English - May 2018

Introduction

This installation guide provides instructions for installation, startup, and adjustment. To receive a copy of the instruction manual, contact your local Sales Office or view a copy at www.fisher.com. For further information refer to: CSB700 Series Commercial / Industrial Pressure Reducing Regulators Instruction Manual, D103483X012.

P.E.D. Categories

This product may be used as a pressure accessory with pressure equipment in the following Pressure Equipment Directive. For information on the current PED revision see Bulletin: D103053X012. Pressure regulator does not require any supplementary upstream safety accessory for protection against overpressure compared with its design pressure PS, when upstream reducing station is sized for a maximum downstream incidental MIPd <= 1.1 PS.

TYPE	DESCRIPTION	PED CATEGORY	FLUID GROUP
CSB700, CSB700F, CSB720, CSB720F and CSB750	Base regulator	I	Groups 1 and 2 according to PED 2014/68/EU, 1st and 2nd family gas
CSB704, CSB704F, CSB724F CSB724 and CSB754	Regulator with Slam-shut Module	IV	according to EN 437 or other gases (compressed air, nitrogen). The gas must be non-corrosive,
Europe Reference	ean EN Standards	EN334 and EN14382	clean (filtration on inlet side necessary) and dry.

Specifications

Available Configurations See Table 1

Regulator Type

Differential Strength (DS)

Accuracy Class

Up to AC5 (depending on Outlet Pressure)

Lockup Class

Up to SG10 (depending on Outlet Pressure)

Failure Mode per EN334 Fail Open (FO)

- Integral Strength (IS) Pressure Ratings⁽¹⁾ See Table 2
- Differential Strength (DS) Pressure Ratings⁽¹⁾ See Table 3

Body Sizes, Materials, End Connections and Pressure Ratings⁽¹⁾

See Table 4

Operating Pressure Range⁽¹⁾ Regulator: See Table 5 Slam-Shut Module: See Tables 7a, 7b, 7c and 7d

CSB700 Series

Maximum Outlet Pressure⁽¹⁾

Emergency Casing: Type CSB700/CSB700F/CSB720/CSB720F: 4.0 bar / 58.0 psig Type CSB750: 5.0 bar / 72.5 psig To Avoid Internal Metallic Parts Damage: Type CSB700/CSB700F/CSB720/CSB720F: 0.34 bar / 5.0 psig over set pressure Type CSB750: 1.5 bar / 21.8 psig over set pressure not to exceed maximum emergency outlet **Operating Casing:** Type CSB700/CSB720: 1.1 bar / 16.2 psig Type CSB750: 5.0 bar / 72.5 psig

Outlet Pressure Ranges⁽¹⁾

9.0 mbar to 4.0 bar / 0.13 to 58.0 psig See Table 5

Orifice Size:

35 mm / 1-3/8 in.

Pressure Registration External

Temperature Capabilities⁽¹⁾⁽²⁾⁽³⁾

According to PED Standards: -20 to 66°C / -4 to 151°F Non-PED: -30 to 66°C / -22 to 151°F

Spring Case Vent Connection 1 NPT: Types CSB700 and CSB720 1/2 NPT: Type CSB750

Type VSX8 Slam-Shut Device Maximum Inlet

Pressure (P_{umax})⁽¹⁾: Differential Strength (DS): 16 bar / 232 psig Integral Strength (IS): 6.0 bar / 87 psig

Approximate Weights

with Threaded body Type CSB700/CSB720: 13 kg / 29 lbs Type CSB750 : 14 kg / 31 lbs Type CSB704/CSB724: 14 kg / 31 lbs Type CSB754 : 15 kg / 33 lbs with Flanged body Add 5.2 kg / 11 lbs to weights listed

Designed, Tested and Evaluated Consistent With: ANSI B16, ASME BPVC Sec. VIII Div. I, ASTM B117 (Corrosion Resistance), EN334 and EN14382

Directive ATEX Information

See Table 6

For information about ATEX, refer to CSB700 Series (D103483X012) and VSX4/VSX8 Series (D103127X012) Instruction Manuals.

1. The pressure/temperature limits in this Installation Guide or any applicable standard limitation should not be exceeded. 2. Standard token relief set values listed in Table 6 are based on -20 to 60°C / -4 to 140°F.

3. Product has passed Emerson Process Management Regulator Technologies, Inc. (Emerson) testing for lockup, relief start-to-discharge and reseal down to -40°.





Table 1. Available Configurations

		T١	PE N	UMBE	R			07701							
С	S	В	7					OPTION							
								PRESSURE CONSTRUCTION							
				0				Low Pressure Applications (Outlet Pressure: 9 to 110 mbar / 3.6 in. w.c. to 1.60 psig) ⁽²⁾							
				2				Medium Pressure Applications (Outlet Pressure: 61 to 780 mbar / 0.9 to 11.3 psig) ⁽²⁾							
				5				High Pressure Applications (Outlet Pressure: 0.7 to 4 bar / 10.2 to 58 psig) ⁽²⁾							
								OVERPRESSURE PROTECTION							
					0			Without Overpressure Protection Module							
					0F			Without Overpressure Protection Module (Outlet Pressure: 9 to 110 mbar / 3.6 in. w.c. to 1.60 psig and 270 to 325 mbar / 3.9 to 4.7 psig only) ⁽²⁾							
					4			With Type VSX8 Slam-shut Module ⁽¹⁾							
					4F			ith Type VSX8 Slam-shut Module ⁽¹⁾ (Outlet Pressure: 9 to 110 mbar / 3.6 in. w.c. to 1.60 psig and 270 to 325 mbar / 9 to 4.7 psig only) ²							
								PRESSURE REGISTRATION							
						Е		External							
								RELIEF							
							N	None							
							Т	Token Internal Relief ⁽³⁾							
		0			Exa 1. F 2. T 3. T	mple: Type number CSB724ET: Type CSB700 regulator constructed for medium pressure applications, with Type VSX8 Slam-shut Module, with External pressure registration and with Token relief. Reference Instruction Manual D103127X012 for information regarding the Type VSX8 Slam-shut Module. The pressure/lemperature limits in this Installation Guide and any applicable standard or code limitation should not be exceeded. Token relief not available for outlet pressure above 500 mbar / 8 psig.									

