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PRESSURE DISTRIBUTION AT SUBSONIC SPEEDS OVER THE FOREPART OF TWO BLUNT CIRCULAR CYLINDERS

By

Vernard E. Lockwood

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LANGLEY RESEARCH CENTER, HAMPTON, VIRGINIA 23665

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16. Abstract

A wind-tunnel investigation was made at subsonic speeds to determine the pressure-distribution over the forward part of a circular cylinder. The cylinder was equipped with interchangeable faces, one having a flat face and one having a dome shaped face. The investigation was made over angle of attack range from -1° to 26° and a Mach number range from 0.30 to 0.89. Pressure coefficients are presented in tabular form and plotted data are presented for some selected angles of attack about the surface of the cylinder. The data were originally published in Langley Working Paper 645.

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PRESSURE DISTRIBUTION AT SUBSONIC SPEEDS OVER THE FOREPART OF TWO BLUNT CIRCULAR CYLINDERS

By Vernard E. Lockwood

SUMMARY

A wind-tunnel investigation has been made at subsonic speeds to determine the pressure distribution over a model of a recovery package from an altitude sounding rocket. The dome-face cylinder which had a cylindrical afterbody was tested over an angle-of-attack range from -1° to 26° and a Mach number range from 0.3 to 0.89. The investigation also included tests of a right circular cylinder to evaluate the effect of nose shape. The data are presented in tabular form. Plotted data, for some selected angles of attack showing pressure coefficient variation about the surface of the cylinder, are also presented.

The results showed that separated flow existed from the faces of the cylinders rearward to about 1.6 diameters and that the region of separated flow increased as the Mach number was increased to 0.89, the highest obtained. The pressures on the cylindrical surface immediately behind the dome-face cylinder were more negative than those obtained on the flat-face cylinder. The data also showed that as the angle of attack increased, the pressure recovery (tendency toward attachment) occurred sooner on the dome-face cylinder than on the flat-face cylinder.

INTRODUCTION

An investigation has been made in the Langley high-speed 7- by 10-foot tunnel to determine pressure distributions on a model of a recovery package from an altitude sounding rocket. This investigation which is in support of NASA activities in altitude research was undertaken to provide pressure information relative to the activation of recovery mechanisms. The model tested was essentially a circular cylinder with a dome-shape nose and having a length to diameter ratio of four to one. To provide an indication of the importance of nose shape, the investigation also included tests of a right circular cylinder (flat face) of similar size.

Pressure data were obtained over the face of each cylinder and about the surface of cylinders at several stations aft of the nose for angles of attack between -1° and 26°. The cylinders were tested over a Mach number range of 0.30 to 0.89, which corresponds to a Reynolds number range between 1.81×10^6 and 3.75×10^6 per foot. The pressure coefficient data obtained are presented in tabular form. Plots showing pressure coefficient as a function of radial distance in the horizontal and vertical planes of the nose and as a function of angular location on surface are also presented.

SYMBOLS

The symbols used in this paper are defined as follows:

C_p pressure coefficient, $\frac{p_l - p_\infty}{Q}$

(CP1 to CP5 in tabulated data)

p_l local static pressure

p_∞ free stream static pressure

Q	free stream dynamic pressure, lb/sq ft
M	Mach number
R	Reynolds number per foot
α	angle of attack, deg
ϕ	radial angle, deg (see fig. 1)
X/D	distance along X-axis, diameters (see fig. 1)
Y/D	distance along Y-axis, diameters (see fig. 1)
Z/D	distance along Z-axis, diameters (see fig. 1)
D	diameter of cylinder, 6.00 in.

TEST CONDITIONS

The average test conditions for the investigation were as follows:

M	Q, lb/sq ft	R/ft
0.303	128	1.81×10^6
0.403	217	2.31
0.505	320	2.80
0.608	430	3.13
0.713	542	3.50
0.822	648	3.75
0.885	703	3.75

Because of the relative bluntness of the cylinder faces, the tests were made without boundary-layer transition strips.

MODEL AND APPARATUS

The cylinder used in the investigation was basically a right circular cylinder with a diameter of 6 inches and a length of 24 inches. The forward

face of the cylinder was replaceable; one face was flat, the other face was convex which is referred to as the dome face. Details of the cylinder and faces are shown in figure 2. The model was equipped with orifices for measuring static pressure. The arrangement of the orifices can be seen in figures 2 and 3. A 5-unit multiple valve scanning system contained in the cylinder was used for measuring the orifice pressures. A photograph of the system is shown in figure 4.

The model was supported on the sting support of the Langley 7- by 10-foot high-speed tunnel.

RESULTS

Table 1 presents a log of the tests made in the Langley 7- by 10-foot high-speed tunnel. A tabulation of the data is presented in Table II. Blockage corrections calculated by the methods of reference 1 have been applied to the data.

The pressure coefficients, C_p , are shown in figure 5 as a function of the radial angle, ϕ , for several angles of attack, longitudinal locations, X/D , and Mach numbers. Similar data obtained on the face of each cylinder are shown in figure 6 as a function of the vertical distance, Y/D , and the horizontal distance, Z/D , from the axis of the cylinder.

Because of the bluntness of the two cylinders, separated flow can be expected for a considerable distance aft of the face of the cylinders. The extent of the separation at zero angle of attack is best shown in figure 7 where the values of C_p have been averaged for a given value of X/D . At a Mach number of 0.30, flow reattachment appears to have been obtained between 1.13 and 1.63 diameters aft of the cylinder face. (For zero angle of

attack where the flow is parallel to the cylinder surface attached flow is indicated by a value of $C_p = 0.$) As would be expected, increasing Mach numbers tend to delay attachment. For example, at the highest Mach number of the investigation, 0.884, attachment was not obtained at the rearmost station surveyed, $X/D = 2.13$, although the pressures were reducing in magnitude toward the rear. At the higher Mach numbers, evidence of fluctuating airflows are indicated at the rearmost stations. For example, the values of C_p in Table II at stations $X/D = 1.63$ and $X/D = 2.13$ show variations of the order of 0.3. (For the flat cylinder see Run 8, Point 191, and for the dome-face cylinder see Run 24, Point 204.)

The shape of the cylinder face had a pronounced effect on the pressures over the cylindrical portion as is indicated by figures 5 and 7. The dome-face cylinder shows more negative pressure coefficients over the forward stations than does the flat-face cylinders. An inspection of figure 6 which shows the measured pressures over the face of each cylinder also indicates higher negative pressures for the dome-face model.

The moderating influence of angle of attack on the pressure is more readily apparent with the dome-face cylinder than the flat-face cylinder. The tendency toward earlier attachment is indicated by decreasing pressure coefficients on the lower surface ($\phi = 0^o$ to 90^o) at $\alpha = 8^o$ for the rear stations and at $\alpha = 12^o$ for the more forward stations. For the higher angles of attack, notably $\alpha = 24^o$, the pressure distributions about both cylinders resemble that obtained on the high fineness ratio cylinder of reference 2 where there is attached flow on the bottom surface over the full length of the cylinder.

CONCLUDING REMARKS

The results of a wind-tunnel investigation to determine the pressure distribution about two circular cylinders with blunt ends facing the air stream are summarized as follows:

At low angles of attack and a Mach number of 0.3, separated flow existed to about 1.6 diameters behind the face of the cylinders. The region of separated flow increased as the Mach number was increased to the highest obtained (0.89). The pressures on the cylindrical surface immediately behind the dome-face cylinder were more negative than those of the flat-face cylinder. As the angle of attack increased, the pressure recovery (tendency toward attachment) occurred sooner on the dome-face cylinder than on the flat-face cylinder.

REFERENCES

1. Herriot, John G.: Blockage Corrections For Three-Dimensional Flow Closed-Throat Wind Tunnels With Consideration Of The Effects Of Compressibility. NACA Report 995, 1950. (Supersedes NACA RM A7B28.)

2. Tinling, Bruce E., and Allen, Clyde Q.: An Investigation Of The Normal-Force And Vortex-Wake Characteristics Of An Ogive-Cylinder Body At Subsonic Speeds. NASA TN D-1297, April 1962.

TABLE I - TEST PROGRAM

Run	Mach Number	Model
3	0.303	Flat Face
4	0.404	Flat Face
2	0.506	Flat Face
5	0.607	Flat Face
6	0.711	Flat Face
7	0.822	Flat Face
8	0.882	Flat Face
18	0.302	Dome Face
19	0.403	Dome Face
20	0.505	Dome Face
21	0.608	Dome Face
22	0.713	Dome Face
23	0.822	Dome Face
24	0.885	Dome Face
25	Range ($\alpha = 0^{o}$)	Dome Face

TABLE II - TABULATED DATA

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 87 ALPHA -1 MACH .303 Q 129.389 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5447	.231	100	-.4791	.331	20	-.4261	.731	0	-.5188	2.131	90	.0101		
2	.161	170	-.5267	.231	90	-.4998	.331	10	-.4676	.931	180	-.6319	2.131	0	.0053		
3	.161	160	-.5249	.231	80	-.5268	.331	0	-.5052	.931	90	-.6069	0.000		.5738	-.45	0.00
4	.161	150	-.5474	.231	70	-.5178	.431	180	-.5863	.931	0	-.5258	0.000		.7707	-.40	0.00
5	.161	140	-.5483	.231	60	-.4593	.431	170	-.5593	1.131	180	-.4527	0.000		.9289	-.30	0.00
6	.161	130	-.5285	.231	50	-.4818	.431	160	-.5409	1.131	170	-.5509	0.000		.9851	-.20	0.00
7	.161	120	-.5041	.231	40	-.4566	.431	150	-.5303	1.131	160	-.5238	0.000		1.0210	-.10	0.00
8	.161	110	-.5139	.231	30	-.4728	.431	140	-.5593	1.131	150	-.4747	0.000		1.0336	0.00	0.00
9	.161	100	-.5086	.231	20	-.4854	.431	130	-.5207	1.131	140	-.5248	0.000		1.0297	.10	0.00
10	.161	90	-.4852	.231	10	-.4998	.431	120	-.5496	1.131	130	-.4727	0.000		.9977	.20	0.00
11	.161	80	-.4936	.231	0	-.5178	.431	110	-.4906	1.131	120	-.5326	0.000		.9444	.30	0.00
12	.161	70	-.4482	.331	180	-.5034	.431	100	-.4801	1.131	110	-.5138	0.000		.8837	.40	0.00
13	.161	60	-.4786	.331	170	-.5304	.431	90	-.5409	1.131	100	-.5519	0.000		.8864	.45	0.00
14	.161	50	-.5059	.331	160	-.5439	.431	80	-.5419	1.131	90	-.4567	0.000		1.0239	0.00	.10
15	.161	40	-.4816	.331	150	-.5637	.431	70	-.5129	1.131	80	-.5268	0.000		.9890	0.00	.20
16	.161	30	-.4807	.331	140	-.5367	.431	60	-.5091	1.131	70	-.5238	0.000		.9298	0.00	.30
17	.161	20	-.4134	.331	130	-.5259	.431	50	-.4907	1.131	60	-.5509	0.000		.7717	0.00	.40
18	.161	10	-.4554	.331	120	-.4998	.431	40	-.4946	1.131	50	-.5469	0.000		.5816	0.00	.45
19	.161	0	-.4852	.331	110	-.5070	.431	30	-.5178	1.131	40	-.4946	.161	270	-.5099		
20	.231	180	-.5402	.331	100	-.5430	.431	20	-.4878	1.131	30	-.5036	.231	270	-.5128		
21	.231	170	-.5243	.331	90	-.5349	.431	10	-.4637	1.131	20	-.4777	.331	270	-.5235		
22	.231	160	-.5068	.331	80	-.4917	.431	0	-.4917	1.131	10	-.5068	.431	270	-.5477		
23	.231	150	-.5337	.331	70	-.5106	.531	180	-.5602	1.131	0	-.4787	.531	270	-.5584		
24	.231	140	-.4987	.331	60	-.4800	.531	90	-.5100				.731	270	-.6089		
25	.231	130	-.5267	.331	50	-.4494	.531	0	-.4936	1.631	90	-.1462	.931	270	-.6050		
26	.231	120	-.4933	.331	40	-.4899	.731	180	-.6123	1.631	0	-.1502	1.131	270	-.5109		
27	.231	110	-.4951	.331	30	-.4773	.731	90	-.5400	2.131	180	.0752	1.631	270	-.0733		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 88 ALPHA 0 MACH .303 Q 129.486 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4668	.231	100	-.4967	.331	20	-.4855	.731	0	-.5614	2.131	90	.0838		
2	.161	170	-.5173	.231	90	-.5012	.331	10	-.4942	.931	180	-.5604	2.131	0	.0121		
3	.161	160	-.5100	.231	80	-.4958	.331	0	-.5010	.931	90	-.5795	0.000		.5908	-.45	0.00
4	.161	150	-.4735	.231	70	-.5084	.431	180	-.4942	.931	0	-.5895	0.000		.7847	-.40	0.00
5	.161	140	-.5028	.231	60	-.5309	.431	170	-.5338	1.131	180	-.5064	0.000		.9340	-.30	0.00
6	.161	130	-.4938	.231	50	-.4887	.431	160	-.5444	1.131	170	-.4874	0.000		.9941	-.20	0.00
7	.161	120	-.5082	.231	40	-.5111	.431	150	-.5646	1.131	160	-.4854	0.000		1.0271	-.10	0.00
8	.161	110	-.4956	.231	30	-.4895	.431	140	-.5154	1.131	150	-.5424	0.000		1.0309	0.00	0.00
9	.161	100	-.4830	.231	20	-.4931	.431	130	-.4952	1.131	140	-.4844	0.000		.9912	.10	0.00
10	.161	90	-.4830	.231	10	-.5156	.431	120	-.4875	1.131	130	-.5124	0.000		1.0009	.20	0.00
11	.161	80	-.4848	.231	0	-.4967	.431	110	-.5136	1.131	120	-.5544	0.000		.9350	.30	0.00
12	.161	70	-.4758	.331	180	-.5012	.431	100	-.5135	1.131	110	-.5424	0.000		.7915	.40	0.00
13	.161	60	-.4631	.331	170	-.5039	.431	90	-.5029	1.131	100	-.5104	0.000		.5821	.45	0.00
14	.161	50	-.4974	.331	160	-.4743	.431	80	-.4884	1.131	90	-.6055	0.000		1.0319	0.00	.10
15	.161	40	-.4821	.331	150	-.4752	.431	70	-.5125	1.131	80	-.5154	0.000		.9980	0.00	.20
16	.161	30	-.4938	.331	140	-.5075	.431	60	-.5096	1.131	70	-.4944	0.000		.9350	0.00	.30
17	.161	20	-.4866	.331	130	-.4922	.431	50	-.5164	1.131	60	-.5194	0.000		.7847	0.00	.40
18	.161	10	-.4722	.331	120	-.5111	.431	40	-.5174	1.131	50	-.4894	0.000		.5772	0.00	.45
19	.161	0	-.5191	.331	110	-.4797	.431	30	-.5482	1.131	40	-.5765	.161	270	-.4940		
20	.231	180	-.5010	.331	100	-.4770	.431	20	-.5203	1.131	30	-.5364	.231	270	-.4930		
21	.231	170	-.4886	.331	90	-.4976	.431	10	-.4913	1.131	20	-.5194	.331	270	-.4968		
22	.231	160	-.4837	.331	80	-.5066	.431	0	-.5241	1.131	10	-.5314	.431	270	-.4979		
23	.231	150	-.5326	.331	70	-.4842	.531	180	-.5357	1.131	0	-.5434	.531	270	-.5357		
24	.231	140	-.4875	.331	60	-.4761	.531	90	-.5019				.731	270	-.5743		
25	.231	130	-.4776	.331	50	-.4869	.531	0	-.5077	1.631	90	-.1451	.931	270	-.6036		
26	.231	120	-.4794	.331	40	-.4873	.731	180	-.5530	1.631	0	-.1191	1.131	270	-.5027		
27	.231	110	-.4884	.331	30	-.5039	.731	90	-.5936	2.131	180	.0831	1.631	270	-.1518		

7 X 10 HIGH-SPEED TUNNEL TEST 780 RUN 3 POINT 89 ALPHA 2 MACH .302 Q 129.098 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4582	.231	100	-.4684	.331	20	-.5315	.731	0	-.6063	2.131	90	.0393		
2	.161	170	-.4682	.231	90	-.5316	.331	10	-.5992	.931	180	-.5321	2.131	0	.1306		
3	.161	160	-.4438	.231	80	-.5172	.331	0	-.5257	.931	90	-.5873	0.000		.6159	-.45	0.00
4	.161	150	-.4166	.231	70	-.5226	.431	180	-.4658	.931	0	-.5812	0.000		.8006	-.40	0.00
5	.161	140	-.4001	.231	60	-.5488	.431	170	-.4396	1.131	180	-.5310	0.000		.9455	-.30	0.00
6	.161	130	-.4836	.231	50	-.5037	.431	160	-.5238	1.131	170	-.4799	0.000		1.0038	-.20	0.00
7	.161	120	-.4754	.231	40	-.5605	.431	150	-.4793	1.131	160	-.4688	0.000		1.0272	-.10	0.00
8	.161	110	-.4745	.231	30	-.5560	.431	140	-.4803	1.131	150	-.5039	0.000		1.0340	0.00	0.00
9	.161	100	-.4803	.231	20	-.5569	.431	130	-.5286	1.131	140	-.5411	0.000		1.0204	.10	0.00
10	.161	90	-.5071	.231	10	-.5362	.431	120	-.5354	1.131	130	-.4748	0.000		.9766	.20	0.00
11	.161	80	-.4953	.231	0	-.5316	.431	110	-.5074	1.131	120	-.5441	0.000		.9144	.30	0.00
12	.161	70	-.5234	.331	180	-.4595	.431	100	-.5180	1.131	110	-.4819	0.000		.7744	.40	0.00
13	.161	60	-.5107	.331	170	-.4884	.431	90	-.5315	1.131	100	-.5210	0.000		.5644	.45	0.00
14	.161	50	-.5397	.331	160	-.4586	.431	80	-.5325	1.131	90	-.5752	0.000		1.0204	0.00	.10
15	.161	40	-.5180	.331	150	-.4550	.431	70	-.5238	1.131	80	-.5220	0.000		.9961	0.00	.20
16	.161	30	-.5496	.331	140	-.4730	.431	60	-.5567	1.131	70	-.5461	0.000		.9329	0.00	.30
17	.161	20	-.5198	.331	130	-.4640	.431	50	-.5315	1.131	60	-.5421	0.000		.7909	0.00	.40
18	.161	10	-.5885	.331	120	-.5091	.431	40	-.5818	1.131	50	-.4276	0.000		.5712	0.00	.45
19	.161	0	-.5460	.331	110	-.5055	.431	30	-.5654	1.131	40	-.5170	.161	270	-.5111		
20	.231	180	-.4510	.331	100	-.5235	.431	20	-.5470	1.131	30	-.5100	.231	270	-.5296		
21	.231	170	-.4745	.331	90	-.5280	.431	10	-.5702	1.131	20	-.4337	.331	270	-.5276		
22	.231	160	-.4393	.331	80	-.5722	.431	0	-.5460	1.131	10	-.5019	.431	270	-.5296		
23	.231	150	-.4816	.331	70	-.5443	.531	180	-.4948	1.131	0	-.4357	.531	270	-.5500		
24	.231	140	-.4953	.331	60	-.5398	.531	90	-.5625				.731	270	-.5918		
25	.231	130	-.4610	.331	50	-.5452	.531	0	-.5818	1.631	90	-.1034	.931	270	-.6268		
26	.231	120	-.4763	.331	40	-.5280	.731	180	-.5654	1.631	0	.0000	1.131	270	-.4945		
27	.231	110	-.4962	.331	30	-.5695	.731	90	-.5954	2.131	180	-.0231	1.631	270	-.0910		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 90 ALPHA 4 MACH .303 Q 129.583 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4231	.231	100	-.5646	.331	20	-.6394	.731	0	-.7490	2.131	90	.0857		
2	.161	170	-.3952	.231	90	-.5718	.331	10	-.6268	.931	180	-.5450	2.131	0	.1051		
3	.161	160	-.4736	.231	80	-.5889	.331	0	-.5892	.931	90	-.6140	0.000		.6902	-.45	0.00
4	.161	150	-.3925	.231	70	-.5880	.431	180	-.4437	.931	0	-.5360	0.000		.8762	-.40	0.00
5	.161	140	-.4628	.231	60	-.5655	.431	170	-.4803	1.131	180	-.4660	0.000		1.0205	-.30	0.00
6	.161	130	-.4889	.231	50	-.5916	.431	160	-.4697	1.131	170	-.5190	0.000		1.0728	-.20	0.00
7	.161	120	-.5078	.231	40	-.5862	.431	150	-.5314	1.131	160	-.5130	0.000		1.0883	-.10	0.00
8	.161	110	-.4988	.231	30	-.5691	.431	140	-.4746	1.131	150	-.4720	0.000		1.0864	0.00	0.00
9	.161	100	-.5313	.231	20	-.5970	.431	130	-.5411	1.131	140	-.5180	0.000		1.0796	.10	0.00
10	.161	90	-.5466	.231	10	-.5727	.431	120	-.5218	1.131	130	-.4660	0.000		1.0418	.20	0.00
11	.161	80	-.5001	.231	0	-.5952	.431	110	-.5603	1.131	120	-.5890	0.000		.9662	.30	0.00
12	.161	70	-.5836	.331	180	-.4649	.431	100	-.5796	1.131	110	-.5120	0.000		.8016	.40	0.00
13	.161	60	-.5736	.331	170	-.4263	.431	90	-.5719	1.131	100	-.5330	0.000		.6127	.45	0.00
14	.161	50	-.5944	.331	160	-.4604	.431	80	-.5950	1.131	90	-.5180	0.000		1.0776	0.00	.10
15	.161	40	-.6025	.331	150	-.4838	.431	70	-.6230	1.131	80	-.4200	0.000		1.0466	0.00	.20
16	.161	30	-.5837	.331	140	-.3553	.431	60	-.5748	1.131	70	-.4500	0.000		.9866	0.00	.30
17	.161	20	-.6043	.331	130	-.4820	.431	50	-.6143	1.131	60	-.3810	0.000		.8393	0.00	.40
18	.161	10	-.6079	.331	120	-.4964	.431	40	-.6394	1.131	50	-.3630	0.000		.6321	0.00	.45
19	.161	0	-.5863	.331	110	-.4856	.431	30	-.5950	1.131	40	-.3900	.161	270	-.5014		
20	.231	180	-.4159	.331	100	-.5305	.431	20	-.6124	1.131	30	-.3050	.231	270	-.4975		
21	.231	170	-.4195	.331	90	-.5602	.431	10	-.5873	1.131	20	-.3460	.331	270	-.5178		
22	.231	160	-.4529	.331	80	-.5781	.431	0	-.6268	1.131	10	-.2850	.431	270	-.5246		
23	.231	150	-.4808	.331	70	-.5835	.531	180	-.5324	1.131	0	-.2720	.531	270	-.5333		
24	.231	140	-.4979	.331	60	-.5871	.531	90	-.6076				.731	270	-.5740		
25	.231	130	-.5051	.331	50	-.5853	.531	0	-.6625	1.631	90	-.0259	.931	270	-.5750		
26	.231	120	-.5502	.331	40	-.6221	.731	180	-.5507	1.631	0	.0711	1.131	270	-.3861		
27	.231	110	-.5340	.331	30	-.5943	.731	90	-.6239	2.131	180	-.0639	1.631	270	-.0431		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 91 ALPHA 6 MACH .303 Q 129.874 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4284	.231	100	-.6028	.331	20	-.6542	.731	0	-.6565	2.131	90	.0189		
2	.161	170	-.4473	.231	90	-.6010	.331	10	-.6446	.931	180	-.5487	2.131	0	.0334		
3	.161	160	-.4150	.231	80	-.6288	.331	0	-.6735	.931	90	-.6406	0.000		.6597	-.45	0.00
4	.161	150	-.4186	.231	70	-.6207	.431	180	-.4687	.931	0	-.3701	0.000		.8443	-.40	0.00
5	.161	140	-.4743	.231	60	-.6422	.431	170	-.4754	1.131	180	-.4530	0.000		.9757	-.30	0.00
6	.161	130	-.5148	.231	50	-.6324	.431	160	-.4840	1.131	170	-.4769	0.000		1.0221	-.20	0.00
7	.161	120	-.5561	.231	40	-.6512	.431	150	-.5187	1.131	160	-.4559	0.000		1.0289	-.10	0.00
8	.161	110	-.5624	.231	30	-.6548	.431	140	-.5167	1.131	150	-.4470	0.000		1.0269	0.00	0.00
9	.161	100	-.5804	.231	20	-.6306	.431	130	-.5600	1.131	140	-.4440	0.000		1.0057	.10	0.00
10	.161	90	-.5921	.231	10	-.6593	.431	120	-.5754	1.131	130	-.5348	0.000		.9554	.20	0.00
11	.161	80	-.6047	.231	0	-.6207	.431	110	-.6081	1.131	120	-.5228	0.000		.8868	.30	0.00
12	.161	70	-.6218	.331	180	-.5069	.431	100	-.6254	1.131	110	-.5048	0.000		.7167	.40	0.00
13	.161	60	-.6551	.331	170	-.5338	.431	90	-.6408	1.131	100	-.4749	0.000		.5147	.45	0.00
14	.161	50	-.6137	.331	160	-.4764	.431	80	-.6215	1.131	90	-.4669	0.000		1.0173	0.00	.10
15	.161	40	-.6200	.331	150	-.4880	.431	70	-.6504	1.131	80	-.3142	0.000		.9892	0.00	.20
16	.161	30	-.6245	.331	140	-.5544	.431	60	-.6581	1.131	70	-.2973	0.000		.9206	0.00	.30
17	.161	20	-.6425	.331	130	-.5580	.431	50	-.6677	1.131	60	-.2075	0.000		.7621	0.00	.40
18	.161	10	-.6281	.331	120	-.5804	.431	40	-.6562	1.131	50	-.1546	0.000		.5504	0.00	.45
19	.161	0	-.6308	.331	110	-.5831	.431	30	-.6658	1.131	40	-.0817	.161	270	-.6394		
20	.231	180	-.4222	.331	100	-.6225	.431	20	-.6619	1.131	30	-.1117	.231	270	-.6249		
21	.231	170	-.4455	.331	90	-.6386	.431	10	-.6840	1.131	20	-.0049	.331	270	-.6094		
22	.231	160	-.4491	.331	80	-.6512	.431	0	-.6773	1.131	10	-.0149	.431	270	-.6288		
23	.231	150	-.4159	.331	70	-.6243	.531	180	-.5215	1.131	0	.0779	.531	270	-.6645		
24	.231	140	-.5130	.331	60	-.6413	.531	90	-.6360				.731	270	-.7593		
25	.231	130	-.5220	.331	50	-.6378	.531	0	-.6696	1.631	90	-.0288	.931	270	-.6065		
26	.231	120	-.5570	.331	40	-.6467	.731	180	-.6523	1.631	0	.0510	1.131	270	-.4007		
27	.231	110	-.5741	.331	30	-.6611	.731	90	-.6994	2.131	180	.0041	1.631	270	-.0014		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 92 ALPHA 8 MACH .303 Q 129.680 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4156	.231	100	-.6315	.331	20	-.7198	.731	0	-.4457	2.131	90	-.0779		
2	.161	170	-.4507	.231	90	-.6800	.331	10	-.7159	.931	180	-.5456	2.131	0	.0111		
3	.161	160	-.4687	.231	80	-.6603	.331	0	-.7072	.931	90	-.5926	0.000		.6858	-.45	0.00
4	.161	150	-.4732	.231	70	-.6809	.431	180	-.4896	.931	0	-.0669	0.000		.8668	-.40	0.00
5	.161	140	-.4922	.231	60	-.6558	.431	170	-.5272	1.131	180	-.4746	0.000		.9859	-.30	0.00
6	.161	130	-.5597	.231	50	-.6782	.431	160	-.5272	1.131	170	-.4497	0.000		1.0139	-.20	0.00
7	.161	120	-.5813	.231	40	-.6935	.431	150	-.5772	1.131	160	-.4706	0.000		1.0207	-.10	0.00
8	.161	110	-.6074	.231	30	-.6755	.431	140	-.5609	1.131	150	-.5126	0.000		1.0120	0.00	0.00
9	.161	100	-.6299	.231	20	-.6657	.431	130	-.5898	1.131	140	-.4686	0.000		.9859	.10	0.00
10	.161	90	-.6326	.231	10	-.7213	.431	120	-.5898	1.131	130	-.5636	0.000		.9384	.20	0.00
11	.161	80	-.6714	.231	0	-.7797	.431	110	-.6408	1.131	120	-.4427	0.000		.8503	.30	0.00
12	.161	70	-.6479	.331	180	-.5175	.431	100	-.6206	1.131	110	-.5516	0.000		.6722	.40	0.00
13	.161	60	-.6993	.331	170	-.5301	.431	90	-.6880	1.131	100	-.3807	0.000		.4670	.45	0.00
14	.161	50	-.6858	.331	160	-.5220	.431	80	-.6861	1.131	90	-.3427	0.000		.9655	0.00	.10
15	.161	40	-.6884	.331	150	-.5597	.431	70	-.6918	1.131	80	-.2967	0.000		.9675	0.00	.20
16	.161	30	-.6975	.331	140	-.5409	.431	60	-.7265	1.131	70	-.1598	0.000		.9113	0.00	.30
17	.161	20	-.6732	.331	130	-.5624	.431	50	-.7063	1.131	60	-.0869	0.000		.7632	0.00	.40
18	.161	10	-.6597	.331	120	-.6226	.431	40	-.7111	1.131	50	-.0869	0.000		.5406	0.00	.45
19	.161	0	-.6836	.331	110	-.6226	.431	30	-.7583	1.131	40	.0261	.161	270	-.6878		
20	.231	180	-.4349	.331	100	-.6100	.431	20	-.7217	1.131	30	.0820	.231	270	-.6839		
21	.231	170	-.4597	.331	90	-.6333	.431	10	-.7178	1.131	20	.0720	.331	270	-.6394		
22	.231	160	-.4383	.331	80	-.6172	.431	0	-.7092	1.131	10	.0870	.431	270	-.6617		
23	.231	150	-.5273	.331	70	-.6468	.531	180	-.5474	1.131	0	.1060	.531	270	-.6404		
24	.231	140	-.5327	.331	60	-.6818	.531	90	-.6716				.731	270	-.7469		
25	.231	130	-.5534	.331	50	-.6549	.531	0	-.7708	1.631	90	-.0769	.931	270	-.5687		
26	.231	120	-.5840	.331	40	-.6971	.731	180	-.5686	1.631	0	.0261	1.131	270	-.3519		
27	.231	110	-.6083	.331	30	-.7177	.731	90	-.7149	2.131	180	.0231	1.631	270	-.0683		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 93 ALPHA 10 MACH .303 Q 129.777 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4738	.231	100	-.6266	.331	20	-.7163	.731	0	-.1727	2.131	90	-.0411		
2	.161	170	-.4648	.231	90	-.6616	.331	10	-.7510	.931	180	-.5392	2.131	0	.0247		
3	.161	160	-.4630	.231	80	-.6849	.331	0	-.7654	.931	90	-.4673	0.000		.7211	-.45	0.00
4	.161	150	-.5350	.231	70	-.7280	.431	180	-.5239	.931	0	.0860	0.000		.8932	-.40	0.00
5	.161	140	-.5422	.231	60	-.6957	.431	170	-.5114	1.131	180	-.4223	0.000		1.0093	-.30	0.00
6	.161	130	-.5971	.231	50	-.6822	.431	160	-.5287	1.131	170	-.4323	0.000		1.0364	-.20	0.00
7	.161	120	-.6160	.231	40	-.6795	.431	150	-.5441	1.131	160	-.4423	0.000		1.0461	-.10	0.00
8	.161	110	-.5971	.231	30	-.7010	.431	140	-.5701	1.131	150	-.4733	0.000		1.0248	0.00	0.00
9	.161	100	-.6430	.231	20	-.7100	.431	130	-.5903	1.131	140	-.5442	0.000		.9822	.10	0.00
10	.161	90	-.6672	.231	10	-.7037	.431	120	-.6239	1.131	130	-.4553	0.000		.9339	.20	0.00
11	.161	80	-.6610	.231	0	-.6876	.431	110	-.6307	1.131	120	-.4783	0.000		.8362	.30	0.00
12	.161	70	-.7239	.331	180	-.5028	.431	100	-.6971	1.131	110	-.4054	0.000		.6601	.40	0.00
13	.161	60	-.6879	.331	170	-.4821	.431	90	-.6567	1.131	100	-.3694	0.000		.4561	.45	0.00
14	.161	50	-.6787	.331	160	-.4795	.431	80	-.6807	1.131	90	-.3345	0.000		1.0093	0.00	.10
15	.161	40	-.6870	.331	150	-.5369	.431	70	-.7336	1.131	80	-.1967	0.000		.9793	0.00	.20
16	.161	30	-.7338	.331	140	-.6015	.431	60	-.7943	1.131	70	-.1086	0.000		.9116	0.00	.30
17	.161	20	-.7050	.331	130	-.6015	.431	50	-.7481	1.131	60	-.0718	0.000		.7540	0.00	.40
18	.161	10	-.7050	.331	120	-.6364	.431	40	-.7604	1.131	50	-.0259	0.000		.5373	0.00	.45
19	.161	0	-.6699	.331	110	-.6024	.431	30	-.7587	1.131	40	-.0129	.161	270	-.6283		
20	.231	180	-.4486	.331	100	-.6741	.431	20	-.8222	1.131	30	.0410	.231	270	-.6641		
21	.231	170	-.4720	.331	90	-.6687	.431	10	-.8337	1.131	20	.0570	.331	270	-.6834		
22	.231	160	-.4747	.331	80	-.7190	.431	0	-.7664	1.131	10	.0540	.431	270	-.6757		
23	.231	150	-.4909	.331	70	-.6562	.531	180	-.5104	1.131	0	.0750	.531	270	-.6631		
24	.231	140	-.5366	.331	60	-.6885	.531	90	-.6961				.731	270	-.6767		
25	.231	130	-.5782	.331	50	-.7208	.531	0	-.6913	1.631	90	-.1118	.931	270	-.4813		
26	.231	120	-.5998	.331	40	-.7387	.731	180	-.5951	1.631	0	.0071	1.131	270	-.2384		
27	.231	110	-.6556	.331	30	-.7172	.731	90	-.7086	2.131	180	-.0229	1.631	270	-.1320		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 94 ALPHA 12 MACH .304 Q 129.970 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4254	.231	100	-.6489	.331	20	-.7402	.731	0	.0858	2.131	90	-.1405		
2	.161	170	-.4497	.231	90	-.7143	.331	10	-.7950	.931	180	-.5553	2.131	0	.0314		
3	.161	160	-.4829	.231	80	-.7376	.331	0	-.7863	.931	90	-.4127	0.000		.7493	-.45	0.00
4	.161	150	-.5252	.231	70	-.7089	.431	180	-.5192	.931	0	.0888	0.000		.9151	-.40	0.00
5	.161	140	-.5704	.231	60	-.7286	.431	170	-.5423	1.131	180	-.4237	0.000		1.0049	-.30	0.00
6	.161	130	-.6076	.231	50	-.7331	.431	160	-.5692	1.131	170	-.3868	0.000		1.0368	-.20	0.00
7	.161	120	-.6357	.231	40	-.7053	.431	150	-.5682	1.131	160	-.4995	0.000		1.0233	-.10	0.00
8	.161	110	-.7049	.231	30	-.7672	.431	140	-.6624	1.131	150	-.3758	0.000		1.0001	0.00	0.00
9	.161	100	-.6788	.231	20	-.7546	.431	130	-.6307	1.131	140	-.4486	0.000		.9566	.10	0.00
10	.161	90	-.6653	.231	10	-.7215	.431	120	-.6249	1.131	130	-.4815	0.000		.8919	.20	0.00
11	.161	80	-.6689	.231	0	-.6982	.431	110	-.6220	1.131	120	-.4586	0.000		.8098	.30	0.00
12	.161	70	-.6968	.331	180	-.5029	.431	100	-.6499	1.131	110	-.4506	0.000		.6234	.40	0.00
13	.161	60	-.7094	.331	170	-.4930	.431	90	-.6912	1.131	100	-.3836	0.000		.4206	.45	0.00
14	.161	50	-.6959	.331	160	-.5459	.431	80	-.7133	1.131	90	-.2751	0.000		.9904	0.00	.10
15	.161	40	-.7408	.331	150	-.5671	.431	70	-.7786	1.131	80	-.2292	0.000		.9634	0.00	.20
16	.161	30	-.7148	.331	140	-.5593	.431	60	-.7863	1.131	70	-.1704	0.000		.8968	0.00	.30
17	.161	20	-.7570	.331	130	-.6068	.431	50	-.8622	1.131	60	-.1196	0.000		.7374	0.00	.40
18	.161	10	-.6959	.331	120	-.6229	.431	40	-.7950	1.131	50	-.0866	0.000		.5211	0.00	.45
19	.161	0	-.7219	.331	110	-.6767	.431	30	-.7911	1.131	40	-.0448	.161	270	-.7036		
20	.231	180	-.4587	.331	100	-.7071	.431	20	-.7498	1.131	30	-.0009	.231	270	-.6553		
21	.231	170	-.5045	.331	90	-.7134	.431	10	-.6970	1.131	20	.0290	.331	270	-.7355		
22	.231	160	-.4730	.331	80	-.6480	.431	0	-.6922	1.131	10	.0510	.431	270	-.6544		
23	.231	150	-.5261	.331	70	-.6740	.531	180	-.5365	1.131	0	.0500	.531	270	-.7316		
24	.231	140	-.5656	.331	60	-.7501	.531	90	-.7489				.731	270	-.6959		
25	.231	130	-.6207	.331	50	-.7268	.531	0	-.4780	1.631	90	-.2113	.931	270	-.4766		
26	.231	120	-.6114	.331	40	-.7358	.731	180	-.5432	1.631	0	.0011	1.131	270	-.3289		
27	.231	110	-.6734	.331	30	-.8057	.731	90	-.7268	2.131	180	-.0468	1.631	270	-.1975		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 95 ALPHA 14 MACH .302 Q 129.001 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4713	.231	100	-.7306	.331	20	-.8427	.731	0	.0984	2.131	90	-.1874		
2	.161	170	-.4830	.231	90	-.7432	.331	10	-.8330	.931	180	-.5797	2.131	0	.0578		
3	.161	160	-.5102	.231	80	-.7117	.331	0	-.8069	.931	90	-.3999	0.000		.8032	-.45	0.00
4	.161	150	-.5211	.231	70	-.6999	.431	180	-.5465	.931	0	.0502	0.000		.9326	-.40	0.00
5	.161	140	-.5654	.231	60	-.7017	.431	170	-.5436	1.131	180	-.4541	0.000		1.0309	-.30	0.00
6	.161	130	-.6406	.231	50	-.7396	.431	160	-.5997	1.131	170	-.5094	0.000		1.0357	-.20	0.00
7	.161	120	-.6505	.231	40	-.7414	.431	150	-.6113	1.131	160	-.4792	0.000		1.0104	-.10	0.00
8	.161	110	-.6708	.231	30	-.7207	.431	140	-.6249	1.131	150	-.4752	0.000		.9910	0.00	0.00
9	.161	100	-.6922	.231	20	-.7830	.431	130	-.6762	1.131	140	-.5495	0.000		.9365	.10	0.00
10	.161	90	-.7284	.231	10	-.8497	.431	120	-.7352	1.131	130	-.5134	0.000		.8713	.20	0.00
11	.161	80	-.7012	.231	0	-.7875	.431	110	-.6597	1.131	120	-.5516	0.000		.7720	.30	0.00
12	.161	70	-.7175	.331	180	-.5032	.431	100	-.7285	1.131	110	-.4702	0.000		.5871	.40	0.00
13	.161	60	-.7130	.331	170	-.5284	.431	90	-.6926	1.131	100	-.4149	0.000		.3702	.45	0.00
14	.161	50	-.7266	.331	160	-.5510	.431	80	-.7517	1.131	90	-.3617	0.000		.9676	0.00	.10
15	.161	40	-.7094	.331	150	-.5763	.431	70	-.7846	1.131	80	-.3165	0.000		.9462	0.00	.20
16	.161	30	-.7302	.331	140	-.6340	.431	60	-.8340	1.131	70	-.2542	0.000		.8966	0.00	.30
17	.161	20	-.6704	.331	130	-.6106	.431	50	-.7469	1.131	60	-.1788	0.000		.7419	0.00	.40
18	.161	10	-.7248	.331	120	-.6593	.431	40	-.7875	1.131	50	-.1396	0.000		.5181	0.00	.45
19	.161	0	-.8352	.331	110	-.6765	.431	30	-.5097	1.131	40	-.0975	.161	270	-.7402		
20	.231	180	-.4749	.331	100	-.6801	.431	20	-.5726	1.131	30	-.0442	.231	270	-.6662		
21	.231	170	-.4840	.331	90	-.7153	.431	10	-.3258	1.131	20	-.0020	.331	270	-.7450		
22	.231	160	-.4939	.331	80	-.7288	.431	0	-.4932	1.131	10	.0201	.431	270	-.7265		
23	.231	150	-.5537	.331	70	-.7748	.531	180	-.6191	1.131	0	.0121	.531	270	-.8034		
24	.231	140	-.5935	.331	60	-.7478	.531	90	-.7614				.731	270	-.6419		
25	.231	130	-.5899	.331	50	-.7649	.531	0	-.0160	1.631	90	-.2863	.931	270	-.4521		
26	.231	120	-.6496	.331	40	-.8200	.731	180	-.5833	1.631	0	-.0030	1.131	270	-.3509		
27	.231	110	-.6523	.331	30	-.7974	.731	90	-.6452	2.131	180	.0542	1.631	270	-.2964		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 96 ALPHA 16 MACH .302 Q 129.001 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4695	.231	100	-.6918	.331	20	-.7043	.731	0	.0773	2.131	90	-.2838		
2	.161	170	-.4735	.231	90	-.6629	.331	10	-.6016	.931	180	-.5455	2.131	0	.0578		
3	.161	160	-.5057	.231	80	-.7243	.331	0	-.0162	.931	90	-.4511	0.000		.8051	-.45	0.00
4	.161	150	-.5718	.231	70	-.7189	.431	180	-.5794	.931	0	.0462	0.000		.9462	-.40	0.00
5	.161	140	-.6451	.231	60	-.6846	.431	170	-.5726	1.131	180	-.4782	0.000		1.0231	-.30	0.00
6	.161	130	-.5980	.231	50	-.6747	.431	160	-.5803	1.131	170	-.4732	0.000		1.0231	-.20	0.00
7	.161	120	-.6469	.231	40	-.6783	.431	150	-.5803	1.131	160	-.4903	0.000		1.0104	-.10	0.00
8	.161	110	-.6270	.231	30	-.7432	.431	140	-.5978	1.131	150	-.4702	0.000		.9608	0.00	0.00
9	.161	100	-.7166	.231	20	-.7676	.431	130	-.6123	1.131	140	-.5516	0.000		.9199	.10	0.00
10	.161	90	-.6659	.231	10	-.7649	.431	120	-.6781	1.131	130	-.5234	0.000		.8489	.20	0.00
11	.161	80	-.7284	.231	0	-.8669	.431	110	-.6663	1.131	120	-.5435	0.000		.7389	.30	0.00
12	.161	70	-.6623	.331	180	-.4942	.431	100	-.6597	1.131	110	-.5335	0.000		.5550	.40	0.00
13	.161	60	-.6994	.331	170	-.5339	.431	90	-.7381	1.131	100	-.4461	0.000		.3147	.45	0.00
14	.161	50	-.7329	.331	160	-.5429	.431	80	-.7943	1.131	90	-.3999	0.000		.9559	0.00	.10
15	.161	40	-.6994	.331	150	-.5781	.431	70	-.8040	1.131	80	-.3777	0.000		.9297	0.00	.20
16	.161	30	-.6895	.331	140	-.6611	.431	60	-.7546	1.131	70	-.3004	0.000		.8674	0.00	.30
17	.161	20	-.7103	.331	130	-.6367	.431	50	-.7052	1.131	60	-.2431	0.000		.7136	0.00	.40
18	.161	10	-.7057	.331	120	-.6783	.431	40	-.5639	1.131	50	-.1728	0.000		.4947	0.00	.45
19	.161	0	-.7564	.331	110	-.7044	.431	30	-.3412	1.131	40	-.1216	.161	270	-.7158		
20	.231	180	-.4495	.331	100	-.6638	.431	20	-.2996	1.131	30	-.0382	.231	270	-.6565		
21	.231	170	-.4957	.331	90	-.7044	.431	10	-.1505	1.131	20	-.0100	.331	270	-.7149		
22	.231	160	-.5120	.331	80	-.6873	.431	0	-.1331	1.131	10	.0221	.431	270	-.7051		
23	.231	150	-.5835	.331	70	-.6620	.531	180	-.5697	1.131	0	.0281	.531	270	-.6857		
24	.231	140	-.6089	.331	60	-.7478	.531	90	-.7575	1.631	180	-.0794	.731	270	-.6584		
25	.231	130	-.5817	.331	50	-.7640	.531	0	.1524				.931	270	-.4623		
26	.231	120	-.6822	.331	40	-.8145	.731	180	-.6026	1.631	0	.0030	1.131	270	-.4385		
27	.231	110	-.7139	.331	30	-.7432	.731	90	-.5997	2.131	180	-.0050	1.631	270	-.3470		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 101 ALPHA 25 MACH .302 Q 129.001 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5591	.231	100	-.7180	.331	20	.1706	.731	0	.1706	2.131	90	-.4229		
2	.161	170	-.4803	.231	90	-.5573	.331	10	.2037	.931	180	-.0249	2.131	0	.1604		
3	.161	160	-.5233	.231	80	-.5618	.331	0	.2424	.931	90	-.0540	0.000		.9861	-.45	0.00
4	.161	150	-.4682	.231	70	-.4596	.431	180	-.4543	.931	0	.1567	0.000		1.0445	-.40	0.00
5	.161	140	-.5487	.231	60	-.7297	.431	170	-.6772	1.131	180	-.4621	0.000		1.0571	-.30	0.00
6	.161	130	-.5016	.231	50	-.5988	.431	160	-.5465	1.131	170	-.5475	0.000		1.0026	-.20	0.00
7	.161	120	-.5700	.231	40	-.1214	.431	150	-.0181	1.131	160	-.5104	0.000		.9567	-.10	0.00
8	.161	110	-.5709	.231	30	.0075	.431	140	-.5474	1.131	150	-.6041	0.000		.8732	0.00	0.00
9	.161	100	-.6433	.231	20	.2504	.431	130	-.8127	1.131	140	-.6249	0.000		.8071	.10	0.00
10	.161	90	-.6179	.231	10	.3262	.431	120	-.7149	1.131	130	-.6490	0.000		.7234	.20	0.00
11	.161	80	-.6107	.231	0	.3289	.431	110	-.6878	1.131	120	-.6741	0.000		.6095	.30	0.00
12	.161	70	-.5743	.331	180	-.5303	.431	100	-.6752	1.131	110	-.7887	0.000		.4052	.40	0.00
13	.161	60	-.5808	.331	170	-.6070	.431	90	-.6442	1.131	100	-.7686	0.000		.1765	.45	0.00
14	.161	50	-.6487	.331	160	-.5573	.431	80	-.6239	1.131	90	-.6982	0.000		.8722	0.00	.10
15	.161	40	-.6750	.331	150	-.5140	.431	70	-.4884	1.131	80	-.6741	0.000		.8489	0.00	.20
16	.161	30	-.4957	.331	140	-.6277	.431	60	-.2928	1.131	70	-.5375	0.000		.7954	0.00	.30
17	.161	20	-.0965	.331	130	-.6214	.431	50	-.1726	1.131	60	-.4380	0.000		.6387	0.00	.40
18	.161	10	.1389	.331	120	-.6223	.431	40	-.0373	1.131	50	-.2552	0.000		.4937	0.00	.45
19	.161	0	.2692	.331	110	-.6142	.431	30	.0527	1.131	40	-.1417	.161	270	-.5640		
20	.231	180	-.5618	.331	100	-.5275	.431	20	.0121	1.131	30	-.0161	.231	270	-.5952		
21	.231	170	-.5075	.331	90	-.5997	.431	10	.1544	1.131	20	.0382	.331	270	-.5699		
22	.231	160	-.5174	.331	80	-.5627	.431	0	.1882	1.131	10	.1185	.431	270	-.5903		
23	.231	150	-.5315	.331	70	-.6142	.531	180	-.5910	1.131	0	.1768	.531	270	-.5582		
24	.231	140	-.5048	.331	60	-.4716	.531	90	-.5600				.731	270	-.5533		
25	.231	130	-.5292	.331	50	-.1963	.531	0	.1631	1.631	90	-.6420	.931	270	-.6925		
26	.231	120	-.5826	.331	40	-.0032	.731	180	-.5929	1.631	0	.1215	1.131	270	-.7178		
27	.231	110	-.5573	.331	30	.1060	.731	90	-.6007	2.131	180	-.0573	1.631	270	-.6935		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 99 ALPHA 22 MACH .303 Q 129.389 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5140	.231	100	-.5187	.331	20	.1964	.731	0	.0942	2.131	90	-.4915		
2	.161	170	-.4870	.231	90	-.5754	.331	10	.2456	.931	180	-.6039	2.131	0	.1091		
3	.161	160	-.4026	.231	80	-.5619	.331	0	.2946	.931	90	-.5709	0.000		.9250	-.45	0.00
4	.161	150	-.3555	.231	70	-.5826	.431	180	-.5458	.931	0	.1082	0.000		1.0123	-.40	0.00
5	.161	140	-.6034	.231	60	-.6105	.431	170	-.5718	1.131	180	-.4858	0.000		1.0278	-.30	0.00
6	.161	130	-.5745	.231	50	-.6087	.431	160	-.5689	1.131	170	-.5028	0.000		1.0113	-.20	0.00
7	.161	120	-.6197	.231	40	-.7284	.431	150	-.6124	1.131	160	-.6160	0.000		.9512	-.10	0.00
8	.161	110	-.6431	.231	30	-.4845	.431	140	-.6548	1.131	150	-.6059	0.000		.9007	0.00	0.00
9	.161	100	-.6097	.231	20	-.1804	.431	130	-.6317	1.131	140	-.5529	0.000		.8639	.10	0.00
10	.161	90	-.5801	.231	10	-.1372	.431	120	-.5670	1.131	130	-.6670	0.000		.7727	.20	0.00
11	.161	80	-.5357	.231	0	-.0733	.431	110	-.5706	1.131	120	-.6550	0.000		.6727	.30	0.00
12	.161	70	-.5529	.331	180	-.4908	.431	100	-.5651	1.131	110	-.6961	0.000		.4593	.40	0.00
13	.161	60	-.6043	.331	170	-.5340	.431	90	-.6365	1.131	100	-.6961	0.000		.2469	.45	0.00
14	.161	50	-.5944	.331	160	-.5439	.431	80	-.6423	1.131	90	-.6360	0.000		.9055	0.00	.10
15	.161	40	-.5790	.331	150	-.5592	.431	70	-.5583	1.131	80	-.5659	0.000		.8310	0.00	.20
16	.161	30	-.7180	.331	140	-.6195	.431	60	-.3971	1.131	70	-.4627	0.000		.8396	0.00	.30
17	.161	20	-.7041	.331	130	-.5997	.431	50	-.1867	1.131	60	-.3625	0.000		.6902	0.00	.40
18	.161	10	-.7036	.331	120	-.6339	.431	40	-.0555	1.131	50	-.2714	0.000		.4758	0.00	.45
19	.161	0	-.6910	.331	110	-.6312	.431	30	.0642	1.131	40	-.1492	.161	270	-.6477		
20	.231	180	-.4834	.331	100	-.5745	.431	20	.0111	1.131	30	-.0631	.231	270	-.5924		
21	.231	170	-.4888	.331	90	-.5448	.431	10	.1896	1.131	20	.0501	.331	270	-.6098		
22	.231	160	-.6106	.331	80	-.6510	.431	0	.1539	1.131	10	.0441	.431	270	-.6205		
23	.231	150	-.5989	.331	70	-.7005	.531	180	-.5515	1.131	0	.1062	.531	270	-.5730		
24	.231	140	-.5529	.331	60	-.6114	.531	90	-.6345				.731	270	-.6234		
25	.231	130	-.5826	.331	50	-.4881	.531	0	.1404	1.631	90	-.5118	.931	270	-.6370		
26	.231	120	-.5899	.331	40	-.2758	.731	180	-.5737	1.631	0	.0872	1.131	270	-.6486		
27	.231	110	-.6070	.331	30	.0742	.731	90	-.6124	2.131	180	-.1823	1.631	270	-.6040		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 100 ALPHA 24 MACH .302 Q 129.098 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4838	.231	100	-.5758	.331	20	.1784	.731	0	.1566	2.131	90	-.5801		
2	.161	170	-.5071	.231	90	-.6272	.331	10	.1891	.931	180	-.5792	2.131	0	.1511		
3	.161	160	-.5780	.231	80	-.6633	.331	0	.2065	.931	90	-.6395	0.000		.9523	-.45	0.00
4	.161	150	-.5912	.231	70	-.6814	.431	180	-.5118	.931	0	.1516	0.000		1.0388	-.40	0.00
5	.161	140	-.5731	.231	60	-.5641	.431	170	-.5664	1.131	180	-.4889	0.000		1.0525	-.30	0.00
6	.161	130	-.6147	.231	50	-.6570	.431	160	-.5751	1.131	170	-.5451	0.000		1.0009	-.20	0.00
7	.161	120	-.6084	.231	40	-.4784	.431	150	-.5847	1.131	160	-.4748	0.000		.9679	-.10	0.00
8	.161	110	-.6482	.231	30	.1709	.431	140	-.6728	1.131	150	-.5722	0.000		.9183	0.00	0.00
9	.161	100	-.5894	.231	20	.2818	.431	130	-.6031	1.131	140	-.5331	0.000		.8395	.10	0.00
10	.161	90	-.5116	.231	10	.3548	.431	120	-.5219	1.131	130	-.5682	0.000		.7831	.20	0.00
11	.161	80	-.6401	.231	0	.3783	.431	110	-.6863	1.131	120	-.6334	0.000		.6431	.30	0.00
12	.161	70	-.5324	.331	180	-.5497	.431	100	-.5886	1.131	110	-.6877	0.000		.4166	.40	0.00
13	.161	60	-.5005	.331	170	-.5488	.431	90	-.5983	1.131	100	-.6756	0.000		.2386	.45	0.00
14	.161	50	-.5831	.331	160	-.5019	.431	80	-.5393	1.131	90	-.6495	0.000		.9066	0.00	.10
15	.161	40	-.6564	.331	150	-.5587	.431	70	-.5306	1.131	80	-.6294	0.000		.9299	0.00	.20
16	.161	30	-.7070	.331	140	-.6227	.431	60	-.3149	1.131	70	-.4999	0.000		.8405	0.00	.30
17	.161	20	-.4347	.331	130	-.5407	.431	50	-.1349	1.131	60	-.3644	0.000		.6995	0.00	.40
18	.161	10	-.1407	.331	120	-.7237	.431	40	-.0634	1.131	50	-.2630	0.000		.4700	0.00	.45
19	.161	0	-.0801	.331	110	-.6794	.431	30	.0498	1.131	40	-.1466	.161	270	-.5607		
20	.231	180	-.5030	.331	100	-.5578	.431	20	.0014	1.131	30	-.0351	.231	270	-.5937		
21	.231	170	-.5406	.331	90	-.6272	.431	10	.1552	1.131	20	.0462	.331	270	-.6424		
22	.231	160	-.5098	.331	80	-.5686	.431	0	.1620	1.131	10	.1034	.431	270	-.5646		
23	.231	150	-.5096	.331	70	-.5686	.531	180	-.5412	1.131	0	.1266	.531	270	-.5743		
24	.231	140	-.5967	.331	60	-.5749	.531	90	-.6350				.731	270	-.5500		
25	.231	130	-.5406	.331	50	-.2764	.531	0	.1562	1.631	90	-.6455	.931	270	-.6511		
26	.231	120	-.6063	.331	40	.0149	.731	180	-.5896	1.631	0	.1435	1.131	270	-.6540		
27	.231	110	-.5014	.331	30	.1501	.731	90	-.5731	2.131	180	-.0402	1.631	270	-.5499		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 104 ALPHA 2 MACH .403 Q 218.621 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3864	.231	100	-.4936	.331	20	-.5170	.731	0	-.5650	2.131	90	.0452		
2	.161	170	-.4324	.231	90	-.5055	.331	10	-.5216	.931	180	-.5169	2.131	0	.1153		
3	.161	160	-.4297	.231	80	-.5018	.331	0	-.5015	.931	90	-.5946	0.000		.6337	-.45	0.00
4	.161	150	-.4131	.231	70	-.4826	.431	180	-.4570	.931	0	-.5899	0.000		.8261	-.40	0.00
5	.161	140	-.4617	.231	60	-.4880	.431	170	-.4953	1.131	180	-.5003	0.000		.9685	-.30	0.00
6	.161	130	-.4447	.231	50	-.5130	.431	160	-.4833	1.131	170	-.5365	0.000		1.0178	-.20	0.00
7	.161	120	-.4033	.231	40	-.5103	.431	150	-.4536	1.131	160	-.5330	0.000		1.0444	-.10	0.00
8	.161	110	-.4334	.231	30	-.5002	.431	140	-.4662	1.131	150	-.5140	0.000		1.0529	0.00	0.00
9	.161	100	-.4719	.231	20	-.5002	.431	130	-.4662	1.131	140	-.5312	0.000		1.0420	.10	0.00
10	.161	90	-.4975	.231	10	-.5428	.431	120	-.4942	1.131	130	-.5146	0.000		1.0110	.20	0.00
11	.161	80	-.4783	.231	0	-.5263	.431	110	-.4816	1.131	120	-.5128	0.000		.9421	.30	0.00
12	.161	70	-.4970	.331	180	-.4534	.431	100	-.4947	1.131	110	-.5466	0.000		.7849	.40	0.00
13	.161	60	-.4954	.331	170	-.4177	.431	90	-.4896	1.131	100	-.5555	0.000		.5976	.45	0.00
14	.161	50	-.5093	.331	160	-.4036	.431	80	-.5284	1.131	90	-.5632	0.000		1.0460	0.00	.10
15	.161	40	-.5146	.331	150	-.4321	.431	70	-.5233	1.131	80	-.5359	0.000		1.0133	0.00	.20
16	.161	30	-.5093	.331	140	-.4432	.431	60	-.5581	1.131	70	-.5306	0.000		.9535	0.00	.30
17	.161	20	-.5120	.331	130	-.4613	.431	50	-.5204	1.131	60	-.5241	0.000		.8002	0.00	.40
18	.161	10	-.4649	.331	120	-.4960	.431	40	-.4759	1.131	50	-.5584	0.000		.6096	0.00	.45
19	.161	0	-.5307	.331	110	-.4789	.431	30	-.5496	1.131	40	-.5264	.161	270	-.5342		
20	.231	180	-.4244	.331	100	-.4885	.431	20	-.4936	1.131	30	-.5484	.231	270	-.4894		
21	.231	170	-.4318	.331	90	-.5189	.431	10	-.5330	1.131	20	-.5413	.331	270	-.5043		
22	.231	160	-.4159	.331	80	-.4944	.431	0	-.5621	1.131	10	-.5306	.431	270	-.5060		
23	.231	150	-.4121	.331	70	-.4731	.531	180	-.4907	1.131	0	-.5596	.531	270	-.5233		
24	.231	140	-.4205	.331	60	-.5247	.531	90	-.5182				.731	270	-.5772		
25	.231	130	-.4003	.331	50	-.5103	.531	0	-.5536	1.631	90	-.1885	.931	270	-.5996		
26	.231	120	-.4033	.331	40	-.4890	.731	180	-.4833	1.631	0	-.0925	1.131	270	-.5393		
27	.231	110	-.4032	.331	30	-.5189	.731	90	-.5261	2.131	180	.0059	1.631	270	-.1368		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 105 ALPHA 4 MACH .404 Q 218.995 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4636	.231	100	-.5126	.331	20	-.5879	.731	0	-.6539	2.131	90	.0509		
2	.161	170	-.4161	.231	90	-.5238	.331	10	-.5743	.931	180	-.5101	2.131	0	.0841		
3	.161	160	-.4369	.231	80	-.5451	.331	0	-.5572	.931	90	-.6048	0.000		.6596	-.45	0.00
4	.161	150	-.4423	.231	70	-.5754	.431	180	-.4511	.931	0	-.5882	0.000		.8393	-.40	0.00
5	.161	140	-.4284	.231	60	-.6477	.431	170	-.4545	1.131	180	-.4929	0.000		.9651	-.30	0.00
6	.161	130	-.4737	.231	50	-.5918	.431	160	-.4602	1.131	170	-.4864	0.000		1.0270	-.20	0.00
7	.161	120	-.4855	.231	40	-.5817	.431	150	-.4665	1.131	160	-.5184	0.000		1.0500	-.10	0.00
8	.161	110	-.5276	.231	30	-.5892	.431	140	-.5326	1.131	150	-.4805	0.000		1.0465	0.00	0.00
9	.161	100	-.5244	.231	20	-.5525	.431	130	-.5047	1.131	140	-.5202	0.000		1.0305	.10	0.00
10	.161	90	-.5399	.231	10	-.5748	.431	120	-.5127	1.131	130	-.5314	0.000		.9898	.20	0.00
11	.161	80	-.5697	.231	0	-.5700	.431	110	-.5634	1.131	120	-.5444	0.000		.9216	.30	0.00
12	.161	70	-.5590	.331	180	-.4207	.431	100	-.5492	1.131	110	-.5740	0.000		.7777	.40	0.00
13	.161	60	-.5473	.331	170	-.4281	.431	90	-.5532	1.131	100	-.5255	0.000		.5685	.45	0.00
14	.161	50	-.5745	.331	160	-.4611	.431	80	-.5606	1.131	90	-.5385	0.000		1.0379	0.00	.10
15	.161	40	-.5633	.331	150	-.4674	.431	70	-.5743	1.131	80	-.5415	0.000		1.0098	0.00	.20
16	.161	30	-.5969	.331	140	-.4701	.431	60	-.5874	1.131	70	-.4728	0.000		.9496	0.00	.30
17	.161	20	-.5686	.331	130	-.4961	.431	50	-.5834	1.131	60	-.5077	0.000		.7989	0.00	.40
18	.161	10	-.5756	.331	120	-.4961	.431	40	-.5936	1.131	50	-.4497	0.000		.5954	0.00	.45
19	.161	0	-.5516	.331	110	-.5110	.431	30	-.5674	1.131	40	-.4876	.161	270	-.5458		
20	.231	180	-.4119	.331	100	-.5254	.431	20	-.5703	1.131	30	-.4515	.231	270	-.5722		
21	.231	170	-.4695	.331	90	-.5275	.431	10	-.5891	1.131	20	-.4711	.331	270	-.5458		
22	.231	160	-.4439	.331	80	-.5791	.431	0	-.5879	1.131	10	-.3775	.431	270	-.5555		
23	.231	150	-.4647	.331	70	-.5956	.531	180	-.4745	1.131	0	-.3704	.531	270	-.5764		
24	.231	140	-.4615	.331	60	-.5871	.531	90	-.5720				.731	270	-.6164		
25	.231	130	-.4812	.331	50	-.5860	.531	0	-.5934	1.631	90	-.0970	.931	270	-.5164		
26	.231	120	-.5191	.331	40	-.5817	.731	180	-.5549	1.631	0	.0386	1.131	270	-.5160		
27	.231	110	-.5343	.331	30	-.5748	.731	90	-.5993	2.131	180	-.0219	1.631	270	-.1136		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 102 ALPHA -1 MACH .403 Q 216.527 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5237	.231	100	-.4829	.331	20	-.4727	.731	0	-.5071	2.131	90	.0378		
2	.161	170	-.5047	.231	90	-.4770	.331	10	-.4858	.931	180	-.5765	2.131	0	.0165		
3	.161	160	-.4833	.231	80	-.4930	.331	0	-.4864	.931	90	-.5866	0.000		.6007	-.45	0.00
4	.161	150	-.4903	.231	70	-.4887	.431	180	-.5064	.931	0	-.5276	0.000		.7943	-.40	0.00
5	.161	140	-.4924	.231	60	-.4653	.431	170	-.5018	1.131	180	-.5415	0.000		.9396	-.30	0.00
6	.161	130	-.4774	.231	50	-.4573	.431	160	-.5292	1.131	170	-.5249	0.000		1.0074	-.20	0.00
7	.161	120	-.4639	.231	40	-.4328	.431	150	-.5241	1.131	160	-.5284	0.000		1.0332	-.10	0.00
8	.161	110	-.4700	.231	30	-.4599	.431	140	-.4612	1.131	150	-.5314	0.000		1.0441	0.00	0.00
9	.161	100	-.4764	.231	20	-.3981	.431	130	-.5281	1.131	140	-.5430	0.000		1.0355	.10	0.00
10	.161	90	-.4620	.231	10	-.4189	.431	120	-.4698	1.131	130	-.5599	0.000		1.0108	.20	0.00
11	.161	80	-.4796	.231	0	-.4536	.431	110	-.4961	1.131	120	-.5557	0.000		.9574	.30	0.00
12	.161	70	-.4774	.331	180	-.5100	.431	100	-.5030	1.131	110	-.5575	0.000		.8092	.40	0.00
13	.161	60	-.4368	.331	170	-.5415	.431	90	-.4870	1.131	100	-.5557	0.000		.6076	.45	0.00
14	.161	50	-.4406	.331	160	-.5239	.431	80	-.5127	1.131	90	-.5189	0.000		1.0367	0.00	.10
15	.161	40	-.4603	.331	150	-.5132	.431	70	-.4955	1.131	80	-.4988	0.000		1.0065	0.00	.20
16	.161	30	-.4379	.331	140	-.5074	.431	60	-.4612	1.131	70	-.5439	0.000		.9465	0.00	.30
17	.161	20	-.4379	.331	130	-.4850	.431	50	-.4578	1.131	60	-.5195	0.000		.8075	0.00	.40
18	.161	10	-.4161	.331	120	-.4930	.431	40	-.4664	1.131	50	-.5433	0.000		.6018	0.00	.45
19	.161	0	-.4673	.331	110	-.4845	.431	30	-.4984	1.131	40	-.5450	.161	270	-.4893		
20	.231	180	-.5031	.331	100	-.4962	.431	20	-.4384	1.131	30	-.5255	.231	270	-.4832		
21	.231	170	-.4978	.331	90	-.4972	.431	10	-.4801	1.131	20	-.4982	.331	270	-.4913		
22	.231	160	-.4967	.331	80	-.4940	.431	0	-.4612	1.131	10	-.5367	.431	270	-.5028		
23	.231	150	-.4800	.331	70	-.4722	.531	180	-.5132	1.131	0	-.5273	.531	270	-.4982		
24	.231	140	-.5031	.331	60	-.4610	.531	90	-.4892				.731	270	-.5419		
25	.231	130	-.4834	.331	50	-.4546	.531	0	-.4887	1.631	90	-.1892	.931	270	-.5539		
26	.231	120	-.4839	.331	40	-.4541	.731	180	-.5521	1.631	0	-.2580	1.131	270	-.5304		
27	.231	110	-.4919	.331	30	-.4541	.731	90	-.5407	2.131	180	.0492	1.631	270	-.2219		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 103 ALPHA 0 MACH .403 Q 218.621 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4826	.231	100	-.4741	.331	20	-.4645	.731	0	-.5401	2.131	90	.0584		
2	.161	170	-.5157	.231	90	-.5162	.331	10	-.4690	.931	180	-.5756	2.131	0	.0286		
3	.161	160	-.4639	.231	80	-.4624	.331	0	-.4565	.931	90	-.5513	0.000		.6234	-.45	0.00
4	.161	150	-.4511	.231	70	-.4736	.431	180	-.4725	.931	0	-.5632	0.000		.8060	-.40	0.00
5	.161	140	-.4601	.231	60	-.4880	.431	170	-.4993	1.131	180	-.5525	0.000		.9547	-.30	0.00
6	.161	130	-.4820	.231	50	-.4992	.431	160	-.4942	1.131	170	-.5329	0.000		1.0184	-.20	0.00
7	.161	120	-.4804	.231	40	-.4794	.431	150	-.5164	1.131	160	-.5703	0.000		1.0431	-.10	0.00
8	.161	110	-.4527	.231	30	-.4427	.431	140	-.4690	1.131	150	-.5484	0.000		1.0517	0.00	0.00
9	.161	100	-.4591	.231	20	-.4672	.431	130	-.4805	1.131	140	-.5525	0.000		1.0397	.10	0.00
10	.161	90	-.4420	.231	10	-.4459	.431	120	-.5113	1.131	130	-.5341	0.000		1.0110	.20	0.00
11	.161	80	-.4826	.231	0	-.5231	.431	110	-.5016	1.131	120	-.5270	0.000		.9573	.30	0.00
12	.161	70	-.4495	.331	180	-.5141	.431	100	-.4999	1.131	110	-.5976	0.000		.8054	.40	0.00
13	.161	60	-.4305	.331	170	-.4667	.431	90	-.4833	1.131	100	-.5833	0.000		.6165	.45	0.00
14	.161	50	-.4628	.331	160	-.4901	.431	80	-.4707	1.131	90	-.5282	0.000		1.0414	0.00	.10
15	.161	40	-.4313	.331	150	-.4842	.431	70	-.4468	1.131	80	-.5264	0.000		1.0133	0.00	.20
16	.161	30	-.4432	.331	140	-.4704	.431	60	-.4873	1.131	70	-.5442	0.000		.9495	0.00	.30
17	.161	20	-.4300	.331	130	-.4395	.431	50	-.4433	1.131	60	-.5163	0.000		.8069	0.00	.40
18	.161	10	-.4361	.331	120	-.4342	.431	40	-.4473	1.131	50	-.5169	0.000		.6234	0.00	.45
19	.161	0	-.4852	.331	110	-.4635	.431	30	-.5284	1.131	40	-.5282	.161	270	-.4544		
20	.231	180	-.4623	.331	100	-.4821	.431	20	-.5067	1.131	30	-.5276	.231	270	-.4573		
21	.231	170	-.4521	.331	90	-.5125	.431	10	-.4793	1.131	20	-.5519	.331	270	-.4911		
22	.231	160	-.4719	.331	80	-.4842	.431	0	-.4713	1.131	10	-.5383	.431	270	-.4946		
23	.231	150	-.4623	.331	70	-.4534	.531	180	-.4953	1.131	0	-.5436	.531	270	-.4905		
24	.231	140	-.4714	.331	60	-.4858	.531	90	-.4993				.731	270	-.5405		
25	.231	130	-.4703	.331	50	-.4597	.531	0	-.4713	1.631	90	-.2425	.931	270	-.5594		
26	.231	120	-.4420	.331	40	-.5071	.731	180	-.5164	1.631	0	-.2164	1.131	270	-.5244		
27	.231	110	-.4730	.331	30	-.4651	.731	90	-.5587	2.131	180	.0498	1.631	270	-.2086		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 106 ALPHA 10 MACH .405 Q 219.744 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	150	-.4125	.231	100	-.6502	.331	20	-.7109	.731	0	-.2043	2.131	90	-.1050		
2	.161	170	-.4561	.231	90	-.6507	.331	10	-.7257	.931	180	-.5437	2.131	0	.0177		
3	.161	160	-.4673	.231	80	-.6517	.331	0	-.6882	.931	90	-.5932	0.000		.7403	-.45	0.00
4	.161	150	-.4450	.231	70	-.6676	.431	180	-.5097	.931	0	.0585	0.000		.9151	-.40	0.00
5	.161	140	-.5257	.231	60	-.6692	.431	170	-.5131	1.131	180	-.4564	0.000		1.0127	-.30	0.00
6	.161	130	-.5805	.231	50	-.6978	.431	160	-.5455	1.131	170	-.4139	0.000		1.0527	-.20	0.00
7	.161	120	-.5943	.231	40	-.6729	.431	150	-.5438	1.131	160	-.5183	0.000		1.0561	-.10	0.00
8	.161	110	-.6267	.231	30	-.6931	.431	140	-.5745	1.131	150	-.5272	0.000		1.0262	0.00	0.00
9	.161	100	-.6432	.231	20	-.6745	.431	130	-.6052	1.131	140	-.5354	0.000		.9887	.10	0.00
10	.161	90	-.6591	.231	10	-.6841	.431	120	-.6041	1.131	130	-.5520	0.000		.9442	.20	0.00
11	.161	80	-.6713	.231	0	-.6719	.431	110	-.6342	1.131	120	-.5472	0.000		.8522	.30	0.00
12	.161	70	-.6421	.331	180	-.4515	.431	100	-.5984	1.131	110	-.5195	0.000		.6894	.40	0.00
13	.161	60	-.6830	.331	170	-.4769	.431	90	-.6421	1.131	100	-.4473	0.000		.4644	.45	0.00
14	.161	50	-.6985	.331	160	-.4970	.431	80	-.6939	1.131	90	-.3296	0.000		1.0173	0.00	.10
15	.161	40	-.6804	.331	150	-.5426	.431	70	-.6916	1.131	80	-.2665	0.000		.9899	0.00	.20
16	.161	30	-.7117	.331	140	-.5785	.431	60	-.7009	1.131	70	-.1497	0.000		.9179	0.00	.30
17	.161	20	-.6740	.331	130	-.5839	.431	50	-.7029	1.131	60	-.1132	0.000		.7688	0.00	.40
18	.161	10	-.7133	.331	120	-.6433	.431	40	-.7700	1.131	50	-.0229	0.000		.5553	0.00	.45
19	.161	0	-.7059	.331	110	-.6125	.431	30	-.7399	1.131	40	-.0158	.161	270	-.6782		
20	.231	180	-.4434	.331	100	-.6671	.431	20	-.7632	1.131	30	.0266	.231	270	-.6543		
21	.231	170	-.4540	.331	90	-.6608	.431	10	-.7677	1.131	20	.0443	.331	270	-.6873		
22	.231	160	-.4689	.331	80	-.6671	.431	0	-.7484	1.131	10	.0773	.431	270	-.6805		
23	.231	150	-.5124	.331	70	-.6719	.531	180	-.5302	1.131	0	.0803	.531	270	-.6708		
24	.231	140	-.5539	.331	60	-.6819	.531	90	-.6893				.731	270	-.7107		
25	.231	130	-.5944	.331	50	-.7148	.531	0	-.6990	1.631	90	-.1427	.931	270	-.5799		
26	.231	120	-.6097	.331	40	-.6936	.731	180	-.5671	1.631	0	.0243	1.131	270	-.3480		
27	.231	110	-.6161	.331	30	-.7016	.731	90	-.7103	2.131	180	-.0141	1.631	270	-.1523		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 109 ALPHA 12 MACH .404 Q 219.370 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	160	-.4165	.231	100	-.6699	.331	20	-.7030	.731	0	-.0407	2.131	90	-.1798		
2	.161	170	-.4173	.231	90	-.6587	.331	10	-.7161	.931	180	-.5104	2.131	0	.0280		
3	.161	160	-.4729	.231	80	-.6615	.331	0	-.7093	.931	90	-.5122	0.000		.7707	-.45	0.00
4	.161	150	-.5293	.231	70	-.6837	.431	180	-.5044	.931	0	.0863	0.000		.9373	-.40	0.00
5	.161	140	-.5581	.231	60	-.6884	.431	170	-.5266	1.131	180	-.4761	0.000		1.0310	-.30	0.00
6	.161	130	-.6070	.231	50	-.6869	.431	160	-.5664	1.131	170	-.4944	0.000		1.0430	-.20	0.00
7	.161	120	-.6241	.231	40	-.6900	.431	150	-.5778	1.131	160	-.5175	0.000		1.0437	-.10	0.00
8	.161	110	-.6406	.231	30	-.6932	.431	140	-.6000	1.131	150	-.5299	0.000		1.0161	0.00	0.00
9	.161	100	-.6555	.231	20	-.6667	.431	130	-.6091	1.131	140	-.5080	0.000		.9715	.10	0.00
10	.161	90	-.6725	.231	10	-.7314	.431	120	-.6139	1.131	130	-.5417	0.000		.9223	.20	0.00
11	.161	80	-.6832	.231	0	-.7410	.431	110	-.6689	1.131	120	-.5122	0.000		.8193	.30	0.00
12	.161	70	-.7151	.331	180	-.5069	.431	100	-.7252	1.131	110	-.4631	0.000		.6459	.40	0.00
13	.161	60	-.6837	.331	170	-.5006	.431	90	-.6683	1.131	100	-.4407	0.000		.4251	.45	0.00
14	.161	50	-.6928	.331	160	-.5202	.431	80	-.6848	1.131	90	-.3798	0.000		1.0047	0.00	.10
15	.161	40	-.7066	.331	150	-.5361	.431	70	-.6786	1.131	80	-.2806	0.000		.9875	0.00	.20
16	.161	30	-.6890	.331	140	-.6189	.431	60	-.7252	1.131	70	-.2126	0.000		.9149	0.00	.30
17	.161	20	-.7103	.331	130	-.6338	.431	50	-.8142	1.131	60	-.1169	0.000		.7569	0.00	.40
18	.161	10	-.7061	.331	120	-.6375	.431	40	-.7941	1.131	50	-.1004	0.000		.5432	0.00	.45
19	.161	0	-.6768	.331	110	-.6455	.431	30	-.7639	1.131	40	-.0573	.161	270	-.6656		
20	.231	180	-.4750	.331	100	-.6674	.431	20	-.7856	1.131	30	-.0159	.231	270	-.6696		
21	.231	170	-.4569	.331	90	-.6624	.431	10	-.7389	1.131	20	.0125	.331	270	-.6573		
22	.231	160	-.4676	.331	80	-.6481	.431	0	-.7474	1.131	10	.0373	.431	270	-.6467		
23	.231	150	-.5142	.331	70	-.6752	.531	180	-.5510	1.131	0	.0414	.531	270	-.7274		
24	.231	140	-.5969	.331	60	-.7261	.531	90	-.7400				.731	270	-.7030		
25	.231	130	-.5703	.331	50	-.6975	.531	0	-.6226	1.631	90	-.2422	.931	270	-.5105		
26	.231	120	-.6097	.331	40	-.6905	.731	180	-.5449	1.631	0	.0024	1.131	270	-.3758		
27	.231	110	-.6113	.331	30	-.8015	.731	90	-.6262	2.131	180	.0237	1.631	270	-.2044		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 106 ALPHA 6 MACH .404 Q 219.370 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3797	.231	100	-.5972	.331	20	-.6443	.731	0	-.6396	2.131	90	-.0047		
2	.161	170	-.4218	.231	90	-.5834	.331	10	-.6279	.931	180	-.5287	2.131	0	.0403		
3	.161	160	-.4079	.231	80	-.5770	.331	0	-.6006	.931	90	-.6396	0.000		.6917	-.45	0.00
4	.161	150	-.4308	.231	70	-.6417	.431	180	-.4554	.931	0	-.3710	0.000		.8599	-.40	0.00
5	.161	140	-.4809	.231	60	-.6333	.431	170	-.4765	1.131	180	-.4389	0.000		.9915	-.30	0.00
6	.161	130	-.5149	.231	50	-.6216	.431	160	-.4816	1.131	170	-.5352	0.000		1.0322	-.20	0.00
7	.161	120	-.5224	.231	40	-.6170	.431	150	-.4924	1.131	160	-.4879	0.000		1.0430	-.10	0.00
8	.161	110	-.5092	.231	30	-.6529	.431	140	-.5385	1.131	150	-.5157	0.000		1.0396	0.00	0.00
9	.161	100	-.5772	.231	20	-.6545	.431	130	-.5567	1.131	140	-.5169	0.000		1.0264	.10	0.00
10	.161	90	-.5943	.231	10	-.6317	.431	120	-.5590	1.131	130	-.5104	0.000		.9793	.20	0.00
11	.161	80	-.5943	.231	0	-.6179	.431	110	-.5750	1.131	120	-.5890	0.000		.8943	.30	0.00
12	.161	70	-.6223	.331	180	-.4098	.431	100	-.5886	1.131	110	-.5925	0.000		.7306	.40	0.00
13	.161	60	-.5996	.331	170	-.4528	.431	90	-.6154	1.131	100	-.5582	0.000		.5366	.45	0.00
14	.161	50	-.6235	.331	160	-.4443	.431	80	-.6051	1.131	90	-.4933	0.000		1.0373	0.00	.10
15	.161	40	-.6209	.331	150	-.4714	.431	70	-.6142	1.131	80	-.4732	0.000		1.0041	0.00	.20
16	.161	30	-.6347	.331	140	-.4926	.431	60	-.6304	1.131	70	-.3769	0.000		.9412	0.00	.30
17	.161	20	-.6193	.331	130	-.5510	.431	50	-.6353	1.131	60	-.2371	0.000		.7844	0.00	.40
18	.161	10	-.6214	.331	120	-.5627	.431	40	-.6473	1.131	50	-.2445	0.000		.5796	0.00	.45
19	.161	0	-.5911	.331	110	-.5621	.431	30	-.6233	1.131	40	-.2386	.161	270	-.6044		
20	.231	180	-.4197	.331	100	-.5881	.431	20	-.6660	1.131	30	-.1654	.231	270	-.6124		
21	.231	170	-.4095	.331	90	-.6147	.431	10	-.6330	1.131	20	-.1169	.331	270	-.6101		
22	.231	160	-.4086	.331	80	-.5956	.431	0	-.6421	1.131	10	-.1004	.431	270	-.6176		
23	.231	150	-.4532	.331	70	-.6152	.531	180	-.5306	1.131	0	-.0980	.531	270	-.6221		
24	.231	140	-.4697	.331	60	-.6295	.531	90	-.6154				.731	270	-.6765		
25	.231	130	-.5320	.331	50	-.6226	.531	0	-.6524	1.631	90	-.0070	.931	270	-.6473		
26	.231	120	-.5607	.331	40	-.6327	.731	180	-.5123	1.631	0	.0739	1.131	270	-.5409		
27	.231	110	-.5804	.331	30	-.6497	.731	90	-.6512	2.131	180	.0201	1.631	270	-.0379		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 107 ALPHA 8 MACH .404 Q 219.650 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3936	.231	100	-.5508	.331	20	-.6890	.731	0	-.5740	2.131	90	-.0681		
2	.161	170	-.4946	.231	90	-.5663	.331	10	-.7061	.931	180	-.5492	2.131	0	.0217		
3	.161	160	-.4202	.231	80	-.5858	.331	0	-.6578	.931	90	-.6153	0.000		.7143	-.45	0.00
4	.161	150	-.4792	.231	70	-.6001	.431	180	-.4974	.931	0	-.0843	0.000		.8891	-.40	0.00
5	.161	140	-.4808	.231	60	-.5853	.431	170	-.4804	1.131	180	-.4525	0.000		1.0034	-.30	0.00
6	.161	130	-.5414	.231	50	-.5762	.431	160	-.5162	1.131	170	-.4702	0.000		1.0434	-.20	0.00
7	.161	120	-.5632	.231	40	-.6054	.431	150	-.5355	1.131	160	-.4796	0.000		1.0469	-.10	0.00
8	.161	110	-.5968	.231	30	-.5964	.431	140	-.5537	1.131	150	-.4979	0.000		1.0297	0.00	0.00
9	.161	100	-.6148	.231	20	-.6250	.431	130	-.5685	1.131	140	-.5339	0.000		1.0006	.10	0.00
10	.161	90	-.6302	.231	10	-.5974	.431	120	-.5827	1.131	130	-.5605	0.000		.9572	.20	0.00
11	.161	80	-.6424	.231	0	-.6467	.431	110	-.6208	1.131	120	-.5787	0.000		.8771	.30	0.00
12	.161	70	-.6482	.331	180	-.3870	.431	100	-.6237	1.131	110	-.5457	0.000		.7068	.40	0.00
13	.161	60	-.6746	.331	170	-.4421	.431	90	-.6652	1.131	100	-.4843	0.000		.4880	.45	0.00
14	.161	50	-.6569	.331	160	-.3992	.431	80	-.6401	1.131	90	-.4720	0.000		1.0217	0.00	.10
15	.161	40	-.6552	.331	150	-.4395	.431	70	-.6616	1.131	80	-.3266	0.000		.9966	0.00	.20
16	.161	30	-.6509	.331	140	-.4771	.431	60	-.6737	1.131	70	-.2578	0.000		.9286	0.00	.30
17	.161	20	-.6817	.331	130	-.5121	.431	50	-.6851	1.131	60	-.1463	0.000		.7806	0.00	.40
18	.161	10	-.6736	.331	120	-.5275	.431	40	-.7095	1.131	50	-.0507	0.000		.5674	0.00	.45
19	.161	0	-.6716	.331	110	-.5508	.431	30	-.7169	1.131	40	-.0365	.161	270	-.6602		
20	.231	180	-.4297	.331	100	-.5598	.431	20	-.6879	1.131	30	-.0082	.231	270	-.6642		
21	.231	170	-.4446	.331	90	-.5704	.431	10	-.6976	1.131	20	.0402	.331	270	-.6432		
22	.231	160	-.4303	.331	80	-.5773	.431	0	-.7140	1.131	10	.0779	.431	270	-.6362		
23	.231	150	-.4909	.331	70	-.5969	.531	180	-.5344	1.131	0	.0974	.531	270	-.6785		
24	.231	140	-.5233	.331	60	-.5868	.531	90	-.6339				.731	270	-.6713		
25	.231	130	-.5329	.331	50	-.5959	.531	0	-.7436	1.631	90	-.0806	.931	270	-.6299		
26	.231	120	-.5626	.331	40	-.5805	.731	180	-.5452	1.631	0	.0331	1.131	270	-.3773		
27	.231	110	-.5951	.331	30	-.5932	.731	90	-.6822	2.131	180	-.0311	1.631	270	-.1069		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 112 ALPHA 16 MACH .404 Q 219.090 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4591	.231	100	-.6155	.331	20	-.2432	.731	0	.0858	2.131	90	-.3635		
2	.161	170	-.4911	.231	90	-.6527	.331	10	-.3101	.931	180	-.5726	2.131	0	.0715		
3	.161	160	-.4597	.231	80	-.5900	.331	0	-.4639	.931	90	-.5294	0.000		.4627	-.45	0.00
4	.161	150	-.5095	.231	70	-.6405	.431	180	-.5290	.931	0	.0432	0.000		.9859	-.40	0.00
5	.161	140	-.5471	.231	60	-.6655	.431	170	-.5210	1.131	180	-.5340	0.000		1.0466	-.30	0.00
6	.161	130	-.5488	.231	50	-.6235	.431	160	-.5065	1.131	170	-.4963	0.000		1.0426	-.20	0.00
7	.161	120	-.6302	.231	40	-.6219	.431	150	-.5219	1.131	160	-.5253	0.000		1.0038	-.10	0.00
8	.161	110	-.6430	.231	30	-.6824	.431	140	-.6327	1.131	150	-.5534	0.000		.9722	0.00	0.00
9	.161	100	-.6222	.231	20	-.7218	.431	130	-.6401	1.131	140	-.5951	0.000		.9091	.10	0.00
10	.161	90	-.6249	.231	10	-.7361	.431	120	-.6396	1.131	130	-.5880	0.000		.8559	.20	0.00
11	.161	80	-.5945	.231	0	-.7074	.431	110	-.6270	1.131	120	-.6045	0.000		.7361	.30	0.00
12	.161	70	-.5425	.331	180	-.5145	.431	100	-.6686	1.131	110	-.5779	0.000		.5276	.40	0.00
13	.161	60	-.6137	.331	170	-.5124	.431	90	-.6532	1.131	100	-.5389	0.000		.3156	.45	0.00
14	.161	50	-.6345	.331	160	-.5342	.431	80	-.6595	1.131	90	-.4844	0.000		.9664	0.00	.10
15	.161	40	-.6158	.331	150	-.5767	.431	70	-.6686	1.131	80	-.4419	0.000		.9492	0.00	.20
16	.161	30	-.6350	.331	140	-.5964	.431	60	-.6578	1.131	70	-.3892	0.000		.8759	0.00	.30
17	.161	20	-.6745	.331	130	-.6426	.431	50	-.5791	1.131	60	-.2963	0.000		.7206	0.00	.40
18	.161	10	-.6793	.331	120	-.6383	.431	40	-.3842	1.131	50	-.2023	0.000		.5367	0.00	.45
19	.161	0	-.7539	.331	110	-.6777	.431	30	-.1072	1.131	40	-.1325	.161	270	-.6923		
20	.231	180	-.4736	.331	100	-.6176	.431	20	-.1157	1.131	30	-.0639	.231	270	-.6258		
21	.231	170	-.5140	.331	90	-.6968	.431	10	.1464	1.131	20	-.0112	.331	270	-.6556		
22	.231	160	-.4932	.331	80	-.6282	.431	0	.1459	1.131	10	.0219	.431	270	-.6963		
23	.231	150	-.5348	.331	70	-.6314	.531	180	-.5769	1.131	0	.0284	.531	270	-.5635		
24	.231	140	-.5961	.331	60	-.6134	.531	90	-.6378				.731	270	-.6493		
25	.231	130	-.6174	.331	50	-.6644	.531	0	.1795	1.631	90	-.4194	.931	270	-.5394		
26	.231	120	-.5950	.331	40	-.7260	.731	180	-.6014	1.631	0	.0544	1.131	270	-.5032		
27	.231	110	-.6281	.331	30	-.6102	.731	90	-.6327	2.131	180	-.0970	1.631	270	-.4768		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 113 ALPHA 20 MACH .404 Q 219.183 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4726	.231	100	-.5844	.331	20	-.1766	.731	0	.0716	2.131	90	-.4050		
2	.161	170	-.4856	.231	90	-.6030	.331	10	.0837	.931	180	-.5960	2.131	0	.1059		
3	.161	160	-.5074	.231	80	-.5523	.331	0	.0940	.931	90	-.5522	0.000		.9105	-.45	0.00
4	.161	150	-.5410	.231	70	-.5807	.431	180	-.5436	.931	0	.0793	0.000		1.0210	-.40	0.00
5	.161	140	-.5815	.231	60	-.5897	.431	170	-.5470	1.131	180	-.5374	0.000		1.0531	-.30	0.00
6	.161	130	-.5921	.231	50	-.6173	.431	160	-.5344	1.131	170	-.5268	0.000		1.0325	-.20	0.00
7	.161	120	-.5990	.231	40	-.5802	.431	150	-.5612	1.131	160	-.5416	0.000		1.0038	-.10	0.00
8	.161	110	-.6060	.231	30	-.6742	.431	140	-.6233	1.131	150	-.5215	0.000		.9488	0.00	0.00
9	.161	100	-.6113	.231	20	-.6386	.431	130	-.6484	1.131	140	-.5942	0.000		.9007	.10	0.00
10	.161	90	-.6012	.231	10	-.6381	.431	120	-.6632	1.131	130	-.5915	0.000		.8097	.20	0.00
11	.161	80	-.5484	.231	0	-.6073	.431	110	-.5470	1.131	120	-.5646	0.000		.7143	.30	0.00
12	.161	70	-.5959	.331	180	-.5148	.431	100	-.6108	1.131	110	-.6238	0.000		.5067	.40	0.00
13	.161	60	-.6049	.331	170	-.5122	.431	90	-.5880	1.131	100	-.6137	0.000		.2845	.45	0.00
14	.161	50	-.5777	.331	160	-.5451	.431	80	-.5766	1.131	90	-.5871	0.000		.9488	0.00	.10
15	.161	40	-.6800	.331	150	-.6126	.431	70	-.6592	1.131	80	-.5215	0.000		.9208	0.00	.20
16	.161	30	-.6363	.331	140	-.6131	.431	60	-.6215	1.131	70	-.4369	0.000		.8641	0.00	.30
17	.161	20	-.7418	.331	130	-.6184	.431	50	-.3601	1.131	60	-.3311	0.000		.7112	0.00	.40
18	.161	10	-.7536	.331	120	-.6675	.431	40	-.1191	1.131	50	-.2329	0.000		.5211	0.00	.45
19	.161	0	-.7514	.331	110	-.6189	.431	30	.0695	1.131	40	-.1377	.161	270	-.6341		
20	.231	180	-.4909	.331	100	-.6482	.431	20	.0866	1.131	30	-.0675	.231	270	-.6130		
21	.231	170	-.4706	.331	90	-.5695	.431	10	.1783	1.131	20	-.0100	.331	270	-.5935		
22	.231	160	-.5420	.331	80	-.5998	.431	0	.1891	1.131	10	.0456	.431	270	-.6067		
23	.231	150	-.5218	.331	70	-.5972	.531	180	-.5413	1.131	0	.0651	.531	270	-.5940		
24	.231	140	-.5639	.331	60	-.5945	.531	90	-.6171				.731	270	-.6296		
25	.231	130	-.6220	.331	50	-.7132	.531	0	.1435	1.631	90	-.5292	.931	270	-.5482		
26	.231	120	-.6134	.331	40	-.5424	.731	180	-.6216	1.631	0	.0580	1.131	270	-.5797		
27	.231	110	-.6459	.331	30	-.2970	.731	90	-.5131	2.131	180	-.1046	1.631	270	-.5253		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 110 ALPHA 14 MACH .404 Q 219.370 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4537	.231	100	-.6333	.331	20	-.7708	.731	0	.1135	2.131	90	-.2455		
2	.161	170	-.4612	.231	90	-.6964	.331	10	-.7873	.931	180	-.5252	2.131	0	.0388		
3	.161	160	-.5091	.231	80	-.7155	.331	0	-.7617	.931	90	-.3905	0.000		.8124	-.45	0.00
4	.161	150	-.5139	.231	70	-.6673	.431	180	-.5180	.931	0	.0527	0.000		.9635	-.40	0.00
5	.161	140	-.5055	.231	60	-.6938	.431	170	-.5419	1.131	180	-.4744	0.000		1.0339	-.30	0.00
6	.161	130	-.5022	.231	50	-.7044	.431	160	-.5630	1.131	170	-.4696	0.000		1.0516	-.20	0.00
7	.161	120	-.5193	.231	40	-.6594	.431	150	-.5093	1.131	160	-.5293	0.000		1.0522	-.10	0.00
8	.161	110	-.5473	.231	30	-.7256	.431	140	-.6028	1.131	150	-.5193	0.000		1.0087	0.00	0.00
9	.161	100	-.5512	.231	20	-.6686	.431	130	-.5806	1.131	140	-.5328	0.000		.9503	.10	0.00
10	.161	90	-.6706	.231	10	-.7076	.431	120	-.5865	1.131	130	-.5354	0.000		.8897	.20	0.00
11	.161	80	-.6555	.231	0	-.7038	.431	110	-.6677	1.131	120	-.5476	0.000		.7937	.30	0.00
12	.161	70	-.6551	.331	180	-.4831	.431	100	-.6626	1.131	110	-.5033	0.000		.6036	.40	0.00
13	.161	60	-.6629	.331	170	-.5043	.431	90	-.6672	1.131	100	-.4495	0.000		.3893	.45	0.00
14	.161	50	-.6619	.331	160	-.5064	.431	80	-.7030	1.131	90	-.3586	0.000		1.0001	0.00	.10
15	.161	40	-.6970	.331	150	-.5616	.431	70	-.7474	1.131	80	-.2971	0.000		.9732	0.00	.20
16	.161	30	-.6901	.331	140	-.5908	.431	60	-.7850	1.131	70	-.2534	0.000		.9063	0.00	.30
17	.161	20	-.7023	.331	130	-.6375	.431	50	-.8334	1.131	60	-.1748	0.000		.7401	0.00	.40
18	.161	10	-.6757	.331	120	-.6529	.431	40	-.7776	1.131	50	-.1417	0.000		.5338	0.00	.45
19	.161	0	-.7124	.331	110	-.6513	.431	30	-.7076	1.131	40	-.0850	.161	270	-.7240		
20	.231	180	-.4782	.331	100	-.6593	.431	20	-.6655	1.131	30	-.0425	.231	270	-.6794		
21	.231	170	-.4980	.331	90	-.6709	.431	10	-.6142	1.131	20	-.0135	.331	270	-.6914		
22	.231	160	-.5137	.331	80	-.7044	.431	0	-.5505	1.131	10	.0201	.431	270	-.6862		
23	.231	150	-.5432	.331	70	-.6699	.531	180	-.5368	1.131	0	.0314	.531	270	-.6702		
24	.231	140	-.5039	.331	60	-.6746	.531	90	-.6911				.731	270	-.6702		
25	.231	130	-.5108	.331	50	-.6959	.531	0	-.2846	1.631	90	-.2953	.931	270	-.5151		
26	.231	120	-.5443	.331	40	-.7134	.731	180	-.5856	1.631	0	.0060	1.131	270	-.3845		
27	.231	110	-.5289	.331	30	-.7866	.731	90	-.5478	2.131	180	-.0041	1.631	270	-.3154		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 111 ALPHA 16 MACH .404 Q 219.277 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4686	.231	100	-.6479	.331	20	-.7199	.731	0	.1005	2.131	90	-.2304		
2	.161	170	-.4779	.231	90	-.6935	.331	10	-.6982	.931	180	-.5443	2.131	0	.0520		
3	.161	160	-.5013	.231	80	-.6734	.331	0	-.6510	.931	90	-.4598	0.000		.8328	-.45	0.00
4	.161	150	-.5610	.231	70	-.6670	.431	180	-.5405	.931	0	.0467	0.000		.9748	-.40	0.00
5	.161	140	-.5759	.231	60	-.6834	.431	170	-.5650	1.131	180	-.4876	0.000		1.0458	-.30	0.00
6	.161	130	-.5817	.231	50	-.6383	.431	160	-.5553	1.131	170	-.4610	0.000		1.0574	-.20	0.00
7	.161	120	-.6451	.231	40	-.6707	.431	150	-.5883	1.131	160	-.5329	0.000		1.0383	-.10	0.00
8	.161	110	-.6334	.231	30	-.6723	.431	140	-.6054	1.131	150	-.5118	0.000		.9960	0.00	0.00
9	.161	100	-.6646	.231	20	-.6665	.431	130	-.6458	1.131	140	-.5077	0.000		.9410	.10	0.00
10	.161	90	-.6355	.231	10	-.6277	.431	120	-.6102	1.131	130	-.5437	0.000		.8786	.20	0.00
11	.161	80	-.6851	.231	0	-.7164	.431	110	-.6642	1.131	120	-.5632	0.000		.7756	.30	0.00
12	.161	70	-.6670	.331	180	-.4987	.431	100	-.6948	1.131	110	-.5325	0.000		.6015	.40	0.00
13	.161	60	-.6476	.331	170	-.4912	.431	90	-.6487	1.131	100	-.4994	0.000		.3583	.45	0.00
14	.161	50	-.6526	.331	160	-.5220	.431	80	-.6806	1.131	90	-.4206	0.000		.9697	0.00	.10
15	.161	40	-.6393	.331	150	-.5778	.431	70	-.6982	1.131	80	-.3812	0.000		.9605	0.00	.20
16	.161	30	-.6536	.331	140	-.5613	.431	60	-.7193	1.131	70	-.3244	0.000		.9067	0.00	.30
17	.161	20	-.7090	.331	130	-.6022	.431	50	-.7090	1.131	60	-.2470	0.000		.7452	0.00	.40
18	.161	10	-.6600	.331	120	-.6256	.431	40	-.6515	1.131	50	-.1761	0.000		.5403	0.00	.45
19	.161	0	-.6851	.331	110	-.6909	.431	30	-.4266	1.131	40	-.1022	.161	270	-.6837		
20	.231	180	-.4694	.331	100	-.6702	.431	20	-.3296	1.131	30	-.0402	.231	270	-.6779		
21	.231	170	-.4768	.331	90	-.6649	.431	10	-.3195	1.131	20	-.0124	.331	270	-.6688		
22	.231	160	-.5072	.331	80	-.6574	.431	0	-.1395	1.131	10	.0337	.431	270	-.6447		
23	.231	150	-.5336	.331	70	-.6574	.531	180	-.5570	1.131	0	.0286	.531	270	-.6739		
24	.231	140	-.5079	.331	60	-.6558	.531	90	-.6589				.731	270	-.6613		
25	.231	130	-.5017	.331	50	-.6101	.531	0	-.3103	1.631	90	-.3753	.931	270	-.4850		
26	.231	120	-.6022	.331	40	-.7079	.731	180	-.5013	1.631	0	.0249	1.131	270	-.4334		
27	.231	110	-.6075	.331	30	-.7403	.731	90	-.5634	2.131	180	-.0614	1.631	270	-.3646		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 116 ALPHA 25 MACH .403 Q 218.341 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4906	.231	100	-.5595	.331	20	.1623	.731	0	.1268	2.131	90	-.6280		
2	.161	170	-.4896	.231	90	-.5361	.331	10	.2052	.931	180	-.5889	2.131	0	.1666		
3	.161	160	-.5469	.231	80	-.5782	.331	0	.2241	.931	90	-.6791	0.000		.9703	-.45	0.00
4	.161	150	-.5528	.231	70	-.5595	.431	180	-.5463	.931	0	.1175	0.000		1.0272	-.40	0.00
5	.161	140	-.5078	.231	60	-.5625	.431	170	-.5589	1.131	180	-.5859	0.000		1.0398	-.30	0.00
6	.161	130	-.5660	.231	50	-.5835	.431	160	-.5795	1.131	170	-.6304	0.000		1.0117	-.20	0.00
7	.161	120	-.5747	.231	40	-.3932	.431	150	-.5349	1.131	160	-.5784	0.000		.9576	-.10	0.00
8	.161	110	-.5534	.231	30	.0963	.431	140	-.5537	1.131	150	-.6292	0.000		.8915	0.00	0.00
9	.161	100	-.5586	.231	20	.2957	.431	130	-.6349	1.131	140	-.6381	0.000		.8260	.10	0.00
10	.161	90	-.5683	.231	10	.3544	.431	120	-.5446	1.131	130	-.5906	0.000		.7616	.20	0.00
11	.161	80	-.5592	.231	0	.3730	.431	110	-.6275	1.131	120	-.6660	0.000		.6173	.30	0.00
12	.161	70	-.5426	.331	180	-.5137	.431	100	-.5915	1.131	110	-.7651	0.000		.4201	.40	0.00
13	.161	60	-.5517	.331	170	-.4822	.431	90	-.5234	1.131	100	-.6951	0.000		.2039	.45	0.00
14	.161	50	-.5164	.331	160	-.4913	.431	80	-.5532	1.131	90	-.6927	0.000		.9013	0.00	.10
15	.161	40	-.7089	.331	150	-.5883	.431	70	-.5148	1.131	80	-.6957	0.000		.8507	0.00	.20
16	.161	30	-.6004	.331	140	-.5654	.431	60	-.3004	1.131	70	-.5521	0.000		.8398	0.00	.30
17	.161	20	-.2201	.331	130	-.6129	.431	50	-.1471	1.131	60	-.4048	0.000		.6857	0.00	.40
18	.161	10	-.0050	.331	120	-.6374	.431	40	-.0579	1.131	50	-.2927	0.000		.4971	0.00	.45
19	.161	0	.0784	.331	110	-.5467	.431	30	.0239	1.131	40	-.1805	.161	270	-.5602		
20	.231	180	-.5035	.331	100	-.5521	.431	20	-.0207	1.131	30	-.0535	.231	270	-.5746		
21	.231	170	-.5768	.331	90	-.6331	.431	10	.1680	1.131	20	.0546	.331	270	-.6355		
22	.231	160	-.4938	.331	80	-.5238	.431	0	.1840	1.131	10	.1074	.431	270	-.5481		
23	.231	150	-.5169	.331	70	-.5873	.531	180	-.5314	1.131	0	.1222	.531	270	-.5843		
24	.231	140	-.6159	.331	60	-.4449	.531	90	-.6910				.731	270	-.6436		
25	.231	130	-.6419	.331	50	-.1548	.531	0	.1532	1.631	90	-.6678	.931	270	-.6545		
26	.231	120	-.5554	.331	40	.0169	.731	180	-.6023	1.631	0	.1234	1.131	270	-.7528		
27	.231	110	-.5426	.331	30	.1134	.731	90	-.5863	2.131	180	-.2096	1.631	270	-.8398		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 117 ALPHA 0 MACH .403 Q 218.341 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4442	.231	100	-.4662	.331	20	-.4508	.731	0	-.5325	2.131	90	.0545		
2	.161	170	-.4438	.231	90	-.4716	.331	10	-.4731	.931	180	-.5592	2.131	0	.0338		
3	.161	160	-.4420	.231	80	-.4982	.331	0	-.5251	.931	90	-.5853	0.000		.6046	-.45	0.00
4	.161	150	-.4763	.231	70	-.4412	.431	180	-.5125	.931	0	-.5289	0.000		.7987	-.40	0.00
5	.161	140	-.4757	.231	60	-.4502	.431	170	-.4977	1.131	180	-.5574	0.000		.9519	-.30	0.00
6	.161	130	-.4645	.231	50	-.4305	.431	160	-.4971	1.131	170	-.5526	0.000		1.0076	-.20	0.00
7	.161	120	-.4677	.231	40	-.4870	.431	150	-.4880	1.131	160	-.5301	0.000		1.0347	-.10	0.00
8	.161	110	-.4485	.231	30	-.4476	.431	140	-.4668	1.131	150	-.5259	0.000		1.0502	0.00	0.00
9	.161	100	-.4613	.231	20	-.4849	.431	130	-.4622	1.131	140	-.5319	0.000		1.0398	.10	0.00
10	.161	90	-.4688	.231	10	-.4876	.431	120	-.4857	1.131	130	-.5479	0.000		1.0059	.20	0.00
11	.161	80	-.4816	.231	0	-.4396	.431	110	-.5291	1.131	120	-.5556	0.000		.9467	.30	0.00
12	.161	70	-.4426	.331	180	-.4897	.431	100	-.4702	1.131	110	-.5503	0.000		.8018	.40	0.00
13	.161	60	-.4570	.331	170	-.4789	.431	90	-.4839	1.131	100	-.5497	0.000		.6052	.45	0.00
14	.161	50	-.4383	.331	160	-.5014	.431	80	-.4708	1.131	90	-.5443	0.000		1.0387	0.00	.10
15	.161	40	-.4586	.331	150	-.5270	.431	70	-.4765	1.131	80	-.5495	0.000		1.0122	0.00	.20
16	.161	30	-.4838	.331	140	-.4844	.431	60	-.4862	1.131	70	-.5420	0.000		.9501	0.00	.30
17	.161	20	-.4586	.331	130	-.4646	.431	50	-.4759	1.131	60	-.5337	0.000		.8050	0.00	.40
18	.161	10	-.4549	.331	120	-.4684	.431	40	-.4931	1.131	50	-.5208	0.000		.6087	0.00	.45
19	.161	0	-.4731	.331	110	-.4854	.431	30	-.4960	1.131	40	-.5295	.161	270	-.4728		
20	.231	180	-.5073	.331	100	-.4982	.431	20	-.4931	1.131	30	-.5378	.231	270	-.4992		
21	.231	170	-.4822	.331	90	-.4561	.431	10	-.5028	1.131	20	-.5616	.331	270	-.4981		
22	.231	160	-.5105	.331	80	-.4828	.431	0	-.4502	1.131	10	-.5443	.431	270	-.4785		
23	.231	150	-.4907	.331	70	-.4742	.531	180	-.5606	1.131	0	-.5301	.531	270	-.5171		
24	.231	140	-.4608	.331	60	-.4625	.531	90	-.4811				.731	270	-.5188		
25	.231	130	-.4602	.331	50	-.5110	.531	0	-.5177	1.631	90	-.2428	.931	270	-.5452		
26	.231	120	-.4709	.331	40	-.4764	.731	180	-.5251	1.631	0	-.1811	1.131	270	-.5418		
27	.231	110	-.4912	.331	30	-.4881	.731	90	-.5257	2.131	180	.0338	1.631	270	-.1451		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 114 ALPHA 22 MACH .404 Q 218.809 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4049	.231	100	-.5264	.331	20	.1865	.731	0	.1036	2.131	90	-.5762		
2	.161	170	-.4501	.231	90	-.5088	.331	10	.2596	.931	180	-.5763	2.131	0	.1312		
3	.161	160	-.4843	.231	80	-.5237	.331	0	.2989	.931	90	-.5668	0.000		.9378	-.45	0.00
4	.161	150	-.5072	.231	70	-.5285	.431	180	-.5257	.931	0	.1167	0.000		1.0497	-.40	0.00
5	.161	140	-.5248	.231	60	-.6195	.431	170	-.5491	1.131	180	-.5319	0.000		1.0554	-.30	0.00
6	.161	130	-.5361	.231	50	-.5423	.431	160	-.5554	1.131	170	-.5295	0.000		1.0244	-.20	0.00
7	.161	120	-.5420	.231	40	-.6748	.431	150	-.5616	1.131	150	-.5882	0.000		.9654	-.10	0.00
8	.161	110	-.5446	.231	30	-.5604	.431	140	-.5976	1.131	150	-.5710	0.000		.9487	0.00	0.00
9	.161	100	-.5478	.231	20	-.3627	.431	130	-.6261	1.131	140	-.6124	0.000		.8701	.10	0.00
10	.161	90	-.5574	.231	10	-.2530	.431	120	-.5890	1.131	130	-.6669	0.000		.7892	.20	0.00
11	.161	80	-.5569	.231	0	-.2188	.431	110	-.5976	1.131	120	-.6320	0.000		.6837	.30	0.00
12	.161	70	-.5361	.331	180	-.5317	.431	100	-.5736	1.131	110	-.6906	0.000		.4525	.40	0.00
13	.161	60	-.5841	.331	170	-.5014	.431	90	-.6193	1.131	100	-.6598	0.000		.2638	.45	0.00
14	.161	50	-.5558	.331	160	-.5498	.431	80	-.6073	1.131	90	-.6089	0.000		.9321	0.00	.10
15	.161	40	-.5462	.331	150	-.5211	.431	70	-.5765	1.131	80	-.5941	0.000		.8954	0.00	.20
16	.161	30	-.6113	.331	140	-.5817	.431	60	-.4395	1.131	70	-.4898	0.000		.8558	0.00	.30
17	.161	20	-.6730	.331	130	-.5908	.431	50	-.2169	1.131	60	-.3625	0.000		.7221	0.00	.40
18	.161	10	-.6855	.331	120	-.5535	.431	40	-.0240	1.131	50	-.2452	0.000		.5242	0.00	.45
19	.161	0	-.7207	.331	110	-.5689	.431	30	.0901	1.131	40	-.1238	.161	270	-.5647		
20	.231	180	-.4800	.331	100	-.5961	.431	20	.0091	1.131	30	-.0468	.231	270	-.5985		
21	.231	170	-.5046	.331	90	-.5759	.431	10	.1557	1.131	20	.0190	.331	270	-.5624		
22	.231	160	-.4880	.331	80	-.4929	.431	0	.1888	1.131	10	.0699	.431	270	-.5525		
23	.231	150	-.4992	.331	70	-.4913	.531	180	-.5223	1.131	0	.0977	.531	270	-.5400		
24	.231	140	-.5553	.331	60	-.6227	.531	90	-.6107				.731	270	-.6192		
25	.231	130	-.6028	.331	50	-.5205	.531	0	.1335	1.631	90	-.5449	.931	270	-.6146		
26	.231	120	-.6140	.331	40	-.1832	.731	180	-.5999	1.631	0	.0936	1.131	270	-.6393		
27	.231	110	-.5494	.331	30	-.0241	.731	90	-.5782	2.131	180	-.0965	1.631	270	-.6244		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 115 ALPHA 24 MACH .403 Q 218.341 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5533	.231	100	-.5857	.331	20	.1709	.731	0	.1056	2.131	90	-.5510		
2	.161	170	-.5495	.231	90	-.5851	.331	10	.1755	.931	180	-.6470	2.131	0	.1027		
3	.161	160	-.5790	.231	80	-.6198	.331	0	.2063	.931	90	-.6565	0.000		.9455	-.45	0.00
4	.161	150	-.5346	.231	70	-.5206	.431	180	-.5297	.931	0	.0967	0.000		1.0365	-.40	0.00
5	.161	140	-.5581	.231	60	-.5691	.431	170	-.5549	1.131	180	-.6007	0.000		1.0237	-.30	0.00
6	.161	130	-.5854	.231	50	-.5857	.431	160	-.6184	1.131	170	-.5841	0.000		.9990	-.20	0.00
7	.161	120	-.5800	.231	40	-.5425	.431	150	-.5389	1.131	160	-.5889	0.000		.9536	-.10	0.00
8	.161	110	-.5544	.231	30	-.2012	.431	140	-.5863	1.131	150	-.6120	0.000		.8840	0.00	0.00
9	.161	100	-.5961	.231	20	.2552	.431	130	-.7041	1.131	140	-.6138	0.000		.8122	.10	0.00
10	.161	90	-.5859	.231	10	.2333	.431	120	-.6143	1.131	130	-.7004	0.000		.7202	.20	0.00
11	.161	80	-.5142	.231	0	.3538	.431	110	-.5532	1.131	120	-.6904	0.000		.6193	.30	0.00
12	.161	70	-.5704	.331	180	-.5345	.431	100	-.6206	1.131	110	-.7723	0.000		.4161	.40	0.00
13	.161	60	-.5565	.331	170	-.4966	.431	90	-.5446	1.131	100	-.7343	0.000		.2269	.45	0.00
14	.161	50	-.5734	.331	160	-.5617	.431	80	-.6075	1.131	90	-.7117	0.000		.8725	0.00	.10
15	.161	40	-.5795	.331	150	-.5263	.431	70	-.5034	1.131	80	-.6251	0.000		.8794	0.00	.20
16	.161	30	-.7250	.331	140	-.5505	.431	60	-.3324	1.131	70	-.5420	0.000		.8122	0.00	.30
17	.161	20	-.5191	.331	130	-.6065	.431	50	-.1557	1.131	60	-.4339	0.000		.6627	0.00	.40
18	.161	10	-.4121	.331	120	-.6214	.431	40	-.0330	1.131	50	-.2938	0.000		.4855	0.00	.45
19	.161	0	-.2035	.331	110	-.6704	.431	30	-.0018	1.131	40	-.2060	.161	270	-.6138		
20	.231	180	-.5025	.331	100	-.5393	.431	20	-.0258	1.131	30	-.0600	.231	270	-.5372		
21	.231	170	-.5003	.331	90	-.5665	.431	10	.1526	1.131	20	.0296	.331	270	-.5757		
22	.231	160	-.5822	.331	80	-.6427	.431	0	.1492	1.131	10	.0670	.431	270	-.6390		
23	.231	150	-.5544	.331	70	-.6427	.531	180	-.5674	1.131	0	.0807	.531	270	-.6223		
24	.231	140	-.6089	.331	60	-.5643	.531	90	-.6956				.731	270	-.6345		
25	.231	130	-.5629	.331	50	-.3793	.531	0	.1251	1.631	90	-.6975	.931	270	-.6849		
26	.231	120	-.5306	.331	40	-.0540	.731	180	-.6109	1.631	0	.0884	1.131	270	-.7275		
27	.231	110	-.5602	.331	30	.1176	.731	90	-.6006	2.131	180	-.1710	1.631	270	-.6987		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 74 ALPHA 2 MACH .507 Q 323.754 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4237	.231	100	-.4755	.331	20	-.5205	.731	0	-.5572	2.131	90	.0075		
2	.161	170	-.4136	.231	90	-.4841	.331	10	-.5047	.931	180	-.5195	2.131	0	.0901		
3	.161	160	-.4374	.231	80	-.5021	.331	0	-.5398	.931	90	-.5604	0.000		.6728	-.45	0.00
4	.161	150	-.4348	.231	70	-.5115	.431	180	-.4564	.931	0	-.5608	0.000		.8586	-.40	0.00
5	.161	140	-.4366	.231	60	-.5007	.431	170	-.4645	1.131	180	-.5255	0.000		.9997	-.30	0.00
6	.161	130	-.4204	.231	50	-.4877	.431	160	-.4518	1.131	170	-.5215	0.000		1.0485	-.20	0.00
7	.161	120	-.4518	.231	40	-.5021	.431	150	-.4564	1.131	160	-.5051	0.000		1.0745	-.10	0.00
8	.161	110	-.4622	.231	30	-.5259	.431	140	-.4773	1.131	150	-.5255	0.000		1.0710	0.00	0.00
9	.161	100	-.4770	.231	20	-.5158	.431	130	-.4834	1.131	140	-.5524	0.000		1.0563	.10	0.00
10	.161	90	-.4947	.231	10	-.4899	.431	120	-.4680	1.131	130	-.5464	0.000		1.0292	.20	0.00
11	.161	80	-.4929	.231	0	-.4705	.431	110	-.4923	1.131	120	-.5624	0.000		.9633	.30	0.00
12	.161	70	-.4713	.331	180	-.4489	.431	100	-.4773	1.131	110	-.5131	0.000		.8210	.40	0.00
13	.161	60	-.5156	.331	170	-.4338	.431	90	-.5074	1.131	100	-.5452	0.000		.6166	.45	0.00
14	.161	50	-.4904	.331	160	-.4532	.431	80	-.4912	1.131	90	-.5452	0.000		1.0613	0.00	.10
15	.161	40	-.5131	.331	150	-.4446	.431	70	-.5124	1.131	80	-.5316	0.000		1.0334	0.00	.20
16	.161	30	-.4738	.331	140	-.4410	.431	60	-.4985	1.131	70	-.5512	0.000		.9547	0.00	.30
17	.161	20	-.5012	.331	130	-.4482	.431	50	-.5104	1.131	60	-.5428	0.000		.8365	0.00	.40
18	.161	10	-.5037	.331	120	-.4683	.431	40	-.5139	1.131	50	-.5780	0.000		.6364	0.00	.45
19	.161	0	-.5066	.331	110	-.4676	.431	30	-.5124	1.131	40	-.5279	.161	270	-.4818		
20	.231	180	-.3988	.331	100	-.4935	.431	20	-.5309	1.131	30	-.5564	.231	270	-.4834		
21	.231	170	-.4402	.331	90	-.4913	.431	10	-.5344	1.131	20	-.5620	.331	270	-.5043		
22	.231	160	-.4420	.331	80	-.4888	.431	0	-.5394	1.131	10	-.5700	.431	270	-.5063		
23	.231	150	-.4258	.331	70	-.5050	.531	180	-.4595	1.131	0	-.5291	.531	270	-.5144		
24	.231	140	-.4125	.331	60	-.4975	.531	90	-.4958				.731	270	-.5315		
25	.231	130	-.4496	.331	50	-.4870	.531	0	-.5590	1.631	90	-.2601	.931	270	-.5481		
26	.231	120	-.4457	.331	40	-.4978	.731	180	-.4958	1.631	0	-.2189	1.131	270	-.5439		
27	.231	110	-.4792	.331	30	-.5072	.731	90	-.5332	2.131	180	-.0384	1.631	270	-.2980		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 75 ALPHA 4 MACH .506 Q 322.864 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4140	.231	100	-.5274	.331	20	-.5634	.731	0	-.6218	2.131	90	.0398		
2	.161	170	-.3941	.231	90	-.5277	.331	10	-.5595	.931	180	-.5206	2.131	0	.0884		
3	.161	160	-.3978	.231	80	-.5454	.331	0	-.5618	.931	90	-.6057	0.000		.6929	-.45	0.00
4	.161	150	-.4419	.231	70	-.5681	.431	180	-.4481	.931	0	-.6061	0.000		.8741	-.40	0.00
5	.161	140	-.4542	.231	60	-.5432	.431	170	-.4570	1.131	180	-.4974	0.000		1.0032	-.30	0.00
6	.161	130	-.4846	.231	50	-.5497	.431	160	-.5092	1.131	170	-.5403	0.000		1.0498	-.20	0.00
7	.161	120	-.4972	.231	40	-.5768	.431	150	-.4875	1.131	160	-.5295	0.000		1.0669	-.10	0.00
8	.161	110	-.5207	.231	30	-.5743	.431	140	-.5108	1.131	150	-.5122	0.000		1.0634	0.00	0.00
9	.161	100	-.5099	.231	20	-.5515	.431	130	-.4918	1.131	140	-.5206	0.000		1.0490	.10	0.00
10	.161	90	-.5236	.231	10	-.5613	.431	120	-.5069	1.131	130	-.5467	0.000		1.0133	.20	0.00
11	.161	80	-.5551	.231	0	-.5382	.431	110	-.5328	1.131	120	-.5568	0.000		.9491	.30	0.00
12	.161	70	-.5616	.331	180	-.4307	.431	100	-.5444	1.131	110	-.5335	0.000		.7897	.40	0.00
13	.161	60	-.5602	.331	170	-.4196	.431	90	-.5444	1.131	100	-.5708	0.000		.5973	.45	0.00
14	.161	50	-.5497	.331	160	-.4765	.431	80	-.5390	1.131	90	-.5311	0.000		1.0615	0.00	.10
15	.161	40	-.5580	.331	150	-.4398	.431	70	-.5537	1.131	80	-.5764	0.000		1.0358	0.00	.20
16	.161	30	-.5721	.331	140	-.4852	.431	60	-.5672	1.131	70	-.5544	0.000		.9763	0.00	.30
17	.161	20	-.5318	.331	130	-.4783	.431	50	-.5521	1.131	60	-.5335	0.000		.8267	0.00	.40
18	.161	10	-.5627	.331	120	-.4953	.431	40	-.5835	1.131	50	-.4813	0.000		.6206	0.00	.45
19	.161	0	-.5359	.331	110	-.5108	.431	30	-.5537	1.131	40	-.4962	.161	270	-.5115		
20	.231	180	-.4274	.331	100	-.5093	.431	20	-.5518	1.131	30	-.5210	.231	270	-.5303		
21	.231	170	-.4574	.331	90	-.5321	.431	10	-.5614	1.131	20	-.4584	.331	270	-.5338		
22	.231	160	-.4115	.331	80	-.5519	.431	0	-.5757	1.131	10	-.4781	.431	270	-.5361		
23	.231	150	-.4289	.331	70	-.5505	.531	180	-.4643	1.131	0	-.4853	.531	270	-.5446		
24	.231	140	-.4621	.331	60	-.5533	.531	90	-.5502				.731	270	-.5901		
25	.231	130	-.4643	.331	50	-.5706	.531	0	-.5533	1.631	90	-.2208	.931	270	-.5886		
26	.231	120	-.4806	.331	40	-.5461	.731	180	-.4860	1.631	0	-.0381	1.131	270	-.5653		
27	.231	110	-.4983	.331	30	-.5717	.731	90	-.5835	2.131	180	-.0325	1.631	270	-.2134		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 72 ALPHA -1 MACH .506 Q 323.218 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4779	.231	100	-.4641	.331	20	-.4228	.731	0	-.4900	2.131	90	-.0247		
2	.161	170	-.4743	.231	90	-.4551	.331	10	-.4410	.931	180	-.5609	2.131	0	-.0577		
3	.161	160	-.4800	.231	80	-.4479	.331	0	-.4715	.931	90	-.5545	0.000		.6332	-.45	0.00
4	.161	150	-.4771	.231	70	-.4515	.431	180	-.5013	.931	0	-.5144	0.000		.8161	-.40	0.00
5	.161	140	-.4746	.231	60	-.4392	.431	170	-.4963	1.131	180	-.5670	0.000		.9613	-.30	0.00
6	.161	130	-.4779	.231	50	-.4378	.431	160	-.4851	1.131	170	-.5517	0.000		1.0219	-.20	0.00
7	.161	120	-.4738	.231	40	-.4284	.431	150	-.5152	1.131	160	-.5449	0.000		1.0592	-.10	0.00
8	.161	110	-.4573	.231	30	-.4270	.431	140	-.4777	1.131	150	-.5457	0.000		1.0697	0.00	0.00
9	.161	100	-.4692	.231	20	-.4385	.431	130	-.4982	1.131	140	-.5593	0.000		1.0642	.10	0.00
10	.161	90	-.4313	.231	10	-.4623	.431	120	-.4773	1.131	130	-.5249	0.000		1.0382	.20	0.00
11	.161	80	-.4315	.231	0	-.4198	.431	110	-.4820	1.131	120	-.5389	0.000		.9784	.30	0.00
12	.161	70	-.4414	.331	180	-.4810	.431	100	-.4684	1.131	110	-.5393	0.000		.8433	.40	0.00
13	.161	60	-.4724	.331	170	-.4980	.431	90	-.4947	1.131	100	-.5369	0.000		.6448	.45	0.00
14	.161	50	-.4500	.331	160	-.4839	.431	80	-.4715	1.131	90	-.5417	0.000		1.0677	0.00	.10
15	.161	40	-.4237	.331	150	-.5008	.431	70	-.4746	1.131	80	-.5533	0.000		1.0335	0.00	.20
16	.161	30	-.4334	.331	140	-.4850	.431	60	-.4727	1.131	70	-.5441	0.000		.9710	0.00	.30
17	.161	20	-.4836	.331	130	-.4890	.431	50	-.4692	1.131	60	-.5208	0.000		.8335	0.00	.40
18	.161	10	-.4511	.331	120	-.4774	.431	40	-.4727	1.131	50	-.5309	0.000		.6366	0.00	.45
19	.161	0	-.4002	.331	110	-.4767	.431	30	-.4464	1.131	40	-.5393	.161	270	-.4846		
20	.231	180	-.4898	.331	100	-.4817	.431	20	-.4735	1.131	30	-.5166	.231	270	-.4904		
21	.231	170	-.4948	.331	90	-.4781	.431	10	-.4549	1.131	20	-.5393	.331	270	-.4687		
22	.231	160	-.4927	.331	80	-.4663	.431	0	-.4715	1.131	10	-.5240	.431	270	-.4749		
23	.231	150	-.4869	.331	70	-.4868	.531	180	-.5272	1.131	0	-.5417	.531	270	-.4815		
24	.231	140	-.4941	.331	60	-.4839	.531	90	-.5179				.731	270	-.5102		
25	.231	130	-.4905	.331	50	-.4724	.531	0	-.4623	1.631	90	-.2674	.931	270	-.5669		
26	.231	120	-.4743	.331	40	-.4681	.731	180	-.5163	1.631	0	-.3095	1.131	270	-.5553		
27	.231	110	-.4685	.331	30	-.4537	.731	90	-.4955	2.131	180	.0221	1.631	270	-.3417		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 73 ALPHA 0 MACH .506 Q 323.219 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4555	.231	100	-.4518	.331	20	-.4561	.731	0	-.4868	2.131	90	-.0131		
2	.161	170	-.4486	.231	90	-.4472	.331	10	-.4503	.931	180	-.5273	2.131	0	-.0041		
3	.161	160	-.4345	.231	80	-.4479	.331	0	-.5009	.931	90	-.5261	0.000		.6487	-.45	0.00
4	.161	150	-.4641	.231	70	-.4518	.431	180	-.4777	.931	0	-.4992	0.000		.8312	-.40	0.00
5	.161	140	-.4696	.231	60	-.4699	.431	170	-.4851	1.131	180	-.5245	0.000		.9757	-.30	0.00
6	.161	130	-.4341	.231	50	-.4670	.431	160	-.4723	1.131	170	-.5357	0.000		1.0401	-.20	0.00
7	.161	120	-.4430	.231	40	-.4500	.431	150	-.4522	1.131	160	-.5200	0.000		1.0681	-.10	0.00
8	.161	110	-.4414	.231	30	-.4515	.431	140	-.4777	1.131	150	-.5485	0.000		1.0683	0.00	0.00
9	.161	100	-.4446	.231	20	-.4374	.431	130	-.4854	1.131	140	-.5329	0.000		1.0584	.10	0.00
10	.161	90	-.4334	.231	10	-.4220	.431	120	-.4665	1.131	130	-.5309	0.000		1.0324	.20	0.00
11	.161	80	-.4504	.231	0	-.4180	.431	110	-.4708	1.131	120	-.5429	0.000		.9722	.30	0.00
12	.161	70	-.4944	.331	180	-.4767	.431	100	-.4966	1.131	110	-.5228	0.000		.8304	.40	0.00
13	.161	60	-.4417	.331	170	-.4558	.431	90	-.4723	1.131	100	-.5485	0.000		.6331	.45	0.00
14	.161	50	-.4439	.331	160	-.4515	.431	80	-.4588	1.131	90	-.5413	0.000		1.0607	0.00	.10
15	.161	40	-.4269	.331	150	-.4598	.431	70	-.4750	1.131	80	-.5317	0.000		1.0269	0.00	.20
16	.161	30	-.4706	.331	140	-.4378	.431	60	-.4750	1.131	70	-.5277	0.000		.9733	0.00	.30
17	.161	20	-.4381	.331	130	-.4537	.431	50	-.4719	1.131	60	-.5224	0.000		.8328	0.00	.40
18	.161	10	-.4519	.331	120	-.4404	.431	40	-.4599	1.131	50	-.5289	0.000		.6425	0.00	.45
19	.161	0	-.4500	.331	110	-.4580	.431	30	-.4827	1.131	40	-.5469	.161	270	-.4702		
20	.231	180	-.4559	.331	100	-.4760	.431	20	-.4681	1.131	30	-.5373	.231	270	-.4675		
21	.231	170	-.4576	.331	90	-.4558	.431	10	-.4541	1.131	20	-.5345	.331	270	-.4679		
22	.231	160	-.4466	.331	80	-.4724	.431	0	-.4681	1.131	10	-.5429	.431	270	-.4935		
23	.231	150	-.4873	.331	70	-.4828	.531	180	-.5090	1.131	0	-.5686	.531	270	-.5130		
24	.231	140	-.4714	.331	60	-.4805	.531	90	-.4766				.731	270	-.5192		
25	.231	130	-.4500	.331	50	-.4503	.531	0	-.4820	1.631	90	-.3673	.931	270	-.5238		
26	.231	120	-.4446	.331	40	-.4648	.731	180	-.4955	1.631	0	-.3188	1.131	270	-.5168		
27	.231	110	-.4367	.331	30	-.4641	.731	90	-.5036	2.131	180	.0497	1.631	270	-.2834		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 78 ALPHA 10 MACH .507 Q 323.345 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4394	.231	100	-.6185	.331	20	-.6669	.731	0	-.3745	2.131	90	-.1351		
2	.161	170	-.4163	.231	90	-.6310	.331	10	-.6503	.931	180	-.5422	2.131	0	.0284		
3	.161	160	-.4021	.231	80	-.6353	.331	0	-.6792	.931	90	-.6310	0.000		.7700	-.45	0.00
4	.161	150	-.4982	.231	70	-.6415	.431	180	-.4804	.931	0	-.0504	0.000		.9405	-.40	0.00
5	.161	140	-.5328	.231	60	-.6922	.431	170	-.5226	1.131	180	-.4754	0.000		1.0525	-.30	0.00
6	.161	130	-.5519	.231	50	-.6584	.431	160	-.5180	1.131	170	-.4366	0.000		1.0723	-.20	0.00
7	.161	120	-.5705	.231	40	-.6656	.431	150	-.5535	1.131	160	-.4962	0.000		1.0669	-.10	0.00
8	.161	110	-.6590	.231	30	-.6976	.431	140	-.5932	1.131	150	-.5234	0.000		1.0459	0.00	0.00
9	.161	100	-.6320	.231	20	-.6825	.431	130	-.5986	1.131	140	-.5282	0.000		1.0130	.10	0.00
10	.161	90	-.5332	.231	10	-.6724	.431	120	-.6163	1.131	130	-.5766	0.000		.9649	.20	0.00
11	.161	80	-.6507	.231	0	-.6562	.431	110	-.6337	1.131	120	-.5830	0.000		.8657	.30	0.00
12	.161	70	-.6781	.331	180	-.4991	.431	100	-.6426	1.131	110	-.5522	0.000		.6948	.40	0.00
13	.161	60	-.6655	.331	170	-.4844	.431	90	-.6404	1.131	100	-.4826	0.000		.4909	.45	0.00
14	.161	50	-.6514	.331	160	-.5088	.431	80	-.6491	1.131	90	-.4494	0.000		1.0440	0.00	.10
15	.161	40	-.6724	.331	150	-.5228	.431	70	-.6665	1.131	80	-.3373	0.000		1.0134	0.00	.20
16	.161	30	-.6662	.331	140	-.5448	.431	60	-.6742	1.131	70	-.2437	0.000		.9521	0.00	.30
17	.161	20	-.6559	.331	130	-.5624	.431	50	-.6541	1.131	60	-.1812	0.000		.7971	0.00	.40
18	.161	10	-.6493	.331	120	-.5883	.431	40	-.6707	1.131	50	-.0980	0.000		.5998	0.00	.45
19	.161	0	-.6734	.331	110	-.6192	.431	30	-.7243	1.131	40	-.0372	.161	270	-.6612		
20	.231	180	-.4639	.331	100	-.6458	.431	20	-.7224	1.131	30	.0009	.231	270	-.6612		
21	.231	170	-.4477	.331	90	-.6454	.431	10	-.6931	1.131	20	.0369	.331	270	-.6449		
22	.231	160	-.4791	.331	80	-.6594	.431	0	-.6830	1.131	10	.0569	.431	270	-.6515		
23	.231	150	-.5195	.331	70	-.6767	.531	180	-.5419	1.131	0	.0649	.531	270	-.6747		
24	.231	140	-.5314	.331	60	-.6781	.531	90	-.6584				.731	270	-.7108		
25	.231	130	-.5034	.331	50	-.6947	.531	0	-.7050	1.631	90	-.1424	.931	270	-.6139		
26	.231	120	-.5966	.331	40	-.6832	.731	180	-.5612	1.631	0	-.0212	1.131	270	-.3879		
27	.231	110	-.6493	.331	30	-.6961	.731	90	-.7282	2.131	180	.0237	1.631	270	-.1592		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 79 ALPHA 12 MACH .507 Q 323.755 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4619	.231	100	-.6593	.331	20	-.7037	.731	0	-.1180	2.131	90	-.1891		
2	.161	170	-.4255	.231	90	-.6427	.331	10	-.6447	.931	180	-.5191	2.131	0	.0289		
3	.161	160	-.4576	.231	80	-.6456	.331	0	-.6651	.931	90	-.5360	0.000		.8190	-.45	0.00
4	.161	150	-.5005	.231	70	-.6769	.431	180	-.5108	.931	0	.0989	0.000		.9683	-.40	0.00
5	.161	140	-.5499	.231	60	-.6859	.431	170	-.5274	1.131	180	-.4919	0.000		1.0547	-.30	0.00
6	.161	130	-.5683	.231	50	-.6654	.431	160	-.5263	1.131	170	-.4863	0.000		1.0799	-.20	0.00
7	.161	120	-.5896	.231	40	-.6560	.431	150	-.5367	1.131	160	-.5019	0.000		1.0679	-.10	0.00
8	.161	110	-.6404	.231	30	-.6970	.431	140	-.6173	1.131	150	-.5704	0.000		1.0423	0.00	0.00
9	.161	100	-.6325	.231	20	-.6888	.431	130	-.6011	1.131	140	-.5444	0.000		1.0043	.10	0.00
10	.161	90	-.6560	.231	10	-.6823	.431	120	-.6273	1.131	130	-.5644	0.000		.9462	.20	0.00
11	.161	80	-.6505	.231	0	-.6672	.431	110	-.6127	1.131	120	-.5668	0.000		.8458	.30	0.00
12	.161	70	-.6592	.331	180	-.4917	.431	100	-.6470	1.131	110	-.5360	0.000		.6701	.40	0.00
13	.161	60	-.6682	.331	170	-.4638	.431	90	-.6597	1.131	100	-.5051	0.000		.4685	.45	0.00
14	.161	50	-.6560	.331	160	-.5147	.431	80	-.6597	1.131	90	-.3825	0.000		1.0330	0.00	.10
15	.161	40	-.6541	.331	150	-.5374	.431	70	-.6547	1.131	80	-.3378	0.000		1.0051	0.00	.20
16	.161	30	-.6780	.331	140	-.5694	.431	60	-.7072	1.131	70	-.2201	0.000		.9427	0.00	.30
17	.161	20	-.6343	.331	130	-.5658	.431	50	-.6597	1.131	60	-.1729	0.000		.7923	0.00	.40
18	.161	10	-.6722	.331	120	-.6212	.431	40	-.7195	1.131	50	-.1016	0.000		.5903	0.00	.45
19	.161	0	-.6704	.331	110	-.6355	.431	30	-.7334	1.131	40	-.0328	.161	270	-.6571		
20	.231	180	-.4348	.331	100	-.6053	.431	20	-.6917	1.131	30	.0149	.231	270	-.6245		
21	.231	170	-.4612	.331	90	-.6690	.431	10	-.7461	1.131	20	.0333	.331	270	-.6582		
22	.231	160	-.4648	.331	80	-.6384	.431	0	-.6435	1.131	10	.0489	.431	270	-.6354		
23	.231	150	-.4832	.331	70	-.6409	.531	180	-.5236	1.131	0	.0553	.531	270	-.6536		
24	.231	140	-.5492	.331	60	-.6452	.531	90	-.6381				.731	270	-.6714		
25	.231	130	-.5011	.331	50	-.6654	.531	0	-.5857	1.631	90	-.2313	.931	270	-.5675		
26	.231	120	-.5917	.331	40	-.6826	.731	180	-.5463	1.631	0	-.0352	1.131	270	-.3996		
27	.231	110	-.6249	.331	30	-.6884	.731	90	-.7006	2.131	180	-.0272	1.631	270	-.2499		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 76 ALPHA 6 MACH .506 Q 323.398 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3895	.231	100	-.5790	.331	20	-.6215	.731	0	-.6632	2.131	90	-.0002		
2	.161	170	-.4043	.231	90	-.5837	.331	10	-.6392	.931	180	-.5438	2.131	0	.0417		
3	.161	160	-.4187	.231	80	-.5891	.331	0	-.6153	.931	90	-.6231	0.000		.7244	-.45	0.00
4	.161	150	-.4060	.231	70	-.6057	.431	180	-.4670	.931	0	-.5145	0.000		.8944	-.40	0.00
5	.161	140	-.4722	.231	60	-.5898	.431	170	-.4658	1.131	180	-.5149	0.000		1.0198	-.30	0.00
6	.161	130	-.4984	.231	50	-.5936	.431	160	-.4543	1.131	170	-.4833	0.000		1.0594	-.20	0.00
7	.161	120	-.5216	.231	40	-.6150	.431	150	-.4971	1.131	160	-.5089	0.000		1.0768	-.10	0.00
8	.161	110	-.5469	.231	30	-.6406	.431	140	-.5002	1.131	150	-.5065	0.000		1.0648	0.00	0.00
9	.161	100	-.5632	.231	20	-.6136	.431	130	-.5299	1.131	140	-.5073	0.000		1.0501	.10	0.00
10	.161	90	-.5744	.231	10	-.6031	.431	120	-.5435	1.131	130	-.5322	0.000		1.0034	.20	0.00
11	.161	80	-.6043	.231	0	-.6305	.431	110	-.5852	1.131	120	-.6063	0.000		.9313	.30	0.00
12	.161	70	-.6141	.331	180	-.4257	.431	100	-.5759	1.131	110	-.6099	0.000		.7632	.40	0.00
13	.161	60	-.6015	.331	170	-.4321	.431	90	-.5856	1.131	100	-.5843	0.000		.5041	.45	0.00
14	.161	50	-.6195	.331	160	-.4325	.431	80	-.5925	1.131	90	-.5466	0.000		1.0602	0.00	.10
15	.161	40	-.6199	.331	150	-.4721	.431	70	-.6083	1.131	80	-.4813	0.000		1.0287	0.00	.20
16	.161	30	-.6350	.331	140	-.4869	.431	60	-.6242	1.131	70	-.4861	0.000		.9654	0.00	.30
17	.161	20	-.6791	.331	130	-.5176	.431	50	-.6006	1.131	60	-.4127	0.000		.8277	0.00	.40
18	.161	10	-.6083	.331	120	-.5257	.431	40	-.6215	1.131	50	-.3651	0.000		.6145	0.00	.45
19	.161	0	-.5993	.331	110	-.5560	.431	30	-.6238	1.131	40	-.3436	.161	270	-.6078		
20	.231	180	-.4072	.331	100	-.5668	.431	20	-.6315	1.131	30	-.2661	.231	270	-.5658		
21	.231	170	-.4343	.331	90	-.5869	.431	10	-.6342	1.131	20	-.2168	.331	270	-.5829		
22	.231	160	-.4353	.331	80	-.5887	.431	0	-.6110	1.131	10	-.2320	.431	270	-.5802		
23	.231	150	-.4610	.331	70	-.5891	.531	180	-.4786	1.131	0	-.2436	.531	270	-.5977		
24	.231	140	-.4751	.331	60	-.6157	.531	90	-.5948				.731	270	-.6190		
25	.231	130	-.4855	.331	50	-.6186	.531	0	-.6439	1.631	90	-.0781	.931	270	-.6571		
26	.231	120	-.5393	.331	40	-.6345	.731	180	-.5222	1.631	0	.0241	1.131	270	-.5379		
27	.231	110	-.5346	.331	30	-.6075	.731	90	-.6006	2.131	180	-.0545	1.631	270	-.0946		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 77 ALPHA 8 MACH .507 Q 323.754 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4136	.231	100	-.6097	.331	20	-.6643	.731	0	-.5732	2.131	90	-.0281		
2	.161	170	-.4305	.231	90	-.6327	.331	10	-.6636	.931	180	-.5440	2.131	0	.0312		
3	.161	160	-.4365	.231	80	-.6237	.331	0	-.6285	.931	90	-.6316	0.000		.7519	-.45	0.00
4	.161	150	-.4731	.231	70	-.6456	.431	180	-.4630	.931	0	-.2942	0.000		.9167	-.40	0.00
5	.161	140	-.4962	.231	60	-.6560	.431	170	-.4854	1.131	180	-.4983	0.000		1.0311	-.30	0.00
6	.161	130	-.5084	.231	50	-.6420	.431	160	-.4831	1.131	170	-.4979	0.000		1.0706	-.20	0.00
7	.161	120	-.5488	.231	40	-.6593	.431	150	-.4996	1.131	160	-.5011	0.000		1.0788	-.10	0.00
8	.161	110	-.5611	.231	30	-.6377	.431	140	-.5278	1.131	150	-.5320	0.000		1.0687	0.00	0.00
9	.161	100	-.5979	.231	20	-.6359	.431	130	-.5571	1.131	140	-.5488	0.000		1.0406	.10	0.00
10	.161	90	-.6156	.231	10	-.6542	.431	120	-.5656	1.131	130	-.5520	0.000		.9892	.20	0.00
11	.161	80	-.6091	.231	0	-.6212	.431	110	-.5891	1.131	120	-.5664	0.000		.9117	.30	0.00
12	.161	70	-.6466	.331	180	-.4593	.431	100	-.6215	1.131	110	-.5704	0.000		.7384	.40	0.00
13	.161	60	-.6419	.331	170	-.4442	.431	90	-.6076	1.131	100	-.5428	0.000		.5414	.45	0.00
14	.161	50	-.6284	.331	160	-.4601	.431	80	-.6215	1.131	90	-.4787	0.000		1.0672	0.00	.10
15	.161	40	-.6379	.331	150	-.4870	.431	70	-.6238	1.131	80	-.4563	0.000		1.0299	0.00	.20
16	.161	30	-.6606	.331	140	-.5295	.431	60	-.6566	1.131	70	-.2930	0.000		.9710	0.00	.30
17	.161	20	-.6087	.331	130	-.5190	.431	50	-.6161	1.131	60	-.2794	0.000		.8206	0.00	.40
18	.161	10	-.6006	.331	120	-.5661	.431	40	-.6867	1.131	50	-.1184	0.000		.6135	0.00	.45
19	.161	0	-.6697	.331	110	-.5960	.431	30	-.6736	1.131	40	-.0984	.161	270	-.6377		
20	.231	180	-.4359	.331	100	-.6068	.431	20	-.6643	1.131	30	-.0544	.231	270	-.6214		
21	.231	170	-.4410	.331	90	-.6226	.431	10	-.6659	1.131	20	-.0048	.331	270	-.6361		
22	.231	160	-.4383	.331	80	-.6345	.431	0	-.6852	1.131	10	-.0128	.431	270	-.6276		
23	.231	150	-.4749	.331	70	-.6255	.531	180	-.4927	1.131	0	-.0132	.531	270	-.6144		
24	.231	140	-.5214	.331	60	-.6564	.531	90	-.6323				.731	270	-.6667		
25	.231	130	-.5416	.331	50	-.6564	.531	0	-.7180	1.631	90	-.1036	.931	270	-.6416		
26	.231	120	-.5712	.331	40	-.6546	.731	180	-.5517	1.631	0	.0133	1.131	270	-.4671		
27	.231	110	-.5328	.331	30	-.6402	.731	90	-.6354	2.131	180	-.0104	1.631	270	-.0793		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 82 ALPHA 16 MACH .505 Q 322.239 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4457	.231	100	-.6224	.331	20	-.5846	.731	0	.0796	2.131	90	-.4160		
2	.161	170	-.4805	.231	90	-.6007	.331	10	-.5459	.931	180	-.5655	2.131	0	.0635		
3	.161	160	-.4953	.231	80	-.6043	.331	0	-.4901	.931	90	-.5458	0.000		.9026	-.45	0.00
4	.161	150	-.5171	.231	70	-.5823	.431	180	-.4967	.931	0	.0510	0.000		1.0230	-.40	0.00
5	.161	140	-.5243	.231	60	-.5740	.431	170	-.5145	1.131	180	-.5474	0.000		1.0635	-.30	0.00
6	.161	130	-.5388	.231	50	-.5870	.431	160	-.5587	1.131	170	-.5052	0.000		1.0736	-.20	0.00
7	.161	120	-.6041	.231	40	-.5837	.431	150	-.5683	1.131	160	-.5217	0.000		1.0335	-.10	0.00
8	.161	110	-.5968	.231	30	-.5960	.431	140	-.5765	1.131	150	-.5740	0.000		.9953	0.00	0.00
9	.161	100	-.6030	.231	20	-.6441	.431	130	-.6284	1.131	140	-.5486	0.000		.9455	.10	0.00
10	.161	90	-.5935	.231	10	-.6329	.431	120	-.5897	1.131	130	-.5957	0.000		.8605	.20	0.00
11	.161	80	-.5769	.231	0	-.6520	.431	110	-.6141	1.131	120	-.6275	0.000		.7624	.30	0.00
12	.161	70	-.5801	.331	180	-.5039	.431	100	-.5994	1.131	110	-.6154	0.000		.5645	.40	0.00
13	.161	60	-.5859	.331	170	-.5144	.431	90	-.6230	1.131	100	-.5422	0.000		.3401	.45	0.00
14	.161	50	-.6070	.331	160	-.5346	.431	80	-.5858	1.131	90	-.5434	0.000		.9790	0.00	.10
15	.161	40	-.5860	.331	150	-.5125	.431	70	-.5676	1.131	80	-.4670	0.000		.9696	0.00	.20
16	.161	30	-.5935	.331	140	-.6061	.431	60	-.6389	1.131	70	-.3970	0.000		.9065	0.00	.30
17	.161	20	-.6244	.331	130	-.5848	.431	50	-.6013	1.131	60	-.3049	0.000		.7600	0.00	.40
18	.161	10	-.5874	.331	120	-.5942	.431	40	-.5242	1.131	50	-.2249	0.000		.5750	0.00	.45
19	.161	0	-.5910	.331	110	-.5989	.431	30	-.3959	1.131	40	-.1557	.161	270	-.5913		
20	.231	180	-.4863	.331	100	-.5960	.431	20	-.2727	1.131	30	-.0676	.231	270	-.5535		
21	.231	170	-.4874	.331	90	-.5935	.431	10	-.0557	1.131	20	-.0113	.331	270	-.6018		
22	.231	160	-.5247	.331	80	-.5866	.431	0	-.0840	1.131	10	.0132	.431	270	-.6038		
23	.231	150	-.5135	.331	70	-.5671	.531	180	-.5331	1.131	0	.0329	.531	270	-.5867		
24	.231	140	-.5667	.331	60	-.6032	.531	90	-.6404				.731	270	-.6692		
25	.231	130	-.6142	.331	50	-.6018	.531	0	.1481	1.631	90	-.4811	.931	270	-.5586		
26	.231	120	-.6276	.331	40	-.6816	.731	180	-.5994	1.631	0	-.0712	1.131	270	-.5298		
27	.231	110	-.5859	.331	30	-.6451	.731	90	-.6381	2.131	180	-.0841	1.631	270	-.4998		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 83 ALPHA 20 MACH .505 Q 322.149 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4494	.231	100	-.6027	.331	20	-.2402	.731	0	.0764	2.131	90	-.4988		
2	.161	170	-.4897	.231	90	-.5792	.331	10	-.0789	.931	180	-.5935	2.131	0	.0955		
3	.161	160	-.5277	.231	80	-.5763	.331	0	-.0092	.931	90	-.5609	0.000		.9469	-.45	0.00
4	.161	150	-.5071	.231	70	-.5344	.431	180	-.4840	.931	0	.0740	0.000		1.0595	-.40	0.00
5	.161	140	-.5154	.231	60	-.5210	.431	170	-.4984	1.131	180	-.5408	0.000		1.0809	-.30	0.00
6	.161	130	-.5564	.231	50	-.5492	.431	160	-.5278	1.131	170	-.5770	0.000		1.0657	-.20	0.00
7	.161	120	-.5607	.231	40	-.5568	.431	150	-.5619	1.131	160	-.5009	0.000		1.0420	-.10	0.00
8	.161	110	-.5618	.231	30	-.6424	.431	140	-.6170	1.131	150	-.5331	0.000		.9855	0.00	0.00
9	.161	100	-.5636	.231	20	-.6630	.431	130	-.6042	1.131	140	-.5987	0.000		.9251	.10	0.00
10	.161	90	-.5499	.231	10	-.6099	.431	120	-.5581	1.131	130	-.5930	0.000		.8549	.20	0.00
11	.161	80	-.5383	.231	0	-.6088	.431	110	-.5650	1.131	120	-.6353	0.000		.7334	.30	0.00
12	.161	70	-.5292	.331	180	-.4982	.431	100	-.5410	1.131	110	-.6220	0.000		.5350	.40	0.00
13	.161	60	-.5426	.331	170	-.4921	.431	90	-.5344	1.131	100	-.6204	0.000		.3059	.45	0.00
14	.161	50	-.5335	.331	160	-.4874	.431	80	-.5406	1.131	90	-.6039	0.000		.9691	0.00	.10
15	.161	40	-.5995	.331	150	-.5669	.431	70	-.6375	1.131	80	-.5267	0.000		.9492	0.00	.20
16	.161	30	-.5883	.331	140	-.5658	.431	60	-.5953	1.131	70	-.4418	0.000		.8803	0.00	.30
17	.161	20	-.5923	.331	130	-.5861	.431	50	-.4929	1.131	60	-.3384	0.000		.7525	0.00	.40
18	.161	10	-.5959	.331	120	-.5593	.431	40	-.2751	1.131	50	-.2463	0.000		.5561	0.00	.45
19	.161	0	-.6021	.331	110	-.5741	.431	30	-.0588	1.131	40	-.1461	.161	270	-.5701		
20	.231	180	-.4748	.331	100	-.5138	.431	20	.0486	1.131	30	-.0709	.231	270	-.5521		
21	.231	170	-.4966	.331	90	-.5644	.431	10	.1951	1.131	20	.0016	.331	270	-.5747		
22	.231	160	-.5035	.331	80	-.5517	.431	0	.2172	1.131	10	.0374	.431	270	-.6032		
23	.231	150	-.5333	.331	70	-.5788	.531	180	-.5561	1.131	0	.0518	.531	270	-.6090		
24	.231	140	-.5451	.331	60	-.5770	.531	90	-.5790				.731	270	-.6274		
25	.231	130	-.5915	.331	50	-.6283	.531	0	.1521	1.631	90	-.5424	.931	270	-.5705		
26	.231	120	-.5404	.331	40	-.5756	.731	180	-.5364	1.631	0	-.0820	1.131	270	-.5607		
27	.231	110	-.5560	.331	30	-.4686	.731	90	-.6182	2.131	180	-.1578	1.631	270	-.5860		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 80 ALPHA 14 MACH .507 Q 323.577 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4647	.231	100	-.6258	.331	20	-.6724	.731	0	.0581	2.131	90	-.2741		
2	.161	170	-.4685	.231	90	-.6737	.331	10	-.7141	.931	180	-.5791	2.131	0	.0273		
3	.161	160	-.5022	.231	80	-.6571	.331	0	-.6578	.931	90	-.5278	0.000		.0458	-.45	0.00
4	.161	150	-.5416	.231	70	-.6722	.431	180	-.5339	.931	0	.0673	0.000		.9874	-.40	0.00
5	.161	140	-.5571	.231	60	-.6337	.431	170	-.5142	1.131	180	-.4970	0.000		1.0576	-.30	0.00
6	.161	130	-.6047	.231	50	-.6672	.431	160	-.5497	1.131	170	-.5126	0.000		1.0683	-.20	0.00
7	.161	120	-.6101	.231	40	-.6403	.431	150	-.5404	1.131	160	-.5066	0.000		1.0557	-.10	0.00
8	.161	110	-.6730	.231	30	-.6949	.431	140	-.6196	1.131	150	-.5415	0.000		1.0196	0.00	0.00
9	.161	100	-.6524	.231	20	-.6586	.431	130	-.6227	1.131	140	-.6064	0.000		.9843	.10	0.00
10	.161	90	-.6744	.231	10	-.6809	.431	120	-.6501	1.131	130	-.5855	0.000		.9040	.20	0.00
11	.161	80	-.6506	.231	0	-.6636	.431	110	-.6230	1.131	120	-.5395	0.000		.8105	.30	0.00
12	.161	70	-.6686	.331	180	-.4844	.431	100	-.6470	1.131	110	-.5783	0.000		.6270	.40	0.00
13	.161	60	-.6386	.331	170	-.4963	.431	90	-.6362	1.131	100	-.5096	0.000		.4117	.45	0.00
14	.161	50	-.6841	.331	160	-.5420	.431	80	-.6759	1.131	90	-.4093	0.000		1.0095	0.00	.10
15	.161	40	-.6333	.331	150	-.5355	.431	70	-.6389	1.131	80	-.3592	0.000		.9932	0.00	.20
16	.161	30	-.6473	.331	140	-.5773	.431	60	-.6802	1.131	70	-.2759	0.000		.9288	0.00	.30
17	.161	20	-.6365	.331	130	-.5970	.431	50	-.6697	1.131	60	-.2134	0.000		.7779	0.00	.40
18	.161	10	-.6715	.331	120	-.6262	.431	40	-.7350	1.131	50	-.1470	0.000		.5774	0.00	.45
19	.161	0	-.6152	.331	110	-.6319	.431	30	-.6836	1.131	40	-.0821	.161	270	-.6454		
20	.231	180	-.4658	.331	100	-.6183	.431	20	-.6300	1.131	30	-.0492	.231	270	-.6416		
21	.231	170	-.4990	.331	90	-.6625	.431	10	-.6570	1.131	20	-.0076	.331	270	-.6466		
22	.231	160	-.5011	.331	80	-.6663	.431	0	-.6076	1.131	10	.0165	.431	270	-.6823		
23	.231	150	-.5390	.331	70	-.6586	.531	180	-.5459	1.131	0	.0243	.531	270	-.6842		
24	.231	140	-.5715	.331	60	-.6730	.531	90	-.6836				.731	270	-.7149		
25	.231	130	-.5842	.331	50	-.6532	.531	0	-.3320	1.631	90	-.3216	.931	270	-.5562		
26	.231	120	-.6105	.331	40	-.6637	.731	180	-.5509	1.631	0	-.0568	1.131	270	-.4348		
27	.231	110	-.6206	.331	30	-.6690	.731	90	-.6663	2.131	180	-.0312	1.631	270	-.3153		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 81 ALPHA 16 MACH .506 Q 323.131 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4563	.231	100	-.6455	.331	20	-.6769	.731	0	.0913	2.131	90	-.3581		
2	.161	170	-.4874	.231	90	-.6505	.331	10	-.6904	.931	180	-.5579	2.131	0	.0373		
3	.161	160	-.4921	.231	80	-.6192	.331	0	-.6506	.931	90	-.5182	0.000		.8773	-.45	0.00
4	.161	150	-.5181	.231	70	-.6051	.431	180	-.5323	.931	0	.0441	0.000		.9961	-.40	0.00
5	.161	140	-.5987	.231	60	-.6328	.431	170	-.5586	1.131	180	-.4949	0.000		1.0699	-.30	0.00
6	.161	130	-.5803	.231	50	-.5966	.431	160	-.5408	1.131	170	-.5314	0.000		1.0583	-.20	0.00
7	.161	120	-.6244	.231	40	-.6530	.431	150	-.5922	1.131	160	-.5274	0.000		1.0486	-.10	0.00
8	.161	110	-.6218	.231	30	-.6346	.431	140	-.5953	1.131	150	-.5699	0.000		1.0128	0.00	0.00
9	.161	100	-.6396	.231	20	-.6451	.431	130	-.6131	1.131	140	-.5487	0.000		.9557	.10	0.00
10	.161	90	-.6367	.231	10	-.6635	.431	120	-.6591	1.131	130	-.6092	0.000		.8792	.20	0.00
11	.161	80	-.6497	.231	0	-.6501	.431	110	-.6514	1.131	120	-.5976	0.000		.7825	.30	0.00
12	.161	70	-.5965	.331	180	-.4920	.431	100	-.6096	1.131	110	-.5767	0.000		.5902	.40	0.00
13	.161	60	-.6237	.331	170	-.4884	.431	90	-.6564	1.131	100	-.5142	0.000		.3688	.45	0.00
14	.161	50	-.6365	.331	160	-.5500	.431	80	-.6977	1.131	90	-.4247	0.000		.9942	0.00	.10
15	.161	40	-.6273	.331	150	-.5471	.431	70	-.6463	1.131	80	-.4107	0.000		.9674	0.00	.20
16	.161	30	-.6038	.331	140	-.5493	.431	60	-.6290	1.131	70	-.3369	0.000		.9064	0.00	.30
17	.161	20	-.6096	.331	130	-.5990	.431	50	-.6603	1.131	60	-.2707	0.000		.7533	0.00	.40
18	.161	10	-.6034	.331	120	-.6202	.431	40	-.6603	1.131	50	-.1949	0.000		.5564	0.00	.45
19	.161	0	-.6359	.331	110	-.6238	.431	30	-.6186	1.131	40	-.1327	.161	270	-.6417		
20	.231	180	-.4816	.331	100	-.6426	.431	20	-.5621	1.131	30	-.0726	.231	270	-.6467		
21	.231	170	-.5138	.331	90	-.6451	.431	10	-.4338	1.131	20	-.0256	.331	270	-.6421		
22	.231	160	-.5116	.331	80	-.6339	.431	0	-.3741	1.131	10	.0132	.431	270	-.6347		
23	.231	150	-.5676	.331	70	-.6397	.531	180	-.5613	1.131	0	.0152	.531	270	-.6829		
24	.231	140	-.5992	.331	60	-.6011	.531	90	-.6089				.731	270	-.6716		
25	.231	130	-.5833	.331	50	-.6195	.531	0	-.1250	1.631	90	-.4115	.931	270	-.5951		
26	.231	120	-.6099	.331	40	-.6444	.731	180	-.5791	1.631	0	-.0577	1.131	270	-.4564		
27	.231	110	-.6302	.331	30	-.6736	.731	90	-.6904	2.131	180	-.1103	1.631	270	-.3903		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 66 ALPHA 25 MACH .505 q 322.414 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5034	.231	100	-.5848	.331	20	.1647	.731	0	.1233	2.131	90	-.6077		
2	.161	170	-.4976	.231	90	-.5541	.331	10	.2062	.931	180	-.6243	2.131	0	.1363		
3	.161	160	-.4929	.231	80	-.5346	.331	0	.2217	.931	90	-.6492	0.000		.9927	-.45	0.00
4	.161	150	-.4798	.231	70	-.5086	.431	180	-.4987	.931	0	.1254	0.000		1.0625	-.40	0.00
5	.161	140	-.5243	.231	60	-.5397	.431	170	-.5223	1.131	180	-.5600	0.000		1.0649	-.30	0.00
6	.161	130	-.5345	.231	50	-.5986	.431	160	-.5196	1.131	170	-.5946	0.000		1.0224	-.20	0.00
7	.161	120	-.5566	.231	40	-.3953	.431	150	-.5669	1.131	160	-.5994	0.000		.9675	-.10	0.00
8	.161	110	-.5273	.231	30	.1099	.431	140	-.6106	1.131	150	-.5447	0.000		.9200	0.00	0.00
9	.161	100	-.5230	.231	20	.3096	.431	130	-.5359	1.131	140	-.6323	0.000		.8445	.10	0.00
10	.161	90	-.5142	.231	10	.3525	.431	120	-.5386	1.131	130	-.6717	0.000		.7445	.20	0.00
11	.161	80	-.4918	.231	0	.3923	.431	110	-.5347	1.131	120	-.6930	0.000		.6405	.30	0.00
12	.161	70	-.5114	.331	180	-.4946	.431	100	-.5587	1.131	110	-.7457	0.000		.4198	.40	0.00
13	.161	60	-.4996	.331	170	-.4870	.431	90	-.5371	1.131	100	-.7385	0.000		.2395	.45	0.00
14	.161	50	-.5059	.331	160	-.4805	.431	80	-.5216	1.131	90	-.6979	0.000		.9064	0.00	.10
15	.161	40	-.6899	.331	150	-.5621	.431	70	-.4983	1.131	80	-.6637	0.000		.8831	0.00	.20
16	.161	30	-.6566	.331	140	-.5278	.431	60	-.2996	1.131	70	-.5616	0.000		.8177	0.00	.30
17	.161	20	-.2165	.331	130	-.6408	.431	50	-.1625	1.131	60	-.4338	0.000		.7067	0.00	.40
18	.161	10	-.1263	.331	120	-.5704	.431	40	-.0572	1.131	50	-.3184	0.000		.5066	0.00	.45
19	.161	0	-.1912	.331	110	-.5661	.431	30	.0319	1.131	40	-.1922	.161	270	-.5832		
20	.231	180	-.5059	.331	100	-.5679	.431	20	-.0169	1.131	30	-.0615	.231	270	-.5540		
21	.231	170	-.4849	.331	90	-.5177	.431	10	.1628	1.131	20	.0249	.331	270	-.5575		
22	.231	160	-.4704	.331	80	-.5249	.431	0	.1713	1.131	10	.0795	.431	270	-.5478		
23	.231	150	-.5077	.331	70	-.5986	.531	180	-.5305	1.131	0	.1024	.531	270	-.6116		
24	.231	140	-.5240	.331	60	-.4839	.531	90	-.5940				.731	270	-.5972		
25	.231	130	-.5208	.331	50	-.1851	.531	0	.1612	1.631	90	-.7212	.931	270	-.6829		
26	.231	120	-.5440	.331	40	.0135	.731	180	-.5533	1.631	0	-.0422	1.131	270	-.7179		
27	.231	110	-.5392	.331	30	.1171	.731	90	-.5893	2.131	180	-.2235	1.631	270	-.7518		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 84 ALPHA 22 MACH .505 Q 322.415 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4686	.231	100	-.5426	.331	20	.1369	.731	0	.0856	2.131	90	-.5552		
2	.161	170	-.5081	.231	90	-.5711	.331	10	.2584	.931	180	-.6110	2.131	0	.0962		
3	.161	160	-.4813	.231	80	-.5011	.331	0	.2430	.931	90	-.5820	0.000		.9539	-.45	0.00
4	.161	150	-.4922	.231	70	-.5429	.431	180	-.5061	.931	0	.0671	0.000		1.0263	-.40	0.00
5	.161	140	-.5537	.231	60	-.5671	.431	170	-.5584	1.131	180	-.5781	0.000		1.0485	-.30	0.00
6	.161	130	-.5408	.231	50	-.6397	.431	160	-.5893	1.131	170	-.5499	0.000		1.0392	-.20	0.00
7	.161	120	-.5599	.231	40	-.6303	.431	150	-.5649	1.131	160	-.5548	0.000		1.0080	-.10	0.00
8	.161	110	-.5559	.231	30	-.6029	.431	140	-.5494	1.131	150	-.5974	0.000		.9416	0.00	0.00
9	.161	100	-.5465	.231	20	-.4566	.431	130	-.5742	1.131	140	-.6243	0.000		.8862	.10	0.00
10	.161	90	-.5501	.231	10	-.3310	.431	120	-.5878	1.131	130	-.6392	0.000		.8036	.20	0.00
11	.161	80	-.5342	.231	0	-.3173	.431	110	-.5700	1.131	120	-.6556	0.000		.6857	.30	0.00
12	.161	70	-.5577	.331	180	-.5383	.431	100	-.6033	1.131	110	-.6854	0.000		.4762	.40	0.00
13	.161	60	-.5320	.331	170	-.5191	.431	90	-.5599	1.131	100	-.6902	0.000		.2742	.45	0.00
14	.161	50	-.5367	.331	160	-.5076	.431	80	-.5525	1.131	90	-.6327	0.000		.9348	0.00	.10
15	.161	40	-.6099	.331	150	-.5697	.431	70	-.6385	1.131	80	-.6114	0.000		.9123	0.00	.20
16	.161	30	-.5928	.331	140	-.5484	.431	60	-.5138	1.131	70	-.4945	0.000		.8615	0.00	.30
17	.161	20	-.6417	.331	130	-.5902	.431	50	-.2676	1.131	60	-.3984	0.000		.7219	0.00	.40
18	.161	10	-.6805	.331	120	-.5689	.431	40	-.0696	1.131	50	-.2858	0.000		.5342	0.00	.45
19	.161	0	-.6718	.331	110	-.5415	.431	30	.0730	1.131	40	-.1761	.131	270	-.5548		
20	.231	180	-.4730	.331	100	-.5195	.431	20	.0400	1.131	30	-.0740	.231	270	-.5485		
21	.231	170	-.4853	.331	90	-.5675	.431	10	.1702	1.131	20	-.0020	.331	270	-.5408		
22	.231	160	-.4867	.331	80	-.5191	.431	0	.1833	1.131	10	.0546	.431	270	-.5672		
23	.231	150	-.4762	.331	70	-.5126	.531	180	-.5088	1.131	0	.0691	.531	270	-.5657		
24	.231	140	-.5656	.331	60	-.6123	.531	90	-.6374				.731	270	-.6093		
25	.231	130	-.5711	.331	50	-.5646	.531	0	.1210	1.631	90	-.6388	.931	270	-.6443		
26	.231	120	-.5849	.331	40	-.2616	.731	180	-.5917	1.631	0	-.0692	1.131	270	-.6661		
27	.231	110	-.5501	.331	30	-.0327	.731	90	-.5870	2.131	180	-.1037	1.631	270	-.6443		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 85 ALPHA 24 MACH .506 Q 323.218 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4721	.231	100	-.5116	.331	20	.2088	.731	0	.1171	2.131	90	-.6260		
2	.161	170	-.4558	.231	90	-.5080	.331	10	.2308	.931	180	-.5986	2.131	0	.1104		
3	.161	160	-.4894	.231	80	-.5246	.331	0	.2324	.931	90	-.5978	0.000		.9679	-.45	0.00
4	.161	150	-.4869	.231	70	-.4785	.431	180	-.4827	.931	0	.1171	0.000		1.0576	-.40	0.00
5	.161	140	-.5286	.231	60	-.5541	.431	170	-.5407	1.131	180	-.5437	0.000		1.0633	-.30	0.00
6	.161	130	-.5451	.231	50	-.5902	.431	160	-.5218	1.131	170	-.5670	0.000		1.0417	-.20	0.00
7	.161	120	-.5436	.231	40	-.5617	.431	150	-.5449	1.131	160	-.5529	0.000		.9765	-.10	0.00
8	.161	110	-.5454	.231	30	-.2916	.431	140	-.5619	1.131	150	-.5814	0.000		.9244	0.00	0.00
9	.161	100	-.5256	.231	20	.2084	.431	130	-.6574	1.131	140	-.6215	0.000		.8673	.10	0.00
10	.161	90	-.5303	.231	10	.3171	.431	120	-.5743	1.131	130	-.6496	0.000		.7737	.20	0.00
11	.161	80	-.5003	.231	0	.1976	.431	110	-.5384	1.131	120	-.6997	0.000		.6798	.30	0.00
12	.161	70	-.4330	.331	180	-.4526	.431	100	-.4901	1.131	110	-.6973	0.000		.4864	.40	0.00
13	.161	60	-.5230	.331	170	-.5059	.431	90	-.5461	1.131	100	-.7334	0.000		.2373	.45	0.00
14	.161	50	-.5321	.331	160	-.5243	.431	80	-.5662	1.131	90	-.7009	0.000		.9225	0.00	.10
15	.161	40	-.6246	.331	150	-.5268	.431	70	-.5299	1.131	80	-.6211	0.000		.9073	0.00	.20
16	.161	30	-.6078	.331	140	-.5369	.431	60	-.3514	1.131	70	-.5241	0.000		.8409	0.00	.30
17	.161	20	-.6032	.331	130	-.5423	.431	50	-.1420	1.131	60	-.4074	0.000		.7058	0.00	.40
18	.161	10	-.4468	.331	120	-.5743	.431	40	-.0191	1.131	50	-.2698	0.000		.5415	0.00	.45
19	.161	0	-.4323	.331	110	-.5876	.431	30	.0504	1.131	40	-.1740	.161	270	-.5669		
20	.231	180	-.5089	.331	100	-.5833	.431	20	-.0056	1.131	30	-.0341	.231	270	-.5572		
21	.231	170	-.5191	.331	90	-.5693	.431	10	.1497	1.131	20	.0072	.331	270	-.6097		
22	.231	160	-.5217	.331	80	-.5837	.431	0	.1756	1.131	10	.0834	.431	270	-.5860		
23	.231	150	-.5154	.331	70	-.5880	.531	180	-.5415	1.131	0	.1131	.531	270	-.5968		
24	.231	140	-.6079	.331	60	-.5830	.531	90	-.6411				.731	270	-.6322		
25	.231	130	-.5966	.331	50	-.3478	.531	0	.1563	1.631	90	-.7053	.931	270	-.6120		
26	.231	120	-.5900	.331	40	-.0571	.731	180	-.5507	1.631	0	.0084	1.131	270	-.7044		
27	.231	110	-.5375	.331	30	.1461	.731	90	-.5774	2.131	180	-.2486	1.631	270	-.7141		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 127 ALPHA 2 MACH .607 @ 431.256 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4211	.231	100	-.4773	.331	20	-.4994	.731	0	-.5322	2.131	90	-.0649		
2	.161	170	-.4106	.231	90	-.4840	.331	10	-.5226	.931	180	-.5073	2.131	0	.0259		
3	.161	160	-.4061	.231	80	-.4867	.331	0	-.5067	.931	90	-.5362	0.000		.7134	-.45	0.00
4	.161	150	-.4232	.231	70	-.4835	.431	180	-.4444	.931	0	-.5401	0.000		.8927	-.40	0.00
5	.161	140	-.4115	.231	60	-.4886	.431	170	-.4308	1.131	180	-.5022	0.000		1.0254	-.30	0.00
6	.161	130	-.4320	.231	50	-.4900	.431	160	-.4771	1.131	170	-.5301	0.000		1.0849	-.20	0.00
7	.161	120	-.4301	.231	40	-.4970	.431	150	-.4383	1.131	160	-.5127	0.000		1.1131	-.10	0.00
8	.161	110	-.4374	.231	30	-.5032	.431	140	-.4369	1.131	150	-.5230	0.000		1.1131	0.00	0.00
9	.161	100	-.4368	.231	20	-.4803	.431	130	-.4262	1.131	140	-.5052	0.000		1.1000	.10	0.00
10	.161	90	-.4047	.231	10	-.4819	.431	120	-.4583	1.131	130	-.5127	0.000		1.0700	.20	0.00
11	.161	80	-.4715	.231	0	-.5073	.431	110	-.4832	1.131	120	-.5310	0.000		1.0013	.30	0.00
12	.161	70	-.4710	.331	180	-.4198	.431	100	-.4612	1.131	110	-.5184	0.000		.8593	.40	0.00
13	.161	60	-.4710	.331	170	-.4246	.431	90	-.4739	1.131	100	-.5172	0.000		.6549	.45	0.00
14	.161	50	-.4693	.331	160	-.4246	.431	80	-.4815	1.131	90	-.5374	0.000		1.0994	0.00	.10
15	.161	40	-.4769	.331	150	-.4292	.431	70	-.4765	1.131	80	-.5355	0.000		1.0635	0.00	.20
16	.161	30	-.4734	.331	140	-.4411	.431	60	-.4913	1.131	70	-.5425	0.000		1.0068	0.00	.30
17	.161	20	-.4986	.331	130	-.4452	.431	50	-.5003	1.131	60	-.5614	0.000		.8642	0.00	.40
18	.161	10	-.4826	.331	120	-.4535	.431	40	-.4873	1.131	50	-.5374	0.000		.6753	0.00	.45
19	.161	0	-.5067	.331	110	-.4835	.431	30	-.5327	1.131	40	-.5743	.161	270	-.4824		
20	.231	180	-.4150	.331	100	-.4746	.431	20	-.5026	1.131	30	-.5671	.231	270	-.4797		
21	.231	170	-.4195	.331	90	-.4846	.431	10	-.5075	1.131	20	-.5524	.331	270	-.4539		
22	.231	160	-.4309	.331	80	-.4805	.431	0	-.5084	1.131	10	-.5770	.431	270	-.4803		
23	.231	150	-.4035	.331	70	-.4765	.531	180	-.4351	1.131	0	-.5449	.531	270	-.4920		
24	.231	140	-.4420	.331	60	-.4830	.531	90	-.4826				.731	270	-.5065		
25	.231	130	-.4268	.331	50	-.4781	.531	0	-.5135	1.631	90	-.3769	.931	270	-.5310		
26	.231	120	-.4333	.331	40	-.4816	.731	180	-.4864	1.631	0	-.3366	1.131	270	-.5519		
27	.231	110	-.4493	.331	30	-.4994	.731	90	-.4922	2.131	180	-.1599	1.631	270	-.3636		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 128 ALPHA 4 MACH .608 @ 432.163 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3896	.231	100	-.5177	.331	20	-.5477	.731	0	-.5721	2.131	90	.0039		
2	.161	170	-.3953	.231	90	-.5330	.331	10	-.5734	.931	180	-.5190	2.131	0	.0741		
3	.161	160	-.4040	.231	80	-.5446	.331	0	-.5474	.931	90	-.5811	0.000		.7309	-.45	0.00
4	.161	150	-.4169	.231	70	-.5522	.431	180	-.4523	.931	0	-.6024	0.000		.8996	-.40	0.00
5	.161	140	-.4423	.231	60	-.5468	.431	170	-.4350	1.131	180	-.5271	0.000		1.0271	-.30	0.00
6	.161	130	-.4618	.231	50	-.5465	.431	160	-.4359	1.131	170	-.5316	0.000		1.0782	-.20	0.00
7	.161	120	-.4526	.231	40	-.5462	.431	150	-.4315	1.131	160	-.5025	0.000		1.1006	-.10	0.00
8	.161	110	-.4958	.231	30	-.5780	.431	140	-.4911	1.131	150	-.5226	0.000		1.0957	0.00	0.00
9	.161	100	-.5177	.231	20	-.5621	.431	130	-.5009	1.131	140	-.5418	0.000		1.0832	.10	0.00
10	.161	90	-.5293	.231	10	-.5511	.431	120	-.4928	1.131	130	-.5421	0.000		1.0489	.20	0.00
11	.161	80	-.5283	.231	0	-.5403	.431	110	-.5240	1.131	120	-.5586	0.000		.9719	.30	0.00
12	.161	70	-.5453	.331	180	-.4304	.431	100	-.5263	1.131	110	-.5691	0.000		.8224	.40	0.00
13	.161	60	-.5447	.331	170	-.4487	.431	90	-.5275	1.131	100	-.5649	0.000		.6272	.45	0.00
14	.161	50	-.5804	.331	160	-.4301	.431	80	-.5853	1.131	90	-.5934	0.000		1.0913	0.00	.10
15	.161	40	-.5588	.331	150	-.4471	.431	70	-.5488	1.131	80	-.5917	0.000		1.0710	0.00	.20
16	.161	30	-.5472	.331	140	-.4657	.431	60	-.5556	1.131	70	-.5646	0.000		1.0068	0.00	.30
17	.161	20	-.5545	.331	130	-.4625	.431	50	-.5501	1.131	60	-.5838	0.000		.8601	0.00	.40
18	.161	10	-.5364	.331	120	-.4821	.431	40	-.5468	1.131	50	-.5553	0.000		.6670	0.00	.45
19	.161	0	-.5337	.331	110	-.5021	.431	30	-.5679	1.131	40	-.5915	.161	270	-.5481		
20	.231	180	-.4275	.331	100	-.5101	.431	20	-.5468	1.131	30	-.5959	.231	270	-.5283		
21	.231	170	-.4150	.331	90	-.5395	.431	10	-.5644	1.131	20	-.5394	.331	270	-.5304		
22	.231	160	-.4358	.331	80	-.5699	.431	0	-.5725	1.131	10	-.5211	.431	270	-.5562		
23	.231	150	-.4312	.331	70	-.5364	.531	180	-.4593	1.131	0	-.5538	.531	270	-.5481		
24	.231	140	-.4372	.331	60	-.5497	.531	90	-.5396				.731	270	-.5614		
25	.231	130	-.4777	.331	50	-.5627	.531	0	-.5639	1.631	90	-.2812	.931	270	-.5832		
26	.231	120	-.4826	.331	40	-.5460	.731	180	-.5188	1.631	0	-.0806	1.131	270	-.5679		
27	.231	110	-.5139	.331	30	-.5511	.731	90	-.5705	2.131	180	-.1121	1.631	270	-.3034		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 125 ALPHA -1 MACH .607 Q 430.980 MODEL FLAT FACE

