

CVS Controls 627H High Pressure Regulator

The CVS Series 627H regulator is a high pressure direct operated pressure reducing regulator. It utilizes an internal diaphragm limiter to deliver higher outlet pressures.

CVS Series 627 Regulators are easy to maintain, reducing cost of ownership and valuable downtime. Internal components may be replaced without the need to remove the regulator from the applications installation. The two bolt design between the body and diaphragm case allows for simple removal to do maintenance or repairs.

The diaphragm case and or the regulator body may be rotated in any of four positions to allow for versatile installation options.

The adjustment set screw and lock nut come standard with a protective cap to discourage unwanted adjustments of the desired pressure output.



Standard body material is LCC steel which allows for a maximum inlet pressure of 2000 psig. The 627H has two outlet pressure ranges of 140 to 250 psig, or 240 to 500 psig, determined by spring selection.

Specifications:

Body Size (in)	End Connection	Construction
1	NPT	LCC Steel

Note: The pressure limits specified in this manual should not be exceeded

Maximum Inlet Pressure (body)

NPT Steel: 2000 psig

Maximum Outlet Pressure

Determined by spring selection:

Blue: 140 to 250 psig

Red: 240 to 500 psig

Maximum Spring and Diaphragm Casing Pressure

See Table 2

Note: The CVS 627H is limited by the maximum diaphragm casing pressure

Orifice Sizes

See Table 1

Regulator Capacities

See Table 3

Flow Coefficients

See Table 4

Temperature Capabilities

Material	Disk/Diaphragm	Temperature	
		C°	F°
Nitrile (NBR)	Disk/Diaphragm	-40 to 82	-40 to 180
Nylon (PA)	Disk		
Neoprene (CR)	Diaphragm		

Construction Materials:

Body:

LCC Steel

Spring Case and Diaphragm Case:

LCC Steel

Orifice:

Standard, Aluminum or Stainless Steel

Disk Holder with Valve Disk:

2000 psig: Aluminum or Stainless Steel with Nylon (PA)

1000 psig: Aluminum, standard or Stainless Steel with Nitrile (NBR)

O-Rings:

Nitrile (NBR)

Diaphragm:

Neoprene (CR)

Pressure Registration:

Internal

Spring Case Vent Connection:

3/4" NPT with screened vent removed

Approximate Shipping Weight:

LCC Steel – 10 lbs

Installation:

Note: Do not exceed the pressure and temperature limits referenced in this manual. Ensure proper safety procedures are followed when installing or maintenance is required. Only qualified personnel should install, operate and maintain this component.

1. If the CVS 627 regulator has been shipped as an individual component, inspect for debris or foreign materials upon un-packaging.
2. Ensure all piping and tubing connections are free of debris and have been blown free.
3. The 627 Regulator may be installed in any direction, as long as the flow direction is adhered to as marked on the body.
4. A three way valve may be utilized should continued operation be required during inspection and maintenance procedures. (not supplied)
5. Position the body and diaphragm spring case in a manner that prevents the screened vent from collecting debris or moisture.

Note: This regulator may ventilate some gas to atmosphere. If installed in a hazardous or flammable gas application, ensure proper venting procedures are followed. Vent the regulator to a safe location away from any hazardous area. Keep the vent line clear of debris and or condensation.

Remote Venting Installation:

The CVS Series 627 Regulator comes standard with a screened vent installed in the 3/4" NPT spring case vent. When necessary to remotely vent the regulator the screened vent may be removed to install a remote vent line.

Always ensure the remote vent line is installed using proper piping procedures. Keep the vent line free of debris and or any condensation, and periodically inspect the vent line for proper regulator operation.

Overpressure Protection:

The outlet pressure rating on the Series 627 Regulator is lower than the inlet pressure rating. If the inlet pressure exceeds the outlet pressure on the CVS 627H, a pressure limiting or pressure relieving device must be installed as there is no internal relief. Internal damage may occur if this step is not followed.

Startup and Adjustments:

The CVS Series 627 Regulator is set to the midpoint of the spring range upon assembly, unless otherwise specified by the customer. Initial adjustments may be required at point of installation to suit the application.

During startup, release downstream pressure to prevent an overpressure condition. It is recommended pressure gauges be utilized to monitor pressures during startup.

1. Open upstream shutoff valve slowly.
2. Open downstream shutoff valve slowly.
3. Inspect all connections for leaks.
4. Should any final control spring adjustments be needed refer to the Adjustment portion of this manual.

