



SGOV – Features

- Uniform discharge
- Self cleaning to prevent clogging
- Efficient, precision control
- Simple, robust design
- Low maintenance
- Manual or automatic operation
- Accurate repeatability of settings

General

SGOV graduated oil valves provide accurate flow control for many different fluids. Primarily designed for the metering of fuel on oil burners, these valves have been used to closely control the flow on a variety of fluids in many applications.

The standard valves operate with a typical pressure drop of up to 6.5bar, and have a maximum operating pressure of 13bar. (Consult FNAC for higher pressures).

Graduated Disc Valves - SDV.A and SDV.B

The standard valves are constructed with brass or mild steel body forgings and aluminium caps. The valves give exceptionally good control by means of rotating a mild steel disc over a fixed port on the valve body. The surfaces of both body and disc are lapped to ensure accurate flow measurement. Different sizes of 'V' grooves are machined into the mild steel discs, each size of groove gives its own unique flow characteristic as it is rotated over the metering port.

The flow is regulated by a hand wheel or lever and if required can be fitted with special adjustable radius levers, which then enables the valve to be linked to an electric or pneumatic actuator. It is also possible to link the valves in tandem with other sizes of valve or with air/gas control valves, thus giving a wide range of options for controlling liquid fuels and gases all by one operating arm.

Graduated Cam Valves – SCV

This range of valves is constructed in a similar manner to the disc valves. The difference being that a three dimensional metering 'V' slot is machined into the surface of the valve body and a specially profiled cam takes the place of the disc. Flow control takes place as the cam is rotated over the 'V' slot. Hand and automatic operating features are as for the disc valves.

Valve selection

Valve selection depends upon the fuel used and the pressure drop allowable across the valve (see capacity tables). When sizing a valve, the following information will be required:

- a) Fuel
- b) Oil flow rate
- c) Supply pressure at valve inlet
- d) Supply temperature at valve inlet
- e) Allowable pressure drop across valve.

Installation

The installation of the SGOV valve is quite straightforward and the valve can be mounted in any attitude. Care must be taken to correctly seal the pipe threads to prevent leakage.



Dimensions and Capacities

Flow data for SDV.A valves – capacities in l/h

| Valve type | Size | Weight (kg) | Pressure drop (bar) | | | | | | | | | |
|------------|-------|-------------|---------------------|------|------|------|------|-----|------|-----|------|------|
| | | | 0.07 | 0.35 | 0.7 | 1.1 | 1.4 | 2.1 | 2.8 | 3.5 | 5.3 | 7.0 |
| SDV.A20 | Rp3/8 | | 5.5 | 13.2 | 17.7 | 21.8 | 25 | 31 | 35.9 | 40 | 49.1 | 56.8 |
| SDV.A30 | Rp3/8 | | 15.5 | 36.3 | 48.6 | 60 | 69.1 | 84 | 97.7 | 109 | 134 | 155 |
| SDV.A40 | Rp3/8 | | 32.7 | 76.8 | 103 | 127 | 147 | 180 | 207 | 232 | 285 | 329 |
| SDV.A50 | Rp3/8 | | 53.6 | 120 | 170 | 208 | 240 | 294 | 340 | 378 | 461 | 536 |
| SDV.A60 | Rp3/8 | | 72.7 | 162 | 230 | 281 | 325 | 397 | 457 | 510 | 627 | 727 |

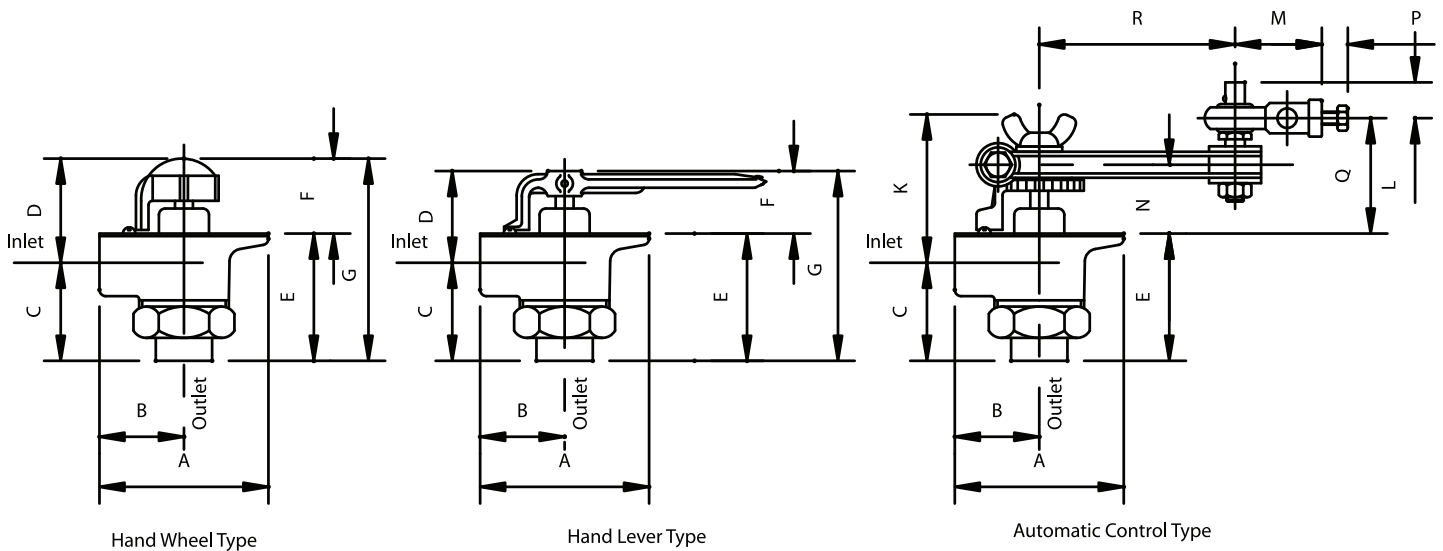
Note 1: The above figures are for maximum flow when the valve indicator is 180° from the zero position.