PORT.	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4715	.231	100	-.4590	.331	20	-.4577	.731	0	-.4836	2.131	90	-.1043		
2	.161	170	-.4870	.231	90	-.4776	.331	10	-.4302	.931	180	-.5290	2.131	0	-.2112		
3	.161	160	-.4681	.231	80	-.4417	.331	0	-.4360	.931	90	-.5082	0.000		.6850	-.45	0.00
4	.161	150	-.4574	.231	70	-.4506	.431	180	-.4855	.931	0	-.4980	0.000		.8574	-.40	0.00
5	.161	140	-.4658	.231	60	-.4398	.431	170	-.4728	1.131	180	-.5396	0.000		.9993	-.30	0.00
6	.161	130	-.4512	.231	50	-.4387	.431	160	-.4913	1.131	170	-.5485	0.000		1.0578	-.20	0.00
7	.161	120	-.4577	.231	40	-.4263	.431	150	-.4899	1.131	160	-.5127	0.000		1.0957	-.10	0.00
8	.161	110	-.4455	.231	30	-.4209	.431	140	-.4653	1.131	150	-.5193	0.000		1.1044	0.00	0.00
9	.161	100	-.4473	.231	20	-.4117	.431	130	-.4710	1.131	140	-.5413	0.000		1.0915	.10	0.00
10	.161	90	-.4338	.231	10	-.4371	.431	120	-.4728	1.131	130	-.5338	0.000		1.0656	.20	0.00
11	.161	80	-.4515	.231	0	-.4190	.431	110	-.4705	1.131	120	-.5260	0.000		1.0134	.30	0.00
12	.161	70	-.4338	.331	180	-.4522	.431	100	-.4682	1.131	110	-.5263	0.000		.8711	.40	0.00
13	.161	60	-.4347	.331	170	-.4746	.431	90	-.4435	1.131	100	-.5296	0.000		.6923	.45	0.00
14	.161	50	-.4236	.331	160	-.4714	.431	80	-.4569	1.131	90	-.5365	0.000		1.0881	0.00	.10
15	.161	40	-.4377	.331	150	-.4792	.431	70	-.4632	1.131	80	-.5206	0.000		1.0654	0.00	.20
16	.161	30	-.4201	.331	140	-.4806	.431	60	-.4490	1.131	70	-.5227	0.000		1.0013	0.00	.30
17	.161	20	-.4225	.331	130	-.4795	.431	50	-.4583	1.131	60	-.5160	0.000		.8694	0.00	.40
18	.161	10	-.4293	.331	120	-.4571	.431	40	-.4516	1.131	50	-.5230	0.000		.6844	0.00	.45
19	.161	0	-.4014	.331	110	-.4581	.431	30	-.4360	1.131	40	-.5257	.161	270	-.4567		
20	.231	180	-.4667	.331	100	-.4584	.431	20	-.4371	1.131	30	-.5139	.231	270	-.4652		
21	.231	170	-.4767	.331	90	-.4822	.431	10	-.4592	1.131	20	-.5245	.331	270	-.4760		
22	.231	160	-.4737	.331	80	-.4479	.431	0	-.4238	1.131	10	-.5175	.431	270	-.4703		
23	.231	150	-.4602	.331	70	-.4433	.531	180	-.4821	1.131	0	-.4968	.531	270	-.4731		
24	.231	140	-.4432	.331	60	-.4884	.531	90	-.5197				.731	270	-.5016		
25	.231	130	-.4640	.331	50	-.4476	.531	0	-.4444	1.631	90	-.4039	.931	270	-.5176		
26	.231	120	-.4640	.331	40	-.4467	.731	180	-.5047	1.631	0	-.4159	1.131	270	-.5488		
27	.231	110	-.4721	.331	30	-.4506	.731	90	-.5021	2.131	180	-.0250	1.631	270	-.3793		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 126 ALPHA 0 MACH .608 Q 432.073 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4392	.231	100	-.4518	.331	20	-.4524	.731	0	-.4910	2.131	90	-.1336		
2	.161	170	-.4278	.231	90	-.4248	.331	10	-.4432	.931	180	-.5060	2.131	0	-.1124		
3	.161	160	-.4451	.231	80	-.4405	.331	0	-.4452	.931	90	-.4904	0.000		.6854	-.45	0.00
4	.161	150	-.4405	.231	70	-.4310	.431	180	-.4484	.931	0	-.5009	0.000		.8649	-.40	0.00
5	.161	140	-.4338	.231	60	-.4488	.431	170	-.4727	1.131	180	-.5224	0.000		.9992	-.30	0.00
6	.161	130	-.4491	.231	50	-.4386	.431	160	-.4553	1.131	170	-.5206	0.000		1.0593	-.20	0.00
7	.161	120	-.4300	.231	40	-.4510	.431	150	-.4663	1.131	160	-.5281	0.000		1.0936	-.10	0.00
8	.161	110	-.4373	.231	30	-.4418	.431	140	-.4689	1.131	150	-.5122	0.000		1.1011	0.00	0.00
9	.161	100	-.4334	.231	20	-.4353	.431	130	-.4490	1.131	140	-.5099	0.000		1.0991	.10	0.00
10	.161	90	-.4413	.231	10	-.4529	.431	120	-.4547	1.131	130	-.5173	0.000		1.0663	.20	0.00
11	.161	80	-.4237	.231	0	-.4329	.431	110	-.4516	1.131	120	-.5284	0.000		1.0087	.30	0.00
12	.161	70	-.4484	.331	180	-.4510	.431	100	-.4680	1.131	110	-.5242	0.000		.8705	.40	0.00
13	.161	60	-.4213	.331	170	-.4615	.431	90	-.4559	1.131	100	-.5239	0.000		.7043	.45	0.00
14	.161	50	-.4436	.331	160	-.4634	.431	80	-.4738	1.131	90	-.5314	0.000		1.0997	0.00	.10
15	.161	40	-.4589	.331	150	-.4593	.431	70	-.4831	1.131	80	-.5341	0.000		1.0718	0.00	.20
16	.161	30	-.4288	.331	140	-.4329	.431	60	-.4412	1.131	70	-.5134	0.000		1.0064	0.00	.30
17	.161	20	-.4311	.331	130	-.4275	.431	50	-.4504	1.131	60	-.5149	0.000		.8687	0.00	.40
18	.161	10	-.4400	.331	120	-.4550	.431	40	-.4634	1.131	50	-.5164	0.000		.6781	0.00	.45
19	.161	0	-.4436	.331	110	-.4316	.431	30	-.4443	1.131	40	-.5081	.161	270	-.4419		
20	.231	180	-.4705	.331	100	-.4523	.431	20	-.4550	1.131	30	-.5276	.231	270	-.4642		
21	.231	170	-.4563	.331	90	-.4588	.431	10	-.4401	1.131	20	-.5191	.331	270	-.4603		
22	.231	160	-.4284	.331	80	-.4316	.431	0	-.4475	1.131	10	-.5137	.431	270	-.4421		
23	.231	150	-.4503	.331	70	-.4518	.531	180	-.4782	1.131	0	-.5401	.531	270	-.4704		
24	.231	140	-.4522	.331	60	-.4534	.531	90	-.4724				.731	270	-.4965		
25	.231	130	-.4532	.331	50	-.4523	.531	0	-.4599	1.631	90	-.3890	.931	270	-.5127		
26	.231	120	-.4611	.331	40	-.4706	.731	180	-.5062	1.631	0	-.4001	1.131	270	-.5348		
27	.231	110	-.4484	.331	30	-.4580	.731	90	-.4782	2.131	180	-.1043	1.631	270	-.4012		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 132 ALPHA 10 MACH .607 Q 431.495 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4211	.231	100	-.6065	.331	20	-.6554	.731	0	-.5143	2.131	90	-.1417		
2	.161	170	-.4444	.231	90	-.6373	.331	10	-.6479	.931	180	-.5558	2.131	0	.0230		
3	.161	160	-.4563	.231	80	-.6521	.331	0	-.6496	.931	90	-.6208	0.000		.8265	-.45	0.00
4	.161	150	-.4761	.231	70	-.6554	.431	180	-.4896	.931	0	-.2000	0.000		.9773	-.40	0.00
5	.161	140	-.5142	.231	60	-.6410	.431	170	-.4820	1.131	180	-.5157	0.000		1.0764	-.30	0.00
6	.161	130	-.5478	.231	50	-.6548	.431	160	-.5173	1.131	170	-.5346	0.000		1.1026	-.20	0.00
7	.161	120	-.5613	.231	40	-.6462	.431	150	-.5240	1.131	160	-.5190	0.000		1.1008	-.10	0.00
8	.161	110	-.6044	.231	30	-.6402	.431	140	-.5622	1.131	150	-.5532	0.000		1.0900	0.00	0.00
9	.161	100	-.6222	.231	20	-.6594	.431	130	-.5790	1.131	140	-.5716	0.000		1.0499	.10	0.00
10	.161	90	-.6341	.231	10	-.6453	.431	120	-.5926	1.131	130	-.5863	0.000		.9967	.20	0.00
11	.161	80	-.6178	.231	0	-.6119	.431	110	-.5963	1.131	120	-.5809	0.000		.9175	.30	0.00
12	.161	70	-.6317	.331	180	-.4597	.431	100	-.6027	1.131	110	-.6016	0.000		.7375	.40	0.00
13	.161	60	-.6344	.331	170	-.4484	.431	90	-.6238	1.131	100	-.5490	0.000		.5414	.45	0.00
14	.161	50	-.6439	.331	160	-.4797	.431	80	-.6253	1.131	90	-.5208	0.000		1.0772	0.00	.10
15	.161	40	-.6642	.331	150	-.5183	.431	70	-.6525	1.131	80	-.3913	0.000		1.0473	0.00	.20
16	.161	30	-.6498	.331	140	-.5342	.431	60	-.6499	1.131	70	-.3124	0.000		.9964	0.00	.30
17	.161	20	-.6420	.331	130	-.5444	.431	50	-.6574	1.131	60	-.2625	0.000		.8492	0.00	.40
18	.161	10	-.6320	.331	120	-.5860	.431	40	-.6548	1.131	50	-.1751	0.000		.6429	0.00	.45
19	.161	0	-.6350	.331	110	-.5930	.431	30	-.6612	1.131	40	-.0952	.161	270	-.6447		
20	.231	180	-.4431	.331	100	-.6051	.431	20	-.6499	1.131	30	-.0589	.231	270	-.6176		
21	.231	170	-.4379	.331	90	-.6400	.431	10	-.6652	1.131	20	-.0339	.331	270	-.6377		
22	.231	160	-.4837	.331	80	-.6467	.431	0	-.6409	1.131	10	.0006	.431	270	-.6203		
23	.231	150	-.5126	.331	70	-.6467	.531	180	-.5315	1.131	0	.0225	.531	270	-.6389		
24	.231	140	-.5302	.331	60	-.6462	.531	90	-.6311				.731	270	-.6456		
25	.231	130	-.5432	.331	50	-.6456	.531	0	-.6606	1.631	90	-.2138	.931	270	-.6334		
26	.231	120	-.5711	.331	40	-.6310	.731	180	-.5304	1.631	0	.0268	1.131	270	-.5391		
27	.231	110	-.6098	.331	30	-.6524	.731	90	-.6490	2.131	180	-.0531	1.631	270	-.1978		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 133 ALPHA 12 MACH .607 Q 431.328 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4367	.231	100	-.6210	.331	20	-.6305	.731	0	-.3606	2.131	90	-.2311		
2	.161	170	-.4430	.231	90	-.6421	.331	10	-.6438	.931	180	-.5550	2.131	0	.0181		
3	.161	160	-.4925	.231	80	-.6472	.331	0	-.6614	.931	90	-.6247	0.000		.8521	-.45	0.00
4	.161	150	-.5017	.231	70	-.6316	.431	180	-.5010	.931	0	-.0340	0.000		.9973	-.40	0.00
5	.161	140	-.5375	.231	60	-.6324	.431	170	-.5054	1.131	180	-.5141	0.000		1.0843	-.30	0.00
6	.161	130	-.5618	.231	50	-.6383	.431	160	-.5071	1.131	170	-.5105	0.000		1.1143	-.20	0.00
7	.161	120	-.5589	.231	40	-.6553	.431	150	-.5456	1.131	160	-.5429	0.000		1.0913	-.10	0.00
8	.161	110	-.6160	.231	30	-.6435	.431	140	-.5749	1.131	150	-.5535	0.000		1.0739	0.00	0.00
9	.161	100	-.6168	.231	20	-.6308	.431	130	-.5804	1.131	140	-.5571	0.000		1.0270	.10	0.00
10	.161	90	-.6333	.231	10	-.6516	.431	120	-.6137	1.131	130	-.5814	0.000		.9717	.20	0.00
11	.161	80	-.6358	.231	0	-.6507	.431	110	-.6252	1.131	120	-.6009	0.000		.8798	.30	0.00
12	.161	70	-.6385	.331	180	-.4872	.431	100	-.6562	1.131	110	-.5986	0.000		.7034	.40	0.00
13	.161	60	-.6312	.331	170	-.4855	.431	90	-.6226	1.131	100	-.5622	0.000		.4947	.45	0.00
14	.161	50	-.6206	.331	160	-.4872	.431	80	-.6293	1.131	90	-.4699	0.000		1.0683	0.00	.10
15	.161	40	-.6130	.331	150	-.5104	.431	70	-.6218	1.131	80	-.4098	0.000		1.0363	0.00	.20
16	.161	30	-.6249	.331	140	-.5428	.431	60	-.6363	1.131	70	-.2812	0.000		.9799	0.00	.30
17	.161	20	-.6125	.331	130	-.5636	.431	50	-.6336	1.131	60	-.2190	0.000		.8326	0.00	.40
18	.161	10	-.6303	.331	120	-.6089	.431	40	-.6556	1.131	50	-.1442	0.000		.6344	0.00	.45
19	.161	0	-.6358	.331	110	-.6229	.431	30	-.6525	1.131	40	-.0637	.161	270	-.6412		
20	.231	180	-.4503	.331	100	-.6121	.431	20	-.6629	1.131	30	-.0273	.231	270	-.6432		
21	.231	170	-.4481	.331	90	-.6302	.431	10	-.6632	1.131	20	.0255	.331	270	-.6441		
22	.231	160	-.4749	.331	80	-.6413	.431	0	-.6142	1.131	10	.0204	.431	270	-.6458		
23	.231	150	-.5223	.331	70	-.6715	.531	180	-.5338	1.131	0	.0358	.531	270	-.6677		
24	.231	140	-.5331	.331	60	-.6405	.531	90	-.6339				.731	270	-.6453		
25	.231	130	-.5397	.331	50	-.6426	.531	0	-.6533	1.631	90	-.2689	.931	270	-.6220		
26	.231	120	-.6025	.331	40	-.6526	.731	180	-.5663	1.631	0	.0084	1.131	270	-.4869		
27	.231	110	-.6241	.331	30	-.6516	.731	90	-.6710	2.131	180	-.0640	1.631	270	-.2686		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 129 ALPHA 6 MACH .607 Q 431.156 MODEL FLAT FACE

