

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

**SV/604 Series  
SVD/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

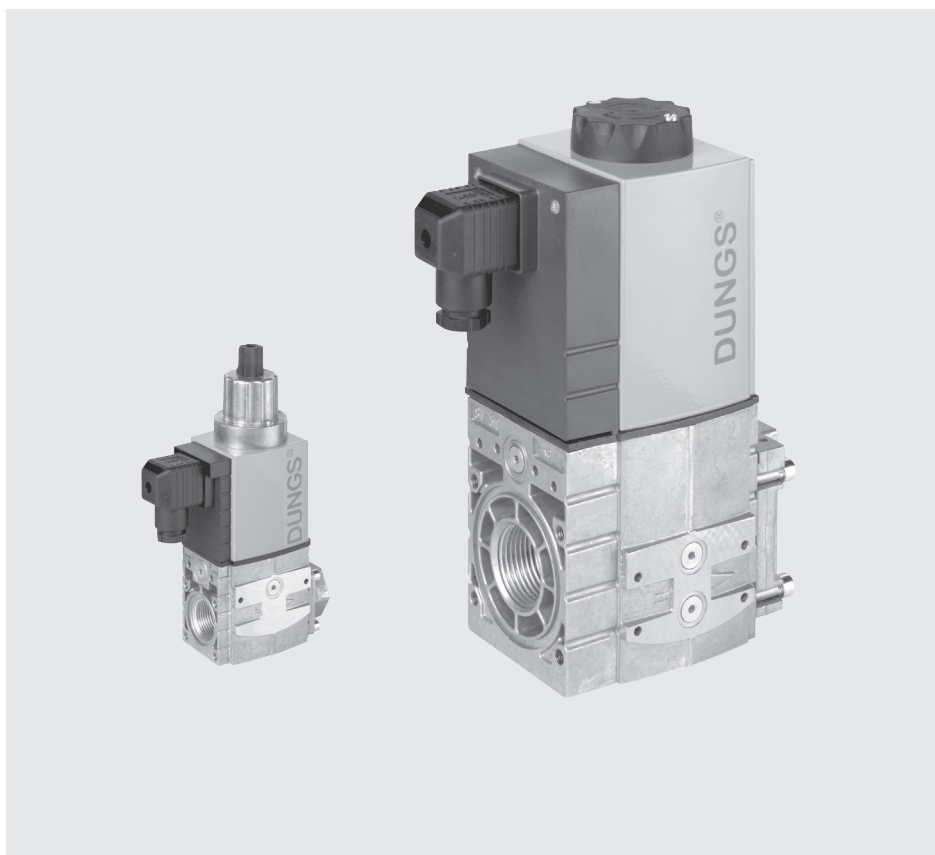
**Commonwealth of Massachusetts  
Approved Product**

- 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 2200, CAN1-3.1, CGA 3.2, CSA 3.8, CSA B149.1, CSA B149.3, CSA B149.6

**DUNGS is an ISO 9001  
manufacturing facility.**



**Technical Description**

The SV... 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 & SV-D: fast-open/fast-close
- SV-DLE: slow-open with adjustable initial 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. The SV... is suitable for dry natural gas, propane, butane, air and inert gases. Suitable for up to 0.1% by volume, dry H<sub>2</sub>S.

A “dry” gas has a dew point lower than +15 °F and its relative humidity is less than 60 %.

