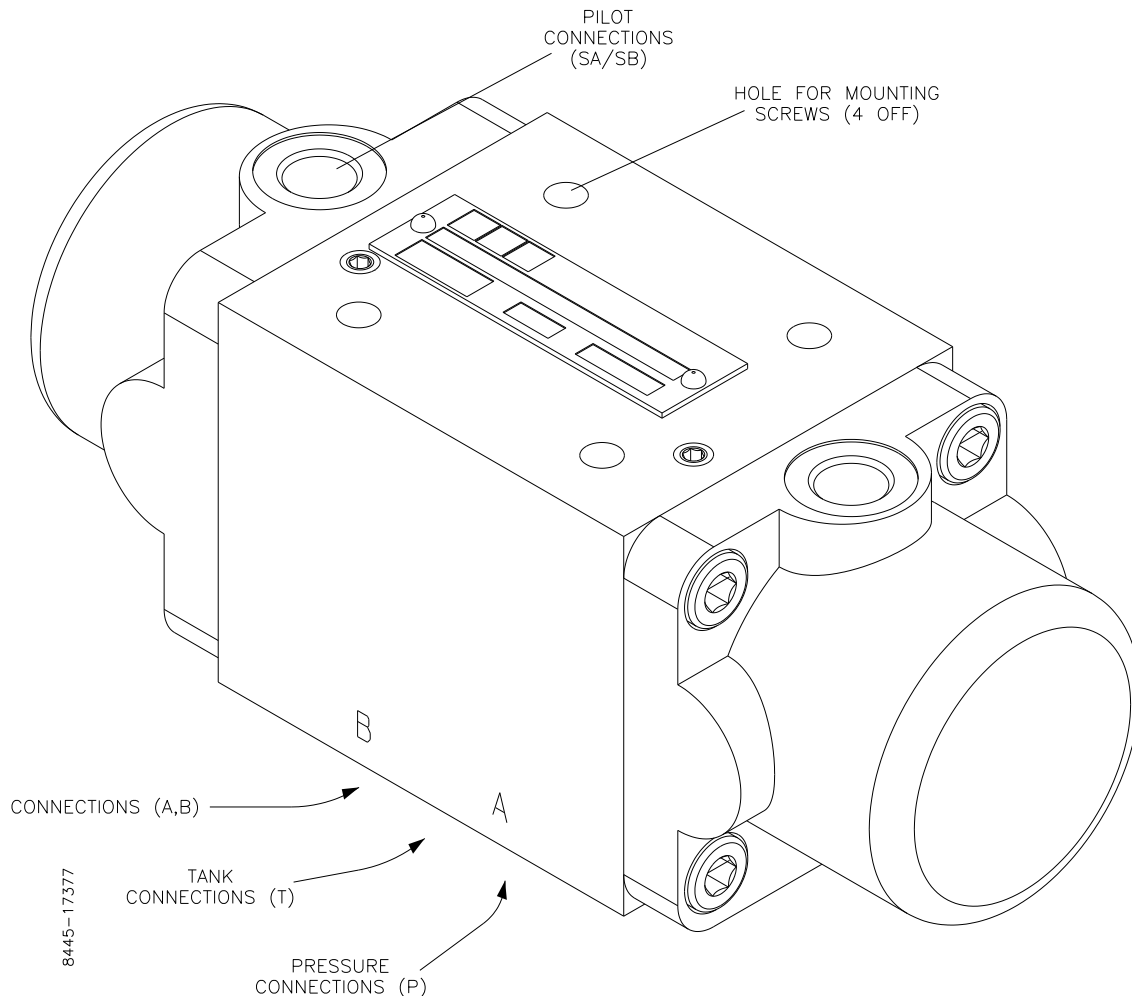


## DIRECTIONAL CONTROL VALVES 1STB442\*\*\*

### GENERAL DESCRIPTION



*Figure 1 1STB442\*\*\* General Arrangement*

The Directional Control Valves 1STB442\*\*\* are 4-ways seawater resistant valves for distribution and stopping of flow in hydraulic systems. The valves have the following characteristics:

- Delivered for gasket mounting to a sub plate according to ISO standard 4401.
- Remote controlled (on/off) by hydraulic pilot pressure.
- Delivered with a flow capacity up to 50 l/min (NG6/10 – ISO 03/05).
- Six standard spools for start and stop are available.
- A number of possibilities for spool positioning, spring or detents.

For more details about types and options, please refer to section 'Modular Code'.



**MODULAR CODE**

| Options                           | Remarks    | Design Code | Fill in    |
|-----------------------------------|------------|-------------|------------|
| <b>Mounting</b>                   |            |             | <b>1ST</b> |
| SUB Plate                         | ISO 4401   | <b>B</b>    | <b>B</b>   |
| <b>Type</b>                       |            |             |            |
| 4-ways                            | No options | <b>4</b>    | <b>4</b>   |
| <b>Pressure</b>                   |            |             |            |
| 350 bar                           | No options | <b>4</b>    | <b>4</b>   |
| <b>Operation</b>                  |            |             |            |
| Remote                            |            | <b>2</b>    | <b>2</b>   |
| <b>Size</b>                       |            |             |            |
| NG6 (ISO-03)                      | 25 l/min   | <b>1</b>    |            |
| NG10 (ISO-05)                     | 50 l/min   | <b>2</b>    |            |
| <b>Spool Type</b>                 |            |             |            |
|                                   |            | <b>01</b>   |            |
|                                   |            | <b>02</b>   |            |
|                                   |            | <b>03</b>   |            |
|                                   |            | <b>06</b>   |            |
|                                   |            | <b>07</b>   |            |
|                                   |            | <b>2C</b>   |            |
| <b>Spring / Detents Positions</b> |            |             |            |
| No spring                         |            | <b>0</b>    |            |
| Spring centred                    |            | <b>1</b>    |            |
| Spring offset to A                |            | <b>2</b>    |            |
| Spring offset to B                |            | <b>3</b>    |            |
| Spring offset to B, A blocked     |            | <b>8</b>    |            |

In example a 1STB442 valve with 25 l/min flow, spool type 02 and spring centred will have modular code: **1STB4421021**.

