



## DATASHEET OF PRESSURE REGULATING VALVE (PRV)

Sr. No.	Technical Description	Specifications
		<b>GLOBE TYPE</b>
<b>General</b>		
1	Tag No.	Vendor to Furnish
2	Valve Inlet Size	Vendor to Furnish
3	Valve Outlet Size	Vendor to Furnish
4	Service	Downstream Pressure Reduction
5	Governing Standard	EN 334
6	Type of SSV	Globe Type, Pilot Operated
7	Operation	Regulating the Downstream Pressure
<b>Service (To be selected from below as per the process parameters mentioned by the user)</b>		
8	Fluid	Natural Gas
9	Flow Capacity	As per the user requirement)
10	Design Pressure & Class	150#- 19 Barg, 300# - 49 Barg, 600# - 98 Barg
11	Design Temperature	150# & 300#: 0 to 65 °C 600# : -10 to 65 °C
12	Inlet Operating Pressure	10 to 40 Barg ( or as per user requirement/process parameter)
13	Outlet Operating Pressure	1.5 to 6 Barg ( or as per user requirement/ process parameter)
14	Operating Temperature	150# & 300#: 0 to 50 °C 600# : -10 to 50 °C
15	Accuracy (%)	2.5 %
16	Lock up Class (SG)	5 %
<b>Material of Construction (To be selected from below as per the process parameters mentioned by the user)</b>		
17	Body Material	1. For 150# & 300#- ASTM A 216 Gr. WCB (Charpy test at 0 deg.C , Investment Casting) 2. 600# - ASTM A 352 Gr. LCB / LCC,ASTM A 350 Gr. LF2
18	Valve Seat Material	ASTM A 479 Gr. SS 316
19	Diaphragm Material	Fabric NBR+PVC/Nitrile Rubber
20	Trim, Plug Material	ASTM A 479 Gr. SS 316
21	Other Wetted Parts	ASTM A 479 Gr. SS 316
22	Impulse Connection & Material	1/2 " - SS 316
23	End Connection	Flange type, 125 AARH( As per ASME B16.5)
<b>Requirements</b>		
24	Failure Position	Fail to Open (Regulator)
25	Failure Indicator	NA
26	Limit Switch	NA
27	Pressure Indicator	NA
28	Spring Range	1.5 to 6 Barg (or as per user requirement/process parameter)



29	Impulse Tubing/Fittings	Required
30	Radiography	Required
31	Charpy V-Notch Test	Required
32	Face to Face Dimensions	Vendor to Furnish
33	Leakage Class	VI
34	Hydrostatic Test	1.5 * Design Pressure
35	Pneumatic Test	1.1 * Design Pressure
<b>Valve Calculation</b>		
36	Selected Cg	Within 10 - 80% of rated Cv for the calculation of min. Inlet & max. outlet flow OR as per manufacturer standard
37	Sound Level	Sound pressure levels shall be limited to the values prescribed by Environmental Authorities but in no case it shall exceed 110 dbA as per PNGRB T4S standard for CGD and shall comply the requirement as per EN334.
38	Limiting Velocity	Max 30 m/s or OEM recommendations
39	Differential Pressure	Maximum 0.5 barg
<b>Note:</b>		
1. Set point of the regulator shall be adjustable. Vendor shall furnish the adjustable range of the pilot.		
2. Accuracy of the pressure regulation shall be better than or equal to 2.5% of the set pressure for the entire inlet pressure and flow range		
3. Regulator shall be sized to deliver the maximum flow at minimum pressure condition and the minimum flow at the maximum pressure reduction as per given regulator sizing sheet by GGL.		
4. The inlet pressure variation is possible for the entire flow rate and the PCV to be sized accordingly.		
5. Vendor shall provide and include the noise treatment with silencer / expander.		
6. 100% radiography applicable on casting and Ultrasonic examination of forged materials for pressure containing parts.		

