Safety Shutoff Valve
1/2" NPT - 2" NPT

SV/604 Series
SV-DLE/604 Series

DUNGS®
Combustion Controls

Normally closed automatic safety shutoff valve with the following approvals.

CSA Certified
- ANSI Z21.21 • CSA 6.5
- Marked C/I
- File # 1350312

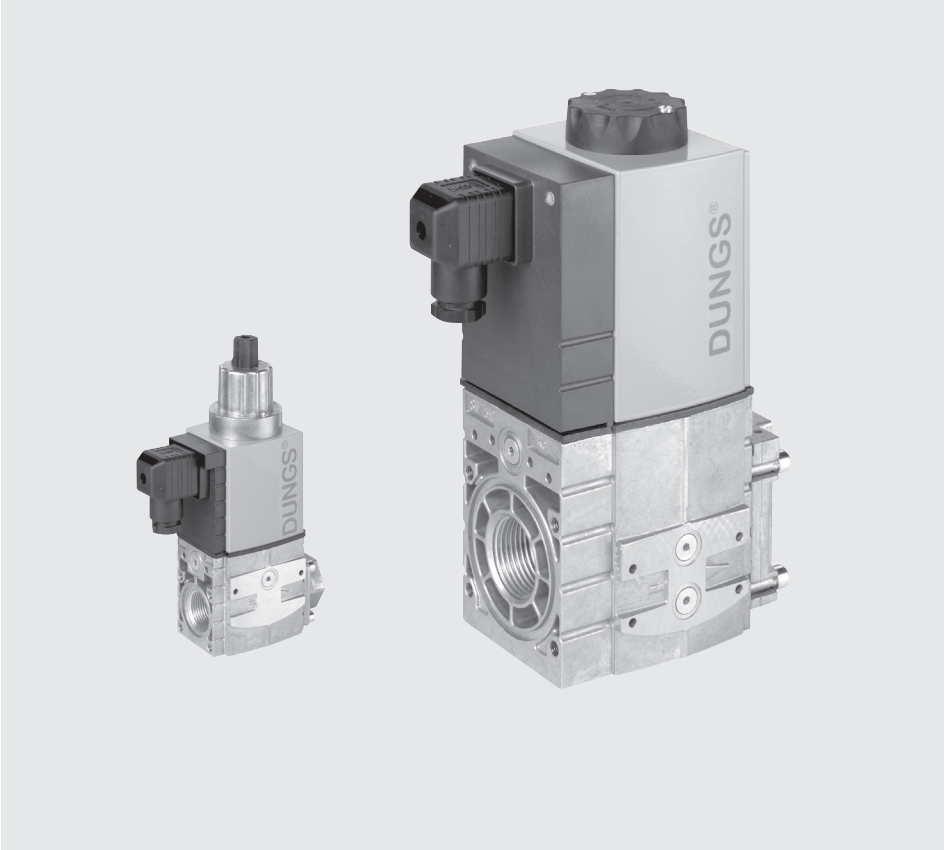
FM Approved
- Class 7400
- File # 3014562

UL Listing PENDING
- UL 429
- File # MH16727

Commonwealth of Massachusetts Approved Product
- Approval code G1-1107-35
- Gas Safety Shutoff Valve

Codes and Standards:
This product is intended for installations covered by but not limited to NFPA 86, NFPA 37, NFPA 160, ANSI Z83.4/ CSA 3.7, ANSI Z83.18/CSA 4.9, ANSI Z21.13, CSD-1, UL 795, UL 2200, CAN1-3.1, CGA 3.2, CSA 3.8, CSA B149.1,or CSA B149.3

DUNGS is an ISO 9001 manufacturing facility.



Technical Description
The SV-(DLE) series safety shutoff valve is a single-stage automatic shut-off valve for gas burners and gas burning appliances:

- Double-seated valve.
- Max. operating pressure up to 10 PSI (700 mbar)
- SV: fast-open/fast-close
- SV-DLE: slow-open with adjustable inital lift, fast closing
- Main flow adjustment
- Pipe thread on the inlet side, threaded flange on outlet side
- Threaded flange on the inlet side optional
- High flow rates
- DMV modular mount accessories can be used in most cases

Application
The SV is recommended for industrial and commercial heating applications that require an automatic shutoff valve incorporating proof of closure. The SV is suitable for natural gas, propane, butane, air and inert gases. Suitable for up to 0.1% by volume, dry H_2S.

