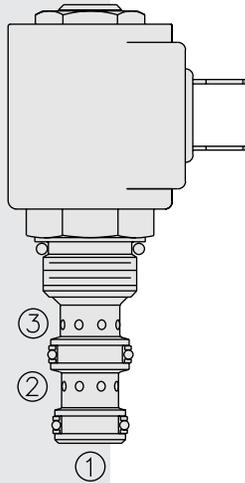# SV08-31 Spool, 3-Way

DESCRIPTION

A solenoid-operated, three-way, direct-acting, spool-type, screw-in hydraulic cartridge valve.

OPERATION

When de-energized, the **SV08-31** allows flow from 2 to 1, while blocking flow at 3. When energized, the valve's spool shifts to open from 1 to 3, while blocking at 2. While port 1 may be fully pressurized, it is not intended to be used as the inlet.

Operation of Manual Override Option: To override, push button in and twist counterclockwise 180°. The internal spring will push the button out. In this position, the valve may be only partially shifted. To assure full override shift, pull the button out to its fullest extension and hold it in this position.
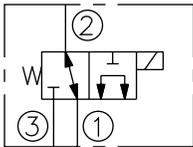
To return to normal valve function, push button in, twist clockwise 180° and release. Override will be detented in this position.
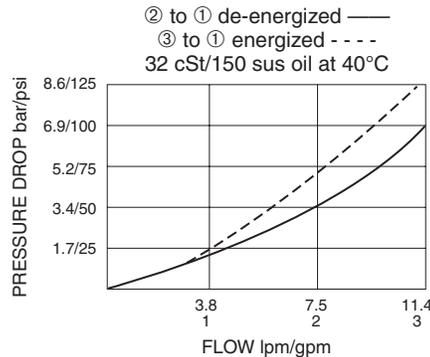
FEATURES

- Continuous-duty rated solenoid.
- Hardened precision spool and cage for long life.
- Optional coil voltages and terminations.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- All ports may be fully pressurized.
- Manual override option.
- Optional waterproof E-Coils rated up to IP69K.
- Unitized molded coil design.
- Compact size.

RATINGS

Operating Pressure: 207 bar (3000 psi)

Flow: See Performance Chart; Note: Under certain operating conditions this valve may be rated for higher flow. Consult factory.

Internal Leakage: 82 cc/minute (5 cu. in./minute) max. at 207 bar (3000 psi)

Temperature: -40 °C to 120 °C with standard Buna seals; -26 °C to 204 °C with Fluorocarbon seals; -54 °C to 107 °C with Polyurethane seals

Coil Duty Rating: Continuous from 85% to 115% of nominal voltage

Response Time: First indication of change of state with 100% voltage supplied at 80% of nominal flow rating: Energized: 30 ms; De-energized: 25 ms

Initial Coil Current Draw at 20 °C: Standard Coil: 1.2 A at 12 Vdc; 0.13 A at 115 Vac (full wave rectified). E-Coil: 1.4 A at 12 Vdc; 0.7 A at 24 Vdc

Minimum Pull-in Voltage: 85% of nominal at 207 bar (3000 psi)

Filtration: See page 9.010.1

Fluids: Mineral-based or synthetics with lubricating properties at viscosities of 7.4 to 420 cSt (50 to 2000 sus); See Temperature and Oil Viscosity, page 9.060.1

Installation: No restrictions; See page 9.020.1

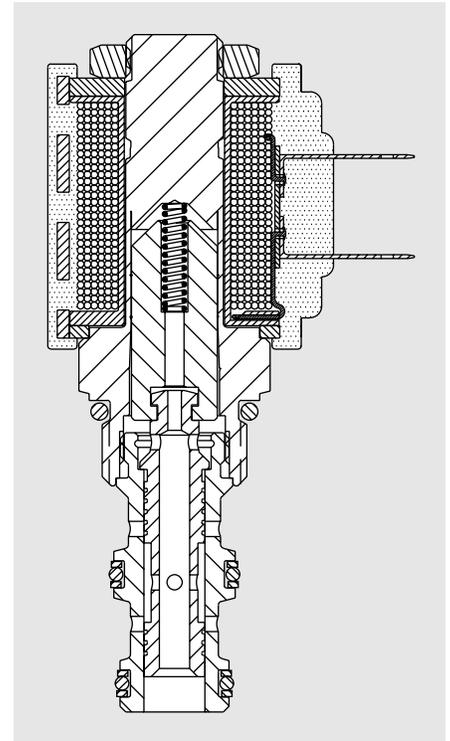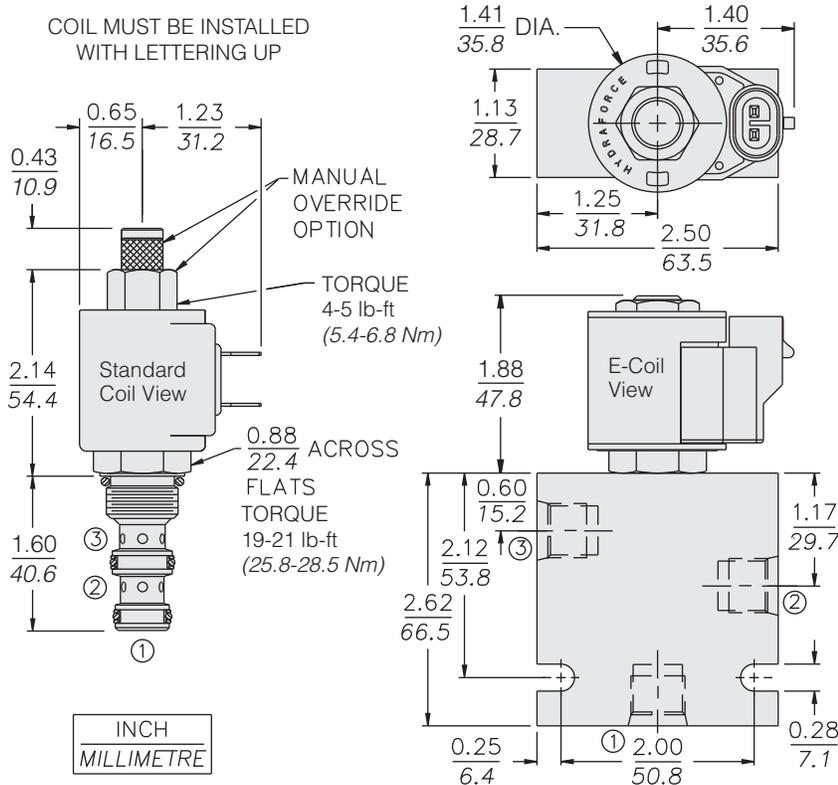**Cavity:** VC08-3; See page 9.108.1

