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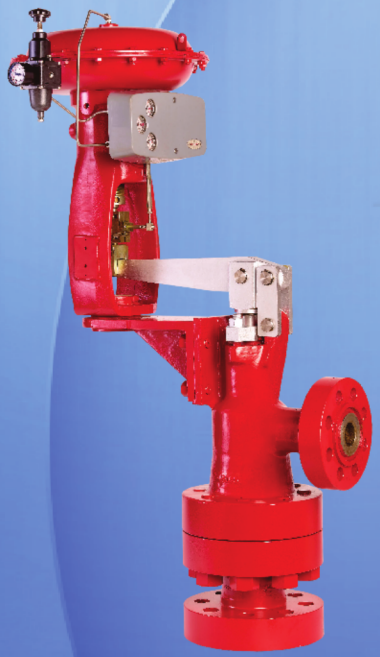
Pumps · Valves · Service

CONTROLS SUPPLY CHAIN
VALVES ACTUATORS INSTRUMENTATIONS

MIL 77000 - Multi-stage Labyrinth Lo-dB Control Valves

Standard sizes & rating
2" to 8" : ASME 600# to ASME 2500#
Seat leakage class (as per FCI 70.2)
Standard : Class IV
Optional : Class V



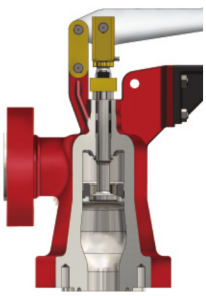
Applications

Hydrocarbon processing
- High pressure hot-separator letdown of flashing liquid hydrocarbons
- Delayed Coker Letdown

Oil & Natural gas production
- Gas pressure reduction
- Choke application
- Steam / water injection

High pressure superheated steam
- Turbine bypass
- Steam vent
- Boiler blowdown

More information:
www.ksb-mil.com



Trim 7C with single stage trim

Multistage trim

Force Multiplication Actuator

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1 Intelligent Design Principle

- Unbalanced plug design without seal rings
- Employs adiabatic flow with friction
- Labyrinth plug which provides a tortuous flow pattern
- Advanced design that eliminates the damaging erosive effects

2 Rugged, Anti-clog Design

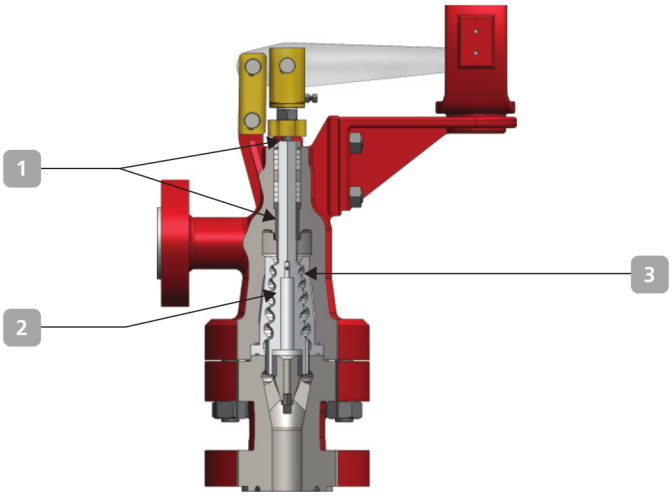
- Larger flow paths
- Smooth axial flow path allowing movement of particles

3 Seat Protection

- Seat on the upstream section of the trim
- Isolation of seat from the most severe and potentially damaging pressure reduction stages
- Prevents premature seat wear, avoiding unwanted and undetected leakage
- Minimized seat damage effects

4 Force Multiplication Actuator

- Offset actuator to meet the higher actuator thrust requirement
- Flow-to-open direction gives dynamic stability



1 Packing box 2 Valve plug & stem 3 Seat ring

MIL 77000 (Trim 7A and 7B)

Model Decodification

1st	2nd	3rd	4th	5th	6th	7th
-	-	7	7	-	-	-

Actuator Type	Body Series	Plug Type	Trim Characteristics	Trim Type
37.Direct Spring Diaphragm 38.Reverse Spring Diaphragm 67.Direct Piston Cylinder 68.Reverse Piston Cylinder	77. Multi-stage Labyrinth Lo-dB Control Valves	0. Undefined 7. Labyrinth Lo-dB	0. Undefined 7. Mod. Linear	0. Undefined 7A. Reduced area 7B. Full Area 7C. High Capacity Single Step

General Data

Body	Type	Angle castings with integral bonnet and bolted outlet flange
	Recommended flow directions	Flow to open (Side inlet - Bottom outlet)
Bonnet	Type	Integral to body
	Temperature range	-27° C to 566° C
Gland Seal	Type	Adjustable double sealed packing box with PTFE or Graphite moulded split rings
	Option	Eco lock (varying density for low emission, PTFE or Graphite) or PTFE V rings
	Temperature range	≤ 180° C for PTFE, > 180° C for Graphite
Trim	Plug type	Unbalanced
	Options	Multistage, expanding labyrinth High capacity single step (in trim 7C)
	Seat type	Clamped (quick change) with metal seat
	Guiding	Top and bottom guiding
	Rangeability	100:1
	Characteristics	Mod.linear