



Gas Connectors & Accessories

GasBreaker

Leading the way in EFVs



Automatic Safety Valves for Gas Service Lines





Since their introduction, millions of GasBreaker EFVs have been sold (more than 5 times as many valves as all other US competitors combined) and installed worldwide, providing tens of billions of field service hours. Today the GasBreaker Excess Flow Valve is known as “The EFV of Choice.” The GasBreaker EFV is manufactured in a wide variety of models that can accommodate service line capacities for both residential and commercial applications. The company’s highly trained technical and production staff is experienced in all areas of EFV research, development, engineering and quality control.

All GasBreaker EFVs Feature: Simplicity of Design

- Work with the flow of natural gas as the sensing source
- Activate when a line rupture causes an excess flow condition
- Automatically reset and resume normal operation after repairs are made using a slight gas bypass to re-pressurize the line
- Non-bypass models are also available. These models are reopened by correcting the excess flow condition and manually applying back pressure to the line and valve.
- Install in minutes with standard tools
- Operate within your normal service line sizing requirements to avoid tripping by snap-acting loads
- Higher capacity EFVs can accommodate future increases in gas loads.
- Maintain stability under turbulent flow conditions by using a unique, dynamically balanced float
- Available for virtually all pressures and service line capabilities
- In-line installation makes them tamper-proof
- Can be fabricated with fitting and piping materials from most manufacturers

Durable/Maintenance-Free Construction

- Made of plastic materials proven in use on natural gas systems
- Require no lubrication and are compatible with all types of pipe materials and configurations – plastic-to-plastic, steel-to-plastic, and steel-to-steel
- Constructed of maintenance-free materials that surpass stringent gas utility requirements

Excess Flow[®] Valves (EFVs)

The World’s
Leading
Automatic
Safety
Valves
for Gas
Service
Lines



Cutaway of Series 700 EFV



Why EFVs?

EFVs are similar to electrical circuit breakers that trip when electrical current exceeds design limits. They automatically trip when gas flow to a private residence or commercial facility exceeds design limits. This would be the case if a gas service line were to rupture because of ground movement, natural disasters or third party damage.

100% Tested and Quality Assured

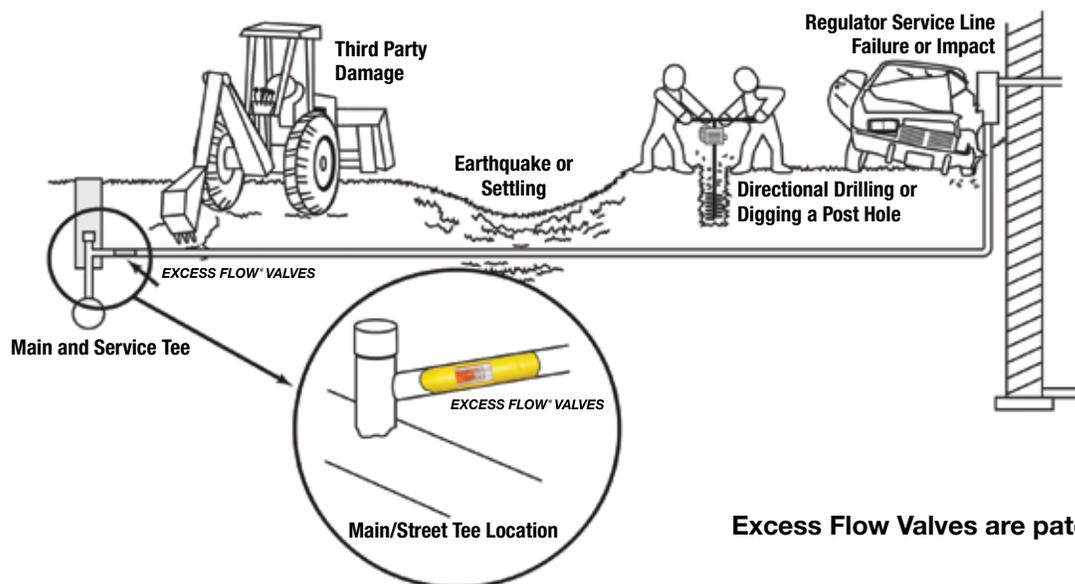
- GasBreaker EFVs are 100% factory tested in accordance with DOT 192.381
- Each valve is individually packaged with operating instructions and field identification tags
- Each valve capsule lot is coded with date and model number traceable back to all component parts
- EFV Models are Series identified by color-coded labels with directional arrows that meet the ASTM F2897 Bar Coding Standard
- Valves have passed rigid pre-acceptance testing by major utilities
- Meet or exceed DOT 192.381, MSS SP-115; MSS SP-142; ASTM F1802 and ASTM F2138 requirements

Benefits of EFVs:

- Turn emergency situations into standard leak service calls
- Save time and money by reducing the number of emergency situations
- Safeguard utilities against unwarranted negative publicity and excessive liabilities that result from gas leak emergencies
- Increase public confidence in gas
- Provide safe working conditions for gas utility personnel and first responders at the scene of a service line rupture
- EPA Natural Gas Star Program recommends the installation of EFVs to reduce methane emissions

Available Configurations

- GasBreaker EFVs are available prefabricated to your specifications in plastic, steel or in a wide range of tees, couplings and mechanical fittings
- GasBreaker No-Hole System "21"® EFVs are designed for installation on existing service lines without digging-up the line. A No-Hole EFV can be installed up to 150 feet upstream from the meter set, under live (pressurized) gas conditions in systems with normal operating pressures up to 150 psig. Sizes 1/2" CTS to 1" IPS; also available in 25 mm & 32 mm – contact GasBreaker for availability
- GasBreaker Auto Cock™ Excess Flow Valves (EFVs) are designed for installation under live gas conditions at pressures up to 150 psig, in existing steel gas utility service lines or risers immediately upstream of the meter set. Sizes 3/4", 1", 1 1/4" IPS – contact GasBreaker for availability.



Excess Flow Valves are patented.

For Standard High Pressure (>5psig) Service Line Applications No Second Stage Regulation

1. Will the EFV Trip when I don't want it to?

The Nominal Minimum Trip Point (SCFH) of the EFV must be greater than the Maximum anticipated customer gas load (SCFH) at the Minimum design Pressure of the system.

2. Will the EFV starve the system if the system pressure drops to a minimum? Or, will I have pressure at the service regulator?

Assure that the total pressure drop across the EFV and service piping at the Maximum anticipated customer load (SCFH) and Minimum Design Pressure will satisfy the minimum pressure requirements to the service regulator. (Contact GasBreaker for EFV Application Chart - Normal Flow Conditions)

3. How long a service line can I have and assure the EFV will trip if there is a pipe break?

At the Minimum Design Pressure of the system, the maximum anticipated length of service pipe must not be longer than the Maximum Recommended Length of Service to be used downstream of the EFV for the given diameter pipe. (Contact GasBreaker for Maximum Recommended Lengths of PE Service Tubing to be used Downstream of a GasBreaker EFV)



EFV Assembly Guide

Sizes 1/2" CTS to 2" IPS

Models shown are a sampling of available units



**STICK UNITS FOR DIRECT SERVICE LINE
INSTALLATION**



**PREFABRICATED UNITS WITH MECHANICAL &
FUSION COUPLINGS**



**EFVS PREFABRICATED IN & ATTACHED TO
ELECTROFUSION & SIDEWALL FUSION TEES**



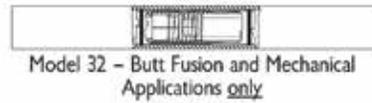
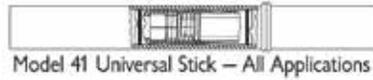
**STEEL UNITS & TRANSITION UNITS FOR
STEEL TO PLASTIC APPLICATIONS**



**MODELS SHOWN ARE A SAMPLING OF OUR PREFABRICATED & STICK
UNITS THAT ARE MOST COMMONLY USED IN THE GAS INDUSTRY**

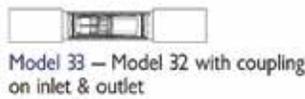
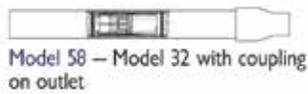


PLASTIC STICKS

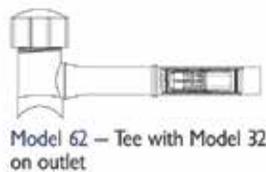
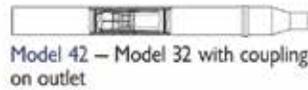


PLASTIC ASSEMBLIES

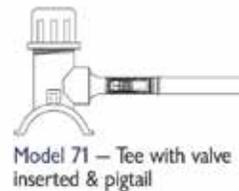
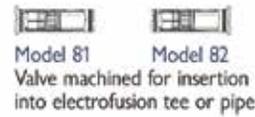
Socket Fusion Applications