Adjustments:

1. Remove the Adjustment Screw Cap.
2. Loosen the Adjustment Screw Lock Nut.
3. It is recommended a pressure gauge be used when making final adjustments to the regulator.
4. To increase the CVS 627 Regulator outlet pressure, turn the adjustment screw clockwise. To decrease the outlet pressure, turn the adjustment screw counter clockwise.
5. Once the final pressure has been achieved, while holding the adjustment screw, tighten the adjustment screw locknut.
6. Replace the adjustment screw cap that was removed in step 1.

Shutdown and Maintenance:

Shutdown:

Avoid an overpressure condition on the regulator by first releasing downstream pressure to avoid equipment damage or personal injury.

1. Close upstream shut off valve.
2. Close downstream shut off valve.
3. Vent line between the regulator installation and the closest downstream shut off valve.
4. The CVS 627H Regulator will open to release the pressure between the upstream shut off valve and the regulator.

Maintenance:

Always follow proper shutdown procedures prior to performing any maintenance. Isolate the regulator from all system pressure to avoid personal injury and/or equipment damage.

Periodic inspections of the CVS 627H regulator are recommended, and field maintenance may be required should the inspection reveal damaged or worn parts due to normal operation, or damage from external sources. Severe operating conditions may require more frequent inspections.

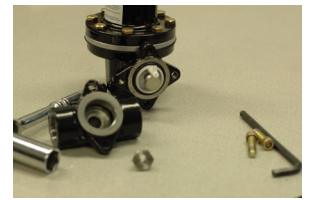
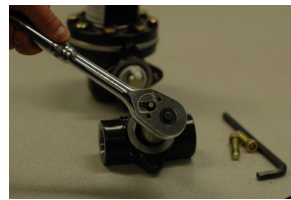
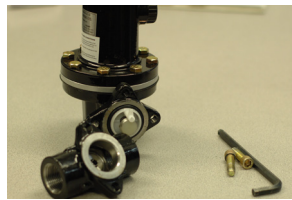
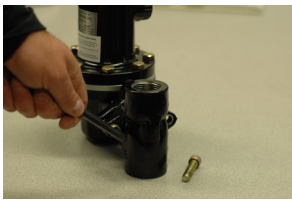
Common items to inspect for wear or damage include the orifice, disk assembly, diaphragm, and o-rings. These procedures may also be used to inspect and replace other regulator items as required.

Body Maintenance:

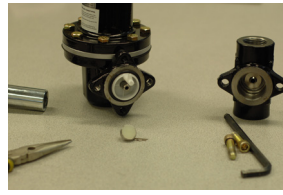
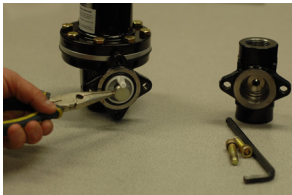
The following procedures may be used to access the disk assembly, orifice, stem assembly and diaphragm casing o-ring. Ensure all pressure has been released from the diaphragm casing prior to performing the following procedures.

Replace the Orifice or Disk Assembly: (Key #12 , and Key #14)

1. Using a 5/16 hex wrench, remove the two cap screws (key 13), and separate the body from the diaphragm casing.
2. Inspect orifice (Key 12) for visible damage and remove/replace if necessary using a 7/8 socket wrench. If the orifice has been removed, lubricate the threads before replacing and torque to 25 ft/lbs.



3. Inspect the disk assembly (Key 14). If replacement is necessary, the disk assembly may be removed by using needle nose pliers to first remove the hair pin clip (Key 15).



Stem Assembly replacement if necessary: (Key 16)

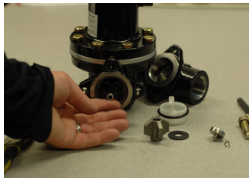
1. Remove the Boost Body (key 11), Stabilizer (key 17), and Stem Guide (key 8) from the diaphragm case. The Stem (key 16) may be removed by unhooking it from the lever inside the diaphragm case.
2. Remove and inspect the diaphragm case o-ring (key 9), replace as required.



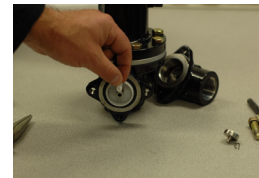
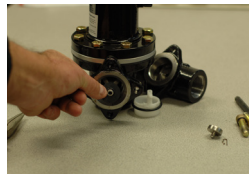
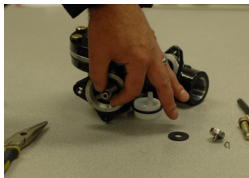
Maintenance:

Stem Assembly Replacement, continued:

3. Apply an o-ring lubricant to the diaphragm casing o-ring (key 9) prior to assembly.
4. When re-assembling, the pitot tube tab must be on the inside of the outlet side of the regulator body.
5. Lubricate the Stem (key 16) and insert into the diaphragm case, making sure to hook back onto the Lever (key 22).