DATASHEET OF SLAM SHUT OFF VALVE (SSV)		
Sr. No.	Technical Description	Specifications
<b>General</b>		
1	Tag No.	Vendor to Furnish
2	Valve Inlet Size	Vendor to Furnish
3	Valve Outlet Size	Vendor to Furnish
4	Service	Shut off at Over Pressure- Metering Skid Safety
5	Governing Standard	EN 14382
6	Type of SSV	Globe Type, Pilot Operated
7	Operation	Shut off at Over pressure
<b>Service (To be selected from below as per the process parameters mentioned by the user)</b>		
8	Fluid	Natural Gas
9	Flow Capacity	As per user requirement
10	Design Pressure & Class	150#- 19 Barg, 300# - 49 Barg, 600# - 98 Barg
11	Design Temperature	150# /300# : 0 to 65 °C 600# : -10 to 65 °C
12	Inlet Operating Pressure	10 to 40 Barg ( or as per user requirement)
13	Outlet Operating Pressure	1.5 to 6 Barg ( or as per user requirement)
14	Operating Temperature	150# & 300#: 0 to 50 °C 600# : -10 to 50 °C
15	Accuracy (%)	2.5 %
<b>Material of Construction (To be selected from below as per the process parameters mentioned by the user)</b>		
16	Body Material	1. For 150# /300#- ASTM A 216 Gr. WCB ( Charpy test at 0 deg.C , Investment Casting) 2. For 600# - ASTM A 352 Gr. LCB / LCC, ASTM A 350 Gr. LF2
17	Valve Seat Material	ASTM A 479 Gr. SS 316
18	Diaphragm Material	Fabric NBR+PVC/Nitrile Rubber
19	Trim, Plug Material	ASTM A 479 Gr. SS 316
20	Other Wetted Parts	ASTM A 479 Gr. SS 316
21	Impulse Connection & Material	1/2 " - SS 316
22	End Connection	Flange type, 125 AARH, 300#
<b>Requirements</b>		
23	Failure Position	Fail to Close
24	Failure position Indicator	Required
25	Limit Switch	Required Potential Free Switch (Intrinsically Safe & Weather proof) with provision of digital output for connectivity of Data logger/SCADA/RTU.
26	Pressure Indicator	Required
27	Spring Range	1.5 to 8 Barg (or as per user requirement)
28	Impulse Tubing/Fittings	Required
29	Radiography	Required
30	Charpy V-Notch Test	Required
31	Face to Face Dimensions	Vendor to Furnish
32	Leakage Class	VI

33	Hydrostatic Test	1.5 * Design Pressure
34	Pneumatic Test	1.1 * Design Pressure
<b>Valve Calculation</b>		
36	Sound Level	Sound pressure levels shall be limited to the values prescribed by Environmental Authorities but in no case it shall exceed 110 dbA as per PNGRB T4S standard for CGD and shall comply the requirement as per EN334.
37	Limiting Velocity	Max. 30 m/s or OEM recommendations
Note:		
1. Set point of the SSV shall be adjustable. Vendor shall furnish the adjustable range of the pilot.		
2. Accuracy of the SSV shall be better than or equal to 2.5% of the set pressure for the entire inlet pressure and flow range		
3. SSV shall be of fail to close type.		
4. Valve shall be sized to deliver the maximum flow at minimum pressure condition and the minimum flow at the maximum pressure reduction.		
5. The inlet pressure variation is possible for the entire flow rate and the PCV to be sized accordingly.		
6. Vendor shall provide and include the noise treatment with silencer / expander.		
7. 100% radiography applicable on casting and Ultrasonic examination of forged materials for pressure containing parts.		
8. Hazardous certification with Model No. shall be furnished by vendor for limit switch.		