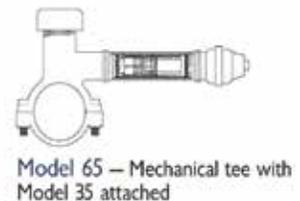
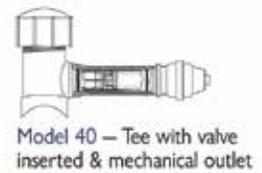
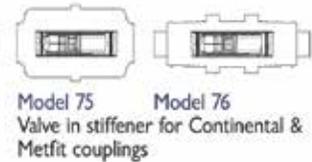
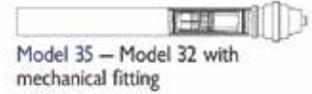
Butt Fusion Applications



Electrofusion Applications



Mechanical Applications



EFV ALL STEEL & STEEL TO PLASTIC MODELS

Sizes 1/2" CTS to 2" IPS

Models shown are a sampling of available units



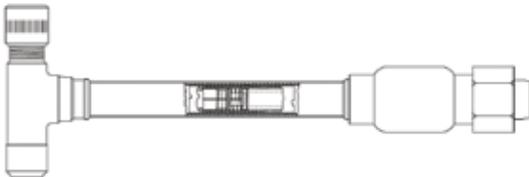
All Steel



Model 11 — Steel pipe nipple threaded both ends with valve inserted



Model 14 — Steel pipe nipple with weld ends with valve inserted



Model 12 — Steel tee & steel compression outlet with valve installed

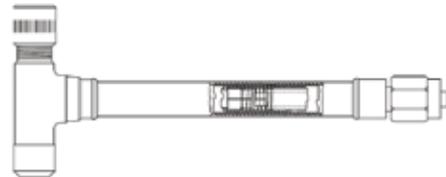
Steel to Plastic



Model 29 — Steel pipe nipple threaded on inlet & compression adapter for plastic on outlet with valve installed



Model 25 — Steel pipe nipple weld inlet & compression adapter for plastic on outlet with valve installed



Model 13 — Steel tee with Model 35 installed



Model 18 — Transition fitting steel to plastic with valve installed

Steel to Plastic standard outlet sizes available in 1/2 CTS and 1 CTS. Other sizes available on request.



The following pipe sizes can be utilized with the indicated EFV series list in the charts below.

Plastic pipe available in PE 2406/2708, PE 3408/4710/PE 100							
S/A= Sticks and Assemblies				A= Assemblies Only			
EFV Series	1/2" CTS		3/4" CTS	1" CTS			1 1/4" CTS
	062 wall	090 wall	090 wall	090 wall	099 wall	101 wall	SDR 15.3
300	A	A	A	S/A	S/A	S/A	S/A
350	S/A	S/A	S/A	-	-	-	-
400	A	A	A	S/A	S/A	S/A	S/A
550	S/A	S/A	S/A	-	-	-	-
700	A	A	A	S/A	S/A	S/A	S/A
800	S/A	S/A	A	-	-	-	-
1100	A	A	A	S/A	S/A	S/A	S/A
1800	-	-	A	S/A	S/A	S/A	S/A
2600	-	-	-	S/A	S/A	S/A	A
5500	-	-	-	-	-	-	A

Plastic pipe available in PE 2406/2708, PE 3408/4710/PE 100								
S/A= Sticks and Assemblies				A= Assemblies Only				
EFV Series	1/2" IPS	3/4" IPS		1" IPS		1 1/4" IPS	1 1/2" IPS	2" IPS
	SDR 9.3	SDR 11.0	SDR 9.0	SDR 11.0	SDR 9.33	SDR 10.0	SDR 9.33	SDR 11.00
300	A	S/A	S/A	S/A	S/A	S/A	S/A	S/A
350	S/A	-	-	-	-	-	-	-
400	A	S/A	S/A	S/A	S/A	S/A	S/A	S/A
550	S/A	-	-	-	-	-	-	-
700	A	S/A	S/A	S/A	S/A	S/A	S/A	S/A
800	A	-	-	-	-	-	-	-
1100	A	S/A	S/A	S/A	S/A	S/A	S/A	S/A
1800	-	S/A	S/A	S/A	S/A	S/A	S/A	S/A
2600	-	S/A	S/A	S/A	S/A	A	A	A
5500	-	A	A	A	A	S/A	S/A	S/A
10000	-	-	-	-	-	-	-	S



Performance Characteristics

Series 300

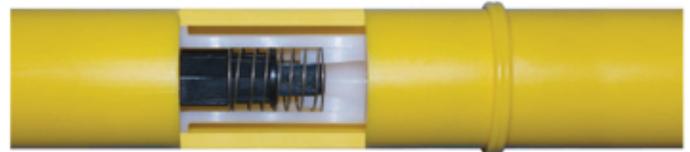
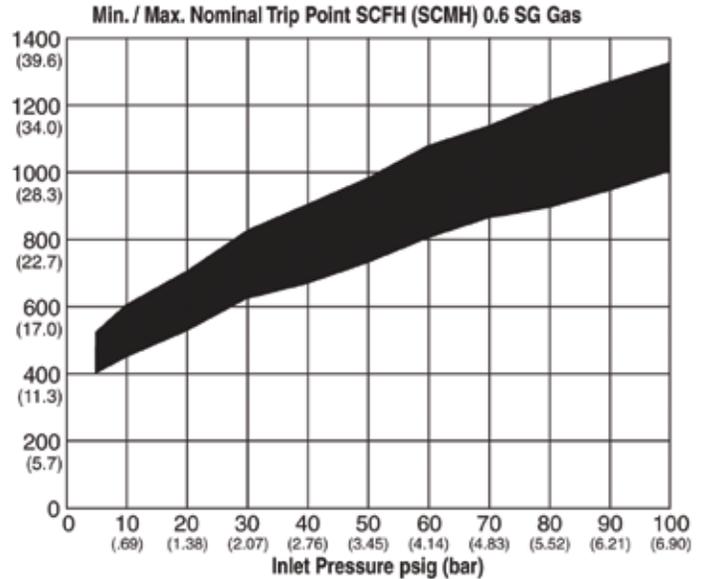


Black Label Excess Flow Valves

5 psig to 1,000 psig (345 mbar to 69 bar) – inlet Pressure

INLET PRESSURE		SERIES 300 NOM. MIN. TRIP POINT 0.6 SG GAS		BYPASS FLOW AFTER TRIP (NOM. MAX) 0.6 SG GAS	
psig	bar	SCFH	SCMH	SCFH	SCMH
5	0.34	400	11.33	18	0.51
10	0.69	450	12.74	20	0.57
15	1.03	490	13.88	23	0.65
20	1.38	540	15.29	25	0.71
30	2.07	620	17.56	28	0.79
40	2.76	680	19.26	32	0.91
50	3.45	740	20.95	35	0.99
60	4.14	800	22.65	37	1.05
70	4.83	860	24.35	39	1.10
80	5.52	910	25.77	41	1.16
90	6.21	950	26.90	46	1.30
100	6.90	1,000	28.32	50	1.42
150	10.34	1,190	33.70	75	2.12
200	13.79	1,210	34.26	88	2.44
250	17.24	1,350	38.23	115	3.26
300	20.69	1,490	42.19	130	3.68
350	24.14	1,590	45.02	155	4.39
400	27.59	1,670	47.29	175	4.96
450	31.03	1,770	50.12	185	5.24
500	34.48	1,810	51.25	195	5.52
550	37.93	1,890	53.52	215	6.09
600	41.38	1,970	55.78	240	6.80
650	44.83	2,050	58.05	260	7.36
700	48.28	2,120	60.03	275	7.79
750	51.72	2,201	62.32	295	8.35
800	55.17	2,278	64.50	310	8.78
850	58.62	2,351	66.58	330	9.34
900	62.07	2,420	68.52	350	9.91
950	65.52	2,483	70.32	370	10.48
1,000	68.97	2,541	71.96	385	10.90

TRIP RANGE CHART



AVAILABILITY

Series 300 EFVs available in sizes ranging from 3/4 IPS - 2 IPS sticks and prefabricated models in other sizes (see page 4 for examples).



This series available for use on propane service line applications.

All valves comply with: DOT Part 192.381, ASTM F 2138 and MSS SP-115: Excess Flow Valves Tested to, or in accordance with, ASTM F 1802: Standard Test Method for Performance Testing of Excess Flow Valves.

AVERAGE PRESSURE DROP AT AN INLET PRESSURE OF 10 PSIG (0.69 BAR)

EFV	Typical Customer Gas Load (0.6 SG Gas)		Average Pressure Drop Across Valve	
	SCFH	SCMH	psi	mbar
Series 300	275	7.79	0.20	13.79

Note:

Calculate service line capacities from given flow and pressure drop data to ensure adequate flow capacity is available to operate valve. For additional assistance with sizing and technical information on GasBreaker Excess Flow Valves, please contact GasBreaker.

