March 2010

Type 63EG Relief Valve or Backpressure Regulator

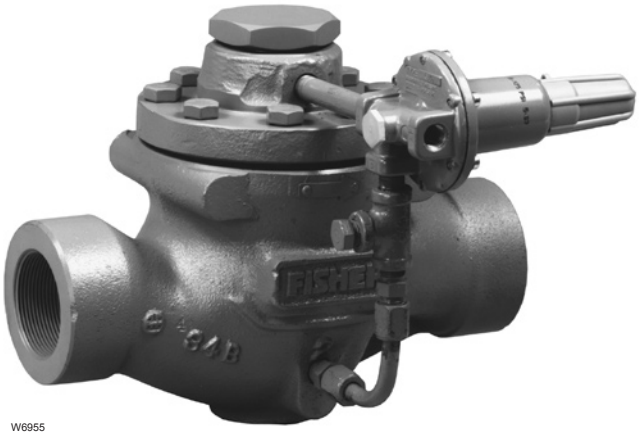


Figure 1. *Type 63EG*

- **NACE Construction**
- **Backpressure Regulator**
- **Relief Valve**
- **Oxygen Service**
- **Natural Gas**
- **Liquids**

- **Fast Pilot Reseat**
- **Low Buildup Capability**
- **Versatility**
- **Time Tested**
- **Reliable**
- **Robust**

Figure 2. *Type 1098-63EGR*

D100151X012

Introduction

Types 63EG and 1098-63EGR pilot-operated relief valves or backpressure regulators are suitable for both liquid and gas service and may also be used for throttling backpressure applications, such as on oilfield separators. These relief valves are combined with the 6358 Series pilots to result in the configurations shown in the Specifications section.

- **Full Usable Capacity**—Fisher® relief valves and backpressure regulators are laboratory tested. One hundred percent of the published capacities can be used with confidence.

- **Fast Pilot Reseat**—The fixed restriction in the Types 6358B, 6358EB, and 6358EBH pilots allows the valve plug to quickly reseat after operation.

- **Low Buildup Capability**—6358 Series relief valve pilots reduce the buildup required for main valve to go wide-open, as shown in the capacity tables.

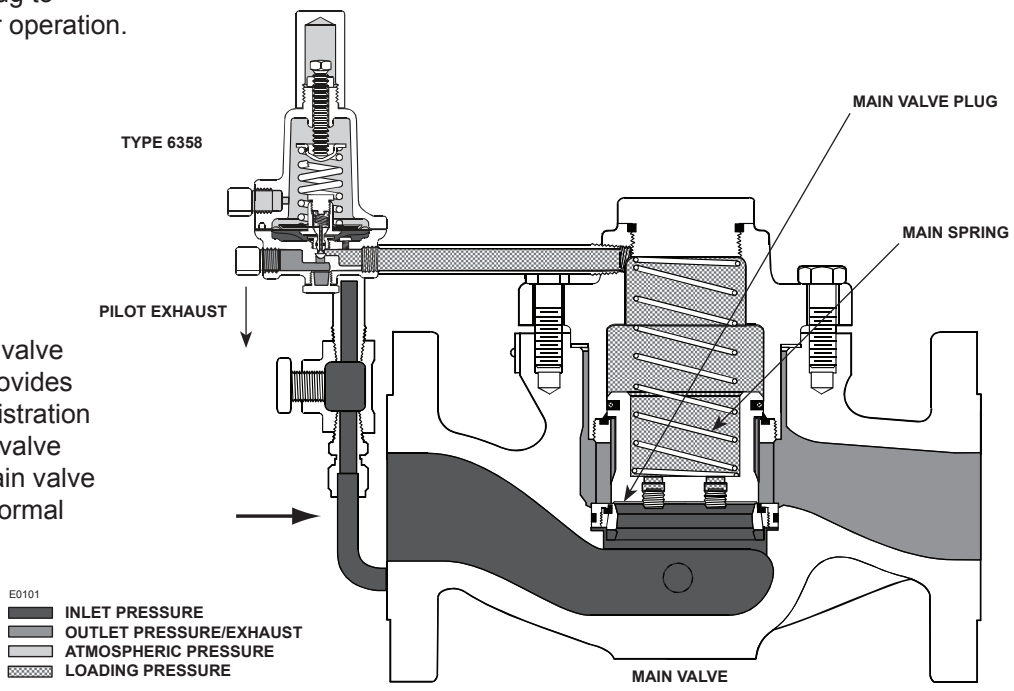


Figure 3. *Type 63EG Backpressure Regulator Operational Schematic*

- **Stable Startup**—The unique hollow valve stem in the pilot provides quick pressure registration on top of the main valve plug preventing main valve unseating during normal system startup.

- **Noise Reduction Capability**—Optional Whisper Trim® cage can reduce noise from high-velocity gas by as much as 10 decibels. Whisper Trim equipped regulators are especially engineered for high-pressure applications where sonic gas velocities are often encountered at relief valve outlets.

- **Overpressure Protection**—A superior pump bypass regulator for overpressure protection in pump recirculation applications.

- **Thorough Laboratory Testing**—Emerson™ state-of-the-art flow laboratory allows thorough testing of all new designs. Emerson conducts performance tests, such as flow, shutoff, material compatibility, and noise abatement.

- **Easy In-Line Maintenance**—Top entry design reduces maintenance time. Trim parts can be inspected, cleaned, and replaced without removing the body from the pipeline. If actuator is used, its stem need not be disconnected.

- **In-Service Travel Inspection**—Optional travel indicator assembly with protective cover permits inspection of plug travel without removing relief valve from service.

- **Differential Control**—Maintains a constant differential pressure between a reference pressure and the pressure of the controlled fluid.

- **Quick Change Trim Package**—The optional quick change trim package allows for faster field maintenance. With Type 1098-63EGR construction, only body flange cap screws or stud bolt nuts need be removed for quick trim change.

- **No Assembly Adjustments**—Precise machining ensures that main valve plug shuts off at the same time against both port and upper seals.

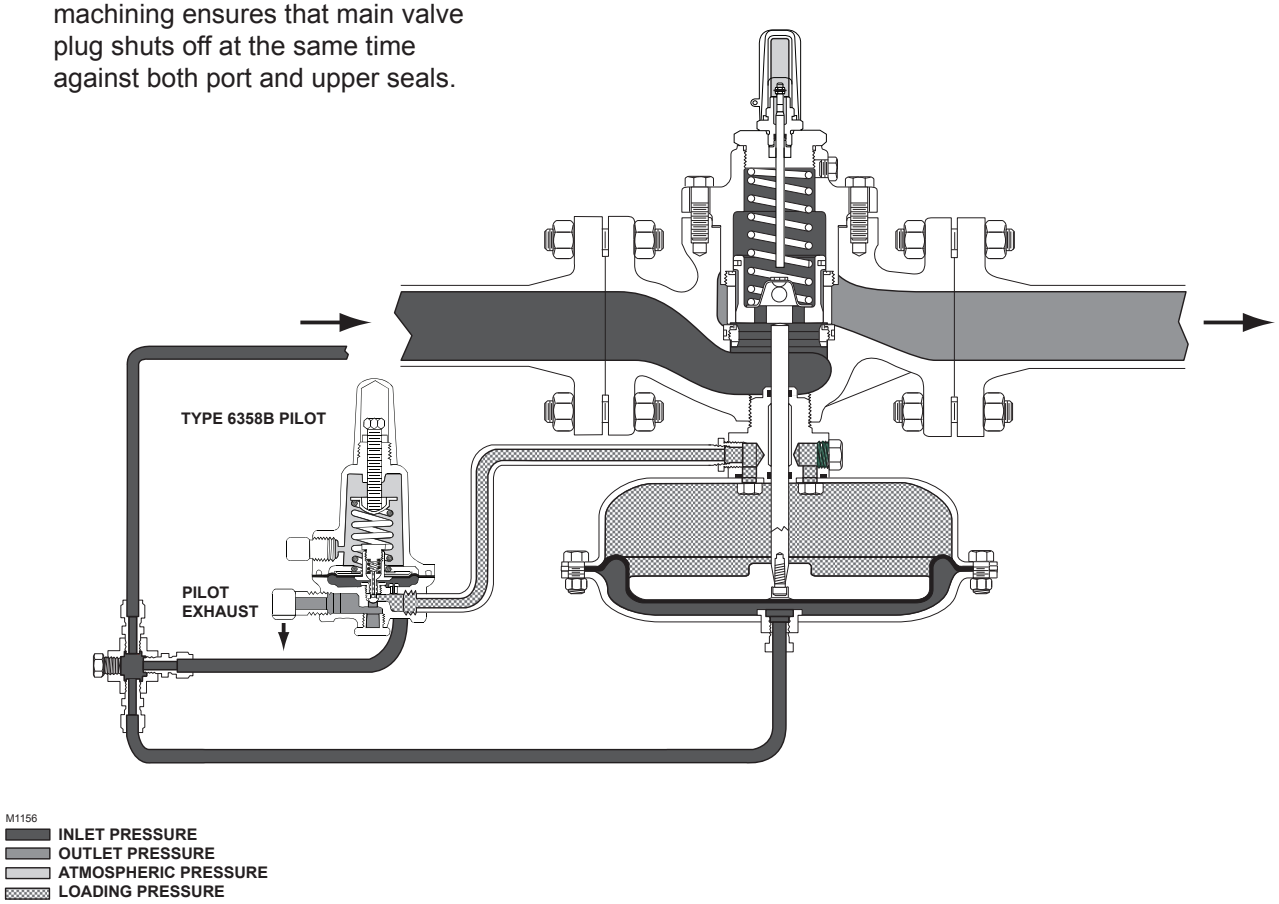


Figure 4. *Type 1098-63EGR Relief Valve Operational Schematic*

- **Versatility in Both Liquid and Gas Service**—Pilot exhaust port and standard tapped pilot spring case each come with removable vent for remote piping when necessary. The standard tapped pilot spring case comes with an optional gasketed closing cap that permits pressure loading for remote pneumatic adjustment of the set pressure. For remote upstream registration, the pilot supply tubing may be disconnected at the 1/4 NPT main valve body tapping, and this tapping plugged.