**DATASHEET OF FILTER**

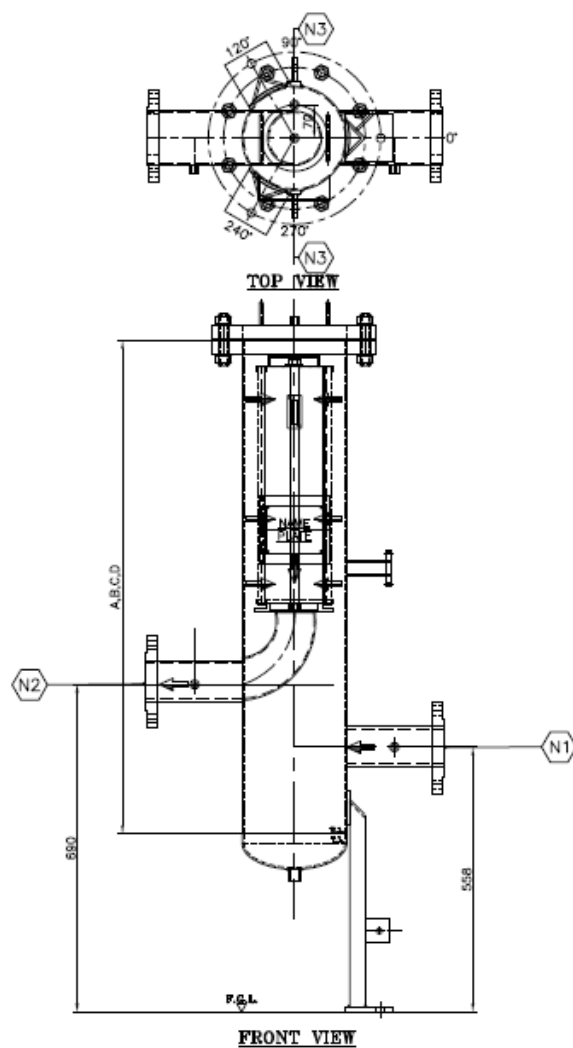
DATASHEET OF FILTER			
Sr. No.	Technical Description	Specifications	
General			
1	Tag No.	Vendor to Furnish	
2	Main line size	2" & larger	
3	Quantity	As per P&ID	
4	Governing Standard	ASME SEC VIII, DIVISION 1, ASME SEC V, ASME SEC IX	
Service Condition			
5	Design Pressure & Class	150#- 19 Barg, 300# - 49 Barg, 600# - 98 Barg	
6	Design Temperature	150# /300# : 0 to 65 °C 600# : -10 to 65 °C	
7	Operating Pressure	150# : 3 to 16 Barg 300# : 10 to 40 Barg 600# : 10 to 90 Barg ( or as per user requirement/process parameter)	
8	Operating Temperature	150# /300# : 0 to 50 °C 600# : -10 to 50 °C	
9	Filter Type	Vertical Type	
10	Operating S.G./Mol. Wt.	Typically 0.6 / 17.38 (g/mol)	
11	Specific heat ratio (Cp/Cv) / Compressibility Factor	1.27 / 0.98	
12	Flash % /Viscosity cP (operating)	- / 0.0135	
13	Flow gas - Min. / Max.(SCMH)	Max : 250/500/750/1000/1500/2000/5000 Filter shall be capable for max. flow of 1.2 times the design flow (or as per user requirement). Min : VENDOR TO FURNISH	
Filter Construction Design			
14	Corrosion allowance (for CS parts)	1.5 mm	
15	Filtration Capacity	≤ 5 micron	
16	Filtration efficiency	99.9% filtration	
17	Pr. Drop - clean (max)	0.1 Max	
18	Pr. Drop - dirty (max)	0.5 Max	
19	Dust content	0.1 mg/dm3	
20	Filter element MOC	Polyester/Poly propylene/ Pleated synthetic	
21	Filter element – make & Model	VENDOR TO FURNISH	
22	OD x ID x Length	Flow SCMH	Element Size
		250	Ø 95 MM Od x Ø 56 MM ID x 500 MM long
		500	Ø 95 MM Od x Ø 56 MM ID x 500 MM long
		750	Ø 114 MM Od x Ø 80 MM ID x 600 MM long
		1000	Ø 114 MM Od x Ø 80 MM ID x 600 MM long
		1500	Ø 160 MM Od x Ø 120 MM ID x 500 MM long
		2000	Ø 160 MM Od x Ø 120 MM ID x 500 MM long
5000	Ø 160 MM Od x Ø 120 MM ID x 800 MM long		
23	Nos. of cartridges	as per OEM recommendation and design	
24	Element bursting pressure	2 barg	
25	Flange Type	WNRF for size 2” NB and larger. SORF for size lower than 2” NB	