PORT.	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4476	.231	100	-.5735	.331	20	-.6122	.731	0	-.6222	2.131	90	-.0023		
2	.161	170	-.4391	.231	90	-.5932	.331	10	-.6183	.931	180	-.5477	2.131	0	.0594		
3	.161	160	-.4078	.231	80	-.5900	.331	0	-.6177	.931	90	-.6123	0.000		.7610	-.45	0.00
4	.161	150	-.4573	.231	70	-.5911	.431	180	-.4433	.931	0	-.5510	0.000		.9421	-.40	0.00
5	.161	140	-.4973	.231	60	-.6032	.431	170	-.4935	1.131	180	-.5170	0.000		1.0533	-.36	0.00
6	.161	130	-.4957	.231	50	-.6327	.431	160	-.4766	1.131	170	-.5432	0.000		1.0956	-.20	0.00
7	.161	120	-.5019	.231	40	-.6573	.431	150	-.4763	1.131	160	-.5185	0.000		1.1115	-.10	0.00
8	.161	110	-.5355	.231	30	-.6145	.431	140	-.5120	1.131	150	-.5279	0.000		1.0967	0.00	0.00
9	.161	100	-.5643	.231	20	-.6089	.431	130	-.5267	1.131	140	-.5408	0.000		1.0754	.10	0.00
10	.161	90	-.5818	.231	10	-.5975	.431	120	-.5499	1.131	130	-.5569	0.000		1.0294	.20	0.00
11	.161	80	-.6024	.231	0	-.6078	.431	110	-.5757	1.131	120	-.5813	0.000		.9628	.30	0.00
12	.161	70	-.6078	.331	180	-.4199	.431	100	-.5910	1.131	110	-.5831	0.000		.8018	.40	0.00
13	.161	60	-.5754	.331	170	-.4218	.431	90	-.5789	1.131	100	-.5711	0.000		.6382	.45	0.00
14	.161	50	-.5597	.331	160	-.4588	.431	80	-.5792	1.131	90	-.5765	0.000		1.0891	0.00	.10
15	.161	40	-.6035	.331	150	-.4628	.431	70	-.6035	1.131	80	-.5645	0.000		1.0632	0.00	.20
16	.161	30	-.5913	.331	140	-.4828	.431	60	-.5807	1.131	70	-.5320	0.000		1.0015	0.00	.30
17	.161	20	-.5116	.331	130	-.5103	.431	50	-.6128	1.131	60	-.5089	0.000		.8501	0.00	.40
18	.161	10	-.5957	.331	120	-.5349	.431	40	-.6123	1.131	50	-.4930	0.000		.6527	0.00	.45
19	.161	0	-.5959	.331	110	-.5414	.431	30	-.5969	1.131	40	-.4389	.161	270	-.5759		
20	.231	180	-.4334	.331	100	-.5770	.431	20	-.6125	1.131	30	-.4004	.231	270	-.5847		
21	.231	170	-.3944	.331	90	-.5951	.431	10	-.6244	1.131	20	-.3427	.331	270	-.5859		
22	.231	160	-.4231	.331	80	-.5813	.431	0	-.6191	1.131	10	-.3487	.431	270	-.5733		
23	.231	150	-.4491	.331	70	-.6024	.531	180	-.4798	1.131	0	-.3364	.531	270	-.5984		
24	.231	140	-.4758	.331	60	-.5951	.531	90	-.5815				.731	270	-.6050		
25	.231	130	-.5158	.331	50	-.6062	.531	0	-.6122	1.631	90	-.2291	.931	270	-.6294		
26	.231	120	-.5239	.331	40	-.6104	.731	180	-.5273	1.631	0	.0255	1.131	270	-.5774		
27	.231	110	-.5244	.331	30	-.5824	.731	90	-.5855	2.131	180	-.0661	1.631	270	-.1873		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 131 ALPHA 8 MACH .607 Q 431.073 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3942	.231	100	-.5936	.331	20	-.6500	.731	0	-.6112	2.131	90	-.0690		
2	.161	170	-.4397	.231	90	-.6306	.331	10	-.6569	.931	180	-.5637	2.131	0	.0250		
3	.161	160	-.4011	.231	80	-.6469	.331	0	-.6505	.931	90	-.6698	0.000		.7350	-.45	0.00
4	.161	150	-.4435	.231	70	-.6220	.431	180	-.4808	.931	0	-.4074	0.000		.9452	-.40	0.00
5	.161	140	-.4909	.231	60	-.6260	.431	170	-.4680	1.131	180	-.5075	0.000		1.0605	-.30	0.00
6	.161	130	-.5263	.231	50	-.6336	.431	160	-.5080	1.131	170	-.5328	0.000		1.0879	-.20	0.00
7	.161	120	-.5324	.231	40	-.6501	.431	150	-.5150	1.131	160	-.5219	0.000		1.1033	-.10	0.00
8	.161	110	-.5928	.231	30	-.6711	.431	140	-.5573	1.131	150	-.5589	0.000		1.0864	0.00	0.00
9	.161	100	-.6061	.231	20	-.6357	.431	130	-.5616	1.131	140	-.5727	0.000		1.0587	.10	0.00
10	.161	90	-.6161	.231	10	-.6514	.431	120	-.6016	1.131	130	-.6064	0.000		1.0127	.20	0.00
11	.161	80	-.6169	.231	0	-.6403	.431	110	-.5926	1.131	120	-.5724	0.000		.9277	.30	0.00
12	.161	70	-.6250	.331	180	-.4432	.431	100	-.5909	1.131	110	-.5836	0.000		.7661	.40	0.00
13	.161	60	-.6218	.331	170	-.4567	.431	90	-.6135	1.131	100	-.5860	0.000		.5617	.45	0.00
14	.161	50	-.6429	.331	160	-.4723	.431	80	-.6390	1.131	90	-.5535	0.000		1.0833	0.00	.10
15	.161	40	-.6421	.331	150	-.5131	.431	70	-.6421	1.131	80	-.5189	0.000		1.0532	0.00	.20
16	.161	30	-.6459	.331	140	-.5350	.431	60	-.6424	1.131	70	-.4525	0.000		.9848	0.00	.30
17	.161	20	-.6391	.331	130	-.5701	.431	50	-.6630	1.131	60	-.3364	0.000		.8401	0.00	.40
18	.161	10	-.6088	.331	120	-.5439	.431	40	-.6291	1.131	50	-.3575	0.000		.6429	0.00	.45
19	.161	0	-.6031	.331	110	-.5763	.431	30	-.6500	1.131	40	-.2411	.161	270	-.6223		
20	.231	180	-.4172	.331	100	-.6214	.431	20	-.6621	1.131	30	-.2051	.231	270	-.6151		
21	.231	170	-.4376	.331	90	-.6252	.431	10	-.6500	1.131	20	-.1347	.331	270	-.6355		
22	.231	160	-.4349	.331	80	-.6241	.431	0	-.6485	1.131	10	-.1479	.431	270	-.6104		
23	.231	150	-.4809	.331	70	-.6301	.531	180	-.4949	1.131	0	-.1470	.531	270	-.6124		
24	.231	140	-.5066	.331	60	-.6339	.531	90	-.5251				.731	270	-.6483		
25	.231	130	-.5437	.331	50	-.6317	.531	0	-.6616	1.631	90	-.1500	.931	270	-.6419		
26	.231	120	-.5049	.331	40	-.6409	.731	180	-.5184	1.631	0	.0490	1.131	270	-.5597		
27	.231	110	-.5704	.331	30	-.6579	.731	90	-.6453	2.131	180	-.0956	1.631	270	-.1544		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 136 ALPHA 18 MACH .607 Q 431.072 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4076	.231	100	-.5674	.331	20	-.5978	.731	0	.0905	2.131	90	-.4543		
2	.161	170	-.4750	.231	90	-.5534	.331	10	-.5718	.931	180	-.5697	2.131	0	.0448		
3	.161	160	-.4934	.231	80	-.5742	.331	0	-.5535	.931	90	-.5406	0.000		.9571	-.45	0.00
4	.161	150	-.4882	.231	70	-.5372	.431	180	-.4935	.931	0	.0523	0.000		1.0707	-.40	0.00
5	.161	140	-.5121	.231	60	-.5366	.431	170	-.5054	1.131	180	-.5255	0.000		1.1214	-.30	0.00
6	.161	130	-.5302	.231	50	-.5350	.431	160	-.5135	1.131	170	-.5373	0.000		1.1036	-.20	0.00
7	.161	120	-.5470	.231	40	-.5536	.431	150	-.5361	1.131	160	-.5706	0.000		1.0748	-.10	0.00
8	.161	110	-.5549	.231	30	-.5582	.431	140	-.5370	1.131	150	-.5688	0.000		1.0232	0.00	0.00
9	.161	100	-.5570	.231	20	-.5439	.431	130	-.5570	1.131	140	-.5806	0.000		.9912	.10	0.00
10	.161	90	-.5570	.231	10	-.5680	.431	120	-.5344	1.131	130	-.5803	0.000		.8948	.20	0.00
11	.161	80	-.5491	.231	0	-.5491	.431	110	-.5523	1.131	120	-.5791	0.000		.7999	.30	0.00
12	.161	70	-.5405	.331	180	-.4724	.431	100	-.5602	1.131	110	-.5821	0.000		.6030	.40	0.00
13	.161	60	-.5063	.331	170	-.5196	.431	90	-.5941	1.131	100	-.5959	0.000		.3686	.45	0.00
14	.161	50	-.5600	.331	160	-.5148	.431	80	-.5671	1.131	90	-.5397	0.000		1.0282	0.00	.10
15	.161	40	-.5573	.331	150	-.5342	.431	70	-.5602	1.131	80	-.4943	0.000		1.0020	0.00	.20
16	.161	30	-.5771	.331	140	-.5658	.431	60	-.6028	1.131	70	-.4071	0.000		.9289	0.00	.30
17	.161	20	-.5733	.331	130	-.5507	.431	50	-.6161	1.131	60	-.3157	0.000		.7973	0.00	.40
18	.161	10	-.5457	.331	120	-.5601	.431	40	-.5729	1.131	50	-.2312	0.000		.6153	0.00	.45
19	.161	0	-.5703	.331	110	-.5798	.431	30	-.4037	1.131	40	-.1419	.161	270	-.5705		
20	.231	180	-.4595	.331	100	-.5388	.431	20	-.3507	1.131	30	-.0779	.231	270	-.5408		
21	.231	170	-.4676	.331	90	-.5372	.431	10	-.3322	1.131	20	-.0253	.331	270	-.5536		
22	.231	160	-.5042	.331	80	-.5509	.431	0	-.2189	1.131	10	.0069	.431	270	-.5918		
23	.231	150	-.5180	.331	70	-.5753	.531	180	-.5411	1.131	0	.0126	.531	270	-.5568		
24	.231	140	-.5188	.331	60	-.5347	.531	90	-.5408				.731	270	-.5973		
25	.231	130	-.5901	.331	50	-.6025	.531	0	.1409	1.631	90	-.4961	.931	270	-.5825		
26	.231	120	-.5644	.331	40	-.5850	.731	180	-.5802	1.631	0	.0403	1.131	270	-.5449		
27	.231	110	-.5625	.331	30	-.5877	.731	90	-.6114	2.131	180	-.1191	1.631	270	-.5216		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 137 ALPHA 20 MACH .607 Q 431.323 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4568	.231	100	-.5269	.331	20	-.4217	.731	0	.0664	2.131	90	-.5411		
2	.161	170	-.4779	.231	90	-.5530	.331	10	-.2648	.931	180	-.5943	2.131	0	.0751		
3	.161	160	-.4966	.231	80	-.5544	.331	0	-.1968	.931	90	-.5799	0.000		.9682	-.45	0.00
4	.161	150	-.4747	.231	70	-.5128	.431	180	-.4886	.931	0	.0484	0.000		1.0561	-.40	0.00
5	.161	140	-.5088	.231	60	-.5125	.431	170	-.4953	1.131	180	-.5607	0.000		1.0922	-.30	0.00
6	.161	130	-.5326	.231	50	-.5395	.431	160	-.5575	1.131	170	-.5850	0.000		1.0774	-.20	0.00
7	.161	120	-.5599	.231	40	-.5063	.431	150	-.5028	1.131	160	-.5730	0.000		1.0521	-.10	0.00
8	.161	110	-.5402	.231	30	-.5304	.431	140	-.5219	1.131	150	-.5847	0.000		.9997	0.00	0.00
9	.161	100	-.5402	.231	20	-.5816	.431	130	-.5549	1.131	140	-.5790	0.000		.9540	.10	0.00
10	.161	90	-.5348	.231	10	-.5706	.431	120	-.5184	1.131	130	-.5922	0.000		.8687	.20	0.00
11	.161	80	-.5391	.231	0	-.5808	.431	110	-.5384	1.131	120	-.6000	0.000		.7567	.30	0.00
12	.161	70	-.5315	.331	180	-.4818	.431	100	-.5650	1.131	110	-.6625	0.000		.5538	.40	0.00
13	.161	60	-.5488	.331	170	-.4953	.431	90	-.5607	1.131	100	-.6409	0.000		.3492	.45	0.00
14	.161	50	-.5310	.331	160	-.4780	.431	80	-.5118	1.131	90	-.5922	0.000		1.0026	0.00	.10
15	.161	40	-.5364	.331	150	-.5279	.431	70	-.5390	1.131	80	-.5484	0.000		.9656	0.00	.20
16	.161	30	-.5559	.331	140	-.5555	.431	60	-.6096	1.131	70	-.4612	0.000		.9103	0.00	.30
17	.161	20	-.5621	.331	130	-.5422	.431	50	-.5303	1.131	60	-.3624	0.000		.7703	0.00	.40
18	.161	10	-.5827	.331	120	-.5544	.431	40	-.4000	1.131	50	-.2656	0.000		.5858	0.00	.45
19	.161	0	-.5648	.331	110	-.5385	.431	30	-.1597	1.131	40	-.1725	.161	270	-.5251		
20	.231	180	-.4660	.331	100	-.5449	.431	20	-.0080	1.131	30	-.0844	.231	270	-.5594		
21	.231	170	-.4890	.331	90	-.5363	.431	10	.0904	1.131	20	-.0394	.331	270	-.5629		
22	.231	160	-.4858	.331	80	-.5358	.431	0	.1474	1.131	10	.0063	.431	270	-.5355		
23	.231	150	-.5359	.331	70	-.5484	.531	180	-.5291	1.131	0	.0303	.531	270	-.5565		
24	.231	140	-.5223	.331	60	-.5236	.531	90	-.5636				.731	270	-.6290		
25	.231	130	-.5044	.331	50	-.5250	.531	0	.1532	1.631	90	-.6186	.931	270	-.5900		
26	.231	120	-.5361	.331	40	-.5719	.731	180	-.5598	1.631	0	.0427	1.131	270	-.6057		
27	.231	110	-.5443	.331	30	-.5412	.731	90	-.6102	2.131	180	-.1965	1.631	270	-.6345		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 134 ALPHA 14 MACH .607 Q 431.326 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4497	.231	100	-.6116	.331	20	-.6140	.731	0	-.1337	2.131	90	-.3178		
2	.161	170	-.4755	.231	90	-.6300	.331	10	-.6099	.931	180	-.5550	2.131	0	.0344		
3	.161	160	-.4877	.231	80	-.6370	.331	0	-.6490	.931	90	-.5754	0.000		.8850	-.45	0.00
4	.161	150	-.5174	.231	70	-.6186	.431	180	-.5048	.931	0	.0649	0.000		1.0282	-.40	0.00
5	.161	140	-.5564	.231	60	-.6208	.431	170	-.5147	1.131	180	-.5186	0.000		1.1035	-.30	0.00
6	.161	130	-.5832	.231	50	-.6175	.431	160	-.5320	1.131	170	-.5496	0.000		1.1085	-.20	0.00
7	.161	120	-.5994	.231	40	-.6289	.431	150	-.5419	1.131	160	-.5384	0.000		1.0878	-.10	0.00
8	.161	110	-.6043	.231	30	-.6181	.431	140	-.5700	1.131	150	-.5333	0.000		1.0657	0.00	0.00
9	.161	100	-.6203	.231	20	-.6265	.431	130	-.5853	1.131	140	-.5709	0.000		1.0192	.10	0.00
10	.161	90	-.6233	.231	10	-.6200	.431	120	-.6102	1.131	130	-.5844	0.000		.9566	.20	0.00
11	.161	80	-.6339	.231	0	-.6186	.431	110	-.6196	1.131	120	-.5844	0.000		.8568	.30	0.00
12	.161	70	-.6160	.331	180	-.4874	.431	100	-.6169	1.131	110	-.5790	0.000		.6554	.40	0.00
13	.161	60	-.6190	.331	170	-.4945	.431	90	-.6441	1.131	100	-.5048	0.000		.4534	.45	0.00
14	.161	50	-.6190	.331	160	-.5179	.431	80	-.6339	1.131	90	-.4630	0.000		1.0532	0.00	.10
15	.161	40	-.6312	.331	150	-.5506	.431	70	-.6467	1.131	80	-.3912	0.000		1.0232	0.00	.20
16	.161	30	-.6312	.331	140	-.5865	.431	60	-.6470	1.131	70	-.2951	0.000		.9630	0.00	.30
17	.161	20	-.5905	.331	130	-.5703	.431	50	-.6001	1.131	60	-.2335	0.000		.8163	0.00	.40
18	.161	10	-.5903	.331	120	-.5730	.431	40	-.6177	1.131	50	-.1547	0.000		.6283	0.00	.45
19	.161	0	-.6163	.331	110	-.5857	.431	30	-.6623	1.131	40	-.0919	.161	270	-.6220		
20	.231	180	-.4427	.331	100	-.5965	.431	20	-.6079	1.131	30	-.0505	.231	270	-.5958		
21	.231	170	-.4774	.331	90	-.6364	.431	10	-.6226	1.131	20	-.0075	.331	270	-.6176		
22	.231	160	-.5104	.331	80	-.6513	.431	0	-.6504	1.131	10	.0162	.431	270	-.6348		
23	.231	150	-.5264	.331	70	-.6024	.531	180	-.5210	1.131	0	.0294	.531	270	-.6103		
24	.231	140	-.5483	.331	60	-.6202	.531	90	-.6412				.731	270	-.6362		
25	.231	130	-.5886	.331	50	-.6078	.531	0	-.4761	1.631	90	-.3464	.931	270	-.6246		
26	.231	120	-.5930	.331	40	-.6265	.731	180	-.5673	1.631	0	.0162	1.131	270	-.4660		
27	.231	110	-.5892	.331	30	-.5827	.731	90	-.6134	2.131	180	-.0955	1.631	270	-.3897		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 135 ALPHA 16 MACH .607 Q 431.323 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4943	.231	100	-.5884	.331	20	-.5972	.731	0	.0658	2.131	90	-.3868		
2	.161	170	-.4836	.231	90	-.5619	.331	10	-.5775	.931	180	-.5450	2.131	0	.0495		
3	.161	160	-.4836	.231	80	-.5949	.331	0	-.6105	.931	90	-.5640	0.000		.9252	-.45	0.00
4	.161	150	-.5228	.231	70	-.6000	.431	180	-.5149	.931	0	.0487	0.000		1.0456	-.40	0.00
5	.161	140	-.5296	.231	60	-.5830	.431	170	-.5065	1.131	180	-.5234	0.000		1.1120	-.30	0.00
6	.161	130	-.5545	.231	50	-.5857	.431	160	-.5323	1.131	170	-.5420	0.000		1.1120	-.20	0.00
7	.161	120	-.5691	.231	40	-.5776	.431	150	-.5433	1.131	160	-.5369	0.000		1.0884	-.10	0.00
8	.161	110	-.5930	.231	30	-.5606	.431	140	-.5540	1.131	150	-.5345	0.000		1.0471	0.00	0.00
9	.161	100	-.5924	.231	20	-.5673	.431	130	-.5798	1.131	140	-.5859	0.000		.9970	.10	0.00
10	.161	90	-.5884	.231	10	-.5641	.431	120	-.5688	1.131	130	-.5517	0.000		.9321	.20	0.00
11	.161	80	-.5919	.231	0	-.5784	.431	110	-.5894	1.131	120	-.5898	0.000		.8282	.30	0.00
12	.161	70	-.5840	.331	180	-.4896	.431	100	-.5954	1.131	110	-.6099	0.000		.6370	.40	0.00
13	.161	60	-.5867	.331	170	-.4909	.431	90	-.5772	1.131	100	-.5604	0.000		.4188	.45	0.00
14	.161	50	-.5894	.331	160	-.5007	.431	80	-.5624	1.131	90	-.5165	0.000		1.0395	0.00	.10
15	.161	40	-.5859	.331	150	-.5336	.431	70	-.6041	1.131	80	-.4186	0.000		1.0143	0.00	.20
16	.161	30	-.5729	.331	140	-.5503	.431	60	-.5656	1.131	70	-.3461	0.000		.9609	0.00	.30
17	.161	20	-.5756	.331	130	-.5757	.431	50	-.5917	1.131	60	-.2707	0.000		.8186	0.00	.40
18	.161	10	-.5778	.331	120	-.5830	.431	40	-.6041	1.131	50	-.2010	0.000		.6243	0.00	.45
19	.161	0	-.5719	.331	110	-.5897	.431	30	-.5933	1.131	40	-.1343	.161	270	-.5961		
20	.231	180	-.4641	.331	100	-.5943	.431	20	-.5656	1.131	30	-.0822	.231	270	-.5994		
21	.231	170	-.4652	.331	90	-.5646	.431	10	-.5178	1.131	20	-.0177	.331	270	-.5777		
22	.231	160	-.4939	.331	80	-.5865	.431	0	-.4753	1.131	10	.0204	.431	270	-.5917		
23	.231	150	-.5074	.331	70	-.5560	.531	180	-.5054	1.131	0	.0093	.531	270	-.5617		
24	.231	140	-.5708	.331	60	-.6054	.531	90	-.6229				.731	270	-.6714		
25	.231	130	-.5448	.331	50	-.5495	.531	0	-.3013	1.631	90	-.4453	.931	270	-.6004		
26	.231	120	-.5905	.331	40	-.5905	.731	180	-.5491	1.631	0	.0189	1.131	270	-.5000		
27	.231	110	-.5805	.331	30	-.5765	.731	90	-.6235	2.131	180	-.1106	1.631	270	-.4529		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 140 ALPHA 25 MACH .607 Q 431.070 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4541	.231	100	-.5015	.331	20	.2107	.731	0	.1431	2.131	90	-.7467		
2	.161	170	-.4649	.231	90	-.5007	.331	10	.2474	.931	180	-.5301	2.131	0	.1427		
3	.161	160	-.5029	.231	80	-.5304	.331	0	.2576	.931	90	-.6160	0.000		1.0331	-.45	0.00
4	.161	150	-.4731	.231	70	-.4888	.431	180	-.4877	.931	0	.1488	0.000		1.1179	-.40	0.00
5	.161	140	-.5029	.231	60	-.5123	.431	170	-.4912	1.131	180	-.5430	0.000		1.1109	-.30	0.00
6	.161	130	-.5186	.231	50	-.5863	.431	160	-.5089	1.131	170	-.5571	0.000		1.0786	-.20	0.00
7	.161	120	-.4955	.231	40	-.4626	.431	150	-.4976	1.131	160	-.5520	0.000		1.0395	-.10	0.00
8	.161	110	-.5186	.231	30	-.1380	.431	140	-.5399	1.131	150	-.6431	0.000		.9534	0.00	0.00
9	.161	100	-.5126	.231	20	.3027	.431	130	-.5480	1.131	140	-.5842	0.000		.9082	.10	0.00
10	.161	90	-.5088	.231	10	.3821	.431	120	-.5700	1.131	130	-.6482	0.000		.8165	.20	0.00
11	.161	80	-.5010	.231	0	.4005	.431	110	-.5208	1.131	120	-.6503	0.000		.6951	.30	0.00
12	.161	70	-.5048	.331	180	-.4718	.431	100	-.5072	1.131	110	-.7144	0.000		.4854	.40	0.00
13	.161	60	-.4926	.331	170	-.4853	.431	90	-.5234	1.131	100	-.7330	0.000		.2854	.45	0.00
14	.161	50	-.4901	.331	160	-.4715	.431	80	-.5228	1.131	90	-.6735	0.000		.9595	0.00	.10
15	.161	40	-.6372	.331	150	-.5337	.431	70	-.4608	1.131	80	-.6590	0.000		.9175	0.00	.20
16	.161	30	-.5933	.331	140	-.5110	.431	60	-.2601	1.131	70	-.5198	0.000		.8875	0.00	.30
17	.161	20	-.4736	.331	130	-.5148	.431	50	-.1027	1.131	60	-.4077	0.000		.7507	0.00	.40
18	.161	10	-.3628	.331	120	-.5248	.431	40	-.0208	1.131	50	-.2916	0.000		.5780	0.00	.45
19	.161	0	-.2357	.331	110	-.5231	.431	30	.0760	1.131	40	-.1552	.161	270	-.5056		
20	.231	180	-.4741	.331	100	-.5302	.431	20	-.0060	1.131	30	-.0538	.231	270	-.5225		
21	.231	170	-.4863	.331	90	-.5291	.431	10	.1791	1.131	20	.0391	.331	270	-.5257		
22	.231	160	-.4964	.331	80	-.5320	.431	0	.2014	1.131	10	.1040	.431	270	-.5236		
23	.231	150	-.4928	.331	70	-.5536	.531	180	-.5179	1.131	0	.1211	.531	270	-.5624		
24	.231	140	-.5430	.331	60	-.5385	.531	90	-.5973				.731	270	-.5976		
25	.231	130	-.5216	.331	50	-.2115	.531	0	.1771	1.631	90	-.7604	.931	270	-.6171		
26	.231	120	-.5332	.331	40	.0584	.731	180	-.5445	1.631	0	.1262	1.131	270	-.7150		
27	.231	110	-.5272	.331	30	.1483	.731	90	-.5744	2.131	180	-.2883	1.631	270	-.7799		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 141 ALPHA 0 MACH .606 Q 430.812 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4281	.231	100	-.4324	.331	20	-.4510	.731	0	-.4723	2.131	90	-.0909		
2	.161	170	-.4392	.231	90	-.4367	.331	10	-.4568	.931	180	-.4994	2.131	0	-.1303		
3	.161	160	-.4235	.231	80	-.4213	.331	0	-.4388	.931	90	-.4780	0.000		.6995	-.45	0.00
4	.161	150	-.4460	.231	70	-.4362	.431	180	-.4846	.931	0	-.4913	0.000		.8738	-.40	0.00
5	.161	140	-.4419	.231	60	-.4146	.431	170	-.4498	1.131	180	-.5331	0.000		1.0115	-.30	0.00
6	.161	130	-.4373	.231	50	-.4364	.431	160	-.4611	1.131	170	-.5214	0.000		1.0719	-.20	0.00
7	.161	120	-.4490	.231	40	-.4354	.431	150	-.4602	1.131	160	-.5274	0.000		1.0946	-.10	0.00
8	.161	110	-.4349	.231	30	-.4483	.431	140	-.4657	1.131	150	-.5286	0.000		1.1016	0.00	0.00
9	.161	100	-.4368	.231	20	-.4427	.431	130	-.4686	1.131	140	-.5274	0.000		1.1040	.10	0.00
10	.161	90	-.4400	.231	10	-.4418	.431	120	-.4582	1.131	130	-.5253	0.000		1.0728	.20	0.00
11	.161	80	-.4221	.231	0	-.4421	.431	110	-.4385	1.131	120	-.5193	0.000		1.0142	.30	0.00
12	.161	70	-.4303	.331	180	-.4591	.431	100	-.4550	1.131	110	-.5322	0.000		.8691	.40	0.00
13	.161	60	-.4202	.331	170	-.4448	.431	90	-.4475	1.131	100	-.5093	0.000		.6774	.45	0.00
14	.161	50	-.4259	.331	160	-.4473	.431	80	-.4492	1.131	90	-.5129	0.000		1.0935	0.00	.10
15	.161	40	-.4305	.331	150	-.4702	.431	70	-.4811	1.131	80	-.5326	0.000		1.0658	0.00	.20
16	.161	30	-.4210	.331	140	-.4564	.431	60	-.4527	1.131	70	-.5135	0.000		1.0148	0.00	.30
17	.161	20	-.4264	.331	130	-.4486	.431	50	-.4341	1.131	60	-.5211	0.000		.8671	0.00	.40
18	.161	10	-.4425	.331	120	-.4578	.431	40	-.4553	1.131	50	-.5184	0.000		.6763	0.00	.45
19	.161	0	-.4452	.331	110	-.4486	.431	30	-.4663	1.131	40	-.5205	.161	270	-.4450		
20	.231	180	-.4628	.331	100	-.4516	.431	20	-.4570	1.131	30	-.5496	.231	270	-.4505		
21	.231	170	-.4509	.331	90	-.4729	.431	10	-.4553	1.131	20	-.5316	.331	270	-.4622		
22	.231	160	-.4349	.331	80	-.4378	.431	0	-.4669	1.131	10	-.5403	.431	270	-.4826		
23	.231	150	-.4001	.331	70	-.4451	.531	180	-.4776	1.131	0	-.5048	.531	270	-.4680		
24	.231	140	-.4332	.331	60	-.4270	.531	90	-.4394				.731	270	-.4715		
25	.231	130	-.4419	.331	50	-.4451	.531	0	-.4573	1.631	90	-.4037	.931	270	-.5094		
26	.231	120	-.4614	.331	40	-.4454	.731	180	-.5054	1.631	0	-.4026	1.131	270	-.5490		
27	.231	110	-.4300	.331	30	-.4437	.731	90	-.4660	2.131	180	-.1119	1.631	270	-.4112		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 138 ALPHA 22 MACH .607 Q 430.984 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4975	.231	100	-.5392	.331	20	.0635	.731	0	.0773	2.131	90	-.5756		
2	.161	170	-.4344	.231	90	-.4943	.331	10	.1487	.931	180	-.5521	2.131	0	.0944		
3	.161	160	-.4058	.231	80	-.4968	.331	0	.2156	.931	90	-.5548	0.000		.9964	-.45	0.00
4	.161	150	-.5263	.231	70	-.5143	.431	180	-.5270	.931	0	.0664	0.000		1.0721	-.40	0.00
5	.161	140	-.5027	.231	60	-.5097	.431	170	-.5110	1.131	180	-.5942	0.000		1.0957	-.30	0.00
6	.161	130	-.5187	.231	50	-.5243	.431	160	-.5044	1.131	170	-.5684	0.000		1.0729	-.20	0.00
7	.161	120	-.4997	.231	40	-.5981	.431	150	-.5594	1.131	160	-.6141	0.000		1.0293	-.10	0.00
8	.161	110	-.5450	.231	30	-.5997	.431	140	-.5493	1.131	150	-.6096	0.000		.9853	0.00	0.00
9	.161	100	-.5279	.231	20	-.5392	.431	130	-.5536	1.131	140	-.5909	0.000		.9346	.10	0.00
10	.161	90	-.5217	.231	10	-.4733	.431	120	-.5252	1.131	130	-.6075	0.000		.8408	.20	0.00
11	.161	80	-.5176	.231	0	-.3782	.431	110	-.5368	1.131	120	-.6580	0.000		.7380	.30	0.00
12	.161	70	-.5181	.331	180	-.4887	.431	100	-.5328	1.131	110	-.6748	0.000		.5219	.40	0.00
13	.161	60	-.5200	.331	170	-.5041	.431	90	-.5473	1.131	100	-.6781	0.000		.2924	.45	0.00
14	.161	50	-.5412	.331	160	-.5176	.431	80	-.5435	1.131	90	-.6544	0.000		.9672	0.00	.10
15	.161	40	-.5414	.331	150	-.5151	.431	70	-.5530	1.131	80	-.6114	0.000		.9439	0.00	.20
16	.161	30	-.5794	.331	140	-.5186	.431	60	-.4681	1.131	70	-.4821	0.000		.9040	0.00	.30
17	.161	20	-.5769	.331	130	-.5195	.431	50	-.3227	1.131	60	-.3708	0.000		.7610	0.00	.40
18	.161	10	-.6230	.331	120	-.5273	.431	40	-.0851	1.131	50	-.2845	0.000		.5683	0.00	.45
19	.161	0	-.6710	.331	110	-.5457	.431	30	.1015	1.131	40	-.1708	.161	270	-.5278		
20	.231	180	-.4699	.331	100	-.5092	.431	20	.0876	1.131	30	-.0728	.231	270	-.5220		
21	.231	170	-.5027	.331	90	-.5473	.431	10	.1809	1.131	20	-.0187	.331	270	-.5406		
22	.231	160	-.4713	.331	80	-.4906	.431	0	.2127	1.131	10	.0306	.431	270	-.5249		
23	.231	150	-.5095	.331	70	-.5257	.531	180	-.5455	1.131	0	.0592	.531	270	-.5849		
24	.231	140	-.5385	.331	60	-.5494	.531	90	-.5649				.731	270	-.5902		
25	.231	130	-.5360	.331	50	-.5800	.531	0	.1415	1.631	90	-.6802	.931	270	-.5797		
26	.231	120	-.5236	.331	40	-.3798	.731	180	-.5270	1.631	0	.0670	1.131	270	-.6289		
27	.231	110	-.5214	.331	30	-.1286	.731	90	-.5768	2.131	180	-.2322	1.631	270	-.6735		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 139 ALPHA 24 MACH .607 Q 430.986 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4734	.231	100	-.5222	.331	20	.2127	.731	0	.1190	2.131	90	-.7090		
2	.161	170	-.4732	.231	90	-.5105	.331	10	.2515	.931	180	-.5473	2.131	0	.1319		
3	.161	160	-.4751	.231	80	-.4995	.331	0	.2927	.931	90	-.5705	0.000		1.0392	-.45	0.00
4	.161	150	-.5314	.231	70	-.5602	.431	180	-.5258	.931	0	.1221	0.000		1.1082	-.40	0.00
5	.161	140	-.5038	.231	60	-.4878	.431	170	-.4951	1.131	180	-.5545	0.000		1.1131	-.30	0.00
6	.161	130	-.5171	.231	50	-.5759	.431	160	-.5162	1.131	170	-.5825	0.000		1.0761	-.20	0.00
7	.161	120	-.5292	.231	40	-.5800	.431	150	-.5493	1.131	160	-.5888	0.000		1.0234	-.10	0.00
8	.161	110	-.5338	.231	30	-.2798	.431	140	-.5559	1.131	150	-.5708	0.000		.9815	0.00	0.00
9	.161	100	-.5401	.231	20	-.0070	.431	130	-.5513	1.131	140	-.5999	0.000		.9063	.10	0.00
10	.161	90	-.5320	.231	10	.2585	.431	120	-.5811	1.131	130	-.6535	0.000		.8140	.20	0.00
11	.161	80	-.5436	.231	0	.3544	.431	110	-.5583	1.131	120	-.6998	0.000		.7051	.30	0.00
12	.161	70	-.5266	.331	180	-.5076	.431	100	-.5455	1.131	110	-.7145	0.000		.4904	.40	0.00
13	.161	60	-.5344	.331	170	-.5070	.431	90	-.5484	1.131	100	-.7262	0.000		.2755	.45	0.00
14	.161	50	-.5206	.331	160	-.5103	.431	80	-.5704	1.131	90	-.6706	0.000		.9704	0.00	.10
15	.161	40	-.6078	.331	150	-.5716	.431	70	-.5328	1.131	80	-.6450	0.000		.9372	0.00	.20
16	.161	30	-.6460	.331	140	-.5365	.431	60	-.3731	1.131	70	-.5410	0.000		.8831	0.00	.30
17	.161	20	-.6319	.331	130	-.5400	.431	50	-.1616	1.131	60	-.4195	0.000		.7415	0.00	.40
18	.161	10	-.5271	.331	120	-.5446	.431	40	-.0150	1.131	50	-.2890	0.000		.5726	0.00	.45
19	.161	0	-.5401	.331	110	-.5057	.431	30	.0838	1.131	40	-.1615	.161	270	-.4812		
20	.231	180	-.4807	.331	100	-.5249	.431	20	-.0083	1.131	30	-.0587	.231	270	-.5022		
21	.231	170	-.4984	.331	90	-.5465	.431	10	.1574	1.131	20	.0138	.331	270	-.5025		
22	.231	160	-.5035	.331	80	-.5157	.431	0	.1785	1.131	10	.0700	.431	270	-.5349		
23	.231	150	-.4891	.331	70	-.4922	.531	180	-.5067	1.131	0	.0821	.531	270	-.5514		
24	.231	140	-.5135	.331	60	-.5789	.531	90	-.5475				.731	270	-.5635		
25	.231	130	-.5274	.331	50	-.3773	.531	0	.1571	1.631	90	-.7286	.931	270	-.6012		
26	.231	120	-.5428	.331	40	-.0675	.731	180	-.5704	1.631	0	.0971	1.131	270	-.7233		
27	.231	110	-.5335	.331	30	.1410	.731	90	-.5646	2.131	180	-.2911	1.631	270	-.7346		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 144 ALPHA 2 MACH .711 Q 542.045 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3840	.231	100	-.4443	.331	20	-.4390	.731	0	-.4980	2.131	90	-.1450		
2	.161	170	-.3801	.231	90	-.4476	.331	10	-.4744	.931	180	-.4674	2.131	0	-.1353		
3	.161	160	-.4094	.231	80	-.4705	.331	0	-.4899	.931	90	-.4987	0.000		.7656	-.45	0.00
4	.161	150	-.4098	.231	70	-.4628	.431	180	-.4288	.931	0	-.5023	0.000		.9344	-.40	0.00
5	.161	140	-.3969	.231	60	-.4637	.431	170	-.4079	1.131	180	-.4803	0.000		1.0632	-.30	0.00
6	.161	130	-.4187	.231	50	-.4652	.431	160	-.4104	1.131	170	-.4879	0.000		1.1204	-.20	0.00
7	.161	120	-.4210	.231	40	-.4793	.431	150	-.4482	1.131	160	-.4970	0.000		1.1373	-.10	0.00
8	.161	110	-.4331	.231	30	-.4635	.431	140	-.4385	1.131	150	-.4946	0.000		1.1443	0.00	0.00
9	.161	100	-.4417	.231	20	-.4690	.431	130	-.4556	1.131	140	-.5056	0.000		1.1299	.10	0.00
10	.161	90	-.4372	.231	10	-.4875	.431	120	-.4516	1.131	130	-.5099	0.000		1.0967	.20	0.00
11	.161	80	-.4015	.231	0	-.4781	.431	110	-.4579	1.131	120	-.4982	0.000		1.0372	.30	0.00
12	.161	70	-.4503	.331	180	-.3971	.431	100	-.4420	1.131	110	-.4920	0.000		.9052	.40	0.00
13	.161	60	-.4908	.331	170	-.4022	.431	90	-.4903	1.131	100	-.5302	0.000		.7091	.45	0.00
14	.161	50	-.4725	.331	160	-.4035	.431	80	-.4740	1.131	90	-.5133	0.000		1.1359	0.00	.10
15	.161	40	-.4852	.331	150	-.4153	.431	70	-.4825	1.131	80	-.5137	0.000		1.1028	0.00	.20
16	.161	30	-.4671	.331	140	-.4186	.431	60	-.4655	1.131	70	-.5111	0.000		1.0523	0.00	.30
17	.161	20	-.4792	.331	130	-.4261	.431	50	-.4906	1.131	60	-.5233	0.000		.9103	0.00	.40
18	.161	10	-.4587	.331	120	-.4394	.431	40	-.4632	1.131	50	-.5111	0.000		.7329	0.00	.45
19	.161	0	-.4861	.331	110	-.4639	.431	30	-.4991	1.131	40	-.5472	.161	270	-.4699		
20	.231	180	-.3766	.331	100	-.4585	.431	20	-.4841	1.131	30	-.5247	.231	270	-.4574		
21	.231	170	-.3952	.331	90	-.4572	.431	10	-.4901	1.131	20	-.5360	.331	270	-.4697		
22	.231	160	-.3904	.331	80	-.4607	.431	0	-.4869	1.131	10	-.5257	.431	270	-.4757		
23	.231	150	-.4077	.331	70	-.4699	.531	180	-.4231	1.131	0	-.5243	.531	270	-.4646		
24	.231	140	-.4202	.331	60	-.4798	.531	90	-.4754				.731	270	-.4998		
25	.231	130	-.4339	.331	50	-.4796	.531	0	-.4883	1.631	90	-.4336	.931	270	-.5121		
26	.231	120	-.4193	.331	40	-.4675	.731	180	-.4551	1.631	0	-.4124	1.131	270	-.5209		
27	.231	110	-.4497	.331	30	-.4862	.731	90	-.4820	2.131	180	-.2426	1.631	270	-.4403		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 145 ALPHA 4 MACH .711 Q 541.647 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4007	.231	100	-.5056	.331	20	-.5604	.731	0	-.5357	2.131	90	-.0684		
2	.161	170	-.3938	.231	90	-.5107	.331	10	-.5493	.931	180	-.5008	2.131	0	.0349		
3	.161	160	-.3852	.231	80	-.5316	.331	0	-.5424	.931	90	-.5628	0.000		.7865	-.45	0.00
4	.161	150	-.4126	.231	70	-.5372	.431	180	-.4297	.931	0	-.5704	0.000		.9550	-.40	0.00
5	.161	140	-.4389	.231	60	-.5453	.431	170	-.4207	1.131	180	-.5068	0.000		1.0769	-.30	0.00
6	.161	130	-.4466	.231	50	-.5531	.431	160	-.4479	1.131	170	-.5111	0.000		1.1292	-.20	0.00
7	.161	120	-.4233	.231	40	-.5468	.431	150	-.4525	1.131	160	-.5060	0.000		1.1371	-.10	0.00
8	.161	110	-.4682	.231	30	-.5415	.431	140	-.4684	1.131	150	-.5156	0.000		1.1401	0.00	0.00
9	.161	100	-.5074	.231	20	-.5700	.431	130	-.5034	1.131	140	-.5434	0.000		1.1244	.10	0.00
10	.161	90	-.5197	.231	10	-.5440	.431	120	-.4940	1.131	130	-.5362	0.000		1.0873	.20	0.00
11	.161	80	-.5273	.231	0	-.5281	.431	110	-.5099	1.131	120	-.5412	0.000		1.0203	.30	0.00
12	.161	70	-.5445	.331	180	-.4254	.431	100	-.5325	1.131	110	-.5544	0.000		.8650	.40	0.00
13	.161	60	-.5268	.331	170	-.4312	.431	90	-.5124	1.131	100	-.5482	0.000		.6773	.45	0.00
14	.161	50	-.5385	.331	160	-.4284	.431	80	-.5380	1.131	90	-.5592	0.000		1.1334	0.00	.10
15	.161	40	-.5367	.331	150	-.4176	.431	70	-.5376	1.131	80	-.5606	0.000		1.1070	0.00	.20
16	.161	30	-.5469	.331	140	-.4471	.431	60	-.5438	1.131	70	-.5702	0.000		1.0430	0.00	.30
17	.161	20	-.5432	.331	130	-.4851	.431	50	-.5696	1.131	60	-.5651	0.000		.9010	0.00	.40
18	.161	10	-.5053	.331	120	-.4800	.431	40	-.5422	1.131	50	-.5572	0.000		.7186	0.00	.45
19	.161	0	-.5286	.331	110	-.4927	.431	30	-.5701	1.131	40	-.5575	.161	270	-.5213		
20	.231	180	-.3765	.331	100	-.5150	.431	20	-.5562	1.131	30	-.5628	.231	270	-.5116		
21	.231	170	-.3867	.331	90	-.5240	.431	10	-.5512	1.131	20	-.5623	.331	270	-.5359		
22	.231	160	-.3914	.331	80	-.5208	.431	0	-.5479	1.131	10	-.5539	.431	270	-.5350		
23	.231	150	-.4089	.331	70	-.5462	.531	180	-.4440	1.131	0	-.5577	.531	270	-.5473		
24	.231	140	-.4445	.331	60	-.5602	.531	90	-.5387				.731	270	-.5487		
25	.231	130	-.4738	.331	50	-.5442	.531	0	-.5811	1.631	90	-.3833	.931	270	-.5614		
26	.231	120	-.4777	.331	40	-.5432	.731	180	-.5057	1.631	0	-.2244	1.131	270	-.5718		
27	.231	110	-.4984	.331	30	-.5565	.731	90	-.5385	2.131	180	-.1866	1.631	270	-.4003		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 142 ALPHA -1 MACH .711 Q 541.807 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4717	.231	100	-.4510	.331	20	-.4150	.731	0	-.4501	2.131	90	-.2369		
2	.161	170	-.4450	.231	90	-.4212	.331	10	-.4009	.931	180	-.4939	2.131	0	-.2700		
3	.161	160	-.4359	.231	80	-.4246	.331	0	-.4000	.931	90	-.4686	0.000		.7328	-.45	0.00
4	.161	150	-.4430	.231	70	-.4250	.431	180	-.4473	.931	0	-.4695	0.000		.9010	-.40	0.00
5	.161	140	-.4596	.231	60	-.4138	.431	170	-.4749	1.131	180	-.5059	0.000		1.0395	-.30	0.00
6	.161	130	-.4439	.231	50	-.4128	.431	160	-.4703	1.131	170	-.5214	0.000		1.0979	-.20	0.00
7	.161	120	-.4538	.231	40	-.4177	.431	150	-.4770	1.131	160	-.5252	0.000		1.1301	-.10	0.00
8	.161	110	-.4450	.231	30	-.4091	.431	140	-.4572	1.131	150	-.5092	0.000		1.1410	0.00	0.00
9	.161	100	-.4333	.231	20	-.4276	.431	130	-.4549	1.131	140	-.5113	0.000		1.1271	.10	0.00
10	.161	90	-.4294	.231	10	-.3898	.431	120	-.4450	1.131	130	-.4870	0.000		1.1122	.20	0.00
11	.161	80	-.4381	.231	0	-.4229	.431	110	-.4602	1.131	120	-.5190	0.000		1.0545	.30	0.00
12	.161	70	-.4335	.331	180	-.4646	.431	100	-.4671	1.131	110	-.5102	0.000		.9159	.40	0.00
13	.161	60	-.4200	.331	170	-.4585	.431	90	-.4486	1.131	100	-.5016	0.000		.7316	.45	0.00
14	.161	50	-.3932	.331	160	-.4566	.431	80	-.4496	1.131	90	-.5028	0.000		1.1268	0.00	.10
15	.161	40	-.4066	.331	150	-.4454	.431	70	-.4397	1.131	80	-.5006	0.000		1.1020	0.00	.20
16	.161	30	-.3863	.331	140	-.4637	.431	60	-.4244	1.131	70	-.4973	0.000		1.0435	0.00	.30
17	.161	20	-.3941	.331	130	-.4474	.431	50	-.4341	1.131	60	-.4877	0.000		.9093	0.00	.40
18	.161	10	-.3971	.331	120	-.4553	.431	40	-.4212	1.131	50	-.4855	0.000		.7332	0.00	.45
19	.161	0	-.4010	.331	110	-.4542	.431	30	-.4150	1.131	40	-.4882	.161	270	-.4403		
20	.231	180	-.4512	.331	100	-.4459	.431	20	-.4413	1.131	30	-.5061	.231	270	-.4319		
21	.231	170	-.4480	.331	90	-.4508	.431	10	-.4486	1.131	20	-.5052	.331	270	-.4537		
22	.231	160	-.4794	.331	80	-.4474	.431	0	-.4344	1.131	10	-.4949	.431	270	-.4484		
23	.231	150	-.4590	.331	70	-.4465	.531	180	-.4784	1.131	0	-.5159	.531	270	-.4674		
24	.231	140	-.4437	.331	60	-.4262	.531	90	-.4535				.731	270	-.4859		
25	.231	130	-.4618	.331	50	-.4259	.531	0	-.4235	1.631	90	-.4501	.931	270	-.4908		
26	.231	120	-.4521	.331	40	-.4153	.731	180	-.4733	1.631	0	-.4489	1.131	270	-.5007		
27	.231	110	-.4473	.331	30	-.4364	.731	90	-.4786	2.131	180	-.1963	1.631	270	-.4437		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 143 ALPHA 0 MACH .712 Q 542.685 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4202	.231	100	-.4173	.331	20	-.4338	.731	0	-.4543	2.131	90	-.2581		
2	.161	170	-.4355	.231	90	-.4311	.331	10	-.4453	.931	180	-.4822	2.131	0	-.2213		
3	.161	160	-.4407	.231	80	-.4422	.331	0	-.4690	.931	90	-.4913	0.000		.7317	-.45	0.00
4	.161	150	-.4166	.231	70	-.4334	.431	180	-.4413	.931	0	-.4780	0.000		.9077	-.40	0.00
5	.161	140	-.4269	.231	60	-.4437	.431	170	-.4517	1.131	180	-.5061	0.000		1.0463	-.30	0.00
6	.161	130	-.4277	.231	50	-.4536	.431	160	-.4469	1.131	170	-.5030	0.000		1.1064	-.20	0.00
7	.161	120	-.4383	.231	40	-.4238	.431	150	-.4522	1.131	160	-.5059	0.000		1.1300	-.10	0.00
8	.161	110	-.4228	.231	30	-.4351	.431	140	-.4413	1.131	150	-.4822	0.000		1.1430	0.00	0.00
9	.161	100	-.4207	.231	20	-.4356	.431	130	-.4418	1.131	140	-.5016	0.000		1.1342	.10	0.00
10	.161	90	-.4165	.231	10	-.4457	.431	120	-.4517	1.131	130	-.5047	0.000		1.1168	.20	0.00
11	.161	80	-.4071	.231	0	-.4225	.431	110	-.4045	1.131	120	-.4710	0.000		1.0558	.30	0.00
12	.161	70	-.4123	.331	180	-.4283	.431	100	-.4308	1.131	110	-.4920	0.000		.9216	.40	0.00
13	.161	60	-.4178	.331	170	-.4429	.431	90	-.4588	1.131	100	-.5087	0.000		.7319	.45	0.00
14	.161	50	-.4284	.331	160	-.4231	.431	80	-.4430	1.131	90	-.4968	0.000		1.1342	0.00	.10
15	.161	40	-.4344	.331	150	-.4422	.431	70	-.4526	1.131	80	-.4822	0.000		1.1078	0.00	.20
16	.161	30	-.4148	.331	140	-.4356	.431	60	-.4250	1.131	70	-.4846	0.000		1.0530	0.00	.30
17	.161	20	-.4142	.331	130	-.4308	.431	50	-.4367	1.131	60	-.4968	0.000		.9174	0.00	.40
18	.161	10	-.4247	.331	120	-.4388	.431	40	-.4459	1.131	50	-.5059	0.000		.7347	0.00	.45
19	.161	0	-.4090	.331	110	-.4366	.431	30	-.4434	1.131	40	-.5056	.161	270	-.4286		
20	.231	180	-.4194	.331	100	-.4171	.431	20	-.4112	1.131	30	-.4712	.231	270	-.4228		
21	.231	170	-.4174	.331	90	-.4223	.431	10	-.4374	1.131	20	-.4920	.331	270	-.4420		
22	.231	160	-.4299	.331	80	-.4225	.431	0	-.4354	1.131	10	-.4963	.431	270	-.4554		
23	.231	150	-.4219	.331	70	-.4328	.531	180	-.4561	1.131	0	-.4989	.531	270	-.4457		
24	.231	140	-.4297	.331	60	-.4214	.531	90	-.4400				.731	270	-.4656		
25	.231	130	-.4077	.331	50	-.4238	.531	0	-.4275	1.631	90	-.4423	.931	270	-.4849		
26	.231	120	-.4172	.331	40	-.4216	.731	180	-.4434	1.631	0	-.4404	1.131	270	-.4931		
27	.231	110	-.4234	.331	30	-.4405	.731	90	-.4650	2.131	180	-.2174	1.631	270	-.4563		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 149 ALPHA 10 MACH .712 Q 542.369 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4364	.231	100	-.6003	.331	20	-.6224	.731	0	-.3628	2.131	90	-.1627		
2	.161	170	-.4272	.231	90	-.6074	.331	10	-.6235	.931	180	-.5542	2.131	0	.0315		
3	.161	160	-.4638	.231	80	-.6209	.331	0	-.6201	.931	90	-.6269	0.000		.8733	-.45	0.00
4	.161	150	-.4651	.231	70	-.6102	.431	180	-.4750	.931	0	-.3333	0.000		1.0200	-.40	0.00
5	.161	140	-.5105	.231	60	-.6190	.431	170	-.4829	1.131	180	-.5261	0.000		1.1153	-.30	0.00
6	.161	130	-.5282	.231	50	-.6273	.431	160	-.4916	1.131	170	-.5237	0.000		1.1394	-.20	0.00
7	.161	120	-.5467	.231	40	-.6304	.431	150	-.5133	1.131	150	-.5459	0.000		1.1378	-.10	0.00
8	.161	110	-.5873	.231	30	-.6295	.431	140	-.5466	1.131	150	-.5557	0.000		1.1239	0.00	0.00
9	.161	100	-.5949	.231	20	-.6231	.431	130	-.5809	1.131	140	-.5931	0.000		1.0850	.10	0.00
10	.161	90	-.6087	.231	10	-.5984	.431	120	-.5842	1.131	130	-.5784	0.000		1.0272	.20	0.00
11	.161	80	-.6143	.231	0	-.5982	.431	110	-.5959	1.131	120	-.5829	0.000		.9473	.30	0.00
12	.161	70	-.6227	.331	180	-.4646	.431	100	-.6086	1.131	110	-.6075	0.000		.7788	.40	0.00
13	.161	60	-.6419	.331	170	-.4719	.431	90	-.6394	1.131	100	-.5810	0.000		.5793	.45	0.00
14	.161	50	-.6386	.331	160	-.4855	.431	80	-.6385	1.131	90	-.5442	0.000		1.1145	0.00	.10
15	.161	40	-.6053	.331	150	-.4870	.431	70	-.6074	1.131	80	-.5433	0.000		1.0853	0.00	.20
16	.161	30	-.6216	.331	140	-.5250	.431	60	-.6222	1.131	70	-.4654	0.000		1.0214	0.00	.30
17	.161	20	-.6020	.331	130	-.5539	.431	50	-.6275	1.131	60	-.3554	0.000		.8855	0.00	.40
18	.161	10	-.6190	.331	120	-.5833	.431	40	-.6500	1.131	50	-.2527	0.000		.6937	0.00	.45
19	.161	0	-.5882	.331	110	-.5692	.431	30	-.6226	1.131	40	-.2431	.161	270	-.6265		
20	.231	180	-.4270	.331	100	-.5859	.431	20	-.6263	1.131	30	-.1645	.231	270	-.6191		
21	.231	170	-.4285	.331	90	-.5900	.431	10	-.6148	1.131	20	-.1389	.331	270	-.6131		
22	.231	160	-.4634	.331	80	-.6224	.431	0	-.6111	1.131	10	-.1313	.431	270	-.6400		
23	.231	150	-.4946	.331	70	-.6209	.531	180	-.5070	1.131	0	-.1421	.531	270	-.6360		
24	.231	140	-.5079	.331	60	-.6190	.531	90	-.6111				.731	270	-.6263		
25	.231	130	-.5331	.331	50	-.6190	.531	0	-.5814	1.631	90	-.2775	.931	270	-.6332		
26	.231	120	-.5637	.331	40	-.6198	.731	180	-.5259	1.631	0	.0247	1.131	270	-.5770		
27	.231	110	-.5943	.331	30	-.6231	.731	90	-.6196	2.131	180	-.1337	1.631	270	-.2779		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 150 ALPHA 12 MACH .711 Q 542.215 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4618	.231	100	-.6138	.331	20	-.6155	.731	0	-.4153	2.131	90	-.2452		
2	.161	170	-.4368	.231	90	-.6119	.331	10	-.6231	.931	180	-.5547	2.131	0	.0197		
3	.161	160	-.4706	.231	80	-.6112	.331	0	-.5908	.931	90	-.6051	0.000		.9080	-.45	0.00
4	.161	150	-.4844	.231	70	-.6069	.431	180	-.4849	.931	0	-.1935	0.000		1.0466	-.40	0.00
5	.161	140	-.5189	.231	60	-.6188	.431	170	-.5072	1.131	180	-.5454	0.000		1.1237	-.30	0.00
6	.161	130	-.5286	.231	50	-.6188	.431	160	-.5272	1.131	170	-.5396	0.000		1.1450	-.20	0.00
7	.161	120	-.5374	.231	40	-.5938	.431	150	-.5238	1.131	160	-.5494	0.000		1.1330	-.10	0.00
8	.161	110	-.5955	.231	30	-.5724	.431	140	-.5316	1.131	150	-.5439	0.000		1.1047	0.00	0.00
9	.161	100	-.6014	.231	20	-.5732	.431	130	-.5496	1.131	140	-.5485	0.000		1.0714	.10	0.00
10	.161	90	-.6115	.231	10	-.5749	.431	120	-.5676	1.131	130	-.5544	0.000		1.0013	.20	0.00
11	.161	80	-.6177	.231	0	-.5887	.431	110	-.5874	1.131	120	-.5869	0.000		.9191	.30	0.00
12	.161	70	-.5962	.331	180	-.4667	.431	100	-.5722	1.131	110	-.5802	0.000		.7452	.40	0.00
13	.161	60	-.5938	.331	170	-.4727	.431	90	-.6035	1.131	100	-.5587	0.000		.5422	.45	0.00
14	.161	50	-.6018	.331	160	-.4837	.431	80	-.6030	1.131	90	-.5604	0.000		1.1038	0.00	.10
15	.161	40	-.6050	.331	150	-.5125	.431	70	-.6076	1.131	80	-.5014	0.000		1.0709	0.00	.20
16	.161	30	-.5854	.331	140	-.5309	.431	60	-.5920	1.131	70	-.4170	0.000		1.0121	0.00	.30
17	.161	20	-.5852	.331	130	-.5466	.431	50	-.5915	1.131	60	-.2963	0.000		.8737	0.00	.40
18	.161	10	-.5678	.331	120	-.5573	.431	40	-.5961	1.131	50	-.1914	0.000		.6908	0.00	.45
19	.161	0	-.5859	.331	110	-.5867	.431	30	-.6039	1.131	40	-.1400	.161	270	-.6080		
20	.231	180	-.4502	.331	100	-.5767	.431	20	-.5846	1.131	30	-.0934	.231	270	-.5925		
21	.231	170	-.4495	.331	90	-.5999	.431	10	-.5862	1.131	20	-.0501	.331	270	-.6017		
22	.231	160	-.4700	.331	80	-.6048	.431	0	-.5862	1.131	10	-.0059	.431	270	-.6059		
23	.231	150	-.5159	.331	70	-.6170	.531	180	-.5173	1.131	0	-.0025	.531	270	-.5698		
24	.231	140	-.5309	.331	60	-.6041	.531	90	-.6115				.731	270	-.6131		
25	.231	130	-.5609	.331	50	-.6063	.531	0	-.5795	1.631	90	-.3183	.931	270	-.6346		
26	.231	120	-.5710	.331	40	-.6185	.731	180	-.5480	1.631	0	.0092	1.131	270	-.5360		
27	.231	110	-.5871	.331	30	-.6082	.731	90	-.6203	2.131	180	-.1433	1.631	270	-.3105		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 146 ALPHA 6 MACH .711 Q 542.209 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3726	.231	100	-.5511	.331	20	-.6026	.731	0	-.5963	2.131	90	-.0150		
2	.161	170	-.3873	.231	90	-.5606	.331	10	-.5878	.931	180	-.5016	2.131	0	.0706		
3	.161	160	-.4295	.231	80	-.5788	.331	0	-.5894	.931	90	-.5879	0.000		.8094	-.45	0.00
4	.161	150	-.4293	.231	70	-.5829	.431	180	-.4386	.931	0	-.5771	0.000		.9693	-.40	0.00
5	.161	140	-.4581	.231	60	-.5820	.431	170	-.4579	1.131	180	-.5200	0.000		1.0883	-.30	0.00
6	.161	130	-.4844	.231	50	-.5949	.431	160	-.4517	1.131	170	-.5253	0.000		1.1293	-.20	0.00
7	.161	120	-.4627	.231	40	-.5999	.431	150	-.4899	1.131	160	-.5389	0.000		1.1427	-.10	0.00
8	.161	110	-.5307	.231	30	-.6001	.431	140	-.4920	1.131	150	-.5150	0.000		1.1372	0.00	0.00
9	.161	100	-.5432	.231	20	-.5966	.431	130	-.5125	1.131	140	-.5430	0.000		1.1145	.10	0.00
10	.161	90	-.5658	.231	10	-.5893	.431	120	-.5365	1.131	130	-.5560	0.000		1.0700	.20	0.00
11	.161	80	-.5749	.231	0	-.5758	.431	110	-.5590	1.131	120	-.5731	0.000		.9967	.30	0.00
12	.161	70	-.5790	.331	180	-.4264	.431	100	-.5583	1.131	110	-.5714	0.000		.8485	.40	0.00
13	.161	60	-.5844	.331	170	-.4339	.431	90	-.5837	1.131	100	-.5834	0.000		.6496	.45	0.00
14	.161	50	-.6001	.331	160	-.4498	.431	80	-.5851	1.131	90	-.5898	0.000		1.1235	0.00	.10
15	.161	40	-.5902	.331	150	-.4493	.431	70	-.5786	1.131	80	-.5716	0.000		1.0976	0.00	.20
16	.161	30	-.5775	.331	140	-.4863	.431	60	-.5908	1.131	70	-.5817	0.000		1.0388	0.00	.30
17	.161	20	-.5943	.331	130	-.5069	.431	50	-.6143	1.131	60	-.5482	0.000		.8964	0.00	.40
18	.161	10	-.5798	.331	120	-.5363	.431	40	-.6194	1.131	50	-.5427	0.000		.7038	0.00	.45
19	.161	0	-.5818	.331	110	-.5515	.431	30	-.6217	1.131	40	-.5069	.161	270	-.5890		
20	.231	180	-.4069	.331	100	-.5823	.431	20	-.6256	1.131	30	-.4918	.231	270	-.5906		
21	.231	170	-.4123	.331	90	-.5535	.431	10	-.5906	1.131	20	-.4830	.331	270	-.5726		
22	.231	160	-.4282	.331	80	-.5805	.431	0	-.6127	1.131	10	-.4543	.431	270	-.5790		
23	.231	150	-.4461	.331	70	-.5923	.531	180	-.4738	1.131	0	-.4603	.531	270	-.5802		
24	.231	140	-.4739	.331	60	-.6009	.531	90	-.5913				.731	270	-.6001		
25	.231	130	-.4842	.331	50	-.5865	.531	0	-.5807	1.631	90	-.3293	.931	270	-.5936		
26	.231	120	-.5036	.331	40	-.5842	.731	180	-.5100	1.631	0	-.0642	1.131	270	-.5897		
27	.231	110	-.5492	.331	30	-.6151	.731	90	-.5927	2.131	180	-.1581	1.631	270	-.3121		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 147 ALPHA 8 MACH .711 Q 542.045 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3990	.231	100	-.5962	.331	20	-.6270	.731	0	-.6137	2.131	90	-.1021		
2	.161	170	-.4212	.231	90	-.5928	.331	10	-.6099	.931	180	-.5341	2.131	0	.0507		
3	.161	160	-.4178	.231	80	-.5855	.331	0	-.5777	.931	90	-.5902	0.000		.8487	-.45	0.00
4	.161	150	-.4717	.231	70	-.5917	.431	180	-.4710	.931	0	-.4886	0.000		.9981	-.40	0.00
5	.161	140	-.4837	.231	60	-.6121	.431	170	-.4625	1.131	180	-.5295	0.000		1.0988	-.30	0.00
6	.161	130	-.5139	.231	50	-.6510	.431	160	-.5032	1.131	170	-.5467	0.000		1.1336	-.20	0.00
7	.161	120	-.5242	.231	40	-.6291	.431	150	-.5154	1.131	160	-.5494	0.000		1.1424	-.10	0.00
8	.161	110	-.5673	.231	30	-.6202	.431	140	-.5203	1.131	150	-.5489	0.000		1.1289	0.00	0.00
9	.161	100	-.5755	.231	20	-.6151	.431	130	-.5348	1.131	140	-.5475	0.000		1.1065	.10	0.00
10	.161	90	-.5848	.231	10	-.6177	.431	120	-.5747	1.131	130	-.5706	0.000		1.0532	.20	0.00
11	.161	80	-.6214	.231	0	-.6250	.431	110	-.5816	1.131	120	-.5809	0.000		.9708	.30	0.00
12	.161	70	-.6138	.331	180	-.4244	.431	100	-.5823	1.131	110	-.5893	0.000		.8147	.40	0.00
13	.161	60	-.6134	.331	170	-.4467	.431	90	-.5963	1.131	100	-.5862	0.000		.6220	.45	0.00
14	.161	50	-.6121	.331	160	-.4544	.431	80	-.5991	1.131	90	-.5814	0.000		1.1197	0.00	.10
15	.161	40	-.6001	.331	150	-.4847	.431	70	-.6065	1.131	80	-.5678	0.000		1.0940	0.00	.20
16	.161	30	-.6302	.331	140	-.5212	.431	60	-.6378	1.131	70	-.5078	0.000		1.0303	0.00	.30
17	.161	20	-.6098	.331	130	-.5470	.431	50	-.6251	1.131	60	-.4401	0.000		.8955	0.00	.40
18	.161	10	-.6022	.331	120	-.5470	.431	40	-.6263	1.131	50	-.4284	0.000		.7012	0.00	.45
19	.161	0	-.5798	.331	110	-.5771	.431	30	-.6348	1.131	40	-.3524	.161	270	-.6061		
20	.231	180	-.4113	.331	100	-.5977	.431	20	-.6290	1.131	30	-.3131	.231	270	-.6091		
21	.231	170	-.4288	.331	90	-.6074	.431	10	-.6164	1.131	20	-.2529	.331	270	-.6022		
22	.231	160	-.4355	.331	80	-.6301	.431	0	-.6212	1.131	10	-.2634	.431	270	-.6131		
23	.231	150	-.4483	.331	70	-.6308	.531	180	-.5014	1.131	0	-.2706	.531	270	-.6228		
24	.231	140	-.4956	.331	60	-.6288	.531	90	-.6210				.731	270	-.6362		
25	.231	130	-.5134	.331	50	-.6022	.531	0	-.5797	1.631	90	-.2687	.931	270	-.6186		
26	.231	120	-.5580	.331	40	-.6312	.731	180	-.5207	1.631	0	.0278	1.131	270	-.5975		
27	.231	110	-.5742	.331	30	-.6295	.731	90	-.6106	2.131	180	-.1123	1.631	270	-.2311		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 153 ALPHA 18 MACH .712 Q 543.099 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4915	.231	100	-.5271	.331	20	-.5534	.731	0	.0895	2.131	90	-.5324		
2	.161	170	-.4921	.231	90	-.5269	.331	10	-.5493	.931	180	-.5335	2.131	0	.0316		
3	.161	160	-.4824	.231	80	-.5166	.331	0	-.5401	.931	90	-.5582	0.000		.9912	-.45	0.00
4	.161	150	-.4785	.231	70	-.5164	.431	180	-.4810	.931	0	.0293	0.000		1.1003	-.40	0.00
5	.161	140	-.4837	.231	60	-.5064	.431	170	-.4874	1.131	180	-.5326	0.000		1.1447	-.30	0.00
6	.161	130	-.4938	.231	50	-.5166	.431	160	-.4920	1.131	170	-.5703	0.000		1.1331	-.20	0.00
7	.161	120	-.4940	.231	40	-.5089	.431	150	-.5109	1.131	160	-.5472	0.000		1.1119	-.10	0.00
8	.161	110	-.5360	.231	30	-.5411	.431	140	-.5292	1.131	150	-.5629	0.000		1.0677	0.00	0.00
9	.161	100	-.5200	.231	20	-.5675	.431	130	-.5490	1.131	140	-.5947	0.000		1.0146	.10	0.00
10	.161	90	-.5265	.231	10	-.5169	.431	120	-.5145	1.131	130	-.5565	0.000		.9420	.20	0.00
11	.161	80	-.5091	.231	0	-.5235	.431	110	-.5228	1.131	120	-.5677	0.000		.8387	.30	0.00
12	.161	70	-.5340	.331	180	-.5040	.431	100	-.5665	1.131	110	-.6336	0.000		.6413	.40	0.00
13	.161	60	-.5248	.331	170	-.4858	.431	90	-.5292	1.131	100	-.5813	0.000		.4353	.45	0.00
14	.161	50	-.5087	.331	160	-.4736	.431	80	-.5072	1.131	90	-.5374	0.000		1.0666	0.00	.10
15	.161	40	-.5259	.331	150	-.5001	.431	70	-.5251	1.131	80	-.5033	0.000		1.0314	0.00	.20
16	.161	30	-.5310	.331	140	-.5357	.431	60	-.5315	1.131	70	-.4195	0.000		.9735	0.00	.30
17	.161	20	-.5306	.331	130	-.5149	.431	50	-.5373	1.131	60	-.3179	0.000		.8398	0.00	.40
18	.161	10	-.5205	.331	120	-.5160	.431	40	-.5513	1.131	50	-.2305	0.000		.6734	0.00	.45
19	.161	0	-.5117	.331	110	-.5334	.431	30	-.5090	1.131	40	-.1554	.161	270	-.5199		
20	.231	180	-.4628	.331	100	-.5317	.431	20	-.4141	1.131	30	-.0871	.231	270	-.5354		
21	.231	170	-.4530	.331	90	-.5181	.431	10	-.3598	1.131	20	-.0361	.331	270	-.5086		
22	.231	160	-.4456	.331	80	-.4954	.431	0	-.3839	1.131	10	-.0110	.431	270	-.5061		
23	.231	150	-.4889	.331	70	-.5111	.531	180	-.4828	1.131	0	.0102	.531	270	-.5149		
24	.231	140	-.4906	.331	60	-.5184	.531	90	-.5141				.731	270	-.5539		
25	.231	130	-.5336	.331	50	-.5402	.531	0	-.0659	1.631	90	-.5565	.931	270	-.6006		
26	.231	120	-.5207	.331	40	-.5342	.731	180	-.5265	1.631	0	.0076	1.131	270	-.5606		
27	.231	110	-.5130	.331	30	-.5340	.731	90	-.5389	2.131	180	-.2141	1.631	270	-.5527		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 154 ALPHA 20 MACH .712 Q 543.096 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4398	.231	100	-.5038	.331	20	-.4593	.731	0	.0716	2.131	90	-.6441		
2	.161	170	-.4609	.231	90	-.5111	.331	10	-.3218	.931	180	-.5482	2.131	0	.0468		
3	.161	160	-.4355	.231	80	-.4860	.331	0	-.3400	.931	90	-.5279	0.000		1.0155	-.45	0.00
4	.161	150	-.4880	.231	70	-.5372	.431	180	-.5256	.931	0	.0281	0.000		1.0885	-.40	0.00
5	.161	140	-.4839	.231	60	-.5205	.431	170	-.5113	1.131	180	-.5682	0.000		1.1345	-.30	0.00
6	.161	130	-.4923	.231	50	-.5226	.431	160	-.4998	1.131	170	-.5598	0.000		1.1137	-.20	0.00
7	.161	120	-.4983	.231	40	-.5239	.431	150	-.5171	1.131	160	-.5620	0.000		1.0797	-.10	0.00
8	.161	110	-.5067	.231	30	-.5235	.431	140	-.5136	1.131	150	-.5818	0.000		1.0405	0.00	0.00
9	.161	100	-.5104	.231	20	-.5664	.431	130	-.5318	1.131	140	-.5959	0.000		.9792	.10	0.00
10	.161	90	-.5097	.231	10	-.5670	.431	120	-.5242	1.131	130	-.5832	0.000		.8902	.20	0.00
11	.161	80	-.4908	.231	0	-.5539	.431	110	-.5111	1.131	120	-.5847	0.000		.7908	.30	0.00
12	.161	70	-.5089	.331	180	-.4768	.431	100	-.5240	1.131	110	-.6379	0.000		.5851	.40	0.00
13	.161	60	-.5037	.331	170	-.4830	.431	90	-.5145	1.131	100	-.6125	0.000		.3912	.45	0.00
14	.161	50	-.5035	.331	160	-.4774	.431	80	-.4994	1.131	90	-.5720	0.000		1.0344	0.00	.10
15	.161	40	-.5035	.331	150	-.4793	.431	70	-.4897	1.131	80	-.5260	0.000		1.0053	0.00	.20
16	.161	30	-.5237	.331	140	-.5059	.431	60	-.5628	1.131	70	-.4510	0.000		.9390	0.00	.30
17	.161	20	-.5334	.331	130	-.5102	.431	50	-.5690	1.131	60	-.3589	0.000		.8017	0.00	.40
18	.161	10	-.5641	.331	120	-.5422	.431	40	-.4170	1.131	50	-.2795	0.000		.6524	0.00	.45
19	.161	0	-.5476	.331	110	-.5201	.431	30	-.2329	1.131	40	-.1943	.161	270	-.5343		
20	.231	180	-.4545	.331	100	-.5177	.431	20	-.1501	1.131	30	-.1100	.231	270	-.5306		
21	.231	170	-.4719	.331	90	-.5051	.431	10	-.0421	1.131	20	-.0387	.331	270	-.5366		
22	.231	160	-.4831	.331	80	-.5177	.431	0	-.1019	1.131	10	.0112	.431	270	-.5102		
23	.231	150	-.4945	.331	70	-.5115	.531	180	-.5122	1.131	0	.0153	.531	270	-.5384		
24	.231	140	-.4863	.331	60	-.4948	.531	90	-.5040				.731	270	-.5768		
25	.231	130	-.4650	.331	50	-.4847	.531	0	-.1529	1.631	90	-.6379	.931	270	-.5634		
26	.231	120	-.5186	.331	40	-.5537	.731	180	-.5226	1.631	0	-.0177	1.131	270	-.5902		
27	.231	110	-.5052	.331	30	-.5351	.731	90	-.5453	2.131	180	-.2804	1.631	270	-.6327		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 151 ALPHA 14 MACH .710 Q 541.260 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4524	.231	100	-.5703	.331	20	-.5772	.731	0	-.2448	2.131	90	-.3520		
2	.161	170	-.4623	.231	90	-.5817	.331	10	-.5648	.931	180	-.5378	2.131	0	.0187		
3	.161	160	-.4371	.231	80	-.5890	.331	0	-.5809	.931	90	-.6300	0.000		.9414	-.45	0.00
4	.161	150	-.4921	.231	70	-.5828	.431	180	-.4974	.931	0	-.0391	0.000		1.0664	-.40	0.00
5	.161	140	-.5115	.231	60	-.5669	.431	170	-.4877	1.131	180	-.5256	0.000		1.1399	-.30	0.00
6	.161	130	-.5381	.231	50	-.5662	.431	160	-.4990	1.131	170	-.5366	0.000		1.1474	-.20	0.00
7	.161	120	-.5454	.231	40	-.5643	.431	150	-.5233	1.131	160	-.5388	0.000		1.1286	-.10	0.00
8	.161	110	-.5516	.231	30	-.5716	.431	140	-.5509	1.131	150	-.5548	0.000		1.0975	0.00	0.00
9	.161	100	-.5713	.231	20	-.5832	.431	130	-.5565	1.131	140	-.5735	0.000		1.0527	.10	0.00
10	.161	90	-.5769	.231	10	-.5832	.431	120	-.6026	1.131	130	-.5783	0.000		.9943	.20	0.00
11	.161	80	-.5708	.231	0	-.5535	.431	110	-.5652	1.131	120	-.5630	0.000		.9013	.30	0.00
12	.161	70	-.5929	.331	180	-.4759	.431	100	-.5971	1.131	110	-.5955	0.000		.7186	.40	0.00
13	.161	60	-.5883	.331	170	-.4656	.431	90	-.5966	1.131	100	-.5786	0.000		.4994	.45	0.00
14	.161	50	-.5883	.331	160	-.4378	.431	80	-.5823	1.131	90	-.5297	0.000		1.1003	0.00	.10
15	.161	40	-.5468	.331	150	-.4892	.431	70	-.5523	1.131	80	-.4756	0.000		1.0643	0.00	.20
16	.161	30	-.5836	.331	140	-.5589	.431	60	-.5879	1.131	70	-.3623	0.000		1.0013	0.00	.30
17	.161	20	-.4884	.331	130	-.5400	.431	50	-.5592	1.131	60	-.2771	0.000		.8658	0.00	.40
18	.161	10	-.5460	.331	120	-.5557	.431	40	-.5604	1.131	50	-.1907	0.000		.6875	0.00	.45
19	.161	0	-.5560	.331	110	-.5686	.431	30	-.5742	1.131	40	-.1143	.161	270	-.5730		
20	.231	180	-.4507	.331	100	-.5574	.431	20	-.5483	1.131	30	-.0715	.231	270	-.5519		
21	.231	170	-.4684	.331	90	-.5856	.431	10	-.5687	1.131	20	-.0156	.331	270	-.5816		
22	.231	160	-.4697	.331	80	-.5692	.431	0	-.5369	1.131	10	.0126	.431	270	-.5681		
23	.231	150	-.4932	.331	70	-.5666	.531	180	-.5103	1.131	0	.0124	.531	270	-.5858		
24	.231	140	-.5253	.331	60	-.5697	.531	90	-.5915				.731	270	-.6113		
25	.231	130	-.5468	.331	50	-.5699	.531	0	-.5219	1.631	90	-.4172	.931	270	-.6196		
26	.231	120	-.5601	.331	40	-.5694	.731	180	-.5286	1.631	0	-.0036	1.131	270	-.5329		
27	.231	110	-.5797	.331	30	-.5811	.731	90	-.6010	2.131	180	-.2056	1.631	270	-.4097		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 152 ALPHA 16 MACH .712 Q 542.620 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4967	.231	100	-.5369	.331	20	-.5328	.731	0	-.0479	2.131	90	-.4441		
2	.161	170	-.4474	.231	90	-.5388	.331	10	-.5268	.931	180	-.5236	2.131	0	.0237		
3	.161	160	-.4489	.231	80	-.5236	.331	0	-.5309	.931	90	-.5700	0.000		.9582	-.45	0.00
4	.161	150	-.4719	.231	70	-.5193	.431	180	-.4693	.931	0	.0247	0.000		1.0741	-.40	0.00
5	.161	140	-.5268	.231	60	-.5029	.431	170	-.5194	1.131	180	-.5506	0.000		1.1343	-.30	0.00
6	.161	130	-.5238	.231	50	-.5281	.431	160	-.4964	1.131	170	-.5375	0.000		1.1347	-.20	0.00
7	.161	120	-.5223	.231	40	-.5547	.431	150	-.5282	1.131	160	-.5540	0.000		1.1105	-.10	0.00
8	.161	110	-.5372	.231	30	-.5549	.431	140	-.5542	1.131	150	-.5757	0.000		1.0732	0.00	0.00
9	.161	100	-.5365	.231	20	-.5571	.431	130	-.5622	1.131	140	-.5855	0.000		1.0272	.10	0.00
10	.161	90	-.5503	.231	10	-.5406	.431	120	-.5526	1.131	130	-.5697	0.000		.9680	.20	0.00
11	.161	80	-.5367	.231	0	-.5277	.431	110	-.5503	1.131	120	-.5829	0.000		.8618	.30	0.00
12	.161	70	-.5561	.331	180	-.4762	.431	100	-.5645	1.131	110	-.5958	0.000		.6728	.40	0.00
13	.161	60	-.5524	.331	170	-.4946	.431	90	-.5694	1.131	100	-.5881	0.000		.4671	.45	0.00
14	.161	50	-.5260	.331	160	-.4777	.431	80	-.5273	1.131	90	-.5442	0.000		1.0565	0.00	.10
15	.161	40	-.5307	.331	150	-.5024	.431	70	-.5362	1.131	80	-.4837	0.000		1.0406	0.00	.20
16	.161	30	-.5333	.331	140	-.5200	.431	60	-.5302	1.131	70	-.3717	0.000		.9962	0.00	.30
17	.161	20	-.5084	.331	130	-.5620	.431	50	-.5719	1.131	60	-.2920	0.000		.8534	0.00	.40
18	.161	10	-.5752	.331	120	-.5860	.431	40	-.5958	1.131	50	-.2296	0.000		.6647	0.00	.45
19	.161	0	-.5365	.331	110	-.5556	.431	30	-.5668	1.131	40	-.1362	.161	270	-.5549		
20	.231	180	-.4907	.331	100	-.5768	.431	20	-.5793	1.131	30	-.0837	.231	270	-.5832		
21	.231	170	-.4750	.331	90	-.5639	.431	10	-.5480	1.131	20	-.0376	.331	270	-.5714		
22	.231	160	-.4502	.331	80	-.5228	.431	0	-.5052	1.131	10	.0056	.431	270	-.5406		
23	.231	150	-.4814	.331	70	-.5300	.531	180	-.4992	1.131	0	-.0065	.531	270	-.5397		
24	.231	140	-.4928	.331	60	-.5182	.531	90	-.5342				.731	270	-.5626		
25	.231	130	-.5180	.331	50	-.5296	.531	0	-.5784	1.631	90	-.4878	.931	270	-.6028		
26	.231	120	-.5362	.331	40	-.5521	.731	180	-.5365	1.631	0	-.0034	1.131	270	-.5531		
27	.231	110	-.5471	.331	30	-.5530	.731	90	-.5655	2.131	180	-.2167	1.631	270	-.4884		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 157 ALPHA 25 MACH .711 Q 541.896 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4574	.231	100	-.5008	.331	20	.2321	.731	0	.1378	2.131	90	-.8014		
2	.161	170	-.4414	.231	90	-.4791	.331	10	.2602	.931	180	-.5287	2.131	0	.1362		
3	.161	160	-.4524	.231	80	-.4703	.331	0	.2826	.931	90	-.5695	0.000		1.0875	-.45	0.00
4	.161	150	-.4774	.231	70	-.4888	.431	180	-.5013	.931	0	.1153	0.000		1.1341	-.40	0.00
5	.161	140	-.4753	.231	60	-.5025	.431	170	-.4917	1.131	180	-.5546	0.000		1.1436	-.30	0.00
6	.161	130	-.5095	.231	50	-.5542	.431	160	-.4905	1.131	170	-.5527	0.000		1.1088	-.20	0.00
7	.161	120	-.4979	.231	40	-.4561	.431	150	-.5152	1.131	160	-.5732	0.000		1.0595	-.10	0.00
8	.161	110	-.5020	.231	30	.0058	.431	140	-.5617	1.131	150	-.5718	0.000		1.0013	0.00	0.00
9	.161	100	-.4957	.231	20	.2118	.431	130	-.5292	1.131	140	-.6007	0.000		.9309	.10	0.00
10	.161	90	-.5009	.231	10	.3266	.431	120	-.5255	1.131	130	-.6316	0.000		.8438	.20	0.00
11	.161	80	-.4626	.231	0	.4215	.431	110	-.4972	1.131	120	-.6483	0.000		.7269	.30	0.00
12	.161	70	-.4632	.331	180	-.4561	.431	100	-.4900	1.131	110	-.6921	0.000		.5360	.40	0.00
13	.161	60	-.4839	.331	170	-.4900	.431	90	-.5212	1.131	100	-.7414	0.000		.3182	.45	0.00
14	.161	50	-.5171	.331	160	-.4978	.431	80	-.5596	1.131	90	-.7002	0.000		.9884	0.00	.10
15	.161	40	-.5927	.331	150	-.5047	.431	70	-.4979	1.131	80	-.6488	0.000		.9580	0.00	.20
16	.161	30	-.5526	.331	140	-.5034	.431	60	-.2430	1.131	70	-.5223	0.000		.9189	0.00	.30
17	.161	20	-.4776	.331	130	-.4967	.431	50	-.0849	1.131	60	-.4063	0.000		.7859	0.00	.40
18	.161	10	-.3078	.331	120	-.5072	.431	40	.0013	1.131	50	-.2798	0.000		.6171	0.00	.45
19	.161	0	-.3384	.331	110	-.4956	.431	30	.0904	1.131	40	-.1578	.161	270	-.4993		
20	.231	180	-.4326	.331	100	-.4673	.431	20	.0105	1.131	30	-.0542	.231	270	-.4777		
21	.231	170	-.4559	.331	90	-.4956	.431	10	.1851	1.131	20	.0225	.331	270	-.4895		
22	.231	160	-.4574	.331	80	-.4946	.431	0	.2091	1.131	10	.0794	.431	270	-.5129		
23	.231	150	-.5063	.331	70	-.5489	.531	180	-.5274	1.131	0	.1012	.531	270	-.5817		
24	.231	140	-.5041	.331	60	-.5339	.531	90	-.5583				.731	270	-.5766		
25	.231	130	-.4979	.331	50	-.2284	.531	0	.1778	1.631	90	-.7923	.931	270	-.6082		
26	.231	120	-.5041	.331	40	.0675	.731	180	-.5214	1.631	0	.0952	1.131	270	-.6946		
27	.231	110	-.5194	.331	30	.1886	.731	90	-.5606	2.131	180	-.3164	1.631	270	-.7898		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 158 ALPHA 0 MACH .711 Q 541.476 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3965	.231	100	-.4167	.331	20	-.4164	.731	0	-.4368	2.131	90	-.2539		
2	.161	170	-.4280	.231	90	-.4524	.331	10	-.4531	.931	180	-.4785	2.131	0	-.2157		
3	.161	160	-.4080	.231	80	-.4202	.331	0	-.4077	.931	90	-.4607	0.000		.7505	-.45	0.00
4	.161	150	-.4369	.231	70	-.4118	.431	180	-.4510	.931	0	-.4715	0.000		.9142	-.40	0.00
5	.161	140	-.4343	.231	60	-.4313	.431	170	-.4515	1.131	180	-.5060	0.000		1.0575	-.30	0.00
6	.161	130	-.4213	.231	50	-.4363	.431	160	-.4467	1.131	170	-.4926	0.000		1.1078	-.20	0.00
7	.161	120	-.4164	.231	40	-.4238	.431	150	-.4494	1.131	160	-.4962	0.000		1.1363	-.10	0.00
8	.161	110	-.4291	.231	30	-.4309	.431	140	-.4603	1.131	150	-.5017	0.000		1.1412	0.00	0.00
9	.161	100	-.4261	.231	20	-.4391	.431	130	-.4303	1.131	140	-.4847	0.000		1.1351	.10	0.00
10	.161	90	-.4194	.231	10	-.4356	.431	120	-.4517	1.131	130	-.4969	0.000		1.1106	.20	0.00
11	.161	80	-.4183	.231	0	-.4141	.431	110	-.4344	1.131	120	-.4995	0.000		1.0554	.30	0.00
12	.161	70	-.4323	.331	180	-.4455	.431	100	-.4464	1.131	110	-.5029	0.000		.9149	.40	0.00
13	.161	60	-.4237	.331	170	-.4460	.431	90	-.4464	1.131	100	-.4928	0.000		.7281	.45	0.00
14	.161	50	-.4023	.331	160	-.4451	.431	80	-.4379	1.131	90	-.4825	0.000		1.1307	0.00	.10
15	.161	40	-.4213	.331	150	-.4202	.431	70	-.4257	1.131	80	-.4844	0.000		1.1071	0.00	.20
16	.161	30	-.4183	.331	140	-.4270	.431	60	-.4367	1.131	70	-.4964	0.000		1.0524	0.00	.30
17	.161	20	-.4239	.331	130	-.4432	.431	50	-.4425	1.131	60	-.5029	0.000		.9117	0.00	.40
18	.161	10	-.4181	.331	120	-.4182	.431	40	-.4324	1.131	50	-.4935	0.000		.7322	0.00	.45
19	.161	0	-.4336	.331	110	-.4339	.431	30	-.4386	1.131	40	-.4969	.161	270	-.4427		
20	.231	180	-.4338	.331	100	-.4320	.431	20	-.4471	1.131	30	-.4966	.231	270	-.4422		
21	.231	170	-.4278	.331	90	-.4326	.431	10	-.4367	1.131	20	-.4978	.331	270	-.4385		
22	.231	160	-.4138	.331	80	-.4262	.431	0	-.4623	1.131	10	-.4940	.431	270	-.4399		
23	.231	150	-.4425	.331	70	-.4556	.531	180	-.4575	1.131	0	-.5203	.531	270	-.4563		
24	.231	140	-.4131	.331	60	-.4232	.531	90	-.4349				.731	270	-.4519		
25	.231	130	-.4401	.331	50	-.4346	.531	0	-.4513	1.631	90	-.4648	.931	270	-.4874		
26	.231	120	-.4073	.331	40	-.4096	.731	180	-.4501	1.631	0	-.4493	1.131	270	-.4867		
27	.231	110	-.4235	.331	30	-.4492	.731	90	-.4674	2.131	180	-.2544	1.631	270	-.4791		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 155 ALPHA 22 MACH .711 Q 542.218 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4280	.231	100	-.4970	.331	20	-.0590	.731	0	.0313	2.131	90	-.7082		
2	.161	170	-.4035	.231	90	-.5172	.331	10	.1303	.931	180	-.5446	2.131	0	.0763		
3	.161	160	-.4784	.231	80	-.5180	.331	0	.1625	.931	90	-.5516	0.000		1.0246	-.45	0.00
4	.161	150	-.4842	.231	70	-.5148	.431	180	-.5178	.931	0	.0501	0.000		1.1068	-.40	0.00
5	.161	140	-.4789	.231	60	-.4901	.431	170	-.4920	1.131	180	-.5670	0.000		1.1260	-.30	0.00
6	.161	130	-.4978	.231	50	-.5346	.431	160	-.5236	1.131	170	-.5869	0.000		1.0971	-.20	0.00
7	.161	120	-.4868	.231	40	-.5305	.431	150	-.4842	1.131	160	-.5468	0.000		1.0677	-.10	0.00
8	.161	110	-.5111	.231	30	-.5607	.431	140	-.5279	1.131	150	-.5967	0.000		.9975	0.00	0.00
9	.161	100	-.5105	.231	20	-.5187	.431	130	-.5374	1.131	140	-.5984	0.000		.9457	.10	0.00
10	.161	90	-.5001	.231	10	-.4650	.431	120	-.5160	1.131	130	-.5829	0.000		.8774	.20	0.00
11	.161	80	-.4972	.231	0	-.4835	.431	110	-.5093	1.131	120	-.5034	0.000		.7522	.30	0.00
12	.161	70	-.5111	.331	180	-.5066	.431	100	-.5406	1.131	110	-.6799	0.000		.5501	.40	0.00
13	.161	60	-.5249	.331	170	-.5080	.431	90	-.5305	1.131	100	-.6868	0.000		.3480	.45	0.00
14	.161	50	-.4700	.331	160	-.4611	.431	80	-.4851	1.131	90	-.6049	0.000		1.0059	0.00	.10
15	.161	40	-.5251	.331	150	-.5009	.431	70	-.5553	1.131	80	-.5460	0.000		.9772	0.00	.20
16	.161	30	-.5742	.331	140	-.5406	.431	60	-.5694	1.131	70	-.5035	0.000		.9286	0.00	.30
17	.161	20	-.5532	.331	130	-.5172	.431	50	-.5698	1.131	60	-.3943	0.000		.7860	0.00	.40
18	.161	10	-.5099	.331	120	-.5067	.431	40	-.1221	1.131	50	-.2776	0.000		.6269	0.00	.45
19	.161	0	-.0167	.331	110	-.5372	.431	30	.0865	1.131	40	-.1990	.161	270	-.5445		
20	.231	180	-.4795	.331	100	-.5344	.431	20	.0817	1.131	30	-.0955	.231	270	-.5320		
21	.231	170	-.4928	.331	90	-.5264	.431	10	.1931	1.131	20	-.0370	.331	270	-.5339		
22	.231	160	-.4947	.331	80	-.5301	.431	0	.1973	1.131	10	.0006	.431	270	-.5554		
23	.231	150	-.4771	.331	70	-.5090	.531	180	-.5162	1.131	0	.0324	.931	270	-.5316		
24	.231	140	-.4812	.331	60	-.4914	.531	90	-.5017				.731	270	-.5631		
25	.231	130	-.5133	.331	50	-.5782	.531	0	.1385	1.631	90	-.7134	.931	270	-.5761		
26	.231	120	-.4975	.331	40	-.4554	.731	180	-.5259	1.631	0	.0431	1.131	270	-.6283		
27	.231	110	-.4991	.331	30	-.2151	.731	90	-.5548	2.131	180	-.2712	1.631	270	-.6991		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 156 ALPHA 24 MACH .711 Q 542.378 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4343	.231	100	-.4680	.331	20	.2727	.731	0	.1356	2.131	90	-.7558		
2	.161	170	-.4392	.231	90	-.4726	.331	10	.2955	.931	180	-.5172	2.131	0	.1176		
3	.161	160	-.4905	.231	80	-.5053	.331	0	.2928	.931	90	-.5863	0.000		1.0776	-.45	0.00
4	.161	150	-.4597	.231	70	-.4764	.431	180	-.4852	.931	0	.1076	0.000		1.1463	-.40	0.00
5	.161	140	-.4814	.231	60	-.4857	.431	170	-.4909	1.131	180	-.5578	0.000		1.1513	-.30	0.00
6	.161	130	-.5049	.231	50	-.5068	.431	160	-.5107	1.131	170	-.5594	0.000		1.1172	-.20	0.00
7	.161	120	-.4998	.231	40	-.5544	.431	150	-.5114	1.131	160	-.5628	0.000		1.0598	-.10	0.00
8	.161	110	-.4950	.231	30	-.3260	.431	140	-.5112	1.131	150	-.5705	0.000		1.0102	0.00	0.00
9	.161	100	-.4959	.231	20	-.0706	.431	130	-.5308	1.131	140	-.5958	0.000		.9369	.10	0.00
10	.161	90	-.4879	.231	10	.1666	.431	120	-.5137	1.131	130	-.6025	0.000		.8524	.20	0.00
11	.161	80	-.4898	.231	0	.2776	.431	110	-.5204	1.131	120	-.6493	0.000		.7427	.30	0.00
12	.161	70	-.5170	.331	180	-.4876	.431	100	-.5276	1.131	110	-.7217	0.000		.5475	.40	0.00
13	.161	60	-.4985	.331	170	-.4814	.431	90	-.4872	1.131	100	-.6520	0.000		.3433	.45	0.00
14	.161	50	-.5135	.331	160	-.4863	.431	80	-.5273	1.131	90	-.6639	0.000		1.0098	0.00	.10
15	.161	40	-.5495	.331	150	-.4782	.431	70	-.5466	1.131	80	-.6319	0.000		.9702	0.00	.20
16	.161	30	-.6152	.331	140	-.5114	.431	60	-.3341	1.131	70	-.5972	0.000		.9420	0.00	.30
17	.161	20	-.6020	.331	130	-.5275	.431	50	-.1147	1.131	60	-.4035	0.000		.7957	0.00	.40
18	.161	10	-.4918	.331	120	-.4827	.431	40	.0326	1.131	50	-.2566	0.000		.6514	0.00	.45
19	.161	0	-.5230	.331	110	-.5093	.431	30	.0911	1.131	40	-.1645	.161	270	-.5183		
20	.231	180	-.4390	.331	100	-.4771	.431	20	.0350	1.131	30	-.0388	.231	270	-.4515		
21	.231	170	-.5008	.331	90	-.5166	.431	10	.1777	1.131	20	.0207	.331	270	-.5187		
22	.231	160	-.5129	.331	80	-.5228	.431	0	.1975	1.131	10	.0625	.431	270	-.5325		
23	.231	150	-.4920	.331	70	-.4850	.531	180	-.4939	1.131	0	.0847	.931	270	-.5270		
24	.231	140	-.4907	.331	60	-.5501	.531	90	-.5165				.731	270	-.5663		
25	.231	130	-.5169	.331	50	-.3940	.531	0	.1703	1.631	90	-.7452	.931	270	-.5865		
26	.231	120	-.5150	.331	40	.0241	.731	180	-.3321	1.631	0	.0978	1.131	270	-.6569		
27	.231	110	-.4997	.331	30	.1583	.731	90	-.3575	2.131	180	-.3029	1.631	270	-.7596		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 168 ALPHA 2 MACH .819 Q 647.923 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3699	.231	100	-.4512	.331	20	-.4894	.731	0	-.4987	2.131	90	-.3070		
2	.161	170	-.3660	.231	90	-.4650	.331	10	-.4841	.931	180	-.4733	2.131	0	-.2297		
3	.161	160	-.3680	.231	80	-.4659	.331	0	-.4858	.931	90	-.4843	0.000		.8269	-.45	0.00
4	.161	150	-.3916	.231	70	-.4774	.431	180	-.4139	.931	0	-.4949	0.000		.9847	-.40	0.00
5	.161	140	-.4060	.231	60	-.4742	.431	170	-.4177	1.131	180	-.4799	0.000		1.1175	-.30	0.00
6	.161	130	-.4107	.231	50	-.4747	.431	160	-.4100	1.131	170	-.4675	0.000		1.1665	-.20	0.00
7	.161	120	-.4210	.231	40	-.4512	.431	150	-.4160	1.131	160	-.4755	0.000		1.1906	-.10	0.00
8	.161	110	-.4300	.231	30	-.5058	.431	140	-.4373	1.131	150	-.4947	0.000		1.1855	0.00	0.00
9	.161	100	-.4505	.231	20	-.4896	.431	130	-.4361	1.131	140	-.4989	0.000		1.1751	.10	0.00
10	.161	90	-.4401	.231	10	-.4679	.431	120	-.4467	1.131	130	-.4869	0.000		1.1477	.20	0.00
11	.161	80	-.4397	.231	0	-.4767	.431	110	-.4397	1.131	120	-.4881	0.000		1.0918	.30	0.00
12	.161	70	-.4757	.331	180	-.4141	.431	100	-.4682	1.131	110	-.5085	0.000		.9473	.40	0.00
13	.161	60	-.4480	.331	170	-.3850	.431	90	-.4467	1.131	100	-.4871	0.000		.7779	.45	0.00
14	.161	50	-.4797	.331	160	-.3908	.431	80	-.4858	1.131	90	-.4977	0.000		1.1805	0.00	.10
15	.161	40	-.4555	.331	150	-.4014	.431	70	-.4682	1.131	80	-.4997	0.000		1.1541	0.00	.20
16	.161	30	-.4682	.331	140	-.4159	.431	60	-.4848	1.131	70	-.5237	0.000		1.0993	0.00	.30
17	.161	20	-.4556	.331	130	-.4222	.431	50	-.4655	1.131	60	-.4973	0.000		.9658	0.00	.40
18	.161	10	-.4485	.331	120	-.4317	.431	40	-.4654	1.131	50	-.4953	0.000		.7903	0.00	.45
19	.161	0	-.4527	.331	110	-.4429	.431	30	-.4983	1.131	40	-.5113	.161	270	-.4644		
20	.231	180	-.4006	.331	100	-.4364	.431	20	-.4698	1.131	30	-.4935	.231	270	-.4551		
21	.231	170	-.3660	.331	90	-.4652	.431	10	-.5058	1.131	20	-.5175	.331	270	-.4684		
22	.231	160	-.4083	.331	80	-.4892	.431	0	-.5191	1.131	10	-.5209	.431	270	-.4841		
23	.231	150	-.3981	.331	70	-.4616	.531	180	-.4239	1.131	0	-.5029	.531	270	-.4767		
24	.231	140	-.4199	.331	60	-.4724	.531	90	-.4679				.731	270	-.4795		
25	.231	130	-.4145	.331	50	-.4751	.531	0	-.4941	1.631	90	-.4629	.931	270	-.5031		
26	.231	120	-.4132	.331	40	-.4657	.731	180	-.4540	1.631	0	-.4573	1.131	270	-.5043		
27	.231	110	-.4301	.331	30	-.4691	.731	90	-.4652	2.131	180	-.3287	1.631	270	-.4760		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 169 ALPHA 4 MACH .820 Q 648.594 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3924	.231	100	-.5128	.331	20	-.5554	.731	0	-.5522	2.131	90	-.2117		
2	.161	170	-.3843	.231	90	-.5324	.331	10	-.5458	.931	180	-.4914	2.131	0	-.0632		
3	.161	160	-.3845	.231	80	-.5422	.331	0	-.5429	.931	90	-.5506	0.000		.8462	-.45	0.00
4	.161	150	-.4335	.231	70	-.5600	.431	180	-.4408	.931	0	-.5534	0.000		1.0014	-.40	0.00
5	.161	140	-.4437	.231	60	-.5480	.431	170	-.4360	1.131	180	-.5202	0.000		1.1131	-.30	0.00
6	.161	130	-.4690	.231	50	-.5855	.431	160	-.4745	1.131	170	-.5474	0.000		1.1653	-.20	0.00
7	.161	120	-.4843	.231	40	-.5627	.431	150	-.4682	1.131	160	-.5254	0.000		1.1863	-.10	0.00
8	.161	110	-.5098	.231	30	-.5767	.431	140	-.4853	1.131	150	-.5370	0.000		1.1862	0.00	0.00
9	.161	100	-.5277	.231	20	-.5521	.431	130	-.4913	1.131	140	-.5400	0.000		1.1671	.10	0.00
10	.161	90	-.5485	.231	10	-.5519	.431	120	-.5088	1.131	130	-.5430	0.000		1.1301	.20	0.00
11	.161	80	-.5631	.231	0	-.5555	.431	110	-.5273	1.131	120	-.5484	0.000		1.0682	.30	0.00
12	.161	70	-.5615	.331	180	-.4932	.431	100	-.5413	1.131	110	-.5662	0.000		.9159	.40	0.00
13	.161	60	-.5687	.331	170	-.4428	.431	90	-.5473	1.131	100	-.5682	0.000		.7335	.45	0.00
14	.161	50	-.5489	.331	160	-.4123	.431	80	-.5344	1.131	90	-.5514	0.000		1.1769	0.00	.10
15	.161	40	-.5579	.331	150	-.4554	.431	70	-.5583	1.131	80	-.5714	0.000		1.1489	0.00	.20
16	.161	30	-.5546	.331	140	-.4724	.431	60	-.5762	1.131	70	-.5712	0.000		1.0958	0.00	.30
17	.161	20	-.5399	.331	130	-.4731	.431	50	-.5627	1.131	60	-.5750	0.000		.9600	0.00	.40
18	.161	10	-.5116	.331	120	-.4900	.431	40	-.5536	1.131	50	-.5710	0.000		.7835	0.00	.45
19	.161	0	-.5075	.331	110	-.4868	.431	30	-.5519	1.131	40	-.5584	.161	270	-.5280		
20	.231	180	-.3814	.331	100	-.5042	.431	20	-.5538	1.131	30	-.5534	.231	270	-.5530		
21	.231	170	-.3831	.331	90	-.5239	.431	10	-.5604	1.131	20	-.5494	.331	270	-.5297		
22	.231	160	-.3930	.331	80	-.5243	.431	0	-.5459	1.131	10	-.5480	.431	270	-.5359		
23	.231	150	-.4090	.331	70	-.5376	.531	180	-.4314	1.131	0	-.5404	.531	270	-.5367		
24	.231	140	-.4428	.331	60	-.5437	.531	90	-.5300				.731	270	-.5403		
25	.231	130	-.4434	.331	50	-.5370	.531	0	-.5627	1.631	90	-.4649	.931	270	-.5477		
26	.231	120	-.4518	.331	40	-.5175	.731	180	-.4651	1.631	0	-.3076	1.131	270	-.5413		
27	.231	110	-.4397	.331	30	-.5519	.731	90	-.5377	2.131	180	-.2473	1.631	270	-.4200		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 166 ALPHA -1 MACH .819 Q 648.219 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4585	.231	100	-.4395	.331	20	-.4429	.731	0	-.4672	2.131	90	-.3310		
2	.161	170	-.4463	.231	90	-.4315	.331	10	-.3992	.931	180	-.4562	2.131	0	-.3291		
3	.161	160	-.4376	.231	80	-.4419	.331	0	-.4263	.931	90	-.4838	0.000		.7918	-.45	0.00
4	.161	150	-.4431	.231	70	-.4211	.431	180	-.4529	.931	0	-.4680	0.000		.9626	-.40	0.00
5	.161	140	-.4594	.231	60	-.4182	.431	170	-.4695	1.131	180	-.4972	0.000		1.0955	-.30	0.00
6	.161	130	-.4434	.231	50	-.4158	.431	160	-.4530	1.131	170	-.4900	0.000		1.1516	-.20	0.00
7	.161	120	-.4434	.231	40	-.4230	.431	150	-.4606	1.131	160	-.4950	0.000		1.1796	-.10	0.00
8	.161	110	-.4363	.231	30	-.3995	.431	140	-.4481	1.131	150	-.4796	0.000		1.1924	0.00	0.00
9	.161	100	-.4356	.231	20	-.4087	.431	130	-.4549	1.131	140	-.4824	0.000		1.1899	.10	0.00
10	.161	90	-.4403	.231	10	-.4087	.431	120	-.4662	1.131	130	-.4964	0.000		1.1690	.20	0.00
11	.161	80	-.4490	.231	0	-.4137	.431	110	-.4770	1.131	120	-.5056	0.000		1.1030	.30	0.00
12	.161	70	-.4383	.331	180	-.4349	.431	100	-.4240	1.131	110	-.4710	0.000		.9850	.40	0.00
13	.161	60	-.4025	.331	170	-.4309	.431	90	-.4339	1.131	100	-.4764	0.000		.8032	.45	0.00
14	.161	50	-.4019	.331	160	-.4503	.431	80	-.4238	1.131	90	-.4772	0.000		1.1781	0.00	.10
15	.161	40	-.4000	.331	150	-.4455	.431	70	-.4321	1.131	80	-.4802	0.000		1.1533	0.00	.20
16	.161	30	-.3955	.331	140	-.4381	.431	60	-.4273	1.131	70	-.4696	0.000		1.1057	0.00	.30
17	.161	20	-.3890	.331	130	-.4324	.431	50	-.4183	1.131	60	-.4734	0.000		.9709	0.00	.40
18	.161	10	-.3873	.331	120	-.4327	.431	40	-.4184	1.131	50	-.4842	0.000		.7939	0.00	.45
19	.161	0	-.3529	.331	110	-.4250	.431	30	-.3901	1.131	40	-.4472	.161	270	-.4253		
20	.231	180	-.4322	.331	100	-.4370	.431	20	-.4084	1.131	30	-.4852	.231	270	-.4309		
21	.231	170	-.4326	.331	90	-.4315	.431	10	-.4051	1.131	20	-.4835	.331	270	-.4306		
22	.231	160	-.4443	.331	80	-.4309	.431	0	-.4204	1.131	10	-.4736	.431	270	-.4513		
23	.231	150	-.4431	.331	70	-.4119	.531	180	-.4529	1.131	0	-.4720	.531	270	-.4490		
24	.231	140	-.4432	.331	60	-.4304	.531	90	-.4493				.731	270	-.4631		
25	.231	130	-.4337	.331	50	-.4182	.531	0	-.4279	1.631	90	-.4620	.931	270	-.4672		
26	.231	120	-.4542	.331	40	-.3997	.731	180	-.4753	1.631	0	-.4536	1.131	270	-.4968		
27	.231	110	-.4316	.331	30	-.4056	.731	90	-.4479	2.131	180	-.3089	1.631	270	-.4736		

