

Control Valve Design Data Form

Please complete the form to define the project and operating parameters. Include as much information as possible. Shaded areas are required.
Email your inquiry to support@redvalve.com.

CUSTOMER		PHONE	
CONTACT PERSON		EMAIL	
PROJECT REFERENCE	DELIVERY REQUIRED		DRAWING APPROVAL
LINE SIZE	BODY MATERIAL		FLANGE CLASS DRILLING
PIPE SCH.			
MODEL	SLEEVE MATERIAL		FLOW MEDIUM (Describe):
FUNCTION			
FLOW DATA	MINIMUM FLOW TO BE CONTROLLED	NORMAL FLOW TO BE CONTROLLED	MAXIMUM FLOW TO BE CONTROLLED
Q (Flow Rate in U.S. GPM)			
P1 (Inlet Pressure at Controlled Flow Rate) psig			
P (Outlet Pressure at Controlled Flow Rate) psig			
SPECIFIC GRAVITY			
cP (Dynamic Viscosity)			
INLET TEMPERATURE (°F)			
Cv (Flow Coefficient)			
ΔP MAX (Calculated)			
MAXIMUM ALLOWABLE APPROACH VELOCITY (fps)			
ATMOSPHERIC PRESSURE (psig)			
SLEEVE STYLE		ACTUATOR TYPE	
ACTUATOR BRAND			
TYPE SPECIFICATION		OPTIONS	
Pneumatic Type:			
Plant Air Supply: psi minimum			
Voltage: V Frequency: Hz Phase:			
Hydraulic Pressure: psi minimum			
Maximum Shutoff Pressure Required (psig):			

Please use separate form for each control valve.

PREPARED BY:

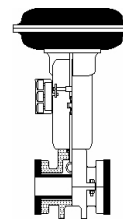
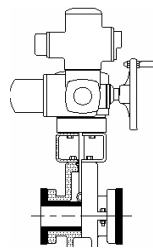
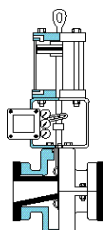
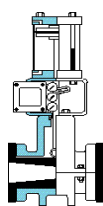
DATE:

CUSTOMER APPROVAL:

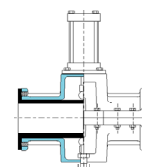
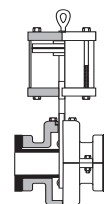
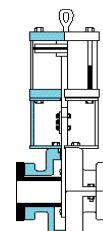
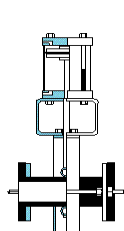
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Control Valve Seat Leakage Classifications

Per Information in ANSI/FCI 70-2



BODY STYLE	Series 5200	Series 5200 D-Port	Series 5200E Electrically Actuated	Series 5200 Diaphragm Actuated
Sizes	1" - 4"	6" - 48"	1" - 48"	1" - 3"
Flange Drilling	ASME B16.1 Class 125 ASME B 16.5 Class 150	ASME B16.1 Class 125 ASME B 16.5 Class 150	ASME B16.1 Class 125 ASME B 16.5 Class 150	ASME B16.1 Class 125 ASME B 16.5 Class 150
Body Materials	Ductile Iron A536-65-45-12	Ductile Iron A536-65-45-12	Ductile Iron A536-65-45-12	Ductile Iron A536-65-45-12
Class of Shutoff*	Class V	Class V	Class V	Class V
Actuator	ATO/ATC ATO/FCS ATC/FOS	ATO/ATC ATO/FCS ATC/FOS	Pneumatic Hydraulic Electric Modulating	ATO/ATC ATO/FCS ATC/FOS
Cv	Pre-pinchd	Pre-pinchd	Pre-pinchd	Pre-pinchd



BODY STYLE	Series 5300	Series 5400	Series 5700	Series 9000
Sizes	2" - 48"	4" - 48"	2" - 48"	1" - 12"
Flange Drilling	ASME B16.1 Class 125 ASME B 16.5 Class 150	ASME B16.1 Class 125 ASME B 16.5 Class 150	ASME B16.1 Class 125 ASME B 16.5 Class 150	ASME B16.1 Class 125 ASME B 16.5 Class 150
Body Materials	Steel Fabricated Stainless Steel Fabricated	Ductile Iron A536-65-45-12	Ductile Iron A536-65-45-12	Ductile Iron A536-65-45-12
Class of Shutoff*	Class V	Class V	Class V	Class IV
Actuator	Pneumatic Hydraulic Electric Modulating	Pneumatic Hydraulic Electric	Pneumatic Hydraulic Electric Modulating	Manual Hydraulic Electric Modulating
Cv	Pre-pinchd	Centerline Pinch	Centerline Pinch	Pre-pinchd

* See following page for leakage class information.

Control Valve Seat Leakage Classifications

Per Information in ANSI/FCI 70-2

TABLE 1				
Leakage Class	Maximum Seat Leakage	Test Medium	Test Pressure	Test Procedure
I	---	---	---	By agreement between user and seller, no test required
II	0.5% of rated capacity	Air or water at 50-125 °F (10-51 °C)	45-60 psig or maximum operating differential, whichever is lower	Type A
III	0.1% of rated capacity	Air or water at 50-125 °F (10-51 °C)	45-60 psig or maximum operating differential, whichever is lower	Type A
IV	0.01% of rated capacity	Air or water at 50-125 °F (10-51 °C)	45-60 psig or maximum operating differential, whichever is lower	Type A
V	0.0005 ml per minute of water per inch of port diameter per psi differential	Water at 50-125 °F (10-51 °C)	Maximum service pressure drop across valve plug; not to exceed ANSI body rating	Type B
VI	Not to exceed amounts in Table 2	Air or nitrogen at 50-125 °F (10-51 °C)	50 psig or maximum rated differential pressure across valve plug, whichever is lower	Type C

Type A: Leakage flow and pressure data accurate to +/- 10% of reading; pressure applied to valve inlet with outlet open to atmosphere or connected to low head loss measuring device; full normal closing thrust from actuator

Type B: Leakage flow and pressure data accurate to +/- 10% of reading after letting leakage flow stabilize; pressure applied to valve inlet after filling entire body cavity and connected plumbing and stroking valve plug closed; net actuator thrust to be specified max;

Type C: Pressure applied to inlet with outlet connected to suitable measuring device; actuator adjusted to operating conditions specified with full normal closing thrust; allow sufficient time for leakage flow to stabilize

TABLE 2*		
*directly from ANSI/FCI 70-2, p. 3		
Nominal Seat Diameter		
Millimeters (Inches)	ml per Minute	Bubbles per Minute
≤ 25 (≤ 1)	0.15	1
38 (1.5)	0.30	2
51 (2)	0.45	3
64 (2.5)	0.60	4
76 (3)	0.90	6
102 (4)	1.70	11
152 (6)	4.00	27
203 (8)	6.75	45
250 (10)	11.1	---
300 (12)	16.0	---
350 (14)	21.6	---
400 (16)	28.4	---