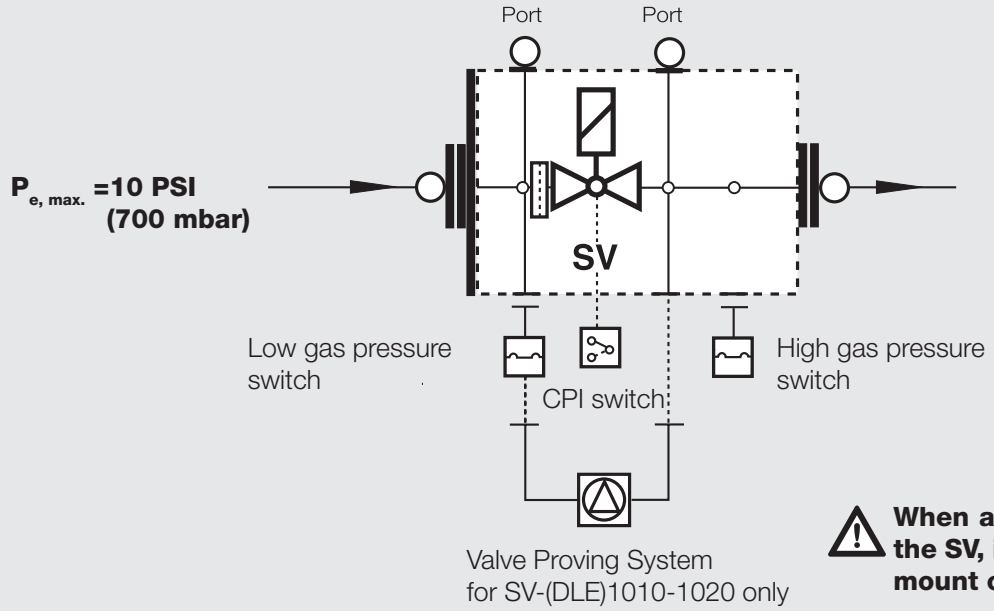
SV.../604 Single-stage automatic shutoff valve, fast-open, fast-closing.

SV-DLE.../604 Single-stage automatic shutoff valve, slow opening, fast closing. Adjustable max flow and Adjustable initial lift.

Specifications

Model Size (NPT)	SV 1005 1/2"	SV 1007 3/4"	SV 1010 1"	SV 1012 1 1/4"	SV 1015 1 1/2"	SV 1020 2"
	Pipe thread on the inlet side,threaded flange on outlet side					
Max. operating pressure	10 PSI (700 mbar)					
Max. body pressure	15 PSI (1000 mbar)					
Max. close-off pressure	15 PSI (1000 mbar)					
Electrical ratings (+10% / -15%)	120 VAC 50 - 60 Hz					
Power ratings	See page 5.					
Enclosure rating	NEMA Type 4 for indoor applications NEMA Type 12 for outdoor applications					
Electrical connection	DIN-connector with 1/2” NPT conduit adapter					
Operating time	100 % duty cycle					
Closing time	< 1 s					
Opening time (to max. flow)	SV.../604 SV-DLE…/604	< 1 s Adjustable to approx. 10 to 20 s at 70 °F				
Initial lift adjustment	SV-DLE…/604 ONLY	0 to 70 % of total flow; 0 to 35% of stroke				
Max. flow adjustment	SV-DLE…/604 ONLY	0 to 100 % of total flow; 0 to 100% of stroke. When adjusted to low flows, flow repeatability upon opening is +/-15%.				
Materials in contact with gas	Housing: Sealings on valve seats:	Aluminium, Steel; free of non-ferrous metals NBR-based rubber				
Ambient temperature rating	-40 °F to +140 °F (-40 °C to +60 °C)					
Installation position	Safety valve upright vertical to horizontal					
Test ports / Pressure switch mounting ports	SV and SV-DLE: G 1/8 ISO 228 ports available. See page 3 and 4 for details.					
Gas strainer (standard)	Installed in the housing (23 mesh)					
CPI 400 Closed Position Indicator Switch (optional)	SPDT switch with indication lamps;	AC max. 10A resistive @ 120 Vac AC max. 8A inductive @ 120 Vac				
Valve proving system	Requires VPS 504; mounts directly to either side of SV-(DLE) 1010-1020 only					