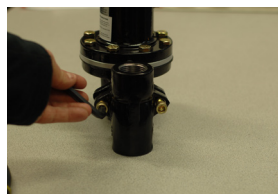
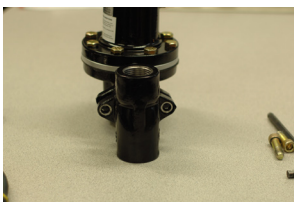
6. Insert the Stem Guide (key 8) back into case by sliding over the Stem Assembly. Insert the Stabilizer (key 17) back onto the Stem Assembly. Slide the Boost Body (key 11) back into diaphragm case.



7. Install the Disk Assembly (key 14) by sliding it into the Stem Assembly and lining up the holes to install the Hair Pin Clip (key 15).



8. Reposition the Body back onto the Diaphragm Case in the correct position for the application. Install the Cap Screws (key 13) back on to secure the Body to the Diaphragm Case, torque to 25 ft/lbs.



Maintenance:

Spring Case and Diaphragm Maintenance:

The following procedures may be used to inspect and maintain the Diaphragm Assembly (key 28), Main Control Spring (key 34), and Lever Assembly (key 22). Remove spring pressure from the diaphragm case prior to performing the procedures.

1. Remove the Adjustment Screw Cap (key 35) and loosen the Lock Nut (key 2) using a 3/4 wrench. Turn the Adjusting Screw (key 1) counter clockwise to remove spring compression on the Control Spring (key 34) until it is loose.



2. Remove the 8 Spring Case Cap Screws (key 29) using a 9/16 wrench. The Spring Case (key 3) may now be lifted off the Diaphragm Case (key 5). If spring replacement or repositioning of the spring case is all that is necessary, do so accordingly and reassemble in reverse order. Torque Spring Case Cap Screws to 7 ft/lbs in a cross pattern till all have been installed and torqued.



Diaphragm area Maintenance:

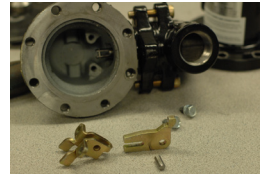
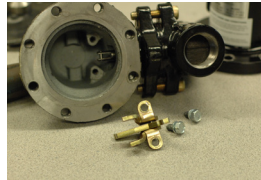
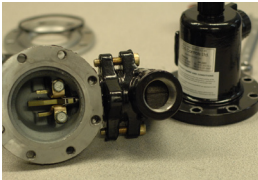
1. Remove the Diaphragm Limiter o-ring (key 27) and the Diaphragm Limiter (key 7). Remove the Diaphragm Assembly (key 28) by tilting it so it will slide off the Lever (key 22)



Maintenance:

Diaphragm area maintenance continued:

1. The Lever Assembly (key 22) may be removed by using a 7/16 nut driver or similar if inspection reveals damage or wear. A new Lever (key 22) may be installed by first removing the Pin (key 21) to remove the old Lever, then install a new Lever and insert the Pin. The Lever Assembly may now be reinstalled by securing the two Lever Cap Screws (key 24) and torque to 7 ft/lbs.



Diaphragm Maintenance: (key 28)

1. If inspection reveals wear or damage to the diaphragm, it must be replaced. Remove the Diaphragm Head Screw (key 31) using a 1/2 wrench. Remove the 2 Pusher Post o-rings (key 26). Separate the Diaphragm (key 28).



2. Install the Diaphragm in the reverse order as listed above. Do not fully tighten the Diaphragm Head Screw.
3. The Diaphragm Assembly may be reinstalled and the Diaphragm must be aligned to the case holes prior to the Diaphragm Head Screw being fully tightened. Once aligned, remove the assembly from the lever once again and tighten the Head Screw to 14 ft/lbs.
4. Install the Diaphragm Assembly back into the Diaphragm Case by tilting in a manner so the Pusher Post properly sets into the Lever.



Maintenance:

Diaphragm Area Maintenance Reassembly:

1. The Diaphragm Limiter and Diaphragm Limiter o-ring may now be installed. Set the Diaphragm Limiter onto the Diaphragm; align so that the Spring Case Cap Screws may be installed. Set the Diaphragm Limiter o-ring back into the groove.