Specifications

Available Constructions

Type 63EG with a 6358 Series Pilot
Type 1098-63EGR with a Type 6358B Pilot

Main Valve Body and End Connection Styles(1, 2)

MAIN VALVE BODY SIZE, NPS (DN)	END CONNECTION STYLES AND RATINGS	
	Cast Iron	Steel or Stainless Steel
1, 2 (25, 50)	NPT; CL125 FF or CL250 RF flanged	NPT; BWE; SWE; CL150 RF, CL300 RF, CL600 RF; or PN 16/24/40 flanged
3, 4, 6, 8 x 6 (80, 100, 150, 200 x 150)	CL125 FF or CL250 RF flanged	BWE; CL150 RF, CL300 RF, CL600 RF; or PN 16/24/40 flanged

Maximum Relief (Inlet(3)) Pressure(2)

Type 63EG: 400 psig (27,6 bar) or body rating, whichever is lower
Type 1098-63EGR: 82 psig (5,6 bar)

Maximum Actuator Pressures(2) (Standard Size 40 with Type 1098-63EGR Only)

Maximum Set Pressure(4): 65 psig (4,5 bar)
Maximum Operating Pressure(3): 75 psig (5,2 bar)
Maximum Emergency Casing Pressure: 82 psig (5,6 bar)

Relief Set Pressure/Backpressure Control Ranges(4)

See Table 1

Flow Coefficients at Maximum Rated Travels

See Table 2

IEC Sizing Coefficients

See Table 3

Minimum and Maximum Differential Pressures(2)

See Table 4

Flow Capacities

Tables 5 and 6; and Capacity Information section

Main Valve Port Diameters and Valve Plug Travels

BODY SIZE, NPS (DN)	PORT DIAMETER, INCHES (mm)	VALVE PLUG TRAVEL, INCHES (mm)
1 (25)	1.31 (33)	0.75 (19)
2 (50)	2.38 (60)	1.13 (29)
3 (80)	3.38 (86)	1.50 (38)
4 (100)	4.38 (111)	2.00 (51)
6 and 8 x 6 (150 and 200 x 150)	7.19 (183)	2.00 (51)

Main Valve Flow Characteristic

Linear **(standard)** or Whisper Trim® III (Optional)

Main Valve Flow Direction

Up through seat ring and out through cage

Dimensions and Pilot Connections

See Figure 7

Temperature Capabilities(2)

Nitrile (NBR):
-20° to 180°F (-29° to 82°C)
Fluorocarbon (FKM):
0° to 300°F (-18° to 149°C)
Water is limited to 0° to 180°F (-18° to 82°C)
Ethylenepropylene (EPR):
-20° to 275°F (-29° to 135°C)
Perfluoroelastomer (FFKM):
0° to 425°F (-18° to 218°C)

Options

- Aluminum or Stainless steel Type 252 pilot supply filter
- Brass Type P594-1 filter
- Pressure gauges(5)
- NACE Construction

Approximate Weights (including pilot)

Type 63EG
NPS 1 (DN 25): 35 pounds (16 kg)
NPS 2 (DN 50): 55 pounds (25 kg)
NPS 3 (DN 80): 95 pounds (43 kg)
NPS 4 (DN 100): 145 pounds (66 kg)
NPS 6 (DN 150): 330 pounds (150 kg)
NPS 8 x 6 (DN 200 x 150): 670 pounds (304 kg)
Type 1098-63EGR
NPS 1 (DN 25): 65 pounds (29 kg)
NPS 2 (DN 50): 85 pounds (39 kg)
NPS 3 (DN 80): 125 pounds (57 kg)
NPS 4 (DN 100): 175 pounds (79 kg)
NPS 6 (DN 150): 360 pounds (163 kg)
NPS 8 x 6 (DN 200 x 150): 700 pounds (318 kg)

Construction Materials

Type 1098 Actuator
Bonnet: Steel or Stainless steel
Diaphragm Case: Steel or 304 Stainless steel
Diaphragm Plate: Cast iron or Stainless steel
Diaphragm and O-Rings: Nitrile (NBR) **(standard),** Fluorocarbon (FKM), Ethylenepropylene (EPDM) or Perfluoroelastomer (FFKM)
Stem: 17-4 PH Stainless steel **(standard)** or 316 Stainless steel
Type 63EG Main Valve
Body and Body Flange: WCC steel, Cast iron, or CF8M Stainless steel
Cage: Stainless steel (standard linear), 416 or 316 Stainless steel (Whisper Trim III)

1. EN (or other) ratings and end connections can usually be supplied; contact your local Sales Office for availability.
2. The pressure and/or temperature limits listed in this Bulletin and any applicable standard limitation should not be exceeded.
3. Includes buildup.
4. Set pressure is defined as the pressure at which the pilot starts-to-discharge.
5. Consult your local Sales Office for information on available gauges and units of measurement.

- continued -

Specifications (continued)

Construction Materials (continued)

Seat Ring and Valve Plug: 410/416 Stainless steel **(standard)**, 316 Stainless steel
Spring: Zinc-plated steel **(standard)** or Inconel® X750
Piston Ring: Polytetrafluoroethylene (PTFE)
O-Rings, Gaskets, and Other Elastomer Parts: Nitrile (NBR) **(standard)**, Fluorocarbon (FKM), or Ethylenepropylene (EPR)
Indicator Stem: 18-8 Stainless steel **(standard)** or 316 Stainless steel (NACE)
Lower Indicator Fitting: Zinc-plated steel
Stem O-Ring: Nitrile (NBR) **(standard)**, Fluorocarbon (FKM), or Ethylenepropylene (EPR)

6358 Series Pilots

Body and Spring Case: CF8M Stainless steel or Aluminum (for Types 6358 and 6358B only)

Construction Materials (continued)

Body Plug: 303 Stainless steel or Aluminum
Valve Plug/Stem Assembly: Nitrile (NBR) **(standard)** or Fluorocarbon (FKM) (high temperature) plug with stainless steel stem or UHMWPE
Spring: Zinc-plated steel
Diaphragm: Nitrile (NBR) **(standard)** or Fluorocarbon (FKM) (high temperature)
Spring Seat: Zinc-plated steel
Gaskets: Fluorocarbon (FKM) or Composition
Stem Guide and Valve Spring: Stainless steel
Adjusting Screw: Zinc-plated steel
O-Rings: Nitrile (NBR) or Fluorocarbon (FKM)
Locknut: Zinc-plated steel

Inconel® is a mark owned by Special Metals Corporation.

Table 1. *Relief Set Pressure and Backpressure Control Ranges*

TYPE	PILOT TYPE	RELIEF SET PRESSURE RANGE, PSIG (bar)(1)	SPRING PART NUMBER	SPRING COLOR	SPRING WIRE DIAMETER, INCH (mm)	SPRING FREE LENGTH, INCH (mm)
63EG	6358	10 to 40 (0,69 to 2,8) 35 to 125 (2,4 to 8,6)	1E392527022 1K748527202	Yellow Red	0.148 (3,76) 0.187 (4,75)	2.00 (50,8) 2.19 (55,6)
	6358B	10 to 30 (0,69 to 2,1) 30 to 60 (2,1 to 4,1) 60 to 125 (4,1 to 8,6)	1B788327022 1B788427022 1K748527202	Silver Blue Red	0.142 (3,61) 0.182 (4,62) 0.187 (4,75)	2.13 (54,1) 1.94 (49,3) 2.19 (55,6)
	6358EB	85 to 140 (5,9 to 9,6) 130 to 200 (9,0 to 13,8) 180 to 350 (12,4 to 24,1)	17B1261X012 17B1263X012 17B1264X012	Green Blue Red	0.225 (5,72) 0.262 (6,65) 0.294 (7,47)	3.70 (94,0) 3.85 (97,8) 4.22 (107)
	6358EBH	250 to 400 (17,2 to 27,6)	17B1263X012	Blue	0.262 (6,65)	3.85 (97,8)
1098-63EGR	6358B	3 to 18 (0,21 to 1,2) 15 to 40 (1,0 to 2,8) 35 to 65 (2,4 to 4,5)	1B986027212 1E392527022 1K748527202	Green Yellow Red	0.120 (3,05) 0.148 (3,76) 0.187 (4,75)	2.12 (53,8) 2.00 (50,8) 2.19 (55,6)

1. Set pressure plus buildup should not exceed maximum differential pressure of 400 psig (27,6 bar).

Table 2. *Flow Coefficients at Maximum Rated Travels*

BODY SIZES, NPS (DN)	PIPING STYLE													
	Line Size Equals Body Size							2:1 Line Size to Body Size						
	Linear Cage			Whisper Trim® III Cage			K_m	Linear Cage			Whisper Trim® III Cage			K_m
	C_g	C_v	C_1	C_g	C_v	C_1		C_g	C_v	C_1	C_g	C_v	C_1	
1 (25)	600	17.2	35.7	576	17.0	33.7	0.71	568	16.8	33.0	529	15.5	34.0	0.71
2 (50)	2280	63.3	36.0	1970	54.7	36.0	0.71	2050	59.6	34.4	1830	52.2	35.0	0.71
3 (80)	4630	132	35.1	3760	107	35.0	0.71	4410	128	34.4	3630	106	34.2	0.71
4 (100)	7320	202	36.2	6280	180	34.8	0.71	6940	198	35.0	6020	171	35.2	0.71
6 (150)	12,900	397	32.5	9450	295	32.0	0.71	12,100	381	31.7	9240	291	31.7	0.71
8 x 6 (200 x 150)	17,800	556	32.0	10,500	300	35.0	0.71	17,100	534	32.0	10,270	293	35.0	0.71

Table 3. *IEC Sizing Coefficients*

BODY SIZES, NPS (DN)	X_T	F_D	F_L
1 (25)	0.81	0.43	0.84
2 (50)	0.82	0.35	0.84
3 (80)	0.78	0.30	0.84
4 (100)	0.83	0.28	0.84
6 or 8 x 6 (150 or 200 x 150)	0.67	0.28	0.84

Principle of Operation

A pressure relief valve is a throttling pressure control device that opens and closes to ensure the upstream pressure does not rise above a predetermined pressure. A backpressure regulator is a device that controls and responds to changes in the upstream pressure. It functions the same as a relief valve in that it opens on increasing upstream pressure.

The Types 63EG and 1098-63EGR relief valves are not ASME safety relief valves.

Type 63EG

Relief Valve

As long as the inlet pressure is below the set pressure, the Type 6358B, 6358EB, or 6358EBH pilot control spring keeps the pilot valve plug closed. Inlet pressure passes through the pilot restriction and through the hollow passage of the valve plug then registers as loading pressure on top of the main valve plug. Force from the main spring, in addition to pilot loading pressure, provides downward loading pressure to keep the main valve plug tightly closed.

When the inlet pressure rises above the set pressure, the pressure on the pilot diaphragm overcomes the control spring and opens the valve plug. The pilot then exhausts the loading pressure from the top of the main valve plug. The pilot continuously exhausts gas while inlet pressure is above the set pressure. The inlet pressure unbalance overcomes the main spring force and opens the main valve plug.

As the inlet pressure drops below the set pressure, the pilot control spring closes the pilot valve plug and the exhaust to atmosphere stops. Force from the main spring, along with pilot loading pressure, pushes the main valve plug onto the seat, producing tight shutoff.

Backpressure Regulator

As long as inlet pressure remains below set pressure, the Type 6358 pilot control spring keeps the pilot valve plug closed. Inlet pressure bleeds around the upper portion of the pilot valve plug and then through the hollow passage of that valve plug to produce loading pressure on the main valve plug. This loading pressure along with force from the main spring provides the pressure to keep the main valve plug tightly closed.

When inlet pressure rises above the set pressure, the pressure on the pilot diaphragm overcomes the control spring to close the upper portion of the valve plug and stroke the valve plug to open the lower port. The pilot exhausts loading pressure from the top of the main valve plug. Inlet pressure unbalance overcomes the main spring force to open the plug.