7 X 10 HIGH SPEED TUNNEL TEST 782 RUN 7 POINT 167 ALPHA 0 MACH .820 Q 649.124 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4103	.231	100	-.4256	.331	20	-.4388	.731	0	-.4476	2.131	90	-.3576		
2	.161	170	-.4262	.231	90	-.4224	.331	10	-.4386	.931	180	-.4632	2.131	0	-.3824		
3	.161	160	-.4186	.231	80	-.4317	.331	0	-.4355	.931	90	-.4620	0.000		.8035	-.45	0.00
4	.161	150	-.4236	.231	70	-.4192	.431	180	-.4388	.931	0	-.4552	0.000		.9622	-.40	0.00
5	.161	140	-.3909	.231	60	-.3987	.431	170	-.4190	1.131	180	-.4612	0.000		1.1001	-.30	0.00
6	.161	130	-.4139	.231	50	-.4267	.431	160	-.4311	1.131	170	-.4781	0.000		1.1513	-.20	0.00
7	.161	120	-.4199	.231	40	-.4245	.431	150	-.4338	1.131	160	-.4741	0.000		1.1759	-.10	0.00
8	.161	110	-.4105	.231	30	-.4233	.431	140	-.4292	1.131	150	-.4640	0.000		1.1854	0.00	0.00
9	.161	100	-.4044	.231	20	-.4118	.431	130	-.4157	1.131	140	-.4620	0.000		1.1819	.10	0.00
10	.161	90	-.4101	.231	10	-.4190	.431	120	-.4259	1.131	130	-.4656	0.000		1.1541	.20	0.00
11	.161	80	-.4249	.231	0	-.4387	.431	110	-.4396	1.131	120	-.4769	0.000		1.0974	.30	0.00
12	.161	70	-.4254	.331	180	-.4389	.431	100	-.4424	1.131	110	-.4833	0.000		.9576	.40	0.00
13	.161	60	-.4355	.331	170	-.4559	.431	90	-.4478	1.131	100	-.4847	0.000		.7822	.45	0.00
14	.161	50	-.4271	.331	160	-.4335	.431	80	-.4490	1.131	90	-.4789	0.000		1.1805	0.00	.10
15	.161	40	-.4209	.331	150	-.4432	.431	70	-.4330	1.131	80	-.4831	0.000		1.1486	0.00	.20
16	.161	30	-.4285	.331	140	-.4314	.431	60	-.4374	1.131	70	-.4765	0.000		1.1015	0.00	.30
17	.161	20	-.4296	.331	130	-.4305	.431	50	-.4376	1.131	60	-.4777	0.000		.9653	0.00	.40
18	.161	10	-.4154	.331	120	-.4323	.431	40	-.4274	1.131	50	-.4699	0.000		.7957	0.00	.45
19	.161	0	-.4323	.331	110	-.4423	.431	30	-.4436	1.131	40	-.4911	.161	270	-.4388		
20	.231	180	-.4168	.331	100	-.4254	.431	20	-.4348	1.131	30	-.4761	.231	270	-.4293		
21	.231	170	-.4118	.331	90	-.4082	.431	10	-.4261	1.131	20	-.4813	.331	270	-.4251		
22	.231	160	-.4206	.331	80	-.4269	.431	0	-.4253	1.131	10	-.4697	.431	270	-.4255		
23	.231	150	-.4321	.331	70	-.4305	.531	180	-.4493	1.131	0	-.4743	.531	270	-.4481		
24	.231	140	-.4085	.331	60	-.4158	.531	90	-.4286				.731	270	-.4357		
25	.231	130	-.4235	.331	50	-.4256	.531	0	-.4376	1.631	90	-.4769	.931	270	-.4618		
26	.231	120	-.4136	.331	40	-.4154	.731	180	-.4503	1.631	0	-.4678	1.131	270	-.4667		
27	.231	110	-.4161	.331	30	-.4227	.731	90	-.4424	2.131	180	-.3140	1.631	270	-.4622		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 172 ALPHA 10 MACH .821 Q 649.358 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4385	.231	100	-.5985	.331	20	-.6167	.731	0	-.5641	2.131	90	-.2267		
2	.161	170	-.4355	.231	90	-.5855	.331	10	-.5640	.931	180	-.5286	2.131	0	.0066		
3	.161	160	-.4612	.231	80	-.5801	.331	0	-.5607	.931	90	-.5871	0.000		.9472	-.45	0.00
4	.161	150	-.4625	.231	70	-.5939	.431	180	-.4665	.931	0	-.4801	0.000		1.0760	-.40	0.00
5	.161	140	-.4935	.231	60	-.5837	.431	170	-.4786	1.131	180	-.5326	0.000		1.1643	-.30	0.00
6	.161	130	-.5180	.231	50	-.5823	.431	160	-.4907	1.131	170	-.5384	0.000		1.1792	-.20	0.00
7	.161	120	-.5267	.231	40	-.5956	.431	150	-.5119	1.131	160	-.5567	0.000		1.1838	-.10	0.00
8	.161	110	-.5032	.231	30	-.5853	.431	140	-.5438	1.131	150	-.5641	0.000		1.1670	0.00	0.00
9	.161	100	-.5799	.231	20	-.5640	.431	130	-.5324	1.131	140	-.5641	0.000		1.1342	.10	0.00
10	.161	90	-.5907	.231	10	-.5816	.431	120	-.5686	1.131	130	-.5943	0.000		1.0785	.20	0.00
11	.161	80	-.6024	.231	0	-.5785	.431	110	-.5917	1.131	120	-.5909	0.000		.9931	.30	0.00
12	.161	70	-.6107	.331	180	-.4613	.431	100	-.5944	1.131	110	-.5893	0.000		.8382	.40	0.00
13	.161	60	-.5983	.331	170	-.4546	.431	90	-.5915	1.131	100	-.5965	0.000		.6474	.45	0.00
14	.161	50	-.6038	.331	160	-.4749	.431	80	-.6011	1.131	90	-.5951	0.000		1.1554	0.00	.10
15	.161	40	-.5934	.331	150	-.4977	.431	70	-.6076	1.131	80	-.5819	0.000		1.1289	0.00	.20
16	.161	30	-.5671	.331	140	-.5154	.431	60	-.5905	1.131	70	-.5398	0.000		1.0742	0.00	.30
17	.161	20	-.5655	.331	130	-.5455	.431	50	-.6047	1.131	60	-.4572	0.000		.9436	0.00	.40
18	.161	10	-.5375	.331	120	-.5421	.431	40	-.5905	1.131	50	-.4428	0.000		.7673	0.00	.45
19	.161	0	-.5348	.331	110	-.5619	.431	30	-.5980	1.131	40	-.3983	.161	270	-.5937		
20	.231	180	-.4382	.331	100	-.6194	.431	20	-.6303	1.131	30	-.3370	.231	270	-.6209		
21	.231	170	-.4922	.331	90	-.6036	.431	10	-.6047	1.131	20	-.3157	.331	270	-.5995		
22	.231	160	-.4682	.331	80	-.5884	.431	0	-.5732	1.131	10	-.3444	.431	270	-.5900		
23	.231	150	-.5010	.331	70	-.6078	.531	180	-.5036	1.131	0	-.3015	.531	270	-.6024		
24	.231	140	-.5071	.331	60	-.5879	.531	90	-.5901				.731	270	-.5852		
25	.231	130	-.5224	.331	50	-.5839	.531	0	-.5655	1.631	90	-.3729	.931	270	-.5846		
26	.231	120	-.5461	.331	40	-.5843	.731	180	-.5307	1.631	0	-.0364	1.131	270	-.6049		
27	.231	110	-.5540	.331	30	-.5855	.731	90	-.5995	2.131	180	-.2165	1.631	270	-.3706		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 173 ALPHA 12 MACH .819 Q 648.166 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4467	.231	100	-.5720	.331	20	-.5621	.731	0	-.4903	2.131	90	-.2798		
2	.161	170	-.4492	.231	90	-.5799	.331	10	-.5578	.931	180	-.5323	2.131	0	-.0100		
3	.161	160	-.4507	.231	80	-.5569	.331	0	-.5482	.931	90	-.5567	0.000		.9700	-.45	0.00
4	.161	150	-.4802	.231	70	-.5663	.431	180	-.4713	.931	0	-.3699	0.000		1.0951	-.40	0.00
5	.161	140	-.4966	.231	60	-.5531	.431	170	-.4782	1.131	180	-.5381	0.000		1.1745	-.30	0.00
6	.161	130	-.5168	.231	50	-.5650	.431	160	-.4888	1.131	170	-.5399	0.000		1.1859	-.20	0.00
7	.161	120	-.5344	.231	40	-.5492	.431	150	-.4987	1.131	160	-.5383	0.000		1.1743	-.10	0.00
8	.161	110	-.5491	.231	30	-.5341	.431	140	-.5069	1.131	150	-.5295	0.000		1.1547	0.00	0.00
9	.161	100	-.5507	.231	20	-.5242	.431	130	-.5245	1.131	140	-.5393	0.000		1.1150	.10	0.00
10	.161	90	-.5564	.231	10	-.5240	.431	120	-.5262	1.131	130	-.5437	0.000		1.0662	.20	0.00
11	.161	80	-.5552	.231	0	-.5251	.431	110	-.5478	1.131	120	-.5497	0.000		.9663	.30	0.00
12	.161	70	-.5799	.331	180	-.4752	.431	100	-.5888	1.131	110	-.5919	0.000		.8036	.40	0.00
13	.161	60	-.5525	.331	170	-.4682	.431	90	-.5688	1.131	100	-.5685	0.000		.6003	.45	0.00
14	.161	50	-.5654	.331	160	-.4747	.431	80	-.5746	1.131	90	-.5877	0.000		1.1464	0.00	.10
15	.161	40	-.5310	.331	150	-.4867	.431	70	-.5470	1.131	80	-.5725	0.000		1.1200	0.00	.20
16	.161	30	-.5586	.331	140	-.5138	.431	60	-.5725	1.131	70	-.4851	0.000		1.0660	0.00	.30
17	.161	20	-.5478	.331	130	-.5438	.431	50	-.5805	1.131	60	-.4385	0.000		.9274	0.00	.40
18	.161	10	-.5227	.331	120	-.5551	.431	40	-.5638	1.131	50	-.3619	0.000		.7525	0.00	.45
19	.161	0	-.5386	.331	110	-.5591	.431	30	-.5694	1.131	40	-.2794	.161	270	-.5835		
20	.231	180	-.4476	.331	100	-.5733	.431	20	-.5644	1.131	30	-.2150	.231	270	-.5651		
21	.231	170	-.4443	.331	90	-.5517	.431	10	-.5349	1.131	20	-.2164	.331	270	-.5488		
22	.231	160	-.4667	.331	80	-.5713	.431	0	-.5428	1.131	10	-.1578	.431	270	-.5774		
23	.231	150	-.4768	.331	70	-.5666	.531	180	-.4896	1.131	0	-.1716	.531	270	-.5751		
24	.231	140	-.5164	.331	60	-.5808	.531	90	-.5919				.731	270	-.5869		
25	.231	130	-.5261	.331	50	-.5724	.531	0	-.5437	1.631	90	-.4167	.931	270	-.5949		
26	.231	120	-.5204	.331	40	-.5521	.731	180	-.5108	1.631	0	-.0198	1.131	270	-.5744		
27	.231	110	-.5292	.331	30	-.5375	.731	90	-.5532	2.131	180	-.2620	1.631	270	-.4144		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 170 ALPHA 6 MACH .821 Q 649.720 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3922	.231	100	-.5166	.331	20	-.5910	.731	0	-.5721	2.131	90	-.1324		
2	.161	170	-.3898	.231	90	-.5313	.331	10	-.5881	.931	180	-.5264	2.131	0	.0218		
3	.161	160	-.4017	.231	80	-.5342	.331	0	-.5803	.931	90	-.5721	0.000		.8730	-.45	0.00
4	.161	150	-.4258	.231	70	-.5467	.431	180	-.4555	.931	0	-.5679	0.000		1.0373	-.40	0.00
5	.161	140	-.4466	.231	60	-.5673	.431	170	-.4594	1.131	180	-.5454	0.000		1.1396	-.30	0.00
6	.161	130	-.4644	.231	50	-.5682	.431	160	-.4594	1.131	170	-.5412	0.000		1.1920	-.20	0.00
7	.161	120	-.5072	.231	40	-.5621	.431	150	-.4680	1.131	160	-.5380	0.000		1.1872	-.10	0.00
8	.161	110	-.5336	.231	30	-.5263	.431	140	-.5001	1.131	150	-.5396	0.000		1.1833	0.00	0.00
9	.161	100	-.5531	.231	20	-.5068	.431	130	-.5322	1.131	140	-.5671	0.000		1.1555	.10	0.00
10	.161	90	-.5584	.231	10	-.5412	.431	120	-.5413	1.131	130	-.5629	0.000		1.1124	.20	0.00
11	.161	80	-.5677	.231	0	-.5156	.431	110	-.5603	1.131	120	-.5647	0.000		1.0469	.30	0.00
12	.161	70	-.5788	.331	180	-.3971	.431	100	-.5595	1.131	110	-.5655	0.000		.8966	.40	0.00
13	.161	60	-.5940	.331	170	-.3957	.431	90	-.5843	1.131	100	-.5914	0.000		.7073	.45	0.00
14	.161	50	-.5766	.331	160	-.4011	.431	80	-.5737	1.131	90	-.5771	0.000		1.1731	0.00	.10
15	.161	40	-.5833	.331	150	-.3953	.431	70	-.5847	1.131	80	-.5791	0.000		1.1447	0.00	.20
16	.161	30	-.5681	.331	140	-.4473	.431	60	-.5922	1.131	70	-.5815	0.000		1.0882	0.00	.30
17	.161	20	-.5646	.331	130	-.4751	.431	50	-.6131	1.131	60	-.5872	0.000		.9567	0.00	.40
18	.161	10	-.5590	.331	120	-.4731	.431	40	-.6029	1.131	50	-.5581	0.000		.7795	0.00	.45
19	.161	0	-.5126	.331	110	-.4996	.431	30	-.5989	1.131	40	-.5414	.161	270	-.5855		
20	.231	180	-.4013	.331	100	-.5240	.431	20	-.6218	1.131	30	-.5312	.231	270	-.5805		
21	.231	170	-.4013	.331	90	-.5179	.431	10	-.6001	1.131	20	-.5055	.331	270	-.5942		
22	.231	160	-.4197	.331	80	-.5460	.431	0	-.5999	1.131	10	-.5049	.431	270	-.5838		
23	.231	150	-.4353	.331	70	-.5510	.531	180	-.4832	1.131	0	-.5192	.531	270	-.6008		
24	.231	140	-.4810	.331	60	-.5706	.531	90	-.5947				.731	270	-.5981		
25	.231	130	-.4619	.331	50	-.5634	.531	0	-.6083	1.631	90	-.4233	.931	270	-.5625		
26	.231	120	-.5140	.331	40	-.5639	.731	180	-.5017	1.631	0	-.1737	1.131	270	-.5318		
27	.231	110	-.5171	.331	30	-.5663	.731	90	-.5870	2.131	180	-.2218	1.631	270	-.3725		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 171 ALPHA 8 MACH .820 Q 648.749 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4287	.231	100	-.5648	.331	20	-.6041	.731	0	-.5740	2.131	90	-.1625		
2	.161	170	-.4155	.231	90	-.5927	.331	10	-.5929	.931	180	-.5452	2.131	0	.0343		
3	.161	160	-.4233	.231	80	-.6020	.331	0	-.5920	.931	90	-.5998	0.000		.9095	-.45	0.00
4	.161	150	-.4521	.231	70	-.5909	.431	180	-.4588	.931	0	-.5354	0.000		1.0538	-.40	0.00
5	.161	140	-.4938	.231	60	-.6192	.431	170	-.4742	1.131	180	-.5462	0.000		1.1475	-.30	0.00
6	.161	130	-.5091	.231	50	-.6073	.431	160	-.4778	1.131	170	-.5366	0.000		1.1942	-.20	0.00
7	.161	120	-.5228	.231	40	-.6169	.431	150	-.5029	1.131	160	-.5526	0.000		1.1998	-.10	0.00
8	.161	110	-.5527	.231	30	-.5814	.431	140	-.5063	1.131	150	-.5390	0.000		1.1761	0.00	0.00
9	.161	100	-.5784	.231	20	-.6024	.431	130	-.5415	1.131	140	-.5722	0.000		1.1465	.10	0.00
10	.161	90	-.5856	.231	10	-.5744	.431	120	-.5606	1.131	130	-.5712	0.000		1.1020	.20	0.00
11	.161	80	-.6067	.231	0	-.5523	.431	110	-.5656	1.131	120	-.5750	0.000		1.0244	.30	0.00
12	.161	70	-.6034	.331	180	-.4498	.431	100	-.5904	1.131	110	-.5850	0.000		.8677	.40	0.00
13	.161	60	-.6315	.331	170	-.4757	.431	90	-.6222	1.131	100	-.6138	0.000		.6666	.45	0.00
14	.161	50	-.6047	.331	160	-.4477	.431	80	-.6020	1.131	90	-.5808	0.000		1.1738	0.00	.10
15	.161	40	-.6216	.331	150	-.5022	.431	70	-.6235	1.131	80	-.6020	0.000		1.1382	0.00	.20
16	.161	30	-.5923	.331	140	-.4992	.431	60	-.6078	1.131	70	-.5710	0.000		1.0836	0.00	.30
17	.161	20	-.6018	.331	130	-.5241	.431	50	-.6264	1.131	60	-.5129	0.000		.9507	0.00	.40
18	.161	10	-.5617	.331	120	-.5514	.431	40	-.6133	1.131	50	-.5115	0.000		.7721	0.00	.45
19	.161	0	-.5484	.331	110	-.5363	.431	30	-.5983	1.131	40	-.4433	.161	270	-.5837		
20	.231	180	-.4378	.331	100	-.5778	.431	20	-.6291	1.131	30	-.4142	.231	270	-.6153		
21	.231	170	-.4420	.331	90	-.6033	.431	10	-.6245	1.131	20	-.4215	.331	270	-.6230		
22	.231	160	-.4434	.331	80	-.6101	.431	0	-.6033	1.131	10	-.3958	.431	270	-.6102		
23	.231	150	-.4843	.331	70	-.6223	.531	180	-.5090	1.131	0	-.4302	.531	270	-.6315		
24	.231	140	-.4677	.331	60	-.6135	.531	90	-.6018				.731	270	-.6091		
25	.231	130	-.5414	.331	50	-.6345	.531	0	-.6322	1.631	90	-.3814	.931	270	-.6235		
26	.231	120	-.5291	.331	40	-.6058	.731	180	-.5206	1.631	0	-.0758	1.131	270	-.5930		
27	.231	110	-.5586	.331	30	-.6067	.731	90	-.5953	2.131	180	-.2194	1.631	270	-.3373		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 176 ALPHA 18 MACH .819 Q 648.560 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4536	.231	100	-.5050	.331	20	-.5304	.731	0	.0542	2.131	90	-.6183		
2	.161	170	-.4514	.231	90	-.4829	.331	10	-.5116	.931	180	-.4937	2.131	0	.0110		
3	.161	160	-.4348	.231	80	-.4829	.331	0	-.4867	.931	90	-.5339	0.000		1.0614	-.45	0.00
4	.161	150	-.4710	.231	70	-.5046	.431	180	-.4719	.931	0	-.0333	0.000		1.1520	-.40	0.00
5	.161	140	-.4708	.231	60	-.4964	.431	170	-.4779	1.131	180	-.5205	0.000		1.1893	-.30	0.00
6	.161	130	-.4620	.231	50	-.4772	.431	160	-.4648	1.131	170	-.5025	0.000		1.1874	-.20	0.00
7	.161	120	-.4649	.231	40	-.5053	.431	150	-.4985	1.131	160	-.5415	0.000		1.1524	-.10	0.00
8	.161	110	-.4850	.231	30	-.4885	.431	140	-.4754	1.131	150	-.5213	0.000		1.1274	0.00	0.00
9	.161	100	-.4906	.231	20	-.5184	.431	130	-.5054	1.131	140	-.5371	0.000		1.0598	.10	0.00
10	.161	90	-.4943	.231	10	-.5095	.431	120	-.5129	1.131	130	-.5485	0.000		.9996	.20	0.00
11	.161	80	-.4984	.231	0	-.5089	.431	110	-.5012	1.131	120	-.5359	0.000		.8930	.30	0.00
12	.161	70	-.4998	.331	180	-.4517	.431	100	-.4900	1.131	110	-.5459	0.000		.7165	.40	0.00
13	.161	60	-.4818	.331	170	-.4427	.431	90	-.4740	1.131	100	-.5481	0.000		.5181	.45	0.00
14	.161	50	-.5177	.331	160	-.4843	.431	80	-.5106	1.131	90	-.5477	0.000		1.1119	0.00	.10
15	.161	40	-.5002	.331	150	-.4825	.431	70	-.4944	1.131	80	-.4813	0.000		1.0813	0.00	.20
16	.161	30	-.5205	.331	140	-.5097	.431	60	-.5158	1.131	70	-.4070	0.000		1.0300	0.00	.30
17	.161	20	-.4766	.331	130	-.4682	.431	50	-.4769	1.131	60	-.3005	0.000		.9071	0.00	.40
18	.161	10	-.4737	.331	120	-.4567	.431	40	-.4806	1.131	50	-.2164	0.000		.7440	0.00	.45
19	.161	0	-.4982	.331	110	-.4822	.431	30	-.4788	1.131	40	-.1584	.161	270	-.4847		
20	.231	180	-.4638	.331	100	-.5025	.431	20	-.4434	1.131	30	-.0905	.231	270	-.5029		
21	.231	170	-.4581	.331	90	-.5016	.431	10	-.3708	1.131	20	-.0445	.331	270	-.4930		
22	.231	160	-.4584	.331	80	-.4901	.431	0	-.3389	1.131	10	-.0205	.431	270	-.4942		
23	.231	150	-.4708	.331	70	-.4910	.531	180	-.4740	1.131	0	-.0215	.531	270	-.4913		
24	.231	140	-.4687	.331	60	-.4854	.531	90	-.4829				.731	270	-.5010		
25	.231	130	-.4741	.331	50	-.4842	.531	0	-.1465	1.631	90	-.5583	.931	270	-.5358		
26	.231	120	-.4970	.331	40	-.4978	.731	180	-.4954	1.631	0	-.0107	1.131	270	-.5313		
27	.231	110	-.5094	.331	30	-.5276	.731	90	-.5266	2.131	180	-.3305	1.631	270	-.5853		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 177 ALPHA 20 MACH .821 Q 649.910 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4427	.231	100	-.4880	.331	20	-.4241	.731	0	.0865	2.131	90	-.6692		
2	.161	170	-.4505	.231	90	-.4863	.331	10	-.3703	.931	180	-.5193	2.131	0	.0351		
3	.161	160	-.4551	.231	80	-.4905	.331	0	-.3249	.931	90	-.5251	0.000		1.0717	-.45	0.00
4	.161	150	-.4648	.231	70	-.4764	.431	180	-.4594	.931	0	.0096	0.000		1.1658	-.40	0.00
5	.161	140	-.4781	.231	60	-.4846	.431	170	-.4859	1.131	180	-.5035	0.000		1.1938	-.30	0.00
6	.161	130	-.4853	.231	50	-.5136	.431	160	-.5042	1.131	170	-.5480	0.000		1.1727	-.20	0.00
7	.161	120	-.4837	.231	40	-.5237	.431	150	-.5048	1.131	160	-.5464	0.000		1.1468	-.10	0.00
8	.161	110	-.4923	.231	30	-.5254	.431	140	-.4979	1.131	150	-.5392	0.000		1.0982	0.00	0.00
9	.161	100	-.4843	.231	20	-.5050	.431	130	-.4744	1.131	140	-.5075	0.000		1.0441	.10	0.00
10	.161	90	-.4848	.231	10	-.5351	.431	120	-.4892	1.131	130	-.5223	0.000		.9684	.20	0.00
11	.161	80	-.4992	.231	0	-.5459	.431	110	-.5090	1.131	120	-.5653	0.000		.8571	.30	0.00
12	.161	70	-.4687	.331	180	-.4706	.431	100	-.4883	1.131	110	-.5847	0.000		.6779	.40	0.00
13	.161	60	-.4783	.331	170	-.4404	.431	90	-.4675	1.131	100	-.5761	0.000		.4890	.45	0.00
14	.161	50	-.5148	.331	160	-.5022	.431	80	-.5134	1.131	90	-.5673	0.000		1.0883	0.00	.10
15	.161	40	-.5103	.331	150	-.5016	.431	70	-.5015	1.131	80	-.5195	0.000		1.0665	0.00	.20
16	.161	30	-.5087	.331	140	-.4792	.431	60	-.5044	1.131	70	-.4232	0.000		1.0161	0.00	.30
17	.161	20	-.5073	.331	130	-.4785	.431	50	-.5244	1.131	60	-.3350	0.000		.8868	0.00	.40
18	.161	10	-.5090	.331	120	-.4826	.431	40	-.4529	1.131	50	-.2576	0.000		.7211	0.00	.45
19	.161	0	-.5144	.331	110	-.4799	.431	30	-.4889	1.131	40	-.1551	.161	270	-.4843		
20	.231	180	-.4740	.331	100	-.5093	.431	20	-.1326	1.131	30	-.0953	.231	270	-.5063		
21	.231	170	-.4566	.331	90	-.4939	.431	10	.0181	1.131	20	-.0391	.331	270	-.4831		
22	.231	160	-.4621	.331	80	-.4844	.431	0	.0036	1.131	10	-.0048	.431	270	-.4945		
23	.231	150	-.4920	.331	70	-.5036	.531	180	-.5006	1.131	0	.0038	.531	270	-.5148		
24	.231	140	-.4804	.331	60	-.4880	.531	90	-.4956				.731	270	-.5326		
25	.231	130	-.4972	.331	50	-.4971	.531	0	.1556	1.631	90	-.6393	.931	270	-.5457		
26	.231	120	-.4956	.331	40	-.5400	.731	180	-.5144	1.631	0	.0090	1.131	270	-.5749		
27	.231	110	-.5179	.331	30	-.5396	.731	90	-.5511	2.131	180	-.3322	1.631	270	-.6545		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 174 ALPHA 14 MACH .822 Q 650.735 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5143	.231	100	-.6081	.331	20	-.5955	.731	0	-.4154	2.131	90	-.4910		
2	.161	170	-.5243	.231	90	-.6181	.331	10	-.6029	.931	180	-.6102	2.131	0	-.0666		
3	.161	160	-.5149	.231	80	-.6001	.331	0	-.5914	.931	90	-.6201	0.000		.9911	-.45	0.00
4	.161	150	-.4849	.231	70	-.5466	.431	180	-.4987	.931	0	-.2527	0.000		1.1195	-.40	0.00
5	.161	140	-.5050	.231	60	-.5459	.431	170	-.4961	1.131	180	-.5419	0.000		1.1846	-.30	0.00
6	.161	130	-.5111	.231	50	-.5541	.431	160	-.5237	1.131	170	-.5664	0.000		1.1984	-.20	0.00
7	.161	120	-.5085	.231	40	-.5362	.431	150	-.5133	1.131	160	-.5546	0.000		1.1766	-.10	0.00
8	.161	110	-.5267	.231	30	-.5190	.431	140	-.5129	1.131	150	-.5439	0.000		1.1454	0.00	0.00
9	.161	100	-.5179	.231	20	-.5249	.431	130	-.5116	1.131	140	-.5688	0.000		1.1018	.10	0.00
10	.161	90	-.5152	.231	10	-.5058	.431	120	-.5239	1.131	130	-.5371	0.000		1.0405	.20	0.00
11	.161	80	-.5172	.231	0	-.4702	.431	110	-.4993	1.131	120	-.5203	0.000		.9508	.30	0.00
12	.161	70	-.5242	.331	180	-.4442	.431	100	-.5294	1.131	110	-.5578	0.000		.7779	.40	0.00
13	.161	60	-.5152	.331	170	-.4407	.431	90	-.5158	1.131	100	-.5437	0.000		.5779	.45	0.00
14	.161	50	-.4874	.331	160	-.4365	.431	80	-.4886	1.131	90	-.5304	0.000		1.1373	0.00	.10
15	.161	40	-.5048	.331	150	-.4687	.431	70	-.5095	1.131	80	-.5178	0.000		1.1084	0.00	.20
16	.161	30	-.4761	.331	140	-.4637	.431	60	-.4855	1.131	70	-.4473	0.000		1.0632	0.00	.30
17	.161	20	-.4951	.331	130	-.4875	.431	50	-.5103	1.131	60	-.3467	0.000		.9270	0.00	.40
18	.161	10	-.5360	.331	120	-.5373	.431	40	-.5578	1.131	50	-.2496	0.000		.7509	0.00	.45
19	.161	0	-.5206	.331	110	-.5392	.431	30	-.5398	1.131	40	-.1912	.161	270	-.5487		
20	.231	180	-.4836	.331	100	-.5064	.431	20	-.5596	1.131	30	-.1292	.231	270	-.5655		
21	.231	170	-.4861	.331	90	-.5471	.431	10	-.5427	1.131	20	-.0946	.331	270	-.5437		
22	.231	160	-.4856	.331	80	-.5518	.431	0	-.5377	1.131	10	-.0462	.431	270	-.5574		
23	.231	150	-.4795	.331	70	-.5264	.531	180	-.4842	1.131	0	-.0219	.531	270	-.5311		
24	.231	140	-.4858	.331	60	-.5190	.531	90	-.5279				.731	270	-.5452		
25	.231	130	-.4960	.331	50	-.5052	.531	0	-.4811	1.031	90	-.4513	.931	270	-.5500		
26	.231	120	-.5304	.331	40	-.5323	.731	180	-.5152	1.631	0	-.0313	1.131	270	-.5610		
27	.231	110	-.5484	.331	30	-.5462	.731	90	-.5625	2.131	180	-.2794	1.631	270	-.4734		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 175 ALPHA 16 MACH .820 Q 649.305 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4914	.231	100	-.5164	.331	20	-.5217	.731	0	-.1261	2.131	90	-.5361		
2	.161	170	-.4997	.231	90	-.5297	.331	10	-.5306	.931	180	-.5405	2.131	0	-.0091		
3	.161	160	-.4842	.231	80	-.5146	.331	0	-.5171	.931	90	-.5530	0.000		1.0144	-.45	0.00
4	.161	150	-.4525	.231	70	-.4965	.431	180	-.4585	.931	0	-.0911	0.000		1.1298	-.40	0.00
5	.161	140	-.4746	.231	60	-.4936	.431	170	-.4629	1.131	180	-.5109	0.000		1.1779	-.30	0.00
6	.161	130	-.4910	.231	50	-.5107	.431	160	-.4825	1.131	170	-.5321	0.000		1.1773	-.20	0.00
7	.161	120	-.4883	.231	40	-.5166	.431	150	-.4992	1.131	160	-.5387	0.000		1.1592	-.10	0.00
8	.161	110	-.5120	.231	30	-.5177	.431	140	-.5166	1.131	150	-.5439	0.000		1.1261	0.00	0.00
9	.161	100	-.5111	.231	20	-.4917	.431	130	-.4948	1.131	140	-.5227	0.000		1.0818	.10	0.00
10	.161	90	-.4856	.231	10	-.5126	.431	120	-.5127	1.131	130	-.5459	0.000		1.0255	.20	0.00
11	.161	80	-.5194	.231	0	-.5340	.431	110	-.5333	1.131	120	-.5640	0.000		.9115	.30	0.00
12	.161	70	-.5210	.331	180	-.4730	.431	100	-.5192	1.131	110	-.5485	0.000		.7331	.40	0.00
13	.161	60	-.4996	.331	170	-.4653	.431	90	-.5031	1.131	100	-.5500	0.000		.5397	.45	0.00
14	.161	50	-.5210	.331	160	-.4847	.431	80	-.5204	1.131	90	-.5612	0.000		1.1108	0.00	.10
15	.161	40	-.4787	.331	150	-.4549	.431	70	-.4775	1.131	80	-.4850	0.000		1.0959	0.00	.20
16	.161	30	-.4928	.331	140	-.4773	.431	60	-.4914	1.131	70	-.3892	0.000		1.0435	0.00	.30
17	.161	20	-.5169	.331	130	-.5078	.431	50	-.5189	1.131	60	-.3173	0.000		.9065	0.00	.40
18	.161	10	-.5208	.331	120	-.5216	.431	40	-.5275	1.131	50	-.2363	0.000		.7381	0.00	.45
19	.161	0	-.5278	.331	110	-.5202	.431	30	-.5398	1.131	40	-.1560	.161	270	-.5305		
20	.231	180	-.4595	.331	100	-.5128	.431	20	-.5208	1.131	30	-.0990	.231	270	-.5176		
21	.231	170	-.4992	.331	90	-.4981	.431	10	-.4983	1.131	20	-.0556	.331	270	-.5066		
22	.231	160	-.4831	.331	80	-.5198	.431	0	-.5239	1.131	10	-.0401	.431	270	-.5153		
23	.231	150	-.4676	.331	70	-.5001	.531	180	-.4796	1.131	0	-.0251	.531	270	-.5124		
24	.231	140	-.5113	.331	60	-.5304	.531	90	-.5396				.731	270	-.5472		
25	.231	130	-.5140	.331	50	-.5218	.531	0	-.4121	1.631	90	-.5201	.931	270	-.5611		
26	.231	120	-.5034	.331	40	-.5055	.731	180	-.4967	1.631	0	-.0289	1.131	270	-.5512		
27	.231	110	-.5079	.331	30	-.5098	.731	90	-.5144	2.131	180	-.3357	1.631	270	-.5103		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 181 ALPHA 25 MACH .819 Q 647.468 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4776	.231	100	-.5169	.331	20	.2545	.731	0	.1503	2.131	90	-.6531		
2	.161	170	-.4672	.231	90	-.4978	.331	10	.2844	.931	180	-.5484	2.131	0	.0969		
3	.161	160	-.4699	.231	80	-.4825	.331	0	.3068	.931	90	-.6009	0.000		1.1312	-.45	0.00
4	.161	150	-.4901	.231	70	-.4888	.431	180	-.4941	.931	0	.0651	0.000		1.1824	-.40	0.00
5	.161	140	-.5233	.231	60	-.5005	.431	170	-.4995	1.131	180	-.5434	0.000		1.1864	-.30	0.00
6	.161	130	-.4928	.231	50	-.6017	.431	160	-.5132	1.131	170	-.5520	0.000		1.1372	-.20	0.00
7	.161	120	-.5085	.231	40	-.4313	.431	150	-.5109	1.131	160	-.5636	0.000		1.0955	-.10	0.00
8	.161	110	-.5051	.231	30	-.0758	.431	140	-.5346	1.131	150	-.5929	0.000		1.0397	0.00	0.00
9	.161	100	-.4848	.231	20	.2409	.431	130	-.5327	1.131	140	-.6047	0.000		.9769	.10	0.00
10	.161	90	-.4708	.231	10	.3640	.431	120	-.5163	1.131	130	-.6111	0.000		.8935	.20	0.00
11	.161	80	-.4870	.231	0	.4171	.431	110	-.4980	1.131	120	-.6593	0.000		.7853	.30	0.00
12	.161	70	-.4747	.331	180	-.4732	.431	100	-.5048	1.131	110	-.7166	0.000		.5909	.40	0.00
13	.161	60	-.4711	.331	170	-.4814	.431	90	-.5076	1.131	100	-.7250	0.000		.3927	.45	0.00
14	.161	50	-.5002	.331	160	-.4811	.431	80	-.5262	1.131	90	-.6731	0.000		1.0494	0.00	.10
15	.161	40	-.5080	.331	150	-.4739	.431	70	-.4679	1.131	80	-.6247	0.000		1.0228	0.00	.20
16	.161	30	-.5828	.331	140	-.5375	.431	60	-.1985	1.131	70	-.5468	0.000		.9656	0.00	.30
17	.161	20	-.4178	.331	130	-.5309	.431	50	-.0683	1.131	60	-.4319	0.000		.8289	0.00	.40
18	.161	10	-.4176	.331	120	-.5244	.431	40	.0195	1.131	50	-.3026	0.000		.6772	0.00	.45
19	.161	0	-.2841	.331	110	-.5390	.431	30	.0796	1.131	40	-.1949	.161	270	-.5220		
20	.231	180	-.4848	.331	100	-.5116	.431	20	.0218	1.131	30	-.0873	.231	270	-.5098		
21	.231	170	-.4803	.331	90	-.5016	.431	10	.2121	1.131	20	.0104	.331	270	-.4939		
22	.231	160	-.5101	.331	80	-.5231	.431	0	.2052	1.131	10	.0382	.431	270	-.5301		
23	.231	150	-.4892	.331	70	-.5643	.531	180	-.5165	1.131	0	.0861	.531	270	-.5660		
24	.231	140	-.5092	.331	60	-.4955	.531	90	-.5713				.731	270	-.5984		
25	.231	130	-.5143	.331	50	-.1592	.531	0	.1805	1.631	90	-.8545	.931	270	-.6360		
26	.231	120	-.5287	.331	40	.0985	.731	180	-.5483	1.631	0	-.0987	1.131	270	-.7097		
27	.231	110	-.5414	.331	30	.1905	.731	90	-.5780	2.131	180	-.3657	1.631	270	-.8435		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 182 ALPHA 0 MACH .819 Q 647.914 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4345	.231	100	-.4503	.331	20	-.4600	.731	0	-.4697	2.131	90	-.0472		
2	.161	170	-.4357	.231	90	-.4348	.331	10	-.4478	.931	180	-.4627	2.131	0	-.3452		
3	.161	160	-.4631	.231	80	-.4479	.331	0	-.4725	.931	90	-.4909	0.000		.8002	-.45	0.00
4	.161	150	-.4500	.231	70	-.4402	.431	180	-.4619	.931	0	-.4803	0.000		.9682	-.40	0.00
5	.161	140	-.4404	.231	60	-.4361	.431	170	-.4563	1.131	180	-.5009	0.000		1.1036	-.30	0.00
6	.161	130	-.4379	.231	50	-.4528	.431	160	-.4619	1.131	170	-.4951	0.000		1.1590	-.20	0.00
7	.161	120	-.4301	.231	40	-.4375	.431	150	-.4468	1.131	160	-.4829	0.000		1.1794	-.10	0.00
8	.161	110	-.4260	.231	30	-.4131	.431	140	-.4150	1.131	150	-.4633	0.000		1.1904	0.00	0.00
9	.161	100	-.4163	.231	20	-.4096	.431	130	-.4235	1.131	140	-.4647	0.000		1.1369	.10	0.00
10	.161	90	-.4107	.231	10	-.4283	.431	120	-.4282	1.131	130	-.4657	0.000		1.1575	.20	0.00
11	.161	80	-.4069	.231	0	-.3969	.431	110	-.4152	1.131	120	-.4657	0.000		1.1075	.30	0.00
12	.161	70	-.3968	.331	180	-.4048	.431	100	-.4070	1.131	110	-.4489	0.000		.9765	.40	0.00
13	.161	60	-.4024	.331	170	-.4242	.431	90	-.4262	1.131	100	-.4557	0.000		.7917	.45	0.00
14	.161	50	-.4134	.331	160	-.4192	.431	80	-.4264	1.131	90	-.4707	0.000		1.1809	0.00	.10
15	.161	40	-.4190	.331	150	-.4258	.431	70	-.4397	1.131	80	-.4747	0.000		1.1571	0.00	.20
16	.161	30	-.4303	.331	140	-.4427	.431	60	-.4484	1.131	70	-.4867	0.000		1.0993	0.00	.30
17	.161	20	-.4249	.331	130	-.4244	.431	50	-.4336	1.131	60	-.4747	0.000		.9666	0.00	.40
18	.161	10	-.4235	.331	120	-.4231	.431	40	-.4391	1.131	50	-.4781	0.000		.7899	0.00	.45
19	.161	0	-.4128	.331	110	-.4143	.431	30	-.4216	1.131	40	-.4785	.161	270	-.4221		
20	.231	180	-.4213	.331	100	-.4355	.431	20	-.4426	1.131	30	-.4781	.231	270	-.4299		
21	.231	170	-.4384	.331	90	-.4283	.431	10	-.4526	1.131	20	-.4803	.331	270	-.4392		
22	.231	160	-.4292	.331	80	-.4461	.431	0	-.4347	1.131	10	-.4793	.431	270	-.4409		
23	.231	150	-.4204	.331	70	-.4310	.531	180	-.4362	1.131	0	-.4705	.531	270	-.4376		
24	.231	140	-.4301	.331	60	-.4386	.531	90	-.4536				.731	270	-.4628		
25	.231	130	-.4181	.331	50	-.4294	.531	0	-.4586	1.631	90	-.4729	.931	270	-.4698		
26	.231	120	-.4330	.331	40	-.4307	.731	180	-.4548	1.631	0	-.2015	1.131	270	-.4812		
27	.231	110	-.4134	.331	30	-.4312	.731	90	-.4486	2.131	180	-.3317	1.631	270	-.4713		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 179 ALPHA 22 MACH .821 Q 649.531 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4251	.231	100	-.4767	.331	20	-.0437	.731	0	.0983	2.131	90	-.7491		
2	.161	170	-.4544	.231	90	-.4859	.331	10	.3910	.931	180	-.5245	2.131	0	.0561		
3	.161	160	-.4657	.231	80	-.4948	.331	0	.0881	.931	90	-.5332	0.000		1.0943	-.45	0.00
4	.161	150	-.4789	.231	70	-.4959	.431	180	-.4996	.931	0	.0230	0.000		1.1634	-.40	0.00
5	.161	140	-.4699	.231	60	-.4812	.431	170	-.4750	1.131	180	-.5259	0.000		1.1874	-.30	0.00
6	.161	130	-.4828	.231	50	-.4809	.431	160	-.4788	1.131	170	-.5213	0.000		1.1585	-.20	0.00
7	.161	120	-.4821	.231	40	-.5402	.431	150	-.5125	1.131	160	-.5446	0.000		1.1242	-.10	0.00
8	.161	110	-.5035	.231	30	-.5705	.431	140	-.5273	1.131	150	-.5686	0.000		1.0707	0.00	0.00
9	.161	100	-.4994	.231	20	-.5031	.431	130	-.5073	1.131	140	-.5368	0.000		1.0135	.10	0.00
10	.161	90	-.4942	.231	10	-.4455	.431	120	-.5092	1.131	130	-.5625	0.000		.9348	.20	0.00
11	.161	80	-.4837	.231	0	-.4210	.431	110	-.5031	1.131	120	-.5841	0.000		.8347	.30	0.00
12	.161	70	-.4999	.331	180	-.4832	.431	100	-.5117	1.131	110	-.6432	0.000		.6443	.40	0.00
13	.161	60	-.4801	.331	170	-.4749	.431	90	-.4931	1.131	100	-.6220	0.000		.4486	.45	0.00
14	.161	50	-.5055	.331	160	-.4918	.431	80	-.5086	1.131	90	-.6142	0.000		1.0765	0.00	.10
15	.161	40	-.5089	.331	150	-.4871	.431	70	-.5236	1.131	80	-.5666	0.000		1.0453	0.00	.20
16	.161	30	-.5256	.331	140	-.4900	.431	60	-.5223	1.131	70	-.4632	0.000		.9986	0.00	.30
17	.161	20	-.5862	.331	130	-.5305	.431	50	-.3310	1.131	60	-.3886	0.000		.8575	0.00	.40
18	.161	10	-.5578	.331	120	-.4941	.431	40	-.0784	1.131	50	-.2579	0.000		.7161	0.00	.45
19	.161	0	-.5628	.331	110	-.4918	.431	30	.0962	1.131	40	-.1731	.161	270	-.4764		
20	.231	180	-.4305	.331	100	-.4696	.431	20	.1223	1.131	30	-.0727	.231	270	-.4657		
21	.231	170	-.4724	.331	90	-.4916	.431	10	.2379	1.131	20	-.0025	.331	270	-.4924		
22	.231	160	-.4771	.331	80	-.4877	.431	0	.2463	1.131	10	.0268	.431	270	-.4976		
23	.231	150	-.4791	.331	70	-.5043	.531	180	-.5200	1.131	0	.0282	.531	270	-.5210		
24	.231	140	-.4952	.331	60	-.5083	.531	90	-.5175				.731	270	-.5641		
25	.231	130	-.4961	.331	50	-.5475	.531	0	.1675	1.631	90	-.7090	.931	270	-.5539		
26	.231	120	-.4976	.331	40	-.4201	.731	180	-.5173	1.631	0	.0272	1.131	270	-.6076		
27	.231	110	-.4801	.331	30	-.1595	.731	90	-.5469	2.131	180	-.3201	1.631	270	-.6880		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 180 ALPHA 24 MACH .820 Q 648.987 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4661	.231	100	-.5042	.331	20	.2910	.731	0	.1286	2.131	90	-.8382		
2	.161	170	-.4740	.231	90	-.5092	.331	10	.2972	.931	180	-.5384	2.131	0	.0803		
3	.161	160	-.4895	.231	80	-.4986	.331	0	.3216	.931	90	-.5670	0.000		1.1223	-.45	0.00
4	.161	150	-.5044	.231	70	-.4977	.431	180	-.5021	.931	0	.0695	0.000		1.1883	-.40	0.00
5	.161	140	-.4934	.231	60	-.4789	.431	170	-.4878	1.131	180	-.5272	0.000		1.1964	-.30	0.00
6	.161	130	-.5114	.231	50	-.6048	.431	160	-.5334	1.131	170	-.5642	0.000		1.1517	-.20	0.00
7	.161	120	-.5075	.231	40	-.5650	.431	150	-.5132	1.131	160	-.5492	0.000		1.1065	-.10	0.00
8	.161	110	-.5021	.231	30	-.3782	.431	140	-.5292	1.131	150	-.5606	0.000		1.0608	0.00	0.00
9	.161	100	-.5121	.231	20	-.1185	.431	130	-.5390	1.131	140	-.5835	0.000		.9893	.10	0.00
10	.161	90	-.4961	.231	10	.0995	.431	120	-.5030	1.131	130	-.5721	0.000		.9264	.20	0.00
11	.161	80	-.4949	.231	0	.0771	.431	110	-.5072	1.131	120	-.6249	0.000		.8026	.30	0.00
12	.161	70	-.4895	.331	180	-.4824	.431	100	-.5017	1.131	110	-.6762	0.000		.6160	.40	0.00
13	.161	60	-.4833	.331	170	-.4631	.431	90	-.4863	1.131	100	-.6860	0.000		.4251	.45	0.00
14	.161	50	-.5093	.331	160	-.5056	.431	80	-.5323	1.131	90	-.6649	0.000		1.0479	0.00	.10
15	.161	40	-.5095	.331	150	-.5332	.431	70	-.5554	1.131	80	-.6165	0.000		1.0212	0.00	.20
16	.161	30	-.6037	.331	140	-.5201	.431	60	-.5039	1.131	70	-.5110	0.000		.9796	0.00	.30
17	.161	20	-.5734	.331	130	-.5273	.431	50	-.0839	1.131	60	-.3928	0.000		.8649	0.00	.40
18	.161	10	-.4803	.331	120	-.4832	.431	40	.0562	1.131	50	-.2598	0.000		.6997	0.00	.45
19	.161	0	-.5089	.331	110	-.5235	.431	30	.1112	1.131	40	-.1608	.161	270	-.5014		
20	.231	180	-.4591	.331	100	-.4860	.431	20	.0313	1.131	30	-.0597	.231	270	-.4749		
21	.231	170	-.4999	.331	90	-.5165	.431	10	.2047	1.131	20	.0237	.331	270	-.5020		
22	.231	160	-.5008	.331	80	-.5108	.431	0	.2029	1.131	10	.0425	.431	270	-.5199		
23	.231	150	-.4672	.331	70	-.4778	.531	180	-.4632	1.131	0	.0864	.531	270	-.5018		
24	.231	140	-.5057	.331	60	-.5800	.531	90	-.5444				.731	270	-.5575		
25	.231	130	-.5175	.331	50	-.3443	.531	0	.1743	1.631	90	-.7690	.931	270	-.5860		
26	.231	120	-.5350	.331	40	-.0110	.731	180	-.5467	1.631	0	.0777	1.131	270	-.6743		
27	.231	110	-.4970	.331	30	.2118	.731	90	-.5577	2.131	180	-.3275	1.631	270	-.7761		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 190 ALPHA -1 MACH .882 Q 703.907 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4528	.231	100	-.4675	.331	20	-.4234	.731	0	-.4487	2.131	90	.0064		
2	.161	170	-.4520	.231	90	-.4312	.331	10	-.4079	.931	180	-.4776	2.131	0	-.3540		
3	.161	160	-.4568	.231	80	-.4425	.331	0	-.4240	.931	90	-.4770	0.000		.8285	-.45	0.00
4	.161	150	-.4296	.231	70	-.4044	.431	180	-.4414	.931	0	-.4697	0.000		.9965	-.40	0.00
5	.161	140	-.4432	.231	60	-.4228	.431	170	-.4662	1.131	180	-.4870	0.000		1.1245	-.30	0.00
6	.161	130	-.4397	.231	50	-.4192	.431	160	-.4504	1.131	170	-.4761	0.000		1.1843	-.20	0.00
7	.161	120	-.4480	.231	40	-.4283	.431	150	-.4650	1.131	160	-.4899	0.000		1.2059	-.10	0.00
8	.161	110	-.4485	.231	30	-.4126	.431	140	-.4522	1.131	150	-.4897	0.000		1.2155	0.00	0.00
9	.161	100	-.4470	.231	20	-.4006	.431	130	-.4558	1.131	140	-.4831	0.000		1.2126	.10	0.00
10	.161	90	-.4304	.231	10	-.3968	.431	120	-.4416	1.131	130	-.4791	0.000		1.1932	.20	0.00
11	.161	80	-.4407	.231	0	-.4256	.431	110	-.4790	1.131	120	-.5021	0.000		1.1363	.30	0.00
12	.161	70	-.4288	.331	180	-.4556	.431	100	-.4496	1.131	110	-.4820	0.000		1.0129	.40	0.00
13	.161	60	-.4240	.331	170	-.4589	.431	90	-.4556	1.131	100	-.4845	0.000		.8417	.45	0.00
14	.161	50	-.4168	.331	160	-.4460	.431	80	-.4449	1.131	90	-.4774	0.000		1.2057	0.00	.10
15	.161	40	-.3973	.331	150	-.4567	.431	70	-.4419	1.131	80	-.4886	0.000		1.1823	0.00	.20
16	.161	30	-.4122	.331	140	-.4608	.431	60	-.4362	1.131	70	-.4899	0.000		1.1288	0.00	.30
17	.161	20	-.4223	.331	130	-.4706	.431	50	-.4496	1.131	60	-.5010	0.000		.9981	0.00	.40
18	.161	10	-.4231	.331	120	-.4751	.431	40	-.4492	1.131	50	-.5069	0.000		.8264	0.00	.45
19	.161	0	-.3868	.331	110	-.4440	.431	30	-.4180	1.131	40	-.4746	.161	270	-.4384		
20	.231	180	-.4510	.331	100	-.4473	.431	20	-.4389	1.131	30	-.4903	.231	270	-.4503		
21	.231	170	-.4613	.331	90	-.4522	.431	10	-.4322	1.131	20	-.4888	.331	270	-.4671		
22	.231	160	-.4824	.331	80	-.4678	.431	0	-.4446	1.131	10	-.5039	.431	270	-.4822		
23	.231	150	-.4553	.331	70	-.4390	.531	180	-.4637	1.131	0	-.4857	.531	270	-.4601		
24	.231	140	-.4731	.331	60	-.4448	.531	90	-.4673				.731	270	-.4835		
25	.231	130	-.4731	.331	50	-.4389	.531	0	-.4375	1.631	90	-.4820	.931	270	-.4869		
26	.231	120	-.4577	.331	40	-.4217	.731	180	-.4705	1.631	0	-.0922	1.131	270	-.4897		
27	.231	110	-.4671	.331	30	-.4183	.731	90	-.4712	2.131	180	-.3349	1.631	270	-.4767		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 191 ALPHA 0 MACH .882 Q 703.639 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4396	.231	100	-.4372	.331	20	-.4606	.731	0	-.4640	2.131	90	-.0109		
2	.161	170	-.4194	.231	90	-.4137	.331	10	-.4169	.931	180	-.4483	2.131	0	-.3673		
3	.161	160	-.4213	.231	80	-.4281	.331	0	-.4318	.931	90	-.4551	0.000		.8488	-.45	0.00
4	.161	150	-.4361	.231	70	-.4321	.431	180	-.4373	.931	0	-.4555	0.000		1.0042	-.40	0.00
5	.161	140	-.4429	.231	60	-.4367	.431	170	-.4554	1.131	180	-.4873	0.000		1.1326	-.30	0.00
6	.161	130	-.4150	.231	50	-.4040	.431	160	-.4197	1.131	170	-.4544	0.000		1.1911	-.20	0.00
7	.161	120	-.4189	.231	40	-.4362	.431	150	-.4398	1.131	160	-.4733	0.000		1.2109	-.10	0.00
8	.161	110	-.4096	.231	30	-.3997	.431	140	-.4199	1.131	150	-.4483	0.000		1.2220	0.00	0.00
9	.161	100	-.4132	.231	20	-.4306	.431	130	-.4419	1.131	140	-.4767	0.000		1.2152	.10	0.00
10	.161	90	-.4276	.231	10	-.4106	.431	120	-.4210	1.131	130	-.4584	0.000		1.1924	.20	0.00
11	.161	80	-.4456	.231	0	-.4400	.431	110	-.4565	1.131	120	-.4925	0.000		1.1324	.30	0.00
12	.161	70	-.4116	.331	180	-.4338	.431	100	-.4244	1.131	110	-.4606	0.000		1.0083	.40	0.00
13	.161	60	-.4429	.331	170	-.4445	.431	90	-.4473	1.131	100	-.4886	0.000		.8338	.45	0.00
14	.161	50	-.4403	.331	160	-.4561	.431	80	-.4519	1.131	90	-.4831	0.000		1.2095	0.00	.10
15	.161	40	-.4233	.331	150	-.4286	.431	70	-.4331	1.131	80	-.4757	0.000		1.1911	0.00	.20
16	.161	30	-.4177	.331	140	-.4280	.431	60	-.4276	1.131	70	-.4706	0.000		1.1324	0.00	.30
17	.161	20	-.4220	.331	130	-.4356	.431	50	-.4343	1.131	60	-.4704	0.000		1.0036	0.00	.40
18	.161	10	-.4323	.331	120	-.4361	.431	40	-.4418	1.131	50	-.4772	0.000		.8367	0.00	.45
19	.161	0	-.4288	.331	110	-.4265	.431	30	-.4407	1.131	40	-.4752	.161	270	-.4373		
20	.231	180	-.4273	.331	100	-.4227	.431	20	-.4373	1.131	30	-.4724	.231	270	-.4373		
21	.231	170	-.4364	.331	90	-.4420	.431	10	-.4343	1.131	20	-.4732	.331	270	-.4444		
22	.231	160	-.4421	.331	80	-.4377	.431	0	-.4551	1.131	10	-.4791	.431	270	-.4416		
23	.231	150	-.4557	.331	70	-.4577	.531	180	-.4732	1.131	0	-.5091	.531	270	-.4748		
24	.231	140	-.4293	.331	60	-.4347	.531	90	-.4355				.731	270	-.4601		
25	.231	130	-.4260	.331	50	-.4318	.531	0	-.4393	1.631	90	-.4676	.931	270	-.4589		
26	.231	120	-.4517	.331	40	-.4521	.731	180	-.4723	1.631	0	-.1904	1.131	270	-.4987		
27	.231	110	-.4338	.331	30	-.4384	.731	90	-.4528	2.131	180	-.3936	1.631	270	-.4839		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 86 ALPHA 2 MACH .608 Q 429.461 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4316	.231	100	-.5146	.331	20	-.5694	.731	0	-.6226	2.131	90	-.1441		
2	.161	170	-.4219	.231	90	-.5195	.331	10	-.5504	.931	180	-.1312	2.131	0	.0805		
3	.161	160	-.4371	.231	80	-.5406	.331	0	-.5824	.931	90	-.5774	0.000		.5891	-.45	0.00
4	.161	150	-.4314	.231	70	-.5496	.431	180	-.4638	.931	0	-.3842	0.000		.6469	-.40	0.00
5	.161	140	-.4450	.231	60	-.5496	.431	170	-.4806	1.131	180	-.5052	0.000		.9145	-.30	0.00
6	.161	130	-.4925	.231	50	-.5624	.431	160	-.4768	1.131	170	-.4994	0.000		1.0407	-.20	0.00
7	.161	120	-.4773	.231	40	-.5570	.431	150	-.4602	1.131	160	-.5000	0.000		1.0918	-.10	0.00
8	.161	110	-.5091	.231	30	-.5313	.431	140	-.4933	1.131	150	-.5140	0.000		1.1013	0.00	0.00
9	.161	100	-.5118	.231	20	-.5785	.431	130	-.4969	1.131	140	-.5243	0.000		1.0724	.10	0.00
10	.161	90	-.4865	.231	10	-.5485	.431	120	-.4911	1.131	130	-.5134	0.000		1.0105	.20	0.00
11	.161	80	-.5289	.231	0	-.5594	.431	110	-.5225	1.131	120	-.5213	0.000		.8683	.30	0.00
12	.161	70	-.5159	.331	180	-.4592	.431	100	-.5123	1.131	110	-.5058	0.000		.6199	.40	0.00
13	.161	60	-.5325	.331	170	-.4041	.431	90	-.5372	1.131	100	-.5228	0.000		.5598	.45	0.00
14	.161	50	-.5444	.331	160	-.4829	.431	80	-.5488	1.131	90	-.5055	0.000		1.0835	0.00	.10
15	.161	40	-.5376	.331	150	-.4696	.431	70	-.5336	1.131	80	-.5234	0.000		1.0167	0.00	.20
16	.161	30	-.5553	.331	140	-.4920	.431	60	-.5576	1.131	70	-.5194	0.000		.8809	0.00	.30
17	.161	20	-.5428	.331	130	-.4944	.431	50	-.5523	1.131	60	-.5037	0.000		.6263	0.00	.40
18	.161	10	-.5523	.331	120	-.4832	.431	40	-.5628	1.131	50	-.4824	0.000		.5995	0.00	.45
19	.161	0	-.5420	.331	110	-.4928	.431	30	-.5548	1.131	40	-.4925	.161	270	-.5296		
20	.231	180	-.4433	.331	100	-.5103	.431	20	-.5645	1.131	30	-.4864	.231	270	-.5238		
21	.231	170	-.4531	.331	90	-.5124	.431	10	-.5617	1.131	20	-.4752	.331	270	-.5358		
22	.231	160	-.4178	.331	80	-.5294	.431	0	-.5758	1.131	10	-.4612	.431	270	-.5404		
23	.231	150	-.4664	.331	70	-.5548	.531	180	-.5063	1.131	0	-.4788	.531	270	-.5509		
24	.231	140	-.4781	.331	60	-.5578	.531	90	-.5518				.731	270	-.5727		
25	.231	130	-.4561	.331	50	-.5406	.531	0	-.5667	1.631	90	-.1685	.931	270	-.5730		
26	.231	120	-.4912	.331	40	-.5651	.731	180	-.5151	1.631	0	-.1391	1.131	270	-.5183		
27	.231	110	-.5053	.331	30	-.5627	.731	90	-.5813	2.131	180	-.0496	1.631	270	-.1604		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 87 ALPHA 4 MACH .609 Q 430.639 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4258	.231	100	-.5624	.331	20	-.6234	.731	0	-.6607	2.131	90	-.1433		
2	.161	170	-.4437	.231	90	-.5793	.331	10	-.6492	.931	180	-.1431	2.131	0	.0402		
3	.161	160	-.4182	.231	80	-.5943	.331	0	-.6536	.931	90	-.6038	0.000		.6063	-.45	0.00
4	.161	150	-.4667	.231	70	-.6155	.431	180	-.4927	.931	0	-.4369	0.000		.6658	-.40	0.00
5	.161	140	-.4824	.231	60	-.6169	.431	170	-.4825	1.131	180	-.4965	0.000		.9317	-.30	0.00
6	.161	130	-.4895	.231	50	-.6158	.431	160	-.4649	1.131	170	-.4671	0.000		1.0616	-.20	0.00
7	.161	120	-.5369	.231	40	-.6253	.431	150	-.4990	1.131	160	-.4841	0.000		1.1009	-.10	0.00
8	.161	110	-.5578	.231	30	-.6340	.431	140	-.5199	1.131	150	-.5155	0.000		1.1070	0.00	0.00
9	.161	100	-.5678	.231	20	-.6357	.431	130	-.5249	1.131	140	-.4995	0.000		1.0671	.10	0.00
10	.161	90	-.5846	.231	10	-.6376	.431	120	-.5485	1.131	130	-.5173	0.000		.9928	.20	0.00
11	.161	80	-.6065	.231	0	-.6395	.431	110	-.5716	1.131	120	-.5173	0.000		.8399	.30	0.00
12	.161	70	-.6220	.331	180	-.4344	.431	100	-.5862	1.131	110	-.5309	0.000		.5919	.40	0.00
13	.161	60	-.6155	.331	170	-.4611	.431	90	-.5961	1.131	100	-.4895	0.000		.5348	.45	0.00
14	.161	50	-.6071	.331	160	-.4589	.431	80	-.5882	1.131	90	-.4662	0.000		1.0870	0.00	.10
15	.161	40	-.6280	.331	150	-.4864	.431	70	-.6154	1.131	80	-.4583	0.000		1.0161	0.00	.20
16	.161	30	-.6388	.331	140	-.5050	.431	60	-.6272	1.131	70	-.4196	0.000		.8813	0.00	.30
17	.161	20	-.6217	.331	130	-.4965	.431	50	-.6201	1.131	60	-.3764	0.000		.6226	0.00	.40
18	.161	10	-.6469	.331	120	-.5472	.431	40	-.6586	1.131	50	-.3255	0.000		.5088	0.00	.45
19	.161	0	-.6288	.331	110	-.5788	.431	30	-.6539	1.131	40	-.3068	.161	270	-.5845		
20	.231	180	-.4602	.331	100	-.5733	.431	20	-.6492	1.131	30	-.2974	.231	270	-.5793		
21	.231	170	-.4437	.331	90	-.5929	.431	10	-.6624	1.131	20	-.2672	.331	270	-.5944		
22	.231	160	-.4575	.331	80	-.6139	.431	0	-.6580	1.131	10	-.2430	.431	270	-.5965		
23	.231	150	-.4540	.331	70	-.5891	.531	180	-.4858	1.131	0	-.3189	.531	270	-.6036		
24	.231	140	-.4748	.331	60	-.6215	.531	90	-.6060				.731	270	-.6257		
25	.231	130	-.5242	.331	50	-.6174	.531	0	-.6820	1.631	90	-.0808	.931	270	-.6027		
26	.231	120	-.5396	.331	40	-.6329	.731	180	-.5122	1.631	0	-.1522	1.131	270	-.4566		
27	.231	110	-.5569	.331	30	-.6370	.731	90	-.6456	2.131	180	-.0164	1.631	270	-.0777		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 73 ALPHA 22 MACH .504 @ 319.163 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4748	.231	100	-.7248	.331	20	.0253	.731	0	.0968	2.131	90	-.2891		
2	.161	170	-.4791	.231	90	-.6902	.331	10	.0661	.931	180	-.3158	2.131	0	.1365		
3	.161	160	-.4919	.231	80	-.6520	.331	0	.0917	.931	90	-.5481	0.000		.8014	-.45	0.00
4	.161	150	-.5054	.231	70	-.7240	.431	180	-.0139	.931	0	-.4770	0.000		.9869	-.40	0.00
5	.161	140	-.6847	.231	60	-.5344	.431	170	-.0035	1.131	180	-.4281	0.000		1.0822	-.30	0.00
6	.161	130	-.6415	.231	50	-.3621	.431	160	-.0150	1.131	170	-.5040	0.000		1.0466	-.20	0.00
7	.161	120	-.7070	.231	40	-.2577	.431	150	-.0688	1.131	160	-.4828	0.000		1.0023	-.10	0.00
8	.161	110	-.7066	.231	30	-.1409	.431	140	-.0722	1.131	150	-.4811	0.000		.9153	0.00	0.00
9	.161	100	-.7487	.231	20	-.0747	.431	130	-.0944	1.131	140	-.5558	0.000		.7985	.10	0.00
10	.161	90	-.7607	.231	10	-.0270	.431	120	-.7022	1.131	130	-.5489	0.000		.6378	.20	0.00
11	.161	80	-.7900	.231	0	-.0112	.431	110	-.0725	1.131	120	-.5877	0.000		.4410	.30	0.00
12	.161	70	-.8288	.331	180	-.5484	.431	100	-.6325	1.131	110	-.6542	0.000		.2488	.40	0.00
13	.161	60	-.8990	.331	170	-.5755	.431	90	-.6139	1.131	100	-.6179	0.000		.0852	.45	0.00
14	.161	50	-.7084	.331	160	-.5976	.431	80	-.5226	1.131	90	-.6072	0.000		.8838	0.00	.10
15	.161	40	-.6236	.331	150	-.5785	.431	70	-.4049	1.131	80	-.5399	0.000		.8304	0.00	.20
16	.161	30	-.5655	.331	140	-.6461	.431	60	-.3032	1.131	70	-.4489	0.000		.7111	0.00	.30
17	.161	20	-.4828	.331	130	-.6825	.431	50	-.2227	1.131	60	-.3677	0.000		.4327	0.00	.40
18	.161	10	-.4126	.331	120	-.6902	.431	40	-.1195	1.131	50	-.2428	0.000		.3838	0.00	.45
19	.161	0	-.4173	.331	110	-.6645	.431	30	-.0374	1.131	40	-.1481	.161	270	-.7309		
20	.231	180	-.5252	.331	100	-.6700	.431	20	.0309	1.131	30	-.0415	.231	270	-.7437		
21	.231	170	-.5501	.331	90	-.7284	.431	10	.0706	1.131	20	.0164	.331	270	-.6866		
22	.231	160	-.5446	.331	80	-.6094	.431	0	.0925	1.131	10	.0813	.431	270	-.5930		
23	.231	150	-.6335	.331	70	-.4767	.531	180	-.6480	1.131	0	.0993	.531	270	-.5835		
24	.231	140	-.6316	.331	60	-.3602	.531	90	-.5809				.731	270	-.5748		
25	.231	130	-.6185	.331	50	-.2158	.531	0	.1077	1.631	90	-.5297	.931	270	-.5773		
26	.231	120	-.6576	.331	40	-.1390	.731	180	-.6384	1.631	0	-.2938	1.131	270	-.6087		
27	.231	110	-.7629	.331	30	-.0479	.731	90	-.6050	2.131	180	-.1868	1.631	270	-.5392		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 74 ALPHA 24 MACH .506 @ 320.768 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5396	.231	100	-.6786	.331	20	.0581	.731	0	.1403	2.131	90	-.3419		
2	.161	170	-.5290	.231	90	-.6812	.331	10	.1121	.931	180	-.3023	2.131	0	.1624		
3	.161	160	-.5032	.231	80	-.6384	.331	0	.1191	.931	90	-.6045	0.000		.8337	-.45	0.00
4	.161	150	-.6309	.231	70	-.6775	.431	180	-.6277	.931	0	-.5026	0.000		1.0485	-.40	0.00
5	.161	140	-.5920	.231	60	-.4589	.431	170	-.6007	1.131	180	-.5675	0.000		1.0852	-.30	0.00
6	.161	130	-.6535	.231	50	-.2933	.431	160	-.6196	1.131	170	-.5338	0.000		1.0794	-.20	0.00
7	.161	120	-.6906	.231	40	-.1913	.431	150	-.6879	1.131	160	-.5407	0.000		.9821	-.10	0.00
8	.161	110	-.7008	.231	30	-.0933	.431	140	-.7134	1.131	150	-.5013	0.000		.8741	0.00	0.00
9	.161	100	-.6804	.231	20	-.0008	.431	130	-.6558	1.131	140	-.6057	0.000		.7497	.10	0.00
10	.161	90	-.7153	.231	10	.0427	.431	120	-.6687	1.131	130	-.5639	0.000		.6025	.20	0.00
11	.161	80	-.7230	.231	0	.0811	.431	110	-.6392	1.131	120	-.6370	0.000		.4307	.30	0.00
12	.161	70	-.6540	.331	180	-.5857	.431	100	-.6742	1.131	110	-.7223	0.000		.1982	.40	0.00
13	.161	60	-.7350	.331	170	-.5576	.431	90	-.5627	1.131	100	-.6938	0.000		.0366	.45	0.00
14	.161	50	-.6127	.331	160	-.5569	.431	80	-.4741	1.131	90	-.6402	0.000		.8873	0.00	.10
15	.161	40	-.5691	.331	150	-.5960	.431	70	-.4161	1.131	80	-.5952	0.000		.8111	0.00	.20
16	.161	30	-.4963	.331	140	-.6790	.431	60	-.3274	1.131	70	-.5078	0.000		.6784	0.00	.30
17	.161	20	-.3715	.331	130	-.6263	.431	50	-.2019	1.131	60	-.3746	0.000		.4447	0.00	.40
18	.161	10	-.3009	.331	120	-.6786	.431	40	-.1018	1.131	50	-.2431	0.000		.3725	0.00	.45
19	.161	0	-.3060	.331	110	-.6135	.431	30	-.0113	1.131	40	-.1354	.161	270	-.6657		
20	.231	180	-.5385	.331	100	-.6552	.431	20	.0744	1.131	30	-.0014	.231	270	-.6740		
21	.231	170	-.5068	.331	90	-.6007	.431	10	.1117	1.131	20	.0526	.331	270	-.6422		
22	.231	160	-.5989	.331	80	-.5642	.431	0	.1294	1.131	10	.1204	.431	270	-.5858		
23	.231	150	-.6306	.331	70	-.4362	.531	180	-.0414	1.131	0	.1435	.531	270	-.5294		
24	.231	140	-.6749	.331	60	-.3382	.531	90	-.5653				.731	270	-.5648		
25	.231	130	-.7026	.331	50	-.2201	.531	0	.1232	1.631	90	-.5870	.931	270	-.6282		
26	.231	120	-.6058	.331	40	-.1119	.731	180	-.6211	1.631	0	-.3255	1.131	270	-.6427		
27	.231	110	-.6699	.331	30	-.0103	.731	90	-.6159	2.131	180	-.1277	1.631	270	-.5858		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 75 ALPHA 26 MACH .505 Q 320.233 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5380	.231	100	-.6662	.331	20	.1015	.731	0	.1576	2.131	90	-.3500		
2	.161	170	-.5289	.231	90	-.6948	.331	10	.1570	.931	180	-.3326	2.131	0	.1750		
3	.161	160	-.5843	.231	80	-.7102	.331	0	.1666	.931	90	-.6566	0.000		.8628	-.45	0.00
4	.161	150	-.5529	.231	70	-.6150	.431	180	-.5888	.931	0	-.5514	0.000		1.0432	-.40	0.00
5	.161	140	-.5937	.231	60	-.3978	.431	170	-.6243	1.131	180	-.6019	0.000		1.0688	-.30	0.00
6	.161	130	-.6018	.231	50	-.2553	.431	160	-.5981	1.131	170	-.5783	0.000		1.0002	-.20	0.00
7	.161	120	-.6598	.231	40	-.1367	.431	150	-.7165	1.131	160	-.5864	0.000		.9345	-.10	0.00
8	.161	110	-.6014	.231	30	-.0034	.431	140	-.6036	1.131	150	-.5848	0.000		.8318	0.00	0.00
9	.161	100	-.6626	.231	20	.0615	.431	130	-.6532	1.131	140	-.5921	0.000		.6960	.10	0.00
10	.161	90	-.6612	.231	10	.1014	.431	120	-.6684	1.131	130	-.6222	0.000		.5094	.20	0.00
11	.161	80	-.7676	.231	0	.1388	.431	110	-.6639	1.131	120	-.6723	0.000		.3116	.30	0.00
12	.161	70	-.8201	.331	180	-.5901	.431	100	-.6558	1.131	110	-.7475	0.000		.1391	.40	0.00
13	.161	60	-.6324	.331	170	-.5648	.431	90	-.5899	1.131	100	-.7357	0.000		-.0120	.45	0.00
14	.161	50	-.6021	.331	160	-.5897	.431	80	-.5197	1.131	90	-.7386	0.000		.7963	0.00	.10
15	.161	40	-.4815	.331	150	-.6010	.431	70	-.4305	1.131	80	-.6613	0.000		.7538	0.00	.20
16	.161	30	-.3951	.331	140	-.6340	.431	60	-.3332	1.131	70	-.5726	0.000		.6097	0.00	.30
17	.161	20	-.2337	.331	130	-.6567	.431	50	-.1885	1.131	60	-.4176	0.000		.4185	0.00	.40
18	.161	10	-.1673	.331	120	-.6226	.431	40	-.0916	1.131	50	-.3098	0.000		.3573	0.00	.45
19	.161	0	-.1833	.331	110	-.6673	.431	30	.0020	1.131	40	-.1605	.161	270	-.7589		
20	.231	180	-.5166	.331	100	-.6336	.431	20	.0837	1.131	30	-.0450	.231	270	-.7110		
21	.231	170	-.5857	.331	90	-.5959	.431	10	.1614	1.131	20	.0823	.331	270	-.6165		
22	.231	160	-.5690	.331	80	-.5648	.431	0	.1781	1.131	10	.1348	.431	270	-.5839		
23	.231	150	-.5577	.331	70	-.4461	.531	180	-.5911	1.131	0	.1409	.531	270	-.5460		
24	.231	140	-.6218	.331	60	-.3293	.531	90	-.5922				.731	270	-.6722		
25	.231	130	-.6838	.331	50	-.2048	.531	0	.1596	1.631	90	-.6910	.931	270	-.7065		
26	.231	120	-.6459	.331	40	-.0924	.731	180	-.6880	1.631	0	-.3663	1.131	270	-.7482		
27	.231	110	-.7191	.331	30	.0219	.731	90	-.6521	2.131	180	-.1609	1.631	270	-.7172		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 76 ALPHA 0 MACH .506 Q 321.123 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5433	.231	100	-.5051	.331	20	-.5226	.731	0	-.5701	2.131	90	-.1428		
2	.161	170	-.5073	.231	90	-.5131	.331	10	-.5381	.931	180	-.1470	2.131	0	-.0658		
3	.161	160	-.5193	.231	80	-.5299	.331	0	-.5333	.931	90	-.5730	0.000		.5492	-.45	0.00
4	.161	150	-.5073	.231	70	-.4814	.431	180	-.5303	.931	0	-.5308	0.000		.6007	-.40	0.00
5	.161	140	-.5008	.231	60	-.5226	.431	170	-.5414	1.131	180	-.4931	0.000		.8543	-.30	0.00
6	.161	130	-.5226	.231	50	-.5328	.431	160	-.5469	1.131	170	-.4444	0.000		.9996	-.20	0.00
7	.161	120	-.5088	.231	40	-.5058	.431	150	-.5558	1.131	160	-.4732	0.000		1.0589	-.10	0.00
8	.161	110	-.5193	.231	30	-.4952	.431	140	-.5613	1.131	150	-.4659	0.000		1.0852	0.00	0.00
9	.161	100	-.5063	.231	20	-.4978	.431	130	-.5314	1.131	140	-.4918	0.000		1.0618	.10	0.00
10	.161	90	-.5230	.231	10	-.5197	.431	120	-.5477	1.131	130	-.4399	0.000		.9988	.20	0.00
11	.161	80	-.5139	.231	0	-.5263	.431	110	-.5373	1.131	120	-.4862	0.000		.8481	.30	0.00
12	.161	70	-.5063	.331	180	-.5442	.431	100	-.5432	1.131	110	-.4651	0.000		.5891	.40	0.00
13	.161	60	-.5052	.331	170	-.5241	.431	90	-.5381	1.131	100	-.4886	0.000		.5171	.45	0.00
14	.161	50	-.5252	.331	160	-.5409	.431	80	-.5561	1.131	90	-.4732	0.000		1.0572	0.00	.10
15	.161	40	-.4906	.331	150	-.5292	.431	70	-.5207	1.131	80	-.5000	0.000		.9930	0.00	.20
16	.161	30	-.5052	.331	140	-.5387	.431	60	-.5491	1.131	70	-.4687	0.000		.8530	0.00	.30
17	.161	20	-.5157	.331	130	-.5613	.431	50	-.5333	1.131	60	-.4703	0.000		.5961	0.00	.40
18	.161	10	-.5059	.331	120	-.5387	.431	40	-.5307	1.131	50	-.4586	0.000		.5558	0.00	.45
19	.161	0	-.5208	.331	110	-.5000	.431	30	-.5373	1.131	40	-.4716	.161	270	-.5172		
20	.231	180	-.5422	.331	100	-.5559	.431	20	-.5477	1.131	30	-.4602	.231	270	-.5214		
21	.231	170	-.5252	.331	90	-.5197	.431	10	-.5307	1.131	20	-.5336	.331	270	-.5485		
22	.231	160	-.5266	.331	80	-.5307	.431	0	-.5329	1.131	10	-.4878	.431	270	-.5658		
23	.231	150	-.5201	.331	70	-.5190	.531	180	-.5466	1.131	0	-.4931	.531	270	-.5465		
24	.231	140	-.5244	.331	60	-.5270	.531	90	-.5466				.731	270	-.5843		
25	.231	130	-.4997	.331	50	-.5339	.531	0	-.5764	1.631	90	-.1048	.931	270	-.5518		
26	.231	120	-.5324	.331	40	-.5201	.731	180	-.5897	1.631	0	-.1401	1.131	270	-.4691		
27	.231	110	-.5162	.331	30	-.5171	.731	90	-.5853	2.131	180	.0420	1.631	270	-.0769		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 69 ALPHA 14 MACH .506 Q 320.857 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4951	.231	100	-.8802	.331	20	-.1830	.731	0	-.0400	2.131	90	-.2549		
2	.161	170	-.4692	.231	90	-.8126	.331	10	-.1638	.931	180	-.2259	2.131	0	.0305		
3	.161	160	-.5362	.231	80	-.9218	.331	0	-.1538	.931	90	-.3632	0.000		.5303	-.45	0.00
4	.161	150	-.5922	.231	70	-.9401	.431	180	-.5840	.931	0	-.3514	0.000		.7614	-.40	0.00
5	.161	140	-.6675	.231	60	-.9354	.431	170	-.6072	1.131	180	-.3510	0.000		1.0066	-.30	0.00
6	.161	130	-.7046	.231	50	-.8305	.431	160	-.6172	1.131	170	-.3766	0.000		1.0812	-.20	0.00
7	.161	120	-.7566	.231	40	-.6868	.431	150	-.6441	1.131	160	-.3997	0.000		1.0725	-.10	0.00
8	.161	110	-.8334	.231	30	-.5077	.431	140	-.7184	1.131	150	-.3433	0.000		1.0070	0.00	0.00
9	.161	100	-.8632	.231	20	-.3973	.431	130	-.7508	1.131	140	-.3380	0.000		.9221	.10	0.00
10	.161	90	-.8890	.231	10	-.3323	.431	120	-.7516	1.131	130	-.3790	0.000		.7993	.20	0.00
11	.161	80	-1.0003	.231	0	-.3067	.431	110	-.8214	1.131	120	-.3278	0.000		.6040	.30	0.00
12	.161	70	-1.0742	.331	180	-.5545	.431	100	-.8049	1.131	110	-.3652	0.000		.3823	.40	0.00
13	.161	60	-1.0702	.331	170	-.5355	.431	90	-.7132	1.131	100	-.3506	0.000		.2608	.45	0.00
14	.161	50	-1.1656	.331	160	-.6097	.431	80	-.5924	1.131	90	-.3201	0.000		.9897	0.00	.10
15	.161	40	-1.0774	.331	150	-.6287	.431	70	-.4961	1.131	80	-.3144	0.000		.9159	0.00	.20
16	.161	30	-1.0149	.331	140	-.7131	.431	60	-.3543	1.131	70	-.2604	0.000		.7692	0.00	.30
17	.161	20	-.8446	.331	130	-.7369	.431	50	-.2539	1.131	60	-.2125	0.000		.4734	0.00	.40
18	.161	10	-.7613	.331	120	-.7585	.431	40	-.2033	1.131	50	-.1715	0.000		.4260	0.00	.45
19	.161	0	-.7119	.331	110	-.8122	.431	30	-.1446	1.131	40	-.1037	.161	270	-.9303		
20	.231	180	-.5027	.331	100	-.8177	.431	20	-.1283	1.131	30	-.0704	.231	270	-.8892		
21	.231	170	-.4816	.331	90	-.8308	.431	10	-.0877	1.131	20	-.0253	.331	270	-.8550		
22	.231	160	-.5529	.331	80	-.8020	.431	0	-.0877	1.131	10	-.0136	.431	270	-.7166		
23	.231	150	-.6355	.331	70	-.7098	.531	180	-.6434	1.131	0	.0006	.531	270	-.5720		
24	.231	140	-.6540	.331	60	-.5618	.531	90	-.5836				.731	270	-.4271		
25	.231	130	-.6940	.331	50	-.4079	.531	0	-.0593	1.631	90	-.2604	.931	270	-.3814		
26	.231	120	-.7810	.331	40	-.2694	.731	180	-.6116	1.631	0	-.2405	1.131	270	-.3422		
27	.231	110	-.7955	.331	30	-.2237	.731	90	-.4473	2.131	180	-.0091	1.631	270	-.2640		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 70 ALPHA 16 MACH .505 Q 320.411 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5093	.231	100	-.8639	.331	20	-.1352	.731	0	-.0201	2.131	90	-.2644		
2	.161	170	-.4961	.231	90	-.8679	.331	10	-.0930	.931	180	-.2340	2.131	0	.0610		
3	.161	160	-.5475	.231	80	-.8507	.331	0	-.0975	.931	90	-.4377	0.000		.5867	-.45	0.00
4	.161	150	-.6775	.231	70	-.9242	.431	180	-.6166	.931	0	-.3682	0.000		.8202	-.40	0.00
5	.161	140	-.6655	.231	60	-.8521	.431	170	-.6037	1.131	180	-.3804	0.000		1.0381	-.30	0.00
6	.161	130	-.7143	.231	50	-.7423	.431	160	-.6262	1.131	170	-.3706	0.000		1.0735	-.20	0.00
7	.161	120	-.8091	.231	40	-.4773	.431	150	-.6880	1.131	160	-.3881	0.000		1.0768	-.10	0.00
8	.161	110	-.7817	.231	30	-.3800	.431	140	-.6883	1.131	150	-.4434	0.000		.9976	0.00	0.00
9	.161	100	-.8593	.231	20	-.3068	.431	130	-.7430	1.131	140	-.4092	0.000		.8949	.10	0.00
10	.161	90	-.8207	.231	10	-.2548	.431	120	-.7719	1.131	130	-.4003	0.000		.7711	.20	0.00
11	.161	80	-.9905	.231	0	-.2548	.431	110	-.7819	1.131	120	-.3905	0.000		.5693	.30	0.00
12	.161	70	-1.0050	.331	180	-.5597	.431	100	-.7693	1.131	110	-.4198	0.000		.3507	.40	0.00
13	.161	60	-1.0713	.331	170	-.5436	.431	90	-.6953	1.131	100	-.4259	0.000		.2141	.45	0.00
14	.161	50	-1.1220	.331	160	-.6076	.431	80	-.5833	1.131	90	-.4068	0.000		.9786	0.00	.10
15	.161	40	-1.0149	.331	150	-.6684	.431	70	-.4532	1.131	80	-.3661	0.000		.9044	0.00	.20
16	.161	30	-.8142	.331	140	-.6962	.431	60	-.3278	1.131	70	-.3092	0.000		.7587	0.00	.30
17	.161	20	-.7165	.331	130	-.7522	.431	50	-.2387	1.131	60	-.2470	0.000		.4530	0.00	.40
18	.161	10	-.6925	.331	120	-.7943	.431	40	-.1866	1.131	50	-.1852	0.000		.3981	0.00	.45
19	.161	0	-.6717	.331	110	-.8170	.431	30	-.1322	1.131	40	-.1267	.161	270	-.9333		
20	.231	180	-.5042	.331	100	-.8269	.431	20	-.0856	1.131	30	-.0653	.231	270	-.8388		
21	.231	170	-.5449	.331	90	-.8273	.431	10	-.0598	1.131	20	-.0299	.331	270	-.8512		
22	.231	160	-.5726	.331	80	-.7489	.431	0	-.0546	1.131	10	-.0128	.431	270	-.7106		
23	.231	150	-.5843	.331	70	-.6098	.531	180	-.6284	1.131	0	.0108	.531	270	-.5720		
24	.231	140	-.6604	.331	60	-.5000	.531	90	-.6006				.731	270	-.4595		
25	.231	130	-.7065	.331	50	-.3291	.531	0	-.0361	1.631	90	-.3373	.931	270	-.4318		
26	.231	120	-.7959	.331	40	-.2376	.731	180	-.6192	1.631	0	-.2661	1.131	270	-.3869		
27	.231	110	-.8258	.331	30	-.1845	.731	90	-.4587	2.131	180	-.0055	1.631	270	-.3246		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 65 ALPHA 6 MACH .506 Q 321.390 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4622	.231	100	-.6550	.331	20	-.8104	.731	0	-.3897	2.131	90	-.1583		
2	.161	170	-.4822	.231	90	-.6824	.331	10	-.8155	.931	180	-.1724	2.131	0	.0041		
3	.161	160	-.4819	.231	80	-.6842	.331	0	-.7997	.931	90	-.4723	0.000		.5471	-.45	0.00
4	.161	150	-.4993	.231	70	-.7046	.431	180	-.5070	.931	0	-.3945	0.000		.6434	-.40	0.00
5	.161	140	-.5287	.231	60	-.7094	.431	170	-.5243	1.131	180	-.4505	0.000		.9144	-.30	0.00
6	.161	130	-.5770	.231	50	-.7331	.431	160	-.5408	1.131	170	-.4237	0.000		1.0383	-.20	0.00
7	.161	120	-.5868	.231	40	-.7287	.431	150	-.5358	1.131	160	-.4282	0.000		1.0761	-.10	0.00
8	.161	110	-.6162	.231	30	-.7630	.431	140	-.5737	1.131	150	-.4383	0.000		1.0617	0.00	0.00
9	.161	100	-.6329	.231	20	-.7652	.431	130	-.6036	1.131	140	-.4553	0.000		1.0259	.10	0.00
10	.161	90	-.6812	.231	10	-.7849	.431	120	-.6261	1.131	130	-.3856	0.000		.9219	.20	0.00
11	.161	80	-.7077	.231	0	-.7834	.431	110	-.6637	1.131	120	-.4189	0.000		.7766	.30	0.00
12	.161	70	-.7066	.331	180	-.4744	.431	100	-.6718	1.131	110	-.3543	0.000		.5208	.40	0.00
13	.161	60	-.7310	.331	170	-.5101	.431	90	-.6869	1.131	100	-.2924	0.000		.4714	.45	0.00
14	.161	50	-.7295	.331	160	-.5393	.431	80	-.7263	1.131	90	-.2442	0.000		1.0366	0.00	.10
15	.161	40	-.7190	.331	150	-.4999	.431	70	-.7171	1.131	80	-.2142	0.000		.9807	0.00	.20
16	.161	30	-.7379	.331	140	-.5400	.431	60	-.7448	1.131	70	-.1323	0.000		.8363	0.00	.30
17	.161	20	-.7651	.331	130	-.5780	.431	50	-.7735	1.131	60	-.0800	0.000		.5599	0.00	.40
18	.161	10	-.7524	.331	120	-.5944	.431	40	-.7735	1.131	50	-.0581	0.000		.5179	0.00	.45
19	.161	0	-.7597	.331	110	-.6101	.431	30	-.7879	1.131	40	-.0066	.161	270	-.6632		
20	.231	180	-.4394	.331	100	-.6506	.431	20	-.8148	1.131	30	.0185	.231	270	-.6681		
21	.231	170	-.4604	.331	90	-.6645	.431	10	-.8288	1.131	20	.0359	.331	270	-.6734		
22	.231	160	-.4335	.331	80	-.6714	.431	0	-.8100	1.131	10	.0363	.431	270	-.6747		
23	.231	150	-.4840	.331	70	-.6955	.531	180	-.5343	1.131	0	.0319	.531	270	-.6948		
24	.231	140	-.5047	.331	60	-.7115	.531	90	-.6821				.731	270	-.6479		
25	.231	130	-.5076	.331	50	-.7218	.531	0	-.7381	1.631	90	-.0326	.931	270	-.4407		
26	.231	120	-.5810	.331	40	-.7601	.731	180	-.5852	1.631	0	-.1684	1.131	270	-.2389		
27	.231	110	-.6169	.331	30	-.7608	.731	90	-.6581	2.131	180	-.0281	1.631	270	-.0209		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 66 ALPHA 8 MACH .506 Q 321.390 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4677	.231	100	-.6966	.331	20	-.9121	.731	0	-.0164	2.131	90	-.1784		
2	.161	170	-.4633	.231	90	-.7167	.331	10	-.9243	.931	180	-.1708	2.131	0	.0058		
3	.161	160	-.4808	.231	80	-.7437	.331	0	-.9328	.931	90	-.3406	0.000		.5549	-.45	0.00
4	.161	150	-.5185	.231	70	-.7670	.431	180	-.5210	.931	0	-.3856	0.000		.6779	-.40	0.00
5	.161	140	-.5759	.231	60	-.7867	.431	170	-.5383	1.131	180	-.3872	0.000		.9432	-.30	0.00
6	.161	130	-.6195	.231	50	-.8137	.431	160	-.5479	1.131	170	-.4128	0.000		1.0485	-.20	0.00
7	.161	120	-.6725	.231	40	-.8404	.431	150	-.5940	1.131	160	-.4375	0.000		1.0847	-.10	0.00
8	.161	110	-.6896	.231	30	-.8571	.431	140	-.6121	1.131	150	-.4225	0.000		1.0654	0.00	0.00
9	.161	100	-.7005	.231	20	-.8801	.431	130	-.6423	1.131	140	-.4266	0.000		1.0086	.10	0.00
10	.161	90	-.7332	.231	10	-.9009	.431	120	-.6784	1.131	130	-.3958	0.000		.9042	.20	0.00
11	.161	80	-.7782	.231	0	-.9152	.431	110	-.7013	1.131	120	-.3317	0.000		.7355	.30	0.00
12	.161	70	-.7528	.331	180	-.4488	.431	100	-.6954	1.131	110	-.3086	0.000		.5117	.40	0.00
13	.161	60	-.8003	.331	170	-.4911	.431	90	-.7411	1.131	100	-.2348	0.000		.4541	.45	0.00
14	.161	50	-.7967	.331	160	-.4933	.431	80	-.7595	1.131	90	-.2263	0.000		1.0424	0.00	.10
15	.161	40	-.8439	.331	150	-.5473	.431	70	-.8170	1.131	80	-.1554	0.000		.9749	0.00	.20
16	.161	30	-.8298	.331	140	-.5809	.431	60	-.8100	1.131	70	-.1104	0.000		.8194	0.00	.30
17	.161	20	-.8650	.331	130	-.6200	.431	50	-.8233	1.131	60	-.0881	0.000		.5241	0.00	.40
18	.161	10	-.8821	.331	120	-.6415	.431	40	-.8447	1.131	50	-.0618	0.000		.5060	0.00	.45
19	.161	0	-.9024	.331	110	-.6772	.431	30	-.8399	1.131	40	-.0326	.161	270	-.7289		
20	.231	180	-.4575	.331	100	-.7039	.431	20	-.8137	1.131	30	-.0095	.231	270	-.7314		
21	.231	170	-.4976	.331	90	-.7218	.431	10	-.8089	1.131	20	-.0091	.331	270	-.7339		
22	.231	160	-.4840	.331	80	-.7323	.431	0	-.7920	1.131	10	.0112	.431	270	-.7425		
23	.231	150	-.5171	.331	70	-.7787	.531	180	-.5446	1.131	0	.0136	.531	270	-.7302		
24	.231	140	-.5581	.331	60	-.7995	.531	90	-.7532				.731	270	-.5912		
25	.231	130	-.6231	.331	50	-.8422	.531	0	-.4860	1.631	90	-.0764	.931	270	-.3400		
26	.231	120	-.6344	.331	40	-.8655	.731	180	-.5756	1.631	0	-.1801	1.131	270	-.1936		
27	.231	110	-.7008	.331	30	-.9057	.731	90	-.5999	2.131	180	-.0237	1.631	270	-.0826		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 71 ALPHA 18 MACH .506 Q 320.948 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4807	.231	100	-.7491	.331	20	-.0844	.731	0	.0274	2.131	90	-.2652		
2	.161	170	-.5055	.231	90	-.7875	.331	10	-.0504	.931	180	-.3010	2.131	0	.0807		
3	.161	160	-.5444	.231	80	-.8039	.331	0	-.0342	.931	90	-.4561	0.000		.6508	-.45	0.00
4	.161	150	-.6658	.231	70	-.8445	.431	180	-.0148	.931	0	-.3939	0.000		.8819	-.40	0.00
5	.161	140	-.6655	.231	60	-.7418	.431	170	-.0133	1.131	180	-.3907	0.000		1.0425	-.30	0.00
6	.161	130	-.6818	.231	50	-.5744	.431	160	-.0070	1.131	170	-.4126	0.000		1.0660	-.20	0.00
7	.161	120	-.7760	.231	40	-.3585	.431	150	-.0803	1.131	160	-.4316	0.000		1.0409	-.10	0.00
8	.161	110	-.7844	.231	30	-.2905	.431	140	-.7089	1.131	150	-.4686	0.000		.9701	0.00	0.00
9	.161	100	-.7826	.231	20	-.2218	.431	130	-.7174	1.131	140	-.4183	0.000		.8576	.10	0.00
10	.161	90	-.8157	.231	10	-.1959	.431	120	-.7499	1.131	130	-.4523	0.000		.7130	.20	0.00
11	.161	80	-.8800	.231	0	-.1900	.431	110	-.7266	1.131	120	-.4389	0.000		.5252	.30	0.00
12	.161	70	-.9026	.331	180	-.3540	.431	100	-.7499	1.131	110	-.4946	0.000		.2986	.40	0.00
13	.161	60	-1.0095	.331	170	-.3469	.431	90	-.0750	1.131	100	-.4958	0.000		.1573	.45	0.00
14	.161	50	-.9979	.331	160	-.5638	.431	80	-.5472	1.131	90	-.4653	0.000		.9425	0.00	.10
15	.161	40	-.8211	.331	150	-.6541	.431	70	-.4535	1.131	80	-.4373	0.000		.8823	0.00	.20
16	.161	30	-.7153	.331	140	-.6574	.431	60	-.3228	1.131	70	-.3594	0.000		.7386	0.00	.30
17	.161	20	-.6644	.331	130	-.7180	.431	50	-.2305	1.131	60	-.2673	0.000		.4506	0.00	.40
18	.161	10	-.6255	.331	120	-.7056	.431	40	-.1715	1.131	50	-.1979	0.000		.3975	0.00	.45
19	.161	0	-.6124	.331	110	-.7612	.431	30	-.0906	1.131	40	-.1118	.161	270	-.8284		
20	.231	180	-.5095	.331	100	-.8050	.431	20	-.0522	1.131	30	-.0562	.231	270	-.8271		
21	.231	170	-.5476	.331	90	-.7940	.431	10	-.0035	1.131	20	-.0063	.331	270	-.7477		
22	.231	160	-.5458	.331	80	-.6673	.431	0	-.0043	1.131	10	.0278	.431	270	-.6745		
23	.231	150	-.6156	.331	70	-.5814	.531	180	-.0262	1.131	0	.0481	.531	270	-.5900		
24	.231	140	-.6833	.331	60	-.3735	.531	90	-.5819				.731	270	-.5068		
25	.231	130	-.7207	.331	50	-.2733	.531	0	.0157	1.631	90	-.3617	.931	270	-.4772		
26	.231	120	-.7753	.331	40	-.2050	.731	180	-.6259	1.631	0	-.2677	1.131	270	-.4548		
27	.231	110	-.8015	.331	30	-.1294	.731	90	-.4876	2.131	180	-.0075	1.631	270	-.3734		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 72 ALPHA 20 MACH .505 Q 319.759 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5224	.231	100	-.7683	.331	20	-.0295	.731	0	.0661	2.131	90	-.3102		
2	.161	170	-.5158	.231	90	-.7625	.331	10	-.0088	.931	180	-.3056	2.131	0	.0883		
3	.161	160	-.5935	.231	80	-.8207	.331	0	.0182	.931	90	-.5299	0.000		.7197	-.45	0.00
4	.161	150	-.6650	.231	70	-.8039	.431	180	-.5930	.931	0	-.4424	0.000		.9362	-.40	0.00
5	.161	140	-.6760	.231	60	-.6639	.431	170	-.0138	1.131	180	-.3870	0.000		1.0601	-.30	0.00
6	.161	130	-.6858	.231	50	-.4322	.431	160	-.6149	1.131	170	-.4697	0.000		1.0717	-.20	0.00
7	.161	120	-.6980	.231	40	-.3193	.431	150	-.6538	1.131	160	-.4461	0.000		1.0275	-.10	0.00
8	.161	110	-.7504	.231	30	-.2387	.431	140	-.7119	1.131	150	-.4514	0.000		.9370	0.00	0.00
9	.161	100	-.8113	.231	20	-.1742	.431	130	-.7704	1.131	140	-.4725	0.000		.8193	.10	0.00
10	.161	90	-.9025	.231	10	-.1251	.431	120	-.8015	1.131	130	-.4664	0.000		.6691	.20	0.00
11	.161	80	-.8649	.231	0	-.0925	.431	110	-.7604	1.131	120	-.5104	0.000		.4759	.30	0.00
12	.161	70	-.9029	.331	180	-.5810	.431	100	-.7167	1.131	110	-.5540	0.000		.2763	.40	0.00
13	.161	60	-.9911	.331	170	-.5645	.431	90	-.6260	1.131	100	-.5796	0.000		.1140	.45	0.00
14	.161	50	-.8274	.331	160	-.5774	.431	80	-.5479	1.131	90	-.5389	0.000		.9176	0.00	.10
15	.161	40	-.6814	.331	150	-.5983	.431	70	-.4375	1.131	80	-.5027	0.000		.8515	0.00	.20
16	.161	30	-.6581	.331	140	-.6738	.431	60	-.3183	1.131	70	-.4035	0.000		.7238	0.00	.30
17	.161	20	-.5957	.331	130	-.7394	.431	50	-.2335	1.131	60	-.3276	0.000		.4114	0.00	.40
18	.161	10	-.5403	.331	120	-.6749	.431	40	-.1561	1.131	50	-.2291	0.000		.3949	0.00	.45
19	.161	0	-.5290	.331	110	-.7320	.431	30	-.0702	1.131	40	-.1322	.161	270	-.8318		
20	.231	180	-.5111	.331	100	-.7936	.431	20	-.0214	1.131	30	-.0552	.231	270	-.8405		
21	.231	170	-.4987	.331	90	-.7189	.431	10	.0345	1.131	20	.0075	.331	270	-.7166		
22	.231	160	-.5003	.331	80	-.6598	.431	0	.0438	1.131	10	.0470	.431	270	-.6480		
23	.231	150	-.6399	.331	70	-.5303	.531	180	-.6775	1.131	0	.0702	.531	270	-.5923		
24	.231	140	-.6059	.331	60	-.3784	.531	90	-.5964				.731	270	-.5497		
25	.231	130	-.7033	.331	50	-.2878	.531	0	.0475	1.631	90	-.4742	.931	270	-.5497		
26	.231	120	-.7373	.331	40	-.1947	.731	180	-.6534	1.631	0	-.3166	1.131	270	-.5555		
27	.231	110	-.7340	.331	30	-.1042	.731	90	-.5557	2.131	180	-.0454	1.631	270	-.4787		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 67 ALPHA 10 MACH .506 Q 320.679 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4478	.231	100	-.7560	.331	20	-.8773	.731	0	.0071	2.131	90	-.1925		
2	.161	170	-.4240	.231	90	-.7914	.331	10	-.8610	.931	180	-.2127	2.131	0	.0107		
3	.161	160	-.4062	.231	80	-.8064	.331	0	-.8303	.931	90	-.2793	0.000		.5540	-.45	0.00
4	.161	150	-.3985	.231	70	-.8503	.431	180	-.5525	.931	0	-.3548	0.000		.6864	-.40	0.00
5	.161	140	-.3823	.231	60	-.8529	.431	170	-.5448	1.131	180	-.3804	0.000		.9663	-.30	0.00
6	.161	130	-.3675	.231	50	-.9289	.431	160	-.5791	1.131	170	-.3747	0.000		1.0533	-.20	0.00
7	.161	120	-.7130	.231	40	-.9483	.431	150	-.5935	1.131	160	-.4227	0.000		1.0755	-.10	0.00
8	.161	110	-.7276	.231	30	-1.0006	.431	140	-.6356	1.131	150	-.3711	0.000		1.0434	0.00	0.00
9	.161	100	-.7403	.231	20	-1.0284	.431	130	-.6500	1.131	140	-.4007	0.000		.9857	.10	0.00
10	.161	90	-.7760	.231	10	-1.0474	.431	120	-.7044	1.131	130	-.3573	0.000		.8703	.20	0.00
11	.161	80	-.8371	.231	0	-1.0803	.431	110	-.7321	1.131	120	-.3427	0.000		.6996	.30	0.00
12	.161	70	-.8226	.331	180	-.5047	.431	100	-.7369	1.131	110	-.2943	0.000		.4576	.40	0.00
13	.161	60	-.8477	.331	170	-.5051	.431	90	-.7635	1.131	100	-.2590	0.000		.3863	.45	0.00
14	.161	50	-.8721	.331	160	-.5274	.431	80	-.7823	1.131	90	-.2192	0.000		1.0339	0.00	.10
15	.161	40	-.9379	.331	150	-.5969	.431	70	-.8237	1.131	80	-.1903	0.000		.9609	0.00	.20
16	.161	30	-.9532	.331	140	-.6283	.431	60	-.7845	1.131	70	-.1619	0.000		.8014	0.00	.30
17	.161	20	-1.0104	.331	130	-.6678	.431	50	-.7221	1.131	60	-.1213	0.000		.5062	0.00	.40
18	.161	10	-1.0165	.331	120	-.7029	.431	40	-.7221	1.131	50	-.1070	0.000		.4695	0.00	.45
19	.161	0	-1.0129	.331	110	-.7260	.431	30	-.5839	1.131	40	-.0823	.161	270	-.7928		
20	.231	180	-.4495	.331	100	-.7391	.431	20	-.5171	1.131	30	-.0445	.231	270	-.7743		
21	.231	170	-.4815	.331	90	-.7969	.431	10	-.3937	1.131	20	-.0380	.331	270	-.7586		
22	.231	160	-.5114	.331	80	-.8116	.431	0	-.4173	1.131	10	-.0140	.431	270	-.7916		
23	.231	150	-.5394	.331	70	-.8350	.531	180	-.5765	1.131	0	-.0132	.531	270	-.7562		
24	.231	140	-.6104	.331	60	-.9044	.531	90	-.7450				.731	270	-.4854		
25	.231	130	-.6675	.331	50	-.9044	.531	0	-.0911	1.631	90	-.1460	.931	270	-.2922		
26	.231	120	-.6959	.331	40	-.9293	.731	180	-.5828	1.631	0	-.1875	1.131	270	-.2234		
27	.231	110	-.7137	.331	30	-.9004	.731	90	-.4790	2.131	180	-.0095	1.631	270	-.1447		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 68 ALPHA 12 MACH .506 Q 321.124 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4561	.231	100	-.8086	.331	20	-.3754	.731	0	-.0387	2.131	90	-.1880		
2	.161	170	-.4863	.231	90	-.8345	.331	10	-.3459	.931	180	-.2249	2.131	0	.0132		
3	.161	160	-.5637	.231	80	-.9243	.331	0	-.2263	.931	90	-.3020	0.000		.5393	-.45	0.00
4	.161	150	-.6004	.231	70	-.9042	.431	180	-.5451	.931	0	-.3535	0.000		.7291	-.40	0.00
5	.161	140	-.6193	.231	60	-.9554	.431	170	-.5768	1.131	180	-.3693	0.000		.9835	-.30	0.00
6	.161	130	-.7251	.231	50	-.9959	.431	160	-.6207	1.131	170	-.3628	0.000		1.0609	-.20	0.00
7	.161	120	-.7752	.231	40	-1.0481	.431	150	-.6772	1.131	160	-.3438	0.000		1.0803	-.10	0.00
8	.161	110	-.7509	.231	30	-1.0160	.431	140	-.6513	1.131	150	-.4034	0.000		1.0309	0.00	0.00
9	.161	100	-.8217	.231	20	-.9857	.431	130	-.7011	1.131	140	-.3957	0.000		.9588	.10	0.00
10	.161	90	-.8523	.231	10	-.9101	.431	120	-.7295	1.131	130	-.3405	0.000		.8382	.20	0.00
11	.161	80	-.8999	.231	0	-.9075	.431	110	-.7609	1.131	120	-.3097	0.000		.6501	.30	0.00
12	.161	70	-.9231	.331	180	-.5171	.431	100	-.7993	1.131	110	-.2967	0.000		.4253	.40	0.00
13	.161	60	-.9740	.331	170	-.5361	.431	90	-.7886	1.131	100	-.3237	0.000		.3166	.45	0.00
14	.161	50	-1.0304	.331	160	-.5507	.431	80	-.7694	1.131	90	-.2809	0.000		1.0111	0.00	.10
15	.161	40	-1.1390	.331	150	-.6099	.431	70	-.6897	1.131	80	-.2424	0.000		.9399	0.00	.20
16	.161	30	-1.1252	.331	140	-.6282	.431	60	-.5665	1.131	70	-.2164	0.000		.7999	0.00	.30
17	.161	20	-1.1623	.331	130	-.7151	.431	50	-.3798	1.131	60	-.1693	0.000		.4738	0.00	.40
18	.161	10	-1.1372	.331	120	-.7103	.431	40	-.2676	1.131	50	-.1296	0.000		.4743	0.00	.45
19	.161	0	-1.1416	.331	110	-.7618	.431	30	-.1651	1.131	40	-.0971	.161	270	-.8625		
20	.231	180	-.4852	.331	100	-.7655	.431	20	-.1230	1.131	30	-.0639	.231	270	-.8349		
21	.231	170	-.5146	.331	90	-.8586	.431	10	-.0747	1.131	20	-.0468	.331	270	-.8230		
22	.231	160	-.5651	.331	80	-.8948	.431	0	-.0802	1.131	10	-.0286	.431	270	-.7637		
23	.231	150	-.6029	.331	70	-.8743	.531	180	-.5893	1.131	0	-.0115	.531	270	-.6822		
24	.231	140	-.6436	.331	60	-.8590	.531	90	-.6974				.731	270	-.4345		
25	.231	130	-.7094	.331	50	-.7724	.531	0	-.0356	1.631	90	-.1929	.931	270	-.3094		
26	.231	120	-.7672	.331	40	-.5993	.731	180	-.5831	1.631	0	-.1994	1.131	270	-.2564		
27	.231	110	-.7434	.331	30	-.6004	.731	90	-.4451	2.131	180	.0185	1.631	270	-.2033		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 61 ALPHA -1 MACH .506 Q 321.033 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5777	.231	100	-.5520	.331	20	-.4652	.731	0	-.5581	2.131	90	-.1445		
2	.161	170	-.5653	.231	90	-.5498	.331	10	-.4903	.931	180	-.1702	2.131	0	.0424		
3	.161	160	-.5555	.231	80	-.4939	.331	0	-.5364	.931	90	-.5569	0.000		.5382	-.45	0.00
4	.161	150	-.5466	.231	70	-.5158	.431	180	-.5858	.931	0	-.1576	0.000		.5732	-.40	0.00
5	.161	140	-.5391	.231	60	-.5239	.431	170	-.5748	1.131	180	-.3893	0.000		.8384	-.30	0.00
6	.161	130	-.5315	.231	50	-.5250	.431	160	-.5585	1.131	170	-.4522	0.000		.9916	-.20	0.00
7	.161	120	-.5402	.231	40	-.4804	.431	150	-.5737	1.131	160	-.4433	0.000		1.0575	-.10	0.00
8	.161	110	-.5453	.231	30	-.5038	.431	140	-.5869	1.131	150	-.4271	0.000		1.0723	0.00	0.00
9	.161	100	-.5228	.231	20	-.4983	.431	130	-.5493	1.131	140	-.4758	0.000		1.0505	.10	0.00
10	.161	90	-.5126	.231	10	-.5082	.431	120	-.5633	1.131	130	-.3930	0.000		.9999	.20	0.00
11	.161	80	-.4940	.231	0	-.4833	.431	110	-.5275	1.131	120	-.4879	0.000		.8722	.30	0.00
12	.161	70	-.5144	.331	180	-.5725	.431	100	-.5434	1.131	110	-.4806	0.000		.6070	.40	0.00
13	.161	60	-.5031	.331	170	-.5746	.431	90	-.5419	1.131	100	-.4831	0.000		.5234	.45	0.00
14	.161	50	-.5140	.331	160	-.5597	.431	80	-.5331	1.131	90	-.4591	0.000		1.0522	0.00	.10
15	.161	40	-.5180	.331	150	-.5589	.431	70	-.5419	1.131	80	-.4644	0.000		.9966	0.00	.20
16	.161	30	-.4911	.331	140	-.5885	.431	60	-.5430	1.131	70	-.4871	0.000		.8450	0.00	.30
17	.161	20	-.4679	.331	130	-.5681	.431	50	-.4991	1.131	60	-.4826	0.000		.5983	0.00	.40
18	.161	10	-.5089	.331	120	-.5458	.431	40	-.5240	1.131	50	-.4904	0.000		.5625	0.00	.45
19	.161	0	-.4602	.331	110	-.5535	.431	30	-.5080	1.131	40	-.4920	.161	270	-.5466		
20	.231	180	-.5391	.331	100	-.5462	.431	20	-.5331	1.131	30	-.4636	.231	270	-.5256		
21	.231	170	-.5377	.331	90	-.5191	.431	10	-.4917	1.131	20	-.4741	.331	270	-.5236		
22	.231	160	-.5620	.331	80	-.5272	.431	0	-.5139	1.131	10	-.4798	.431	270	-.5598		
23	.231	150	-.5668	.331	70	-.5301	.531	180	-.6098	1.131	0	-.5123	.531	270	-.5663		
24	.231	140	-.5089	.331	60	-.5217	.531	90	-.5489				.731	270	-.6330		
25	.231	130	-.5591	.331	50	-.5162	.531	0	-.5305	1.631	90	-.0724	.931	270	-.5655		
26	.231	120	-.5424	.331	40	-.4873	.731	180	-.6323	1.631	0	-.1682	1.131	270	-.4577		
27	.231	110	-.5311	.331	30	-.5056	.731	90	-.5689	2.131	180	.0404	1.631	270	-.0202		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 62 ALPHA 0 MACH .505 Q 320.142 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5276	.231	100	-.5496	.331	20	-.5653	.731	0	-.6183	2.131	90	-.1404		
2	.161	170	-.5421	.231	90	-.5166	.331	10	-.5209	.931	180	-.1561	2.131	0	.0396		
3	.161	160	-.5101	.231	80	-.5030	.331	0	-.5083	.931	90	-.5687	0.000		.5553	-.45	0.00
4	.161	150	-.5246	.231	70	-.5422	.431	180	-.5294	.931	0	-.2639	0.000		.5938	-.40	0.00
5	.161	140	-.5177	.231	60	-.5038	.431	170	-.5516	1.131	180	-.4979	0.000		.8565	-.30	0.00
6	.161	130	-.5356	.231	50	-.5155	.431	160	-.5546	1.131	170	-.4421	0.000		1.0005	-.20	0.00
7	.161	120	-.5035	.231	40	-.5210	.431	150	-.5239	1.131	160	-.4653	0.000		1.0608	-.10	0.00
8	.161	110	-.5093	.231	30	-.5239	.431	140	-.5346	1.131	150	-.4535	0.000		1.0736	0.00	0.00
9	.161	100	-.5035	.231	20	-.4939	.431	130	-.5446	1.131	140	-.4731	0.000		1.0625	.10	0.00
10	.161	90	-.5035	.231	10	-.5111	.431	120	-.5420	1.131	130	-.4751	0.000		.9989	.20	0.00
11	.161	80	-.4962	.231	0	-.4957	.431	110	-.5161	1.131	120	-.4670	0.000		.8634	.30	0.00
12	.161	70	-.5236	.331	180	-.5404	.431	100	-.5394	1.131	110	-.4682	0.000		.5938	.40	0.00
13	.161	60	-.4947	.331	170	-.5118	.431	90	-.5205	1.131	100	-.4694	0.000		.5153	.45	0.00
14	.161	50	-.5042	.331	160	-.5591	.431	80	-.5339	1.131	90	-.4609	0.000		1.0567	0.00	.10
15	.161	40	-.4984	.331	150	-.5250	.431	70	-.5379	1.131	80	-.4592	0.000		.9997	0.00	.20
16	.161	30	-.5232	.331	140	-.5129	.431	60	-.5316	1.131	70	-.4828	0.000		.8622	0.00	.30
17	.161	20	-.5079	.331	130	-.5386	.431	50	-.5428	1.131	60	-.4466	0.000		.6016	0.00	.40
18	.161	10	-.5130	.331	120	-.5334	.431	40	-.5494	1.131	50	-.4629	0.000		.5516	0.00	.45
19	.161	0	-.5006	.331	110	-.5470	.431	30	-.5487	1.131	40	-.4389	.161	270	-.5007		
20	.231	180	-.5214	.331	100	-.5129	.431	20	-.5468	1.131	30	-.4674	.231	270	-.5164		
21	.231	170	-.5155	.331	90	-.5463	.431	10	-.5675	1.131	20	-.4303	.331	270	-.5449		
22	.231	160	-.5112	.331	80	-.5170	.431	0	-.5065	1.131	10	-.5106	.431	270	-.5445		
23	.231	150	-.5436	.331	70	-.5712	.531	180	-.5749	1.131	0	-.5113	.531	270	-.5647		
24	.231	140	-.5265	.331	60	-.5411	.531	90	-.5635				.731	270	-.5928		
25	.231	130	-.4896	.331	50	-.5360	.531	0	-.5849	1.631	90	-.0804	.931	270	-.5544		
26	.231	120	-.5126	.331	40	-.5060	.731	180	-.5894	1.631	0	-.1362	1.131	270	-.4665		
27	.231	110	-.5039	.331	30	-.5165	.731	90	-.5705	2.131	180	.0360	1.631	270	-.0669		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 63 ALPHA 2 MACH .504 Q 319.161 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4832	.231	100	-.5462	.331	20	-.6065	.731	0	-.6603	2.131	90	-.1347		
2	.161	170	-.4718	.231	90	-.5212	.331	10	-.6124	.931	180	-.1383	2.131	0	.0537		
3	.161	160	-.4733	.231	80	-.5469	.331	0	-.5909	.931	90	-.5860	0.000		.5591	-.45	0.00
4	.161	150	-.4963	.231	70	-.5660	.431	180	-.5196	.931	0	-.3464	0.000		.6057	-.40	0.00
5	.161	140	-.4718	.231	60	-.5631	.431	170	-.5044	1.131	180	-.5481	0.000		.8889	-.30	0.00
6	.161	130	-.5000	.231	50	-.5631	.431	160	-.5103	1.131	170	-.4448	0.000		1.0043	-.20	0.00
7	.161	120	-.4978	.231	40	-.5804	.431	150	-.5055	1.131	160	-.5056	0.000		1.0565	-.10	0.00
8	.161	110	-.4978	.231	30	-.5774	.431	140	-.5074	1.131	150	-.4517	0.000		1.0735	0.00	0.00
9	.161	100	-.5102	.231	20	-.5914	.431	130	-.5025	1.131	140	-.4934	0.000		1.0503	.10	0.00
10	.161	90	-.5453	.231	10	-.5921	.431	120	-.5407	1.131	130	-.4550	0.000		.9715	.20	0.00
11	.161	80	-.5585	.231	0	-.5936	.431	110	-.5385	1.131	120	-.4852	0.000		.8300	.30	0.00
12	.161	70	-.5731	.331	180	-.4833	.431	100	-.5634	1.131	110	-.4660	0.000		.5769	.40	0.00
13	.161	60	-.5739	.331	170	-.5164	.431	90	-.5582	1.131	100	-.4664	0.000		.5114	.45	0.00
14	.161	50	-.5527	.331	160	-.5043	.431	80	-.5630	1.131	90	-.4472	0.000		1.0495	0.00	.10
15	.161	40	-.5903	.331	150	-.4951	.431	70	-.5905	1.131	80	-.4448	0.000		.9985	0.00	.20
16	.161	30	-.5794	.331	140	-.5484	.431	60	-.5879	1.131	70	-.4011	0.000		.8490	0.00	.30
17	.161	20	-.5819	.331	130	-.4914	.431	50	-.5872	1.131	60	-.4350	0.000		.5976	0.00	.40
18	.161	10	-.5837	.331	120	-.5241	.431	40	-.5939	1.131	50	-.4281	0.000		.5566	0.00	.45
19	.161	0	-.5914	.331	110	-.5535	.431	30	-.6239	1.131	40	-.3844	.161	270	-.5450		
20	.231	180	-.4729	.331	100	-.5363	.431	20	-.5872	1.131	30	-.4048	.231	270	-.5301		
21	.231	170	-.4843	.331	90	-.5620	.431	10	-.5983	1.131	20	-.3836	.331	270	-.5346		
22	.231	160	-.5029	.331	80	-.5657	.431	0	-.6176	1.131	10	-.3640	.431	270	-.5669		
23	.231	150	-.4927	.331	70	-.5690	.531	180	-.5289	1.131	0	-.3477	.531	270	-.5930		
24	.231	140	-.4967	.331	60	-.5719	.531	90	-.5690	1.631	180	-.1754	.731	270	-.6025		
25	.231	130	-.5146	.331	50	-.5939	.531	0	-.6503	1.631	90	-.0607	.931	270	-.5711		
26	.231	120	-.5183	.331	40	-.5866	.731	180	-.5590	1.631	0	-.1460	1.131	270	-.4568		
27	.231	110	-.5322	.331	30	-.6057	.731	90	-.6299	2.131	180	.0185	1.631	270	-.0610		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 64 ALPHA 4 MACH .506 Q 321.213 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4825	.231	100	-.5918	.331	20	-.6932	.731	0	-.6215	2.131	90	-.1538		
2	.161	170	-.4200	.231	90	-.6097	.331	10	-.7013	.931	180	-.1458	2.131	0	.0140		
3	.161	160	-.4825	.231	80	-.6389	.331	0	-.6987	.931	90	-.5902	0.000		.5449	-.45	0.00
4	.161	150	-.4545	.231	70	-.6123	.431	180	-.5036	.931	0	-.3854	0.000		.6133	-.40	0.00
5	.161	140	-.4974	.231	60	-.6298	.431	170	-.5066	1.131	180	-.4394	0.000		.8878	-.30	0.00
6	.161	130	-.5108	.231	50	-.6601	.431	160	-.5162	1.131	170	-.4499	0.000		1.0092	-.20	0.00
7	.161	120	-.5417	.231	40	-.6404	.431	150	-.5246	1.131	160	-.4426	0.000		1.0631	-.10	0.00
8	.161	110	-.5781	.231	30	-.6813	.431	140	-.5552	1.131	150	-.4706	0.000		1.0639	0.00	0.00
9	.161	100	-.6042	.231	20	-.6875	.431	130	-.5755	1.131	140	-.4467	0.000		1.0294	.10	0.00
10	.161	90	-.5955	.231	10	-.6645	.431	120	-.5715	1.131	130	-.4730	0.000		.9557	.20	0.00
11	.161	80	-.6151	.231	0	-.6670	.431	110	-.5796	1.131	120	-.4674	0.000		.7919	.30	0.00
12	.161	70	-.6340	.331	180	-.4998	.431	100	-.6213	1.131	110	-.4325	0.000		.5441	.40	0.00
13	.161	60	-.6340	.331	170	-.4750	.431	90	-.6172	1.131	100	-.3838	0.000		.4007	.45	0.00
14	.161	50	-.6551	.331	160	-.4600	.431	80	-.6390	1.131	90	-.3388	0.000		1.0450	0.00	.10
15	.161	40	-.6627	.331	150	-.5309	.431	70	-.6519	1.131	80	-.3449	0.000		.9746	0.00	.20
16	.161	30	-.6700	.331	140	-.5279	.431	60	-.6593	1.131	70	-.2946	0.000		.8334	0.00	.30
17	.161	20	-.6729	.331	130	-.5301	.431	50	-.6751	1.131	60	-.2208	0.000		.5639	0.00	.40
18	.161	10	-.6918	.331	120	-.5652	.431	40	-.7098	1.131	50	-.1668	0.000		.5116	0.00	.45
19	.161	0	-.6449	.331	110	-.5648	.431	30	-.6825	1.131	40	-.1648	.161	270	-.6162		
20	.231	180	-.4719	.331	100	-.6116	.431	20	-.7146	1.131	30	-.1230	.231	270	-.6212		
21	.231	170	-.4974	.331	90	-.6116	.431	10	-.6980	1.131	20	-.1113	.331	270	-.6109		
22	.231	160	-.4640	.331	80	-.6269	.431	0	-.7094	1.131	10	-.1149	.431	270	-.6315		
23	.231	150	-.4876	.331	70	-.6550	.531	180	-.5202	1.131	0	-.0614	.531	270	-.6368		
24	.231	140	-.5076	.331	60	-.6539	.531	90	-.6467				.731	270	-.6483		
25	.231	130	-.5265	.331	50	-.6521	.531	0	-.7094	1.631	90	-.0107	.931	270	-.5985		
26	.231	120	-.5530	.331	40	-.6700	.731	180	-.5637	1.631	0	-.1259	1.131	270	-.3998		
27	.231	110	-.5711	.331	30	-.6875	.731	90	-.6781	2.131	180	.0161	1.631	270	-.0149		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 55 ALPHA 18 MACH .404 Q 217.445 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4710	.231	100	-.8153	.331	20	-.0648	.731	0	.0244	2.131	90	-.2544		
2	.161	170	-.5231	.231	90	-.9102	.331	10	-.0370	.931	180	-.3045	2.131	0	.0817		
3	.161	160	-.5086	.231	80	-.7479	.331	0	-.0299	.931	90	-.4710	0.000		.6052	-.45	0.00
4	.161	150	-.5837	.231	70	-.8034	.431	180	-.0036	.931	0	-.3446	0.000		.8624	-.40	0.00
5	.161	140	-.7496	.231	60	-.6653	.431	170	-.0499	1.131	180	-.3105	0.000		1.0186	-.30	0.00
6	.161	130	-.7658	.231	50	-.4620	.431	160	-.0396	1.131	170	-.3600	0.000		1.0593	-.20	0.00
7	.161	120	-.7818	.231	40	-.3504	.431	150	-.0990	1.131	160	-.3770	0.000		1.0180	-.10	0.00
8	.161	110	-.7850	.231	30	-.2754	.431	140	-.1068	1.131	150	-.3297	0.000		.9377	0.00	0.00
9	.161	100	-.8484	.231	20	-.2085	.431	130	-.1218	1.131	140	-.3956	0.000		.8320	.10	0.00
10	.161	90	-.9101	.231	10	-.1692	.431	120	-.1654	1.131	130	-.4099	0.000		.7128	.20	0.00
11	.161	80	-.9670	.231	0	-.1708	.431	110	-.1551	1.131	120	-.4195	0.000		.5006	.30	0.00
12	.161	70	-1.0985	.331	180	-.5877	.431	100	-.1202	1.131	110	-.4285	0.000		.2635	.40	0.00
13	.161	60	-1.1318	.331	170	-.5785	.431	90	-.6260	1.131	100	-.4651	0.000		.1486	.45	0.00
14	.161	50	-.8870	.331	160	-.6314	.431	80	-.5350	1.131	90	-.4381	0.000		.9098	0.00	.10
15	.161	40	-.7571	.331	150	-.6610	.431	70	-.4020	1.131	80	-.4051	0.000		.8472	0.00	.20
16	.161	30	-.7045	.331	140	-.6799	.431	60	-.3094	1.131	70	-.3368	0.000		.7170	0.00	.30
17	.161	20	-.6659	.331	130	-.6018	.431	50	-.2211	1.131	60	-.3279	0.000		.4015	0.00	.40
18	.161	10	-.5746	.331	120	-.8045	.431	40	-.1552	1.131	50	-.2003	0.000		.3358	0.00	.45
19	.161	0	-.5880	.331	110	-.8476	.431	30	-.0871	1.131	40	-.1246	.161	270	-.9155		
20	.231	180	-.5129	.331	100	-.7808	.431	20	-.0326	1.131	30	-.0397	.231	270	-.9168		
21	.231	170	-.5360	.331	90	-.7689	.431	10	-.0021	1.131	20	-.0187	.331	270	-.7624		
22	.231	160	-.5886	.331	80	-.6589	.431	0	.0077	1.131	10	.0310	.431	270	-.6476		
23	.231	150	-.6847	.331	70	-.4874	.531	180	-.6875	1.131	0	.0526	.531	270	-.5558		
24	.231	140	-.7228	.331	60	-.3757	.531	90	-.5475				.731	270	-.4763		
25	.231	130	-.7679	.331	50	-.2803	.531	0	.0344	1.631	90	-.3746	.931	270	-.4440		
26	.231	120	-.8033	.331	40	-.2031	.731	180	-.6151	1.631	0	-.3117	1.131	270	-.4239		
27	.231	110	-.8038	.331	30	-.1228	.731	90	-.4761	2.131	180	-.0295	1.631	270	-.3595		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 56 ALPHA 20 MACH .403 Q 217.258 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4811	.231	100	-.7356	.331	20	-.0305	.731	0	.0670	2.131	90	-.2856		
2	.161	170	-.4784	.231	90	-.7971	.331	10	.0000	.931	180	-.2730	2.131	0	.1037		
3	.161	160	-.6294	.231	80	-.8424	.331	0	.0077	.931	90	-.5194	0.000		.6744	-.45	0.00
4	.161	150	-.6342	.231	70	-.7696	.431	180	-.5851	.931	0	-.3929	0.000		.9172	-.40	0.00
5	.161	140	-.6423	.231	60	-.6017	.431	170	-.6555	1.131	180	-.3911	0.000		1.0316	-.30	0.00
6	.161	130	-.7744	.231	50	-.3982	.431	160	-.6903	1.131	170	-.3725	0.000		1.0566	-.20	0.00
7	.161	120	-.7712	.231	40	-.2843	.431	150	-.6958	1.131	160	-.3947	0.000		1.0000	-.10	0.00
8	.161	110	-.8631	.231	30	-.2022	.431	140	-.7770	1.131	150	-.3923	0.000		.9148	0.00	0.00
9	.161	100	-.8695	.231	20	-.1299	.431	130	-.7443	1.131	140	-.3959	0.000		.8241	.10	0.00
10	.161	90	-.9528	.231	10	-.1013	.431	120	-.7966	1.131	130	-.4313	0.000		.6598	.20	0.00
11	.161	80	-.9759	.231	0	-.0921	.431	110	-.7770	1.131	120	-.4685	0.000		.4505	.30	0.00
12	.161	70	-1.0850	.331	180	-.5418	.431	100	-.7198	1.131	110	-.5104	0.000		.2558	.40	0.00
13	.161	60	-.9764	.331	170	-.5763	.431	90	-.6347	1.131	100	-.5290	0.000		.1390	.45	0.00
14	.161	50	-.7825	.331	160	-.6082	.431	80	-.5224	1.131	90	-.5014	0.000		.8959	0.00	.10
15	.161	40	-.7003	.331	150	-.6233	.431	70	-.4149	1.131	80	-.4535	0.000		.8497	0.00	.20
16	.161	30	-.6462	.331	140	-.7221	.431	60	-.3184	1.131	70	-.3875	0.000		.6970	0.00	.30
17	.161	20	-.5660	.331	130	-.7491	.431	50	-.2317	1.131	60	-.3090	0.000		.3884	0.00	.40
18	.161	10	-.4788	.331	120	-.7760	.431	40	-.1521	1.131	50	-.2304	0.000		.3452	0.00	.45
19	.161	0	-.4902	.331	110	-.8462	.431	30	-.0578	1.131	40	-.1243	.161	270	-.9188		
20	.231	180	-.5284	.331	100	-.7615	.431	20	-.0147	1.131	30	-.0493	.231	270	-.8874		
21	.231	170	-.5805	.331	90	-.7464	.431	10	.0268	1.131	20	.0052	.331	270	-.7333		
22	.231	160	-.6326	.331	80	-.6287	.431	0	.0404	1.131	10	.0616	.431	270	-.6408		
23	.231	150	-.6894	.331	70	-.4851	.531	180	-.7170	1.131	0	.0736	.531	270	-.5770		
24	.231	140	-.6830	.331	60	-.3755	.531	90	-.5523				.731	270	-.5374		
25	.231	130	-.7830	.331	50	-.2692	.531	0	.0502	1.631	90	-.4535	.931	270	-.5283		
26	.231	120	-.7642	.331	40	-.1628	.731	180	-.6538	1.631	0	-.2784	1.131	270	-.5137		
27	.231	110	-.8728	.331	30	-.1056	.731	90	-.5365	2.131	180	-.0505	1.631	270	-.4535		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 59 ALPHA 26 MACH .403 Q 217.071 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5794	.231	100	-.7124	.331	20	.1037	.731	0	.1636	2.131	90	-.3523		
2	.161	170	-.5418	.231	90	-.7119	.331	10	.1376	.931	180	-.3555	2.131	0	.1579		
3	.161	160	-.5660	.231	80	-.7108	.331	0	.1665	.931	90	-.6657	0.000		.8382	-.45	0.00
4	.161	150	-.7660	.231	70	-.6109	.431	180	-.6396	.931	0	-.5181	0.000		1.0240	-.40	0.00
5	.161	140	-.5364	.231	60	-.3618	.431	170	-.5943	1.131	180	-.5061	0.000		1.0465	-.30	0.00
6	.161	130	-.6606	.231	50	-.2575	.431	160	-.6145	1.131	170	-.5385	0.000		.9990	-.20	0.00
7	.161	120	-.6149	.231	40	-.1452	.431	150	-.5834	1.131	160	-.5517	0.000		.9253	-.10	0.00
8	.161	110	-.6257	.231	30	-.0263	.431	140	-.6101	1.131	150	-.5301	0.000		.7980	0.00	0.00
9	.161	100	-.7031	.231	20	.0499	.431	130	-.7046	1.131	140	-.5079	0.000		.6768	.10	0.00
10	.161	90	-.7111	.231	10	.1142	.431	120	-.6784	1.131	130	-.5679	0.000		.5185	.20	0.00
11	.161	80	-.8171	.231	0	.1304	.431	110	-.7117	1.131	120	-.6543	0.000		.3017	.30	0.00
12	.161	70	-.7332	.331	180	-.5288	.431	100	-.5889	1.131	110	-.6651	0.000		.1476	.40	0.00
13	.161	60	-.6848	.331	170	-.6303	.431	90	-.6014	1.131	100	-.6867	0.000		-.0424	.45	0.00
14	.161	50	-.6316	.331	160	-.6222	.431	80	-.5283	1.131	90	-.7101	0.000		.7859	0.00	.10
15	.161	40	-.4756	.331	150	-.6049	.431	70	-.4142	1.131	80	-.6177	0.000		.7719	0.00	.20
16	.161	30	-.3611	.331	140	-.6617	.431	60	-.3132	1.131	70	-.5457	0.000		.6190	0.00	.30
17	.161	20	-.2288	.331	130	-.6201	.431	50	-.1888	1.131	60	-.4041	0.000		.3845	0.00	.40
18	.161	10	-.1536	.331	120	-.5990	.431	40	-.0933	1.131	50	-.2918	0.000		.3073	0.00	.45
19	.161	0	-.1557	.331	110	-.6735	.431	30	.0109	1.131	40	-.1418	.161	270	-.6761		
20	.231	180	-.5364	.331	100	-.6957	.431	20	.0770	1.131	30	-.0422	.231	270	-.7315		
21	.231	170	-.5299	.331	90	-.6033	.431	10	.1403	1.131	20	.0418	.331	270	-.6743		
22	.231	160	-.5461	.331	80	-.5568	.431	0	.1687	1.131	10	.1438	.431	270	-.5817		
23	.231	150	-.6127	.331	70	-.4785	.531	180	-.6838	1.131	0	.1396	.531	270	-.6438		
24	.231	140	-.6515	.331	60	-.3348	.531	90	-.6052				.731	270	-.6743		
25	.231	130	-.7074	.331	50	-.1992	.531	0	.1867	1.631	90	-.6171	.931	270	-.6895		
26	.231	120	-.6875	.331	40	-.0884	.731	180	-.6582	1.631	0	-.3417	1.131	270	-.7065		
27	.231	110	-.6170	.331	30	.0007	.731	90	-.6107	2.131	180	-.1658	1.631	270	-.7108		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 60 ALPHA 0 MACH .404 Q 217.725 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5792	.231	100	-.5104	.331	20	-.5794	.731	0	-.6038	2.131	90	-.1460		
2	.161	170	-.5406	.231	90	-.5341	.331	10	-.5794	.931	180	-.1473	2.131	0	.0652		
3	.161	160	-.5294	.231	80	-.5271	.331	0	-.6006	.931	90	-.5614	0.000		.5036	-.45	0.00
4	.161	150	-.5615	.231	70	-.5939	.431	180	-.5881	.931	0	-.5129	0.000		.5589	-.40	0.00
5	.161	140	-.5680	.231	60	-.5309	.431	170	-.6148	1.131	180	-.3472	0.000		.8321	-.30	0.00
6	.161	130	-.5412	.231	50	-.5390	.431	160	-.5887	1.131	170	-.4052	0.000		.9681	-.20	0.00
7	.161	120	-.5487	.231	40	-.5271	.431	150	-.6175	1.131	160	-.3603	0.000		1.0240	-.10	0.00
8	.161	110	-.5353	.231	30	-.5530	.431	140	-.5832	1.131	150	-.4088	0.000		1.0616	0.00	0.00
9	.161	100	-.5615	.231	20	-.5470	.431	130	-.6066	1.131	140	-.3717	0.000		1.0270	.10	0.00
10	.161	90	-.5492	.231	10	-.5352	.431	120	-.5745	1.131	130	-.3585	0.000		.9730	.20	0.00
11	.161	80	-.5540	.231	0	-.5583	.431	110	-.6017	1.131	120	-.3484	0.000		.8303	.30	0.00
12	.161	70	-.5792	.331	180	-.6311	.431	100	-.6311	1.131	110	-.3053	0.000		.5595	.40	0.00
13	.161	60	-.5428	.331	170	-.5637	.431	90	-.5919	1.131	100	-.3890	0.000		.4672	.45	0.00
14	.161	50	-.5144	.331	160	-.5856	.431	80	-.5636	1.131	90	-.4052	0.000		1.0331	0.00	.10
15	.161	40	-.5508	.331	150	-.5891	.431	70	-.6181	1.131	80	-.3226	0.000		.9873	0.00	.20
16	.161	30	-.5615	.331	140	-.5750	.431	60	-.6714	1.131	70	-.3789	0.000		.8230	0.00	.30
17	.161	20	-.5245	.331	130	-.5697	.431	50	-.5789	1.131	60	-.4028	0.000		.5722	0.00	.40
18	.161	10	-.5701	.331	120	-.5707	.431	40	-.5908	1.131	50	-.3729	0.000		.5109	0.00	.45
19	.161	0	-.5229	.331	110	-.5600	.431	30	-.5685	1.131	40	-.4291	.161	270	-.5526		
20	.231	180	-.5492	.331	100	-.5546	.431	20	-.6175	1.131	30	-.3741	.231	270	-.5363		
21	.231	170	-.5712	.331	90	-.5406	.431	10	-.5860	1.131	20	-.3729	.331	270	-.5696		
22	.231	160	-.5476	.331	80	-.5616	.431	0	-.5794	1.131	10	-.4064	.431	270	-.5629		
23	.231	150	-.5508	.331	70	-.5772	.531	180	-.6066	1.131	0	-.4363	.531	270	-.5896		
24	.231	140	-.5267	.331	60	-.5675	.531	90	-.6012				.731	270	-.6145		
25	.231	130	-.5358	.331	50	-.5777	.531	0	-.6491	1.631	90	-.0420	.931	270	-.5405		
26	.231	120	-.5374	.331	40	-.5605	.731	180	-.6828	1.631	0	-.1575	1.131	270	-.3766		
27	.231	110	-.5471	.331	30	-.5395	.731	90	-.6491	2.131	180	.0370	1.631	270	.0233		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 53 ALPHA 14 MACH .403 Q 217.352 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4933	.231	100	-.9192	.331	20	-.1684	.731	0	-.0235	2.131	90	-.2247		
2	.161	170	-.4814	.231	90	-.9586	.331	10	-.1406	.931	180	-.2015	2.131	0	.0410		
3	.161	160	-.5582	.231	80	-.9570	.331	0	-.1406	.931	90	-.3352	0.000		.4771	-.45	0.00
4	.161	150	-.6366	.231	70	-.9419	.431	180	-.6344	.931	0	-.2693	0.000		.7295	-.40	0.00
5	.161	140	-.7322	.231	60	-.9225	.431	170	-.6393	1.131	180	-.2645	0.000		.9740	-.30	0.00
6	.161	130	-.7918	.231	50	-.7228	.431	160	-.6584	1.131	170	-.2645	0.000		1.0622	-.20	0.00
7	.161	120	-.7891	.231	40	-.5011	.431	150	-.6927	1.131	160	-.3226	0.000		1.0373	-.10	0.00
8	.161	110	-.8525	.231	30	-.4110	.431	140	-.7282	1.131	150	-.2627	0.000		.9941	0.00	0.00
9	.161	100	-.8912	.231	20	-.3511	.431	130	-.7489	1.131	140	-.2944	0.000		.9071	.10	0.00
10	.161	90	-.9481	.231	10	-.3252	.431	120	-.7674	1.131	130	-.3412	0.000		.7733	.20	0.00
11	.161	80	-1.0883	.231	0	-.3171	.431	110	-.8671	1.131	120	-.3046	0.000		.5781	.30	0.00
12	.161	70	-1.1452	.331	180	-.5361	.431	100	-.7701	1.131	110	-.3172	0.000		.3494	.40	0.00
13	.161	60	-1.1371	.331	170	-.5437	.431	90	-.7053	1.131	100	-.3202	0.000		.2764	.45	0.00
14	.161	50	-1.1462	.331	160	-.5815	.431	80	-.5630	1.131	90	-.3058	0.000		.9813	0.00	.10
15	.161	40	-1.0383	.331	150	-.6748	.431	70	-.4229	1.131	80	-.2807	0.000		.8700	0.00	.20
16	.161	30	-.8611	.331	140	-.7271	.431	60	-.2976	1.131	70	-.2387	0.000		.7441	0.00	.30
17	.161	20	-.7789	.331	130	-.7277	.431	50	-.2354	1.131	60	-.1782	0.000		.4260	0.00	.40
18	.161	10	-.7542	.331	120	-.7633	.431	40	-.1973	1.131	50	-.1404	0.000		.3792	0.00	.45
19	.161	0	-.7397	.331	110	-.7919	.431	30	-.1439	1.131	40	-.0925	.161	270	-1.0248		
20	.231	180	-.5341	.331	100	-.8572	.431	20	-.1237	1.131	30	-.0595	.231	270	-.9530		
21	.231	170	-.5964	.331	90	-.8636	.431	10	-.0855	1.131	20	-.0307	.331	270	-.8691		
22	.231	160	-.5674	.331	80	-.7498	.431	0	-.0752	1.131	10	.0118	.431	270	-.6819		
23	.231	150	-.6538	.331	70	-.6300	.531	180	-.6355	1.131	0	.0166	.531	270	-.5329		
24	.231	140	-.7311	.331	60	-.4503	.531	90	-.5379				.731	270	-.4010		
25	.231	130	-.7671	.331	50	-.3155	.531	0	-.0528	1.631	90	-.2363	.931	270	-.3329		
26	.231	120	-.8348	.331	40	-.2572	.731	180	-.6033	1.631	0	-.2345	1.131	270	-.2995		
27	.231	110	-.8815	.331	30	-.2070	.731	90	-.3880	2.131	180	-.0014	1.631	270	-.2344		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 54 ALPHA 16 MACH .404 Q 217.819 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4868	.231	100	-.8564	.331	20	-.1223	.731	0	.0088	2.131	90	-.2430		
2	.161	170	-.4697	.231	90	-.9124	.331	10	-.0951	.931	180	-.2717	2.131	0	.0567		
3	.161	160	-.5597	.231	80	-.9221	.331	0	-.0859	.931	90	-.3727	0.000		.5453	-.45	0.00
4	.161	150	-.6133	.231	70	-.8758	.431	180	-.6254	.931	0	-.3033	0.000		.7935	-.40	0.00
5	.161	140	-.6974	.231	60	-.7692	.431	170	-.6107	1.131	180	-.3249	0.000		1.0217	-.30	0.00
6	.161	130	-.7949	.231	50	-.5468	.431	160	-.6999	1.131	170	-.3093	0.000		1.0606	-.20	0.00
7	.161	120	-.7799	.231	40	-.4122	.431	150	-.6879	1.131	160	-.3655	0.000		1.0393	-.10	0.00
8	.161	110	-.8753	.231	30	-.3352	.431	140	-.7614	1.131	150	-.3177	0.000		.9908	0.00	0.00
9	.161	100	-.9283	.231	20	-.2921	.431	130	-.7826	1.131	140	-.3380	0.000		.8755	.10	0.00
10	.161	90	-.9869	.231	10	-.2555	.431	120	-.7880	1.131	130	-.3578	0.000		.7444	.20	0.00
11	.161	80	-.9896	.231	0	-.2426	.431	110	-.7652	1.131	120	-.3715	0.000		.5611	.30	0.00
12	.161	70	-1.0521	.331	180	-.5839	.431	100	-.7630	1.131	110	-.3889	0.000		.3068	.40	0.00
13	.161	60	-1.1677	.331	170	-.5570	.431	90	-.6336	1.131	100	-.3745	0.000		.1963	.45	0.00
14	.161	50	-1.0275	.331	160	-.6302	.431	80	-.5003	1.131	90	-.3620	0.000		.9556	0.00	.10
15	.161	40	-.8549	.331	150	-.6583	.431	70	-.3910	1.131	80	-.3321	0.000		.8852	0.00	.20
16	.161	30	-.7724	.331	140	-.7153	.431	60	-.3094	1.131	70	-.2842	0.000		.7322	0.00	.30
17	.161	20	-.7231	.331	130	-.7595	.431	50	-.2458	1.131	60	-.2101	0.000		.3990	0.00	.40
18	.161	10	-.6802	.331	120	-.8074	.431	40	-.1838	1.131	50	-.1670	0.000		.3511	0.00	.45
19	.161	0	-.6749	.331	110	-.8908	.431	30	-.1212	1.131	40	-.0970	.161	270	-1.0298		
20	.231	180	-.5166	.331	100	-.8801	.431	20	-.0875	1.131	30	-.0402	.231	270	-.8988		
21	.231	170	-.5447	.331	90	-.7950	.431	10	-.0434	1.131	20	-.0031	.331	270	-.8114		
22	.231	160	-.5656	.331	80	-.7056	.431	0	-.0396	1.131	10	.0148	.431	270	-.6616		
23	.231	150	-.6041	.331	70	-.5726	.531	180	-.6542	1.131	0	.0262	.531	270	-.5336		
24	.231	140	-.7365	.331	60	-.3955	.531	90	-.5378				.731	270	-.4486		
25	.231	130	-.7687	.331	50	-.3099	.531	0	-.0233	1.631	90	-.2878	.931	270	-.4049		
26	.231	120	-.7553	.331	40	-.2410	.731	180	-.6292	1.631	0	-.2400	1.131	270	-.3686		
27	.231	110	-.8244	.331	30	-.1661	.731	90	-.4263	2.131	180	-.0013	1.631	270	-.3019		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 57 ALPHA 22 MACH .403 Q 216.603 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4648	.231	100	-.7774	.331	20	.0087	.731	0	.1113	2.131	90	-.3079		
2	.161	170	-.5284	.231	90	-.7622	.331	10	.0574	.931	180	-.2552	2.131	0	.1473		
3	.161	160	-.5279	.231	80	-.7270	.331	0	.0744	.931	90	-.5433	0.000		.7594	-.45	0.00
4	.161	150	-.6093	.231	70	-.6945	.431	180	-.5738	.931	0	-.3978	0.000		.9993	-.40	0.00
5	.161	140	-.6168	.231	60	-.5272	.431	170	-.6099	1.131	180	-.4778	0.000		1.0634	-.30	0.00
6	.161	130	-.7084	.231	50	-.3193	.431	160	-.6542	1.131	170	-.3875	0.000		1.0786	-.20	0.00
7	.161	120	-.6982	.231	40	-.2164	.431	150	-.6449	1.131	160	-.4940	0.000		.9932	-.10	0.00
8	.161	110	-.7688	.231	30	-.1439	.431	140	-.7450	1.131	150	-.4399	0.000		.8864	0.00	0.00
9	.161	100	-.8738	.231	20	-.0524	.431	130	-.7898	1.131	140	-.3887	0.000		.7912	.10	0.00
10	.161	90	-.8433	.231	10	-.0118	.431	120	-.7723	1.131	130	-.4687	0.000		.6239	.20	0.00
11	.161	80	-.8949	.231	0	-.0074	.431	110	-.7406	1.131	120	-.5180	0.000		.4152	.30	0.00
12	.161	70	-.9487	.331	180	-.5537	.431	100	-.6941	1.131	110	-.5932	0.000		.2351	.40	0.00
13	.161	60	-.8431	.331	170	-.5759	.431	90	-.6356	1.131	100	-.6047	0.000		.0453	.45	0.00
14	.161	50	-.6949	.331	160	-.5954	.431	80	-.4912	1.131	90	-.5403	0.000		.8827	0.00	.10
15	.161	40	-.6454	.331	150	-.7449	.431	70	-.4474	1.131	80	-.5241	0.000		.7954	0.00	.20
16	.161	30	-.5613	.331	140	-.7514	.431	60	-.3260	1.131	70	-.4369	0.000		.6581	0.00	.30
17	.161	20	-.4508	.331	130	-.7108	.431	50	-.2155	1.131	60	-.3076	0.000		.3847	0.00	.40
18	.161	10	-.3905	.331	120	-.7162	.431	40	-.1362	1.131	50	-.2276	0.000		.3401	0.00	.45
19	.161	0	-.3819	.331	110	-.7081	.431	30	-.0487	1.131	40	-.1313	.161	270	-.7660		
20	.231	180	-.5527	.331	100	-.7075	.431	20	.0394	1.131	30	-.0141	.231	270	-.8332		
21	.231	170	-.6297	.331	90	-.7221	.431	10	.0705	1.131	20	.0383	.331	270	-.7215		
22	.231	160	-.6049	.331	80	-.6268	.431	0	.0776	1.131	10	.0918	.431	270	-.6032		
23	.231	150	-.6055	.331	70	-.4585	.531	180	-.6465	1.131	0	.1092	.531	270	-.5702		
24	.231	140	-.6766	.331	60	-.3426	.531	90	-.5617				.731	270	-.5562		
25	.231	130	-.7440	.331	50	-.2316	.531	0	.0859	1.631	90	-.4940	.931	270	-.5673		
26	.231	120	-.6696	.331	40	-.1358	.731	180	-.6531	1.631	0	-.3430	1.131	270	-.5446		
27	.231	110	-.7370	.331	30	-.0551	.731	90	-.5967	2.131	180	-.0514	1.631	270	-.4726		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 58 ALPHA 24 MACH .403 Q 217.351 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5029	.231	100	-.6295	.331	20	.0889	.731	0	.1353	2.131	90	-.3135		
2	.161	170	-.5115	.231	90	-.6683	.331	10	.1145	.931	180	-.3112	2.131	0	.1717		
3	.161	160	-.5625	.231	80	-.7244	.331	0	.1243	.931	90	-.6067	0.000		.8110	-.45	0.00
4	.161	150	-.6764	.231	70	-.6592	.431	180	-.6786	.931	0	-.4689	0.000		1.0361	-.40	0.00
5	.161	140	-.6549	.231	60	-.4115	.431	170	-.5859	1.131	180	-.5492	0.000		1.0762	-.30	0.00
6	.161	130	-.6613	.231	50	-.3030	.431	160	-.6497	1.131	170	-.5078	0.000		1.0294	-.20	0.00
7	.161	120	-.7043	.231	40	-.1822	.431	150	-.6780	1.131	160	-.4653	0.000		.9789	-.10	0.00
8	.161	110	-.6587	.231	30	-.0575	.431	140	-.6551	1.131	150	-.6229	0.000		.8706	0.00	0.00
9	.161	100	-.6801	.231	20	-.0214	.431	130	-.6720	1.131	140	-.5006	0.000		.7073	.10	0.00
10	.161	90	-.6608	.231	10	.0466	.431	120	-.6862	1.131	130	-.5318	0.000		.5689	.20	0.00
11	.161	80	-.7714	.231	0	.0844	.431	110	-.6202	1.131	120	-.6181	0.000		.3658	.30	0.00
12	.161	70	-.8412	.331	180	-.5566	.431	100	-.6241	1.131	110	-.6313	0.000		.1760	.40	0.00
13	.161	60	-.7043	.331	170	-.5890	.431	90	-.5576	1.131	100	-.6391	0.000		.0610	.45	0.00
14	.161	50	-.6393	.331	160	-.5896	.431	80	-.5009	1.131	90	-.6169	0.000		.8451	0.00	.10
15	.161	40	-.5384	.331	150	-.5669	.431	70	-.3902	1.131	80	-.5935	0.000		.7873	0.00	.20
16	.161	30	-.4481	.331	140	-.6802	.431	60	-.3134	1.131	70	-.4964	0.000		.6456	0.00	.30
17	.161	20	-.3214	.331	130	-.7142	.431	50	-.1880	1.131	60	-.3556	0.000		.3877	0.00	.40
18	.161	10	-.2564	.331	120	-.6473	.431	40	-.0899	1.131	50	-.2489	0.000		.3390	0.00	.45
19	.161	0	-.2709	.331	110	-.6905	.431	30	-.0141	1.131	40	-.1476	.161	270	-.7463		
20	.231	180	-.4847	.331	100	-.6252	.431	20	.0943	1.131	30	.0100	.231	270	-.6788		
21	.231	170	-.5410	.331	90	-.6602	.431	10	.1292	1.131	20	.0586	.331	270	-.6971		
22	.231	160	-.5459	.331	80	-.5723	.431	0	.1352	1.131	10	.1077	.431	270	-.5864		
23	.231	150	-.5894	.331	70	-.4865	.531	180	-.6317	1.131	0	.1113	.531	270	-.5913		
24	.231	140	-.6615	.331	60	-.3257	.531	90	-.5298				.731	270	-.5816		
25	.231	130	-.6893	.331	50	-.2286	.531	0	.1210	1.631	90	-.5642	.931	270	-.6387		
26	.231	120	-.6366	.331	40	-.1277	.731	180	-.6388	1.631	0	-.3430	1.131	270	-.6624		
27	.231	110	-.6490	.331	30	-.0209	.731	90	-.5908	2.131	180	-.0721	1.631	270	-.6260		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 49 ALPHA 6 MACH .404 Q 218.006 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4285	.231	100	-.6690	.331	20	-.8721	.731	0	-.1507	2.131	90	-.1555		
2	.161	170	-.4216	.231	90	-.6614	.331	10	-.8553	.931	180	-.1274	2.131	0	.0027		
3	.161	160	-.4425	.231	80	-.6948	.331	0	-.8444	.931	90	-.3951	0.000		.5042	-.45	0.00
4	.161	150	-.4906	.231	70	-.7351	.431	180	-.5243	.931	0	-.2696	0.000		.6049	-.40	0.00
5	.161	140	-.5137	.231	60	-.7636	.431	170	-.5243	1.131	180	-.3425	0.000		.8838	-.30	0.00
6	.161	130	-.6095	.231	50	-.7878	.431	160	-.5564	1.131	170	-.3945	0.000		.9978	-.20	0.00
7	.161	120	-.5876	.231	40	-.8056	.431	150	-.5374	1.131	160	-.3706	0.000		1.0451	-.10	0.00
8	.161	110	-.6309	.231	30	-.8309	.431	140	-.5944	1.131	150	-.3843	0.000		1.0367	0.00	0.00
9	.161	100	-.6658	.231	20	-.8433	.431	130	-.6194	1.131	140	-.4142	0.000		.9997	.10	0.00
10	.161	90	-.6732	.231	10	-.8459	.431	120	-.6140	1.131	130	-.3999	0.000		.9069	.20	0.00
11	.161	80	-.7112	.231	0	-.8357	.431	110	-.6558	1.131	120	-.3270	0.000		.7431	.30	0.00
12	.161	70	-.7080	.331	180	-.4914	.431	100	-.6710	1.131	110	-.2654	0.000		.4830	.40	0.00
13	.161	60	-.7305	.331	170	-.5033	.431	90	-.7096	1.131	100	-.2146	0.000		.4193	.45	0.00
14	.161	50	-.7412	.331	160	-.4785	.431	80	-.7172	1.131	90	-.1806	0.000		1.0173	0.00	.10
15	.161	40	-.7728	.331	150	-.5226	.431	70	-.7460	1.131	80	-.1537	0.000		.9499	0.00	.20
16	.161	30	-.7894	.331	140	-.5711	.431	60	-.7857	1.131	70	-.0808	0.000		.7953	0.00	.30
17	.161	20	-.8033	.331	130	-.6033	.431	50	-.8053	1.131	60	-.0425	0.000		.5048	0.00	.40
18	.161	10	-.8060	.331	120	-.6415	.431	40	-.8460	1.131	50	-.0043	0.000		.4618	0.00	.45
19	.161	0	-.8253	.331	110	-.6448	.431	30	-.8341	1.131	40	-.0085	.161	270	-.7155		
20	.231	180	-.4623	.331	100	-.6921	.431	20	-.8476	1.131	30	.0178	.231	270	-.6858		
21	.231	170	-.4612	.331	90	-.6743	.431	10	-.8444	1.131	20	.0519	.331	270	-.7058		
22	.231	160	-.4842	.331	80	-.7163	.431	0	-.8574	1.131	10	.0274	.431	270	-.7131		
23	.231	150	-.4992	.331	70	-.7453	.531	180	-.5526	1.131	0	.0381	.531	270	-.7452		
24	.231	140	-.5137	.331	60	-.7459	.531	90	-.7286				.731	270	-.6368		
25	.231	130	-.5859	.331	50	-.8034	.531	0	-.6830	1.631	90	-.0067	.931	270	-.3834		
26	.231	120	-.6020	.331	40	-.7975	.731	180	-.5569	1.631	0	-.1059	1.131	270	-.1622		
27	.231	110	-.6261	.331	30	-.8320	.731	90	-.6439	2.131	180	.0202	1.631	270	-.0343		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 50 ALPHA 8 MACH .404 Q 217.445 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4356	.231	100	-.7214	.331	20	-.9474	.731	0	.0304	2.131	90	-.1565		
2	.161	170	-.3970	.231	90	-.7381	.331	10	-.9376	.931	180	-.1709	2.131	0	.0051		
3	.161	160	-.5005	.231	80	-.8110	.331	0	-.9572	.931	90	-.2476	0.000		.5049	-.45	0.00
4	.161	150	-.5285	.231	70	-.8217	.431	180	-.5382	.931	0	-.2602	0.000		.6271	-.40	0.00
5	.161	140	-.5510	.231	60	-.8595	.431	170	-.5491	1.131	180	-.3872	0.000		.9031	-.30	0.00
6	.161	130	-.6213	.231	50	-.8983	.431	160	-.5704	1.131	170	-.3548	0.000		1.0265	-.20	0.00
7	.161	120	-.6761	.231	40	-.9302	.431	150	-.5982	1.131	160	-.3656	0.000		1.0587	-.10	0.00
8	.161	110	-.7115	.231	30	-.9469	.431	140	-.6336	1.131	150	-.4243	0.000		1.0375	0.00	0.00
9	.161	100	-.7196	.231	20	-.9668	.431	130	-.6467	1.131	140	-.3686	0.000		.9779	.10	0.00
10	.161	90	-.7523	.231	10	-.9728	.431	120	-.6543	1.131	130	-.3620	0.000		.8782	.20	0.00
11	.161	80	-.7893	.231	0	-1.0121	.431	110	-.7224	1.131	120	-.2398	0.000		.6946	.30	0.00
12	.161	70	-.7705	.331	180	-.4793	.431	100	-.7180	1.131	110	-.2434	0.000		.4593	.40	0.00
13	.161	60	-.8226	.331	170	-.5116	.431	90	-.7578	1.131	100	-.1919	0.000		.4033	.45	0.00
14	.161	50	-.8532	.331	160	-.5499	.431	80	-.7976	1.131	90	-.1751	0.000		1.0168	0.00	.10
15	.161	40	-.8929	.331	150	-.5893	.431	70	-.8357	1.131	80	-.1308	0.000		.9426	0.00	.20
16	.161	30	-.9128	.331	140	-.6082	.431	60	-.8368	1.131	70	-.1020	0.000		.7943	0.00	.30
17	.161	20	-.9477	.331	130	-.6497	.431	50	-.8357	1.131	60	-.0625	0.000		.4872	0.00	.40
18	.161	10	-.9251	.331	120	-.6670	.431	40	-.8117	1.131	50	-.0517	0.000		.4447	0.00	.45
19	.161	0	-1.0523	.331	110	-.7160	.431	30	-.6548	1.131	40	-.0433	.161	270	-.7575		
20	.231	180	-.4555	.331	100	-.7015	.431	20	-.7583	1.131	30	-.0157	.231	270	-.7679		
21	.231	170	-.4598	.331	90	-.7603	.431	10	-.7338	1.131	20	-.0205	.331	270	-.7393		
22	.231	160	-.4914	.331	80	-.7910	.431	0	-.6527	1.131	10	-.0109	.431	270	-.7831		
23	.231	150	-.4920	.331	70	-.8045	.531	180	-.5529	1.131	0	.0022	.531	270	-.7782		
24	.231	140	-.5854	.331	60	-.8692	.531	90	-.7638				.731	270	-.5291		
25	.231	130	-.6310	.331	50	-.8994	.531	0	-.2860	1.631	90	-.0804	.931	270	-.2696		
26	.231	120	-.6567	.331	40	-.9312	.731	180	-.5976	1.631	0	-.1691	1.131	270	-.1627		
27	.231	110	-.7351	.331	30	-.9043	.731	90	-.4707	2.131	180	.0058	1.631	270	-.0946		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 51 ALPHA 10 MACH .404 Q 217.820 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4391	.231	100	-.7858	.331	20	-.6635	.731	0	-.0145	2.131	90	-.1829		
2	.161	170	-.4697	.231	90	-.8107	.331	10	-.6428	.931	180	-.1784	2.131	0	-.0034		
3	.161	160	-.4911	.231	80	-.8284	.331	0	-.6069	.931	90	-.2699	0.000		.4646	-.45	0.00
4	.161	150	-.5307	.231	70	-.8558	.431	180	-.5514	.931	0	-.2597	0.000		.6582	-.40	0.00
5	.161	140	-.6079	.231	60	-.9565	.431	170	-.5873	1.131	180	-.2932	0.000		.9222	-.30	0.00
6	.161	130	-.6963	.231	50	-1.0157	.431	160	-.5890	1.131	170	-.3440	0.000		1.0284	-.20	0.00
7	.161	120	-.7435	.231	40	-1.0583	.431	150	-.6194	1.131	160	-.3374	0.000		1.0478	-.10	0.00
8	.161	110	-.7912	.231	30	-1.1073	.431	140	-.6939	1.131	150	-.4242	0.000		1.0248	0.00	0.00
9	.161	100	-.8094	.231	20	-1.1089	.431	130	-.7015	1.131	140	-.3566	0.000		.9513	.10	0.00
10	.161	90	-.8710	.231	10	-1.1116	.431	120	-.7331	1.131	130	-.3171	0.000		.8366	.20	0.00
11	.161	80	-.8753	.231	0	-1.0825	.431	110	-.7837	1.131	120	-.2687	0.000		.6570	.30	0.00
12	.161	70	-.9128	.331	180	-.5683	.431	100	-.8179	1.131	110	-.2465	0.000		.4166	.40	0.00
13	.161	60	-.9364	.331	170	-.5269	.431	90	-.8283	1.131	100	-.2089	0.000		.3784	.45	0.00
14	.161	50	-.9878	.331	160	-.5640	.431	80	-.8239	1.131	90	-.1987	0.000		.9914	0.00	.10
15	.161	40	-1.0484	.331	150	-.5990	.431	70	-.7679	1.131	80	-.1813	0.000		.9343	0.00	.20
16	.161	30	-1.0752	.331	140	-.6297	.431	60	-.7266	1.131	70	-.1520	0.000		.7773	0.00	.30
17	.161	20	-1.1566	.331	130	-.7002	.431	50	-.5710	1.131	60	-.1120	0.000		.4498	0.00	.40
18	.161	10	-1.1400	.331	120	-.7320	.431	40	-.4024	1.131	50	-.1006	0.000		.4148	0.00	.45
19	.161	0	-1.1818	.331	110	-.7632	.431	30	-.2806	1.131	40	-.0785	.161	270	-.8612		
20	.231	180	-.4825	.331	100	-.8133	.431	20	-.2044	1.131	30	-.0563	.231	270	-.8211		
21	.231	170	-.5039	.331	90	-.8515	.431	10	-.1299	1.131	20	-.0438	.331	270	-.8339		
22	.231	160	-.4997	.331	80	-.8790	.431	0	-.1141	1.131	10	-.0240	.431	270	-.8211		
23	.231	150	-.5538	.331	70	-.9005	.531	180	-.5890	1.131	0	-.0252	.531	270	-.7295		
24	.231	140	-.6299	.331	60	-.9113	.531	90	-.7233				.731	270	-.4402		
25	.231	130	-.6754	.331	50	-.9129	.531	0	-.0287	1.631	90	-.1449	.931	270	-.2576		
26	.231	120	-.7295	.331	40	-.8429	.731	180	-.5803	1.631	0	-.1790	1.131	270	-.2090		
27	.231	110	-.7606	.331	30	-.7250	.731	90	-.3980	2.131	180	.0047	1.631	270	-.1343		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 52 ALPHA 12 MACH .403 Q 217.352 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4986	.231	100	-.9149	.331	20	-.2016	.731	0	-.0535	2.131	90	-.1986		
2	.161	170	-.4809	.231	90	-.8863	.331	10	-.2005	.931	180	-.2255	2.131	0	.0227		
3	.161	160	-.5260	.231	80	-1.0088	.331	0	-.1880	.931	90	-.2729	0.000		.4011	-.45	0.00
4	.161	150	-.6039	.231	70	-1.0023	.431	180	-.5695	.931	0	-.2729	0.000		.6498	-.40	0.00
5	.161	140	-.6490	.231	60	-.9877	.431	170	-.5968	1.131	180	-.3136	0.000		.9576	-.30	0.00
6	.161	130	-.7311	.231	50	-.8388	.431	160	-.6202	1.131	170	-.3214	0.000		1.0482	-.20	0.00
7	.161	120	-.8224	.231	40	-.7196	.431	150	-.6715	1.131	160	-.3424	0.000		1.0592	-.10	0.00
8	.161	110	-.8273	.231	30	-.5723	.431	140	-.7042	1.131	150	-.2855	0.000		1.0068	0.00	0.00
9	.161	100	-.8928	.231	20	-.4563	.431	130	-.7527	1.131	140	-.2729	0.000		.9345	.10	0.00
10	.161	90	-.9529	.231	10	-.4039	.431	120	-.7652	1.131	130	-.2902	0.000		.8147	.20	0.00
11	.161	80	-1.0125	.231	0	-.3651	.431	110	-.8295	1.131	120	-.2615	0.000		.6340	.30	0.00
12	.161	70	-1.1462	.331	180	-.5966	.431	100	-.8159	1.131	110	-.2723	0.000		.3786	.40	0.00
13	.161	60	-1.1914	.331	170	-.5663	.431	90	-.7560	1.131	100	-.2747	0.000		.3554	.45	0.00
14	.161	50	-1.1849	.331	160	-.5653	.431	80	-.6262	1.131	90	-.2519	0.000		.9765	0.00	.10
15	.161	40	-1.1914	.331	150	-.6311	.431	70	-.4927	1.131	80	-.2429	0.000		.9089	0.00	.20
16	.161	30	-1.1033	.331	140	-.6705	.431	60	-.3673	1.131	70	-.2195	0.000		.7636	0.00	.30
17	.161	20	-.8955	.331	130	-.7536	.431	50	-.2294	1.131	60	-.1662	0.000		.4394	0.00	.40
18	.161	10	-.8337	.331	120	-.7417	.431	40	-.1913	1.131	50	-.1380	0.000		.4035	0.00	.45
19	.161	0	-.7843	.331	110	-.7935	.431	30	-.1460	1.131	40	-.0961	.161	270	-.9731		
20	.231	180	-.4949	.331	100	-.8475	.431	20	-.1439	1.131	30	-.0757	.231	270	-.9062		
21	.231	170	-.5276	.331	90	-.9117	.431	10	-.1210	1.131	20	-.0517	.331	270	-.9001		
22	.231	160	-.5625	.331	80	-.8243	.431	0	-.1210	1.131	10	-.0265	.431	270	-.7281		
23	.231	150	-.6114	.331	70	-.7072	.531	180	-.6273	1.131	0	-.0271	.531	270	-.5512		
24	.231	140	-.6957	.331	60	-.5896	.531	90	-.5815				.731	270	-.3834		
25	.231	130	-.7204	.331	50	-.4282	.531	0	-.0823	1.631	90	-.1896	.931	270	-.2764		
26	.231	120	-.7875	.331	40	-.2944	.731	180	-.5728	1.631	0	-.2291	1.131	270	-.2405		
27	.231	110	-.6240	.331	30	-.2307	.731	90	-.3477	2.131	180	-.0002	1.631	270	-.1858		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 45 ALPHA -1 MACH .404 Q 217.911 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.6494	.231	100	-.6004	.331	20	-.5229	.731	0	-.5919	2.131	90	-.1659		
2	.161	170	-.6044	.231	90	-.5374	.331	10	-.5012	.931	180	-.1920	2.131	0	-.0100		
3	.161	160	-.5916	.231	80	-.5573	.331	0	-.4941	.931	90	-.5322	0.000		.5220	-.45	0.00
4	.161	150	-.5782	.231	70	-.5304	.431	180	-.6452	.931	0	.4033	0.000		.5493	-.40	0.00
5	.161	140	-.5787	.231	60	-.4895	.431	170	-.6322	1.131	180	-.2548	0.000		.8125	-.30	0.00
6	.161	130	-.7040	.231	50	-.5363	.431	160	-.6251	1.131	170	-.2835	0.000		.9552	-.20	0.00
7	.161	120	-.5798	.231	40	-.5272	.431	150	-.6365	1.131	160	-.2380	0.000		1.0183	-.10	0.00
8	.161	110	-.5487	.231	30	-.5170	.431	140	-.5952	1.131	150	-.3714	0.000		1.0486	0.00	0.00
9	.161	100	-.5562	.231	20	-.5256	.431	130	-.6099	1.131	140	-.3092	0.000		1.0371	.10	0.00
10	.161	90	-.5594	.231	10	-.5218	.431	120	-.5941	1.131	130	-.3349	0.000		.9648	.20	0.00
11	.161	80	-.5412	.231	0	-.4658	.431	110	-.5963	1.131	120	-.3570	0.000		.8339	.30	0.00
12	.161	70	-.5273	.331	180	-.5971	.431	100	-.5833	1.131	110	-.3463	0.000		.6693	.40	0.00
13	.161	60	-.5262	.331	170	-.6397	.431	90	-.5604	1.131	100	-.3630	0.000		.4632	.45	0.00
14	.161	50	-.5348	.331	160	-.6111	.431	80	-.6017	1.131	90	-.3558	0.000		1.0189	0.00	.10
15	.161	40	-.5278	.331	150	-.6267	.431	70	-.5827	1.131	80	-.3726	0.000		.9582	0.00	.20
16	.161	30	-.5107	.331	140	-.6079	.431	60	-.5778	1.131	70	-.3534	0.000		.8125	0.00	.30
17	.161	20	-.5123	.331	130	-.5848	.431	50	-.5392	1.131	60	-.4180	0.000		.6639	0.00	.40
18	.161	10	-.5294	.331	120	-.6025	.431	40	-.5735	1.131	50	-.4013	0.000		.4978	0.00	.45
19	.161	0	-.5048	.331	110	-.5702	.431	30	-.5338	1.131	40	-.4132	.161	270	-.5643		
20	.231	180	-.6034	.331	100	-.5643	.431	20	-.5680	1.131	30	-.3492	.231	270	-.5776		
21	.231	170	-.6264	.331	90	-.5971	.431	10	-.5393	1.131	20	-.4066	.331	270	-.5758		
22	.231	160	-.5991	.331	80	-.5514	.431	0	-.5604	1.131	10	-.3672	.431	270	-.5964		
23	.231	150	-.5862	.331	70	-.5654	.531	180	-.6398	1.131	0	-.3247	.531	270	-.6110		
24	.231	140	-.6232	.331	60	-.5762	.531	90	-.6371				.731	270	-.6152		
25	.231	130	-.5734	.331	50	-.5826	.531	0	-.6235	1.631	90	.0047	.931	270	-.5430		
26	.231	120	-.5926	.331	40	-.5492	.731	180	-.6425	1.631	0	-.1496	1.131	270	-.3338		
27	.231	110	-.5975	.331	30	-.5277	.731	90	-.6355	2.131	180	.0369	1.631	270	.0142		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 46 ALPHA 0 MACH .403 Q 217.350 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5298	.231	100	-.5491	.331	20	-.5717	.731	0	-.6349	2.131	90	-.1378		
2	.161	170	-.5609	.231	90	-.5707	.331	10	-.5761	.931	180	-.1464	2.131	0	.0507		
3	.161	160	-.5142	.231	80	-.5237	.331	0	-.5586	.931	90	-.5360	0.000		.5008	-.45	0.00
4	.161	150	-.5491	.231	70	-.5507	.431	180	-.5755	.931	0	.1407	0.000		.5702	-.40	0.00
5	.161	140	-.5566	.231	60	-.5566	.431	170	-.5946	1.131	180	-.3412	0.000		.8208	-.30	0.00
6	.161	130	-.5142	.231	50	-.5739	.431	160	-.5657	1.131	170	-.3706	0.000		.9582	-.20	0.00
7	.161	120	-.5625	.231	40	-.5297	.431	150	-.6039	1.131	160	-.3322	0.000		1.0288	-.10	0.00
8	.161	110	-.5480	.231	30	-.5183	.431	140	-.5636	1.131	150	-.3945	0.000		1.0519	0.00	0.00
9	.161	100	-.4922	.231	20	-.6020	.431	130	-.5276	1.131	140	-.4341	0.000		1.0330	.10	0.00
10	.161	90	-.5303	.231	10	-.5264	.431	120	-.5701	1.131	130	-.3832	0.000		.9661	.20	0.00
11	.161	80	-.5545	.231	0	-.5534	.431	110	-.5930	1.131	120	-.3670	0.000		.8250	.30	0.00
12	.161	70	-.5249	.331	180	-.5415	.431	100	-.5543	1.131	110	-.3736	0.000		.5695	.40	0.00
13	.161	60	-.4965	.331	170	-.5912	.431	90	-.5548	1.131	100	-.4239	0.000		.4564	.45	0.00
14	.161	50	-.5378	.331	160	-.5566	.431	80	-.5630	1.131	90	-.4077	0.000		1.0294	0.00	.10
15	.161	40	-.5464	.331	150	-.5777	.431	70	-.5728	1.131	80	-.3843	0.000		.9667	0.00	.20
16	.161	30	-.5620	.331	140	-.5491	.431	60	-.5826	1.131	70	-.3556	0.000		.8086	0.00	.30
17	.161	20	-.5754	.331	130	-.5523	.431	50	-.6077	1.131	60	-.3310	0.000		.6683	0.00	.40
18	.161	10	-.5609	.331	120	-.5723	.431	40	-.5886	1.131	50	-.3520	0.000		.5185	0.00	.45
19	.161	0	-.5749	.331	110	-.5534	.431	30	-.5946	1.131	40	-.3742	.161	270	-.5287		
20	.231	180	-.5566	.331	100	-.5453	.431	20	-.5766	1.131	30	-.4107	.231	270	-.5524		
21	.231	170	-.5255	.331	90	-.5464	.431	10	-.6072	1.131	20	-.3484	.331	270	-.5609		
22	.231	160	-.5448	.331	80	-.5512	.431	0	-.5717	1.131	10	-.4029	.431	270	-.5937		
23	.231	150	-.5652	.331	70	-.5728	.531	180	-.5914	1.131	0	-.4335	.531	270	-.5937		
24	.231	140	-.5706	.331	60	-.5599	.531	90	-.5892				.731	270	-.5992		
25	.231	130	-.5942	.331	50	-.5944	.531	0	-.6475	1.631	90	.0026	.931	270	-.5585		
26	.231	120	-.5760	.331	40	-.5723	.731	180	-.5897	1.631	0	-.1590	1.131	270	-.3354		
27	.231	110	-.5604	.331	30	-.5707	.731	90	-.6099	2.131	180	.0634	1.631	270	.0100		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 47 ALPHA 2 MACH .403 J 217.351 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5695	.231	100	-.5378	.331	20	-.6442	.731	0	-.6577	2.131	90	-.1475		
2	.161	170	-.4680	.231	90	-.5863	.331	10	-.6437	.931	180	-.1482	2.131	0	.0179		
3	.161	160	-.4487	.231	80	-.5906	.331	0	-.6246	.931	90	-.5444	0.000		.4953	-.45	0.00
4	.161	150	-.4804	.231	70	-.5998	.431	180	-.5178	.931	0	-.1416	0.000		.5513	-.40	0.00
5	.161	140	-.4981	.231	60	-.6230	.431	170	-.5243	1.131	180	-.4293	0.000		.8311	-.30	0.00
6	.161	130	-.5233	.231	50	-.6176	.431	160	-.5352	1.131	170	-.3933	0.000		.9765	-.20	0.00
7	.161	120	-.5056	.231	40	-.6165	.431	150	-.5194	1.131	160	-.4497	0.000		1.0318	-.10	0.00
8	.161	110	-.5507	.231	30	-.6322	.431	140	-.5973	1.131	150	-.4005	0.000		1.0343	0.00	0.00
9	.161	100	-.5486	.231	20	-.6289	.431	130	-.5586	1.131	140	-.3933	0.000		1.0081	.10	0.00
10	.161	90	-.5615	.231	10	-.6090	.431	120	-.5646	1.131	130	-.3957	0.000		.9430	.20	0.00
11	.161	80	-.5604	.231	0	-.6083	.431	110	-.5844	1.131	120	-.3975	0.000		.8049	.30	0.00
12	.161	70	-.6028	.331	180	-.5173	.431	100	-.6110	1.131	110	-.3939	0.000		.6282	.40	0.00
13	.161	60	-.5969	.331	170	-.5151	.431	90	-.6072	1.131	100	-.3400	0.000		.4625	.45	0.00
14	.161	50	-.5910	.331	160	-.4730	.431	80	-.5941	1.131	90	-.3496	0.000		1.0184	0.00	.10
15	.161	40	-.6484	.331	150	-.5119	.431	70	-.6578	1.131	80	-.2453	0.000		.9509	0.00	.20
16	.161	30	-.5974	.331	140	-.5696	.431	60	-.6159	1.131	70	-.2944	0.000		.8116	0.00	.30
17	.161	20	-.6484	.331	130	-.5761	.431	50	-.6753	1.131	60	-.2135	0.000		.5434	0.00	.40
18	.161	10	-.6307	.331	120	-.5383	.431	40	-.6339	1.131	50	-.2837	0.000		.3069	0.00	.45
19	.161	0	-.6431	.331	110	-.5545	.431	30	-.6459	1.131	40	-.2069	.161	270	-.5749		
20	.231	180	-.4986	.331	100	-.5529	.431	20	-.6377	1.131	30	-.2447	.231	270	-.5761		
21	.231	170	-.4884	.331	90	-.5966	.431	10	-.6835	1.131	20	-.1278	.331	270	-.5907		
22	.231	160	-.5040	.331	80	-.5923	.431	0	-.6546	1.131	10	-.1776	.431	270	-.6016		
23	.231	150	-.4965	.331	70	-.5874	.531	180	-.5292	1.131	0	-.1476	.531	270	-.6351		
24	.231	140	-.5018	.331	60	-.6138	.531	90	-.5995				.731	270	-.6436		
25	.231	130	-.5260	.331	50	-.6084	.531	0	-.6611	1.631	90	.0076	.931	270	-.5373		
26	.231	120	-.5357	.331	40	-.6176	.731	180	-.6159	1.631	0	-.1236	1.131	270	-.3597		
27	.231	110	-.5341	.331	30	-.5993	.731	90	-.6088	2.131	180	.0478	1.631	270	.0197		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 48 ALPHA 4 MACH .404 J 218.006 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5303	.231	100	-.5845	.331	20	-.7118	.731	0	-.5421	2.131	90	-.1573		
2	.161	170	-.4060	.231	90	-.6421	.331	10	-.7395	.931	180	-.1579	2.131	0	.0264		
3	.161	160	-.4350	.231	80	-.6356	.331	0	-.7227	.931	90	-.5170	0.000		.5000	-.45	0.00
4	.161	150	-.4644	.231	70	-.6528	.431	180	-.5162	.931	0	-.2541	0.000		.5940	-.40	0.00
5	.161	140	-.5180	.231	60	-.6840	.431	170	-.5232	1.131	180	-.3963	0.000		.8705	-.30	0.00
6	.161	130	-.5260	.231	50	-.6786	.431	160	-.5493	1.131	170	-.3813	0.000		.9942	-.20	0.00
7	.161	120	-.5438	.231	40	-.6916	.431	150	-.5374	1.131	160	-.3963	0.000		1.0482	-.10	0.00
8	.161	110	-.5843	.231	30	-.7045	.431	140	-.5330	1.131	150	-.4501	0.000		1.0500	0.00	0.00
9	.161	100	-.5908	.231	20	-.7308	.431	130	-.5662	1.131	140	-.4112	0.000		1.0100	.10	0.00
10	.161	90	-.6218	.231	10	-.7238	.431	120	-.5922	1.131	130	-.4053	0.000		.9233	.20	0.00
11	.161	80	-.6325	.231	0	-.7115	.431	110	-.6123	1.131	120	-.4088	0.000		.7813	.30	0.00
12	.161	70	-.6502	.331	180	-.5043	.431	100	-.6330	1.131	110	-.3180	0.000		.5091	.40	0.00
13	.161	60	-.6743	.331	170	-.5146	.431	90	-.6341	1.131	100	-.2863	0.000		.4493	.45	0.00
14	.161	50	-.6957	.331	160	-.4904	.431	80	-.6564	1.131	90	-.2857	0.000		1.0360	0.00	.10
15	.161	40	-.6995	.331	150	-.5399	.431	70	-.7004	1.131	80	-.2110	0.000		.9572	0.00	.20
16	.161	30	-.7059	.331	140	-.5286	.431	60	-.6988	1.131	70	-.1262	0.000		.8086	0.00	.30
17	.161	20	-.7182	.331	130	-.5382	.431	50	-.7221	1.131	60	-.1280	0.000		.5467	0.00	.40
18	.161	10	-.7043	.331	120	-.5888	.431	40	-.7362	1.131	50	-.1142	0.000		.3054	0.00	.45
19	.161	0	-.7182	.331	110	-.6216	.431	30	-.7650	1.131	40	-.0425	.161	270	-.6083		
20	.231	180	-.4066	.331	100	-.5993	.431	20	-.7455	1.131	30	-.0192	.231	270	-.6222		
21	.231	170	-.4419	.331	90	-.6275	.431	10	-.7667	1.131	20	-.0210	.331	270	-.6337		
22	.231	160	-.4858	.331	80	-.6512	.431	0	-.7649	1.131	10	.0459	.431	270	-.6386		
23	.231	150	-.4698	.331	70	-.6566	.531	180	-.5216	1.131	0	-.0145	.531	270	-.6531		
24	.231	140	-.5533	.331	60	-.7045	.531	90	-.6819				.731	270	-.6580		
25	.231	130	-.5255	.331	50	-.7217	.531	0	-.7721	1.631	90	-.0055	.931	270	-.4628		
26	.231	120	-.5752	.331	40	-.7475	.731	180	-.5754	1.631	0	-.1579	1.131	270	-.2634		
27	.231	110	-.5785	.331	30	-.7437	.731	90	-.6710	2.131	180	.0071	1.631	270	.0051		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 34 ALPHA 22 MACH .303 Q 128.692 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5139	.231	100	-.9028	.331	20	.0167	.731	0	.0839	2.131	90	-.3155		
2	.161	170	-.5257	.231	90	-.7679	.331	10	.0517	.931	180	-.2805	2.131	0	.1343		
3	.161	160	-.6472	.231	80	-.8499	.331	0	.0738	.931	90	-.5497	0.000		.7126	-.45	0.00
4	.161	150	-.6209	.231	70	-.6804	.431	180	-.6341	.931	0	-.4839	0.000		.9623	-.40	0.00
5	.161	140	-.6771	.231	60	-.4918	.431	170	-.6525	1.131	180	-.3797	0.000		1.0270	-.30	0.00
6	.161	130	-.7071	.231	50	-.3033	.431	160	-.6249	1.131	170	-.3837	0.000		1.0188	-.20	0.00
7	.161	120	-.7062	.231	40	-.2512	.431	150	-.6369	1.131	160	-.4505	0.000		.9602	-.10	0.00
8	.161	110	-.7724	.231	30	-.1364	.431	140	-.7492	1.131	150	-.3756	0.000		.8708	0.00	0.00
9	.161	100	-.8159	.231	20	-.0608	.431	130	-.7602	1.131	140	-.3817	0.000		.7578	.10	0.00
10	.161	90	-.8204	.231	10	-.0279	.431	120	-.7326	1.131	130	-.4839	0.000		.6171	.20	0.00
11	.161	80	-.9429	.231	0	-.0052	.431	110	-.7344	1.131	120	-.5751	0.000		.4055	.30	0.00
12	.161	70	-.9846	.331	180	-.5857	.431	100	-.6939	1.131	110	-.5660	0.000		.1949	.40	0.00
13	.161	60	-.8222	.331	170	-.6476	.431	90	-.5918	1.131	100	-.5538	0.000		.0942	.45	0.00
14	.161	50	-.7433	.331	160	-.6677	.431	80	-.5227	1.131	90	-.5923	0.000		.8524	0.00	.10
15	.161	40	-.6363	.331	150	-.6385	.431	70	-.4261	1.131	80	-.5416	0.000		.7887	0.00	.20
16	.161	30	-.5338	.331	140	-.7214	.431	60	-.3119	1.131	70	-.4394	0.000		.6633	0.00	.30
17	.161	20	-.4368	.331	130	-.6248	.431	50	-.2152	1.131	60	-.3271	0.000		.3675	0.00	.40
18	.161	10	-.3561	.331	120	-.7697	.431	40	-.1269	1.131	50	-.2208	0.000		.2771	0.00	.45
19	.161	0	-.3515	.331	110	-.8372	.431	30	-.0238	1.131	40	-.1256	.161	270	-.8207		
20	.231	180	-.5610	.331	100	-.7952	.431	20	.0223	1.131	30	-.0517	.231	270	-.8648		
21	.231	170	-.5728	.331	90	-.7387	.431	10	.0637	1.131	20	-.0082	.331	270	-.7519		
22	.231	160	-.5366	.331	80	-.6175	.431	0	.0784	1.131	10	.0708	.431	270	-.6369		
23	.231	150	-.7007	.331	70	-.4845	.531	180	-.7050	1.131	0	.0869	.531	270	-.5866		
24	.231	140	-.6789	.331	60	-.3706	.531	90	-.6000				.731	270	-.5876		
25	.231	130	-.7452	.331	50	-.2485	.531	0	.1060	1.631	90	-.4981	.931	270	-.5691		
26	.231	120	-.7442	.331	40	-.1501	.731	180	-.6534	1.631	0	-.3291	1.131	270	-.5424		
27	.231	110	-.7796	.331	30	-.0498	.731	90	-.5770	2.131	180	-.1266	1.631	270	-.4767		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 35 ALPHA 24 MACH .302 Q 128.304 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5064	.231	100	-.8708	.331	20	.0528	.731	0	.1318	2.131	90	-.3505		
2	.161	170	-.4982	.231	90	-.8151	.331	10	.0722	.931	180	-.3819	2.131	0	.1099		
3	.161	160	-.6246	.231	80	-.8151	.331	0	.1054	.931	90	-.6266	0.000		.7271	-.45	0.00
4	.161	150	-.6365	.231	70	-.6313	.431	180	-.6545	.931	0	-.5687	0.000		.9590	-.40	0.00
5	.161	140	-.7102	.231	60	-.4650	.431	170	-.6481	1.131	180	-.4388	0.000		1.0084	-.30	0.00
6	.161	130	-.6974	.231	50	-.3288	.431	160	-.6730	1.131	170	-.4926	0.000		.9590	-.20	0.00
7	.161	120	-.6492	.231	40	-.1789	.431	150	-.6204	1.131	160	-.4672	0.000		.9105	-.10	0.00
8	.161	110	-.7229	.231	30	-.0957	.431	140	-.7210	1.131	150	-.4824	0.000		.8003	0.00	0.00
9	.161	100	-.7948	.231	20	-.0336	.431	130	-.7801	1.131	140	-.4052	0.000		.6498	.10	0.00
10	.161	90	-.8084	.231	10	.0304	.431	120	-.8318	1.131	130	-.4804	0.000		.5118	.20	0.00
11	.161	80	-.8311	.231	0	.0624	.431	110	-.6582	1.131	120	-.6083	0.000		.3541	.30	0.00
12	.161	70	-.8284	.331	180	-.5847	.431	100	-.6314	1.131	110	-.6317	0.000		.1377	.40	0.00
13	.161	60	-.7711	.331	170	-.5948	.431	90	-.6231	1.131	100	-.6560	0.000		.0069	.45	0.00
14	.161	50	-.6619	.331	160	-.6222	.431	80	-.5151	1.131	90	-.6246	0.000		.8003	0.00	.10
15	.161	40	-.5737	.331	150	-.7066	.431	70	-.4745	1.131	80	-.6114	0.000		.7271	0.00	.20
16	.161	30	-.4082	.331	140	-.7237	.431	60	-.3489	1.131	70	-.5037	0.000		.5818	0.00	.30
17	.161	20	-.3281	.331	130	-.7301	.431	50	-.2169	1.131	60	-.3504	0.000		.3376	0.00	.40
18	.161	10	-.2580	.331	120	-.6496	.431	40	-.1125	1.131	50	-.2448	0.000		.2933	0.00	.45
19	.161	0	-.2790	.331	110	-.7182	.431	30	-.0350	1.131	40	-.1484	.161	270	-.8437		
20	.231	180	-.5046	.331	100	-.7054	.431	20	.0685	1.131	30	-.0022	.231	270	-.7408		
21	.231	170	-.5155	.331	90	-.6935	.431	10	.1146	1.131	20	.0750	.331	270	-.6955		
22	.231	160	-.6337	.331	80	-.6048	.431	0	.1266	1.131	10	.1379	.431	270	-.6317		
23	.231	150	-.5637	.331	70	-.4769	.531	180	-.6730	1.131	0	.1298	.531	270	-.6337		
24	.231	140	-.7793	.331	60	-.3754	.531	90	-.6490				.731	270	-.6553		
25	.231	130	-.6892	.331	50	-.2164	.531	0	.1294	1.631	90	-.5443	.931	270	-.6265		
26	.231	120	-.7738	.331	40	-.1250	.731	180	-.6610	1.631	0	-.3200	1.131	270	-.6492		
27	.231	110	-.7020	.331	30	-.0445	.731	90	-.6259	2.131	180	-.0621	1.631	270	-.5663		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 36 ALPHA 20 MACH .302 Q 128.304 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5573	.231	100	-.6990	.331	20	.1072	.731	0	.1867	2.131	90	-.3247		
2	.161	170	-.5027	.231	90	-.6670	.331	10	.1626	.931	180	-.3504	2.131	0	.1965		
3	.161	160	-.5446	.231	80	-.7017	.331	0	.1728	.931	90	-.6388	0.000		.8580	-.45	0.00
4	.161	150	-.6292	.231	70	-.5756	.431	180	-.6231	.931	0	-.5687	0.000		1.0404	-.40	0.00
5	.161	140	-.5855	.231	60	-.3882	.431	170	-.6000	1.131	180	-.4256	0.000		1.0610	-.30	0.00
6	.161	130	-.7111	.231	50	-.2410	.431	160	-.6638	1.131	170	-.4327	0.000		1.0167	-.20	0.00
7	.161	120	-.6248	.231	40	-.1332	.431	150	-.7644	1.131	160	-.4253	0.000		.9268	-.10	0.00
8	.161	110	-.6820	.231	30	-.0336	.431	140	-.6970	1.131	150	-.4347	0.000		.8099	0.00	0.00
9	.161	100	-.6965	.231	20	.0569	.431	130	-.7081	1.131	140	-.4631	0.000		.6478	.10	0.00
10	.161	90	-.7547	.231	10	.1173	.431	120	-.6933	1.131	130	-.4976	0.000		.5241	.20	0.00
11	.161	80	-.8339	.231	0	.1264	.431	110	-.7145	1.131	120	-.5758	0.000		.3129	.30	0.00
12	.161	70	-.7493	.331	180	-.5482	.431	100	-.6102	1.131	110	-.6499	0.000		.1728	.40	0.00
13	.161	60	-.6892	.331	170	-.5546	.431	90	-.5779	1.131	100	-.6774	0.000		-.0034	.45	0.00
14	.161	50	-.6064	.331	160	-.6039	.431	80	-.5225	1.131	90	-.6763	0.000		.8023	0.00	.10
15	.161	40	-.4682	.331	150	-.6706	.431	70	-.4357	1.131	80	-.5900	0.000		.7621	0.00	.20
16	.161	30	-.3234	.331	140	-.7081	.431	60	-.3406	1.131	70	-.5362	0.000		.5942	0.00	.30
17	.161	20	-.2262	.331	130	-.6716	.431	50	-.2252	1.131	60	-.3931	0.000		.3644	0.00	.40
18	.161	10	-.1234	.331	120	-.6121	.431	40	-.0645	1.131	50	-.2316	0.000		.3150	0.00	.45
19	.161	0	-.0934	.331	110	-.6652	.431	30	.0324	1.131	40	-.0885	.161	270	-.7913		
20	.231	180	-.4745	.331	100	-.6012	.431	20	.1165	1.131	30	.0354	.231	270	-.6955		
21	.231	170	-.6901	.331	90	-.7072	.431	10	.1479	1.131	20	.0801	.331	270	-.6934		
22	.231	160	-.6037	.331	80	-.5728	.431	0	.1626	1.131	10	.1501	.431	270	-.5812		
23	.231	150	-.6174	.331	70	-.4275	.531	180	-.6416	1.131	0	.1856	.531	270	-.5606		
24	.231	140	-.6301	.331	60	-.3123	.531	90	-.6167				.731	270	-.6255		
25	.231	130	-.6528	.331	50	-.2136	.531	0	.1830	1.631	90	-.5850	.931	270	-.6244		
26	.231	120	-.6283	.331	40	-.0875	.731	180	-.6656	1.631	0	-.3118	1.131	270	-.6790		
27	.231	110	-.7347	.331	30	.0085	.731	90	-.6631	2.131	180	-.1595	1.631	270	-.5647		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 37 ALPHA 0 MACH .303 Q 128.595 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5805	.231	100	-.5651	.331	20	-.5719	.731	0	-.6292	2.131	90	-.1400		
2	.161	170	-.6241	.231	90	-.5305	.331	10	-.5664	.931	180	-.1338	2.131	0	.0696		
3	.161	160	-.5615	.231	80	-.6007	.331	0	-.6760	.931	90	-.4408	0.000		.4695	-.45	0.00
4	.161	150	-.5842	.231	70	-.5587	.431	180	-.6272	.931	0	-.5492	0.000		.5477	-.40	0.00
5	.161	140	-.6014	.231	60	-.5569	.431	170	-.6355	1.131	180	-.2442	0.000		.8211	-.30	0.00
6	.161	130	-.5987	.231	50	-.5496	.431	160	-.6466	1.131	170	-.2118	0.000		.9435	-.20	0.00
7	.161	120	-.6214	.231	40	-.5524	.431	150	-.6889	1.131	160	-.2047	0.000		1.0257	-.10	0.00
8	.161	110	-.6132	.231	30	-.5742	.431	140	-.6705	1.131	150	-.1409	0.000		1.0350	0.00	0.00
9	.161	100	-.5624	.231	20	-.5560	.431	130	-.5931	1.131	140	-.3040	0.000		1.0164	.10	0.00
10	.161	90	-.5279	.231	10	-.5578	.431	120	-.5673	1.131	130	-.3577	0.000		.9486	.20	0.00
11	.161	80	-.6005	.231	0	-.6025	.431	110	-.6447	1.131	120	-.2361	0.000		.8036	.30	0.00
12	.161	70	-.5905	.331	180	-.5761	.431	100	-.6152	1.131	110	-.2301	0.000		.5569	.40	0.00
13	.161	60	-.5787	.331	170	-.6133	.431	90	-.6143	1.131	100	-.2341	0.000		.4469	.45	0.00
14	.161	50	-.4880	.331	160	-.5396	.431	80	-.6364	1.131	90	-.2250	0.000		1.0195	0.00	.10
15	.161	40	-.5678	.331	150	-.5460	.431	70	-.5664	1.131	80	-.3810	0.000		.9589	0.00	.20
16	.161	30	-.5730	.331	140	-.5761	.431	60	-.6325	1.131	70	-.2979	0.000		.7995	0.00	.30
17	.161	20	-.5660	.331	130	-.5651	.431	50	-.5931	1.131	60	-.2898	0.000		.5564	0.00	.40
18	.161	10	-.5388	.331	120	-.5669	.431	40	-.5729	1.131	50	-.3455	0.000		.5127	0.00	.45
19	.161	0	-.5524	.331	110	-.6463	.431	30	-.5867	1.131	40	-.2989	.161	270	-.6014		
20	.231	180	-.6005	.331	100	-.5788	.431	20	-.6263	1.131	30	-.3000	.231	270	-.5863		
21	.231	170	-.5669	.331	90	-.5697	.431	10	-.5719	1.131	20	-.3364	.331	270	-.6014		
22	.231	160	-.6114	.331	80	-.6463	.431	0	-.6079	1.131	10	-.3070	.431	270	-.6117		
23	.231	150	-.6350	.331	70	-.5642	.531	180	-.6954	1.131	0	-.3759	.531	270	-.6425		
24	.231	140	-.6168	.331	60	-.6007	.531	90	-.6374				.731	270	-.6250		
25	.231	130	-.5923	.331	50	-.5296	.531	0	-.5747	1.631	90	.0191	.931	270	-.3867		
26	.231	120	-.5760	.331	40	-.5615	.731	180	-.6410	1.631	0	-.1247	1.131	270	-.2582		
27	.231	110	-.5914	.331	30	-.5980	.731	90	-.6512	2.131	180	.0252	1.631	270	.0305		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 30 ALPHA 14 MACH .302 Q 128.207 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4986	.231	100	-.9410	.331	20	-.1634	.731	0	-.0205	2.131	90	-.2384		
2	.161	170	-.5314	.231	90	-.9730	.331	10	-.1496	.931	180	-.2704	2.131	0	.0430		
3	.161	160	-.6269	.231	80	-1.0261	.331	0	-.1302	.931	90	-.3304	0.000		.4379	-.45	0.00
4	.161	150	-.6716	.231	70	-.9575	.431	180	-.6421	.931	0	-.3680	0.000		.6967	-.40	0.00
5	.161	140	-.6543	.231	60	-.8358	.431	170	-.6301	1.131	180	-.2897	0.000		.9535	-.30	0.00
6	.161	130	-.6973	.231	50	-.5751	.431	160	-.7243	1.131	170	-.2145	0.000		1.0205	-.20	0.00
7	.161	120	-.8363	.231	40	-.4053	.431	150	-.7253	1.131	160	-.2053	0.000		1.0145	-.10	0.00
8	.161	110	-.9092	.231	30	-.4132	.431	140	-.7761	1.131	150	-.2033	0.000		.9586	0.00	0.00
9	.161	100	-.9829	.231	20	-.3547	.431	130	-.8075	1.131	140	-.3121	0.000		.8844	.10	0.00
10	.161	90	-1.0175	.231	10	-.3117	.431	120	-.8260	1.131	130	-.2338	0.000		.7687	.20	0.00
11	.161	80	-1.1604	.231	0	-.3025	.431	110	-.8519	1.131	120	-.2775	0.000		.5689	.30	0.00
12	.161	70	-1.3416	.331	180	-.5971	.431	100	-.7927	1.131	110	-.3436	0.000		.3255	.40	0.00
13	.161	60	-1.3243	.331	170	-.6108	.431	90	-.6458	1.131	100	-.3050	0.000		.2801	.45	0.00
14	.161	50	-1.0922	.331	160	-.6227	.431	80	-.5164	1.131	90	-.3161	0.000		.9360	0.00	.10
15	.161	40	-.9265	.331	150	-.6831	.431	70	-.4065	1.131	80	-.2867	0.000		.9122	0.00	.20
16	.161	30	-.8555	.331	140	-.7434	.431	60	-.3011	1.131	70	-.2196	0.000		.7297	0.00	.30
17	.161	20	-.8081	.331	130	-.7571	.431	50	-.2457	1.131	60	-.1942	0.000		.4132	0.00	.40
18	.161	10	-.7635	.331	120	-.8134	.431	40	-.1847	1.131	50	-.1485	0.000		.3327	0.00	.45
19	.161	0	-.7626	.331	110	-.8980	.431	30	-.1376	1.131	40	-.1048	.161	270	-1.0413		
20	.231	180	-.5405	.331	100	-.8559	.431	20	-.0997	1.131	30	-.0550	.231	270	-.9980		
21	.231	170	-.5623	.331	90	-.8550	.431	10	-.0886	1.131	20	-.0408	.331	270	-.8723		
22	.231	160	-.5832	.331	80	-.6455	.431	0	-.0673	1.131	10	-.0032	.431	270	-.6373		
23	.231	150	-.7052	.331	70	-.5376	.531	180	-.6578	1.131	0	-.0073	.531	270	-.5353		
24	.231	140	-.7280	.331	60	-.4489	.531	90	-.5349				.731	270	-.3652		
25	.231	130	-.8281	.331	50	-.3117	.531	0	-.0535	1.531	90	-.2328	.931	270	-.3497		
26	.231	120	-.8327	.331	40	-.2641	.731	180	-.5617	1.631	0	-.2603	1.131	270	-.3166		
27	.231	110	-.9028	.331	30	-.2065	.731	90	-.3686	2.131	180	-.0438	1.631	270	-.2467		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 31 ALPHA 16 MACH .302 Q 128.314 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4928	.231	100	-.9328	.331	20	-.1119	.731	0	-.0192	2.131	90	-.2353		
2	.161	170	-.4706	.231	90	-.9205	.331	10	-.0749	.931	180	-.2536	2.131	0	.0554		
3	.161	160	-.5723	.231	80	-.9415	.331	0	-.0758	.931	90	-.3355	0.000		.5165	-.45	0.00
4	.161	150	-.6945	.231	70	-.9086	.431	180	-.6218	.931	0	-.3645	0.000		.7670	-.40	0.00
5	.161	140	-.7501	.231	60	-.6383	.431	170	-.6436	1.131	180	-.2373	0.000		.9378	-.30	0.00
6	.161	130	-.7674	.231	50	-.5504	.431	160	-.6857	1.131	170	-.2171	0.000		1.0179	-.20	0.00
7	.161	120	-.8540	.231	40	-.4065	.431	150	-.7190	1.131	160	-.2841	0.000		1.0085	-.10	0.00
8	.161	110	-.8896	.231	30	-.3488	.431	140	-.7958	1.131	150	-.2790	0.000		.9570	0.00	0.00
9	.161	100	-.9735	.231	20	-.2792	.431	130	-.7838	1.131	140	-.3299	0.000		.8620	.10	0.00
10	.161	90	-.9969	.231	10	-.2627	.431	120	-.7847	1.131	130	-.2892	0.000		.7112	.20	0.00
11	.161	80	-1.1659	.231	0	-.2398	.431	110	-.8310	1.131	120	-.3341	0.000		.5222	.30	0.00
12	.161	70	-1.1011	.331	180	-.5101	.431	100	-.7227	1.131	110	-.3492	0.000		.2774	.40	0.00
13	.161	60	-1.1504	.331	170	-.5971	.431	90	-.6292	1.131	100	-.3360	0.000		.2330	.45	0.00
14	.161	50	-.8996	.331	160	-.6557	.431	80	-.4932	1.131	90	-.3594	0.000		.9374	0.00	.10
15	.161	40	-.8358	.331	150	-.6750	.431	70	-.3886	1.131	80	-.3136	0.000		.8775	0.00	.20
16	.161	30	-.7765	.331	140	-.7776	.431	60	-.3044	1.131	70	-.2780	0.000		.7112	0.00	.30
17	.161	20	-.7016	.331	130	-.7592	.431	50	-.2229	1.131	60	-.2068	0.000		.4043	0.00	.40
18	.161	10	-.6589	.331	120	-.7858	.431	40	-.1776	1.131	50	-.1437	0.000		.3064	0.00	.45
19	.161	0	-.6443	.331	110	-.9498	.431	30	-.1100	1.131	40	-.0734	.161	270	-1.0109		
20	.231	180	-.5149	.331	100	-.8765	.431	20	-.0721	1.131	30	-.0450	.231	270	-.8834		
21	.231	170	-.5322	.331	90	-.8453	.431	10	-.0397	1.131	20	-.0297	.331	270	-.8048		
22	.231	160	-.5659	.331	80	-.6766	.431	0	-.0249	1.131	10	.0202	.431	270	-.6538		
23	.231	150	-.6480	.331	70	-.5082	.531	180	-.6422	1.131	0	.0273	.531	270	-.5247		
24	.231	140	-.7610	.331	60	-.3836	.531	90	-.5117				.731	270	-.4071		
25	.231	130	-.7820	.331	50	-.3177	.531	0	-.0110	1.631	90	-.3034	.931	270	-.4050		
26	.231	120	-.8449	.331	40	-.2453	.731	180	-.5811	1.631	0	-.2312	1.131	270	-.3782		
27	.231	110	-.8988	.331	30	-.1619	.731	90	-.4182	2.131	180	-.0327	1.631	270	-.3214		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 32 ALPHA 18 MACH .302 Q 127.723 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4841	.231	100	-.9051	.331	20	-.0463	.731	0	.0630	2.131	90	-.2518		
2	.161	170	-.5060	.231	90	-.8344	.331	10	-.0445	.931	180	-.2654	2.131	0	.0784		
3	.161	160	-.5142	.231	80	-.8602	.331	0	-.0138	.931	90	-.4072	0.000		.6010	-.45	0.00
4	.161	150	-.5864	.231	70	-.7656	.431	180	-.0205	.931	0	-.3949	0.000		.8453	-.40	0.00
5	.161	140	-.7400	.231	60	-.6233	.431	170	-.0316	1.131	180	-.2593	0.000		.9943	-.30	0.00
6	.161	130	-.8871	.231	50	-.4525	.431	160	-.0587	1.131	170	-.2052	0.000		1.0274	-.20	0.00
7	.161	120	-.8313	.231	40	-.3432	.431	150	-.7225	1.131	160	-.3001	0.000		1.0047	-.10	0.00
8	.161	110	-.9172	.231	30	-.2633	.431	140	-.8032	1.131	150	-.3072	0.000		.9508	0.00	0.00
9	.161	100	-.8697	.231	20	-.2092	.431	130	-.7438	1.131	140	-.3256	0.000		.8328	.10	0.00
10	.161	90	-.9913	.231	10	-.1614	.431	120	-.7652	1.131	130	-.3337	0.000		.6796	.20	0.00
11	.161	80	-1.0397	.231	0	-.1605	.431	110	-.8088	1.131	120	-.4010	0.000		.4768	.30	0.00
12	.161	70	-1.1091	.331	180	-.5223	.431	100	-.6984	1.131	110	-.4286	0.000		.2594	.40	0.00
13	.161	60	-.9967	.331	170	-.6407	.431	90	-.5936	1.131	100	-.4327	0.000		.1176	.45	0.00
14	.161	50	-.8368	.331	160	-.6077	.431	80	-.5055	1.131	90	-.3970	0.000		.9145	0.00	.10
15	.161	40	-.7345	.331	150	-.6949	.431	70	-.3877	1.131	80	-.3572	0.000		.8515	0.00	.20
16	.161	30	-.6879	.331	140	-.7849	.431	60	-.3070	1.131	70	-.3041	0.000		.6848	0.00	.30
17	.161	20	-.6011	.331	130	-.7399	.431	50	-.2114	1.131	60	-.2368	0.000		.3826	0.00	.40
18	.161	10	-.5517	.331	120	-.7839	.431	40	-.1344	1.131	50	-.1624	0.000		.3060	0.00	.45
19	.161	0	-.5362	.331	110	-.8400	.431	30	-.0732	1.131	40	-.0910	.161	270	-.9491		
20	.231	180	-.5078	.331	100	-.7169	.431	20	-.0389	1.131	30	-.0308	.231	270	-.8622		
21	.231	170	-.5243	.331	90	-.7527	.431	10	.0001	1.131	20	.0120	.331	270	-.7722		
22	.231	160	-.5782	.331	80	-.5985	.431	0	.0140	1.131	10	.0753	.431	270	-.6191		
23	.231	150	-.6769	.331	70	-.5186	.531	180	-.6631	1.131	0	.0549	.531	270	-.5777		
24	.231	140	-.7473	.331	60	-.3799	.531	90	-.5175				.731	270	-.4763		
25	.231	130	-.7582	.331	50	-.2615	.531	0	.0372	1.631	90	-.3123	.931	270	-.4618		
26	.231	120	-.8067	.331	40	-.1981	.731	180	-.6483	1.631	0	-.2277	1.131	270	-.4422		
27	.231	110	-.8432	.331	30	-.1183	.731	90	-.4591	2.131	180	.0263	1.631	270	-.3232		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 33 ALPHA 20 MACH .303 Q 128.498 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4856	.231	100	-.7563	.331	20	-.0312	.731	0	.0810	2.131	90	-.3109		
2	.161	170	-.5374	.231	90	-.8430	.331	10	.0038	.931	180	-.3073	2.131	0	.0964		
3	.161	160	-.5247	.231	80	-.8494	.331	0	.0223	.931	90	-.4959	0.000		.6283	-.45	0.00
4	.161	150	-.5910	.231	70	-.7755	.431	180	-.6517	.931	0	-.4401	0.000		.8835	-.40	0.00
5	.161	140	-.7590	.231	60	-.5464	.431	170	-.6683	1.131	180	-.2475	0.000		1.0193	-.30	0.00
6	.161	130	-.7745	.231	50	-.4186	.431	160	-.7374	1.131	170	-.3266	0.000		.9997	-.20	0.00
7	.161	120	-.8444	.231	40	-.3182	.431	150	-.7485	1.131	160	-.4178	0.000		.9761	-.10	0.00
8	.161	110	-.8771	.231	30	-.2096	.431	140	-.7835	1.131	150	-.3478	0.000		.8896	0.00	0.00
9	.161	100	-.9752	.231	20	-.1384	.431	130	-.8278	1.131	140	-.3438	0.000		.7682	.10	0.00
10	.161	90	-.8853	.231	10	-.1010	.431	120	-.7752	1.131	130	-.4107	0.000		.6242	.20	0.00
11	.161	80	-1.0070	.231	0	-.1010	.431	110	-.8020	1.131	120	-.4614	0.000		.4431	.30	0.00
12	.161	70	-1.0370	.331	180	-.6112	.431	100	-.7190	1.131	110	-.5151	0.000		.2291	.40	0.00
13	.161	60	-.9044	.331	170	-.6587	.431	90	-.6480	1.131	100	-.4948	0.000		.0913	.45	0.00
14	.161	50	-.7745	.331	160	-.6012	.431	80	-.5088	1.131	90	-.5100	0.000		.8660	0.00	.10
15	.161	40	-.6918	.331	150	-.6851	.431	70	-.4147	1.131	80	-.4371	0.000		.8053	0.00	.20
16	.161	30	-.6191	.331	140	-.7445	.431	60	-.3179	1.131	70	-.3762	0.000		.6725	0.00	.30
17	.161	20	-.5428	.331	130	-.7527	.431	50	-.2340	1.131	60	-.2951	0.000		.3557	0.00	.40
18	.161	10	-.4975	.331	120	-.8594	.431	40	-.1391	1.131	50	-.2110	0.000		.2744	0.00	.45
19	.161	0	-.4620	.331	110	-.8759	.431	30	-.0570	1.131	40	-.1238	.161	270	-1.1675		
20	.231	180	-.5110	.331	100	-.7563	.431	20	-.0072	1.131	30	-.0285	.231	270	-.8374		
21	.231	170	-.5655	.331	90	-.7581	.431	10	.0462	1.131	20	.0181	.331	270	-.7438		
22	.231	160	-.6082	.331	80	-.6112	.431	0	.0444	1.131	10	.0769	.431	270	-.6389		
23	.231	150	-.6491	.331	70	-.5072	.531	180	-.6590	1.131	0	.0769	.531	270	-.5875		
24	.231	140	-.7009	.331	60	-.3721	.531	90	-.5420				.731	270	-.5237		
25	.231	130	-.7536	.331	50	-.2662	.531	0	.0527	1.631	90	-.4164	.931	270	-.5392		
26	.231	120	-.7726	.331	40	-.1896	.731	180	-.6517	1.631	0	-.3499	1.131	270	-.4980		
27	.231	110	-.7981	.331	30	-.0942	.731	90	-.5281	2.131	180	-.0549	1.631	270	-.4219		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 26 ALPHA 6 MACH .303 Q 128.401 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4633	.231	100	-.6847	.331	20	-.9483	.731	0	-.0093	2.131	90	-.1609		