 Table 2. Integral Strength (IS) Pressure Ratings⁽¹⁾

		0 0 ()	0				
7/05	MAXIMUM ALLOWA MAXIMUM EMERGENO	ABLE PRESSURE / CY INLET PRESSURE	MAXIMUM OPERATIN	G INLET PRESSURE ⁽²⁾			
ITPE	P	S	P _{UMAX}				
	bar	psig	bar	psig			
CSB700 and CSB704							
CSB700F and CSB704F	4.0	59.0	4.0	59.0			
CSB720 and CSB724	4.0	0.00	4.0	56.0			
CSB720F and CSB724F							
CSB750 and CSB754	5.0	72.5	5.0	72.5			
1. Applicable only to applications whe	ere the inlet rating cannot exceed the out	let rating.	Differential Strength (DC) version				

2. For the Integral Strength (IS version), the maximum value of Ps and Pumas should be similar to the PSD used for the Differential Strength (DS) version.

Table 3. Differential Strength (DS) Pressure Ratings and Flow and Sizing Coefficients

TYPE	SPECIFIC ALLOWABLE MAXIMUM E OUTLET P	MAXIMUM PRESSURE / MERGENCY RESSURE	MAXIMUM ALLOW/ MAXIMUM EMEI PRES	MAX OPERATI PRES	IMUM NG INLET SURE	ORIFIC	ORIFICE SIZE		WIDE-OPEN FLOW COEFFICIENT			IEC SIZING COEFFICIENT		
	P	SD	P	PUMAX										
	bar	psig	bar	psig	bar	psig	mm	In.	C,	C,	C ₁	XT	FD	FL
CSB700 and CSB704					10	145								
CSB700F and CSB704F	4.0	50.0	12.0	174	0	07								
CSB720F and CSB724F	4.0	58.0			ю	87	35	1-3/8	1080	27.7	39	0.96	0.89	0.66
CSB720 and CSB724			20.0	290	16	232								
CSB750 and CSB754	5.0	72.5	20.0	290	16	232								

1. The pressure/temperature limits in this Instruction Manual and any applicable standard or code limitation should not be exceeded.

	BOD	/ SIZE		FACE-TO-FA	CE DIMENSION	BODY PRESSURE RATING		
BODT WATERIAL	DN	NPS	END CONNECTION	mm	In.	bar	psig	
BODY MATERIAL Ductile Iron WCC Steel	40	1-1/2	NDT					
	50	2	NP1	155	6.10			
	40	1-1/2	Dr.	100	0.10			
	50	2	Rp			17.2	250	
	50	2		191	7.52			
Ductile Iron	50	2	CL125 FF/CL150 FF	254	10.0			
	50	2		267	10.5	1		
	50	2		191	7.52			
	50	2	PN 10/16	200	7.87	16.0	222	
	50	2		254	10.0	10.0	232	
	40	1-1/2	PN 16 Slip-On	222	8.74			
	40	1-1/2	NOT					
	50	2	NPI	455	0.40			
	40	1-1/2	D-2	100	0.10	20.0	290	
WCC Steel	50	2	Rp					
	50	2	CL150 RF	254	20.0	1		
	50	2	PN 10/16	254	20.0	40.0	222	
	50	2	PN 10/16	191	7.52	10.0	232	

Table 4. Body Sizes, Material, End Connections and Cold Working Pressure Ratings

Table 5. CSB700 Series Primary Regulator Outlet Pressure Ranges

TYPE	OPERATING PRES	SURE RANGES, W _d	ANGES, W _d PART NUMBER	SPRING	SPRINO DIAM	G WIRE ETER	SPRING FREE LENGTH		
	mbar	psig		SPRING DIAMETERSPRING DIAMETERSI12Silver3.000.118112Silver3.000.1181A0Red3.500.138112Black Stripe4.320.170112Purple4.340.171112White Stripe4.620.1821A0Dark Green4.880.1921A0Dark Green4.880.1921A0Blue5.940.234112Black8.000.3151A0Blue with White Stripe100.3941A0Black with White Stripe6.50.256112Purple Stripe9.000.3541A0Crowwith Bed Stripe11.00.4931	mm	In.			
	9 to 14	3.6 to 5.6 in. w.c.	GE30336X012	Silver	DIAMETER SPRING FREE LENGT mm In. mm In. 3.00 0.118 224 8.82 3.50 0.138 264 10.4 4.32 0.170 172 6.78 4.34 0.171 187 7.35 4.62 0.182 188 7.40 4.88 0.192 224 8.82 5.94 0.234 217 8.53 8.00 0.315 206 8.13 8.71 0.343 177 6.97 10 0.394 181 7.13 6.5 0.256 235 9.25 9.00 0.354 225 8.87 11.0 0.433 226 8.88 12.6 0.496 225 8.87 13.7 0.539 226 8.89	8.82			
	13 to 24	5.2 to 9.6 in. w.c.	ERSA01138A0	Red	3.50	0.138	264	10.4	
CSB700, CSB704,	22 to 39	8.8 to 15.7 in. w.c.	GE30338X012	Black Stripe	4.32	0.170	172	6.78	
CSB700F and CSB704F	32 to 50	12.8 to 20.1 in. w.c.	GE30339X012	Purple	4.34	0.171	187	7.35	
	42 to 70	16.9 to 28.1 in. w.c.	GE30340X012	White Stripe	4.62	0.182	188	7.40	
	61 to 110	0.9 to 1.6	ERSA03656A0	Dark Green	4.88	0.192	224	8.82	
	61 to 110	0.9 to 1.6	ERSA03656A0	Dark Green	4.88	0.192	224	8.82	
	105 to 220	1.5 to 3.2	ERSA03657A0	Blue	5.94	0.234	217	8.53	
CSB720 and CSB724	210 to 380	3.1 to 5.5	GG06247X012	Black	8.00	0.315	206	8.13	
	320 to 570	4.6 to 8.3 ERSA01582A0		Red with White Stripe	8.71	0.343	177	6.97	
	510 to 780	7.4 to 11.3	ERSA05055A0	Blue with White Stripe	10	0.394	181	7.13	
CSB720F and CSB724F	270 to 325	3.9 to 4.7	ERAA11747A0	Black with White Stripe	6.5	0.256	235	9.25	
	0.7 to 1.19 bar	10.2 to 17.3	GE30345X012	Purple Stripe	9.00	0.354	225	8.87	
000750 and 000754	1.05 to 2.7 bar	15.2 to 39.2	GE30346X012	Brown	11.0	0.433	226	8.88	
CSB750 and CSB754	2.3 to 3.25 bar	33.4 to 47.1	ERSA01125A0	Grey with Red Stripe	12.6	0.496	225	8.87	
	3.1 to 4 bar	45 to 58	ERSA01126A0	Grey with Orange Stripe	13.7	0.539	226	8.89	