While the main valve is throttling, the upper port of the pilot stays closed. The pilot exhausts only when it repositions the main valve. As inlet pressure drops below setpoint, the pilot control spring overcomes the diaphragm force to stroke the valve plug down to close the lower port and open the upper port. Force from the main spring, along with pilot loading pressure, builds up to close the main valve plug.

Type 1098-63EGR Relief Valve

As long as inlet pressure remains below set pressure, the Type 6358B pilot control spring keeps the pilot valve plug closed. Inlet pressure bleeding through the pilot restriction and the hollow passage of the valve stem loads the stem side of the actuator diaphragm, balancing the actuator and letting the main valve spring keep the main valve plug tightly shutoff.

An inlet pressure rise above the set pressure overcomes the pilot control spring and opens the pilot valve plug. Loading pressure bleeds out the pilot exhaust faster than it can be replaced through the pilot restriction. The pilot continuously exhausts gas while inlet pressure is above the set pressure. This permits inlet pressure to unbalance the actuator diaphragm and push the actuator stem against the main valve plug causing it to open.

As inlet pressure drops back to set pressure, the pilot control spring closes the pilot valve plug. Loading pressure again builds up to balance the actuator and let the main valve plug close.

Pilot Descriptions

The following pilot configurations are available.

Relief Valve

For relief valve application use a Type 6358B, 6358EB, or 6358EBH relief pilot. The pilot bleeds constantly while the relief valve is in operation. The pilot does

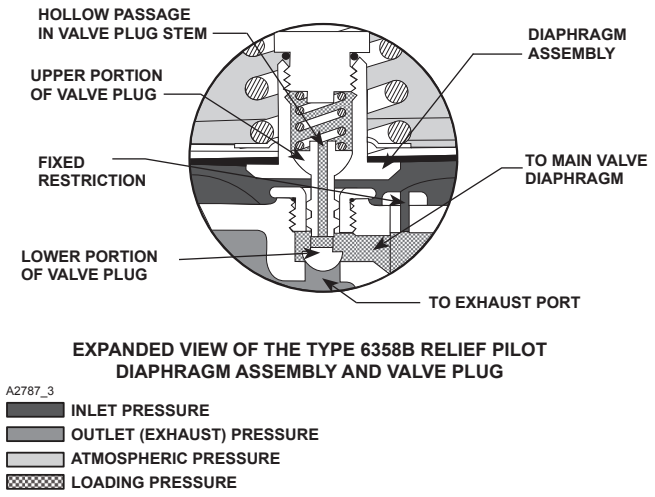


Figure 5. *Type 6358B Operational Schematic*

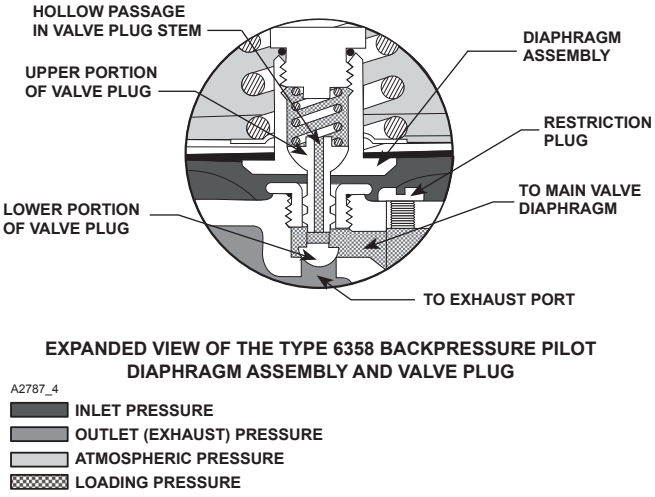


Figure 6. *Type 6358 Operational Schematic*

not bleed when inlet pressure is below set pressure. The pilot exhaust can be connected directly to the main valve vent stack if the pilot connection and the exhaust vent stack are designed to prevent significant backpressure buildup during full-flow conditions.

Type 6358B—Set pressure range from 10 to 125 psig (0,69 to 8,6 bar) in two ranges. This pilot is available with a high, medium, or low-gain restriction.

Type 6358EB—Set pressure range of 85 to 350 psig (5,9 to 24,1 bar) in three ranges. This pilot is available with a high or low-gain restriction.

Type 6358EBH—Set pressure range of 250 to 400 psig (17,2 to 27,6 bar) in two ranges. This pilot is available with a high or low-gain restriction.

Backpressure Regulator

The **Type 6358** is a low bleed pilot, so it only exhausts while it is repositioning the main valve. There is no constant bleed with this construction. This minimizes dirt buildup in the pilot. The Type 6358 has a set pressure range of 10 to 125 psig (0,69 to 8,6 bar) in two ranges. The Types 6358B, 6358EB, and 6358EBH relief pilots can also be used in backpressure applications. The pilot exhaust can be piped into the downstream system when no bleed is required.

Optional Pilot Supply Filter

A Type 252 or P590 Series pilot supply filter prevents pipeline debris from entering the pilot; a primary cause of pilot clogging. When the upstream system is free of debris, a filter is not necessary. Pilot supply filters are not typically used in relief applications because filter plugging may hamper pilot operation.

Installation

On both the Types 63EG and 1098-63EGR relief valves, normal pressure drop assists shutoff. Therefore, leakage may result during any reverse pressure drop condition.

These valves may be installed in any position desired as long as the flow through the main valve complies with the flow arrow on the body. An upstream control line is not required because of the integral pilot supply tubing, although this tubing may be disconnected for remote upstream registration and the main valve body tapping plugged.

For safety during shutdown, vent valves will be required immediately upstream and downstream of the main valve on backpressure or bypass installations.

Dimensions are shown in Figure 7.

Table 4. *Minimum and Maximum Differential Pressures*

BODY SIZE, INCHES (DN)	MAIN VALVE SPRING RANGE, PSIG (bar)	MAIN VALVE SPRING PART NUMBER	MAIN VALVE SPRING COLOR	TYPE 63EG		TYPE 63EG WITH TYPE 1098 SIZE 40 ACTUATOR	
				Minimum Differential Pressure Required For Full Stroke, PSIG (bar)	Maximum Differential Pressure, PSIG (bar)	Minimum Differential Pressure Required For Full Stroke, PSIG (bar)	Maximum Differential Pressure, PSIG (bar)
1 (25)	30 to 125 (2,1 to 8,6) 85 to 400 (5,9 to 27,6)	14A9687X012 14A9679X012	Green Red	70 (4,8) 150 (10,3)	125 (8,6) 400 (27,6)	2.5 (0,17) - - - -	60 (4,1) - - - -
2 (50)	10 to 40 (0,69 to 2,8) 30 to 125 (2,1 to 8,6) 85 to 400 (5,9 to 27,6)	14A6768X012 14A6626X012 14A6628X012	Yellow Green Red	22 (1,5) 30 (2,1) 90 (6,2)	40 (2,8) 125 (8,6) 400 (27,6)	2 (0,14) 3 (0,21) - - - -	20 (1,4) 60 (4,1) - - - -
3 (80)	10 to 40 (0,69 to 2,8) 30 to 125 (2,1 to 8,6) 85 to 400 (5,9 to 27,6)	14A6771X012 14A6629X012 14A6631X012	Yellow Green Red	19 (1,3) 25 (1,7) 60 (4,1)	40 (2,8) 125 (8,6) 400 (27,6)	2.5 (0,17) 4 (0,28) - - - -	20 (1,4) 60 (4,1) - - - -
4 (100)	10 to 40 (0,69 to 2,8) 30 to 125 (2,1 to 8,6) 85 to 400 (5,9 to 27,6)	14A6770X012 14A6632X012 14A6634X012	Yellow Green Red	16 (1,1) 20 (1,4) 55 (3,8)	40 (2,8) 125 (8,6) 400 (27,6)	3.5 (0,24) 5 (0,34) - - - -	20 (1,4) 60 (4,1) - - - -
6 (150) 8 x 6 (200 x 150)	10 to 40 (0,69 to 2,8) 30 to 125 (2,1 to 8,6) 85 to 400 (5,9 to 27,6)	15A2253X012 14A9686X012 15A2615X012	Yellow Green Red	16 (1,1) 20 (1,4) 55 (3,8)	40 (2,8) 125 (8,6) 400 (27,6)	6 (0,41) 9.5 (0,66) - - - -	20 (1,4) 60 (4,1) - - - -

Universal NACE Compliance

Optional materials are available for applications handling sour gases. These constructions comply with the recommendations of NACE International sour service standards.

The manufacturing processes and materials used by Emerson assure that all products specified for sour gas service comply with the chemical, physical, and metallurgical requirements of NACE MR0175 and/or NACE MR0103. Customers have the responsibility to specify correct materials. Environmental limitations may apply and shall be determined by the user.

Capacity Information

Gases

Tables 5 and 6 give relief capacities at selected set pressures for the Types 63EG and 1098-63EGR respectively. Flows are in SCFH (at 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 equivalent capacities for air, propane, butane, or nitrogen, multiply the given capacity by the appropriate conversion factor: 0.775 for air, 0.625 for propane, 0.547 for butane, or 0.789 for nitrogen. For gases of other specific gravities, multiply the given capacity by 0.775, and divide by the square root of the appropriate specific gravity.

To determine relief capacities at set pressures or build-ups not provided in the capacity tables, use one of the following formulas. Then, if capacity is desired in normal cubic meters per hour at 0°C and 1,01325 bar, multiply SCFH by 0.0268.

Note

Buildup must be at least the minimum buildup required to fully open the valve.