Note 2: When valves are to be operated automatically the actuator may restrict movement of the lever arm to 90°. In such cases, size the valve for double the flow indicated in the above chart.

Note 3: Do not oversize the valve or turn-down will be difficult to control.

Note 4: The above capacities are based on No.2 fuel oil having a specific gravity of 0.849 @ 22°C.

Dimensional data for SDV.A valves



| Valve type | Dimensions (mm) | | | | | | | | | | | | | | | |
|-------------------|-----------------|----|----|----|------|----|-----|-----|------|----|----|------|----|------|----|-----------|
| | A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q | R |
| Hand wheel | 81 | 41 | 48 | 54 | 63.5 | 38 | 102 | - | - | - | - | - | - | - | - | - |
| Hand lever | 81 | 41 | 48 | 54 | 63.5 | 38 | 102 | 105 | 63.5 | - | - | - | - | - | - | - |
| Automatic control | 81 | 41 | 48 | - | 63.5 | - | - | - | - | 83 | 14 | 52.4 | 38 | 25.4 | 57 | 29 to 111 |

Dimensions and Capacities

Flow data for SDV.B valves – capacities in l/h

| Valve type | Size | Weight (kg) | Pressure drop (bar) | | | | | | | | | |
|------------|-------|-------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | 0.07 | 0.35 | 0.7 | 1.1 | 1.4 | 2.1 | 2.8 | 3.5 | 5.3 | 7.0 |
| SDV.B20 | Rp3/8 | | 5.3 | 12.5 | 16.7 | 20.5 | 23.9 | 29.2 | 33.3 | 37.5 | 45.9 | 53.1 |
| SDV.B30 | Rp3/8 | | 16.7 | 39.0 | 52.6 | 64.8 | 74.7 | 91.4 | 105.0 | 117.3 | 144.3 | 166.7 |
| SDV.B40 | Rp3/8 | | 32.2 | 75.0 | 101.5 | 124.6 | 144.0 | 176.2 | 203.1 | 226.9 | 280.0 | 321.9 |
| SDV.B50 | Rp3/8 | | 47.4 | 106.1 | 149.6 | 183.7 | 211.8 | 259.6 | 299.6 | 335.0 | 409.1 | 472.8 |
| SDV.B60 | Rp3/8 | | 84.6 | 197.3 | 266.9 | 327.3 | 378.2 | 462.3 | 534.2 | 594.6 | 731.0 | 844.7 |

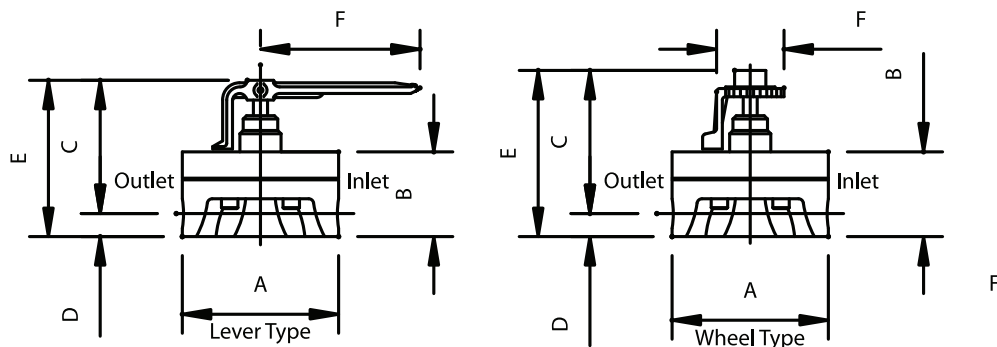
Note 1: The above figures are for maximum flow when the valve indicator is 180° from the zero position.

