☞ 1. CONTROL VALVE SEAT LEAKAGE CLASSIFICATIONS

[FCI 70-2]

Leakage Class Designation	Maximum Leakage Allowable	Test medium	Test pressures	Test procedures Required for Establishing ration
I	-	-	-	No test required provided user and supplier so agree.
II	0.5% of rated capacity	Air or water at 50-125°F (10-52°C)	45-60 psig or max operation differential, whichever is lower	Pressure applied to valve inlet, with outlet open to atmosphere or connected to a low head loss mea Suring device, full normal closing thrust provided by actuator.
III	0.1% of rated capacity	As above	As above	As above
IV	0.01% of rated capacity	As above	As above	As above
V	0.0005mℓ per minute of water per inch of port diameter per psi differential	Water at 50-125°F (10-52°C)	Max. service pressure drop across valve plug, not to exceed ANSI body rating (100psi pressure drop minimum)	Pressure applied to valve inlet after filling entire body cavity and connected piping with water and stroking valve plug closed. Use net specified max. actuator thrust, but no more, even if available during test. Allow time for leakage flow to stabilizer.
VI	Not to exceed amounts shown in following table based on port diameter	Air or Nitrogen at 50-125°F (10-52°C)	50 psig or max. Rated differential pressure across valve plug. Whichever if lower.	Actuator should be adjusted to operating conditions specific with full normal closing thrust applied to valve plug seat. Allow time for leakage flow to stabilize & use suitable measuring device.

Nominal port diameter		Leakage factor	
Inches (B)	Millimeters (mm)	mℓ Per Minute	Bubbles Per Minute
1”	25	0.15	1
1½”	38	0.30	2
2”	51	0.45	3
2½”	64	0.60	4
3”	76	0.90	6
4”	102	1.70	11
6”	152	4.00	27
8”	203	6.75	45

Bubbles per minute as tabulated are an easily measured suggested alternative based on a suitable calibrated measuring device such as a 1/4” O.D. x 0.032” wall tube submerged in water to a depth of 1/8” to 1/4”. The tube end shall be cut square and smooth with on chamfers or burrs and the tube axis shall be perpendicular to the surface of the water. Other apparatus may be constructed and the number of bubbles per minute may vary from these shown. As long as they correctly indict indicate the flow in ml per minute.