Robertshaw
INDUSTRIAL PRODUCTS DIVISION

Valve Body Assembly Style "MA"

FEATURES

- Sizes 3/4" through 2"
- Single-Seated . . . Piston Balanced, Direct Acting only.
- Tight closing
- Fully modulating . . . Provides greater control sensitivity
- All moving parts readily removed for inspection and service.
- Non-sticking poppet . . . No chatter . . . No rattle
- Teflon* chevron packing around highly finished stem

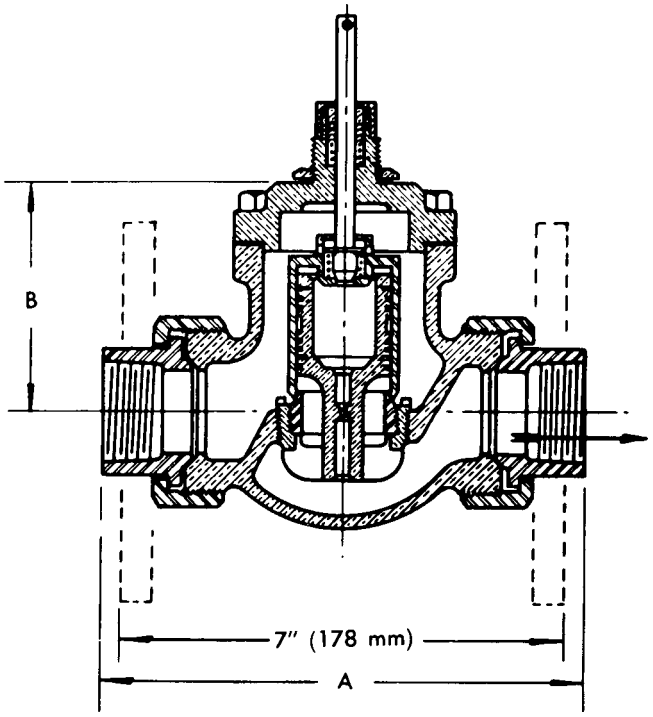
**TEFLON is registered tradename of DuPont Co.*

GENERAL DESCRIPTION

The "MA" valve is piston balanced with the plug posi tion dictated exactly by the valve stem position. The "MA" valve is fully modulating as well as tight closing.

SPECIFICATIONS

Type: ..... Single-seated, fully balanced.
Sizes: .....3/4" through 2".
Action: ..... Direct-acting only (closes with downward stem movement). Fully modulating in action.
Ends:
3/4 "- 1 1/2" .....Bronze - ASTM B61
2" ..... Cast iron 125 lb. ANSI flanges.
Packing: .....Stacked Teflon chevrons (spring loaded).
Stem Connection: .....Quick-disconnect type.
Maximum Leakage (Factory test): 0.01% of rated capacitance at 50 psi.
Maximum Pressure Drop:
3/4" - 1 1/2" .....250 psi.
2" .....150 psi.
Maximum Temperature:
3/4 " –1 1/2" .....400°F. (204°C.)
2" .....353°F. (178°C.)



Direct-Acting Only

Body Rating:
3/4"-1 1/2" .....250 psi.
2" .....175 psi.
Materials:
Valve Body -
3/4"-1 1/2" ..... Brass, ASTM B584
2" .....Cast Iron, ASTM A126, Class B
Stem .....316 Stainless Steel
Plug .....316 Stainless Steel (l7- 4 PH for pilot poppet)
Seat Rings .....316 Stainless Steel

Valve Size	3/4"	1"	1 1/4"	1 1/2"	2"
Cv	9.8	12.8	18.6	26.0	47.5
Valve Travel, In. (mm)	1/4 (6.4)	5/16 (7.9)	3/8 (9.5)	7/16 (11.1)	9/16 (14.3)
Dim. A., In. (mm)	6-15/16 (176)	7-1/8 (181)	7-1/2 (191)	8-1/2 (216)	--
Dim. B, In. (mm)	3-7/l6 (87)	3-7/ 16 (87)	3-5/8 (92)	4-1/8 (105)	4-15/16 (126)

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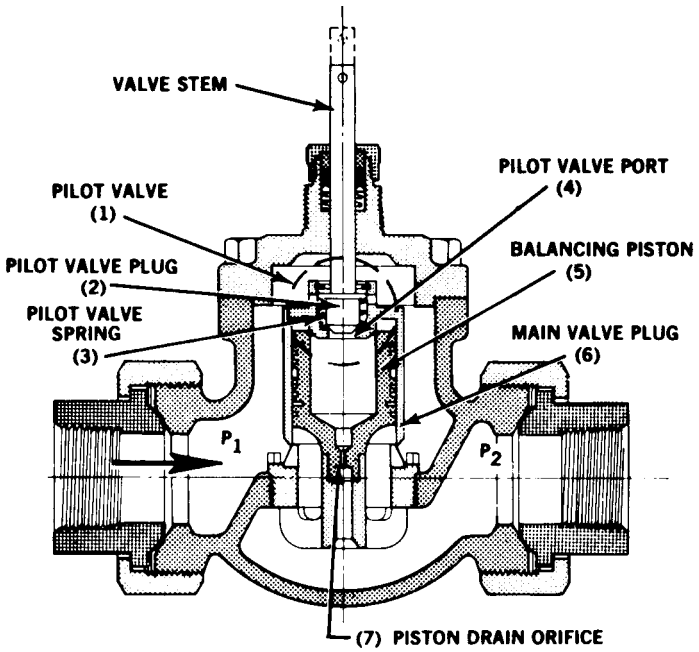

OPERATION

CLOSING:

Downward thrust of the stem closes Pilot Valve (1) also forcing Main Valve Plug (6) closed. Pressure between Main Plug (6) and Piston (5) bleeds through Drain Orifice (7) to the downstream pressure (P_2). The full pressure drop (P_1 - P_2) acts on pilot valve and main valve areas providing additional force to seat valve more tightly.

OPENING

Stem moves up, opening Pilot Valve (1) while downward force of Pilot Valve Spring (3) continues to hold Main Plug (6) on seat. Upstream pressure (P_1) enters through Pilot Valve (1). With pilot valve port area greater than that of Drain Orifice (7), pressure between Main Plug (6) and Stationary Piston (5) quickly becomes equal to upstream pressure (P_1) and the valve is now statically balanced. After the pilot plug is fully lifted against the top of its "cage," further upward stem movement lifts the Main Valve Plug (6) easily and exactly with almost no force requirement, regardless of pressure drop through the valve.

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