Type 330 Instrument Air Filter Regulator

Field rugged airset in a down-sized package

The Type 330 Instrument Air Filter Regulator is designed to provide clean, accurate air pressure to instruments, valves, and other automatic control equipment in a lightweight, compact housing. This filter regulator has been constructed of durable materials that will provide long lasting corrosion resistance in harsh industrial environments.

FEATURES

Compact and Light Weight Construction
Will mount where competitive units won't

Second Gauge Port Option
Allows easier and lower cost mounting and plumbing connections

Direct, Pipe or Bracket Mounting
Compatible for field replacements of other brands

Low Air Consumption
Lower operating costs

Tapped Exhaust Option

Rugged, Corrosion Resistant Design
Functional for harsh service conditions

Type 330
One Gauge Port

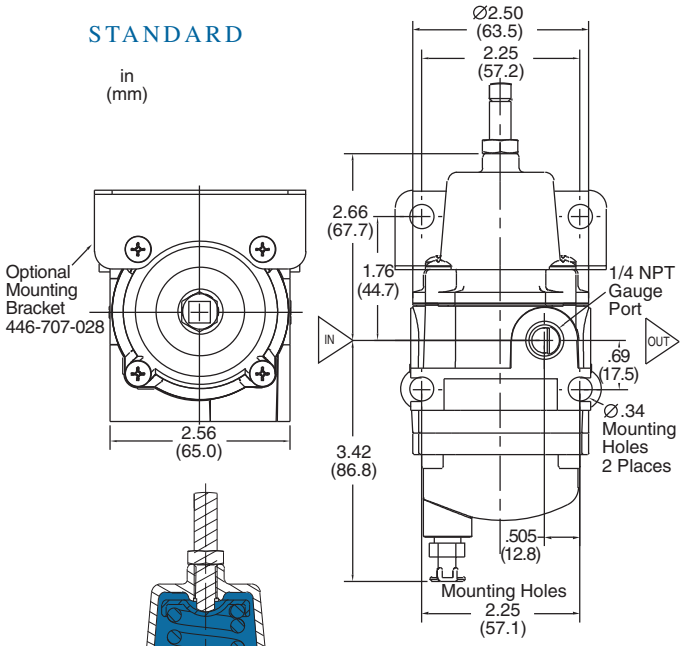
Type 330
Two Gauge Ports

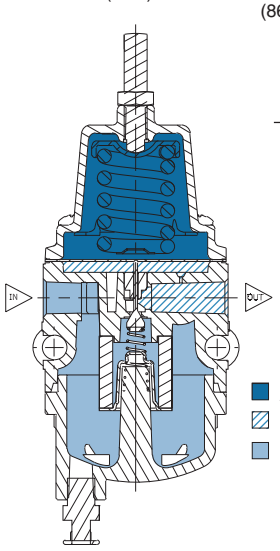
ControlAir Inc.

Type 330 Dimensions

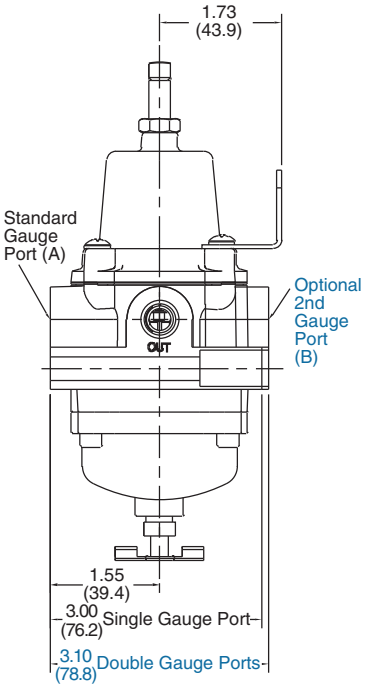
STANDARD

in
(mm)

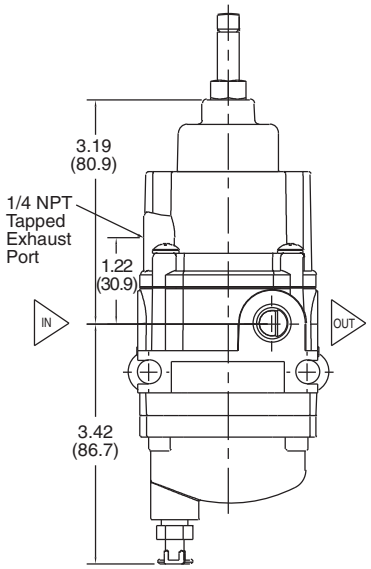




- Atmospheric Pressure
- Regulated Pressure
- Supply Pressure



TAPPED EXHAUST OPTION



SPECIFICATIONS

Port Size	In/Out/Gauge: 1/4" NPT
Output Ranges	0-30 psig (0-2 BAR), 0-60 psig (0-4 BAR), 0-120 psig (0-8 BAR)
Maximum Supply Pressure	250 psig (17 BAR)
Mounting	Pipe, bracket or through body direct
Filter	40 micron (optional 5 micron)
Flow Capacity	22 scfm (37 m3/hr) at 100 psig (7 BAR) supply with 20 psig(1.4 BAR) output
Exhaust Capacity	0.1 scfm (0.2 m3/hr) with downstream pressure 5 psig (0.3 BAR) above set point
Sensitivity	1" of water
Air Consumption	Less than 5 scfh (0.2 m3/hr)
Effect of Supply Pressure Variation	Less than 0.2 psig (0.01 BAR) for 25 psig (1.7 BAR) change
Temperature Limits	0° to 160° F (-18° C to 71° C)
Weight	1.2 lb (0.45 kg)

MATERIALS

Body	Diecast Aluminum Alloy, Irridite and Baked Epoxy Finish
Filter	Phenolic Impregnated Cellulose
Diaphragm	Nitrile Elastomer and Nylon Fabric
Valve Seat Plug	Nitrile Elastomer
Additional Materials	Brass, Zinc Plated Steel, Acetal

Type 330 Ordering **Use this coding system to order**

330 - B [ ] [ ] [ ]

Model

Range
0-30 (0-2 BAR) psig **A**
0-60 (0-4 BAR) psig **B**
0-120 (0-8 BAR) psig **C**

Gauge Port
A Single
B Double

Options
E Tapped Exhaust
F 5 Micron Filter
N Non-Relieving

Accessories

Mounting Bracket: P/N 446-707-028

Gauges: 1/4" NPT back-mount, 2" face, Dual Scale

0-15 psi (0-1 BAR)	P/N 446-725-003
0-30 psi (0-2 BAR)	P/N 446-725-004
0-60 psi (0-4 BAR)	P/N 446-725-001
0-160 psi (0-10 BAR)	P/N 446-725-002

Warranty

ControlAir, Inc. products are warranted to be free from defects in materials and workmanship for a period of eighteen months from the date of sale, provided said products are used according to ControlAir, Inc. recommended usages. ControlAir, Inc.'s liability is limited to the repair, purchase price refund, or replacement in kind, at ControlAir, Inc.'s sole option, of any products proved defective. ControlAir, Inc. reserves the right to discontinue manufacture of any products or change products materials, designs or specifications without notice. Note: ControlAir does not assume responsibility for the selection, use, or maintenance of any product. Responsibility for the proper selection, use, and maintenance of any ControlAir product remains solely with the purchaser and end user

P/N 441-625-057 02/18/09

RoHS Compliant

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FM Approvals ISO-9001

July 2008

627 Series Pressure Reducing Regulators

Introduction

The 627 Series direct-operated pressure reducing regulators (Figure 1) are for low and high pressure systems. These regulators can be used with natural gas, air, or a variety of other gases. Performance characteristics vary according to construction (see the Specifications section).

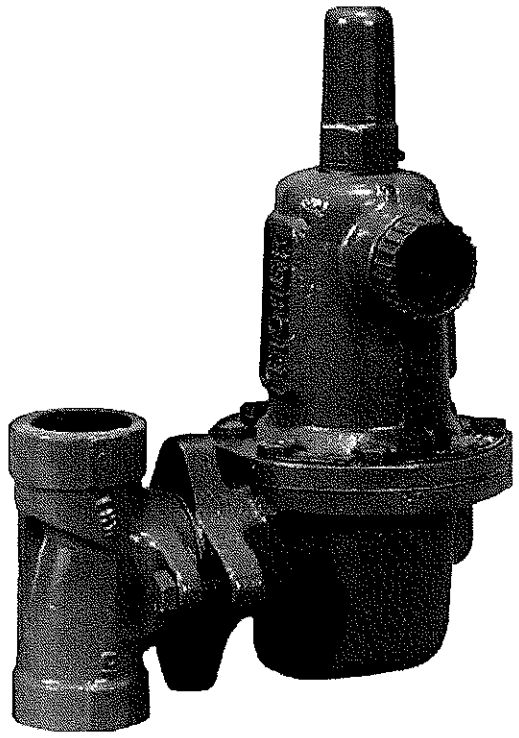

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Figure 1. Typical 627 Series Direct-Operated Pressure Reducing Regulator

Features

- **Internal Relief Valve**—Types 627R, 627LR, and 627MR regulators have an internal relief valve, which in many cases eliminates the usual requirement for an external relief valve, thereby reducing equipment and maintenance costs. Refer to the Specifications section for capacity data.
- **Types 627R, 627LR, and 627MR Travel Stop**—The internal relief valve still works if the disk or linkage fails. The pusher post (Figure 7) contacts the travel stop of the lever retainer and, as the diaphragm continues to rise, it opens the relief valve.
- **Relief Operation Indicator**—A rubber cap (Figure 8) slipped on the vent assembly pops off when the relief valve opens, indicating the relief valve has opened since the last inspection.
- **Easy to Maintain**—Trim parts can be replaced without removing the regulator body from the pipeline. A two-bolt connection between the body and diaphragm casing simplifies disassembly for maintenance.
- **Installation Adaptability**—The diaphragm case and/or regulator body can be rotated in any of four positions to allow regulator installation in locations with limited space (Figure 11). The regulator may be installed in any position without affecting operation as long as the spring case vent is protected from the elements.
- **Application Versatility**—The different 627 Series constructions can be used as farm tap regulators, regulator-relief valves, monitoring regulators, or high-pressure industrial regulators.
- **Extended Body Option**— The Type 627 Long Body is available with same face-to-face dimensions as the Type 630 with threaded NPT end connections.
- **Tamper-Resistant**—An adjusting screw locknut and protective cap (Figure 3) is standard on all 627 Series regulators to discourage tampering with the pressure setting.
- **Wide Range of Flow Capabilities**—A selection of body sizes and orifice sizes is available to satisfy various flow requirements.
- **Tight Shutoff Capability**—A flat-faced disk of nitrile (NBR), nylon (PA), or fluorocarbon (FKM) provides excellent shutoff capability.

D101331X012

FISHER

U.S. Patent 4,782,850

www.emersonprocess.com/regulators

EMERSON. Process Management

Specifications

Available Constructions

Type 627: Direct-operated pressure reducing regulator equipped with a pitot tube for greater regulated capacities (Figure 3)
Type 627R: Type 627 with internal relief and open throat (Figure 4)
Type 627LR: Type 627R with light rate relief spring
Type 627H: Type 627 with a diaphragm limiter to deliver a higher outlet pressure (Figure 6)
Type 627M: Type 627 with a stem seal between the body outlet pressure and diaphragm case. Pressure is measured under the diaphragm through the 1/4-inch NPT downstream control line connection (Figure 3)
Type 627MR: Type 627M with internal relief (Figure 5)
Type 627HM: Type 627H with a stem seal between the body outlet pressure and diaphragm case. Pressure is measured under the diaphragm through two 1/4-inch NPT downstream control line connections (Figure 6)

Body Sizes and End Connection Styles(1)

BODY SIZES	END CONNECTION STYLES	CONSTRUCTION AVAILABLE
3/4	NPT	All
1	NPT, CL150 RF, CL300 RF, CL600 RF, and Long Body	
2	NPT, CL150 RF, CL300 RF, CL600 RF, and Long Body	

Maximum Inlet Pressure(2) **(Body Rating)**

NPT Steel: 2000 psig (138 bar)
Flanged Steel: 1500 psig (103 bar)
Ductile Iron: 1000 psig (69,0 bar)

Maximum Valve Disk Inlet Pressure Rating(2)

Nylon (PA) Disk: 2000 psig (138 bar)
Nitrile (NBR) Disk: 1000 psig (69,0 bar)
Fluorocarbon (FKM) Disk: 300 psig (20,7 bar)

Maximum Operating Inlet and Outlet Pressure Ranges(2)

See Table 2 for pressures by orifice size and spring range

Maximum Spring and Diaphragm Casing Pressure(2)

See Table 3

Maximum Body Outlet Pressure(2)(3) **(Types 627M, 627MR, and 627HM Only)**

NPT Steel: 2000 psig (138 bar)
Flanged Steel: 1500 psig (103 bar)
Ductile Iron: 1000 psig (69,0 bar)

Orifice Sizes

See Table 2

Internal Relief Performance

Type 627R: See Table 4 and Figure 9
Type 627LR: See Table 5
Type 627MR: Limited by field-installed control line piping

Regulator Capacities

Type 627, 627M, or 627MR: See Tables 6 to 9
Type 627H or 627HM: See Tables 10 to 12
Type 627R: See Tables 13 to 14

Flow Coefficients

See Table 15

Construction Materials

Body: Ductile iron, WCC steel
Spring Case and Diaphragm Case: WCC steel, ductile iron, or die cast aluminum
Orifice: Aluminum **(standard)** or stainless steel
Disk Holder with Valve Disk:
2000 psig (138 bar) Maximum Pressure:
Aluminum or stainless steel with nylon (PA)
1000 psig (69,0 bar) Maximum Pressure:
Aluminum **(standard)** or stainless steel with nitrile (NBR)
300 psig (20,7 bar) Maximum Pressure:
Stainless steel or aluminum with fluorocarbon (FKM) disk
O-Rings and Diaphragm:
Nitrile (NBR) or fluorocarbon (FKM)

Relief Indicator

For Types 627R, 627LR, and 627MR (see Figure 8)

Temperature Capabilities(2)

-20° to 180°F (-29° to 82°C)

Pressure Registration

Type 627, 627H, 627R, or 627LR: Internal
Type 627M, 627HM, or 627MR: External through 1/4-inch NPT internal control line connection in the diaphragm case

De-icer System

See Figure 10 and Type 627M De-Icer System Application section

Spring Case Orientation and Vent Location

See Figure 11

Spring Case Vent Connection

3/4-inch NPT with removable screened vent

Approximate Weight

Ductile Iron or Steel Casings: 10 pounds (4,54 kg)
Aluminum Casing: 6.3 pounds (2,86 kg)

1. End connections threaded to other than ASME standards can usually be supplied. For more information, please consult your local Sales Office.
2. The pressure/temperature limits in this bulletin or any applicable standard limitation should not be exceeded.
3. Types 627, 627H, 627R, and 627LR are limited by maximum diaphragm casing pressure.

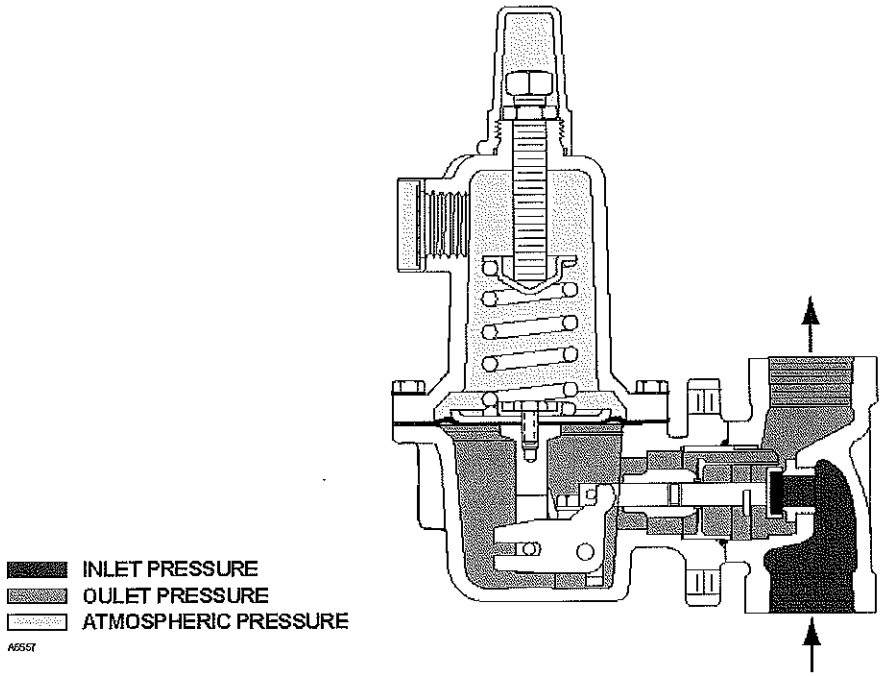

Figure 2. Operational Schematic

Principle of Operation

Refer to Figure 2. When downstream demand decreases, the pressure under the diaphragm increases. This pressure overcomes the regulator setting (which is set by a spring). Through the action of the pusher post assembly, lever, and valve stem the valve disk moves closer to the orifice and reduces gas flow. If demand downstream increases, pressure under the diaphragm decreases. Spring force pushes the pusher post assembly downward and the valve disk moves away from the orifice.

Product Description

Types 627 and 627H Direct-Operated Pressure Reducing Regulators

The Types 627 and 627H regulators provide economical pressure reducing control for a variety of residential, commercial, and industrial applications. The regulator pitot tube located in a high velocity stream provides dynamic boost that compensates for outlet pressure drop (see Tables 6 through 12).

Type 627 Long Body

The Type 627 Long Body regulator can be used as a drop-in replacement for existing Type 630 installations without the need to modify piping.

Internal Relief for Type 627R, 627LR, or 627MR Regulator

The Types 627R and 627LR internal relief performance values (Tables 4 and 5) were obtained **by removing the disk assembly** from the regulator, see Figure 9. For the Type 627R, 627LR, or 627MR regulator, the internal relief across the diaphragm (Figure 4 or 5) provides overpressure protection in many applications. As outlet pressures buildup above the start-to-discharge point, the diaphragm moves off the relief valve seat allowing the excess pressure to bleed out through the screened vent.

For extra protection, should failure conditions exist which would prevent normal operation of the regulator (for example, disk broken off or disk erosion), the pusher post contacts the lever retainer (Figure 7) causing the relief valve assembly to open. Since the diaphragm continues to rise as downstream pressure builds, it opens the relief valve, thereby opening the valve. This internal relief may be adequate for the application.

Downstream Control Line for Type 627M, 627HM, or 627MR Regulator

A Type 627M, 627HM, or 627MR regulator has a blocking throat stem seal with O-rings and a 1/4-inch threaded NPT control line connection in the diaphragm case (Figure 5). A regulator with a downstream control line is used for monitoring applications or other applications where other equipment is installed between the regulator and the pressure control point. The stem seal separates the body outlet pressure from the diaphragm case.

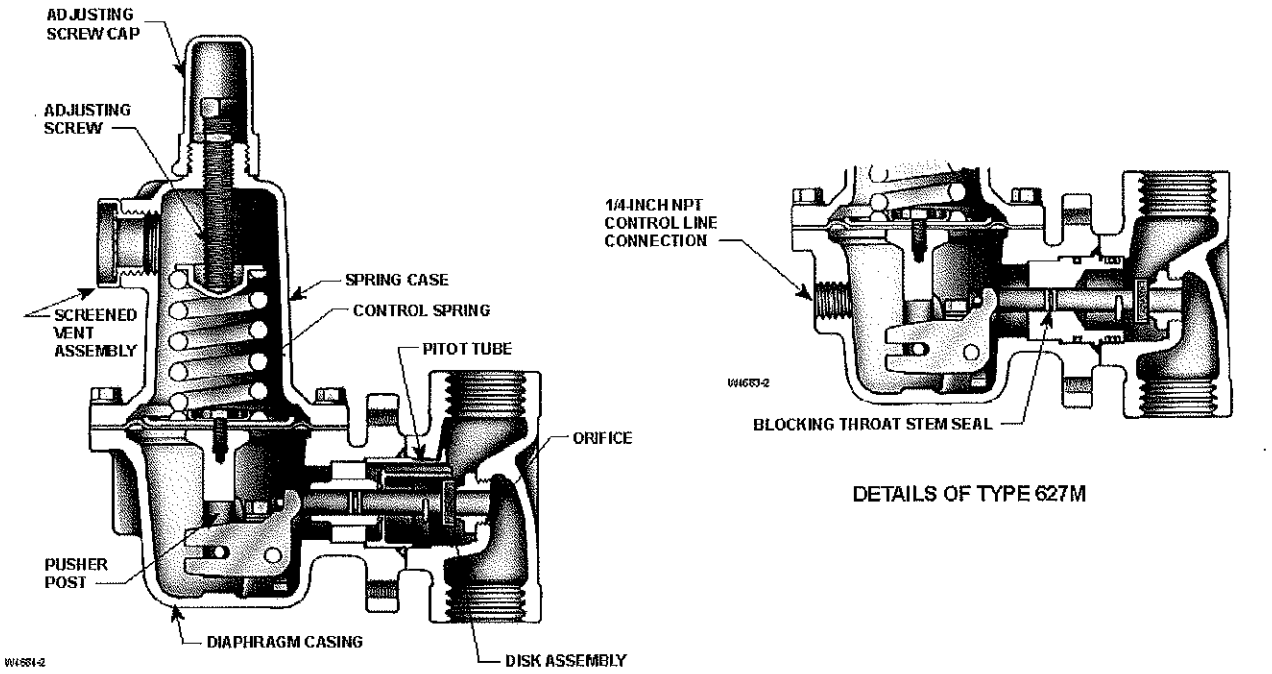

Figure 3. Types 627 and 627M Construction Details

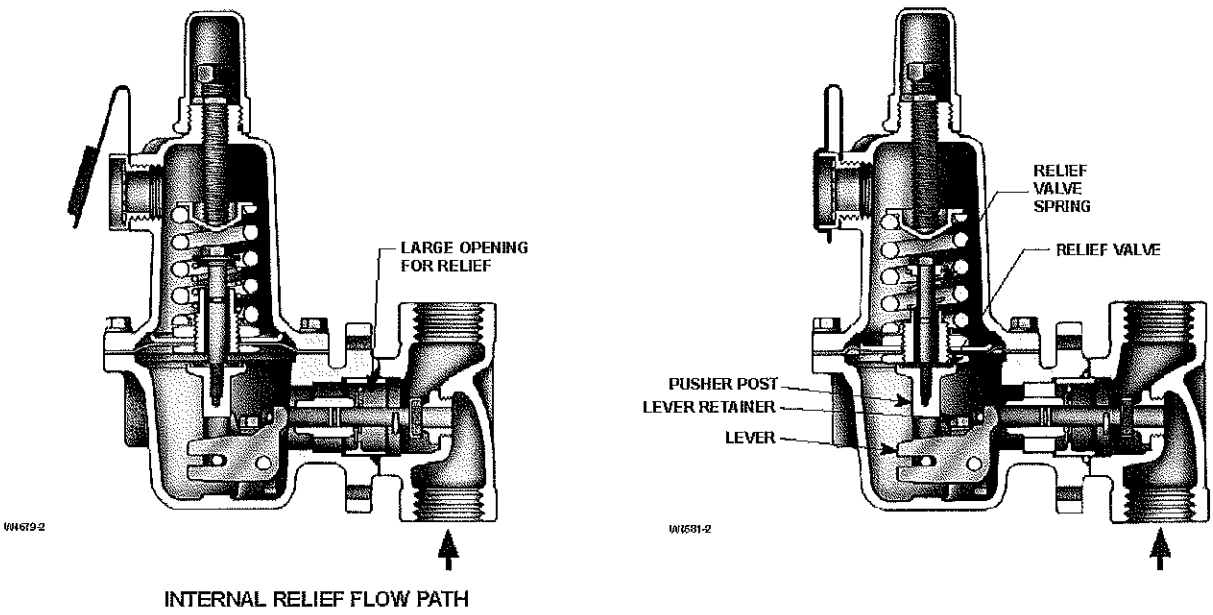

Figure 4. Types 627R and 627LR Construction Details

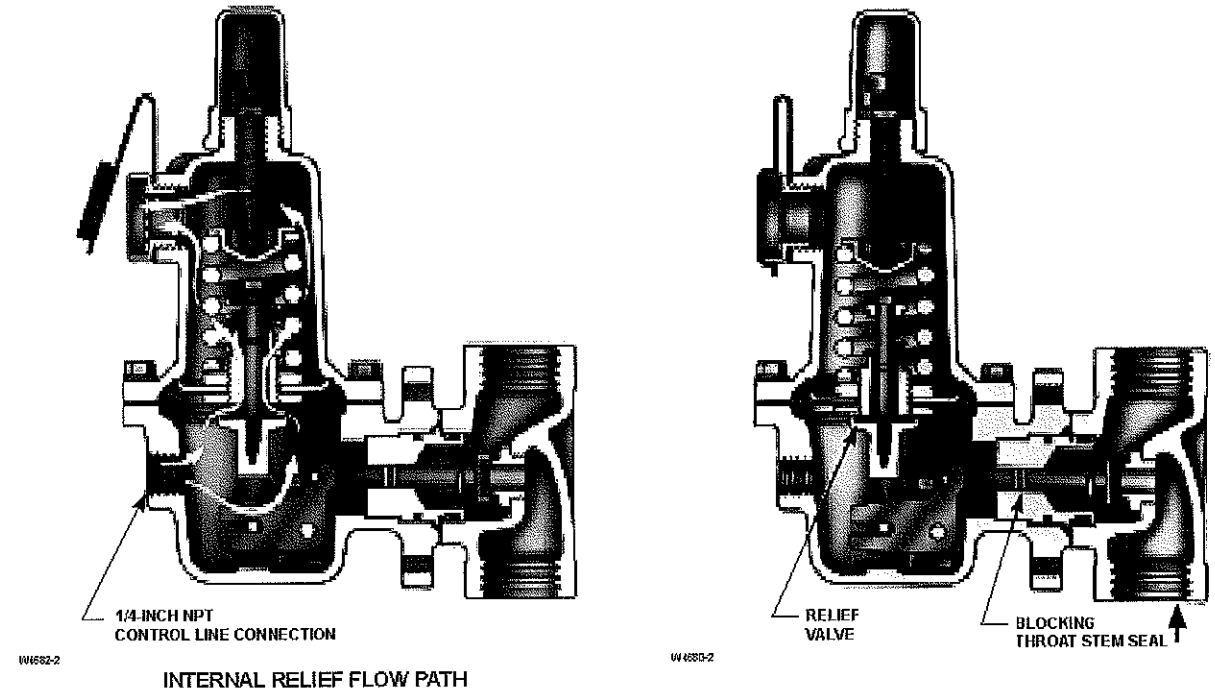

Figure 5. *Type 627MR Construction Details*

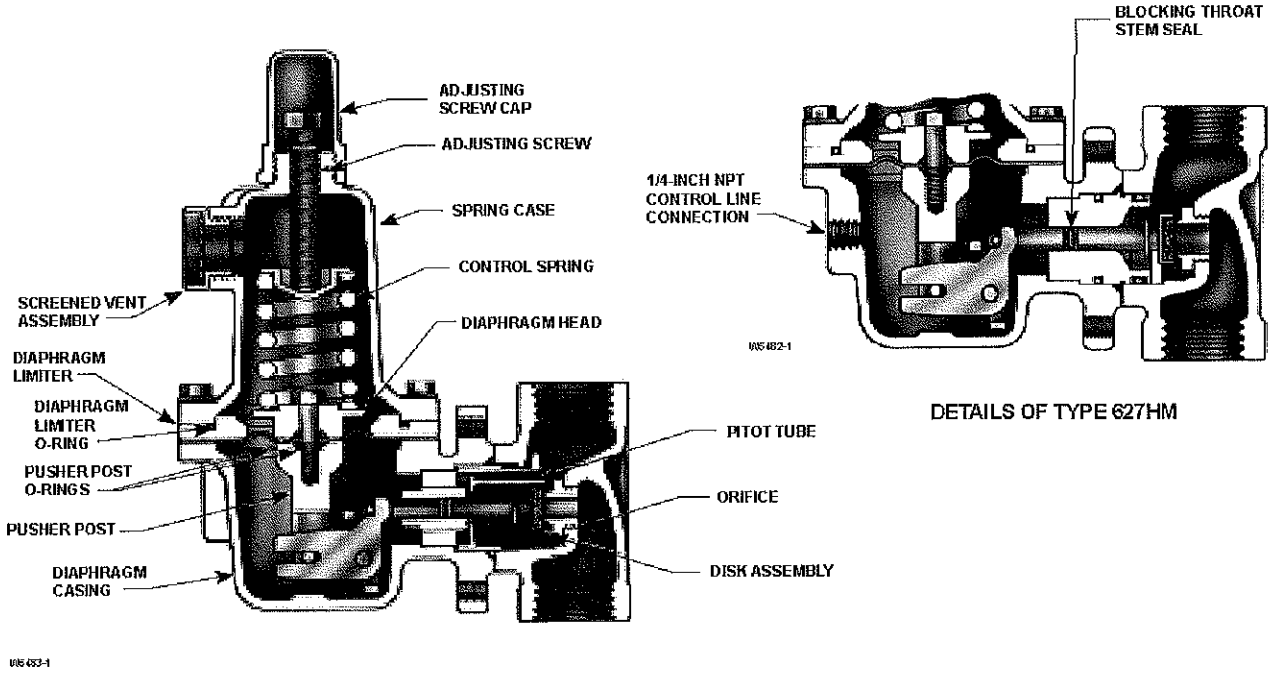

Figure 6. *Types 627H and 627HM Construction Details*

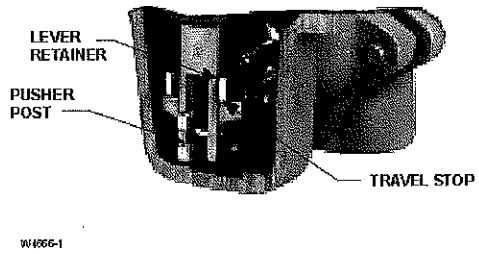

Figure 7. Internal Relief Construction Feature

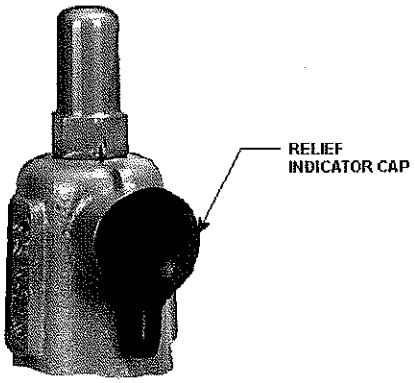

Figure 8. Relief Indicator

Table 1. Maximum Cold Working Pressure of Body Inlet (Body Rating)[1][2]