Cavity Tool: CT08-3XX; See page 8.600.1

Seal Kit: SK08-3X-MM; See page 8.650.1

Coil Nut: Part No. 7004400; For E-coils manufactured prior to 1-1-04, see page 3.400.1 for coil nut info.

SYMBOLS

USASI/ISO:

PERFORMANCE (Cartridge Only)

② to ① de-energized ——
③ to ① energized - - - -
32 cSt/150 sus oil at 40°C

DIMENSIONS

COIL MUST BE INSTALLED WITH LETTERING UP

0.65 / 16.5   1.23 / 31.2
0.43 / 10.9
MANUAL OVERRIDE OPTION
TORQUE 4-5 lb-ft (5.4-6.8 Nm)
Standard Coil View
2.14 / 54.4
0.88 / 22.4 ACROSS FLATS TORQUE 19-21 lb-ft (25.8-28.5 Nm)
1.60 / 40.6 ③ ② ①

INCH / MILLIMETRE

1.41 / 35.8 DIA.   1.40 / 35.6
1.13 / 28.7
1.25 / 31.8   2.50 / 63.5

1.88 / 47.8 E-Coil View
0.60 / 15.2 1.17 / 29.7
2.12 / 53.8 ③
2.62 / 66.5 ②
0.25 / 6.4 ① 2.00 / 50.8 0.28 / 7.1

MATERIALS

Cartridge: Weight: 0.13 kg (0.28 lb); Steel with hardened work surfaces. Zinc-plated exposed surfaces; Buna N O-rings and back-ups standard.

Standard Ported Body: Weight: 0.27 kg (0.60 lb); Anodized high-strength 6061 T6 aluminum alloy, rated to 207 bar (3000 psi); Ductile iron bodies available; dimensions may differ.
See page 8.008.1.

Standard Coil: Weight: 0.11 kg (0.25 lb); Unitized thermoplastic encapsulated, Class H high temperature magnet wire. See page 3.200.1.

E-Coil: Weight: 0.14 kg (0.3 lb); Perfect wound, fully encapsulated with rugged external metal shell; Rated up to IP69K with integral connectors.
See page 3.400.1 for all E-Coil retrofit applications.

TO ORDER

SV08-31___ - _____ - __ - _____

Option
None (Blank)
Manual Override **M**
For Manual Override options see page 1.001.1

Porting
Cartridge Only **0**
SAE 6 **6T**
3/8 in. BSP* **3B**
*BSP Body; U.K. Mfr. Only

Seals
Buna N (Std.) **N**
Fluorocarbon **V**
Polyurethane **P**

Voltage Std. Coil
0 Less Coil**
10 10 Vdc†
12 12 Vdc
24 24 Vdc
36 36 Vdc
48 48 Vdc
24 24 Vac
115 115 Vac
230 230 Vac
**Includes Std. Coil Nut
† DS, DW or DL terminations only.

E-Coil
10 10 Vdc
12 12 Vdc
20 20 Vdc
24 24 Vdc

Coil Termination	E-Coil	D-Coil
Deutsch DT04-2P	ER (IP69K)	DR (IP65)
Metri-Pack® 150	EY (IP69K)	DY (IP65)
Dual Lead Wires	EL (IP69K)	DL (IP65)
Amp Jr. Timer	EJ (IP67)	—
DIN 43650	EG (IP65)	DG (IP65)
Dual Spades	—	DS (IP65)

For Coils with Zener Diode, add "**/Z**" to option code. For example: "**ER/Z**". Not available on all models. See coil option info. on pages 3.200.1 & 3.400.1