Table 6. Directive ATEX Information

TYPE	CLASSIFICATION	ATEX ASSEMBLIES	ATEX LABELLING
CSB704, CSB704F,CSB724, CSB724, CSB724F, CSB754 version with VSX8	Non-electrical equipment	Not falling under the ATEX Directive 2014/34/EU	No
CSB704, CSB704F, CSB724, CSB724, CSB724F and CSB754 with limit switch	Non-electric equipment equipped with an electrical device falling under the scope of the ATEX Directive 2014/34/EU	Constitutes an assembly according to the ATEX Directive 2014/34/EU	C € (E (E) 2 G T

	REGULATO	R				SL	AM SHUT DEVICE		
	Typical	Spring	Туре	Token	Relief Range	Shown as a %	Required Difference Between	Over Pressure Shut-off	Factory Set
Туре	Setpoint	Range	(Maximum Operating	Relief Set	of Regulat	tor Setpoint	Token Relief and OPSO	(OPSO) Set Range	OPSO
	psig	psig	Inlet)	psig	min	max	psig	psig	psig
	7 in. w.c.	5.2 to 9.6 in. w.c.		12 in. w.c.	170	215	3.2 in. w.c.	12 to 24 in. w.c.	22 in. w.c.
0007045	11 in. w.c.	8.8 to 15.7 in. w.c.		17 in. w.c.	150	160	4 in. w.c.	16 in. w.c. to 1.6 psig	25 in. w.c.
CSB/04F	14 in. w.c.	12.8 to 20.0 in. w.c.	VSX8L	21 in. w.c.	150	160	4 in. w.c.	24 in. w.c. to 2.8 psig	1.1
	1	24 in. w.c. to 1.6 psig	(125 psi)	1.4	140	150	6.4 in. w.c.	1.4 to 4.1	2
	2	154-00	1	2.6	130	140	0.6	0.0.4-7.0	3.5
0007045	3	1.5 to 3.2		3.8	125	140	0.6	2.0 to 7.3	5
CSB/24F	5	3.1 to 5.5]	6.2	125	140	0.7	3.2 to 11.0	7
	10	7.4 to 11.3						5.8 to 13.3 ⁽¹⁾	12
	7 in. w.c.	5.2 to 9.6 in. w.c.		12 in. w.c.	170	215	3.2 in. w.c.	12 to 24 in. w.c.	22 in. w.c.
CSP704	11 in. w.c.	8.8 to 15.7 in. w.c.]	17 in. w.c.	150	160	4 in. w.c.	16 in. w.c. to 1.6 psig	25 in. w.c.
038704	14 in. w.c.	12.8 to 20.0 in. w.c.	VSX8L	21 in. w.c.	150	160	4 in. w.c.	24 in. w.c. to 2.8 psig	1.1
	1	24 in. w.c. to 1.6 psig	(232 psi)	1.4	140	150	6.4 in. w.c.	1.4 to 4.1	2
	2	1 E to 2 2]	2.6	130	140	0.6	2.0 to 7.2	3.5
000724	3	1.5 10 3.2		3.8	125	140	0.6	2.0 10 7.3	5
036724	5	3.1 to 5.5		6.2	125	140	0.7	3.2 to 11.0	7
	10	7.4 to 11.3						5.8 to 13.3 ⁽¹⁾	12
	15	10.2 to 17.3						13.1 to 39.1 ⁽¹⁾	19
CSB754	20	15.2 to 30.2	VSX8H					13 1 to 43 5	25
000704	30	13.2 10 39.2	(232 psi)			13.1 10 43.3	35		
	40	33.4 to 47.1						23.2 to 72.5 ⁽¹⁾	45
	and a second second second	- Ale - A A - Li - in the lite	fie net eveilebl		stensist				

Table 7a. North American Overpressure Shut-off OPSO Only Ranges

- Gray areas indicate that token relief is not available above 8 psig setpoint. 1. Max OPSO setpoint truncated to reflect maximum outlet pressure for spring range.