BODY SIZE, INCH	BODY MATERIAL	END CONNECTION	MAXIMUM INLET PRESSURE, PSIG (bar)
3/4	Ductile iron and Steel	NPT	1000 (69,0)
			2000 (138)
1 and 2	Ductile iron		1000 (69,0)
	Steel		2000 (138)
		CL150 RF	290 (20,0)
		CL300 RF	750 (51,7)
		CL600 RF	1500 (103)
		PN 16/25/40	580 (40,0)

1. The pressure/temperature limits in this bulletin, and any applicable standard or code should not be exceeded.
2. Temperature may decrease these maximum pressures.

Overpressure Protection

627 Series regulators have outlet pressure ratings that are lower than their inlet pressure ratings. A pressure-relieving or pressure-limiting device must be provided by the user for the Types 627, 627M, and 627HM regulators if the inlet pressure can exceed the outlet pressure rating, since these regulators do not have internal relief.

Types 627R and 627LR regulators provide internal relief which limits the total outlet pressure buildup over setpoint. Use Table 4 or 5 and the following example to determine the maximum inlet pressure allowed to keep the maximum allowable downstream pressure from being exceeded.

Given:

40 psig (2,76 bar) Desired outlet pressure setting
125 psig (8,62 bar) Maximum allowable downstream pressure
1/4-inch (6,35 mm) Orifice size

What is the maximum inlet pressure?

35 to 80 psig (2,41 to 5,52 bar) Control spring range (first column)
40 psig (2,76 bar) Outlet pressure setting (second column)
125 psig (8,62 bar) Maximum allowable downstream pressure (third column)
1/4-inch (6,35 mm) Orifice size column across from the 125 psig (8,62 bar) maximum allowable pressure and the column under 1/4-inch (6,35 mm) orifice size

From Table 4, the maximum inlet pressure for this example is 300 psig (20,7 bar).

In many cases the internal relief of Types 627R and 627LR offers full capacity overpressure protection. No additional relief capacity is needed if the actual inlet pressure is equal to or less than the inlet pressure shown under the Maximum Inlet Pressure column heading in Tables 4 and 5.

Table 2. *Maximum Inlet Pressures and Outlet Pressure Ranges*

TYPES	OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	ORIFICE SIZE, INCHES (mm)	MAXIMUM INLET PRESSURE, PSIG (bar)[1]		
			Nylon (PA) Disk	Nitrile (NBR) Disk	Fluorocarbon (FKM) Disk
627 and 627M[3]	5[2] to 20 psig (0,3 to 1,4 bar) 10B3076X012 Yellow	3/32 (2,38)	2000 (138)	1000 (68,9)	300 (20,7)
		1/8 (3,18)	1000 (68,9)	1000 (68,9)	300 (20,7)
		3/16 (4,76)	750 (51,7)	750 (51,7)	300 (20,7)
		1/4 (6,35)	500 (34,5)	500 (34,5)	300 (20,7)
		3/8 (9,53)	300 (20,7)	300 (20,7)	300 (20,7)
		1/2 (12,7)	250 (17,2)	250 (17,2)	250 (17,2)
	15 to 40 psig (1,0 to 2,8 bar) 10B3077X012 Green	3/32 (2,38)	2000 (138)	1000 (68,9)	300 (20,7)
		1/8 (3,18)	1500 (103)	1000 (68,9)	300 (20,7)
		3/16 (4,76)	1000 (68,9)	1000 (68,9)	300 (20,7)
		1/4 (6,35)	750 (51,7)	750 (51,7)	300 (20,7)
		3/8 (9,53)	500 (34,5)	500 (34,5)	300 (20,7)
		1/2 (12,7)	300 (20,7)	300 (20,7)	300 (20,7)
	35 to 80 psig (2,4 to 5,5 bar) 10B3078X012 Blue	3/32 (2,38)	2000 (138)	1000 (68,9)	300 (20,7)
		1/8 (3,18)	2000 (138)	1000 (68,9)	300 (20,7)
		3/16 (4,76)	1750 (121)	1000 (68,9)	300 (20,7)
		1/4 (6,35)	1500 (103)	1000 (68,9)	300 (20,7)
		3/8 (9,53)	1000 (68,9)	1000 (68,9)	300 (20,7)
		1/2 (12,7)	750 (51,7)	750 (51,7)	300 (20,7)
	70 to 150 psig (4,8 to 10,3 bar) 10B3079X012 Red	3/32 (2,38)	2000 (138)	1000 (68,9)	300 (20,7)
		1/8 (3,18)	2000 (138)	1000 (68,9)	300 (20,7)
		3/16 (4,76)	2000 (138)	1000 (68,9)	300 (20,7)
		1/4 (6,35)	1750 (121)	1000 (68,9)	300 (20,7)
		3/8 (9,53)	1250 (86,2)	1000 (68,9)	300 (20,7)
		1/2 (12,7)	750 (51,7)	750 (51,7)	300 (20,7)
627R and 627MR	5[2] to 20 psig (0,3 to 1,4 bar) 10B3076X012 Yellow	3/32 (2,38)	2000 (138)	1000 (68,9)	300 (20,7)
		1/8 (3,18)	1000 (68,9)	1000 (68,9)	300 (20,7)
		3/16 (4,76)	750 (51,7)	750 (51,7)	300 (20,7)
		1/4 (6,35)	500 (34,5)	500 (34,5)	300 (20,7)
		3/8 (9,53)	300 (20,7)	300 (20,7)	300 (20,7)
		1/2 (12,7)	200 (13,8)	200 (13,8)	200 (13,8)
	15 to 40 psig (1,0 to 2,8 bar) 10B3077X012 Green	3/32 (2,38)	2000 (138)	1000 (68,9)	300 (20,7)
		1/8 (3,18)	1500 (103)	1000 (68,9)	300 (20,7)
		3/16 (4,76)	1000 (68,9)	1000 (68,9)	300 (20,7)
		1/4 (6,35)	750 (51,7)	750 (51,7)	300 (20,7)
		3/8 (9,53)	300 (20,7)	300 (20,7)	300 (20,7)
		1/2 (12,7)	200 (13,8)	200 (13,8)	200 (13,8)
	35 to 80 psig (2,4 to 5,5 bar) 10B3078X012 Blue	3/32 (2,38)	2000 (138)	1000 (68,9)	300 (20,7)
		1/8 (3,18)	1750 (121)	1000 (68,9)	300 (20,7)
		3/16 (4,76)	1000 (68,9)	1000 (68,9)	300 (20,7)
		1/4 (6,35)	750 (51,7)	750 (51,7)	300 (20,7)
		3/8 (9,53)	300 (20,7)	300 (20,7)	300 (20,7)
		1/2 (12,7)	200 (13,8)	200 (13,8)	200 (13,8)
	70 to 150 psig (4,8 to 10,3 bar) 10B3079X012 Red	3/32 (2,38)	2000 (138)	1000 (68,9)	300 (20,7)
		1/8 (3,18)	1000 (68,9)	1000 (68,9)	300 (20,7)
		3/16 (4,76)	500 (34,5)	500 (34,5)	300 (20,7)
		1/4 (6,35)	300 (20,7)	300 (20,7)	300 (20,7)
		3/8 (9,53)	200 (13,8)	200 (13,8)	200 (13,8)
		1/2 (12,7)	200 (13,8)	200 (13,8)	200 (13,8)
627LR	15 to 40 psig (1,0 to 2,8 bar) 10B3077X012 Green	3/32 (2,38)		1000 (68,9)	300 (20,7)
		1/8 (3,18)		1000 (68,9)	300 (20,7)
		3/16 (4,76)		750 (51,7)	300 (20,7)
		1/4 (6,35)		500 (34,5)	300 (20,7)
627H and 627MH[3]	140 to 250 psig (9,6 to 17,2 bar) 10B3076X012 Blue	3/32 (2,38)	2000 (138)	1000 (68,9)	
		1/8 (3,18)	2000 (138)	1000 (68,9)	
		3/16 (4,76)	1750 (121)	1000 (68,9)	
		1/4 (6,35)	1500 (103)	1000 (68,9)	
		3/8 (9,53)	1000 (68,9)	750 (51,7)	
		1/2 (12,7)	750 (51,7)	500 (34,5)	
	240 to 500 psig (16,5 to 34,5 bar) 10B3079X012 Red	3/32 (2,38)	2000 (138)	1000 (68,9)	
		1/8 (3,18)	2000 (138)	1000 (68,9)	
		3/16 (4,76)	1750 (121)	1000 (68,9)	
		1/4 (6,35)	1500 (103)	1000 (68,9)	
		3/8 (9,53)	1000 (68,9)	1000 (68,9)	
		1/2 (12,7)	750 (51,7)	750 (51,7)	

1. For inlet pressure in excess of 1000 psig (69,0 bar), refer to the maximum body and disk pressure ratings in the Specification section.
2. For pressure settings under 10 psig (0,69 bar), inlet pressure should be limited to approximately 100 psig (6,90 bar) so the setpoint adjustment can be obtained.
3. The unbalance forces change from the wide-open monitor mode to an active regulator mode such that the Type 627M or 627MH should have a 3/8-inch (9,53 mm) or larger orifice.

Shaded areas indicate that Fluorocarbon (FKM) / Nylon (PA) disk material is not available.

If the maximum allowable downstream system pressure is less than any of the pressures shown in the third column of Tables 4 and 5, use a separate relief valve or a monitor regulator since the internal relief will not open at pressures lower than shown in the table.

If the actual inlet pressure is higher than the pressure shown, in the Maximum Inlet Pressure column, to protect to the level shown, an additional relief valve is needed to supplement the relief capacity of the Type 627R or 627LR internal relief or a full capacity separate relief valve or monitor regulator may be used.

To size a supplemental relief valve to use with the Type 627R or 627LR:

1. Use the universal sizing equation to calculate the wide-open capacity of the regulator port (Q_1) using:
   a. Actual inlet pressure, PSIA (P_1)
   b. Maximum allowable downstream system pressure (P_2) from Table 4 or 5, column 3
   c. C_g from Table 15
2. Use the universal sizing equation to calculate the internal relief flow (Q_2) using:
   a. Maximum inlet pressure (P_1) from Table 4 columns 4 through 9 for Type 627R or Table 5 columns 4 through 7 for Type 627LR (use the pressure from the table even though the actual pressure will be higher). Remember the equation requires pressures to be converted to PSIA.
   b. Maximum allowable downstream system pressure (P_2) from Table 4 or 5
   c. C_g from Table 15
3. Calculate supplemental relief capacity:
   a. Q supplemental relief = $Q_1 - Q_2$

Example:

10 psig (0,69 bar)	Outlet pressure setting
60 psig (4,14 bar)	Maximum allowable downstream system pressure
300 psig (20,7 bar)	Inlet pressure
1/4-inch (6,35 mm)	Orifice size

Step 1.
P_1 = 300 psig (20,7 bar)
P_2 = 60 psig (4,14 bar)
C_g, 1/4-inch (6,35 mm) orifice = 50
Q_1 = 20 300 SCFH (544 Nm^3/h)

Step 2.
P_1 = 190 psig (13,1 bar)
P_2 = 60 psig (4,14 bar)
C_g, 1/4-inch (6,4 mm) orifice = 50
Q_2 = 13 200 SCFH (354 Nm^3/h)

Step 3.
Q supplemental relief = $Q_1 - Q_2$
Q supplemental relief = 20 300 – 13 200 = 7,100 SCFH
(544 - 354 = 190 Nm^3/h)

Overpressurizing any portion of a regulator or associated equipment may cause personal injury, leakage, or property damage due to bursting of pressure-containing parts or explosion of accumulated gas.

If needed, provide appropriate pressure-relieving or pressure-limiting devices to ensure that none of the specifications are exceeded. Regulator operation within ratings does not prevent the possibility of damage from external sources such as debris in the pipeline.

Refer to the relief sizing coefficients in Table 15 and the Capacity Information section to determine the required external relief valve capacity.

Capacity Information

Natural gas regulating capacities at selected inlet pressures and outlet pressure settings are given in Tables 6 to 9 for the Type 627 or 627M, in Tables 10 to 12 for the Type 627H, and in Tables 13 to 14 for the Type 627R regulator. Flows are in SCFH (60°F and 14.7 psia) and Nm^3/h (at 0°C and 1,01325 bar) of 0.6 specific gravity natural gas.

To determine the equivalent capacities for other gases, multiply the table capacity by the following appropriate conversion factor: 0.775 for air, 0.789 for nitrogen, 0.628 for propane, or 0.548 for butane. For gases of other specific gravities, multiply the given capacity by 0.775, and divide by the square root of the appropriate specific gravity.

Then, if capacity is desired in Nm^3/h at 0°C and 1,01325 bar, multiply SCFH by 0.0268.

To determine wide-open flow capacities for relief sizing use the following formula:

$$Q = \sqrt{\frac{520}{GT}}\, C_g P_1 \mathrm{SIN}\left(\frac{3417}{C_1}\sqrt{\frac{\Delta P}{P_1}}\right)\mathrm{DEG}$$

where,

Q = gas flow rate, SCFH
G = specific gravity of the gas
T = absolute temperature of gas at inlet, °Rankine
C_g = gas sizing coefficient
P_1 = absolute inlet pressure, psia
C_1 = flow coefficient ($C_g \div C_v$)
ΔP = pressure drop across the regulator, psi

To obtain the published capacities, the inlet and outlet piping should be the same as the regulator size.

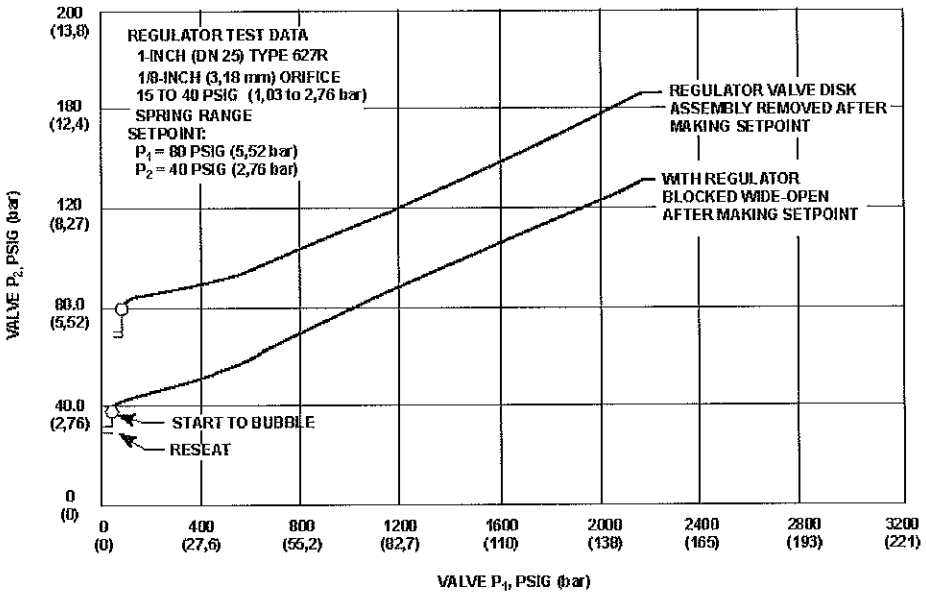

Figure 9. *Relief Testing Methods, Outlet vs. Inlet Pressures*

Table 3. *Maximum Spring and Diaphragm Casing Pressure*[1]

MAXIMUM PRESSURE DESCRIPTION	DIAPHRAGM CASING MATERIAL	TYPE 627, PSIG (bar)	TYPES 627R AND 627LR, PSIG (bar)	TYPE 627M, PSIG (bar)	TYPE 627MR, PSIG (bar)	TYPES 627H AND 627HM, PSIG (bar)
Maximum pressure to spring and diaphragm casings to prevent leak to atmosphere other than relief action (internal parts damage may occur)	Die cast aluminum	250 (17,2)	250 (17,2)	Not Available	Not Available	Not Available
	Ductile iron	250 (17,2)	250 (17,2)	250 (17,2)	Not Available	Not Available
	Steel	250 (17,2)	250 (17,2)	250 (17,2)	250 (17,2)	800 (55,2)
Maximum pressure to spring and diaphragm casings to prevent burst of casings during abnormal operation (leak to atmosphere and internal parts damage may occur)	Die cast aluminum	375 (25,9)	375 (25,9)	Not Available	Not Available	Not Available
	Ductile iron	465 (32,1)	465 (32,1)	465 (32,1)	465 (32,1)	Not Available
	Steel	1500 (103)	1500 (103)	1500 (103)	1500 (103)	1500 (103)
Maximum diaphragm casing overpressure (above setpoint) to prevent damage to internal parts	All materials	60 (4,14)	120 (8,27)	60 (4,14)	120 (8,27)	120 (8,27)

1. If the spring case is pressurized, a metal adjusting screw cap is required. Contact your local Sales Office for details.

Table 4. *Type 627R Internal Relief Performance*[1]

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	MAXIMUM ALLOWABLE DOWNSTREAM SYSTEM PRESSURE, PSIG (bar)	MAXIMUM INLET PRESSURE TO KEEP MAXIMUM ALLOWABLE DOWNSTREAM SYSTEM PRESSURE FROM BEING EXCEEDED, PSIG (bar)[2]					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
5[3] to 20 psig (0,3 to 1,4 bar) 10B3076X012 Yellow	10 (0,7)	60 (4,14)	1250 (86,2)	740 (51,0)	320 (22,1)	190 (13,1)	95 (6,55)	75 (5,17)
		100 (6,90)	2000 (138)	1500 (103)	620 (42,7)	390 (26,9)	180 (12,4)	130 (8,96)
		125 (8,62)	2000 (138)	1900 (131)	830 (57,2)	480 (33,1)	220 (15,2)	160 (11,0)
		175 (12,1)	2000 (138)	2000 (138)	1100 (75,8)	670 (46,2)	320 (22,1)	220 (15,2)
		200 (13,8)	2000 (138)	2000 (138)	1300 (89,6)	770 (53,1)	360 (24,8)	260 (17,9)
		250 (17,2)	2000 (138)	2000 (138)	1600 (110)	960 (66,2)	450 (31,0)	320 (22,1)
	15 (1,0)	60 (4,14)	1000 (69,0)	620 (42,7)	260 (17,9)	170 (11,7)	90 (6,21)	70 (4,83)
		100 (6,90)	2000 (138)	1400 (96,5)	610 (42,1)	370 (25,5)	170 (11,7)	130 (8,96)
		125 (8,62)	2000 (138)	1900 (131)	810 (55,8)	480 (33,1)	220 (15,2)	160 (11,0)
		175 (12,1)	2000 (138)	2000 (138)	1100 (75,8)	670 (46,2)	320 (22,1)	220 (15,2)
		200 (13,8)	2000 (138)	2000 (138)	1300 (89,6)	770 (53,1)	360 (24,8)	260 (17,9)
		250 (17,2)	2000 (138)	2000 (138)	1600 (110)	960 (66,2)	450 (31,0)	320 (22,1)
	20 (1,4)	60 (4,14)	850 (58,6)	490 (33,8)	210 (14,5)	130 (8,96)	80 (5,52)	65 (4,48)
		100 (6,90)	2000 (138)	1300 (89,6)	600 (41,4)	360 (24,8)	170 (11,7)	120 (8,27)
		125 (8,62)	2000 (138)	1800 (124)	800 (55,2)	480 (33,1)	220 (15,2)	160 (11,0)
		175 (12,1)	2000 (138)	2000 (138)	1100 (75,8)	670 (46,2)	320 (22,1)	220 (15,2)
		200 (13,8)	2000 (138)	2000 (138)	1300 (89,6)	770 (53,1)	360 (24,8)	260 (17,9)
		250 (17,2)	2000 (138)	2000 (138)	1600 (110)	960 (66,2)	450 (31,0)	320 (22,1)

1. The internal relief performance values are obtained by removing the disk assembly.
2. For inlet pressures in excess of 1000 psig (69,0 bar), refer to the maximum body and disk pressure ratings in the Specifications section.
3. For pressure settings under 10 psig (0,69 bar), inlet pressure should be limited to approximately 100 psig (6,90 bar) so the setpoint adjustment can be obtained.

[ ] - Shaded areas indicate maximum inlet pressures allowed during system malfunction only. Table 2 gives the maximum inlet pressure for normal regulator operation.