SV 10../604



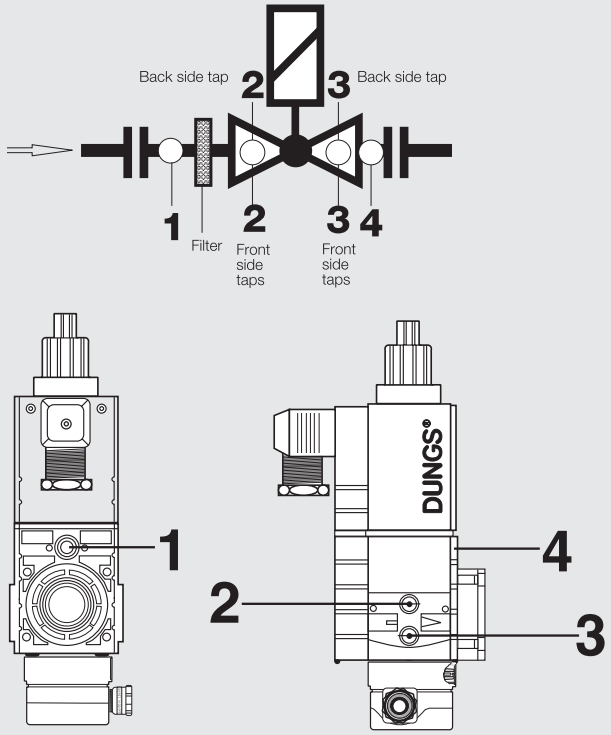
⚠ **When an accessory is added to the SV, it may not be possible to mount other devices.**

Test Ports

G1/8 ISO 228 test ports available on both sides of the valve. Each side has one test port upstream (2), one downstream (3) of the valve seat. One Inlet (1) and outlet (4) of valve body. The SV 1010, 1012, 1015, and 1020 have one outlet (5) on valve flange. The G 1/8 test nipple (# 219-008) can be screwed into any of the test ports.

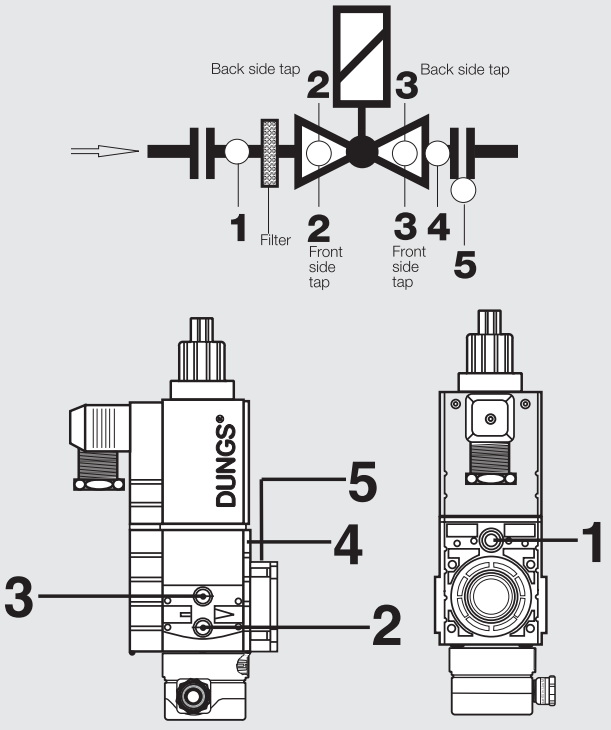
⚠ **NOTE: The position of the side taps #2 and #3 on the SV 1005/1007 are not the same as on the SV 1010-1020 valves.**