Table 7b. European Overpressure Shut-off OPSO Only Ranges

hybric ybric ybric <		REGULATO	R				SI	LAM SHUT DEVICE		
http:// <ttp: <="" th="">http://<ttp: <="" th="">http://<ttp: <="" <ttp:="" tr="">100101</ttp:></ttp:></ttp:>	Tuno	Typical	Spring	Type (Maximum	Token Relief Set	Relief Range	Shown as a %	Required Difference Between	Over Pressure Shut-off	Factory Set
Image Image <th< th=""><th>туре</th><th>Serbourt</th><th>Kalige</th><th>Operating</th><th></th><th>or Regulat</th><th></th><th>Token Relief and OFSO</th><th>Over Pressure Shut-off (OPSO) Set Range mbar 30 to 60 30 to 60 30 to 60 30 to 60 40 to 110 60 to 193 60 to 193 30 to 60 30 to 50 95 to 280 138 to 500 138 to 500 400 to 1450 900 t</th><th>0250</th></th<>	туре	Serbourt	Kalige	Operating		or Regulat		Token Relief and OFSO	Over Pressure Shut-off (OPSO) Set Range mbar 30 to 60 30 to 60 30 to 60 30 to 60 40 to 110 60 to 193 60 to 193 30 to 60 30 to 50 95 to 280 138 to 500 138 to 500 400 to 1450 900 t	0250
109 0 1417170215830 0 60321513 10 2426170215630 0 6040402113 10 2436170215630 0 6040402121 0 3021 0 3036170215430 0 6060603022 10 3041415016010040 10 10606060605042 10 707014015816660 10 1339010510510510510010510		mbar	mbar	Inlet)	mbar	min	max	mbar	mbar	mbar
15 13 to 24 20 13 to 24 21 6		10	9 to 14		17	170	215	8	30 to 60	32
20 21 30 30 30 50 42 b 70 50 50 42 b 70 50 50 42 b 70 50 50 42 b 70 50 50 42 b 70 50 50 42 b 70 50 50 50 50 50 50 50 50 50 50 50 50 50		15	13 to 24		26	170	215	6		
21 10000 30 20000 30000 30000 30000 40000 400000 400000 400000 400000 400000 400000 4000000 4000000 40000000 400000000 400000000 4000000000 4000000000000000 4000000000000000000000000000000000000		20	13 to 24		34	170	215	6	30 to 60	40
CSB704F 3027 3021 0 30VS.84 (6.6 br) 35411501605 16030 to 6046 603522 to 39451501601040 to 11070706042 to 70701401581600000 to 193907561 to 100981301402060 to 193130109 to 14770215830 to 60502013 to 247261702151030 to 60552113 to 247261702151030 to 6055351501601040 to 110705530 to 601551601040 to 1107030 to 601610101055555411501601040 to 1107030 to 601040 to 110701055515030 to 601040 to 11070105105105531501601040 to 110706042 to 701401581660 to 193130701401581601040 to 110251501601040 to 1102525160105 to 2201301404095 to 2025160105 to 22014514050138 to 500330		21	10 10 24		36	170	215	4		-10
30 2.2 to 30 4.6 b bit) 4.6 1.60 1.60 1.00 0.0 b 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	CSB704F	27	22 to 39	VSX8L	41	150	160	5	30 to 60	46
35 22 to 39 50 22 to 39 50 160 10 10 40 to 10 70 60 42 to 70 61 to 10 - </td <td></td> <td>30</td> <td></td> <td>(0.0 Dar)</td> <td>45</td> <td>150</td> <td>160</td> <td>10</td> <td></td> <td>60</td>		30		(0.0 Dar)	45	150	160	10		60
50 60 75 61 to 10 61 to 10 70 84 140 158 158 158 16 16 60 to 193 105 90 105 75 61 to 10 98 130 140 158 16 0 to 193 130 75 61 to 10 961 98 130 140 20 60 to 193 130 10 9 to 14 98 170 215 8 30 to 60 90 55 20 13 to 24 7 215 10 30 to 60 55 21 13 to 24 16 160 10 30 to 60 55 30 22 to 39 53 160 160 10 30 to 60 55 35 22 to 39 16 bit 10 45 150 160 10 40 to 10 70 60 44 to 70 140 158 166 10 40 to 103 130 10 10 10 10 10 10 10 10 10 10 10 <		35	22 to 39		53	150	160	10	40 to 110	70
$egin{tabular}{ c c c } \hline \begin{tabular}{ c c } \hline \hline \begin{tabular}{ c c } \hline \begin{tabular}{ c$		50	42 to 70		70	140	158	16	60 to 193	90
10961 9109813014020606013313011910910910910101030605020131312261721510306055552121302230306010306055553022213944150160103060606030222130451501601030606060606060606060606070701401581660105<		60	42 10 10		84	140	158	16	0010100	105
10 9 to 14 17 170 215 8 30 to 60 40 15 13 to 24 13 to 24 20 13 to 24 26 170 215 10 30 to 60 55 27 21 to 31 to 24 33 21 to 30 to 60 55 55 30 22 to 39 36 170 215 10 30 to 60 55 35 22 to 39 41 150 160 10 30 to 60 60 35 22 to 39 53 150 160 10 40 to 110 70 56 77 61 to 110 53 150 160 10 40 to 110 70 75 61 to 110 70 140 158 16 60 to 193 105 150 105 to 220 105 to 220 105 to 220 150 140 40 20 205 205 150 105 to 220 105 to 220 155 140 50 138 to 500 <t< td=""><td></td><td>75</td><td>61 to 110</td><td></td><td>98</td><td>130</td><td>140</td><td>20</td><td>60 to 193</td><td>130</td></t<>		75	61 to 110		98	130	140	20	60 to 193	130
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		10	9 to 14		17	170	215	8	30 to 60	40
20 13 to 24 34 170 215 10 30 to 60 55 27 22 to 39		15	13 to 24		26	170	215	10	00 10 00	50
21 10 0 21 30 0 22 to 39 36 170 215 10 0 0 0 0 0 0 55 30 22 to 39 22 to 39 41 150 160 10 30 to 60 65 35 22 to 39 41 150 160 10 30 to 60 60 50 42 to 70 55 150 160 10 40 to 110 70 60 42 to 70 56 61 to 110 75 61 to 110 70 140 158 16 90 105 90 105 </td <td></td> <td>20</td> <td>13 to 24</td> <td></td> <td>34</td> <td>170</td> <td>215</td> <td>10</td> <td>30 to 60</td> <td>55</td>		20	13 to 24		34	170	215	10	30 to 60	55
$\begin{array}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		21	101024		36	170	215	10	30 10 00	55
