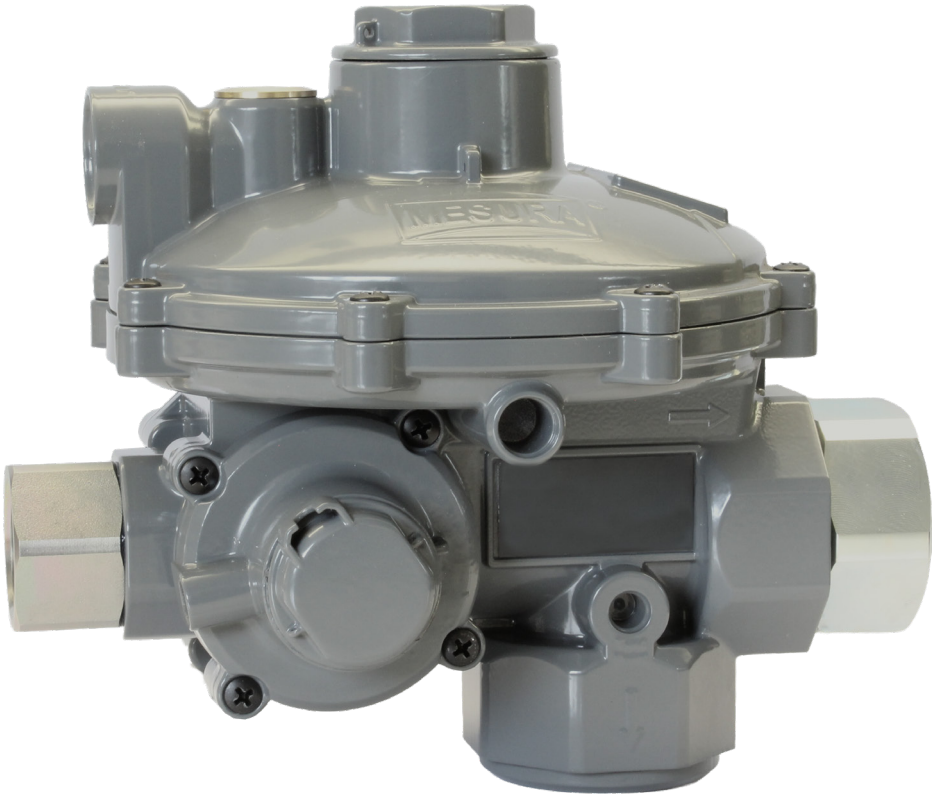
MESURA®

A Cavagna Group Company

S9 Dual Stage Regulator Product Bulletin



1 PRODUCT OVERVIEW

The S9 regulator is a direct acting, dual-stage pressure regulator with an integral slam-shut valve (SSV) and an optional token Internal Relief Valve (IRV). The S9 features a variety of body configurations, end connections, and integral overpressure protection options. The dual stage design provides improved accuracy and minimizes delivery pressure fluctuations as inlet pressures vary. The available over pressure protection options include a token IRV, Limited IRV, over pressure shut off (OPSO) device, under pressure shut off (UPSO) device and excess-flow shut off (EFV). The S9 also offers a safety diaphragm to minimize emissions in the event of a diaphragm failure. Built on decades of experience and refined for North America, the S9 provides a level of safety and reliability for commercial applications that cannot be achieved with traditional lever-style regulators.

2 MATERIALS OF CONSTRUCTION

BODY & CASINGS: Die-cast aluminum
DIAPHRAGMS: Nitrile (NBR)
SPRINGS: Stainless steel
STEMS & LEVER ARM: Brass, Zinc alloy, or SST
ADJUSTING SCREW: Zinc alloy or plastic
VENT SCREEN: Stainless steel
VENTURI & GUIDE: Plastic

FITTINGS: Zinc Plated Steel or SST
ORIFICE: Brass
DISCS AND O-RINGS: Nitrile (NBR)
DIAPHRAGM PLATES: Plastic or aluminum
CLOSING CAP: Die-cast aluminum
FASTENERS: Stainless steel
SSV CLOSING CAP: Aluminum or plastic

