# DPS2-20 - Logic element

Differential pressure sense valves
303 L/min (80 USgpm) • 210, 350 bar (3000, 5000 psi)

### Functional symbols

See pages I-142 & I-143

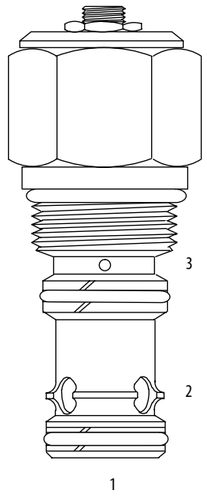
### Operation

This valve is used as a main section of a pilot controlled valve assembly. This valve has multiple uses when used with either directional control, flow control or pressure control cartridges. Refer to application examples.

### Features

Hardened and ground and honed working components. Cartridge construction for maximum mounting flexibility. Low leakage with poppet valves and 350 bar pressure rating.

### Sectional view




### Performance data

**Ratings and specifications**

| *Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49° C (120° F)* | |
|---|---|
| Typical application pressure | Spool type: 290 bar (4200 psi)<br>Poppet type: 210 bar (3000 psi) or 350 bar (5000 psi) |
| Rated flow | 303 L/min (80 USgpm) |
| Pilot ratio | Spool type P, V, R, F: 1:1 |
| Internal leakage | Poppet type B, S, T: 2:1 |
| Temperature range | Spool type: 82 cm³/min. (5 in³/min) max @ 290 bar (4200 psi)<br>Poppet type: Port 1 to 2:< 5 drops/min max @ 350 bar (5000 psi) |
| Cavity | -40° to 120° C (-40° to 248° F) |
| Standard housing materials | C-20-3S |
| Fluids | Aluminium |
| Filtration | All general purpose hydraulics fluids such as:<br>MIL-H-5606, SAE 10, SAE 20 etc |
| Weight cartridge only | Cleanliness code 18/**16/13** |
| Seal kit | 0,81 kg (1.78 lbs) |
| | 02-113153 (Buna-N), 02-112969 (Viton®) |

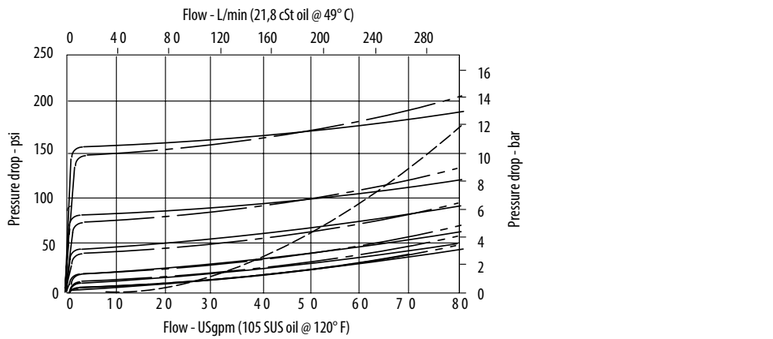
Viton is a registered trademark of E.I. DuPont

### Description

These are normally open or closed logic elements with or without a control orifice. They can be used as main valves for the control of high flows using small pilot cartridges, as compensators or load sense elements.

### Pressure drop curve

Cartridge only




*Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.*



# DPS2-20 - Logic element

Differential pressure sense valves
303 L/min (80 USgpm) • 210, 350 bar (3000, 5000 psi)

### Model code

**DPS2** – **20** **(V)** – ***** – ***** – ****** – ******* – ******
1 2 3 4 5 6 7 8

**1 Function**

**DPS2** - Differential pressure sensing

**Size**

**20 - 20 size**

**3 Seal material**

**Blank** - Buna-N
**V** - Viton®

**4 Function**

**B** - Poppet, vent to open, N/C
**S** - Poppet, vent to open, N/C
**T** - Poppet, bi-directional, pilot to close, 2:1 ratio, N/C
**P** - Spool, N/C (L/S element)
**V** - Spool, N/C
**R** - Spool, pressure reducing, N/O
**F** - Spool, flow control, N/O (hydrostat)

**5 Port size**

**0** - Cartridge only

| Code | Port size | Housing number |
|---|---|---|
| | | **Aluminium** |
| **8B** | 1" BSPP | 02-175472* |
| **16T** | SAE 16 | 566415* |
| **12H** | SAE 12 | 876741 |
| **16H** | SAE 16 | 876743 |
| **6G** | 3/4" BSPP | 876740 |
| **8G** | 1" BSPP | 876742 |

* Light duty housing
See section J for housing details.

**6 Stroke adjustment**

**F** - None (Fixed stroke)
**S** - Screw adjustment

Screw adjustment is not available with F and R functions.

**7 Differential pressure**

**Note:** Code based on pressure in psi
**005** - 0,35 bar (5 psi)+*
**10** - 0,7 bar (10 psi)+*
**20** - 1,40 bar (20 psi)+*
**40** - 2,80 bar (40 psi)
**80** - 5,50 bar (80 psi)
**160** - 11,0 bar (160 psi)
+ Not available with the "B", "S" and "T" poppet.
* The operating back pressure at port 3 should never be less than 1.3 times the spring set pressure.

**8 Special features**

**00** - 210 bar (3000 psi) rated valve
**AA** - 350 bar (5000 psi) rated valve (poppet type only).

(Only required if valve has special features, omit if "00".)

### Dimensions

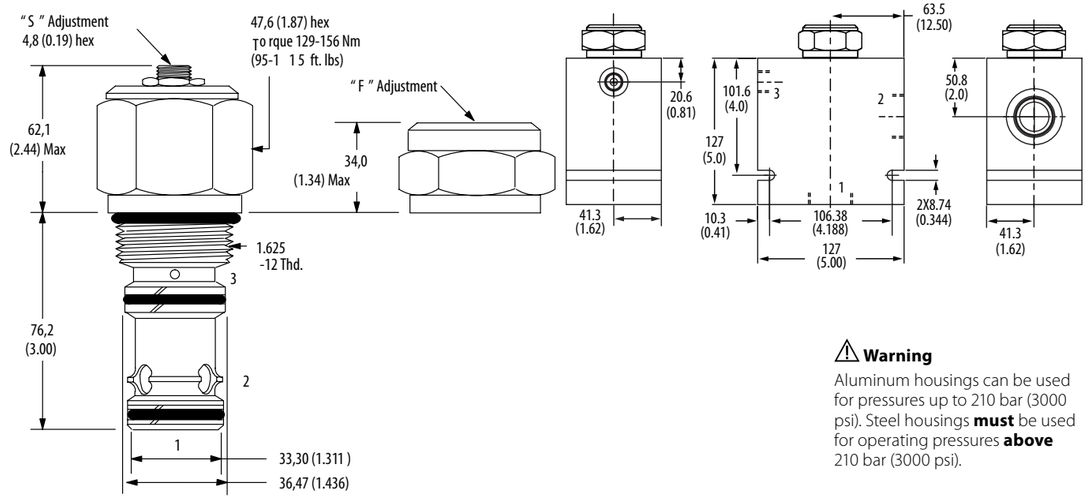
mm (inch)

**Cartridge only**

Torque cartridge in housing
**A** - 128-155 Nm (95-115 ft lbs)
**S** - 163-183 Nm (120-135 ft lbs)

**Note: For application at 350 bar (5000 psi) torque into steel housing to 205-218 Nm (150-160 ft. lbs) (for valves with "AA" special feature only).**

### Installation drawing




**⚠ Warning**

Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

*Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.*