

YALE PUMPER



YALE & TOWNE

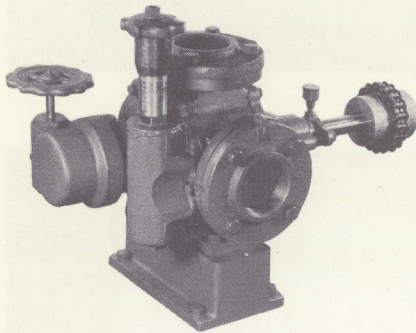
THE YALE & TOWNE MANUFACTURING CO., STAMFORD, CONN.

PIPE LINES

THE MEANING OF "AUTOMATION"

Automation is one of the newest terms to be accepted in general usage in industry. A recent feature article, in discussing advancements in hydraulic equipment, defined this term rather aptly as "The simple, logical, most practical means to an end."

The article further stressed the importance of careful planning for automation. It pointed out that the practical aspect of automation is sometimes lost sight of or misinterpreted, causing needlessly complicated arrangements that often result in high operating and maintenance costs.



YALE VARIABLE VOLUME CONTROL
TRI-ROTOR PUMP

Perhaps the term "improved automatic equipment" should be used to describe this new emphasis on labor-saving equipment and production planning. However, no matter which term you choose to use, each applies equally well to the variable control features of Yale Tri-Rotor Pumps — and that means new opportunities for the use of Yale Tri-Rotors as this industry-wide trend toward automation continues to grow.