3 OPERATIONAL SCHEMATICS

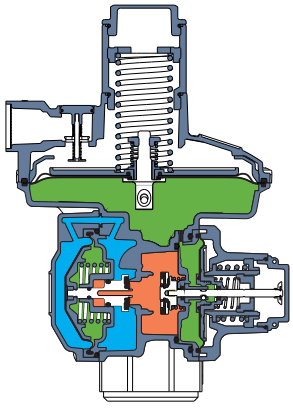


Figure 1: Front View Schematic

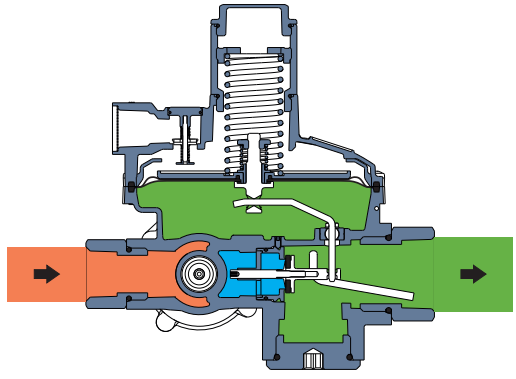


Figure 2: Side View Schematic

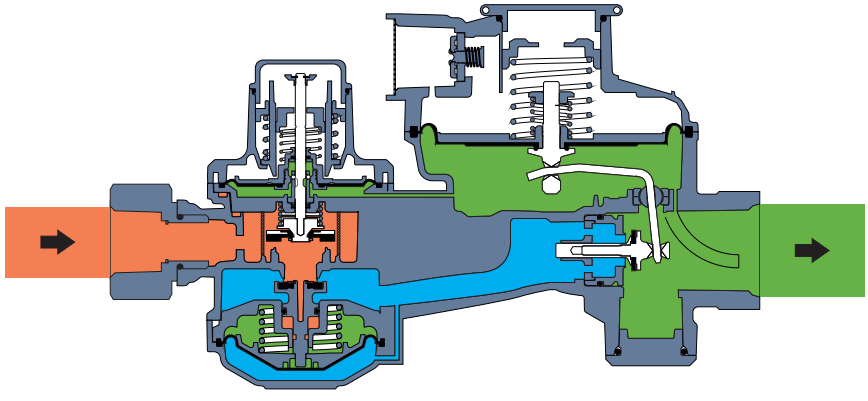


Figure 3: Operational Schematic

4 SPECIFICATIONS

Table 1: Regulator Specifications						
Operating Inlet Pressure		125 psig	8.6 bar	**Inlet Connections**	1", 1.25" & 1.5" NPT	
Operating Outlet Pressure Range		See Table 6		**Outlet Connections** Angled or In-line Body	1.25", 1.5" & 2" NPT	
Maximum Outlet Pressure to avoid damage to internal parts	**BP[1]:**	5 psig	345 mbar	**Operating Temperature**	-22 to 155 °F	-30 to 69 °C
	MP[2]:	6 psig	450 mbar	**Weight**	7.5 lbs	3.4 kg
	MP TR[3]:	7.5 psig	520 mbar	**Orifice Size** (2nd Stage)	0.75 inch	
Emergency Inlet Pressure (Body)		150 psig	10.3 bar	**Over Pressure Shut Off Accuracy**	BP[1]: AG 10 MP[2]: AG 5	
Emergency Outlet Pressure (Casing)		10.9 psig	750 mbar	**Under Pressure Shut Off Accuracy**	BP[1] (≤10" w.c.): AG 20[4] BP[1] (>10" w.c.): AG 10 MP[2]: AG 5	
Regulator Vent Connection		3/4" NPT				
SSV Vent Connection		1/8" NPT		**Pressure Registration**	Internal	

1: Base Pressure (BP), 2: Medium Pressure (MP), 3: Medium Pressure - Travel Restricted (MPTR)
3: UPSO Accuracy at minimum temperature is AG35

5 AVAILABLE SAFETY FEATURES

OVERPRESSURE SHUT-OFF (OPSO)
If outlet pressure reaches the OPSO set point, the flow of gas is shut off at the inlet of the regulator. This requires a manual reset. OPSO is available standalone or with UPSO.