Critical Pressure Drops

For critical pressure drops (absolute outlet pressure equal to or less than one-half of absolute inlet pressure), use the following formula:

$$Q = (P_1 + \text{Buildup})_{abs}\, C_g \sqrt{\frac{520}{GT}}$$

where,

Q = flow capacity in SCFH

$(P_1 + \text{buildup})_{abs}$ = set pressure (absolute pressure = gauge in psi + buildup in psi + 14.7)

C_g = gas sizing coefficient from Table 2

G = gas specific gravity (air = 1.0)

T = absolute temperature of gas in °Rankine (°Rankine = °F + 460)

Table 5. *Type **63EG** Relief Capacities[1] to atmosphere with Types 6358, 6358B, 6358EB, and 6358EBH Pilots*

MAIN VALVE SIZE, NPS (DN)	PILOT TYPE	MAIN VALVE SPRING COLOR	PILOT SPRING RANGE, PART NUMBER, AND COLOR, PSIG (bar)	SET PRESSURE[2], PSIG (bar)	BUILDUP OVER SET PRESSURE NEEDED TO BEGIN OPENING MAIN VALVE[3], PSIG (bar)	BUILDUP OVER SET PRESSURE NEEDED TO FULLY OPEN MAIN VALVE[4], PSIG (bar)	PRESSURE DROP BELOW SET PRESSURE NEEDED TO RESEAT PILOT, PSIG (bar)	CAPACITIES[1] OF 0.6 SPECIFIC GRAVITY NATURAL GAS WITH 2:1 LINE SIZE TO BODY SIZE PIPING, SCFH (Nm³/h)
1 (25)	6358	Green	35 to 125 (2,4 to 8,6) 1K748527202 Red	60 (4,1) 80 (5,5) 100 (6,9) 125 (8,6)	8.5 (0,59) 3.0 (0,21) 2.5 (0,17) 2.5 (0,17)	10.0 (0,69) 3.0 (0,21) 3.5 (0,24) 3.5 (0,24)	5.0 (0,34)	62 000 (1662) 72 000 (1930) 87 000 (2332) 105 000 (2814)
	6358B	Green	60 to 125 (4,1 to 8,6) 1K748527202 Red	60 (4,1) 80 (5,5) 100 (6,9) 125 (8,6)	2.7 (0,19)	10.0 (0,69) 3.0 (0,21) 3.5 (0,24) 3.5 (0,24)	1.0 (0,07)	62 000 (1662) 72 000 (1930) 87 000 (2332) 105 000 (2814)
	6358EB	Red	85 to 140 (5,9 to 9,6) 17B1261X012 Green	85 (5,7) 100 (6,9) 125 (8,6) 140 (9,6)	2.5 (0,17) 2.5 (0,17) 3.0 (0,21) 3.0 (0,21)	72.0 (5,0) 57.0 (3,9) 32.0 (2,2) 17.0 (1,2)	2.0 (0,14)	126 000 (3377)
			130 to 200 (9,0 to 13,8) 17B1263X012 Blue	140 (9,6) 150 (10,3) 175 (12,1) 200 (13,8)	5.0 (0,34) 5.0 (0,34) 6.0 (0,41) 6.0 (0,41)	17.0 (1,2) 14.0 (0,97) 12.0 (0,83) 12.0 (0,83)	3.0 (0,21)	126 000 (3377) 131 000 (3511) 148 000 (3966) 166 000 (4449)
			180 to 350 (12,4 to 24,1) 17B1264X012 Red	200 (13,8) 250 (17,2) 300 (20,7) 350 (24,1)	6.0 (0,41)	12.0 (0,83)		166 000 (4449) 203 000 (5440) 239 000 (6405) 276 000 (7397)
	6358EBH	Red	250 to 400[5] (17,2 to 27,6) 17B1263X012 Blue	300 (20,7) 350 (24,1) 375 (25,9)	7.0 (0,48) 7.0 (0,48) 8.0 (0,55)	13.0 (0,90) 13.0 (0,90) 14.0 (0,97)	6.0 (0,41)	240 000 (6432) 277 000 (7424) 296 000 (7933)

1. Capacities based on set pressure plus buildup to achieve full opening using a standard linear cage and standard high-gain pilot restriction (or restriction plug on Type 6358).
2. Set pressure is defined as the pressure at which the pilot starts-to-discharge.
3. Crack point of the main valve is the inlet pressure buildup over the set pressure at which the main valve starts audible flow.
4. Inlet pressure buildup over the set pressure for the main valve to achieve wide-open capacity.
5. Set pressure plus buildup should not exceed maximum differential pressure of 400 psig (27,6 bar).

- continued -

Non-Critical Pressure Drops

For pressure drops lower than critical (absolute outlet pressure greater than one-half of absolute inlet pressure), use the following formula:

$$Q = \sqrt{\frac{520}{GT}}\, C_g\, (P_1 + \text{Buildup})_{abs}\, \text{SIN}\left(\frac{3417}{C_1}\sqrt{\frac{\Delta P}{P_1}}\right)\text{DEG}$$

where,

Q = flow capacity in SCFH

$(P_1 + \text{buildup})_{abs}$ = set pressure (absolute pressure = gauge in psi + buildup in psi + 14.7)

C_g = gas sizing coefficient from Table 2

G = gas specific gravity (air = 1.0)

T = absolute temperature of gas in °Rankine (°Rankine = °F + 460)

C_1 = C_g/C_v from Table 2

ΔP = pressure drop across valve (psig)

Liquids

To determine flow capacity for liquid relief valves, use the following equation in conjunction with the appropriate liquid sizing coefficient (C_v) from Table 2:

$$Q = C_v\sqrt{\frac{\Delta P}{G}}$$

where,

Q = liquid flow rate, GPM

C_v = liquid sizing coefficient

ΔP = pressure drop across the regulator, psi

G = specific gravity (specific gravity of water is 1)

If capacity is desired in liters per minute, multiply GPM by 3.785 or if capacity is desired in cubic meters per hour, multiply GPM by 0.2271.

Table 5. *Type **63EG** Relief Capacities[1] to atmosphere with Types 6358, 6358B, 6358EB, and 6358EBH Pilots (continued)*

MAIN VALVE SIZE, NPS (DN)	PILOT TYPE	MAIN VALVE SPRING COLOR	PILOT SPRING RANGE, PART NUMBER, AND COLOR, PSIG (bar)	SET PRESSURE[2], PSIG (bar)	BUILDUP OVER SET PRESSURE NEEDED TO BEGIN OPENING MAIN VALVE[3], PSIG (bar)	BUILDUP OVER SET PRESSURE NEEDED TO FULLY OPEN MAIN VALVE[4], PSIG (bar)	PRESSURE DROP BELOW SET PRESSURE NEEDED TO RESEAT PILOT, PSIG (bar)	CAPACITIES[1] OF 0.6 SPECIFIC GRAVITY NATURAL GAS WITH 2:1 LINE SIZE TO BODY SIZE PIPING, SCFH (Nm³/h)
2 (50)	6358	Yellow	10 to 40 (0,69 to 2,8) 1E392527022 Yellow	10 (0,69) 15 (1,0) 20 (1,4) 30 (2,1)	5.5 (0,38) 2.0 (0,14) 1.7 (0,12) 1.7 (0,12)	12.0 (0,83) 7.0 (0,48) 2.5 (0,17) 2.0 (0,14)	5.0 (0,34)	95 000 (2546) 95 000 (2546) 96 000 (2573) 122 000 (3270)
		Green	35 to 125 psig (2,4 to 8,6) 1K748527202 Red	40 (2,8) 50 (3,5) 60 (4,1) 80 (5,5) 100 (6,9) 125 (8,6)	2.0 (0,14) 2.0 (0,14) 2.0 (0,14) 2.4 (0,17) 2.4 (0,17) 2.4 (0,17)	2.5 (0,17) 2.5 (0,17) 2.5 (0,17) 3.0 (0,21) 3.0 (0,21) 3.0 (0,21)		151 000 (4047) 178 000 (4770) 204 000 (5467) 258 000 (6914) 311 000 (8335) 377 000 (10 104)
	6358B	Yellow	10 to 30 (0,69 to 2,1) 1B788327022 Silver	10 (0,69) 15 (1,0) 20 (1,4) 30 (2,1)	5.5 (0,38) 2.0 (0,14) 1.7 (0,12) 1.7 (0,12)	12.0 (0,83) 7.0 (0,48) 2.5 (0,17) 2.0 (0,14)	1.0 (0,07)	95 000 (2546) 95 000 (2546) 96 000 (2573) 122 000 (3270)
		Green	30 to 60 (2,1 to 4,1) 1B788427022 Blue	30 (2,1) 40 (2,8) 50 (3,4) 60 (4,1)	1.7 (0,12) 1.7 (0,12) 1.7 (0,12) 1.7 (0,12)	2.5 (0,17) 2.0 (0,14) 2.0 (0,14) 2.0 (0,14)		124 000 (3323) 149 000 (3993) 176 000 (4717) 203 000 (5440)
			60 to 125 (4,1 to 8,6) 1K748527202 Red	60 (4,1) 80 (5,5) 100 (6,9) 125 (8,6)	2.0 (0,14) 2.4 (0,17) 2.4 (0,17) 2.4 (0,17)	2.5 (0,17) 3.0 (0,21) 3.0 (0,21) 3.0 (0,21)		204 000 (5467) 258 000 (6914) 311 000 (8335) 377 000 (10 104)
	6358EB	Red	85 to 140 (5,9 to 9,6) 17B1261X012 Green	85 (5,9) 100 (6,9) 125 (8,6) 140 (9,6)	1.7 (0,12) 1.7 (0,12) 2.2 (0,15) 2.2 (0,15)	10.0 (0,69) 4.0 (0,28) 4.0 (0,28) 4.0 (0,28)	2.0 (0,14)	290 000 (7772) 314 000 (8415) 380 000 (10 184) 420 000 (11 256)
			130 to 200 (9,0 to 13,8) 17B1263X012 Blue	140 (9,6) 150 (10,3) 175 (12,1) 200 (13,8)	4.0 (0,28) 4.0 (0,28) 5.0 (0,34) 5.0 (0,34)	7.0 (0,48) 7.0 (0,48) 8.0 (0,55) 8.0 (0,55)	3.0 (0,21)	428 000 (11 470) 454 000 (12 167) 523 000 (14 016) 589 000 (15 785)
			180 to 350 (12,4 to 24,1) 17B1264X012 Red	200 (13,8) 250 (17,2) 300 (20,7) 350 (24,1)	5.0 (0,34) 5.0 (0,34) 5.5 (0,38) 5.5 (0,38)	8.0 (0,55) 8.0 (0,55) 8.5 (0,59) 8.5 (0,59)		589 000 (15 785) 721 000 (19 323) 855 000 (22 914) 987 000 (26 452)
	6358EBH	Red	250 to 400[5] (17,2 to 27,6) 17B1263X012 Blue	300 (20,7) 350 (24,1) 375 (25,9)	6.0 (0,41) 6.0 (0,41) 7.0 (0,48)	10.0 (0,69) 10.0 (0,69) 11.0 (0,76)	6.0 (0,41)	859 000 (23 021) 991 000 (26 559) 1 060 000 (28 408)

1. Capacities based on set pressure plus buildup to achieve full opening using a standard linear cage and standard high-gain pilot restriction (or restriction plug on Type 6358).
2. Set pressure is defined as the pressure at which the pilot starts-to-discharge.
3. Crack point of the main valve is the inlet pressure buildup over the set pressure at which the main valve starts audible flow.
4. Inlet pressure buildup over the set pressure for the main valve to achieve wide-open capacity.
5. Set pressure plus buildup should not exceed maximum differential pressure of 400 psig (27,6 bar).

