

COMPRESSOR

tech²

Dedicated To Gas Compression Products & Applications

Carving Out A

BY NORM SHADE

Niche

> Hi-Tech Compressor & Pump Products has grown to serve OEM and end-user repair and new component manufacturing needs



■ After ultrasonically testing the casting to confirm adequate thickness, the worn bore of this Knight KOC compressor cylinder was restored using an iron-based alloy plasma spray before it was ground back to its original size. Hi-Tech has successfully restored numerous Knight and Ariel unlined cylinders in this manner, including quick turnarounds when needed.

When Todd Pollazzi started Hi-Tech Compressor & Pump Products Inc. in 1999, he envisioned serving the East Coast chemical plant and refinery compressor market. Pollazzi had been working with compressor wear parts since 1988, first learning about the workings of compressors and pumps from his father, who spent his entire career with Joy Mfg. working on compression and drilling machinery. Nestled in Tullytown, Pennsylvania, near Philadelphia, Hi-Tech rapidly carved a niche in supplying and servicing the wearing components of all kinds of reciprocating compressors and pumps in the northeastern United States.

Today, with a staff of 21 and 300 years of collective experience, Hi-Tech has grown into a respected supplier of reciprocating compressor and pump products for both original equipment manufacturers (OEM) and end-user markets throughout the U.S. and Canada. "We built our reputation on reliability, technical expertise and, above all, rapid turnaround that our customers need to keep up and running," Pollazzi said.

The company's modern 18,000 sq.ft (1672 m²) facility is equipped to refurbish parts as well as to precision-manufacture new components. The shop has boring mills and drills large enough to machine compressor cylinders up to 28 in. (711 mm) in diameter, lathes for turning parts up to 252 in. (6401 mm) long and 56 in. (1422 mm) in diameter, and a 50 ton (45.4 tonne) rod-straightening press. It has computer numerical control (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 shop has equipment for sand and shot blast cleaning, parts washing, magnetic particle and all types of dimensional inspections, oven heating, component marking and valve and unloader leak testing. It also has capabilities for

continued on page 18

■ After metal-spraying the bore of this Clark HBA connecting rod back to size and checking the rod for twist and bend, a Hi-Tech technician prepares to shrink-fit a new crosshead pin bushing.



producing computer-aided design (CAD) drawings in which customers prior to CNC programming can review models.

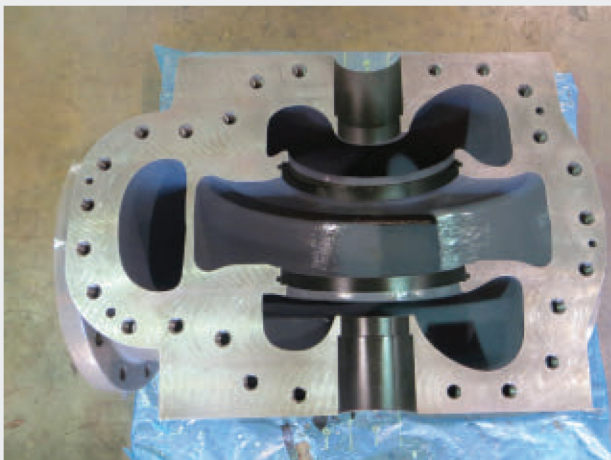
As the company has grown, it has added equipment to enhance its capabilities for cylinder sleeving (lining), with both vertical and horizontal honing, and thermal spraying of cylinder and liner bores, piston rods, bearing housings, crossheads, connecting rods, and pump casings and impellers. It also has added in-house thread rolling and piston rod manufacturing capabilities, as well as casting crack repair including cold locking and lacing services.

“Our service includes keeping extensive records, and we often know customers’ equipment better than they know it themselves,” Pollazzi said. “The condition of all reconditioned parts is documented with detailed measurements, technical details and digital photos before and after repair.”

“Every job has a thorough paper trail from start to finish,” said Scott Weil, director of quality assurance. “We have spent significant time and money to improve our equipment and procedures, reducing our nonconformances to a minimum. Along with multiple tracking sheets such as ‘as-received’ and ‘as-retained’ client sheets, our quality focus has grown with the addition and replacement of many of our CNC’s and manual machines: a Siemens CNC drawing program, NX9 CAM program, ultrasonic testing equipment, profilometer, nondestructive testing (NDT) machines for valve and piston rod inspection, positive material identification (PMI) gun and a 12 ft. (3.7 m) Faro arm coordinate measuring machine.”

“Hi-Tech strives for the fastest turnaround time in the industry, available for service to our customers 24/7/365,” General Manager David Finan said.