Self 4 30 24.0.37 (16 bar) 45 150 160 10 60.000 60 60 35 22 to 39 53 50 160 100 10 40 to 110 70 60 42 to 70 75 61 to 110 70 140 158 16 60 to 193 105 75 61 to 110 98 130 140 20 60 to 193 130 120 105 to 220 156 130 140 40 95 to 280 205 150 105 to 220 156 130 140 40 95 to 280 205 150 105 to 220 105 to 220 156 130 140 40 95 to 280 265 150 105 to 220 105 to 220 135 140 50 138 to 500 330 160 105 to 220 125 140 50 138 to 500 450 200 105 to 270 100 for 700 1050	CSB704	27	22 to 39	VSX8L	41	150	160	10	30 to 60	55
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		30	22 10 33	(16 bar)	45	150	160	10	30 10 00	60
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60 42.070 84 140 158 16 $0.00000000000000000000000000000000000$		50	42 to 70		70	140	158	16	60 to 193	90
		60	42 10 7 0		84	140	158	16	0010 100	105
100 61 to 110 130 140 20 60 to 193 170 120 105 to 220 105 to 220 105 to 220 156 130 140 40 95 to 280 205 160 105 to 220 105 to 220 195 130 140 40 95 to 280 205 200 105 to 220 105 to 220 195 130 140 40 95 to 280 265 200 105 to 220 195 130 140 40 95 to 280 265 300 210 to 380 166 135 140 50 138 to 500 330 500 320 to 570 625 125 140 60 221 to 760 700 600 320 to 570 625 125 140 60 221 to 760 700 600 570 to 780 VSX8L 625 125 140 60 221 to 760 700 CSB724 300 270 to 325 VSX8L (85 bar)		75	61 to 110		98	130	140	20	60 to 193	130
$ \begin{array}{c c c c c c c c c } \hline 120 \\ \hline 150 \\ \hline 150$		100	61 to 110		130	130	140	20	60 to 193	170
150 100 10 2.00 195 130 140 40 50 6 0.0 2.00 250 160 105 to 220 105 to 220 200 105 to 220 200 105 to 220 265 300 210 to 380 250 125 140 50 138 to 500 330 500 320 to 570 375 125 140 50 138 to 500 350 600 510 to 780 625 125 140 600 221 to 760 700 600 510 to 780 625 125 140 600 221 to 760 700 500 320 to 570 625 125 140 600 221 to 760 700 600 510 to 780 VSX8L (8.6 bar) 625 125 140 600 221 to 760 700 CSB724F 300 270 to 325 VSX8L (8.6 bar) 625 125 140 600 221 to 760 130 1200 1000 700 to 1190 1350 130		120	105 to 220		156	130	140	40	95 to 280	205
160 105 to 220 VSXBL (16 bar) 208 130 140 40 95 to 280 265 200 105 to 220 105 to 220 105 to 220 105 to 220 330 330 300 210 to 380 320 to 570 375 125 140 500 138 to 500 450 500 320 to 570 625 125 140 600 221 to 760 700 600 510 to 780 625 125 140 600 221 to 760 700 750 510 to 780 750 750 750 700 4400 to 915 ⁽¹⁾ 840 CSB724 300 270 to 325 VSX8L (8 b bar) 56 bar 450 450 450 1200 700 to 1190 1200 700 to 1450 1320 450 1320 1300 1320 CSB754 1500 1050 to 2700 VSX8L 1500 1600 1300 1300		150	103 10 220		195	130	140	40	33 10 200	250
CSB724 200 105 to 220 VSAL (16 bar) 250 125 140 50 138 to 500 330 300 210 to 380 375 125 140 50 138 to 500 450 500 320 to 570 625 125 140 60 221 to 760 700 600 510 to 780 625 125 140 60 221 to 760 700 750 510 to 780 625 125 140 60 221 to 760 700 CSB724F 300 270 to 325 VSX8L (8.6 bar) 65 125 140 60 221 to 760 700 1200 700 to 1190 1050 700 400 to 1100 ⁽¹⁾ 1050 450 CSB754 1000 700 to 1190 VSX8L 65 1380 to 700 1320 1200 1050 to 2700 VSX8L VSX8L 1500 1600 1900		160	105 to 220	Veval	208	130	140	40	95 to 280	265
300 210 to 380 (10 diff) 375 125 140 500 138 to 500 450 500 320 to 570 600 320 to 570 625 125 140 600 221 to 760 700 600 750 510 to 780 625 125 140 600 221 to 760 700 750 510 to 780 625 125 140 600 221 to 760 700 CSB724 300 270 to 325 VSX81 VSX81 VSX81 4400 to 1100 ⁽¹⁾ 1050 1200 700 to 1190 VSX81 VSX81 VSX81 1600 1320 CSB754 1500 1050 to 2700 VSX81 VSX81 VSX81 1600 1900	CSB724	200	105 to 220	(16 bar)	250	125	140	50	138 to 500	330
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		300	210 to 380	(10 20.)	375	125	140	50	138 to 500	450
600 510 to 780 400 to 915 ⁽¹⁾ 840 750 750 100 to 700 1050 CSB724F 300 270 to 325 VSX8L (8.6 bar) 138 to 500 450 1000 700 to 1190 400 to 1450 1320 1200 1050 to 2700 VSX8H 1600 1500 1050 to 2700 VSX8H 1600		500	320 to 570		625	125	140	60	221 to 760	700
1000 270 to 325 VSX8L (8.6 bar) VSX8L (8.6 bar) 400 to 1100 ⁽¹⁾ 1050 1000 700 to 1190 400 to 1450 1320 1200 1050 to 2700 VSX8H 1600 1500 1050 to 2700 VSX8H 1600		600	510 to 780						400 to 915 ⁽¹⁾	840
CSB724F 300 270 to 325 VSX8L (8.6 bar) 138 to 500 450 1000 700 to 1190 400 to 1450 1320 1200 1050 to 2700 VSX8H 1600 1500 VSX8H VSX8H 1900 to 3000		750	510 10 7 80						400 to 1100 ⁽¹⁾	1050
1000 700 to 1190 400 to 1450 1320 1200 1050 to 2700 VSX8H 1600 1900 VSX8H VSX8H 1900 1900 1900	CSB724F	300	270 to 325	VSX8L (8.6 bar)					138 to 500	450
1200 1050 to 2700 VSX8H 1600 CSB754 1500 VSX8H 1900		1000	700 to 1190						400 to 1450	1320
CSB754 1500 VSX8H 900 to 3000 1900		1200	1050 to 2700						000 to 2000	1600
	CODTEA	1500	1050 10 2700	VSX8H					900 10 2000	1900
2000 1050 to 2700 (16 bar) 1600 to 4000 ⁽¹⁾ 2400	038/34	2000	1050 to 2700	(16 bar)					1600 to 4000 ⁽¹⁾	2400
3000 2300 to 3250 3400		3000	2300 to 3250						1000 to 5000(1)	3400
4000 3100 to 4000 4000 4400		4000	3100 to 4000							4400