2. Install the Spring (key 34) and Upper Spring Seat (key 4) onto the Diaphragm Limiter (key 7).



3. Install the Spring Case (key 3), align the vent assembly in the correct position for the application.

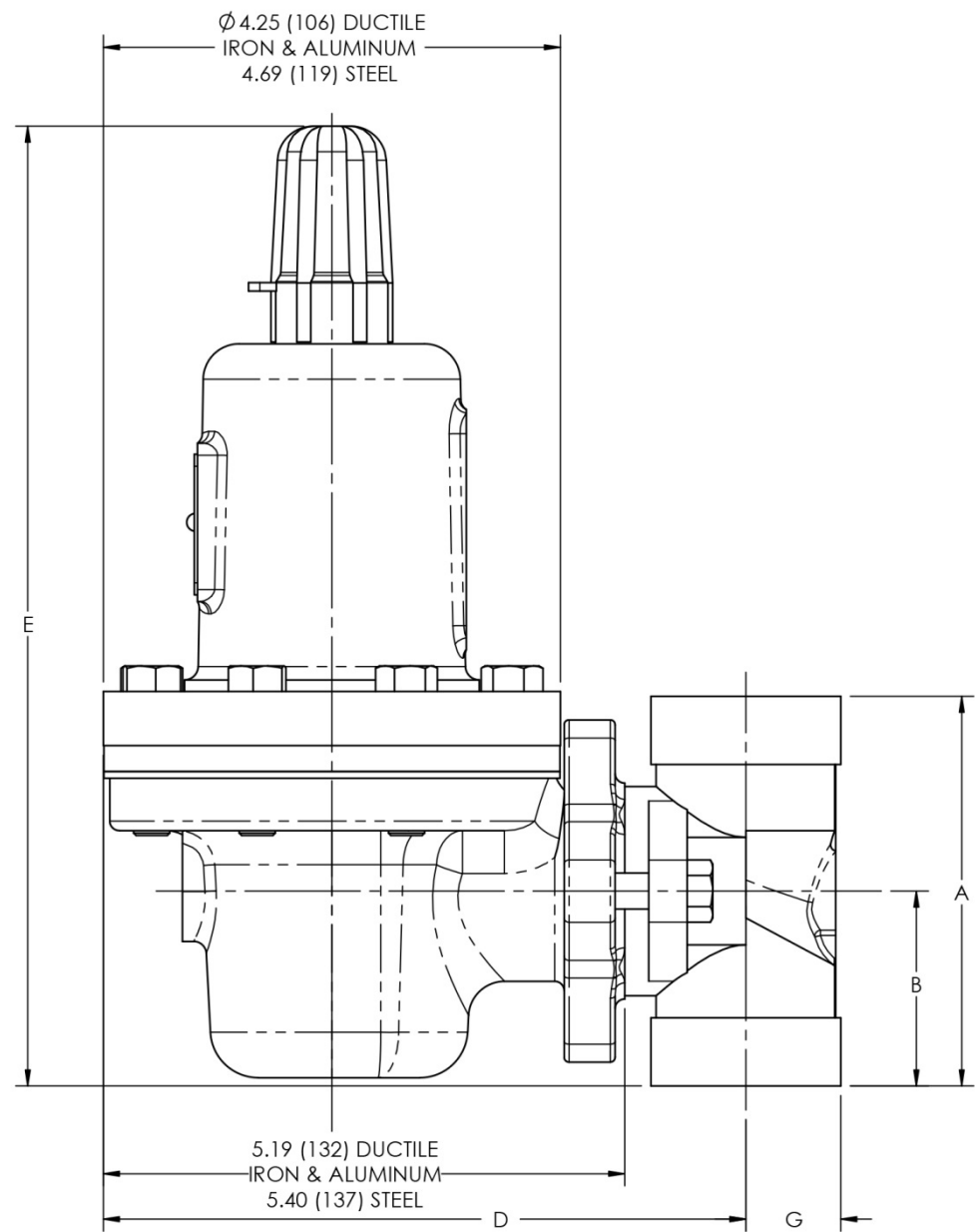


4. Insert the Spring Case Cap Screws (key29) and finger tighten. Screw in the Adjusting Screw (key 1) to put slack on the Diaphragm. Use a cross pattern to complete tightening of the Spring Case Cap Screws to 7 ft/lbs.



5. Make final adjustments as required, if necessary; refer to Startup and Adjustments section. Once final adjustments are complete, tighten the Adjustment Lock Nut and install the Adjustment Screw Cap.