- continued -

Table 4. *Type 627R Internal Relief Performance[1] (continued)*

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	MAXIMUM ALLOWABLE DOWNSTREAM SYSTEM PRESSURE, PSIG (bar)	MAXIMUM INLET PRESSURE TO KEEP MAXIMUM ALLOWABLE DOWNSTREAM SYSTEM PRESSURE FROM BEING EXCEEDED, PSIG (bar)[2]					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
15 to 40 psig (1,0 to 2,8 bar) 10B3077X012 Green	15 (1,0)	60 (4,14)	1000 (69,0)	380 (26,2)	210 (14,5)	130 (8,96)	80 (5,52)	65 (4,48)
		100 (6,90)	2000 (138)	1300 (89,6)	590 (40,7)	350 (24,1)	170 (11,7)	120 (8,27)
		125 (8,62)	2000 (138)	1800 (124)	800 (55,2)	470 (32,4)	220 (15,2)	160 (11,0)
		175 (12,1)	2000 (138)	2000 (138)	1100 (75,8)	640 (44,1)	320 (22,1)	220 (15,2)
		200 (13,8)	2000 (138)	2000 (138)	1300 (89,6)	780 (53,8)	370 (25,5)	260 (17,9)
		250 (17,2)	2000 (138)	2000 (138)	1600 (110)	960 (66,2)	460 (31,8)	320 (22,1)
	20 (1,4)	60 (4,14)	630 (43,4)	200 (13,8)	150 (10,3)	100 (6,90)	70 (4,83)	65 (4,48)
		100 (6,90)	2000 (138)	1200 (82,7)	550 (37,9)	330 (22,8)	160 (11,0)	120 (8,27)
		125 (8,62)	2000 (138)	1700 (117)	760 (52,4)	450 (31,0)	210 (14,5)	160 (11,0)
		175 (12,1)	2000 (138)	2000 (138)	1100 (75,8)	630 (43,4)	320 (22,1)	220 (15,2)
		200 (13,8)	2000 (138)	2000 (138)	1300 (89,6)	770 (53,1)	360 (24,8)	260 (17,9)
		250 (17,2)	2000 (138)	2000 (138)	1600 (110)	960 (66,2)	460 (31,7)	320 (22,1)
	30 (2,1)	100 (6,90)	2000 (138)	950 (65,5)	450 (31,0)	260 (17,9)	140 (9,65)	110 (7,58)
		125 (8,62)	2000 (138)	1500 (103)	670 (46,2)	400 (27,6)	190 (13,1)	150 (10,3)
		175 (12,1)	2000 (138)	2000 (138)	1000 (69,0)	610 (42,1)	300 (20,7)	220 (15,2)
		200 (13,8)	2000 (138)	2000 (138)	1200 (82,7)	760 (52,4)	360 (24,8)	260 (17,9)
		250 (17,2)	2000 (138)	2000 (138)	1600 (110)	970 (66,9)	460 (31,7)	320 (22,1)
	40 (2,8)	100 (6,90)	1500 (103)	700 (48,3)	330 (22,8)	200 (13,8)	120 (8,27)	108 (7,45)
		125 (8,62)	2000 (138)	1300 (89,6)	560 (38,6)	340 (23,4)	180 (12,4)	140 (9,65)
		175 (12,1)	2000 (138)	1800 (124)	1000 (69,0)	550 (37,9)	290 (20,0)	220 (15,2)
		200 (13,8)	2000 (138)	2000 (138)	1200 (82,7)	730 (50,3)	350 (24,1)	250 (17,2)
		250 (17,2)	2000 (138)	2000 (138)	1600 (110)	970 (66,9)	460 (31,7)	320 (22,1)
35 to 80 psig (2,4 to 5,5 bar) 10B3078X012 Blue	40 (2,8)	125 (8,62)	2000 (138)	1100 (75,8)	500 (34,5)	300 (20,7)	170 (11,7)	140 (9,65)
		150 (10,3)	2000 (138)	1600 (110)	750 (51,7)	440 (30,3)	230 (15,9)	180 (12,4)
		175 (12,1)	2000 (138)	2000 (138)	980 (67,6)	580 (40,0)	290 (20,0)	220 (15,2)
		200 (13,8)	2000 (138)	2000 (138)	1200 (82,7)	720 (49,6)	340 (23,4)	250 (17,2)
		250 (17,2)	2000 (138)	2000 (138)	1600 (110)	940 (64,8)	450 (31,0)	320 (22,1)
	50 (3,4)	125 (8,62)	1400 (96,5)	820 (56,5)	400 (27,6)	230 (15,9)	150 (10,3)	140 (9,65)
		150 (10,3)	2000 (138)	1400 (96,5)	650 (44,8)	370 (25,5)	210 (14,5)	170 (11,7)
		175 (12,1)	2000 (138)	1900 (131)	700 (48,3)	530 (36,5)	270 (18,6)	210 (14,5)
		200 (13,8)	2000 (138)	2000 (138)	1100 (75,8)	670 (46,2)	330 (22,8)	240 (16,5)
		250 (17,2)	2000 (138)	2000 (138)	1500 (103)	920 (63,4)	430 (29,6)	320 (22,1)
	60 (4,1)	125 (8,62)	900 (62,1)	450 (31,0)	270 (18,6)	190 (13,1)	140 (9,65)	130 (8,96)
		150 (10,3)	1700 (117)	1100 (75,8)	540 (37,2)	300 (20,7)	190 (13,1)	160 (11,0)
		175 (12,1)	2000 (138)	1700 (117)	780 (53,8)	470 (32,4)	250 (17,2)	200 (13,8)
		200 (13,8)	2000 (138)	2000 (138)	1000 (69,0)	610 (42,1)	310 (21,4)	230 (15,9)
		250 (17,2)	2000 (138)	2000 (138)	1400 (96,5)	880 (60,7)	420 (29,0)	310 (21,4)
	70 (4,8)	150 (10,3)	1200 (82,7)	850 (58,6)	430 (29,6)	250 (17,2)	170 (11,7)	160 (11,0)
		175 (12,1)	2000 (138)	1400 (96,5)	670 (46,2)	400 (27,6)	230 (15,9)	190 (13,1)
		200 (13,8)	2000 (138)	2000 (138)	920 (63,4)	550 (37,9)	280 (19,3)	230 (15,9)
		250 (17,2)	2000 (138)	2000 (138)	1300 (89,6)	830 (57,2)	400 (27,6)	310 (21,4)
	80 (5,5)	150 (10,3)	800 (55,2)	500 (34,5)	300 (20,7)	200 (13,8)	160 (11,0)	150 (10,3)
		175 (12,1)	1500 (103)	1200 (82,7)	550 (37,9)	330 (22,8)	210 (14,5)	190 (13,1)
		200 (13,8)	2000 (138)	1700 (117)	800 (55,2)	480 (33,1)	270 (18,6)	220 (15,2)
		250 (17,2)	2000 (138)	2000 (138)	1200 (82,7)	770 (53,1)	390 (26,9)	300 (20,7)
70 to 150 psig (4,8 to 10,3 bar) 10B3079X012 Red	70 (4,8)	175 (12,1)	1900 (131)	600 (41,4)	400 (27,6)	260 (17,9)	200 (13,8)	175 (12,1)
		200 (13,8)	2000 (138)	1200 (82,7)	630 (43,4)	380 (26,2)	250 (17,2)	210 (14,5)
		250 (17,2)	2000 (138)	2000 (138)	1100 (75,8)	680 (46,9)	360 (24,8)	290 (20,0)
	80 (5,5)	175 (12,1)	1400 (96,5)	250 (17,2)	240 (16,5)	200 (13,8)	190 (13,1)	175 (12,1)
		200 (13,8)	2000 (138)	960 (66,2)	520 (35,9)	330 (22,8)	240 (16,5)	210 (14,5)
		250 (17,2)	2000 (138)	2000 (138)	1000 (69,0)	620 (42,7)	350 (24,1)	280 (19,3)
	100 (6,9)	200 (13,8)	1500 (103)	250 (17,2)	240 (16,5)	230 (15,9)	210 (14,5)	210 (14,5)
		250 (17,2)	2000 (138)	1600 (110)	770 (53,1)	520 (35,9)	320 (22,1)	270 (18,6)
	125 (8,6)	250 (17,2)	2000 (138)	1000 (69,0)	500 (34,5)	390 (26,9)	290 (20,0)	260 (17,9)
	150 (10,3)	250 (17,2)	1200 (82,7)	260 (17,9)	260 (17,9)	260 (17,9)	260 (17,9)	260 (17,9)

1. The internal relief performance values are obtained by removing the disk assembly.
2. For inlet pressures in excess of 1000 psig (69,0 bar), refer to the maximum body and disk pressure ratings in the Specifications section.
3. For pressure settings under 10 psig (0,69 bar), inlet pressure should be limited to approximately 100 psig (6,90 bar) so the setpoint adjustment can be obtained.

[ ] - Shaded areas indicate maximum inlet pressures allowed during system malfunction only. Table 2 gives the maximum inlet pressure for normal regulator operation.

Table 5. *Type 627LR Internal Relief Performance[1]*

OUTLET PRESSURE RANGE AND CONTROL SPRING INFORMATION	OUTLET PRESSURE SETTING, PSIG (bar)	MAXIMUM ALLOWABLE DOWNSTREAM SYSTEM PRESSURE, PSIG (bar)	MAXIMUM INLET PRESSURE, PSIG (bar)			
			Maximum Inlet Pressure to Keep Maximum Allowable Downstream System Pressure From Being Exceeded			
			Orifice Diameter, Inches (mm)			
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)
15 to 40 Psig (1,03 to 2,76 Bar) 10B3077X012 Green	30 (2,1)	55 (3,79)	500 (34,5)	270 (18,6)	110 (7,58)	80 (5,52)
		60 (4,14)	850 (58,6)	480 (33,1)	200 (13,8)	120 (8,27)
		66 (4,55)	1000 (69,0)	660 (45,5)	290 (20,0)	175 (12,1)
	40 (2,8)	66 (4,55)	380 (26,2)	190 (13,1)	85 (5,86)	80 (5,52)
		70 (4,83)	700 (48,3)	370 (25,5)	150 (10,3)	115 (7,93)
		75 (5,17)	1000 (69,0)	560 (38,6)	240 (16,5)	160 (11,0)

1. The internal relief performance values are obtained by removing the disk assembly.

Table 6. *Types 627, 627M, and 627MR Capacities for 3/4-Inch Body Size*[1]

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0,6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
5 to 20 psig[2] (0,3 to 1,4 bar) 10B3076X012 Yellow	5 (0,3)[3]	10 (0,69)	170 (4,56)	320 (8,58)	700 (18,8)	1060 (28,4)	1540 (41,3)	1900 (50,9)
		15 (1,03)	240 (6,43)	330 (8,84)	810 (21,7)	1300 (34,8)	2150 (57,6)	3350 (89,8)
		20 (1,38)	290 (7,77)	460 (12,3)	1140 (30,6)	1800 (48,2)	3050 (81,7)	4350 (117)
		30 (2,07)	380 (10,2)	610 (16,3)	1530 (41,0)	2490 (66,7)	3880 (104)	6850 (184)
		60 (4,14)	640 (17,2)	1170 (31,4)	2550 (68,3)	4240 (114)	6270 (168)	7370 (198)
		75 (5,17)	770 (20,6)	1410 (37,8)	3020 (80,9)	5100 (137)	6620 (177)	7700 (206)
		100 (6,90)	990 (26,5)	1800 (48,2)	3800 (102)	5980 (160)	7440 (199)	7900 (212)
	10 (0,7)	15 (1,03)	210 (5,63)	320 (8,58)	800 (21,4)	1290 (34,6)	2100 (56,3)	3300 (88,4)
		20 (1,38)	280 (7,50)	455 (12,2)	1130 (30,3)	1790 (48,0)	3000 (80,4)	4300 (115)
		30 (2,07)	380 (10,2)	610 (16,3)	1530 (41,0)	2480 (66,5)	3860 (103)	6830 (183)
		60 (4,14)	640 (17,2)	1170 (31,4)	2550 (68,3)	4240 (114)	6270 (168)	7370 (198)
		75 (5,17)	770 (20,6)	1410 (37,8)	3020 (80,9)	5100 (137)	6620 (177)	7700 (206)
		100 (6,90)	990 (26,5)	1800 (48,2)	3800 (102)	5980 (160)	7440 (199)	7900 (212)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5700 (153)	7130 (191)	8180 (219)	8200 (220)
		200 (13,8)	1850 (49,6)	3370 (90,3)	6970 (187)	7250 (194)	8200 (220)	8300 (222)
		300 (20,7)	2700 (72,4)	4910 (132)	8000 (214)	8050 (216)	8250 (221)	
		500 (34,5)	4010 (107)	8090 (217)	8060 (216)	8100 (217)		
		750 (51,7)	4400 (118)	8930 (239)	8950 (240)			
		1000 (69,0)	4450 (119)	10 300 (276)				
		1250 (86,2)	4540 (122)					
		1500 (103)	4880 (131)					
		1750 (121)	5230 (140)					
		2000 (138)	5900 (158)					
	20 (1,4)	30 (2,07)	350 (9,38)	620 (16,6)	1400 (37,5)	2490 (66,7)	4360 (117)	6290 (169)
		50 (3,45)	550 (14,7)	1000 (26,8)	2280 (61,1)	4010 (107)	7870 (211)	8500 (228)
		60 (4,14)	640 (17,2)	1170 (31,4)	2640 (70,8)	4680 (125)	8340 (224)	8940 (240)
		100 (6,90)	990 (26,5)	1800 (48,2)	3980 (107)	7220 (193)	11 500 (308)	12 600 (338)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 400 (279)	12 100 (324)	13 100 (351)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7340 (197)	12 000 (322)	13 200 (354)	13 700 (367)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	13 000 (348)	15 600 (418)	
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	15 100 (405)		
		750 (51,7)	6600 (177)	12 000 (322)	14 200 (381)			
		1000 (69,0)	7300 (196)	14 600 (391)				
		1250 (86,2)	7500 (201)					
		1500 (103)	7800 (209)					
		1750 (121)	8400 (225)					
		2000 (138)	8600 (230)					
15 to 40 psig (1,0 to 2,8 bar) 10B3077X012 Green	40 (2,8)	60 (4,14)	610 (16,3)	1090 (29,2)	2530 (67,8)	4350 (117)	8140 (218)	9420 (252)
		75 (5,17)	760 (20,4)	1370 (36,7)	3080 (82,5)	5510 (148)	10 300 (276)	13 600 (364)
		100 (6,90)	990 (26,5)	1790 (48,0)	4070 (109)	7220 (193)	13 200 (354)	15 300 (410)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 400 (279)	17 400 (466)	18 200 (488)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 500 (362)	18 000 (482)	18 500 (496)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	18 500 (496)	20 000 (536)	20 700 (555)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	24 000 (643)	27 000 (724)	
		750 (51,7)	6600 (177)	12 000 (322)	23 000 (616)	24 200 (649)		
		1000 (69,0)	8700 (233)	16 000 (429)	24 400 (654)			
		1250 (86,2)	11 000 (295)	18 000 (482)				
		1500 (103)	12 000 (322)	21 000 (563)				
		1750 (121)	13 000 (348)					
		2000 (138)	14 000 (375)					

1. Capacity is based on 20% droop unless otherwise noted below.
2. For pressure settings under 10 psig (0,69 bar), inlet pressure should be limited to approximately 100 psig (6,90 bar) so the setpoint adjustment can be obtained.
3. For 5 psig (0,34 bar) pressure setpoint the droop is 2 psig (0,14 bar).

□ - Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

▨ - Shaded areas indicate where a Type 627MR regulator should not be used because unbalanced forces can cause the internal relief valve to start-to-discharge during normal operation. Refer to Table 4.

- continued -

Table 6. Types 627, 627M, and 627MR Capacities for 3/4-Inch Body Size[1] (continued)

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
35 to 80 psig (2,4 to 5,5 bar) 10B3078X012 Blue	60 (4,1)	75 (5,17)	700 (18,8)	1230 (33,0)	2760 (74,0)	4750 (127)	8620 (231)	15 200 (407)
		100 (6,90)	970 (26,0)	1740 (46,6)	4010 (107)	6990 (187)	12 800 (343)	17 300 (464)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 300 (276)	18 600 (498)	23 000 (616)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 500 (362)	21 600 (579)	27 400 (734)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	19 800 (531)	26 100 (699)	30 100 (807)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	28 100 (753)	28 900 (775)	33 400 (895)
		750 (51,7)	6600 (177)	12 000 (322)	26 300 (705)	30 000 (804)	37 000 (992)	45 000 (1206)
		1000 (69,0)	8700 (233)	16 000 (429)	30 000 (804)	31 200 (836)	37 400 (1002)	
		1250 (86,2)	11 000 (295)	19 000 (509)	31 600 (847)	34 000 (911)		
		1500 (103)	13 000 (348)	22 000 (590)	30 400 (815)	36 000 (965)		
		1750 (121)	15 000 (402)	25 000 (670)	34 000 (911)			
		2000 (138)	17 000 (456)	28 000 (750)				
	80 (5,5)	100 (6,90)	900 (24,1)	1600 (42,9)	3750 (101)	6490 (174)	12 200 (327)	17 300 (464)
		150 (10,3)	1410 (37,8)	2580 (69,1)	5850 (157)	10 200 (273)	19 600 (525)	25 700 (689)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 500 (362)	25 400 (681)	29 300 (785)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	19 800 (531)	32 700 (876)	33 500 (898)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	31 900 (855)	36 000 (965)	36 700 (984)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	35 000 (938)	44 000 (1179)	46 000 (1233)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	38 000 (1018)	56 200 (1506)	
		1250 (86,2)	11 000 (295)	19 000 (509)	37 000 (992)	40 000 (1072)		
		1500 (103)	13 000 (348)	22 000 (590)	38 000 (1018)	44 000 (1179)		
		1750 (121)	15 000 (402)	25 000 (670)	42 000 (1126)			
		2000 (138)	17 000 (456)	28 000 (750)				
70 to 150 psig (4,8 to 10, bar) 10B3079X012 Red	100 (6,9)	150 (10,3)	1170 (31,4)	2510 (67,3)	5540 (148)	8710 (233)	16 000 (429)	20 300 (544)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	12 000 (322)	21 300 (571)	25 700 (689)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	19 400 (520)	30 000 (804)	31 700 (850)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	31 800 (852)	39 000 (1045)	39 200 (1051)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	39 000 (1045)	39 200 (1051)	45 900 (1230)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	40 000 (1072)	40 500 (1085)	
		1250 (86,2)	11 000 (295)	19 000 (509)	39 000 (1045)	40 500 (1085)	41 000 (1099)	
		1500 (103)	13 000 (348)	22 000 (590)	43 000 (1152)	44 000 (1179)		
		1750 (121)	15 000 (402)	25 000 (670)	45 000 (1206)	47 000 (1260)		
		2000 (138)	17 000 (456)	28 000 (750)	46 000 (1233)			
	125 (8,6)	150 (10,3)	1250 (33,5)	2340 (62,7)	5340 (143)	9130 (245)	15 700 (421)	20 800 (557)
		200 (13,8)	1830 (49,0)	3320 (89,0)	7550 (202)	13 160 (353)	22 500 (603)	28 600 (766)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	19 800 (531)	32 700 (876)	38 000 (1018)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 500 (871)	43 900 (1174)	51 700 (1385)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 300 (1294)	49 900 (1337)	71 400 (1914)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	50 000 (1340)	52 900 (1418)	72 000 (1930)
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	53 000 (1420)	58 000 (1554)	
		1500 (103)	13 000 (348)	22 000 (590)	51 000 (1367)	56 000 (1501)		
		1750 (121)	15 000 (402)	25 000 (670)	52 000 (1394)	60 000 (1608)		
		2000 (138)	17 000 (456)	28 000 (750)	53 000 (1420)			
	150 (10,3)	200 (13,8)	1760 (47,2)	3200 (85,8)	7290 (195)	12 500 (335)	21 400 (574)	30 600 (820)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	17 200 (461)	34 700 (930)	46 000 (1233)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 500 (871)	48 900 (1311)	59 700 (1600)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 300 (1294)	59 000 (1581)	72 000 (1930)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	64 100 (1718)	81 100 (2173)	85 000 (2278)
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	68 000 (1822)	90 000 (2412)	
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	72 000 (1930)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)	77 000 (2064)		
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			

1. Capacity is based on 20% droop unless otherwise noted below.
[ ] - Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.
[ ] - Shaded areas indicate where a Type 627MR regulator should not be used because unbalanced forces can cause the internal relief valve to start-to-discharge during normal operation. Refer to Table 4.

Table 7. *Types 627, 627M, and 627MR Capacities for 1-Inch (DN 25) Body Size*[1]

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
5 to 20 psig[2] (0,3 to 1,4 bar) 10B3076X012 Yellow	5 (0,3)[3]	10 (0,69)	170 (4,56)	330 (8,84)	710 (19,0)	1100 (29,5)	1900 (50,9)	2500 (67,0)
		15 (1,03)	240 (6,43)	390 (10,5)	890 (23,9)	1600 (42,9)	2500 (67,0)	3350 (89,8)
		20 (1,38)	290 (7,77)	500 (13,4)	1160 (31,1)	2060 (55,2)	3400 (91,1)	4450 (119)
		30 (2,07)	380 (10,2)	670 (18,0)	1560 (41,8)	2800 (75,0)	4750 (127)	6900 (185)
		60 (4,14)	640 (17,2)	1170 (31,4)	2600 (69,7)	4710 (126)	8140 (218)	13 700 (367)
		75 (5,17)	770 (20,6)	1410 (37,8)	3150 (84,4)	5710 (153)	9790 (262)	14 500 (389)
		100 (6,90)	990 (26,5)	1800 (48,2)	4070 (109)	7310 (196)	12 500 (335)	16 000 (429)
	10 (0,7)	15 (1,03)	210 (5,63)	375 (10,1)	880 (23,6)	1590 (42,6)	2480 (66,5)	3300 (88,4)
		20 (1,38)	280 (7,5)	490 (13,1)	1150 (30,8)	2050 (54,9)	3380 (90,6)	4410 (118)
		30 (2,07)	380 (10,2)	670 (18,0)	1560 (41,8)	2800 (75,0)	4720 (126)	6840 (183)
		60 (4,14)	640 (17,2)	1170 (31,4)	2600 (69,7)	4710 (126)	8140 (218)	13 700 (367)
		75 (5,17)	770 (20,6)	1410 (37,8)	3150 (84,4)	5710 (153)	9790 (262)	14 500 (389)
		100 (6,90)	990 (26,5)	1800 (48,2)	4070 (109)	7310 (196)	12 500 (335)	16 000 (429)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 500 (281)	17 000 (456)	18 000 (482)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	18 000 (482)	18 500 (496)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	19 800 (531)	20 000 (536)	
		500 (34,5)	4400 (118)	8090 (217)	15 700 (421)	20 000 (536)		
		750 (51,7)	5400 (145)	12 000 (322)	18 000 (482)			
		1000 (69,0)	5800 (155)	14 000 (375)				
		1250 (86,2)	6300 (169)					
		1500 (103)	6600 (177)					
		1750 (121)	6800 (182)					
		2000 (138)	7600 (204)					
	20 (1,4)	30 (2,07)	350 (9,38)	620 (16,6)	1450 (38,9)	2580 (69,1)	4360 (117)	6290 (169)
		50 (3,45)	550 (14,7)	1000 (26,8)	2280 (61,1)	4090 (110)	7870 (211)	14 100 (378)
		60 (4,14)	640 (17,2)	1170 (31,4)	2640 (70,8)	4750 (127)	9690 (260)	14 500 (389)
		100 (6,90)	990 (26,5)	1800 (48,2)	4070 (109)	7310 (196)	13 900 (373)	23 300 (624)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 500 (281)	17 700 (474)	34 200 (917)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	26 600 (713)	39 100 (1048)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	37 000 (992)	
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)		
		750 (51,7)	6600 (177)	12 000 (322)	23 600 (632)			
		1000 (69,0)	8900 (239)	16 000 (429)				
		1250 (86,2)	10 000 (268)					
		1500 (103)	10 400 (279)					
		1750 (121)	12 000 (322)					
		2000 (138)	14 000 (375)					
15 to 40 psig (1,0 to 2,8 bar) 10B3077X012 Green	40 (2,8)	60 (4,14)	610 (16,3)	1090 (29,2)	2530 (67,8)	4510 (121)	9290 (249)	9420 (252)
		75 (5,17)	760 (20,4)	1370 (36,7)	3080 (82,5)	5640 (151)	10 800 (289)	16 500 (442)
		100 (6,90)	990 (26,5)	1790 (48,0)	4070 (109)	7310 (196)	14 700 (394)	21 900 (587)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 500 (281)	20 500 (549)	34 500 (925)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	27 100 (726)	46 400 (1244)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	40 100 (1075)	67 100 (1798)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	63 900 (1713)	
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	39 400 (1056)		
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)			
		1250 (86,2)	11 000 (295)	19 000 (509)				
		1500 (103)	13 000 (348)	22 000 (590)				
		1750 (121)	15 000 (402)					
		2000 (138)	17 000 (456)					

1. Capacity is based on 20% droop unless otherwise noted below.
2. For pressure settings under 10 psig (0,69 bar), inlet pressure should be limited to approximately 100 psig (6,90 bar) so the setpoint adjustment can be obtained.
3. For 5 psig (0,34 bar) pressure setpoint the droop is 2 psig (0,14 bar).

☐ - Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

☐ - Shaded areas indicate where a Type 627MR regulator should not be used because unbalanced forces can cause the internal relief valve to start-to-discharge during normal operation. Refer to Table 4.

- continued -

Table 7. Types 627, 627M, and 627MR Capacities for 1-Inch (DN 25) Body Size[1] (continued)

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
35 to 80 psig (2,4 to 5,5 bar) 10B3078X012 Blue	60 (4,1)	75 (5,17)	700 (18,8)	1230 (33,0)	2760 (74,0)	4880 (131)	8630 (231)	16 100 (431)
		100 (6,90)	970 (26,0)	1740 (46,6)	4010 (107)	7000 (188)	13 000 (349)	19 300 (517)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 500 (281)	18 900 (507)	32 800 (879)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	24 000 (643)	42 200 (1131)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	32 500 (871)	69 100 (1852)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	64 000 (1715)	94 300 (2527)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	43 380 (1163)	66 000 (1769)	130 000 (3484)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	50 300 (1348)	67 700 (1814)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	57 000 (1528)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	63 000 (1688)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)				
	80 (5,5)	100 (6,90)	900 (24,1)	1600 (42,9)	3750 (101)	6650 (178)	12 200 (327)	18 600 (498)
		150 (10,3)	1410 (37,8)	2580 (69,1)	5850 (157)	10 500 (281)	21 100 (565)	33 600 (900)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	28 400 (761)	44 100 (1182)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	43 300 (1160)	75 400 (2021)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	71 600 (1919)	110 000 (2948)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)	105 500 (2827)	135 000 (3618)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	64 900 (1739)	118 000 (3162)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	80 000 (2144)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	96 000 (2573)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)				
70 to 150 psig (4,8 to 10,3 bar) 10B3079X012 Red	100 (6,9)	150 (10,3)	1170 (31,4)	2510 (67,3)	5540 (148)	8710 (233)	16 000 (429)	24 000 (643)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	12 000 (322)	21 300 (571)	34 100 (914)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	19 400 (520)	30 100 (807)	53 200 (1426)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	31 800 (852)	66 500 (1782)	83 900 (2249)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	47 300 (1268)	95 300 (2554)	117 000 (3136)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	59 700 (1600)	100 000 (2680)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	72 000 (1930)	114 000 (3055)	
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	86 000 (2305)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)	95 000 (2546)		
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
	125 (8,6)	150 (10,3)	1250 (33,5)	2340 (62,7)	5340 (143)	9470 (254)	15 700 (421)	20 800 (557)
		200 (13,8)	1830 (49,0)	3320 (89,0)	7550 (202)	13 400 (359)	28 100 (753)	32 800 (879)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	36 300 (973)	52 600 (1410)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	70 800 (1897)	109 000 (2921)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)	104 000 (2787)	158 000 (4234)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	64 800 (1737)	138 000 (3698)	160 000 (4288)
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	80 000 (2144)	145 000 (3885)	
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	96 000 (2573)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)	112 000 (3002)		
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
	150 (10,3)	200 (13,8)	1760 (47,2)	3200 (85,8)	7290 (195)	12 900 (346)	21 400 (574)	33 600 (900)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	17 200 (461)	40 100 (1075)	55 900 (1499)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	70 300 (1884)	111 000 (2975)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)	104 000 (2787)	160 000 (4288)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	64 800 (1737)	138 000 (3698)	162 000 (4342)
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	80 000 (2144)	150 000 (4020)	
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	96 000 (2573)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)	112 000 (3002)		
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			

1. Capacity is based on 20% droop unless otherwise noted below.
- Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.
- Shaded areas indicate where a Type 627MR regulator should not be used because unbalanced forces can cause the internal relief valve to start-to-discharge during normal operation. Refer to Table 4.