SV-(DLE): 1005, 1007



SV-(DLE): 1010, 1012

SV-(DLE): 1015, 1020

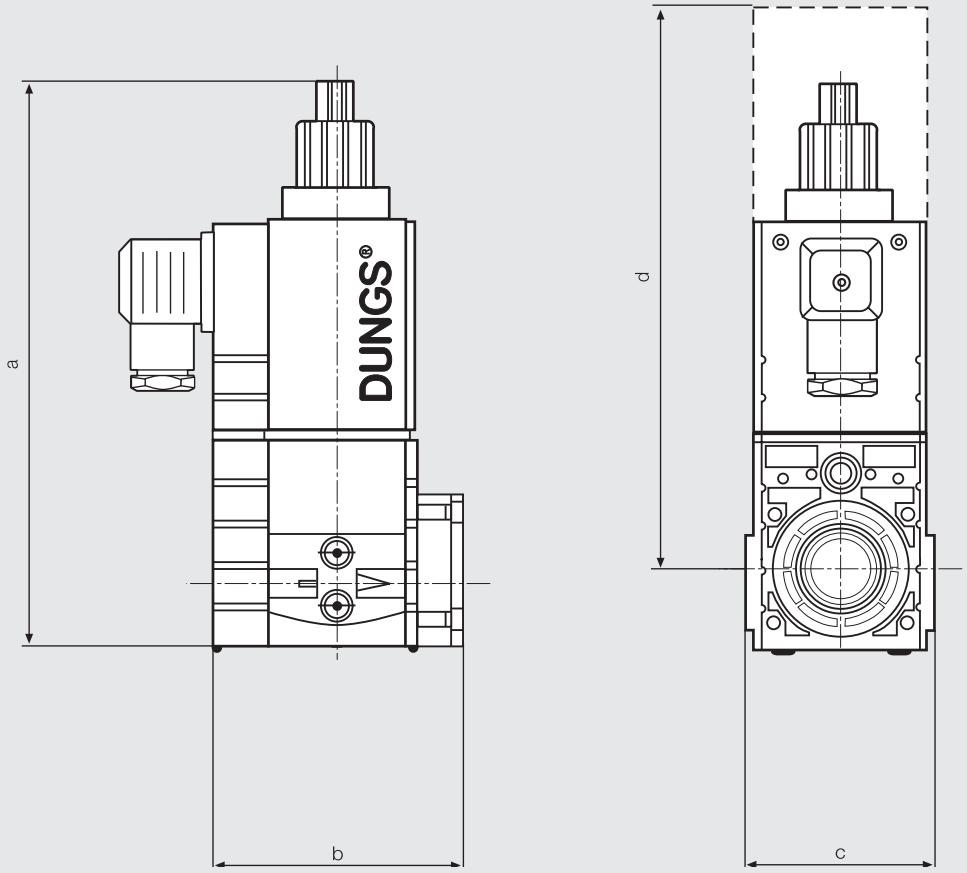


	SV Model			SV-DLE Model		
Feature	1005/1007	1010/1012	1015/1020	1005/1007	1010/1012	1015/1020
Main flow adjustment	-	-	-	X	X	X
Slow opening	-	-	-	X	X	X
Strainer	X	X	X	X	X	X
Ports for field mountable gas pressure switch	X	X	X	X	X	X
GAO, GMH, GML..A2 valve inlet (Port 1)	- 3	X	X	- 3	X	X
GAO, GMH, GML..A2 valve outlet, (Port 4)	- 3	(X)	(X)	- 3	(X)	(X)
GAO, GMH, GML..A2 inlet flange (Optional Flange)	-	X	X	-	X	X
GAO, GMH, GML..A2 outlet flange (Port 5)	-	X	X	-	X	X
GAO, GMH, GML..A2 both sides upstream (port 2)	X	X	X	X	X	X
GAO, GMH, GML..A2 both sides downstream (port 3)	-	X	X	-	X	X
Flange installed on outlet	X	X	X	X	X	X
Flange installed on inlet	(X)	(X)	(X)	(X)	(X)	(X)
Ignition gas flange NPT 1/2 (225-043)	-	(X)	(X)	-	(X)	(X)
1/4" NPT Adapter both sides upstream (225-047)	(X)	(X)	(X)	(X)	(X)	(X)
1/4" NPT Adapter both sides downstream (225-047)	-	(X)	(X)	-	(X)	(X)
Valve proving system VPS 504 S06 (221-073)	1	(X)	(X)	1	(X)	(X)
G 1/8 Test Nipple (219-008)	2	2	2	2	2	2

- \- Not Avaliable/Not possible
- X Standard
- (X) Optional
- 1 Alternate valve proving system: VDK 200 (216-352)
- 2 Fits into any test port
- 3 No adapter exists to mount a switch at this port

Flow (CFH) of natural gas, s.g. 0.65 at 60 °F with 1 in. W.C. pressure drop	
SV 1005/604	335
SV 1007/604	450
SV 1010/604	900
SV 1012/604	1300
SV 1015/604	1950
SV 1020/604	2250