- Gray areas indicate that token relief is not available above 500 mbar setpoint. 1. Max OPSO setpoint truncated to reflect maximum outlet pressure for spring range.

	REGU	LATOR					SLAM SI	IUT DEVICE				
			Turne		Delief Der	chour	Required Difference	UPSO	OPSO		Factory Set	
Туре	Typical Setpoint	Spring Range	(Maximum Operating Inlet)	Token Relief Set	as a % of Setp	Regulator point	Between Token Relief and OPSO	Set Range	Shut-off (OPSO) Set Range Over UPSO Setpoint	UPSO	Adjusted OPSO Range	OPSO
	psig	psig		psig	min	max	psig	psig	psig	psig	psig	psig
	7 in. w.c.	5.2 to 9.6 in. w.c.		12 in. w.c.	170	215	3.2 in. w.c.	2 to 12 in wa	16 to 20 in we	3 in. w.c.	19 in. w.c. to 1.2 psig	22 in. w.c.
CSB704F	11 in. w.c.	8.8 to 15.7 in. w.c.		17 in. w.c.	150	160	4 in. w.c.	3 to 12 in. w.c.	16 to 29 in. w.c.	6 in. w.c.	22 in. w.c. to 1.3 psig	25 in. w.c.
	14 in. w.c.	12.8 to 20.0 in. w.c.	VSX8L	21 in. wc	150	160	4 in. w.c.	4 in. w.c. to 1.1 psig	20 in. w.c. to 1.8 psig	9 in. w.c.	1 to 2.1 psig	1.1
	1	24.0 in. w.c. to 1.6 psig	(125 psi)	1.4	140	150	6.4 in. w.c.	10 in. w.c. to	124022	14 in. w.c.	1.7 to 3.7	2
	2	1.5 to 3.2		2.6	130	140	0.6	2.3 psig	1.2 10 3.2	1	2.2 to 4.2	3.5
CSB724	3	1.5 10 3.2	-	3.8	125	140	0.6	1.5 to 7.3	2.6 to 5.6	2	4.6 to 7.6	5
	5	3.1 to 5.5		6.2	125	140	0.7	1.5 to 7.3	3.5 to 8.2	3	5.6 to 8.6	7
	10	7.4 to 11.3						1.5 to 7.3	3.5 to 8.2	5	8.5 to 13.2	12
	7 in. w.c.	5.2 to 9.6 in. w.c.		12 in. w.c.	170	215	3.2 in. w.c.	3 to 12 in w.c	18 to 30 in w.c.	3 in. w.c.	21 in. w.c. to 1.2 psig	22 in. w.c.
CSB704	11 in. w.c.	8.8 to 15.7 in. w.c.		17 in. w.c.	150	160	4 in. w.c.	5 to 12 in. w.c.	10 to 30 m. w.c.	6 in. w.c.	24 in. w.c. to 1.3 psig	25 in. w.c.
	14 in. w.c.	12.8 to 20.0 in. w.c.	VSX8L	21 in. w.c.	150	160	4 in. w.c.	4 in. w.c. to 1.1 psig	25 in. w.c. to 1.9 psig	9 in. w.c.	1.2 to 2.2	1.1
	1	24.0 in. w.c. to 1.6 psig	(232 psi)	1.4	140	150	6.4 in. w.c.	10 in. w.c. to	1 2 to 3 2	14 in. w.c.	1.7 to 3.7	2
	2	1.5 to 3.2		2.6	130	140	0.6	2.3 psig	1.2 10 3.2	1	2.2 to 4.2	3.5
CSB724	3	1.5 10 5.2		3.8	125	140	0.6		2.6 to 5.6	2	4.6 to 7.6	5
000724	5	3.1 to 5.5		6.2	125	140	0.7	1.5 to 7.3	2.0 10 3.0	3	5.6 to 8.6	7
	10	7.4 to 11.3							3.5 to 8.2	5	8.5 to 13.2	12
	15	10.2 to 17.3						1.5 to 10.9	6.7 to 13.5	7	13.7 to 20.5	19
CSB754	20	15.2 to 39.2							15.2 to 22.8	10	25.2 to 32.8	25
000104	30	10.2 10 00.2	(232 psi)					7.3 to 29.0	18 1 to 33 4	15	33.1 to 48.4	35
	40	33.4 to 55.1	(202 (00))						10.110 00.4	20	38.1 to 53.4	45
– G	ray areas in	dicate that token relief is	not available at	oove 8 psig set	tpoint.							

Table 7c. North American Overpressure and Underpressure Shut-off UPSO/OPSO Ranges

Table 7d. European Overpressure and Underpressure Shut-off UPSO/OPSO Ranges

F	REGULATOR Typical S						SLAM SH	UT DEVICE				
			1				Required	UPSO	OPSO		Factory Set	
Туре	Typical Setpoint	Spring Range	Type (Maximum Operating Inlet)	Token Relief Set	Relief Rar as a % of Setp	ige Shown Regulator point	Difference Between Token Relief and OPSO	Set Range	Shut-off (OPSO) Set Range Over UPSO Setpoint	UPSO	Adjusted OPSO Range	OPSO
	mbar	mbar		mbar	min	max	mbar	mbar	mbar	mbar	mbar	mbar
	15	13 to 24		26	170	215	6	7 to 11	30 to 44	8	38 to 52	40
	20	13 to 24		34	170	215	6	7 to 11	30 to 44	10	40 to 54	40
	21	13 to 24		36	170	215	4	7 to 11	30 to 44	10	40 to 54	40
	27	22 to 39		41	150	160	5	7 to 15	32 to 44	14	46 to 58	46
CSB704F	30	22 to 39	VSX8L (8.6 bar)	45	150	160	10	7 to 30	40 to 72	15	55 to 87	60
	35	22 to 39	1	53	150	160	10	7 to 30	40 to 72	18	58 to 90	70
	50	40 to 70	1	70	140	158	16	10 to 75	48 to 74	25	73 to 99	90
	60	42 10 70		84	140	158	16	101075	48 to 74	30	78 to 104	100
	75	61 to 110		98	130	140	20	25 to 160	83 to 221	38	121 to 259	130
	15	13 to 24		26	170	215	6	7 to 30	40 to 55	8	48 to 63	50
	20	13 to 24		34	170	215	6	7 to 30	40 to 55	10	50 to 65	55
	21	13 to 24		36	170	215	4	7 to 30	40 to 55	10	50 to 65	55
	27			41	150	160	5	7 to 30	40 to 55	14	54 to 69	55
CSB704	30	22 to 39		45	150	160	10	7 to 30	45 to 76	15	60 to 91	60
	35			53	150	160	10	7 to 30	45 to 76	18	63 to 94	70
	50	42 to 70		70	140	158	16	10 to 75	50 to 80	25	75 to 105	90
	60	42 10 7 0		84	140	158	16	101075	50 to 80	30	80 to 110	100
	75	61 to 110	VSX8L (16 bar)	98	130	140	20	_		38	121 to 259	130
	100	0110110		130	130	140	20	25 to 160	83 to 221	50	133 to 271	170
	120			156	130	140	40	2510100	00 10 22 1	60	143 to 281	205
	150	105 to 220		195	130	140	40			75	158 to 296	250
	160	100 10 220		208	130	140	40	25 to 160	83 to 221	80	163 to 301	265
CSB724	200			250	125	140	50		114 to 261	100	214 to 361	330
		210 to 380		375	125	140	50	100 to 500	179 to 386	150	329 to 536	450
	500	320 to 570		625	125	140	60		241 to 565	250	491 to 815	700
	600	510 to 780						100 to 500	241 to 565	300	541 to 865	840
	750	01010100						100 to 750	460 to 932	375	835 to 1120 ⁽¹⁾	1050
CSB724F	300	270 to 325	VSX8L (8.6 bar)					100 to 500	179 to 386	200	379 to 586	400
CSB754 GrDF	1 bar	0.7 to 1.19 bar	VSV9L (16 bor)					100 to 500	460 to 932	750	1210 to 1682	1210
	1 bar	0.7 to 1.19 bar						100 to 500	460 to 932	500	960 to 1432	1320
	1.2 bar	4.05.4-]					1050 to 1570	600	1650 to 2170	1650
CSB754	1.5 bar	1.05 to							1000 10 10/0	750	1800 to 2320	1900
CSB/54	2 bar	2.7 bar						500 to 2000		1000	2250 to 3300	2400
	3 bar	2.3 to 3.25 bar	VSX8H (16 bar)						1250 to 2300	1500	2750 to 3800	3400
	4 bar	3.1 to 4 bar]			500 to 2800	2100 to 3750	2000	4100 to 5000(1)	4400		
Gray a	areas indicate	e that token reli	ef is not available	above 500 m	bar setpoint.							

