

■ This Penn 11ATP compressor with 17.5 and 10.5 in. (444.5 and 266.7 mm) diameter cylinders for H<sub>2</sub>S service was completely rebuilt and refurbished in Hi-Tech's shop. The rebuild included resleeved cylinder bores, a new piston rod, new PEEK rings and packing, and new poppet valves.

## EAST COAST RECIPROCATING COMPRESSOR SPECIALISTS

*Hi-Tech Compressor & Pump Applies Expertise to Reciprocating Compressors*

**By Norm Shade**

Few people from the oil and gas producing regions of North America might think of the East Coast as a good place for a reciprocating compressor parts and service business. But that is exactly the location of Hi-Tech Compressor & Pump Products Inc. Nestled in Tullytown, Pennsylvania, U.S.A., near Philadelphia, Hi-Tech supplies and services the wearing components of all kinds of reciprocating compressors and pumps.

The region has some of the largest refineries and chemical plants in the U.S.A., with most of the facilities and their compression equipment having been in service for several decades. Many operations and maintenance personnel have spent most, if not all, of their careers in these facilities. As these seasoned veterans retire, their newer replacements have to draw on various sources, including Hi-Tech, for the equipment knowledge and technical expertise needed to keep their compressors operating at peak reliability.

"Hi-Tech Compressor & Pump

Products is a leading supplier of reciprocating compressor and pump products for this region," said Todd Pollazzi, president. "Working together with our application engineers, we offer customers the best combination of materials, designs and services for their specific applications. Hi-Tech's constantly growing staff and state-of-the-art facility are equipped to refurbish parts and also precision manufacture new components promptly," he added.

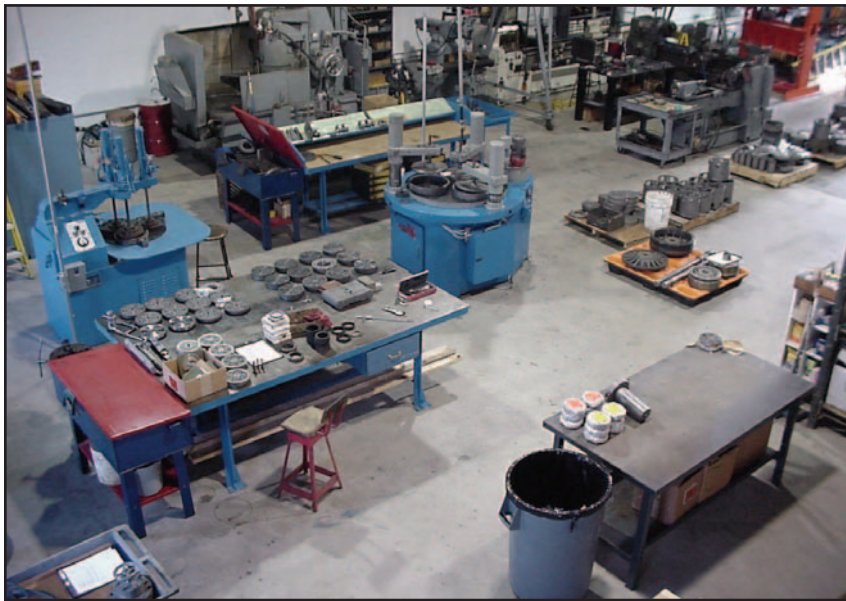
The company serves the air separation, gas transmission, petroleum refining, chemical processing, cogeneration and industrial air (P.E.T.) reciprocating compressor and pump markets throughout the New England states, but primarily in New Jersey, Delaware, New York and Pennsylvania. It has experience with most compressor brands including Ajax, Ariel, Chicago Pneumatic, Clark, Cooper Bessemer, Dresser-Rand, Gardner Denver, Ingersoll Rand, Joy, Knox Western, Norwalk, Pennsylvania, Superior and Worthington.