2	.161	170	-.4369	.231	90	-.6811	.331	10	-.9557	.931	180	-.1513	2.131	0	-.0003		
3	.161	160	-.4842	.231	80	-.7441	.331	0	-.9520	.931	90	-.1756	0.000		.4589	-.45	0.00
4	.161	150	-.5260	.231	70	-.7615	.431	180	-.5562	.931	0	-.5175	0.000		.5866	-.40	0.00
5	.161	140	-.5324	.231	60	-.8044	.431	170	-.5415	1.131	180	-.3126	0.000		.8697	-.30	0.00
6	.161	130	-.5642	.231	50	-.8391	.431	160	-.5396	1.131	170	-.3217	0.000		.9902	-.20	0.00
7	.161	120	-.6242	.231	40	-.8720	.431	150	-.5784	1.131	160	-.3177	0.000		1.0334	-.10	0.00
8	.161	110	-.6460	.231	30	-.9122	.431	140	-.5950	1.131	150	-.3025	0.000		1.0355	0.00	0.00
9	.161	100	-.6905	.231	20	-.9222	.431	130	-.6522	1.131	140	-.3228	0.000		.9850	.10	0.00
10	.161	90	-.7042	.231	10	-.9286	.431	120	-.6162	1.131	130	-.3349	0.000		.9015	.20	0.00
11	.161	80	-.7569	.231	0	-.9779	.431	110	-.7278	1.131	120	-.2751	0.000		.7317	.30	0.00
12	.161	70	-.7605	.331	180	-.4884	.431	100	-.7057	1.131	110	-.2193	0.000		.4959	.40	0.00
13	.161	60	-.7987	.331	170	-.5012	.431	90	-.7278	1.131	100	-.1685	0.000		.4383	.45	0.00
14	.161	50	-.7878	.331	160	-.5487	.431	80	-.7371	1.131	90	-.1391	0.000		1.0149	0.00	.10
15	.161	40	-.8332	.331	150	-.5697	.431	70	-.7998	1.131	80	-.0823	0.000		.9345	0.00	.20
16	.161	30	-.8387	.331	140	-.5459	.431	60	-.8422	1.131	70	-.0813	0.000		.7987	0.00	.30
17	.161	20	-.8496	.331	130	-.6089	.431	50	-.8229	1.131	60	-.0529	0.000		.5145	0.00	.40
18	.161	10	-.9050	.331	120	-.6318	.431	40	-.8579	1.131	50	.0029	0.000		.4414	0.00	.45
19	.161	0	-.8696	.331	110	-.6464	.431	30	-.8653	1.131	40	-.0032	.161	270	-.7032		
20	.231	180	-.4496	.331	100	-.7012	.431	20	-.7980	1.131	30	-.0143	.231	270	-.6898		
21	.231	170	-.4514	.331	90	-.7386	.431	10	-.8053	1.131	20	-.0174	.331	270	-.6981		
22	.231	160	-.5169	.331	80	-.7688	.431	0	-.7897	1.131	10	.0019	.431	270	-.7145		
23	.231	150	-.5014	.331	70	-.7934	.531	180	-.5442	1.131	0	.0080	.531	270	-.7557		
24	.231	140	-.5451	.331	60	-.8464	.531	90	-.7546				.731	270	-.5962		
25	.231	130	-.5705	.331	50	-.8601	.531	0	-.5092	1.631	90	-.0153	.931	270	-.2833		
26	.231	120	-.6451	.331	40	-.8930	.731	180	-.5571	1.631	0	-.1767	1.131	270	-.0919		
27	.231	110	-.6605	.331	30	-.9332	.731	90	-.5968	2.131	180	.0181	1.631	270	-.0281		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 27 ALPHA 8 MACH .302 Q 128.207 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4339	.231	100	-.7581	.331	20	-.9175	.731	0	-.0205	2.131	90	-.1663		
2	.161	170	-.4276	.231	90	-.7700	.331	10	-.8426	.931	180	-.1475	2.131	0	-.0106		
3	.161	160	-.4931	.231	80	-.7974	.331	0	-.8602	.931	90	-.2034	0.000		.4400	-.45	0.00
4	.161	150	-.5423	.231	70	-.8633	.431	180	-.5377	.931	0	-.4574	0.000		.5936	-.40	0.00
5	.161	140	-.5860	.231	60	-.9218	.431	170	-.5589	1.131	180	-.2491	0.000		.8772	-.30	0.00
6	.161	130	-.6242	.231	50	-.9090	.431	160	-.5478	1.131	170	-.3009	0.000		1.0009	-.20	0.00
7	.161	120	-.6233	.231	40	-.9758	.431	150	-.6107	1.131	160	-.3466	0.000		1.0267	-.10	0.00
8	.161	110	-.6925	.231	30	-1.0508	.431	140	-.6153	1.131	150	-.3385	0.000		1.0174	0.00	0.00
9	.161	100	-.7171	.231	20	-1.0288	.431	130	-.6319	1.131	140	-.3456	0.000		.9648	.10	0.00
10	.161	90	-.7963	.231	10	-1.1386	.431	120	-.7308	1.131	130	-.2979	0.000		.8586	.20	0.00
11	.161	80	-.8063	.231	0	-1.0672	.431	110	-.7086	1.131	120	-.2532	0.000		.7060	.30	0.00
12	.161	70	-.8218	.331	180	-.5083	.431	100	-.7197	1.131	110	-.2115	0.000		.4451	.40	0.00
13	.161	60	-.8409	.331	170	-.5394	.431	90	-.7604	1.131	100	-.1729	0.000		.3078	.45	0.00
14	.161	50	-.8691	.331	160	-.5102	.431	80	-.7631	1.131	90	-.1627	0.000		.9963	0.00	.10
15	.161	40	-.9674	.331	150	-.6282	.431	70	-.8306	1.131	80	-.1312	0.000		.9360	0.00	.20
16	.161	30	-1.0512	.331	140	-.6465	.431	60	-.8731	1.131	70	-.1119	0.000		.7792	0.00	.30
17	.161	20	-1.0421	.331	130	-.6631	.431	50	-.7862	1.131	60	-.0865	0.000		.4884	0.00	.40
18	.161	10	-1.0803	.331	120	-.6821	.431	40	-.6791	1.131	50	-.0611	0.000		.4132	0.00	.45
19	.161	0	-1.1031	.331	110	-.7114	.431	30	-.5469	1.131	40	-.0642	.161	270	-.7909		
20	.231	180	-.4534	.331	100	-.7718	.431	20	-.5026	1.131	30	-.0581	.231	270	-.7886		
21	.231	170	-.4795	.331	90	-.8102	.431	10	-.3889	1.131	20	-.0652	.331	270	-.8465		
22	.231	160	-.4795	.331	80	-.8084	.431	0	-.4074	1.131	10	-.0449	.431	270	-.7929		
23	.231	150	-.5377	.331	70	-.9310	.531	180	-.5940	1.131	0	-.0601	.531	270	-.7857		
24	.231	140	-.5914	.331	60	-.9520	.531	90	-.7955				.731	270	-.4672		
25	.231	130	-.6515	.331	50	-.9858	.531	0	-.1209	1.631	90	-.0723	.931	270	-.2199		
26	.231	120	-.6697	.331	40	-.9877	.731	180	-.6199	1.631	0	-.1302	1.131	270	-.1395		
27	.231	110	-.6898	.331	30	-.9703	.731	90	-.4721	2.131	180	-.0012	1.631	270	-.0838		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 28 ALPHA 10 MACH .302 Q 128.014 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4611	.231	100	-.8124	.331	20	-.2711	.731	0	-.0877	2.131	90	-.1614		
2	.161	170	-.4702	.231	90	-.8792	.331	10	-.2488	.931	180	-.2159	2.131	0	.0131		
3	.161	160	-.5256	.231	80	-.9026	.331	0	-.2368	.931	90	-.2302	0.000		.2867	-.45	0.00
4	.161	150	-.5623	.231	70	-1.0080	.431	180	-.5663	.931	0	-.4194	0.000		.5831	-.40	0.00
5	.161	140	-.6326	.231	60	-1.0991	.431	170	-.6338	1.131	180	-.2505	0.000		.9135	-.30	0.00
6	.161	130	-.6498	.231	50	-.9434	.431	160	-.5774	1.131	170	-.3421	0.000		1.0179	-.20	0.00
7	.161	120	-.7866	.231	40	-.8866	.431	150	-.6838	1.131	160	-.3136	0.000		1.0530	-.10	0.00
8	.161	110	-.8431	.231	30	-.7153	.431	140	-.6986	1.131	150	-.2617	0.000		1.0117	0.00	0.00
9	.161	100	-.8622	.231	20	-.5643	.431	130	-.7356	1.131	140	-.2983	0.000		.9435	.10	0.00
10	.161	90	-.9470	.231	10	-.4798	.431	120	-.7847	1.131	130	-.2078	0.000		.8640	.20	0.00
11	.161	80	-.9160	.231	0	-.4752	.431	110	-.7671	1.131	120	-.2403	0.000		.6719	.30	0.00
12	.161	70	-1.0847	.331	180	-.5137	.431	100	-.8485	1.131	110	-.2169	0.000		.3993	.40	0.00
13	.161	60	-1.2215	.331	170	-.5568	.431	90	-.8310	1.131	100	-.2139	0.000		.3952	.45	0.00
14	.161	50	-1.2543	.331	160	-.5879	.431	80	-.6727	1.131	90	-.1793	0.000		.9983	0.00	.10
15	.161	40	-1.2579	.331	150	-.6447	.431	70	-.5108	1.131	80	-.1833	0.000		.9263	0.00	.20
16	.161	30	-1.2687	.331	140	-.6814	.431	60	-.3664	1.131	70	-.1610	0.000		.7711	0.00	.30
17	.161	20	-1.0081	.331	130	-.7290	.431	50	-.2396	1.131	60	-.1528	0.000		.4478	0.00	.40
18	.161	10	-.9571	.331	120	-.7391	.431	40	-.2118	1.131	50	-.1396	0.000		.4093	0.00	.45
19	.161	0	-.9352	.331	110	-.8334	.431	30	-.1767	1.131	40	-.1294	.161	270	-.8974		
20	.231	180	-.4738	.331	100	-.8921	.431	20	-.1683	1.131	30	-.0928	.231	270	-.8974		
21	.231	170	-.5404	.331	90	-.9791	.431	10	-.1508	1.131	20	-.0582	.331	270	-.9180		
22	.231	160	-.5185	.331	80	-.9370	.431	0	-.1545	1.131	10	-.0521	.431	270	-.8230		
23	.231	150	-.5997	.331	70	-.8710	.531	180	-.6459	1.131	0	-.0493	.531	270	-.5691		
24	.231	140	-.6835	.331	60	-.6759	.531	90	-.5977				.731	270	-.3249		
25	.231	130	-.6808	.331	50	-.5641	.531	0	-.1036	1.631	90	-.1498	.931	270	-.2306		
26	.231	120	-.7629	.331	40	-.3735	.731	180	-.5663	1.631	0	-.2078	1.131	270	-.1655		
27	.231	110	-.7802	.331	30	-.2629	.731	90	-.3081	2.131	180	-.0012	1.631	270	-.1284		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 29 ALPHA 12 MACH .302 Q 128.207 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4758	.231	100	-.9008	.331	20	-.2143	.731	0	-.0276	2.131	90	-.2147		
2	.161	170	-.5122	.231	90	1.0078	.331	10	-.1810	.931	180	-.2206	2.131	0	.0234		
3	.161	160	-.5396	.231	80	-1.0215	.331	0	-.1791	.931	90	-.2481	0.000		.3564	-.45	0.00
4	.161	150	-.6351	.231	70	-1.0618	.431	180	-.6190	.931	0	-.3720	0.000		.6400	-.40	0.00
5	.161	140	-.6679	.231	60	-.9813	.431	170	-.6153	1.131	180	-.2816	0.000		.9360	-.30	0.00
6	.161	130	-.7708	.231	50	-.8459	.431	160	-.6356	1.131	170	-.2603	0.000		1.0205	-.20	0.00
7	.161	120	-.9392	.231	40	-.5934	.431	150	-.7798	1.131	160	-.2623	0.000		1.0246	-.10	0.00
8	.161	110	-.8354	.231	30	-.5147	.431	140	-.7511	1.131	150	-.2816	0.000		.9855	0.00	0.00
9	.161	100	-.9256	.231	20	-.4608	.431	130	-.7862	1.131	140	-.2305	0.000		.9195	.10	0.00
10	.161	90	-.9319	.231	10	-.3995	.431	120	-.7511	1.131	130	-.2966	0.000		.7978	.20	0.00
11	.161	80	-1.0357	.231	0	-.4178	.431	110	-.8214	1.131	120	-.2298	0.000		.6029	.30	0.00
12	.161	70	-1.0612	.331	180	-.5669	.431	100	-.8038	1.131	110	-.2338	0.000		.3719	.40	0.00
13	.161	60	-1.2979	.331	170	-.6236	.431	90	-.6800	1.131	100	-.2562	0.000		.3472	.45	0.00
14	.161	50	-1.2852	.331	160	-.6465	.431	80	-.5247	1.131	90	-.2511	0.000		.9710	0.00	.10
15	.161	40	-1.1286	.331	150	-.6721	.431	70	-.4194	1.131	80	-.2511	0.000		.9112	0.00	.20
16	.161	30	-.9347	.331	140	-.7233	.431	60	-.2882	1.131	70	-.1769	0.000		.7359	0.00	.30
17	.161	20	-.8500	.331	130	-.7719	.431	50	-.2272	1.131	60	-.1444	0.000		.3967	0.00	.40
18	.161	10	-.8336	.331	120	-.7599	.431	40	-.1930	1.131	50	-.1282	0.000		.3603	0.00	.45
19	.161	0	-.8281	.331	110	-.8706	.431	30	-.1662	1.131	40	-.0855	.161	270	-.9877		
20	.231	180	-.5013	.331	100	-.8880	.431	20	-.1366	1.131	30	-.0469	.231	270	-.9725		
21	.231	170	-.5195	.331	90	-.9035	.431	10	-.0997	1.131	20	-.0367	.331	270	-.9156		
22	.231	160	-.5942	.331	80	-.8450	.431	0	-.1117	1.131	10	-.0113	.431	270	-.7177		
23	.231	150	-.6342	.331	70	-.7050	.531	180	-.6338	1.131	0	-.0316	.531	270	-.5229		
24	.231	140	-.7626	.331	60	-.4983	.531	90	-.5072				.731	270	-.3455		
25	.231	130	-.7826	.331	50	-.3355	.531	0	-.0729	1.631	90	-.1597	.931	270	-.2693		
26	.231	120	-.7826	.331	40	-.3208	.731	180	-.4878	1.631	0	-.2095	1.131	270	-.2307		
27	.231	110	-.8391	.331	30	-.2705	.731	90	-.3113	2.131	180	.0131	1.631	270	-.1900		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 22 ALPHA -1 MACH .303 Q 128.401 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.6242	.231	100	-.5779	.331	20	-.5747	.731	0	-.5957	2.131	90	-.1753		
2	.161	170	-.6223	.231	90	-.5934	.331	10	-.5811	.931	180	-.1838	2.131	0	.0223		
3	.161	160	-.6451	.231	80	-.5797	.331	0	-.5784	.931	90	-.4678	0.000		.4723	-.45	0.00
4	.161	150	-.6033	.231	70	-.5432	.431	180	-.6605	.931	0	-.7631	0.000		.5135	-.40	0.00
5	.161	140	-.6033	.231	60	-.5907	.431	170	-.6716	1.131	180	-.1361	0.000		.7976	-.30	0.00
6	.161	130	-.6369	.231	50	-.5742	.431	160	-.7205	1.131	170	-.0661	0.000		.9377	-.20	0.00
7	.161	120	-.6233	.231	40	-.5651	.431	150	-.6771	1.131	160	-.1036	0.000		.9963	-.10	0.00
8	.161	110	-.5923	.231	30	-.5496	.431	140	-.6632	1.131	150	-.1807	0.000		1.0190	0.00	0.00
9	.161	100	-.5896	.231	20	-.5313	.431	130	-.6411	1.131	140	-.1858	0.000		1.0190	.10	0.00
10	.161	90	-.5851	.231	10	-.5304	.431	120	-.6559	1.131	130	-.1655	0.000		.9469	.20	0.00
11	.161	80	-.5676	.231	0	-.5194	.431	110	-.6596	1.131	120	-.2325	0.000		.8131	.30	0.00
12	.161	70	-.5823	.331	180	-.6309	.431	100	-.6596	1.131	110	-.2274	0.000		.5536	.40	0.00
13	.161	60	-.5605	.331	170	-.6455	.431	90	-.6153	1.131	100	-.2467	0.000		.4208	.45	0.00
14	.161	50	-.5714	.331	160	-.6893	.431	80	-.6540	1.131	90	-.2152	0.000		.9912	0.00	.10
15	.161	40	-.5769	.331	150	-.6628	.431	70	-.6605	1.131	80	-.1970	0.000		.9232	0.00	.20
16	.161	30	-.5296	.331	140	-.6372	.431	60	-.5848	1.131	70	-.2923	0.000		.8017	0.00	.30
17	.161	20	-.5196	.331	130	-.5779	.431	50	-.5673	1.131	60	-.3593	0.000		.5361	0.00	.40
18	.161	10	-.5769	.331	120	-.5961	.431	40	-.5857	1.131	50	-.3319	0.000		.4723	0.00	.45
19	.161	0	-.5096	.331	110	-.6272	.431	30	-.5894	1.131	40	-.3613	.161	270	-.6054		
20	.231	180	-.6151	.331	100	-.6080	.431	20	-.5848	1.131	30	-.3075	.231	270	-.5941		
21	.231	170	-.6305	.331	90	-.5450	.431	10	-.5876	1.131	20	-.3339	.331	270	-.5931		
22	.231	160	-.6369	.331	80	-.6199	.431	0	-.5977	1.131	10	-.2467	.431	270	-.5951		
23	.231	150	-.6523	.331	70	-.5998	.531	180	-.6872	1.131	0	-.3065	.531	270	-.6487		
24	.231	140	-.6251	.331	60	-.5742	.531	90	-.6245				.731	270	-.6620		
25	.231	130	-.6196	.331	50	-.6062	.531	0	-.6660	1.631	90	.0029	.931	270	-.4758		
26	.231	120	-.6078	.331	40	-.5852	.731	180	-.6319	1.631	0	-.1574	1.131	270	-.2494		
27	.231	110	-.6114	.331	30	-.5715	.731	90	-.6679	2.131	180	.0273	1.631	270	.0234		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 23 ALPHA 0 MACH .303 Q 128.692 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5892	.231	100	-.5857	.331	20	-.5733	.731	0	-.6247	2.131	90	-.1307		
2	.161	170	-.5565	.231	90	-.5857	.331	10	-.5936	.931	180	-.1732	2.131	0	.0202		
3	.161	160	-.6236	.231	80	-.6567	.331	0	-.5503	.931	90	-.5093	0.000		.4907	-.45	0.00
4	.161	150	-.5737	.231	70	-.5893	.431	180	-.6415	.931	0	-.7097	0.000		.5380	-.40	0.00
5	.161	140	-.5919	.231	60	-.5492	.431	170	-.6304	1.131	180	-.2805	0.000		.8205	-.30	0.00
6	.161	130	-.5901	.231	50	-.5811	.431	160	-.6442	1.131	170	-.2218	0.000		.9479	-.20	0.00
7	.161	120	-.5946	.231	40	-.5975	.431	150	-.6590	1.131	160	-.2329	0.000		1.0136	-.10	0.00
8	.161	110	-.5804	.231	30	-.6312	.431	140	-.6203	1.131	150	-.2299	0.000		1.0414	0.00	0.00
9	.161	100	-.5928	.231	20	-.6130	.431	130	-.6221	1.131	140	-.2592	0.000		1.0239	.10	0.00
10	.161	90	-.6091	.231	10	-.5711	.431	120	-.6387	1.131	130	-.2795	0.000		.9828	.20	0.00
11	.161	80	-.5964	.231	0	-.6221	.431	110	-.6470	1.131	120	-.2724	0.000		.8030	.30	0.00
12	.161	70	-.5947	.331	180	-.6303	.431	100	-.5807	1.131	110	-.3301	0.000		.5719	.40	0.00
13	.161	60	-.5801	.331	170	-.5975	.431	90	-.5945	1.131	100	-.3028	0.000		.4507	.45	0.00
14	.161	50	-.5964	.331	160	-.6431	.431	80	-.6277	1.131	90	-.3260	0.000		1.0283	0.00	.10
15	.161	40	-.5965	.331	150	-.5920	.431	70	-.5807	1.131	80	-.3179	0.000		.9530	0.00	.20
16	.161	30	-.6445	.331	140	-.6057	.431	60	-.6507	1.131	70	-.2805	0.000		.8164	0.00	.30
17	.161	20	-.5801	.331	130	-.5966	.431	50	-.6231	1.131	60	-.2764	0.000		.5534	0.00	.40
18	.161	10	-.5112	.331	120	-.6130	.431	40	-.5641	1.131	50	-.3129	0.000		.5062	0.00	.45
19	.161	0	-.5520	.331	110	-.6011	.431	30	-.5954	1.131	40	-.3038	.161	270	-.5953		
20	.231	180	-.5937	.331	100	-.6258	.431	20	-.6083	1.131	30	-.3230	.231	270	-.5948		
21	.231	170	-.6109	.331	90	-.6513	.431	10	-.5789	1.131	20	-.3017	.331	270	-.5763		
22	.231	160	-.5837	.331	80	-.6011	.431	0	-.5825	1.131	10	-.3392	.431	270	-.6020		
23	.231	150	-.5955	.331	70	-.5574	.531	180	-.6746	1.131	0	-.3200	.531	270	-.6944		
24	.231	140	-.6499	.331	60	-.6103	.531	90	-.6599				.731	270	-.6143		
25	.231	130	-.5992	.331	50	-.5764	.531	0	-.5954	1.631	90	.0454	.931	270	-.4777		
26	.231	120	-.5901	.331	40	-.6258	.731	180	-.6323	1.631	0	-.1509	1.131	270	-.2323		
27	.231	110	-.5963	.331	30	-.5893	.731	90	-.6157	2.131	180	.0242	1.631	270	.0552		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 24 ALPHA 2 MACH .303 Q 128.692 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4840	.231	100	-.6039	.331	20	-.7197	.731	0	-.6358	2.131	90	-.2149		
2	.161	170	-.4685	.231	90	-.5829	.331	10	-.7529	.931	180	-.1540	2.131	0	.0077		
3	.161	160	-.5357	.231	80	-.6157	.331	0	-.6958	.931	90	-.4556	0.000		.4774	-.45	0.00
4	.161	150	-.5347	.231	70	-.6376	.431	180	-.5991	.931	0	-.6570	0.000		.5544	-.40	0.00
5	.161	140	-.5266	.231	60	-.6330	.431	170	-.6074	1.131	180	-.3503	0.000		.8154	-.30	0.00
6	.161	130	-.5365	.231	50	-.6658	.431	160	-.6221	1.131	170	-.3868	0.000		.9654	-.20	0.00
7	.161	120	-.5610	.231	40	-.6631	.431	150	-.6175	1.131	160	-.2542	0.000		1.0342	-.10	0.00
8	.161	110	-.5311	.231	30	-.7351	.431	140	-.6221	1.131	150	-.3260	0.000		1.0301	0.00	0.00
9	.161	100	-.5883	.231	20	-.6841	.431	130	-.6148	1.131	140	-.4222	0.000		1.0065	.10	0.00
10	.161	90	-.6055	.231	10	-.7041	.431	120	-.6599	1.131	130	-.3291	0.000		.9366	.20	0.00
11	.161	80	-.5692	.231	0	-.7041	.431	110	-.6267	1.131	120	-.2754	0.000		.7959	.30	0.00
12	.161	70	-.6109	.331	180	-.5647	.431	100	-.6728	1.131	110	-.3028	0.000		.5308	.40	0.00
13	.161	60	-.6273	.331	170	-.5820	.431	90	-.6829	1.131	100	-.2795	0.000		.4445	.45	0.00
14	.161	50	-.6064	.331	160	-.5875	.431	80	-.6608	1.131	90	-.2501	0.000		1.0106	0.00	.10
15	.161	40	-.6490	.331	150	-.5255	.431	70	-.6792	1.131	80	-.2876	0.000		.9654	0.00	.20
16	.161	30	-.6380	.331	140	-.5674	.431	60	-.7455	1.131	70	-.1479	0.000		.8133	0.00	.30
17	.161	20	-.6291	.331	130	-.5884	.431	50	-.6884	1.131	60	-.1722	0.000		.5503	0.00	.40
18	.161	10	-.6608	.331	120	-.5674	.431	40	-.7151	1.131	50	-.1884	0.000		.4702	0.00	.45
19	.161	0	-.6699	.331	110	-.6248	.431	30	-.7473	1.131	40	-.1013	.161	270	-.5948		
20	.231	180	-.4858	.331	100	-.6203	.431	20	-.7326	1.131	30	-.0973	.231	270	-.6153		
21	.231	170	-.5084	.331	90	-.6586	.431	10	-.7501	1.131	20	-.0983	.331	270	-.6143		
22	.231	160	-.5166	.331	80	-.6622	.431	0	-.7464	1.131	10	-.0527	.431	270	-.6431		
23	.231	150	-.5375	.331	70	-.6558	.531	180	-.6175	1.131	0	-.0527	.531	270	-.6194		
24	.231	140	-.5075	.331	60	-.6602	.531	90	-.6663				.731	270	-.6461		
25	.231	130	-.5610	.331	50	-.6276	.531	0	-.7326	1.631	90	-.0214	.931	270	-.4572		
26	.231	120	-.5565	.331	40	-.6567	.731	180	-.6175	1.631	0	-.1418	1.131	270	-.1964		
27	.231	110	-.5556	.331	30	-.6686	.731	90	-.6378	2.131	180	.0060	1.631	270	.0418		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 25 ALPHA 4 MACH .303 Q 128.886 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4597	.231	100	-.6248	.331	20	-.7967	.731	0	-.4781	2.131	90	-.1520		
2	.161	170	-.5049	.231	90	-.6339	.331	10	-.8041	.931	180	-.1810	2.131	0	.0120		
3	.161	160	-.4941	.231	80	-.6794	.331	0	-.8363	.931	90	-.3973	0.000		.4531	-.45	0.00
4	.161	150	-.5067	.231	70	-.6894	.431	180	-.5430	.931	0	-.6126	0.000		.5690	-.40	0.00
5	.161	140	-.5086	.231	60	-.6958	.431	170	-.5339	1.131	180	-.3488	0.000		.8480	-.30	0.00
6	.161	130	-.5475	.231	50	-.7276	.431	160	-.5219	1.131	170	-.3488	0.000		.9721	-.20	0.00
7	.161	120	-.5765	.231	40	-.7467	.431	150	-.5669	1.131	160	-.3488	0.000		1.0152	-.10	0.00
8	.161	110	-.6535	.231	30	-.7549	.431	140	-.6782	1.131	150	-.2406	0.000		1.0255	0.00	0.00
9	.161	100	-.6462	.231	20	-.7849	.431	130	-.6092	1.131	140	-.2891	0.000		.9963	.10	0.00
10	.161	90	-.6498	.231	10	-.8122	.431	120	-.6083	1.131	130	-.3589	0.000		.9065	.20	0.00
11	.161	80	-.6444	.231	0	-.7458	.431	110	-.6203	1.131	120	-.2992	0.000		.7557	.30	0.00
12	.161	70	-.7033	.331	180	-.4928	.431	100	-.6598	1.131	110	-.2740	0.000		.5034	.40	0.00
13	.161	60	-.7395	.331	170	-.4792	.431	90	-.7011	1.131	100	-.2113	0.000		.4377	.45	0.00
14	.161	50	-.7141	.331	160	-.5711	.431	80	-.6874	1.131	90	-.1810	0.000		1.0091	0.00	.10
15	.161	40	-.7467	.331	150	-.5438	.431	70	-.7480	1.131	80	-.1396	0.000		.9444	0.00	.20
16	.161	30	-.6870	.331	140	-.5666	.431	60	-.7443	1.131	70	-.1476	0.000		.8121	0.00	.30
17	.161	20	-.8065	.331	130	-.5866	.431	50	-.8078	1.131	60	-.0486	0.000		.5147	0.00	.40
18	.161	10	-.7540	.331	120	-.5866	.431	40	-.7967	1.131	50	-.0173	0.000		.4490	0.00	.45
19	.161	0	-.7965	.331	110	-.6330	.431	30	-.8344	1.131	40	-.0061	.161	270	-.6554		
20	.231	180	-.4609	.331	100	-.6330	.431	20	-.7986	1.131	30	.0110	.231	270	-.6482		
21	.231	170	-.4751	.331	90	-.6594	.431	10	-.8574	1.131	20	.0040	.331	270	-.6393		
22	.231	160	-.4932	.331	80	-.6603	.431	0	-.8216	1.131	10	.0130	.431	270	-.7405		
23	.231	150	-.5049	.331	70	-.7003	.531	180	-.5669	1.131	0	.0121	.531	270	-.6923		
24	.231	140	-.5384	.331	60	-.7613	.531	90	-.7278				.731	270	-.6585		
25	.231	130	-.5911	.331	50	-.7676	.531	0	-.7535	1.631	90	.0100	.931	270	-.3642		
26	.231	120	-.6254	.331	40	-.7749	.731	180	-.5458	1.631	0	-.1699	1.131	270	-.1604		
27	.231	110	-.5919	.331	30	-.7868	.731	90	-.6644	2.131	180	.0009	1.631	270	-.0085		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 201 ALPHA 18 MACH .882 Q 703.722 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4906	.231	100	-.5020	.331	20	-.5284	.731	0	.0699	2.131	90	-.2721		
2	.161	170	-.4443	.231	90	-.4786	.331	10	-.4860	.931	180	-.4856	2.131	0	-.0172		
3	.161	160	-.4491	.231	80	-.4767	.331	0	-.4821	.931	90	-.5299	0.000		1.0846	-.45	0.00
4	.161	150	-.4645	.231	70	-.4930	.431	180	-.4769	.931	0	-.0240	0.000		1.1887	-.40	0.00
5	.161	140	-.4551	.231	60	-.4892	.431	170	-.4682	1.131	180	-.4992	0.000		1.2298	-.30	0.00
6	.161	130	-.4776	.231	50	-.5097	.431	160	-.4913	1.131	170	-.5154	0.000		1.2169	-.20	0.00
7	.161	120	-.4773	.231	40	-.4930	.431	150	-.4721	1.131	160	-.5108	0.000		1.1912	-.10	0.00
8	.161	110	-.4750	.231	30	-.5026	.431	140	-.4789	1.131	150	-.5060	0.000		1.1577	0.00	0.00
9	.161	100	-.4768	.231	20	-.5025	.431	130	-.4833	1.131	140	-.5030	0.000		1.1021	.10	0.00
10	.161	90	-.4878	.231	10	-.4985	.431	120	-.4833	1.131	130	-.5213	0.000		1.0295	.20	0.00
11	.161	80	-.4841	.231	0	-.5286	.431	110	-.5009	1.131	120	-.5309	0.000		.9344	.30	0.00
12	.161	70	-.4891	.331	180	-.4503	.431	100	-.4761	1.131	110	-.5384	0.000		.7632	.40	0.00
13	.161	60	-.4735	.331	170	-.4585	.431	90	-.4840	1.131	100	-.5449	0.000		.5680	.45	0.00
14	.161	50	-.4976	.331	160	-.4704	.431	80	-.4883	1.131	90	-.5244	0.000		1.1406	0.00	.10
15	.161	40	-.4825	.331	150	-.4614	.431	70	-.4780	1.131	80	-.4598	0.000		1.1192	0.00	.20
16	.161	30	-.4853	.331	140	-.4657	.431	60	-.4743	1.131	70	-.3734	0.000		1.0717	0.00	.30
17	.161	20	-.5016	.331	130	-.4732	.431	50	-.4929	1.131	60	-.2909	0.000		.9515	0.00	.40
18	.161	10	-.5074	.331	120	-.4831	.431	40	-.5099	1.131	50	-.2244	0.000		.7845	0.00	.45
19	.161	0	-.5120	.331	110	-.4975	.431	30	-.4684	1.131	40	-.1640	.161	270	-.5046		
20	.231	180	-.4244	.331	100	-.4614	.431	20	-.3903	1.131	30	-.0727	.231	270	-.4661		
21	.231	170	-.4269	.331	90	-.4520	.431	10	-.3343	1.131	20	-.0318	.331	270	-.4641		
22	.231	160	-.4675	.331	80	-.4952	.431	0	-.3259	1.131	10	-.0244	.431	270	-.4926		
23	.231	150	-.4647	.331	70	-.4864	.531	180	-.4691	1.131	0	-.0121	.531	270	-.4873		
24	.231	140	-.4801	.331	60	-.4975	.531	90	-.5000				.731	270	-.5140		
25	.231	130	-.4873	.331	50	-.5044	.531	0	-.1472	1.631	90	-.5937	.931	270	-.5652		
26	.231	120	-.4929	.331	40	-.5035	.731	180	-.4963	1.631	0	-.1631	1.131	270	-.5399		
27	.231	110	-.4856	.331	30	-.5111	.731	90	-.5052	2.131	180	-.3824	1.631	270	-.5783		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 202 ALPHA 20 MACH .882 Q 703.722 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4667	.231	100	-.4952	.331	20	-.3847	.731	0	.0853	2.131	90	-.2993		
2	.161	170	-.4593	.231	90	-.4926	.331	10	-.2878	.931	180	-.5044	2.131	0	.0072		
3	.161	160	-.4219	.231	80	-.4557	.331	0	-.2752	.931	90	-.4894	0.000		1.1227	-.45	0.00
4	.161	150	-.4599	.231	70	-.4706	.431	180	-.4605	.931	0	.0010	0.000		1.2057	-.40	0.00
5	.161	140	-.4754	.231	60	-.4856	.431	170	-.4809	1.131	180	-.5126	0.000		1.2355	-.30	0.00
6	.161	130	-.4725	.231	50	-.4818	.431	160	-.4704	1.131	170	-.5055	0.000		1.2221	-.20	0.00
7	.161	120	-.4898	.231	40	-.4692	.431	150	-.4542	1.131	160	-.4933	0.000		1.1868	-.10	0.00
8	.161	110	-.4851	.231	30	-.5084	.431	140	-.4830	1.131	150	-.5193	0.000		1.1511	0.00	0.00
9	.161	100	-.4699	.231	20	-.5384	.431	130	-.5018	1.131	140	-.5320	0.000		1.0862	.10	0.00
10	.161	90	-.5062	.231	10	-.5298	.431	120	-.4924	1.131	130	-.5294	0.000		1.0146	.20	0.00
11	.161	80	-.4759	.231	0	-.5154	.431	110	-.4786	1.131	120	-.5250	0.000		.9142	.30	0.00
12	.161	70	-.4802	.331	180	-.4495	.431	100	-.4766	1.131	110	-.5699	0.000		.7321	.40	0.00
13	.161	60	-.4649	.331	170	-.4618	.431	90	-.4810	1.131	100	-.5587	0.000		.5357	.45	0.00
14	.161	50	-.4808	.331	160	-.4704	.431	80	-.4816	1.131	90	-.5373	0.000		1.1308	0.00	.10
15	.161	40	-.4893	.331	150	-.4785	.431	70	-.4889	1.131	80	-.4878	0.000		1.1067	0.00	.20
16	.161	30	-.4964	.331	140	-.4765	.431	60	-.5125	1.131	70	-.4123	0.000		1.0610	0.00	.30
17	.161	20	-.5120	.331	130	-.4907	.431	50	-.5274	1.131	60	-.3283	0.000		.9374	0.00	.40
18	.161	10	-.4969	.331	120	-.4686	.431	40	-.3833	1.131	50	-.2289	0.000		.7767	0.00	.45
19	.161	0	-.5318	.331	110	-.4922	.431	30	-.1655	1.131	40	-.1690	.161	270	-.4909		
20	.231	180	-.4261	.331	100	-.4613	.431	20	-.0974	1.131	30	-.0730	.231	270	-.4650		
21	.231	170	-.4606	.331	90	-.4907	.431	10	.0401	1.131	20	-.0296	.331	270	-.4852		
22	.231	160	-.4802	.331	80	-.5028	.431	0	.0403	1.131	10	-.0090	.431	270	-.5032		
23	.231	150	-.4569	.331	70	-.4742	.531	180	-.4713	1.131	0	.0181	.531	270	-.4760		
24	.231	140	-.4483	.331	60	-.4557	.531	90	-.4633				.731	270	-.5055		
25	.231	130	-.4853	.331	50	-.4972	.531	0	.1819	1.631	90	-.6290	.931	270	-.5340		
26	.231	120	-.4755	.331	40	-.5303	.731	180	-.4933	1.631	0	-.1502	1.131	270	-.5528		
27	.231	110	-.4697	.331	30	-.4777	.731	90	-.5227	2.131	180	-.3810	1.631	270	-.6143		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 203 ALPHA 22 MACH .882 Q 703.901 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4583	.231	100	-.4939	.331	20	.0149	.731	0	.1000	2.131	90	-.3328		
2	.161	170	-.4474	.231	90	-.4754	.331	10	.1268	.931	180	-.5078	2.131	0	.0275		
3	.161	160	-.4749	.231	80	-.4637	.331	0	.2191	.931	90	-.5262	0.000		1.1467	-.45	0.00
4	.161	150	-.4484	.231	70	-.4465	.431	180	-.4543	.931	0	.0230	0.000		1.2169	-.40	0.00
5	.161	140	-.4940	.231	60	-.4845	.431	170	-.4905	1.131	180	-.5265	0.000		1.2283	-.30	0.00
6	.161	130	-.5108	.231	50	-.5092	.431	160	-.5122	1.131	170	-.5558	0.000		1.1986	-.20	0.00
7	.161	120	-.5028	.231	40	-.5226	.431	150	-.4735	1.131	160	-.5131	0.000		1.1788	-.10	0.00
8	.161	110	-.4606	.231	30	-.5351	.431	140	-.5102	1.131	150	-.5503	0.000		1.1301	0.00	0.00
9	.161	100	-.4920	.231	20	-.4625	.431	130	-.4762	1.131	140	-.5243	0.000		1.0707	.10	0.00
10	.161	90	-.4698	.231	10	-.3811	.431	120	-.5010	1.131	130	-.5582	0.000		.9901	.20	0.00
11	.161	80	-.4864	.231	0	-.3436	.431	110	-.4905	1.131	120	-.6017	0.000		.8785	.30	0.00
12	.161	70	-.4952	.331	180	-.5078	.431	100	-.5281	1.131	110	-.6727	0.000		.6932	.40	0.00
13	.161	60	-.4917	.331	170	-.4648	.431	90	-.4779	1.131	100	-.6208	0.000		.5190	.45	0.00
14	.161	50	-.4907	.331	160	-.4819	.431	80	-.4941	1.131	90	-.5969	0.000		1.1130	0.00	.10
15	.161	40	-.4905	.331	150	-.4757	.431	70	-.5322	1.131	80	-.5466	0.000		1.0876	0.00	.20
16	.161	30	-.5453	.331	140	-.5022	.431	60	-.4932	1.131	70	-.4531	0.000		1.0416	0.00	.30
17	.161	20	-.5648	.331	130	-.4913	.431	50	-.2042	1.131	60	-.3404	0.000		.9202	0.00	.40
18	.161	10	-.5702	.331	120	-.4984	.431	40	.0051	1.131	50	-.2410	0.000		.7668	0.00	.45
19	.161	0	-.5541	.331	110	-.4812	.431	30	.1690	1.131	40	-.1487	.161	270	-.4749		
20	.231	180	-.4497	.331	100	-.4772	.431	20	.1416	1.131	30	-.0602	.231	270	-.4749		
21	.231	170	-.4547	.331	90	-.4746	.431	10	.2606	1.131	20	.0057	.331	270	-.4712		
22	.231	160	-.4321	.331	80	-.4433	.431	0	.2753	1.131	10	.0433	.431	270	-.4535		
23	.231	150	-.4646	.331	70	-.4688	.531	180	-.4891	1.131	0	.0518	.531	270	-.4979		
24	.231	140	-.4635	.331	60	-.4881	.531	90	-.4852				.731	270	-.5420		
25	.231	130	-.4809	.331	50	-.5292	.531	0	.1882	1.631	90	-.6860	.931	270	-.5241		
26	.231	120	-.5025	.331	40	-.4005	.731	180	-.5200	1.631	0	-.1716	1.131	270	-.6147		
27	.231	110	-.4995	.331	30	-.0895	.731	90	-.5670	2.131	180	-.3583	1.631	270	-.7109		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 204 ALPHA 24 MACH .882 Q 703.815 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4608	.231	100	-.5103	.331	20	.3055	.731	0	.1365	2.131	90	-.3292		
2	.161	170	-.4733	.231	90	-.4951	.331	10	.3355	.931	180	-.5387	2.131	0	.0750		
3	.161	160	-.4784	.231	80	-.4915	.331	0	.3305	.931	90	-.5759	0.000		1.1643	-.45	0.00
4	.161	150	-.4710	.231	70	-.4637	.431	180	-.4810	.931	0	.1161	0.000		1.2200	-.40	0.00
5	.161	140	-.4749	.231	60	-.4883	.431	170	-.4891	1.131	180	-.5286	0.000		1.2306	-.30	0.00
6	.161	130	-.4950	.231	50	-.5858	.431	160	-.5147	1.131	170	-.5444	0.000		1.1963	-.20	0.00
7	.161	120	-.5182	.231	40	-.4675	.431	150	-.5037	1.131	160	-.5349	0.000		1.1581	-.10	0.00
8	.161	110	-.5070	.231	30	-.1552	.431	140	-.5340	1.131	150	-.5523	0.000		1.1068	0.00	0.00
9	.161	100	-.5076	.231	20	.0622	.431	130	-.5223	1.131	140	-.5665	0.000		1.0454	.10	0.00
10	.161	90	-.4953	.231	10	.1851	.431	120	-.5140	1.131	130	-.6045	0.000		.9582	.20	0.00
11	.161	80	-.4630	.231	0	.2519	.431	110	-.5099	1.131	120	-.6323	0.000		.8536	.30	0.00
12	.161	70	-.4890	.331	180	-.4933	.431	100	-.5095	1.131	110	-.6954	0.000		.6621	.40	0.00
13	.161	60	-.4862	.331	170	-.4782	.431	90	-.5099	1.131	100	-.7009	0.000		.4838	.45	0.00
14	.161	50	-.5065	.331	160	-.4984	.431	80	-.5500	1.131	90	-.6431	0.000		1.1003	0.00	.10
15	.161	40	-.5069	.331	150	-.4878	.431	70	-.5021	1.131	80	-.5943	0.000		1.0691	0.00	.20
16	.161	30	-.5806	.331	140	-.5434	.431	60	-.1628	1.131	70	-.4986	0.000		1.0152	0.00	.30
17	.161	20	-.4895	.331	130	-.5110	.431	50	-.0010	1.131	60	-.3634	0.000		.9050	0.00	.40
18	.161	10	-.4330	.331	120	-.5052	.431	40	.0825	1.131	50	-.2404	0.000		.7556	0.00	.45
19	.161	0	-.3857	.331	110	-.4720	.431	30	.1602	1.131	40	-.1181	.161	270	-.4699		
20	.231	180	-.4404	.331	100	-.4609	.431	20	.0707	1.131	30	-.0259	.231	270	-.4739		
21	.231	170	-.4560	.331	90	-.4782	.431	10	.2383	1.131	20	.0273	.331	270	-.4847		
22	.231	160	-.4650	.331	80	-.4784	.431	0	.2511	1.131	10	.0804	.431	270	-.5083		
23	.231	150	-.5234	.331	70	-.5770	.531	180	-.5496	1.131	0	.0723	.531	270	-.6105		
24	.231	140	-.5348	.331	60	-.5765	.531	90	-.6126				.731	270	-.5787		
25	.231	130	-.5116	.331	50	-.1782	.531	0	.2016	1.631	90	-.7851	.931	270	-.6107		
26	.231	120	-.5270	.331	40	.1111	.731	180	-.5523	1.631	0	-.1585	1.131	270	-.6824		
27	.231	110	-.5085	.331	30	.2395	.731	90	-.5480	2.131	180	-.3632	1.631	270	-.7981		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 197 ALPHA 10 MACH .882 Q 703.547 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4237	.231	100	-.5708	.331	20	-.5511	.731	0	-.5240	2.131	90	-.1516		
2	.161	170	-.4335	.231	90	-.5640	.331	10	-.5289	.931	180	-.5284	2.131	0	-.0015		
3	.161	160	-.4312	.231	80	-.5784	.331	0	-.5349	.931	90	-.5761	0.000		.9844	-.45	0.00
4	.161	150	-.4713	.231	70	-.5865	.431	180	-.4819	.931	0	-.5012	0.000		1.1084	-.40	0.00
5	.161	140	-.4834	.231	60	-.5812	.431	170	-.4790	1.131	180	-.5454	0.000		1.1965	-.30	0.00
6	.161	130	-.4952	.231	50	-.5948	.431	160	-.4989	1.131	170	-.5594	0.000		1.2199	-.20	0.00
7	.161	120	-.5165	.231	40	-.5627	.431	150	-.5055	1.131	160	-.5562	0.000		1.2202	-.10	0.00
8	.161	110	-.5432	.231	30	-.5789	.431	140	-.5587	1.131	150	-.5896	0.000		1.2001	0.00	0.00
9	.161	100	-.5570	.231	20	-.5324	.431	130	-.5298	1.131	140	-.5535	0.000		1.1705	.10	0.00
10	.161	90	-.5631	.231	10	-.5405	.431	120	-.5561	1.131	130	-.5590	0.000		1.1162	.20	0.00
11	.161	80	-.5714	.231	0	-.5435	.431	110	-.5823	1.131	120	-.5784	0.000		1.0354	.30	0.00
12	.161	70	-.5799	.331	180	-.4581	.431	100	-.5845	1.131	110	-.5831	0.000		.8823	.40	0.00
13	.161	60	-.5737	.331	170	-.4674	.431	90	-.5728	1.131	100	-.5791	0.000		.6921	.45	0.00
14	.161	50	-.5588	.331	160	-.4667	.431	80	-.5806	1.131	90	-.5778	0.000		1.1913	0.00	.10
15	.161	40	-.5736	.331	150	-.4808	.431	70	-.5877	1.131	80	-.5732	0.000		1.1665	0.00	.20
16	.161	30	-.5465	.331	140	-.5066	.431	60	-.5747	1.131	70	-.5496	0.000		1.1102	0.00	.30
17	.161	20	-.5306	.331	130	-.5225	.431	50	-.5688	1.131	60	-.5209	0.000		.9842	0.00	.40
18	.161	10	-.5092	.331	120	-.5393	.431	40	-.5546	1.131	50	-.4936	0.000		.8135	0.00	.45
19	.161	0	-.5095	.331	110	-.5559	.431	30	-.5534	1.131	40	-.4223	.161	270	-.5676		
20	.231	180	-.4544	.331	100	-.5767	.431	20	-.5688	1.131	30	-.4120	.231	270	-.5834		
21	.231	170	-.4580	.331	90	-.5792	.431	10	-.5610	1.131	20	-.3930	.331	270	-.5747		
22	.231	160	-.4526	.331	80	-.5668	.431	0	-.5376	1.131	10	-.3665	.431	270	-.5733		
23	.231	150	-.4967	.331	70	-.5926	.531	180	-.5067	1.131	0	-.3678	.531	270	-.5911		
24	.231	140	-.5218	.331	60	-.6130	.531	90	-.6217				.731	270	-.6238		
25	.231	130	-.5203	.331	50	-.5809	.531	0	-.5520	1.631	90	-.4118	.931	270	-.5900		
26	.231	120	-.5598	.331	40	-.5721	.731	180	-.5309	1.631	0	-.3951	1.131	270	-.5965		
27	.231	110	-.5565	.331	30	-.5652	.731	90	-.5886	2.131	180	-.3354	1.631	270	-.4480		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 198 ALPHA 12 MACH .882 Q 703.993 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4465	.231	100	-.5275	.331	20	-.5083	.731	0	-.4724	2.131	90	-.1821		
2	.161	170	-.4163	.231	90	-.5037	.331	10	-.4788	.931	180	-.4884	2.131	0	-.0193		
3	.161	160	-.4443	.231	80	-.5233	.331	0	-.5031	.931	90	-.5370	0.000		1.0176	-.45	0.00
4	.161	150	-.4712	.231	70	-.5538	.431	180	-.4813	.931	0	-.3984	0.000		1.1363	-.40	0.00
5	.161	140	-.4706	.231	60	-.5356	.431	170	-.4735	1.131	180	-.5311	0.000		1.2151	-.30	0.00
6	.161	130	-.4785	.231	50	-.5037	.431	160	-.4653	1.131	170	-.5330	0.000		1.2354	-.20	0.00
7	.161	120	-.4847	.231	40	-.5319	.431	150	-.4990	1.131	160	-.5385	0.000		1.2190	-.10	0.00
8	.161	110	-.5057	.231	30	-.5038	.431	140	-.4990	1.131	150	-.5348	0.000		1.1969	0.00	0.00
9	.161	100	-.5150	.231	20	-.5015	.431	130	-.5157	1.131	140	-.5348	0.000		1.1657	.10	0.00
10	.161	90	-.5421	.231	10	-.5025	.431	120	-.5310	1.131	130	-.5518	0.000		1.1097	.20	0.00
11	.161	80	-.5351	.231	0	-.5083	.431	110	-.5452	1.131	120	-.5624	0.000		1.0193	.30	0.00
12	.161	70	-.5426	.331	180	-.4517	.431	100	-.5333	1.131	110	-.5405	0.000		.8582	.40	0.00
13	.161	60	-.5295	.331	170	-.4575	.431	90	-.5223	1.131	100	-.5333	0.000		.6595	.45	0.00
14	.161	50	-.5408	.331	160	-.4751	.431	80	-.5505	1.131	90	-.5652	0.000		1.1853	0.00	.10
15	.161	40	-.5160	.331	150	-.4790	.431	70	-.5411	1.131	80	-.5538	0.000		1.1620	0.00	.20
16	.161	30	-.5177	.331	140	-.5032	.431	60	-.5411	1.131	70	-.5280	0.000		1.1146	0.00	.30
17	.161	20	-.5101	.331	130	-.5192	.431	50	-.5384	1.131	60	-.4849	0.000		.9823	0.00	.40
18	.161	10	-.4902	.331	120	-.5068	.431	40	-.5143	1.131	50	-.4036	0.000		.8161	0.00	.45
19	.161	0	-.4865	.331	110	-.5176	.431	30	-.5079	1.131	40	-.3371	.161	270	-.5307		
20	.231	180	-.4590	.331	100	-.5429	.431	20	-.5297	1.131	30	-.2872	.231	270	-.5154		
21	.231	170	-.4694	.331	90	-.5586	.431	10	-.5322	1.131	20	-.2392	.331	270	-.5432		
22	.231	160	-.4600	.331	80	-.5268	.431	0	-.5102	1.131	10	-.2349	.431	270	-.5282		
23	.231	150	-.4746	.331	70	-.5362	.531	180	-.4765	1.131	0	-.2371	.531	270	-.5432		
24	.231	140	-.5081	.331	60	-.5478	.531	90	-.5576				.731	270	-.5591		
25	.231	130	-.5048	.331	50	-.5311	.531	0	-.5161	1.631	90	-.4216	.931	270	-.5537		
26	.231	120	-.5306	.331	40	-.5399	.731	180	-.5164	1.631	0	-.3572	1.131	270	-.5733		
27	.231	110	-.5389	.331	30	-.5455	.731	90	-.5801	2.131	180	-.2949	1.631	270	-.4496		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 199 ALPHA 14 MACH .883 Q 704.259 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4948	.231	100	-.5199	.331	20	-.5212	.731	0	-.3215	2.131	90	-.2093		
2	.161	170	-.4643	.231	90	-.5332	.331	10	-.5225	.931	180	-.5321	2.131	0	-.0407		
3	.161	160	-.4585	.231	80	-.5104	.331	0	-.5086	.931	90	-.5236	0.000		1.0471	-.45	0.00
4	.161	150	-.4684	.231	70	-.5218	.431	180	-.4827	.931	0	-.2259	0.000		1.1603	-.40	0.00
5	.161	140	-.4761	.231	60	-.5137	.431	170	-.4797	1.131	180	-.5159	0.000		1.2183	-.30	0.00
6	.161	130	-.4840	.231	50	-.4751	.431	160	-.4547	1.131	170	-.4943	0.000		1.2266	-.20	0.00
7	.161	120	-.4928	.231	40	-.5344	.431	150	-.5159	1.131	160	-.5595	0.000		1.2118	-.10	0.00
8	.161	110	-.4999	.231	30	-.4744	.431	140	-.4723	1.131	150	-.5050	0.000		1.1836	0.00	0.00
9	.161	100	-.5159	.231	20	-.5223	.431	130	-.5320	1.131	140	-.5663	0.000		1.1334	.10	0.00
10	.161	90	-.5081	.231	10	-.5149	.431	120	-.5262	1.131	130	-.5411	0.000		1.0739	.20	0.00
11	.161	80	-.5125	.231	0	-.4888	.431	110	-.5097	1.131	120	-.5391	0.000		.9908	.30	0.00
12	.161	70	-.5034	.331	180	-.4532	.431	100	-.5118	1.131	110	-.5321	0.000		.8230	.40	0.00
13	.161	60	-.4986	.331	170	-.4610	.431	90	-.5125	1.131	100	-.5381	0.000		.6272	.45	0.00
14	.161	50	-.5117	.331	160	-.4726	.431	80	-.5147	1.131	90	-.5496	0.000		1.1752	0.00	.10
15	.161	40	-.4933	.331	150	-.4683	.431	70	-.4983	1.131	80	-.5269	0.000		1.1476	0.00	.20
16	.161	30	-.5208	.331	140	-.5061	.431	60	-.5294	1.131	70	-.4656	0.000		1.0945	0.00	.30
17	.161	20	-.5034	.331	130	-.5132	.431	50	-.5207	1.131	60	-.3755	0.000		.9712	0.00	.40
18	.161	10	-.4875	.331	120	-.4974	.431	40	-.5026	1.131	50	-.2719	0.000		.8095	0.00	.45
19	.161	0	-.4918	.331	110	-.5177	.431	30	-.5157	1.131	40	-.1863	.161	270	-.5259		
20	.231	180	-.4585	.331	100	-.5161	.431	20	-.5164	1.131	30	-.1300	.231	270	-.5254		
21	.231	170	-.4407	.331	90	-.4959	.431	10	-.4935	1.131	20	-.1059	.331	270	-.5074		
22	.231	160	-.4795	.331	80	-.5328	.431	0	-.5164	1.131	10	-.0729	.431	270	-.5421		
23	.231	150	-.4834	.331	70	-.5253	.531	180	-.4948	1.131	0	-.0797	.531	270	-.5380		
24	.231	140	-.5024	.331	60	-.5308	.531	90	-.5370				.731	270	-.5402		
25	.231	130	-.5018	.331	50	-.5217	.531	0	-.5065	1.631	90	-.4684	.931	270	-.5434		
26	.231	120	-.5011	.331	40	-.5104	.731	180	-.5005	1.631	0	-.2461	1.131	270	-.5619		
27	.231	110	-.5077	.331	30	-.5023	.731	90	-.5194	2.131	180	-.3381	1.631	270	-.4600		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 200 ALPHA 16 MACH .882 Q 704.258 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5021	.231	100	-.5399	.331	20	-.5512	.731	0	-.0813	2.131	90	-.2532		
2	.161	170	-.4247	.231	90	-.4698	.331	10	-.4778	.931	180	-.4725	2.131	0	-.0395		
3	.161	160	-.4526	.231	80	-.4935	.331	0	-.5044	.931	90	-.5257	0.000		1.0729	-.45	0.00
4	.161	150	-.4681	.231	70	-.5024	.431	180	-.4792	.931	0	-.0654	0.000		1.1688	-.40	0.00
5	.161	140	-.4582	.231	60	-.5174	.431	170	-.4957	1.131	180	-.5238	0.000		1.2214	-.30	0.00
6	.161	130	-.4514	.231	50	-.4840	.431	160	-.4627	1.131	170	-.5012	0.000		1.2287	-.20	0.00
7	.161	120	-.4769	.231	40	-.4892	.431	150	-.4691	1.131	160	-.4926	0.000		1.2066	-.10	0.00
8	.161	110	-.4870	.231	30	-.4792	.431	140	-.4613	1.131	150	-.5014	0.000		1.1748	0.00	0.00
9	.161	100	-.4953	.231	20	-.4830	.431	130	-.4727	1.131	140	-.5001	0.000		1.1269	.10	0.00
10	.161	90	-.4676	.231	10	-.4630	.431	120	-.4585	1.131	130	-.4962	0.000		1.0658	.20	0.00
11	.161	80	-.4980	.231	0	-.5065	.431	110	-.4996	1.131	120	-.5218	0.000		.9649	.30	0.00
12	.161	70	-.5059	.331	180	-.4749	.431	100	-.5080	1.131	110	-.5522	0.000		.7879	.40	0.00
13	.161	60	-.5046	.331	170	-.4343	.431	90	-.4652	1.131	100	-.5513	0.000		.6041	.45	0.00
14	.161	50	-.4927	.331	160	-.4589	.431	80	-.4881	1.131	90	-.5301	0.000		1.1686	0.00	.10
15	.161	40	-.4836	.331	150	-.4584	.431	70	-.4799	1.131	80	-.4791	0.000		1.1412	0.00	.20
16	.161	30	-.4904	.331	140	-.4715	.431	60	-.4808	1.131	70	-.3783	0.000		1.0850	0.00	.30
17	.161	20	-.4955	.331	130	-.4868	.431	50	-.4966	1.131	60	-.2984	0.000		.9594	0.00	.40
18	.161	10	-.4734	.331	120	-.4728	.431	40	-.4849	1.131	50	-.2014	0.000		.8007	0.00	.45
19	.161	0	-.4892	.331	110	-.4956	.431	30	-.5099	1.131	40	-.1521	.161	270	-.5028		
20	.231	180	-.4917	.331	100	-.4992	.431	20	-.5033	1.131	30	-.1022	.231	270	-.4951		
21	.231	170	-.4257	.331	90	-.4781	.431	10	-.4649	1.131	20	-.0397	.331	270	-.4792		
22	.231	160	-.4340	.331	80	-.4658	.431	0	-.4478	1.131	10	-.0040	.431	270	-.4709		
23	.231	150	-.4587	.331	70	-.4847	.531	180	-.4656	1.131	0	-.0122	.531	270	-.4930		
24	.231	140	-.4776	.331	60	-.4901	.531	90	-.4980				.731	270	-.5008		
25	.231	130	-.4743	.331	50	-.4941	.531	0	-.3565	1.631	90	-.5163	.931	270	-.5199		
26	.231	120	-.4920	.331	40	-.5072	.731	180	-.5002	1.631	0	-.1762	1.131	270	-.5384		
27	.231	110	-.4875	.331	30	-.5030	.731	90	-.4993	2.131	180	-.3755	1.631	270	-.5238		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 192 ALPHA 2 MACH .882 Q 703.371 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4023	.231	100	-.4497	.331	20	-.4906	.731	0	-.5026	2.131	90	-.0325		
2	.161	170	-.3926	.231	90	-.4801	.331	10	-.5012	.931	180	-.4776	2.131	0	-.2615		
3	.161	160	-.4051	.231	80	-.4856	.331	0	-.5268	.931	90	-.5104	0.000		.8703	-.45	0.00
4	.161	150	-.4162	.231	70	-.5096	.431	180	-.4353	.931	0	-.5082	0.000		1.0251	-.40	0.00
5	.161	140	-.4272	.231	60	-.4752	.431	170	-.4148	1.131	180	-.4840	0.000		1.1537	-.30	0.00
6	.161	130	-.4255	.231	50	-.5068	.431	160	-.4338	1.131	170	-.5069	0.000		1.1985	-.20	0.00
7	.161	120	-.4380	.231	40	-.4785	.431	150	-.4062	1.131	160	-.4833	0.000		1.2198	-.10	0.00
8	.161	110	-.4634	.231	30	-.4942	.431	140	-.4338	1.131	150	-.4969	0.000		1.2239	0.00	0.00
9	.161	100	-.4559	.231	20	-.4962	.431	130	-.4689	1.131	140	-.5165	0.000		1.2150	.10	0.00
10	.161	90	-.4712	.231	10	-.4977	.431	120	-.4611	1.131	130	-.5028	0.000		1.1819	.20	0.00
11	.161	80	-.4790	.231	0	-.4957	.431	110	-.4735	1.131	120	-.5143	0.000		1.1234	.30	0.00
12	.161	70	-.5070	.331	180	-.4252	.431	100	-.4954	1.131	110	-.5286	0.000		.9862	.40	0.00
13	.161	60	-.4860	.331	170	-.4089	.431	90	-.4647	1.131	100	-.5074	0.000		.8165	.45	0.00
14	.161	50	-.4904	.331	160	-.3937	.431	80	-.4812	1.131	90	-.5049	0.000		1.2171	0.00	.10
15	.161	40	-.5007	.331	150	-.4157	.431	70	-.4922	1.131	80	-.5168	0.000		1.1896	0.00	.20
16	.161	30	-.5007	.331	140	-.4333	.431	60	-.5074	1.131	70	-.5264	0.000		1.1325	0.00	.30
17	.161	20	-.4840	.331	130	-.4344	.431	50	-.4924	1.131	60	-.5109	0.000		1.0054	0.00	.40
18	.161	10	-.4979	.331	120	-.4550	.431	40	-.5195	1.131	50	-.5318	0.000		.8357	0.00	.45
19	.161	0	-.4816	.331	110	-.4591	.431	30	-.5195	1.131	40	-.5213	.161	270	-.4849		
20	.231	180	-.3800	.331	100	-.4682	.431	20	-.5240	1.131	30	-.5106	.231	270	-.4787		
21	.231	170	-.3827	.331	90	-.4639	.431	10	-.4954	1.131	20	-.4997	.331	270	-.4594		
22	.231	160	-.4023	.331	80	-.4803	.431	0	-.4959	1.131	10	-.5133	.431	270	-.4816		
23	.231	150	-.4132	.331	70	-.4781	.531	180	-.4293	1.131	0	-.5150	.531	270	-.4844		
24	.231	140	-.4157	.331	60	-.4763	.531	90	-.4723				.731	270	-.4874		
25	.231	130	-.4232	.331	50	-.4950	.531	0	-.5108	1.631	90	-.4706	.931	270	-.4964		
26	.231	120	-.4574	.331	40	-.5225	.731	180	-.4835	1.631	0	-.2648	1.131	270	-.5422		
27	.231	110	-.4383	.331	30	-.4867	.731	90	-.4709	2.131	180	-.3604	1.631	270	-.4675		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 193 ALPHA 4 MACH .882 Q 703.996 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4176	.231	100	-.5403	.331	20	-.5809	.731	0	-.5623	2.131	90	-.0777		
2	.161	170	-.3943	.231	90	-.5629	.331	10	-.5858	.931	180	-.5358	2.131	0	-.1057		
3	.161	160	-.4254	.231	80	-.5495	.331	0	-.5697	.931	90	-.5686	0.000		.8946	-.45	0.00
4	.161	150	-.4371	.231	70	-.5647	.431	180	-.4514	.931	0	-.5689	0.000		1.0426	-.40	0.00
5	.161	140	-.4557	.231	60	-.5948	.431	170	-.4439	1.131	180	-.5386	0.000		1.1587	-.30	0.00
6	.161	130	-.4650	.231	50	-.5697	.431	160	-.4579	1.131	170	-.5290	0.000		1.2042	-.20	0.00
7	.161	120	-.5090	.231	40	-.5818	.431	150	-.4773	1.131	160	-.5318	0.000		1.2190	-.10	0.00
8	.161	110	-.5123	.231	30	-.5892	.431	140	-.4947	1.131	150	-.5502	0.000		1.2166	0.00	0.00
9	.161	100	-.5048	.231	20	-.5454	.431	130	-.4821	1.131	140	-.5266	0.000		1.1976	.10	0.00
10	.161	90	-.5314	.231	10	-.5346	.431	120	-.5099	1.131	130	-.5284	0.000		1.1651	.20	0.00
11	.161	80	-.5594	.231	0	-.5108	.431	110	-.5126	1.131	120	-.5329	0.000		1.1020	.30	0.00
12	.161	70	-.5727	.331	180	-.3979	.431	100	-.5472	1.131	110	-.5502	0.000		.9686	.40	0.00
13	.161	60	-.5829	.331	170	-.4129	.431	90	-.5044	1.131	100	-.5669	0.000		.7843	.45	0.00
14	.161	50	-.5706	.331	160	-.4334	.431	80	-.5692	1.131	90	-.5680	0.000		1.2113	0.00	.10
15	.161	40	-.5638	.331	150	-.4417	.431	70	-.5660	1.131	80	-.5631	0.000		1.1821	0.00	.20
16	.161	30	-.5519	.331	140	-.4619	.431	60	-.5702	1.131	70	-.5610	0.000		1.1268	0.00	.30
17	.161	20	-.5312	.331	130	-.4649	.431	50	-.5628	1.131	60	-.5502	0.000		1.0039	0.00	.40
18	.161	10	-.5577	.331	120	-.5262	.431	40	-.6128	1.131	50	-.5780	0.000		.8238	0.00	.45
19	.161	0	-.5226	.331	110	-.5158	.431	30	-.5677	1.131	40	-.5664	.161	270	-.5763		
20	.231	180	-.4157	.331	100	-.5376	.431	20	-.5963	1.131	30	-.5693	.231	270	-.5757		
21	.231	170	-.4182	.331	90	-.5545	.431	10	-.5935	1.131	20	-.5704	.331	270	-.5729		
22	.231	160	-.4312	.331	80	-.5561	.431	0	-.5837	1.131	10	-.5745	.431	270	-.5812		
23	.231	150	-.4416	.331	70	-.5614	.531	180	-.4782	1.131	0	-.5612	.531	270	-.5730		
24	.231	140	-.4582	.331	60	-.5570	.531	90	-.5489				.731	270	-.5786		
25	.231	130	-.4734	.331	50	-.5930	.531	0	-.6087	1.631	90	-.4702	.931	270	-.5886		
26	.231	120	-.5065	.331	40	-.5884	.731	180	-.5119	1.631	0	-.3173	1.131	270	-.5802		
27	.231	110	-.5282	.331	30	-.5899	.731	90	-.5835	2.131	180	-.3121	1.631	270	-.4712		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 194 ALPHA 6 MACH .882 Q 703.550 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4170	.231	100	-.5522	.331	20	-.5840	.731	0	-.5681	2.131	90	-.1103		
2	.161	170	-.4060	.231	90	-.5967	.331	10	-.6069	.931	180	-.5455	2.131	0	-.0286		
3	.161	160	-.4354	.231	80	-.6033	.331	0	-.5856	.931	90	-.6018	0.000		.9213	-.45	0.00
4	.161	150	-.4545	.231	70	-.5960	.431	180	-.4532	.931	0	-.5554	0.000		1.0717	-.40	0.00
5	.161	140	-.4731	.231	60	-.6202	.431	170	-.4580	1.131	180	-.5470	0.000		1.1755	-.30	0.00
6	.161	130	-.4941	.231	50	-.6174	.431	160	-.4846	1.131	170	-.5497	0.000		1.2112	-.20	0.00
7	.161	120	-.4971	.231	40	-.6064	.431	150	-.4804	1.131	160	-.5451	0.000		1.2234	-.10	0.00
8	.161	110	-.5566	.231	30	-.5743	.431	140	-.5024	1.131	150	-.5370	0.000		1.2176	0.00	0.00
9	.161	100	-.5584	.231	20	-.5806	.431	130	-.5281	1.131	140	-.5567	0.000		1.1962	.10	0.00
10	.161	90	-.5853	.231	10	-.5796	.431	120	-.5421	1.131	130	-.5685	0.000		1.1527	.20	0.00
11	.161	80	-.5992	.231	0	-.5709	.431	110	-.5462	1.131	120	-.5602	0.000		1.0853	.30	0.00
12	.161	70	-.6064	.331	180	-.4426	.431	100	-.5803	1.131	110	-.5792	0.000		.9365	.40	0.00
13	.161	60	-.6125	.331	170	-.4535	.431	90	-.5918	1.131	100	-.5891	0.000		.7563	.45	0.00
14	.161	50	-.6404	.331	160	-.4736	.431	80	-.6243	1.131	90	-.6090	0.000		1.2069	0.00	.10
15	.161	40	-.6092	.331	150	-.4894	.431	70	-.6233	1.131	80	-.6028	0.000		1.1770	0.00	.20
16	.161	30	-.5737	.331	140	-.4742	.431	60	-.6021	1.131	70	-.5751	0.000		1.1249	0.00	.30
17	.161	20	-.5768	.331	130	-.5128	.431	50	-.6199	1.131	60	-.5711	0.000		.9945	0.00	.40
18	.161	10	-.5914	.331	120	-.5561	.431	40	-.6534	1.131	50	-.5484	0.000		.8221	0.00	.45
19	.161	0	-.5562	.331	110	-.5517	.431	30	-.6261	1.131	40	-.5350	.161	270	-.5998		
20	.231	180	-.4095	.331	100	-.5712	.431	20	-.6206	1.131	30	-.5260	.231	270	-.6103		
21	.231	170	-.4078	.331	90	-.5925	.431	10	-.6247	1.131	20	-.4863	.331	270	-.5771		
22	.231	160	-.4234	.331	80	-.5838	.431	0	-.5799	1.131	10	-.5155	.431	270	-.5891		
23	.231	150	-.4711	.331	70	-.6083	.531	180	-.4910	1.131	0	-.4910	.531	270	-.6105		
24	.231	140	-.4687	.331	60	-.6122	.531	90	-.5904				.731	270	-.5998		
25	.231	130	-.4902	.331	50	-.5829	.531	0	-.5979	1.631	90	-.4504	.931	270	-.5941		
26	.231	120	-.5265	.331	40	-.6280	.731	180	-.5223	1.631	0	-.3548	1.131	270	-.5964		
27	.231	110	-.5589	.331	30	-.6328	.731	90	-.6193	2.131	180	-.2646	1.631	270	-.4285		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 195 ALPHA 8 MACH .882 Q 703.638 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4021	.231	100	-.5546	.331	20	-.5605	.731	0	-.5393	2.131	90	-.1192		
2	.161	170	-.4199	.231	90	-.5931	.331	10	-.5736	.931	180	-.5596	2.131	0	-.0107		
3	.161	160	-.4303	.231	80	-.6088	.331	0	-.6059	.931	90	-.6001	0.000		.9547	-.45	0.00
4	.161	150	-.4446	.231	70	-.5787	.431	180	-.4455	.931	0	-.5290	0.000		1.0994	-.40	0.00
5	.161	140	-.4755	.231	60	-.6206	.431	170	-.4789	1.131	180	-.5476	0.000		1.1933	-.30	0.00
6	.161	130	-.4959	.231	50	-.6315	.431	160	-.5076	1.131	170	-.5778	0.000		1.2250	-.20	0.00
7	.161	120	-.4999	.231	40	-.5787	.431	150	-.4870	1.131	160	-.5345	0.000		1.2268	-.10	0.00
8	.161	110	-.5508	.231	30	-.5893	.431	140	-.5144	1.131	150	-.5599	0.000		1.2132	0.00	0.00
9	.161	100	-.5575	.231	20	-.5747	.431	130	-.5215	1.131	140	-.5540	0.000		1.1818	.10	0.00
10	.161	90	-.5614	.231	10	-.5324	.431	120	-.5339	1.131	130	-.5480	0.000		1.1458	.20	0.00
11	.161	80	-.5893	.231	0	-.5838	.431	110	-.5729	1.131	120	-.5767	0.000		1.0645	.30	0.00
12	.161	70	-.5986	.331	180	-.4450	.431	100	-.5901	1.131	110	-.5909	0.000		.9121	.40	0.00
13	.161	60	-.5729	.331	170	-.4417	.431	90	-.5733	1.131	100	-.5636	0.000		.7273	.45	0.00
14	.161	50	-.5905	.331	160	-.4475	.431	80	-.5864	1.131	90	-.5717	0.000		1.2004	0.00	.10
15	.161	40	-.5893	.331	150	-.4698	.431	70	-.6029	1.131	80	-.5802	0.000		1.1793	0.00	.20
16	.161	30	-.5681	.331	140	-.5069	.431	60	-.6049	1.131	70	-.5688	0.000		1.1242	0.00	.30
17	.161	20	-.5807	.331	130	-.5345	.431	50	-.6239	1.131	60	-.5316	0.000		.9958	0.00	.40
18	.161	10	-.5502	.331	120	-.5726	.431	40	-.6327	1.131	50	-.5087	0.000		.8168	0.00	.45
19	.161	0	-.5422	.331	110	-.5837	.431	30	-.6194	1.131	40	-.4806	.161	270	-.6129		
20	.231	180	-.4492	.331	100	-.6039	.431	20	-.6255	1.131	30	-.4664	.231	270	-.6173		
21	.231	170	-.4448	.331	90	-.5820	.431	10	-.5854	1.131	20	-.4656	.331	270	-.5909		
22	.231	160	-.4469	.331	80	-.5972	.431	0	-.5745	1.131	10	-.4575	.431	270	-.5945		
23	.231	150	-.4879	.331	70	-.6260	.531	180	-.5087	1.131	0	-.4640	.531	270	-.6188		
24	.231	140	-.5200	.331	60	-.6295	.531	90	-.6214				.731	270	-.6239		
25	.231	130	-.5264	.331	50	-.6050	.531	0	-.5901	1.631	90	-.4095	.931	270	-.6054		
26	.231	120	-.5322	.331	40	-.5963	.731	180	-.5051	1.631	0	-.3571	1.131	270	-.5734		
27	.231	110	-.5769	.331	30	-.6098	.731	90	-.6162	2.131	180	-.2483	1.631	270	-.3900		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 205 ALPHA 0 MACH .682 Q 703.462 MODEL FLAT FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4310	.231	100	-.4321	.331	20	-.4414	.731	0	-.4553	2.131	90	-.0024		
2	.161	170	-.4049	.231	90	-.4629	.331	10	-.4719	.931	180	-.5001	2.131	0	-.4225		
3	.161	160	-.4232	.231	80	-.4263	.331	0	-.4324	.931	90	-.4537	0.000		.8468	-.45	0.00
4	.161	150	-.4430	.231	70	-.4457	.431	180	-.4544	.931	0	-.4636	0.000		.9994	-.40	0.00
5	.161	140	-.4391	.231	60	-.4432	.431	170	-.4611	1.131	180	-.4927	0.000		1.1269	-.30	0.00
6	.161	130	-.4438	.231	50	-.4378	.431	160	-.4494	1.131	170	-.4885	0.000		1.1796	-.20	0.00
7	.161	120	-.4305	.231	40	-.4334	.431	150	-.4377	1.131	160	-.4839	0.000		1.2119	-.10	0.00
8	.161	110	-.4448	.231	30	-.4296	.431	140	-.4361	1.131	150	-.4765	0.000		1.2204	0.00	0.00
9	.161	100	-.4074	.231	20	-.4311	.431	130	-.4492	1.131	140	-.4874	0.000		1.2124	.10	0.00
10	.161	90	-.4443	.231	10	-.4429	.431	120	-.4382	1.131	130	-.4756	0.000		1.1824	.20	0.00
11	.161	80	-.4259	.231	0	-.4364	.431	110	-.4341	1.131	120	-.4737	0.000		1.1339	.30	0.00
12	.161	70	-.4225	.331	180	-.4593	.431	100	-.4411	1.131	110	-.4842	0.000		1.0011	.40	0.00
13	.161	60	-.4237	.331	170	-.4389	.431	90	-.4364	1.131	100	-.4912	0.000		.8318	.45	0.00
14	.161	50	-.4142	.331	160	-.4278	.431	80	-.4279	1.131	90	-.4829	0.000		1.2099	0.00	.10
15	.161	40	-.4280	.331	150	-.4437	.431	70	-.4459	1.131	80	-.4791	0.000		1.1842	0.00	.20
16	.161	30	-.4224	.331	140	-.4290	.431	60	-.4336	1.131	70	-.4699	0.000		1.1314	0.00	.30
17	.161	20	-.4239	.331	130	-.4339	.431	50	-.4302	1.131	60	-.4693	0.000		1.0049	0.00	.40
18	.161	10	-.4273	.331	120	-.4429	.431	40	-.4382	1.131	50	-.4719	0.000		.8307	0.00	.45
19	.161	0	-.4092	.331	110	-.4126	.431	30	-.4144	1.131	40	-.4619	.161	270	-.4186		
20	.231	180	-.4325	.331	100	-.4366	.431	20	-.4471	1.131	30	-.4785	.231	270	-.4457		
21	.231	170	-.4453	.331	90	-.4402	.431	10	-.4519	1.131	20	-.4839	.331	270	-.4541		
22	.231	160	-.4298	.331	80	-.4374	.431	0	-.4577	1.131	10	-.4887	.431	270	-.4557		
23	.231	150	-.4546	.331	70	-.4576	.531	180	-.4782	1.131	0	-.5040	.531	270	-.4684		
24	.231	140	-.4391	.331	60	-.4348	.531	90	-.4542				.731	270	-.4655		
25	.231	130	-.4156	.331	50	-.4321	.531	0	-.4372	1.631	90	-.4654	.931	270	-.4564		
26	.231	120	-.4327	.331	40	-.4368	.731	180	-.4473	1.631	0	-.1091	1.131	270	-.4792		
27	.231	110	-.4137	.331	30	-.4310	.731	90	-.4462	2.131	180	-.3663	1.631	270	-.4701		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 84 ALPHA -1 MACH .608 Q 429.711 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5259	.231	100	-.5064	.331	20	-.4676	.731	0	-.5258	2.131	90	-.1345		
2	.161	170	-.5302	.231	90	-.5159	.331	10	-.4674	.931	180	-.1456	2.131	0	-.0419		
3	.161	160	-.5512	.231	80	-.5013	.331	0	-.4652	.931	90	-.5704	0.000		.5974	-.45	0.00
4	.161	150	-.5422	.231	70	-.4813	.431	180	-.5619	.931	0	-.2232	0.000		.6248	-.40	0.00
5	.161	140	-.4881	.231	60	-.4652	.431	170	-.5352	1.131	180	-.5106	0.000		.8807	-.30	0.00
6	.161	130	-.5207	.231	50	-.4881	.431	160	-.5330	1.131	170	-.5158	0.000		1.0127	-.20	0.00
7	.161	120	-.5156	.231	40	-.4826	.431	150	-.5446	1.131	160	-.5106	0.000		1.0795	-.10	0.00
8	.161	110	-.5063	.231	30	-.4775	.431	140	-.5341	1.131	150	-.5325	0.000		1.0998	0.00	0.00
9	.161	100	-.5088	.231	20	-.4660	.431	130	-.5346	1.131	140	-.5058	0.000		1.0958	.10	0.00
10	.161	90	-.4993	.231	10	-.4799	.431	120	-.5355	1.131	130	-.4955	0.000		1.0296	.20	0.00
11	.161	80	-.5093	.231	0	-.4829	.431	110	-.5363	1.131	120	-.5243	0.000		.8976	.30	0.00
12	.161	70	-.4890	.331	180	-.5552	.431	100	-.5319	1.131	110	-.5212	0.000		.6404	.40	0.00
13	.161	60	-.4586	.331	170	-.5462	.431	90	-.4977	1.131	100	-.5170	0.000		.5675	.45	0.00
14	.161	50	-.4879	.331	160	-.5304	.431	80	-.5299	1.131	90	-.5009	0.000		1.0862	0.00	.10
15	.161	40	-.4699	.331	150	-.5239	.431	70	-.5106	1.131	80	-.5322	0.000		1.0182	0.00	.20
16	.161	30	-.4642	.331	140	-.5304	.431	60	-.4960	1.131	70	-.5188	0.000		.8813	0.00	.30
17	.161	20	-.4642	.331	130	-.5383	.431	50	-.5073	1.131	60	-.4979	0.000		.6257	0.00	.40
18	.161	10	-.4678	.331	120	-.5359	.431	40	-.4999	1.131	50	-.5309	0.000		.5974	0.00	.45
19	.161	0	-.4327	.331	110	-.4987	.431	30	-.4538	1.131	40	-.5040	.161	270	-.5004		
20	.231	180	-.5186	.331	100	-.5116	.431	20	-.4665	1.131	30	-.4931	.231	270	-.5026		
21	.231	170	-.5503	.331	90	-.5307	.431	10	-.4911	1.131	20	-.4961	.331	270	-.5161		
22	.231	160	-.5430	.331	80	-.5173	.431	0	-.4847	1.131	10	-.5373	.431	270	-.5250		
23	.231	150	-.5387	.331	70	-.5072	.531	180	-.5647	1.131	0	-.4937	.531	270	-.5373		
24	.231	140	-.5131	.331	60	-.4889	.531	90	-.5079				.731	270	-.5690		
25	.231	130	-.4971	.331	50	-.4725	.531	0	-.4883	1.631	90	-.2102	.931	270	-.5681		
26	.231	120	-.5224	.331	40	-.4900	.731	180	-.5771	1.631	0	-.1620	1.131	270	-.5235		
27	.231	110	-.5186	.331	30	-.4649	.731	90	-.5454	2.131	180	.0602	1.631	270	-.1972		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 85 ALPHA 0 MACH .608 Q 429.711 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4656	.231	100	-.4777	.331	20	-.4853	.731	0	-.5382	2.131	90	-.1317		
2	.161	170	-.4816	.231	90	-.4941	.331	10	-.4977	.931	180	-.1441	2.131	0	.0571		
3	.161	160	-.4977	.231	80	-.4903	.331	0	-.4657	.931	90	-.5507	0.000		.6051	-.45	0.00
4	.161	150	-.4922	.231	70	-.4987	.431	180	-.5123	.931	0	-.3157	0.000		.6198	-.40	0.00
5	.161	140	-.4841	.231	60	-.4930	.431	170	-.5214	1.131	180	-.5285	0.000		.8832	-.30	0.00
6	.161	130	-.4724	.231	50	-.4791	.431	160	-.5040	1.131	170	-.5125	0.000		1.0186	-.20	0.00
7	.161	120	-.4672	.231	40	-.4911	.431	150	-.5178	1.131	160	-.5228	0.000		1.0773	-.10	0.00
8	.161	110	-.4862	.231	30	-.4892	.431	140	-.5277	1.131	150	-.5273	0.000		1.0979	0.00	0.00
9	.161	100	-.4708	.231	20	-.4859	.431	130	-.4878	1.131	140	-.5025	0.000		1.0835	.10	0.00
10	.161	90	-.4795	.231	10	-.4851	.431	120	-.5076	1.131	130	-.5197	0.000		1.0293	.20	0.00
11	.161	80	-.5107	.231	0	-.5028	.431	110	-.5242	1.131	120	-.5073	0.000		.8863	.30	0.00
12	.161	70	-.4917	.331	180	-.4941	.431	100	-.5082	1.131	110	-.5303	0.000		.6451	.40	0.00
13	.161	60	-.5072	.331	170	-.4892	.431	90	-.5244	1.131	100	-.5143	0.000		.5657	.45	0.00
14	.161	50	-.4854	.331	160	-.4960	.431	80	-.5175	1.131	90	-.5225	0.000		1.0853	0.00	.10
15	.161	40	-.5031	.331	150	-.5138	.431	70	-.5148	1.131	80	-.5264	0.000		1.0127	0.00	.20
16	.161	30	-.4833	.331	140	-.5203	.431	60	-.5286	1.131	70	-.5021	0.000		.8798	0.00	.30
17	.161	20	-.4784	.331	130	-.5028	.431	50	-.5057	1.131	60	-.5103	0.000		.6334	0.00	.40
18	.161	10	-.4914	.331	120	-.5007	.431	40	-.5112	1.131	50	-.5249	0.000		.5974	0.00	.45
19	.161	0	-.4928	.331	110	-.4799	.431	30	-.5112	1.131	40	-.5291	.161	270	-.4973		
20	.231	180	-.5101	.331	100	-.5176	.431	20	-.5184	1.131	30	-.5306	.231	270	-.5099		
21	.231	170	-.4963	.331	90	-.5189	.431	10	-.5313	1.131	20	-.5152	.331	270	-.5145		
22	.231	160	-.4872	.331	80	-.4892	.431	0	-.5071	1.131	10	-.5046	.431	270	-.5222		
23	.231	150	-.4860	.331	70	-.4925	.531	180	-.5181	1.131	0	-.5185	.531	270	-.5290		
24	.231	140	-.4960	.331	60	-.4783	.531	90	-.5098				.731	270	-.5481		
25	.231	130	-.4710	.331	50	-.5192	.531	0	-.5534	1.631	90	-.2242	.931	270	-.5668		
26	.231	120	-.4702	.331	40	-.4955	.731	180	-.5366	1.631	0	-.1393	1.131	270	-.5192		
27	.231	110	-.4936	.331	30	-.5083	.731	90	-.5429	2.131	180	.0320	1.631	270	-.1837		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 90 ALPHA 10 MACH .608 Q 429.633 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4228	.231	100	-.7175	.331	20	-.8783	.731	0	-.0165	2.131	90	-.1880		
2	.161	170	-.4584	.231	90	-.7702	.331	10	-.8973	.931	180	-.1636	2.131	0	.0036		
3	.161	160	-.4771	.231	80	-.7685	.331	0	-.8871	.931	90	-.3625	0.000		.6273	-.45	0.00
4	.161	150	-.5305	.231	70	-.8078	.431	180	-.5452	.931	0	-.4222	0.000		.7442	-.40	0.00
5	.161	140	-.5676	.231	60	-.8100	.431	170	-.5334	1.131	180	-.4143	0.000		1.0098	-.30	0.00
6	.161	130	-.6027	.231	50	-.8392	.431	160	-.5571	1.131	170	-.4571	0.000		1.0907	-.20	0.00
7	.161	120	-.7221	.231	40	-.9072	.431	150	-.6241	1.131	160	-.4316	0.000		1.1141	-.10	0.00
8	.161	110	-.7099	.231	30	-.9211	.431	140	-.6381	1.131	150	-.4252	0.000		1.0821	0.00	0.00
9	.161	100	-.7317	.231	20	-.9296	.431	130	-.6508	1.131	140	-.4789	0.000		1.0120	.10	0.00
10	.161	90	-.7455	.231	10	-.9378	.431	120	-.6665	1.131	130	-.4462	0.000		.9150	.20	0.00
11	.161	80	-.8080	.231	0	-.9700	.431	110	-.7035	1.131	120	-.3837	0.000		.7132	.30	0.00
12	.161	70	-.8126	.331	180	-.5156	.431	100	-.7280	1.131	110	-.3039	0.000		.4999	.40	0.00
13	.161	60	-.8178	.331	170	-.4972	.431	90	-.7537	1.131	100	-.3052	0.000		.4091	.45	0.00
14	.161	50	-.8547	.331	160	-.5357	.431	80	-.7854	1.131	90	-.2594	0.000		1.0652	0.00	.10
15	.161	40	-.8596	.331	150	-.5649	.431	70	-.7983	1.131	80	-.2242	0.000		.9993	0.00	.20
16	.161	30	-.8868	.331	140	-.6042	.431	60	-.7887	1.131	70	-.1202	0.000		.8547	0.00	.30
17	.161	20	-.8944	.331	130	-.6321	.431	50	-.7625	1.131	60	-.1339	0.000		.5553	0.00	.40
18	.161	10	-.9167	.331	120	-.6785	.431	40	-.7622	1.131	50	-.0981	0.000		.5387	0.00	.45
19	.161	0	-.9300	.331	110	-.7055	.431	30	-.7344	1.131	40	-.0726	.161	270	-.7724		
20	.231	180	-.4325	.331	100	-.7205	.431	20	-.6748	1.131	30	-.0374	.231	270	-.7422		
21	.231	170	-.4790	.331	90	-.7366	.431	10	-.6621	1.131	20	-.0323	.331	270	-.7346		
22	.231	160	-.4798	.331	80	-.7612	.431	0	-.6594	1.131	10	-.0226	.431	270	-.7379		
23	.231	150	-.5605	.331	70	-.8103	.531	180	-.5640	1.131	0	-.0198	.531	270	-.7355		
24	.231	140	-.5423	.331	60	-.8021	.531	90	-.7118				.731	270	-.5725		
25	.231	130	-.6455	.331	50	-.8526	.531	0	-.3219	1.631	90	-.1542	.931	270	-.3523		
26	.231	120	-.6934	.331	40	-.8836	.731	180	-.5993	1.631	0	-.1836	1.131	270	-.2403		
27	.231	110	-.7072	.331	30	-.8826	.731	90	-.5835	2.131	180	-.0177	1.631	270	-.1496		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 91 ALPHA 12 MACH .608 Q 430.307 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4527	.231	100	-.7567	.331	20	-.7420	.731	0	-.0249	2.131	90	-.2064		
2	.161	170	-.4486	.231	90	-.7722	.331	10	-.6756	.931	180	-.2120	2.131	0	.0196		
3	.161	160	-.5379	.231	80	-.8259	.331	0	-.6698	.931	90	-.3622	0.000		.6304	-.45	0.00
4	.161	150	-.5542	.231	70	-.8515	.431	180	-.5476	.931	0	-.4000	0.000		.7911	-.40	0.00
5	.161	140	-.6268	.231	60	-.8837	.431	170	-.5570	1.131	180	-.3982	0.000		1.0246	-.30	0.00
6	.161	130	-.7155	.231	50	-.9224	.431	160	-.6063	1.131	170	-.4496	0.000		1.0968	-.20	0.00
7	.161	120	-.7318	.231	40	-.9662	.431	150	-.6335	1.131	160	-.4387	0.000		1.1014	-.10	0.00
8	.161	110	-.7340	.231	30	-.9747	.431	140	-.6462	1.131	150	-.4696	0.000		1.0679	0.00	0.00
9	.161	100	-.7825	.231	20	-.9867	.431	130	-.6938	1.131	140	-.4669	0.000		.9932	.10	0.00
10	.161	90	-.7858	.231	10	-.9940	.431	120	-.7021	1.131	130	-.4397	0.000		.8765	.20	0.00
11	.161	80	-.8539	.231	0	-1.0131	.431	110	-.7574	1.131	120	-.3737	0.000		.6848	.30	0.00
12	.161	70	-.8541	.331	180	-.5187	.431	100	-.7461	1.131	110	-.3715	0.000		.4568	.40	0.00
13	.161	60	-.8902	.331	170	-.5375	.431	90	-.7888	1.131	100	-.3234	0.000		.3416	.45	0.00
14	.161	50	-.9035	.331	160	-.5435	.431	80	-.7596	1.131	90	-.2965	0.000		1.0482	0.00	.10
15	.161	40	-.9491	.331	150	-.5918	.431	70	-.7390	1.131	80	-.2816	0.000		.9754	0.00	.20
16	.161	30	-1.0060	.331	140	-.6634	.431	60	-.7106	1.131	70	-.2247	0.000		.8279	0.00	.30
17	.161	20	-1.0177	.331	130	-.6752	.431	50	-.6145	1.131	60	-.1781	0.000		.5321	0.00	.40
18	.161	10	-1.0234	.331	120	-.6975	.431	40	-.5165	1.131	50	-.1393	0.000		.5185	0.00	.45
19	.161	0	-1.0329	.331	110	-.7242	.431	30	-.4243	1.131	40	-.1027	.161	270	-.8276		
20	.231	180	-.4698	.331	100	-.7387	.431	20	-.3298	1.131	30	-.0652	.231	270	-.7745		
21	.231	170	-.5148	.331	90	-.8034	.431	10	-.1864	1.131	20	-.0391	.331	270	-.7917		
22	.231	160	-.4956	.331	80	-.7929	.431	0	-.1737	1.131	10	-.0313	.431	270	-.7595		
23	.231	150	-.5712	.331	70	-.8212	.531	180	-.5848	1.131	0	-.0261	.531	270	-.7370		
24	.231	140	-.6106	.331	60	-.8251	.531	90	-.7293				.731	270	-.5092		
25	.231	130	-.6439	.331	50	-.7954	.531	0	-.0818	1.631	90	-.2283	.931	270	-.3784		
26	.231	120	-.7104	.331	40	-.7975	.731	180	-.6010	1.631	0	-.1935	1.131	270	-.2936		
27	.231	110	-.7370	.331	30	-.7853	.731	90	-.5286	2.131	180	-.0452	1.631	270	-.2122		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 92 ALPHA 14 MACH .608 Q 429.975 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4851	.231	100	-.7570	.331	20	-.1970	.731	0	-.0368	2.131	90	-.2210		
2	.161	170	-.4838	.231	90	-.8445	.331	10	-.1733	.931	180	-.2319	2.131	0	.0337		
3	.161	160	-.4987	.231	80	-.8233	.331	0	-.1615	.931	90	-.3955	0.000		.6373	-.45	0.00
4	.161	150	-.6021	.231	70	-.8784	.431	180	-.5693	.931	0	-.3985	0.000		.8199	-.40	0.00
5	.161	140	-.6629	.231	60	-.9264	.431	170	-.5935	1.131	180	-.4437	0.000		1.0379	-.30	0.00
6	.161	130	-.7080	.231	50	-.8860	.431	160	-.6078	1.131	170	-.4128	0.000		1.1105	-.20	0.00
7	.161	120	-.7308	.231	40	-.8653	.431	150	-.6258	1.131	160	-.4561	0.000		1.1059	-.10	0.00
8	.161	110	-.7886	.231	30	-.7594	.431	140	-.6765	1.131	150	-.4552	0.000		1.0456	0.00	0.00
9	.161	100	-.8011	.231	20	-.6454	.431	130	-.6872	1.131	140	-.4749	0.000		.9592	.10	0.00
10	.161	90	-.7957	.231	10	-.6002	.431	120	-.7037	1.131	130	-.4721	0.000		.8325	.20	0.00
11	.161	80	-.8559	.231	0	-.4922	.431	110	-.7205	1.131	120	-.4288	0.000		.6465	.30	0.00
12	.161	70	-.9800	.331	180	-.5587	.431	100	-.8159	1.131	110	-.4034	0.000		.4162	.40	0.00
13	.161	60	-1.0144	.331	170	-.5543	.431	90	-.7809	1.131	100	-.3955	0.000		.2923	.45	0.00
14	.161	50	-1.0635	.331	160	-.5827	.431	80	-.6803	1.131	90	-.3703	0.000		1.0219	0.00	.10
15	.161	40	-1.1314	.331	150	-.6768	.431	70	-.6076	1.131	80	-.3431	0.000		.9531	0.00	.20
16	.161	30	-1.0516	.331	140	-.6329	.431	60	-.4646	1.131	70	-.2822	0.000		.8162	0.00	.30
17	.161	20	-.9995	.331	130	-.7360	.431	50	-.2976	1.131	60	-.2131	0.000		.5174	0.00	.40
18	.161	10	-.9479	.331	120	-.7196	.431	40	-.2276	1.131	50	-.1734	0.000		.5057	0.00	.45
19	.161	0	-.9289	.331	110	-.7504	.431	30	-.1612	1.131	40	-.1231	.161	270	-.8560		
20	.231	180	-.4900	.331	100	-.7504	.431	20	-.1224	1.131	30	-.0810	.231	270	-.8163		
21	.231	170	-.5223	.331	90	-.8385	.431	10	-.0945	1.131	20	-.0465	.331	270	-.8264		
22	.231	160	-.5432	.331	80	-.8178	.431	0	-.0783	1.131	10	-.0153	.431	270	-.7644		
23	.231	150	-.5796	.331	70	-.7554	.531	180	-.6095	1.131	0	-.0122	.531	270	-.6639		
24	.231	140	-.6607	.331	60	-.6569	.531	90	-.6415				.731	270	-.4644		
25	.231	130	-.6987	.331	50	-.5680	.531	0	-.0670	1.631	90	-.2885	.931	270	-.3977		
26	.231	120	-.7460	.331	40	-.3858	.731	180	-.6164	1.631	0	-.2537	1.131	270	-.3646		
27	.231	110	-.7289	.331	30	-.2800	.731	90	-.4896	2.131	180	-.0119	1.631	270	-.2886		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 93 ALPHA 16 MACH .608 Q 429.723 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4841	.231	100	-.8033	.331	20	-.1407	.731	0	-.0141	2.131	90	-.2532		
2	.161	170	-.5028	.231	90	-.7498	.331	10	-.1271	.931	180	-.2572	2.131	0	.0423		
3	.161	160	-.5090	.231	80	-.7711	.331	0	-.1161	.931	90	-.4436	0.000		.6573	-.45	0.00
4	.161	150	-.5984	.231	70	-.8270	.431	180	-.5674	.931	0	-.4112	0.000		.8610	-.40	0.00
5	.161	140	-.6459	.231	60	-.8208	.431	170	-.5845	1.131	180	-.4624	0.000		1.0573	-.30	0.00
6	.161	130	-.6878	.231	50	-.7476	.431	160	-.6057	1.131	170	-.4552	0.000		1.0988	-.20	0.00
7	.161	120	-.7459	.231	40	-.6480	.431	150	-.6631	1.131	160	-.4373	0.000		1.0804	-.10	0.00
8	.161	110	-.7247	.231	30	-.4826	.431	140	-.6716	1.131	150	-.4918	0.000		1.0250	0.00	0.00
9	.161	100	-.8152	.231	20	-.3443	.431	130	-.7017	1.131	140	-.4976	0.000		.9259	.10	0.00
10	.161	90	-.8420	.231	10	-.2971	.431	120	-.7455	1.131	130	-.4797	0.000		.7862	.20	0.00
11	.161	80	-.8684	.231	0	-.2799	.431	110	-.7499	1.131	120	-.4497	0.000		.5875	.30	0.00
12	.161	70	-.9271	.331	180	-.5282	.431	100	-.7472	1.131	110	-.4548	0.000		.3780	.40	0.00
13	.161	60	-.9311	.331	170	-.5173	.431	90	-.6862	1.131	100	-.4500	0.000		.2488	.45	0.00
14	.161	50	-1.0496	.331	160	-.6087	.431	80	-.6264	1.131	90	-.4060	0.000		1.0007	0.00	.10
15	.161	40	-1.0655	.331	150	-.6576	.431	70	-.5252	1.131	80	-.3903	0.000		.9311	0.00	.20
16	.161	30	-.9474	.331	140	-.6914	.431	60	-.4150	1.131	70	-.3409	0.000		.7859	0.00	.30
17	.161	20	-.7932	.331	130	-.6761	.431	50	-.2661	1.131	60	-.2542	0.000		.5054	0.00	.40
18	.161	10	-.7098	.331	120	-.7182	.431	40	-.1963	1.131	50	-.1966	0.000		.4795	0.00	.45
19	.161	0	-.7033	.331	110	-.7531	.431	30	-.1343	1.131	40	-.1253	.161	270	-.8762		
20	.231	180	-.5036	.331	100	-.7509	.431	20	-.1043	1.131	30	-.0808	.231	270	-.7941		
21	.231	170	-.5145	.331	90	-.7992	.431	10	-.0737	1.131	20	-.0392	.331	270	-.7799		
22	.231	160	-.5631	.331	80	-.7656	.431	0	-.0607	1.131	10	-.0013	.431	270	-.7430		
23	.231	150	-.5848	.331	70	-.6693	.531	180	-.6027	1.131	0	.0032	.531	270	-.6314		
24	.231	140	-.6340	.331	60	-.5470	.531	90	-.6231				.731	270	-.5112		
25	.231	130	-.6709	.331	50	-.4090	.531	0	-.0331	1.631	90	-.3542	.931	270	-.4530		
26	.231	120	-.6935	.331	40	-.2774	.731	180	-.6330	1.631	0	-.2469	1.131	270	-.4420		
27	.231	110	-.7361	.331	30	-.1964	.731	90	-.5029	2.131	180	-.0268	1.631	270	-.3513		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 94 ALPHA 18 MACH .608 Q 429.807 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5051	.231	100	-.7729	.331	20	-.0803	.731	0	.0259	2.131	90	-.2712		
2	.161	170	-.5000	.231	90	-.7041	.331	10	-.0690	.931	180	-.2590	2.131	0	.0657		
3	.161	160	-.5489	.231	80	-.7718	.331	0	-.0549	.931	90	-.4987	0.000		.7052	-.45	0.00
4	.161	150	-.5825	.231	70	-.7475	.431	180	-.5634	.931	0	-.4338	0.000		.9273	-.40	0.00
5	.161	140	-.6417	.231	60	-.7494	.431	170	-.5764	1.131	180	-.4954	0.000		1.0891	-.30	0.00
6	.161	130	-.7262	.231	50	-.6703	.431	160	-.6602	1.131	170	-.4938	0.000		1.1118	-.20	0.00
7	.161	120	-.6865	.231	40	-.4858	.431	150	-.6381	1.131	160	-.5211	0.000		1.0725	-.10	0.00
8	.161	110	-.7333	.231	30	-.3237	.431	140	-.6845	1.131	150	-.5575	0.000		.9897	0.00	0.00
9	.161	100	-.8017	.231	20	-.2449	.431	130	-.7200	1.131	140	-.4620	0.000		.8868	.10	0.00
10	.161	90	-.7569	.231	10	-.2100	.431	120	-.7090	1.131	130	-.5236	0.000		.7606	.20	0.00
11	.161	80	-.8191	.231	0	-.1955	.431	110	-.7095	1.131	120	-.5011	0.000		.5692	.30	0.00
12	.161	70	-.8870	.331	180	-.5445	.431	100	-.7239	1.131	110	-.5278	0.000		.3386	.40	0.00
13	.161	60	-.9255	.331	170	-.5589	.431	90	-.6974	1.131	100	-.5257	0.000		.2035	.45	0.00
14	.161	50	-.9361	.331	160	-.5663	.431	80	-.6087	1.131	90	-.5014	0.000		.9805	0.00	.10
15	.161	40	-.9282	.331	150	-.6462	.431	70	-.4976	1.131	80	-.4572	0.000		.9147	0.00	.20
16	.161	30	-.7683	.331	140	-.6449	.431	60	-.3559	1.131	70	-.3908	0.000		.7824	0.00	.30
17	.161	20	-.6662	.331	130	-.6776	.431	50	-.2437	1.131	60	-.3108	0.000		.5071	0.00	.40
18	.161	10	-.6406	.331	120	-.7046	.431	40	-.1825	1.131	50	-.2283	0.000		.4730	0.00	.45
19	.161	0	-.6211	.331	110	-.6929	.431	30	-.1067	1.131	40	-.1417	.161	270	-.7401		
20	.231	180	-.4932	.331	100	-.7027	.431	20	-.0676	1.131	30	-.0759	.231	270	-.7386		
21	.231	170	-.5326	.331	90	-.7431	.431	10	-.0279	1.131	20	-.0226	.331	270	-.7284		
22	.231	160	-.5331	.331	80	-.6667	.431	0	-.0089	1.131	10	.0093	.431	270	-.6620		
23	.231	150	-.6067	.331	70	-.6151	.531	180	-.6095	1.131	0	.0223	.531	270	-.6297		
24	.231	140	-.6483	.331	60	-.4904	.531	90	-.6186				.731	270	-.5344		
25	.231	130	-.7118	.331	50	-.3057	.531	0	.0066	1.631	90	-.4323	.931	270	-.5178		
26	.231	120	-.7099	.331	40	-.2165	.731	180	-.6390	1.631	0	-.2768	1.131	270	-.4926		
27	.231	110	-.7001	.331	30	-.1469	.731	90	-.5486	2.131	180	-.0871	1.631	270	-.4311		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 95 ALPHA 20 MACH .607 Q 429.134 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4859	.231	100	-.6459	.331	20	-.0238	.731	0	.0611	2.131	90	-.2874		
2	.161	170	-.5112	.231	90	-.6899	.331	10	-.0009	.931	180	-.2995	2.131	0	.0973		
3	.161	160	-.5579	.231	80	-.7126	.331	0	.0159	.931	90	-.5335	0.000		.7562	-.45	0.00
4	.161	150	-.6012	.231	70	-.7369	.431	180	-.5710	.931	0	-.4640	0.000		.9777	-.40	0.00
5	.161	140	-.6322	.231	60	-.6943	.431	170	-.5713	1.131	180	-.4895	0.000		1.0870	-.30	0.00
6	.161	130	-.6265	.231	50	-.5284	.431	160	-.5680	1.131	170	-.5484	0.000		1.1049	-.20	0.00
7	.161	120	-.6700	.231	40	-.3560	.431	150	-.6271	1.131	160	-.5806	0.000		1.0541	-.10	0.00
8	.161	110	-.6790	.231	30	-.2371	.431	140	-.6610	1.131	150	-.5645	0.000		.9623	0.00	0.00
9	.161	100	-.6898	.231	20	-.1759	.431	130	-.6668	1.131	140	-.5836	0.000		.8661	.10	0.00
10	.161	90	-.7130	.231	10	-.1275	.431	120	-.6765	1.131	130	-.5454	0.000		.7247	.20	0.00
11	.161	80	-.7494	.231	0	-.1426	.431	110	-.6574	1.131	120	-.5806	0.000		.5116	.30	0.00
12	.161	70	-.8261	.331	180	-.5538	.431	100	-.7052	1.131	110	-.6070	0.000		.3073	.40	0.00
13	.161	60	-.9458	.331	170	-.5733	.431	90	-.6455	1.131	100	-.6076	0.000		.1591	.45	0.00
14	.161	50	-.8884	.331	160	-.5722	.431	80	-.5539	1.131	90	-.5593	0.000		.9521	0.00	.10
15	.161	40	-.7135	.331	150	-.5661	.431	70	-.4396	1.131	80	-.5114	0.000		.8988	0.00	.20
16	.161	30	-.6466	.331	140	-.6014	.431	60	-.3137	1.131	70	-.4236	0.000		.7589	0.00	.30
17	.161	20	-.6265	.331	130	-.6689	.431	50	-.2359	1.131	60	-.3368	0.000		.4749	0.00	.40
18	.161	10	-.5681	.331	120	-.6435	.431	40	-.1522	1.131	50	-.2461	0.000		.4709	0.00	.45
19	.161	0	-.5851	.331	110	-.6664	.431	30	-.0735	1.131	40	-.1441	.161	270	-.7373		
20	.231	180	-.5008	.331	100	-.6615	.431	20	-.0095	1.131	30	-.0566	.231	270	-.6954		
21	.231	170	-.5024	.331	90	-.6328	.431	10	.0270	1.131	20	.0053	.331	270	-.6609		
22	.231	160	-.5359	.331	80	-.6085	.431	0	.0413	1.131	10	.0372	.431	270	-.6261		
23	.231	150	-.5966	.331	70	-.5514	.531	180	-.6226	1.131	0	.0435	.531	270	-.6126		
24	.231	140	-.6180	.331	60	-.3869	.531	90	-.5696				.731	270	-.5439		
25	.231	130	-.6398	.331	50	-.2664	.531	0	.0477	1.631	90	-.5177	.931	270	-.5544		
26	.231	120	-.6447	.331	40	-.1797	.731	180	-.6224	1.631	0	-.2758	1.131	270	-.5544		
27	.231	110	-.6401	.331	30	-.0928	.731	90	-.5337	2.131	180	-.0994	1.631	270	-.5141		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 96 ALPHA 22 MACH .606 Q 430.057 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4720	.231	100	-.6808	.331	20	.6074	.731	0	.0647	2.131	90	-.3353		
2	.161	170	-.4806	.231	90	-.6309	.331	10	.0614	.931	180	-.3263	2.131	0	.0694		
3	.161	160	-.5032	.231	80	-.6279	.331	0	.0821	.931	90	-.5620	0.000		.8115	-.45	0.00
4	.161	150	-.6069	.231	70	-.7285	.431	180	-.6052	.931	0	-.5066	0.000		1.0174	-.40	0.00
5	.161	140	-.6044	.231	60	-.6088	.431	170	-.5829	1.131	180	-.6277	0.000		1.0820	-.30	0.00
6	.161	130	-.6267	.231	50	-.3936	.431	160	-.5923	1.131	170	-.5629	0.000		1.0808	-.20	0.00
7	.161	120	-.6329	.231	40	-.2431	.431	150	-.6306	1.131	160	-.5862	0.000		1.0267	-.10	0.00
8	.161	110	-.6356	.231	30	-.1613	.431	140	-.6422	1.131	150	-.5902	0.000		.9252	0.00	0.00
9	.161	100	-.6959	.231	20	-.1119	.431	130	-.6915	1.131	140	-.5684	0.000		.7958	.10	0.00
10	.161	90	-.6679	.231	10	-.0470	.431	120	-.6344	1.131	130	-.6214	0.000		.6762	.20	0.00
11	.161	80	-.7219	.231	0	-.0307	.431	110	-.6474	1.131	120	-.6156	0.000		.4641	.30	0.00
12	.161	70	-.7024	.331	180	-.5324	.431	100	-.6372	1.131	110	-.6626	0.000		.2520	.40	0.00
13	.161	60	-.8031	.331	170	-.5474	.431	90	-.6028	1.131	100	-.6617	0.000		.1158	.45	0.00
14	.161	50	-.7236	.331	160	-.5769	.431	80	-.5052	1.131	90	-.6253	0.000		.9240	0.00	.10
15	.161	40	-.6272	.331	150	-.6088	.431	70	-.4262	1.131	80	-.5811	0.000		.8419	0.00	.20
16	.161	30	-.6025	.331	140	-.6197	.431	60	-.3675	1.131	70	-.4781	0.000		.7233	0.00	.30
17	.161	20	-.5398	.331	130	-.6156	.431	50	-.2223	1.131	60	-.3827	0.000		.4580	0.00	.40
18	.161	10	-.4926	.331	120	-.6701	.431	40	-.1471	1.131	50	-.2873	0.000		.4106	0.00	.45
19	.161	0	-.4676	.331	110	-.6159	.431	30	-.0361	1.131	40	-.1597	.161	270	-.6883		
20	.231	180	-.5203	.331	100	-.6431	.431	20	.0248	1.131	30	-.0549	.231	270	-.6711		
21	.231	170	-.5141	.331	90	-.6502	.431	10	.0540	1.131	20	.0023	.331	270	-.6711		
22	.231	160	-.5364	.331	80	-.6088	.431	0	.0859	1.131	10	.0668	.431	270	-.6072		
23	.231	150	-.5512	.331	70	-.4931	.531	180	-.5970	1.131	0	.0720	.531	270	-.5750		
24	.231	140	-.6050	.331	60	-.3546	.531	90	-.5639				.731	270	-.5710		
25	.231	130	-.6424	.331	50	-.2570	.531	0	.0686	1.631	90	-.6117	.931	270	-.6315		
26	.231	120	-.6096	.331	40	-.1485	.731	180	-.6744	1.631	0	-.3266	1.131	270	-.6429		
27	.231	110	-.6204	.331	30	-.0574	.731	90	-.5532	2.131	180	-.1640	1.631	270	-.5919		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 97 ALPHA 24 MACH .608 Q 430.059 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5005	.231	100	-.6224	.331	20	.0755	.731	0	.1323	2.131	90	-.3298		
2	.161	170	-.5336	.231	90	-.6797	.331	10	.0980	.931	180	-.3581	2.131	0	.1223		
3	.161	160	-.5542	.231	80	-.6347	.331	0	.1239	.931	90	-.6026	0.000		.8493	-.45	0.00
4	.161	150	-.5433	.231	70	-.6499	.431	180	-.5537	.931	0	-.5205	0.000		1.0629	-.40	0.00
5	.161	140	-.6180	.231	60	-.5259	.431	170	-.5843	1.131	180	-.6265	0.000		1.0934	-.30	0.00
6	.161	130	-.5862	.231	50	-.2995	.431	160	-.5843	1.131	170	-.5896	0.000		1.0666	-.20	0.00
7	.161	120	-.5795	.231	40	-.1880	.431	150	-.5648	1.131	160	-.5917	0.000		1.0033	-.10	0.00
8	.161	110	-.6587	.231	30	-.0726	.431	140	-.6529	1.131	150	-.5665	0.000		.9068	0.00	0.00
9	.161	100	-.6473	.231	20	-.0097	.431	130	-.6284	1.131	140	-.6208	0.000		.7832	.10	0.00
10	.161	90	-.6204	.231	10	.0506	.431	120	-.5909	1.131	130	-.6405	0.000		.6338	.20	0.00
11	.161	80	-.7179	.231	0	.0637	.431	110	-.6127	1.131	120	-.6544	0.000		.4245	.30	0.00
12	.161	70	-.6232	.331	180	-.5395	.431	100	-.6265	1.131	110	-.7098	0.000		.2434	.40	0.00
13	.161	60	-.7434	.331	170	-.5223	.431	90	-.5741	1.131	100	-.7092	0.000		.0694	.45	0.00
14	.161	50	-.5966	.331	160	-.5586	.431	80	-.4628	1.131	90	-.6665	0.000		.8896	0.00	.10
15	.161	40	-.5675	.331	150	-.5706	.431	70	-.4077	1.131	80	-.6298	0.000		.8333	0.00	.20
16	.161	30	-.5127	.331	140	-.5668	.431	60	-.2907	1.131	70	-.4954	0.000		.7116	0.00	.30
17	.161	20	-.4044	.331	130	-.5763	.431	50	-.1874	1.131	60	-.3815	0.000		.4681	0.00	.40
18	.161	10	-.3404	.331	120	-.5695	.431	40	-.1022	1.131	50	-.2754	0.000		.4118	0.00	.45
19	.161	0	-.3189	.331	110	-.6336	.431	30	-.0094	1.131	40	-.1567	.161	270	-.6723		
20	.231	180	-.4533	.331	100	-.5280	.431	20	.1044	1.131	30	-.0207	.231	270	-.5593		
21	.231	170	-.5073	.331	90	-.5687	.431	10	.1228	1.131	20	.0474	.331	270	-.5980		
22	.231	160	-.5263	.331	80	-.5711	.431	0	.1461	1.131	10	.1008	.431	270	-.5617		
23	.231	150	-.5667	.331	70	-.4329	.531	180	-.5810	1.131	0	.1238	.531	270	-.5160		
24	.231	140	-.5423	.331	60	-.3143	.531	90	-.5052				.731	270	-.5547		
25	.231	130	-.5548	.331	50	-.1441	.531	0	.1339	1.631	90	-.6686	.931	270	-.6349		
26	.231	120	-.5941	.331	40	-.0950	.731	180	-.6347	1.631	0	-.3251	1.131	270	-.6859		
27	.231	110	-.6839	.331	30	-.0293	.731	90	-.6251	2.131	180	-.2327	1.631	270	-.6905		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 98 ALPHA 26 MACH .607 Q 429.389 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5206	.231	100	-.6423	.331	20	.1299	.731	0	.1800	2.131	90	-.3500		
2	.161	170	-.4798	.231	90	-.5773	.331	10	.1873	.931	180	-.3339	2.131	0	.1997		
3	.161	160	-.5636	.231	80	-.6933	.331	0	.1748	.931	90	-.6861	0.000		.9057	-.45	0.00
4	.161	150	-.5812	.231	70	-.6196	.431	180	-.5960	.931	0	-.5620	0.000		1.0932	-.40	0.00
5	.161	140	-.6052	.231	60	-.3937	.431	170	-.5883	1.131	180	-.5896	0.000		1.1123	-.30	0.00
6	.161	130	-.6024	.231	50	-.2326	.431	160	-.6021	1.131	170	-.6348	0.000		1.0476	-.20	0.00
7	.161	120	-.5641	.231	40	-.1064	.431	150	-.5370	1.131	160	-.6175	0.000		.9608	-.10	0.00
8	.161	110	-.5940	.231	30	.0078	.431	140	-.5886	1.131	150	-.6045	0.000		.8697	0.00	0.00
9	.161	100	-.6307	.231	20	.0933	.431	130	-.5974	1.131	140	-.5702	0.000		.7406	.10	0.00
10	.161	90	-.6775	.231	10	.1258	.431	120	-.5980	1.131	130	-.6348	0.000		.5962	.20	0.00
11	.161	80	-.7538	.231	0	.1449	.431	110	-.6297	1.131	120	-.6891	0.000		.3629	.30	0.00
12	.161	70	-.7767	.331	180	-.5412	.431	100	-.5916	1.131	110	-.7407	0.000		.2264	.40	0.00
13	.161	60	-.6481	.331	170	-.5035	.431	90	-.5246	1.131	100	-.7296	0.000		.0424	.45	0.00
14	.161	50	-.5976	.331	160	-.5961	.431	80	-.4926	1.131	90	-.7210	0.000		.8607	0.00	.10
15	.161	40	-.5383	.331	150	-.6387	.431	70	-.4264	1.131	80	-.6822	0.000		.7945	0.00	.20
16	.161	30	-.3896	.331	140	-.5683	.431	60	-.2912	1.131	70	-.5520	0.000		.6717	0.00	.30
17	.161	20	-.2673	.331	130	-.5988	.431	50	-.1678	1.131	60	-.4173	0.000		.4494	0.00	.40
18	.161	10	-.1988	.331	120	-.6180	.431	40	-.0762	1.131	50	-.2987	0.000		.3786	0.00	.45
19	.161	0	-.1996	.331	110	-.5784	.431	30	.0446	1.131	40	-.1373	.161	270	-.5916		
20	.231	180	-.5521	.331	100	-.6477	.431	20	.1172	1.131	30	-.0178	.231	270	-.6793		
21	.231	170	-.5807	.331	90	-.6169	.431	10	.1663	1.131	20	.0720	.331	270	-.6282		
22	.231	160	-.5551	.331	80	-.5396	.431	0	.1834	1.131	10	.1188	.431	270	-.5682		
23	.231	150	-.5011	.331	70	-.4090	.531	180	-.6004	1.131	0	.1640	.531	270	-.5248		
24	.231	140	-.6062	.331	60	-.3132	.531	90	-.5511				.731	270	-.5910		
25	.231	130	-.5907	.331	50	-.1687	.531	0	.1770	1.631	90	-.7337	.931	270	-.6913		
26	.231	120	-.5093	.331	40	-.0545	.731	180	-.5982	1.631	0	-.3406	1.131	270	-.7233		
27	.231	110	-.6432	.331	30	.0343	.731	90	-.6165	2.131	180	-.3078	1.631	270	-.7005		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 99 ALPHA 0 MACH .607 Q 428.620 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5143	.231	100	-.4922	.331	20	-.4996	.731	0	-.5388	2.131	90	-.1377		
2	.161	170	-.4848	.231	90	-.4922	.331	10	-.5065	.931	180	-.1315	2.131	0	.0365		
3	.161	160	-.4681	.231	80	-.4881	.331	0	-.5228	.931	90	-.5515	0.000		.6019	-.45	0.00
4	.161	150	-.4843	.231	70	-.5034	.431	180	-.5029	.931	0	-.5458	0.000		.6337	-.40	0.00
5	.161	140	-.4838	.231	60	-.4960	.431	170	-.5192	1.131	180	-.5205	0.000		.8980	-.30	0.00
6	.161	130	-.4911	.231	50	-.4643	.431	160	-.5170	1.131	170	-.4898	0.000		1.0300	-.20	0.00
7	.161	120	-.4780	.231	40	-.4960	.431	150	-.5015	1.131	160	-.5066	0.000		1.0898	-.10	0.00
8	.161	110	-.4870	.231	30	-.4897	.431	140	-.5105	1.131	150	-.4868	0.000		1.1074	0.00	0.00
9	.161	100	-.5001	.231	20	-.4960	.431	130	-.5187	1.131	140	-.5287	0.000		1.0914	.10	0.00
10	.161	90	-.4968	.231	10	-.5075	.431	120	-.5339	1.131	130	-.5293	0.000		1.0251	.20	0.00
11	.161	80	-.4690	.231	0	-.4755	.431	110	-.4902	1.131	120	-.5069	0.000		.9001	.30	0.00
12	.161	70	-.4699	.331	180	-.5097	.431	100	-.4825	1.131	110	-.5224	0.000		.6369	.40	0.00
13	.161	60	-.4704	.331	170	-.4774	.431	90	-.4860	1.131	100	-.5035	0.000		.5701	.45	0.00
14	.161	50	-.4957	.331	160	-.4815	.431	80	-.5129	1.131	90	-.5190	0.000		1.0803	0.00	.10
15	.161	40	-.4663	.331	150	-.5067	.431	70	-.4907	1.131	80	-.5193	0.000		1.0265	0.00	.20
16	.161	30	-.4772	.331	140	-.4949	.431	60	-.4913	1.131	70	-.5281	0.000		.8875	0.00	.30
17	.161	20	-.4911	.331	130	-.5004	.431	50	-.5129	1.131	60	-.5263	0.000		.6330	0.00	.40
18	.161	10	-.4990	.331	120	-.4979	.431	40	-.5203	1.131	50	-.5193	0.000		.5988	0.00	.45
19	.161	0	-.4848	.331	110	-.5001	.431	30	-.5040	1.131	40	-.5214	.161	270	-.4916		
20	.231	180	-.4421	.331	100	-.4853	.431	20	-.4996	1.131	30	-.5126	.231	270	-.4937		
21	.231	170	-.4832	.331	90	-.5012	.431	10	-.5123	1.131	20	-.5230	.331	270	-.4971		
22	.231	160	-.5031	.331	80	-.4790	.431	0	-.4996	1.131	10	-.5075	.431	270	-.5002		
23	.231	150	-.4949	.331	70	-.4922	.531	180	-.5198	1.131	0	-.5114	.531	270	-.5341		
24	.231	140	-.4889	.331	60	-.4886	.531	90	-.5062				.731	270	-.5421		
25	.231	130	-.4895	.331	50	-.4851	.531	0	-.5118	1.631	90	-.2063	.931	270	-.5489		
26	.231	120	-.4911	.331	40	-.5015	.731	180	-.5532	1.631	0	-.1285	1.131	270	-.5122		
27	.231	110	-.5192	.331	30	-.5141	.731	90	-.5612	2.131	180	.0511	1.631	270	-.1741		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 131 ALPHA -1 MACH .713 Q 542.228 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4995	.231	100	-.4942	.331	20	-.4506	.731	0	-.4890	2.131	90	-.1241		
2	.161	170	-.5150	.231	90	-.4886	.331	10	-.4613	.931	180	-.1373	2.131	0	-.1053		
3	.161	160	-.5031	.231	80	-.4972	.331	0	-.4497	.931	90	-.5428	0.000		.6547	-.45	0.00
4	.161	150	-.4965	.231	70	-.4635	.431	180	-.5013	.931	0	-.4626	0.000		.6781	-.40	0.00
5	.161	140	-.5072	.231	60	-.4678	.431	170	-.5196	1.131	180	-.5399	0.000		.9138	-.30	0.00
6	.161	130	-.4904	.231	50	-.4641	.431	160	-.5129	1.131	170	-.5315	0.000		1.0550	-.20	0.00
7	.161	120	-.4967	.231	40	-.4737	.431	150	-.5094	1.131	160	-.5430	0.000		1.1177	-.10	0.00
8	.161	110	-.4874	.231	30	-.4319	.431	140	-.5170	1.131	150	-.5421	0.000		1.1471	0.00	0.00
9	.161	100	-.4784	.231	20	-.4423	.431	130	-.5105	1.131	140	-.5351	0.000		1.1269	.10	0.00
10	.161	90	-.4730	.231	10	-.4408	.431	120	-.5124	1.131	130	-.5375	0.000		1.0672	.20	0.00
11	.161	80	-.4968	.231	0	-.4332	.431	110	-.5050	1.131	120	-.5380	0.000		.9433	.30	0.00
12	.161	70	-.4754	.331	180	-.5119	.431	100	-.5146	1.131	110	-.5390	0.000		.6988	.40	0.00
13	.161	60	-.4736	.331	170	-.5102	.431	90	-.5035	1.131	100	-.5368	0.000		.6313	.45	0.00
14	.161	50	-.4482	.331	160	-.5169	.431	80	-.4823	1.131	90	-.5303	0.000		1.1213	0.00	.10
15	.161	40	-.4633	.331	150	-.5119	.431	70	-.4873	1.131	80	-.5423	0.000		1.0637	0.00	.20
16	.161	30	-.4383	.331	140	-.5042	.431	60	-.4685	1.131	70	-.5291	0.000		.9316	0.00	.30
17	.161	20	-.4534	.331	130	-.5029	.431	50	-.4773	1.131	60	-.5178	0.000		.6906	0.00	.40
18	.161	10	-.4448	.331	120	-.5031	.431	40	-.4602	1.131	50	-.5183	0.000		.6672	0.00	.45
19	.161	0	-.4627	.331	110	-.5029	.431	30	-.4816	1.131	40	-.5130	.161	270	-.4911		
20	.231	180	-.5165	.331	100	-.4949	.431	20	-.4543	1.131	30	-.5159	.231	270	-.4904		
21	.231	170	-.5176	.331	90	-.4892	.431	10	-.4572	1.131	20	-.5046	.331	270	-.4940		
22	.231	160	-.5029	.331	80	-.4750	.431	0	-.4620	1.131	10	-.5121	.431	270	-.4979		
23	.231	150	-.5027	.331	70	-.4756	.531	180	-.5098	1.131	0	-.5140	.531	270	-.4979		
24	.231	140	-.5049	.331	60	-.4860	.531	90	-.5085				.731	270	-.5374		
25	.231	130	-.4978	.331	50	-.4678	.531	0	-.4663	1.631	90	-.3227	.931	270	-.5435		
26	.231	120	-.4846	.331	40	-.4496	.731	180	-.5290	1.631	0	-.1209	1.131	270	-.5262		
27	.231	110	-.4861	.331	30	-.4553	.731	90	-.5059	2.131	180	.0100	1.631	270	-.3086		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 141 ALPHA 0 MACH .713 Q 542.467 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4368	.231	100	-.4632	.331	20	-.4513	.731	0	-.4909	2.131	90	-.1096		
2	.161	170	-.4605	.231	90	-.4751	.331	10	-.4606	.931	180	-.1225	2.131	0	-.0599		
3	.161	160	-.4635	.231	80	-.4697	.331	0	-.4674	.931	90	-.5140	0.000		.6610	-.45	0.00
4	.161	150	-.4702	.231	70	-.4598	.431	180	-.4871	.931	0	-.4895	0.000		.6852	-.40	0.00
5	.161	140	-.4613	.231	60	-.4654	.431	170	-.4833	1.131	180	-.5156	0.000		.9327	-.30	0.00
6	.161	130	-.4467	.231	50	-.4680	.431	160	-.4663	1.131	170	-.5125	0.000		1.0689	-.20	0.00
7	.161	120	-.4521	.231	40	-.4650	.431	150	-.4678	1.131	160	-.5101	0.000		1.1250	-.10	0.00
8	.161	110	-.4551	.231	30	-.4706	.431	140	-.4820	1.131	150	-.5166	0.000		1.1491	0.00	0.00
9	.161	100	-.4665	.231	20	-.4736	.431	130	-.4857	1.131	140	-.5104	0.000		1.1288	.10	0.00
10	.161	90	-.4588	.231	10	-.4594	.431	120	-.4766	1.131	130	-.5207	0.000		1.0665	.20	0.00
11	.161	80	-.4766	.231	0	-.4784	.431	110	-.5045	1.131	120	-.5324	0.000		.9334	.30	0.00
12	.161	70	-.4751	.331	180	-.4827	.431	100	-.4864	1.131	110	-.5348	0.000		.6961	.40	0.00
13	.161	60	-.4530	.331	170	-.4907	.431	90	-.4785	1.131	100	-.5089	0.000		.6299	.45	0.00
14	.161	50	-.4738	.331	160	-.5000	.431	80	-.4940	1.131	90	-.5300	0.000		1.1298	0.00	.10
15	.161	40	-.4624	.331	150	-.4764	.431	70	-.4853	1.131	80	-.5128	0.000		1.0604	0.00	.20
16	.161	30	-.4637	.331	140	-.4808	.431	60	-.4794	1.131	70	-.5322	0.000		.9274	0.00	.30
17	.161	20	-.4394	.331	130	-.4838	.431	50	-.4637	1.131	60	-.5070	0.000		.6942	0.00	.40
18	.161	10	-.4474	.331	120	-.4535	.431	40	-.4637	1.131	50	-.5077	0.000		.6720	0.00	.45
19	.161	0	-.4538	.331	110	-.4581	.431	30	-.4665	1.131	40	-.5120	.161	270	-.4770		
20	.231	180	-.4766	.331	100	-.4743	.431	20	-.4755	1.131	30	-.5288	.231	270	-.4706		
21	.231	170	-.4969	.331	90	-.4834	.431	10	-.4681	1.131	20	-.5087	.331	270	-.4733		
22	.231	160	-.4786	.331	80	-.4831	.431	0	-.4766	1.131	10	-.5224	.431	270	-.4762		
23	.231	150	-.4652	.331	70	-.4728	.531	180	-.4775	1.131	0	-.5108	.531	270	-.4772		
24	.231	140	-.4855	.331	60	-.4849	.531	90	-.5050				.731	270	-.5145		
25	.231	130	-.4667	.331	50	-.4706	.531	0	-.4661	1.631	90	-.3411	.931	270	-.5237		
26	.231	120	-.4678	.331	40	-.4555	.731	180	-.5053	1.631	0	-.1206	1.131	270	-.5194		
27	.231	110	-.4495	.331	30	-.4894	.731	90	-.5069	2.131	180	-.0378	1.631	270	-.3150		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 145 ALPHA 2 MACH .712 J 541.513 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4285	.231	100	-.5002	.331	20	-.5329	.731	0	-.5696	2.131	90	-.1133		
2	.161	170	-.4052	.231	90	-.5049	.331	10	-.5517	.931	180	-.1231	2.131	0	.0279		
3	.161	160	-.4125	.231	80	-.5181	.331	0	-.5438	.931	90	-.5521	0.000		.6601	-.45	0.00
4	.161	150	-.4261	.231	70	-.5043	.431	180	-.4356	.931	0	-.5092	0.000		.6975	-.40	0.00
5	.161	140	-.4375	.231	60	-.5275	.431	170	-.4531	1.131	180	-.5102	0.000		.9452	-.30	0.00
6	.161	130	-.4796	.231	50	-.5457	.431	160	-.4826	1.131	170	-.5203	0.000		1.0658	-.20	0.00
7	.161	120	-.4634	.231	40	-.5067	.431	150	-.4555	1.131	160	-.5025	0.000		1.1312	-.10	0.00
8	.161	110	-.4750	.231	30	-.5160	.431	140	-.4771	1.131	150	-.5095	0.000		1.1395	0.00	0.00
9	.161	100	-.4789	.231	20	-.5272	.431	130	-.4780	1.131	140	-.4984	0.000		1.1148	.10	0.00
10	.161	90	-.4843	.231	10	-.5298	.431	120	-.4697	1.131	130	-.5032	0.000		1.0453	.20	0.00
11	.161	80	-.5039	.231	0	-.5348	.431	110	-.4992	1.131	120	-.5263	0.000		.9008	.30	0.00
12	.161	70	-.5136	.331	180	-.4462	.431	100	-.5071	1.131	110	-.5367	0.000		.6926	.40	0.00
13	.161	60	-.5166	.331	170	-.4506	.431	90	-.5150	1.131	100	-.5395	0.000		.6076	.45	0.00
14	.161	50	-.5300	.331	160	-.4441	.431	80	-.5233	1.131	90	-.5321	0.000		1.1199	0.00	.10
15	.161	40	-.5108	.331	150	-.4698	.431	70	-.5167	1.131	80	-.5290	0.000		1.0575	0.00	.20
16	.161	30	-.5337	.331	140	-.4610	.431	60	-.5362	1.131	70	-.5242	0.000		.9230	0.00	.30
17	.161	20	-.5365	.331	130	-.4722	.431	50	-.5487	1.131	60	-.5333	0.000		.6728	0.00	.40
18	.161	10	-.5354	.331	120	-.4900	.431	40	-.5456	1.131	50	-.5410	0.000		.6523	0.00	.45
19	.161	0	-.5304	.331	110	-.4885	.431	30	-.5375	1.131	40	-.5340	.161	270	-.5253		
20	.231	180	-.4487	.331	100	-.5212	.431	20	-.5613	1.131	30	-.5391	.231	270	-.5212		
21	.231	170	-.4125	.331	90	-.5000	.431	10	-.5390	1.131	20	-.5395	.331	270	-.5009		
22	.231	160	-.4315	.331	80	-.5158	.431	0	-.5583	1.131	10	-.5294	.431	270	-.5190		
23	.231	150	-.4190	.331	70	-.5142	.531	180	-.4585	1.131	0	-.5210	.531	270	-.5260		
24	.231	140	-.4492	.331	60	-.5383	.531	90	-.5318				.731	270	-.5487		
25	.231	130	-.4696	.331	50	-.5190	.531	0	-.5410	1.631	90	-.2997	.931	270	-.5629		
26	.231	120	-.4817	.331	40	-.5376	.731	180	-.5029	1.631	0	-.1222	1.131	270	-.5365		
27	.231	110	-.4858	.331	30	-.5374	.731	90	-.5419	2.131	180	-.1044	1.631	270	-.3071		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 145 ALPHA 4 MACH .713 J 542.556 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4361	.231	100	-.5468	.331	20	-.6079	.731	0	-.6344	2.131	90	-.1405		
2	.161	170	-.4141	.231	90	-.5762	.331	10	-.6177	.931	180	-.1419	2.131	0	.0509		
3	.161	160	-.4103	.231	80	-.5769	.331	0	-.6238	.931	90	-.5799	0.000		.6673	-.45	0.00
4	.161	150	-.4423	.231	70	-.5985	.431	180	-.4453	.931	0	-.5285	0.000		.7170	-.40	0.00
5	.161	140	-.4714	.231	60	-.5957	.431	170	-.4603	1.131	180	-.4927	0.000		.9808	-.30	0.00
6	.161	130	-.5049	.231	50	-.6117	.431	160	-.4824	1.131	170	-.5179	0.000		1.0951	-.20	0.00
7	.161	120	-.5161	.231	40	-.5983	.431	150	-.4776	1.131	160	-.5112	0.000		1.1374	-.10	0.00
8	.161	110	-.5415	.231	30	-.6145	.431	140	-.5219	1.131	150	-.5194	0.000		1.1370	0.00	0.00
9	.161	100	-.5596	.231	20	-.6030	.431	130	-.5193	1.131	140	-.5252	0.000		1.0965	.10	0.00
10	.161	90	-.5602	.231	10	-.5976	.431	120	-.5291	1.131	130	-.5276	0.000		1.0190	.20	0.00
11	.161	80	-.5723	.231	0	-.6087	.431	110	-.5431	1.131	120	-.5338	0.000		.8792	.30	0.00
12	.161	70	-.5839	.331	180	-.4526	.431	100	-.5599	1.131	110	-.5535	0.000		.6395	.40	0.00
13	.161	60	-.5968	.331	170	-.4457	.431	90	-.5828	1.131	100	-.5468	0.000		.5971	.45	0.00
14	.161	50	-.5796	.331	160	-.4407	.431	80	-.5691	1.131	90	-.5300	0.000		1.1189	0.00	.10
15	.161	40	-.5947	.331	150	-.4699	.431	70	-.5904	1.131	80	-.5199	0.000		1.0549	0.00	.20
16	.161	30	-.6018	.331	140	-.4928	.431	60	-.6031	1.131	70	-.5098	0.000		.9170	0.00	.30
17	.161	20	-.6168	.331	130	-.5120	.431	50	-.6271	1.131	60	-.4572	0.000		.6645	0.00	.40
18	.161	10	-.6005	.331	120	-.5166	.431	40	-.6038	1.131	50	-.4882	0.000		.6497	0.00	.45
19	.161	0	-.6160	.331	110	-.5380	.431	30	-.6129	1.131	40	-.4133	.161	270	-.5673		
20	.231	180	-.4234	.331	100	-.5594	.431	20	-.6121	1.131	30	-.4368	.231	270	-.5763		
21	.231	170	-.4232	.331	90	-.5704	.431	10	-.6158	1.131	20	-.3765	.331	270	-.5687		
22	.231	160	-.4419	.331	80	-.5762	.431	0	-.6110	1.131	10	-.4243	.431	270	-.5741		
23	.231	150	-.4533	.331	70	-.5927	.531	180	-.4885	1.131	0	-.3924	.531	270	-.5884		
24	.231	140	-.4589	.331	60	-.6011	.531	90	-.5822				.731	270	-.6109		
25	.231	130	-.4976	.331	50	-.5922	.531	0	-.6221	1.631	90	-.1804	.931	270	-.6001		
26	.231	120	-.5161	.331	40	-.6212	.731	180	-.5151	1.631	0	-.1374	1.131	270	-.5249		
27	.231	110	-.5265	.331	30	-.6011	.731	90	-.5880	2.131	180	-.0778	1.631	270	-.1651		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 146 ALPHA 6 MACH .714 Q 543.359 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4471	.231	100	-.6374	.331	20	-.7111	.731	0	-.6108	2.131	90	-.1609		
2	.161	170	-.4158	.231	90	-.6441	.331	10	-.7013	.931	180	-.1435	2.131	0	.0165		
3	.161	160	-.4420	.231	80	-.6605	.331	0	-.7196	.931	90	-.5818	0.000		.6839	-.45	0.00
4	.161	150	-.4807	.231	70	-.6705	.431	180	-.4829	.931	0	-.5298	0.000		.7479	-.40	0.00
5	.161	140	-.5161	.231	60	-.6698	.431	170	-.4931	1.131	180	-.5178	0.000		1.0367	-.30	0.00
6	.161	130	-.5574	.231	50	-.6675	.431	160	-.5038	1.131	170	-.5010	0.000		1.1094	-.20	0.00
7	.161	120	-.5858	.231	40	-.6776	.431	150	-.5208	1.131	160	-.5211	0.000		1.1441	-.10	0.00
8	.161	110	-.6173	.231	30	-.6946	.431	140	-.5544	1.131	150	-.5259	0.000		1.1291	0.00	0.00
9	.161	100	-.6493	.231	20	-.7059	.431	130	-.5932	1.131	140	-.5178	0.000		1.0870	.10	0.00
10	.161	90	-.6603	.231	10	-.6918	.431	120	-.5975	1.131	130	-.5660	0.000		1.0091	.20	0.00
11	.161	80	-.6742	.231	0	-.6985	.431	110	-.6228	1.131	120	-.5382	0.000		.8428	.30	0.00
12	.161	70	-.6680	.331	180	-.4680	.431	100	-.6365	1.131	110	-.5130	0.000		.6165	.40	0.00
13	.161	60	-.6631	.331	170	-.4518	.431	90	-.6309	1.131	100	-.4718	0.000		.5732	.45	0.00
14	.161	50	-.6873	.331	160	-.4824	.431	80	-.6716	1.131	90	-.4351	0.000		1.1133	0.00	.10
15	.161	40	-.6843	.331	150	-.5291	.431	70	-.6738	1.131	80	-.3845	0.000		1.0500	0.00	.20
16	.161	30	-.6796	.331	140	-.5187	.431	60	-.6777	1.131	70	-.3332	0.000		.9206	0.00	.30
17	.161	20	-.6852	.331	130	-.5526	.431	50	-.6915	1.131	60	-.2903	0.000		.6418	0.00	.40
18	.161	10	-.6989	.331	120	-.5819	.431	40	-.7117	1.131	50	-.2320	0.000		.6367	0.00	.45
19	.161	0	-.6755	.331	110	-.6022	.431	30	-.7013	1.131	40	-.2073	.161	270	-.6205		
20	.231	180	-.4351	.331	100	-.6182	.431	20	-.7052	1.131	30	-.1869	.231	270	-.6315		
21	.231	170	-.4392	.331	90	-.6558	.431	10	-.7185	1.131	20	-.1407	.331	270	-.6383		
22	.231	160	-.4489	.331	80	-.6592	.431	0	-.7231	1.131	10	-.1495	.431	270	-.6432		
23	.231	150	-.4781	.331	70	-.6655	.531	180	-.5051	1.131	0	-.1493	.531	270	-.6458		
24	.231	140	-.5159	.331	60	-.6700	.531	90	-.6503				.731	270	-.6602		
25	.231	130	-.5619	.331	50	-.6843	.531	0	-.7096	1.631	90	-.1100	.931	270	-.5940		
26	.231	120	-.5752	.331	40	-.6771	.731	180	-.5352	1.631	0	-.1440	1.131	270	-.4335		
27	.231	110	-.6272	.331	30	-.6875	.731	90	-.6729	2.131	180	-.0726	1.631	270	-.1219		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 148 ALPHA 8 MACH .713 Q 542.010 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4592	.231	100	-.6838	.331	20	-.7889	.731	0	-.4087	2.131	90	-.1734		
2	.161	170	-.4351	.231	90	-.7145	.331	10	-.8055	.931	180	-.1686	2.131	0	.0082		
3	.161	160	-.4685	.231	80	-.7096	.331	0	-.7950	.931	90	-.5070	0.000		.6839	-.45	0.00
4	.161	150	-.5081	.231	70	-.7427	.431	180	-.5039	.931	0	-.5106	0.000		.7781	-.40	0.00
5	.161	140	-.5736	.231	60	-.7407	.431	170	-.5225	1.131	180	-.4736	0.000		1.0188	-.30	0.00
6	.161	130	-.5934	.231	50	-.7383	.431	160	-.5284	1.131	170	-.4998	0.000		1.1136	-.20	0.00
7	.161	120	-.6565	.231	40	-.7660	.431	150	-.5811	1.131	160	-.5053	0.000		1.1348	-.10	0.00
8	.161	110	-.6834	.231	30	-.7825	.431	140	-.6069	1.131	150	-.5361	0.000		1.1243	0.00	0.00
9	.161	100	-.6692	.231	20	-.7608	.431	130	-.6101	1.131	140	-.5089	0.000		1.0729	.10	0.00
10	.161	90	-.7177	.231	10	-.7926	.431	120	-.6460	1.131	130	-.5212	0.000		.9693	.20	0.00
11	.161	80	-.7112	.231	0	-.7872	.431	110	-.6565	1.131	120	-.4928	0.000		.8132	.30	0.00
12	.161	70	-.7381	.331	180	-.4709	.431	100	-.6906	1.131	110	-.4554	0.000		.5767	.40	0.00
13	.161	60	-.7246	.331	170	-.4793	.431	90	-.6917	1.131	100	-.4092	0.000		.5169	.45	0.00
14	.161	50	-.7397	.331	160	-.5094	.431	80	-.7170	1.131	90	-.3275	0.000		1.1068	0.00	.10
15	.161	40	-.7493	.331	150	-.5280	.431	70	-.7347	1.131	80	-.2816	0.000		1.0395	0.00	.20
16	.161	30	-.7612	.331	140	-.5680	.431	60	-.7509	1.131	70	-.2287	0.000		.9005	0.00	.30
17	.161	20	-.7590	.331	130	-.5992	.431	50	-.7596	1.131	60	-.1838	0.000		.6130	0.00	.40
18	.161	10	-.7735	.331	120	-.6381	.431	40	-.7775	1.131	50	-.1624	0.000		.6162	0.00	.45
19	.161	0	-.7601	.331	110	-.6613	.431	30	-.7839	1.131	40	-.0828	.161	270	-.7096		
20	.231	180	-.4455	.331	100	-.6678	.431	20	-.7850	1.131	30	-.0465	.231	270	-.6937		
21	.231	170	-.4743	.331	90	-.6994	.431	10	-.8016	1.131	20	-.0088	.331	270	-.7037		
22	.231	160	-.4760	.331	80	-.7199	.431	0	-.7885	1.131	10	-.0001	.431	270	-.6952		
23	.231	150	-.5193	.331	70	-.7461	.531	180	-.5407	1.131	0	-.0021	.531	270	-.7198		
24	.231	140	-.5605	.331	60	-.7539	.531	90	-.7177				.731	270	-.6759		
25	.231	130	-.5867	.331	50	-.7461	.531	0	-.7249	1.631	90	-.1220	.931	270	-.5260		
26	.231	120	-.6402	.331	40	-.7743	.731	180	-.5730	1.631	0	-.1732	1.131	270	-.3282		
27	.231	110	-.6677	.331	30	-.7764	.731	90	-.6735	2.131	180	-.0179	1.631	270	-.1154		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 150 ALPHA 10 MACH .713 Q 542.175 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4386	.231	100	-.7011	.331	20	-.8304	.731	0	-.1234	2.131	90	-.1860		
2	.161	170	-.4419	.231	90	-.7420	.331	10	-.8550	.931	180	-.1726	2.131	0	.0019		
3	.161	160	-.4522	.231	80	-.7480	.331	0	-.8398	.931	90	-.4403	0.000		.6994	-.45	0.00
4	.161	150	-.3241	.231	70	-.7673	.431	180	-.5208	.931	0	-.4631	0.000		.8113	-.40	0.00
5	.161	140	-.5573	.231	60	-.7915	.431	170	-.5226	1.131	180	-.4809	0.000		1.0443	-.30	0.00
6	.161	130	-.6214	.231	50	-.8045	.431	160	-.5383	1.131	170	-.4667	0.000		1.1270	-.20	0.00
7	.161	120	-.6938	.231	40	-.8309	.431	150	-.5964	1.131	160	-.5093	0.000		1.1389	-.10	0.00
8	.161	110	-.7123	.231	30	-.8324	.431	140	-.6423	1.131	150	-.5201	0.000		1.1092	0.00	0.00
9	.161	100	-.7172	.231	20	-.8499	.431	130	-.6429	1.131	140	-.5424	0.000		1.0463	.10	0.00
10	.161	90	-.7452	.231	10	-.8668	.431	120	-.6798	1.131	130	-.5232	0.000		.9458	.20	0.00
11	.161	80	-.7547	.231	0	-.8582	.431	110	-.6862	1.131	120	-.4528	0.000		.7693	.30	0.00
12	.161	70	-.7715	.331	180	-.4865	.431	100	-.7052	1.131	110	-.4124	0.000		.5438	.40	0.00
13	.161	60	-.7891	.331	170	-.5081	.431	90	-.7318	1.131	100	-.3576	0.000		.4502	.45	0.00
14	.161	50	-.8232	.331	160	-.5481	.431	80	-.7763	1.131	90	-.3127	0.000		1.0843	0.00	.10
15	.161	40	-.8257	.331	150	-.5581	.431	70	-.7757	1.131	80	-.2796	0.000		1.0319	0.00	.20
16	.161	30	-.8344	.331	140	-.6055	.431	60	-.7683	1.131	70	-.2248	0.000		.8851	0.00	.30
17	.161	20	-.8400	.331	130	-.6466	.431	50	-.7677	1.131	60	-.1570	0.000		.6011	0.00	.40
18	.161	10	-.8208	.331	120	-.6580	.431	40	-.7677	1.131	50	-.1212	0.000		.5916	0.00	.45
19	.161	0	-.8759	.331	110	-.6825	.431	30	-.7550	1.131	40	-.0804	.161	270	-.7652		
20	.231	180	-.4552	.331	100	-.7130	.431	20	-.7508	1.131	30	-.0523	.231	270	-.7515		
21	.231	170	-.4841	.331	90	-.7424	.431	10	-.7301	1.131	20	-.0381	.331	270	-.7405		
22	.231	160	-.5028	.331	80	-.7606	.431	0	-.7432	1.131	10	-.0191	.431	270	-.7386		
23	.231	150	-.5127	.331	70	-.7524	.531	180	-.5354	1.131	0	-.0042	.531	270	-.7318		
24	.231	140	-.5917	.331	60	-.8026	.531	90	-.7349				.731	270	-.6294		
25	.231	130	-.6296	.331	50	-.8153	.531	0	-.5389	1.631	90	-.1770	.931	270	-.4402		
26	.231	120	-.6699	.331	40	-.8264	.731	180	-.5789	1.631	0	-.1661	1.131	270	-.3176		
27	.231	110	-.7007	.331	30	-.8473	.731	90	-.6447	2.131	180	-.0366	1.631	270	-.1848		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 152 ALPHA 12 MACH .713 Q 542.501 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4573	.231	100	-.7285	.331	20	-.7958	.731	0	-.0251	2.131	90	-.2100		
2	.161	170	-.4721	.231	90	-.7385	.331	10	-.7886	.931	180	-.2087	2.131	0	.0219		
3	.161	160	-.5102	.231	80	-.7564	.331	0	-.7680	.931	90	-.4215	0.000		.7197	-.45	0.00
4	.161	150	-.3584	.231	70	-.8018	.431	180	-.5342	.931	0	-.4205	0.000		.8461	-.40	0.00
5	.161	140	-.6173	.231	60	-.8409	.431	170	-.5436	1.131	180	-.4760	0.000		1.0730	-.30	0.00
6	.161	130	-.6488	.231	50	-.8591	.431	160	-.5779	1.131	170	-.4662	0.000		1.1348	-.20	0.00
7	.161	120	-.7066	.231	40	-.8928	.431	150	-.6215	1.131	160	-.4974	0.000		1.1368	-.10	0.00
8	.161	110	-.7187	.231	30	-.8935	.431	140	-.6270	1.131	150	-.5005	0.000		1.0990	0.00	0.00
9	.161	100	-.7495	.231	20	-.9160	.431	130	-.6676	1.131	140	-.5180	0.000		1.0250	.10	0.00
10	.161	90	-.7639	.231	10	-.9242	.431	120	-.6779	1.131	130	-.5137	0.000		.9139	.20	0.00
11	.161	80	-.8147	.231	0	-.9467	.431	110	-.7268	1.131	120	-.4462	0.000		.7353	.30	0.00
12	.161	70	-.8192	.331	180	-.5017	.431	100	-.7176	1.131	110	-.4426	0.000		.5109	.40	0.00
13	.161	60	-.8446	.331	170	-.5268	.431	90	-.7514	1.131	100	-.3850	0.000		.3750	.45	0.00
14	.161	50	-.8381	.331	160	-.5084	.431	80	-.7200	1.131	90	-.3298	0.000		1.0844	0.00	.10
15	.161	40	-.8634	.331	150	-.5979	.431	70	-.7573	1.131	80	-.3106	0.000		1.0130	0.00	.20
16	.161	30	-.8956	.331	140	-.6116	.431	60	-.6969	1.131	70	-.2577	0.000		.8829	0.00	.30
17	.161	20	-.9248	.331	130	-.6377	.431	50	-.6370	1.131	60	-.2092	0.000		.5894	0.00	.40
18	.161	10	-.9205	.331	120	-.6656	.431	40	-.6189	1.131	50	-.1494	0.000		.5947	0.00	.45
19	.161	0	-.9233	.331	110	-.6931	.431	30	-.5840	1.131	40	-.1103	.161	270	-.7708		
20	.231	180	-.4676	.331	100	-.7385	.431	20	-.5109	1.131	30	-.0553	.231	270	-.7556		
21	.231	170	-.4717	.331	90	-.7488	.431	10	-.5091	1.131	20	-.0575	.331	270	-.7354		
22	.231	160	-.5048	.331	80	-.7603	.431	0	-.4545	1.131	10	-.0354	.431	270	-.7464		
23	.231	150	-.5771	.331	70	-.7888	.531	180	-.5746	1.131	0	-.0267	.531	270	-.7352		
24	.231	140	-.5982	.331	60	-.7977	.531	90	-.7272				.731	270	-.5800		
25	.231	130	-.6539	.331	50	-.7899	.531	0	-.1618	1.631	90	-.2395	.931	270	-.4032		
26	.231	120	-.6858	.331	40	-.7843	.731	180	-.5857	1.631	0	-.2181	1.131	270	-.3423		
27	.231	110	-.7094	.331	30	-.7741	.731	90	-.5857	2.131	180	-.0299	1.631	270	-.2658		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 153 ALPHA 14 MACH .712 Q 540.816 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4641	.231	100	-.7310	.331	20	-.5127	.731	0	-.0328	2.131	90	-.2241		
2	.161	170	-.4883	.231	90	-.7542	.331	10	-.4468	.931	180	-.2308	2.131	0	.0308		
3	.161	160	-.5086	.231	80	-.7449	.331	0	-.4404	.931	90	-.4260	0.000		.7312	-.45	0.00
4	.161	150	-.5612	.231	70	-.7975	.431	180	-.5442	.931	0	-.4146	0.000		.8847	-.40	0.00
5	.161	140	-.6359	.231	60	-.8443	.431	170	-.5558	1.131	180	-.4944	0.000		1.1010	-.30	0.00
6	.161	130	-.6670	.231	50	-.8525	.431	160	-.5821	1.131	170	-.4907	0.000		1.1552	-.20	0.00
7	.161	120	-.6877	.231	40	-.8800	.431	150	-.6185	1.131	160	-.5069	0.000		1.1347	-.10	0.00
8	.161	110	-.7143	.231	30	-.8707	.431	140	-.6377	1.131	150	-.5218	0.000		1.0807	0.00	0.00
9	.161	100	-.7687	.231	20	-.8627	.431	130	-.6693	1.131	140	-.5206	0.000		.9930	.10	0.00
10	.161	90	-.7335	.231	10	-.8538	.431	120	-.6750	1.131	130	-.5074	0.000		.8798	.20	0.00
11	.161	80	-.8131	.231	0	-.8616	.431	110	-.7161	1.131	120	-.4669	0.000		.6877	.30	0.00
12	.161	70	-.8233	.331	180	-.5096	.431	100	-.7175	1.131	110	-.4363	0.000		.4775	.40	0.00
13	.161	60	-.8544	.331	170	-.5090	.431	90	-.7214	1.131	100	-.4233	0.000		.3355	.45	0.00
14	.161	50	-.8939	.331	160	-.5532	.431	80	-.7067	1.131	90	-.3995	0.000		1.0555	0.00	.10
15	.161	40	-.9312	.331	150	-.5916	.431	70	-.6758	1.131	80	-.3549	0.000		1.0318	0.00	.20
16	.161	30	-.9502	.331	140	-.6092	.431	60	-.6633	1.131	70	-.2930	0.000		.8691	0.00	.30
17	.161	20	-.9696	.331	130	-.6760	.431	50	-.4739	1.131	60	-.2325	0.000		.5902	0.00	.40
18	.161	10	-.9556	.331	120	-.6881	.431	40	-.3806	1.131	50	-.1841	0.000		.5719	0.00	.45
19	.161	0	-.9573	.331	110	-.6757	.431	30	-.2801	1.131	40	-.1321	.161	270	-.7780		
20	.231	180	-.4827	.331	100	-.7475	.431	20	-.1459	1.131	30	-.0895	.231	270	-.7602		
21	.231	170	-.4986	.331	90	-.7221	.431	10	-.1154	1.131	20	-.0543	.331	270	-.7160		
22	.231	160	-.5565	.331	80	-.7582	.431	0	-.1183	1.131	10	-.0295	.431	270	-.7118		
23	.231	150	-.5530	.331	70	-.7545	.531	180	-.5731	1.131	0	-.0266	.531	270	-.7079		
24	.231	140	-.5909	.331	60	-.7226	.531	90	-.6929				.731	270	-.5259		
25	.231	130	-.6478	.331	50	-.6768	.531	0	-.0431	1.631	90	-.3094	.931	270	-.4315		
26	.231	120	-.6966	.331	40	-.6387	.731	180	-.6084	1.631	0	-.2265	1.131	270	-.3934		
27	.231	110	-.6918	.331	30	-.5870	.731	90	-.5480	2.131	180	-.0584	1.631	270	-.3204		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 154 ALPHA 16 MACH .712 Q 541.439 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4944	.231	100	-.7117	.331	20	-.1670	.731	0	-.0257	2.131	90	-.2584		
2	.161	170	-.4904	.231	90	-.7446	.331	10	-.1322	.931	180	-.2367	2.131	0	.0504		
3	.161	160	-.5340	.231	80	-.7494	.331	0	-.1290	.931	90	-.4701	0.000		.7407	-.45	0.00
4	.161	150	-.5661	.231	70	-.7678	.431	180	-.5420	.931	0	-.4234	0.000		.9211	-.40	0.00
5	.161	140	-.6215	.231	60	-.8072	.431	170	-.5623	1.131	180	-.5100	0.000		1.1050	-.30	0.00
6	.161	130	-.6407	.231	50	-.7470	.431	160	-.5717	1.131	170	-.4963	0.000		1.1506	-.20	0.00
7	.161	120	-.6739	.231	40	-.7190	.431	150	-.6078	1.131	160	-.5370	0.000		1.1299	-.10	0.00
8	.161	110	-.6659	.231	30	-.6346	.431	140	-.6231	1.131	150	-.5351	0.000		1.0659	0.00	0.00
9	.161	100	-.7228	.231	20	-.5505	.431	130	-.6404	1.131	140	-.5562	0.000		.9770	.10	0.00
10	.161	90	-.6970	.231	10	-.4617	.431	120	-.6653	1.131	130	-.5380	0.000		.8411	.20	0.00
11	.161	80	-.7670	.231	0	-.4509	.431	110	-.6761	1.131	120	-.5372	0.000		.6553	.30	0.00
12	.161	70	-.8341	.331	180	-.5089	.431	100	-.7030	1.131	110	-.4783	0.000		.4478	.40	0.00
13	.161	60	-.8841	.331	170	-.5377	.431	90	-.6995	1.131	100	-.4862	0.000		.2691	.45	0.00
14	.161	50	-.9371	.331	160	-.5832	.431	80	-.6798	1.131	90	-.4626	0.000		1.0398	0.00	.10
15	.161	40	-.9499	.331	150	-.5995	.431	70	-.5616	1.131	80	-.4109	0.000		.9883	0.00	.20
16	.161	30	-.9156	.331	140	-.6103	.431	60	-.4444	1.131	70	-.3409	0.000		.8542	0.00	.30
17	.161	20	-.8960	.331	130	-.6441	.431	50	-.3346	1.131	60	-.2704	0.000		.5826	0.00	.40
18	.161	10	-.8714	.331	120	-.6885	.431	40	-.2285	1.131	50	-.2129	0.000		.5625	0.00	.45
19	.161	0	-.8535	.331	110	-.6848	.431	30	-.1434	1.131	40	-.1470	.161	270	-.7426		
20	.231	180	-.4939	.331	100	-.6946	.431	20	-.0951	1.131	30	-.0847	.231	270	-.7168		
21	.231	170	-.4939	.331	90	-.6974	.431	10	-.0625	1.131	20	-.0373	.331	270	-.7097		
22	.231	160	-.5394	.331	80	-.7221	.431	0	-.0741	1.131	10	-.0236	.431	270	-.7221		
23	.231	150	-.5745	.331	70	-.6824	.531	180	-.5774	1.131	0	-.0118	.531	270	-.6577		
24	.231	140	-.6290	.331	60	-.6086	.531	90	-.6857				.731	270	-.5361		
25	.231	130	-.6254	.331	50	-.4857	.531	0	-.0482	1.631	90	-.3715	.931	270	-.4783		
26	.231	120	-.6853	.331	40	-.3664	.731	180	-.6093	1.631	0	-.2420	1.131	270	-.4732		
27	.231	110	-.6903	.331	30	-.2464	.731	90	-.5262	2.131	180	-.0577	1.631	270	-.3809		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 155 ALPHA 18 MACH .713 Q 542.553 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4662	.231	100	-.6873	.331	20	-.0927	.731	0	.0129	2.131	90	-.2774		
2	.161	170	-.4824	.231	90	-.6314	.331	10	-.0661	.931	180	-.2764	2.131	0	.0607		
3	.161	160	-.5052	.231	80	-.6625	.331	0	-.0552	.931	90	-.5057	0.000		.7752	-.45	0.00
4	.161	150	-.5475	.231	70	-.7278	.431	180	-.5302	.931	0	-.4370	0.000		.9684	-.40	0.00
5	.161	140	-.5398	.231	60	-.6791	.431	170	-.5477	1.131	180	-.5660	0.000		1.1102	-.30	0.00
6	.161	130	-.5807	.231	50	-.6290	.431	160	-.5354	1.131	170	-.5343	0.000		1.1618	-.20	0.00
7	.161	120	-.6065	.231	40	-.6268	.431	150	-.6123	1.131	160	-.5667	0.000		1.1177	-.10	0.00
8	.161	110	-.6327	.231	30	-.4738	.431	140	-.6046	1.131	150	-.5756	0.000		1.0463	0.00	0.00
9	.161	100	-.6773	.231	20	-.3125	.431	130	-.6354	1.131	140	-.5573	0.000		.9387	.10	0.00
10	.161	90	-.6928	.231	10	-.2375	.431	120	-.6496	1.131	130	-.5482	0.000		.8078	.20	0.00
11	.161	80	-.7263	.231	0	-.2092	.431	110	-.6363	1.131	120	-.5799	0.000		.6227	.30	0.00
12	.161	70	-.7702	.331	180	-.5183	.431	100	-.6496	1.131	110	-.5761	0.000		.4059	.40	0.00
13	.161	60	-.8085	.331	170	-.5200	.431	90	-.6153	1.131	100	-.5621	0.000		.2402	.45	0.00
14	.161	50	-.8337	.331	160	-.5421	.431	80	-.5859	1.131	90	-.5136	0.000		1.0320	0.00	.10
15	.161	40	-.8937	.331	150	-.6128	.431	70	-.5079	1.131	80	-.4858	0.000		.9611	0.00	.20
16	.161	30	-.8255	.331	140	-.5896	.431	60	-.3874	1.131	70	-.4041	0.000		.8305	0.00	.30
17	.161	20	-.7463	.331	130	-.6156	.431	50	-.2617	1.131	60	-.3182	0.000		.5830	0.00	.40
18	.161	10	-.6799	.331	120	-.6294	.431	40	-.1582	1.131	50	-.2291	0.000		.5684	0.00	.45
19	.161	0	-.6859	.331	110	-.6277	.431	30	-.1054	1.131	40	-.1640	.161	270	-.6886		
20	.231	180	-.4940	.331	100	-.6584	.431	20	-.0643	1.131	30	-.0872	.231	270	-.6683		
21	.231	170	-.4976	.331	90	-.6413	.431	10	-.0277	1.131	20	-.0262	.331	270	-.6520		
22	.231	160	-.5278	.331	80	-.6322	.431	0	-.0078	1.131	10	.0108	.431	270	-.6357		
23	.231	150	-.5424	.331	70	-.6041	.531	180	-.5568	1.131	0	.0103	.531	270	-.6116		
24	.231	140	-.5882	.331	60	-.5109	.531	90	-.6097				.731	270	-.5441		
25	.231	130	-.5935	.331	50	-.4009	.531	0	-.0130	1.631	90	-.4538	.931	270	-.5254		
26	.231	120	-.6244	.331	40	-.2407	.731	180	-.5852	1.631	0	-.2766	1.131	270	-.5239		
27	.231	110	-.6386	.331	30	-.1478	.731	90	-.5383	2.131	180	-.0726	1.631	270	-.4900		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 156 ALPHA 20 MACH .712 Q 541.135 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4611	.231	100	-.5967	.331	20	-.0319	.731	0	.0503	2.131	90	-.2842		
2	.161	170	-.4706	.231	90	-.6249	.331	10	-.0043	.931	180	-.3259	2.131	0	.0719		
3	.161	160	-.5196	.231	80	-.6633	.331	0	.0082	.931	90	-.5469	0.000		.8173	-.45	0.00
4	.161	150	-.5004	.231	70	-.6368	.431	180	-.5000	.931	0	-.4612	0.000		1.0195	-.40	0.00
5	.161	140	-.5813	.231	60	-.6540	.431	170	-.5593	1.131	180	-.6165	0.000		1.1350	-.30	0.00
6	.161	130	-.6158	.231	50	-.6206	.431	160	-.5814	1.131	170	-.6210	0.000		1.1440	-.20	0.00
7	.161	120	-.6169	.231	40	-.4088	.431	150	-.5858	1.131	160	-.5974	0.000		1.0989	-.10	0.00
8	.161	110	-.5925	.231	30	-.2641	.431	140	-.5779	1.131	150	-.5873	0.000		1.0178	0.00	0.00
9	.161	100	-.6147	.231	20	-.1698	.431	130	-.5950	1.131	140	-.5900	0.000		.8964	.10	0.00
10	.161	90	-.6156	.231	10	-.1479	.431	120	-.6066	1.131	130	-.6218	0.000		.7535	.20	0.00
11	.161	80	-.6980	.231	0	-.1494	.431	110	-.6245	1.131	120	-.6141	0.000		.5569	.30	0.00
12	.161	70	-.7036	.331	180	-.5001	.431	100	-.5770	1.131	110	-.6278	0.000		.3857	.40	0.00
13	.161	60	-.7748	.331	170	-.5200	.431	90	-.5792	1.131	100	-.5948	0.000		.1962	.45	0.00
14	.161	50	-.7985	.331	160	-.5285	.431	80	-.5359	1.131	90	-.5748	0.000		.9963	0.00	.10
15	.161	40	-.7657	.331	150	-.5384	.431	70	-.4304	1.131	80	-.5185	0.000		.9372	0.00	.20
16	.161	30	-.6725	.331	140	-.5794	.431	60	-.3271	1.131	70	-.4391	0.000		.8068	0.00	.30
17	.161	20	-.6220	.331	130	-.6050	.431	50	-.2078	1.131	60	-.3317	0.000		.5667	0.00	.40
18	.161	10	-.5720	.331	120	-.5738	.431	40	-.1258	1.131	50	-.2398	0.000		.5493	0.00	.45
19	.161	0	-.5832	.331	110	-.6104	.431	30	-.0588	1.131	40	-.1449	.161	270	-.6512		
20	.231	180	-.4913	.331	100	-.6106	.431	20	-.0139	1.131	30	-.0708	.231	270	-.6287		
21	.231	170	-.5047	.331	90	-.6102	.431	10	.0126	1.131	20	-.0291	.331	270	-.6009		
22	.231	160	-.5282	.331	80	-.6275	.431	0	.0342	1.131	10	.0260	.431	270	-.5984		
23	.231	150	-.5572	.331	70	-.5679	.531	180	-.5657	1.131	0	.0334	.531	270	-.5850		
24	.231	140	-.5845	.331	60	-.4290	.531	90	-.5657				.731	270	-.5298		
25	.231	130	-.6031	.331	50	-.2779	.531	0	.0439	1.631	90	-.5228	.931	270	-.5594		
26	.231	120	-.6123	.331	40	-.1724	.731	180	-.5915	1.631	0	-.2860	1.131	270	-.5872		
27	.231	110	-.5999	.331	30	-.0907	.731	90	-.5107	2.131	180	-.1945	1.631	270	-.5691		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 160 ALPHA 22 MACH .713 Q 542.142 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5185	.231	100	-.6137	.331	20	.0247	.731	0	.0867	2.131	90	-.3162		
2	.161	170	-.5060	.231	90	-.6126	.331	10	.0566	.931	180	-.3142	2.131	0	.0882		
3	.161	160	-.5024	.231	80	-.6211	.331	0	.0717	.931	90	-.5732	0.000		.8555	-.45	0.00
4	.161	150	-.5024	.231	70	-.6276	.431	180	-.5005	.931	0	-.5009	0.000		1.0644	-.40	0.00
5	.161	140	-.5020	.231	60	-.6126	.431	170	-.5468	1.131	180	-.6044	0.000		1.1375	-.30	0.00
6	.161	130	-.6109	.231	50	-.4175	.431	160	-.5861	1.131	170	-.6222	0.000		1.1261	-.20	0.00
7	.161	120	-.6010	.231	40	-.2371	.431	150	-.5988	1.131	160	-.6049	0.000		1.0778	-.10	0.00
8	.161	110	-.5995	.231	30	-.1711	.431	140	-.5892	1.131	150	-.6328	0.000		.9813	0.00	0.00
9	.161	100	-.5934	.231	20	-.0962	.431	130	-.5800	1.131	140	-.6241	0.000		.8579	.10	0.00
10	.161	90	-.6066	.231	10	-.0698	.431	120	-.5767	1.131	130	-.6179	0.000		.7175	.20	0.00
11	.161	80	-.6477	.231	0	-.0737	.431	110	-.5964	1.131	120	-.6522	0.000		.5144	.30	0.00
12	.161	70	-.6755	.331	180	-.4969	.431	100	-.5643	1.131	110	-.6527	0.000		.3406	.40	0.00
13	.161	60	-.7461	.331	170	-.4941	.431	90	-.5580	1.131	100	-.6630	0.000		.1606	.45	0.00
14	.161	50	-.7760	.331	160	-.5410	.431	80	-.5221	1.131	90	-.6270	0.000		.9571	0.00	.10
15	.161	40	-.6449	.331	150	-.5596	.431	70	-.3998	1.131	80	-.5578	0.000		.9137	0.00	.20
16	.161	30	-.5950	.331	140	-.5618	.431	60	-.2919	1.131	70	-.4934	0.000		.7709	0.00	.30
17	.161	20	-.5650	.331	130	-.5369	.431	50	-.1804	1.131	60	-.3521	0.000		.5514	0.00	.40
18	.161	10	-.5349	.331	120	-.5769	.431	40	-.1121	1.131	50	-.2644	0.000		.5156	0.00	.45
19	.161	0	-.5269	.331	110	-.5432	.431	30	-.0291	1.131	40	-.1539	.161	270	-.5794		
20	.231	180	-.5140	.331	100	-.6170	.431	20	.0166	1.131	30	-.0775	.231	270	-.6384		
21	.231	170	-.5353	.331	90	-.6254	.431	10	.0837	1.131	20	.0278	.331	270	-.6440		
22	.231	160	-.4793	.331	80	-.5603	.431	0	.0944	1.131	10	.0580	.431	270	-.5458		
23	.231	150	-.5540	.331	70	-.5008	.531	180	-.5855	1.131	0	.0717	.531	270	-.5570		
24	.231	140	-.5691	.331	60	-.3422	.531	90	-.5475				.731	270	-.5385		
25	.231	130	-.6083	.331	50	-.2221	.531	0	.0828	1.631	90	-.4626	.931	270	-.5936		
26	.231	120	-.5691	.331	40	-.1362	.731	180	-.5977	1.631	0	-.3269	1.131	270	-.6540		
27	.231	110	-.6242	.331	30	-.0402	.731	90	-.5636	2.131	180	-.1318	1.631	270	-.6406		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 161 ALPHA 24 MACH .713 Q 541.980 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4765	.231	100	-.5715	.331	20	.0752	.731	0	.1171	2.131	90	-.3382		
2	.161	170	-.5165	.231	90	-.6074	.331	10	.1095	.931	180	-.3441	2.131	0	.1275		
3	.161	160	-.5725	.231	80	-.6862	.331	0	.1331	.931	90	-.6145	0.000		.9106	-.45	0.00
4	.161	150	-.5555	.231	70	-.6639	.431	180	-.5619	.931	0	-.5207	0.000		1.1166	-.40	0.00
5	.161	140	-.5790	.231	60	-.5438	.431	170	-.5632	1.131	180	-.6214	0.000		1.1364	-.30	0.00
6	.161	130	-.5137	.231	50	-.2794	.431	160	-.4948	1.131	170	-.5686	0.000		1.1296	-.20	0.00
7	.161	120	-.5700	.231	40	-.1878	.431	150	-.5479	1.131	160	-.5988	0.000		1.0462	-.10	0.00
8	.161	110	-.5934	.231	30	-.0904	.431	140	-.5898	1.131	150	-.6174	0.000		.9428	0.00	0.00
9	.161	100	-.6725	.231	20	-.0080	.431	130	-.6355	1.131	140	-.6080	0.000		.8208	.10	0.00
10	.161	90	-.6191	.231	10	.0199	.431	120	-.5811	1.131	130	-.6409	0.000		.6667	.20	0.00
11	.161	80	-.6591	.231	0	.0582	.431	110	-.5603	1.131	120	-.6505	0.000		.4804	.30	0.00
12	.161	70	-.7074	.331	180	-.5040	.431	100	-.5470	1.131	110	-.6580	0.000		.3226	.40	0.00
13	.161	60	-.7612	.331	170	-.4906	.431	90	-.5260	1.131	100	-.6796	0.000		.1675	.45	0.00
14	.161	50	-.6729	.331	160	-.5921	.431	80	-.4863	1.131	90	-.6746	0.000		.9349	0.00	.10
15	.161	40	-.5781	.331	150	-.5791	.431	70	-.3844	1.131	80	-.6188	0.000		.8776	0.00	.20
16	.161	30	-.5575	.331	140	-.5388	.431	60	-.2756	1.131	70	-.5041	0.000		.7555	0.00	.30
17	.161	20	-.4530	.331	130	-.6016	.431	50	-.1757	1.131	60	-.3864	0.000		.5231	0.00	.40
18	.161	10	-.4155	.331	120	-.5531	.431	40	-.0817	1.131	50	-.2684	0.000		.4996	0.00	.45
19	.161	0	-.4088	.331	110	-.5845	.431	30	.0046	1.131	40	-.1525	.161	270	-.6308		
20	.231	180	-.5226	.331	100	-.6072	.431	20	.0806	1.131	30	-.0398	.231	270	-.6230		
21	.231	170	-.5058	.331	90	-.5821	.431	10	.1200	1.131	20	.0311	.331	270	-.6082		
22	.231	160	-.4924	.331	80	-.5267	.431	0	.1454	1.131	10	.0991	.431	270	-.5445		
23	.231	150	-.5189	.331	70	-.4492	.531	180	-.5492	1.131	0	.1013	.531	270	-.5170		
24	.231	140	-.6064	.331	60	-.3125	.531	90	-.5354				.731	270	-.5509		
25	.231	130	-.5860	.331	50	-.1950	.531	0	.1353	1.631	90	-.4018	.931	270	-.6260		
26	.231	120	-.5529	.331	40	-.0839	.731	180	-.5684	1.631	0	-.3167	1.131	270	-.6838		
27	.231	110	-.5792	.331	30	.0083	.731	90	-.5494	2.131	180	-.2809	1.631	270	-.7325		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 162 ALPHA 26 MACH .713 Q 542.461 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5168	.231	100	-.6289	.331	20	.1158	.731	0	.1464	2.131	90	-.3593		
2	.161	170	-.5328	.231	90	-.6429	.331	10	.1737	.931	180	-.3425	2.131	0	.1565		
3	.161	160	-.4792	.231	80	-.5848	.331	0	.1822	.931	90	-.6139	0.000		.9427	-.45	0.00
4	.161	150	-.5380	.231	70	-.6271	.431	180	-.5375	.931	0	-.5461	0.000		1.1220	-.40	0.00
5	.161	140	-.5380	.231	60	-.3709	.431	170	-.5320	1.131	180	-.5725	0.000		1.1520	-.30	0.00
6	.161	130	-.5875	.231	50	-.2358	.431	160	-.5757	1.131	170	-.6244	0.000		1.1060	-.20	0.00
7	.161	120	-.5668	.231	40	-.1205	.431	150	-.5569	1.131	160	-.6076	0.000		1.0204	-.10	0.00
8	.161	110	-.5816	.231	30	-.0068	.431	140	-.5720	1.131	150	-.6122	0.000		.9074	0.00	0.00
9	.161	100	-.5616	.231	20	.0855	.431	130	-.5471	1.131	140	-.5721	0.000		.7758	.10	0.00
10	.161	90	-.6071	.231	10	.1318	.431	120	-.6010	1.131	130	-.6669	0.000		.6289	.20	0.00
11	.161	80	-.6546	.231	0	.1510	.431	110	-.5414	1.131	120	-.6636	0.000		.4442	.30	0.00
12	.161	70	-.7325	.331	180	-.5063	.431	100	-.5611	1.131	110	-.7219	0.000		.2917	.40	0.00
13	.161	60	-.6927	.331	170	-.5074	.431	90	-.5268	1.131	100	-.7527	0.000		.1197	.45	0.00
14	.161	50	-.5640	.331	160	-.6150	.431	80	-.4626	1.131	90	-.7313	0.000		.8942	0.00	.10
15	.161	40	-.5498	.331	150	-.5705	.431	70	-.3940	1.131	80	-.6770	0.000		.8545	0.00	.20
16	.161	30	-.4542	.331	140	-.6228	.431	60	-.2936	1.131	70	-.5771	0.000		.7134	0.00	.30
17	.161	20	-.3475	.331	130	-.6226	.431	50	-.1770	1.131	60	-.4395	0.000		.5039	0.00	.40
18	.161	10	-.2599	.331	120	-.5733	.431	40	-.0657	1.131	50	-.2921	0.000		.4600	0.00	.45
19	.161	0	-.2384	.331	110	-.6060	.431	30	.0490	1.131	40	-.1465	.161	270	-.6417		
20	.231	180	-.5253	.331	100	-.5921	.431	20	.1237	1.131	30	-.0286	.231	270	-.6339		
21	.231	170	-.5087	.331	90	-.5820	.431	10	.1739	1.131	20	.0607	.331	270	-.5817		
22	.231	160	-.5173	.331	80	-.5069	.431	0	.1914	1.131	10	.1166	.431	270	-.5520		
23	.231	150	-.5896	.331	70	-.4189	.531	180	-.5962	1.131	0	.1435	.531	270	-.5362		
24	.231	140	-.5612	.331	60	-.2855	.531	90	-.5150				.731	270	-.5861		
25	.231	130	-.5373	.331	50	-.1478	.531	0	.1973	1.631	90	-.3833	.931	270	-.6794		
26	.231	120	-.5451	.331	40	-.0561	.731	180	-.5537	1.631	0	-.3682	1.131	270	-.7308		
27	.231	110	-.5711	.331	30	.0531	.731	90	-.5696	2.131	180	-.3761	1.631	270	-.7910		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 163 ALPHA 0 MACH .713 Q 541.740 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4498	.231	100	-.4659	.331	20	-.4819	.731	0	-.5193	2.131	90	-.1181		
2	.161	170	-.4812	.231	90	-.4750	.331	10	-.4804	.931	180	-.1182	2.131	0	-.0725		
3	.161	160	-.4713	.231	80	-.4783	.331	0	-.4983	.931	90	-.5333	0.000		.6438	-.45	0.00
4	.161	150	-.4737	.231	70	-.4674	.431	180	-.4841	.931	0	-.5140	0.000		.6799	-.40	0.00
5	.161	140	-.4569	.231	60	-.4402	.431	170	-.4764	1.131	180	-.5071	0.000		.9419	-.30	0.00
6	.161	130	-.4586	.231	50	-.4659	.431	160	-.4705	1.131	170	-.5018	0.000		1.0666	-.20	0.00
7	.161	120	-.4726	.231	40	-.4607	.431	150	-.4815	1.131	160	-.5210	0.000		1.1298	-.10	0.00
8	.161	110	-.4698	.231	30	-.4560	.431	140	-.4867	1.131	150	-.5236	0.000		1.1422	0.00	0.00
9	.161	100	-.4793	.231	20	-.4705	.431	130	-.4935	1.131	140	-.5311	0.000		1.1251	.10	0.00
10	.161	90	-.4666	.231	10	-.4681	.431	120	-.4832	1.131	130	-.5128	0.000		1.0659	.20	0.00
11	.161	80	-.4524	.231	0	-.4300	.431	110	-.4729	1.131	120	-.5078	0.000		.9385	.30	0.00
12	.161	70	-.4584	.331	180	-.4690	.431	100	-.4817	1.131	110	-.5152	0.000		.6979	.40	0.00
13	.161	60	-.4472	.331	170	-.4718	.431	90	-.4751	1.131	100	-.5229	0.000		.6352	.45	0.00
14	.161	50	-.4599	.331	160	-.4811	.431	80	-.4760	1.131	90	-.5217	0.000		1.1176	0.00	.10
15	.161	40	-.4744	.331	150	-.4713	.431	70	-.4856	1.131	80	-.5263	0.000		1.0627	0.00	.20
16	.161	30	-.4543	.331	140	-.4581	.431	60	-.4692	1.131	70	-.5121	0.000		.9334	0.00	.30
17	.161	20	-.4688	.331	130	-.4830	.431	50	-.4935	1.131	60	-.5217	0.000		.6835	0.00	.40
18	.161	10	-.4427	.331	120	-.4787	.431	40	-.4769	1.131	50	-.5253	0.000		.6589	0.00	.45
19	.161	0	-.4651	.331	110	-.4716	.431	30	-.4832	1.131	40	-.5210	.161	270	-.4680		
20	.231	180	-.4774	.331	100	-.4720	.431	20	-.4810	1.131	30	-.5215	.231	270	-.4672		
21	.231	170	-.4817	.331	90	-.4651	.431	10	-.4723	1.131	20	-.5253	.331	270	-.4858		
22	.231	160	-.4737	.331	80	-.4718	.431	0	-.4784	1.131	10	-.5215	.431	270	-.4799		
23	.231	150	-.4580	.331	70	-.4531	.531	180	-.4784	1.131	0	-.5212	.531	270	-.4945		
24	.231	140	-.4670	.331	60	-.4748	.531	90	-.4880				.731	270	-.5087		
25	.231	130	-.4800	.331	50	-.4594	.531	0	-.4935	1.631	90	-.3238	.931	270	-.5341		
26	.231	120	-.4722	.331	40	-.4876	.731	180	-.5235	1.631	0	-.1240	1.131	270	-.5214		
27	.231	110	-.4739	.331	30	-.4655	.731	90	-.5073	2.131	180	-.0574	1.631	270	-.3233		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 186 ALPHA -1 MACH .822 @ 647.106 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4757	.231	100	-.4550	.331	20	-.4246	.731	0	-.4590	2.131	90	-.0809		
2	.161	170	-.4927	.231	90	-.4767	.331	10	-.4328	.931	180	-.1051	2.131	0	-.2107		
3	.161	160	-.4948	.231	80	-.4599	.331	0	-.4350	.931	90	-.5192	0.000		.7272	-.45	0.00
4	.161	150	-.4727	.231	70	-.4412	.431	180	-.4870	.931	0	-.1768	0.000		.7382	-.40	0.00
5	.161	140	-.4795	.231	60	-.4367	.431	170	-.5050	1.131	180	-.5353	0.000		.9752	-.30	0.00
6	.161	130	-.4991	.231	50	-.4331	.431	160	-.4735	1.131	170	-.5043	0.000		1.1124	-.20	0.00
7	.161	120	-.5003	.231	40	-.4613	.431	150	-.5152	1.131	160	-.5419	0.000		1.1701	-.10	0.00
8	.161	110	-.4671	.231	30	-.4436	.431	140	-.4916	1.131	150	-.5272	0.000		1.1915	0.00	0.00
9	.161	100	-.4618	.231	20	-.4356	.431	130	-.4903	1.131	140	-.5186	0.000		1.1772	.10	0.00
10	.161	90	-.4701	.231	10	-.4182	.431	120	-.4951	1.131	130	-.5192	0.000		1.1212	.20	0.00
11	.161	80	-.4476	.231	0	-.4098	.431	110	-.4720	1.131	120	-.5023	0.000		1.0056	.30	0.00
12	.161	70	-.4681	.331	180	-.5028	.431	100	-.4934	1.131	110	-.5353	0.000		.7607	.40	0.00
13	.161	60	-.4382	.331	170	-.4905	.431	90	-.4720	1.131	100	-.5130	0.000		.7127	.45	0.00
14	.161	50	-.4429	.331	160	-.4985	.431	80	-.4707	1.131	90	-.5204	0.000		1.1725	0.00	.10
15	.161	40	-.4501	.331	150	-.5130	.431	70	-.4824	1.131	80	-.5368	0.000		1.1056	0.00	.20
16	.161	30	-.4261	.331	140	-.4827	.431	60	-.4458	1.131	70	-.4952	0.000		.9866	0.00	.30
17	.161	20	-.4012	.331	130	-.4744	.431	50	-.4467	1.131	60	-.4991	0.000		.7497	0.00	.40
18	.161	10	-.4151	.331	120	-.4791	.431	40	-.4502	1.131	50	-.4985	0.000		.7403	0.00	.45
19	.161	0	-.4247	.331	110	-.4776	.431	30	-.4449	1.131	40	-.5113	.161	270	-.4601		
20	.231	180	-.4851	.331	100	-.4637	.431	20	-.4217	1.131	30	-.4971	.231	270	-.4615		
21	.231	170	-.4918	.331	90	-.4671	.431	10	-.4385	1.131	20	-.4910	.331	270	-.4715		
22	.231	160	-.4983	.331	80	-.4769	.431	0	-.4406	1.131	10	-.5081	.431	270	-.4954		
23	.231	150	-.4795	.331	70	-.4611	.531	180	-.4947	1.131	0	-.5107	.531	270	-.4852		
24	.231	140	-.4716	.331	60	-.4447	.531	90	-.4683				.731	270	-.4935		
25	.231	130	-.4808	.331	50	-.4539	.531	0	-.4541	1.631	90	.2213	.931	270	-.5150		
26	.231	120	-.4781	.331	40	-.4448	.731	180	-.5121	1.631	0	-.0936	1.131	270	-.5226		
27	.231	110	-.4772	.331	30	-.4492	.731	90	-.4969	2.131	180	-.1583	1.631	270	-.4105		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 187 ALPHA 0 MACH .822 @ 646.815 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4802	.231	100	-.4734	.331	20	-.4741	.731	0	-.4980	2.131	90	-.0924		
2	.161	170	-.4704	.231	90	-.4613	.331	10	-.4686	.931	180	-.0903	2.131	0	-.2436		
3	.161	160	-.4563	.231	80	-.4544	.331	0	-.4734	.931	90	-.4986	0.000		.7286	-.45	0.00
4	.161	150	-.4390	.231	70	-.4464	.431	180	-.4600	.931	0	-.2577	0.000		.7515	-.40	0.00
5	.161	140	-.4740	.231	60	-.4624	.431	170	-.4725	1.131	180	-.5173	0.000		.9857	-.30	0.00
6	.161	130	-.4603	.231	50	-.4636	.431	160	-.4740	1.131	170	-.5080	0.000		1.1188	-.20	0.00
7	.161	120	-.4582	.231	40	-.4522	.431	150	-.4769	1.131	160	-.5161	0.000		1.1687	-.10	0.00
8	.161	110	-.4634	.231	30	-.4428	.431	140	-.4884	1.131	150	-.5090	0.000		1.1877	0.00	0.00
9	.161	100	-.4383	.231	20	-.4520	.431	130	-.4567	1.131	140	-.4958	0.000		1.1729	.10	0.00
10	.161	90	-.4513	.231	10	-.4482	.431	120	-.4665	1.131	130	-.5050	0.000		1.1131	.20	0.00
11	.161	80	-.4508	.231	0	-.4562	.431	110	-.4672	1.131	120	-.5068	0.000		.9900	.30	0.00
12	.161	70	-.4424	.331	180	-.4645	.431	100	-.4562	1.131	110	-.5030	0.000		.7577	.40	0.00
13	.161	60	-.4466	.331	170	-.4506	.431	90	-.4494	1.131	100	-.4929	0.000		.7103	.45	0.00
14	.161	50	-.4661	.331	160	-.4992	.431	80	-.4807	1.131	90	-.5209	0.000		1.1664	0.00	.10
15	.161	40	-.4515	.331	150	-.4734	.431	70	-.4679	1.131	80	-.5147	0.000		1.1151	0.00	.20
16	.161	30	-.4358	.331	140	-.4691	.431	60	-.4690	1.131	70	-.5157	0.000		.9857	0.00	.30
17	.161	20	-.4471	.331	130	-.4700	.431	50	-.4697	1.131	60	-.5109	0.000		.7444	0.00	.40
18	.161	10	-.4724	.331	120	-.4642	.431	40	-.4771	1.131	50	-.5151	0.000		.7348	0.00	.45
19	.161	0	-.4199	.331	110	-.4518	.431	30	-.4518	1.131	40	-.4865	.161	270	-.4269		
20	.231	180	-.4951	.331	100	-.4428	.431	20	-.4589	1.131	30	-.5012	.231	270	-.4475		
21	.231	170	-.4936	.331	90	-.4486	.431	10	-.4630	1.131	20	-.4972	.331	270	-.4653		
22	.231	160	-.4944	.331	80	-.4518	.431	0	-.4575	1.131	10	-.5032	.431	270	-.4600		
23	.231	150	-.4500	.331	70	-.4529	.531	180	-.4721	1.131	0	-.5125	.531	270	-.4765		
24	.231	140	-.4610	.331	60	-.4660	.531	90	-.4776				.731	270	-.4843		
25	.231	130	-.4704	.331	50	-.4580	.531	0	-.4721	1.631	90	.0398	.931	270	-.4998		
26	.231	120	-.4616	.331	40	-.4536	.731	180	-.4910	1.631	0	-.0789	1.131	270	-.5086		
27	.231	110	-.4394	.331	30	-.4656	.731	90	-.4904	2.131	180	-.1848	1.631	270	-.4134		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 188 ALPHA 2 MACH .821 Q 646.599 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.3869	.231	100	-.4662	.331	20	-.5059	.731	0	-.5300	2.131	90	-.0880		
2	.161	170	-.4037	.231	90	-.4901	.331	10	-.5270	.931	180	-.0967	2.131	0	-.0535		
3	.161	160	-.4127	.231	80	-.5168	.331	0	-.5277	.931	90	-.5470	0.000		.7413	-.45	0.00
4	.161	150	-.4226	.231	70	-.5081	.431	180	-.4418	.931	0	-.3135	0.000		.7711	-.40	0.00
5	.161	140	-.4340	.231	60	-.5299	.431	170	-.4498	1.131	180	-.5284	0.000		1.0032	-.30	0.00
6	.161	130	-.4466	.231	50	-.5259	.431	160	-.4495	1.131	170	-.5230	0.000		1.1215	-.20	0.00
7	.161	120	-.4647	.231	40	-.5243	.431	150	-.4595	1.131	160	-.5212	0.000		1.1757	-.10	0.00
8	.161	110	-.4637	.231	30	-.5233	.431	140	-.4575	1.131	150	-.5081	0.000		1.1888	0.00	0.00
9	.161	100	-.4739	.231	20	-.5190	.431	130	-.4637	1.131	140	-.5143	0.000		1.1535	.10	0.00
10	.161	90	-.5125	.231	10	-.5426	.431	120	-.5052	1.131	130	-.5405	0.000		1.0842	.20	0.00
11	.161	80	-.4995	.231	0	-.5239	.431	110	-.4824	1.131	120	-.5157	0.000		.9658	.30	0.00
12	.161	70	-.5078	.331	180	-.4145	.431	100	-.4936	1.131	110	-.5167	0.000		.7335	.40	0.00
13	.161	60	-.5174	.331	170	-.4452	.431	90	-.5081	1.131	100	-.5371	0.000		.6881	.45	0.00
14	.161	50	-.5115	.331	160	-.4281	.431	80	-.5053	1.131	90	-.5411	0.000		1.1677	0.00	.10
15	.161	40	-.5301	.331	150	-.4404	.431	70	-.5205	1.131	80	-.5528	0.000		1.1376	0.00	.20
16	.161	30	-.5320	.331	140	-.4584	.431	60	-.5284	1.131	70	-.5534	0.000		.9774	0.00	.30
17	.161	20	-.5165	.331	130	-.4769	.431	50	-.5163	1.131	60	-.5466	0.000		.7454	0.00	.40
18	.161	10	-.5190	.331	120	-.4602	.431	40	-.5248	1.131	50	-.5250	0.000		.7296	0.00	.45
19	.161	0	-.5284	.331	110	-.4954	.431	30	-.5343	1.131	40	-.5552	.161	270	-.5027		
20	.231	180	-.4163	.331	100	-.4934	.431	20	-.5308	1.131	30	-.5486	.231	270	-.5021		
21	.231	170	-.4078	.331	90	-.5045	.431	10	-.5297	1.131	20	-.5341	.331	270	-.4986		
22	.231	160	-.4231	.331	80	-.5092	.431	0	-.5306	1.131	10	-.5443	.431	270	-.5058		
23	.231	150	-.4163	.331	70	-.5255	.531	180	-.4495	1.131	0	-.5284	.531	270	-.5096		
24	.231	140	-.4537	.331	60	-.5239	.531	90	-.5169				.731	270	-.5135		
25	.231	130	-.4519	.331	50	-.5203	.531	0	-.5348	1.631	90	-.0830	.931	270	-.5401		
26	.231	120	-.4746	.331	40	-.5295	.731	180	-.4892	1.631	0	-.1136	1.131	270	-.5438		
27	.231	110	-.4544	.331	30	-.5092	.731	90	-.5108	2.131	180	-.1833	1.631	270	-.3856		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 189 ALPHA 4 MACH .822 Q 647.658 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4009	.231	100	-.5916	.331	20	-.6149	.731	0	-.6319	2.131	90	-.1329		
2	.161	170	-.3919	.231	90	-.5860	.331	10	-.6072	.931	180	-.1194	2.131	0	.0642		
3	.161	160	-.4256	.231	80	-.5985	.331	0	-.6257	.931	90	-.6174	0.000		.7530	-.45	0.00
4	.161	150	-.4709	.231	70	-.6974	.431	180	-.4726	.931	0	-.3481	0.000		.7932	-.40	0.00
5	.161	140	-.4801	.231	60	-.6503	.431	170	-.4719	1.131	180	-.5110	0.000		1.0349	-.30	0.00
6	.161	130	-.5235	.231	50	-.6327	.431	160	-.4825	1.131	170	-.5307	0.000		1.1457	-.20	0.00
7	.161	120	-.5466	.231	40	-.6256	.431	150	-.5026	1.131	160	-.5325	0.000		1.1861	-.10	0.00
8	.161	110	-.5711	.231	30	-.6244	.431	140	-.5262	1.131	150	-.5426	0.000		1.1896	0.00	0.00
9	.161	100	-.5711	.231	20	-.6025	.431	130	-.5264	1.131	140	-.5361	0.000		1.1561	.10	0.00
10	.161	90	-.5990	.231	10	-.6188	.431	120	-.5736	1.131	130	-.5800	0.000		1.0798	.20	0.00
11	.161	80	-.5971	.231	0	-.6251	.431	110	-.5906	1.131	120	-.5740	0.000		.9404	.30	0.00
12	.161	70	-.6055	.331	180	-.4405	.431	100	-.5992	1.131	110	-.5730	0.000		.7103	.40	0.00
13	.161	60	-.6243	.331	170	-.4659	.431	90	-.6078	1.131	100	-.5649	0.000		.6669	.45	0.00
14	.161	50	-.6131	.331	160	-.4601	.431	80	-.6197	1.131	90	-.5585	0.000		1.1424	0.00	.10
15	.161	40	-.5967	.331	150	-.4746	.431	70	-.6089	1.131	80	-.5255	0.000		1.1071	0.00	.20
16	.161	30	-.6064	.331	140	-.4940	.431	60	-.6310	1.131	70	-.4742	0.000		.9785	0.00	.30
17	.161	20	-.6088	.331	130	-.5269	.431	50	-.6217	1.131	60	-.4798	0.000		.7245	0.00	.40
18	.161	10	-.6145	.331	120	-.5594	.431	40	-.6327	1.131	50	-.4495	0.000		.7238	0.00	.45
19	.161	0	-.6007	.331	110	-.5874	.431	30	-.6290	1.131	40	-.4404	.161	270	-.5771		
20	.231	180	-.4204	.331	100	-.6142	.431	20	-.6369	1.131	30	-.4496	.231	270	-.5871		
21	.231	170	-.4215	.331	90	-.5941	.431	10	-.6252	1.131	20	-.4619	.331	270	-.5877		
22	.231	160	-.4642	.331	80	-.6233	.431	0	-.6407	1.131	10	-.4495	.431	270	-.5824		
23	.231	150	-.4752	.331	70	-.6271	.531	180	-.4869	1.131	0	-.4561	.531	270	-.5830		
24	.231	140	-.4930	.331	60	-.6488	.531	90	-.6250				.731	270	-.6018		
25	.231	130	-.5230	.331	50	-.6311	.531	0	-.6407	1.631	90	-.1027	.931	270	-.5861		
26	.231	120	-.5376	.331	40	-.6197	.731	180	-.5035	1.631	0	-.1176	1.131	270	-.5412		
27	.231	110	-.5792	.331	30	-.6251	.731	90	-.6197	2.131	180	-.1389	1.631	270	-.2666		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 190 ALPHA 6 MACH .821 Q 646.922 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4254	.231	100	-.6588	.331	20	-.6790	.731	0	-.6232	2.131	90	-.1447		
2	.161	170	-.4243	.231	90	-.6483	.331	10	-.6841	.931	180	-.1463	2.131	0	.0173		
3	.161	160	-.4418	.231	80	-.6614	.331	0	-.6730	.931	90	-.6014	0.000		.7606	-.45	0.00
4	.161	150	-.4859	.231	70	-.7747	.431	180	-.4794	.931	0	-.3555	0.000		.8154	-.40	0.00
5	.161	140	-.5346	.231	60	-.6944	.431	170	-.5001	1.131	180	-.5333	0.000		1.0544	-.30	0.00
6	.161	130	-.5667	.231	50	-.6634	.431	160	-.5015	1.131	170	-.5215	0.000		1.1558	-.20	0.00
7	.161	120	-.6086	.231	40	-.7274	.431	150	-.5468	1.131	160	-.5583	0.000		1.1863	-.10	0.00
8	.161	110	-.6189	.231	30	-.6864	.431	140	-.5598	1.131	150	-.5434	0.000		1.1791	0.00	0.00
9	.161	100	-.7070	.231	20	-.6811	.431	130	-.5876	1.131	140	-.5603	0.000		1.1351	.10	0.00
10	.161	90	-.6337	.231	10	-.6824	.431	120	-.6242	1.131	130	-.5948	0.000		1.0455	.20	0.00
11	.161	80	-.7187	.231	0	-.6821	.431	110	-.6407	1.131	120	-.5766	0.000		.8938	.30	0.00
12	.161	70	-.7311	.331	180	-.4527	.431	100	-.6614	1.131	110	-.5718	0.000		.6803	.40	0.00
13	.161	60	-.6972	.331	170	-.4701	.431	90	-.6750	1.131	100	-.5315	0.000		.6208	.45	0.00
14	.161	50	-.6754	.331	160	-.4967	.431	80	-.6730	1.131	90	-.4504	0.000		1.1666	0.00	.10
15	.161	40	-.6837	.331	150	-.5170	.431	70	-.7048	1.131	80	-.3847	0.000		1.1038	0.00	.20
16	.161	30	-.6757	.331	140	-.5680	.431	60	-.6898	1.131	70	-.3896	0.000		.9570	0.00	.30
17	.161	20	-.6790	.331	130	-.5892	.431	50	-.6979	1.131	60	-.3521	0.000		.6928	0.00	.40
18	.161	10	-.6721	.331	120	-.6142	.431	40	-.6889	1.131	50	-.3670	0.000		.6944	0.00	.45
19	.161	0	-.6857	.331	110	-.6621	.431	30	-.7063	1.131	40	-.3376	.161	270	-.6721		
20	.231	180	-.4238	.331	100	-.6755	.431	20	-.6942	1.131	30	-.3004	.231	270	-.6393		
21	.231	170	-.4426	.331	90	-.6612	.431	10	-.6920	1.131	20	-.2959	.331	270	-.6513		
22	.231	160	-.4657	.331	80	-.6877	.431	0	-.6927	1.131	10	-.2679	.431	270	-.6466		
23	.231	150	-.5018	.331	70	-.7314	.531	180	-.5129	1.131	0	-.2885	.531	270	-.6635		
24	.231	140	-.5296	.331	60	-.7158	.531	90	-.6920				.731	270	-.6601		
25	.231	130	-.5577	.331	50	-.6721	.531	0	-.6827	1.631	90	-.0551	.931	270	-.6064		
26	.231	120	-.6088	.331	40	-.6933	.731	180	-.5499	1.631	0	-.1495	1.131	270	-.4891		
27	.231	110	-.6297	.331	30	-.6857	.731	90	-.6759	2.131	180	-.0815	1.631	270	-.1784		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 191 ALPHA 8 MACH .823 Q 648.170 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4332	.231	100	-.6809	.331	20	-.7594	.731	0	-.5332	2.131	90	-.1655		
2	.161	170	-.4295	.231	90	-.6997	.331	10	-.7673	.931	180	-.1577	2.131	0	-.0075		
3	.161	160	-.4704	.231	80	-.7848	.331	0	-.7667	.931	90	-.5756	0.000		.7691	-.45	0.00
4	.161	150	-.4866	.231	70	-.7734	.431	180	-.4958	.931	0	-.3165	0.000		.8370	-.40	0.00
5	.161	140	-.5514	.231	60	-.7546	.431	170	-.5132	1.131	180	-.5436	0.000		1.0717	-.30	0.00
6	.161	130	-.6017	.231	50	-.7577	.431	160	-.5357	1.131	170	-.5412	0.000		1.1666	-.20	0.00
7	.161	120	-.6382	.231	40	-.7504	.431	150	-.5753	1.131	160	-.5468	0.000		1.1890	-.10	0.00
8	.161	110	-.6782	.231	30	-.7294	.431	140	-.5931	1.131	150	-.5738	0.000		1.1674	0.00	0.00
9	.161	100	-.6861	.231	20	-.7506	.431	130	-.6397	1.131	140	-.5916	0.000		1.1135	.10	0.00
10	.161	90	-.6733	.231	10	-.7307	.431	120	-.6371	1.131	130	-.5764	0.000		1.0293	.20	0.00
11	.161	80	-.8798	.231	0	-.7401	.431	110	-.6686	1.131	120	-.5703	0.000		.8682	.30	0.00
12	.161	70	-.7353	.331	180	-.4686	.431	100	-.6876	1.131	110	-.5386	0.000		.6490	.40	0.00
13	.161	60	-.7791	.331	170	-.4799	.431	90	-.6930	1.131	100	-.4879	0.000		.5621	.45	0.00
14	.161	50	-.7295	.331	160	-.5113	.431	80	-.7071	1.131	90	-.4266	0.000		1.1513	0.00	.10
15	.161	40	-.7184	.331	150	-.5233	.431	70	-.7077	1.131	80	-.3659	0.000		1.0915	0.00	.20
16	.161	30	-.7557	.331	140	-.5779	.431	60	-.7395	1.131	70	-.3507	0.000		.9618	0.00	.30
17	.161	20	-.7353	.331	130	-.6044	.431	50	-.7269	1.131	60	-.3143	0.000		.7150	0.00	.40
18	.161	10	-.7465	.331	120	-.6321	.431	40	-.7389	1.131	50	-.2427	0.000		.6855	0.00	.45
19	.161	0	-.7519	.331	110	-.6558	.431	30	-.7408	1.131	40	-.1979	.161	270	-.7080		
20	.231	180	-.4489	.331	100	-.6797	.431	20	-.7344	1.131	30	-.1907	.231	270	-.7039		
21	.231	170	-.4500	.331	90	-.6746	.431	10	-.7349	1.131	20	-.1181	.331	270	-.6821		
22	.231	160	-.4754	.331	80	-.7070	.431	0	-.7391	1.131	10	-.0934	.431	270	-.6868		
23	.231	150	-.5143	.331	70	-.7729	.531	180	-.5273	1.131	0	-.1308	.531	270	-.6909		
24	.231	140	-.5438	.331	60	-.7446	.531	90	-.6983				.731	270	-.6906		
25	.231	130	-.6024	.331	50	-.7535	.531	0	-.7111	1.631	90	.0163	.931	270	-.5802		
26	.231	120	-.6172	.331	40	-.7309	.731	180	-.5534	1.631	0	-.1553	1.131	270	-.4266		
27	.231	110	-.6834	.331	30	-.7716	.731	90	-.6998	2.131	180	-.0954	1.631	270	-.1743		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 192 ALPHA 10 MACH .822 Q 647.049 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4283	.231	100	-.6887	.331	20	-.7837	.731	0	-.3099	2.131	90	-.1702		
2	.161	170	-.4532	.231	90	-.7323	.331	10	-.7833	.931	180	-.1597	2.131	0	.0065		
3	.161	160	-.4906	.231	80	-.7424	.331	0	-.7822	.931	90	-.5092	0.000		.7922	-.45	0.00
4	.161	150	-.5370	.231	70	-.7248	.431	180	-.5310	.931	0	-.3375	0.000		.8795	-.40	0.00
5	.161	140	-.5682	.231	60	-.8102	.431	170	-.5270	1.131	180	-.5455	0.000		1.0976	-.30	0.00
6	.161	130	-.5974	.231	50	-.9199	.431	160	-.5212	1.131	170	-.5199	0.000		1.1822	-.20	0.00
7	.161	120	-.6770	.231	40	-.8717	.431	150	-.5878	1.131	160	-.5670	0.000		1.1877	-.10	0.00
8	.161	110	-.6734	.231	30	-.8175	.431	140	-.5959	1.131	150	-.5553	0.000		1.1615	0.00	0.00
9	.161	100	-.7024	.231	20	-.8209	.431	130	-.6451	1.131	140	-.5924	0.000		1.0974	.10	0.00
10	.161	90	-.7704	.231	10	-.8147	.431	120	-.6762	1.131	130	-.5972	0.000		.9942	.20	0.00
11	.161	80	-.7488	.231	0	-.8039	.431	110	-.6947	1.131	120	-.5523	0.000		.8294	.30	0.00
12	.161	70	-.6698	.331	180	-.4873	.431	100	-.6962	1.131	110	-.5038	0.000		.6151	.40	0.00
13	.161	60	-1.0961	.331	170	-.4928	.431	90	-.7026	1.131	100	-.4909	0.000		.4896	.45	0.00
14	.161	50	-.9023	.331	160	-.5229	.431	80	-.7429	1.131	90	-.3725	0.000		1.1380	0.00	.10
15	.161	40	-.8892	.331	150	-.5495	.431	70	-.7509	1.131	80	-.3341	0.000		1.0927	0.00	.20
16	.161	30	-.8186	.331	140	-.5841	.431	60	-.7293	1.131	70	-.2805	0.000		.9464	0.00	.30
17	.161	20	-.8063	.331	130	-.6215	.431	50	-.6801	1.131	60	-.2430	0.000		.6896	0.00	.40
18	.161	10	-.7923	.331	120	-.6612	.431	40	-.6898	1.131	50	-.2161	0.000		.6825	0.00	.45
19	.161	0	-.8183	.331	110	-.6976	.431	30	-.6898	1.131	40	-.1549	.161	270	-.7532		
20	.231	180	-.4767	.331	100	-.7071	.431	20	-.7200	1.131	30	-.1168	.231	270	-.7354		
21	.231	170	-.4731	.331	90	-.7301	.431	10	-.7149	1.131	20	-.0842	.331	270	-.7042		
22	.231	160	-.4756	.331	80	-.7346	.431	0	-.6951	1.131	10	-.0721	.431	270	-.6942		
23	.231	150	-.5444	.331	70	-.7493	.531	180	-.5534	1.131	0	-.0431	.531	270	-.7132		
24	.231	140	-.5804	.331	60	-.7620	.531	90	-.7292				.731	270	-.6646		
25	.231	130	-.6304	.331	50	-.8245	.531	0	-.5977	1.631	90	.0301	.931	270	-.5331		
26	.231	120	-.6459	.331	40	-.7944	.731	180	-.5810	1.631	0	-.1764	1.131	270	-.3903		
27	.231	110	-.6548	.331	30	-.7709	.731	90	-.6621	2.131	180	-.1164	1.631	270	-.2178		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 193 ALPHA 12 MACH .823 Q 647.799 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4705	.231	100	-.7010	.331	20	-.7614	.731	0	-.0980	2.131	90	-.1877		
2	.161	170	-.4686	.231	90	-.7357	.331	10	-.7574	.931	180	-.1979	2.131	0	.0093		
3	.161	160	-.5075	.231	80	-.7180	.331	0	-.7722	.931	90	-.5076	0.000		.7917	-.45	0.00
4	.161	150	-.5334	.231	70	-.6999	.431	180	-.5240	.931	0	-.3498	0.000		.9184	-.40	0.00
5	.161	140	-.5614	.231	60	-.8880	.431	170	-.5306	1.131	180	-.5229	0.000		1.1302	-.30	0.00
6	.161	130	-.6122	.231	50	-.8308	.431	160	-.5489	1.131	170	-.5281	0.000		1.1904	-.20	0.00
7	.161	120	-.6628	.231	40	-.8055	.431	150	-.5820	1.131	160	-.5547	0.000		1.1869	-.10	0.00
8	.161	110	-.6798	.231	30	-.8390	.431	140	-.6217	1.131	150	-.5694	0.000		1.1535	0.00	0.00
9	.161	100	-.7052	.231	20	-.8324	.431	130	-.6308	1.131	140	-.5591	0.000		1.0800	.10	0.00
10	.161	90	-.7250	.231	10	-.8371	.431	120	-.6469	1.131	130	-.5318	0.000		.9676	.20	0.00
11	.161	80	-.7299	.231	0	-.8411	.431	110	-.6769	1.131	120	-.5446	0.000		.7974	.30	0.00
12	.161	70	-.6783	.331	180	-.4978	.431	100	-.6935	1.131	110	-.4982	0.000		.5807	.40	0.00
13	.161	60	-.9802	.331	170	-.5333	.431	90	-.7201	1.131	100	-.4574	0.000		.4284	.45	0.00
14	.161	50	-.8737	.331	160	-.5422	.431	80	-.7307	1.131	90	-.4012	0.000		1.1314	0.00	.10
15	.161	40	-.8458	.331	150	-.5793	.431	70	-.7343	1.131	80	-.3653	0.000		1.0747	0.00	.20
16	.161	30	-.8216	.331	140	-.5970	.431	60	-.6887	1.131	70	-.3039	0.000		.9435	0.00	.30
17	.161	20	-.8472	.331	130	-.6309	.431	50	-.6187	1.131	60	-.2671	0.000		.6694	0.00	.40
18	.161	10	-.8553	.331	120	-.6564	.431	40	-.6065	1.131	50	-.2152	0.000		.6874	0.00	.45
19	.161	0	-.8548	.331	110	-.6725	.431	30	-.6184	1.131	40	-.1563	.161	270	-.7652		
20	.231	180	-.4866	.331	100	-.6961	.431	20	-.5933	1.131	30	-.1334	.231	270	-.7489		
21	.231	170	-.4718	.331	90	-.7151	.431	10	-.5842	1.131	20	-.0801	.331	270	-.7145		
22	.231	160	-.5174	.331	80	-.7383	.431	0	-.5527	1.131	10	-.0576	.431	270	-.7007		
23	.231	150	-.5628	.331	70	-.7513	.531	180	-.5621	1.131	0	-.0548	.531	270	-.7185		
24	.231	140	-.5929	.331	60	-.7352	.531	90	-.7073				.731	270	-.6315		
25	.231	130	-.6201	.331	50	-.7510	.531	0	-.3686	1.631	90	.0367	.931	270	-.4813		
26	.231	120	-.6477	.331	40	-.7352	.731	180	-.5778	1.631	0	-.2048	1.131	270	-.4033		
27	.231	110	-.6574	.331	30	-.7415	.731	90	-.6186	2.131	180	-.1010	1.631	270	-.3075		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 194 ALPHA 14 MACH .822 Q 647.142 MODEL DONE FACE