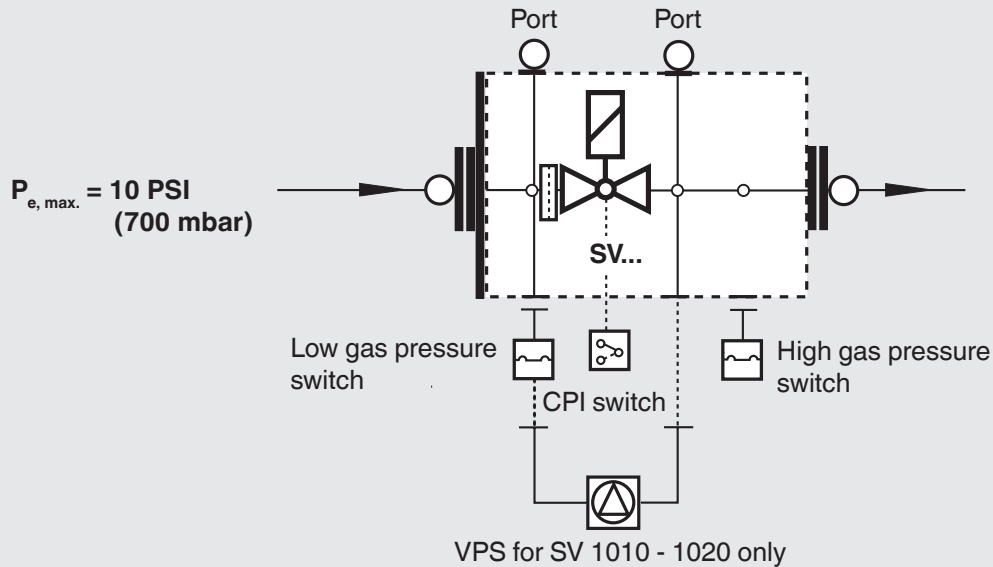
**SV.../604** Single-stage automatic shutoff valve, fast-opening, fast-closing.

**SV-D.../604** Single-stage automatic shutoff valve, fast opening, fast closing. Adjustable max flow.

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

## Specifications

|                                                     |                                                                                                                                                  |         |                                                    |         |         |         |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------|---------|---------|---------|
| Model                                               | SV 1005                                                                                                                                          | SV 1007 | SV 1010                                            | SV 1012 | SV 1015 | SV 1020 |
| Size (NPT)                                          | 1/2"                                                                                                                                             | 3/4"    | 1"                                                 | 1 1/4"  | 1 1/2"  | 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 % to +15 %)                 | 120 VAC @ 50 - 60 Hz                                                                                                                             |         |                                                    |         |         |         |
| Power ratings                                       | See page 5.                                                                                                                                      |         |                                                    |         |         |         |
| Enclosure ratings                                   | NEMA 4 for NEMA 4 indoor only<br>NEMA 12                                                                                                         |         |                                                    |         |         |         |
| 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... & SV-D.../604<br>SV-DLE.../604                                                                                                             |         | < 1 s<br>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-D... & SV-DLE.../604 0 to 100 % of total flow; 0 to 100% of stroke.<br>When adjusted to low flows, flow repeatability upon opening is +/-15%. |         |                                                    |         |         |         |
| Materials in contact with gas                       | Housing: Aluminium, Steel; free of non-ferrous metals<br>Sealings on valve seats: NBR-based rubber                                               |         |                                                    |         |         |         |
| Ambient temperature rating                          | -20 °F to +140 °F (-29 °C to +60 °C)                                                                                                             |         |                                                    |         |         |         |
| Installation position                               | Safety shut off valve from vertically upright to horizontal                                                                                      |         |                                                    |         |         |         |
| Test ports /<br>Pressure switch mounting ports      | G 1/8 ISO 228 ports available.<br>See page 3 and 4 for details.                                                                                  |         |                                                    |         |         |         |
| Gas strainer (standard)                             | Installed in the housing upstream (23 mesh)                                                                                                      |         |                                                    |         |         |         |
| CPI 400 Closed Position Indicator Switch (optional) | SPDT switch with indication lamps: AC max. 10 A resistive @ 120 VAC<br>AC max. 8 A inductive @ 120 VAC                                           |         |                                                    |         |         |         |
| Valve proving system                                | Requires VPS 504; mounts directly to either side of SV... 1010 - 1020 only                                                                       |         |                                                    |         |         |         |