Dimensions SV..., SV-DLE inch (mm)



d = Space required for replacing solenoid

Type	Order No. 120 VAC 50-60 Hz	$p_{max.}$ [PSI]	Connection	Dimensions [inch] Dimensions [mm] a	b	c	d	Rating [VA]	Weight [lbs] [kg]
SV 1005	246-700NP	10	NPT 1/2	**6.0**	**3.8**	**2.4**	**8.5**	20	**3.3**
				152	96	62	215		1.5
SV 1007	246-701NP	10	NPT 3/4	**6.0**	**3.8**	**2.4**	**8.5**	20	**3.3**
				152	96	62	215		1.5
SV 1010	246-702NP	10	NPT 1	**9.2**	**4.6**	**3.4**	**10.9**	25	**9.3**
				233	116	87	277		4.2
SV 1012	246-703NP	10	NPT 1 1/4	**9.2**	**4.6**	**3.4**	**10.9**	25	**9.3**
				233	116	87	277		4.2
SV 1015	246-704NP	10	NPT 1 1/2	**12.0**	**6.5**	**4.5**	**14.6**	45	**16.1**
				305	165	115	370		7.3
SV 1020	246-705NP	10	NPT 2	**12.0**	**6.5**	**4.5**	**14.6**	45	**16.1**
				305	165	115	370		7.3
SV-DLE 1005	246-706NP	10	NPT 1/2	**8.1**	**3.8**	**2.4**	**8.5**	20	**3.5**
				205	96	62	215		1.6
SV-DLE 1007	246-707NP	10	NPT 3/4	**8.1**	**3.8**	**2.4**	**8.5**	20	**3.5**
				205	96	62	215		1.6
SV-DLE 1010	246-708NP	10	NPT 1	**10.5**	**4.6**	**3.4**	**10.9**	25	**9.3**
				266	116	87	277		4.2
SV-DLE 1012	246-709NP	10	NPT 1 1/4	**10.5**	**4.6**	**3.4**	**10.9**	25	**9.3**
				266	116	87	277		4.2
SV-DLE 1015	246-710NP	10	NPT 1 1/2	**12.0**	**6.5**	**4.6**	**14.6**	45	**16.1**
				305	165	116	370		7.3
SV-DLE 1020	246-711NP	10	NPT 2	**12.0**	**6.5**	**4.6**	**14.6**	45	**16.1**
				305	165	116	370		7.3

VALVE ACCESSORIES

*Flange kit	Size	NPT Part #	Rp Part #
SV 1005 / 1007	1/2		242-220
SV 1005 / 1007	3/4	242-650 242-651	242-221
SV 1010 / 1012	1/2		242-223
SV 1010 / 1012	3/4	242-653	242-224
SV 1010 / 1012	1	242-654	242-225
SV 1010 / 1012	1 1/4	242-655 242-656	242-226
SV 1015 / 1020	1		242-227
SV 1015 / 1020	1 1/4	242-657	242-228
SV 1015 / 1020	1 1/2	242-658	242-229
SV 1015 / 1020	2	242-659	242-230

The SV 1010, 1012, 1015 and 1020 flanges are the same as the DMV flanges, however the mounting screws used for the SV and DMV are different. DO NOT interchange flange mounting screws.

*** Mounting kit includes 1 flange, 4 bolts and 1 O-ring.**

SV supplied with downstream flange and mounting kit as standard.

Flange kit is only needed if a flange is desired on the inlet of the valve.

Additional Accessories

VPS 504
Valve proving system approved by some authorities having jurisdiction in lieu of vent valve and "proof of closure". (NFPA 86) NEMA Type 12 only.

GAO/GMH/GML A2 pressure switch

DMK butterfly control valve
Mounts directly downstream of DMV to modulate gas flow. Requires DMA actuator.

DMA actuator.
Mounts directly to DMK to modulate gas flow. 12 and 30 second actuators available. NEMA Type 4 cover avaliable.

Adapters
- 1/4" NPT adapter (225-047)
- 1/2" NPT Pilot gas adapter; Check flow requirements. (225-043)
- G 1/8" Test nipple (219-008)

PRESSURE DROP FOR OTHER GASES

To determine the pressure drop when using a gas other than natural gas, use the flow formula below and f value located in the chart below to determine the "corrected" flow rate in CFH through the valve for the other gas used. For example, when using propane, divide the volume (CFH) of propane required for the application by the calculated value f (f = 0.66 for propane). Use this "corrected" flow rate and the flow curve on the next page to determine pressure drop for propane.