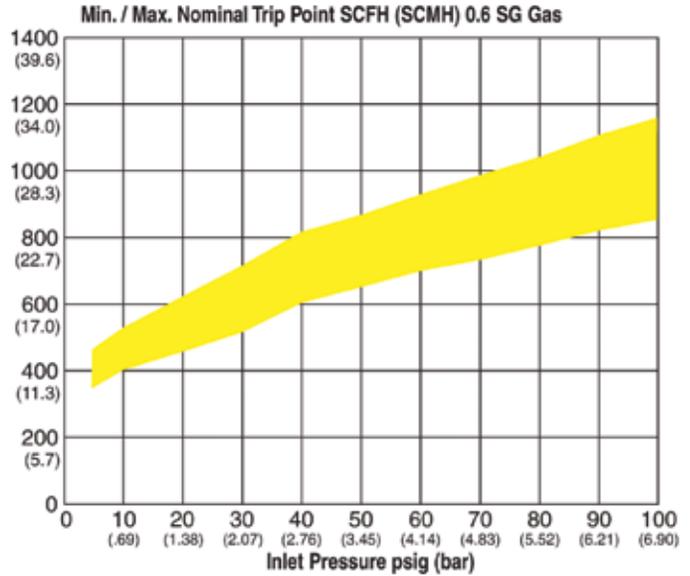


Yellow Label Excess Flow Valves

5 psig to 150 psig (345 mbar to 10 bar) – inlet Pressure

INLET PRESSURE		SERIES 350 NOM. MIN. TRIP POINT 0.6 SG GAS		BYPASS FLOW AFTER TRIP (NOM. MAX) 0.6 SG GAS	
psig	bar	SCFH	SCMH	SCFH	SCMH
5	0.34	350	9.91	18	0.51
10	0.69	400	11.33	20	0.57
15	1.03	430	12.18	23	0.65
20	1.38	460	13.03	25	0.71
30	2.07	530	15.01	28	0.79
40	2.76	600	16.99	32	0.91
50	3.45	650	18.41	35	0.99
60	4.14	700	19.82	37	1.05
70	4.83	730	20.67	39	1.10
80	5.52	780	22.09	41	1.16
90	6.21	820	23.22	46	1.30
100	6.90	860	24.35	50	1.42
150	10.34	1,000	28.32	75	2.12

TRIP RANGE CHART



For pressures over 150 psig (10.34 bar) contact GasBreaker.

Note:

Calculate service line capacities from given flow and pressure drop data to ensure adequate flow capacity is available to operate valve. For additional assistance with sizing and technical information on GasBreaker Excess Flow Valves, please contact GasBreaker.

AVAILABILITY

Series 350 EFVs available in 1/2 CTS, 1/2 IPS & 3/4 CTS sticks and other prefabricated models. (see page 4 for examples)

All valves comply with: DOT Part 192.381, ASTM F 2138 and MSS SP-115: Excess Flow Valves Tested to, or in accordance with, ASTM F 1802: Standard Test Method for Performance Testing of Excess Flow Valves

AVERAGE PRESSURE DROP AT AN INLET PRESSURE OF 10 PSIG (0.69 BAR)

EFV	Typical Customer Gas Load (0.6 SG Gas)		Average Pressure Drop Across Valve	
	SCFH	SCMH	psi	mbar
Series 350	275	7.79	0.75	51.72

Performance Characteristics

Series 400

Blue Label Excess Flow Valves



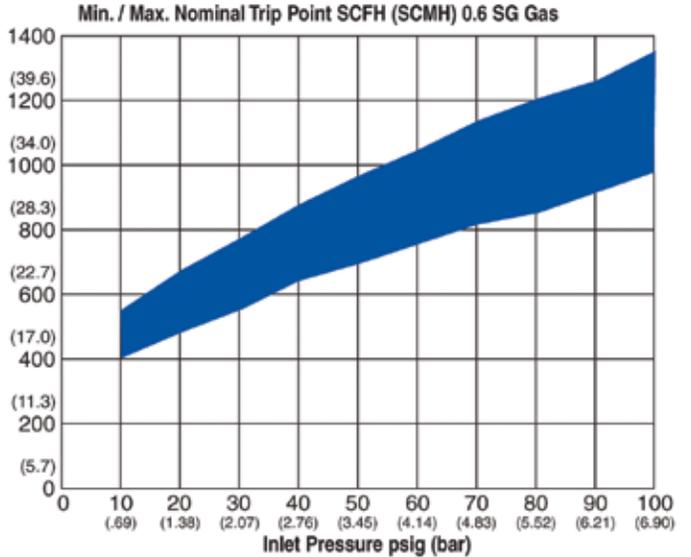
Donkin Flow limiter® 10 psig to 1,000 psig (690 mbar to 69 bar) – inlet Pressure

INLET PRESSURE		SERIES 400 NOM. MIN. TRIP POINT 0.6 SG GAS		BYPASS FLOW AFTER TRIP (NOM. MAX) 0.6 SG GAS	
psig	bar	SCFH	SCMH	SCFH	SCMH
10	0.69	400	11.33	20	0.57
15	1.03	430	12.18	23	0.65
20	1.38	490	13.88	25	0.71
30	2.07	560	15.86	28	0.79
40	2.76	640	18.12	32	0.91
50	3.45	700	19.82	35	0.99
60	4.14	760	21.52	37	1.05
70	4.83	810	22.94	39	1.10
80	5.52	860	24.35	41	1.16
90	6.21	910	25.77	46	1.30
100	6.90	970	27.47	50	1.42
150	10.34	1,160	32.85	75	2.12
200	13.79	1,180	33.41	88	2.44
250	17.24	1,310	37.10	115	3.26
300	20.69	1,450	41.06	130	3.68
350	24.14	1,540	43.61	155	4.39
400	27.59	1,630	46.16	175	4.96
450	31.03	1,720	48.70	185	5.24
500	34.48	1,760	49.84	195	5.52
550	37.93	1,850	52.39	215	6.09
600	41.38	1,920	54.37	240	6.80
650	44.83	1,990	56.35	260	7.36
700	48.28	2,060	58.33	275	7.79
750	51.72	2,130	60.31	295	8.35
800	55.17	2,199	62.27	310	8.78
850	58.62	2,267	64.21	330	9.34
900	62.07	2,335	66.12	350	9.91
950	65.52	2,402	68.01	370	10.48
1,000	68.97	2,467	69.85	385	10.90

Note:

Calculate service line capacities from given flow and pressure drop data to ensure adequate flow capacity is available to operate valve. For additional assistance with sizing and technical information on GasBreaker Excess Flow Valves, please contact GasBreaker.

TRIP RANGE CHART



AVAILABILITY

Series 400 EFVs available in sizes ranging from 3/4 IPS – 2 IPS sticks and prefabricated models in other sizes. (see page 4 for examples)

All valves comply with: DOT Part 192.381, ASTM F 2138 and MSS SP-115: Excess Flow Valves Tested to, or in accordance with, ASTM F 1802: Standard Test Method for Performance Testing of Excess Flow Valves

AVERAGE PRESSURE DROP AT AN INLET PRESSURE OF 10 PSIG (0.69 BAR)

EFV	Typical Customer Gas Load (0.6 SG Gas)		Average Pressure Drop Across Valve	
	SCFH	SCMH	psi	mbar
Series 400	275	7.79	1.38	94.83

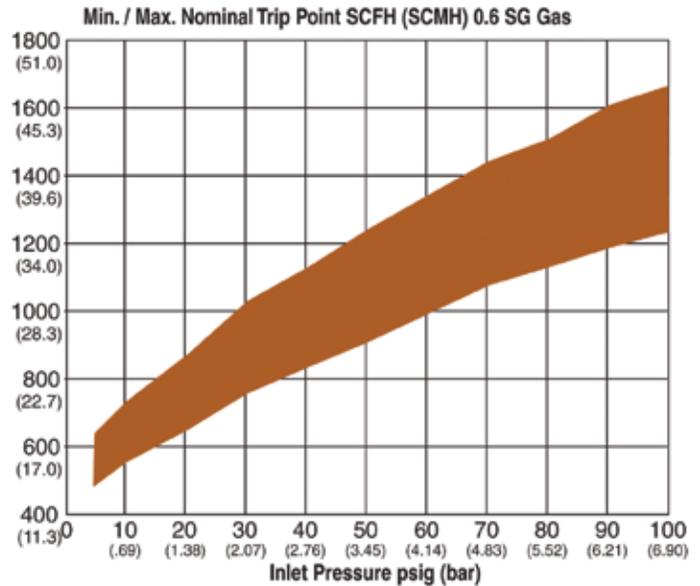


Brown Label Excess Flow Valves

5 psig to 150 psig (345 mbar to 10 bar) – inlet Pressure

INLET PRESSURE		SERIES 550 NOM. MIN. TRIP POINT 0.6 SG GAS		BYPASS FLOW AFTER TRIP (NOM. MAX) 0.6 SG GAS	
psig	bar	SCFH	SCMH	SCFH	SCMH
5	0.34	470	13.31	18	0.51
10	0.69	550	15.57	20	0.57
15	1.03	600	16.99	23	0.65
20	1.38	660	18.69	25	0.71
30	2.07	760	21.52	28	0.79
40	2.76	840	23.79	32	0.91
50	3.45	920	26.05	35	0.99
60	4.14	990	28.03	37	1.05
70	4.83	1,070	30.30	39	1.10
80	5.52	1,120	31.71	41	1.16
90	6.21	1,190	33.70	46	1.30
100	6.90	1,240	35.11	50	1.42
150	10.34	1,430	40.49	75	2.12

TRIP RANGE CHART



For pressures over 150 psig (10.34 bar) contact GasBreaker.