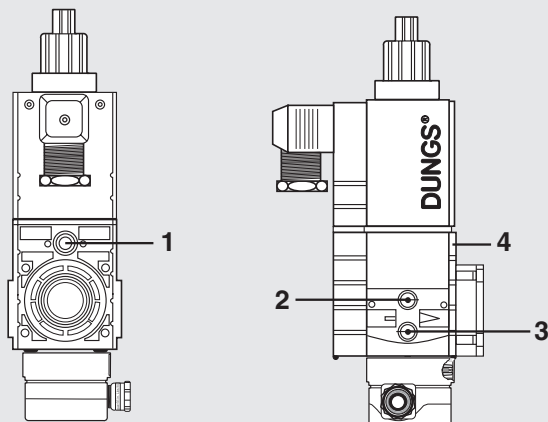
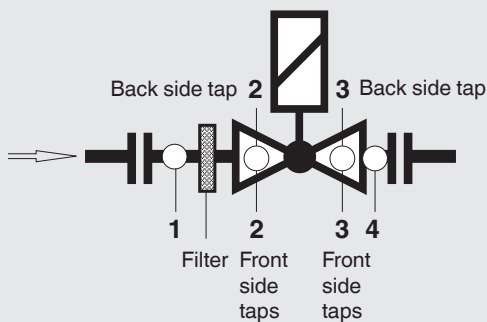
**!** When an accessory is added to the SV..., it may not be possible to mount other devices.

### 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 (# 219008) can be screwed into any of the test ports.

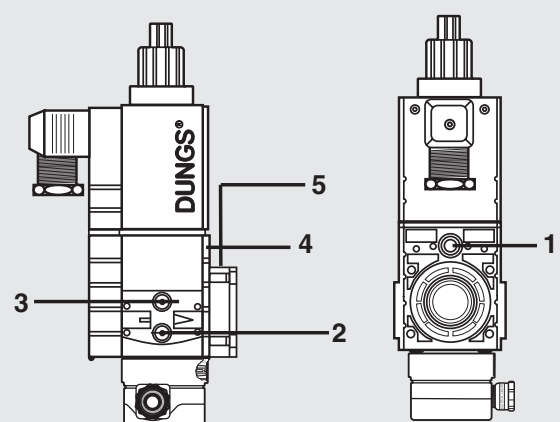
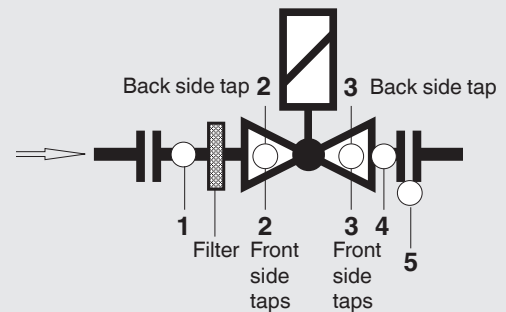
**!** The position of the side taps #2 and #3 on the SV... 1005/1007 are not the same as on the SV... 1010-1020 valves.