Dimensions

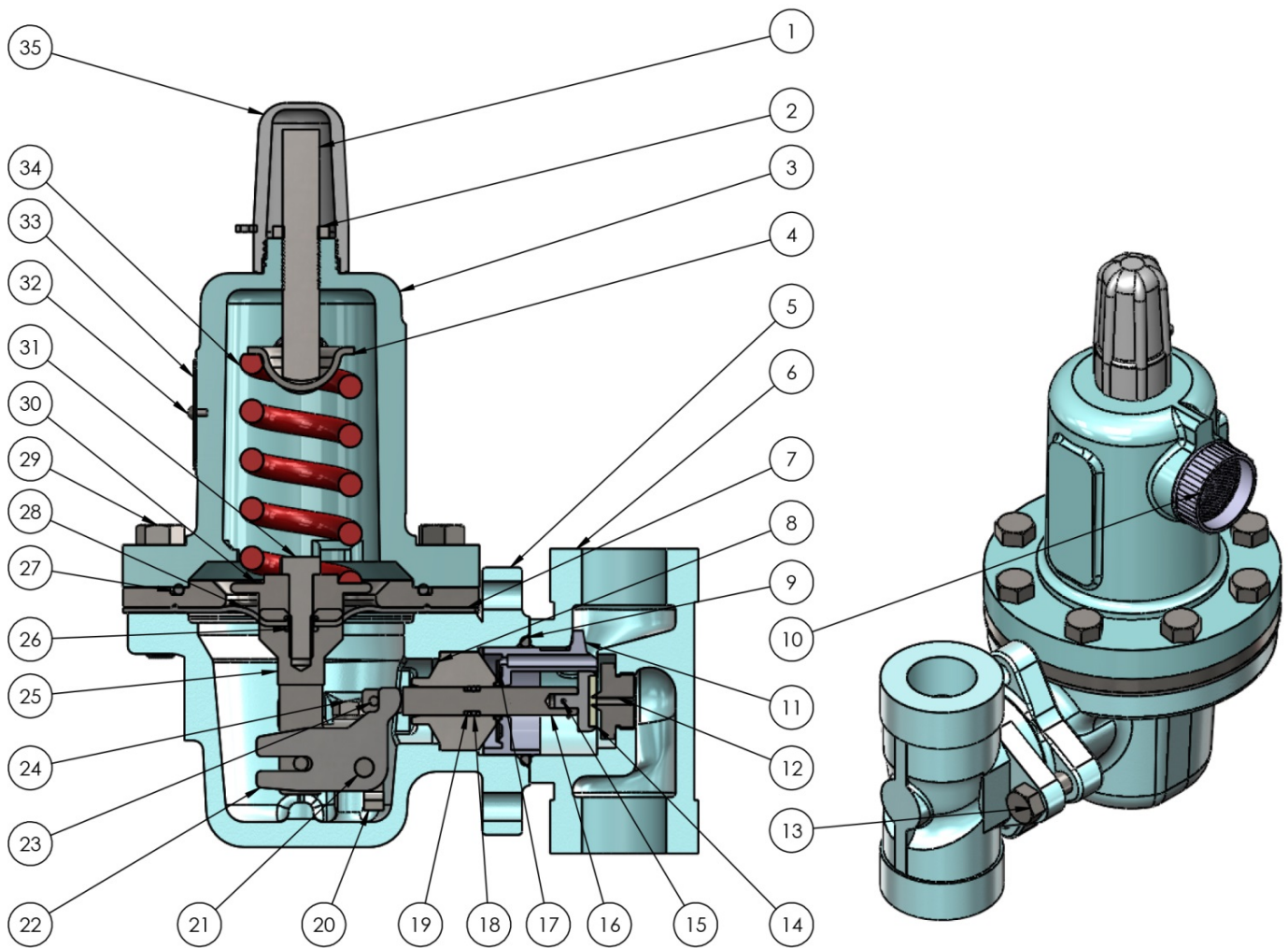


Inches					
Body Size (In)	A	B	D	E	G
1	4.06	1.94	6.75	9.88	1.00
mm					
1	103	49	172	251	25

