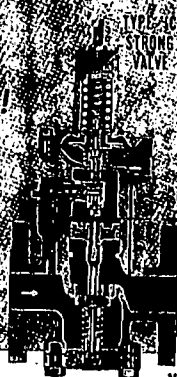


## GET THIS VALVE!

Accurate  
pressure  
regulation!

### FOR HEATING OR PROCESS JOBS:

- ... with intermittent or fluctuating demands;
- ... requiring accurate control;
- ... where dependability is essential.



For positive control, use this **STRONG** single-seated, pilot-controlled valve!

Simple design, extra-heavy construction make **STRONG's** Type "C" regulating valve give trouble-free regulation. Semi-steel for pressures to 250 psi, 450° F.; cast steel to 600 psi, 750° F. With Anum-Mett† seat and disc, this valve automatically adjusts itself to control the flow of steam, air or gas required to maintain reduced pressure.

Write us about your pressure reducing problem or request our complete steam specialties Catalog 68-X.

**TYPE "O"** Direct operated. Semi-steel construction suitable for initial pressures to 225 psi, 400° F. For steam, air, water or gas.



Features internal strainer, Anum-Mett† seat and disc. Direct operated, of extra heavy semi-steel, this valve is suitable for pressures to 225 psi, 400° F.



**TYPE "K"**

†Trade Mark Reg. U. S. Pat. Off.

**STRONG, CARLISLE & HAMMOND COMPANY**  
1392 WEST 3rd Street  
Cleveland 13, Ohio

OTHER STRONG STEAM SPECIALTIES



No. 670 Small Trap



"SY" Suctioner



800 Series Steel Trap

# STRONG

## More TECHNICAL BRIEFS

The author then discusses the various areas where changes or close control will pay off. APC Paper, no number.

Directions for ordering papers on p. 154

Trends in Combustion and Steam Temperature Control. By P. S. Dickson. Bailey Meter Co.

Since World War II the design of steam power plants has advanced at a phenomenal pace in an effort to bring down the cost of power generation in spite of increased cost of plant, fuel and supervision. The design changes have had an important bearing on regulation of the steam generator and its controls.

1. A substantial increase in capacity with a corresponding increase in the complexity of the fuel burning equipment.
2. Increased steam temperature with a corresponding need for closer temperature regulation over a wider load range.
3. Use of the reheat cycle which adds a second temperature control system, likewise requiring close regulation over a substantial load range.
4. Adoption of centralized control for one, two or more boiler-turbine units which requires improved control and supervisory equipment and better design of the supervisory station to improve operator efficiency and minimize operating errors.

The principal functions of a suitable automatic control system for regulating a modern high-capacity, high-pressure and high-temperature steam generator are as follows:

1. To supply the correct amount of fuel and air to the furnace to release heat in accordance with the load demand.
2. To feed water to the boiler in accordance with steam demand. This is an important phase of regulation but will not be covered in this paper since we are dealing principally with the release and control of the heat supply.
3. To avoid any controllable losses due to excess air or incomplete combustion by proper fuel-air proportioning. A related requirement is providing against explosive atmospheres in the furnace and maintaining proper furnace pressures.
4. To distribute the heat released in the furnace to the evaporating and the superheating sections of the boiler in a proper relationship to produce the required quantity of steam at the desired pressure and temperature.
5. To arrange the instrumentation and control equipment for most efficient

## THE **AUTOMATIC** answer to **DIVERSIFIED TEMPERATURE REGULATION PROBLEMS...**

### **JOHNSON CONTROL**

With from sand? Yes! That is what happens at the Owens-Corning Fiberglass plant at Anderson, South Carolina. Here, temperature and humidity conditions throughout the entire plant are controlled by Johnson.

The Carrier centrifugal refrigeration machine, which furnishes the chilled water for cooling in connection with the air conditioning, is under the control of a Johnson T-1000 Single-Pen Record-O-Slot. In addition to acting as an accurate temperature controller, this instrument also insures that a continuous record of the temperature of the chilled water is always available for reference. This is important where industrial processes are dependent upon the space conditions. In the forming and finishing rooms, space temperatures are maintained at precise levels by Johnson T-800 Master and T-901 Submaster Thermostats which operate Johnson Valves and Damper Operators.

Finishing rooms, offices, cafeteria, shops, first aid room, kitchen and locker rooms are controlled by Johnson Individual Room Thermostats. All of the Johnson apparatus, engineered for the most exacting results, is combined into a complete Planned-for-the-Purpose, Installed-for-the-Purpose Control System. Another outstanding example of the adaptability of Johnson Control!

Whether your plant calls for the solution of intricate temperature and humidity control problems or merely the simple application of a single controller, call a Johnson engineer from a nearby Branch Office and get the benefit of over 60 years of experience offered by the only nationwide organization devoted exclusively to manufacturing, planning and installing automatic temperature and air conditioning control systems. **JOHNSON SERVICE COMPANY**, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.



V-104 Coil Valve



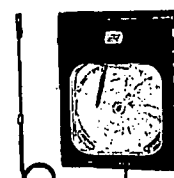
D-265 Damper Operator with Pilot Positioner



T-403 Room Thermostat



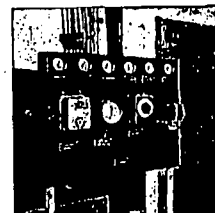
Owens-Corning Fiberglass Corp., Anderson, South Carolina. Lockwood-Greene Engineers, Inc., architects and engineers, New York and Spartanburg, S. C., Carrier Corporation's Atlanta Office, air conditioning contractors.



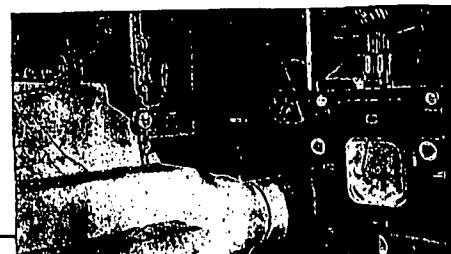
T-1000 Single-Pen Record-O-Slot



Temperatures in manufacturing and other areas are controlled by Johnson T-800 series Room Thermostats, one of which is shown above.



From control panel at left, a Johnson T-800 Thermostat controls the dew-point temperature of air leaving the air conditioning unit serving a processing area.



Above, a Johnson T-1000 Record-O-Slot regulates and records the temperature of the chilled water leaving the Carrier centrifugal refrigeration machine.

**JOHNSON Automatic Temperature and Air Conditioning CONTROL**

MANUFACTURE • APPLICATION • INSTALLATION • SINCE 1885