The company has a fleet of six trucks and two trailers,
continued on page 20



■ Hi-Tech restored the fit-up dimensions of mating parts in the assembly and applied a corrosion-resistant ceramic coating to the inside flow surface (left) as part of a complete reconditioning of this horizontally split Worthington pump (right).

■ Hi-Tech's quality control inspector uses a Faro arm to measure and record dimensions for a Superior SW64 crankshaft (left) and a connecting rod and pin bushing (right) for a Burkhardt compressor for a major East Coast refinery.



including a 13 ton (11.7 tonne) stake truck, for picking up and delivering customer parts for turnaround repair and rebuild services. Hi-Tech's services include repairing and manufacturing compressor and pump parts as well as the running gear. In addition, it manufactures new sealing products for two major OEMs, and it is an authorized distributor or reseller for ACI Services, Sloan Brothers, VaporKote, U.S. Seal, Bosch and Atlas Copco.

"Working together with our application engineers and distributors, we strive to offer the best combination of materials, designs and services for specific applications," said Judy Plexico, customer service manager. "Our experience includes equipment in air separation, gas transmission, petroleum refining, chemical processing, industrial air (polyethylene terephthalate [PET]), cogeneration, power plant and LNG compressor and pump applications."



■ Hi-Tech twin arc thermal spraying of bronze rider bands restored this Clark RA32 compressor piston.

■ Hi-Tech manufactured turbine labyrinth seals from aircraft-quality 6061-T6 aluminum material for an OEM for an emergency need. The company manufactures reciprocating compressor and pump products for both OEM and end user markets throughout the U.S. and Canada.



Shop Manager Adam Cojocaru described a wide range of equipment repairs that Hi-Tech has performed for end users. Several examples included resleeving and metal spraying Ariel and Knight KOC compressor cylinders for Marcellus shale and coalbed methane customers to re-establish bores back to their original size.

In another example, when a major New Jersey chemical plant spun a wrist pin bushing in a large Burkhardt polypropylene compressor, Hi-Tech expedited the restoration of the connecting rod and manufactured and installed a new bushing, all over a weekend.

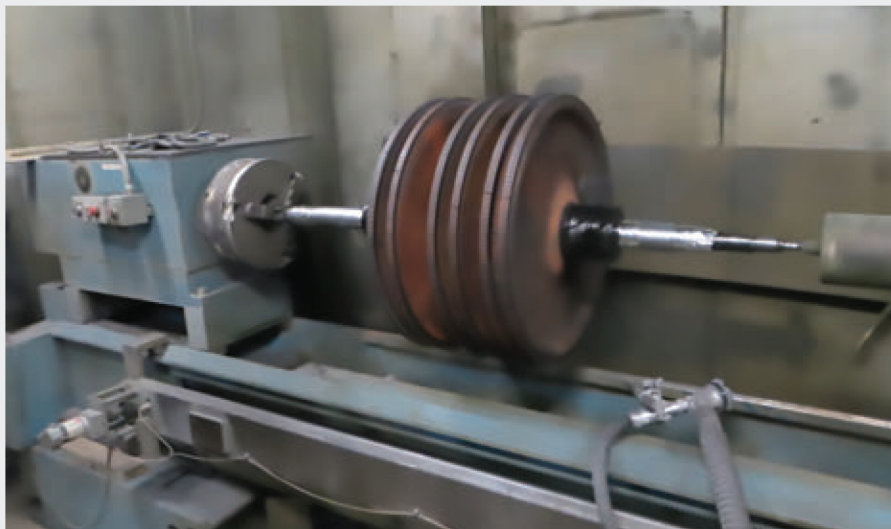
Hi-Tech also came to the aid of a New

Jersey refinery, which lost compressor cylinder cooling water circulation on the coldest day of the year. After the cylinder cooling jackets in eight compressors (five I-R FS-1 steam-driven propane compressors, two I-R HHE compressors and one Penn HOE hydrogen compressor) froze and cracked, Hi-Tech metal-stitched the cylinder cooling jackets, putting the compressors back in service within a week.

Other examples included restoring two Worthington BDC hydrogen compressor frames, upgrading a Penn HOE-22 fuel booster clear-

ance pocket unloader to prevent fugitive emissions, upgrading a Worthington HBB-2 boil-off compressor with non-lube wear components that increased service time from five months to five years, the repair and manufacture of 8.5 in. (216 mm) x 130 in. (3302 mm) Monel pump shafts, and purge panel upgrades.

"Our motto of being 'Large enough to serve and small enough to care' helps us to establish and maintain old-fashioned relationships, treating our customers the way they want to be treated, with impeccable customer service," Pollazzi said. [CT2](#)



■ Hi-Tech restored the worn bearing journals on this Skinner steam turbine rotor by rebuilding them with 400 series stainless-steel thermal spray and then grinding them back to original size.