Assembly – Parts Listing

Item Number	PART NUMBER	DESCRIPTION	QTY.
1	CVS 10B3081X012	ADJUSTING SCREW	1
2	CVS 1D667728982	LOCK NUT	1
3	CVS 30B3102X012	SPRING CASE	1
4	CVS 1D667125072	UPPER SPRING SEAT	1
5	CVS 30B3104X012	DIAPHRAGM CASE	1
6	CVS 30B3051X012	BODY	1
7	CVS 22B0176X012	DIAPHRAGM LIMITER	1
8	CVS 20B3061X012	STEM GUIDE	1
9	CVS 17A2325X022	DIAPHRAGM CASE O-RING 221	1
10	CVS 10B3093X012	SCREENED VENT ASSEMBLY	1
11	CVS 30B3056X012	BOOST BODY	1
12	CVS 0R044109022	ORIFICE	1
13	CVS 1C403024052	CAP SCREW, 3/8-16, 1.25 LONG	1
14	CVS 1C4248X00A2	DISK ASSEMBLY	1
15	CVS 10B3058X012	HAIR PIN CLIP	1
16	CVS 10B3059X012	STEM	1
17	CVS 10B3060X012	STABILIZER	1
18	CVS 1D687506992	STEM O-RING 010	1
19	CVS 1K786806992	STEM BACKUP RING	2
20	CVS 30B3097X012	LEVER RETAINER	1
21	CVS 10B3083X012	LEVER PIN, .25" DIA, .63" LONG	1
22	CVS 20B3063X012	LEVER	1
23	CVS 1H3671X0012	DRIVE PIN, .125" DIA, .52" LONG, GROOVED	1
24	CVS 10B7454X012	LEVER CAP SCREW, 1/4-20, .50" LONG	2
25	CVS 10B3098X032	PUSHER POST	1
26	CVS 1C853806992	PUSHER POST O-RING 011	2
27	CVS 1K877606992	DIAPHRAGM LIMITER O-RING 235	1
28	CVS 12B0178X012	DIAPHRAGM	1
29	CVS 1A346424052	SPRING CASE CAP SCREW, 3/8-16, 1.50 LONG	8
30	CVS 12B0175X012	DIAPHRAGM HEAD	1
31	CVS 1C379124052	DIAPHRAGM HEAD SCREW, 5/16-18, 1 1/8 LONG	1
32	CVS 1A368228982	3/32 REVIT, .18" LONG	2
33	CVS 10B3679X022	NAME PLATE	1
34	CVS 10B3079X012	CONTROL SPRING – Red – 240-500	1
35	CVS 20B3082X012	ADJUSTING SCREW CAP	1

Assembly



CVS 627H Assembly

Technical Data

Table 1: Maximum Inlet Pressures and Outlet Pressure Range

Model	Outlet Pressure Range, Color Code, Spring Part Number	Orifice Size		Maximum Inlet Pressure			
				Nylon Disk (PA)		Nitrile Disk (NBR)	
		Mm	Inches	Bar	Psig	Bar	Psig
CVS 627H	140-250psig (1.0-2.8bar) Blue CVS 10B3078X012	2.4	3/32	138	2000	69	1000
		3.2	1/8	138	2000	69	1000
		4.8	3/16	121	1750	69	1000
		6.4	1/4	103	1500	69	1000
		9.5	3/8	69	1000	20.7	300
		13	1/2	51.7	750	13.8	200
	240-500psig (16.5-34.5bar) Red CVS 10B3079X012	2.4	3/32	138	2000	69	1000
		3.2	1/8	138	2000	69	1000
		4.8	3/16	121	1750	69	1000
		6.4	1/4	103	1500	69	1000
		9.5	3/8	69	1000	69	1000
		13	1/2	51.7	750	51.7	750

Table 2: Spring and Diaphragm Casing Pressure

Maximum Pressure Condition	Diaphragm Casing Material	CVS 627H	
		Bar	Psig
Maximum pressure to diaphragm casing to prevent leak to atmosphere.	Die Cast Aluminum		
	Ductile Iron		
	Steel or Stainless Steel	55.2	800
Maximum pressure to spring and diaphragm casing to prevent burst under abnormal operation	Die Cast Aluminum		
	Ductile Iron		
	Steel or Stainless Steel	103	1500
Maximum diaphragm case overpressure condition, above setpoint.	All Materials	8.3	120
Internal parts and damage may occur if pressures listed are exceeded			