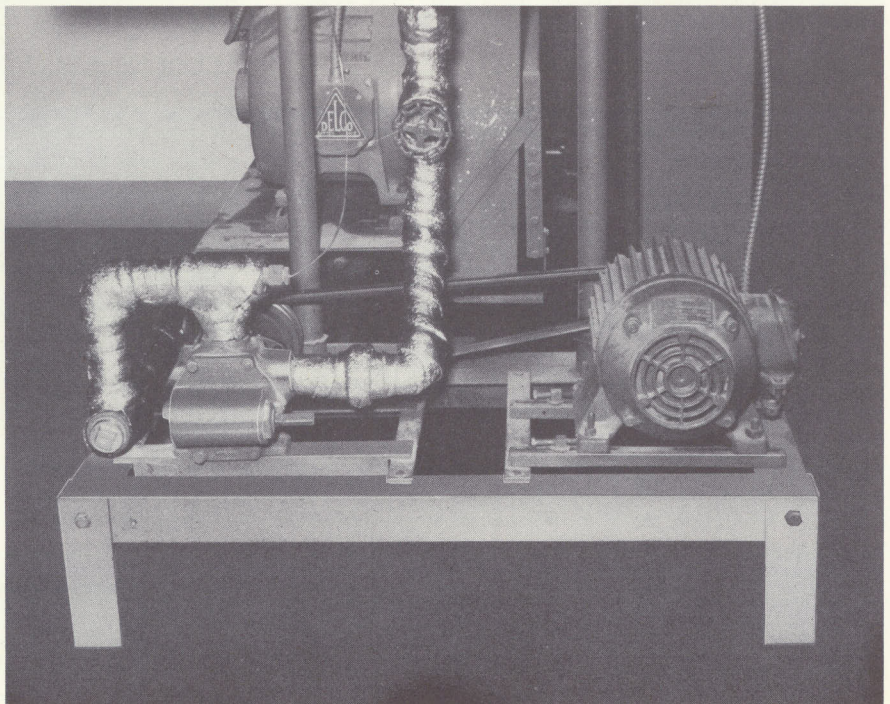
THE EDITOR

YALE TRI-ROTOR PUMPS KEEP LIQUID SUGAR SUPPLIES FLOWING

Nearly everybody has a sweet tooth. That's why candy manufacturers, bakers, and food processors need vast quantities of liquid sugar to sweeten their products. One of the major suppliers of this important ingredient is Refined Syrups & Sugars, Inc., Yonkers, New York — and to keep production and distribution flowing without interruption, they depend on Yale Tri-Rotor Pumps. In constant use in the company's processing and distribution operations, Yale Tri-Rotors are called upon to handle a wide variety of heavy and light syrups over a wide range of temperatures. The outstanding ability of Yale Pumps to handle sugar solutions without foaming or chewing action was demonstrated by Louis M. Barish, the New York Yale Distributor. It was the chief reason why Yale Pumps were selected over competition. Over and above these applications, however, Refined Syrups & Sugars, Inc. also depends on Yale Tri-Rotors to help customers make better use of the syrups they buy.

For example, the baking industry uses liquid sugar in cake batter to control batter temperatures as well as to provide sweetening. Strict temperature control during batter mixing is important in maintaining uniform texture and quality in the finished cake products. Refined Syrups & Sugars, Inc. helps its baking customers solve this problem by supplying cooling equipment for use with their syrups. Designed, assembled, and fabricated in the company's Yonkers Plant, these cooling units are capable of handling hundreds of pounds of liquid sugar per hour — and an integral part of every unit is a Yale Tri-Rotor Pump.

As shown in the accompanying illustrations, each of these compact cooling units is fitted with a 20-DX Iron Tri-Rotor Pump, driven by a 1½ h.p. 1750 rpm motor. V-belt reduction gives a pumping speed of 570 rpm at the pump shaft. The syrup for which these "Flo-sweet" coolers were designed is of the 67 deg. Brix variety with a viscosity of approximately 2,000 SSU. The Yale 20-DX provides continuous circulation of the liquid sugar through the



cooling tank as well as delivery of the cooled sugar solution to the beating operation which follows. A simple, fabricated steel base provides off-the-floor mounting of the unit to avoid the possibility of contamination and to permit easy cleaning.

Since they were first put into service, these "Flo-sweet" cooling units have proven more than satisfactory, particularly in operating economy. Simple, straightforward design and construction minimizes maintenance problems on these units and, in addition, keeps initial investment low.

