



STEAM PRESSURE REDUCING VALVE

MODEL COSR-16HT

SELF-ACTUATED PRESSURE REDUCING VALVE WITH SHOCK-ABSORBING PISTON

Benefits

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

1. High-temperature model suitable for superheated steam applications.
2. Unique Shock-Absorbing Spherical (SAS) piston delivers stable secondary pressure.
3. Valve maintains high accuracy during severe conditions of varying primary pressure and fluctuating flow rates.
4. Unique self-aligning piston design provides for maximum reliability.
5. Unique two-piece pilot and main valve designs assure seal tight shut-off in dead end service.
6. Internal screen for pilot valve extends maintenance-free service.
7. Body made of durable cast steel.
8. Built-in silencer for noise reduction.
9. Capable of internal secondary pressure sensing for compact space installation.



Specifications

Model	COSR-16HT	
Connection	Flanged	
Size (in)	2½, 3, 4	
Body Material	Cast Steel	
Maximum Operating Pressure (psig)	PMO	250
Maximum Operating Temperature (°F)	TMO	572
Maximum Allowable Pressure (psig)	PMA	250
Maximum Allowable Temperature (°F)	TMA	572
Primary Pressure Range (psig)	30 to 250	
Adjustable Differential Pressure (psi)	10 to 120	
Pressure Adjustment Range (psig)	5 to 210	
Maximum Adjustable Secondary Pressure (psig)	84% of Primary Pressure (or Primary Pressure minus 10 psi, whichever is lower)	
Minimum Adjustable Secondary Pressure (psig)	10% of Primary Pressure (or Primary Pressure minus 120 psi, whichever is higher) (except primary pressures up through 85 psig as shown in the Capacity Tables)	
Minimum Adjustable Flow Rate	10% of rated flow rate	
Accuracy of Regulation (psi)	AOR	±1 (under steady flow conditions)
Seat Leakage Rating	Less than 0.1% of Rated Flow Rate	

Connections and sizes in bold are standard

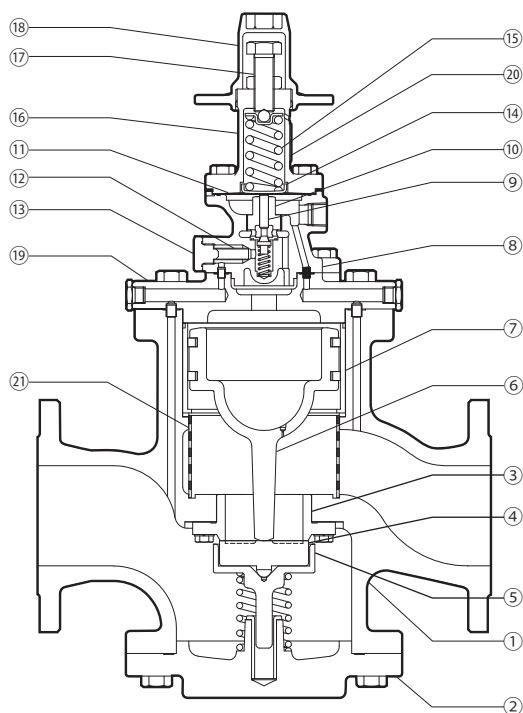


To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.

Configuration

No.	Description	Material	ASTM/AISI
①	Main Body	Cast Steel	A216/A216M Gr.WCB
②	Cover	Cast Steel	A216/A216M Gr.WCB
③	Main Valve Seat	Stainless Steel	—
④	Main Valve	Stainless Steel	—
⑤	Main Valve Holder	Stainless Steel	—
⑥	Piston	Stainless Steel	—
⑦	Cylinder	Stainless Steel	—
⑧	Pilot Valve Body	Cast Stainless Steel	A351/A351M Gr.CF8
⑨	Pilot Valve	Stainless Steel	—
⑩	Pilot Valve Seat	Stainless Steel	—
⑪	Diaphragm	Stainless Steel	—
⑫	Pilot Screen	Stainless Steel	—
⑬	Pilot Screen Holder	Stainless Steel	A479/A479M Type 304
⑭	Diaphragm Support	Brass	—
⑮	Coil Spring	Carbon Steel	—
⑯	Spring Housing	Cast Stainless Steel	A351/A351M Gr.CF8
⑰	Adjustment Screw	Cr-Mo Steel	—
⑱	Spanner Cap	Cast Stainless Steel	A351/A351M Gr.CF8
⑲	Pilot Cover	Cast Steel	A216/A216M Gr.WCB
⑳	Nameplate	Stainless Steel	—
㉑	Silencer	Stainless Steel	—

Contact TLV for available replacement parts.