Note:

Calculate service line capacities from given flow and pressure drop data to ensure adequate flow capacity is available to operate valve. For additional assistance with sizing and technical information on GasBreaker Excess Flow Valves, please contact GasBreaker.

AVAILABILITY

Series 550 EFVs available in 1/2 CTS, 1/2 IPS & 3/4 CTS sticks and other prefabricated models. (see page 4 for examples)

All valves comply with: DOT Part 192.381, ASTM F 2138 and MSS SP-115: Excess Flow Valves Tested to, or in accordance with, ASTM F 1802: Standard Test Method for Performance Testing of Excess Flow Valves

AVERAGE PRESSURE DROP AT AN INLET PRESSURE OF 10 PSIG (0.69 BAR)

EFV	Typical Customer Gas Load (0.6 SG Gas)		Average Pressure Drop Across Valve	
	SCFH	SCMH	psi	mbar
Series 550	275	7.79	0.53	36.55

Performance Characteristics

Series 700

Orange Label Excess Flow Valves



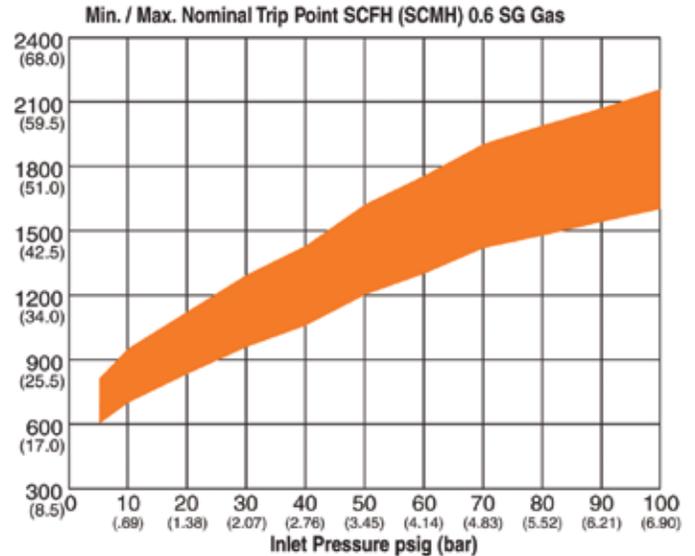
5 psig to 1,000 psig (345 mbar to 69 bar) – inlet Pressure

INLET PRESSURE		SERIES 700 NOM. MIN. TRIP POINT 0.6 SG GAS		BYPASS FLOW AFTER TRIP (NOM. MAX) 0.6 SG GAS	
psig	bar	SCFH	SCMH	SCFH	SCMH
5	0.34	600	16.99	18	0.51
10	0.69	700	19.82	20	0.57
15	1.03	760	21.52	23	0.65
20	1.38	830	23.50	25	0.71
30	2.07	960	27.18	28	0.79
40	2.76	1,060	30.02	32	0.91
50	3.45	1,200	33.98	35	0.99
60	4.14	1,300	36.81	37	1.05
70	4.83	1,410	39.93	39	1.10
80	5.52	1,480	41.91	41	1.16
90	6.21	1,540	43.61	46	1.30
100	6.90	1,600	45.31	50	1.42
150	10.34	1,780	50.40	75	2.12
200	13.79	1,960	55.50	88	2.44
250	17.24	2,140	60.60	115	3.26
300	20.69	2,320	65.70	130	3.68
350	24.14	2,500	70.79	155	4.39
400	27.59	2,680	75.89	175	4.96
450	31.03	2,860	80.99	185	5.24
500	34.48	3,040	86.08	195	5.52
550	37.93	3,220	91.18	215	6.09
600	41.38	3,400	96.28	240	6.80
650	44.83	3,580	101.37	260	7.36
700	48.28	3,750	106.19	275	7.79
750	51.72	3,938	111.5	295	8.35
800	55.17	4,124	116.79	310	8.78
850	58.62	4,310	122.03	330	9.34
900	62.07	4,492	127.20	350	9.91
950	65.52	4,670	132.25	370	10.48
1,000	68.97	4,844	137.16	385	10.90

Note:

Calculate service line capacities from given flow and pressure drop data to ensure adequate flow capacity is available to operate valve. For additional assistance with sizing and technical information on GasBreaker Excess Flow Valves, please contact GasBreaker.

TRIP RANGE CHART



AVAILABILITY

Series 700 EFVs available in sizes ranging from 3/4 IPS – 2 IPS sticks and prefabricated models in other sizes. (see page 4 for examples)



This series available for use on propane service line applications.

All valves comply with: DOT Part 192.381, ASTM F 2138 and MSS SP-115: Excess Flow Valves Tested to, or in accordance with, ASTM F 1802: Standard Test Method for Performance Testing of Excess Flow Valves

AVERAGE PRESSURE DROP AT AN INLET PRESSURE OF 10 PSIG (0.69 BAR)

EFV	Typical Customer Gas Load (0.6 SG Gas)		Average Pressure Drop Across Valve	
	SCFH	SCMH	psi	mbar
Series 700	425	12.03	0.15	10.34

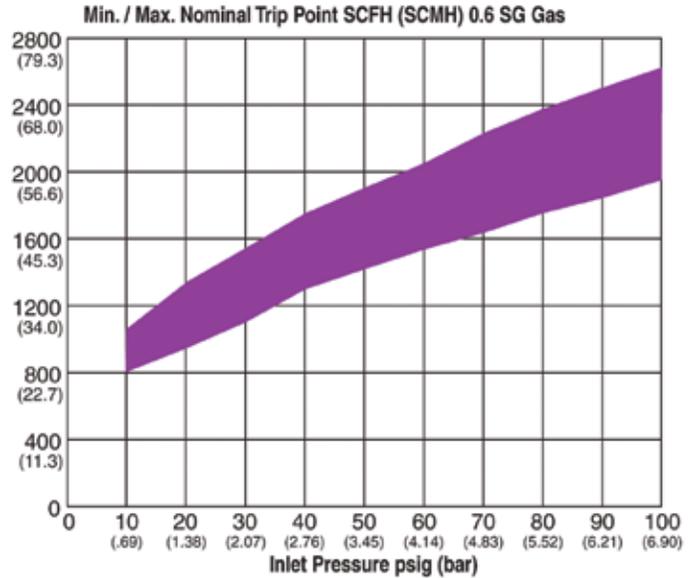


Purple Label Excess Flow Valves

10 psig to 150 psig (690 mbar to 10 bar) – inlet Pressure

INLET PRESSURE		SERIES 800 NOM. MIN. TRIP POINT 0.6 SG GAS		BYPASS FLOW AFTER TRIP (NOM. MAX) 0.6 SG GAS	
psig	bar	SCFH	SCMH	SCFH	SCMH
10	0.69	800	22.65	20	0.57
15	1.03	900	25.48	23	0.65
20	1.38	980	27.75	25	0.71
30	2.07	1,130	32.00	28	0.79
40	2.76	1,310	37.09	32	0.91
50	3.45	1,420	40.21	35	0.99
60	4.14	1,530	43.32	37	1.05
70	4.83	1,660	47.01	39	1.10
80	5.52	1,770	50.12	41	1.16
90	6.21	1,860	52.67	46	1.30
100	6.90	1,950	55.22	50	1.42
150	10.34	2,240	63.43	75	2.12

TRIP RANGE CHART



For pressures over 150 psig (10.34 bar) contact GasBreaker.

Note:

Calculate service line capacities from given flow and pressure drop data to ensure adequate flow capacity is available to operate valve. For additional assistance with sizing and technical information on GasBreaker Excess Flow Valves, please contact GasBreaker.