UNDERPRESSURE SHUT-OFF (UPSO)
If outlet pressure decreases to the UPSO set point, the flow of gas is shut off at the inlet of the regulator. This requires a manual reset.

EXCESS FLOW SHUT-OFF
When the outlet flow of gas exceeds between 110% - 150% of the maximum flow the excess flow device shuts off the downstream flow of gas. This would then activate the UPSO, requiring a manual reset.

VISUAL INDICATOR FOR OPSO/UPSO SHUT-OFF
If the OPSO/UPSO activate and shut-off the flow of gas for any reason, the visual indicator will change from green to red as shown in Figure 4. This optional indicator has no impact on operation, can be added after installation of the regulator, and requires no special tools for installation.

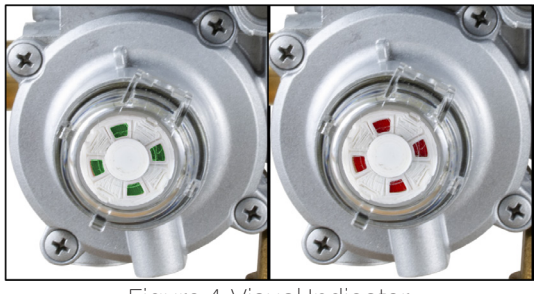


Figure 4: Visual Indicator

TOKEN INTERNAL RELIEF VALVE (IRV)
The internal relief valve will release a small amount of gas through the vent during an overpressure event. When the pressure decreases, the IRV re-seats, stopping the release of gas. This protects the regulator from brief pressure surges, such as thermal expansion.

LIMITED IRV
The Limited IRV functions the same as the standard IRV, but has been designed to minimize emissions. The Limited IRV is designed to limit the release of gas to < 2.5 SCFH until the OPSO activates.

SECOND STAGE SAFETY DIAPHRAGM
In the event of a second stage diaphragm failure, the Safety Diaphragm will contain the gas and keep the regulator in operation. The safety diaphragm does not impact normal operation and provides an alarm through a limited release of gas to atmosphere. This Micro-Vent will limit the release of gas to < 1.0 SCFH.

COMBINED VENTS
An optional system is available to combine the SSV vent with the regulator vent. This simplifies vent piping for installations that require vents to be piped away. Caution should be taken to prevent all vents from freezing or plugging.

OPSO/UPSO VENT LIMITER
For indoor installations, an alternative to combined vents is utilizing a vent limiter on the SSV vent. This vent limiter will keep emissions at or below 2.5 SCFH for inlet pressures up to 10 PSIG. This eliminates the need to combine vents.

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6 CAPACITY TABLES

Additional capacity information is available upon request.
All capacity data was recorded per ANSI B109.5 unless otherwise noted.

Table 2: 7" w.c. Set Point
Linear Body. Capacities in 0.6 SG Natural Gas - (14.7 PSIA and 60° F)

Inlet Pressure		Accuracy: +2/-1" w.c.		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
1	0.069	523 (14.8)	596 (16.8)	596 (16.8)
2	0.1	957 (27.1)	1,099 (31.1)	1,099 (31.1)
3	0.2	1568 (44.4)	1,587 (44.9)	1,587 (44.9)
5	0.3	1568 (44.4)	1,360 (38.5)	1,809 (51.2)
10	0.7	2,311 (65.4)	2,764 (78.3)	4,898 (138.7)
15 - 125	1.0 - 8.6	3,026 (85.7)	3,068 (86.9)	5,458 (154.6)

Do not exceed these capacity values. Capacity values may be limited by droop, boost or gas velocity.
For inlet pressures outside ANSI B109.5, set point was established at the advertised inlet pressure with a flowrate of 200 SCFH Air.
For constructions with the optional Second Stage Safety Diaphragm, please consider a 15% reduction in capacity.