Available 24/7, their portfolio of services includes the reconditioning

and replacement of all reciprocating and pump wear parts. Capabilities include valve repair, piston and rod repair, non-lube conversions, cylinder boring, honing and sleeving, NDT magnetic particle inspection, casting crack repair including cold locking and lacing services, shaft and rod straightening, application of HVOF coatings, hydrostatic testing and chemical cleaning.

The 5500 ft<sup>2</sup> (511 m<sup>2</sup>) shop has boring mills and drills large enough to machine cylinders up to 28 in. (711 mm) in diameter, lathes for turning parts up to 100 in. (2540 mm) long and 30 in. (762 mm) in diameter with up to 5 in. (127 mm) spindle hole diameter and a 50 ton (45.4 metric ton) rod straightening press. Hi-Tech has CNC turning and milling equipment, grinders and lapping machines for the manufacture of valve seats and guards, piston rings, riders, packing rings and other components. The facility has equipment for sand and shot blast cleaning, parts washing, magnetic particle and all types of dimensional inspections, oven heating, laser marking and leak testing





■ Hi-Tech Compressor and Pump Products Inc.'s shop in Tullytown, Pennsylvania, U.S.A., can manufacture and repair new compressor valve components and other compressor parts.

of valves and unloaders. It also has capabilities for producing CAD drawings and CNC programming.

"With our experience and equipment we can make complete valve assemblies in as little as two days, including the valve seat, guard, gaskets and plates or rings. We also make packing cups and cases, wiper cases, packing rings, piston rings, wiper rings, pistons, rods, nuts, caps, cages, oil slingers and miscellaneous parts," said David Finan, service center manager. "We stock PTFE bushing material for rings and packing up to 25 in. (635 mm) diameter on the shelf," he added. Hi-Tech also rebuilds valves and unloaders and can restore cylinder valve pockets and bores. The company has four trucks including a 2 ton (1.8 metric ton) stake truck for picking up and delivering customer parts for turnaround repair and rebuild services.

Pollazzi started Hi-Tech in 1999, but he has been working with compressor wear parts since 1988. He first learned about the workings of compressors and pumps from his father, who spent his entire career with Joy Manufacturing working on compression and drilling machinery.

"The Hi-Tech name is symbolic of cutting-edge, state-of-the-art products and solutions for reciprocating compressors and pumps," said Pollazzi. "Our staff has more than 75 years of collective service. It knows the reciprocating compressor and pump industry and can troubleshoot problems. We take care of customers and maintain old-fashioned relationships, treating customers the way they want to be

treated with fast turnaround service. Our service includes keeping extensive records, and we often know customers'

equipment better than they know it themselves. The condition of all reconditioned parts is documented with detailed measurements and digital photos before and after repair," he explained.

"Supported by resources like AIM Mechanical Field Services, ACI Services Inc., SBCO, and others with many years of experience in the reciprocating industry, we can provide multiple product options to offer the best solution for the customer's problems and needs," said Jane Foden, manager, sales and marketing. "We have been successful in many specialized applications including ammonia, butane, chlorine, carbon dioxide, hydrogen and methane gas."