26	Fixing details	As per approved drawing
27	PSV size	1" x 2" (Minimum) and as per the Vendor sizing calculation sheet whichever is more
28	DPG size	1/2" 3000#
29	Vent Size	1/2" on Flange (Minimum) and as per the approved sizing calculation sheet whichever is more
30	Drain size	1" on Flange (Minimum) and as per the approved sizing calculation sheet whichever is more
31	Inlet/Outlet Size	As per approved drawing
32	Head connection	As per approved drawing
<b>Filter Dimension</b>		
33	Overall Length	As per approved drawing
34	Overall height	As per approved drawing
35	Empty weight (kg)	As per approved drawing
36	Operating weight	As per approved drawing
<b>Filter Material of Construction</b>		
37	Shell	<ol style="list-style-type: none"> <li>150# &amp; 300# - MOC-ASTM A 106 Gr. B (Charpy test at 0 deg C) or ASTM A 333 Gr. 6</li> <li>600# - MOC- ASTM A 333, Gr.6.</li> <li>Wall Thickness matching to pipe WT as per GGL Piping and Valve material Specification / as per the sizing calculation by the manufacturer whichever is more.</li> <li>The carbon content is greater than 0.12% in product analysis, the CE (IIW) shall not exceed 0.40% and if The carbon content is less than 0.12% in product analysis, the CE (Pcm) shall not exceed 0.20%.</li> </ol>
38	Shell flange	<ol style="list-style-type: none"> <li>150# &amp; 300# = ASTM A 105 (Charpy test at 0 deg C)</li> <li>600# = ASTM A 350 Gr. LF2, MSS SP 44 Gr.F52, MSS SP 44 Gr.F65</li> </ol> <p>The carbon content is greater than 0.12% in product analysis, the CE (IIW) shall not exceed 0.40% and if The carbon content is less than 0.12% in product analysis, the CE (Pcm) shall not exceed 0.20%.</p>
39	Nozzle	Same as Shell MOC
40	Nozzle flange	Same as Shell flange MOC
41	Head	150# & 300#: ASME A 516 Gr.70 /SA 234 WPB 600# : ASME A 420 Gr. WPL 6
42	Head flange	Same as shell flange MOC
43	Bottom	150# & 300# : ASME A515/ ASME A 516 Gr. 60/70 /SA 234 WPB 600# : ASME A 420 Gr. WPL 6
44	Perforated sheet	CS plated



45	Stud bolts / Nuts	1. For 150# & 300#: STUD-ASTM A 193 Gr. B7, NUT: A194 Gr. 2H, Hot Dipped Galvanized as per ASTM A 153 2. FOR 600#- STUD:ASTM A 320 Gr.L7 NUT: ASTM A 194 Gr.7 , Hot Dipped Galvanized as per ASTM A 153
46	Gaskets	SS 316 Spiral Wound with CANF filler + SS 316 Inner & Outer ring as per ASME 16.20
47	O ring	Buna N
48	Support	ASME A 283 Gr. C / IS : 2062
<b>Accessories</b>		
490	Davit Details (with make & Model	Davit arm for filter shell size of 8" and above
50	Companion flange, Blind, flange, Gaskets, Bolts / stud, Nuts for all nozzles, Earthing Lug	YES
<b>INSPECTION , TESING &amp; OTHERS</b>		
51	Hydrostatic test	1.5 * Design Pressure
52	Radiography	100%
53	Dye Penetration Test	Yes
54	Post weld Heat treatment	N/A
55	Charpy Impact Test	Yes
56	Painting	As per Painting Datasheet
<b>Note:</b>		
1. All CS parts weld joints to be stress relieved. Hardness in welds not to exceed 200 BHN.		
2. Gas Composition & quality is as per process data sheet.		
3. Filtration area should be minimum 8 times of inlet nozzle area. Sizing calculations to be submitted by the vendor.		
4. Fire case PSV of suitable capacity shall be provided on each dry gas filter.		
5. Proper support, crossover and platform required for maintenance of filter, PSV, DPG etc.		
6. Sizing calculation of filter element to be submitted by VENDOR's.		
7. 100% Radiography applicable on casting.		
8. Filter Design & Calculations shall be approved by TPIA.		
9. Typical GAD, Element size and shell size is enclosed. However, final sizing shall be checked by vendor and submitted to GGL.		



A.	1040 MM LG.	Ø160 X Ø120 X 500
B.	1340 MM LG.	Ø160 X Ø120 X 800
C.	1110 MM LG.	Ø114 X Ø80 X 600
D.	1040 MM LG.	Ø95 X Ø65 X 500

Sr No:	Item Description	Number of element	Flow rate SCMH	Shell diameter (MM)	Length MM
1	Ø 95 MM OD x Ø 56 MM ID x 500 MM Long	1	250	Ø 168	1040
2	Ø 95 MM OD x Ø 56 MM ID x 500 MM Long	1	500	Ø 168	1040
3	Ø 114 MM OD x Ø 80 MM ID x 600 MM Long	1	750	Ø 168	1110
4	Ø 114 MM OD x Ø 80 MM ID x 600 MM Long	1	1000	Ø 168	1110
5	Ø 160 MM OD x Ø 120 MM ID x 500 MM Long	1	1500	Ø 220	1040
6	Ø 160 MM OD x Ø 120 MM ID x 500 MM Long	1	2000	Ø 220	1040
7	Ø 160 MM OD x Ø 120 MM ID x 800 MM Long	1	5000	Ø 220	1340