Table 3: 14" w.c. Set Point
Linear Body. Capacities in 0.6 SG Natural Gas - (14.7 PSIA and 60° F)

Inlet Pressure		Accuracy: +2/-2" w.c.		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
1	0.069	591 (16.7)	524 (14.8)	466 (13.2)
2	0.1	1,164 (32.9)	987 (27.9)	1,034 (29.2)
3	0.2	1,610 (45.6)	1,644 (46.5)	1,552 (43.9)
5	0.3	1,742 (49.3)	1,940 (54.9)	2,038 (57.7)
10	0.7	3,293 (93.2)	3,344 (94.7)	4,230 (119.8)
15 - 125	1.0 - 8.6	3,980 (112.7)	4,119 (116.6)	5,176 (146.6)

Do not exceed these capacity values. Capacity values may be limited by droop, boost or gas velocity.
For inlet pressures outside ANSI B109.5, set point was established at the advertised inlet pressure with a flowrate of 200 SCFH Air.
For constructions with the optional Second Stage Safety Diaphragm, please consider a 15% reduction in capacity.

Additional capacity information is available upon request.
All capacity data was recorded per ANSI B109.5 unless otherwise noted.

Table 4: 1 PSIG Set Point

Linear Body. Capacities in 0.6 SG Natural Gas - (14.7 PSIA and 60° F)

Inlet Pressure		Accuracy: +/- 1% ABS (+/- 0.157 PSIG)		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
2	0.1	1,078 (30.5)	1,045 (29.6)	630 (17.8)
3	0.2	1,599 (45.2)	1,478 (41.8)	1,255 (35.5)
5	0.3	2,331 (66)	2,214 (62.7)	2,050 (58)
10	0.7	4,062 (115)	4,041 (114.4)	3,827 (108.4)
15 - 125	1.0 - 8.6	4,295 (121.6)	4,577 (129.6)	4,314 (122.2)

Inlet Pressure		Accuracy: +/- 2% ABS (+/- 0.314 PSIG)		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
2	0.1	1,566 (44.3)	1,561 (44.2)	1,458 (41.3)
3	0.2	2,233 (63.2)	2,137 (60.5)	2,173 (61.5)
5	0.3	3,070 (86.9)	2,921 (82.7)	3,111 (88.1)
10	0.7	4,295 (121.6)	4,710 (133.4)	4,991 (141.3)
15 - 125	1.0 - 8.6	4,295 (121.6)	5,873 (166.3)	5,912 (167.4)

Inlet Pressure		Accuracy: +/- 10% Gauge (+/- 0.1 PSIG)		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
2	0.1	609 (17.2)	577 (16.3)	266 (7.5)
3	0.2	1,006 (28.4)	929 (26.3)	590 (16.7)
5	0.3	1,685 (47.7)	1,510 (42.7)	1,381 (39.1)
10	0.7	2,728 (77.2)	2,470 (69.9)	2,445 (69.2)
15 - 125	1.0 - 8.6	2,898 (82)	2,861 (81)	3,660 (103.6)

Inlet Pressure		Accuracy: +/- 20% Gauge (+/- 0.2 PSIG)		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
2	0.1	1,271 (36)	1,266 (35.8)	875 (24.7)
3	0.2	1,849 (52.3)	1,778 (50.3)	1,552 (43.9)
5	0.3	2,633 (74.5)	2,490 (70.5)	2,506 (70.9)
10	0.7	4,295 (121.6)	4,358 (123.4)	4,665 (132.1)
15 - 125	1.0 - 8.6	4,295 (121.6)	5,079 (143.8)	5,136 (145.4)

Do not exceed these capacity values. Capacity values may be limited by droop, boost or gas velocity.
For inlet pressures outside ANSI B109.5, set point was established at the advertised inlet pressure with a flowrate of 200 SCFH Air.
For constructions with the optional Second Stage Safety Diaphragm, please consider a 15% reduction in capacity.

Additional capacity information is available upon request.
All capacity data was recorded per ANSI B109.5 unless otherwise noted.