Table 8. *Type 627 Capacities for 2-Inch (DN 50) Body Size*[1]

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
5 to 20 psig[2] (0,3 to 1,4 bar) 10B3076X012 Yellow	5 (0,3)[3]	10 (0,69)	170 (4,56)	330 (8,84)	710 (19,0)	1080 (28,9)	1700 (45,6)	2400 (64,3)
		15 (1,03)	240 (6,43)	390 (10,5)	890 (23,9)	1250 (33,5)	1900 (50,9)	2700 (72,4)
		20 (1,38)	290 (7,77)	500 (13,4)	1160 (31,1)	1900 (50,9)	2650 (71,0)	3900 (105)
		30 (2,07)	380 (10,2)	670 (18,0)	1560 (41,8)	2800 (75,0)	3680 (98,6)	6600 (174)
		60 (4,14)	640 (17,2)	1170 (31,4)	2600 (69,7)	4750 (127)	7250 (194)	17 800 (477)
		75 (5,17)	770 (20,6)	1410 (37,8)	3150 (84,4)	5700 (153)	8060 (216)	22 400 (600)
		100 (6,90)	990 (26,5)	1790 (48,0)	4070 (109)	7310 (196)	16 200 (434)	28 700 (769)
	10 (0,7)	15 (1,03)	210 (5,63)	375 (10,1)	880 (23,6)	1220 (32,7)	1860 (49,8)	2670 (71,6)
		20 (1,38)	280 (7,50)	490 (13,1)	1150 (30,8)	1880 (50,4)	2610 (69,9)	3830 (103)
		30 (2,07)	380 (10,2)	670 (18,0)	1560 (41,8)	2760 (74,0)	3640 (97,6)	6460 (173)
		60 (4,14)	640 (17,2)	1170 (31,4)	2600 (69,7)	4750 (127)	7250 (194)	17 800 (477)
		75 (5,17)	770 (20,6)	1410 (37,8)	3150 (84,4)	5700 (153)	8060 (216)	22 400 (600)
		100 (6,90)	990 (26,5)	1790 (48,0)	4070 (109)	7310 (196)	16 200 (434)	28 700 (769)
		150 (10,3)	1420 (38,1)	2590 (69,1)	5850 (157)	10 500 (281)	23 300 (624)	25 900 (694)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	22 700 (608)	24 000 (643)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	10 300 (276)	12 800 (343)	
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	21 000 (563)		
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)			
		1000 (69,0)	8700 (233)	16 000 (429)				
		1250 (86,2)	11 000 (295)					
		1500 (103)	13 000 (348)					
		1750 (121)	15 000 (402)					
		2000 (138)	6300 (169)					
	20 (1,4)	30 (2,07)	350 (9,38)	620 (16,6)	1450 (38,9)	2350 (63,0)	4300 (115)	6110 (164)
		50 (3,45)	550 (14,7)	1000 (26,8)	2280 (61,1)	4040 (108)	7100 (190)	12 800 (343)
		60 (4,14)	640 (17,2)	1170 (31,4)	2640 (70,8)	4750 (127)	8400 (225)	15 700 (421)
		100 (6,90)	990 (26,5)	1800 (48,2)	4070 (109)	7310 (196)	16 200 (434)	28 700 (769)
		150 (10,3)	1420 (38,1)	2590 (69,1)	5850 (157)	10 500 (281)	23 300 (624)	29 000 (777)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	24 000 (643)	33 000 (884)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	19 600 (525)	
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)		
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)			
		1000 (69,0)	8700 (233)	16 000 (429)				
		1250 (86,2)	11 000 (295)					
		1500 (103)	13 000 (348)					
		1750 (121)	15 000 (402)					
		2000 (138)	6300 (169)					
15 to 40 psig (1,0 to 2,8 bar) 10B3077X012 Green	40 (2,8)	60 (4,14)	610 (16,3)	1090 (29,2)	2530 (67,8)	4370 (117)	8680 (233)	13 300 (356)
		75 (5,17)	760 (20,4)	1370 (36,7)	3080 (82,5)	5540 (148)	11 900 (319)	19 300 (517)
		100 (6,90)	990 (26,5)	1800 (48,2)	4070 (109)	7310 (196)	16 200 (434)	25 400 (681)
		150 (10,3)	1420 (38,1)	2590 (69,1)	5850 (157)	10 500 (281)	23 300 (624)	41 300 (1107)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	30 400 (815)	53 900 (1445)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	44 600 (1195)	46 000 (1233)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	22 000 (590)	
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	28 000 (750)		
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)			
		1250 (86,2)	11 000 (295)	19 000 (509)				
		1500 (103)	13 000 (348)	22 000 (590)				
		1750 (121)	15 000 (402)					
		2000 (138)	17 000 (456)					

1. Capacity is based on 20% droop unless otherwise noted below.
2. For pressure settings under 10 psig (0,69 bar), inlet pressure should be limited to approximately 100 psig (6,90 bar) so the setpoint adjustment can be obtained.
3. For 5 psig (0,34 bar) pressure setpoint the droop is 2 psig (0,14 bar).

[ ] - Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

- continued -

Table 8. *Type 627 Capacities for 2-Inch (DN 50) Body Size[1] (continued)*

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
35 to 80 psig (2,4 to 5,5 bar) 10B3078X012 Blue	60 (4,1)	75 (5,17)	700 (18,8)	1260 (33,8)	2760 (74,0)	4900 (131)	9000 (241)	12 300 (330)
		100 (6,90)	970 (26,0)	1740 (46,6)	4010 (107)	7000 (188)	15 000 (402)	20 400 (547)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 500 (281)	23 300 (624)	35 200 (943)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	30 400 (815)	53 900 (1445)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	44 600 (1195)	79 000 (2117)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	73 000 (1956)	38 800 (1040)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)	53 000 (1420)	32 000 (858)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	43 000 (1152)	52 000 (1394)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	70 000 (1876)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	43 000 (1152)		
		1750 (121)	15 000 (402)	25 000 (670)	26 000 (697)			
		2000 (138)	17 000 (456)	28 000 (750)				
	80 (5,5)	100 (6,90)	900 (24,1)	1630 (43,7)	3750 (101)	6400 (172)	12 800 (343)	20 400 (547)
		150 (10,3)	1410 (37,8)	2580 (69,1)	5850 (157)	10 500 (281)	23 300 (624)	41 300 (1107)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	30 400 (815)	53 900 (1445)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	44 600 (1195)	79 000 (2117)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	73 000 (1956)	46 000 (1286)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)	87 000 (2332)	44 000 (1179)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)	63 000 (1688)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	63 000 (1688)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	86 000 (2305)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)				
70 to 150 psig (4,8 to 10,3 bar) 10B3079X012 Red	100 (6,9)	150 (10,3)	1170 (31,4)	2510 (67,3)	5540 (148)	8600 (230)	16 000 (429)	22 000 (590)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	22 000 (590)	33 000 (884)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	35 000 (938)	65 300 (1750)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	73 000 (1956)	129 000 (3457)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)	108 000 (2894)	54 000 (1447)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	64 800 (1737)	82 000 (2198)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	80 000 (2144)	110 000 (2948)	
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	96 000 (2573)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)	112 000 (3002)		
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
	125 (8,6)	150 (10,3)	1250 (33,5)	2340 (62,7)	5340 (143)	8600 (230)	16 000 (429)	24 000 (643)
		200 (13,8)	1830 (49,0)	3320 (89,0)	7550 (202)	13 700 (367)	24 000 (643)	36 000 (965)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	39 000 (1045)	65 300 (1750)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	73 000 (1956)	129 000 (3457)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)	108 000 (2894)	58 000 (1581)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	64 800 (1737)	58 000 (1554)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	80 000 (2144)	75 000 (2010)	
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	96 000 (2573)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)	112 000 (3002)		
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
	150 (10,3)	200 (13,8)	1760 (47,2)	3200 (85,8)	7290 (195)	13 000 (348)	24 000 (643)	38 000 (1018)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	44 600 (1195)	64 200 (1721)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	73 000 (1956)	129 000 (3457)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)	108 000 (2894)	62 000 (1662)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	64 800 (1737)	144 000 (3859)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	80 000 (2144)	81 000 (2171)	
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	96 000 (2573)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)	112 000 (3002)		
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			

1. Capacity is based on 20% droop unless otherwise noted below.
[ ]- Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

Table 9. *Types 627M and 627MR Capacities for 2-Inch (DN 50) Body Size*[1]

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
5 to 20 psig[2] (0,3 to 1,4 bar) 10B3076X012 Yellow	5 (0,3)[3]	10 (0,69)	170 (4,56)	330 (8,84)	710 (19,0)	1080 (28,9)	1700 (45,6)	2400 (64,3)
		15 (1,03)	240 (6,43)	390 (10,5)	890 (23,9)	1250 (33,5)	1900 (50,9)	2700 (72,4)
		20 (1,38)	290 (7,77)	500 (13,4)	1160 (31,1)	1990 (50,9)	2650 (71,0)	3900 (105)
		30 (2,07)	380 (10,2)	670 (18,0)	1560 (41,8)	2800 (75,0)	3680 (98,6)	6500 (174)
		60 (4,14)	640 (17,2)	1170 (31,4)	2600 (69,7)	4750 (127)	7250 (194)	15 000 (402)
		75 (5,17)	770 (20,6)	1410 (37,8)	3150 (84,4)	5700 (153)	8060 (216)	17 900 (480)
		100 (6,90)	990 (26,5)	1790 (48,0)	4070 (109)	7310 (196)	14 600 (391)	23 000 (616)
	10 (0,7)	15 (1,03)	210 (5,63)	375 (10,1)	880 (23,6)	1220 (32,7)	1860 (49,8)	2670 (71,6)
		20 (1,38)	280 (7,50)	490 (13,1)	1150 (30,8)	1880 (50,4)	2610 (69,9)	3930 (103)
		30 (2,07)	380 (10,2)	670 (18,0)	1560 (41,8)	2760 (74,0)	3640 (97,6)	6460 (173)
		60 (4,14)	640 (17,2)	1170 (31,4)	2600 (69,7)	4750 (127)	7250 (194)	15 000 (402)
		75 (5,17)	770 (20,6)	1410 (37,8)	3150 (84,4)	5700 (153)	8060 (216)	17 900 (480)
		100 (6,90)	990 (26,5)	1790 (48,0)	4070 (109)	7310 (196)	14 600 (391)	23 000 (616)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 500 (281)	21 000 (563)	33 000 (884)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	27 300 (732)	43 000 (1152)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	40 100 (1075)	
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)		
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)			
		1000 (69,0)	8700 (233)	16 000 (429)				
		1250 (86,2)	11 000 (295)					
		1500 (103)	13 000 (348)					
		1750 (121)	15 000 (402)					
		2000 (138)	17 000 (456)					
	20 (1,4)	30 (2,07)	350 (9,38)	620 (16,6)	1450 (38,9)	2490 (66,5)	4300 (115)	6110 (164)
		50 (3,45)	550 (14,7)	1000 (26,8)	2280 (61,1)	4040 (108)	7100 (190)	12 800 (343)
		60 (4,14)	640 (17,2)	1170 (31,4)	2640 (70,8)	4750 (127)	8400 (225)	15 000 (402)
		100 (6,90)	990 (26,5)	1800 (48,2)	4070 (109)	7310 (196)	14 600 (391)	23 000 (616)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 500 (281)	21 000 (563)	33 000 (884)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	27 300 (732)	43 000 (1152)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	40 100 (1075)	
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)		
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)			
		1000 (69,0)	8700 (233)	16 000 (429)				
		1250 (86,2)	11 000 (295)					
		1500 (103)	13 000 (348)					
		1750 (121)	15 000 (402)					
		2000 (138)	17 000 (456)					
15 to 40 psig (1,0 to 2,8 bar) 10B3077X012 Green	40 (2,8)	60 (4,14)	610 (16,3)	1090 (29,2)	2530 (67,8)	4370 (117)	8680 (233)	13 300 (356)
		75 (5,17)	760 (20,4)	1370 (36,7)	3080 (82,5)	5540 (148)	10 700 (287)	19 300 (517)
		100 (6,90)	990 (26,5)	1800 (48,2)	4070 (109)	7310 (196)	14 600 (391)	25 400 (681)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 500 (281)	21 000 (563)	37 000 (992)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	27 300 (732)	48 000 (1286)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	40 100 (1075)	71 000 (1903)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	65 000 (1742)	
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)		
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)			
		1250 (86,2)	11 000 (295)	19 000 (509)				
		1500 (103)	13 000 (348)	22 000 (590)				
		1750 (121)	15 000 (402)					
		2000 (138)	17 000 (456)					

1. Capacity is based on 20% droop unless otherwise noted below.
2. For pressure settings under 10 psig (0,69 bar), inlet pressure should be limited to approximately 100 psig (6,90 bar) so the setpoint adjustment can be obtained.
3. For 5 psig (0,34 bar) pressure setpoint the droop is 2 psig (0,14 bar).

□ - Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

▭ - Shaded areas indicate where a Type 627MR regulator should not be used because unbalanced forces can cause the internal relief valve to start-to-discharge during normal operation. Refer to Table 4.

- continued -

Table 9. *Types 627M and 627MR Capacities for 2-Inch (DN 50) Body Size[1] (continued)*

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
35 to 80 psig (2,4 to 5,5 bar) 10B3078X012 Blue	60 (4,1)	75 (5,17)	700 (18,8)	1230 (33,0)	2760 (74,0)	4900 (131)	9000 (241)	12 300 (330)
		100 (6,90)	970 (26,0)	1740 (46,6)	4010 (107)	7000 (188)	15 000 (402)	20 400 (547)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 500 (281)	23 300 (624)	35 200 (943)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	30 400 (815)	48 500 (1300)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	44 600 (1195)	71 000 (1903)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	73 000 (1956)	116 000 (3109)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)	108 000 (2894)	172 000 (4610)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)	144 000 (3859)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	81 000 (2171)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	97 000 (2600)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)				
	80 (5,5)	100 (6,90)	900 (24,1)	1630 (43,7)	3750 (101)	6400 (172)	12 800 (343)	20 400 (547)
		150 (10,3)	1410 (37,8)	2580 (69,1)	5850 (157)	10 500 (281)	23 300 (624)	37 200 (997)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	30 400 (815)	48 500 (1300)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	44 600 (1195)	71 000 (1903)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	73 000 (1956)	116 000 (3109)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)	108 000 (2894)	172 000 (4610)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)	144 000 (3859)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	81 000 (2171)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	97 000 (2600)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)				
70 to 150 psig (4,8 to 10,3 bar) 10B3079X012 Red	100 (6,9)	150 (10,3)	1170 (31,4)	2510 (67,3)	5540 (148)	8600 (230)	16 000 (429)	22 000 (590)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	22 000 (590)	33 000 (884)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	36 000 (939)	59 000 (1581)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	73 000 (1956)	116 000 (3109)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)	108 000 (2894)	172 000 (4610)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	64 800 (1737)	144 000 (3859)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	80 000 (2144)	179 000 (4797)	
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	96 000 (2573)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)	112 000 (3002)		
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
	125 (8,6)	150 (10,3)	1250 (33,5)	2340 (62,7)	5340 (143)	8600 (230)	16 000 (429)	24 000 (643)
		200 (13,8)	1830 (49,0)	3320 (89,0)	7550 (202)	13 700 (367)	24 000 (643)	36 000 (965)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	39 000 (1045)	59 000 (1581)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	73 000 (1956)	116 000 (3109)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)	108 000 (2894)	172 000 (4610)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	64 800 (1737)	144 000 (3859)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	80 000 (2144)	179 000 (4797)	
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	96 000 (2573)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)	112 000 (3002)		
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
	150 (10,3)	200 (13,8)	1760 (47,2)	3200 (85,8)	7290 (195)	13 000 (348)	24 000 (643)	38 000 (1018)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	44 600 (1195)	58 000 (1554)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 900 (882)	73 000 (1956)	116 000 (3109)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 900 (1311)	108 000 (2894)	172 000 (4610)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	64 800 (1737)	144 000 (3859)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	80 000 (2144)	179 000 (4797)	
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	96 000 (2573)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)	112 000 (3002)		
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			

1. Capacity is based on 20% droop unless otherwise noted below.
   - Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.
   - Shaded areas indicate where a Type 627MR regulator should not be used because unbalanced forces can cause the internal relief valve to start-to-discharge during normal operation. Refer to Table 4.

Table 10. *Types 627H and 627HM Capacities for 3/4-Inch Body Size*[1]

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
140 to 250 psig (9,6 to 17,2 bar) 10B3078X012 Blue	150 (10,3)	200 (13,8)	1760[2] (47,2)	3200[2] (85,8)	7290 (195)	11 500 (308)	21 600 (579)	31 000 (831)
		250 (17,2)	2260[2] (60,6)	4100[2] (110)	9200 (247)	15 400 (413)	28 600 (766)	40 000 (1072)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	19 300 (517)	31 000 (831)	46 000 (1233)
		400 (27,6)	3600 (96,5)	6500 (174)	14 800 (397)	24 700 (662)	40 000 (1072)	50 000 (1340)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	29 700 (796)	51 000 (1367)	
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	43 000 (1152)		
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	57 000 (1528)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)			
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)				
	200 (13,8)	250 (17,2)	2160[2] (57,9)	3850[2] (103)	8400 (225)	15 000 (402)	31 000 (831)	41 000 (1099)
		300 (20,7)	2700[2] (72,4)	4910[2] (132)	11 200 (300)	19 500 (523)	36 000 (965)	52 000 (1394)
		400 (27,6)	3600 (96,5)	6500 (174)	14 800 (397)	25 500 (683)	52 000 (1394)	68 000 (1822)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	31 000 (831)	61 000 (1635)	
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	45 500 (1219)		
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	60 000 (1608)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)			
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)				
	250 (17,2)	300 (20,7)	2500[2] (67)	4500[2] (121)	9900 (265)	18 500 (496)	37 000 (992)	52 000 (1394)
		400 (27,6)	3600[2] (96,5)	6400[2] (172)	14 300 (383)	26 000 (697)	55 000 (1474)	74 000 (1983)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	33 000 (884)	64 000 (1715)	87 000 (2332)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	49 000 (1313)	93 000 (2492)	
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	81 000 (2171)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
240 to 500 psig (16,5 to 34,5 bar) 10B3079X012 Red	250 (17,2)	300 (20,7)	2500[2] (67,0)	4500[2] (121)	9300 (249)	14 000 (375)	25 000 (670)	37 000 (992)
		400 (27,6)	3600[2] (96,5)	6400[2] (172)	14 300 (383)	21 400 (574)	36 000 (965)	49 000 (1313)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	26 300 (705)	42 000 (1126)	62 000 (1662)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	37 100 (994)	57 000 (1528)	
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	47 400 (1270)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	57 000 (1528)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
	300 (20,7)	350 (24,1)	2900[2] (77,7)	5150[2] (138)	11 300 (303)	18 400 (493)	31 000 (831)	45 000 (1206)
		400 (27,6)	3500[2] (93,8)	6200[2] (166)	13 700 (367)	23 400 (627)	40 000 (1072)	52 000 (1394)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 000 (858)	53 000 (1420)	67 000 (1795)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 000 (1285)	80 000 (2144)	
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	62 000 (1662)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	79 000 (2117)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			

1. Capacity is based on 20% droop unless otherwise noted below.
2. Small orifices and low pressure drops may cause the setpoint to shift + 15 psig (1,03 bar).

[ ] - Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

- continued -

Table 10. Types 627H and 627HM Capacities for 3/4-Inch Body Size[1] (continued)

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
240 to 500 psig (16,5 to 34,5 bar) 10B3079X012 Red	400 (27,6)	450 (31,0)	3600[2] (96,5)	6400[2] (172)	14 000 (375)	25 000 (670)	47 000 (1260)	67 000 (1796)
		500 (34,5)	4400[2] (118)	8090[2] (217)	18 300 (490)	32 000 (858)	54 000 (1447)	77 000 (2064)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	49 000 (1313)	91 000 (2439)	
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	81 000 (2171)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
	500 (34,5)	550 (37,9)	4300[2] (115)	7700[2] (206)	16 800 (450)	33 000 (884)	62 000 (1662)	90 000 (2412)
		600 (41,4)	4900[2] (131)	8800[2] (236)	19 400 (520)	37 000 (992)	70 000 (1876)	104 000 (2787)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	49 000 (1313)	88 000 (2356)	137 000 (3672)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)	130 000 (3484)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	81 000 (2171)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	97 000 (2600)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			

1. Capacity is based on 20% droop unless otherwise noted below.
2. Small orifices and low pressure drops may cause the setpoint to shift + 15 psig (1,03 bar).
- Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

Table 11. Types 627H and 627HM Capacities for 1-Inch (DN 25) Body Size[1]

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
140 to 250 psig (9,65 to 17,2 bar) 10B3078X012 Blue	150 (10,3)	200 (13,8)	1760[2] (47,2)	3200[2] (85,8)	7290 (195)	11 500 (308)	21 600 (579)	31 000 (831)
		250 (17,2)	2260[2] (60,6)	4100[2] (110)	9200 (247)	15 400 (413)	28 600 (766)	40 000 (1072)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	19 300 (517)	31 000 (831)	46 000 (1233)
		400 (27,6)	3600 (96,5)	6500 (174)	14 800 (397)	25 000 (670)	40 000 (1072)	50 000 (1340)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 000 (858)	51 000 (1367)	
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	46 000 (1233)		
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	57 000 (1528)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)			
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)				

1. Capacity is based on 20% droop unless otherwise noted below.
2. Small orifices and low pressure drops may cause the setpoint to shift + 15 psig (1,03 bar).
- Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

- continued -

Table 11. Types 627H and 627HM Capacities for 1-Inch (DN 25) Body Size[1] (continued)

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
140 to 250 psig (9,6 to 17,2 bar) 10B3078X012 Blue	200 (13,8)	250 (17,2)	2160[2] (67,9)	3850[2] (103)	8400 (225)	15 000 (402)	31 000 (831)	41 000 (1099)
		300 (20,7)	2700[2] (72,4)	4910[2] (132)	11 200 (300)	19 500 (523)	36 000 (965)	52 000 (1394)
		400 (27,6)	3600 (96,5)	6500 (174)	14 800 (397)	26 500 (710)	52 000 (1394)	68 000 (1822)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	33 000 (884)	61 000 (1635)	
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	49 000 (1313)		
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1205)			
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)				
	250 (17,2)	300 (20,7)	2500[2] (67,0)	4500[2] (121)	9900 (265)	18 500 (496)	37 000 (992)	52 000 (1394)
		400 (27,6)	3600[2] (96,5)	6400[2] (172)	14 300 (383)	26 000 (697)	55 000 (1474)	74 000 (1983)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	33 000 (884)	64 000 (1715)	87 000 (2332)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	49 000 (1313)	93 000 (2492)	
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	81 000 (2171)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
240 to 500 psig (16,5 to 34,5 bar) 10B3079X012 Red	250 (17,2)	300 (20,7)	2500[2] (67,0)	4500[2] (121)	9300 (249)	14 000 (375)	25 000 (670)	37 000 (992)
		400 (27,6)	3600[2] (96,5)	6400[2] (172)	14 300 (383)	21 400 (574)	36 000 (965)	49 000 (1313)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	26 300 (705)	42 000 (1126)	62 000 (1662)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	37 100 (994)	57 000 (1528)	
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	47 400 (1270)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	57 000 (1528)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
	300 (20,7)	350 (24,1)	2900[2] (77,7)	5150[2] (138)	11 300 (303)	18 400 (493)	31 000 (831)	45 000 (1206)
		400 (27,6)	3500[2] (93,8)	6200[2] (166)	13 700 (367)	23 400 (627)	40 000 (1072)	52 000 (1394)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 000 (858)	53 000 (1420)	67 000 (1796)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 000 (1286)	80 000 (2144)	
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	62 000 (1662)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	79 000 (2117)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
	400 (27,6)	450 (31,0)	3600[2] (96,5)	6400[2] (172)	14 000 (375)	25 000 (670)	47 000 (1260)	67 000 (1796)
		500 (34,5)	4400[2] (118)	8090[2] (217)	18 300 (490)	32 000 (858)	54 000 (1447)	77 000 (2064)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	49 000 (1313)	91 000 (2439)	
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	81 000 (2171)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
	500 (34,5)	550 (37,9)	4300[2] (115)	7700[2] (206)	16 800 (450)	33 000 (884)	62 000 (1662)	90 000 (2412)
		600 (41,4)	4900[2] (131)	8800[2] (236)	19 400 (520)	37 000 (892)	70 000 (1876)	104 000 (2787)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	49 000 (1313)	88 000 (2358)	140 000 (3752)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)	130 000 (3484)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	81 000 (2171)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	97 000 (2600)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			

1. Capacity is based on 20% droop unless otherwise noted below.
2. Small orifices and low pressure drops may cause the setpoint to shift + 15 psig (1,03 bar).
- Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

Table 12. *Types 627H and 627HM Capacities for 2-Inch (DN 50) Body Size*[1]

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
140 to 250 psig (9,6 to 17,2 bar) 10B3078X012 Blue	150 (10,3)	200 (13,8)	1760[2] (47,2)	3200[2] (85,8)	7290 (195)	13 700 (367)	24 100 (646)	31 000 (831)
		250 (17,2)	2260[2] (60,6)	4100[2] (110)	9200 (247)	16 100 (431)	28 600 (766)	40 000 (1072)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	19 300 (517)	31 000 (831)	46 000 (1233)
		400 (27,6)	3600 (96,5)	6500 (174)	14 800 (397)	25 000 (670)	40 000 (1072)	50 000 (1340)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 000 (858)		
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 000 (1286)		
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)			
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)				
	200 (13,8)	250 (17,2)	2160[2] (57,9)	3850[2] (103)	8400 (225)	16 100 (431)	33 000 (884)	41 000 (1099)
		300 (20,7)	2700[2] (72,4)	4910[2] (132)	11 200 (300)	20 100 (539)	36 000 (965)	52 000 (1394)
		400 (27,6)	3600 (96,5)	6500 (174)	14 800 (397)	26 500 (710)	52 000 (1394)	68 000 (1822)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	33 000 (884)	61 000 (1635)	
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	49 000 (1313)		
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)			
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)				
	250 (17,2)	300 (20,7)	2500[2] (67,0)	4500[2] (121)	9900 (265)	18 500 (496)	37 000 (992)	75 000 (2010)
		400 (27,6)	3600[2] (96,5)	6400[2] (172)	14 300 (383)	26 000 (697)	55 000 (1474)	81 000 (2171)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	33 000 (884)	64 000 (1715)	95 000 (2546)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	49 000 (1313)	102 000 (2734)	
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	81 000 (2171)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
240 to 500 psig (16,5 to 34,5 bar) 10B3079X012 Red	250 (17,2)	300 (20,7)	2500[2] (67,0)	4500[2] (121)	9300 (249)	14 000 (375)	25 000 (670)	37 000 (992)
		400 (27,6)	3600[2] (96,5)	6400[2] (172)	14 300 (383)	21 400 (574)	36 000 (965)	49 000 (1313)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	26 300 (705)	42 000 (1126)	62 000 (1662)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	37 100 (994)	57 000 (1528)	
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	47 400 (1270)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	57 000 (1528)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
	300 (20, 7)	350 (24,1)	2900[2] (77,7)	5150[2] (138)	11 300 (303)	18 400 (493)	31 000 (831)	45 000 (1206)
		400 (27,6)	3500[2] (93,8)	6200[2] (166)	13 700 (367)	23 400 (627)	40 000 (1072)	52 000 (1394)
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	32 000 (858)	53 000 (1420)	67 000 (1796)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	48 000 (1286)	80 000 (2144)	
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	62 000 (1662)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	78 000 (2117)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			

1. Capacity is based on 20% droop unless otherwise noted below.
2. Small orifices and low pressure drops may cause the setpoint to shift + 15 psig (1,03 bar).

[ ] - Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

- continued -

Table 12. *Types 627H and 627HM Capacities for 2-Inch (DN 50) Body Size[1] (continued)*

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
240 to 500 psig (16,5 to 34,5 bar) 1083079X012 Red	400 (27,6)	450 (31,0)	3600[2] (96,5)	6400[2] (172)	14 000 (375)	25 000 (670)	47 000 (1260)	67 000 (1796)
		500 (34,5)	4400[2] (118)	8090[2] (217)	18 300 (490)	32 000 (858)	54 000 (1447)	77 000 (2064)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	49 000 (1313)	91 000 (2439)	
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)		
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	81 000 (2171)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)			
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			
	500 (34,5)	550 (37,9)	4300[2] (115)	7700[2] (206)	16 800 (450)	33 000 (884)	62 000 (1662)	90 000 (2412)
		600 (41,4)	4900[2] (131)	8800[2] (236)	19 400 (520)	37 000 (992)	70 000 (1876)	104 000 (2787)
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	49 000 (1313)	88 000 (2359)	140 000 (3752)
		1000 (69,0)	8700 (233)	16 000 (429)	36 100 (967)	65 000 (1742)	130 000 (3484)	
		1250 (86,2)	11 000 (295)	19 000 (509)	45 000 (1206)	81 000 (2171)		
		1500 (103)	13 000 (348)	22 000 (590)	54 000 (1447)	97 000 (2600)		
		1750 (121)	15 000 (402)	25 000 (670)	63 000 (1688)			
		2000 (138)	17 000 (456)	28 000 (750)	71 000 (1903)			

1. Capacity is based on 20% droop unless otherwise noted below.
2. Small orifices and low pressure drops may cause the setpoint to shift + 15 psig (1,03 bar).
- Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

Table 13. *Type 627R Capacities for 3/4-Inch Body Size[1]*

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
5 to 20 psig[2] (0,3 to 1,4 bar) 1083076X012 Yellow	5 (0,3)	10 (0,69)	170 (4,56)	320 (8,58)	710 (19,0)	1050 (28,1)	1500 (40,2)	1850 (49,6)
		15 (1,03)	240 (6,43)	330 (8,84)	810 (21,7)	1290 (34,6)	2100 (56,3)	2850 (76,4)
		20 (1,38)	290 (7,77)	460 (12,3)	1090 (29,2)	1750 (46,9)	2750 (73,7)	3850 (103)
		30 (2,07)	380 (10,2)	610 (16,3)	1470 (39,4)	2490 (66,7)	3600 (96,5)	4800 (129)
		60 (4,14)	640 (17,2)	1170 (31,4)	2460 (65,9)	3690 (98,9)	5270 (141)	6120 (164)
		75 (5,17)	770 (20,6)	1410 (37,8)	2880 (77,2)	4150 (111)	5760 (154)	6900 (185)
		100 (6,90)	990 (26,5)	1690 (45,3)	3540 (94,9)	4790 (128)	6200 (166)	7600 (204)
	10 (0,7)	15 (1,03)	210 (5,63)	320 (8,58)	800 (21,4)	1290 (34,6)	2100 (56,3)	2820 (75,6)
		20 (1,38)	280 (7,5)	450 (12,1)	1070 (28,7)	1740 (46,6)	2700 (72,4)	3800 (102)
		30 (2,07)	380 (10,2)	610 (16,3)	1470 (39,4)	2430 (65,1)	3550 (95,1)	4780 (128)
		60 (4,14)	640 (17,2)	1170 (31,4)	2460 (65,9)	3690 (98,9)	5270 (141)	6120 (164)
		75 (5,17)	770 (20,6)	1410 (37,8)	2880 (77,2)	4150 (111)	5760 (154)	6900 (185)
		100 (6,90)	990 (26,5)	1690 (45,3)	3540 (94,9)	4790 (128)	6200 (166)	7600 (204)
		150 (10,3)	1420 (38,1)	2430 (65,1)	4000 (107)	5680 (152)	6250 (168)	7630 (204)
		200 (13,8)	1850 (49,6)	3070 (82,3)	4200 (113)	6200 (166)	6380 (171)	7680 (206)
		300 (20,7)	2700 (72,4)	3970 (106)	4270 (114)	6250 (168)	6500 (174)	
		500 (34,5)	4010 (107)	4240 (114)	5640 (151)	6520 (175)		
		750 (51,7)	4400 (118)	5120 (137)	6400 (172)			
		1000 (69,0)	4450 (119)	6220 (167)				
		1250 (86,2)	4540 (122)					
		1500 (103)	4880 (131)					
		1750 (121)	5230 (140)					
		2000 (138)	5900 (158)					
	20 (1,4)	30 (2,07)	350 (9,38)	590 (15,8)	1390 (37,3)	2480 (66,5)	4350 (117)	4970 (133)
		50 (3,45)	550 (14,7)	980 (26,3)	2240 (60,0)	4000 (107)	7450 (200)	8000 (214)
		60 (4,14)	640 (17,2)	1170 (31,4)	2610 (69,9)	4680 (125)	7800 (209)	8900 (239)
		100 (6,90)	990 (26,5)	1800 (48,2)	3980 (107)	6700 (180)	9750 (261)	10 400 (279)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5600 (150)	8790 (236)	10 000 (268)	10 800 (289)

1. Capacity is based on 20% droop unless otherwise noted below.
2. For pressure setting under 10 psig (0,69 bar), inlet pressure should be limited to approximately 100 psig (6,90 bar) so that setpoint adjustment can be obtained.
- Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

- continued -

Table 13. *Type 627R Capacities for 3/4-Inch Body Size[1] (continued)*

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
5 to 20 psig[2] (0,3 to 1,4 bar) 10B3076X012 Yellow	20 (1,4)	200 (13,8)	1850 (49,6)	3370 (90,3)	7050 (189)	9000 (241)	10 200 (273)	10 800 (289)
		300 (20,7)	2700 (72,4)	4910 (132)	7300 (196)	9500 (255)	10 500 (281)	
		500 (34,5)	4400 (118)	5200 (139)	7400 (198)	9760 (262)		
		750 (51,7)	6600 (177)	5360 (144)	8870 (238)			
		1000 (69,0)	7300 (196)	6500 (174)				
		1250 (86,2)	7500 (201)					
		1500 (103)	7800 (209)					
		1750 (121)	8400 (225)					
		2000 (138)	8600 (230)					
15 to 40 psig (1,0 to 2,8 bar) 10B3077X012 Green	40 (2,8)	60 (4,14)	610 (16,3)	1090 (29,2)	2270 (60,8)	4230 (113)	8100 (217)	9100 (244)
		75 (5,17)	760 (20,4)	1370 (36,7)	3080 (82,5)	5330 (143)	10 300 (276)	11 600 (311)
		100 (6,90)	990 (26,5)	1790 (48,0)	4070 (109)	6840 (183)	11 900 (319)	13 400 (359)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	9320 (250)	13 500 (362)	13 800 (370)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	11 000 (295)	16 300 (437)	17 100 (458)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	14 700 (394)	17 800 (477)	
		500 (34,5)	4400 (118)	8090 (217)	14 500 (389)	14 800 (397)		
		750 (51,7)	6600 (177)	10 800 (289)	14 800 (397)	14 900 (399)		
		1000 (69,0)	8700 (233)	13 100 (351)	16 300 (437)			
		1250 (86,2)	11 000 (295)	13 800 (370)				
		1500 (103)	12 000 (322)	14 000 (375)				
		1750 (121)	13 000 (348)					
		2000 (138)	14 000 (375)					
35 to 80 psig (2,4 to 5,5 bar) 10B3078X012 Blue	60 (4,1)	75 (5,17)	700 (18,8)	1230 (33,0)	2760 (74,0)	4700 (126)	9170 (218)	12 600 (338)
		100 (6,90)	970 (26,0)	1740 (46,6)	3910 (105)	6690 (179)	11 900 (319)	14 400 (386)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	9740 (261)	15 700 (421)	18 700 (501)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	12 400 (332)	18 400 (493)	21 200 (568)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	17 700 (474)	20 200 (541)	
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	20 000 (536)		
		750 (51,7)	6600 (177)	12 000 (322)	18 900 (507)	21 400 (574)		
		1000 (69,0)	8700 (233)	16 000 (429)	19 000 (509)			
		1250 (86,2)	11 000 (295)	18 700 (501)				
		1500 (103)	13 000 (348)	19 000 (509)				
		1750 (121)	15 000 (402)	20 000 (536)				
		2000 (138)	17 000 (456)					
	80 (5,5)	100 (6,90)	900 (24,1)	1630 (43,7)	3570 (95,7)	6490 (174)	12 000 (322)	17 200 (461)
		150 (10,3)	1410 (37,8)	2580 (69,1)	5750 (154)	10 500 (281)	18 900 (507)	25 000 (670)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	23 000 (616)	29 000 (777)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	26 000 (697)	
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	29 000 (777)		
		750 (51,7)	6600 (177)	12 000 (322)	23 100 (619)	30 900 (828)		
		1000 (69,0)	8700 (233)	16 000 (429)	27 400 (734)			
		1250 (86,2)	11 000 (295)	19 000 (509)				
		1500 (103)	13 000 (348)	22 000 (590)				
		1750 (121)	15 000 (402)	25 000 (670)				
		2000 (138)	17 000 (456)					
70 to 150 psig (4,8 to 10,3 bar) 10B3079X012 Red	100 (6,9)	150 (10,3)	1170 (31,4)	2510 (67,3)	5540 (148)	8310 (223)	15 500 (415)	20 300 (544)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	12 000 (322)	20 100 (539)	25 700 (689)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	18 200 (488)		
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)			
		750 (51,7)	6600 (177)	12 000 (322)				
		1000 (69,0)	8700 (233)	16 000 (429)				
		1250 (86,2)	11 000 (295)					
		1500 (103)	13 000 (348)					
		1750 (121)	15 000 (402)					
		2000 (138)	17 000 (456)					

1. Capacity is based on 20% droop unless otherwise noted below.
2. For pressure setting under 10 psig (0,69 bar), inlet pressure should be limited to approximately 100 psig (6,90 bar) so that setpoint adjustment can be obtained.

▭ - Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

- continued -

Table 13. *Type 627R Capacities for 3/4-Inch Body Size[1] (continued)*

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
70 to 150 psig (4,8 to 10,3 bar) 10B3079X012 Red	125 (8,6)	150 (10,3)	1250 (33,5)	2330 (62,4)	5090 (136)	9130 (245)	15 700 (421)	20 800 (557)
		200 (13,8)	1830 (49,0)	3320 (89,0)	7360 (197)	13 160 (353)	22 400 (600)	29 600 (766)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	19 700 (528)		
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)			
		750 (51,7)	6600 (177)	12 000 (322)				
		1000 (69,0)	8700 (233)	16 000 (429)				
		1250 (86,2)	11 000 (295)					
		1500 (103)	13 000 (348)					
		1750 (121)	15 000 (402)					
		2000 (138)	17 000 (456)					
	150 (10,3)	200 (13,8)	1760 (47,2)	3200 (85,8)	7020 (188)	12 500 (335)	21 400 (574)	30 600 (820)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	17 200 (461)		
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)			
		750 (51,7)	6600 (177)	12 000 (322)				
		1000 (69,0)	8700 (233)	16 000 (429)				
		1250 (86,2)	11 000 (295)					
		1500 (103)	13 000 (348)					
		1750 (121)	15 000 (402)					
		2000 (138)	17 000 (456)					

1. Capacity is based on 20% droop unless otherwise noted below.
- Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

Table 14. *Type 627R Capacities for 1 and 2-Inch (DN 25 and 50) Body Sizes[1]*

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
5 to 20 psig[2] (0,3 to 14 bar) 10B3076X012 Yellow	5 (0,3)	10 (0,69)	170 (4,56)	330 (8,84)	710 (19,0)	1080 (28,9)	2000 (53,6)	2150 (57,6)
		15 (1,03)	240 (6,43)	390 (10,5)	890 (23,9)	1500 (40,2)	2350 (63,0)	3000 (80,4)
		20 (1,37)	290 (7,77)	500 (13,4)	1160 (31,1)	1900 (50,9)	2750 (73,7)	3900 (105)
		30 (2,07)	380 (10,2)	690 (18,5)	1500 (40,2)	2500 (67,0)	3600 (96,5)	4900 (131)
		60 (4,14)	640 (17,2)	1170 (31,4)	2460 (65,9)	3690 (98,9)	5650 (151)	6900 (185)
		75 (5,17)	770 (20,6)	1410 (37,8)	2880 (77,2)	4150 (111)	6450 (173)	7490 (201)
		100 (6,90)	990 (26,5)	1800 (48,2)	3540 (94,9)	5790 (155)	7520 (202)	8150 (218)
	10 (0,7)	15 (1,03)	210 (5,63)	390 (10,5)	840 (22,5)	1480 (39,7)	2300 (61,6)	2930 (78,5)
		20 (1,37)	280 (7,50)	500 (13,4)	1100 (29,5)	1880 (50,4)	2700 (72,4)	3830 (103)
		30 (2,07)	380 (10,2)	690 (18,5)	1500 (40,2)	2460 (65,9)	3550 (95,1)	4840 (130)
		60 (4,14)	640 (17,2)	1170 (31,4)	2460 (65,9)	3690 (98,9)	5650 (151)	6900 (185)
		75 (5,17)	770 (20,6)	1410 (37,8)	2880 (77,2)	4150 (111)	6450 (173)	7490 (201)
		100 (6,90)	990 (26,5)	1800 (48,2)	3540 (94,9)	4790 (128)	7520 (202)	8150 (218)
		150 (10,3)	1420 (38,1)	2580 (69,1)	4660 (125)	5680 (152)	9980 (267)	10 800 (289)
		200 (13,8)	1850 (49,6)	3370 (90,3)	5620 (151)	6360 (170)	11 000 (295)	12 900 (346)
		300 (20,7)	2700 (72,4)	4880 (131)	6890 (185)	7780 (209)	13 600 (364)	
		500 (34,5)	4400 (118)	6720 (180)	8570 (230)	11 600 (311)		
		750 (51,7)	5400 (145)	8850 (237)	9000 (241)			
		1000 (69,0)	5800 (155)	9500 (255)				
		1250 (86,2)	6300 (169)					
		1500 (103)	6600 (177)					
		1750 (121)	6800 (182)					
		2000 (138)	7600 (204)					

1. Capacity is based on 20% droop unless otherwise noted below.
2. For pressure setting under 10 psig (0,69 bar), inlet pressure should be limited to approximately 100 psig (6,90 bar) so that setpoint adjustment can be obtained.
- Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

- continued -

Table 14. *Type 627R Capacities for 1 and 2-Inch (DN 25 and 50) Body Sizes[1] (continued)*

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
5 to 20 psig[2] (0,3 to 1,4 bar) 10B3076X012 Yellow	20 (1,4)	30 (2,07)	350 (9,39)	600 (16,1)	1390 (37,3)	2580 (69,1)	4350 (117)	6290 (169)
		50 (3,45)	550 (14,7)	1000 (26,8)	2250 (60,3)	4090 (110)	7600 (204)	8000 (214)
		60 (4,14)	640 (17,2)	1170 (31,4)	2630 (70,5)	4750 (127)	7800 (209)	10 600 (284)
		100 (6,90)	990 (26,5)	1800 (48,2)	4070 (109)	7310 (196)	10 800 (289)	13 400 (359)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5720 (153)	10 300 (276)	13 500 (362)	14 000 (375)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7050 (189)	10 500 (281)	14 000 (375)	14 400 (386)
		300 (20,7)	2700 (72,4)	4910 (132)	9250 (248)	10 800 (289)	14 900 (399)	
		500 (34,5)	4400 (118)	7830 (210)	11 800 (316)	13 300 (356)		
		750 (51,7)	6600 (177)	9000 (241)	12 000 (322)			
		1000 (69,0)	8700 (233)	9660 (259)				
		1250 (86,2)	10 000 (268)					
		1500 (103)	10 400 (279)					
		1750 (121)	12 000 (322)					
		2000 (138)	14 000 (375)					
15 to 40 psig (1,0 to 2,8 bar) 10B3077X012 Green	40 (2,8)	60 (4,14)	610 (16,3)	1090 (29,2)	2430 (65,1)	4510 (121)	9200 (247)	9400 (252)
		75 (5,17)	760 (20,4)	1370 (36,7)	3060 (82,5)	5640 (151)	10 800 (289)	16 300 (437)
		100 (6,90)	990 (26,5)	1790 (48,0)	4070 (109)	7310 (196)	13 500 (362)	17 600 (472)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 500 (281)	18 000 (482)	22 200 (595)
		200 (13,8)	1850 (49.6)	3370 (90,3)	7630 (204)	11 000 (295)	21 400 (574)	24 600 (659)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	14 900 (399)	24 400 (654)	
		500 (34,5)	4400 (118)	8090 (217)	16 300 (437)	21 800 (584)		
		750 (51,7)	6600 (177)	12 000 (322)	20 200 (541)	23 600 (632)		
		1000 (69,0)	8700 (233)	16 000 (429)	23 200 (622)			
		1250 (86,2)	11 000 (295)	19 000 (509)				
		1500 (103)	13 000 (348)	21 000 (563)				
		1750 (121)	15 000 (402)					
		2000 (138)	17 000 (456)					
35 to 80 psig (2,4 to 5,5 bar) 10B3078X012 Blue	60 (4,1)	75 (5,17)	700 (18,8)	1230 (33,0)	2760 (74,0)	4860 (130)	8600 (230)	12 800 (343)
		100 (6,90)	970 (26,0)	1740 (46,6)	3910 (105)	7000 (188)	12 500 (335)	16 700 (448)
		150 (10,3)	1420 (38,1)	2580 (69,1)	5850 (157)	10 500 (281)	16 800 (450)	23 000 (616)
		200 (13,8)	1850 (49.6)	3370 (90,3)	7630 (204)	13 700 (367)	20 900 (560)	27 700 (742)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	28 100 (753)	
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	28 500 (764)		
		750 (51,7)	6600 (177)	12 000 (322)	22 800 (611)	29 500 (791)		
		1000 (69,0)	8700 (233)	16 000 (429)	26 800 (718)			
		1250 (86,2)	11 000 (295)	19 000 (509)				
		1500 (103)	13 000 (348)	22 000 (590)				
		1750 (121)	15 000 (402)	25 000 (670)				
		2000 (138)	17 000 (456)					
	80 (5,5)	100 (6,90)	900 (24,1)	1630 (43,7)	3570 (95,7)	6650 (178)	12 000 (322)	17 400 (466)
		150 (10,3)	1410 (37,8)	2580 (69,1)	5750 (154)	10 500 (281)	20 100 (539)	26 000 (697)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	13 700 (367)	25 100 (673)	31 800 (852)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	20 100 (539)	32 600 (874)	
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)	30 300 (812)		
		750 (51,7)	6600 (177)	12 000 (322)	27 200 (729)	37 400 (1002)		
		1000 (69,0)	8700 (233)	16 000 (429)	33 300 (892)			
		1250 (86,2)	11 000 (295)	19 000 (509)				
		1500 (103)	13 000 (348)	22 000 (590)				
		1750 (121)	15 000 (402)	25 000 (670)				
		2000 (138)	17 000 (456)					

1. Capacity is based on 20% droop unless otherwise noted below.
2. For pressure setting under 10 psig (0,69 bar), inlet pressure should be limited to approximately 100 psig (6,90 bar) so that setpoint adjustment can be obtained.

☐ - Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

- continued -

Table 14. *Type 627R Capacities for 1 and 2-Inch (DN 25 and 50) Body Sizes[1] (continued)*

OUTLET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR	OUTLET PRESSURE SETTING, PSIG (bar)	INLET PRESSURE, PSIG (bar)	CAPACITIES IN SCFH (Nm³/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS					
			Orifice Size, Inches (mm)					
			3/32 (2,38)	1/8 (3,18)	3/16 (4,76)	1/4 (6,35)	3/8 (9,53)	1/2 (12,7)
70 to 150 psig (4,8 to 10,3 bar) 10B3079X012 Red	100 (6,9)	150 (10,3)	1170 (31,4)	2510 (67,3)	5540 (148)	8310 (223)	15 500 (415)	20 300 (544)
		200 (13,8)	1850 (49,6)	3370 (90,3)	7630 (204)	12 000 (322)	20 100 (539)	26 700 (716)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	18 200 (488)		
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)			
		750 (51,7)	6600 (177)	12 000 (322)				
		1000 (69,0)	8700 (233)	16 000 (429)				
		1250 (86,2)	11 000 (295)					
		1500 (103)	13 000 (348)					
		1750 (121)	15 000 (402)					
		2000 (138)	17 000 (456)					
	125 (8,6)	150 (10,3)	1250 (33,5)	2330 (62,4)	5090 (136)	9470 (254)	15 700 (421)	20 800 (557)
		200 (13,8)	1830 (49,0)	3320 (89,0)	7360 (197)	13 400 (359)	23 600 (632)	31 300 (839)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	19 700 (528)		
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)			
		750 (51,7)	6600 (177)	12 000 (322)				
		1000 (69,0)	8700 (233)	16 000 (429)				
		1250 (86,2)	11 000 (295)					
		1500 (103)	13 000 (348)					
		1750 (121)	15 000 (402)					
		2000 (138)	17 000 (456)					
	150 (10,3)	200 (13,8)	1760 (47,2)	3200 (85,8)	7020 (188)	12 900 (346)	21 400 (574)	33 300 (892)
		300 (20,7)	2700 (72,4)	4910 (132)	11 200 (300)	17 200 (461)		
		500 (34,5)	4400 (118)	8090 (217)	18 300 (490)			
		750 (51,7)	6600 (177)	12 000 (322)				
		1000 (69,0)	8700 (233)	16 000 (429)				
		1250 (86,2)	11 000 (295)					
		1500 (103)	13 000 (348)					
		1750 (121)	15 000 (402)					
		2000 (138)	17 000 (456)					

1. Capacity is based on 20% droop unless otherwise noted below.
□ - Blank areas indicate where maximum operating inlet pressure for a given orifice is exceeded.

Table 15. *Flow Coefficients*

ORIFICE SIZE, INCH (mm)	3/4-INCH BODY			1-INCH (DN 25) BODY			2-INCH (DN 50) BODY			K_m
	Wide-Open C_g for External Relief Sizing	Wide-Open C_v for External Relief Sizing	C_1	Wide-Open C_g for External Relief Sizing	Wide-Open C_v for External Relief Sizing	C_1	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	29.2	6.9	0.24	28.5	6.9	0.23	29.7	0.72
1/8 (3,2)	12.5	0.43	29.1	12.5	0.43	29.4	12.5	0.42	29.5	0.62
3/16 (4,8)	29	1.01	28.6	29	0.93	31.2	29	1.02	28.5	0.72
1/4 (6,4)	50	1.63	30.6	50	1.71	29.3	52	1.66	31.3	0.76
3/8 (9,5)	108	2.99	36.1	108	3.42	31.6	115	3.39	33.9	0.79
1/2 (12,7)	190	4.87	39.0	190	5.29	35.9	200	5.01	39.9	0.74

Table 16. *IEC Sizing Coefficients*

ORIFICE SIZE, INCH (mm)	X_T			F_D	F_L
	3/4-inch (DN 20) Body	1-inch (DN 25) Body	2-inch (DN 50) Body		
3/32 (2,4)	0.539	0.514	0.558	0.50	0.85
1/8 (3,2)	0.536	0.547	0.539		0.79
3/16 (4,8)	0.517	0.616	0.514		0.85
1/4 (6,4)	0.592	0.543	0.620		0.87
3/8 (9,5)	0.624	0.632	0.727		0.89
1/2 (12,7)	0.962	0.815	1.01		0.86

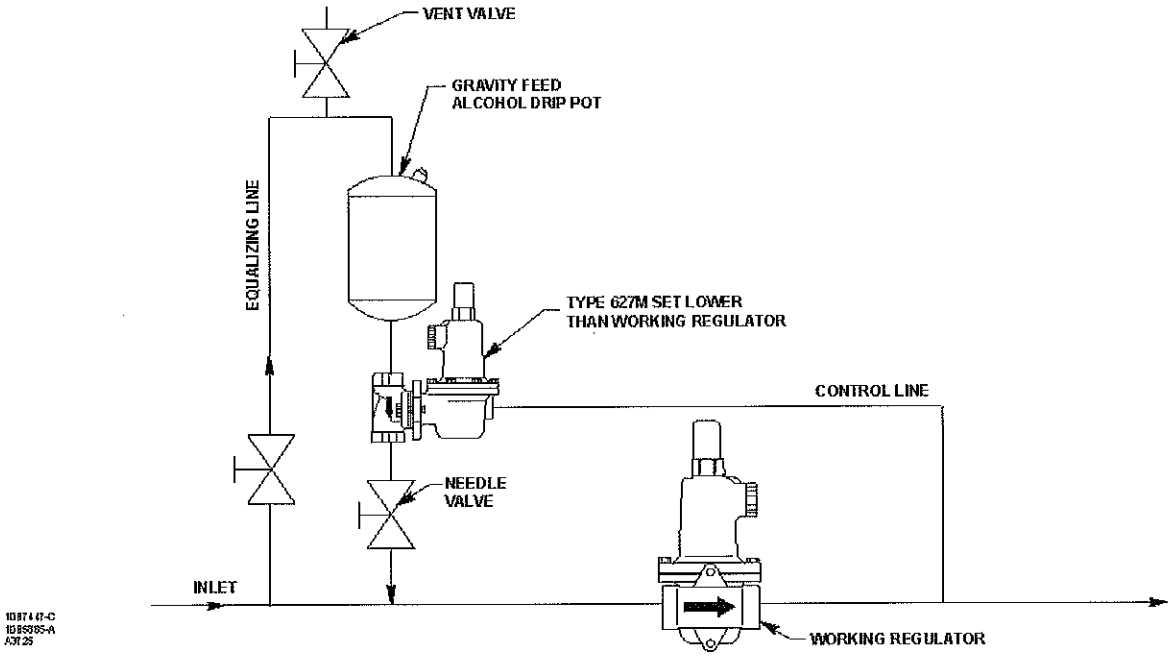

Figure 10. Schematic of De-Icer System

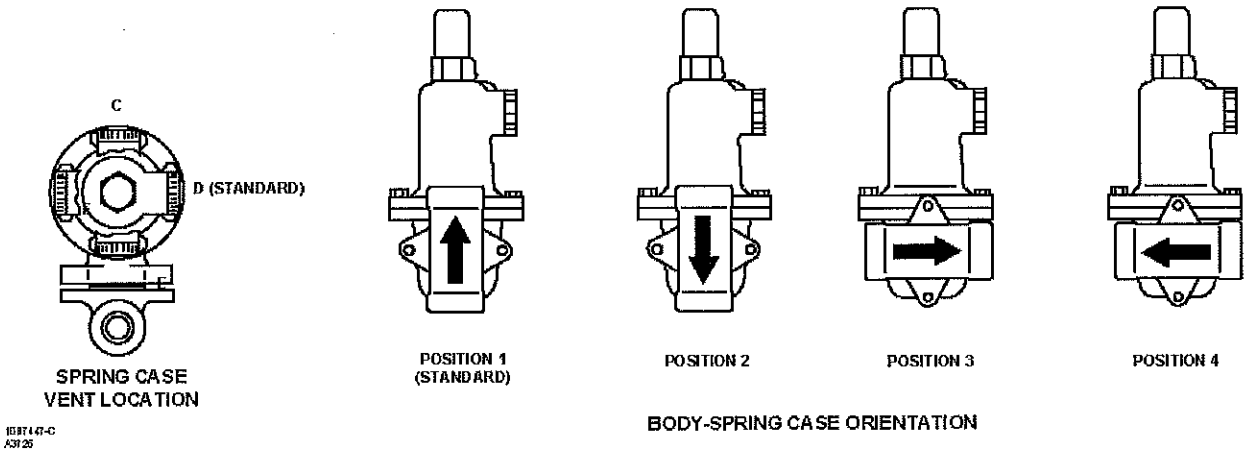

Figure 11. 627 Series Spring Case and Vent Location

Type 627M or 627HM De-Icer System Application

A 627 Series regulator can be used in a de-icer application as shown in Figure 10. As the orifice in the working regulator begins to freeze, ice formation decreases the orifice size so that the working regulator is unable to supply enough flow to satisfy the downstream demand. When downstream pressure falls below the outlet pressure setting of the Type 627M regulator, the disk of the Type 627M regulator moves off its orifice and lets alcohol flow into the main gas line. The alcohol carried to the working regulator by the flow stream helps prevent additional ice formation on the orifice. Normal flow then resumes, and as pressure in the downstream system is restored, the Type 627M regulator shuts off. This is an economy feature which conserves both the alcohol and the number of man hours required to maintain the alcohol supply. The alcohol is supplied to the working regulator only when icing conditions exist.