AVAILABILITY

Series 800 EFVs available in 1/2 CTS sticks and other prefabricated models. (see page 4 for examples)

All valves comply with: DOT Part 192.381, ASTM F 2138 and MSS SP-115: Excess Flow Valves Tested to, or in accordance with, ASTM F 1802: Standard Test Method for Performance Testing of Excess Flow Valves

AVERAGE PRESSURE DROP AT AN INLET PRESSURE OF 10 PSIG (0.69 BAR)

EFV	Typical Customer Gas Load (0.6 SG Gas)		Average Pressure Drop Across Valve	
	SCFH	SCMH	psi	mbar
Series 800	630	17.84	1.88	129.66

Performance Characteristics

Series 1100

Gray Label Excess Flow Valves

5 psig to 1,000 psig (345 mbar to 69 bar) – inlet Pressure

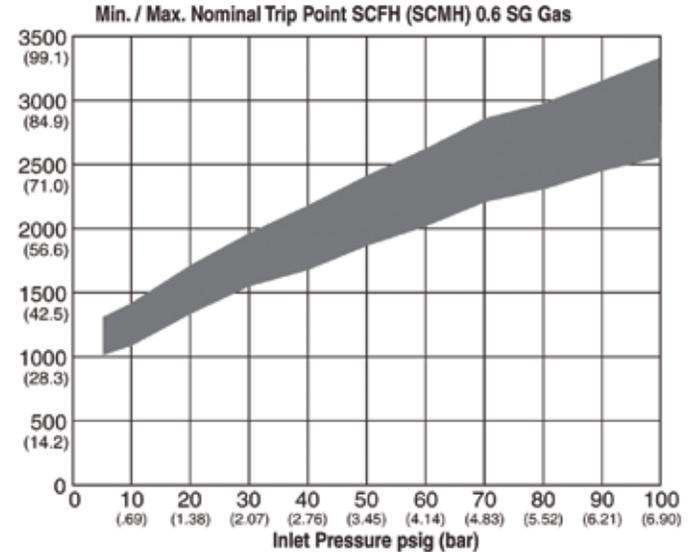


INLET PRESSURE		SERIES 1100 NOM. MIN. TRIP POINT 0.6 SG GAS		BYPASS FLOW AFTER TRIP (NOM. MAX) 0.6 SG GAS	
psig	bar	SCFH	SCMH	SCFH	SCMH
5	0.34	1,000	28.32	18	0.51
10	0.69	1,100	31.15	20	0.57
15	1.03	1,230	34.83	23	0.65
20	1.38	1,310	37.09	25	0.71
30	2.07	1,530	43.32	28	0.79
40	2.76	1,670	47.29	32	0.91
50	3.45	1,870	52.95	35	0.99
60	4.14	2,030	57.18	37	1.05
70	4.83	2,180	61.73	39	1.10
80	5.52	2,300	65.13	41	1.16
90	6.21	2,450	69.38	46	1.30
100	6.90	2,550	72.21	50	1.42
150	10.34	2,859	80.96	75	2.12
200	13.79	3,329	94.25	88	2.44
250	17.24	3,744	106.01	115	3.26
300	20.69	4,142	117.30	130	3.68
350	24.14	4,536	128.44	155	4.39
400	27.59	4,829	136.73	175	4.96
450	31.03	5,130	145.26	185	5.24
500	34.48	5,401	152.94	195	5.52
550	37.93	5,621	159.16	215	6.09
600	41.38	5,819	164.77	240	6.80
650	44.83	6,017	170.38	260	7.36
700	48.28	6,292	178.16	275	7.79
750	51.72	6,555	185.61	295	8.35
800	55.17	6,803	192.65	310	8.78
850	58.62	7,035	199.22	330	9.34
900	62.07	7,248	205.24	350	9.91
950	65.52	7,439	210.65	370	10.48
1,000	68.97	7,606	215.39	385	10.90

Note:

Calculate service line capacities from given flow and pressure drop data to ensure adequate flow capacity is available to operate valve. For additional assistance with sizing and technical information on GasBreaker Excess Flow Valves, please contact GasBreaker.

TRIP RANGE CHART



AVAILABILITY

Series 1100 EFVs available in sizes ranging from 3/4 IPS – 2 IPS sticks and prefabricated models in other sizes. (see page 4 for examples)

All valves comply with: DOT Part 192.381, ASTM F 2138 and MSS SP-115: Excess Flow Valves Tested to, or in accordance with, ASTM F 1802: Standard Test Method for Performance Testing of Excess Flow Valves

AVERAGE PRESSURE DROP AT AN INLET PRESSURE OF 10 PSIG (0.69 BAR)

EFV	Typical Customer Gas Load (0.6 SG Gas)		Average Pressure Drop Across Valve	
	SCFH	SCMH	psi	mbar
Series 1100	800	22.65	0.30	20.69



Green Label Excess Flow Valves

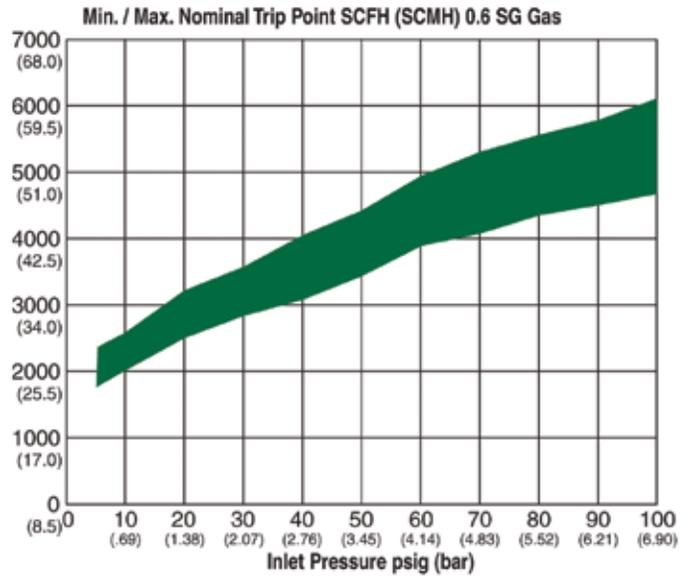
5 psig to 1,000 psig (345 mbar to 69 bar) – inlet Pressure

INLET PRESSURE		SERIES 1800 NOM. MIN. TRIP POINT 0.6 SG GAS		BYPASS FLOW AFTER TRIP (NOM. MAX) 0.6 SG GAS	
psig	bar	SCFH	SCMH	SCFH	SCMH
5	0.34	1,800	50.97	18	0.51
10	0.69	2,000	56.63	20	0.57
15	1.03	2,250	63.71	23	0.65
20	1.38	2,500	70.79	25	0.71
30	2.07	2,800	79.29	28	0.79
40	2.76	3,100	87.78	32	0.91
50	3.45	3,400	96.28	35	0.99
60	4.14	3,800	107.60	37	1.05
70	4.83	4,100	116.10	39	1.10
80	5.52	4,300	121.76	41	1.16
90	6.21	4,500	127.43	46	1.30
100	6.90	4,700	133.09	50	1.42
150	10.34	5,270	149.23	75	2.12
200	13.79	6,135	173.72	88	2.44
250	17.24	6,900	195.39	115	3.26
300	20.69	7,635	216.20	130	3.68
350	24.14	8,360	236.73	155	4.39
400	27.59	8,900	252.02	175	4.96
450	31.03	9,455	267.74	185	5.24
500	34.48	9,955	281.89	195	5.52
550	37.93	10,360	293.36	215	6.09
600	41.38	10,725	303.70	240	6.80
650	44.83	11,090	314.03	260	7.36
700	48.28	11,315	320.40	275	7.79
750	51.72	11,746	332.61	295	8.35
800	55.17	12,146	343.92	310	8.78
850	58.62	12,509	354.22	330	9.34
900	62.07	12,833	363.38	350	9.91
950	65.52	13,112	371.29	370	10.48
1,000	68.97	13,344	377.85	385	10.90

Note:

Calculate service line capacities from given flow and pressure drop data to ensure adequate flow capacity is available to operate valve. For additional assistance with sizing and technical information on GasBreaker Excess Flow Valves, please contact GasBreaker.

TRIP RANGE CHART



AVAILABILITY

Series 1800 EFVs available in sizes ranging from 3/4 IPS - 2 IPS sticks and prefabricated models in other sizes. (see page 4 for examples)



This series available for use on propane service line applications.