- continued -

Table 5. *Type **63EG** Relief Capacities[1] to atmosphere with Types 6358, 6358B, 6358EB, and 6358EBH Pilots (continued)*

MAIN VALVE SIZE, NPS (DN)	PILOT TYPE	MAIN VALVE SPRING COLOR	PILOT SPRING RANGE, PART NUMBER, AND COLOR, PSIG (bar)	SET PRESSURE[2], PSIG (bar)	BUILDUP OVER SET PRESSURE NEEDED TO BEGIN OPENING MAIN VALVE[3], PSIG (bar)	BUILDUP OVER SET PRESSURE NEEDED TO FULLY OPEN MAIN VALVE[4], PSIG (bar)	PRESSURE DROP BELOW SET PRESSURE NEEDED TO RESEAT PILOT, PSIG (bar)	CAPACITIES[1] OF 0.6 SPECIFIC GRAVITY NATURAL GAS WITH 2:1 LINE SIZE TO BODY SIZE PIPING, SCFH (Nm³/h)
3 (80)	6358	Yellow	10 to 40 (0,69 to 2,8) 1E392527022 Yellow	10 (0,69) 15 (1,0) 20 (1,4) 30 (2,1)	3.5 (0,24) 1.3 (0,09) 1.2 (0,08) 1.2 (0,08)	9.0 (0,62) 4.0 (0,28) 2.0 (0,14) 1.5 (0,10)	5.0 (0,34)	185 000 (4958) 185 000 (4958) 203 000 (5440) 260 000 (6968)
		Green	35 to 125 psig (2,4 to 8,6) 1K748527202 Red	40 (2,8) 50 (3,4) 60 (4,1) 80 (5,5) 100 (6,9) 125 (8,6)	2.0 (0,14) 2.0 (0,14) 2.0 (0,14) 2.0 (0,14) 2.4 (0,17) 2.4 (0,17)	2.5 (0,17) 2.5 (0,17) 2.5 (0,17) 2.5 (0,17) 3.0 (0,21) 3.0 (0,21)		324 000 (8683) 382 000 (10 238) 439 000 (11 765) 555 000 (14 874) 670 000 (17 956) 812 000 (21 762)
	6358B	Yellow	10 to 30 (0,69 to 2,1) 1B788327022 Silver	10 (0,69) 15 (1,0) 20 (1,4) 30 (2,1)	3.5 (0,24) 1.3 (0,09) 1.2 (0,08) 1.2 (0,08)	9.0 (0,62) 4.0 (0,28) 2.0 (0,14) 1.5 (0,10)	1.0 (0,07)	185 000 (4958) 185 000 (4958) 203 000 (5440) 260 000 (6968)
		Green	30 to 60 (2,1 to 4,1) 1B788427022 Blue	30 (2,1) 40 (2,8) 50 (3,4) 60 (4,1)	1.6 (0,11)	2.0 (0,14)		263 000 (7048) 322 000 (8630) 379 000 (10 157) 436 000 (11 685)
			60 to 125 (4,1 to 8,6) 1K748527202 Red	60 (4,1) 80 (5,5) 100 (6,9) 125 (8,6)	2.0 (0,14) 2.0 (0,14) 2.4 (0,17) 2.4 (0,17)	2.5 (0,17) 2.5 (0,17) 3.0 (0,21) 3.0 (0,21)		439 000 (11 765) 553 000 (14 820) 670 000 (17 956) 812 000 (21 762)
	6358EB	Red	85 to 140 (5,9 to 9,6) 17B1261X012 Green	85 (5,9) 100 (6,9) 125 (8,6) 140 (9,6)	1.7 (0,12) 1.7 (0,12) 2.2 (0,15) 2.2 (0,15)	3.0 (0,21) 3.0 (0,21) 3.5 (0,24) 3.5 (0,24)	2.0 (0,14)	584 000 (15 651) 670 000 (17 956) 815 000 (21 842) 900 000 (24 120)
			130 to 200 (9,0 to 13,8) 17B1263X012 Blue	140 (9,6) 150 (10,3) 175 (12,1) 200 (13,8)	4.0 (0,28) 4.0 (0,28) 5.0 (0,34) 5.0 (0,34)	6.0 (0,41) 6.0 (0,41) 7.0 (0,48) 7.0 (0,48)	3.0 (0,21)	914 000 (24 495) 971 000 (26 023) 1 119 000 (29 989) 1 261 000 (33 795)
			180 to 350 (12,4 to 24,1) 17B1264X012 Red	200 (13,8) 250 (17,2) 300 (20,7) 350 (24,1)	5.0 (0,34) 5.0 (0,34) 5.5 (0,38) 5.5 (0,38)	7.0 (0,48) 7.0 (0,48) 7.5 (0,52) 7.5 (0,52)		1 261 000 (33 795) 1 546 000 (41 433) 1 833 000 (49 124) 2 117 000 (56 736)
	6358EBH	Red	250 to 400[5] (17,2 to 27,6) 17B1263X012 Blue	300 (20,7) 350 (24,1) 375 (25,9)	6.0 (0,41) 6.0 (0,41) 7.0 (0,48)	8.5 (0,59) 8.5 (0,59) 9.5 (0,66)	6.0 (0,41)	1 839 000 (49 285) 2 123 000 (56 896) 2 271 000 (60 863)

1. Capacities based on set pressure plus buildup to achieve full opening using a standard linear cage and standard high-gain pilot restriction (or restriction plug on Type 6358).
2. Set pressure is defined as the pressure at which the pilot starts-to-discharge.
3. Crack point of the main valve is the inlet pressure buildup over the set pressure at which the main valve starts audible flow.
4. Inlet pressure buildup over the set pressure for the main valve to achieve wide-open capacity.
5. Set pressure plus buildup should not exceed maximum differential pressure of 400 psig (27,6 bar).

- continued -

Table 5. *Type **63EG** Relief Capacities[1] to atmosphere with Types 6358, 6358B, 6358EB, and 6358EBH Pilots (continued)*

MAIN VALVE SIZE, NPS (DN)	PILOT TYPE	MAIN VALVE SPRING COLOR	PILOT SPRING RANGE, PART NUMBER, AND COLOR, PSIG (bar)	SET PRESSURE[2], PSIG (bar)	BUILDUP OVER SET PRESSURE NEEDED TO BEGIN OPENING MAIN VALVE[3], PSIG (bar)	BUILDUP OVER SET PRESSURE NEEDED TO FULLY OPEN MAIN VALVE[4], PSIG (bar)	PRESSURE DROP BELOW SET PRESSURE NEEDED TO RESEAT PILOT, PSIG (bar)	CAPACITIES[1] OF 0.6 SPECIFIC GRAVITY NATURAL GAS WITH 2:1 LINE SIZE TO BODY SIZE PIPING, SCFH (Nm³/h)
4 (100)	6358	Yellow	10 to 40 (0,69 to 2,8) 1E392527022 Yellow	10 (0,69) 15 (1,0) 20 (1,4) 30 (2,1)	1.5 (0,10) 1.2 (0,08) 1.2 (0,08) 1.2 (0,08)	6.0 (0,41) 2.0 (0,14) 1.5 (0,10) 1.5 (0,10)	5.0 (0,34)	259 000 (6941) 269 000 (7209) 313 000 (8388) 408 000 (10 934)
		Green	35 to 125 psig (2,4 to 8,6) 1K748527202 Red	40 (2,8) 50 (3,4) 60 (4,1) 80 (5,5) 100 (6,9) 125 (8,6)	1.6 (0,11) 1.6 (0,11) 1.6 (0,11) 2.0 (0,14) 2.4 (0,17) 2.4 (0,17)	2.5 (0,17) 2.5 (0,17) 2.5 (0,17) 2.5 (0,17) 3.0 (0,21) 3.0 (0,21)		509 000 (13 641) 600 000 (16 080) 691 000 (18 519) 873 000 (23 396) 1 054 000 (28 247) 1 278 000 (34 250)
	6358B	Yellow	10 to 30 (0,69 to 2,1) 1B788327022 Silver	10 (0,69) 15 (1,0) 20 (1,4) 30 (2,1)	1.5 (0,10) 1.2 (0,08) 1.2 (0,08) 1.2 (0,08)	6.0 (0,41) 2.0 (0,14) 1.5 (0,10) 1.5 (0,10)	1.0 (0,07)	259 000 (6941) 269 000 (7209) 313 000 (8388) 408 000 (10 934)
		Green	30 to 60 (2,1 to 4,1) 1B788427022 Blue	30 (2,1) 40 (2,8) 50 (3,4) 60 (4,1)	1.2 (0,08)	1.5 (0,10)		408 000 (10 934) 500 000 (13 400) 591 000 (15 839) 682 000 (18 278)
			60 to 125 (4,1 to 8,6) 1K748527202 Red	60 (4,1) 80 (5,5) 100 (6,9) 125 (8,6)	1.6 (0,11) 2.0 (0,14) 2.4 (0,17) 2.4 (0,17)	2.0 (0,14) 2.5 (0,17) 3.0 (0,21) 3.0 (0,21)		686 000 (18 385) 870 000 (23 316) 1 054 000 (28 247) 1 278 000 (34 250)
	6358EB	Red	85 to 140 (5,9 to 9,6) 17B1261X012 Green	85 (5,9) 100 (6,9) 125 (8,6) 140 (9,6)	1.7 (0,12) 1.7 (0,12) 2.2 (0,15) 2.2 (0,15)	2.7 (0,19) 2.7 (0,19) 3.2 (0,22) 3.2 (0,22)	2.0 (0,14)	917 000 (24 576) 1 051 000 (28 167) 1 279 000 (34 277) 1 414 000 (37 895)
			130 to 200 (9,0 to 13,8) 17B1263X012 Blue	140 (9,6) 150 (10,3) 175 (12,1) 200 (13,8)	4.0 (0,28) 4.0 (0,28) 5.0 (0,34) 5.0 (0,34)	5.5 (0,38) 5.5 (0,38) 6.5 (0,45) 6.5 (0,45)	3.0 (0,21)	1 434 000 (38 431) 1 524 000 (40 843) 1 757 000 (47 088) 1 980 000 (53 064)
			180 to 350 (12,4 to 24,1) 17B1264X012 Red	200 (13,8) 250 (17,2) 300 (20,7) 350 (24,1)	5.0 (0,34) 5.0 (0,34) 5.5 (0,38) 5.5 (0,38)	6.5 (0,45) 6.5 (0,45) 7.0 (0,48) 7.0 (0,48)		1 980 000 (53 064) 2 428 000 (65 070) 2 880 000 (77 184) 3 328 000 (89 190)
	6358EBH	Red	250 to 400[5] (17,2 to 27,6) 17B1263X012 Blue	300 (20,7) 350 (24,1) 375 (25,9)	6.0 (0,41) 6.0 (0,41) 7.0 (0,48)	8.0 (0,55) 8.0 (0,55) 9.0 (0,62)	6.0 (0,41)	2 889 000 (77 425) 3 337 000 (89 432) 3 569 000 (95 649)

1. Capacities based on set pressure plus buildup to achieve full opening using a standard linear cage and standard high-gain pilot restriction (or restriction plug on Type 6358).
2. Set pressure is defined as the pressure at which the pilot starts-to-discharge.
3. Crack point of the main valve is the inlet pressure buildup over the set pressure at which the main valve starts audible flow.
4. Inlet pressure buildup over the set pressure for the main valve to achieve wide-open capacity.
5. Set pressure plus buildup should not exceed maximum differential pressure of 400 psig (27,6 bar).