### SV...: 1005, 1007



### SV...: 1010, 1012

### SV...: 1015, 1020

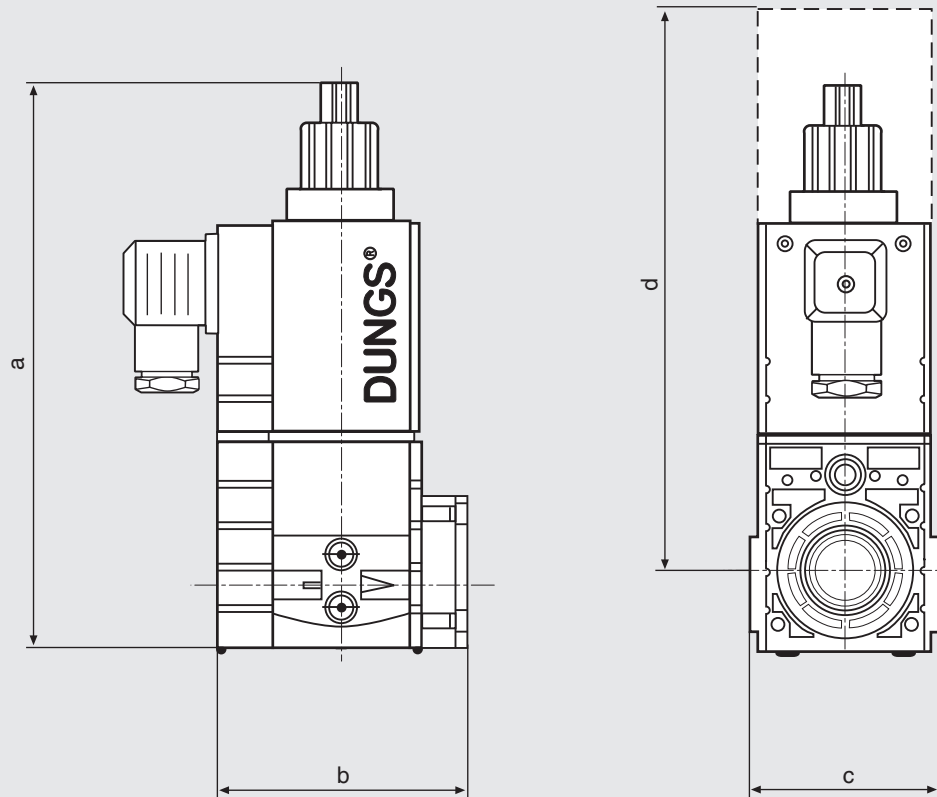


| Feature                                                | SV-D Model | SV Model  |           | SV-DLE Model |           |           |
|--------------------------------------------------------|------------|-----------|-----------|--------------|-----------|-----------|
|                                                        | 1005/1007  | 1010/1012 | 1015/1020 | 1005/1007    | 1010/1012 | 1015/1020 |
| <b>Main flow adjustment</b>                            | X          | -         | -         | X            | X         | X         |
| <b>Slow opening</b>                                    | -          | -         | -         | X            | X         | X         |
| <b>Strainer</b>                                        | X          | X         | X         | X            | X         | X         |
| <b>Ports for field mountable gas pressure switch</b>   | X          | X         | X         | X            | X         | X         |
| GAO, GMH, GML..A2 valve inlet (Port 1)                 | -<br>3     | X         | X         | -<br>3       | X         | (X)       |
| GAO, GMH, GML..A2 valve outlet, (Port 4)               | -<br>3     | (X)       | (X)       | -<br>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         |
| <b>Flange installed on outlet</b>                      | X          | X         | X         | X            | X         | X         |
| <b>Flange installed on inlet</b>                       | (X)        | (X)       | (X)       | (X)          | (X)       | (X)       |
| <b>Ignition gas flange NPT 1/2 (225043)</b>            | -          | (X)       | (X)       | -            | (X)       | (X)       |
| <b>1/4" NPT Adapter both sides upstream (225047)</b>   | (X)        | (X)       | (X)       | (X)          | (X)       | (X)       |
| <b>1/4" NPT Adapter both sides downstream (225047)</b> | -          | (X)       | (X)       | -            | (X)       | (X)       |
| <b>Valve proving system VPS 504 S06 (221073)</b>       | 1          | (X)       | (X)       | 1            | (X)       | (X)       |
| <b>G 1/8 Test Nipple (219008)</b>                      | 2          | 2         | 2         | 2            | 2         | 2         |

|     |                                                    |
|-----|----------------------------------------------------|
| -   | Not available / Not possible                       |
| X   | Standard                                           |
| (X) | Optional                                           |
| 1   | Alternative valve proving system: VDK 200 (216352) |
| 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... inch (mm)