DATASHEET OF PRESSURE SAFETY VALVE (PSV)		 GUJARAT GAS
Sr. No.	Technical Description	Specifications
<b>General</b>		
1	Tag No.	Vendor to Furnish
2	Valve Inlet Size	Vendor to Furnish
3	Valve Outlet Size	Vendor to Furnish
4	Service	Dry Natural Gas
5	Governing Standard	API 520
6	Testing Standard	API 526/527
7	Operation	Relief Overpressure
8	Mounting	On Filter
<b>Service</b>		
8	Design Pressure & Class	150#: 19 Barg, 300#: 49 Barg, 600#: 98 Barg
9	Design Temperature	150#/ 300#: 0 - 65 °C 600#: -10 – 65 °C
10	Operating Pressure	150# : 3 to 15 Barg 300# : 10 to 40 Barg 600# : 10 to 78 Barg ( or as per user requirement/process parameter)
11	Operating Temperature	150#/ 300#: 0 to 50 °C 600#: -10 - 50 °C
12	Flow Capacity	500/1000/2000/5000 SCMH OR AS PER USER REQUIREMENT
<b>Construction of Valve</b>		
13	Type	Standard
14	Nozzle Type	Full nozzle full lift
15	Bonnet Type	Closed
16	Inlet & Outlet End Connection	Flanged connection
17	Inlet & Outlet Connection: Facing	RF Serrated, 125-250 AARH
18	Inlet Pressure Rating	300# Class
19	Outlet Pressure Rating	150# Class
20	Test Gag	Yes
21	Cap Over Adjustable Nut	Yes
22	Screwed / Bolted	Bolted
<b>Material of Construction</b>		
23	Body Material	150#/ 300#: ASTM A 216 Gr. WCB 600#: ASTM A 352 Gr. LCB/LCC, ASTM A 350 Gr. LF2
24	Bonnet Material	150#/ 300#: ASTM A 216 Gr. WCB 600#: ASTM A 352 Gr. LCB/LCC, ASTM A 350 Gr. LF2
25	Cap Material	150#/ 300#: ASTM A 216 Gr. WCB 600#: ASTM A 352 Gr. LCB/LCC, ASTM A 350 Gr. LF2
26	Nozzle/Disc/Guide/Piston/Spindle	ASTM A 479 Gr. SS 316
27	Diaphragm	Fabric NBR+PVC/Nitrile Rubber
28	Spring	Chrome Alloy/SS 316
29	Stud bolts / Nuts	150#/ 300#: STUD: ASTM A-193 Gr. B7, NUT: ASTM A



		194 Gr.2 H , Hot Dipped Galvanized as per ASTM A 153 600#: STUD: ASTM A320 Gr. L7, NUT: ASTM A 194 Gr.7, Hot Dipped Galvanized as per ASTM A 153
30	Gasket	Spiral Wound CNAF Filler + Inner and outer ring SS316
<b>Requirements</b>		
31	Radiography	100%
32	Charpy V-Notch Test	Required (at 0 deg C)
33	Leakage Class	VI
34	Spring Set Range	150#: 16.5 Barg 300#: 44 Barg 600#: 88 Barg
35	Spring Range Capacity	150#: 15 to 18 Barg 300#: 40 to 48 Barg 600#: 78 to 97 Barg
36	Body Hydro Test	1.5 * Design Pressure
37	Seat Hydro Test	1.2 * Design Pressure
38	Pneumatic Test	1.1 * Design Pressure
<b>Valve Calculation</b>		
39	Corrosion Allowance	-/ 1.5 mm
40	Required Flow Capacity	Vendor to Furnish
41	Mol. Wt. / S.G.	17.7 / 0.6
42	Over Pressure (%)	21%
43	Blow Down (%)	10%
44	Cp/Cv	Vendor to Furnish
45	Compressibility	0.98 to 0.997
46	Viscosity at Relative Temperature	0.022 cp
47	Vessel Surface Area-m2/Wall Temp	Vendor to Furnish
48	Calculated Area m2	Vendor to Furnish
49	Selected Area - cm2	Vendor to Furnish
50	Orifice Design	Vendor to Furnish
51	No. of Valve Required for Capacity	Vendor to Furnish
52	Total Area - cm2	Vendor to Furnish
53	Actual Flow Capacity	Vendor to Furnish
<b>Note:</b>		
1. Vendor shall provide Calculation of selection of Orifice.		
2. 100 % Radiography applicable on Casting.		