PONT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4797	.231	100	-.6596	.331	20	-.5108	.731	0	-.0755	2.131	90	-.2298		
2	.161	170	-.4862	.231	90	-.7068	.331	10	-.4609	.931	180	-.2142	2.131	0	.0089		
3	.161	160	-.5398	.231	80	-.6763	.331	0	-.4594	.931	90	-.4816	0.000		.8183	-.45	0.00
4	.161	150	-.5515	.231	70	-.6635	.431	180	-.5317	.931	0	-.3608	0.000		.9479	-.40	0.00
5	.161	140	-.5813	.231	60	-.8130	.431	170	-.5436	1.131	180	-.5520	0.000		1.1395	-.30	0.00
6	.161	130	-.6011	.231	50	-.7561	.431	160	-.5403	1.131	170	-.5444	0.000		1.1904	-.20	0.00
7	.161	120	-.6605	.231	40	-.8143	.431	150	-.6051	1.131	160	-.5492	0.000		1.1757	-.10	0.00
8	.161	110	-.6267	.231	30	-.7782	.431	140	-.5864	1.131	150	-.5583	0.000		1.1299	0.00	0.00
9	.161	100	-.6821	.231	20	-.7813	.431	130	-.6077	1.131	140	-.5826	0.000		1.0492	.10	0.00
10	.161	90	-.7236	.231	10	-.7704	.431	120	-.6492	1.131	130	-.5951	0.000		.9235	.20	0.00
11	.161	80	-.7070	.231	0	-.7786	.431	110	-.6701	1.131	120	-.5560	0.000		.7510	.30	0.00
12	.161	70	-.6868	.331	180	-.5027	.431	100	-.6461	1.131	110	-.5126	0.000		.5425	.40	0.00
13	.161	60	-.8539	.331	170	-.5099	.431	90	-.6701	1.131	100	-.4739	0.000		.4019	.45	0.00
14	.161	50	-.8257	.331	160	-.5304	.431	80	-.6675	1.131	90	-.4608	0.000		1.1081	0.00	.10
15	.161	40	-.8459	.331	150	-.5853	.431	70	-.6564	1.131	80	-.4244	0.000		1.0484	0.00	.20
16	.161	30	-.8925	.331	140	-.5770	.431	60	-.5150	1.131	70	-.3479	0.000		.9281	0.00	.30
17	.161	20	-.8981	.331	130	-.6065	.431	50	-.5086	1.131	60	-.2891	0.000		.6615	0.00	.40
18	.161	10	-.9639	.331	120	-.6778	.431	40	-.4255	1.131	50	-.2426	0.000		.6726	0.00	.45
19	.161	0	-.9202	.331	110	-.6430	.431	30	-.3252	1.131	40	-.1756	.161	270	-.7221		
20	.231	180	-.4797	.331	100	-.6584	.431	20	-.2555	1.131	30	-.1200	.231	270	-.7031		
21	.231	170	-.4974	.331	90	-.6845	.431	10	-.2139	1.131	20	-.0932	.331	270	-.7004		
22	.231	160	-.5259	.331	80	-.7010	.431	0	-.1885	1.131	10	-.0675	.431	270	-.6773		
23	.231	150	-.5540	.331	70	-.7026	.531	180	-.5559	1.131	0	-.0568	.531	270	-.6812		
24	.231	140	-.5764	.331	60	-.6595	.531	90	-.6544				.731	270	-.5875		
25	.231	130	-.6231	.331	50	-.6571	.531	0	-.1086	1.631	90	-.0049	.931	270	-.4891		
26	.231	120	-.6358	.331	40	-.6234	.731	180	-.5930	1.631	0	-.2416	1.131	270	-.4419		
27	.231	110	-.6522	.331	30	-.5427	.731	90	-.5881	2.131	180	-.1031	1.631	270	-.3864		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 195 ALPHA 16 MACH .822 Q 647.522 MODEL DONE FACE

