

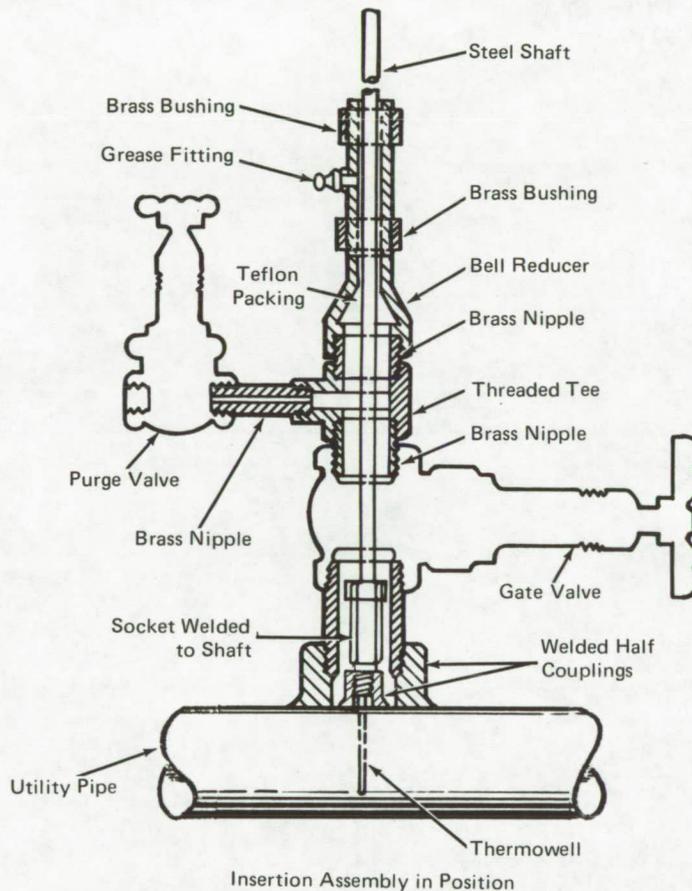
NASA TECH BRIEF

Manned Spacecraft Center



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Hot Tap Thermowell Installation



Use of the thermowell tapping system described below permits thermowells to be installed in live steam lines or water pipes, without interrupting their operation. Because this innovation eliminates the restrictions of current tapping methods - which require utilities to be shut down while the tapping operation is performed - it effects an economy in time and cost.

It has not previously been possible to install thermowells in water and steam lines which were in operation,

without interrupting the service or without hazard to personnel effecting the installation. Yet occasionally it is necessary to tap vital utilities using chilled water for cooling or hot water and steam for heating.

Two basic assemblies have been developed which enable a thermowell to be installed in a pipe under pressure. A drill assembly consisting of a circular shaft, approximately .76 meters long, has a drill bit welded to one end. This shaft is provided with a packing gland

(continued overleaf)

attached to which is a bell reducer. Connected to the lower end of the bell reducer is a short nipple and a three part connector tee. A purge valve is attached to one end of the tee and a short threaded nipple to the other.

The thermowell insertion assembly (see the figure) is a duplicate of the drill assembly except that a socket is attached to the end of the shaft in place of the drill bit. This socket is the same size as the required thermowell.

Installation is effected by welding half couplings to the pipe and attaching a gate valve. The drill assembly is then fitted to the gate valve and a hole is bored in the pipe wall by means of the drill bit. After this operation the purge valve enables the drill shavings to be cleared and the trapped pressure to be relieved.

Retraction of the drill bit is followed by the closing of the gate valve and the substitution of the thermowell insertion assembly for the drill assembly.

Note:

Requests for further information may be directed to:
Technology Utilization Officer
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Houston, Texas 77058
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Patent status:

No patent action is contemplated by NASA.

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