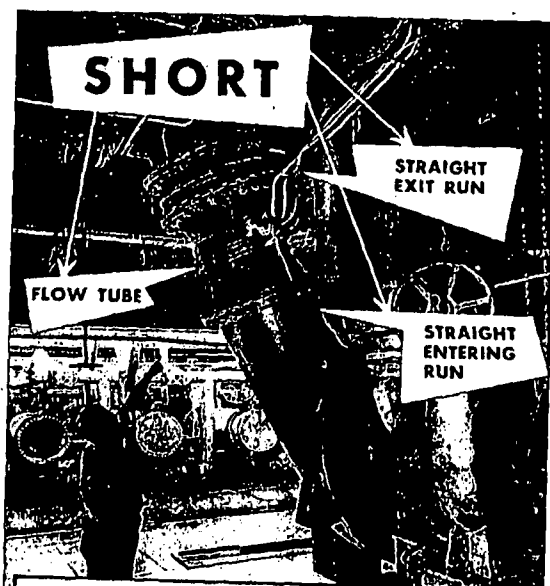




Flow Tubes are short. For instance, the 30" Flow Tube shown above is only 30", face to face. And because they need only minimum straight runs entering and following, they can be installed at practically any accessible point where flow conditions are reasonably steady.

This important advantage means easy, convenient, economical installations.

Flow Tubes are manufactured exclusively by Foster Engineering Co. in all pipe sizes for measuring the flow of liquids and wet or dry gases. They can be furnished with or without suitable secondary indicating, recording or totalizing instruments, and, to insure maximum combined accuracy of primary element and receiver, each Flow Tube is furnished with an individual head capacity curve. For unusual piping arrangements, calibration curves for simulated conditions can be furnished.

For further information, ask for Bulletin FT-101, and for specific recommendations, please send us necessary flow data.



PRESSURE REGULATORS • RELIEF AND BACK PRESSURE VALVES • CUSHION CHICK VALVES • FAN ENGINE REGULATORS • PUMP GOVERNORS • TEMPERATURE REGULATORS • FLOAT AND LEVER BALANCED VALVES • NON-RETURN VALVES • VACUUM REGULATORS OR BREAKERS • STRAINERS • SIRENS • SAFETY VALVES • FLOW TUBES

FOSTER ENGINEERING COMPANY • UNION, N. J.

More TECHNICAL BRIEFS

an entirely different direction installed an experimental steam of the once-through type boiler. Many years of dealing with problems and in manufacturing necessary equipment, the author enabled Sulzer to find an efficient and foolproof way of controlling forced circulation. It was decided to continue the development of high-pressure steam generating these lines, and soon afterwards an experimental unit of 22,000 capacity was built. In 1931 order received for steam generators for a dyeworks and a distillery plant in Switzerland. These plants combined with systematic research to be milestones on the road to development. The author then discussed the advantages this design gives. Paper No. 52-A-121.

Boiler Designs Developed For Reliability. By P. R. Loughin, Babcock & Wilcox Co.

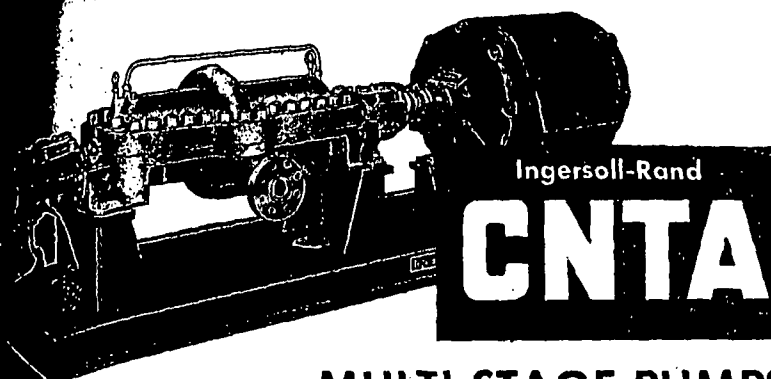
The expansion of electrical generating systems generally occurs in periods of rising fuel and labor costs. This has logically resulted in economies and purchasing practices that increased efficiencies with a minimum initial investment and minimum operating costs per unit of output. This brought about a trend toward the maximum size of single-boiler turbine unit the system load will permit. This practice has already progressed to the stage where some systems are longer base load the newer large units and take the swings on older efficient units, and the large single-boiler turbine is required to take the swings.

A paper was presented to the ASME in January 1949 by P. S. Dicker, P. R. Loughin titled, Design of Boilers and Control for Fluctuating Loads. The paper outlined some of the extreme fluctuating load conditions encountered in stationary and marine fields and described factors that govern the response to load increase. Brief measures were made to boiler design features that contributed to the result.

This paper will review the development of some of the features of modern boiler designs which facilitate operation of these units under varying load conditions.

Water level control is one essential feature. It aims at (1) Complete separation of steam from water for all pressures.

Directions for ordering papers on p. 154



Ingersoll-Rand

CNTA

MULTI-STAGE PUMPS

extend the advantages of the

UNIT-TYPE ROTOR ASSEMBLY

to your medium pressure applications

With the completely re-designed line of CNTA multi-stage pumps, Ingersoll-Rand offers a new high in performance, efficiency, dependability and economy—for medium-pressure boiler feed, mine dewatering, marine, petro-chemical and general hydraulic services.

The advanced design Unit-Type rotor assembly, with impellers and channel rings mounted on a single, heavy-duty shaft and with a smooth-bore outer casing, is the same type as that used by Ingersoll-Rand in the high-pressure CHTA and HMTA lines. The result of this modern construction is a dependable, simpler and more rugged unit that requires minimum attention and maintenance.

CNTA pumps are multi-stage, horizontally split units, with single-suction impeller groups placed back-to-back to eliminate hydraulic thrust. They are available in 4, 6 and 8 stages for pressures from 100 to 800 psi, in capacities from 50 to 700 gpm.

Your I-R representative will be glad to give you the complete story.



Ingersoll-Rand

Comen Pump Division
11 Broadway, New York 4, N. Y.

844-10

ACCESSORIES • AIR TOOLS • ROCK DRILLS • TURBO BLOWERS • CONDENSERS • CENTRIFUGAL PUMPS • DIESEL AND GAS ENGINES