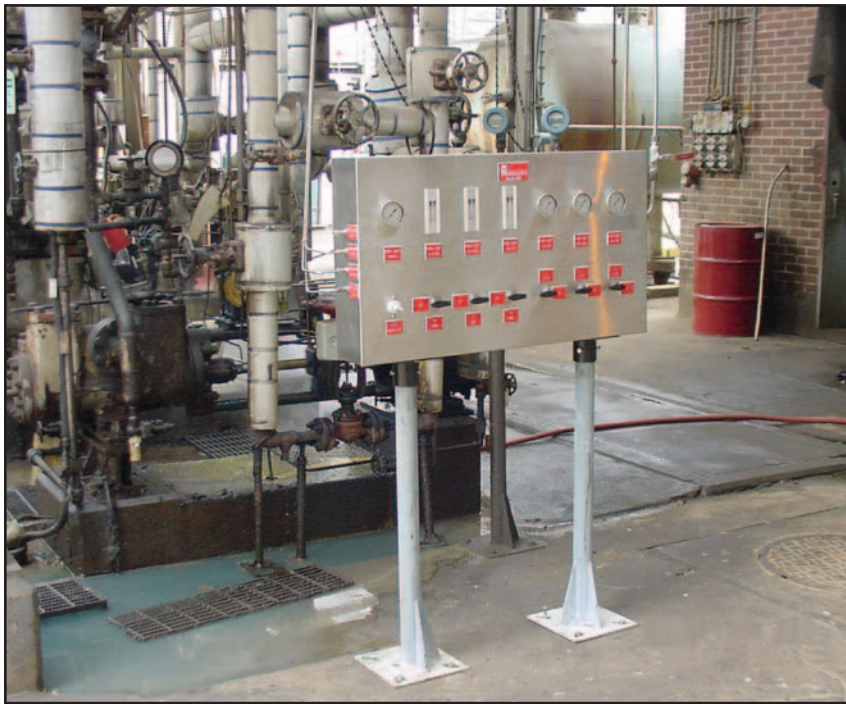
The company can design and prescribe compressor piston rod packing, rings, riders, wipers, purge packing, purge gas monitoring control panels and systems and lubrication systems. Its CAD designs include assembly drawings and parts lists for the customer. Its services also include repair and sales of new compressor bushings and bearings, crossheads and shoes, rod drop indicators and sys-

*continued on page 82*



■ A local refinery discovered during a turnaround that this 13.5 in. (342.9 mm) diameter, 10.5 in. (266.7 mm) stroke Cooper Bessemer FM-2 hydrogen cylinder had cracks and pulled studs around a valve pocket. Hi-Tech metal stitched the casting, installed a sleeve in the valve pocket, restored dimensions and hydrostatically tested it to 1.5 times the maximum working pressure. They then rebuilt the cylinder with refurbished valves and new wear parts, returning it to the customer in only one week.





■ This purge gas and packing monitoring system panel was custom designed and manufactured by Hi-Tech Compressor & Pump Products. Constructed of stainless steel for outdoor installation, it monitors purge gas flow and packing leakage to help customers reduce VOC emissions.

tems, crosshead jam nut tensioners and piston end nuts, cylinders, unloaders and cylinder lubrication systems and parts. It can also provide used and reconditioned replacement compressor cylinders, frames, distance pieces, etc.

Hi-Tech has the capability of repairing many gas engine parts and can provide new engine parts including engine gaskets, shell bearings, bushings and shims, fuel valves, power piston rings, power valves, seats, guides and springs, turbocharger nozzle rings, metal bellows, expansion joints and flanges, and replacement filters.

“We are a distributor of Watchman lubrication systems and can look at an entire lubrication problem to offer the best overall solution,” said Bill Mullen, sales engineer. “We carry profilometers in our trucks and can check the surface finish, material and lube system when dealing with a wear problem.”

Watchman products offered by Hi-Tech include the Wizard Monitor for engine and compressor lubrication. “The Wizard is a processor-based monitor that offers precise, reliable protection for positive displacement divider block type lubrication systems,” said Mullen. Displayed flow rates are updated at every block cycle, eliminating the need for timing the ‘seconds per count’ and calculating drops per minute. The Wizard

automatically displays the actual pints being delivered per 24 hours. Continually monitoring flow rate, the Wizard signals lubrication failure and shuts down the equipment before damage can occur. The bright red LED flow rate display in each zone can be programmed in gallons, quarts, liters, or any unit of measure.