1. Max OPSO setpoint truncated to reflect maximum outlet pressure for spring range.

Example: If a non-standard setpoint is needed, see the following example for the proper use of Tables 7a, 7b, 7c and 7d. In this example, the non-standard regulator setpoint is 140 mbar / 2.0 psig. The minimum factory token relief set pressure is 130% of the non-standard setpoint. The resulting token relief set pressure is 183 mbar / 2.6 psig. The minimum factory OPSO and UPSO set pressures are 165% and 50% of the non-standard setpoint, respectively. The resulting minimum settings are: OPSO = 231 mbar / 3.4 psig and UPSO = 70 mbar / 1.0 psig.

Installation

Only qualified personnel shall install or service a regulator. Regulators should be installed, operated and maintained in accordance with international and applicable codes and regulations and Emerson instructions.

If the regulator vents fluid or a leak develops in the system, it indicates that service is required. Failure to take the regulator out of service immediately may create a hazardous condition.

Personal injury, equipment damage or leakage due to escaping gas or bursting of pressure containing parts may result if this regulator is overpressured or is installed where service conditions could exceed the limits given in the Specifications section or where conditions exceed any ratings of the adjacent piping or piping connections.

To avoid such injury or damage, provide pressure-relieving or pressure-limiting devices (as required by the appropriate code, regulation or standard) to prevent service conditions from exceeding limits.

Additionally, physical damage to the regulator could result in personal injury and property damage due to escaping fluid. To avoid such injury and damage, install the regulator in a safe location.

Clean out all pipelines before installation of the regulator and check to be sure the regulator has not been damaged or has collected foreign material during shipping. For NPT bodies, apply pipe compound to the external pipe threads. For flanged bodies, use suitable line gaskets and approved piping and bolting practices. Install the regulator in any position desired, unless otherwise specified, but be sure flow through the body is in the direction indicated by the arrow on the body.

Note

It is important that the regulator be installed so that the vent hole in the spring case is unobstructed at all times. For outdoor installations, the regulator should be located away from vehicular traffic and positioned so that water, ice and other foreign materials cannot enter the spring case through the vent. Avoid placing the regulator beneath eaves or downspouts and be sure it is above the probable snow level.

Downstream Control Line Installation

Failure to install a downstream control line could result in a hazardous condition. Install downstream control line(s) to the slam-shut device when construction uses external pressure registration. The regulator and slam-shut device will not control pressure or shut off if a downstream control line is not installed on those constructions where external pressure registration is required.

CSB700 Series regulators with an "ET" or "EN" in the type number use external pressure registration. To communicate the downstream pressure to the regulator, connect a downstream control line tubing to the 3/4 NPT control line tapping in the lower diaphragm casing and connect the other end of the tubing downstream of the regulator outlet with a minimum distance of 6 times the outlet pipe diameter.

For all types with external control lines, use tubing with an inner diameter of 16 mm / 0.63 in. or larger.

Downstream Control Line Installation with Slam-Shut Device

Refer to Figure 1. When installing the Types CSB704ET, CSB704FET, CSB704FEN CSB704EN, CSB724ET, CSB724EN, CSB724FEN and CSB754EN regulators, connect downstream control line tubing to the lower casing of the regulator and run the tubing downstream of the regulator outlet with a minimum distance of 6 times the outlet pipe diameter. Connect a second, separate downstream control line tubing to the lower casing of the slam-shut and run the tubing downstream of the regulator outlet a minimum distance of 6 times the outlet pipe diameter.

For all types with external control lines, use tubing with an inner diameter of 16 mm / 0.63 in. or larger for the primary regulator and 6.4 mm / 0.25 in. or larger for the slam-shut.

Installation with External Overpressure Protection

If the regulator is used in conjunction with a Type 289H relief valve, it should be installed as shown in Figure 6. The outside end of the vent line should be protected with a rainproof assembly. The Type 289H is typically set 25 mbar / 10 in. w.c. higher than the outlet pressure setting of the regulator, up to 75 mbar / 30 in. w.c. outlet pressure. For pressure greater than this, set the Type 289H 0.05 bar / 0.73 psi higher than the outlet pressure setting of the regulator. Refer to the 289 Series Instruction Manual (D100280X012) for more information.



Figure 1. Type CSB704 Downstream Control Line Installation

Vent Line Installation

CSB700 Series regulators have a 1 NPT screened vent opening in the spring case. If necessary to vent escaping gas away from the regulator, install a remote vent line in the spring case tapping. Vent piping should be as short and direct as possible with a minimum number of bends and elbows. The remote vent line should have the largest practical diameter. Vent piping on regulators with token relief must be large enough to vent all relief valve discharge to atmosphere without excessive backpressure and resulting excessive pressure in the regulator.

For types with optional token relief, this low capacity relief is located in the spring case of the primary regulator. If necessary to vent escaping gas away, install a remote vent line in the spring case tapping of the primary regulator as described above. Periodically check all vent openings to be sure that they are not plugged or obstructed.

For Types CSB700/CSB700F/CSB720/CSB720F, outlet pressure higher than 0.34 bar / 5.0 psig above the setpoint may damage internal metallic parts. For Type CSB750, outlet pressure higher than 1.5 bar / 21.8 psig above the setpoint may damage internal metallic parts.

Overpressure Protection

The recommended pressure limitations are stamped on the regulator nameplate. Some type of overpressure protection is needed if the actual inlet pressure exceeds the maximum operating outlet pressure rating. Overpressure protection should also be provided if the regulator inlet pressure is greater than the safe working pressure of the downstream equipment. Regulator operation below the maximum pressure limitations does not preclude the possibility of damage from external sources or debris in the line. The regulator should be inspected for damage after any overpressure condition.