Technical Data

Table 3: Regulator Capacities for CVS 627H, 1 Inch NPS

Outlet Pressure Range, Color Code, Spring Part Number	Outlet Pressure Setting psig (bar)	Inlet Pressure psig (bar)	Capacities – SCFH (Nm ³ /h) of 0.6 Specific Gravity Natural Gas (based on 20% droop)					
			Orifice Size In (mm)					
			3/32 (2.4)	1/8 (3.2)	3/16 (4.8)	1/4 (6.4)	3/8 (9.5)	1/2 (13)
140-250 psig (1.0-2.8 bar) Blue CVS 10B3078X012	150 (10.3)	200 (13.8)	1760 ⁽¹⁾ (47.2)	3200 ⁽¹⁾ (85.8)	7290 (195)	11500 (308)	21600 (579)	31000 (831)
		250 (17.2)	2260 ⁽¹⁾ (60.6)	4100 ⁽¹⁾ (110)	9200 (247)	15400 (413)	28600 (766)	40000 (1072)
		300 (20.7)	2700 (72.4)	4910 (132)	11200 (300)	19300 (517)	31000 (831)	46000 (1233)
		400 (27.6)	3600 (96.5)	6500 (174)	14800 (397)	25000 (670)	40000 (1072)	50000 (1340)
		500 (34.5)	4400 (118)	8090 (217)	18300 (490)	32000 (858)	51000 (1367)	
		750 (51.7)	6600 (177)	12000 (322)	27200 (729)	46000 (1233)		
		1000 (69)	8700 (233)	16000 (429)	36100 (967)	57000 (1528)		
		1250 (86.2)	11000 (295)	19000 (509)	45000 (1206)			
		1500 (103)	13000 (348)	22000 (590)	54000 (1447)			
		1750 (121)	15000 (402)	25000 (670)	63000 (1688)			
140-250 psig (1.0-2.8 bar) Blue CVS 10B3078X012	200 (13.8)	250 (17.2)	2160 ⁽¹⁾ (57.9)	3850 ⁽¹⁾ (103)	8400 (225)	15000 (402)	31000 (831)	41000 (1099)
		300 (20.7)	2700 ⁽¹⁾ (72.4)	4910 ⁽¹⁾ (132)	11200 (300)	19500 (523)	36000 (965)	52000 (1394)
		400 (27.6)	3600 (96.5)	6500 (174)	14800 (397)	26500 (710)	52000 (1394)	68000 (1822)
		500 (34.5)	4400 (118)	8090 (217)	18300 (490)	33000 (884)	61000 (1635)	
		750 (51.7)	6600 (177)	12000 (322)	27200 (729)	49000 (1313)		
		1000 (69)	8700 (233)	16000 (429)	36100 (967)	65000 (1742)		
		1250 (86.2)	11000 (295)	19000 (509)	45000 (1206)			
		1500 (103)	13000 (348)	22000 (590)	54000 (1447)			
		1750 (121)	15000 (402)	25000 (670)	63000 (1688)			
		2000 (138)	17000 (456)	28000 (750)				
	250 (17.2)	300 (20.7)	2500 ⁽¹⁾ (67)	4500 ⁽¹⁾ (121)	9900 (265)	18500 (496)	37000 (992)	52000 (1394)
		400 (27.6)	3600 (96.5)	6400 ⁽¹⁾ (172)	14300 (383)	26000 (697)	55000 (1474)	74000 (1983)
		500 (34.5)	4400 (118)	8090 (217)	18300 (490)	33000 (884)	64000 (1715)	87000 (2332)
		750 (51.7)	6600 (177)	12000 (322)	27200 (729)	49000 (1313)	93000 (2492)	
		1000 (69)	8700 (233)	16000 (429)	36100 (967)	65000 (1742)		
		1250 (86.2)	11000 (295)	19000 (509)	45000 (1206)	81000 (2171)		
		1500 (103)	13000 (348)	22000 (590)	54000 (1447)			
		1750 (121)	15000 (402)	25000 (670)	63000 (1688)			
		2000 (138)	17000 (456)	28000 (750)	71000 (1903)			

1 – A ±15 psig (1.0 bar) setpoint shift may occur due to small orifices and low pressure drops

