



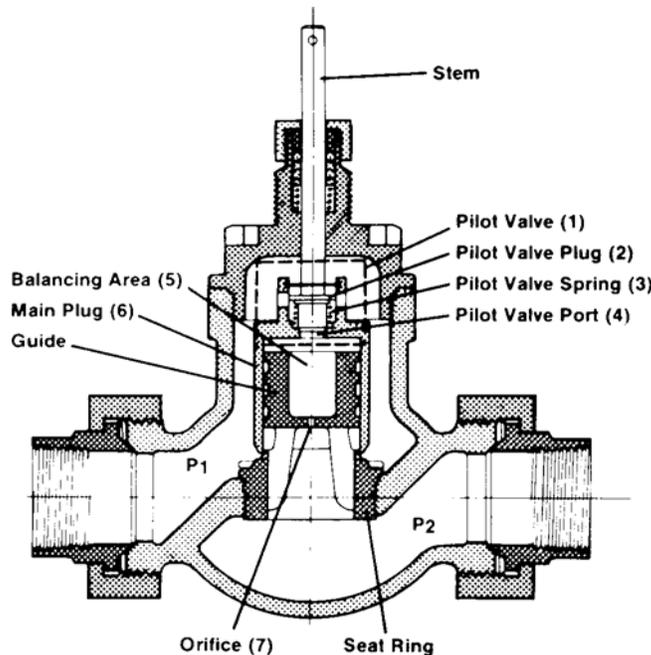
**INDUSTRIAL PRODUCTS DIVISION**

**Style 'MA' Valve Assembly**

**FEATURES**

- Sizes 3/4" through 2".
- Single-seated, piston balanced, direct-acting only.
- Piston located above steam flow line for self-cleaning during operation.
- Fully modulating - provides greater control sensitivity.
- Choice of end connections.
- Tight closing.
- Quick-disconnect stem construction.
- All moving parts readily removed for inspection and service.
- Non-sticking poppet - no chatter - no rattle.
- Teflon\* chevron maintenance-free stem packing with highly finished stem.

\*Teflon is a registered trade name of the DuPont Company.



*Direct-acting only  
(for heating service)*

**GENERAL DESCRIPTION**

The "MA" valve is piston balanced with the plug position dictated exactly by the valve stem position, and hence any temperature regulator using the "MA" valve is fully modulating as well as tight closing. The piston is above the steam flow line.

**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 (P2). The full pressure drop (P1 - P2) 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 Pilot Valve Spring (3) downward force continues to hold Main Plug (6) on seat. Upstream pressure (P1) 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 (P1) and the valve is now statically balanced. After 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 valve.

**SPECIFICATIONS**

**Type:** .....Single-seated, fully balanced.

**Sizes:** .....3/4" through 2".

**Action:** ..... Direct-acting only (closes with downward stem movement). Fully modulating in action. Connections:

**Sizes:** 3/4 through 1 1/2" - Female threaded unions (Silver-braze unions available).

2" Size - Flanged, Bronze Class 150 ANSI or Cast Iron Class 125 ANSI (std).

**Materials:**

**Valve Trim** .....(Seat and both plugs) 18-8 stainless steel.

**Valve Stem** ..... 316 stainless steel (highly finished). Quick detach type.

**Stem Packing** ..Stacked Teflon chevrons (spring loaded).

**Unions** .....Bronze (sizes 3/4" through 1 1/2").

**Valve Body** .....Brass, sizes 3/a" through 1/2"; brass or cast iron, size 2".

**Capacity:**

See Cv ratings on back page.

**Maximum Valve Design Ratings:**

(Supply Pressure and Allowable Pressure Drop)

**Maximum Pressure at 100 'F.:** 3/4" – 1 1/2" sizes, 250 psi; 2" bronze, 150 psi; 2" cast iron, 175 psi.

**Maximum Temperature:** 3/4" – 1 1/2" sizes: 400°F. at 250 psi; 2" bronze, 450°F. at 150 psi; 2" cast iron, 353°F. at 125 psi.

**Maximum Pressure Drop:** 3/4" – 1 1/2" sizes, 250 psi; 2", 150 psi.

Type "MA" used with self-actuated temperature regulator series.

**Maximum Recommended Pressure Drops, PSI\***

Valve Size, In. (Port)	SATR SERIES						
	RT-1001	RT-1003	RT-1004	RT-1006	RT-1007	RT-1009	RT-1011
3/4	250	250	250	250	250	250	250
1	250	250	250	250	250	250	250
1 1/4	250	250	250	-	250	250	250
1 1/8	250	250	250	-	250	250	250
2(1)	150	150	150	-	150	150	150
2(2)	100	100	100	-	100	100	100

(1) Bronze

(2) Cast Iron

\* Supply pressure to valve less any back pressure to valve.

**Capacity Ratings**

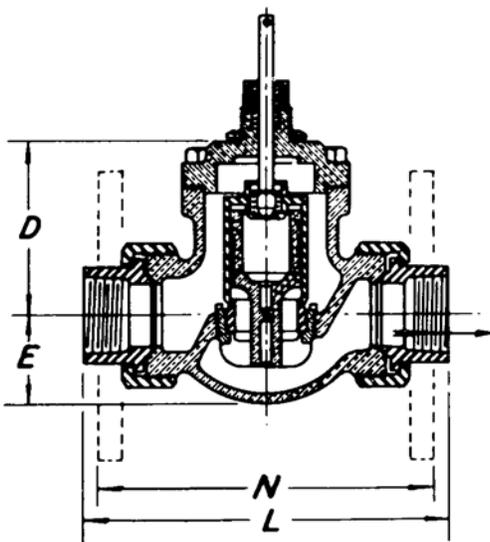
Valve Size In.	Cv
3/4	9.8
1	12.8
1 1/4	18.6
1 1/2	26
2	47.5

**NOTE:** Maximum factory test allowable leakage is 0.01 % of rated valve capacity at 50, 75 and 100 psi.

**DIMENSIONS**

valve size	D	E	L	N (Flange)	Flange Dia.	Flange Thickness	Bolt Circle	Number Bolts	Bolt Holes Dia.
3/4	3-7/16	1-1/2	6-15/16	-	-	-	-	-	-
1	3-7/16	1-1/2	7-1/8	-	-	-	-	-	-
1-1/4	4-5/16	1-7/8	7-1/2	-	-	-	-	-	-
1-1/2	4-5/16	1-15/16	8-1/2	-	-	-	-	-	-
2(i)	4-15/16	2-3/4	-	7	6	1/2	4-3/4	4	3/4

(1) Bronze - Class 150 ANSI flanges.  
Cast Iron - Class 125 ANSI flanges.



*Robertshaw*

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