$$\dot{V}_{gas\ used} = \dot{V}_{Natural\ Gas} \times f$$

Use this formula to calculator the f factor for other gases not listed on the table.

$$f = \sqrt{\frac{\text{Spec. gravity of Natural Gas}}{\text{Spec. gravity of gas used}}}$$

Type of gas used	Density [kg/m^3]	sg	f
Natural gas	0.81	0.65	1.00
Butane	2.39	1.95	0.58
Propane	1.86	1.50	0.66
Air	1.24	1.00	0.80

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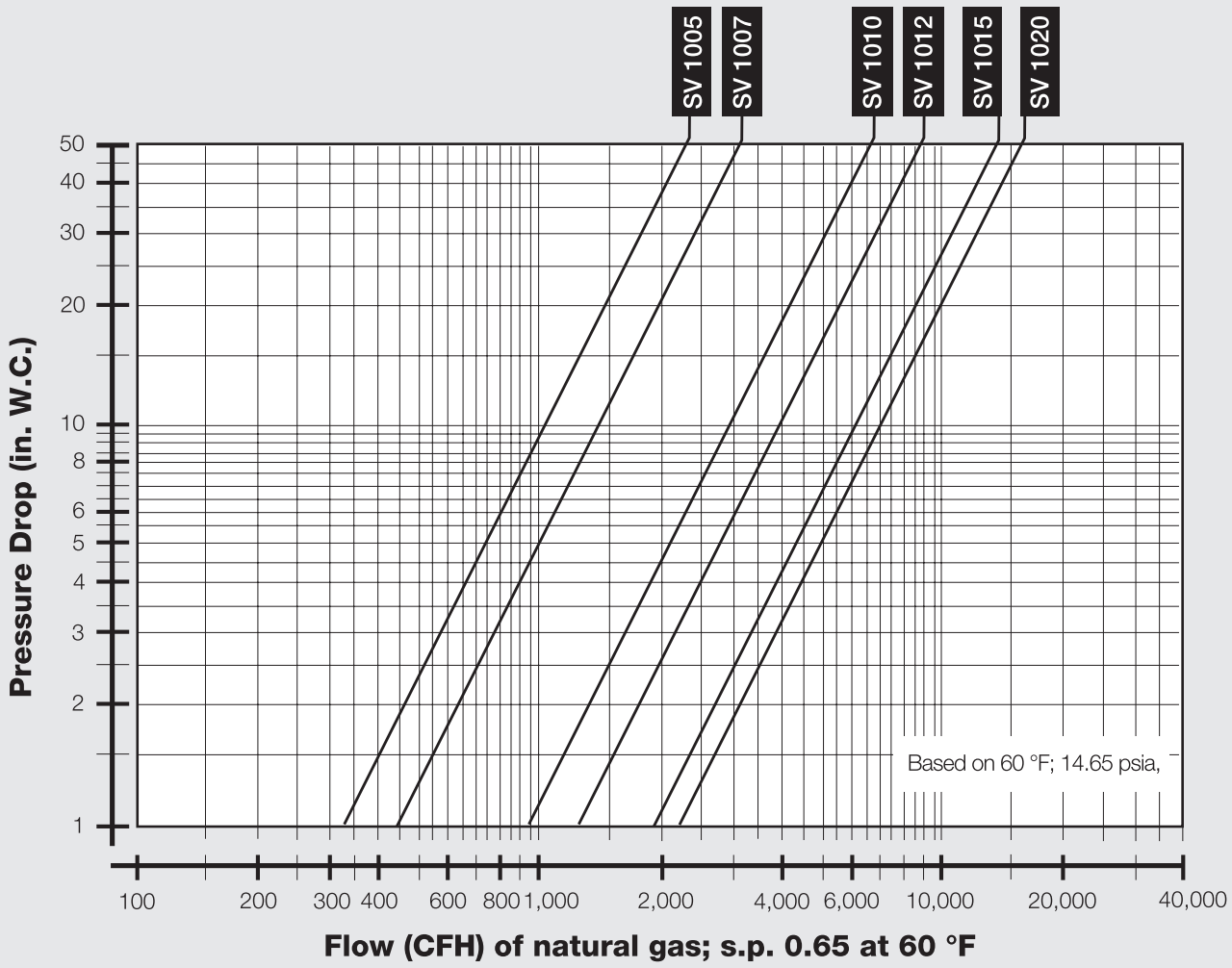
Flow curve



We reserve the right to make any changes in the interest of technical progress.

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