Startup

The regulator is factory set at approximately the midpoint of the spring range or the pressure requested, so an initial adjustment may be required to give the desired results. With proper installation completed and relief valves properly adjusted, slowly open the upstream and downstream shutoff valves.

Adjustment

Note

For types that include the slam-shut module, refer to the instruction manual for Type VSX8 slam-shut for adjustment and maintenance of the slam-shut.

To change the outlet pressure, loosen the hex nut and turn the adjusting screw clockwise to increase outlet pressure or counterclockwise to decrease it. Monitor the outlet pressure with a test gauge during the adjustment. Tighten the hex nut to maintain the desired setting.

Taking Out of Service (Shutdown)

To avoid personal injury resulting from sudden release of pressure, isolate the regulator from all pressure before attempting disassembly.

Parts List

Key Description

- 1 Spring Case, Aluminum
- 4 Stabilizer Guide, Stainless steel
- 5 Stabilizer, Lustran[®] 648
- 6 Spring, Stainless steel
- 7 Retainer Ring, Zinc-plated Carbon steel
- 8 Stabilizer Screw, Zinc-plated steel (3 required)
- 9 Lower Casing, Aluminum
- 10 Lever, BP steel
- 11 Stem, BP, Aluminum
- 13 Lever Pin, Carbon steel
- 14 Lever Screw, Plated-Carbon steel (2 required)
- 15 Bolt, Steel (8 required)
- 16 Nut, Steel (6 required for low and medium pressure, 8 required for high pressure)
- 17 Union Ring, Aluminum
- 18 Snap Ring, Zinc-plated steel
- 19* O-ring, Nitrile (NBR)
- 20 Stem Guide, Aluminum
- 21* O-ring, Nitrile (NBR)
- 22 Pipe plug (not shown), 3/4 NPT, Carbon steel
- 25 Orifice, Aluminum
- 26 Orifice, Aluminum (with slam-shut module)
- 27* O-ring, Nitrile (NBR) (with slam-shut module)
- 36* Balanced Port Assembly
- 36A Stem, Stainless steel
- 36B Spring Retainer, Zinc-plated steel
- 36C Spring, Stainless steel
- 36D Screw, Steel
- 36E Diaphragm, Nitrile (NBR) and Polyester Fabric
- 36F Housing
- 36G Cap, Brass
- 36H Diaphragm Retainer, Zinc-plated steel
- 36J Disk, Nitrile (NBR)
- 36K Disk Retainer
- 36L* O-ring, Nitrile (NBR)
- 36M* O-ring, Nitrile (NBR)
- 36N* O-ring, Nitrile (NBR)
- 36P* O-ring, Nitrile (NBR)
- 36Q* O-ring, Nitrile (NBR)
- 36R Screw, Zinc-plated steel (4 required)
- 36S Retainer Plate
- 36V Stabilizer
- 36W Retaining Ring
- 36X Connector
- 36Z Stabilizer Spring
- 38 Spring, Music Wire

*Recommended spare part.

8

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- 40 Relief Valve Seat Nut, Zinc-plated steel
- 41 Token Relief Spring, Music Wire
- 42 Spring Retainer, Zinc-plated steel (with token relief)
- 43 Spring Seat, Zinc-plated steel
- 44 Stem. Zinc-plated steel (with token relief)

Key Description

- 45 Screw, Zinc-plated steel (without token relief)
- 46 Token Relief Nut, Steel
- 50 Pusher Post, Aluminum
- 51 Relief Valve Seat, Aluminum
- 52* Pusher Post O-ring, Nitrile (NBR)
- 53 Pin, Stainless steel
- 54 Roller Pin, Brass
- 55* Diaphragm Assembly
- 60* Closing Cap, Aluminum
- 61 Bonnet, Zinc-plated steel
- 62* O-ring, Nitrile (NBR)
- 63 Upper Spring Seat, Zinc-plated Carbon steel
- 64 Adjusting Bolt, Steel
- 65* Adjusting Screw, Aluminum
- 66 Ball, Stainless Steel
- 67 Hex Nut, Stainless steel
- 68 Retainer Ring, Steel
- 70 Body
- 71 Cap Screw, Steel (4 required)
- 72 Pipe Plug, 1/4 NPT
- 74* Blanking Plug, Aluminum (without slam-shut module)
- 75* O-ring, Nitrile (NBR)
- 76 Snap Ring Flange (2 required)
- 77* O-ring, Nitrile (NBR)
- 80 Screw, Steel (4 required)
- 82* O-ring, Nitrile (NBR)
- 90 Nameplate
- 91 Warning Label
- 93 Label
- 94 Overlay Label
- 95 Grommet, Nitrile (NBR)
- 96 Rubber Washer, Nitrile (NBR)
- 100 Lockwire
- 101 Hub, Zinc-Plated Steel (2 required)
- 102 Sip-On Flange (2 required)
- 103 O-ring, Nitrile (NBR) (2 required)
- 104 Spacer
- 105 Restriction Plate, Stainless steel
- 106 Diaphragm Stem O-ring, Nitrile (NBR)
- 111 Damper Assembly
- 111A Connector
- 111B Retainer Ring
- 111C Spring, Stainless steel

Sealing Washer

Thrust Washer

- 111D Spring Retainer, Zinc-plated steel
- 111E Plastics Ball

Stem Cap

Elbow

112

113*

114

115

111F Knob, Acrylonitrile Butadiene Styrene (ABS)



Figure 2. CSB700 Series Regulator Vent Line Installation



Figure 3. CSB700 Series Regulator Installed with the Vent Pointed Downward and with a Type 289H Relief Valve for High Capacity Relief



GE2791_DM

APPLY LUBRICANT⁽¹⁾

L1 = ANTI-SEIZE LUBRICANT L2 = EXTREME LOW-TEMPERATURE BEARING GREASE

1. Lubricants must be selected such that they meet the temperature requirements.



GE2791_DM

APPLY LUBRICANT(1)

L1 = ANTI-SEIZE LUBRICANT L2 = EXTREME LOW-TEMPERATURE BEARING GREASE

1. Lubricants must be selected such that they meet the temperature requirements.



ORIFICE AND SLAM-SHUT ASSEMBLY

GE32791_B

L2 = EXTREME LOW-TEMPERATURE BEARING GREASE

1. Lubricants must be selected such that they meet the temperature requirements.

Figure 6. CSB700 Series Slam-Shut Module

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For further information on the current PED revision see Bulletin: <u>D103053X012</u> or scan the QR code.

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