

PUMPER

YALE & TOWNE

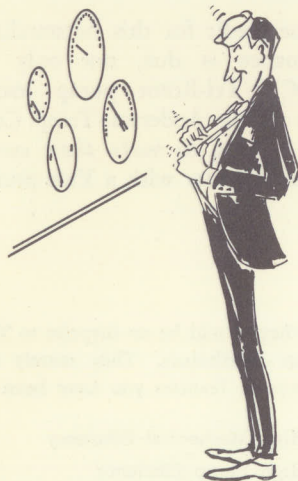
THE YALE & TOWNE MANUFACTURING CO., STAMFORD, CONN.

PIPE LINES

TRI-ROTOR TAKES A TEST

A Model 100CV Tri-Rotor pump proved better on three counts than conventional gear pumps in a recent 100 hour test at Beloit, Wisconsin.

The test was made for the U.S. Coast Guard. The Yale pump and the gear pump used as a standard were operated under identical conditions as though they were moving lubricating oil from storage tanks ashore to bunkers aboard ship. The discharge line from each pump was repeatedly



closed and opened, while the pumps continued to operate at normal speed.

The first point scored by the Tri-Rotor pump was in simplicity of installation. It was equipped with the variable volume control, while the gear pump required extra connections for an external by-pass.

The other points showed up in comparative measurements of discharge line pressure and electric power consumption. The figures which follow resulted from pumping SAE 30 oil preheated to 140° F.

(Please turn to back page)

YALE PUMP POURS NEW SUPERHIGHWAY SURFACE

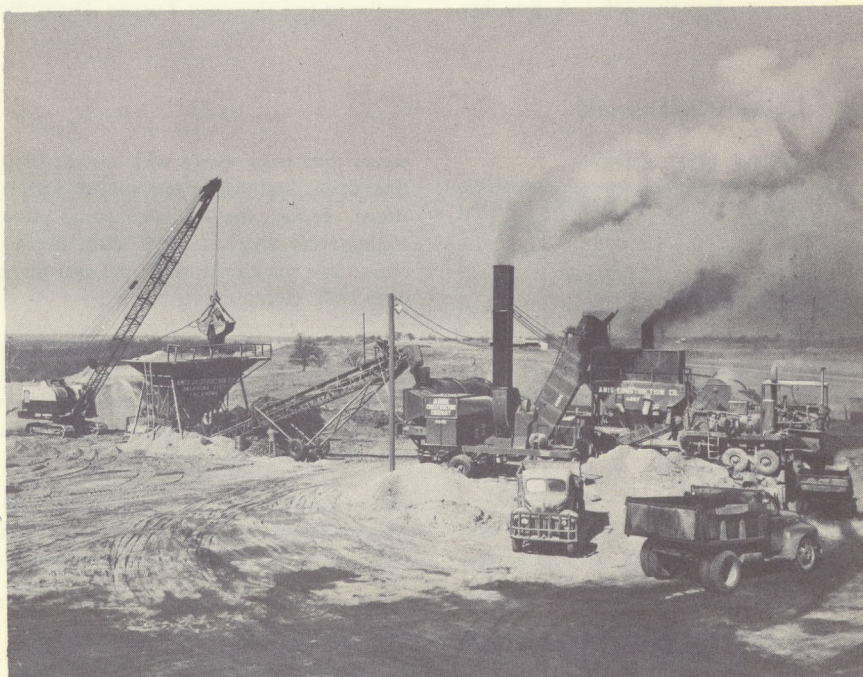
TRI-ROTOR APPLICATION SPEEDS PRODUCTION OF TURNER TURNPIKE SURFACING MATERIAL

Sections of Oklahoma's Turner Turnpike, the eighty-eight-mile, toll-supported superhighway linking Tulsa with Oklahoma City, were literally poured through a Tri-Rotor pump last winter.

Surface specifications for the new Southwestern superhighway, which opened to traffic May 16, 1953, called for three sizes of crushed rock to be mixed in controlled proportions with bituminous asphalt. The Yale pump comes into the process in controlling this mixture.

Actually, the Tri-Rotor pump entered the picture in 1945, even before the Turner Turnpike was planned. It was introduced through the joint efforts of the Minneapolis distributor of Yale pumps, the Anderson-Tripp Company, and the Pioneer Engineering Works, Inc., leading manufacturer of asphaltic concrete mixing equipment.

The Pioneer unit is known as a bituminous continuous process plant. Aggregates — crushed rock or gravel — are carried by conveyor into a drying drum. From there, a hot elevator carries them to a 2½ deck vibrating screen which



A Model 100CV Tri-Rotor pump meters bitumen in this Pioneer Continuous asphalt plant. Using this plant, the Amis Construction Company set a new production record in surfacing sections of the Turner Turnpike.