All valves comply with: DOT Part 192.381, ASTM F 2138 and MSS SP-115: Excess Flow Valves Tested to, or in accordance with, ASTM F 1802: Standard Test Method for Performance Testing of Excess Flow Valves

AVERAGE PRESSURE DROP AT AN INLET PRESSURE OF 10 PSIG (0.69 BAR)

EFV	Typical Customer Gas Load (0.6 SG Gas)		Average Pressure Drop Across Valve	
	SCFH	SCMH	psi	mbar
Series 1800	1000	28.32	0.44	30.34

Performance Characteristics

Series 2600

Pink Label Excess Flow Valves

10 psig to 1,000 psig (690 mbar to 69 bar) – inlet Pressure

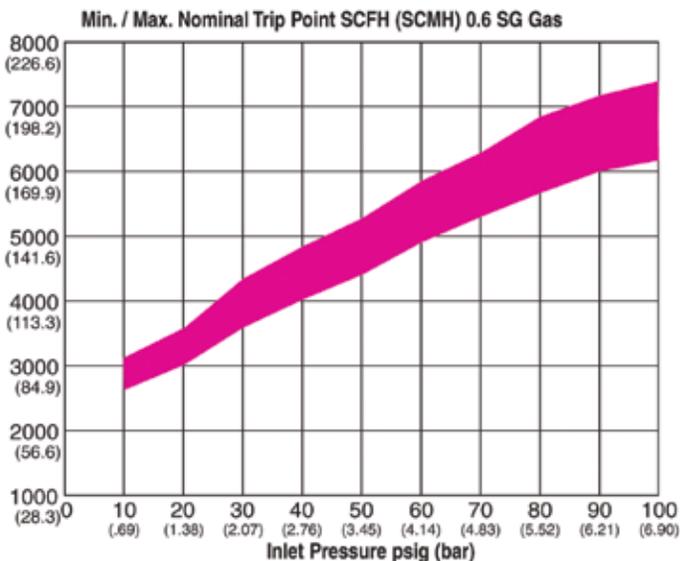


INLET PRESSURE		SERIES 2600 NOM. MIN. TRIP POINT 0.6 SG GAS		BYPASS FLOW AFTER TRIP (NOM. MAX) 0.6 SG GAS	
psig	bar	SCFH	SCMH	SCFH	SCMH
10	0.69	2,600	73.62	20	0.57
15	1.03	2,700	76.45	23	0.65
20	1.38	3,000	84.95	25	0.71
30	2.07	3,600	101.94	28	0.79
40	2.76	4,000	113.27	32	0.91
50	3.45	4,400	124.59	35	0.99
60	4.14	4,900	138.75	37	1.05
70	4.83	5,300	150.08	39	1.10
80	5.52	5,700	161.40	41	1.16
90	6.21	6,000	169.90	46	1.30
100	6.90	6,200	175.56	50	1.42
150	10.34	6,952	196.85	75	2.12
200	13.79	8,093	229.17	88	2.44
250	17.24	9,102	257.74	115	3.26
300	20.69	10,072	285.20	130	3.68
350	24.14	11,028	312.28	155	4.39
400	27.59	11,740	332.45	175	4.96
450	31.03	12,473	353.18	185	5.24
500	34.48	13,132	371.86	195	5.52
550	37.93	13,666	386.99	215	6.09
600	41.38	14,148	400.62	240	6.80
650	44.83	14,629	414.25	260	7.36
700	48.28	15,295	433.11	275	7.79
750	51.72	15,930	451.08	295	8.35
800	55.17	16,526	467.96	310	8.78
850	58.62	17,077	483.58	330	9.34
900	62.07	17,578	497.76	350	9.91
950	65.52	18,022	510.33	370	10.48
1,000	68.97	18,405	521.16	385	10.90

Note:

Calculate service line capacities from given flow and pressure drop data to ensure adequate flow capacity is available to operate valve. For additional assistance with sizing and technical information on GasBreaker Excess Flow Valves, please contact GasBreaker.

TRIP RANGE CHART



AVAILABILITY

Series 2600 EFVs available in sizes ranging from 3/4 IPS – 2 IPS sticks and prefabricated models in other sizes. (see page 4 for examples)

All valves comply with: DOT Part 192.381, ASTM F 2138 and MSS SP-115: Excess Flow Valves Tested to, or in accordance with, ASTM F 1802: Standard Test Method for Performance Testing of Excess Flow Valves

AVERAGE PRESSURE DROP AT AN INLET PRESSURE OF 10 PSIG (0.69 BAR)

EFV	Typical Customer Gas Load (0.6 SG Gas)		Average Pressure Drop Across Valve	
	SCFH	SCMH	psi	mbar
Series 2600	1400	39.64	0.90	62.07

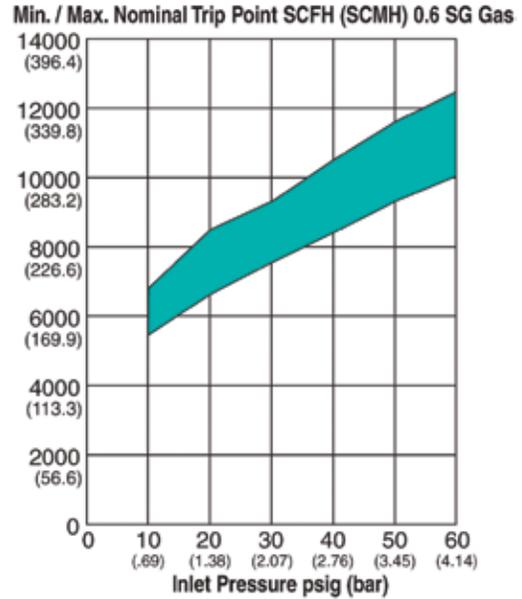


Turquoise Label Excess Flow Valves

5 psig to 150 psig (340 mbar to 10.34 bar) – inlet Pressure

INLET PRESSURE		SERIES 5500 NOM. MIN. TRIP POINT 0.6 SG GAS		BYPASS FLOW AFTER TRIP (NOM. MAX) 0.6 SG GAS	
psig	bar	SCFH	SCMH	SCFH	SCMH
5	0.34	4,800	135.92	18	0.51
10	0.69	5,500	155.74	20	0.57
15	1.03	6,100	172.73	23	0.65
20	1.38	6,700	189.72	25	0.71
30	2.07	7,700	218.04	28	0.79
40	2.76	8,500	240.69	32	0.91
50	3.45	9,300	263.34	35	0.99
60	4.14	10,100	286.00	37	1.05
70	4.83	11,003	311.58	39	1.10
80	5.52	11,933	337.90	41	1.16
90	6.21	12,882	364.78	46	1.30
100	6.90	13,843	391.99	50	1.42
150	10.34	15,643	442.94	75	2.12

TRIP RANGE CHART



Note:

Calculate service line capacities from given flow and pressure drop data to ensure adequate flow capacity is available to operate valve. For additional assistance with sizing and technical information on GasBreaker Excess Flow Valves, please contact GasBreaker.



AVAILABILITY

Series 5500 EFVs available in sizes ranging from 1 1/4 IPS - 2 IPS sticks and other prefabricated models. (see page 4 for examples)

All valves comply with: DOT Part 192.381, ASTM F 2138 and MSS SP-115: Excess Flow Valves Tested to, or in accordance with, ASTM F 1802: Standard Test Method for Performance Testing of Excess Flow Valves

AVERAGE PRESSURE DROP AT AN INLET PRESSURE OF 10 PSIG (0.69 BAR)

EFV	Typical Customer Gas Load (0.6 SG Gas)		Average Pressure Drop Across Valve	
	SCFH	SCMH	psi	mbar
Series 5500	4000	113	1.30	90

Performance Characteristics

Series 10000

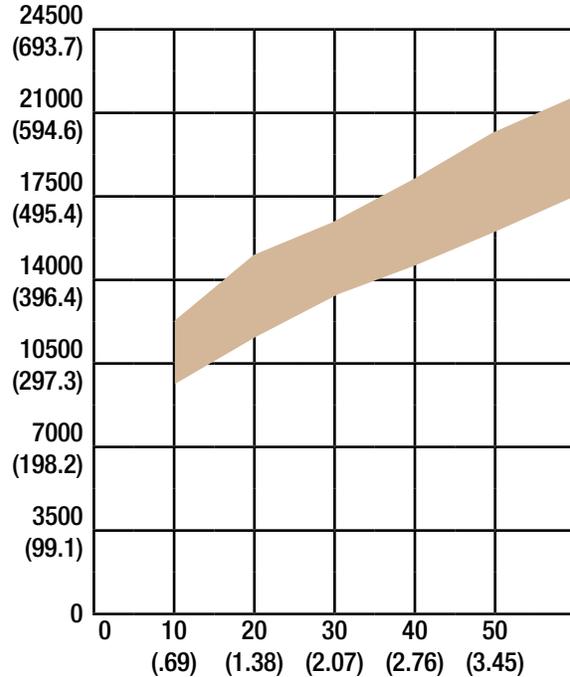
Tan Label Excess Flow Valves



10 psig to 150 psig (690 mbar to 10.34 bar) – inlet Pressure

INLET PRESSURE		SERIES 10000 NOM. MIN. TRIP POINT 0.6 SG GAS		BYPASS FLOW AFTER TRIP (NOM. MAX) 0.6 SG GAS	
psig	bar	SCFH	SCMH	SCFH	SCMH
10	0.69	10,000	283.17	20	0.57
15	1.03	10,500	297.32	23	0.65
20	1.38	11,000	311.48	25	0.71
30	2.07	12,500	353.96	28	0.79
40	2.76	14,000	396.43	32	0.91
50	3.45	15,000	424.75	35	0.99
60	4.14	16,000	453.07	37	1.05
70	4.83	17,286	489.48	39	1.10
80	5.52	18,629	527.50	41	1.16
90	6.21	20,026	567.06	46	1.30
100	6.90	21,474	608.06	50	1.42
150	10.34	24,265	687.11	75	2.12

TRIP RANGE CHART



Note:

Calculate service line capacities from given flow and pressure drop data to ensure adequate flow capacity is available to operate valve. For additional assistance with sizing and technical information on GasBreaker Excess Flow Valves, please contact GasBreaker.