PONT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4943	.231	100	-.6778	.331	20	-.2795	.731	0	-.0629	2.131	90	-.2565		
2	.161	170	-.5015	.231	90	-.6468	.331	10	-.2241	.931	180	-.2875	2.131	0	.0035		
3	.161	160	-.5239	.231	80	-.6680	.331	0	-.1965	.931	90	-.5168	0.000		.8413	-.45	0.00
4	.161	150	-.5664	.231	70	-.6892	.431	180	-.5397	.931	0	-.3800	0.000		.9897	-.40	0.00
5	.161	140	-.5700	.231	60	-.7258	.431	170	-.5370	1.131	180	-.5792	0.000		1.1483	-.30	0.00
6	.161	130	-.5743	.231	50	-.7195	.431	160	-.5337	1.131	170	-.5649	0.000		1.1928	-.20	0.00
7	.161	120	-.6436	.231	40	-.7456	.431	150	-.6005	1.131	160	-.5794	0.000		1.1663	-.10	0.00
8	.161	110	-.6322	.231	30	-.7199	.431	140	-.6087	1.131	150	-.6077	0.000		1.1024	0.00	0.00
9	.161	100	-.6605	.231	20	-.6452	.431	130	-.5959	1.131	140	-.5810	0.000		1.0130	.10	0.00
10	.161	90	-.6483	.231	10	-.5863	.431	120	-.6118	1.131	130	-.6021	0.000		.8946	.20	0.00
11	.161	80	-.6452	.231	0	-.5796	.431	110	-.6048	1.131	120	-.5840	0.000		.7159	.30	0.00
12	.161	70	-.7456	.331	180	-.4871	.431	100	-.5908	1.131	110	-.5530	0.000		.5143	.40	0.00
13	.161	60	-.7813	.331	170	-.5304	.431	90	-.6312	1.131	100	-.5488	0.000		.3538	.45	0.00
14	.161	50	-.8176	.331	160	-.5293	.431	80	-.6209	1.131	90	-.5035	0.000		1.0871	0.00	.10
15	.161	40	-.8250	.331	150	-.5557	.431	70	-.5679	1.131	80	-.4611	0.000		1.0260	0.00	.20
16	.161	30	-.8403	.331	140	-.5528	.431	60	-.4669	1.131	70	-.3782	0.000		.8987	0.00	.30
17	.161	20	-.8699	.331	130	-.6075	.431	50	-.3868	1.131	60	-.3219	0.000		.6114	0.00	.40
18	.161	10	-.8974	.331	120	-.6097	.431	40	-.2958	1.131	50	-.2619	0.000		.6516	0.00	.45
19	.161	0	-.8953	.331	110	-.6144	.431	30	-.1787	1.131	40	-.1754	.161	270	-.6734		
20	.231	180	-.5066	.331	100	-.6336	.431	20	-.1290	1.131	30	-.1299	.231	270	-.6585		
21	.231	170	-.5073	.331	90	-.6467	.431	10	-.0723	1.131	20	-.0792	.331	270	-.6491		
22	.231	160	-.5249	.331	80	-.6412	.431	0	-.0766	1.131	10	-.0641	.431	270	-.6538		
23	.231	150	-.5426	.331	70	-.6249	.531	180	-.5412	1.131	0	-.0489	.531	270	-.6085		
24	.231	140	-.5713	.331	60	-.5979	.531	90	-.6252				.731	270	-.5677		
25	.231	130	-.6169	.331	50	-.5525	.531	0	-.0770	1.631	90	-.0165	.931	270	-.5363		
26	.231	120	-.6501	.331	40	-.4934	.731	180	-.6076	1.631	0	-.2856	1.131	270	-.5293		
27	.231	110	-.6169	.331	30	-.3702	.731	90	-.5073	2.131	180	-.1663	1.631	270	-.4750		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 196 ALPHA 16 MACH .821 Q 646.922 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5155	.231	100	-.6434	.331	20	-.1016	.731	0	-.0034	2.131	90	-.2930		
2	.161	170	-.4864	.231	90	-.6048	.331	10	-.0774	.931	180	-.3012	2.131	0	.0262		
3	.161	160	-.5191	.231	80	-.6311	.331	0	-.0404	.931	90	-.5136	0.000		.8662	-.45	0.00
4	.161	150	-.5306	.231	70	-.6637	.431	180	-.5200	.931	0	-.3861	0.000		1.0213	-.40	0.00
5	.161	140	-.5582	.231	60	-.6956	.431	170	-.5407	1.131	180	-.5750	0.000		1.1662	-.30	0.00
6	.161	130	-.5537	.231	50	-.6518	.431	160	-.5321	1.131	170	-.5869	0.000		1.1852	-.20	0.00
7	.161	120	-.5835	.231	40	-.6416	.431	150	-.5580	1.131	150	-.5857	0.000		1.1537	-.10	0.00
8	.161	110	-.5925	.231	30	-.5680	.431	140	-.5770	1.131	150	-.5946	0.000		1.0886	0.00	0.00
9	.161	100	-.6099	.231	20	-.4287	.431	130	-.5678	1.131	140	-.5656	0.000		.9821	.10	0.00
10	.161	90	-.6257	.231	10	-.3395	.431	120	-.5927	1.131	130	-.6097	0.000		.8545	.20	0.00
11	.161	80	-.6104	.231	0	-.3203	.431	110	-.5695	1.131	120	-.5770	0.000		.6750	.30	0.00
12	.161	70	-.7122	.331	180	-.5078	.431	100	-.5810	1.131	110	-.5946	0.000		.4782	.40	0.00
13	.161	60	-.7526	.331	170	-.5395	.431	90	-.6234	1.131	100	-.5835	0.000		.3086	.45	0.00
14	.161	50	-.7827	.331	160	-.5341	.431	80	-.5960	1.131	90	-.5362	0.000		1.0671	0.00	.10
15	.161	40	-.7716	.331	150	-.5314	.431	70	-.4983	1.131	80	-.5015	0.000		1.0123	0.00	.20
16	.161	30	-.8385	.331	140	-.5845	.431	60	-.4191	1.131	70	-.4296	0.000		.8807	0.00	.30
17	.161	20	-.8338	.331	130	-.6017	.431	50	-.3076	1.131	60	-.3370	0.000		.5859	0.00	.40
18	.161	10	-.8271	.331	120	-.5704	.431	40	-.1721	1.131	50	-.2482	0.000		.6343	0.00	.45
19	.161	0	-.7925	.331	110	-.5874	.431	30	-.0939	1.131	40	-.1665	.161	270	-.6190		
20	.231	180	-.5010	.331	100	-.6229	.431	20	-.0512	1.131	30	-.0907	.231	270	-.6329		
21	.231	170	-.4888	.331	90	-.5879	.431	10	-.0146	1.131	20	-.0448	.331	270	-.5825		
22	.231	160	-.5124	.331	80	-.6171	.431	0	-.0120	1.131	10	-.0187	.431	270	-.5959		
23	.231	150	-.5397	.331	70	-.5970	.531	180	-.5378	1.131	0	-.0062	.531	270	-.5914		
24	.231	140	-.5545	.331	60	-.5450	.531	90	-.5942				.731	270	-.5332		
25	.231	130	-.5655	.331	50	-.4369	.531	0	-.0141	1.631	90	-.0239	.931	270	-.5334		
26	.231	120	-.5907	.331	40	-.3143	.731	180	-.5981	1.631	0	-.2563	1.131	270	-.5541		
27	.231	110	-.5707	.331	30	-.1825	.731	90	-.5261	2.131	180	-.1995	1.631	270	-.5663		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 197 ALPHA 20 MACH .820 Q 645.271 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5089	.231	100	-.6013	.331	20	-.0147	.731	0	.0412	2.131	90	-.2850		
2	.161	170	-.5056	.231	90	-.6061	.331	10	.0033	.931	180	-.2822	2.131	0	.0435		
3	.161	160	-.5073	.231	80	-.6153	.331	0	.0200	.931	90	-.5216	0.000		.8932	-.45	0.00
4	.161	150	-.5371	.231	70	-.6486	.431	180	-.5198	.931	0	-.3924	0.000		1.0680	-.40	0.00
5	.161	140	-.5382	.231	60	-.6275	.431	170	-.5185	1.131	180	-.5680	0.000		1.1831	-.30	0.00
6	.161	130	-.5740	.231	50	-.6348	.431	160	-.5613	1.131	170	-.6072	0.000		1.1841	-.20	0.00
7	.161	120	-.5965	.231	40	-.5092	.431	150	-.5695	1.131	160	-.6088	0.000		1.1372	-.10	0.00
8	.161	110	-.5862	.231	30	-.2917	.431	140	-.5649	1.131	150	-.6102	0.000		1.0682	0.00	0.00
9	.161	100	-.5845	.231	20	-.1639	.431	130	-.5495	1.131	140	-.5812	0.000		.9375	.10	0.00
10	.161	90	-.5853	.231	10	-.1459	.431	120	-.5493	1.131	130	-.6046	0.000		.8178	.20	0.00
11	.161	80	-.6412	.231	0	-.1267	.431	110	-.5886	1.131	120	-.6226	0.000		.6238	.30	0.00
12	.161	70	-.6509	.331	180	-.5008	.431	100	-.5552	1.131	110	-.6066	0.000		.4368	.40	0.00
13	.161	60	-.7170	.331	170	-.5150	.431	90	-.5741	1.131	100	-.6082	0.000		.2760	.45	0.00
14	.161	50	-.7479	.331	160	-.5135	.431	80	-.5326	1.131	90	-.5755	0.000		1.0345	0.00	.10
15	.161	40	-.7526	.331	150	-.5252	.431	70	-.4438	1.131	80	-.5115	0.000		.9856	0.00	.20
16	.161	30	-.7305	.331	140	-.5535	.431	60	-.3171	1.131	70	-.4390	0.000		.8680	0.00	.30
17	.161	20	-.7329	.331	130	-.5455	.431	50	-.2157	1.131	60	-.3468	0.000		.6113	0.00	.40
18	.161	10	-.7041	.331	120	-.5946	.431	40	-.1357	1.131	50	-.2634	0.000		.6062	0.00	.45
19	.161	0	-.6622	.331	110	-.5728	.431	30	-.0626	1.131	40	-.1724	.161	270	-.6180		
20	.231	180	-.5207	.331	100	-.6135	.431	20	-.0151	1.131	30	-.0918	.231	270	-.6315		
21	.231	170	-.5259	.331	90	-.6106	.431	10	.0207	1.131	20	-.0349	.331	270	-.6272		
22	.231	160	-.5113	.331	80	-.5904	.431	0	.0446	1.131	10	.0107	.431	270	-.5731		
23	.231	150	-.5310	.331	70	-.5659	.531	180	-.5385	1.131	0	.0132	.531	270	-.5525		
24	.231	140	-.5411	.331	60	-.4486	.531	90	-.5392				.731	270	-.5117		
25	.231	130	-.5417	.331	50	-.3165	.531	0	.0299	1.631	90	-.1802	.931	270	-.5180		
26	.231	120	-.5601	.331	40	-.1718	.731	180	-.5503	1.631	0	-.3169	1.131	270	-.5926		
27	.231	110	-.5616	.331	30	-.0771	.731	90	-.5207	2.131	180	-.2047	1.631	270	-.6243		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 198 ALPHA 22 MACH .822 Q 647.306 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4765	.231	100	-.5852	.331	20	.0360	.731	0	.0706	2.131	90	-.3213		
2	.161	170	-.4884	.231	90	-.5761	.331	10	.0642	.931	180	-.3317	2.131	0	.0667		
3	.161	160	-.4814	.231	80	-.6011	.331	0	.1017	.931	90	-.5219	0.000		.9435	-.45	0.00
4	.161	150	-.5201	.231	70	-.6491	.431	180	-.5290	.931	0	-.4047	0.000		1.1131	-.40	0.00
5	.161	140	-.5421	.231	60	-.6205	.431	170	-.5303	1.131	180	-.5855	0.000		1.1919	-.30	0.00
6	.161	130	-.5335	.231	50	-.5395	.431	160	-.5173	1.131	170	-.5873	0.000		1.1697	-.20	0.00
7	.161	120	-.5632	.231	40	-.2968	.431	150	-.5572	1.131	160	-.6114	0.000		1.1188	-.10	0.00
8	.161	110	-.5800	.231	30	-.1529	.431	140	-.5588	1.131	150	-.5975	0.000		1.0349	0.00	0.00
9	.161	100	-.6062	.231	20	-.0875	.431	130	-.5689	1.131	140	-.6012	0.000		.9269	.10	0.00
10	.161	90	-.5906	.231	10	-.0460	.431	120	-.5599	1.131	130	-.6068	0.000		.7839	.20	0.00
11	.161	80	-.6183	.231	0	-.0478	.431	110	-.5526	1.131	120	-.6456	0.000		.5842	.30	0.00
12	.161	70	-.6579	.331	180	-.5043	.431	100	-.5473	1.131	110	-.6356	0.000		.4072	.40	0.00
13	.161	60	-.7156	.331	170	-.4978	.431	90	-.5563	1.131	100	-.6438	0.000		.2642	.45	0.00
14	.161	50	-.7337	.331	160	-.5170	.431	80	-.5045	1.131	90	-.6130	0.000		1.0096	0.00	.10
15	.161	40	-.6895	.331	150	-.5505	.431	70	-.4111	1.131	80	-.5680	0.000		.9534	0.00	.20
16	.161	30	-.6029	.331	140	-.5371	.431	60	-.2587	1.131	70	-.4557	0.000		.8538	0.00	.30
17	.161	20	-.5512	.331	130	-.5560	.431	50	-.1747	1.131	60	-.3665	0.000		.6079	0.00	.40
18	.161	10	-.5216	.331	120	-.5484	.431	40	-.0945	1.131	50	-.2582	0.000		.5993	0.00	.45
19	.161	0	-.5131	.331	110	-.5703	.431	30	-.0068	1.131	40	-.1518	.161	270	-.6137		
20	.231	180	-.4817	.331	100	-.5456	.431	20	.0505	1.131	30	-.0550	.231	270	-.5765		
21	.231	170	-.5156	.331	90	-.5850	.431	10	.0852	1.131	20	.0080	.331	270	-.5718		
22	.231	160	-.4992	.331	80	-.5698	.431	0	.0957	1.131	10	.0402	.431	270	-.5632		
23	.231	150	-.5441	.331	70	-.5239	.531	180	-.5572	1.131	0	.0424	.531	270	-.5455		
24	.231	140	-.5317	.331	60	-.3728	.531	90	-.5261				.731	270	-.5187		
25	.231	130	-.5421	.331	50	-.2004	.531	0	.0898	1.631	90	-.3188	.931	270	-.5500		
26	.231	120	-.5553	.331	40	-.1082	.731	180	-.5475	1.631	0	-.3110	1.131	270	-.6143		
27	.231	110	-.5457	.331	30	-.0241	.731	90	-.4913	2.131	180	-.3564	1.631	270	-.7141		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 199 ALPHA 24 MACH .821 Q 646.931 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4366	.231	100	-.5165	.331	20	.1156	.731	0	.1362	2.131	90	-.3245		
2	.161	170	-.4501	.231	90	-.5992	.331	10	.1326	.931	180	-.3324	2.131	0	.0963		
3	.161	160	-.4756	.231	80	-.5834	.331	0	.1605	.931	90	-.5495	0.000		.9772	-.45	0.00
4	.161	150	-.5054	.231	70	-.6179	.431	180	-.4900	.931	0	-.4027	0.000		1.1566	-.40	0.00
5	.161	140	-.5059	.231	60	-.5749	.431	170	-.5052	1.131	180	-.5652	0.000		1.1905	-.30	0.00
6	.161	130	-.5328	.231	50	-.2855	.431	160	-.5166	1.131	170	-.5756	0.000		1.1727	-.20	0.00
7	.161	120	-.5222	.231	40	-.1386	.431	150	-.5058	1.131	160	-.5603	0.000		1.1163	-.10	0.00
8	.161	110	-.5220	.231	30	-.0866	.431	140	-.4979	1.131	150	-.5505	0.000		1.0125	0.00	0.00
9	.161	100	-.5786	.231	20	-.0077	.431	130	-.5426	1.131	140	-.5915	0.000		.8913	.10	0.00
10	.161	90	-.5483	.231	10	.0412	.431	120	-.5092	1.131	130	-.5617	0.000		.7448	.20	0.00
11	.161	80	-.6025	.231	0	.0583	.431	110	-.5149	1.131	120	-.6125	0.000		.5507	.30	0.00
12	.161	70	-.6638	.331	180	-.4808	.431	100	-.5336	1.131	110	-.6483	0.000		.3977	.40	0.00
13	.161	60	-.7133	.331	170	-.5083	.431	90	-.5431	1.131	100	-.7079	0.000		.2254	.45	0.00
14	.161	50	-.6322	.331	160	-.5181	.431	80	-.4475	1.131	90	-.6524	0.000		.9913	0.00	.10
15	.161	40	-.5653	.331	150	-.5176	.431	70	-.3437	1.131	80	-.5883	0.000		.9392	0.00	.20
16	.161	30	-.5131	.331	140	-.5225	.431	60	-.2430	1.131	70	-.4830	0.000		.8241	0.00	.30
17	.161	20	-.4913	.331	130	-.5401	.431	50	-.1523	1.131	60	-.3662	0.000		.6041	0.00	.40
18	.161	10	-.4346	.331	120	-.5292	.431	40	-.0555	1.131	50	-.2528	0.000		.5791	0.00	.45
19	.161	0	-.4402	.331	110	-.5368	.431	30	.0354	1.131	40	-.1373	.161	270	-.5569		
20	.231	180	-.4902	.331	100	-.5524	.431	20	.0976	1.131	30	-.0440	.231	270	-.5776		
21	.231	170	-.4962	.331	90	-.5591	.431	10	.1462	1.131	20	.0389	.331	270	-.5745		
22	.231	160	-.5079	.331	80	-.5513	.431	0	.1540	1.131	10	.0802	.431	270	-.5373		
23	.231	150	-.5245	.331	70	-.4342	.531	180	-.5321	1.131	0	.0953	.531	270	-.5026		
24	.231	140	-.4895	.331	60	-.2813	.531	90	-.4768				.731	270	-.5067		
25	.231	130	-.5057	.331	50	-.1673	.531	0	.1431	1.631	90	-.4345	.931	270	-.5496		
26	.231	120	-.5158	.331	40	-.0614	.731	180	-.5127	1.631	0	-.3249	1.131	270	-.6463		
27	.231	110	-.5611	.331	30	.0407	.731	90	-.5272	2.131	180	-.3253	1.631	270	-.7828		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 201 ALPHA 26 MACH .822 Q 647.456 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4754	.231	100	-.5466	.331	20	.1577	.731	0	.1768	2.131	90	-.3463		
2	.161	170	-.4940	.231	90	-.6004	.331	10	.2088	.931	180	-.3569	2.131	0	.1503		
3	.161	160	-.5261	.231	80	-.6700	.331	0	.2084	.931	90	-.6131	0.000		1.0131	-.45	0.00
4	.161	150	-.4913	.231	70	-.5993	.431	180	-.4986	.931	0	-.4280	0.000		1.1743	-.40	0.00
5	.161	140	-.5075	.231	60	-.4199	.431	170	-.5158	1.131	180	-.5599	0.000		1.1844	-.30	0.00
6	.161	130	-.5187	.231	50	-.2034	.431	160	-.5065	1.131	170	-.5457	0.000		1.1539	-.20	0.00
7	.161	120	-.5331	.231	40	-.1005	.431	150	-.5266	1.131	160	-.5686	0.000		1.0733	-.10	0.00
8	.161	110	-.5443	.231	30	-.0054	.431	140	-.5360	1.131	150	-.5760	0.000		.9661	0.00	0.00
9	.161	100	-.5636	.231	20	.0881	.431	130	-.5338	1.131	140	-.5835	0.000		.8373	.10	0.00
10	.161	90	-.5730	.231	10	.1308	.431	120	-.5281	1.131	130	-.6082	0.000		.6925	.20	0.00
11	.161	80	-.6338	.231	0	.1778	.431	110	-.5321	1.131	120	-.6479	0.000		.5090	.30	0.00
12	.161	70	-.6601	.331	180	-.4806	.431	100	-.5402	1.131	110	-.6935	0.000		.3755	.40	0.00
13	.161	60	-.6677	.331	170	-.5040	.431	90	-.5156	1.131	100	-.7356	0.000		.2089	.45	0.00
14	.161	50	-.6643	.331	160	-.4913	.431	80	-.4254	1.131	90	-.6887	0.000		.9406	0.00	.10
15	.161	40	-.5016	.331	150	-.5268	.431	70	-.3577	1.131	80	-.6277	0.000		.9026	0.00	.20
16	.161	30	-.4455	.331	140	-.5279	.431	60	-.2456	1.131	70	-.5273	0.000		.7889	0.00	.30
17	.161	20	-.3822	.331	130	-.5009	.431	50	-.1268	1.131	60	-.3766	0.000		.5792	0.00	.40
18	.161	10	-.2868	.331	120	-.5210	.431	40	-.0198	1.131	50	-.2457	0.000		.5508	0.00	.45
19	.161	0	-.2994	.331	110	-.5477	.431	30	.0684	1.131	40	-.1318	.161	270	-.5955		
20	.231	180	-.4572	.331	100	-.5121	.431	20	.1401	1.131	30	-.0133	.231	270	-.5502		
21	.231	170	-.4826	.331	90	-.5674	.431	10	.1905	1.131	20	.0732	.331	270	-.5872		
22	.231	160	-.4727	.331	80	-.5004	.431	0	.2108	1.131	10	.1193	.431	270	-.5184		
23	.231	150	-.5025	.331	70	-.3851	.531	180	-.5111	1.131	0	.1384	.531	270	-.4757		
24	.231	140	-.5312	.331	60	-.2639	.531	90	-.4931				.731	270	-.5533		
25	.231	130	-.5097	.331	50	-.1192	.531	0	.1971	1.631	90	-.4738	.931	270	-.6106		
26	.231	120	-.5429	.331	40	-.0145	.731	180	-.5403	1.631	0	-.3278	1.131	270	-.6963		
27	.231	110	-.5180	.331	30	.0901	.731	90	-.5290	2.131	180	-.4115	1.631	270	-.8404		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 202 ALPHA 0 MACH .821 Q 646.356 MODEL DOME FACE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4477	.231	100	-.4553	.331	20	-.4500	.731	0	-.4833	2.131	90	-.0896		
2	.161	170	-.4582	.231	90	-.4526	.331	10	-.4665	.931	180	-.0903	2.131	0	-.1935		
3	.161	160	-.4640	.231	80	-.4708	.331	0	-.4861	.931	90	-.5182	0.000		.7268	-.45	0.00
4	.161	150	-.4687	.231	70	-.4628	.431	180	-.4790	.931	0	-.3977	0.000		.7430	-.40	0.00
5	.161	140	-.4593	.231	60	-.4626	.431	170	-.4680	1.131	180	-.5023	0.000		.9847	-.30	0.00
6	.161	130	-.4447	.231	50	-.4524	.431	160	-.4619	1.131	170	-.5135	0.000		1.1144	-.20	0.00
7	.161	120	-.4440	.231	40	-.4510	.431	150	-.4630	1.131	160	-.5089	0.000		1.1712	-.10	0.00
8	.161	110	-.4497	.231	30	-.4675	.431	140	-.4638	1.131	150	-.5220	0.000		1.1853	0.00	0.00
9	.161	100	-.4633	.231	20	-.4622	.431	130	-.4836	1.131	140	-.5176	0.000		1.1710	.10	0.00
10	.161	90	-.4328	.231	10	-.4385	.431	120	-.4528	1.131	130	-.4914	0.000		1.1236	.20	0.00
11	.161	80	-.4575	.231	0	-.4521	.431	110	-.4810	1.131	120	-.5236	0.000		.9876	.30	0.00
12	.161	70	-.4447	.331	180	-.4684	.431	100	-.4594	1.131	110	-.5061	0.000		.7544	.40	0.00
13	.161	60	-.4537	.331	170	-.4748	.431	90	-.4728	1.131	100	-.5156	0.000		.7047	.45	0.00
14	.161	50	-.4609	.331	160	-.4615	.431	80	-.4660	1.131	90	-.5103	0.000		1.1753	0.00	.10
15	.161	40	-.4485	.331	150	-.4693	.431	70	-.4612	1.131	80	-.5049	0.000		1.1113	0.00	.20
16	.161	30	-.4499	.331	140	-.4735	.431	60	-.4684	1.131	70	-.5115	0.000		.9865	0.00	.30
17	.161	20	-.4295	.331	130	-.4488	.431	50	-.4544	1.131	60	-.4982	0.000		.7532	0.00	.40
18	.161	10	-.4631	.331	120	-.4631	.431	40	-.4720	1.131	50	-.5176	0.000		.7329	0.00	.45
19	.161	0	-.4718	.331	110	-.4759	.431	30	-.4772	1.131	40	-.5164	.161	270	-.4635		
20	.231	180	-.4714	.331	100	-.4699	.431	20	-.4757	1.131	30	-.5238	.231	270	-.4653		
21	.231	170	-.4627	.331	90	-.4639	.431	10	-.4676	1.131	20	-.5097	.331	270	-.4663		
22	.231	160	-.4515	.331	80	-.4572	.431	0	-.4696	1.131	10	-.5115	.431	270	-.4735		
23	.231	150	-.4501	.331	70	-.4615	.531	180	-.4781	1.131	0	-.5142	.531	270	-.4810		
24	.231	140	-.4530	.331	60	-.4535	.531	90	-.4614				.731	270	-.4714		
25	.231	130	-.4618	.331	50	-.4637	.531	0	-.4812	1.631	90	-.3251	.931	270	-.5015		
26	.231	120	-.4472	.331	40	-.4644	.731	180	-.4857	1.631	0	-.0972	1.131	270	-.5017		
27	.231	110	-.4532	.331	30	-.4684	.731	90	-.4867	2.131	180	-.2239	1.631	270	-.4097		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 203 ALPHA -1 MACH .885 Q 702.472 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5140	.231	100	-.4827	.331	20	-.4546	.731	0	-.4994	2.131	90	-.0955		
2	.161	170	-.5142	.231	90	-.4915	.331	10	-.4355	.931	180	-.0975	2.131	0	-.2844		
3	.161	160	-.4839	.231	80	-.4585	.331	0	-.4311	.931	90	-.5001	0.000		.7813	-.45	0.00
4	.161	150	-.5078	.231	70	-.4635	.431	180	-.5159	.931	0	-.2551	0.000		.7729	-.40	0.00
5	.161	140	-.4861	.231	60	-.4453	.431	170	-.5055	1.131	180	-.5047	0.000		1.0075	-.30	0.00
6	.161	130	-.4804	.231	50	-.4371	.431	160	-.4957	1.131	170	-.5114	0.000		1.1342	-.20	0.00
7	.161	120	-.5123	.231	40	-.4730	.431	150	-.5299	1.131	160	-.5411	0.000		1.1934	-.10	0.00
8	.161	110	-.5060	.231	30	-.4538	.431	140	-.5227	1.131	150	-.5383	0.000		1.2198	0.00	0.00
9	.161	100	-.4822	.231	20	-.4287	.431	130	-.4981	1.131	140	-.5181	0.000		1.2062	.10	0.00
10	.161	90	-.4743	.231	10	-.4500	.431	120	-.4994	1.131	130	-.5259	0.000		1.1562	.20	0.00
11	.161	80	-.4714	.231	0	-.4339	.431	110	-.4991	1.131	120	-.5324	0.000		1.0352	.30	0.00
12	.161	70	-.4927	.331	180	-.4965	.431	100	-.4822	1.131	110	-.5157	0.000		.8096	.40	0.00
13	.161	60	-.4963	.331	170	-.5041	.431	90	-.4930	1.131	100	-.5205	0.000		.7631	.45	0.00
14	.161	50	-.4483	.331	160	-.5032	.431	80	-.4830	1.131	90	-.5229	0.000		1.2089	0.00	.10
15	.161	40	-.4149	.331	150	-.4778	.431	70	-.4520	1.131	80	-.4808	0.000		1.1481	0.00	.20
16	.161	30	-.4329	.331	140	-.4992	.431	60	-.4635	1.131	70	-.5090	0.000		1.0158	0.00	.30
17	.161	20	-.4538	.331	130	-.5268	.431	50	-.4865	1.131	60	-.5363	0.000		.7889	0.00	.40
18	.161	10	-.4209	.331	120	-.4778	.431	40	-.4507	1.131	50	-.4949	0.000		.7853	0.00	.45
19	.161	0	-.4209	.331	110	-.4790	.431	30	-.4593	1.131	40	-.4995	.161	270	-.4685		
20	.231	180	-.4897	.331	100	-.4697	.431	20	-.4507	1.131	30	-.4975	.231	270	-.4693		
21	.231	170	-.5190	.331	90	-.4969	.431	10	-.4775	1.131	20	-.5242	.331	270	-.4958		
22	.231	160	-.5125	.331	80	-.4835	.431	0	-.4753	1.131	10	-.5181	.431	270	-.5035		
23	.231	150	-.4860	.331	70	-.4451	.531	180	-.4777	1.131	0	-.4866	.531	270	-.4670		
24	.231	140	-.4987	.331	60	-.4665	.531	90	-.4873				.731	270	-.5068		
25	.231	130	-.4904	.331	50	-.4506	.531	0	-.4431	1.631	90	-.1346	.931	270	-.5187		
26	.231	120	-.4837	.331	40	-.4488	.731	180	-.5197	1.631	0	-.0892	1.131	270	-.5161		
27	.231	110	-.4964	.331	30	-.4428	.731	90	-.5180	2.131	180	-.1936	1.631	270	-.4267		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 204 ALPHA 0 MACH .885 Q 702.471 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4542	.231	100	-.4692	.331	20	-.4755	.731	0	-.4938	2.131	90	-.0632		
2	.161	170	-.4712	.231	90	-.4680	.331	10	-.4711	.931	180	-.0922	2.131	0	-.2788		
3	.161	160	-.4444	.231	80	-.4405	.331	0	-.4431	.931	90	-.4872	0.000		.7873	-.45	0.00
4	.161	150	-.4766	.231	70	-.4664	.431	180	-.4861	.931	0	-.3045	0.000		.7875	-.40	0.00
5	.161	140	-.4594	.231	60	-.4632	.431	170	-.4774	1.131	180	-.5165	0.000		1.0205	-.30	0.00
6	.161	130	-.4713	.231	50	-.4593	.431	160	-.4925	1.131	170	-.5239	0.000		1.1443	-.20	0.00
7	.161	120	-.4760	.231	40	-.4864	.431	150	-.4932	1.131	160	-.5268	0.000		1.1998	-.10	0.00
8	.161	110	-.4615	.231	30	-.4443	.431	140	-.4713	1.131	150	-.5094	0.000		1.2278	0.00	0.00
9	.161	100	-.4512	.231	20	-.4540	.431	130	-.4625	1.131	140	-.5055	0.000		1.2064	.10	0.00
10	.161	90	-.4612	.231	10	-.4613	.431	120	-.4774	1.131	130	-.5153	0.000		1.1415	.20	0.00
11	.161	80	-.4545	.231	0	-.4330	.431	110	-.4689	1.131	120	-.5024	0.000		1.0261	.30	0.00
12	.161	70	-.4589	.331	180	-.4725	.431	100	-.4791	1.131	110	-.5083	0.000		.7950	.40	0.00
13	.161	60	-.4447	.331	170	-.4659	.431	90	-.4662	1.131	100	-.5016	0.000		.7676	.45	0.00
14	.161	50	-.4397	.331	160	-.4532	.431	80	-.4475	1.131	90	-.4970	0.000		1.2054	0.00	.10
15	.161	40	-.4645	.331	150	-.4869	.431	70	-.4870	1.131	80	-.5254	0.000		1.1424	0.00	.20
16	.161	30	-.4851	.331	140	-.4994	.431	60	-.4959	1.131	70	-.5373	0.000		1.0150	0.00	.30
17	.161	20	-.4560	.331	130	-.4754	.431	50	-.4718	1.131	60	-.5118	0.000		.7933	0.00	.40
18	.161	10	-.4517	.331	120	-.4647	.431	40	-.4617	1.131	50	-.5035	0.000		.7883	0.00	.45
19	.161	0	-.4717	.331	110	-.4647	.431	30	-.4728	1.131	40	-.5129	.161	270	-.4618		
20	.231	180	-.4682	.331	100	-.4680	.431	20	-.4656	1.131	30	-.5079	.231	270	-.4631		
21	.231	170	-.4798	.331	90	-.4841	.431	10	-.4856	1.131	20	-.5192	.331	270	-.4913		
22	.231	160	-.4647	.331	80	-.4538	.431	0	-.4672	1.131	10	-.5037	.431	270	-.4738		
23	.231	150	-.4499	.331	70	-.4542	.531	180	-.4622	1.131	0	-.5013	.531	270	-.4714		
24	.231	140	-.4444	.331	60	-.4406	.531	90	-.4468				.731	270	-.4796		
25	.231	130	-.4667	.331	50	-.4630	.531	0	-.4883	1.631	90	-.1626	.931	270	-.5035		
26	.231	120	-.4632	.331	40	-.4730	.731	180	-.4909	1.631	0	-.0851	1.131	270	-.5035		
27	.231	110	-.4683	.331	30	-.4647	.731	90	-.4976	2.131	180	-.2379	1.631	270	-.4119		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 205 ALPHA 2 MACH .884 Q 702.108 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4460	.231	100	-.5216	.331	20	-.5673	.731	0	-.5802	2.131	90	-.1114		
2	.161	170	-.3951	.231	90	-.4662	.331	10	-.5177	.931	180	-.0677	2.131	0	-.1067		
3	.161	160	-.3903	.231	80	-.4799	.331	0	-.5060	.931	90	-.5095	0.000		.7992	-.45	0.00
4	.161	150	-.4307	.231	70	-.5352	.431	180	-.4642	.931	0	-.3277	0.000		.8030	-.40	0.00
5	.161	140	-.4533	.231	60	-.5280	.431	170	-.4476	1.131	180	-.5106	0.000		1.0423	-.30	0.00
6	.161	130	-.4523	.231	50	-.5203	.431	160	-.4446	1.131	170	-.4995	0.000		1.1646	-.20	0.00
7	.161	120	-.4786	.231	40	-.5420	.431	150	-.4701	1.131	160	-.5264	0.000		1.2136	-.10	0.00
8	.161	110	-.4810	.231	30	-.5118	.431	140	-.4522	1.131	150	-.4908	0.000		1.2193	0.00	0.00
9	.161	100	-.5017	.231	20	-.5437	.431	130	-.4814	1.131	140	-.5262	0.000		1.1917	.10	0.00
10	.161	90	-.5125	.231	10	-.5517	.431	120	-.4935	1.131	130	-.5253	0.000		1.1293	.20	0.00
11	.161	80	-.5415	.231	0	-.5654	.431	110	-.5180	1.131	120	-.5394	0.000		1.0027	.30	0.00
12	.161	70	-.5346	.331	180	-.4257	.431	100	-.5141	1.131	110	-.5334	0.000		.7743	.40	0.00
13	.161	60	-.5333	.331	170	-.4449	.431	90	-.5215	1.131	100	-.5359	0.000		.7322	.45	0.00
14	.161	50	-.5430	.331	160	-.4620	.431	80	-.5303	1.131	90	-.5366	0.000		1.2017	0.00	.10
15	.161	40	-.5350	.331	150	-.4615	.431	70	-.5322	1.131	80	-.5437	0.000		1.1392	0.00	.20
16	.161	30	-.5604	.331	140	-.4782	.431	60	-.5558	1.131	70	-.5561	0.000		1.0157	0.00	.30
17	.161	20	-.5445	.331	130	-.4561	.431	50	-.5393	1.131	60	-.5316	0.000		.7955	0.00	.40
18	.161	10	-.5288	.331	120	-.4784	.431	40	-.5337	1.131	50	-.5360	0.000		.7804	0.00	.45
19	.161	0	-.5445	.331	110	-.5011	.431	30	-.5477	1.131	40	-.5412	.161	270	-.5185		
20	.231	180	-.4194	.331	100	-.4855	.431	20	-.5286	1.131	30	-.5208	.231	270	-.4968		
21	.231	170	-.4182	.331	90	-.5049	.431	10	-.5360	1.131	20	-.5240	.331	270	-.5070		
22	.231	160	-.4246	.331	80	-.5176	.431	0	-.5445	1.131	10	-.5312	.431	270	-.5014		
23	.231	150	-.4432	.331	70	-.5320	.531	180	-.4719	1.131	0	-.5479	.531	270	-.5319		
24	.231	140	-.4478	.331	60	-.5240	.531	90	-.5182				.731	270	-.5360		
25	.231	130	-.4681	.331	50	-.5226	.531	0	-.5352	1.631	90	-.1919	.931	270	-.5465		
26	.231	120	-.4685	.331	40	-.5303	.731	180	-.5013	1.631	0	-.0971	1.131	270	-.5309		
27	.231	110	-.4708	.331	30	-.5271	.731	90	-.5254	2.131	180	-.2321	1.631	270	-.3995		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 206 ALPHA 4 MACH .887 Q 704.079 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4116	.231	100	-.6225	.331	20	-.6652	.731	0	-.6323	2.131	90	-.1284		
2	.161	170	-.4209	.231	90	-.6433	.331	10	-.6569	.931	180	-.1133	2.131	0	.0090		
3	.161	160	-.4523	.231	80	-.6250	.331	0	-.6561	.931	90	-.6293	0.000		.7967	-.45	0.00
4	.161	150	-.4606	.231	70	-.7065	.431	180	-.4759	.931	0	-.3359	0.000		.8234	-.40	0.00
5	.161	140	-.4992	.231	60	-.8318	.431	170	-.4991	1.131	180	-.5396	0.000		1.0643	-.30	0.00
6	.161	130	-.5569	.231	50	-.6826	.431	160	-.5115	1.131	170	-.5618	0.000		1.1728	-.20	0.00
7	.161	120	-.5595	.231	40	-.6743	.431	150	-.5142	1.131	160	-.5401	0.000		1.2148	-.10	0.00
8	.161	110	-.6275	.231	30	-.6765	.431	140	-.5726	1.131	150	-.5745	0.000		1.2150	0.00	0.00
9	.161	100	-.6308	.231	20	-.6563	.431	130	-.5809	1.131	140	-.5701	0.000		1.1763	.10	0.00
10	.161	90	-.6206	.231	10	-.6293	.431	120	-.5928	1.131	130	-.5621	0.000		1.1084	.20	0.00
11	.161	80	-.6211	.231	0	-.6493	.431	110	-.6324	1.131	120	-.5927	0.000		.9708	.30	0.00
12	.161	70	-.6273	.331	180	-.4311	.431	100	-.6320	1.131	110	-.5697	0.000		.7504	.40	0.00
13	.161	60	-.7028	.331	170	-.4939	.431	90	-.6780	1.131	100	-.5869	0.000		.7089	.45	0.00
14	.161	50	-.7429	.331	160	-.4992	.431	80	-.6983	1.131	90	-.5647	0.000		1.1966	0.00	.10
15	.161	40	-.7114	.331	150	-.5382	.431	70	-.7145	1.131	80	-.5397	0.000		1.1358	0.00	.20
16	.161	30	-.6529	.331	140	-.5302	.431	60	-.6938	1.131	70	-.4804	0.000		1.0089	0.00	.30
17	.161	20	-.6245	.331	130	-.5390	.431	50	-.6482	1.131	60	-.4308	0.000		.7645	0.00	.40
18	.161	10	-.6711	.331	120	-.6143	.431	40	-.6906	1.131	50	-.4713	0.000		.7556	0.00	.45
19	.161	0	-.6531	.331	110	-.6222	.431	30	-.6800	1.131	40	-.4313	.161	270	-.6119		
20	.231	180	-.4236	.331	100	-.6238	.431	20	-.6446	1.131	30	-.4587	.231	270	-.5912		
21	.231	170	-.4312	.331	90	-.6233	.431	10	-.6566	1.131	20	-.4178	.331	270	-.6089		
22	.231	160	-.4607	.331	80	-.6403	.431	0	-.6712	1.131	10	-.4334	.431	270	-.6119		
23	.231	150	-.4863	.331	70	-.6715	.531	180	-.5104	1.131	0	-.4524	.531	270	-.6211		
24	.231	140	-.5270	.331	60	-.6815	.531	90	-.6620				.731	270	-.6316		
25	.231	130	-.5287	.331	50	-.6365	.531	0	-.6305	1.631	90	-.1556	.931	270	-.5945		
26	.231	120	-.5799	.331	40	-.6650	.731	180	-.5573	1.631	0	-.1416	1.131	270	-.5364		
27	.231	110	-.6025	.331	30	-.6726	.731	90	-.6717	2.131	180	-.1643	1.631	270	-.3086		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 207 ALPHA 6 MACH .886 Q 703.453 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4254	.231	100	-.6772	.331	20	-.7098	.731	0	-.6008	2.131	90	-.1453		
2	.161	170	-.4322	.231	90	-.6612	.331	10	-.7021	.931	180	-.1592	2.131	0	.0099		
3	.161	160	-.4724	.231	80	-.7035	.331	0	-.7198	.931	90	-.6420	0.000		.8326	-.45	0.00
4	.161	150	-.5031	.231	70	-.8020	.431	180	-.5018	.931	0	-.3951	0.000		.8609	-.40	0.00
5	.161	140	-.5560	.231	60	-.7177	.431	170	-.5135	1.131	180	-.5492	0.000		1.0936	-.30	0.00
6	.161	130	-.5545	.231	50	-.6924	.431	160	-.5008	1.131	170	-.5362	0.000		1.1882	-.20	0.00
7	.161	120	-.6081	.231	40	-.6950	.431	150	-.5483	1.131	160	-.5623	0.000		1.2192	-.10	0.00
8	.161	110	-.6561	.231	30	-.7085	.431	140	-.5795	1.131	150	-.5886	0.000		1.2040	0.00	0.00
9	.161	100	-.6977	.231	20	-.7099	.431	130	-.6194	1.131	140	-.6023	0.000		1.1667	.10	0.00
10	.161	90	-.6649	.231	10	-.7150	.431	120	-.6425	1.131	130	-.6092	0.000		1.0802	.20	0.00
11	.161	80	-.7764	.231	0	-.6830	.431	110	-.6531	1.131	120	-.6016	0.000		.9419	.30	0.00
12	.161	70	-.7761	.331	180	-.4632	.431	100	-.6873	1.131	110	-.5727	0.000		.7134	.40	0.00
13	.161	60	-.7216	.331	170	-.4988	.431	90	-.6937	1.131	100	-.5481	0.000		.6547	.45	0.00
14	.161	50	-.7120	.331	160	-.5048	.431	80	-.7058	1.131	90	-.5025	0.000		1.1907	0.00	.10
15	.161	40	-.7084	.331	150	-.5433	.431	70	-.7317	1.131	80	-.4414	0.000		1.1289	0.00	.20
16	.161	30	-.7037	.331	140	-.5706	.431	60	-.7219	1.131	70	-.3818	0.000		1.0018	0.00	.30
17	.161	20	-.7125	.331	130	-.5861	.431	50	-.7290	1.131	60	-.3581	0.000		.7476	0.00	.40
18	.161	10	-.7150	.331	120	-.6258	.431	40	-.7322	1.131	50	-.3473	0.000		.7525	0.00	.45
19	.161	0	-.7014	.331	110	-.6550	.431	30	-.7135	1.131	40	-.3410	.161	270	-.6765		
20	.231	180	-.4523	.331	100	-.6874	.431	20	-.7159	1.131	30	-.3451	.231	270	-.6737		
21	.231	170	-.4440	.331	90	-.6740	.431	10	-.7134	1.131	20	-.3410	.331	270	-.6929		
22	.231	160	-.4797	.331	80	-.6867	.431	0	-.7130	1.131	10	-.3429	.431	270	-.6792		
23	.231	150	-.5288	.331	70	-.7662	.531	180	-.5535	1.131	0	-.3346	.531	270	-.7011		
24	.231	140	-.5633	.331	60	-.7469	.531	90	-.7159				.731	270	-.6925		
25	.231	130	-.5723	.331	50	-.7219	.531	0	-.6989	1.631	90	-.1177	.931	270	-.6138		
26	.231	120	-.6015	.331	40	-.6899	.731	180	-.5621	1.631	0	-.1384	1.131	270	-.4731		
27	.231	110	-.6474	.331	30	-.6892	.731	90	-.6763	2.131	180	-.1266	1.631	270	-.2298		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 208 ALPHA 8 MACH .885 Q 702.468 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4443	.231	100	-.6853	.331	20	-.7707	.731	0	-.4958	2.131	90	-.1581		
2	.161	170	-.4306	.231	90	-.6710	.331	10	-.7479	.931	180	-.1484	2.131	0	.0079		
3	.161	160	-.4664	.231	80	-.7832	.331	0	-.7414	.931	90	-.5942	0.000		.8266	-.45	0.00
4	.161	150	-.5050	.231	70	-.7431	.431	180	-.5014	.931	0	-.3467	0.000		.8898	-.40	0.00
5	.161	140	-.5566	.231	60	-.7582	.431	170	-.5176	1.131	180	-.5610	0.000		1.1064	-.30	0.00
6	.161	130	-.5990	.231	50	-.8108	.431	160	-.5324	1.131	170	-.5384	0.000		1.1988	-.20	0.00
7	.161	120	-.6326	.231	40	-.7921	.431	150	-.5542	1.131	160	-.5657	0.000		1.2180	-.10	0.00
8	.161	110	-.6708	.231	30	-.7608	.431	140	-.5801	1.131	150	-.5653	0.000		1.2041	0.00	0.00
9	.161	100	-.6775	.231	20	-.7855	.431	130	-.6287	1.131	140	-.5957	0.000		1.1486	.10	0.00
10	.161	90	-.6908	.231	10	-.7712	.431	120	-.6542	1.131	130	-.6100	0.000		1.0533	.20	0.00
11	.161	80	-.8789	.231	0	-.7381	.431	110	-.6741	1.131	120	-.5931	0.000		.9066	.30	0.00
12	.161	70	-.7459	.331	180	-.4850	.431	100	-.7058	1.131	110	-.5712	0.000		.6853	.40	0.00
13	.161	60	-.8889	.331	170	-.4816	.431	90	-.6985	1.131	100	-.5165	0.000		.6091	.45	0.00
14	.161	50	-.7981	.331	160	-.4935	.431	80	-.7048	1.131	90	-.4477	0.000		1.1851	0.00	.10
15	.161	40	-.8229	.331	150	-.5441	.431	70	-.7611	1.131	80	-.4142	0.000		1.1275	0.00	.20
16	.161	30	-.7546	.331	140	-.5823	.431	60	-.7358	1.131	70	-.3320	0.000		.9967	0.00	.30
17	.161	20	-.7634	.331	130	-.6124	.431	50	-.7355	1.131	60	-.3035	0.000		.7563	0.00	.40
18	.161	10	-.7707	.331	120	-.6666	.431	40	-.7520	1.131	50	-.3066	0.000		.7385	0.00	.45
19	.161	0	-.7649	.331	110	-.6965	.431	30	-.7358	1.131	40	-.2619	.161	270	-.7194		
20	.231	180	-.4295	.331	100	-.6650	.431	20	-.7134	1.131	30	-.2120	.231	270	-.6814		
21	.231	170	-.4707	.331	90	-.7032	.431	10	-.7341	1.131	20	-.1913	.331	270	-.7028		
22	.231	160	-.4837	.331	80	-.7288	.431	0	-.7387	1.131	10	-.1945	.431	270	-.6992		
23	.231	150	-.5262	.331	70	-.7957	.531	180	-.5527	1.131	0	-.1840	.531	270	-.7077		
24	.231	140	-.5794	.331	60	-.7460	.531	90	-.7134				.731	270	-.6837		
25	.231	130	-.6165	.331	50	-.8383	.531	0	-.6903	1.631	90	-.0590	.931	270	-.6024		
26	.231	120	-.6221	.331	40	-.7777	.731	180	-.5616	1.631	0	-.1590	1.131	270	-.4523		
27	.231	110	-.6894	.331	30	-.7675	.731	90	-.6938	2.131	180	-.1354	1.631	270	-.2198		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 209 ALPHA 10 MACH .887 Q 704.261 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4493	.231	100	-.6661	.331	20	-.7561	.731	0	-.3222	2.131	90	-.1719		
2	.161	170	-.4670	.231	90	-.7356	.331	10	-.7782	.931	180	-.1565	2.131	0	.0092		
3	.161	160	-.4510	.231	80	-.6679	.331	0	-.7420	.931	90	-.5670	0.000		.8423	-.45	0.00
4	.161	150	-.5327	.231	70	-.6758	.431	180	-.5186	.931	0	-.3554	0.000		.9219	-.40	0.00
5	.161	140	-.5383	.231	60	-.7684	.431	170	-.5153	1.131	180	-.5289	0.000		1.1381	-.30	0.00
6	.161	130	-.5890	.231	50	-.8871	.431	160	-.5240	1.131	170	-.5488	0.000		1.2147	-.20	0.00
7	.161	120	-.6512	.231	40	-.8327	.431	150	-.5709	1.131	160	-.5720	0.000		1.2196	-.10	0.00
8	.161	110	-.6487	.231	30	-.7984	.431	140	-.5852	1.131	150	-.5851	0.000		1.1899	0.00	0.00
9	.161	100	-.6759	.231	20	-.7934	.431	130	-.6231	1.131	140	-.5882	0.000		1.1259	.10	0.00
10	.161	90	-.7256	.231	10	-.7849	.431	120	-.6402	1.131	130	-.6071	0.000		1.0330	.20	0.00
11	.161	80	-.6968	.231	0	-.7925	.431	110	-.6693	1.131	120	-.5819	0.000		.8699	.30	0.00
12	.161	70	-.6525	.331	180	-.4841	.431	100	-.6789	1.131	110	-.5570	0.000		.6597	.40	0.00
13	.161	60	-.9867	.331	170	-.4676	.431	90	-.6677	1.131	100	-.4922	0.000		.5443	.45	0.00
14	.161	50	-.9317	.331	160	-.5175	.431	80	-.7132	1.131	90	-.4645	0.000		1.1749	0.00	.10
15	.161	40	-.8390	.331	150	-.5422	.431	70	-.7032	1.131	80	-.3866	0.000		1.1113	0.00	.20
16	.161	30	-.8327	.331	140	-.5950	.431	60	-.7035	1.131	70	-.3432	0.000		.9845	0.00	.30
17	.161	20	-.7949	.331	130	-.5952	.431	50	-.6774	1.131	60	-.2751	0.000		.7432	0.00	.40
18	.161	10	-.7732	.331	120	-.6263	.431	40	-.6705	1.131	50	-.2571	0.000		.7579	0.00	.45
19	.161	0	-.8024	.331	110	-.6633	.431	30	-.6752	1.131	40	-.2094	.161	270	-.7430		
20	.231	180	-.4758	.331	100	-.6849	.431	20	-.6958	1.131	30	-.1798	.231	270	-.7239		
21	.231	170	-.4732	.331	90	-.6756	.431	10	-.6784	1.131	20	-.1432	.331	270	-.6969		
22	.231	160	-.5080	.331	80	-.7121	.431	0	-.6931	1.131	10	-.1156	.431	270	-.7168		
23	.231	150	-.5435	.331	70	-.6989	.531	180	-.5496	1.131	0	-.0957	.531	270	-.7051		
24	.231	140	-.5889	.331	60	-.6946	.531	90	-.6963				.731	270	-.6794		
25	.231	130	-.6104	.331	50	-.8447	.531	0	-.5778	1.631	90	-.0542	.931	270	-.5678		
26	.231	120	-.6580	.331	40	-.7765	.731	180	-.5950	1.631	0	-.1824	1.131	270	-.4498		
27	.231	110	-.6587	.331	30	-.7581	.731	90	-.6717	2.131	180	-.0966	1.631	270	-.2673		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 210 ALPHA 12 MACH .885 Q 702.556 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4605	.231	100	-.6542	.331	20	-.6485	.731	0	-.1499	2.131	90	-.2071		
2	.161	170	-.4595	.231	90	-.6725	.331	10	-.6620	.931	180	-.2059	2.131	0	-.0025		
3	.161	160	-.4746	.231	80	-.6615	.331	0	-.6681	.931	90	-.5044	0.000		.8502	-.45	0.00
4	.161	150	-.5557	.231	70	-.6700	.431	180	-.5354	.931	0	-.3714	0.000		.9424	-.40	0.00
5	.161	140	-.5546	.231	60	-.8597	.431	170	-.5214	1.131	180	-.5422	0.000		1.1520	-.30	0.00
6	.161	130	-.5805	.231	50	-.7791	.431	160	-.5234	1.131	170	-.5409	0.000		1.2169	-.20	0.00
7	.161	120	-.6307	.231	40	-.8058	.431	150	-.5689	1.131	160	-.5832	0.000		1.2132	-.10	0.00
8	.161	110	-.6661	.231	30	-.8323	.431	140	-.6112	1.131	150	-.5901	0.000		1.1772	0.00	0.00
9	.161	100	-.6907	.231	20	-.8292	.431	130	-.6333	1.131	140	-.6077	0.000		1.0973	.10	0.00
10	.161	90	-.6775	.231	10	-.7983	.431	120	-.6230	1.131	130	-.5748	0.000		.9941	.20	0.00
11	.161	80	-.6932	.231	0	-.8347	.431	110	-.6600	1.131	120	-.5800	0.000		.8342	.30	0.00
12	.161	70	-.6669	.331	180	-.5228	.431	100	-.6838	1.131	110	-.5743	0.000		.6274	.40	0.00
13	.161	60	-.9366	.331	170	-.5163	.431	90	-.6947	1.131	100	-.4801	0.000		.4965	.45	0.00
14	.161	50	-.8397	.331	160	-.5106	.431	80	-.6698	1.131	90	-.4293	0.000		1.1622	0.00	.10
15	.161	40	-.8337	.331	150	-.5595	.431	70	-.6962	1.131	80	-.3853	0.000		1.1001	0.00	.20
16	.161	30	-.8351	.331	140	-.5782	.431	60	-.6107	1.131	70	-.3421	0.000		.9725	0.00	.30
17	.161	20	-.9103	.331	130	-.6121	.431	50	-.5944	1.131	60	-.3145	0.000		.7025	0.00	.40
18	.161	10	-.9123	.331	120	-.6336	.431	40	-.5571	1.131	50	-.2439	0.000		.7465	0.00	.45
19	.161	0	-.9033	.331	110	-.6498	.431	30	-.5180	1.131	40	-.2120	.161	270	-.7264		
20	.231	180	-.4901	.331	100	-.6695	.431	20	-.4812	1.131	30	-.1769	.231	270	-.7051		
21	.231	170	-.4711	.331	90	-.6715	.431	10	-.4622	1.131	20	-.1256	.331	270	-.6811		
22	.231	160	-.5074	.331	80	-.6794	.431	0	-.4443	1.131	10	-.1222	.431	270	-.6856		
23	.231	150	-.5466	.331	70	-.6884	.531	180	-.5615	1.131	0	-.1139	.531	270	-.6959		
24	.231	140	-.5868	.331	60	-.6677	.531	90	-.6467				.731	270	-.6397		
25	.231	130	-.5891	.331	50	-.7073	.531	0	-.3000	1.631	90	-.0718	.931	270	-.5349		
26	.231	120	-.6372	.331	40	-.7014	.731	180	-.5799	1.631	0	-.2098	1.131	270	-.4377		
27	.231	110	-.6473	.331	30	-.6749	.731	90	-.6467	2.131	180	-.1259	1.631	270	-.3405		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 211 ALPHA 14 MACH .886 Q 703.719 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4900	.231	100	-.6416	.331	20	-.4988	.731	0	-.0961	2.131	90	-.2337		
2	.161	170	-.4923	.231	90	-.6630	.331	10	-.4446	.931	180	-.2162	2.131	0	.0392		
3	.161	160	-.5112	.231	80	-.6540	.331	0	-.4227	.931	90	-.4974	0.000		.8652	-.45	0.00
4	.161	150	-.5424	.231	70	-.6591	.431	180	-.5301	.931	0	-.3730	0.000		.9907	-.40	0.00
5	.161	140	-.5404	.231	60	-.7453	.431	170	-.5215	1.131	180	-.5555	0.000		1.1055	-.30	0.00
6	.161	130	-.6023	.231	50	-.7595	.431	160	-.5574	1.131	170	-.5733	0.000		1.2125	-.20	0.00
7	.161	120	-.5963	.231	40	-.7648	.431	150	-.5500	1.131	160	-.5574	0.000		1.2024	-.10	0.00
8	.161	110	-.6371	.231	30	-.7726	.431	140	-.6018	1.131	150	-.5833	0.000		1.1573	0.00	0.00
9	.161	100	-.6572	.231	20	-.7391	.431	130	-.5971	1.131	140	-.5859	0.000		1.0734	.10	0.00
10	.161	90	-.6547	.231	10	-.7366	.431	120	-.6202	1.131	130	-.6075	0.000		.9625	.20	0.00
11	.161	80	-.6683	.231	0	-.6960	.431	110	-.6266	1.131	120	-.5707	0.000		.7951	.30	0.00
12	.161	70	-.6734	.331	180	-.5048	.431	100	-.6232	1.131	110	-.5398	0.000		.5945	.40	0.00
13	.161	60	-.7947	.331	170	-.5246	.431	90	-.6480	1.131	100	-.5244	0.000		.4461	.45	0.00
14	.161	50	-.7972	.331	160	-.5246	.431	80	-.6394	1.131	90	-.4672	0.000		1.1434	0.00	.10
15	.161	40	-.8085	.331	150	-.5478	.431	70	-.6135	1.131	80	-.4435	0.000		1.0906	0.00	.20
16	.161	30	-.8667	.331	140	-.5686	.431	60	-.5332	1.131	70	-.3787	0.000		.9636	0.00	.30
17	.161	20	-.9492	.331	130	-.6095	.431	50	-.5029	1.131	60	-.3348	0.000		.6971	0.00	.40
18	.161	10	-.9940	.331	120	-.6060	.431	40	-.4195	1.131	50	-.2584	0.000		.7301	0.00	.45
19	.161	0	-1.1672	.331	110	-.6395	.431	30	-.3569	1.131	40	-.2053	.161	270	-.6870		
20	.231	180	-.4778	.331	100	-.6360	.431	20	-.2702	1.131	30	-.1383	.231	270	-.6669		
21	.231	170	-.4973	.331	90	-.6476	.431	10	-.2281	1.131	20	-.1222	.331	270	-.6508		
22	.231	160	-.5407	.331	80	-.6820	.431	0	-.1988	1.131	10	-.0981	.431	270	-.6780		
23	.231	150	-.5593	.331	70	-.6770	.531	180	-.5569	1.131	0	-.0961	.531	270	-.6469		
24	.231	140	-.5550	.331	60	-.6491	.531	90	-.6185				.731	270	-.5918		
25	.231	130	-.5742	.331	50	-.6233	.531	0	-.1283	1.631	90	-.1160	.931	270	-.5224		
26	.231	120	-.6255	.331	40	-.6133	.731	180	-.5914	1.631	0	-.2671	1.131	270	-.4910		
27	.231	110	-.6466	.331	30	-.5493	.731	90	-.6017	2.131	180	-.1475	1.631	270	-.4367		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 212 ALPHA 16 MACH .885 Q 703.090 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4682	.231	100	-.6222	.331	20	-.3030	.731	0	-.0588	2.131	90	-.2299		
2	.161	170	-.5044	.231	90	-.6247	.331	10	-.2022	.931	180	-.2454	2.131	0	.0054		
3	.161	160	-.4949	.231	80	-.6218	.331	0	-.1704	.931	90	-.5085	0.000		.8860	-.45	0.00
4	.161	150	-.5113	.231	70	-.6424	.431	180	-.5016	.931	0	-.3579	0.000		1.0236	-.40	0.00
5	.161	140	-.5180	.231	60	-.6691	.431	170	-.5217	1.131	180	-.5382	0.000		1.1862	-.30	0.00
6	.161	130	-.5603	.231	50	-.6969	.431	160	-.5316	1.131	170	-.5680	0.000		1.2223	-.20	0.00
7	.161	120	-.5636	.231	40	-.6771	.431	150	-.5266	1.131	160	-.5450	0.000		1.2069	-.10	0.00
8	.161	110	-.6012	.231	30	-.6924	.431	140	-.5732	1.131	150	-.5689	0.000		1.1415	0.00	0.00
9	.161	100	-.6520	.231	20	-.6666	.431	130	-.6037	1.131	140	-.5989	0.000		1.0554	.10	0.00
10	.161	90	-.6221	.231	10	-.5466	.431	120	-.5961	1.131	130	-.5811	0.000		.9286	.20	0.00
11	.161	80	-.6387	.231	0	-.5272	.431	110	-.5865	1.131	120	-.5780	0.000		.7641	.30	0.00
12	.161	70	-.7136	.331	180	-.5002	.431	100	-.5803	1.131	110	-.5598	0.000		.5637	.40	0.00
13	.161	60	-.7167	.331	170	-.5174	.431	90	-.6015	1.131	100	-.5402	0.000		.3968	.45	0.00
14	.161	50	-.7949	.331	160	-.5291	.431	80	-.6111	1.131	90	-.4959	0.000		1.1264	0.00	.10
15	.161	40	-.7875	.331	150	-.5428	.431	70	-.5719	1.131	80	-.4678	0.000		1.0665	0.00	.20
16	.161	30	-.8379	.331	140	-.5675	.431	60	-.4844	1.131	70	-.4003	0.000		.9495	0.00	.30
17	.161	20	-.9198	.331	130	-.5766	.431	50	-.3918	1.131	60	-.3245	0.000		.6859	0.00	.40
18	.161	10	-1.1134	.331	120	-.5730	.431	40	-.3169	1.131	50	-.2628	0.000		.7190	0.00	.45
19	.161	0	-1.1364	.331	110	-.5851	.431	30	-.1751	1.131	40	-.1811	.161	270	-.6244		
20	.231	180	-.4977	.331	100	-.6047	.431	20	-.1090	1.131	30	-.1337	.231	270	-.6312		
21	.231	170	-.4931	.331	90	-.6133	.431	10	-.0805	1.131	20	-.0989	.331	270	-.6058		
22	.231	160	-.5015	.331	80	-.6040	.431	0	-.0613	1.131	10	-.0663	.431	270	-.5951		
23	.231	150	-.5701	.331	70	-.6646	.531	180	-.5724	1.131	0	-.0794	.531	270	-.6427		
24	.231	140	-.5655	.331	60	-.6244	.531	90	-.6069				.731	270	-.5622		
25	.231	130	-.5791	.331	50	-.5371	.531	0	-.0548	1.631	90	-.2150	.931	270	-.5226		
26	.231	120	-.5631	.331	40	-.4702	.731	180	-.5528	1.631	0	-.2539	1.131	270	-.5182		
27	.231	110	-.5877	.331	30	-.4063	.731	90	-.5603	2.131	180	-.2330	1.631	270	-.5449		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 213 ALPHA 16 MACH .885 Q 702.911 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5016	.231	100	-.6146	.331	20	-.0905	.731	0	-.0127	2.131	90	-.2822		
2	.161	170	-.5021	.231	90	-.6038	.331	10	-.0402	.931	180	-.2847	2.131	0	-.0115		
3	.161	160	-.5114	.231	80	-.6145	.331	0	-.0296	.931	90	-.5064	0.000		.9141	-.45	0.00
4	.161	150	-.5169	.231	70	-.6472	.431	180	-.5127	.931	0	-.3494	0.000		1.0604	-.40	0.00
5	.161	140	-.5603	.231	60	-.6991	.431	170	-.5245	1.131	180	-.5742	0.000		1.2075	-.30	0.00
6	.161	130	-.5573	.231	50	-.6528	.431	160	-.5342	1.131	170	-.5649	0.000		1.2212	-.20	0.00
7	.161	120	-.5961	.231	40	-.6719	.431	150	-.5762	1.131	160	-.6020	0.000		1.1856	-.10	0.00
8	.161	110	-.5868	.231	30	-.5821	.431	140	-.5649	1.131	150	-.5894	0.000		1.1164	0.00	0.00
9	.161	100	-.6151	.231	20	-.3872	.431	130	-.5767	1.131	140	-.5853	0.000		1.0177	.10	0.00
10	.161	90	-.5872	.231	10	-.3212	.431	120	-.5590	1.131	130	-.5922	0.000		.8868	.20	0.00
11	.161	80	-.6239	.231	0	-.3104	.431	110	-.5639	1.131	120	-.5846	0.000		.7230	.30	0.00
12	.161	70	-.6757	.331	180	-.5075	.431	100	-.5706	1.131	110	-.5785	0.000		.5359	.40	0.00
13	.161	60	-.7154	.331	170	-.5217	.431	90	-.5899	1.131	100	-.5903	0.000		.3495	.45	0.00
14	.161	50	-.7400	.331	160	-.5288	.431	80	-.5846	1.131	90	-.5421	0.000		1.0965	0.00	.10
15	.161	40	-.7454	.331	150	-.5162	.431	70	-.4914	1.131	80	-.4880	0.000		1.0416	0.00	.20
16	.161	30	-.8524	.331	140	-.5684	.431	60	-.4072	1.131	70	-.4241	0.000		.9348	0.00	.30
17	.161	20	-1.0270	.331	130	-.5677	.431	50	-.2868	1.131	60	-.3357	0.000		.6847	0.00	.40
18	.161	10	-1.0391	.331	120	-.5838	.431	40	-.1658	1.131	50	-.2530	0.000		.6918	0.00	.45
19	.161	0	-1.0150	.331	110	-.5761	.431	30	-.0704	1.131	40	-.1672	.161	270	-.6142		
20	.231	180	-.4930	.331	100	-.5614	.431	20	-.0382	1.131	30	-.1122	.231	270	-.5984		
21	.231	170	-.4930	.331	90	-.5764	.431	10	-.0094	1.131	20	-.0701	.331	270	-.5869		
22	.231	160	-.5172	.331	80	-.6046	.431	0	.0014	1.131	10	-.0431	.431	270	-.5937		
23	.231	150	-.5196	.331	70	-.5951	.531	180	-.5189	1.131	0	-.0219	.531	270	-.5638		
24	.231	140	-.5505	.331	60	-.5469	.531	90	-.5846				.731	270	-.5296		
25	.231	130	-.5614	.331	50	-.4639	.531	0	-.0057	1.631	90	-.3513	.931	270	-.5225		
26	.231	120	-.5559	.331	40	-.3411	.731	180	-.5491	1.631	0	-.2666	1.131	270	-.5328		
27	.231	110	-.5735	.331	30	-.1892	.731	90	-.5240	2.131	180	-.2580	1.631	270	-.5888		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 214 ALPHA 20 MACH .885 Q 702.820 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4956	.231	100	-.5806	.331	20	-.0043	.731	0	.0202	2.131	90	-.3185		
2	.161	170	-.4867	.231	90	-.5743	.331	10	.0476	.931	180	-.2973	2.131	0	.0303		
3	.161	160	-.5063	.231	80	-.6123	.331	0	.0470	.931	90	-.5130	0.000		.9359	-.45	0.00
4	.161	150	-.5255	.231	70	-.6480	.431	180	-.5191	.931	0	-.3557	0.000		1.1046	-.40	0.00
5	.161	140	-.5395	.231	60	-.6394	.431	170	-.5243	1.131	180	-.5677	0.000		1.2030	-.30	0.00
6	.161	130	-.5664	.231	50	-.6485	.431	160	-.5422	1.131	170	-.5786	0.000		1.2186	-.20	0.00
7	.161	120	-.5917	.231	40	-.5347	.431	150	-.5678	1.131	160	-.5983	0.000		1.1633	-.10	0.00
8	.161	110	-.6010	.231	30	-.2920	.431	140	-.5735	1.131	150	-.5959	0.000		1.0913	0.00	0.00
9	.161	100	-.5805	.231	20	-.1729	.431	130	-.5489	1.131	140	-.5714	0.000		.9899	.10	0.00
10	.161	90	-.6041	.231	10	-.1570	.431	120	-.5611	1.131	130	-.6083	0.000		.8571	.20	0.00
11	.161	80	-.6043	.231	0	-.1420	.431	110	-.5322	1.131	120	-.5907	0.000		.6745	.30	0.00
12	.161	70	-.6342	.331	180	-.4905	.431	100	-.5437	1.131	110	-.6046	0.000		.4986	.40	0.00
13	.161	60	-.6991	.331	170	-.5113	.431	90	-.5762	1.131	100	-.6198	0.000		.3224	.45	0.00
14	.161	50	-.7121	.331	160	-.5085	.431	80	-.5353	1.131	90	-.5557	0.000		1.0687	0.00	.10
15	.161	40	-.7845	.331	150	-.5404	.431	70	-.4432	1.131	80	-.5236	0.000		1.0183	0.00	.20
16	.161	30	-.9835	.331	140	-.5477	.431	60	-.3342	1.131	70	-.4409	0.000		.8989	0.00	.30
17	.161	20	-.9760	.331	130	-.5541	.431	50	-.1835	1.131	60	-.3394	0.000		.6720	0.00	.40
18	.161	10	-.9422	.331	120	-.5402	.431	40	-.0973	1.131	50	-.2480	0.000		.6739	0.00	.45
19	.161	0	-.9287	.331	110	-.5576	.431	30	-.0378	1.131	40	-.1646	.161	270	-.6022		
20	.231	180	-.5063	.331	100	-.5733	.431	20	.0006	1.131	30	-.1030	.231	270	-.6010		
21	.231	170	-.5192	.331	90	-.6003	.431	10	.0279	1.131	20	-.0506	.331	270	-.6001		
22	.231	160	-.5267	.331	80	-.6033	.431	0	.0461	1.131	10	-.0109	.431	270	-.5869		
23	.231	150	-.5252	.331	70	-.5591	.531	180	-.5251	1.131	0	.0187	.531	270	-.5420		
24	.231	140	-.5267	.331	60	-.4471	.531	90	-.5290				.731	270	-.5044		
25	.231	130	-.5465	.331	50	-.3393	.531	0	.0431	1.631	90	-.3560	.931	270	-.5224		
26	.231	120	-.5601	.331	40	-.1583	.731	180	-.5555	1.631	0	-.2804	1.131	270	-.5907		
27	.231	110	-.5870	.331	30	-.0445	.731	90	-.5093	2.131	180	-.2645	1.631	270	-.6559		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 215 ALPHA 22 MACH .885 Q 703.088 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4759	.231	100	-.5563	.331	20	.0651	.731	0	.0860	2.131	90	-.3007		
2	.161	170	-.4639	.231	90	-.5532	.331	10	.1047	.931	180	-.2896	2.131	0	.0560		
3	.161	160	-.4991	.231	80	-.5969	.331	0	.1111	.931	90	-.5197	0.000		.9739	-.45	0.00
4	.161	150	-.4873	.231	70	-.6112	.431	180	-.4879	.931	0	-.3326	0.000		1.1444	-.40	0.00
5	.161	140	-.5074	.231	60	-.6012	.431	170	-.5083	1.131	180	-.5568	0.000		1.2232	-.30	0.00
6	.161	130	-.5069	.231	50	-.5158	.431	160	-.4923	1.131	170	-.5379	0.000		1.2140	-.20	0.00
7	.161	120	-.5409	.231	40	-.2162	.431	150	-.5197	1.131	160	-.5390	0.000		1.1561	-.10	0.00
8	.161	110	-.5544	.231	30	-.1347	.431	140	-.5258	1.131	150	-.5453	0.000		1.0688	0.00	0.00
9	.161	100	-.5695	.231	20	-.0475	.431	130	-.5425	1.131	140	-.5679	0.000		.9600	.10	0.00
10	.161	90	-.5816	.231	10	-.0094	.431	120	-.5334	1.131	130	-.5751	0.000		.8276	.20	0.00
11	.161	80	-.5956	.231	0	-.0003	.431	110	-.5327	1.131	120	-.5926	0.000		.6462	.30	0.00
12	.161	70	-.6490	.331	180	-.5030	.431	100	-.5598	1.131	110	-.6359	0.000		.4742	.40	0.00
13	.161	60	-.6808	.331	170	-.4794	.431	90	-.5399	1.131	100	-.6014	0.000		.3341	.45	0.00
14	.161	50	-.6955	.331	160	-.4894	.431	80	-.4823	1.131	90	-.5790	0.000		1.0640	0.00	.10
15	.161	40	-.8169	.331	150	-.5173	.431	70	-.3775	1.131	80	-.5306	0.000		1.0107	0.00	.20
16	.161	30	-.9247	.331	140	-.5340	.431	60	-.2363	1.131	70	-.4489	0.000		.8908	0.00	.30
17	.161	20	-.8528	.331	130	-.5330	.431	50	-.1431	1.131	60	-.3381	0.000		.6629	0.00	.40
18	.161	10	-.8649	.331	120	-.5774	.431	40	-.0835	1.131	50	-.2592	0.000		.6484	0.00	.45
19	.161	0	-.7553	.331	110	-.5545	.431	30	.0025	1.131	40	-.1506	.161	270	-.5745		
20	.231	180	-.4754	.331	100	-.5418	.431	20	.0709	1.131	30	-.0517	.231	270	-.5649		
21	.231	170	-.5106	.331	90	-.5916	.431	10	.0988	1.131	20	.0006	.331	270	-.5801		
22	.231	160	-.4837	.331	80	-.5624	.431	0	.1147	1.131	10	.0430	.431	270	-.5493		
23	.231	150	-.5245	.331	70	-.5075	.531	180	-.5278	1.131	0	.0497	.531	270	-.5247		
24	.231	140	-.5169	.331	60	-.3363	.531	90	-.5024				.731	270	-.4974		
25	.231	130	-.5566	.331	50	-.1858	.531	0	.1046	1.631	90	-.3509	.931	270	-.5407		
26	.231	120	-.5334	.331	40	-.0733	.731	180	-.5362	1.631	0	-.3024	1.131	270	-.6138		
27	.231	110	-.5610	.331	30	-.0036	.731	90	-.5081	2.131	180	-.3509	1.631	270	-.7296		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 216 ALPHA 24 MACH .883 Q 701.030 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4766	.231	100	-.5688	.331	20	.1183	.731	0	.1323	2.131	90	-.3151		
2	.161	170	-.5104	.231	90	-.6222	.331	10	.1478	.931	180	-.3300	2.131	0	.0579		
3	.161	160	-.4887	.231	80	-.6169	.331	0	.1715	.931	90	-.5473	0.000		1.0088	-.45	0.00
4	.161	150	-.5347	.231	70	-.6642	.431	180	-.5317	.931	0	-.3527	0.000		1.1872	-.40	0.00
5	.161	140	-.5329	.231	60	-.5600	.431	170	-.5239	1.131	180	-.5597	0.000		1.2217	-.30	0.00
6	.161	130	-.5182	.231	50	-.2444	.431	160	-.4989	1.131	170	-.5350	0.000		1.2004	-.20	0.00
7	.161	120	-.5447	.231	40	-.1222	.431	150	-.5314	1.131	160	-.5768	0.000		1.1287	-.10	0.00
8	.161	110	-.5793	.231	30	-.0658	.431	140	-.5562	1.131	150	-.5779	0.000		1.0247	0.00	0.00
9	.161	100	-.5830	.231	20	-.0011	.431	130	-.5358	1.131	140	-.5844	0.000		.9155	.10	0.00
10	.161	90	-.5814	.231	10	.0635	.431	120	-.5097	1.131	130	-.5844	0.000		.7818	.20	0.00
11	.161	80	-.6486	.231	0	.0750	.431	110	-.5471	1.131	120	-.6403	0.000		.5891	.30	0.00
12	.161	70	-.6613	.331	180	-.4967	.431	100	-.5581	1.131	110	-.6738	0.000		.4347	.40	0.00
13	.161	60	-.6734	.331	170	-.5145	.431	90	-.5466	1.131	100	-.6911	0.000		.2883	.45	0.00
14	.161	50	-.6033	.331	160	-.5108	.431	80	-.4335	1.131	90	-.6337	0.000		1.0155	0.00	.10
15	.161	40	-.5828	.331	150	-.4833	.431	70	-.3057	1.131	80	-.5486	0.000		.9741	0.00	.20
16	.161	30	-.4981	.331	140	-.5406	.431	60	-.2382	1.131	70	-.4822	0.000		.8427	0.00	.30
17	.161	20	-.4468	.331	130	-.5382	.431	50	-.1349	1.131	60	-.3663	0.000		.6219	0.00	.40
18	.161	10	-.4281	.331	120	-.5268	.431	40	-.0413	1.131	50	-.2421	0.000		.6283	0.00	.45
19	.161	0	-.3747	.331	110	-.5289	.431	30	.0512	1.131	40	-.1314	.161	270	-.5837		
20	.231	180	-.4719	.331	100	-.5411	.431	20	.1140	1.131	30	-.0303	.231	270	-.5813		
21	.231	170	-.4956	.331	90	-.5990	.431	10	.1428	1.131	20	.0284	.331	270	-.5918		
22	.231	160	-.4862	.331	80	-.5355	.431	0	.1793	1.131	10	.0990	.431	270	-.5270		
23	.231	150	-.5027	.331	70	-.4534	.531	180	-.5097	1.131	0	.1037	.531	270	-.4925		
24	.231	140	-.5297	.331	60	-.2648	.531	90	-.4884				.731	270	-.5306		
25	.231	130	-.5319	.331	50	-.1405	.531	0	.1602	1.631	90	-.3055	.931	270	-.5781		
26	.231	120	-.5320	.331	40	-.0389	.731	180	-.5226	1.631	0	-.3283	1.131	270	-.6486		
27	.231	110	-.5372	.331	30	.0613	.731	90	-.5062	2.131	180	-.3729	1.631	270	-.7773		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 217 ALPHA 26 MACH .885 Q 703.002 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4765	.231	100	-.5691	.331	20	.1973	.731	0	.1935	2.131	90	-.3456		
2	.161	170	-.5001	.231	90	-.6148	.331	10	.2175	.931	180	-.3513	2.131	0	.1074		
3	.161	160	-.5262	.231	80	-.6635	.331	0	.2378	.931	90	-.6159	0.000		1.0440	-.45	0.00
4	.161	150	-.5347	.231	70	-.6003	.431	180	-.5297	.931	0	-.3542	0.000		1.2191	-.40	0.00
5	.161	140	-.5250	.231	60	-.3626	.431	170	-.5103	1.131	180	-.5746	0.000		1.2235	-.30	0.00
6	.161	130	-.5249	.231	50	-.1531	.431	160	-.5041	1.131	170	-.5475	0.000		1.1903	-.20	0.00
7	.161	120	-.5536	.231	40	-.1043	.431	150	-.5379	1.131	160	-.5903	0.000		1.1102	-.10	0.00
8	.161	110	-.5401	.231	30	-.0039	.431	140	-.5228	1.131	150	-.5592	0.000		1.0021	0.00	0.00
9	.161	100	-.6097	.231	20	.0984	.431	130	-.5651	1.131	140	-.6305	0.000		.8774	.10	0.00
10	.161	90	-.5631	.231	10	.1571	.431	120	-.5103	1.131	130	-.6007	0.000		.7356	.20	0.00
11	.161	80	-.5815	.231	0	.1925	.431	110	-.5219	1.131	120	-.6494	0.000		.5506	.30	0.00
12	.161	70	-.6175	.331	180	-.5015	.431	100	-.5607	1.131	110	-.7345	0.000		.4143	.40	0.00
13	.161	60	-.6242	.331	170	-.5167	.431	90	-.5098	1.131	100	-.7326	0.000		.2639	.45	0.00
14	.161	50	-.5023	.331	160	-.5147	.431	80	-.4272	1.131	90	-.6856	0.000		.9917	0.00	.10
15	.161	40	-.4707	.331	150	-.5549	.431	70	-.3561	1.131	80	-.6374	0.000		.9289	0.00	.20
16	.161	30	-.4111	.331	140	-.5033	.431	60	-.2070	1.131	70	-.4871	0.000		.8362	0.00	.30
17	.161	20	-.3603	.331	130	-.5313	.431	50	-.1030	1.131	60	-.3646	0.000		.6281	0.00	.40
18	.161	10	-.3096	.331	120	-.5333	.431	40	.0060	1.131	50	-.2379	0.000		.6031	0.00	.45
19	.161	0	-.2885	.331	110	-.5325	.431	30	.1048	1.131	40	-.1158	.161	270	-.5867		
20	.231	180	-.4664	.331	100	-.5400	.431	20	.1736	1.131	30	.0002	.231	270	-.5802		
21	.231	170	-.4762	.331	90	-.5711	.431	10	.2241	1.131	20	.0766	.331	270	-.5779		
22	.231	160	-.4872	.331	80	-.5222	.431	0	.2440	1.131	10	.1379	.431	270	-.4877		
23	.231	150	-.5330	.331	70	-.3992	.531	180	-.5416	1.131	0	.1446	.531	270	-.4952		
24	.231	140	-.5068	.331	60	-.2318	.531	90	-.4702				.731	270	-.5503		
25	.231	130	-.5403	.331	50	-.1035	.531	0	.2189	1.631	90	-.2314	.931	270	-.6253		
26	.231	120	-.5282	.331	40	.0111	.731	180	-.5349	1.631	0	-.3563	1.131	270	-.6965		
27	.231	110	-.5626	.331	30	.1072	.731	90	-.5452	2.131	180	-.3952	1.631	270	-.8523		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 218 ALPHA 0 MACH .884 Q 701.576 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5038	.231	100	-.4903	.331	20	-.4948	.731	0	-.5153	2.131	90	-.0880		
2	.161	170	-.4559	.231	90	-.4530	.331	10	-.4570	.931	180	-.0474	2.131	0	-.2336		
3	.161	160	-.4614	.231	80	-.4514	.331	0	-.4560	.931	90	-.4949	0.000		.7820	-.45	0.00
4	.161	150	-.4815	.231	70	-.4781	.431	180	-.4935	.931	0	-.2636	0.000		.7852	-.40	0.00
5	.161	140	-.4799	.231	60	-.4678	.431	170	-.4740	1.131	180	-.5213	0.000		1.0168	-.30	0.00
6	.161	130	-.4336	.231	50	-.4392	.431	160	-.4526	1.131	170	-.4867	0.000		1.1440	-.20	0.00
7	.161	120	-.4807	.231	40	-.4736	.431	150	-.4941	1.131	160	-.5157	0.000		1.1984	-.10	0.00
8	.161	110	-.4576	.231	30	-.4495	.431	140	-.4693	1.131	150	-.4942	0.000		1.2231	0.00	0.00
9	.161	100	-.4474	.231	20	-.4494	.431	130	-.4664	1.131	140	-.4984	0.000		1.2016	.10	0.00
10	.161	90	-.4757	.231	10	-.4838	.431	120	-.4850	1.131	130	-.5218	0.000		1.1415	.20	0.00
11	.161	80	-.4569	.231	0	-.4560	.431	110	-.4621	1.131	120	-.4951	0.000		1.0245	.30	0.00
12	.161	70	-.4419	.331	180	-.4509	.431	100	-.4512	1.131	110	-.4942	0.000		.8033	.40	0.00
13	.161	60	-.4438	.331	170	-.4564	.431	90	-.4561	1.131	100	-.4958	0.000		.7553	.45	0.00
14	.161	50	-.4454	.331	160	-.4534	.431	80	-.4531	1.131	90	-.4932	0.000		1.2043	0.00	.10
15	.161	40	-.4434	.331	150	-.4552	.431	70	-.4582	1.131	80	-.4923	0.000		1.1421	0.00	.20
16	.161	30	-.4567	.331	140	-.4649	.431	60	-.4675	1.131	70	-.5049	0.000		1.0208	0.00	.30
17	.161	20	-.4657	.331	130	-.4898	.431	50	-.4881	1.131	60	-.5228	0.000		.7905	0.00	.40
18	.161	10	-.4300	.331	120	-.4417	.431	40	-.4423	1.131	50	-.4726	0.000		.7890	0.00	.45
19	.161	0	-.4489	.331	110	-.4564	.431	30	-.4577	1.131	40	-.4990	.161	270	-.4528		
20	.231	180	-.4732	.331	100	-.4761	.431	20	-.4800	1.131	30	-.5174	.231	270	-.4771		
21	.231	170	-.4920	.331	90	-.4925	.431	10	-.5087	1.131	20	-.5317	.331	270	-.4982		
22	.231	160	-.4765	.331	80	-.4771	.431	0	-.4845	1.131	10	-.5157	.431	270	-.4756		
23	.231	150	-.4692	.331	70	-.4661	.531	180	-.4811	1.131	0	-.5018	.531	270	-.4835		
24	.231	140	-.4862	.331	60	-.4846	.531	90	-.4933				.731	270	-.5054		
25	.231	130	-.4805	.331	50	-.4815	.531	0	-.4827	1.631	90	-.1642	.931	270	-.5272		
26	.231	120	-.4722	.331	40	-.4785	.731	180	-.5011	1.631	0	-.0823	1.131	270	-.5161		
27	.231	110	-.4414	.331	30	-.4576	.731	90	-.4724	2.131	180	-.2303	1.631	270	-.4266		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 25 POINT 221 ALPHA 0 MACH .712 Q 539.496 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4456	.231	100	-.4672	.331	20	-.4774	.731	0	-.5181	2.131	90	-.1142		
2	.161	170	-.4630	.231	90	-.4627	.331	10	-.4713	.931	180	-.1114	2.131	0	-.0821		
3	.161	160	-.4777	.231	80	-.4705	.331	0	-.4917	.931	90	-.5246	0.000		.6490	-.45	0.00
4	.161	150	-.4712	.231	70	-.4805	.431	180	-.4970	.931	0	-.5514	0.000		.6804	-.40	0.00
5	.161	140	-.4638	.231	60	-.4657	.431	170	-.4841	1.131	180	-.5149	0.000		.9330	-.30	0.00
6	.161	130	-.4624	.231	50	-.4722	.431	160	-.4904	1.131	170	-.5219	0.000		1.0641	-.20	0.00
7	.161	120	-.4673	.231	40	-.4753	.431	150	-.4794	1.131	160	-.5270	0.000		1.1204	-.10	0.00
8	.161	110	-.4690	.231	30	-.4770	.431	140	-.4939	1.131	150	-.5256	0.000		1.1413	0.00	0.00
9	.161	100	-.4597	.231	20	-.4714	.431	130	-.5016	1.131	140	-.5289	0.000		1.1241	.10	0.00
10	.161	90	-.4716	.231	10	-.4814	.431	120	-.4878	1.131	130	-.5282	0.000		1.0599	.20	0.00
11	.161	80	-.4452	.231	0	-.4731	.431	110	-.4706	1.131	120	-.5043	0.000		.9372	.30	0.00
12	.161	70	-.4362	.331	180	-.4875	.431	100	-.4713	1.131	110	-.5219	0.000		.6929	.40	0.00
13	.161	60	-.4731	.331	170	-.4614	.431	90	-.4869	1.131	100	-.5214	0.000		.6282	.45	0.00
14	.161	50	-.4367	.331	160	-.4831	.431	80	-.4662	1.131	90	-.5299	0.000		1.1236	0.00	.10
15	.161	40	-.4885	.331	150	-.4905	.431	70	-.4921	1.131	80	-.5251	0.000		1.0575	0.00	.20
16	.161	30	-.4894	.331	140	-.4768	.431	60	-.4796	1.131	70	-.5229	0.000		.9296	0.00	.30
17	.161	20	-.4653	.331	130	-.4670	.431	50	-.4757	1.131	60	-.5147	0.000		.6828	0.00	.40
18	.161	10	-.4796	.331	120	-.4864	.431	40	-.5047	1.131	50	-.5311	0.000		.6561	0.00	.45
19	.161	0	-.4638	.331	110	-.4714	.431	30	-.4687	1.131	40	-.5200	.161	270	-.4678		
20	.231	180	-.4701	.331	100	-.4779	.431	20	-.4827	1.131	30	-.5214	.231	270	-.4612		
21	.231	170	-.4811	.331	90	-.4912	.431	10	-.4926	1.131	20	-.5219	.331	270	-.4891		
22	.231	160	-.4725	.331	80	-.4775	.431	0	-.5016	1.131	10	-.5323	.431	270	-.4830		
23	.231	150	-.4757	.331	70	-.4875	.531	180	-.4932	1.131	0	-.5359	.531	270	-.4960		
24	.231	140	-.4878	.331	60	-.4903	.531	90	-.4932				.731	270	-.5217		
25	.231	130	-.4745	.331	50	-.4814	.531	0	-.4864	1.631	90	-.2993	.931	270	-.5271		
26	.231	120	-.4666	.331	40	-.4703	.731	180	-.5086	1.631	0	-.1143	1.131	270	-.5171		
27	.231	110	-.4720	.331	30	-.4773	.731	90	-.5080	2.131	180	-.0559	1.631	270	-.3341		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 25 POINT 222 ALPHA 0 MACH .608 Q 429.627 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4835	.231	100	-.5080	.331	20	-.5019	.731	0	-.5511	2.131	90	-.1290		
2	.161	170	-.4938	.231	90	-.4886	.331	10	-.5152	.931	180	-.1299	2.131	0	.0630		
3	.161	160	-.5055	.231	80	-.5080	.331	0	-.5254	.931	90	-.5714	0.000		.5913	-.45	0.00
4	.161	150	-.4900	.231	70	-.4927	.431	180	-.5204	.931	0	-.8464	0.000		.6251	-.40	0.00
5	.161	140	-.4623	.231	60	-.4864	.431	170	-.5119	1.131	180	-.5089	0.000		.8949	-.30	0.00
6	.161	130	-.4897	.231	50	-.4739	.431	160	-.5190	1.131	170	-.5189	0.000		1.0223	-.20	0.00
7	.161	120	-.4954	.231	40	-.4919	.431	150	-.5187	1.131	160	-.5198	0.000		1.0872	-.10	0.00
8	.161	110	-.4852	.231	30	-.5053	.431	140	-.5005	1.131	150	-.5208	0.000		1.1054	0.00	0.00
9	.161	100	-.4805	.231	20	-.4826	.431	130	-.5154	1.131	140	-.5026	0.000		1.0903	.10	0.00
10	.161	90	-.4702	.231	10	-.4810	.431	120	-.5063	1.131	130	-.5256	0.000		1.0257	.20	0.00
11	.161	80	-.4889	.231	0	-.5061	.431	110	-.5265	1.131	120	-.5047	0.000		.8989	.30	0.00
12	.161	70	-.4821	.331	180	-.4902	.431	100	-.4978	1.131	110	-.5056	0.000		.6399	.40	0.00
13	.161	60	-.4838	.331	170	-.5118	.431	90	-.5063	1.131	100	-.5180	0.000		.5596	.45	0.00
14	.161	50	-.4870	.331	160	-.5083	.431	80	-.5171	1.131	90	-.5232	0.000		1.0823	0.00	.10
15	.161	40	-.4810	.331	150	-.4984	.431	70	-.4967	1.131	80	-.5065	0.000		1.0285	0.00	.20
16	.161	30	-.5069	.331	140	-.4996	.431	60	-.5295	1.131	70	-.5283	0.000		.8903	0.00	.30
17	.161	20	-.4938	.331	130	-.4927	.431	50	-.5140	1.131	60	-.5232	0.000		.6362	0.00	.40
18	.161	10	-.4723	.331	120	-.4861	.431	40	-.4909	1.131	50	-.5165	0.000		.6048	0.00	.45
19	.161	0	-.4789	.331	110	-.4990	.431	30	-.5025	1.131	40	-.5253	.161	270	-.4931		
20	.231	180	-.5109	.331	100	-.5039	.431	20	-.4898	1.131	30	-.5311	.231	270	-.4901		
21	.231	170	-.5221	.331	90	-.5156	.431	10	-.5212	1.131	20	-.4935	.331	270	-.5174		
22	.231	160	-.4954	.331	80	-.5066	.431	0	-.5080	1.131	10	-.5080	.431	270	-.5205		
23	.231	150	-.4957	.331	70	-.4979	.531	180	-.5273	1.131	0	-.5010	.531	270	-.5276		
24	.231	140	-.4837	.331	60	-.4984	.531	90	-.5176				.731	270	-.5426		
25	.231	130	-.4982	.331	50	-.4957	.531	0	-.4978	1.631	90	-.3279	.931	270	-.5571		
26	.231	120	-.4935	.331	40	-.5020	.731	180	-.5356	1.631	0	-.1263	1.131	270	-.5233		
27	.231	110	-.4946	.331	30	-.4889	.731	90	-.5414	2.131	180	.0532	1.631	270	-.1997		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 25 POINT 219 ALPHA 0 MACH .886 Q 703.010 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4657	.231	100	-.4415	.331	20	-.4636	.731	0	-.4813	2.131	90	-.0644		
2	.161	170	-.4521	.231	90	-.4475	.331	10	-.4695	.931	180	-.0718	2.131	0	-.2775		
3	.161	160	-.4551	.231	80	-.4392	.331	0	-.4479	.931	90	-.4901	0.000		.7815	-.45	0.00
4	.161	150	-.4727	.231	70	-.4724	.431	180	-.4927	.931	0	-.2812	0.000		.7823	-.40	0.00
5	.161	140	-.4677	.231	60	-.4816	.431	170	-.4870	1.131	180	-.5210	0.000		1.0201	-.30	0.00
6	.161	130	-.4561	.231	50	-.4514	.431	160	-.4752	1.131	170	-.5078	0.000		1.1501	-.20	0.00
7	.161	120	-.4557	.231	40	-.4342	.431	150	-.4695	1.131	160	-.4954	0.000		1.2029	-.10	0.00
8	.161	110	-.4695	.231	30	-.4652	.431	140	-.4799	1.131	150	-.5141	0.000		1.2104	0.00	0.00
9	.161	100	-.4690	.231	20	-.4696	.431	130	-.4838	1.131	140	-.5130	0.000		1.2013	.10	0.00
10	.161	90	-.4491	.231	10	-.4677	.431	120	-.4611	1.131	130	-.5015	0.000		1.1473	.20	0.00
11	.161	80	-.4650	.231	0	-.4667	.431	110	-.4761	1.131	120	-.5049	0.000		1.0275	.30	0.00
12	.161	70	-.4528	.331	180	-.4686	.431	100	-.4739	1.131	110	-.5056	0.000		.7994	.40	0.00
13	.161	60	-.4518	.331	170	-.4596	.431	90	-.4670	1.131	100	-.5049	0.000		.7531	.45	0.00
14	.161	50	-.4476	.331	160	-.4612	.431	80	-.4604	1.131	90	-.5073	0.000		1.2003	0.00	.10
15	.161	40	-.4531	.331	150	-.4686	.431	70	-.4688	1.131	80	-.5141	0.000		1.1425	0.00	.20
16	.161	30	-.4670	.331	140	-.4604	.431	60	-.4762	1.131	70	-.5147	0.000		1.0205	0.00	.30
17	.161	20	-.4418	.331	130	-.4292	.431	50	-.4533	1.131	60	-.4812	0.000		.7981	0.00	.40
18	.161	10	-.4730	.331	120	-.4669	.431	40	-.4971	1.131	50	-.5177	0.000		.7838	0.00	.45
19	.161	0	-.4823	.331	110	-.4866	.431	30	-.4897	1.131	40	-.5245	.161	270	-.4911		
20	.231	180	-.4835	.331	100	-.4727	.431	20	-.4777	1.131	30	-.5167	.231	270	-.4817		
21	.231	170	-.4443	.331	90	-.4379	.431	10	-.4547	1.131	20	-.4878	.331	270	-.4497		
22	.231	160	-.4640	.331	80	-.4544	.431	0	-.4685	1.131	10	-.4949	.431	270	-.4787		
23	.231	150	-.4534	.331	70	-.4537	.531	180	-.4794	1.131	0	-.4988	.531	270	-.4802		
24	.231	140	-.4733	.331	60	-.4552	.531	90	-.4840				.731	270	-.4993		
25	.231	130	-.4690	.331	50	-.4697	.531	0	-.4852	1.631	90	-.1441	.931	270	-.5172		
26	.231	120	-.4569	.331	40	-.4472	.731	180	-.4862	1.631	0	-.0613	1.131	270	-.4948		
27	.231	110	-.4471	.331	30	-.4502	.731	90	-.4858	2.131	180	-.2358	1.631	270	-.4219		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 25 POINT 220 ALPHA 0 MACH .822 Q 647.004 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4316	.231	100	-.4583	.331	20	-.4490	.731	0	-.4909	2.131	90	-.0856		
2	.161	170	-.4653	.231	90	-.4714	.331	10	-.4627	.931	180	-.0922	2.131	0	-.2334		
3	.161	160	-.4408	.231	80	-.4726	.331	0	-.4679	.931	90	-.5122	0.000		.7316	-.45	0.00
4	.161	150	-.4518	.231	70	-.4578	.431	180	-.4706	.931	0	-.3719	0.000		.7439	-.40	0.00
5	.161	140	-.4790	.231	60	-.4790	.431	170	-.4776	1.131	180	-.5330	0.000		.9821	-.30	0.00
6	.161	130	-.4680	.231	50	-.4783	.431	160	-.4858	1.131	170	-.5241	0.000		1.1169	-.20	0.00
7	.161	120	-.4617	.231	40	-.4587	.431	150	-.4798	1.131	160	-.5165	0.000		1.1735	-.10	0.00
8	.161	110	-.4613	.231	30	-.4543	.431	140	-.4726	1.131	150	-.5173	0.000		1.1931	0.00	0.00
9	.161	100	-.4608	.231	20	-.4701	.431	130	-.4805	1.131	140	-.5249	0.000		1.1717	.10	0.00
10	.161	90	-.4406	.231	10	-.4505	.431	120	-.4618	1.131	130	-.5007	0.000		1.1173	.20	0.00
11	.161	80	-.4558	.231	0	-.4761	.431	110	-.4884	1.131	120	-.5211	0.000		.9849	.30	0.00
12	.161	70	-.4404	.331	180	-.4706	.431	100	-.4713	1.131	110	-.5128	0.000		.7533	.40	0.00
13	.161	60	-.4494	.331	170	-.4672	.431	90	-.4635	1.131	100	-.5034	0.000		.7016	.45	0.00
14	.161	50	-.4599	.331	160	-.4712	.431	80	-.4673	1.131	90	-.5094	0.000		1.1717	0.00	.10
15	.161	40	-.4543	.331	150	-.4603	.431	70	-.4684	1.131	80	-.5156	0.000		1.1114	0.00	.20
16	.161	30	-.4503	.331	140	-.4701	.431	60	-.4637	1.131	70	-.5076	0.000		.9635	0.00	.30
17	.161	20	-.4453	.331	130	-.4705	.431	50	-.4615	1.131	60	-.5052	0.000		.7481	0.00	.40
18	.161	10	-.4642	.331	120	-.4650	.431	40	-.4646	1.131	50	-.5148	0.000		.7408	0.00	.45
19	.161	0	-.4639	.331	110	-.4728	.431	30	-.4688	1.131	40	-.5213	.161	270	-.4681		
20	.231	180	-.4747	.331	100	-.4726	.431	20	-.4816	1.131	30	-.5177	.231	270	-.4706		
21	.231	170	-.4532	.331	90	-.4601	.431	10	-.4631	1.131	20	-.4991	.331	270	-.4546		
22	.231	160	-.4635	.331	80	-.4706	.431	0	-.4734	1.131	10	-.5201	.431	270	-.4810		
23	.231	150	-.4709	.331	70	-.4710	.531	180	-.4933	1.131	0	-.5189	.531	270	-.4887		
24	.231	140	-.4632	.331	60	-.4692	.531	90	-.4818				.731	270	-.5071		
25	.231	130	-.4722	.331	50	-.4661	.531	0	-.4743	1.631	90	-.1999	.931	270	-.5169		
26	.231	120	-.4554	.331	40	-.4583	.731	180	-.4887	1.631	0	-.0848	1.131	270	-.5061		
27	.231	110	-.4498	.331	30	-.4523	.731	90	-.4792	2.131	180	-.1873	1.631	270	-.4121		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 25 POINT 223 ALPHA 0 MACH .506 Q 321.122 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5215	.231	100	-.5158	.331	20	-.5270	.731	0	-.5795	2.131	90	-.1354		
2	.161	170	-.5126	.231	90	-.4994	.331	10	-.5252	.931	180	-.1176	2.131	0	.0716		
3	.161	160	-.5360	.231	80	-.5144	.331	0	-.5063	.931	90	-.5734	0.000		.5528	-.45	0.00
4	.161	150	-.5133	.231	70	-.5341	.431	180	-.5370	.931	0	-1.2435	0.000		.5903	-.40	0.00
5	.161	140	-.5126	.231	60	-.5114	.431	170	-.5473	1.131	180	-.4801	0.000		.8620	-.30	0.00
6	.161	130	-.4988	.231	50	-.5034	.431	160	-.5248	1.131	170	-.4537	0.000		.9991	-.20	0.00
7	.161	120	-.5107	.231	40	-.5133	.431	150	-.5237	1.131	160	-.4931	0.000		1.0645	-.10	0.00
8	.161	110	-.5137	.231	30	-.5158	.431	140	-.5477	1.131	150	-.4789	0.000		1.0781	0.00	0.00
9	.161	100	-.5133	.231	20	-.5038	.431	130	-.5307	1.131	140	-.4935	0.000		1.0649	.10	0.00
10	.161	90	-.5246	.231	10	-.5458	.431	120	-.5469	1.131	130	-.4675	0.000		.9937	.20	0.00
11	.161	80	-.5231	.231	0	-.5155	.431	110	-.5484	1.131	120	-.4484	0.000		.8607	.30	0.00
12	.161	70	-.5344	.331	180	-.5323	.431	100	-.5473	1.131	110	-.4655	0.000		.5969	.40	0.00
13	.161	60	-.4951	.331	170	-.5271	.431	90	-.5119	1.131	100	-.4801	0.000		.5158	.45	0.00
14	.161	50	-.5198	.331	160	-.5673	.431	80	-.5407	1.131	90	-.4606	0.000		1.0625	0.00	.10
15	.161	40	-.5104	.331	150	-.5381	.431	70	-.5436	1.131	80	-.4732	0.000		1.0015	0.00	.20
16	.161	30	-.5027	.331	140	-.5341	.431	60	-.5410	1.131	70	-.4647	0.000		.8536	0.00	.30
17	.161	20	-.5264	.331	130	-.5432	.431	50	-.5410	1.131	60	-.4634	0.000		.5977	0.00	.40
18	.161	10	-.5071	.331	120	-.5169	.431	40	-.5336	1.131	50	-.4906	0.000		.5627	0.00	.45
19	.161	0	-.5206	.331	110	-.5394	.431	30	-.5532	1.131	40	-.4444	.161	270	-.5139		
20	.231	180	-.5206	.331	100	-.5213	.431	20	-.5495	1.131	30	-.4801	.231	270	-.5444		
21	.231	170	-.5373	.331	90	-.5410	.431	10	-.5362	1.131	20	-.4829	.331	270	-.5411		
22	.231	160	-.5500	.331	80	-.5355	.431	0	-.5222	1.131	10	-.4845	.431	270	-.5201		
23	.231	150	-.4998	.331	70	-.5164	.531	180	-.5388	1.131	0	-.4776	.531	270	-.5563		
24	.231	140	-.5227	.331	60	-.5063	.531	90	-.5384				.731	270	-.5843		
25	.231	130	-.5227	.331	50	-.5304	.531	0	-.5384	1.631	90	-.4042	.931	270	-.5621		
26	.231	120	-.5035	.331	40	-.5180	.731	180	-.5820	1.631	0	-.1336	1.131	270	-.4609		
27	.231	110	-.5322	.331	30	-.5410	.731	90	-.5764	2.131	180	.0509	1.631	270	-.0737		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 25 POINT 224 ALPHA 0 MACH .404 Q 218.001 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5256	.231	100	-.5395	.331	20	-.5298	.731	0	-.5875	2.131	90	-.1428		
2	.161	170	-.5642	.231	90	-.5115	.331	10	-.5705	.931	180	-.1405	2.131	0	.0712		
3	.161	160	-.5240	.231	80	-.5599	.331	0	-.5874	.931	90	-.5696	0.000		.5157	-.45	0.00
4	.161	150	-.5443	.231	70	-.5427	.431	180	-.5944	.931	0	-1.8549	0.000		.5624	-.40	0.00
5	.161	140	-.5572	.231	60	-.5567	.431	170	-.5846	1.131	180	-.3419	0.000		.8346	-.30	0.00
6	.161	130	-.5288	.231	50	-.5578	.431	160	-.5683	1.131	170	-.3891	0.000		.9711	-.20	0.00
7	.161	120	-.5497	.231	40	-.5432	.431	150	-.5678	1.131	160	-.3294	0.000		1.0439	-.10	0.00
8	.161	110	-.5556	.231	30	-.5448	.431	140	-.5863	1.131	150	-.3820	0.000		1.0541	0.00	0.00
9	.161	100	-.5272	.231	20	-.5739	.431	130	-.5428	1.131	140	-.4035	0.000		1.0469	.10	0.00
10	.161	90	-.5717	.231	10	-.5486	.431	120	-.6069	1.131	130	-.3210	0.000		.9741	.20	0.00
11	.161	80	-.5358	.231	0	-.5330	.431	110	-.5705	1.131	120	-.3939	0.000		.8346	.30	0.00
12	.161	70	-.5390	.331	180	-.5287	.431	100	-.5700	1.131	110	-.3885	0.000		.5733	.40	0.00
13	.161	60	-.5508	.331	170	-.5734	.431	90	-.5874	1.131	100	-.3013	0.000		.4757	.45	0.00
14	.161	50	-.5652	.331	160	-.6062	.431	80	-.5944	1.131	90	-.3449	0.000		1.0481	0.00	.10
15	.161	40	-.5020	.331	150	-.5893	.431	70	-.5857	1.131	80	-.3927	0.000		.9717	0.00	.20
16	.161	30	-.5336	.331	140	-.5777	.431	60	-.5792	1.131	70	-.3634	0.000		.8371	0.00	.30
17	.161	20	-.5492	.331	130	-.5685	.431	50	-.5912	1.131	60	-.3581	0.000		.5715	0.00	.40
18	.161	10	-.6027	.331	120	-.5809	.431	40	-.6075	1.131	50	-.3545	0.000		.5151	0.00	.45
19	.161	0	-.5556	.331	110	-.6008	.431	30	-.6124	1.131	40	-.3091	.161	270	-.5513		
20	.231	180	-.5604	.331	100	-.5944	.431	20	-.5857	1.131	30	-.3873	.231	270	-.5446		
21	.231	170	-.5979	.331	90	-.5594	.431	10	-.5596	1.131	20	-.4280	.331	270	-.5743		
22	.231	160	-.5572	.331	80	-.5755	.431	0	-.5287	1.131	10	-.4716	.431	270	-.5531		
23	.231	150	-.5893	.331	70	-.5970	.531	180	-.6395	1.131	0	-.3431	.531	270	-.6277		
24	.231	140	-.5207	.331	60	-.6347	.531	90	-.6151				.731	270	-.6095		
25	.231	130	-.5647	.331	50	-.5384	.531	0	-.6189	1.631	90	-.4029	.931	270	-.5355		
26	.231	120	-.5176	.331	40	-.5798	.731	180	-.5971	1.631	0	-.1567	1.131	270	-.3598		
27	.231	110	-.5599	.331	30	-.5475	.731	90	-.5912	2.131	180	.0566	1.631	270	.0106		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 25 POINT 225 ALPHA 0 MACH .302 Q 126.109 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5984	.231	100	-.5949	.331	20	-.5631	.731	0	-.6408	2.131	90	-.1375		
2	.161	170	-.6085	.231	90	-.6068	.331	10	-.5917	.931	180	-.1547	2.131	0	.0750		
3	.161	160	-.5802	.231	80	-.5803	.331	0	-.5723	.931	90	-.4964	0.000		.4846	-.45	0.00
4	.161	150	-.6121	.231	70	-.5519	.431	180	-.6565	.931	0	-2.9562	0.000		.9341	-.40	0.00
5	.161	140	-.5757	.231	60	-.5794	.431	170	-.6269	1.131	180	-.3093	0.000		.7993	-.30	0.00
6	.161	130	-.6577	.231	50	-.5649	.431	160	-.6676	1.131	170	-.1578	0.000		.9562	-.20	0.00
7	.161	120	-.5875	.231	40	-.5345	.431	150	-.6398	1.131	160	-.2188	0.000		1.0160	-.10	0.00
8	.161	110	-.6075	.231	30	-.5711	.431	140	-.6269	1.131	150	-.2422	0.000		1.0150	0.00	0.00
9	.161	100	-.6057	.231	20	-.5318	.431	130	-.6380	1.131	140	-.2198	0.000		1.0026	.10	0.00
10	.161	90	-.5939	.231	10	-.5519	.431	120	-.6195	1.131	130	-.2554	0.000		.9458	.20	0.00
11	.161	80	-.5802	.231	0	-.5162	.431	110	-.6306	1.131	120	-.2554	0.000		.8024	.30	0.00
12	.161	70	-.5693	.331	180	-.5821	.431	100	-.5908	1.131	110	-.2462	0.000		.5333	.40	0.00
13	.161	60	-.5702	.331	170	-.5666	.431	90	-.5843	1.131	100	-.2940	0.000		.4268	.45	0.00
14	.161	50	-.5720	.331	160	-.5812	.431	80	-.5899	1.131	90	-.2361	0.000		1.0232	0.00	.10
15	.161	40	-.5583	.331	150	-.5647	.431	70	-.5695	1.131	80	-.3245	0.000		.9355	0.00	.20
16	.161	30	-.5620	.331	140	-.6041	.431	60	-.6112	1.131	70	-.2930	0.000		.7931	0.00	.30
17	.161	20	-.6003	.331	130	-.6105	.431	50	-.6139	1.131	60	-.2503	0.000		.5293	0.00	.40
18	.161	10	-.5702	.331	120	-.5894	.431	40	-.6324	1.131	50	-.2442	0.000		.4815	0.00	.45
19	.161	0	-.5237	.331	110	-.6114	.431	30	-.5649	1.131	40	-.3540	.161	270	-.5883		
20	.231	180	-.5866	.331	100	-.6517	.431	20	-.6426	1.131	30	-.2208	.231	270	-.5976		
21	.231	170	-.6057	.331	90	-.6068	.431	10	-.6084	1.131	20	-.2747	.331	270	-.6151		
22	.231	160	-.5993	.331	80	-.6105	.431	0	-.6435	1.131	10	-.2015	.431	270	-.6656		
23	.231	150	-.5757	.331	70	-.6197	.531	180	-.6269	1.131	0	-.2717	.531	270	-.6326		
24	.231	140	-.6085	.331	60	-.5528	.531	90	-.6056				.731	270	-.6347		
25	.231	130	-.6549	.331	50	-.6297	.531	0	-.6935	1.631	90	-.4720	.931	270	-.4851		
26	.231	120	-.6057	.331	40	-.6416	.731	180	-.6213	1.631	0	-.1761	1.131	270	-.2314		
27	.231	110	-.5729	.331	30	-.5867	.731	90	-.6241	2.131	180	.0242	1.631	270	.0430		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 25 POINT 226 ALPHA 0 MACH .404 Q 217.907 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.5355	.231	100	-.5478	.331	20	-.5539	.731	0	-.6069	2.131	90	-.1447		
2	.161	170	-.5312	.231	90	-.5359	.331	10	-.5626	.931	180	-.1245	2.131	0	.0640		
3	.161	160	-.5317	.231	80	-.5478	.331	0	-.5528	.931	90	-.5226	0.000		.4971	-.45	0.00
4	.161	150	-.5633	.231	70	-.5779	.431	180	-.5876	.931	0	-1.1396	0.000		.5487	-.40	0.00
5	.161	140	-.5457	.231	60	-.5516	.431	170	-.5941	1.131	180	-.3642	0.000		.8192	-.30	0.00
6	.161	130	-.5842	.231	50	-.5849	.431	160	-.6355	1.131	170	-.2817	0.000		.9751	-.20	0.00
7	.161	120	-.5457	.231	40	-.5855	.431	150	-.6088	1.131	160	-.3552	0.000		1.0243	-.10	0.00
8	.161	110	-.5055	.231	30	-.5785	.431	140	-.5604	1.131	150	-.3785	0.000		1.0582	0.00	0.00
9	.161	100	-.5435	.231	20	-.5930	.431	130	-.5729	1.131	140	-.3720	0.000		1.0340	.10	0.00
10	.161	90	-.5612	.231	10	-.5279	.431	120	-.6115	1.131	130	-.2871	0.000		.9727	.20	0.00
11	.161	80	-.5253	.231	0	-.5133	.431	110	-.5691	1.131	120	-.3594	0.000		.8277	.30	0.00
12	.161	70	-.5237	.331	180	-.5564	.431	100	-.5577	1.131	110	-.3833	0.000		.5638	.40	0.00
13	.161	60	-.5253	.331	170	-.5699	.431	90	-.5632	1.131	100	-.3875	0.000		.4589	.45	0.00
14	.161	50	-.5328	.331	160	-.5435	.431	80	-.5528	1.131	90	-.4616	0.000		1.0327	0.00	.10
15	.161	40	-.5039	.331	150	-.5343	.431	70	-.5458	1.131	80	-.3875	0.000		.9666	0.00	.20
16	.161	30	-.5837	.331	140	-.5693	.431	60	-.6126	1.131	70	-.3564	0.000		.8131	0.00	.30
17	.161	20	-.5574	.331	130	-.5634	.431	50	-.5963	1.131	60	-.3516	0.000		.5573	0.00	.40
18	.161	10	-.5537	.331	120	-.5559	.431	40	-.6039	1.131	50	-.4007	0.000		.5123	0.00	.45
19	.161	0	-.5419	.331	110	-.5618	.431	30	-.5474	1.131	40	-.4132	.161	270	-.5534		
20	.231	180	-.5628	.331	100	-.5359	.431	20	-.5735	1.131	30	-.4042	.231	270	-.5758		
21	.231	170	-.5799	.331	90	-.5494	.431	10	-.5686	1.131	20	-.3756	.331	270	-.5758		
22	.231	160	-.5483	.331	80	-.5575	.431	0	-.5439	1.131	10	-.4192	.431	270	-.5788		
23	.231	150	-.5307	.331	70	-.5731	.531	180	-.5762	1.131	0	-.3295	.531	270	-.6153		
24	.231	140	-.5617	.331	60	-.5569	.531	90	-.5865				.731	270	-.6183		
25	.231	130	-.5590	.331	50	-.5542	.531	0	-.5893	1.631	90	-.0073	.931	270	-.5364		
26	.231	120	-.5108	.331	40	-.5542	.731	180	-.6061	1.631	0	-.1328	1.131	270	-.3624		
27	.231	110	-.5365	.331	30	-.5849	.731	90	-.6170	2.131	180	.0363	1.631	270	-.0113		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 25 POINT 227 ALPHA 0 MACH .607 Q 428.274 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4388	.231	100	-.4755	.331	20	-.4959	.731	0	-.5566	2.131	90	-.1221		
2	.161	170	-.4761	.231	90	-.4927	.331	10	-.4984	.931	180	-.1219	2.131	0	-.0209		
3	.161	160	-.4941	.231	80	-.4812	.331	0	-.4842	.931	90	-.5365	0.000		.5884	-.45	0.00
4	.161	150	-.4867	.231	70	-.5048	.431	180	-.5174	.931	0	-.1983	0.000		.6239	-.40	0.00
5	.161	140	-.4900	.231	60	-.4777	.431	170	-.5114	1.131	180	-.4681	0.000		.8748	-.30	0.00
6	.161	130	-.4952	.231	50	-.4768	.431	160	-.5197	1.131	170	-.5301	0.000		1.0119	-.20	0.00
7	.161	120	-.4906	.231	40	-.4708	.431	150	-.5202	1.131	160	-.5112	0.000		1.0733	-.10	0.00
8	.161	110	-.4698	.231	30	-.4626	.431	140	-.5031	1.131	150	-.4918	0.000		1.0921	0.00	0.00
9	.161	100	-.4963	.231	20	-.4946	.431	130	-.5080	1.131	140	-.5085	0.000		1.0873	.10	0.00
10	.161	90	-.4818	.231	10	-.4927	.431	120	-.5213	1.131	130	-.5131	0.000		1.0186	.20	0.00
11	.161	80	-.4848	.231	0	-.4938	.431	110	-.5083	1.131	120	-.5228	0.000		.8825	.30	0.00
12	.161	70	-.4723	.331	180	-.5149	.431	100	-.4981	1.131	110	-.5210	0.000		.6310	.40	0.00
13	.161	60	-.4756	.331	170	-.4755	.431	90	-.5006	1.131	100	-.5146	0.000		.5640	.45	0.00
14	.161	50	-.4780	.331	160	-.5294	.431	80	-.5266	1.131	90	-.4997	0.000		1.0785	0.00	.10
15	.161	40	-.4690	.331	150	-.5124	.431	70	-.4986	1.131	80	-.5079	0.000		1.0168	0.00	.20
16	.161	30	-.4808	.331	140	-.4996	.431	60	-.5072	1.131	70	-.5115	0.000		.8807	0.00	.30
17	.161	20	-.4794	.331	130	-.5108	.431	50	-.5125	1.131	60	-.5234	0.000		.6331	0.00	.40
18	.161	10	-.4878	.331	120	-.5004	.431	40	-.4997	1.131	50	-.5301	0.000		.5983	0.00	.45
19	.161	0	-.4846	.331	110	-.5009	.431	30	-.5238	1.131	40	-.4875	.161	270	-.4973		
20	.231	180	-.4917	.331	100	-.4900	.431	20	-.5039	1.131	30	-.5143	.231	270	-.4773		
21	.231	170	-.5001	.331	90	-.4922	.431	10	-.5036	1.131	20	-.5161	.331	270	-.5135		
22	.231	160	-.4930	.331	80	-.5165	.431	0	-.5501	1.131	10	-.5277	.431	270	-.5148		
23	.231	150	-.4810	.331	70	-.5092	.531	180	-.5219	1.131	0	-.5143	.531	270	-.5330		
24	.231	140	-.5069	.331	60	-.5165	.531	90	-.5399				.731	270	-.5688		
25	.231	130	-.4955	.331	50	-.4996	.531	0	-.5105	1.631	90	.0019	.931	270	-.5550		
26	.231	120	-.4887	.331	40	-.4971	.731	180	-.5412	1.631	0	-.1262	1.131	270	-.5145		
27	.231	110	-.4952	.331	30	-.5182	.731	90	-.5578	2.131	180	.0557	1.631	270	-.1884		

