



MIL 90000 - Automatic Recirculation Valves for Pump Protection

Standard sizes & rating

1" to 12" : ASME 150# to ASME 2500#
PN 10 to PN 400

Seat leakage class (as per FCI 70.2)

Main Check Valve: Class IV (all models)
Bypass: Class IV (for model 902 & 903)



Applications

- Ensures minimum flow for centrifugal pumps to avoid overheating and subsequent damages.
 - Boiler feed pump in energy sector
 - Centrifugal process pump in the process industries / petrochemical / refineries.
- Bypass trim modulates when main flow demand falls below the design limit.
 - Multistage pressure reduction prevents cavitation / flashing in High Pressure drops.
 - Bypass side trim also acts as check valve to prevent reverse flow.
- Check valve disc prevents reverse flow and positions the bypass trim for open, close or modulating flow by detecting the process flow demand
- Flow straightener streamlines the exit flow. Reduces erosive wear on downstream piping

More information:
www.ksb-mil.com

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1 Regulatory duty

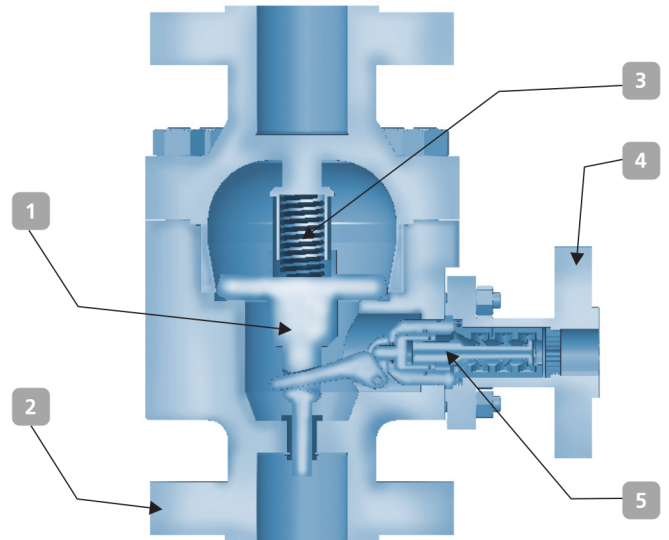
- The valve performs not only On/Off function, but modulating function also. It can also work in various load conditions without loss of energy

2 Stable Operation

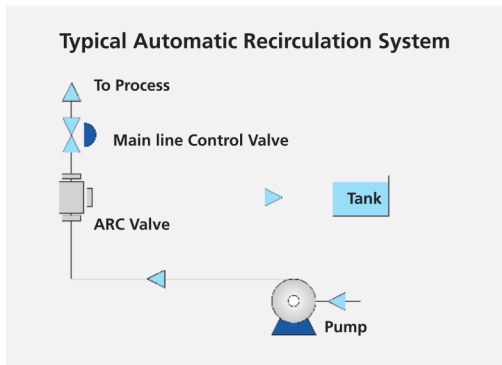
- Sturdy spring loaded check valve design eliminates instability during operation. Hardfaced seat surface (check valve side) ensures long service life

3 Rugged Bypass design

- The bypass port employs the globally field proven MIL 78000 eries technology which is based on based on the principle of multi-step high resistance axial-flow.



1 Main Plug 2 Main Body 3 Spring 4 Bypass Body 5 Bypass Plug



Model Decodification

1 st	2 nd	3 rd	4 th	5 th	Suffix				
9	0	-	-	-	-	-	-	-	-
Series	Model	Size		Pressure Class		Connection	Configuration	Bypass option	Body Material
90. Automatic Recirculation Control Valve	1. Single stage	1. 1"	7. 5"	1. 150	C. PN 25	F. Flanged W. Weld End	V. Vertical Mounting H. Horizontal Mounting	S. Standard O. Oversized R. Reduced	C. Carbon Steel S. Stainless Steel A. Alloy Steel D. Duplex Steel
		2. 1½"	8. 6"	2. 300	K. PN 40				
	2. Double stage	3. 2"	9. 8"	3. 600	D. PN 63/64				
		4. 2½"	A. 10"	4. 900	E. PN 100				
	3. Multi stage	5. 3"	B. 12"	5. 1500	F. PN 160				
		6. 4"		6. 2500	G. PN 250				
				A. PN 10	H. PN 320				
				B. PN 16	J. PN 400				

General Data

Flow direction	Flow To Open (Check Valve) Flow To Close (Bypass Valve)	O-Ring Materials <ul style="list-style-type: none"> Viton (FKM) ≤ 190 °C FFKM ≤ 260 °C
Leakage Class	Main Check Valve: FCI 70.2 Class IV (all models) Bypass: FCI 70.2 Class IV (for 903 model)	
Operating Temperature range	Up to 260 °C	
Installation requirements		<ul style="list-style-type: none"> Standard Orientation - Vertical Filter mesh having mesh size 0.3 to 0.5mm should be used at pump suction side