AVAILABILITY

Series 10,000 EFVs available in 2 IPS sticks and other prefabricated models. (see page 4 for examples).

All valves comply with: DOT Part 192.381, ASTM F 2138 and MSS SP-115: Excess Flow Valves Tested to, or in accordance with, ASTM F 1802: Standard Test Method for Performance Testing of Excess Flow Valves

AVERAGE PRESSURE DROP AT AN INLET PRESSURE OF 10 PSIG (0.69 BAR)

EFV	Typical Customer Gas Load (0.6 SG Gas)		Average Pressure Drop Across Valve	
	SCFH	SCMH	psi	mbar
Series 10000	8000	226	0.51	35





COMMERCIAL/INDUSTRIAL EXCESS FLOW VALVES

Large Residential, Commercial, Industrial and Multi Meter EFV Applications:



Specifications

- ◆ Accommodates pressures from 5 psi to 1000 psi (Depending on Series of EFV)
- ◆ Flow Ranges from 1,000,000 to 24,000,000 BTU
- ◆ Meet DOT 192.381 and MSS-SP-115; MSS-SP-142 for excess flow valves for use in natural gas system
- ◆ Tested to, or in accordance with, ASTM F 1802
- ◆ Compatible with steel or plastic fittings and piping materials from most manufacturers

Large Volume EFVs

Series 1100



Series 1800



Series 2600



Series 5500

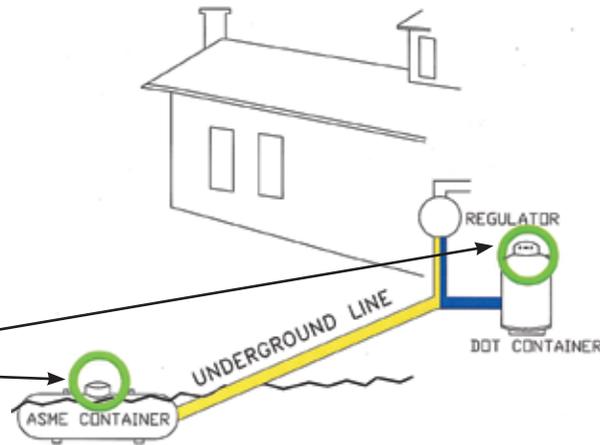


Series 10000



PROPANE SERVICE APPLICATIONS

Excess Flow Valves for Propane Service Applications



Performance Characteristics				
Inlet Pressure psig	Flow Prior to Closure (Trip), SCFH 1.55 SG Gas (Nominal Minimum)			Bleed-By Flow After Closure (Trip) SCFH 1.55 SG Gas (Nom. Max.)
	SERIES 300 (Black Label)	SERIES 700 (Orange Label)	SERIES 1800 (Green Label)	
5	249	373	1120	11
10	280	435	1244	12
15	305	473	1400	14
20	336	516	1555	16
30	386	597	1742	17
40	423	659	1928	20
50	460	746	2115	22
60	498	809	2364	23
70	535	877	2550	24
80	566	921	2675	26
90	591	958	2799	29
100	622	995	2923	31
150	740	1107	3278	47
200	753	1219	3816	53
250	840	1331	4292	72
300	927	1443	4749	81

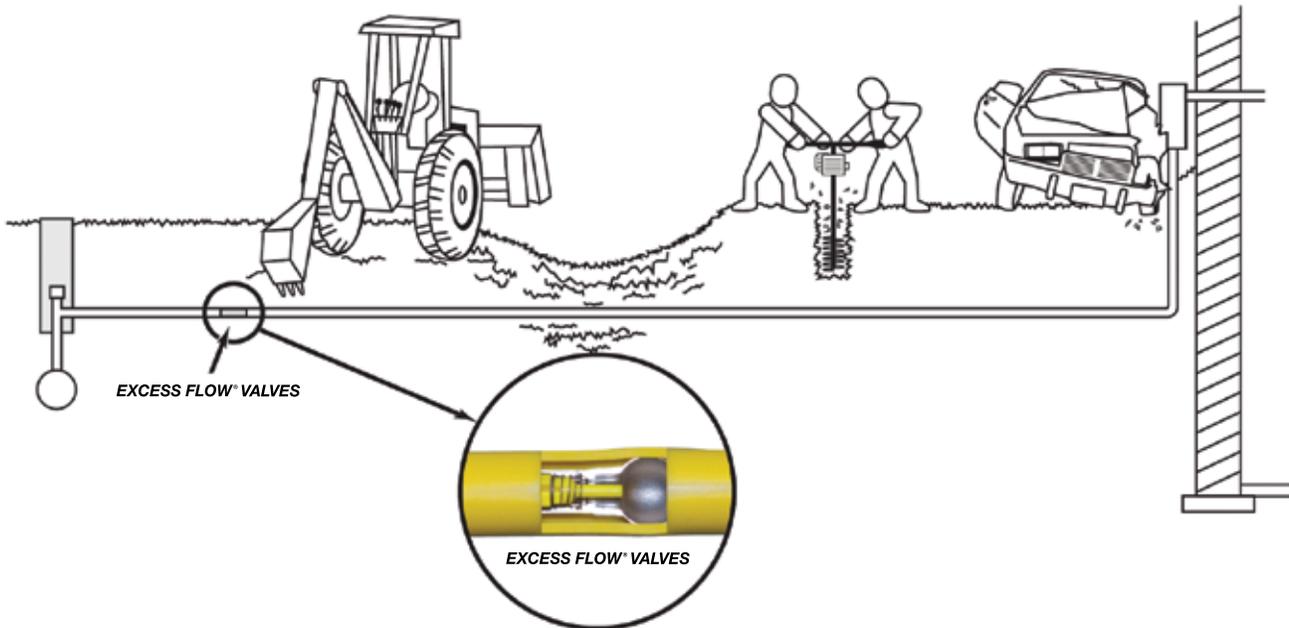
Flow prior to trip values in chart represent Nominal Minimum values. Bleed-By flow after trip values represent Nominal Maximum values Minimum service size for Series 1800 is 3/4" IPS



GasBreaker EFVs are the leader in Excess Flow® Valve (EFV) technology. The No-Hole System "21" allows insertion of a special No-Hole EFV, up to 150 feet from the meter set, under live (pressurized) gas conditions in systems with normal operating pressures up to 150 psig without an excavation.

When gas flow exceeds design limits, the No-Hole EFV automatically trips, affording the same protection and benefits as standard GasBreaker EFVs including:

- ◆ Saving time and money by reducing the number of emergency situations
- ◆ Turning emergency situations into routine service calls
- ◆ Safeguarding utilities against unwarranted negative publicity and excessive liabilities that result from gas leak emergencies
- ◆ Increasing public confidence in gas
- ◆ Provide safe working conditions for gas utility personnel and first responders at the scene of a service line rupture
- ◆ EPA Natural Gas Star Program recommends the installation of EFVs to reduce methane emissions



NO-HOLE SYSTEM “21”®



Like other GasBreaker EFVs no-Hole EFVs:

- ◆ Meet or exceed DOT 192.381, MSS SP-115 ASTM F 1802 and ASTM F2138 requirements.
- ◆ Are 100% factory tested in accordance with DOT 192.381.
- ◆ Are individually packaged with operating instructions and field identification tags.
- ◆ Are lot coded with date and model # traceable back to all component parts.
- ◆ Have valve series identified on the valve by color coded labels with directional flow arrows.

Installation

1. The meter set is removed from the service line.
2. If necessary a valve changing apparatus is used to change the meter shut-off valve to a full-port ball valve.
3. The No-Hole System “21” gland assembly is attached to the ball valve.
4. The ball valve is opened and the No-Hole EFV is inserted to the desired distance – up to 150 feet.
5. The EFV is anchored in place using proprietary No-Hole System “21” technology.
6. Then the apparatus is removed and the original meter valve reinstalled if desired.
7. The meter set is reattached and service is restored to the customer.

* For exact installation and recommissioning procedures follow instructions included with each valve.

Standard Equipment includes:

- ◆ Hand pump with pressure gauge and reservoir (Pump has detachable handle for more compact storage).
- ◆ 150 foot insertion hose (Longer hose available – see options).
- ◆ Plug ends to prevent fluid loss.
- ◆ Replacement parts for high-wear components.
- ◆ Foot counter so that an approximate EFV location can be noted on the service card.