Note 2: When valves are to be operated automatically the actuator may restrict movement of the lever arm to 90°. In such cases, size the valve for double the flow indicated in the above chart.

Note 3: Do not oversize the valve or turn-down will be difficult to control.

Note 4: The above capacities are based on No.2 fuel oil having a specific gravity of 0.849 @ 22°C.

Dimensional data for SDV.B valves



| Valve type | Dimensions (mm) | | | | | |
|------------|-----------------|----|------|----|-----|----|
| | A | B | C | D | E | F |
| Hand wheel | 95 | 51 | 89 | 12 | 101 | 44 |
| Hand lever | 95 | 51 | 82.5 | 12 | 95 | 98 |

Dimensions and Capacities

Flow data for SDV valves – capacities in l/h

| Valve type | Size | Weight (kg) | Pressure drop (bar) | | | | | | | | | |
|------------|-------|-------------|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 0.07 | 0.35 | 0.7 | 1.1 | 1.4 | 2.1 | 2.8 | 3.5 | 5.3 | 7.0 |
| SCV.M1 | Rp3/8 | | 3.03 | 6.07 | 8.80 | 10.60 | 12.40 | 15.13 | 17.60 | 19.60 | 24.27 | 30.33 |
| SCV.M2 | Rp3/8 | | 6.06 | 13.33 | 19.07 | 23.67 | 25.13 | 33.33 | 37.87 | 43.00 | 50.60 | 60.67 |
| SCV.M3 | Rp3/8 | | 15.13 | 33.33 | 48.47 | 57.53 | 66.67 | 82.00 | 96.67 | 106.00 | 133.33 | 151.33 |
| SCV.M4 | Rp3/8 | | 30.33 | 57.60 | 88.00 | 106.00 | 124.00 | 151.33 | 176.00 | 194.00 | 239.33 | 303.33 |
| SCV.M5 | Rp3/8 | | 42.40 | 100.00 | 139.33 | 170.00 | 194.00 | 239.33 | 278.67 | 312.00 | 378.67 | 439.33 |
| SCV.M6 | Rp1/2 | | 63.60 | 142.67 | 200.00 | 245.33 | 282.00 | 342.67 | 400.00 | 442.67 | 545.33 | 636.67 |
| SCV.M7 | Rp1/2 | | 115.33 | 245.33 | 351.33 | 430.67 | 494.00 | 606.00 | 703.33 | 788.00 | 970.00 | 1121.33 |
| SCV.M8 | Rp1/2 | | 133.33 | 294.0 | 415.33 | 506.00 | 590.67 | 727.33 | 824.67 | 927.33 | 1136.00 | 1318.67 |
| SCV.N9 | Rp1/2 | | 166.67 | 372.67 | 524.00 | 648.67 | 724.67 | 909.33 | 1045.33 | 1182.00 | 1439.33 | 1666.67 |
| SCV.N10 | Rp1/2 | | 251.33 | 560.67 | 803.33 | 970.00 | 1136.67 | 1394.00 | 1591.33 | 1788.00 | 2197.33 | 2530.67 |
| SCV.P11 | Rp1 | | 281.50 | 658.30 | 889.10 | 1089.60 | 1259.80 | 1539.80 | 1774.30 | 1986.20 | 2436.50 | 2814.80 |
| SCV.P12 | Rp1 | | 354.67 | 833.33 | 1166.67 | 1424.67 | 1666.67 | 2030.67 | 2333.33 | 2621.33 | 3182.00 | 3788.67 |
| SCV.Q13 | Rp1 | | 659.00 | 1477.00 | 2091.00 | 2546.00 | 2909.00 | 3637.00 | 4205.00 | 4660.00 | 5683.00 | 6592.00 |

Note 1: The above figures are for maximum flow when the valve indicator is 180° from the zero position, except for the SCV.Q13 which is when the valve indicator is 135° from the zero position.

Note 2: When valves are to be operated automatically the actuator may restrict movement of the lever arm to 90°. In such cases, size the valve for double the flow indicated in the above chart.

Note 3: Do not oversize the valve or turn-down will be difficult to control.

Note 4: The above capacities are based on No.2 fuel oil having a specific gravity of 0.849 @ 22°C.

Oil Viscosity

The specified capacities are based on the use of light fuel oil with a viscosity of 4.5 cst. For heavier oils, the valve capacities would depend on the viscosity of the oil at the valve inlet which is dependent on the oil supply temperature.