Table 5: 2 PSIG Set Point

Linear Body. Capacities in 0.6 SG Natural Gas - (14.7 PSIA and 60° F)

Inlet Pressure		Accuracy: +/- 1% ABS (+/- 0.167 PSIG)		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
3	0.2	850 (24)	946 (26.7)	599 (16.9)
5	0.3	1,603 (45.4)	1,668 (47.2)	1,334 (37.7)
10	0.7	2,814 (79.7)	3,004 (85)	2,761 (78.2)
15 - 125	1.0 - 8.6	3,096 (87.7)	3,371 (95.4)	2,978 (84.3)

Inlet Pressure		Accuracy: +/- 2% ABS (+/- 0.314 PSIG)		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
3	0.2	1,437 (40.7)	1,535 (43.4)	1,308 (37)
5	0.3	2,354 (66.6)	2,451 (69.4)	2,453 (69.4)
10	0.7	4,244 (120.2)	4,260 (120.6)	4,538 (128.5)
15 - 125	1.0 - 8.6	4,560 (129.1)	5,356 (151.7)	5,456 (154.5)

Inlet Pressure		Accuracy: +/- 10% Gauge (+/- 0.2 PSIG)		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
3	0.2	935 (26.4)	1,108 (31.3)	780 (22)
5	0.3	1,776 (50.3)	1,884 (53.3)	1,619 (45.8)
10	0.7	3,213 (91)	3,567 (101)	3,526 (99.8)
15 - 125	1.0 - 8.6	3,843 (108.8)	3,962 (112.2)	3,597 (101.8)

Inlet Pressure		Accuracy: +/- 20% Gauge (+/- 0.4 PSIG)		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
3	0.2	1,547 (43.8)	1,634 (46.2)	1,537 (43.5)
5	0.3	2,489 (70.5)	2,592 (73.4)	2,689 (76.1)
10	0.7	4,413 (125)	4,463 (126.4)	4,737 (134.1)
15 - 125	1.0 - 8.6	4,560 (129.1)	5,644 (159.8)	5,880 (166.5)

Do not exceed these capacity values. Capacity values may be limited by droop, boost or gas velocity.
For constructions with the optional Second Stage Safety Diaphragm, please consider a 15% reduction in capacity.

Additional capacity information is available upon request.
All capacity data was recorded per ANSI B109.5 unless otherwise noted.

Table 6: 5 PSIG Set Point Linear Body. Capacities in 0.6 SG Natural Gas - (14.7 PSIA and 60° F)				
Inlet Pressure		Accuracy: +/- 1% ABS (+/- 0.197 PSIG)		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
7.5	0.5	Contact Cavagna Group	282 (7.9)	316 (8.9)
10	0.7		467 (13.2)	587 (16.6)
15	1		1,254 (35.5)	1,500 (42.4)
20 - 125	1.4 - 8.6		1,522 (43.1)	1,586 (44.9)
Inlet Pressure		Accuracy: +/- 2% ABS (+/- 0.394 PSIG)		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
7.5	0.5	Contact Cavagna Group	883 (25)	769 (21.7)
10	0.7		1,422 (40.2)	1,391 (39.4)
15	1		2,623 (74.3)	2,723 (77.1)
20 - 125	1.4 - 8.6		2,859 (80.9)	2,901 (82.1)
Inlet Pressure		Accuracy: +/- 10% Gauge (+/- 0.5 PSIG)		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
7.5	0.5	Contact Cavagna Group	1,203 (34)	1,188 (33.6)
10	0.7		1,795 (50.8)	1,887 (53.4)
15	1		3,224 (91.3)	3,341 (94.6)
20 - 125	1.4 - 8.6		3,761 (106.5)	3,728 (105.6)
Inlet Pressure		Accuracy: +/- 20% Gauge (+/- 1.0 PSIG)		
		1.25" NPT Outlet	1.5" NPT Outlet	2" NPT Outlet
PSIG	Bar	SCFH (m^3/h)	SCFH (m^3/h)	SCFH (m^3/h)
7.5	0.5	Contact Cavagna Group	2,376 (67.3)	2,518 (71.3)
10	0.7		3,319 (94)	3,325 (94.1)
15	1		4,935 (139.8)	5,056 (143.2)
20 - 125	1.4 - 8.6		6,382 (180.7)	6,546 (185.4)

Do not exceed these capacity values. Capacity values may be limited by droop, boost or gas velocity.
For constructions with the optional Second Stage Safety Diaphragm, please consider a 15% reduction in capacity.

