



■ Shown here at ACE's shop in Broken Arrow, Oklahoma, what will be used on a PAMCO-Stewart and Stevenson-built compressor package by Public Service Company of Colorado. The cooler measures 53 ft. long, 18.5 ft. wide and 16.5 ft. tall (16.15 m x 5.64 m x 5.03 m) and weighs approximately 110,000 lb. (49,900 kg)

## IS THIS THE WORLD'S LARGEST ENGINE DRIVEN COOLER?

*Air-Cooled Exchangers Supplies Big, Quiet Unit for PAMCO-Stewart and Stevenson Package*

**By Russ Burget**

Air Cooled Exchangers (ACE), headquartered just outside Tulsa in Broken Arrow, Oklahoma, U.S.A., and now operating under new ownership, has recently shipped what the company believes may be the largest engine driven, horizontal, forced draft air cooler ever built.

When the Denver office of PAMCO-Stewart and Stevenson was awarded a contract by Public Service Company of Colorado (PSCoC) to build a compressor package for installation in an environmentally sensitive area it turned to ACE to supply the heat exchanger. The ability to produce quiet running heat exchangers is one of the reasons ACE was selected for this project, according to Paul Wilkinson, ACE sales engineer. Once fully operational, the sound power level emanating from the cooler is not to exceed 100. This translates to a noise level of less than 80 dB(A) at 1 m from the cooler.

The ACE cooler, incorporated with the PAMCO compressor package, is to be installed at PSCoC's Yosemite compressor station near

Brighton, Colorado, U.S.A. The PAMCO package employs a Caterpillar G3612TALE turbo-charged, low emissions engine rated at 3335 bhp (2487 kW) at 1000 rpm and Dresser-Rand 6HOS compressor capable of delivering five stages of air compression to 1200 psi (82.3 bar).

The heat exchanger, sized to cooling requirements, measures 53 ft. long, 18.5 ft. wide and 16.5 ft. tall (16.15 m x 5.64 m x 5.03 m) and weighs approximately 110,000 lb. (49,900 kg). It is furnished with three 12 ft. (3.66 m) diameter Moore Fan Company fans, each equipped with 16 variable pitch blades, belt driven from the front of the engine. It takes less than 70 hp (52.2 kW) to drive the fans. Cooling is controlled by use of ACE louvers over the air sections operated by Bettis EM500M electric actuators and positioners. Package controls will be pre-set at the desired gas temperature level and the louver positioners will manage the airflow to maintain the gas temperature at/or near the pre-set mark.

In addition to selecting the fan blade combination and

louvers that operate at acceptable noise levels, other potential sources of vibration noises, including harmonic, were identified and neutralized. To ensure that the cooler's overall appearance blends into its environment, the multicoat paint system applied includes a final coat selected to color-match the surrounding area.

Since its founding in 1964, ACE has grown to become what it said is the largest independently owned air-cooled heat exchanger manufacturer in the U.S. New owner, Tom Self, holds a masters degree in heat transfer and for 18 years headed his own company, Heat Transfer Inc. Paul Wilkinson is a recent arrival to ACE. He has served as manager of engineering for Dresser Rand gas field compressors and in that same capacity for Dresser-Rand's (now The Hanover Company's) compressor packaging operation in Broken Arrow, Oklahoma.

The acquisition of ACE in December 2001 brought with it a 13 acre (5.3 ha) site that contains a recently completed office building, and 75,000 sq.ft. (6968 m<sup>2</sup>) of shop and fabrication floor space con-

tained in three adjoining buildings. All major heat exchanger components are manufactured in-house to ASME standards and when requested, API-661. The work force averages 15 years of heat exchanger manufacturing experience. The product line includes horizontal and vertical coolers, both forced and induced draft, engine and motor driven ranging in sizes from a 24 in. (61 cm) diameter fan to multiple fan units up to 16 ft. (4.877 m) in diameter with pressure capabilities up to 10,000 psi (689 bar).

According to Self, the transition of ownership has gone smoothly. "Backlog, work in progress and new orders are meeting expectations. Working relationships with important existing and new compressor packagers is intact. Among our customers are nearly all of the gas compressor packagers, many gas producers, gas processing companies and generator set manufacturers. Included in our list of gas compressor packagers are the nation's two largest suppliers of gas compression lease and rental equipment," he said. ■