



REDUCING VALVE FOR STEAM

MODEL COSR-21

Features

Technologically advanced pressure reducing valve for accurate control in process steam systems.

1. Patented self-aligning shock-absorbing spherical piston and advanced pilot regulator designs maintain secondary steam pressure accuracy, even during adverse process conditions.
2. Major internal components made of stainless steel for long service life.
3. Large surface area integral screen for pilot valve extend trouble-free service.
4. Internal Primary and secondary pressure-sensing channels make external sensing lines unnecessary.
5. COSR-21, sizes 65 mm and larger have a silencer for noise reduction.



Specifications

Model	COSR-21	
Connection	Flanged	
Size (mm)	15, 20, 25, 32, 40, 50, 65, 80, 100	
Body Material	Cast Iron	
Maximum Operating Pressure (MPaG)	PMO	2.1
Maximum Operating Temperature (°C)	TMO	220
Primary Pressure Range (MPaG)	1.35 – 2.1	
Adjustable Pressure Range (all conditions must be met)	Within 10 – 84% of primary pressure but with a minimum pressure of 0.55 MPaG Maximum differential pressure 0.85 MPa	
Minimum Adjustable Flow Rate	5% of rated flow rate (For 65 mm – 100 mm: 10% of rated flow rate)	

PRESSURE SHELL DESIGN CONDITIONS (**NOT** OPERATING CONDITIONS):

1 MPa = 10.197 kg/cm²

Maximum Allowable Pressure (MPaG) PMA: 2.1, Maximum Allowable Temperature (°C) TMA: 220



To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.

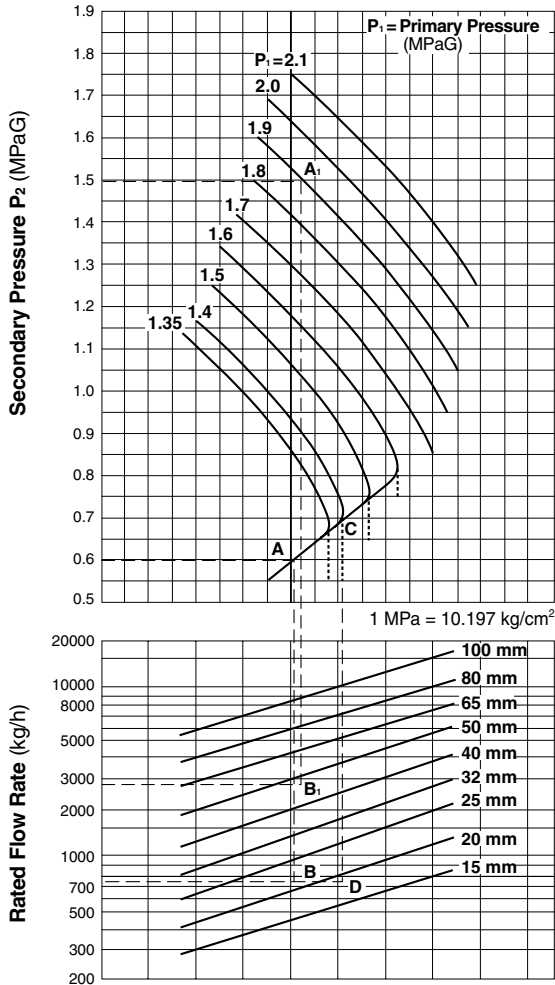
Cv Values

	Nominal Valve Size (mm)								
	15	20	25	32	40	50	65	80	100
Cv (US)	3.8	6.9	11.1	15.5	24.0	37.2	59.3	85.0	128
Cv (UK)	3.2	5.7	9.2	12.9	20.0	31.0	49.4	70.8	107
Kvs (DIN)	3.3	5.9	9.5	13.3	20.6	31.9	50.8	72.9	110



The Cv & Kvs values shown are for the valve in the full fail open position. These values are not to be used for COSR-21 sizing, and instead may be used as one of the factors in calculations for safety valve selection.

Sizing Chart



Sizing Examples

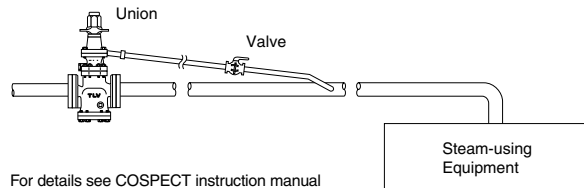
For P_1 over 1.6 MPaG

For primary pressure of 1.9 MPaG, set pressure 1.5 MPaG, and saturated steam flow rate 2800 kg/h, select an appropriate size.

1. Locate intersecting point A_1 of 1.9 MPaG primary pressure and 1.5 MPaG set pressure. Go to point A_1 and down until 2800 kg/h, point B_1 is reached.
2. Since point B_1 is located between 40 mm and 50 mm, the larger size, 50 mm, should be chosen.

Special Instructions for P_1 under 1.6 MPaG

The vertical dotted lines in the graph represent the increased capacity often achievable when the internal sensing features of COSR-21 are enhanced by the installation of a 3/8 inch external secondary pressure-sensing line (condition: $P_2 < 1/2 P_1$).



For details see COSPECT instruction manual

For primary pressure of 1.4 MPaG, set pressure 0.6 MPaG, and saturated steam flow rate 750 kg/h, select an appropriate size.

With internal secondary pressure-sensing channel

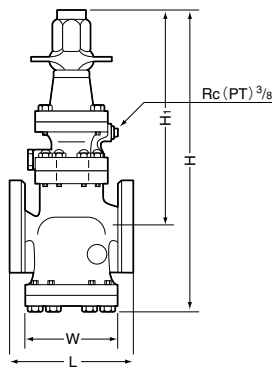
1. Locate intersecting point A of 1.4 MPaG primary pressure and 0.6 MPaG set pressure. Go to point A and down until 750 kg/h, point B, is reached.
2. Since point B is located between 20 mm and 25 mm, the larger size, 25 mm, should be chosen.

With external secondary pressure-sensing line

1. Obtain intersecting point C of 1.4 MPaG primary pressure. Go straight down from point C to 0.6 MPaG set pressure, and continue until 750 kg/h, point D, is reached.
2. Since point D is located between 15 mm and 20 mm, the larger size, 20 mm, should be chosen.

1 MPa = 10.197 kg/cm²

Dimensions



Size 15-25 shown. Configuration of larger sizes differs slightly.

COSR-21 Flanged* (mm)

Size	L	H	H ₁	W	Weight (kg)
15	166	405	305	105	11
20	178				12
25	184	422	302	125	14
32	216	457	322	150	19
40					20
50	251	490	335	195	36
65	366	655	430	280	55
80	370				58
100	434	678	468	350	85

* JIS 20K, other standards available

Manufacturer

ISO 9001/ISO 14001

TLV® CO., LTD.
Kakogawa, Japan

is approved by LRQA Ltd. to ISO 9001/14001