7 PRODUCT MARKING & IDENTIFICATION

The sample nameplate in Figure 5 on the right shows the information available on each regulator. These laser engraved nameplates are fixed to the S9 actuator diaphragm casing:

Type: S9- ## $	**MM/YY**	**SN:** #######
Pout xxxx	**Spring Range:** xxxx	**Orifice:**
OPSO: xxxx	**Spring Range:** xxxx	3/4"
UPSO: xxxx	**Spring Range:** xxxx	**Max Inlet:**
IRV: xxxx	**Type:** xxxx	125 psig

Figure 5: S9 Nameplate

The most critical components of an S9 regulator construction can be easily identified by a three digit code following "Type: S9" in the upper left hand corner of the nameplate. The two numbers after the dash correlate to table 7 below.
This table indicates the set point, diaphragm configuration, and over pressure protection features.
The letter ($) following the two digits indicate the body from Table 8 below.

Table 7: Product Coding System

Over Pressure Protection Options		Regulator Set Point (inches w.c.)									
		7"	14"	1 psig	2 psig	Other	7"	14"	1 psig	2 psig	Other
OPSO Only	No IRV	11	12	13	14	15	16	17	18	19	10
	Token IRV	21	22	23	24	25	26	27	28	29	20
	Limited IRV	31	32	33	34	35	36	37	38	39	30
OPSO & UPSO	No IRV	41	42	43	44	45	46	47	48	49	40
	Token IRV	51	52	53	54	55	56	57	58	59	50
	Limited IRV	61	62	63	64	65	66	67	68	69	60
OPSO, UPSO & EFV	No IRV	71	72	73	74	75	76	77	78	79	70
	Token IRV	81	82	83	84	85	86	87	88	89	80
	Limited IRV	91	92	93	94	95	96	97	98	99	90
		Single Diaphragm					Dual (Safety) Diaphragm				

Note that Table 7 only represents the most common constructions. More options are available; please see Section 11 for more options or contact Cavagna Group.

Table 8: Body Configuration - NPT Connections

Inlet Connection:	1"			1.25"			1.5"	
Outlet Connection:	1.25"	1.5"	2"	1.25"	1.5"	2"	1.5"	2"
Linear Body	A	B	C	D	E	F	G	H
Angled Body	P	Q	R	S	T	U	V	W

8 PRODUCT CONFIGURATION

This table shows common set points for popular configurations in North America. Custom set points are available for the delivery pressure, IRV, OPSO and UPSO. Please specify all set points in Section 11.

Table 9: Common Configurations

Model	Regulator Delivery Pressure		IRV Setting (Standard or Limited)		OPSO		UPSO (Optional)	
	Set Point	Spring Color	Set Point	Spring Color	Set Point	Spring Color	Set Point	Spring Color
Base Pressure (BP)	7" w.c.	SST	No IRV		16" w.c.	SST/Unpainted	4" w.c.	SST
			15" w.c.	SST	28" w.c.	Red		
	14" w.c.	Blue	No IRV		28" w.c.	Red	6" w.c.	Red
			23" w.c.	SST	1.5 psig	Green		
	28" w.c.	Orange	No IRV		2 psig	Green	10" w.c.	Red
			1.5 psig	White	2.5 psig	Blue		
	2 psig	Yellow	No IRV		3.5 psig	White	20" w.c.	Green
			3 psig	Red	4.5 psig	Brown		
Medium Pressure (MP)	5 psig	Pink	No IRV		7 psig	Light Blue	3 psig	White
			6 psig	Green	7.25 psig	Yellow		

9 SPRING SPECIFICATIONS

For recommended/standard settings, refer to Table 9.
Additional spring ranges are available.