Optional Equipment:

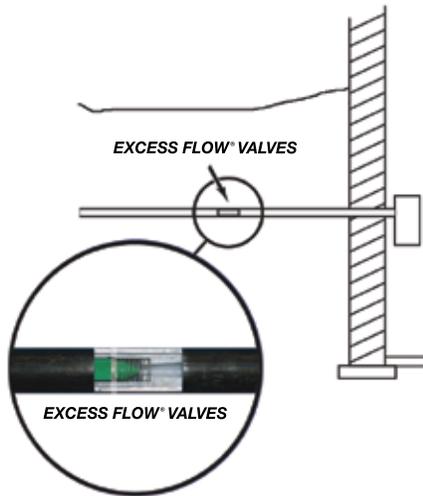
- ◆ 200 foot insertion hose
- ◆ Maximum indicating pressure gauge
- ◆ Bare pipe installation adapter (available in various sizes)

TOOL PACKAGE	CATALOG NO.
150' Complete Package W/Cart	#60105

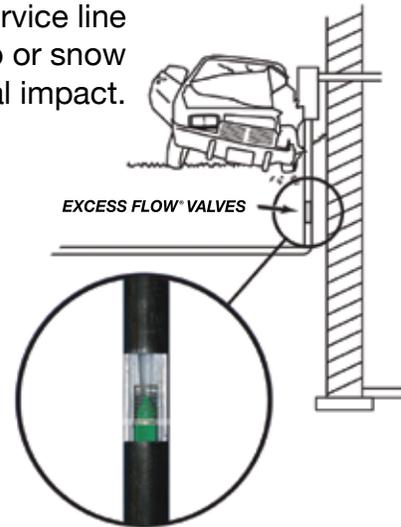
SLEEVE SIZE	EFV SERIES	ORDER/ KIT#
½” IPS Sleeve	Series 350	#60139
	Series 550	#60140
¾” CTS Sleeve	Series 350	#60122
	Series 550	#60071
¾” IPS Sleeve	Series 350	#60123
	Series 550	#60106
1” CTS Sleeve	Series 350	#60124
	Series 550	#60087
1” IPS Sleeve	Series 350	#60125
	Series 550	#60107
1 ¼” IPS Sleeve	Series 350	#60133
	Series 550	#60134
1 ¼” CTS Sleeve	Series 350	#60137
	Series 550	#60138



Unauthorized Disconnection



Regulator or service line failure due to auto or snow removal impact.



The GasBreaker AutoCock™ Excess Flow® Valve is designed for installation under live gas condition, pressures up to 150 psig, in existing steel gas utility service lines or risers immediately upstream of the meter set. Auto-Cocks protect against unsafe conditions that result from damage to the exposed or aboveground portion of the service line.

When gas flow exceeds design limits the AutoCock automatically trips, affording the same protection and benefits as standard GasBreaker EFVs including:

- ◆ Saving time and money by reducing the number of emergency situations
- ◆ Turning emergency situations into routine service calls
- ◆ Safeguarding against unwarranted negative publicity and excessive liabilities that result from gas leak emergencies
- ◆ Increasing public confidence in gas
- ◆ Providing safe working conditions for gas utility personnel and first responders at the scene of a service line rupture
- ◆ EPA Natural Gas Star Program recommends the installation of EFVs to reduce methane emissions

Like other GasBreaker EFVs autococks:

- ◆ Meet or exceed DOT 192.381, MSS SP-115 ASTM F 1802 and ASTM F 2138 requirements
- ◆ Are 100% factory tested in accordance with DOT 192.381
- ◆ Are individually packaged with operating instructions and field identification tags

- ◆ Are lot coded with date and model number traceable back to all component parts
- ◆ Have Series identified by color coded directional flow arrows

Here's How They are installed

1. The meter set is removed from the service line.
2. A valve changing apparatus is used to change the meter shut-off valve to a full-port ball valve such as the Mueller® Centurion II™, if necessary.
3. The EFV and installation assembly are threaded onto the ball valve.
4. The ball valve is opened, the installation rod is inserted, and the EFV is expanded into the riser or service line.
5. The rod is withdrawn, the installation assembly removed and the original meter valve reinstalled if desired.
6. The meter set is reattached and service is restored to the customer.

* For exact installation and recommissioning procedures follow instructions included with each valve.

AUTOCOCK™ EFVS



Standard Equipment includes:

- ◆ Air activated hydraulic pump with pressure gauge
- ◆ 10 foot hydraulic hose
- ◆ Hydraulic ram
- ◆ Three foot installation rod assembly
- ◆ Standard carrying box for pump, hose and ram

Optional Equipment:

- ◆ Extended length rod assembly up to six feet
- ◆ Carrying case for ram, pull rod, pump, hose and EFVs
- ◆ Air pressure regulator with gauge and sleeve lock quick connects
- ◆ Extra hydraulic fluid

Sizing:

Available in - ¾" IPS, 1" IPS & 1 ¼" IPS

The following GasBreaker excess flow valves are available in

AutoCock configuration:

series 300, series 400, series 700 series 1100, series 1800, series 2600

See Performance Characteristics Section of brochure

Sizing is accomplished using the same methods as for standard excess flow valves.

NOTE: Excess flow valves are designed to limit the amount of gas that escapes in the event of a full line rupture. Proper sizing is necessary to allow the EFV to activate. Thread leaks, corrosion leaks, partial line breakage, or ruptures on the fuel gas or service line downstream of pressure regulation or line metering devices may not result in activation of the EFV.



1974

UMAC introduces the Donkin Flow Limitor®, the first spring loaded EFV to the natural gas utility industry.

1975

UMAC prefabricates the first steel to plastic EFV for a gas utility in Ohio.

1976

UMAC prefabricates the first plastic to plastic EFV for a gas utility in Massachusetts

1979

UMAC introduces the first low pressure gravity ball style EFV to the natural gas industry.

1988

UMAC Introduces the first all plastic high capacity series 1800 EFV In response to a gas utility customer in New York that wants to protect branch natural gas service lines for multi-family applications.

1990

UMAC introduces a medium capacity series 700 EFV to meet a higher flow volume meter demand for a gas utility customer in Ohio.

1993

UMAC introduces the first commercially available 1/2 CTS EFV in response to a gas industry demand for same size in-line 1/2 CTS service line applications.

1994

UMAC introduces the first EFV built into the stiffeners of mechanical couplings used to join plastic pipe service lines.

1996

UMAC introduces the first residential EFV for installation in customer owned fuel gas piping systems in California.

2000

UMAC introduces the most comprehensive range of EFVs for residential and commercial applications in sizes from 1/2" CTS through 2" IPS.

2002

UMAC is the first to develop an EFV for live insertion into steel services from the meter set for a gas utility in Canada.

2006

UMAC develops the first no-hole EFV for live insertion from the meter set into PE piping up to 150 feet in length for a gas utility in New Jersey.

2009

UMAC excess flow valves joined the family of EFVs available from GasBreaker.

TODAY

The GasBreaker EFV's long track record of field service in the gas industry is unparalleled. GasBreaker, a part of the Hubbell Gas Connectors and Accessories group continues to lead the way in assisting the gas utility industry in meeting the demanding needs for service line applications with GasBreaker EFVs.



OTHER PRODUCTS FROM HGCA



Hubbell Gas Connectors & Accessories, headquartered in Tulsa, Oklahoma with locations California, Wisconsin and Illinois We engineer and manufacture, with a commitment to providing our customers the highest quality products at the best value.

For gas distribution, Hubbell Gas Connectors & Accessories (HGCA) supplies a full line of specialty products, offering turnkey solutions for main-to-meter connections. No other single manufacturer can offer the variety of fittings that HGCA provides. Whether you need to connect PE to PE, PE to PVC, PE to Steel, PE to Copper or Steel to Steel, chances are HGCA has one to do the job. HGCA is an ISO 9001 certified company. Our products meet or exceed all ASTM and D.O.T. requirements and make safe, reliable and economical connections.

Advance Engineering is a National Leader in providing the Gas Utility Industry and other related markets with fabricated meter sets and high grade pipe nipples for 75 plus years. Together with our sister company Perfect Pipe and Supply, our turnkey operations provides the Gas Utilities Industry with fabrications starting in the Residential 250 Class arena and going up to Gate Station fabrication. We have a complete line of fabricated Bypass sets for all Diaphragm and Rotary Meter configurations.



Continental Industries, headquartered in Tulsa, Oklahoma since 1958 – with manufacturing facilities in both Tulsa and Broken Arrow. We are committed to providing our customers with the highest quality products at the best value.



Our commitment to quality is evident in every step of our business processes. Renowned for our design and development of technologically advanced products, we provide our customers with reliable, cost-effective solutions to their “main to meter” service line installation, repair, or renewal projects.

As one of the most trusted names in gas pipeline components manufacturing since 1973, the Lyall Corporation has an undisputed reputation for quality. The Lyall mission is to consistently manufacture the safest, most reliable and installer-friendly gas pipeline products available. From midstream to local distribution and all points between, Lyall keeps the gas industries moving.





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