d = Space required for replacing solenoid

| Type            | Order No.<br>120 VAC @<br>50-60 Hz | Pressure <sub>max.</sub><br>[PSI] | Size      | Dimensions [inch]<br>Dimensions [mm] |            |            |             | Rating<br>[VA] | Weight [lbs]<br>[kg] |
|-----------------|------------------------------------|-----------------------------------|-----------|--------------------------------------|------------|------------|-------------|----------------|----------------------|
|                 |                                    |                                   |           | a                                    | b          | c          | d           |                |                      |
| SV-D 1005/604   | 288491                             | 10                                | NPT 1/2   | 6.0<br>152                           | 3.8<br>96  | 2.4<br>62  | 8.5<br>215  | 20             | 3.3<br>1.5           |
| SV-D 1007/604   | 288492                             | 10                                | NPT 3/4   | 6.0<br>152                           | 3.8<br>96  | 2.4<br>62  | 8.5<br>215  | 20             | 3.3<br>1.5           |
| SV 1010/604     | 267103                             | 10                                | NPT 1     | 9.2<br>233                           | 4.6<br>116 | 3.4<br>87  | 10.9<br>277 | 25             | 9.3<br>4.2           |
| SV 1012/604     | 267104                             | 10                                | NPT 1 1/4 | 9.2<br>233                           | 4.6<br>116 | 3.4<br>87  | 10.9<br>277 | 25             | 9.3<br>4.2           |
| SV 1015/604     | 267105                             | 10                                | NPT 1 1/2 | 12.0<br>305                          | 6.5<br>165 | 4.5<br>115 | 14.6<br>370 | 45             | 16.1<br>7.3          |
| SV 1020/604     | 267106                             | 10                                | NPT 2     | 12.0<br>305                          | 6.5<br>165 | 4.5<br>115 | 14.6<br>370 | 45             | 16.1<br>7.3          |
| SV-DLE 1005/604 | 267107                             | 10                                | NPT 1/2   | 8.1<br>205                           | 3.8<br>96  | 2.4<br>62  | 8.5<br>215  | 20             | 3.5<br>1.6           |
| SV-DLE 1007/604 | 267108                             | 10                                | NPT 3/4   | 8.1<br>205                           | 3.8<br>96  | 2.4<br>62  | 8.5<br>215  | 20             | 3.5<br>1.6           |
| SV-DLE 1010/604 | 267109                             | 10                                | NPT 1     | 10.5<br>266                          | 4.6<br>116 | 3.4<br>87  | 10.9<br>277 | 25             | 9.3<br>4.2           |
| SV-DLE 1012/604 | 267110                             | 10                                | NPT 1 1/4 | 10.5<br>266                          | 4.6<br>116 | 3.4<br>87  | 10.9<br>277 | 25             | 9.3<br>4.2           |
| SV-DLE 1015/604 | 267111                             | 10                                | NPT 1 1/2 | 12.0<br>305                          | 6.5<br>165 | 4.6<br>116 | 14.6<br>370 | 45             | 16.1<br>7.3          |
| SV-DLE 1020/604 | 267112                             | 10                                | NPT 2     | 12.0<br>305                          | 6.5<br>165 | 4.6<br>116 | 14.6<br>370 | 45             | 16.1<br>7.3          |

## Valve Accessories

| *Flange kit       | Size  | NPT Part # | Rp Part # |
|-------------------|-------|------------|-----------|
| SV... 1005 / 1007 | 1/2   | 242650     | 242220    |
| SV... 1005 / 1007 | 3/4   | 242651     | 242221    |
| SV... 1010 / 1012 | 1/2   | 242653     | 242223    |
| SV... 1010 / 1012 | 3/4   | 242654     | 242224    |
| SV... 1010 / 1012 | 1     | 242655     | 242225    |
| SV... 1010 / 1012 | 1 1/4 | 242656     | 242226    |
| SV... 1010 / 1012 | 1 1/2 | 245563     | 243817    |
| SV... 1015 / 1020 | 1     | 242657     | 242227    |
| SV... 1015 / 1020 | 1 1/4 | 242658     | 242228    |
| SV... 1015 / 1020 | 1 1/2 | 242659     | 242229    |
| SV... 1015 / 1020 | 2     | 242660     | 242230    |

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



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.

## 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 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 4 cover available.

### Adapters

- 1/4" NPT adapter (225047)
- 1/2" NPT Pilot gas adapter; Check flow requirements. (225043)
- G 1/8" Test nipple (219008)

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.

