

NOW REMOVE SCALE, RUST

By Chemical
Circulation
Method

*It's safer,
faster, easier*

Don't rod out lime scale from equipment—dissolve it with Oakite Compound No. 32.

Oakite Compound No. 32 is a liquid acidic material to which you add water. It dissolves lime scale and rust when circulated through equipment. In most cases dismantling of equipment is unnecessary. Oakite Compound No. 32 does a more efficient job than mechanical methods because it flows into areas inaccessible to rod and drill. Use Oakite Compound No. 32 for descaling:

- Diesel Engines
- Condensers
- Heat Exchangers
- Transformers

FREE BOOKLET contains complete details. Send for your copy today. No obligation.



OAKITE PRODUCTS, INC.
22 Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE

MATERIALS • METHODS • SERVICE
Technical Service Representatives in
Principal Cities of U. S. and Canada

More TECHNICAL BRIEFS

Begins on page 130

known as well as its temperature and pressure. The temperature is obtained by a combination pilot tube-thermocouple. Stack pressure can be obtained with a simple U-tube manometer or an inclined draft gage with a range of 0.0 to 1.5 inches of water. The gas analysis for CO, CO₂, and O₂ can be obtained with sufficient accuracy by the Orsat method. A more complete and accurate gas analysis is considered spurious because of the small difference that would be affected in the calculated density.

The wet-dry bulb method proved quite satisfactory to determine the percent of water in the stack gas. The assumption was made that the psychrometric charts for air and water applied to stack gases. This assumption held true within the required accuracy for further calculations. It is interesting to note that the stack gas density is practically identical with air. APCA Paper, no number.

Directions for ordering papers on p. 132

Mixing and Equilibrium in Pipe Flow.
By W H Carrier and W S Misener, Carrier Corp.

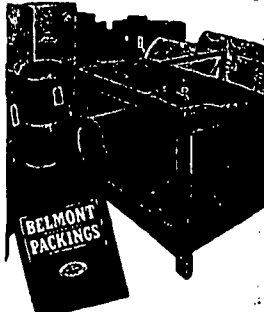
A semi-classical approach to the problem of mixing or redistribution in pipe flow is developed and checked against a series of tests when a jet discharges into the open end of a pipe. The theory presented successfully describes the changes in velocity distribution as a jet-like peaked flow that decays and, under proper conditions, offers a moderately good prediction of the change in total pressure. There is some indication that the theory can be extended to cover normal pipe flows.

The test data are of considerable independent value and tabulated in detail with typical cases plotted to illustrate the various phenomena measured. The momentum loss area of two typical cases is plotted vs. L/D, illustrating the way momentum loss reduces exponentially, over-shoots its final value somewhat, then rises to assume the value corresponding to the Reynold number.

Perhaps the most important single item arising from the present theory and tests is the concept of the decay coefficient and the fact that it is almost independent of Reynold number. This would seem to indicate that the turbulent mechanism itself is not greatly affected by Reynold number.

It is hoped that the success of the simple semi-classical approach used here in predicting the performance of a symmetrical mixing flow in a pipe will provoke some productive thought and eventually will result in some gains in

BELMONT SHEET PACKINGS



ASK YOUR DISTRIBUTOR

You know the high cost of packing failure . . . but do you know the easiest, simplest and most economical way to prevent failures? The answer is to put your problem squarely in the hands of an expert . . . your BELMONT distributor. Working in close cooperation with Belmont's service engineers and technicians he is in an ideal position to help you select and apply the proper sheet packings for your services . . . speedily, economically and all from a single reliable source.

Belmont sheet packings and gasket cutters are sold nationally through this experienced distributor organization. Use them and enjoy a new freedom from packing worry. Write on your company letterhead for catalog.

4034

for Steam • Water • Oil • Gas • Air
Acids • Alkalies • Ammonia

BELMONT
PACKING AND RUBBER CO.

Builer and Sagviva Streets
Philadelphia 37, Pennsylvania

Rings • Spirals • Colls • Reels
Spools • Sheets • Gaskets
There's a Belmont Packing for every service

Another Example of the ADAPTABILITY of JOHNSON AUTOMATIC TEMPERATURE CONTROL



Springfield Fire and Marine Insurance Co., Springfield, Mass. Cram and Ferguson, architects; Buerkel & Co., mechanical engineers and heating and air conditioning contractors, both of Boston.

Fan room equipment panels, with panel-mounted controllers which regulate the temperatures, humidities and air quantities in the Primary Air and Central Fan Air Conditioning Systems.

T-271 Heating-Cooling
Thermostat for Room
Air Conditioning Units

V-152 Water Valve for
Room Air Conditioning
Units

T-400 Room
Thermostat

This modern office building, which houses the Springfield Fire and Marine Insurance Co. in Springfield, Mass., is another example of the adaptability of Johnson Automatic Temperature Control. There are 202 Johnson T-271 Heating-Cooling Thermostats operating Johnson V-152 Valves which regulate the hot and cold water that is supplied to the modern Carrier "Weathermaster" room air conditioning units in spaces on the periphery of the building. Over one hundred Johnson Individual Room Thermostats operate Johnson Volume Dampers to insure year-around comfort in the interior zones. In other areas of the building, Johnson instru-

ments control unit heaters and exhaust fans.

Yes! Here, indeed, is an outstanding example of the adaptability of Johnson Control and a convincing demonstration that any control problem is best solved by Johnson . . . the only nationwide organization devoted exclusively to manufacturing, planning and installing automatic temperature and air conditioning control systems.

Why not let a Johnson engineer solve your control problems, large or small, simple or complex? There is no obligation, of course. JOHNSON SERVICE COMPANY, Milwaukee 2, Wis. Direct Branch Offices in Principal Cities.

**JOHNSON Automatic Temperature and
Air Conditioning CONTROL**

MANUFACTURE • APPLICATION • INSTALLATION • SINCE 1885