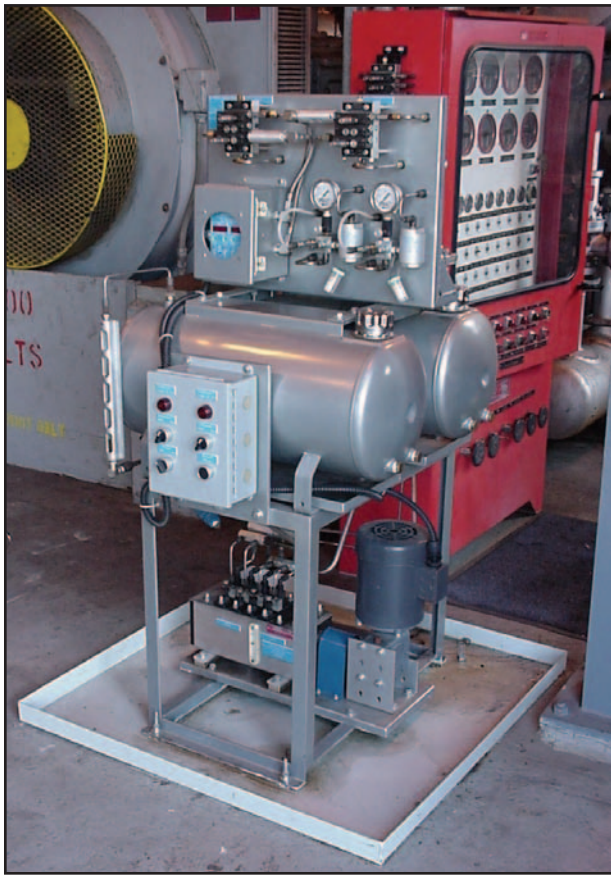
“Purge flow monitoring and control system upgrades are another growing part of our business as customers look for improvements to reduce fugitive emissions,” said Pollazzi. “Our systems can control purge gas flows and detect excessive rod packing leakage so that preventative maintenance can be scheduled before major problems occur.”

Several past accomplishments give testimony to Hi-Tech’s problem solving and repair capabilities. In one instance, a local refinery discovered during a turnaround that a 13.5 in. (342.9 mm) diameter, 10.5 in. (266.7 mm) stroke Cooper Bessemer FM-2 crude gas cylinder had cracks and pulled studs around a valve pocket. Requiring an urgent repair, the customer had Hi-Tech assess the problem. Within one week they



A Hi-Tech technician conducts an air leakage test on a rebuilt compressor unloader prior to returning it to a customer for installation on a Worthington BDC compressor in hydrogen service.





■ Hi-Tech is a distributor of Watchman lube systems, including this Wizard Monitor for engine and compressor lubrication.



■ This gas storage packing case for an I-R KVS-512 is being double checked prior to shipment to the customer. Valves and cases are checked against minimum design standards, magnetic particle tested for cracks, and reconditioned to like-new condition. New internals are installed and the assemblies are then leak tested, CNC stenciled, packaged and labeled.

metal stitched the casting, installed a sleeve in the valve pocket, restored dimensions and hydrostatically tested it to 1.5 times the maximum working pressure. It then rebuilt the cylinder with refurbished valves and new wear parts.

In another instance a local customer had experienced piston rod and cylinder bore wear in a Worthington HBB-NL2 compressor in methane service. Packing life was averaging only six months. The rod, which had contacted the packing case, accommodated two stages on one throw and was over 9 ft. (2.74 m) long, but only 1.5 to 1.75 in. (38.1 to 44.5 mm) in diameter. Hi-Tech refurbished the cylinder, straightened the rod and upgraded the design to PEEK packing, piston and rider rings, which has more than doubled the packing life as it continues to accumulate service hours after the repair and upgrade.

“Our mission is to grow our company by captivating our customers with an unsurpassed value package of technology, creative solutions and unequalled execution in the services and products that we supply to them, thus making us always their vendor of choice,” explained Pollazzi. “We are large enough to serve and small enough to care,” he added. ■



■ Hi-Tech's service center makes complete valve assemblies in as little as two days, including the valve seat, guard, gaskets and plates or rings.