Capacity Table

With external (factory standard) or internal (option) secondary pressure-sensing line or channel (lb/h)

(Parts to activate the internal pressure-sensing channel are available from TLV)

Primary Steam Press. (psig)	Secondary (Set) Steam Pressure (psig)		Nominal Valve		
	External Line	Internal Channel (option)	2½"	3"	4"
30	* 20	* 20	2975	4255	6395
	16	16	3475	4980	7525
	** 5 - 14	14	3545	5090	7665
		9	3525	5065	7645
		** 5	3505	5050	7625
40	* 30	* 30	3760	5555	8370
	25	25	3965	6060	9135
	** 5 - 20	20	4385	6390	9625
		12	4290	6155	9255
		** 5	3930	5650	8490
50	* 40	* 40	3910	5540	8335
	30	30	4955	7250	10920
	** 5 - 25	25	5280	7580	11425
		15	4840	6930	10430
		** 5	4230	6075	9125
60	* 50	* 50	4850	6950	10475
	45	45	5460	7860	11845
	40	40	5710	8245	12430
	** 5 - 30	30	6315	9040	13635
		18	5565	7960	12000
75		** 5	4525	6495	9765
	* 63	* 63	4650	6680	10030
	60	60	5000	7175	10790
	50	50	6265	9165	13820
	** 5 - 38	38	7105	10295	15515
85		23	6270	8975	13520
		** 5	4575	6565	9890
	* 71	* 71	6435	9225	13895
	70	70	6520	9340	14070
	50	50	8245	11820	17800
100	** 5 - 42	42	8280	11885	17865
		25	6105	9015	13165
		** 5	4770	6760	10330
	* 84	* 84	6925	9910	14920
	80	80	7620	10915	16440
125	60	60	9165	13145	19795
	** 10 - 50	50	9510	13625	20535
		30	7165	10275	15455
		** 10	5090	7295	10980
	* 105	* 105	9040	12970	19475
150	100	100	9660	13860	20815
	80	80	11520	16500	24910
	** 13 - 63	63	11820	16955	25465
		35	7935	11520	17120
		** 13	5045	7235	10890
175	* 126	* 126	8475	12160	18375
	125	125	8545	12255	18520
	100	100	11880	17040	25575
	** 30 - 75	75	13205	18915	28440
		50	9605	13995	20715
200		** 30	6415	9295	13860
	* 147	* 147	12415	17790	26720
	145	145	12530	17955	26975
	120	120	14405	20640	31130
	** 55 - 88	88	15875	22735	34230
225		70	12495	17905	26935
		** 55	11250	16120	24300
	* 168	* 168	12980	18585	26715
	150	150	16005	22930	34390
	130	130	16615	23810	35805
250	** 80 - 100	100	17880	25575	38580
		** 80	13315	19090	28660
	* 189	* 189	14470	20750	30995
	175	175	15790	22630	33915
	150	150	18840	26975	40650
	** 105 - 111	111	19545	27935	42195
		** 105	18245	26095	39355
	* 210	* 210	16385	23525	36275
	150	150	22115	31660	47885
	** 130	** 130	21975	31350	47445

* Maximum adjustable secondary pressure ** Minimum adjustable secondary pressure

Cv Values

	Nominal Valve Size		
	2½"	3"	4"
Cv (US)	59.3	85.0	128
Cv (UK)	49.4	70.8	107
Kvs (DIN)	50.8	72.9	110



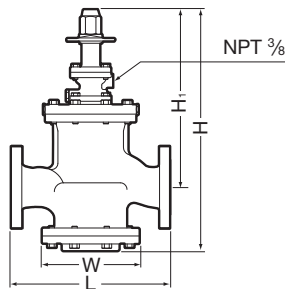
CAUTION

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

Dimensions

• COSR-16HT

Flanged



COSR-16HT Flanged

(in)

Size	L		H*	H ₁ *	ϕ W	Weight** (lb)
	Connects to ASME Class					
	150RF	300RF				
2½	14 ⁵ / ₈	14 ⁷ / ₈	22	16 ³ / ₈	8 ⁵ / ₈	132
3	14 ³ / ₄	15 ¹ / ₈				143
4	17 ¹ / ₁₆	17 ³ / ₄	25	17 ³ / ₄	10 ³ / ₈	231

Other standards available, but length and weight may vary

* Approximate dimensions

** Weight is for Class 300 RF

Flange classes in bold are standard

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For Technical Service 1-800 "TLV TRAP"



Manufacturer

TLV CO., LTD.

Kakogawa, Japan

is approved by LRQA Ltd. to ISO 9001/14001

ISO 9001
ISO 14001