TRI-ROTOR PUMPER

TRI-ROTOR SPEEDS PRODUCTION (Continued)

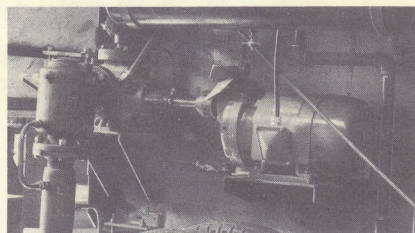
separates them into three sizes. Each size flows into a separate bin. The aggregates are fed through calibrated gates to a mixer elevator. The elevator moves the aggregates into a pre-mix chamber, where they are thoroughly mixed. A predetermined proportion of bitumen is sprayed onto the aggregates as they pass into a pugmill chamber for final, complete mixing.

Proportioning and pumping the heated bitumen into the spray chamber gave Pioneer engineers a difficult problem. Even at the flow temperature, 300° F, it is a tacky, viscous liquid. Since modern highway surface specifications call for close tolerances in mixing, the displacement had to be consistent and accurate. Although Pioneer used a pump specifically designed for handling asphalt prior to 1945, they were still not entirely satisfied.

In 1945, however, the Sales and Engineering Departments of the Pioneer Engineering Works compared a number of pumps thought to be suitable for this operation. The Tri-Rotor pump with Variable Volume Control was equal to or better than the other pumps in most respects. It was the volume control feature, however, that finally led to its choice as the standard metering pump for Pioneer bituminous plants.

They selected a 100CV pump with steam jacket for the job. A five hp,

200 volt, totally enclosed motor drives the pump at 600 rpm through a worm gear. Normal displacement at this speed is 80 gpm.



Standard installation of a steam-jacketed Model 100CV Tri-Rotor pump for moving and metering bitumen in a Model 101 Continuflo bituminous plant manufactured by the Pioneer Engineering Works, Inc., Minneapolis, Minn.

For accurate proportioning, the same worm drives the aggregate feeding mechanism through a separate gear and shaft. In this way, the flows of bitumen and aggregate are mechanically interlocked.

Thus, the Yale pump gives the Pioneer Continuflo bituminous plant extra value to the contractor.

And it was with a Pioneer Model 101 Continuflo bituminous plant that the Amis Construction Company of Oklahoma City completed its share of the surfacing of the new Turner Turnpike.

Typical of the several contractors who completed the new superhighway, Amis worked straight through the winter rains and near-freezing temperatures to have the road ready for traffic last spring. In spite of low temperatures and high moisture content, Amis maintained the astonishing average rate of 185 tons of paving produced each hour.

Amis has been using its Pioneer Model 101 Continuflo asphalt plant since 1950. Up to last May, it had produced 230,000 tons of surfacing materials. Amis reports that maintenance on the plant has been negligible.

Furthermore, Amis and other contractors using the Tri-Rotor-pump-equipped Pioneer Continuflo plants have found their mixes highly accurate throughout production. The special mix design and consistent accuracy produce a fresh asphalt that is unusually stable right from the start. New pavement can be rolled immediately and used without delay for delivery of new asphalt further down the road.

Some credit for this outstanding performance is due, not only to the 100CV Tri-Rotor pump itself, but also to the Anderson-Tripp Company for helping to *make their customer's product better* with a Yale pump.

PIPE LINES (Continued)

DISCHARGE LINE OPEN:

PUMP	TRI-ROTOR	GEAR
Pressure, Disch. line	48.0 psi	48 psi
Power Consumed	2.4 kw	3.7 kw

DISCHARGE LINE CLOSED:

Pressure, Disch. line	51.5 psi	55 psi
Power Consumed	2.0 kw	4.2 kw

These figures prove that Yale pumps with variable volume control use 35% less

power than gear pumps with the discharge line open, and 53% less power with it closed. In fact, the Tri-Rotor pump power consumption *dropped* 17% when the discharge line was closed, while the gear pump used 14% more.

In both pumps, the discharge pressure rose when the line was closed. But the Tri-Rotor pump showed a pressure rise of only 7.5% while the gear pump showed a rise of 14.5%.

These points of superiority, which impressed Coast Guard observers, will provide you with specific sales ammunition,

but they should be no surprise to Tri-Rotor pump distributors. They merely serve to underscore features you have been selling:

- High Mechanical Efficiency
- High Pump Efficiency
- Smooth, Even Pumping Action
- Simplicity of Installation
- Automatic Variable Volume Control

The results of this test will back your claims for the Yale pump. Where a prospect is still not convinced, set up a test installation in his own plant. Let the pump itself convince him.

THE EDITOR

YALE & TOWNE