Table 10: Second Stage/Delivery Pressure Spring Data

Model	Spring Range		Standard Set Point	Color	Part Number
	Psig	mbar			
Base Pressure (BP)	6.9 - 7.6" w.c.	17 - 19	7" w.c.	SST	32-R-190-0220
	8 - 9.2" w.c.	20 - 23	9" w.c.	Red	32-R-190-0165
	9.65 - 11.65" w.c.	24 - 29	11" w.c.	Green	32-R-190-0166
	12.1 - 14.4" w.c.	30 - 36	14" w.c.	Blue	32-R-190-0167
	16.1 - 22" w.c.	40 - 55	20" w.c.	White	32-R-190-0221*
	21 - 28.8" w.c.	52 - 72	28" w.c.	Orange	32-R-190-0222*
	1.16 - 1.5	80 - 105	1.5 psig	Brown	32-R-190-0223*
	1.75 - 2.1	120 - 146	2 psig	Yellow	32-R-190-0171*
Medium Pressure (MP)	2.2 - 2.9	150 - 200	2.5 psig	Grey	32-R-190-0224*
	2.9 - 4.0	200 - 280	4 psig	Pink	32-R-190-0225*
MP Travel Restricted (TR)	3.2 - 5.4	220 - 375	5 psig	Yellow	32-R-190-0171
	5.8 - 7.25	400 - 500	7 psig	Black	32-R-190-0212

*Longer spring requires an extension of the spring case

Table 11: Internal Relief Valve Spring Data					
Model	Regulator Set Point	IRV Set Point		Color	Part Number
		psig	mbar		
Base Pressure (BP)	7" w.c.	15" w.c.	37	SST	
	14" w.c.	23" w.c.	55		
	1 psig	1.5	103	White	
	2 psig	3	206	Red	
Medium Pressure (MP)	3 psig	4	275	Green	
	5 psig	6.5	450	Green	

IRV start-to-relieve point is +/- 10% of IRV Set Point.
Custom IRV set points are available. For more information contact Cavagna North America.

Table 12: Over Pressure Shut Off Spring Data				
Model	Spring Range		Color	Part Number
	psig	mbar		
Base Pressure (BP)	11.6 – 20" w.c.	29 - 50	SST	32-R-190-0125
	20 - 34" w.c.	50 - 85	Red	32-R-190-0127
	1.25 – 1.96	85 - 140	Green	32-R-190-0128
	1.75 – 2.5	120 - 175	Blue	32-R-190-0129
	2.35 – 3.0	160 - 210	White	32-R-190-0130
Medium Pressure (MP)	3.0 – 4.0	210 - 280	Orange	32-R-190-0131
	3.65 – 5.0	250 - 350	Brown	32-R-190-0132
	5.1 – 6.5	350 - 450	Lt Blue	32-R-190-0133
	6.5 – 8.5	450 - 590	Yellow	32-R-190-0134

Table 13: Under Pressure Shut Off Spring Data				
Model	Spring Range		Color	Part Number
	In w.c.	mbar		
Base Pressure (BP)	3.6 - 5.6	9 - 14	SST	07-1-110-0503
	5.6 - 10.1	14 - 25	Red	07-1-111-0635
	10 - 18	25 – 45	Yellow	07-1-111-1266
	18.1 - 22.9	45 - 57	Green	07-1-111-0678
Medium Pressure (MP)	1 - 1.6 psig	68 - 110	Blue	07-1-111-0679
	2.3 - 3.5 psig	160 - 240	White	07-1-111-0677
	4.3 - 5.1 psig	300 - 350	Orange	07-1-111-0826

