

POSITIVE ACCURATE PRESSURE CONTROL

STICKLE SERIES 400 VALVES
FOR REGULATING • REDUCING
PRESSURES OF STEAM, AIR,
GAS, AND LIQUIDS

DESIGN: Single seated, Balanced. TYPES: Spring Loaded, Diaphragm Operated; Lever and Weight Loaded, Diaphragm Operated; and Lever Operated. CONSTRUCTION: Smaller sizes, Bronze bodies with either Bronze, Stainless Steel, or KA2 Metal trim. Larger sizes, Semi-Steel, or Cast Steel Bodies with Bronze, Stainless Steel, KA2 Metal, or Monel Metal trim. SIZES: 1/4" to 4". PRESSURES: Initial Pressures, 10 to 450 psi. Reduced Pressures 1/4 to 100 psi. DESIGN ADVANTAGES: Internal parts, including valve and seat rings, interchangeable, and may be removed without disconnecting valve bodies. Repairs may be made at point of use. Main valve and pilot valve and seat reground independently. PERFORMANCE ADVANTAGES: Easy opening, easy closing, non-chattering, leak-proof. Perfect balance regardless of flow rate. Alignment of valve with seating contact maintained without use of wing guides in port areas, eliminating excessive erosion. Port areas equal pipe areas, valves accommodating full pipe capacities. High velocities resulting from heavy pressure reductions handled perfectly. Flexibility in range permits constant reduced pressure to be maintained against variable supply pressure.

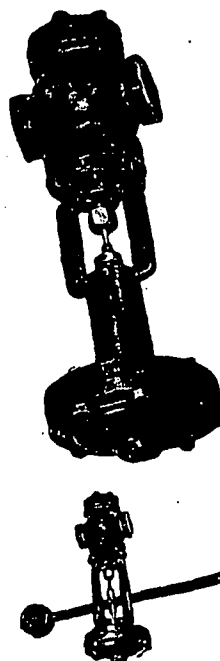
STICKLE STEAM SPECIALTIES COMPANY
2265 Valley Avenue, INDIANAPOLIS 18, INDIANA

Successfully Serving
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Paper Mills, Food
Processors, Textile and
Hosiery Mills, Lumber
and Other Manufacturers
Using Steam
for Industrial Processing

STICKLE EQUIPMENT

STICKLE DIFFERENTIAL AND-BOILER RETURN SYSTEMS •
STICKLE OPEN FLOAT STEAM TRAPS • STICKLE REGULATING AND
REDUCING VALVES • STICKLE OPEN COIL FEED WATER HEATERS
AND PURIFIERS • STICKLE OIL AND STEAM SEPARATORS
STICKLE TEMPERATURE CONTROLLERS AND OTHER SPECIALTIES

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HOW TO SELECT A VALVE

Selecting a valve of correct size for reducing steam pressure is made a simple matter with the use of two charts given in Stickle Valve Bulletin. These bulletins also furnish complete information on the various types of valves and supply engineering data. Ask for Bulletin No. 435 if you are interested in Stickle Series 400 Single Seated Balanced Valves briefly described above. If you desire information on Double Seated Semi-balanced Valves, in various types, or Pilot Operated Valves, Back Pressure Release Valves, and Float Valves, ask for Stickle Bulletin No. 235.

For a torque of 256 ft.-lb. and speed of 370 rpm, rotor copper loss is 1490 watts. Rotor copper loss is proportional to slip, therefore for the same torque for a rotor speed of 400 rpm (200 ÷ 80) 1490 = 9910 watts. The external resistance required for this point would be:

$$\begin{aligned} 9910 \text{ watts} &= P(R_e + R_{rot}) \\ 9910 &= 40^2 (0.02 + R_{rot}) \\ 9910 &= 990 + 1800 R_{rot} \\ R_{rot} &= \frac{9910 - 990}{1800} = 5.52 \text{ ohms} \end{aligned}$$

This gives a new point on the speed torque curve for the same torque but at a different slip or rotor speed. In like manner, points for other external resistances may be calculated. The rotor current is proportional to the torque, therefore, knowing the rotor current and torque for one point on the speed torque curve, additional points may be determined. K B Hoffman, Tenafly, N. J.

Motor Load Too Light

SPEED OF JHP's slipping motor follows definite laws depending on amount of external resistance inserted into the rotor circuit and load on the motor. An analysis of a typical set of characteristic curves for this type of motor graphically reveals the cause of his trouble. Within the operating range of the motor, these curves are essentially straight lines, each representing speed variation with load for a given value of rotor resistance. It is evident that for high values of rotor resistance, speed variation with the load is large.

This indicates that JHP's load is so light that the speed remains high and that to reduce the speed to the required point, an excessive amount of external resistance must be inserted in the rotor circuit. In other words, his load is overmotored. Speed of this motor must never be reduced below 50% of synchronous speed nor should it be run without load; otherwise speed regulation would be ineffective.

Total starting resistance to be inserted in each phase of the circuit is given for the Y-connected circuit by formula:

$$R = \frac{E K}{1.73 I_s}$$

and for the delta circuit:

$$R = \frac{1.73 E K}{I_s}$$

Where R = resistance in ohms; E = voltage across the sliprings at standstill (This is the maximum voltage that could be generated in the rotor by the

"COAL PREPARATION at 1000 TONS per HOUR with TWIN AMERICANS"

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Tidd Plant at Brilliant, Ohio

And the Complete Crushing Units Occupy only 12" x 12" x 12"

110,000 kilowatt output represents converting 1200 tons of coal per day into power . . . Continuous pulverizer fed from bunkers kept at constant level of 3/4" by conveyors from the two "Type S No. 60" American Ring Crushers which reduce the 16" ROM bituminous coal.

Direct-connected with two 200 HP 720 RPM motors, the Americans employ efficient shredder ring action with an unusually conservative power demand.

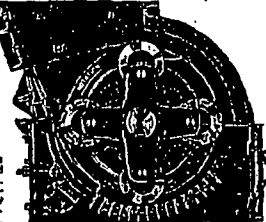
The uniform product and the dependability of Americans are considered essentials to the unfailing, high output of the Ohio Power Co. and other power plants throughout the world. Americans offer a complete crushing plant in one compact unit,—no auxiliary crushers or refuse picking operations are required.



Note the compactness of area and headroom in which these two direct motor-connected Model 60S Americans are installed (including by-pass between).



Cross-section shows American patented shredder ring action. Each shredder ring revolves on its own shaft and automatically deflects from tramp iron.



Send for the facts on efficiency of coal preparation in power plants with American Crushers.

American PULVERIZER COMPANY

Originators and Manufacturers of
Ring Crushers and Pulverizers

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