- continued -

Table 5. *Type **63EG** Relief Capacities[1] to atmosphere with Types 6358, 6358B, 6358EB, and 6358EBH Pilots (continued)*

MAIN VALVE SIZE, NPS (DN)	PILOT TYPE	MAIN VALVE SPRING COLOR	PILOT SPRING RANGE, PART NUMBER, AND COLOR, PSIG (bar)	SET PRESSURE[2], PSIG (bar)	BUILDUP OVER SET PRESSURE NEEDED TO BEGIN OPENING MAIN VALVE[3], PSIG (bar)	BUILDUP OVER SET PRESSURE NEEDED TO FULLY OPEN MAIN VALVE[4], PSIG (bar)	PRESSURE DROP BELOW SET PRESSURE NEEDED TO RESEAT PILOT, PSIG (bar)	CAPACITIES[1] OF 0.6 SPECIFIC GRAVITY NATURAL GAS WITH 2:1 LINE SIZE TO BODY SIZE PIPING, SCFH (Nm^3/h)
6 (50)	6358	Yellow	10 to 40 (0,69 to 2,8) 1E392527022 Yellow	10 (0,69) 15 (1,0) 20 (1,4) 30 (2,1)	2.5 (0,17) 1.2 (0,08) 1.2 (0,08) 1.2 (0,08)	6.0 (0,41) 2.0 (0,14) 1.5 (0,10) 1.5 (0,10)	5.0 (0,34)	479 000 (12 837) 496 000 (13 293) 573 000 (15 356) 736 000 (19 725)
		Green	35 to 125 psig (2,4 to 8,6) 1K748527202 Red	40 (2,8) 50 (3,4) 60 (4,1) 80 (5,5) 100 (6,9) 125 (8,6)	1.6 (0,11) 1.6 (0,11) 1.6 (0,11) 2.0 (0,14) 2.4 (0,17) 2.4 (0,17)	2.5 (0,17) 2.5 (0,17) 2.5 (0,17) 2.5 (0,17) 3.0 (0,21) 3.0 (0,21)		911 000 (24 415) 1 071 000 (28 703) 1 230 000 (32 964) 1 553 000 (41 620) 1 875 000 (50 250) 2 273 000 (60 916)
	6358B	Yellow	10 to 30 (0,69 to 2,1) 1B788327022 Silver	10 (0,69) 15 (1,0) 20 (1,4) 30 (2,1)	2.5 (0,17) 1.2 (0,08) 1.2 (0,08) 1.2 (0,08)	6.0 (0,41) 2.0 (0,14) 1.5 (0,10) 1.5 (0,10)	1.0 (0,07)	479 000 (12 837) 496 000 (13 293) 573 000 (15 356) 736 000 (19 725)
		Green	30 to 60 (2,1 to 4,1) 1B788427022 Blue	30 (2,1) 40 (2,8) 50 (3,4) 60 (4,1)	1.2 (0,08)	1.5 (0,10)		736 000 (19 725) 895 000 (23 986) 1 055 000 (28 274) 1 214 000 (32 535)
			60 to 125 (4,1 to 8,6) 1K748527202 Red	60 (4,1) 80 (5,5) 100 (6,9) 125 (8,6)	1.6 (0,11) 2.0 (0,14) 2.4 (0,17) 2.4 (0,17)	2.0 (0,14) 2.5 (0,17) 3.0 (0,21) 3.0 (0,21)		1 222 000 (32 750) 1 549 000 (41 513) 1 875 000 (50 250) 2 273 000 (60 916)
	6358EB	Red	85 to 140 (5,7 to 9,6) 17B1261X012 Green	85 (5,9) 100 (6,9) 125 (8,6) 140 (9,6)	1.7 (0,12) 1.7 (0,12) 2.2 (0,15) 2.2 (0,15)	2.7 (0,19) 2.7 (0,19) 3.2 (0,22) 3.2 (0,22)	2.0 (0,14)	1 598 000 (42 826) 1 832 000 (49 098) 2 231 000 (59 791) 2 465 000 (66 062)
			130 to 200 (9,6 to 13,8) 17B1263X012 Blue	140 (9,6) 150 (10,3) 175 (12,1) 200 (13,8)	4.0 (0,28) 4.0 (0,28) 5.0 (0,34) 5.0 (0,34)	5.5 (0,38) 5.5 (0,38) 6.5 (0,45) 6.5 (0,45)	3.0 (0,21)	2 501 000 (67 027) 2 657 000 (71 208) 3 062 000 (82 062) 3 453 000 (92 540)
			180 to 350 (12,4 to 24,1) 17B1264X012 Red	200 (13,8) 250 (17,2) 300 (20,7) 350 (24,1)	5.0 (0,34) 5.0 (0,34) 5.5 (0,38) 5.5 (0,38)	6.5 (0,45) 6.5 (0,45) 7.0 (0,48) 7.0 (0,48)		3 453 000 (92 540) 4 233 000 (113 444) 5 021 000 (134 563) 5 802 000 (155 494)
	6358EBH	Red	250 to 400[5] (17,2 to 27,6) 17B1263X012 Blue	300 (20,7) 350 (24,1) 375 (25,9)	6.0 (0,41) 6.0 (0,41) 7.0 (0,48)	8.0 (0,55) 8.0 (0,55) 9.0 (0,62)	6.0 (0,41)	5 037 000 (134 992) 5 817 000 (155 896) 6 223 000 (166 776)

1. Capacities based on set pressure plus buildup to achieve full opening using a standard linear cage and standard high-gain pilot restriction (or restriction plug on Type 6358).
2. Set pressure is defined as the pressure at which the pilot starts-to-discharge.
3. Crack point of the main valve is the inlet pressure buildup over the set pressure at which the main valve starts audible flow.
4. Inlet pressure buildup over the set pressure for the main valve to achieve wide-open capacity.
5. Set pressure plus buildup should not exceed maximum differential pressure of 400 psig (27,6 bar).

- continued -

Table 5. *Type **63EG** Relief Capacities[1] to atmosphere with Types 6358, 6358B, 6358EB, and 6358EBH Pilots (continued)*

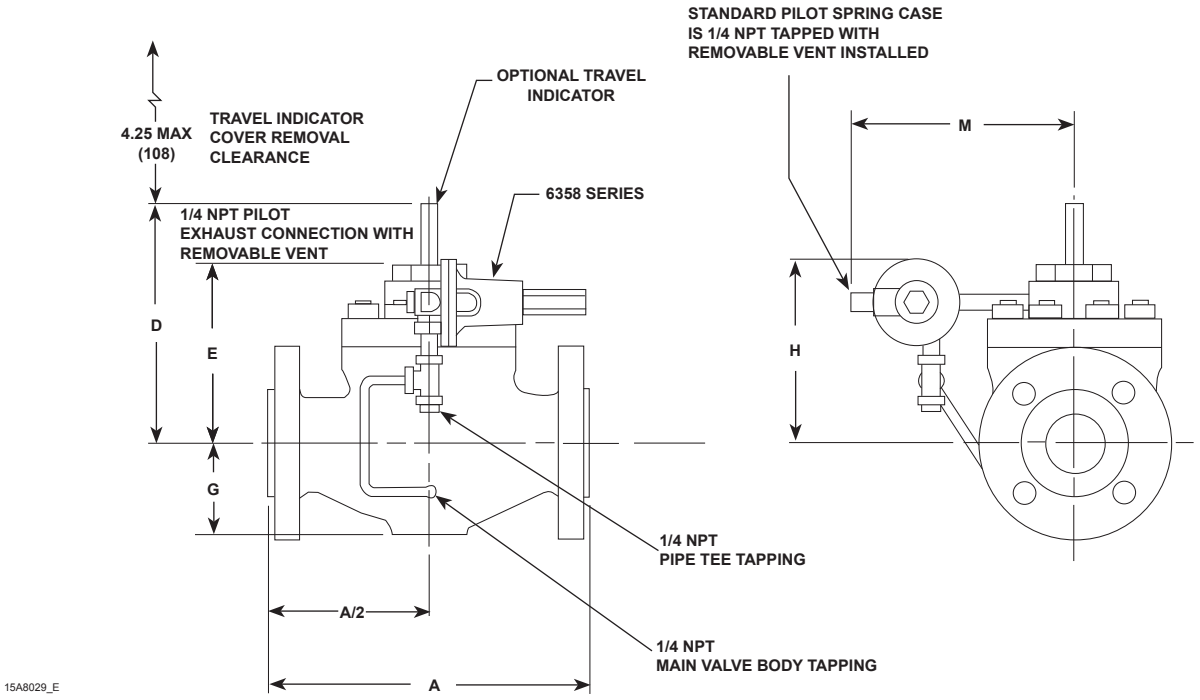
MAIN VALVE SIZE, NPS (DN)	PILOT TYPE	MAIN VALVE SPRING COLOR	PILOT SPRING RANGE, PART NUMBER, AND COLOR, PSIG (bar)	SET PRESSURE[2], PSIG (bar)	BUILDUP OVER SET PRESSURE NEEDED TO BEGIN OPENING MAIN VALVE[3], PSIG (bar)	BUILDUP OVER SET PRESSURE NEEDED TO FULLY OPEN MAIN VALVE[4], PSIG (bar)	PRESSURE DROP BELOW SET PRESSURE NEEDED TO RESEAT PILOT, PSIG (bar)	CAPACITIES[1] OF 0.6 SPECIFIC GRAVITY NATURAL GAS WITH 2:1 LINE SIZE TO BODY SIZE PIPING, SCFH (Nm³/h)
8 x 6 (200 x 150)	6358	Yellow	10 to 40 (0,69 to 2,8) 1E392527022 Yellow	10 (0,69) 15 (1,0) 20 (1,4) 30 (2,1)	2.5 (0,17) 1.2 (0,08) 1.2 (0,08) 1.2 (0,08)	6.0 (0,41) 2.0 (0,14) 1.5 (0,10) 1.5 (0,10)	5.0 (0,34)	660 000 (17 688) 684 000 (18 331) 791 000 (21 199) 1 019 000 (27 309)
		Green	35 to 125 psig (2,4 to 8,6) 1K748527202 Red	40 (2,8) 50 (3,4) 60 (4,1) 80 (5,5) 100 (6,9) 125 (8,6)	1.6 (0,11) 1.6 (0,11) 1.6 (0,11) 2.0 (0,14) 2.4 (0,17) 2.4 (0,17)	2.5 (0,17) 2.5 (0,17) 2.5 (0,17) 2.5 (0,17) 3.0 (0,21) 3.0 (0,21)		1 262 000 (33 822) 1 482 000 (39 718) 1 703 000 (45 640) 2 144 000 (57 459) 2 596 000 (69 573) 3 148 000 (84 366)
	6358B	Yellow	10 to 30 (0,69 to 2,1) 1B788327022 Silver	10 (0,69) 15 (1,0) 20 (1,4) 30 (2,1)	2.5 (0,17) 1.2 (0,08) 1.2 (0,08) 1.2 (0,08)	6.0 (0,41) 2.0 (0,14) 1.5 (0,10) 1.5 (0,10)	1.0 (0,07)	660 000 (17 688) 684 000 (18 331) 791 000 (21 199) 1 019 000 (27 309)
		Green	30 to 60 (2,1 to 4,1) 1B788427022 Blue	30 (2,1) 40 (2,8) 50 (3,4) 60 (4,1)	1.2 (0,08)	1.5 (0,10)		1 019 000 (27 309) 1 240 000 (33 232) 1 460 000 (39 128) 1 681 000 (45 051)
			60 to 125 (4,1 to 8,6) 1K748527202 Red	60 (4,1) 80 (5,5) 100 (6,9) 125 (8,6)	1.6 (0,11) 2.0 (0,14) 2.4 (0,17) 2.4 (0,17)	2.0 (0,14) 2.5 (0,17) 3.0 (0,21) 3.0 (0,21)		1 692 000 (45 346) 2 144 000 (57 459) 2 596 000 (69 573) 3 148 000 (84 366)
	6358EB	Red	85 to 140 (5,9 to 9,6) 17B1261X012 Green	85 (5,9) 100 (6,9) 125 (8,6) 140 (9,6)	1.7 (0,12) 1.7 (0,12) 2.2 (0,15) 2.2 (0,15)	2.7 (0,19) 2.7 (0,19) 3.2 (0,22) 3.2 (0,22)	2.0 (0,14)	2 259 000 (60 541) 2 590 000 (69 412) 3 152 000 (84 474) 3 483 000 (93 344)
			130 to 200 (9,0 to 13,8) 17B1263X012 Blue	140 (9,6) 150 (10,3) 175 (12,1) 200 (13,8)	4.0 (0,28) 4.0 (0,28) 5.0 (0,34) 5.0 (0,34)	5.5 (0,38) 5.5 (0,38) 6.5 (0,45) 6.5 (0,45)	3.0 (0,21)	3 534 000 (94 711) 3 754 000 (100 607) 4 328 000 (115 990) 4 879 000 (130 757)
			180 to 350 (12,4 to 24,1) 17B1264X012 Red	200 (13,8) 250 (17,2) 300 (20,7) 350 (24,1)	5.0 (0,34) 5.0 (0,34) 5.5 (0,38) 5.5 (0,38)	6.5 (0,45) 6.5 (0,45) 7.0 (0,48) 7.0 (0,48)		4 879 000 (130 757) 5 982 000 (160 318) 7 096 000 (190 173) 8 199 000 (219 733)
	6358EBH	Red	250 to 400[5] (17,2 to 27,6) 17B1263X012 Blue	300 (20,7) 350 (24,1) 375 (25,9)	6.0 (0,41) 6.0 (0,41) 7.0 (0,48)	8.0 (0,55) 8.0 (0,55) 9.0 (0,62)	6.0 (0,41)	7 118 000 (190 762) 8 221 000 (220 323) 8 795 000 (235 706)