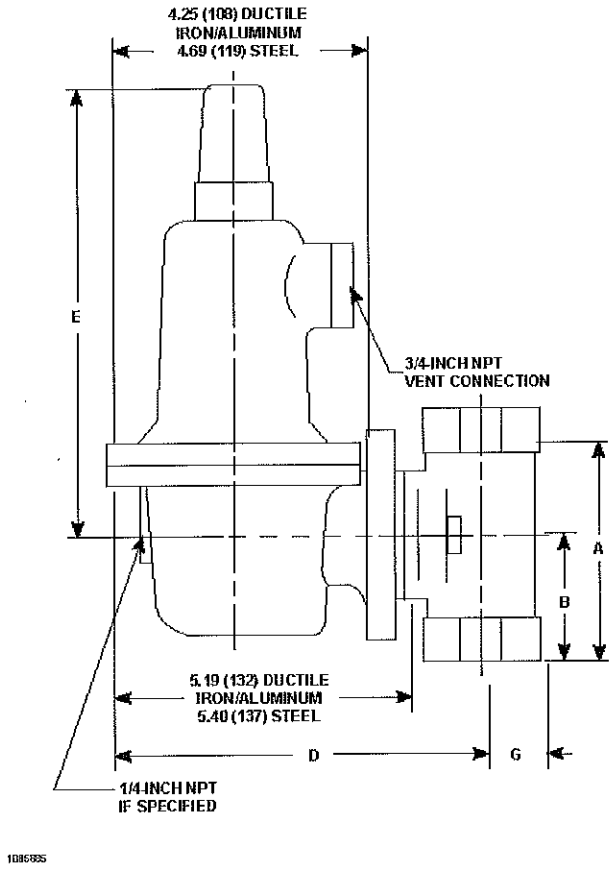

Figure 12. NPT Dimensions

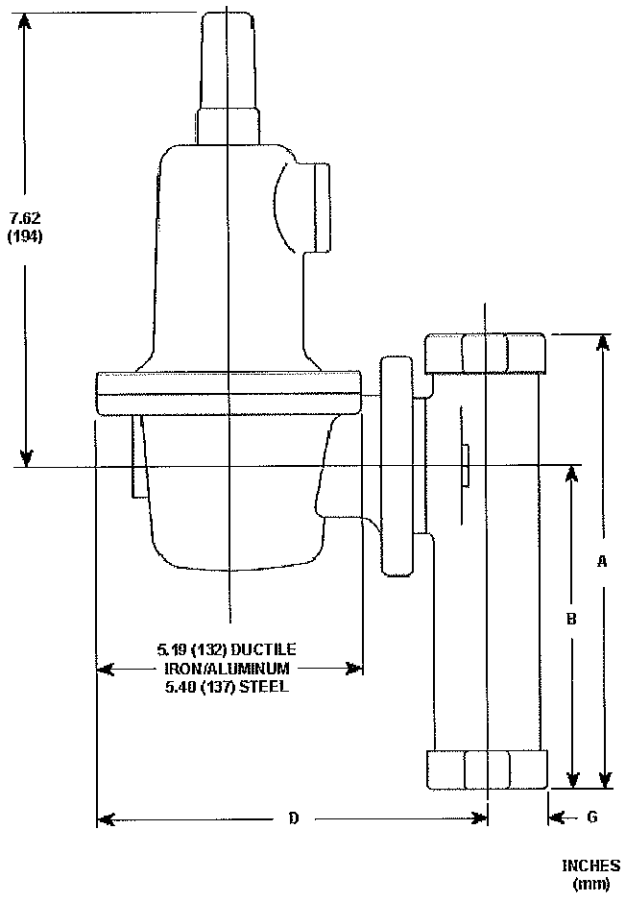

Figure 13. Long Body Dimensions

Table 17. *NPT Body Dimensions*

BODY SIZE, INCH	DIMENSIONS, INCH (mm)						
	A	B	D		E		G
			Aluminum/ Ductile Iron	Steel	Types 627, 627R, 627LR, 627M, and 627MR	Types 627H and 627HM	
3/4 and 1	4.06 (103)	1.94 (49,3)	6.50 (165)	6.75 (172)	7.62 (194)	7.94 (202)	1.00 (25,4)
2	5.00 (127)	2.50 (63,5)	6.88 (175)	7.12 (181)			1.69 (42,9)

Table 18. *Long Body Dimensions*

BODY SIZE, INCH	DIMENSIONS, INCH (mm)				
	A	B	D		G
			Aluminum/ Ductile Iron	Steel	
1	7.38 (187)	5.25 (133)	6.50 (165)	6.75 (172)	1.00 (25,4)
2	7.88 (200)	5.38 (137)	6.88 (175)	7.12 (181)	1.69 (42,9)

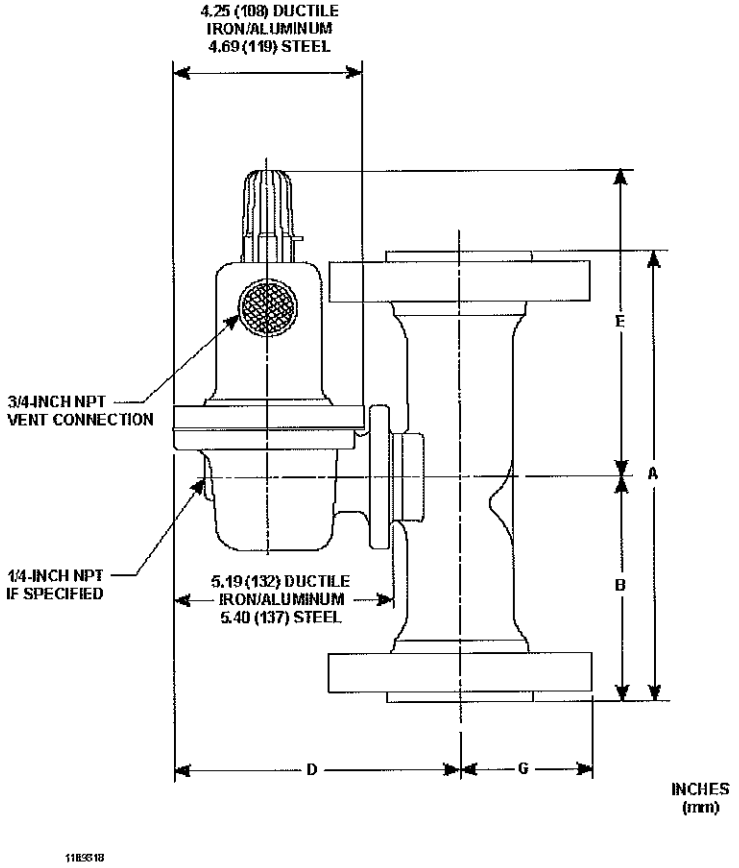

Figure 14. Flanged Dimensions

Table 19. Flanged Body Dimensions

BODY SIZE, INCHES (DN)	DIMENSIONS, INCH (mm)												
	A			B			D		E		G		
	CL150 RF	CL300 RF	CL600 RF	CL150 RF	CL300 RF	CL600 RF	Aluminum/ Ductile Iron	Steel	Types 627, 627R, 627LR 627M, and 627MR	Types 627H and 627HM	CL150 RF	CL300 RF	CL600 RF
1 (25)	7.25 (184)	7.75 (197)	8.25 (210)	3.62 (91,9)	3.88 (98,6)	4.12 (105)	6.50 (165)	6.75 (172)	7.62 (194)	7.94 (202)	2.12 (53,8)	2.44 (62,0)	2.44 (62,0)
2 (50)	10 (254)	10.5 (267)	11.25 (286)	5 (127)	5.25 (133)	5.62 (143)	6.88 (175)	7.12 (181)			3 (76,2)	3.25 (82,5)	3.25 (82,5)

Ordering Information

Application

When ordering, specify:

1. Type of regulator
2. Body size
3. Body material and trim material
4. Orifice size in inches (millimeters)
5. Control spring range in psig (bar)

Construction

Refer to the Specifications section and to each referenced table; specify the desired selection whenever there is a choice to be made. The standard assembly position is 1D as shown in Figure 11, but an alternate assembly position may be factory-ordered or can be accomplished in the field by unbolting the body or spring case using the instructions in the appropriate section of the instruction manual. For installation dimensions, refer to Figures 12 to 14.

Ordering Guide

Type (Select One)

- ☐ Type 627 (basic construction)***
- ☐ Type 627H (high-pressure version) (WCC steel only)***
- ☐ Type 627M (external pressure registration)***
- ☐ Type 627HM***
- ☐ Type 627R (internal relief)***
- ☐ Type 627LR***
- ☐ Type 627MR***

Body Size (Select One)

- ☐ 3/4-inch (NPT only)***
- ☐ 1-inch (DN 25)***
- ☐ 2-inch (DN 50)***
- ☐ 1-inch Long Body**
- ☐ 2-inch Long Body**

Body Material and End Connection Styles (Select One)

Ductile Iron (not available for Types 627H and 627HM)

- ☐ NPT***

WCC Steel (required for Types 627H and 627HM)

- ☐ NPT***
- ☐ CL150 RF**
- ☐ CL300 RF***
- ☐ CL600 RF***
- ☐ PN 16/25/40**

Spring Case and Diaphragm Casing Material (Select One)

- ☐ Aluminum (Types 627, 627R, and 627LR only)***
- ☐ Ductile iron***
- ☐ WCC steel***

Trim Material (Select One)

- ☐ Aluminum (Types 627, 627R, and 627LR only)***
- ☐ Stainless steel***

Valve Disk Material (Select One)

- ☐ Nitrile (NBR)***
- ☐ Nylon (PA) (not available to Type 627LR)***
- ☐ Fluorocarbon (FKM) (not available to Type 627H and 627MH)**

Orifice Size (Select One)

- ☐ 3/32-inch (2,4 mm)***
- ☐ 1/8-inch (3,2 mm)***
- ☐ 3/16-inch (4,8 mm)***
- ☐ 1/4-inch (6,4 mm)***
- ☐ 3/8-inch (9,5 mm) (not available to Type 627LR)***
- ☐ 1/2-inch (12,7 mm) (not available to Type 627LR)***

Outlet Pressure Range (Select One)

Types 627, 627M, 627R, and 627MR

- ☐ 5 to 20 psig (0,3 to 1,4 bar)***
- ☐ 15 to 40 psig (1,0 to 2,8 bar)***
- ☐ 35 to 80 psig (2,4 to 5,5 bar)***
- ☐ 70 to 150 psig (4,8 to 10,3 bar)***

Type 627LR

- ☐ 15 to 40 psig (1,0 to 2,8 bar)***

Types 627H and 627HM

- ☐ 140 to 250 psig (9,7 to 17,2 bar)***
- ☐ 240 to 500 psig (16,5 to 34,5 bar)***

Body Position (Select One)

- ☐ Position 1 **(standard)***
- ☐ Position 2**
- ☐ Position 3**
- ☐ Position 4**

Vent Position (Select One)

- ☐ Position C**
- ☐ Position D **(standard)***
- ☐ Position E**
- ☐ Position F**

DVGW Approval Required (Optional)

- ☐ Yes*

Replacement Parts Kit (Optional)

- ☐ Yes, send one replacement parts kit to match this order.

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**	Allow Additional Time for Shipment
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Specification Worksheet

Application:

Specific Use _____

Line Size _____

Gas Type and Specific Gravity _____

Gas Temperature _____

Does the Application Require Overpressure Protection?

☐ Yes ☐ No If yes, which is preferred:

☐ Relief Valve ☐ Monitor Regulator ☐ Shutoff Device

Is overpressure protection equipment selection assistance desired? _____

Pressure:

Maximum Inlet Pressure (P_{1max}) _____

Minimum Inlet Pressure (P_{1min}) _____

Downstream Pressure Setting(s) (P_2) _____

Maximum Flow (Q_{max}) _____

Performance Required:

Accuracy Requirements? _____

Need for Extremely Fast Response? _____

Other Requirements: _____

_____

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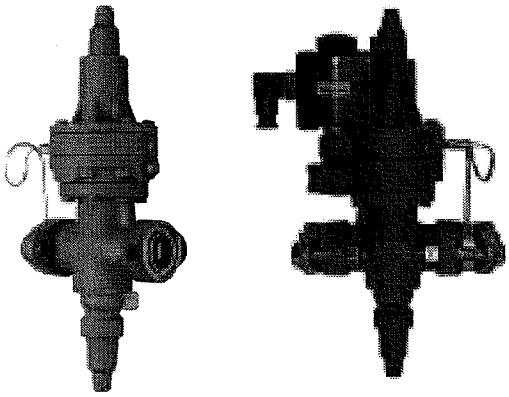
FOR AMMONIA, R-12, R-22, R-502
OTHER REFRIGERANTS AND OIL

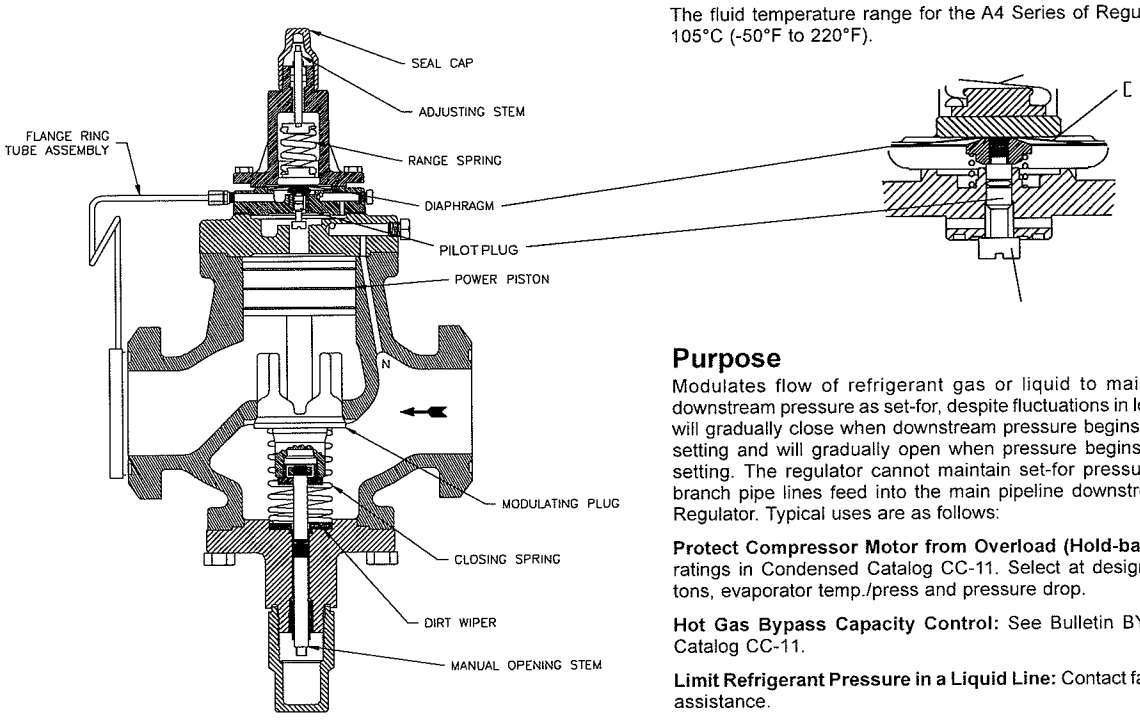
BULLETIN 23-07A
Type A4AO, A4AOE, A4AOS, A4AOSE



January 2003
Installation, Service and Parts Information

FEATURES

- Pilot operated characterized Modulating Plug precise control
- Suitable for all common refrigerants and oil
- 27.6 bar (400 psig) design pressure (MRP)
- Flanges for threaded or welded steel pipe and copper tube (copper not for ammonia)
- Interchangeable parts
- Easy to service
- Close coupled strainers, optional
- Many control variations are possible with the use of a few Modules and kits. (See Adaptomode Pressure Regulator Bul. 23-06)
- Stainless Steel Diaphragm
- Chrome Plated Pilot Seat
- Manual Opening Stem



Description

These compact, heavy duty, pilot operated, iron alloy (ASTM A126 Class B) Outlet Pressure regulators are suitable for Ammonia, R-12, R-22, R-502 and other common refrigerants and fluids approved for use in refrigerant valves. All A4 Regulators are pilot operated using upstream pressure for the opening force and requires a minimum 0.14 bar (2 psig) pressure drop to fully open.

These valves are generally ordered with close coupled strainer to prevent entrance of foreign material into the valve and the rest of the system. (See current Bulletin 00-10 for strainer information.)

The fluid temperature range for the A4 Series of Regulators is -45°C to 105°C (-50°F to 220°F).

Purpose

Modulates flow of refrigerant gas or liquid to maintain a constant downstream pressure as set-for, despite fluctuations in load. The regulator will gradually close when downstream pressure begins to rise above the setting and will gradually open when pressure begins to fall below the setting. The regulator cannot maintain set-for pressure if uncontrolled branch pipe lines feed into the main pipeline downstream of the A4AO Regulator. Typical uses are as follows:

Protect Compressor Motor from Overload (Hold-back): See capacity ratings in Condensed Catalog CC-11. Select at design parameters i.e., tons, evaporator temp./press and pressure drop.

Hot Gas Bypass Capacity Control: See Bulletin BYG-4, Condensed Catalog CC-11.

Limit Refrigerant Pressure in a Liquid Line: Contact factory for selection assistance.

Prevent Deep Vacuum in Booster Suction: See capacity ratings Condensed Catalog CC-11 "Compressor Suction Loading". For selections other than those shown, contact factory.

Prevent Pressure Rise in Suction Main: Select valve based on mass flow requirements. Valve Cv and pressure drop across regulator. Contact factory for proper selection assistance, if required.

Hot Gas Defrost Control: Refer to Condensed Catalog CC-1 1 and Bulletin 90-10 for ratings and application information.

Principles of Operation (See Fig. 1 & 1A)

The outlet pressure is sensed under the diaphragm through the sensing tube, which is part of the Flange Ring-tube assembly. When the force created by the outlet pressure acting under the diaphragm is less than the force of the range spring, the pilot is open, allowing pressure to enter on top of the piston. This causes the power piston to force the modulating plug to open to maintain constant outlet pressure. Decrease in the outlet pressure allows the range spring to open the pilot further, allowing more pressure on top of the piston and opening the modulating plug further. An increase in the outlet pressure will lift the diaphragm against the force of the range spring, allowing the pilot plug to start closing. The pressure on top of the power piston is decreased and the closing spring acts to reduce the opening of the modulating plug and the flow of fluid through the regulator. The pressure on top of the power piston is controlled by the flow through the pilot seat and the bleed through a bleed hole in the power piston and through the clearance between the piston and cylinder. A minimum of 0.14 bar (2 PSIG) pressure drop across the regulator is required to open it fully.

The A4AO Outlet Pressure Regulator therefore opens on a drop in the outlet pressure below its set point and closes on a rise in outlet pressure above its set point. The outlet pressure set point is not appreciably affected by variations in the inlet pressure.

Manual Opening Stem

All Type A4A Regulators are provided with a manual opening stem. To open the regulator manually, back the stem out (turn counterclockwise) until it stops. To put the regulator into automatic operation, turn the stem in (clockwise) until only the flats on the stem protrude from the packing nut.

Adjustment

Install a pressure gauge at the regulator gauge port in the A4AO Adapter next to the sensing tube. Back the adjusting stem all the way out to stop (counterclockwise). This will reduce the set-point to its lowest level and cause the valve to close. Operate the system until the outlet pressure is lower-than desired. Slowly turn in the adjusting stem (clockwise) until the desired outlet pressure is reached.

A4AO Outlet Pressure Setting Ranges

Set Point Ranges	Approx. Pressure Change per Turn of Adjusting Screw	Factory Set Point (unless otherwise specified)
V:500mm hg to 8.3 bar (20in hg to 120 psig)	1.7 bar (25 psi)	2.8 bar (40 psig)
D:5.2 to 19.3 bar (75 to 280 psig)	3.7 bar (53 psi)	9.7 bar (140 psig)

TYPE A4AOE (See Fig. 2)

Description
A4AOE Outlet Pressure Regulator,
Remote Sensing Connection

This regulator allows control of downstream pressure at a point remote from the outlet of the regulator. The pressure from the desired sensing point is connected directly to the A4AOE adapter at Fitting 7A in place of the Flange Ring-tube Assembly 20 shown for the A4AO. Thus the regulator will control the pressure at the sensing point. The regulator operation and adjustment is the same as for A4AO.

Type A4AOS (See Figs. 2, 3, and 4)

Description
A4AOS Outlet Pressure Regulator
With Electric Shut-Off

The A4AOS Pressure Regulator controls outlet pressure when the modular solenoid is energized, and closes when the solenoid pilot is de-energized regardless of the pressure setting or pressure in the regulator. The Modudapter (Fig. 2, item 28A) is used only with the A4AOS. The Pilot Solenoid is mounted on Pad #1 of the Modudapter along with Moduplate, item #52, mounted on Pad #2 with "S" showing to the outside of the regulator.

Adjustment: With the solenoid energized, proceed as with the A4AO.

Installation

All regulators are packed for maximum protection. Unpack carefully. Check the carton to make sure all flanges and other items are unpacked. Save the enclosed instructions for the installer and eventual user.

Do not remove the protective coverings from the inlet and outlet of the regulator until the regulator is ready to be installed. Protect the inside of the regulator from moisture, dirt and chips before and during installation. When welded or brazed flange connections are used, all slag, scale and loose particles should be removed from the flange interior before the regulator is installed between the flanges. It is advisable to install a close-coupled companion strainer (RSF) at the inlet of the regulator to help protect it from any foreign material in the system.

The A4A series of regulators will give optimum performance if mounted in a horizontal line in a vertical position with the manual opening stem on bottom. Where other positions are desired, the factory should be consulted, please give application and piping details. The regulator must be installed with the arrow on the valve body pointing in the direction of the fluid flow for the regulator to function properly. Backward flow through the regulator is uncontrolled and will vary with the valve model and the reverse pressure drop encountered. The regulator is not a check valve.

Tighten the flange bolts and nuts evenly to provide proper seating of the flange gasket and to avoid damage to gaskets or flanges. (See Flange Bolt Torque Table, page 12). Avoid using the regulator flange bolts to stretch or align pipe. Even the heavy duty semi-steel body of an A4A can be distorted, causing the precision parts to bind.

The regulator should be installed in a location where it is easily accessible for adjustment and maintenance. The location should be such that the regulator cannot be easily damaged by material handling equipment. When it is necessary to insulate the regulator (and companion strainer), the insulation should be installed to provide access to the regulator (and companion strainer) for adjustment and maintenance. Do not insulate the solenoid coil and coil housing. Proper indicating gauges should be installed to be easily visible to the operating engineer for system checking and adjusting purposes.

Disassembly and Assembly

Refer to Figs. 2, 3 and 4 in this section.

Before disassembling any A4A type regulator, read the information in this bulletin and Bulletin RSB, Safety Procedures for Refrigerating Specialties Division Refrigeration Control Valves.

Before a regulator is removed from the line or disassembled in the line, make sure that all refrigerant has been removed from the regulator, including the bonnet where applicable, and the close coupled strainer. The regulator must be isolated from the rest of the system in a safe manner. When pumping down to remove the refrigerant, the manual opening stem 33A must be turned out (counterclockwise) to make sure the valve is open.

All A4A Regulators General Procedure

The construction of the regulator and the method of disassembly are relatively simple, but some procedures must be followed to avoid damage. The following describes the procedure for the basic A4A; special instructions for other types are included in other appropriate sections.

Disassembly and Assembly (continued)

Disassembly - Take care when removing Seal Caps 1 and 44 in case some refrigerant may be trapped inside. Back the Adjusting Stem 6 all the way out to remove any pressure from Range Spring 13 otherwise damage to Diaphragm 17 or Pilot Seat 18 may occur. Remove Bonnet 8 by carefully removing Cap Screws 11. Take care not to damage Diaphragm Follower 15. Remove Adapter 28 by removing Cap Screws 31. Turn the Manual Opening Stem 33A all the way in until the flats on the stem barely protrude from the stuffing box nut. Push Piston 30 down against the spring force. The piston should move freely down and be returned by the spring force. If the piston is jammed or sticky, remove Bottom Cap Assembly which includes Items 33 through 42 by removing Cap Screws 39 or unscrewing Bottom Cap, 20mm through 32mm (3/4" through 1-1/4"). Using a hard wood dowel rod inserted through the bottom of the valve, tap the piston upward and out. Thoroughly clean all parts. If jamming has taken place and the piston and bore are scored, remove all burrs by polishing the piston, bore and modulating plug with fine crocus cloth. Inspect the seating area of the Modulating Plug 33 for damage or erosion. If damaged it should be replaced. It would be advisable to replace the entire bottom cap assembly. Inspect all gaskets and "O" rings for damage and replace where necessary.