### 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 table 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.

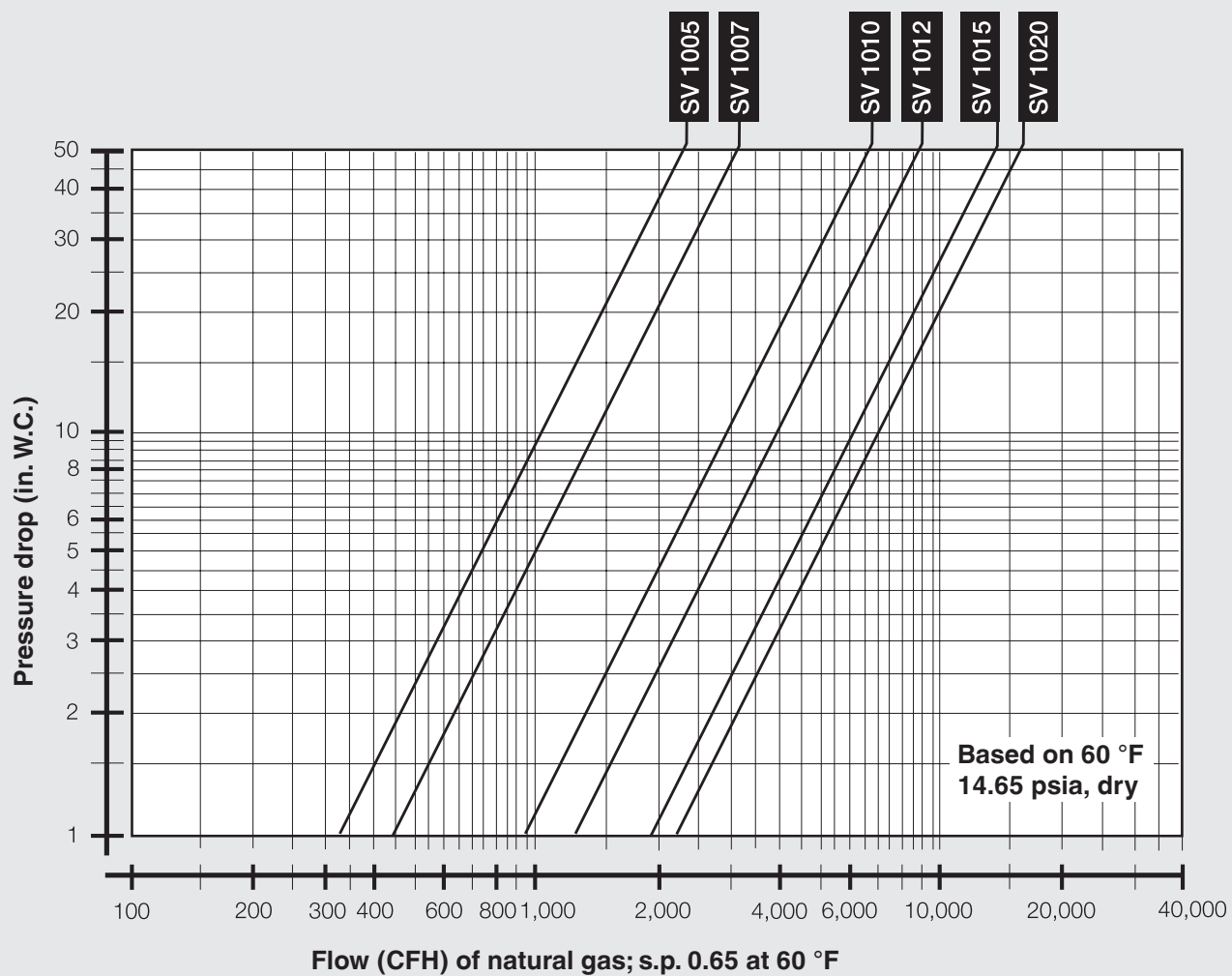
## Determining equivalent flow through valves using another gas

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

$$f = \sqrt{\frac{\text{Density of Natural gas}}{\text{Density of gas used}}}$$

| Type of gas | Density [kg/m³] | s.g. | 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 |

## Flow curve



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

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

**SV/604 Series**  
**SV-D/604 Series**  
**SV-DLE/604 Series**

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