1. Capacities based on set pressure plus buildup to achieve full opening using a standard linear cage and standard high-gain pilot restriction (or restriction plug on Type 6358).
2. Set pressure is defined as the pressure at which the pilot starts-to-discharge.
3. Crack point of the main valve is the inlet pressure buildup over the set pressure at which the main valve starts audible flow.
4. Inlet pressure buildup over the set pressure for the main valve to achieve wide-open capacity.
5. Set pressure plus buildup should not exceed maximum differential pressure of 400 psig (27,6 bar).

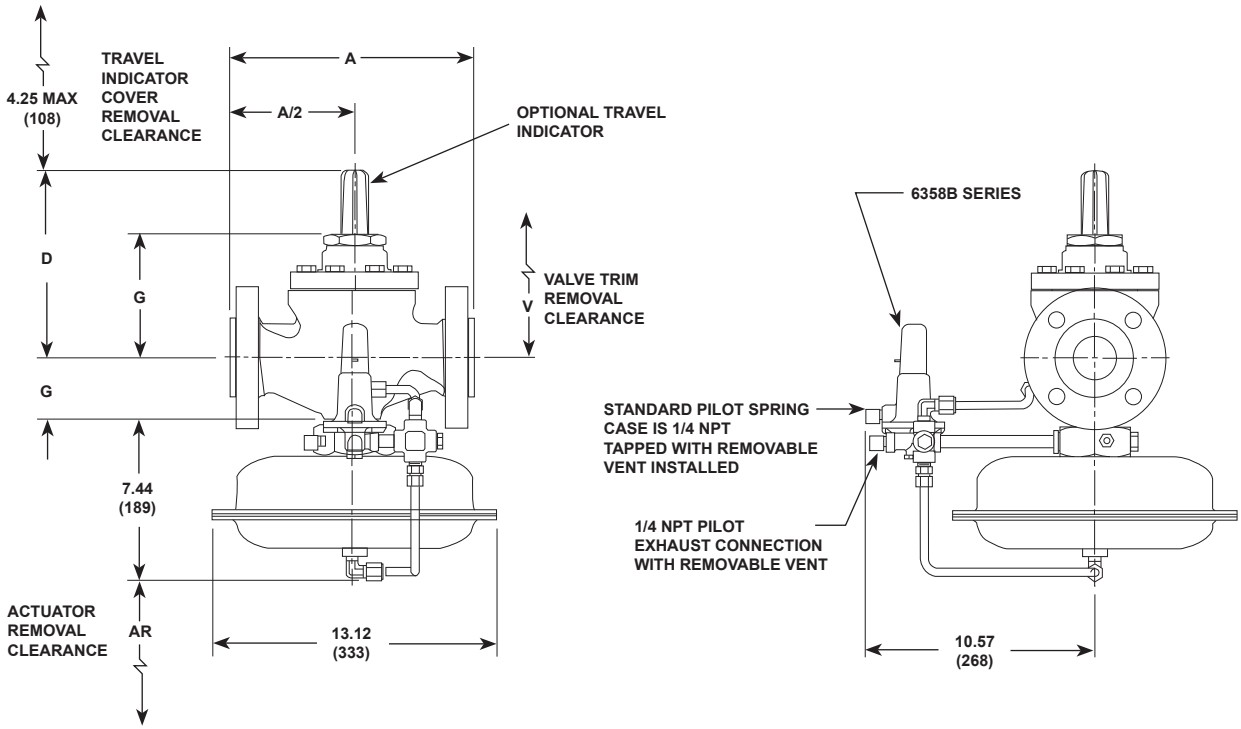
Table 6. *Type **1098-63EGR** Relief Capacities[1] to atmosphere with a Type 6358B Pilot, Size 40 Actuator, and Green Main Spring*

BODY SIZE, NPS (DN)	SET PRESSURE RANGE, SPRING PART NUMBER, AND COLOR, PSIG (bar)	PILOT SET PRESSURE[2], PSIG (bar)	BUILDUP OVER SET PRESSURE TO BEGIN OPENING MAIN VALVE[3], PSIG (bar)	BUILDUP OVER SET PRESSURE TO FULLY OPEN MAIN VALVE[4], PSIG (bar)	PRESSURE DROP BELOW SET PRESSURE TO RESEAT PILOT, PSIG (bar)	CAPACITY IN SCFH (Nm^3/h) OF 0.6 SPECIFIC GRAVITY NATURAL GAS WITH 1:1 LINE SIZE TO BODY SIZE PIPING[1]
1 (25)	3 to 18 (0,21 to 1,2) 1B986027212 Green	3 (0,21) 5 (0,34) 10 (0,69) 15 (1,0)	0.7 (0,048)	1.0 (0,07)	1.0 (0,07)	10 000 (268) 13 000 (348) 18 000 (482) 22 000 (590)
	15 to 40 (1,0 to 2,8) 1E392527022 Yellow	15 (1,0) 20 (1,4) 30 (2,1) 40 (2,8)	0.8 (0,055)	1.1 (0,076)		22 000 (590) 27 000 (724) 35 000 (938) 43 000 (1152)
	35 to 65 (2,4 to 4,5) 1K748527202 Red	40 (2,8) 50 (3,4) 60 (4,1) 65 (4,5)	1.2 (0,08)	1.6 (0,11)		43 000 (1152) 51 000 (1367) 59 000 (1581) 63 000 (1688)
2 (50)	3 to 18 (0,21 to 1,2) 1B986027212 Green	3 (0,21) 5 (0,34) 10 (0,69) 15 (1,0)	0.9 (0,062) 0.7 (0,048) 0.7 (0,048) 0.7 (0,048)	1.3 (0,09) 1.0 (0,07) 1.0 (0,07) 1.0 (0,07)		40 000 (1072) 47 000 (1260) 67 000 (1796) 84 000 (2251)
	15 to 40 (1,0 to 2,8) 1E392527022 Yellow	15 (1,0) 20 (1,4) 30 (2,1) 40 (2,8)	0.8 (0,055)	1.1 (0,076)		84 000 (2251) 101 000 (2707) 132 000 (3538) 162 000 (4342)
	35 to 65 (2,4 to 4,5) 1K748527202 Red	40 (2,8) 50 (3,4) 60 (4,1) 65 (4,5)	1.3 (0,09)	1.7 (0,12)		164 000 (4395) 194 000 (5199) 224 000 (6003) 239 000 (6405)
3 (80)	3 to 18 (0,21 to 1,2) 1B986027212 Green	3 (0,21) 5 (0,34) 10 (0,69) 15 (1,0)	0.9 (0,062) 0.7 (0,048) 0.7 (0,048) 0.7 (0,048)	1.5 (0,10) 1.0 (0,07) 1.0 (0,07) 1.0 (0,07)		84 000 (2251) 98 000 (2626) 138 000 (3698) 173 000 (4636)
	15 to 40 (1,0 to 2,8) 1E392527022 Yellow	15 (1,0) 20 (1,4) 30 (2,1) 40 (2,8)	0.8 (0,055)	1.1 (0,076)		173 000 (4636) 206 000 (5521) 270 000 (7236) 331 000 (8871)
	35 to 65 (2,4 to 4,5) 1K748527202 Red	40 (2,8) 50 (3,4) 60 (4,1) 65 (4,5)	1.3 (0,09)	1.7 (0,12)		335 000 (8978) 396 000 (10 613) 456 000 (12 221) 486 000 (13 025)
4 (100)	3 to 18 (0,21 to 1,2) 1B986027212 Green	3 (0,21) 5 (0,34) 10 (0,69) 15 (1,0)	1.3 (0,09) 0.8 (0,055) 0.8 (0,055) 0.8 (0,055)	2.3 (0,16) 1.3 (0,09) 1.1 (0,076) 1.1 (0,076)		142 000 (3806) 156 000 (4181) 215 000 (5762) 270 000 (7236)
	15 to 40 (1,0 to 2,8) 1E392527022 Yellow	15 (1,0) 20 (1,4) 30 (2,1) 40 (2,8)	0.9 (0,062)	1.2 (0,08)		271 000 (7263) 323 000 (8656) 424 000 (11 363) 521 000 (13 963)
	35 to 65 (2,4 to 4,5) 1K748527202 Red	40 (2,8) 50 (3,4) 60 (4,1) 65 (4,5)	1.4 (0,097)	1.8 (0,12)		527 000 (14 124) 624 000 (16 723) 719 000 (19 269) 767 000 (20 556)
6 (150)	3 to 18 (0,21 to 1,2) 1B986027212 Green	3 (0,21) 5 (0,34) 10 (0,69) 15 (1,0)	1.7 (0,12) 0.8 (0,055) 0.8 (0,055) 0.8 (0,055)	6.4 (0,44) 4.4 (0,30) 1.2 (0,08) 1.1 (0,076)		365 000 (9782) 365 000 (9782) 403 000 (10 800) 497 000 (13 320)
	15 to 40 (1,0 to 2,8) 1E392527022 Yellow	15 (1,0) 20 (1,4) 30 (2,1) 40 (2,8)	0.9 (0,062)	1.2 (0,08)		499 000 (13 373) 590 000 (15 812) 763 000 (20 448) 930 000 (24 924)
	35 to 65 (2,4 to 4,5) 1K748527202 Red	40 (2,8) 50 (3,4) 60 (4,1) 65 (4,5)	1.5 (0,10)	1.9 (0,13)		942 000 (25 246) 1 108 000 (29 694) 1 275 000 (34 170) 1 358 000 (36 394)