7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 25 POINT 228 ALPHA 0 MACH .881 Q 699.169 MODEL DOME SHAPE

PORT	X/D	PHI	CP1	X/D	PHI	CP2	X/D	PHI	CP3	X/D	PHI	CP4	X/D	PHI	CP5	Y/D	Z/D
1	.161	180	-.4389	.231	100	-.4352	.331	20	-.4363	.731	0	-.4544	2.131	90	-.0451		
2	.161	170	-.4734	.231	90	-.4745	.331	10	-.4735	.931	180	-.0695	2.131	0	-.2592		
3	.161	160	-.4487	.231	80	-.4574	.331	0	-.4542	.931	90	-.4947	0.000		.7737	-.45	0.00
4	.161	150	-.4621	.231	70	-.4491	.431	180	-.4759	.931	0	.1790	0.000		.7818	-.40	0.00
5	.161	140	-.4579	.231	60	-.4616	.431	170	-.4754	1.131	180	-.5025	0.000		1.0163	-.30	0.00
6	.161	130	-.4496	.231	50	-.4515	.431	160	-.4642	1.131	170	-.5021	0.000		1.1427	-.20	0.00
7	.161	120	-.4654	.231	40	-.4585	.431	150	-.4840	1.131	160	-.5075	0.000		1.1964	-.10	0.00
8	.161	110	-.4539	.231	30	-.4419	.431	140	-.4625	1.131	150	-.4915	0.000		1.2187	0.00	0.00
9	.161	100	-.4527	.231	20	-.4513	.431	130	-.4603	1.131	140	-.4921	0.000		1.2055	.10	0.00
10	.161	90	-.4415	.231	10	-.4443	.431	120	-.4530	1.131	130	-.4876	0.000		1.1458	.20	0.00
11	.161	80	-.4669	.231	0	-.4653	.431	110	-.4790	1.131	120	-.5068	0.000		1.0181	.30	0.00
12	.161	70	-.4322	.331	180	-.4475	.431	100	-.4425	1.131	110	-.4706	0.000		.7975	.40	0.00
13	.161	60	-.4726	.331	170	-.4815	.431	90	-.4837	1.131	100	-.5211	0.000		.7442	.45	0.00
14	.161	50	-.4309	.331	160	-.4357	.431	80	-.4395	1.131	90	-.4770	0.000		1.2032	0.00	.10
15	.161	40	-.4389	.331	150	-.4584	.431	70	-.4595	1.131	80	-.4941	0.000		1.1384	0.00	.20
16	.161	30	-.4531	.331	140	-.4810	.431	60	-.4707	1.131	70	-.5092	0.000		1.0074	0.00	.30
17	.161	20	-.4786	.331	130	-.4897	.431	50	-.4863	1.131	60	-.5148	0.000		.7818	0.00	.40
18	.161	10	-.4694	.331	120	-.4641	.431	40	-.4724	1.131	50	-.5081	0.000		.7841	0.00	.45
19	.161	0	-.4614	.331	110	-.4567	.431	30	-.4598	1.131	40	-.4939	.161	270	-.4654		
20	.231	180	-.4604	.331	100	-.4543	.431	20	-.4702	1.131	30	-.5036	.231	270	-.4703		
21	.231	170	-.4532	.331	90	-.4476	.431	10	-.4637	1.131	20	-.4954	.331	270	-.4613		
22	.231	160	-.4843	.331	80	-.4736	.431	0	-.4930	1.131	10	-.5164	.431	270	-.4800		
23	.231	150	-.4703	.331	70	-.4693	.531	180	-.4930	1.131	0	-.5111	.531	270	-.4915		
24	.231	140	-.4447	.331	60	-.4532	.531	90	-.4666				.731	270	-.4919		
25	.231	130	-.4359	.331	50	-.4471	.531	0	-.4700	1.631	90	-.0091	.931	270	-.4934		
26	.231	120	-.4798	.331	40	-.4809	.731	180	-.5103	1.631	0	-.0641	1.131	270	-.5244		
27	.231	110	-.4477	.331	30	-.4458	.731	90	-.4818	2.131	180	-.2390	1.631	270	-.4265		

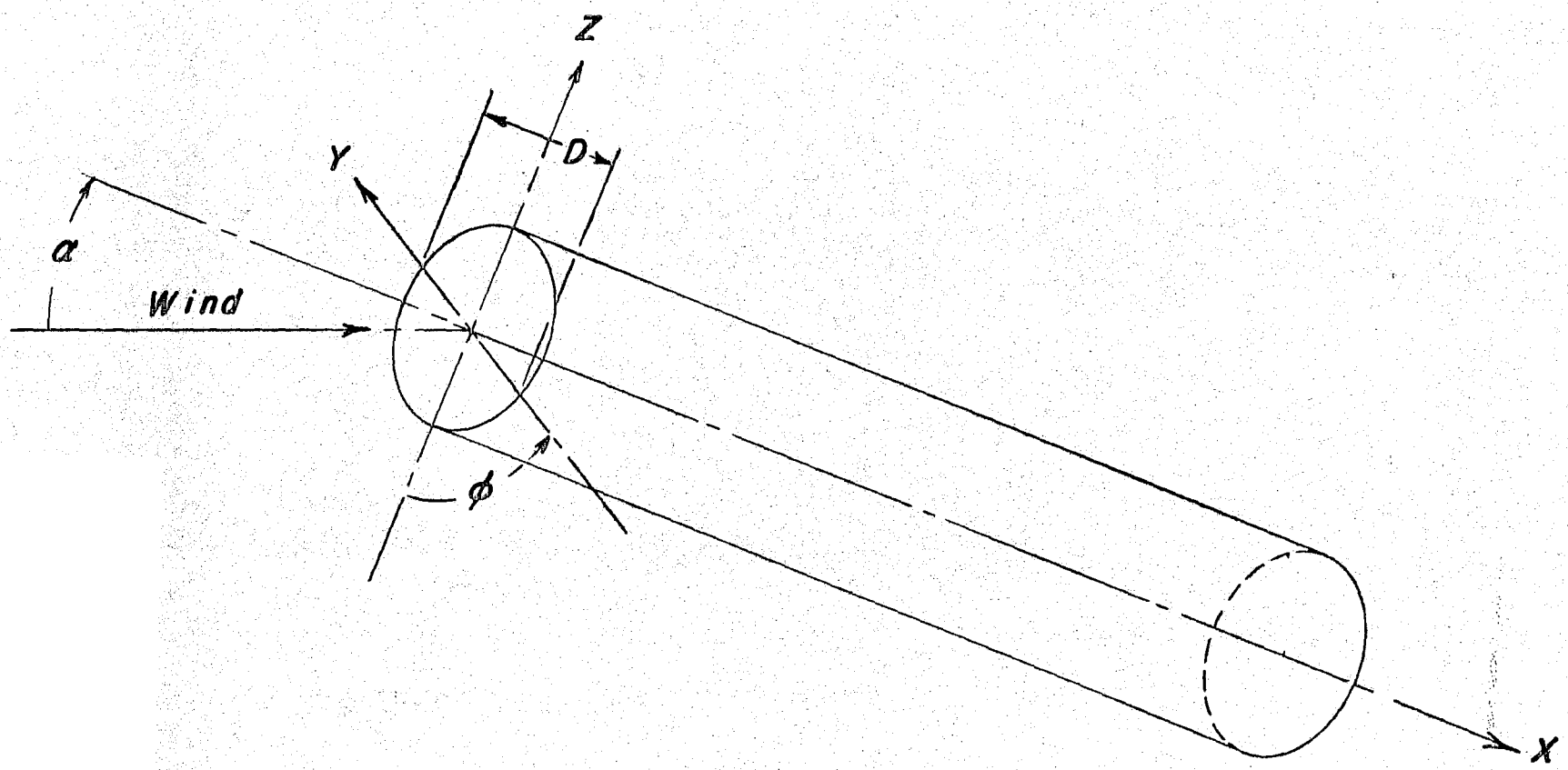


Figure 1.- Axis system used for data presentation.

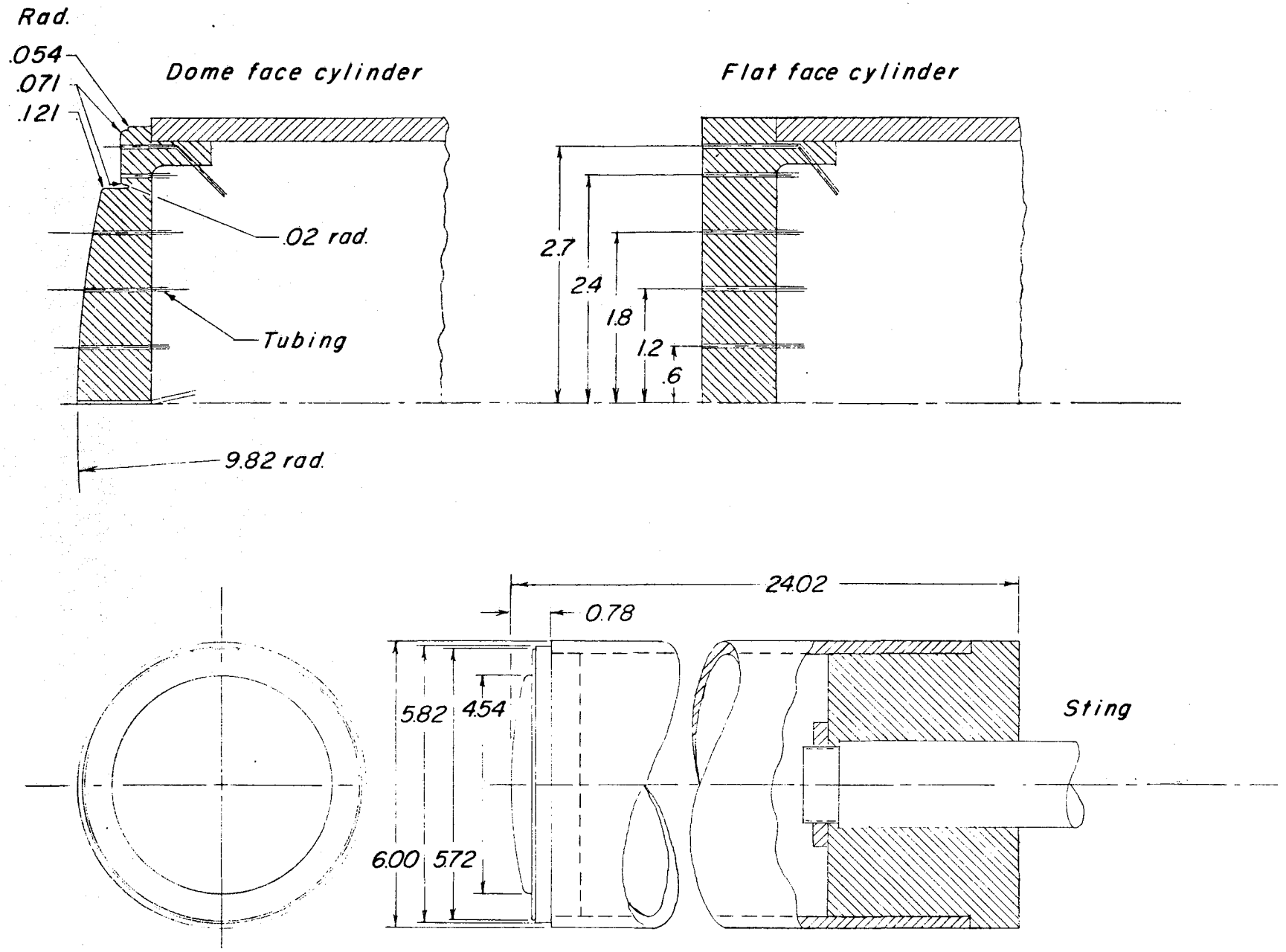


Figure 2.- Sketch of model. (Dimensions in inches).

Figure 3.- Photograph of dome face cylinder model.

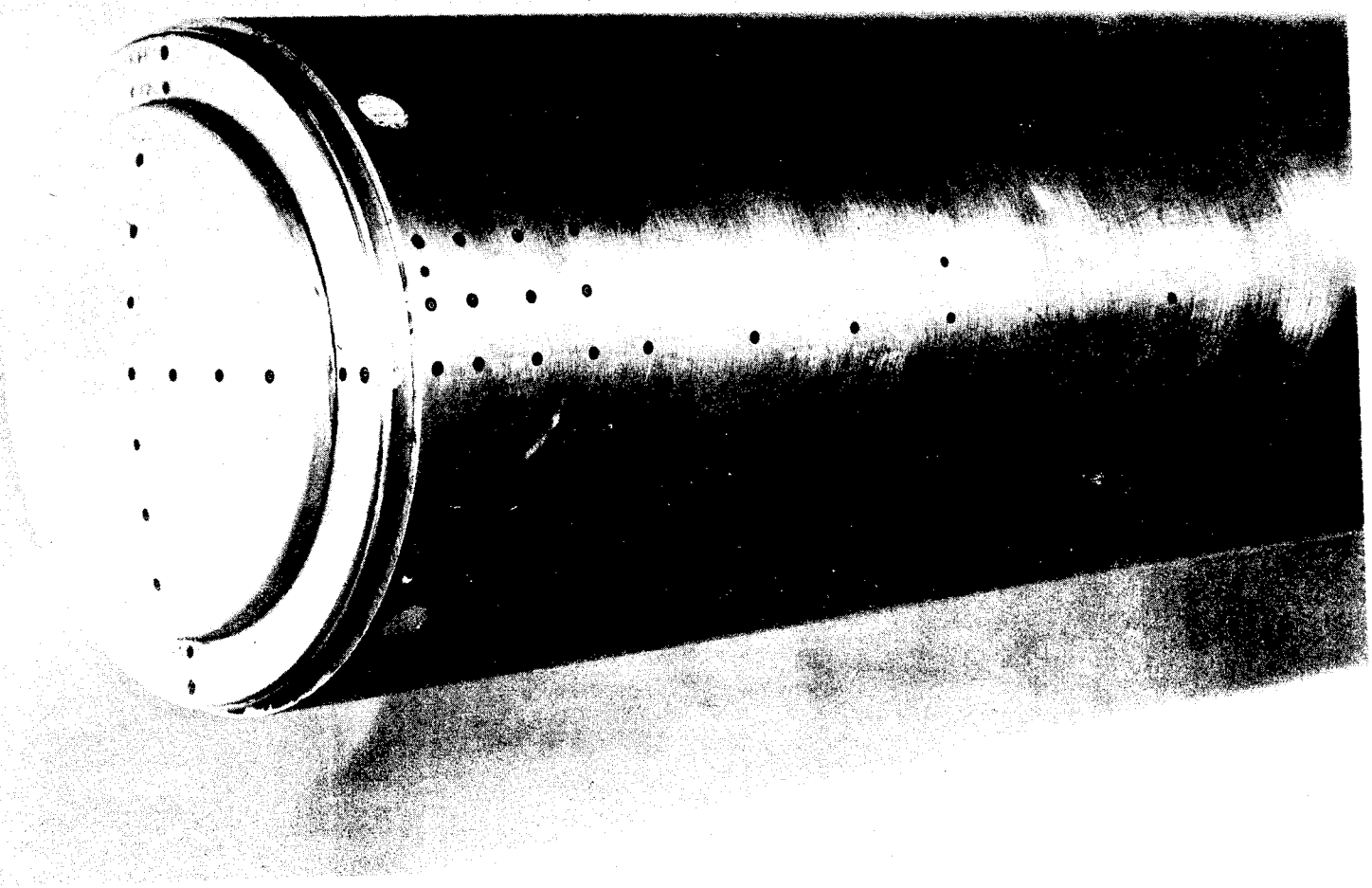


Figure 3.- Concluded.

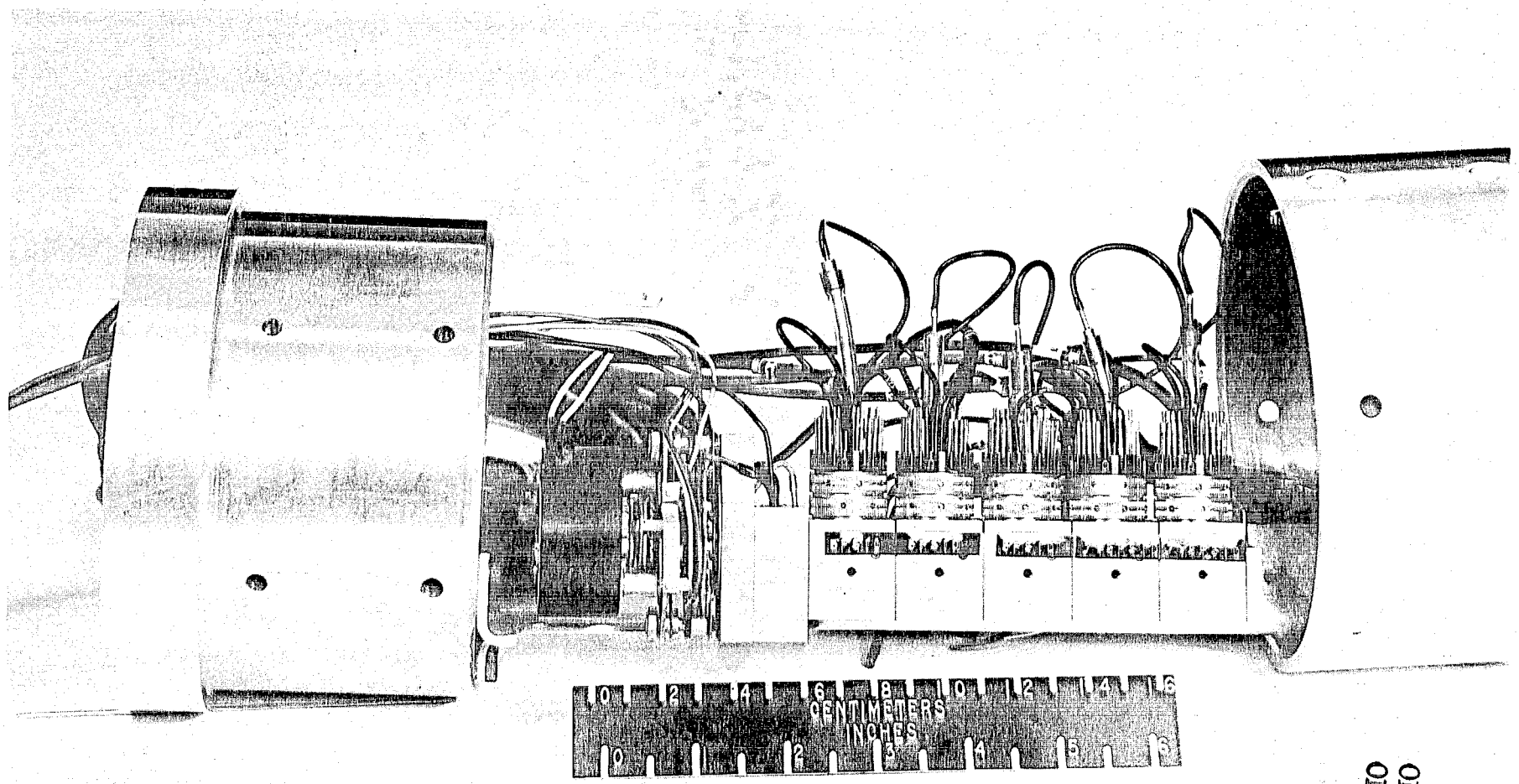
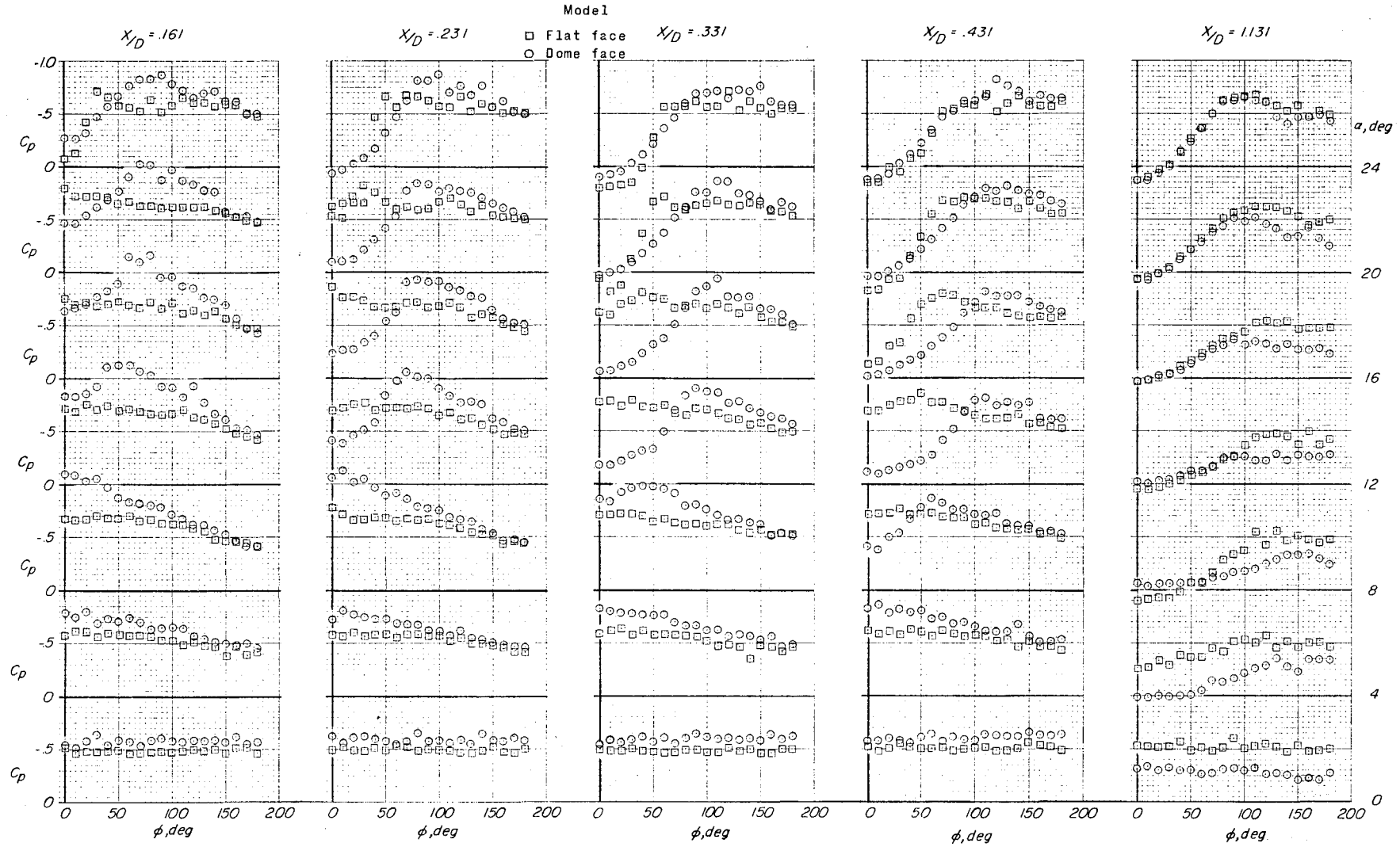
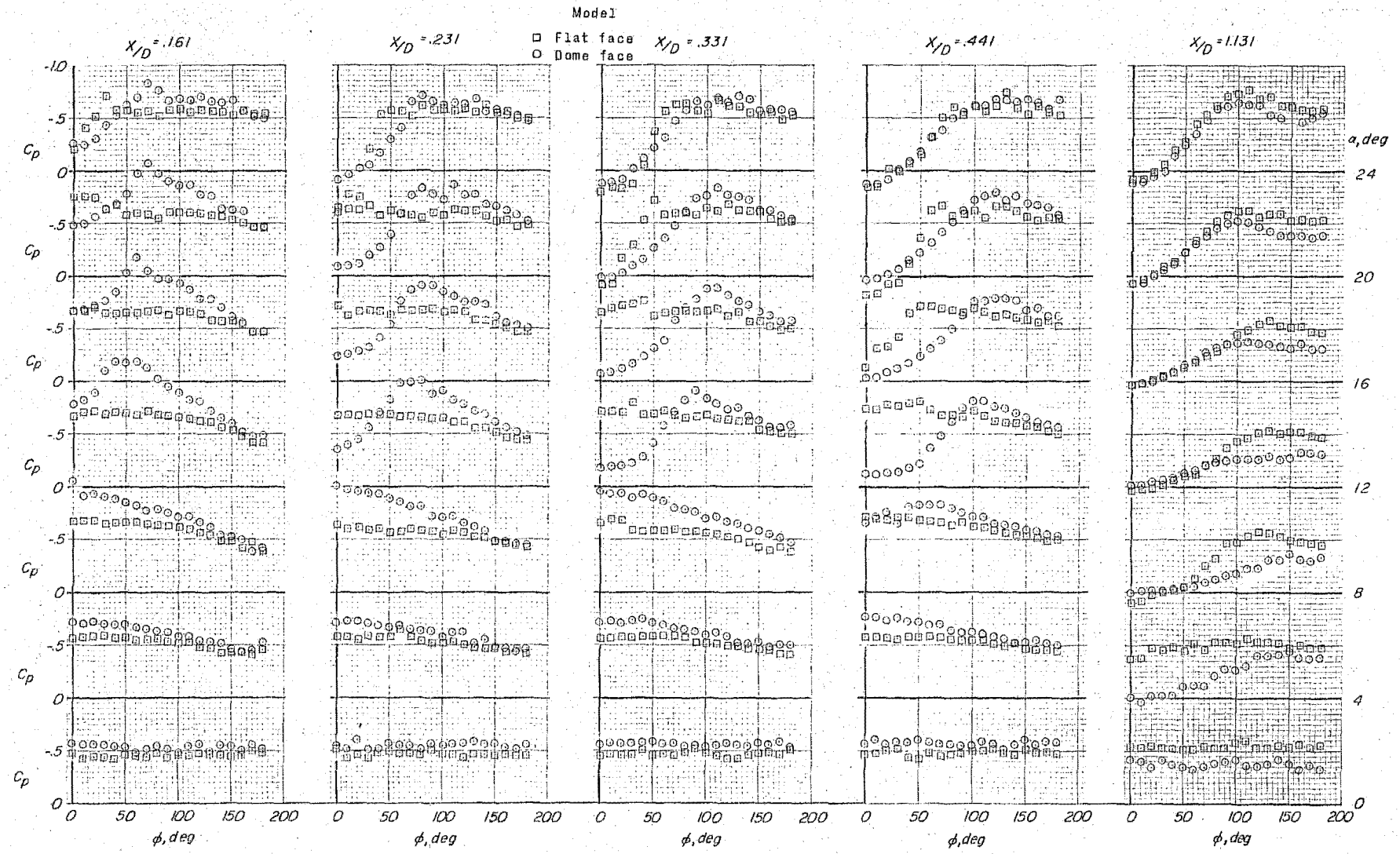


Figure 4.- Photograph of multiple valve scanning system used for measuring orifice pressures.



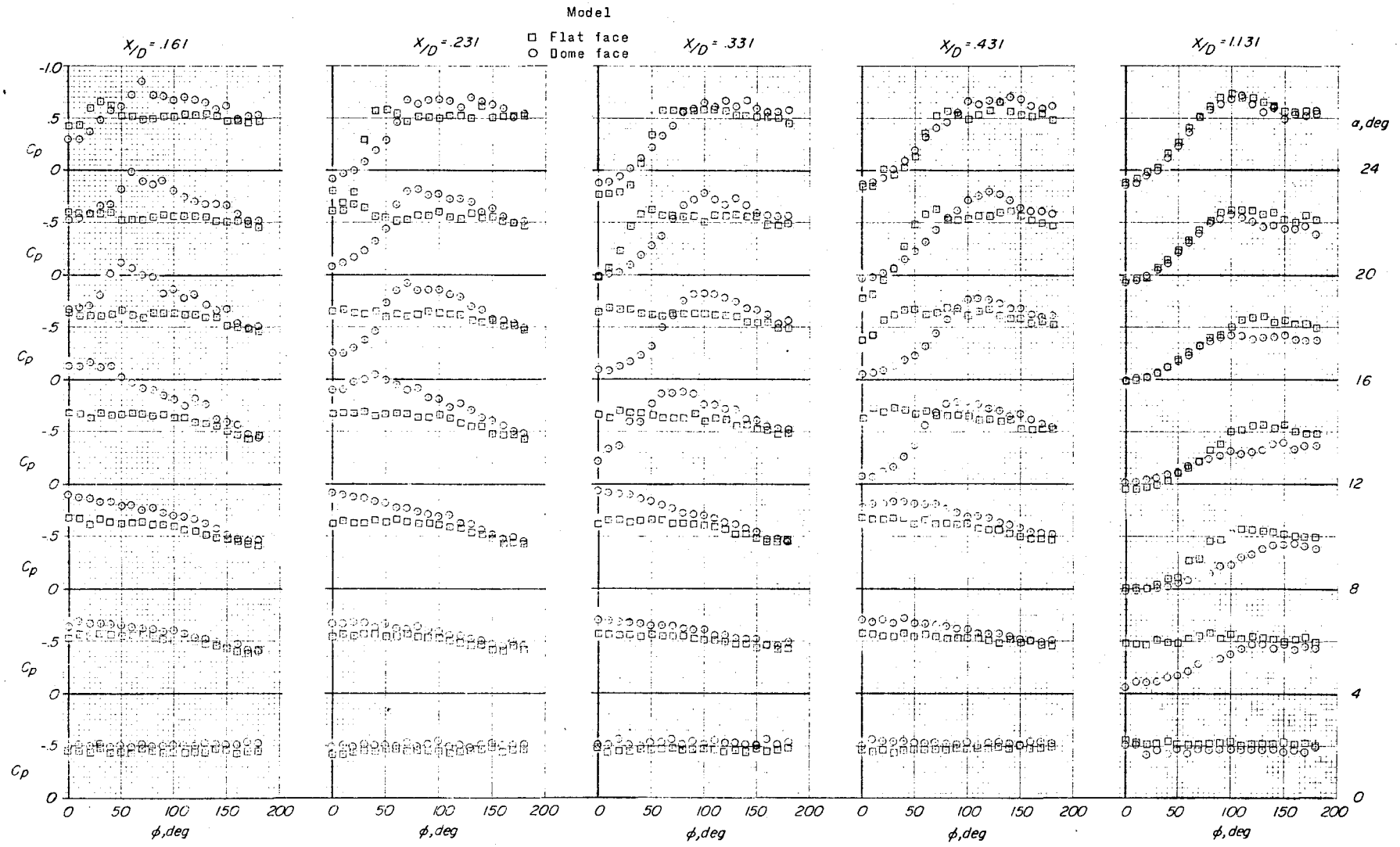
(a) M = 0.303

Figure 5.- Pressure coefficient variation over surface of the cylinders.



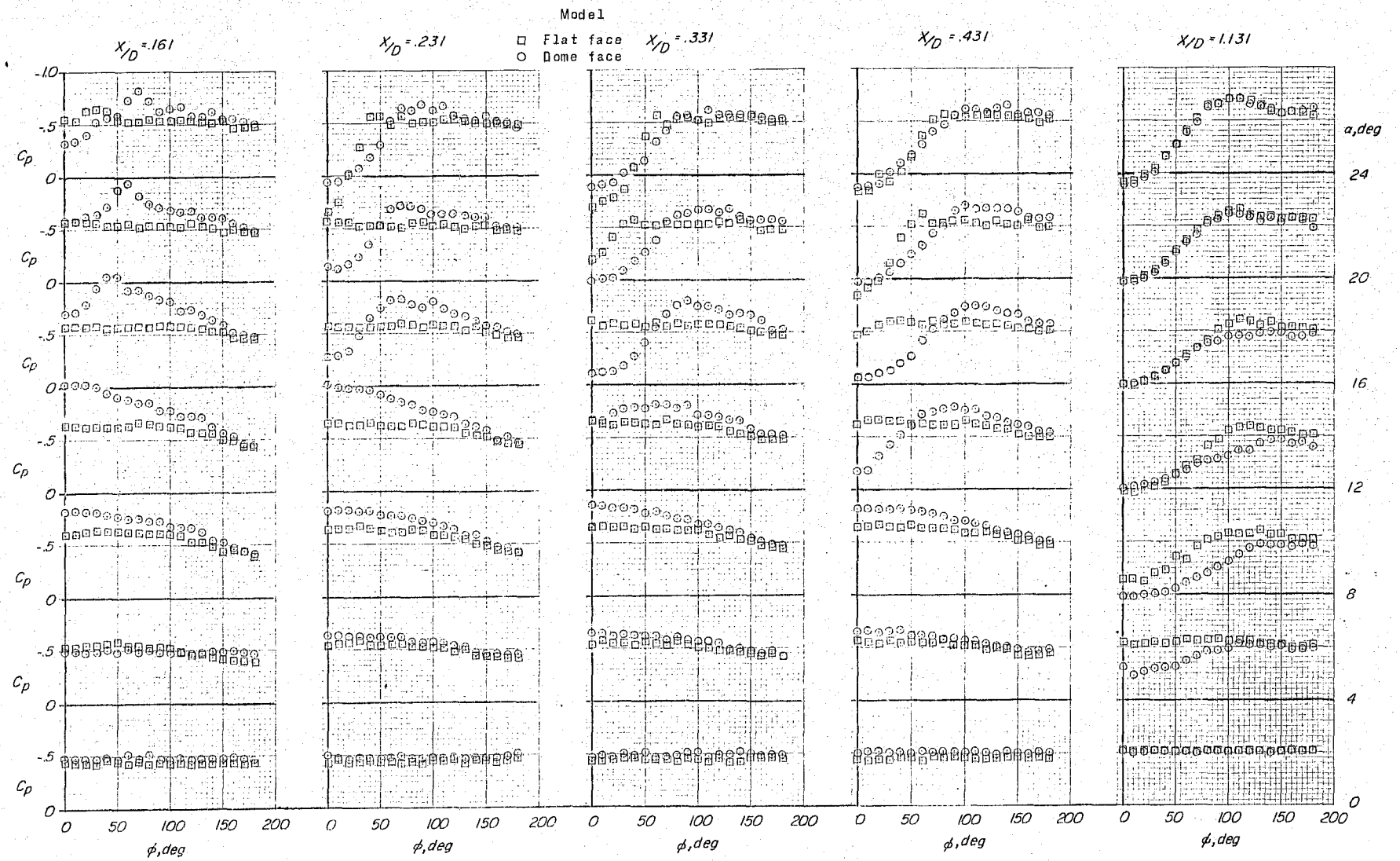
(b) M = 0.403

Figure 5.- Continued.



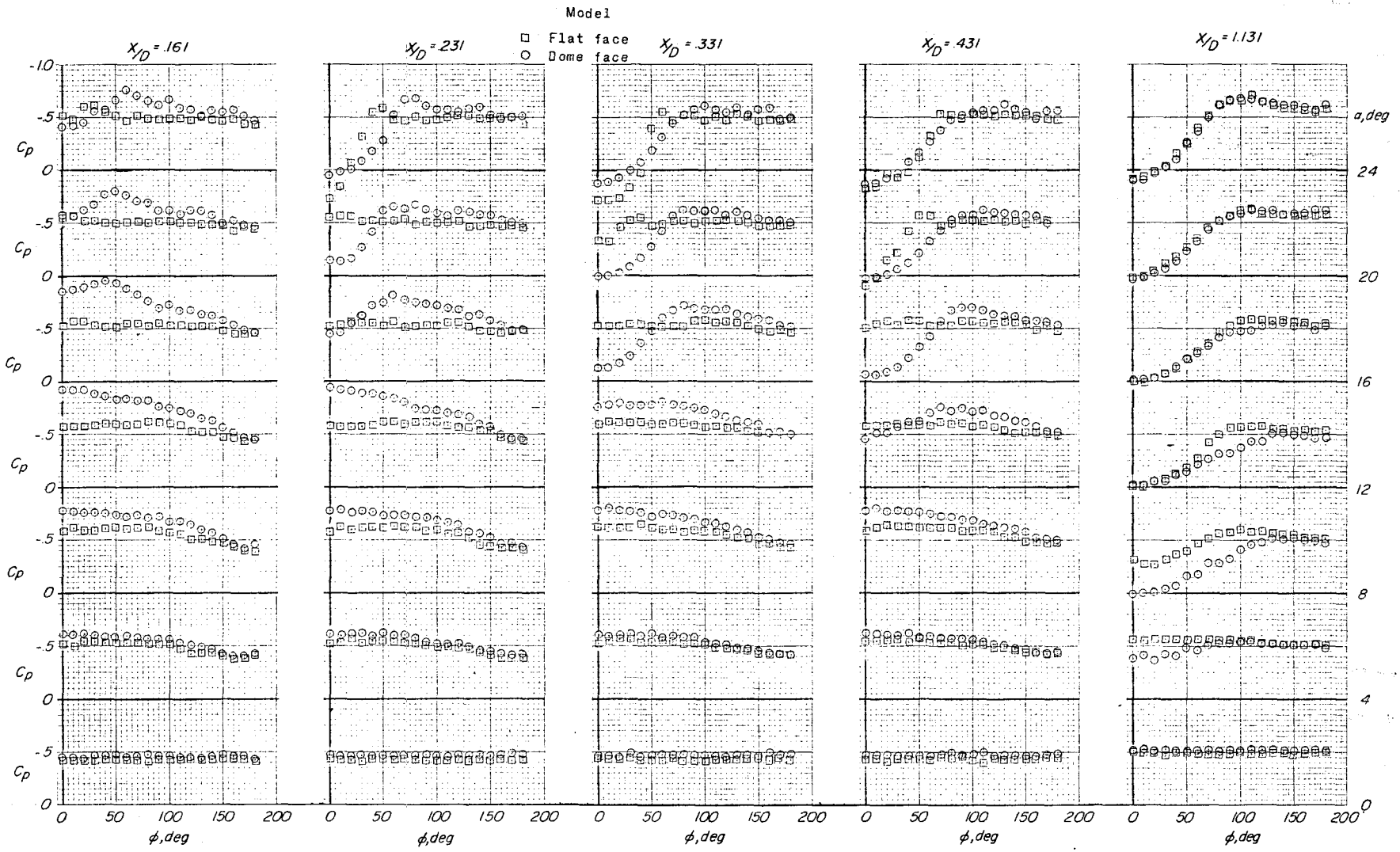
(c) M = 0.507

Figure 5.- Continued.



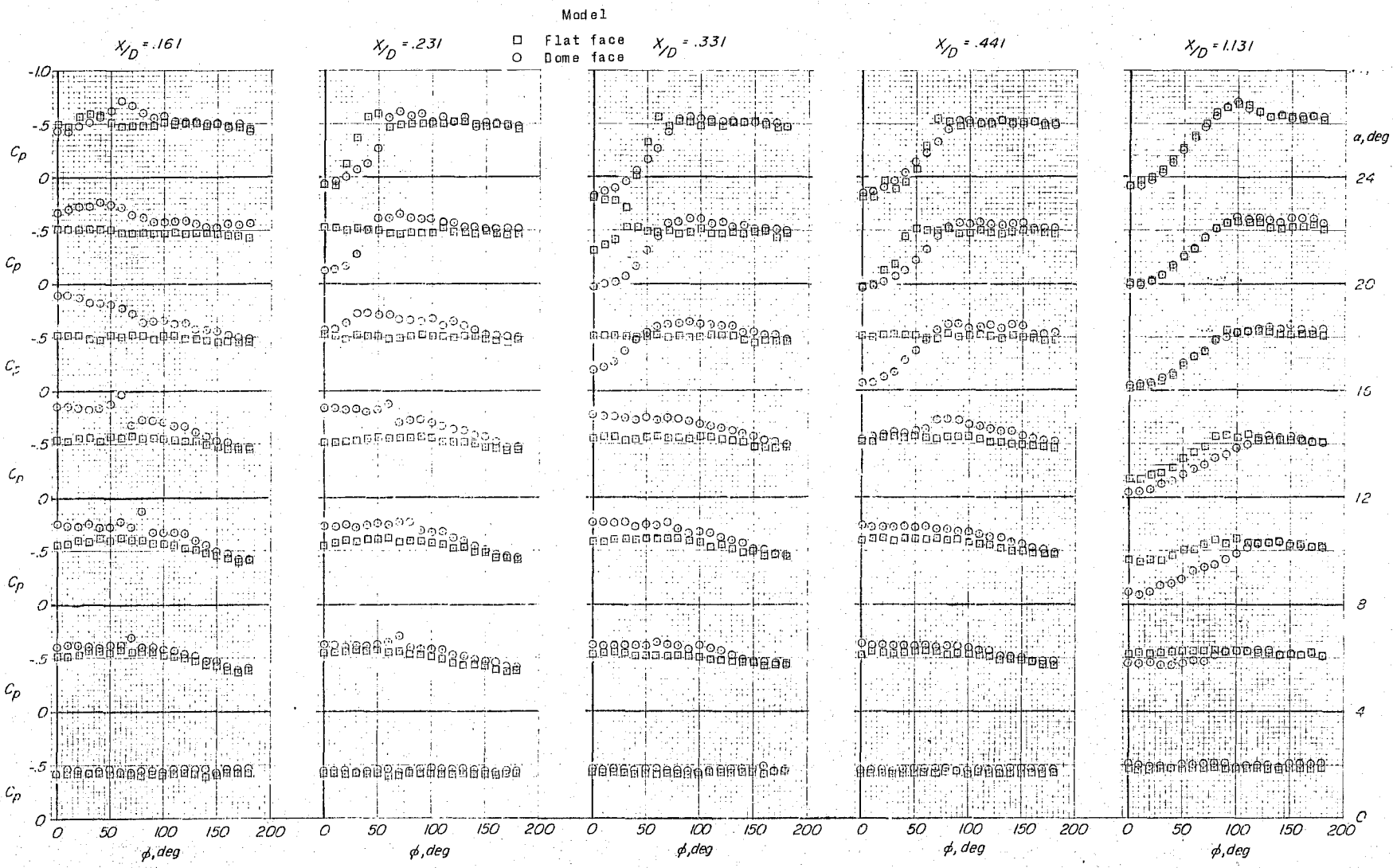
(d) M = 0.600

Figure 5.- Continued.



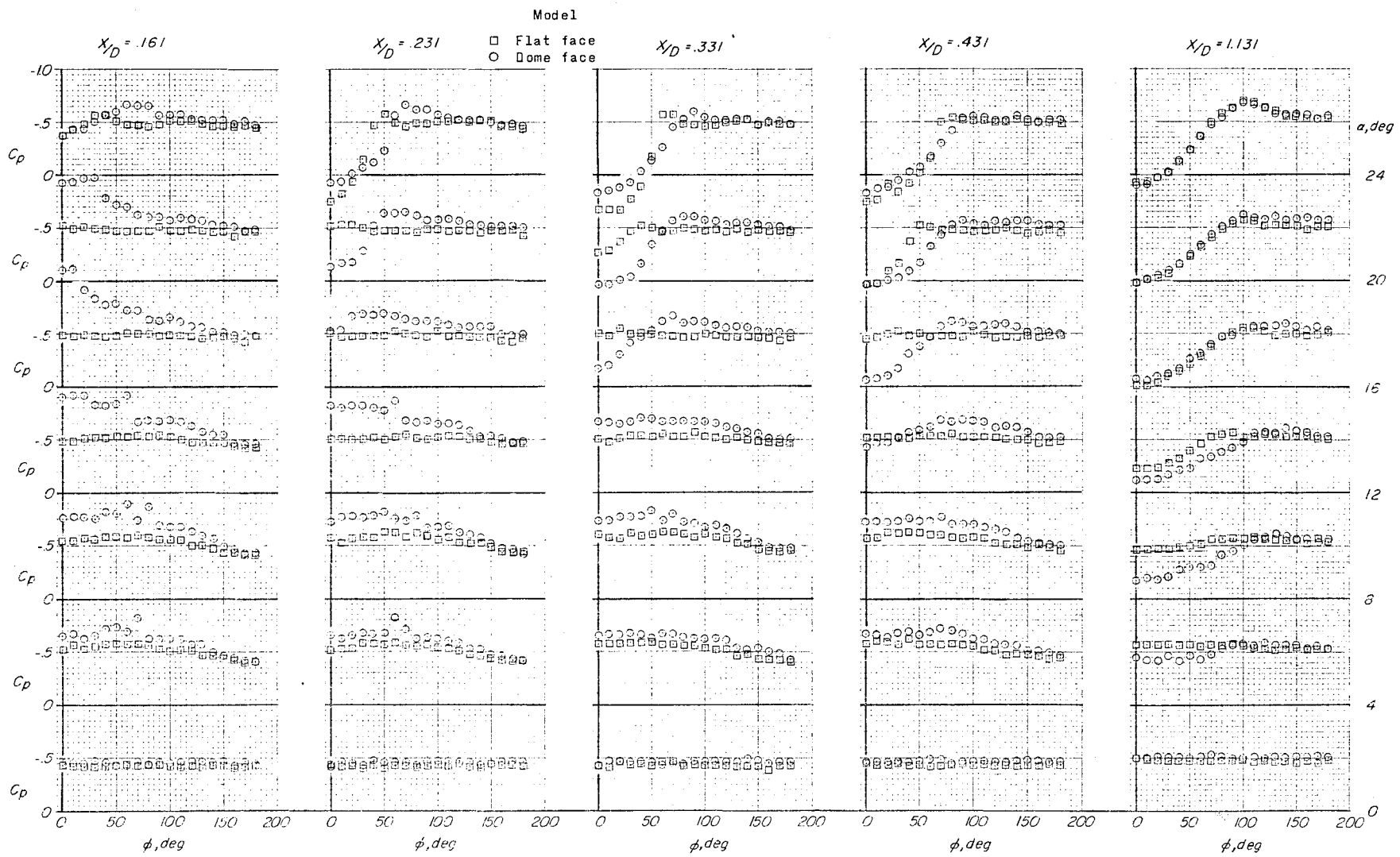
(e) M = 0.713

Figure 5.- Continued.



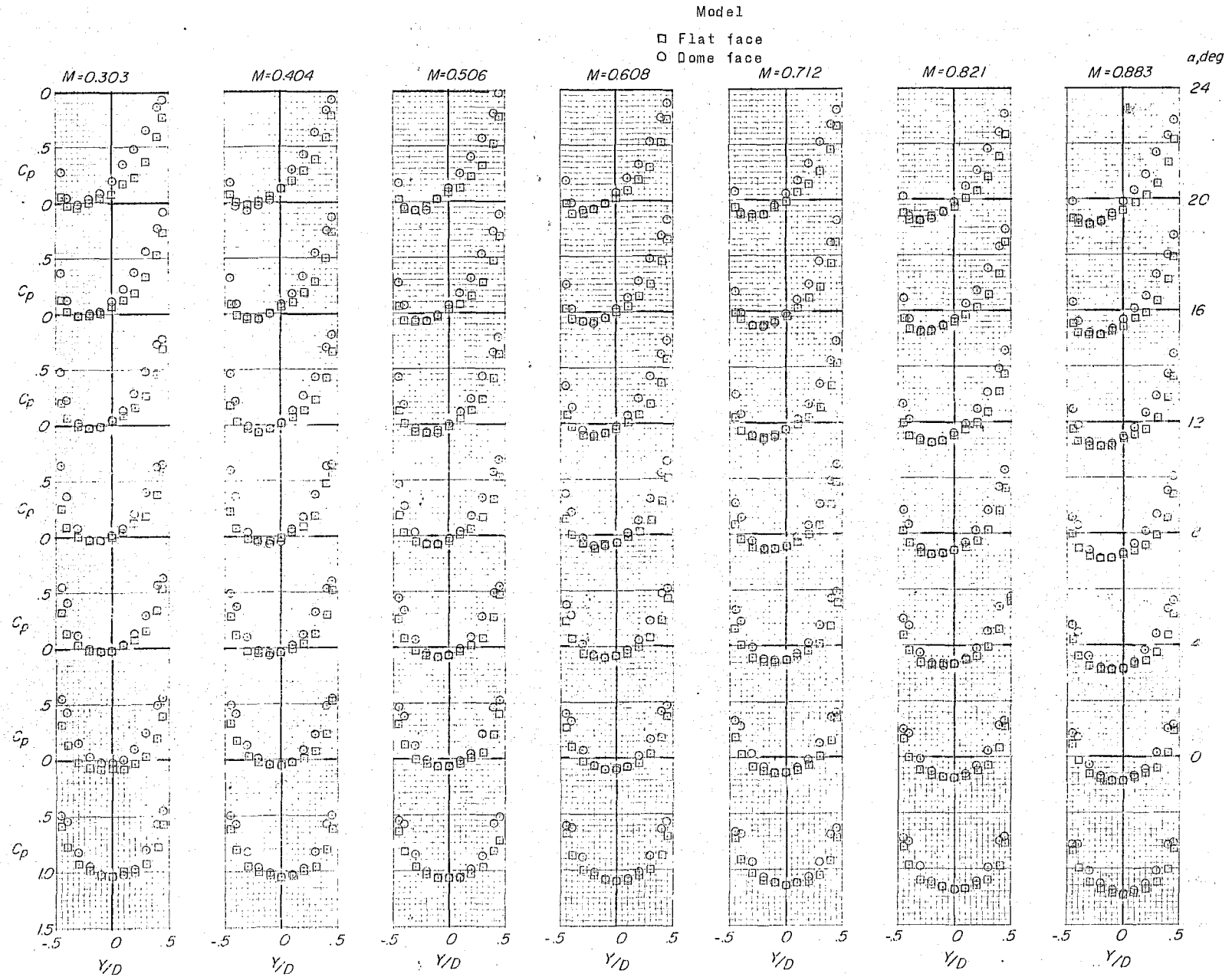
(f) M = 0.820

Figure 5.- Continued.



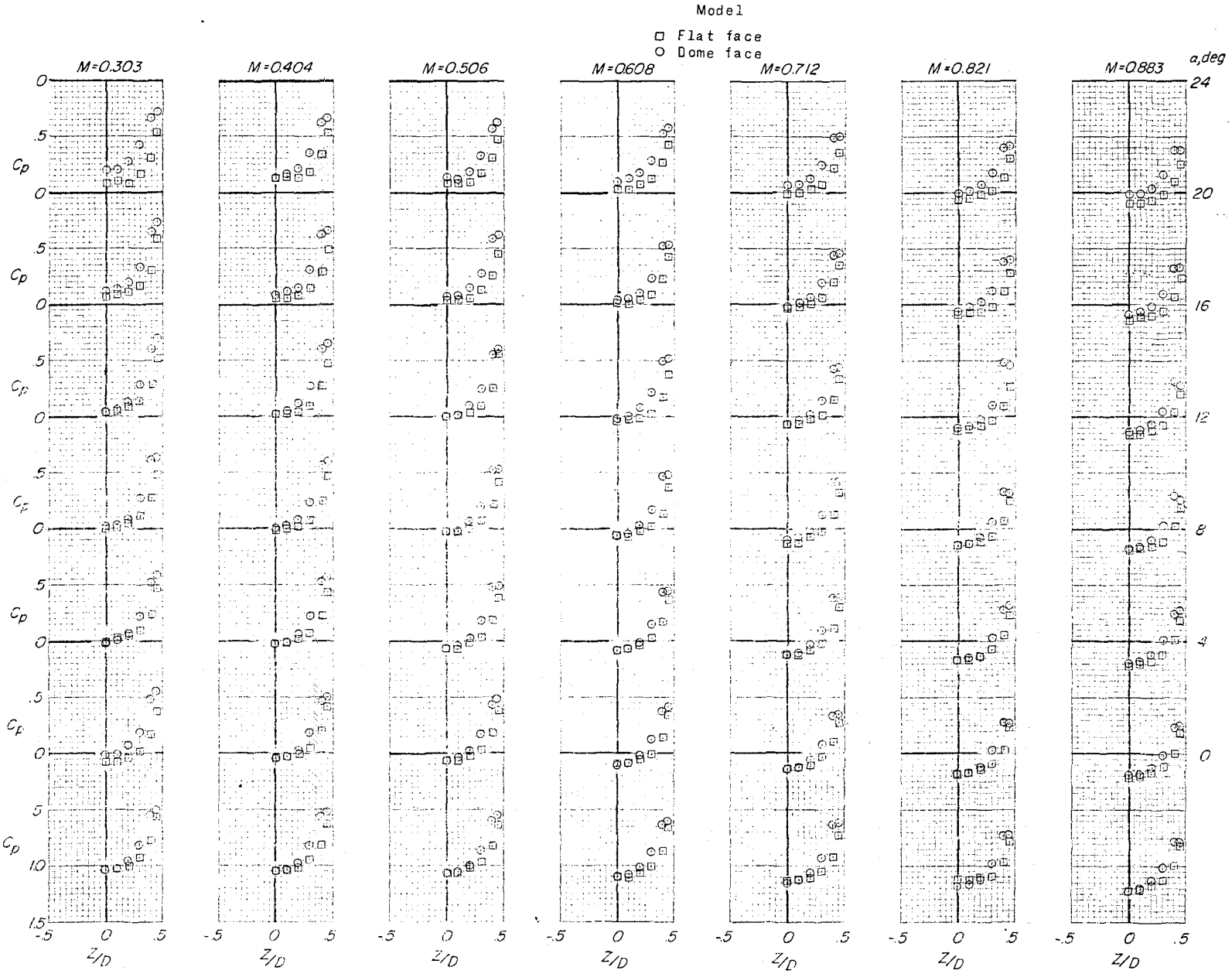
(g) M = 0.885

Figure 5.- Concluded.



(a) Along Y-axis

Pressure coefficient variation over forward face of cylinders.



(b) Along Z-axis

Figure 6.- Concluded.

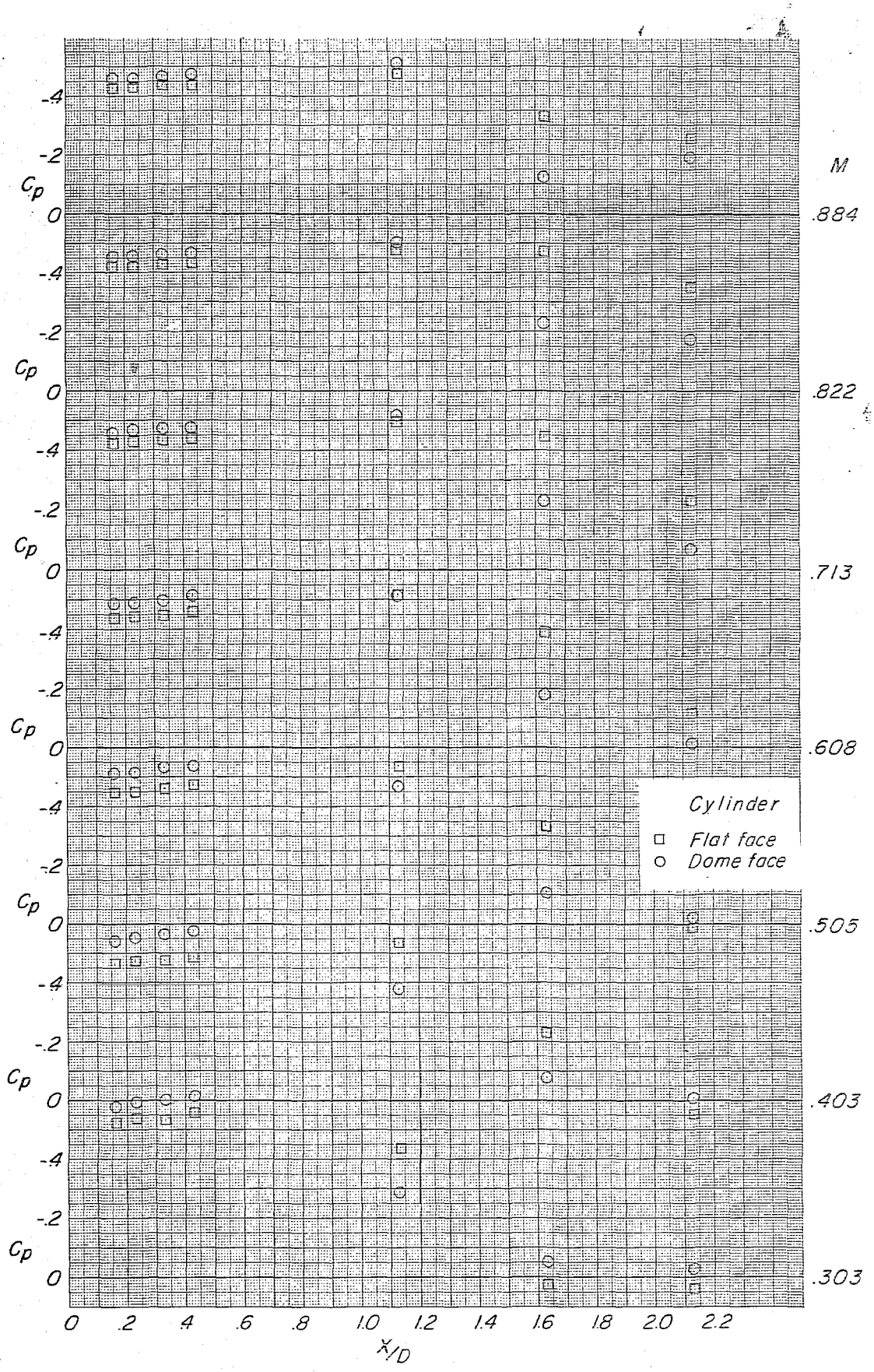


Figure 7.- Average pressure coefficient, C_p, existing on surface of cylinders at $\alpha = 0^\circ$.