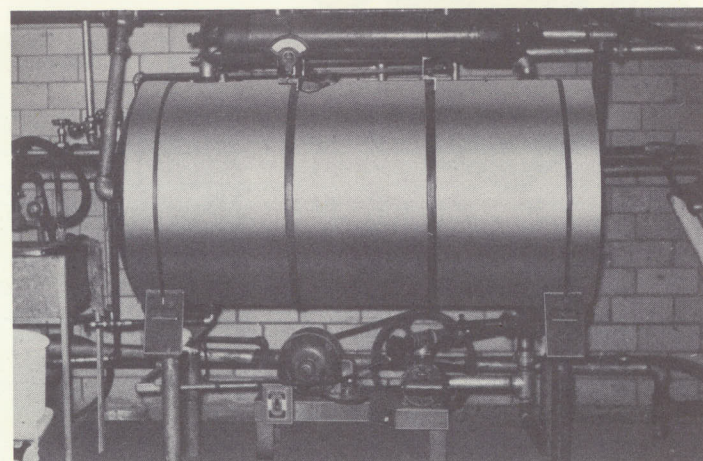
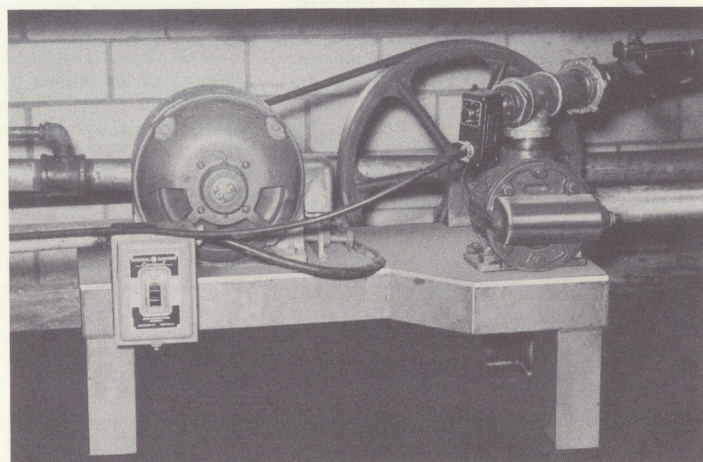
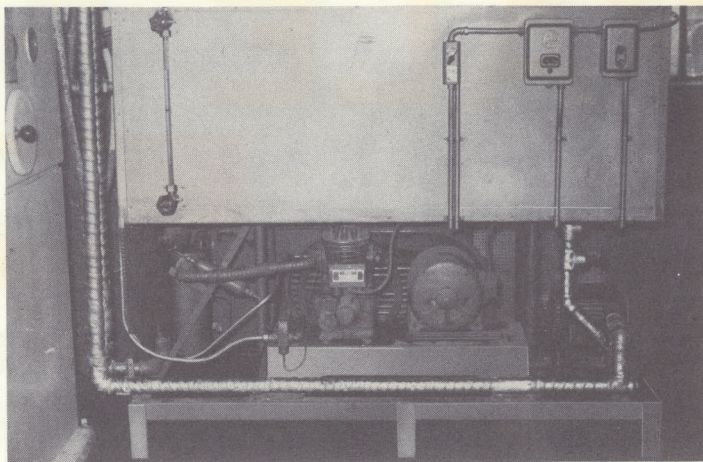
A further application of Yale Tri-Rotors in this field is shown in the last two illustrations. Here, a Yale 40-AX is installed in a "Flo-sweet" Marshmallow Cooler, used in the processing of marshmallow from liquid sugar. In the preparation of marshmallow, liquid sugar as supplied by Refined Syrups & Sugars, Inc. must be further concentrated and blended with corn syrup. This blend of syrups must then be thoroughly mixed and immediately cooled before entering the beating stage of production.

A 40-AX 2" iron-fitted Tri-Rotor is used in the cooler to provide continuous circulation of the sugar blend at a 25 gpm rate. The pump is driven by a 2 h.p., 1140 rpm motor and a V-belt reduction drive provides a pump shaft speed of 200 rpm. This reduced shaft speed precludes the possibility of cavitation and non-filling at the suction side of the pump when handling the cooled blend where viscosities reach appreciable values. At 67°F., the viscosity of the mixture, which is 80% of 76 deg. Brix invert liquid sugar and 20% corn syrup, is approximately 15,000 SSU. The pump models used in these cooling units are all fitted with spring by-pass heads as an operating convenience in filling and drawing off the blend from the cooler. These coolers have been equally successful in operation as other types of "Flo-sweet" cooling units, with the same low maintenance and operating costs.

For these cooling units as well as for in-plant installations, Yale Tri-Rotors provide advantages not found in other types of pumps. The longer shaft housings available on the Tri-Rotors keep out all air, eliminating undesirable bubbling and foaming of the syrups. In addition, the Tri-Rotors in this application are equipped with iron fittings, giving exceptionally good wearing qualities over the wide ranges of pumpage temperature and viscosity conditions. The good lubricating property of the sugar solutions further extends the life of the pumping equipment and minimizes the effects of wear.

Specific Yale Pump installations in the company's Yonkers plant include the 200 AXBD 4" sizes for unloading tank cars and tank wagons. The large capacity of these models is important in reducing unloading time, where demurrage is a factor. Tank truck installations use 100 CX pumps driven from the power take-off through conventional chain and sprocket drives. Several mobile installations use 200 AX models where larger capacities are needed. Transferring of the liquid sugar syrups to storage tanks and in various processing stages is handled by 3" 100 CXBD pumps.

This is but one example of extensive Yale Tri-Rotor installations within a single industry. It points the way to opportunities for similar across-the-board installation in other fields.



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