



## Robotic Hand

**S**hown below is the Omni-Hand, a robotic hand for which its developers claim "capabilities virtually identical to those of the human hand." The multiple digit hand features an opposable thumb and a flexible wrist. Electric muscles, called Minnacs™, power wrist joints and the completely interchangeable digits.

The Omni-Hand was developed by Ross-Hime Designs, Inc., Minneapolis, Minnesota for Marshall Space Flight Center under a NASA Small Business Innovation Research (SBIR) contract. Two Omni-Hands have been delivered to NASA for evaluation and potential

use on space missions. The unit is also commercially available for such applications as hazardous materials handling and manufacturing automation.

Ross-Hime Designs had earlier developed for NASA, under SBIR contracts with Langley Research Center, systems known as Omni-Wrist™ and Omni-Wrist II that are also commercially available for such applications as spray painting, sealing, ultrasonic testing and a variety of nuclear industry, aerospace and military use.

A relatively new company formed in 1987, Ross-Hime has patented a number of robotic mechanisms with

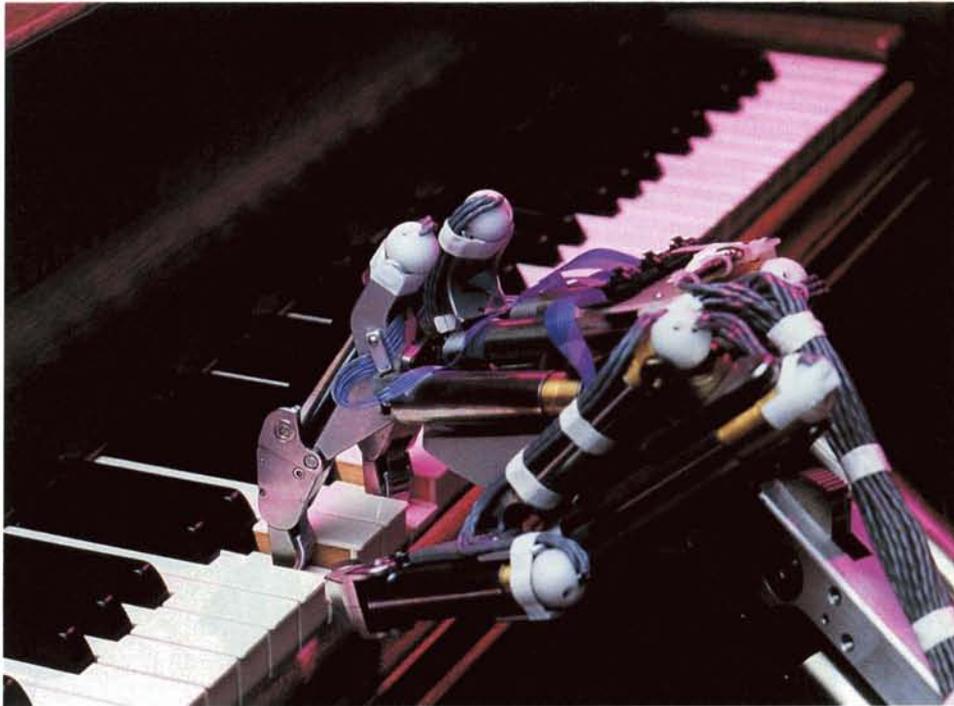
humanlike "singularity-free" motion (singularity is a phenomenon of robotics that can cause a joint to jam as it attempts to move in an area where it has no axis of rotation or range of motion). The company has conducted development programs under four SBIR contracts. In addition to Omni-Hand and Omni-Wrist, its robotic products include a Dextrous Arm and the Minnac electric muscle. ●

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SPACE-USE ROBOTIC

SYSTEMS BECOME

COMMERCIAL PRODUCTS



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