Assembly - When reassembling the valve, all internal parts should be clean, dry and lightly oiled with refrigerant oil, except "O" rings. Apply silicone grease to the "O" rings. Care must be taken especially when the parts are cold since moisture can condense on parts and cause rapid rusting. When replacing gaskets, they should be oiled very lightly with refrigerant oil before assembly. Install bottom cap assembly first and tighten in place. Carefully replace the piston; never try to force it in place. Align the Adapter Gasket 29 carefully with the proper holes in the adapter and valve body and fasten adapter in place. Before assembling the bonnet be sure the Adjusting Stem 6 is turned all the way out and that the Bonnet 8 and Diaphragm Follower 15 are properly aligned, otherwise damage to the diaphragm and pilot seat may occur. Place Gasket 19 in the adapter and align Gasket 16 and Diaphragm 17 to the center of the bonnet. The raised center of the diaphragm must be towards the bonnet. For range "D" use two diaphragms. Tighten Cap Screws 11 evenly. The ideal tightening torque is 1.5 Kg-m (11 ft. lbs.). Valve is now ready to be adjusted for normal operation.

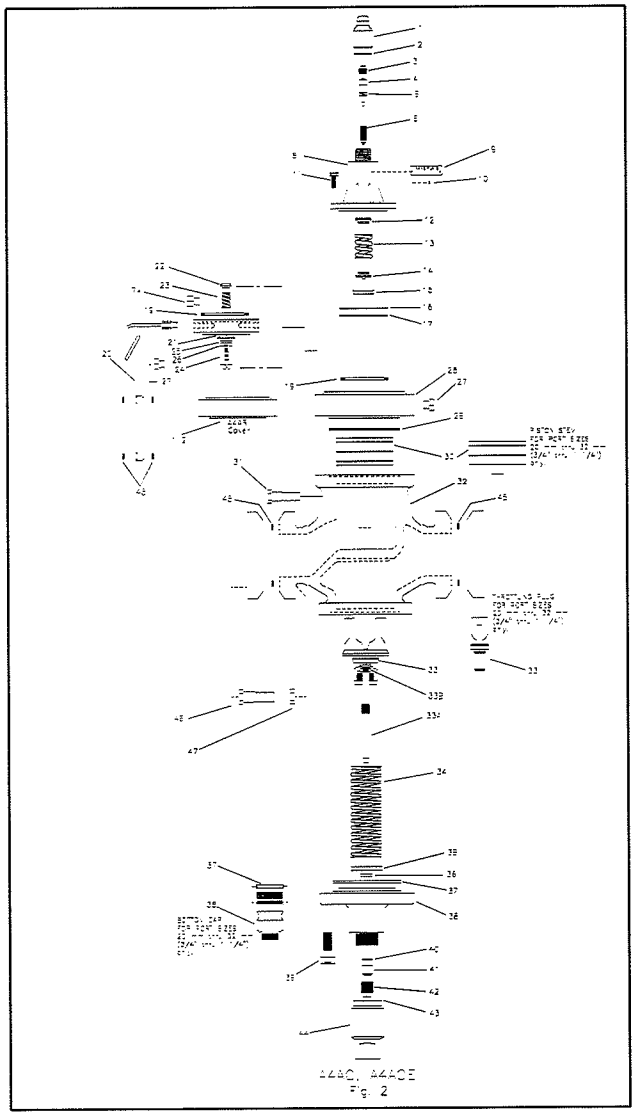
If close coupled strainer is used, it may be cleaned before putting the valve back in operation. The regulator must be tested for leaks with refrigerant gas or other appropriate gas before the system is put into operation.

Basic Modules (Used on A4AOS/A4AOSE)

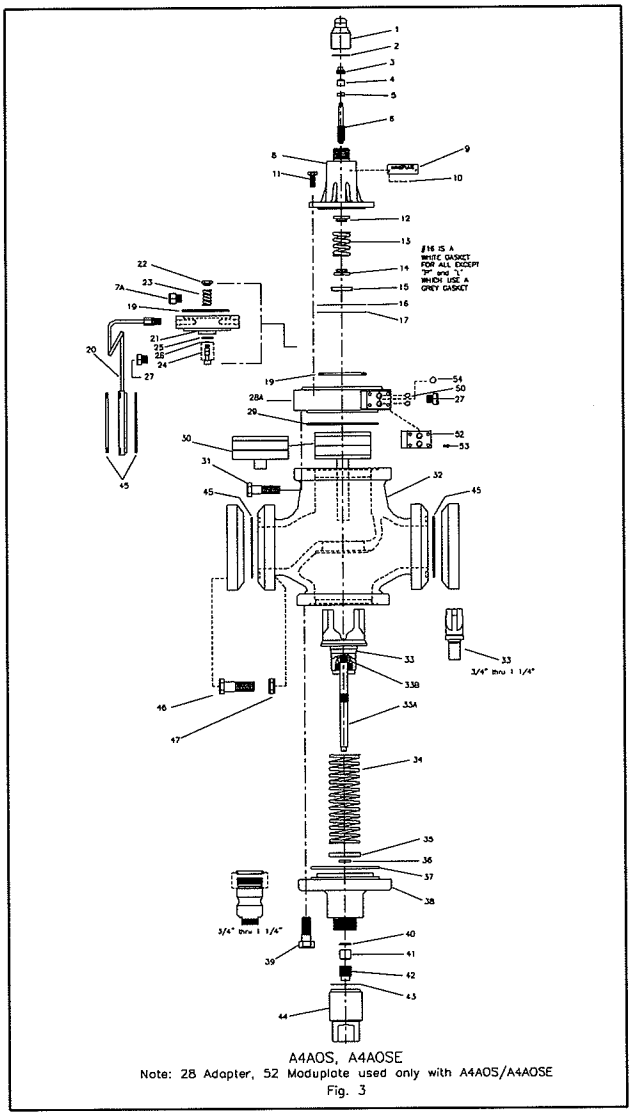
Disassembly and Assembly

Refer to exploded views (Figs. 3 and 4), illustrating the Modular Solenoid Pilot and Moduplate. These modules are used only with the A4AOS/A4AOSE Outlet Pressure Regulator with Electric Shut Off. The Modudapter, Item #28 (Fig. 2) accommodates these modules. The Pilot Solenoid is mounted on Pad #1 of the Modudapter along with the Moduplate, item #52, mounted on Pad #2 with the "S" showing to the outside of the regulator.

Before disassembling and assembling any modules, refer to page 2 of this bulletin and to Bulletin RSB, Safety Procedure for Refrigerating Specialties Division Refrigeration Control Valves.



A4AOS, A4AOSE
Fig. 2



A4AOS, A4AOSE
Note: 28 Adapter, 52 Moduplate used only with A4AOS/A4AOSE
Fig. 3

Disassembly and Assembly *(continued)*

Modudapter (See Figs. 1, 2 and 3)

The Modudapter 28 will accommodate the Modular Pilot Solenoid and Moduplate. When assembling make sure the Modudapter gauge port is directly lined up with the inlet of the regulator. Passage N must communicate upstream pressure through the hole in the Adapter Gasket 29 as well as into Modudapter 28 and thence to the pilot modules. It is imperative that proper alignment of these items be made to assure regulator function.

Before disassembly, make sure all refrigerant has been removed from the regulator and strainer, if used.

Protect the surfaces of Pads 1 and 2 of the Modudapter at all times since these surfaces determine the sealing tightness of the "O" Rings.

S6A Modular Solenoid Pilot (Fig. 4)

This solenoid pilot is mounted on Pad 1. Before working on any solenoid pilot, make sure the coil is de-energized and will remain so during the servicing period. Refer to page 10 for Repair Parts Kit details of S6A Solenoid Pilot.

Disassembly (Fig. 4) - Remove Coil Housing Screw 55 and pull entire Coil and Housing Assembly, 56 through 60, upward and off of Bonnet Tube Assembly 61. Carefully remove Bonnet-Tube Assembly. Lift out Plunger-Needle Assembly 63, avoid damaging the needle. Remove Seat Assembly 64 by using a 7/16" (11 mm) socket wrench. Inspect all parts, clean or replace as needed.

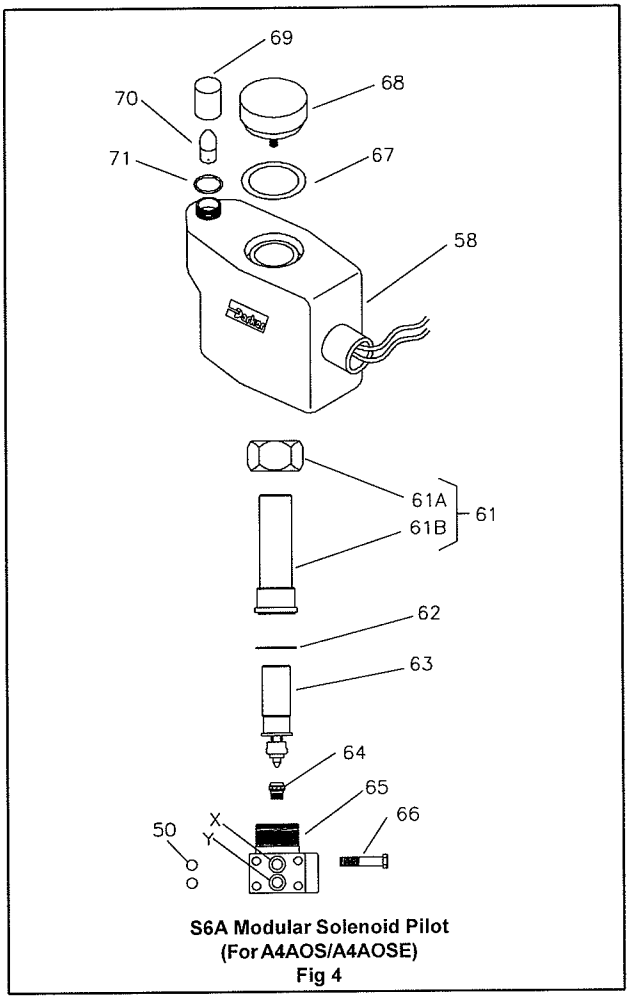
Assembly (Fig. 4) - Reinstall the Seat Assembly and tighten (no gasket needed). Carefully insert the Plunger Needle Assembly. Replace the Gasket 62 and re-install Bonnet-Tube Assembly. Replace entire Coil and Housing Assembly and tighten Coil Housing Screw.

Make sure the solenoid coil is of the proper voltage and frequency.

When mounting the solenoid pilot, place the "O" Rings 50 into the proper grooves and tighten the Cap Screws 66, evenly. The ideal tightening torque is 1.1 kg-m (8 ft. lbs.).

Moduplate (Fig. 2)

The Moduplate Item #52 is used to stop the flow through the flow path of the Modudapter. Protect the "O" Ring surfaces at all times. When mounting the Moduplate, place "O" Rings 50 into the grooves (lubricate with silicone grease) and tighten the Cap Screws 53 evenly to avoid distortion and assure proper sealing. The ideal tightening torque is 1.1 Kg-m (8 ft. lbs.).



S6A Modular Solenoid Pilot
(For A4AOS/A4AOSE)
Fig 4

Maintenance and Service

General Procedure:

Before disassembly of regulator, make certain that all refrigerant has been removed (pumped out) from the regulator and its companion strainer where one is used. Read Safety Bulletin RSB.

Dirt in the system is the greatest single cause of regulator malfunction. All screens or filters must be cleaned or replaced when they become dirty. At start up it is especially important that these items are cleaned or changed frequently. When the RSF close-coupled companion strainers are used, maintain according to instructions in Bulletin 00-10. Moisture in halocarbon systems in particular can cause corrosion or form ice, causing the piston to freeze in position. Filter-driers should be used and maintained for halocarbon systems.

Before deciding to disassemble a regulator for servicing, the following investigations should be made:

Check the manual opening stem; it should be turned in for automatic operation.

Check the regulator setting to make sure it is properly adjusted. Turn adjusting screw slowly to see if regulator responds. Check regulator pressure range; if wrong, range spring must be replaced.

Check other system components for proper operation. Make sure that the regulator receives the proper electrical signal where modular pilot solenoids are used. Make sure they are same as the power supply.

Check hand valves in the system to make sure they are open or closed as required and the system is receiving liquid or gas as the case may be.

Solenoid Coils and Coil Housing

The solenoid coils and coil housing, identified and described on page 8 for the Type S6A Solenoid Pilot, are an improved design which provide a higher MOPD and a cooler coil resulting in longer life. The new coil and its heavily plated, rust resisting housing are interchangeable with the obsolete coil and cast iron housing as follows: The new coil, which has its Part Number stamped on the side, can be used in both the old and new coil housing; the old coil which has its 30-0030-XX Series Part Number stamped on one end, can be used in the old, cast iron housing only. There is no bottom marking on the new coil; either end may be positioned up. The color coding of lead wires for various voltage and frequencies has not been changed. The fuses used with the old coils are suitable for the new coils; the new coil power consumption is 33 Watts instead of 37.

The S6A pilot solenoid valve is also available with a coil using a quick electrical connector or plug, permitting easy wiring connection with an exposed rubber covered cable instead of a rigid or flexible conduit and enclosed wiring. This type of coil cannot be used with the old, cast iron housing.

The new coils and new housing described above for the S6A valve are also used with Solenoid Valve Types S4, S5, S6N, S7, S8 and S9.

Maintenance and Service (continued)

Electrical

The Refrigerating Specialties Division molded water resistance Class "B" solenoid coil is designed for long life and powerful opening force. The standard coil housing meets NEMA 3R and 4 requirements. This sealed construction can withstand direct contact with moisture and ice. The coil housing far exceeds the requirements of NEMA Standard ICS, 1-110.57 salt spray test for rust resistance.

By definition, Class "B" coil construction will permit coil temperatures as measured by resistance method, as high as 130°C (266°F). Final coil temperatures are a function of both fluid and ambient temperatures. The higher fluid temperatures require lower ambient temperatures so the maximum coil temperature is not exceeded. Conversely, low fluid temperatures permit higher ambient temperatures.

The molded Class "B" coil is available from stock with most standard voltages. However, coils are available for other voltages and frequencies, as well as for direct current. Coils are also available as transformer type with a 6 volt secondary winding for use with the Refrigerating Specialties Division Pilot Light Assembly (see current copy of Bulletin 60-10, "Pilot Light Assembly and Solenoid Transformer Coil"). The solenoid coil must be connected to electrical lines with volts and Hertz same as stamped on coil. The supply circuits must be properly sized to give adequate voltage at the coil leads even when other electrical equipment is operating. The coil is designed to operate with line voltage from 85% to 110% of rated coil voltage. Operating with a line voltage above or below these limits may result in coil burnout. Also, operating with line voltage below the limit will definitely result in lowering the valve opening pressure differential. Power consumption during normal operation will be 33 Watts or less.

Inrush and running current is listed below:

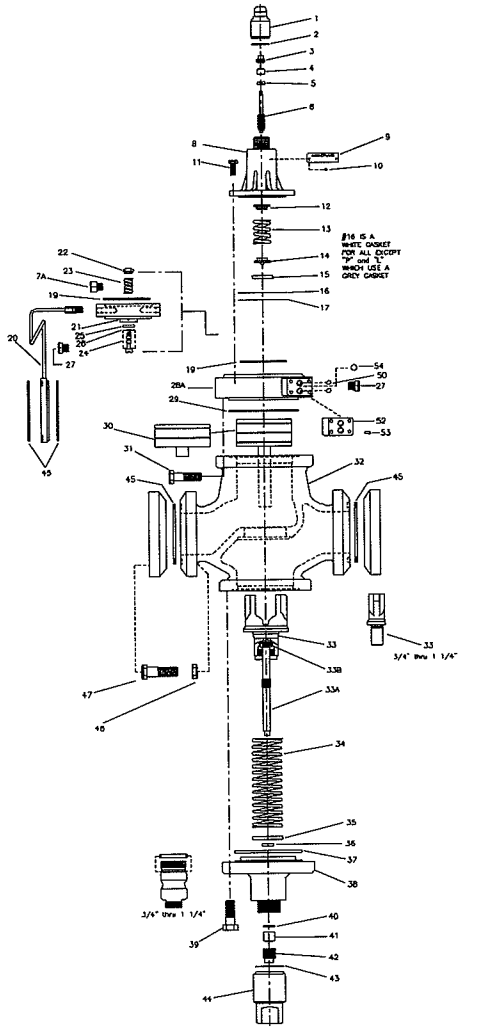
Standard Coil Volts/Hertz	Inrush Current (Amps)	Running Current (Amps)	Fuse Size (Amps)
120/60 (Blue leads)	1.86	0.46	1
208/60 (Blue & Red leads)	0.63	0.26	1
240/60 (Red leads)	0.60	0.23	1
440/60 (Yellow & Red leads)	0.39	0.13	1
115/50 (Yellow & Blue leads)	1.22	0.21	1
230/50 (Yellow leads)	0.65	0.26	1
Other		(Contact Factory)	

On transformer coil the 6 volt leads are always black.

SERVICE POINTERS (Check General Procedure)

SYMPTOM	PROBABLE REASON	CORRECTION
Regulator does not shut off flow.	Diaphragm or seat dirty, damaged or frozen.	Clean or replace. Clean strainer.
	Diaphragm follower stuck or damaged.	Clean or replace. Install follower carefully.
	Piston jammed with excess dirt.	Remove and polish piston and bore with crocus cloth. Clean valve and strainer.
	Modulating plug leaking due to excess dirt or damage.	Clean or replace. If used on liquid, check for erosion due to excessive flash gas. Reduce flash gas by subcooling or by reducing pressure drop across valve by providing restriction at valve outlet.
	Diaphragm ruptured or badly deformed.	Replace. If Range "D" make sure has 2 diaphragms.
	A4AOS/A4AOSE Modular Solenoid Pilot Seat leaking.	Check seat and needle. Replace as needed.
	Diaphragm and seat eroded due to flash gas.	Replace. Reduce flash gas by subcooling or by reducing pressure drop across regulator by providing restriction at valve outlet.
	Modular Solenoid Pilot not closing.	Check power at leads, make sure coil is de-energized.
Regulator does not open.	Pressure Regulator Diaphragm ruptured or badly deformed.	Replace. If Range D make sure has 2 diaphragms.
	Diaphragm follower stuck, damaged or frozen.	Clean or replace. Install follower carefully.
	A4AOS/A4AOSE Modular Solenoid Pilot not opening.	Pressure drop across valve too high; over 21 bar (300 psig). Lower pressure drop. Improper power supply. Correct. Replace solenoid coil.
	Piston worn, too much clearance.	Replace piston. Check for reason. If used on liquid, check for flash gas.
	Piston jammed with excess dirt.	Remove and polish piston and bore with crocus cloth. Clean valve and strainer.
Regulator Operation erratic.	Diaphragm or seat dirty or damaged.	Clean or replace. Clean strainer.
	Diaphragm follower has dirt on the outside diameter or outside diameter is damaged.	Clean or replace.
	Other system components, line controllers, thermostats, etc., erratic.	Adjust, repair or replace.
	Regulator too far oversized.	Check load. Replace with smaller regulator or investigate use of reduced capacity plug.
Pressure drop across regulator too high.	Inlet or outlet restricted.	Check for restriction. Clean strainer.
	Regulator too small.	Open manually to be sure valve is full open. Replace with proper size regulator.
	Large amount of flash gas in liquid line.	Reduce flash gas by subcooling. Reduce line restriction by increasing line size, particularly at the regulator outlet. Replace with larger regulator.
	High pressure drop causes high rate of expansion gas at regulator outlet.	Increase pipe size at the outlet of the regulator.
	Regulator does not open all the way.	Check piston for wear. Replace, if needed.

Repair Kits for A4AO, A4AOE, A4AOS and A4AOSE



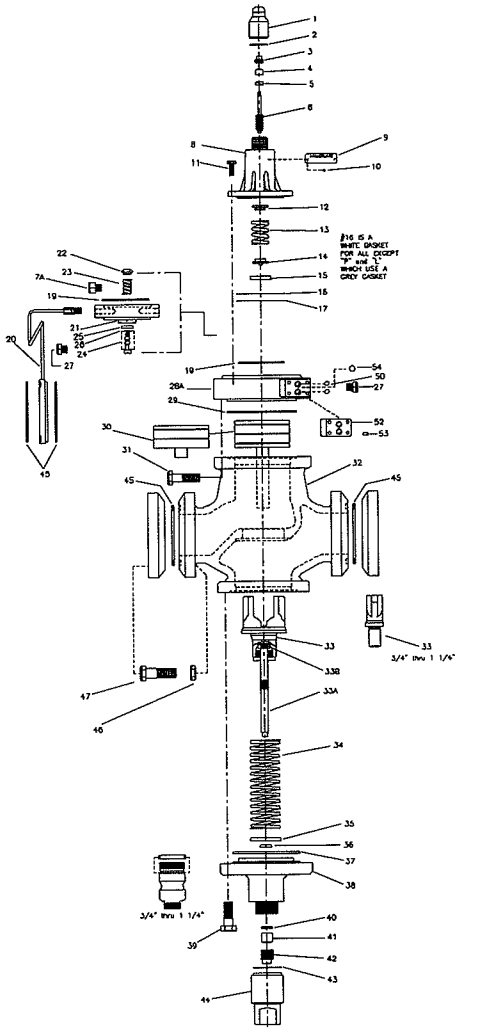
A4AO, A4AOE, A4AOS, A4AOSE
Note: 28 Adapter, 52 Moduplate used only with A4AOS/A4AOSE
28 Adapter, 52 Moduplate used only with A4AO/A4AOE
Fig. 3

			20mm (3/4")		25mm (1")	
Item No.	Description		Kit No.	Qty	Kit No.	Qty
1	Seal Cap		Only Avail. with Kit	1	Only Avail. with Kit	1
2	Seal Cap Gasket		Only Avail. with Kit	1	Only Avail. with Kit	1
1-2	Cap Kit, Seal		202110	1	202110	1
3	Nut, Packing		Only Avail. with Kit	1	Only Avail. with Kit	1
4	Packing,Stem		Only Avail. with Kit	1	Only Avail. with Kit	1
5	Washer, Flat		Only Avail. with Kit	1	Only Avail. with Kit	1
3-5	Packing Kit, Stem		202100	1	202100	1
6	Stem, Adjusting		Only Avail. with Kit	1	Only Avail. with Kit	1
4-6	Stem Kit, Adjusting		202120	1	202120	1
12	Plate, Spring, Upper		Only Avail. with Kit	1	Only Avail. with Kit	1
13	Spring, Comp.		Only Avail. with Kit	1	Only Avail. with Kit	1
14	Plate, Spring, Lower		Only Avail. with Kit	1	Only Avail. with Kit	1
15	Follower, Diaphragm		Only Avail. with Kit	1	Only Avail. with Kit	1
3-5,6,	Spring	Rge. V	202006	1	202006	1
12-15	Stem Kit	Rge. D	202007	1	202007	1
8	Bonnet		Only Avail. with Kit	1	Only Avail. with Kit	1
11	Screw, Hx. Hd.		Only Avail. with Kit	8	Only Avail. with Kit	8
16	Bonnet Gasket		Only Avail. with Kit	1	Only Avail. with Kit	1
1-6,8	Spring Kit	Rge. V	202008	1	202008	1
11-16	with Bonnet	Rge. D	202009	1	202009	1
12-14	Spring Kit	Rge. V	202481	1	202481	1
16	less Bonnet	Rge. D	202482	1	202482	1
17	Diaphragm		Only AvTl. with Kit	1	Only Avail. with Kit	1
19	Gasket		Only Avail. with Kit	1	Only Avail. with Kit	1
16,17,19	Diaphragm Kit	Rge. V	200770	1	200770	1
17	Diaphragms	Rge. D	Only Avail. with Kit	2	Only Avail. with Kit	2
16,17,19	Diaphragm Kit	Rge. D	200771	1	200771	1
19	Gasket		Only Avail. with Kit	1	Only Avail. with Kit	1
22	Nut, Retainer		Only Avail. with Kit	1	Only Avail. with Kit	1
23	Spring		Only Avail. with Kit	1	Only Avail. with Kit	1
24	Plug, Pilot		Only Avail. with Kit	1	Only Avail. with Kit	1
25	O-Ring		Only Avail. with Kit	1	Only Avail. with Kit	1
26	O-Ring		Only Avail. with Kit	1	Only Avail. with Kit	1
19,22-26	Plug Kit, Pilot		200777	1	200777	1
21	Adapter		Only Avail. with Kit	1	Only Avail. with Kit	1
19,22-26	Plug Kit, Pilot A4AO/A4AOS		Only Avail. with Kit	1	Only Avail. with Kit	1
21,19,22-26	Outlet-Regulator Kit		OR-50(200516)	1	OR-50(200516)	1
	(See List Price Schedule)					
20	Ring/Tube Assbly. Flge.		Only Avail. with Kit	1	Only Avail. with Kit	1
45	Gasket, Flange		Only Avail. with Kit	1	Only Avail. with Kit	1
20,45	Flge. Ring/Tube Kit A4AO/A4AL		FRT-20 (200439)	1	FRT-25 (200439)	1
27	Plug Pkg. 1/4" NPT		202552	5	202552	5
28	Adapter, A4AO/A4AOE		Only Avail. with Kit	1	Only Avail. with Kit	1
29	Gasket		Only Avail. with Kit	1	Only Avail. with Kit	1
19,28,29	Adapter Kit A4AO/A4AOE		200703	1	200703	1
28A	Adapter, A4AOS/A4AOSE		Only Avail. with Kit	1	Only Avail. with Kit	1
29	Gasket		Only Avail. with Kit	1	Only Avail. with Kit	1
19,28A,29	Adapter Kit A4AOS/A4AOSE		MD-25(200591)	1	MD-25 (200591)	1
	(See List Price Schedule)					
30	Piston/Stem Assembly		Only Avail. with Kit	1	Only Avail. with Kit	1
29,30	Piston Kit		200760	1	200760	1
32	Valve Body		Not Available		NotAvailable	
34	Spring, Comp.		Only Avail. with Kit	1	Only Avail. with Kit	1
35	Washer, Flat		Only Avail. with Kit	1	Only Avail. with Kit	1
36	Wiper, Dirt		Only Avail. with Kit	1	Only Avail. with Kit	1
37	"O"Ring		Only Avail. with Kit	1	Only Avail. with Kit	1
34-37	Spring Kit, Closing		202300	1	202300	1