The approximate percentage of capacity on heavy oil would be as follows:

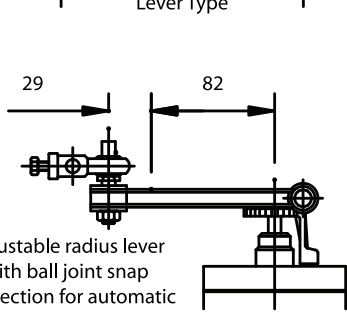
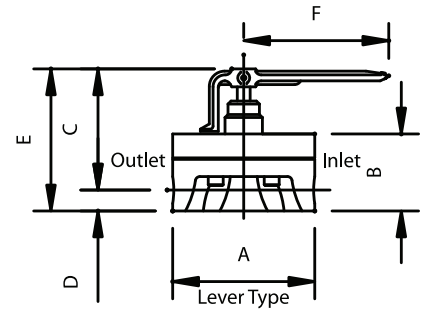
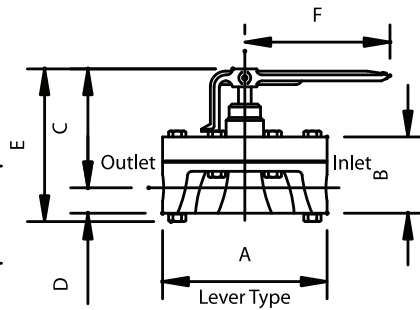
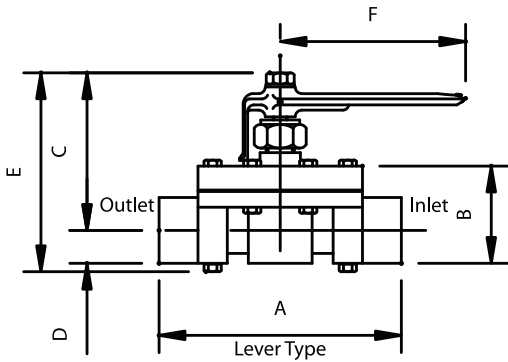
| Viscosity (centistokes) | Oil temperature at valve inlet (°C) | Percentage capacity |
|-------------------------|-------------------------------------|---------------------|
| 55 | 43 | 70% |
| | 60 | 90% |
| 235 | 49 | 50% |
| | 82 | 80% |
| 864 | 43 | 35% |
| | 135 | 95% |

Dimensional data for SDV valves

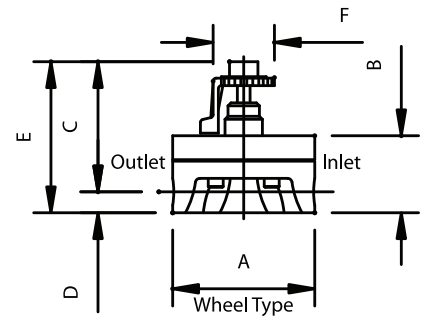
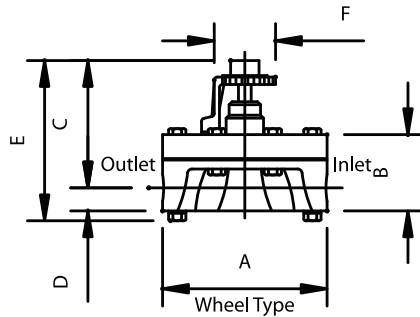
Graduated Cam Oil Valve SCV.M6-N10 & X6-X10

Graduated Cam Oil Valve. SCV.P11, P12, Q13, X12, Z13 & Z14

Graduated Cam Oil Valve SCV.M1-M5



Adjustable radius lever with ball joint snap connection for automatic control can be supplied



| Graduated Disc Valve Type SCV | |
|-------------------------------|-------|
| Dimension | Lever |
| A | 162 |
| B | 65 |
| C | 111 |
| D | 22 |
| E | 133 |
| F | 124 |

| Graduated Disc Valve Type SCV | | |
|-------------------------------|-------|-------|
| Dimension | Lever | Wheel |
| A | 110 | 110 |
| B | 51 | 51 |
| C | 79 | 86 |
| D | 17 | 22 |
| E | 102 | 108 |
| F | 97 | 41 |

| Graduated Disc Valve Type SCV | | |
|-------------------------------|-------|-------|
| Dimension | Lever | Wheel |
| A | 110 | 110 |
| B | 51 | 51 |
| C | 79 | 86 |
| D | 17 | 22 |
| E | 102 | 108 |
| F | 97 | 41 |

WARNING: The data outlined is for information only and does not form part of any contract. Our policy is one of continuous improvement and we therefore reserve the right to modify specifications or dimensions without prior warning. Situations dangerous to personnel and property can develop from incorrect installation and operation of combustion equipment. Fives North American Combustion UK, Ltd urges compliance with International, National and Local Safety Standards and that installation is carried out by properly qualified personnel.

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