10 CONFIGURATIONS & DIMENSIONS

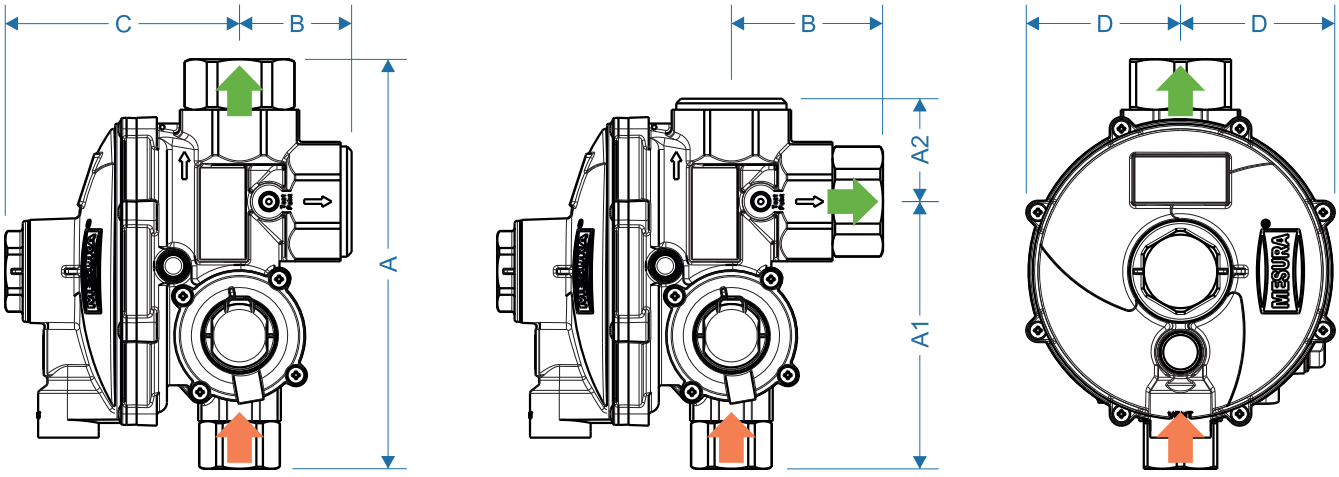

Figure 6: Regulator Dimensions

Table 14: Regulator Dimensions - See Figure 6 Above							
Body	Inlet Connection	Outlet Connection	A	B	C		D
					Standard	Extended	
In-line (A - H)	1" NPT	1.25" & 1.5"	8.8 inches (223 mm)	2.4 Inches (61 mm)	5.1 Inches (127.5 mm)	6.8 Inches (172.5 mm)	3.3 inches (83.9 mm)
		2"	9 inches (228 mm)				
	1.25" & 1.5"	1.25" & 1.5"	8.9 inches (225 mm)				
		2"	9.05 inches (230 mm)				

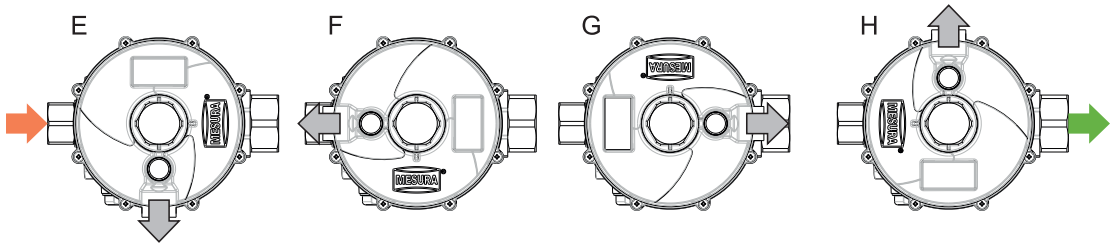

Figure 7: Regulator Vent Orientation (Regulator Inlet on Left)

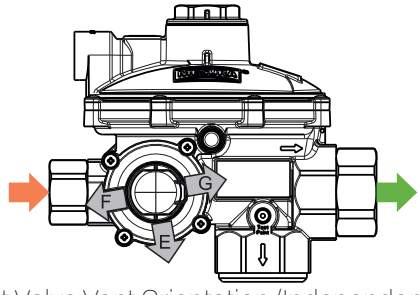

Figure 8: Slam-shut Valve Vent Orientation (Independent of Regulator Vent)

11 PRODUCT SELECTION

Choose one option or enter the specific request for each section below. Table 4 above offers common set points, but any set points can be provided upon request.

PRODUCT CONSTRUCTION CODE (See Table 9)**: S9-____**

DELIVERY PRESSURE
- Set Point _____

OVER PRESSURE SHUT OFF
- Set Point _____

UNDER PRESSURE SHUT OFF
- Set Point _____

FILTER
- *Yes _____
- No _____

REGULATOR VENT POSITION
- E _____
- *F _____
- G _____
- H _____

OPSO/UPSO VENT POSITION
- E _____
- *F _____
- G _____

ORIFICE DIAMETER
- *3/4" _____
- Custom _____

ADDITIONAL OPTIONS
- None _____
- Closing Seal Wires _____
- SSV Vent Limiter _____
- Premium Paint _____
- Combined Vents _____
- Arctic Construction _____

**Indicates standard offering*

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