Robertshaw
INDUSTRIAL PRODUCTS DIVISION

Sales Manual Section 160
PRODUCT SPECIFICATION "WCSS"
(For TEMPERATURE REGULATOR Service

Style "WCSS" Valve Assembly

Features:

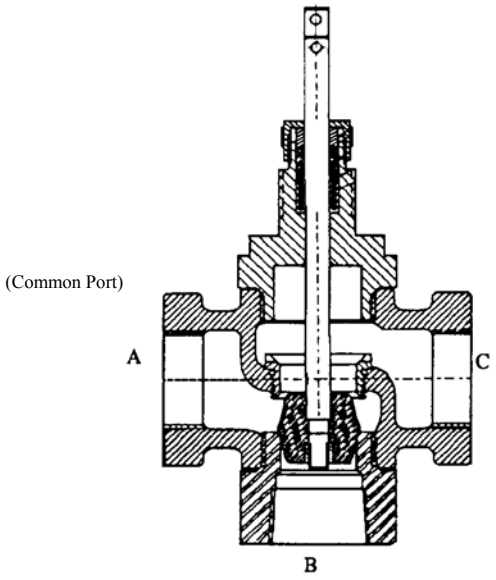
- **Sizes 1/2" 3/4", 1"**
- **Three-Way Type**
- **All Stainless Steel Construction**
- **Quick Disconnect Stem**

General Description

These valves are especially suited for Temperature Regulators for applications requiring opening one line and closing another by operation of the regulator actuator to which it is attached. Typical service is bypass, diverting, blending and alternating hot-cold service.

Valve stems of highly finished type 316 stainless steel feature quick-disconnect valve stem construction which permits removal of valve from regulator without disturbing valve stem stroke adjustment in the upper-works.

Stainless steel body and trim make this valve ideal for most any process material and ambient conditions.



With stem up, port B is open
With stem down, port C is open

Specifications

Type: 3-Way
Size: ..... 1/2", 3/4", 1"
Materials:
Stem ..... 316 SS
Plug ..... 316 SS
Seat Ring ..... 316 SS
Body: ..... CF8M (316 SS)
Packing: ..... Teflon Chevrons with 316 SS Spring
Ends: ..... Female Thread

Other Parts: ..... Stainless Steel
Maximum Leakage (Factory Test): ..... 0.1% of rated flow at 50 psig (Class III)

Maximum Pressure/Temperature:
450 psig max. at 100°F.
450 psig max. at 450°F.

Flow (Preliminary)

Size	End Connection	Port Size	Max. Pres. Drop	C_v	Max. Seat Leakage @ 5O psig	Stem Force	Flow
1/2"	1/2 NPT	1/2"	40 psig	A-C 2.2 A-B 2.2	59 cc/min.	30 lbs.	Linear
3/4"	3/4 NPT	3/4"	40 psig	A-C 4.6 A-B 4.6	123 cc/min.	50 lbs	Linear
1"	1 NPT	1"	40 psig	A-C 9.0 A-B 9.0	241 cc/min.	70 lbs	Linear
1/2"	1/2 NPT	9/16"	75 psig	A-C 3.0 A-B 3.8	80 cc/min.	30 lbs	Quick Opening
3/4"	3/4 NPT	3/4"	75 psig	A-C 5.6 A-B 8.5	150 cc/min.	50 lbs	Quick Opening
1"	1 NPT	1"	75 psig	A-C 9.0 A-B 10.7	241 cc/min.	70 lbs	Quick Opening

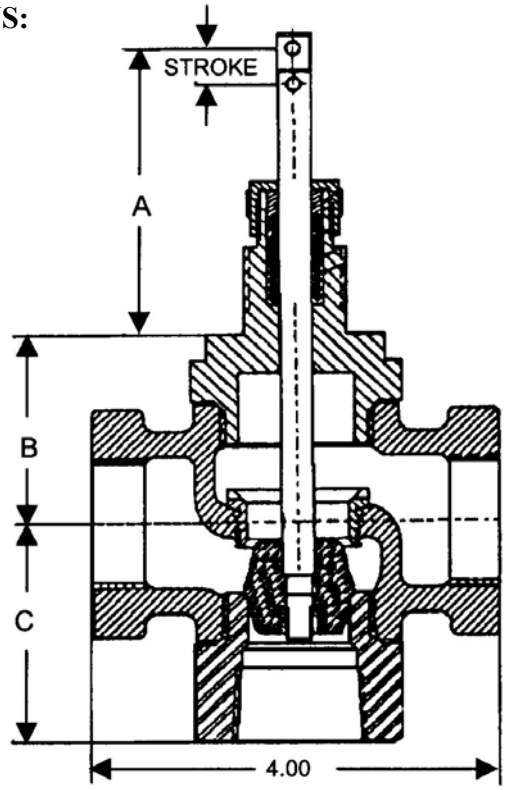
invensys

Style WCSS used with self-actuated temperature regulator series.
Maximum Recommended Pressure Drops, PSI*

Valve Size	Flow	SATR Series						
		RT-1001	RT-1003	RT-1004	RT-1006	RT-1007	RT-1009	RT-1011
1/2"	Linear	40	40	40	40	40	40	40
3/4"	Linear	30	40	40	40	40	40	40
1"	Linear	15	40	40	20	30	40	40
1/2"	Quick Opening	65	75	75	75	75	75	75
3/4"	Quick Opening	30	75	75	40	50	75	75
1"	Quick Opening	15	40	75	20	30	40	40

DIMENSIONS:

Valve Size	Flow	Dimensions			
		Stroke	A	B	C
1/2"	Linear	3/8"	2.88	1.90	2.25
3/4"	Linear	3/8"	2.88	1.90	2.25
1"	Linear	3/8"	2.88	1.90	2.25
1/2"	Quick Opening	3/16"	2.81	1.88	2.44
3/4"	Quick Opening	1/4"	2.81	1.88	2.44
1"	Quick Opening	5/16"	2.81	1.88	2.44



INSTALLATIONS:

Alternating:

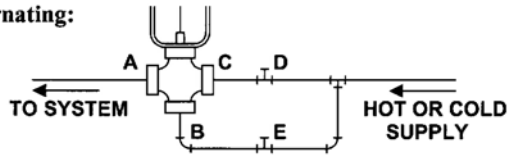


Figure 1 – Illustrates how connections would be made where it is desire to shift from heating service to cooling service by manually opening anc closing proper valves (shown as D and E in the illustration).

Blending:

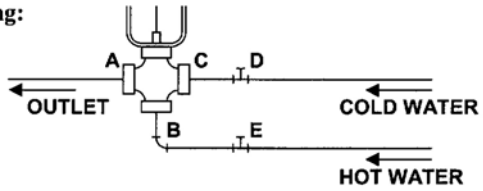


Figure 2 – Illustrates a simple means for blending hot and cold water where a rough mixing is suitable.

Diverting:

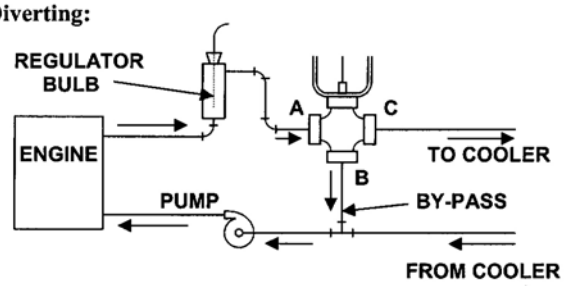


Figure 3 – Illustrates the most widely used method of cooling water control for internal combustion engines.

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