240 to 500 psig continued next page,

Technical Data

Table 3 continued: Regulator Capacities for CVS 627H, 1 Inch NPS

Outlet Pressure Range, Color Code, Spring Part Number	Outlet Pressure Setting psig (bar)	Inlet Pressure psig (bar)	Capacities – SCFH (Nm ³ /h) of 0.6 Specific Gravity Natural Gas (based on 20% droop)					
			Orifice Size In (mm)					
			3/32 (2.4)	1/8 (3.2)	3/16 (4.8)	1/4 (6.4)	3/8 (9.5)	1/2 (13)
240-500 psig (16.5-34.5 bar) Red CVS 10B3079X012	250 (17.2)	300 (20.7)	2500 ⁽¹⁾ (67)	4500 ⁽¹⁾ (121)	9300 (249)	14000 (375)	25000 (670)	37000 (992)
		400 (27.6)	3600 (96.5)	6400 ⁽¹⁾ (172)	14300 (383)	21400 (574)	36000 (9965)	49000 (1313)
		500 (34.5)	4400 (118)	8090 (217)	18300 (490)	26300 (705)	42000 (1126)	62000 (1662)
		750 (51.7)	660 (177)	12000 (322)	27200 (729)	37100 (994)	57000 (1528)	
		1000 (69)	8700 (233)	16000 (429)	36100 (967)	47400 (1270)		
		1250 (86.2)	11000 (295)	19000 (509)	45000 (1206)	57000 (1528)		
		1500 (103)	13000 (348)	22000 (590)	54000 (1447)			
		1750 (121)	15000 (402)	25000 (670)	63000 (1688)			
	300 (20.7)	2000 (138)	17000 (456)	28000 (750)	71000 (1903)			
		350 (24.1)	2900 ⁽¹⁾ (77.7)	5150 ⁽¹⁾ (138)	11300 (303)	18400 (493)	31000 (831)	45000 (1206)
		400 (27.6)	3500 ⁽¹⁾ (93.8)	6200 ⁽¹⁾ (166)	13700 (367)	23400 (627)	40000 (1072)	52000 (1394)
		500 (34.5)	4400 (118)	8090 (217)	18300 (490)	32000 (858)	53000 (1420)	67000 (1796)
		750 (51.7)	6600 (177)	12000 (322)	27200 (729)	48000 (1286)	80000 (2144)	
		1000 (69)	8700 (233)	16000 (429)	36100 (967)	62000 (1662)		
		1250 (86.2)	11000 (295)	19000 (509)	45000 (1206)	79000 (2117)		
		1500 (103)	13000 (348)	22000 (590)	54000 (1447)			
	400 (27.6)	1750 (121)	15000 (402)	25000 (670)	63000 (1688)			
		2000 (138)	17000 (456)	28000 (750)	71000 (1903)			
		450 (31)	3600 (96.5)	6400 ⁽¹⁾ (172)	14000 (375)	25000 (670)	47000 (1260)	67000 (1796)
		500 (34.5)	4400 (118)	8090 (217)	18300 (490)	32000 (858)	54000 (1447)	77000 (2064)
		750 (51.7)	6600 (177)	12000 (322)	27200 (729)	49000 (1313)	91000 (2439)	
		1000 (69)	8700 (233)	16000 (429)	36100 (967)	65000 (1742)		
		1250 (86.2)	11000 (295)	19000 (509)	45000 (1206)	81000 (2171)		
		1500 (103)	13000 (348)	22000 (590)	54000 (1447)			
	500 (34.5)	1750 (121)	15000 (402)	25000 (670)	63000 (1688)			
		2000 (138)	17000 (456)	28000 (750)	71000 (1903)			
		550 (37.9)	4300 ⁽¹⁾ (115)	7700 ⁽¹⁾ (206)	16800 (450)	33000 (884)	62000 (1662)	90000 (2412)
		600 (41.4)	4900 ⁽¹⁾ (131)	8800 ⁽¹⁾ (236)	19400 (520)	37000 (992)	70000 (1876)	104000 (2787)
		750 (51.7)	6600 (177)	12000 (322)	27200 (729)	49000 (1313)	88000 (2358)	14000 (3752)
		1000 (69)	8700 (233)	16000 (429)	36100 (967)	65000 (1742)	130000 (3484)	
		1250 (86.2)	11000 (295)	19000 (509)	45000 (1206)	81000 (2171)		
		1500 (103)	13000 (348)	22000 (590)	54000 (1447)	97000 (2600)		
		1750 (121)	15000 (402)	25000 (670)	63000 (1688)			
		2000 (138)	17000 (456)	28000 (750)	71000 (1903)			

1 – A ±15 psig (1.0 bar) setpoint shift may occur due to small orifices and low pressure drops

Technical Data

Table 4: Flow Coefficients

Orifice Size Inch (mm)	NPS 1 Inch CVS 627H		
	Wide Open C_g For External Relief Sizing	Wide Open C_v for External Relief Sizing	C_1
3/32 (2.4)	6.9	0.24	28.5
1/8 (3.20)	12.5	0.43	29.4
3/16 (4.8)	29	0.93	31.2
1/4 (6.5)	50	1.71	29.3
3/8 (9.5)	108	3.42	31.6
1/2 (13)	190	5.29	35.9

Table 5: IEC Sizing Coefficients

Orifice Size		X_T	F_D	F_L
Inch	mm	NPS 1 Inch Body	Ft lbs	Nm
3/32	2.4	0.514	0.50	0.85
1/8	3.2	0.547		0.79
3/16	4.8	0.616		0.85
1/4	6.4	0.543		0.87
3/8	9.5	0.632		0.89
1/2	13	0.815		0.86

Table 6: Torque Values

Item Number	Description	Torque Value	
		Ft lbs	Nm
12	Orifice	25	34
13	Cap Screw (alum casing)	16	22
	Cap Screw (steel casing)	25	34
24	Lever Cap Screw	7	9.5
29	Spring Case Cap Screw (alum diaphragm casing)	7	9.5
	Spring Case Cap Screw (steel diaphragm casing)	35	47
31	Diaphragm Head Screw	14	19

Refer to page 13 for assembly drawing and item number reference

Notes:

Notes:

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