1. Capacities based on set pressure plus buildup to achieve full opening using a size 40 actuator, green main spring, standard linear cage, and standard high-gain pilot restriction.
2. Set pressure is defined as the pressure at which the pilot starts-to-discharge.
3. Crack point of the main valve is the inlet pressure buildup over the set pressure at which the main valve starts audible flow.
4. Inlet pressure buildup over the set pressure for the main valve to achieve wide-open capacity.



TYPE 63EG WITH 6358 SERIES PILOT



TYPE 1098-63EGR WITH 6358B SERIES PILOT

INCHES
(mm)

NOTE:
FOR DIMENSIONS OF RELIEF VALVES WITH EN (OR OTHER) END CONNECTIONS, CONSULT THE LOCAL SALES OFFICE.

Figure 7. *Dimensions*

COMMON DIMENSIONS, INCHES (mm)												DIMENSION SPECIFIC FOR TYPE 63EG, INCHES (mm)		DIMENSION SPECIFIC FOR TYPE 1098-63EGR, INCHES (mm)
BODY SIZE, NPS (DN)	A						D (With Travel Indicator)	E (Without Travel Indicator)	G	V				
	NPT	Cast Iron		Steel/Stainless Steel								H	M	AR
		CL125 FF	CL250 RF	CL150 RF	CL300 RF	CL600 RF								
1 (25)	8.25 (209)	7.25 (184)	7.75 (197)	7.25 (184)	7.75 (197)	8.25 (209)	8.19 (208)	4.94 (125)	2.19 (55,6)	11.38 (289)		5.44 (138)	7.25 (184)	3.00 (76,2)
2 (50)	11.25 (286)	10 (254)	10.5 (267)	10 (254)	10.5 (267)	11.25 (286)	8.69 (221)	5.44 (138)	2.84 (72,1)	12.62 (320)		5.94 (151)	7.69 (195)	3.12 (79,2)
3 (80)	- - - -	11.75 (298)	12.5 (317)	11.75 (298)	12.5 (317)	13.25 (337)	11.25 (286)	7.00 (178)	3.5 (88,9)	16.25 (413)		7.25 (184)	8.19 (208)	3.88 (98,6)
4 (100)	- - - -	13.88 (353)	14.5 (368)	13.88 (353)	14.5 (368)	15.5 (394)	12.62 (321)	8.38 (213)	4.81 (122)	18.88 (479)		8.62 (219)	8.88 (226)	5.12 (130)
6 (150)	- - - -	17.75 (451)	18.62 (473)	17.75 (451)	18.62 (473)	20 (508)	13.44 (341)	9.19 (233)	5.19 (132)	20 (508)		8.81 (224)	14.56 (370)	6.38 (162)
8 X 6 (200 X 150)	- - - -	- - - -	- - - -	21.38 (543)	22.38 (568)	24 (610)	15.00 (381)	10.75 (273)	7.19 (183)	23.5 (597)		10.5 (267)	14.56 (370)	9.69 (246)

Figure 7. *Dimensions (continued)*

Ordering Information

Use the Specifications section on pages 4 and 5 and carefully review the description to the right of each specification. Use this information to complete the Ordering Guide on pages 18 and 19. Specify the desired selection wherever there is a choice to be made. Then send the Ordering Guide to your local Sales Office.

Ordering Guide

Type (Select One)
- ☐ 63EG***
- ☐ 1098-63EGR**

Body Size (Select One)
- ☐ NPS 1 (DN 25)***
- ☐ NPS 2 (DN 50)***
- ☐ NPS 3 (DN 80)***
- ☐ NPS 4 (DN 100)***
- ☐ NPS 6 (DN 150)***
- ☐ NPS 8 x 6 (DN 200 x 150)***

End Connection Style (Select One)

Cast Iron
- ☐ NPT [available in 1 or 2 body size only]***
- ☐ CL125 FF***
- ☐ CL250 RF***

Steel, Stainless Steel, and Other Alloys
- ☐ NPT [available in 1 or 2 body size only]***
- ☐ SWE [available in 1 or 2 body size only]**
- ☐ CL150 RF***
- ☐ CL300 RF***
- ☐ CL600 RF***
- ☐ BWE**
- ☐ PN 16/24/40 _____ (please specify)*

Body Material (Select One)
- ☐ Cast iron***
- ☐ Steel***
- ☐ Stainless steel***

Body Flange Material (Select One)
- ☐ Cast iron***
- ☐ Steel***
- ☐ Stainless steel***

Cage Material (Select One)
- ☐ Linear, Stainless steel***
- ☐ Whisper Trim®, 416 Stainless steel***
- ☐ Whisper Trim®, 316 Stainless steel***

Seat Ring and Valve Plug Material (Select One)
- ☐ 410/416 Stainless steel***
- ☐ 316 Stainless steel***

Gasket and O-Ring Material (Select One)
- ☐ Nitrile (NBR)***
- ☐ Fluorocarbon (FKM)***
- ☐ Ethylenepropylene (EPR)

Main Valve Spring (Select One)

Type 63EG
- ☐ Yellow [NPS 1 (DN 25) not available]
- ☐ Green
- ☐ Red

Type 1098-63EGR
- ☐ Green
- ☐ Yellow

Set Pressure Range (Select One)

Type 63EG

Type 6358 Backpressure
- ☐ 10 to 40 psig (0,69 to 2,8 bar), Yellow
- ☐ 35 to 125 psig (2,4 to 8,6 bar), Red

Type 6358B Relief
- ☐ 10 to 30 psig (0,69 to 2,1 bar), Silver
- ☐ 30 to 60 psig (2,1 to 4,1 bar), Blue
- ☐ 60 to 125 psig (4,1 to 8,6 bar), Red

Type 6358EB Relief
- ☐ 85 to 140 psig (5,9 to 9,6 bar), Green
- ☐ 130 to 200 psig (9,0 to 13,8 bar), Blue
- ☐ 180 to 350 psig (12,4 to 24,1 bar), Red

Type 6358EBH Relief
- ☐ 250 to 400 psig (17,2 to 27,6 bar), Blue

Type 1098-63EGR

Type 6358B
- ☐ 3 to 18 psig (0,21 to 1,2 bar), Green
- ☐ 15 to 40 psig (1,0 to 2,8 bar), Yellow
- ☐ 35 to 65 psig (2,4 to 4,5 bar), Red

-continued-

Ordering Guide (continued)

Pilot Body Material (for Types 6358 and 6358B only) (Select One)
- ☐ Aluminum (for Types 6358 and 6358B only)***
- ☐ Stainless steel***

Pilot Diaphragm and O-Ring Material (Select One)
- ☐ Nitrile (NBR)***
- ☐ Fluorocarbon (FKM)**

Travel Indicator (Optional)
- ☐ Yes**

Tubing and Fittings (Select One)
- ☐ Stainless steel tubing and steel fittings***
- ☐ Stainless steel tubing and stainless steel fittings***

Pilot Supply Filter (Optional)
Type 252

Aluminum Construction
- ☐ Standard length without drain valve
- ☐ Standard length with drain valve
- ☐ Extended length without drain valve
- ☐ Extended length with drain valve

Stainless Steel Construction
- ☐ Standard length without drain valve
- ☐ Standard length with drain valve
- ☐ Extended length without drain valve
- ☐ Extended length with drain valve

P590 Series Pilot Supply Filter (Optional)
- ☐ Type P594-1 brass filter

Pressure Gauges (Optional)
- ☐ Pressure gauge for Type 63EG
- ☐ Pressure gauge for Type 1098-63EGR

Special Cleaning Services (Optional)
- ☐ Pure Gas
- ☐ Oxygen

NACE Construction (Optional)
- ☐ Yes

Quick Change Trim Package (Optional)
- ☐ Yes, send one trim package to match this order.

Main Valve Parts Kit (Optional)
- ☐ Yes, send one parts kit to match this order.

Pilot Parts Kit (Optional)
- ☐ Yes, send one parts kit to match this order.

Regulators Quick Order Guide	
* * *	Standard - Readily Available for Shipment
* *	Non-Standard - Allow Additional Time for Shipment
*	Special Order, Constructed from Non-Stocked Parts. Consult your local Sales Office for Availability.
Availability of the product being ordered is determined by the component with the longest shipping time for the requested construction.	

Specification Worksheet

Application:
Specific Use _____
Line Size _____
Gas Type and Specific Gravity _____
Gas Temperature _____

Relief Valve Size:
Brand of upstream regulator? _____
Orifice size of the upstream regulator? _____
Wide-open coefficient of the upstream regulator? _____

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: _____
_____

Industrial Regulators

Emerson Process Management
Regulator Technologies, Inc.

USA - Headquarters
McKinney, Texas 75069-1872 USA
Tel: 1-800-558-5853
Outside U.S. 1-972-548-3574

Asia-Pacific
Shanghai, China 201206
Tel: +86 21 2892 9000

Europe
Bologna, Italy 40013
Tel: +39 051 4190611

Middle East and Africa
Dubai, United Arab Emirates
Tel: +971 4811 8100

Natural Gas Technologies

Emerson Process Management
Regulator Technologies, Inc.

USA - Headquarters
McKinney, Texas 75069-1872 USA
Tel: 1-800-558-5853
Outside U.S. 1-972-548-3574

Asia-Pacific
Singapore, Singapore 128461
Tel: +65 6777 8211

Europe
Bologna, Italy 40013
Tel: +39 051 4190611
Gallardon, France 28320
Tel: +33 (0)2 37 33 47 00

TESCOM

Emerson Process Management
Tescom Corporation

USA - Headquarters
Elk River, Minnesota 55330-2445 USA
Tel: 1-763-241-3238

Europe
Selmsdorf, Germany 23923
Tel: +49 (0) 38823 31 0

For further information visit www.fisherregulators.com