Repair Kits for A4AO, A4AOE, A4AOS and A4AOSE

	32mm (1-1/4")		40mm (1-5/8")		50mm (2")		65mm (2-1/2")		75mm (3")		100mm (4")	
Item No.	Kit No.	Qty	Kit No.	Qty	Kit No.	Qty	Kit No.	Qty	Kit No.	Qty	Kit No.	Qty
1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
2	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
1-2	202110	1	202110	1	202110	1	202110	1	202110	1	202110	1
3	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
4	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
5	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
3-5	202100	1	202100	1	202110	1	200110	1	200110	1	200110	1
6	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
4-6	202120	1	202120	1	202120	1	202120	1	202120	1	202120	1
12	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
13	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
14	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
15	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
3-5,6	202006	1	202006	1	202006	1	202006	1	202006	1	202006	1
12-15	202007	1	202007	1	202007	1	202007	1	202007	1	202007	1
8	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
11	Only Avail. with Kit	8	Only Avail. with Kit	8	Only Avail. with Kit	8	Only Avail. with Kit	8	Only Avail. with Kit	8	Only Avail. with Kit	8
16	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
1-6,8	202008	1	202008	1	202008	1	202008	1	202008	1	202008	1
11-16	202009	1	202009	1	202009	1	202009	1	202009	1	202009	1
12-14	202481	1	202481	1	202481	1	202481	1	202481	1	202481	1
16	202482	1	202482	1	202482	1	202482	1	202482	1	202482	1
17	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
19	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
16,17,19	200770	1	200770	1	200770	1	200770	1	200770	1	200770	1
17	Only Avail. with Kit	2	Only Avail. with Kit	2	Only Avail. with Kit	2	Only Avail. with Kit	2	Only Avail. with Kit	2	Only Avail. with Kit	2
16,17,19	200771	1	200771	1	200771	1	200771	1	200771	1	200771	1
19	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
22	Only Avail, with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
23	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
24	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
25	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
26	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
19,22-26	200777	1	200777	1	200777	1	200778	1	200778	1	200778	1
21	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
19,22-26	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
21,19,22-26	OR-50 (200516)	1	OR-50 (200516)	1	OR-50 (200516)	1	OR-200 (200517)	1	OR-200 (200517)	1	OR-200 (200517)	1
20	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
45	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
20,45	FRT-32 (200441)	1	FRT-40 (200443)	1	FRT-50 (200443)	1	FRT-65 (200445)	1	FRT-75 (200447)	1	FRT-100 (200449)	1
27	202552	5	202552	5	202552	2	202552	2	202552	2	202552	2
28	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
29	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
19,28,29	200700	1	200725	1	200725	1	200685	1	200713	1	200716	1
28A	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
29	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
19,28A,29	MD-32 (200593)	1	MD-50 (200595)	1	MD-50 (200595)	1	MD-65 (200597)	1	MD-75 (200599)	1	MD-100 (200606)	1
30	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
29,30	200767	1	200389	1	200389	1	200391	1	200393	1	200227	1
32	Not Available		NotAvailable		NotAvailable		Not Available		Not Available		Not Available	
34	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
35	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
36	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
37	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
34-37	202301	1	202302	1	202302	1	202303	1	202304	1	202305	1

Repair Kits for A4AO, A4AOE, A4AOS and A4AOSE



A4AO, A4AOE, A4AOS, A4AOSE
Note: 28 Adapter, 52 Moduplate used only with A4AOS/A4AOSE
28 Adapter, 52 Moduplate used only with A4AO/A4AOE

		20mm (3/4")		25mm (1")	
Item No.	Description	Kit No.	Qty	Kit No.	Qty
33	Plug/Stem Assembly	Only Avail. with Kit	1	Only Avail. with Kit	1
40	Washer, Flat	Only Avail. with Kit	1	Only Avail. with Kit	1
41	Packing, Stem	Only Avail. with Kit	1	Only Avail. with Kit	1
42	Nut, Packing	Only Avail. with Kit	1	Only Avail. with Kit	1
33,34-37,40-42	Full Cap. Plug Kit Modul.	202021	1	202022	1
33,34-37,40-42	50% Cap. Plug Kit, Modul.	202029	1	(*)	
33,34-37,40-42	35% Cap. Plug Kit, Modul.	Not Available		Not Available	
33,34-37,40-42	17% Cap. Plug Kit, Modul.	202030	1	(*)	
37	O-Ring	Only Avail. with Kit	1	Only Avail. with Kit	1
38	Cover, Bottom	Only Avail. with Kit	1	Only Avail. with Kit	1
40	Washer, Flat	Only Avail. with Kit	1	Only Avail. with Kit	1
41	Packing, Stem	Only Avail. with Kit	1	Only Avail. with Kit	1
37,38,40,41	Cover Kit	200761	1	200761	1
42	Nut, Packing	Only Avail. with Kit	1	Only Avail. with Kit	1
40-42	Packing Kit, Stem	202100	1	202100	1
43	Gasket	Only Avail. with Kit	1	Only Avail. with Kit	
44	Seal Cap	Only Avail. with Kit	8	Only Avail. with Kit	8
43,44	Seal Cap, Kit	202110	1	202110	1
33-38,40-44	Full Cap. Bottom Assembly	Kit 202010	1	202011	1
33-38,40-44	50% Cap. Bottom Assembly	Kit 202347	1	(*)	1
33-38,40-44	17% Cap. Bottom Assembly	Kit 202346	1	(*)	1
3-6,12-19,	Full Cap. Repair				
29,30,33-37	Kit, Req. Rge. V	202040	1	202043	1
40-42	Rge. D	202042	1	202045	1
3-6,12-19,	50% Cap. Repair				
29,30,33-37	Kit. Reg. Rge. V	202354	1	(*)	1
40-42	Rge. D	202353	1	(*)	1
3-6,12-19,	17% Cap. Repair				
29,30,33-37	Kit. Reg. Rge. V	202351	1	(*)	1
40-42	Rge. D	202350	1	(*)	1
2,16(2),19(2)					
25,26,29,37,	Gasket Kit A4/S4	202112		202112	
43,45(3)					
Indv'l Gaskets, O- Rings & Valve Packing sold & packaged in qtys only as indicated					
29	Gasket Pkg. Adapter	202406	5	202406	5
37	O-Ring/Gasket Pkg. Bottom Cap	202384	3	202384	3
43	Gasket Pkg. Seal Cap (Bottom)	202408	12	202408	12
2	Gasket Pkg. Seal Cap (Top)	202408	12	202408	12
45	Gasket Pkg. Flange	202079	12	202079	12
4	Packing Pkg. Stem (Top)	202478	25	202478	2
41	Packing Pkg. Stem (Bottom)	202478	25	202478	25
Bolt Package Kits					
11	Bolt Package, A4AO Bonnet	202247	8	202247	8
31	Bolt Package, Adapter	202248	8	202249	8
39	Bolt Package, Bottom Cap	Not Required		Not Required	
Flange Bolt Package includes bolts and nuts; no gaskets					
46,47	Bolt Kit, Flange	201585	1	201585	1

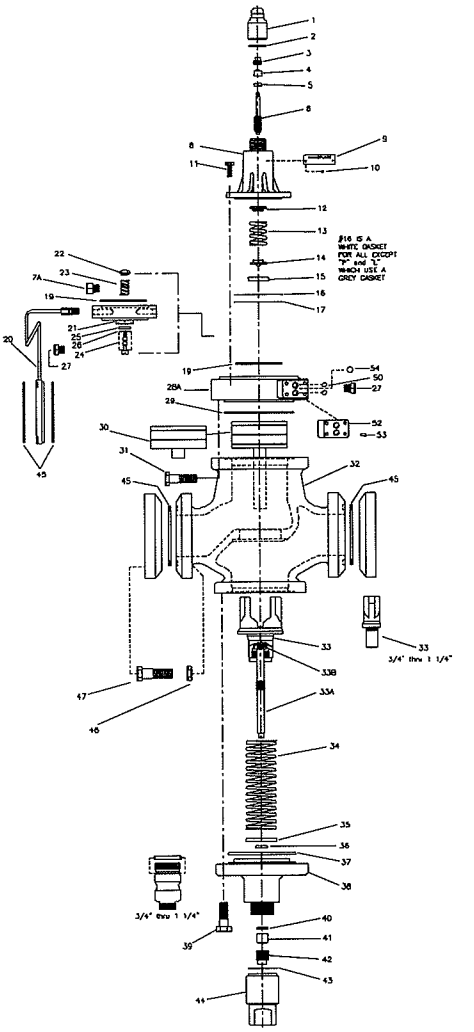
(*) All Plug Kits and Bottom Assembly Kits for 3/4" Port Size Valves can be used in the 1" Port Size Valves for reducing capacity.
(**) All Plug Kits and Bottom Assembly Kits for 1-5/8" Port Size Valves can be used in the 2" Port Size Valves for reducing capacity.

Repair Kits for A4AO, A4AOE, A4AOS and A4AOSE

	32mm (1-1/4")		40mm (1-5/8")		50mm (2")		65mm (2-1/2")		75mm (3")		100mm (4")	
Item No.	Kit No.	Qty	Kit No.	Qty	Kit No.	Qty	Kit No.	Qty	Kit No.	Qty	Kit No.	Qty
33	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
40	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
41	202110	1	202110	1	202110	1	202110	1	202110	1	202110	1
42	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
33,34-37,40-42	202023	1	202024	1	202025	1	202025	1	202027	1	202028	1
33,34-37,40-42	Not Available		Not Available		Not Available		Not Available		Not Available		Not Available	
33,34-37,40-42	202031	1	202032	1	(**)		202033	1	202034	1	202035	1
33,34-37,40-42	Not Available		Not Available		Not Available		Not Available		Not Available		Not Available	
37	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
38	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
40	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
41	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
37,38,40,41	200761	1	Not Available		Not Available		Not Available		Not Available		Not Available	
42	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
40-42	202100	1	202100	1	202100	1	202100	1	202101	1	202101	1
43	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
44	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
43,44	202110	1	202110	1	202110	1	202110	1	202110	1	202110	1
33-38,40-44	202012	1	202013	1	202014	1	202015	1	202016	1	202017	1
33-38,40-44	Not Available		Not Available		Not Available		Not Available		Not Available		Not Available	
33-38,40-44	Not Available		Not Available		Not Available		Not Available		Not Available		Not Available	
3-6,12-19	202047	1	202050	1	202053	1	202056	1	202059	1	202062	1
29,30,33-37	202046	1	202049	1	202052	1	202055	1	202058	1	202061	1
40-42	202048	1	202051	1	202054	1	202057	1	202060	1	202063	1
3-6,12-19, 29-30,33-37, 40-42	**NOTE:** 50% Capacity Repair Kit is not available for port sizes 1-1/4" to 4". Capacity reduction can be obtained through use of field installing "Reduced Capacity Plug Kits". See description and contents of these kits elsewhere in this section.											
3-6,12-19, 29-30,33-37, 40-42	**NOTE:** 17% Capacity Repair Kit is not available for port sizes 1-1/4" to 4". Capacity reduction can be obtained through use of field installing "Reduced Capacity Plug Kits". See description and contents of these kits elsewhere in this section.											
2,16(2),19(2)	**Gasket Kits (includes complete set of gaskets plus O-Rings if applicable)**											
25,26,29,37	202113		202114		202114		202115		202116		202117	
43,45(3)												
	Individual Gaskets, O- Rings and Valve Packing sold and packaged in quantities only as directed.											
29	202407	5	202397	3	202397	3	202396	3	202399	3	202400	3
37	202384	3	202374	6	202374	6	202374	6	202382	3	202383	3
43	202408	12	202408	12	202408	12	202408	12	202404	5	202404	5
2	202408	12	202408	12	202408	12	202408	12	202408	12	202408	12
45	202080	12	202081	12	202081	12	202082	12	202083	12	202084	12
4	202478	25	202478	25	202478	25	202478	25	202478	25	202478	25
41	202478	25	202478	25	202478	25	202478	25	202479	5	202471	5
	Bolt Package Kits											
11	202247	8	202247	8	202247	8	202247	8	202247	8	202247	8
31	202248	8	202249	8	202249	8	202249	8	202250	6	202250	6
39	Not Required		202251	6	202251	6	202251	6	202252	6	202252	6
	Flange Bolt Package includes bolts and nuts; no gaskets											
46,47	201595	1	201604	1	201604	1	201611	1	201611	1	201620	1

(*) All Plug Kits and Bottom Assembly Kits for 3/4" Port Size Valves can be used in the 1" Port Size Valves for reducing capacity.
(**) All Plug Kits and Bottom Assembly Kits for 1-5/8" Port Size Valves can be used in the 2" Port Size Valves for reducing capacity.

Repair Kits for A4AO, A4AOE, A4AOS and A4AOSE



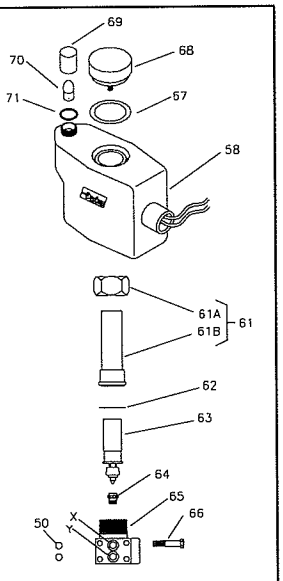
A4AO, A4AOE, A4AOS, A4AOSE
Note: 28 Adapter, 52 Moduplate used only with A4AOS/A4AOSE
28 Adapter, 52 Moduplate used only with A4AO/A4AOE
Fig. 3

Item No.	Description	20mm (3/4") Kit No.	Qty	25mm (1") Kit No.	Qty
	Flange Bolt Package includes bolts and nuts; no gaskets				
50,52-54	Moduplate Kit "MP"	200518		200518	
52	Moduplate	Only Avail. with Kit	1	Only Avail. with Kit	1
54	O-Ring, "B"	Only Avail. with Kit	1	Only Avail. with Kit	1
50	O-Ring, "S", "D"	Only Avail. with Kit	2	Only Avail. with Kit	2

	Flange Kit	FK-20				FK-25			
	Specify Flange, Style, Connection, Size	FPT, SW, WN		ODS		FPT, SW, WN		ODS	
	Kit includes 2 Flanges only	Std	Also Avail	Std	Also Avail	Std	Also Avail	Std	Also Avail
		3/4	1, 1¼	7/8	1 1/8, 1 3/8	1	3/4, 1¼	1 1/8	1 3/8, 1 5/8

Repair Kits for S6A Modular Pressure Pilot Solenoid

Item	Description	Qty	Kit Number
55	Screw	1	Only Avail. with Kit
58	Coil Assemly	1	See Page 8
67	O-Ring	1	Only Avail. with Kit
68	Knob	1	Only Avail. with Kit
67, 68	Knob Kit	1	205047
69	Lens	1	Only Avail. with Kit
70	Bulb Kit	6	205282
71	O-Ring	1	Only Avail. with Kit
69 , 71	Lens Kit	6	205279
61B	Tube Assembly, Solenoid	1	Only Avail. with Kit
61A	Nut, Solenoid Tube	1	Only Avail. with Kit
62	Gasket	1	Only Avail. with Kit
61A,61B 62	Tube Kit, Solenoid	1	201036
50	O-Ring	2	Only Avail. with Kit Also available in package. See below.
66	Botts	4	Only Avail. with Kit
50,66	Bolt/"O"Ring Kit	1	201574
62	Gasket	1	Only Avail. with Kit
63	Plunger/Needle Assembly	1	Only Avail. with Kit
62,63	Plunger Kit, Needle	1	202019
62	Gasket	1	Only Avail. with Kit
63	Plunger/Needle Assembly	1	Only Avail. with Kit
62,63	Plunger Kit, Needle (D.C. only)	1	201021
62	Gasket	1	Only Avail. with Kit
63	Plunger/Needle Assembly	1	Only Avail. with Kit
64	SeatAssembly	1	Only Avail. with Kit
62,62,64	Plunger Seat Kit	1	201630
50	O-Ring Pkg. Moduplate	12	202424
65	Body S6A	1	Not Avail. Separately



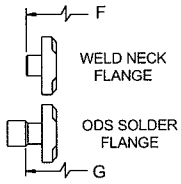
S6A Modular Solenoid Pilot (for A4AOS/A4AOSE) Port Sizes 20-100mm 3/4" - 4" Fig. 4

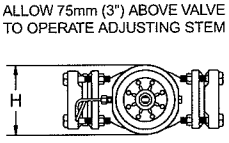
Repair Kits for A4AO, A4AOE, A4AOS and A4AOSE

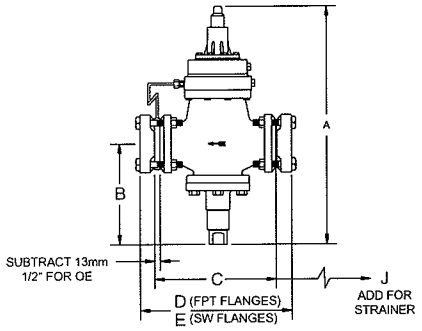
	32mm (1-1/4")		40mm (1-5/8")		50mm (2")		65mm (2-1/2")		75mm (3")		100mm (4")	
Flange Bolt Package includes bolts and nuts; no gaskets (cont'd from page 9)												
Item No.	**Kit No.**	**Qty**	**Kit No.**	**Qty**	**Kit No.**	**Qty**	**Kit No.**	**Qty**	**Kit No.**	**Qty**	**Kit No.**	**Qty**
50,52-54	200518		200518		200518		200518		200518		200518	
52	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
54	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1
50	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1	Only Avail. with Kit	1

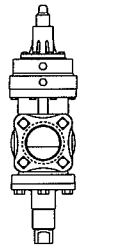
	FK-32				FK-40				FK-50				FK-65				FK-75				FK-100			
	FPT, SW, WN		ODS		FPT, SW, WN		ODS		FPT, SW, WN		ODS		FPT, SW, WN		ODS		FPT, SW, WN		ODS		FPT, SW, WN		ODS	
	Std	Also Avail	Std	Also Avail	Std	Also Avail	Std	Also Avail	Std	Also Avail	Std	Also Avail	Std	Also Avail	Std	Also Avail	Std	Also Avail	Std	Also Avail	Std	Also Avail	Std	Also Avail
	1¼	1½	1⅜	1⅝, 2⅛	1½	2	1⅝	2⅛, 2⅝	2	1½	2⅛	2⅝	2⅛		2⅝	3⅛	3		3⅛	3⅝	4		4⅛	

A4AO, A4AOE

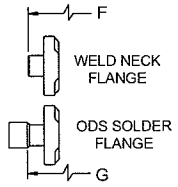


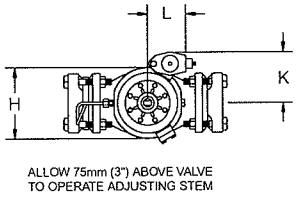


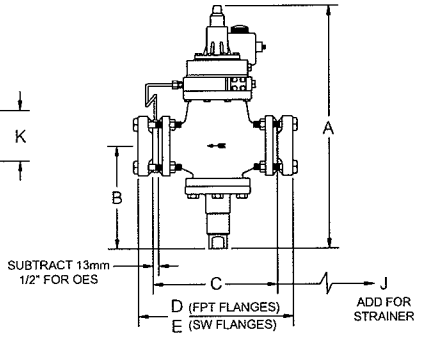




A4AOS, A4AOSE







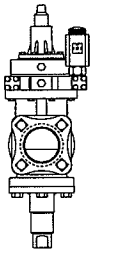


TABLE OF DIMENSIONS FOR INLET PRESSURE Types A4AO, A4AOE, A4AOS, A4AOSE

TYPE	20mm & 25mm (3/4 & 1 ")			32mm (1-1/4")			40mm & 50mm (1-5/8 & 2")			65mm (2-1/2")			75mm (3")			100mm (4")		
DIMENSIONS		**mm**	**inches**		**mm**	**inches**		**mm**	**inches**		**mm**	**inches**		**mm**	**inches**		**mm**	**inches**
A		454	17.9		472	18.6		525	20.7		538	21.2		657	25.9		710	28.4
B		148	5.8		162	6.3		177	6.9		181	7.1		273	10.7		292	11.5
C		177	6.7		216	8.5		264	10.4		264	10.4		324	12.7		352	14.6
D (FPT) FOR PIPE SIZES SHOWN	1/2"	229	9.0	1-1/4"	269	10.6	1-1/2"	320	12.6	2-1/2"	344	13.5	3"	402	15.8	4"	463	18.2
	3/4"	229	9.0															
	1"	229	9.0	1-1/2"	269	10.6												
	1-1/4"	229	9.0															
E (S.W.)FOR PIPE SIZES SHOWN	1/2"	229	9.0	1-1/4"	269	10.6	1-1/2"	320	12.6	2-1/2"	344	13.5	3"	402	15.8	4"	463	18.2
	3/4"	229	9.0															
	1"	229	9.0	1-1/2"	269	10.6	2"	320	12.6									
	1-1/4"	229	9.0															
F (W.N.) FOR PIPE SIZES SHOWN	3/4"	267	10.5	1-1/4"	313	12.3	1-1/2"	377	14.8	2-1/2"	414	16.1	3'	491	19.3	4"	584	23.0
	1"	274	10.8	1-1/2"	317	12.5	2"	384	15.1									
	1-1/4"	274	10.0															
G (O.D.S.) FOR TUBE SIZES SHOWN	7/8"	252	9.9							2-5/8"	361	14.2	3-1/8"	427	16.8			
	1-1/8"	252	9.9	1-3/8"	282	11.1	1-5/8"	371	14.6							4-1/8"	516	20.3
	1-3/8"	244	9.6	1-5/8"	292	11.5	2-1/8"	351	13.8	3-1/8"	402	15.8	3-5/8"	445	17.5			
	1-5/8"	252	9.9	2-1/8"	318	12.5	2-5/8"	371	14.6									
H		117	4.6		117	4.6		140	5.5		159	6.2		178	7.0		222	8.8
J		98	3.9		178	7.0		251	9.9		314	12.4		314	12.4		363	14.3
K		112	4.4		112	4.4		117	4.6		124	4.9		142	5.6		157	6.2
L		122	4.8		122	4.8		135	5.3		133	5.2		122	4.8		152	6.0

FLANGES

VALVE SIZE		Â FPT FLANGES		WELDING FLANGES								Ã FLANGES				
		Nom. Pipe Size	Flange Pkg. No.	Nominal Pipe Size		Sock Weld Socket I.D.		Weld Neck O.D.		Flange Package Number(2/Pkg)		Tubing O.D.		Fitting I.D.		Flge Pkg. No. (2/Pkg)
					Á					Socket	Weld		Â			
mm	Inches	Inches	(2/Pkg)	Inches	NW No.	Inches	mm	Inches	mm	Weld	Neck	Inches	mm	Inches	mm	
20	3/4	3/4	200016	3/4	20	1.070	27.81	1.050	26.67	200020	200023	1-1/8	28.57	1.130	28.70	200027
and	and	1	200017	1	25	1.365	34.67	1.315	33.40	200021	200024	1-3/8	34.92	1.380	33.05	200028
25	1	1-1/4	200018	1-1/4	32	1.705	43.31	1.660	42.16	200022	200025	1-5/8	41.27	1.631	41.43	200029
32	1-1/4	1-1/4	200030	1-1/4	32	1.705	43.31	1.660	42.16	200032	200034	1-3/8	34.92	1.380	35.05	200036
		1-1/2	200031	1-1/2	40	1.930	49.02	1.900	48.26	200033	200035	1-5/8	41.27	1.631	41.43	200037
												2-1/8	53.97	2.131	54.13	200038
40	1-5/8	1-1/2	200039	1-1/2	40	1.930	49.02	1.900	48.26	200041	200043	1-5/8	41.27	1.631	41.43	200045
and	and	2	200040	2	50	2.445	62.10	2.375	60.33	200042	200044	2-1/8	53.97	2.131	54.13	200046
50	2											2-5/8	66.67	2.631	66.83	200047
65	2-1/2	2-1/2	200048	2-1/2	65	2.945	—	2.875	73.03	200049	200050	2-5/8	66.67	2.631	66.83	200051
												3-1/8	79.37	3.131	79.53	200052
75	3	3	200053	3	80	3.575	90.81	3.500	88.90	200054	200055	3-1/8	79.37	3.131	79.53	200056
												3-5/8	92.07	3.631	92.23	200057
100	4	4	200062	4	100	4.575	116.20	4.500	114.30	200063	200064	4-1/8	104.77	4.132	104.95	200065

Â FPT: Internal NPT (USA Standard Taper Pipe Thread).
Á NW: Metric equivalent nominal size for steel tubing.
Â Metric copper tubing used for refrigeration.
Ã ODS connections to fit copper tubing of given outside diameter. (Not for use with ammonia)

Definitions:
ODS - Outside Diameter Sweat
I.D. - Inside Diameter
O.D. - Outside Diameter
N.A. - Not Available

Flange Bolt Torque Requirements

Bolt Diameter	Valve Port Size	Torque
11mm (7/16")	13mm (1/2 ")	3.9 mkg (28 ft lb)
16mm (5/8")	20-50mm (3/4 "- 2")	11.8 mkg (85 ft lb)
19mm (3/4")	65-75mm (2-1/2 "- 3")	14.5 mkg (105 ft lb)
22mm (7/8")	100mm (4")	22.1 mkg (150 ft lb)

Safe Operation (See also Bulletin RSBCV)

People doing any work on a refrigeration system must be qualified and completely familiar with the system and the Refrigerating Specialties Division valves involved, or all other precautions will be meaningless. This includes reading and understanding pertinent Refrigerating Specialties Division product Bulletins, and Safety Bulletin RSB prior to installation or servicing work.

Where cold refrigerant liquid lines are used, it is necessary that certain precautions be taken to avoid damage which could result from liquid expansion. Temperature increase in a piping section full of solid liquid will cause high pressure due to the expanding liquid which can possibly rupture a gasket, pipe or valve. All hand valves isolating such sections should be marked, warning against accidental closing, and must not be closed until the liquid is removed. Check valves must never be installed upstream of solenoid valves, or regulators with electric shutoff, nor should hand valves upstream of solenoid valves or downstream of check valves be closed until the liquid has been removed. It is advisable to properly install relief devices in any section where liquid expansion could take place.

Avoid all piping or control arrangements which might produce thermal or pressure shock.

For the protection of people and products, all refrigerant must be removed from the section to be worked on before a valve, strainer, or other device is opened or removed.

Flanges with ODS connections are not suitable for ammonia service.

Warranty

All Refrigerating Specialties Products are warranted against defect in workmanship and materials for a period of one year from date of shipment from factory. This warranty is in force only when products are properly installed, field assembled, maintained and operated in use and service as specifically stated in Refrigerating Specialties Catalogs or Bulletins for normal refrigeration applications, unless otherwise approved in writing by Refrigerating Specialties Division. Defective products, or parts thereof, returned to the factory with transportation charges prepaid and found to be defective by factory inspection will be replaced or repaired at Refrigerating Specialties' option, free of charge, F.O.B. factory. Warranty does not cover products which have been altered or repaired in the field; damaged intransit, or have suffered accidents, misuse, or abuse. Products disabled by dirt, or other foreign substances will not be considered defective.

THE EXPRESS WARRANTY SET FORTH ABOVE CONSTITUTES THE ONLY WARRANTY APPLICABLE TO REFRIGERATING SPECIALTIES PRODUCTS, AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, WRITTEN OR ORAL, INCLUDING ANY WARRANTY OR MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. No employee, agent, dealer or other person is authorized to give any warranties on behalf of Refrigerating Specialties, nor to assume, for Refrigerating Specialties, any other liability in connection with any of its products.