**DIMENSIONS**

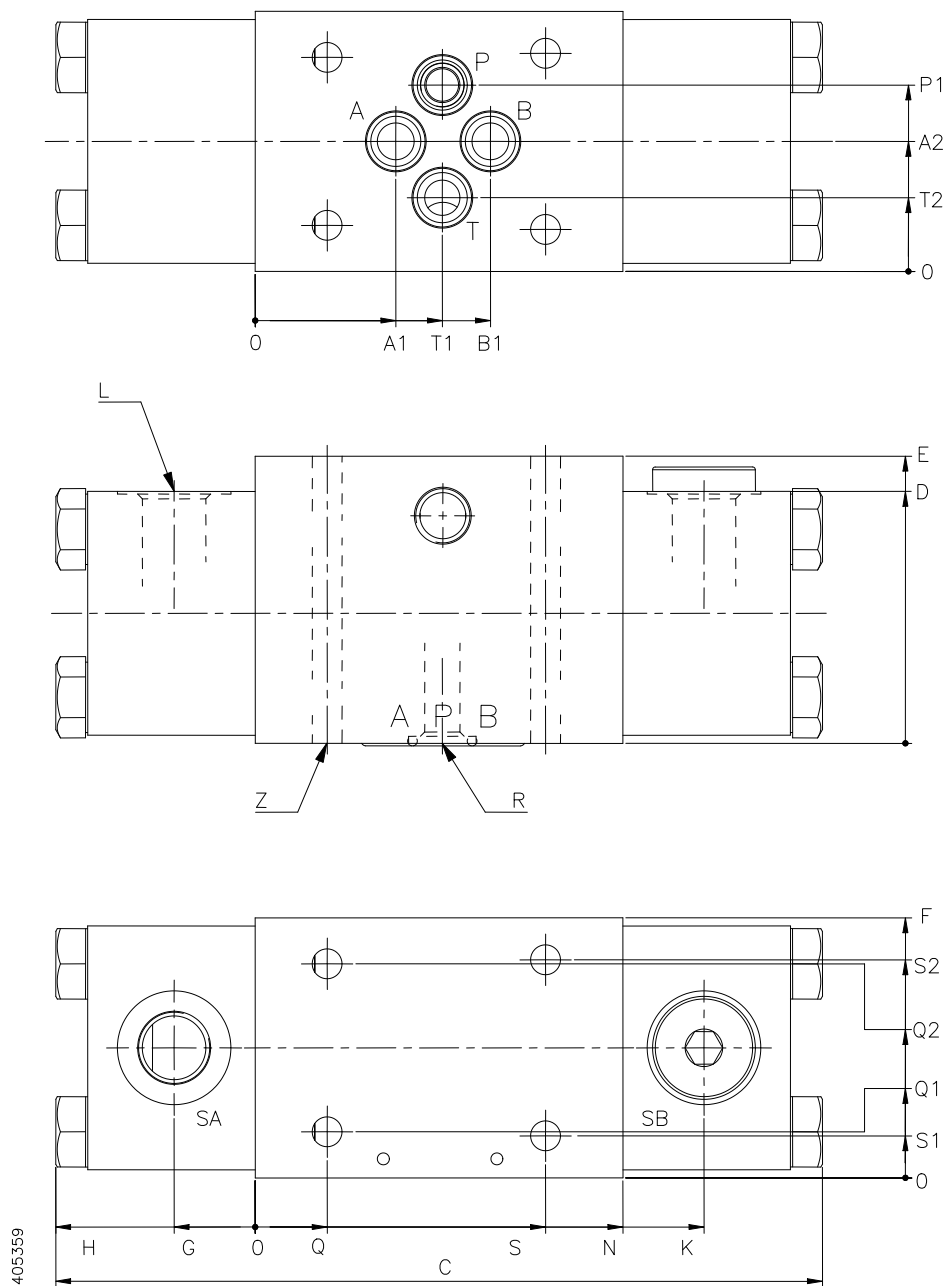


Figure 2 1STB4421 Dimensions

| Size [mm] | C    | D    | E    | F    | G    | H   | K    | N    | Z    | A1    | A2       |
|-----------|------|------|------|------|------|-----|------|------|------|-------|----------|
| 6         | 142  | 47   | 53   | 48   | 15   | 37  | 83   | 68   | 5.5  | 26    | 24       |
|           | B1   | T1   | T2   | P1   | Q    | Q1  | Q2   | S    | S1   | S2    | SA/SB    |
|           | 43.5 | 34.6 | 13.6 | 34.4 | 13.3 | 8.5 | 39.5 | 57.3 | 7.75 | 40.25 | 1/4"BSPP |

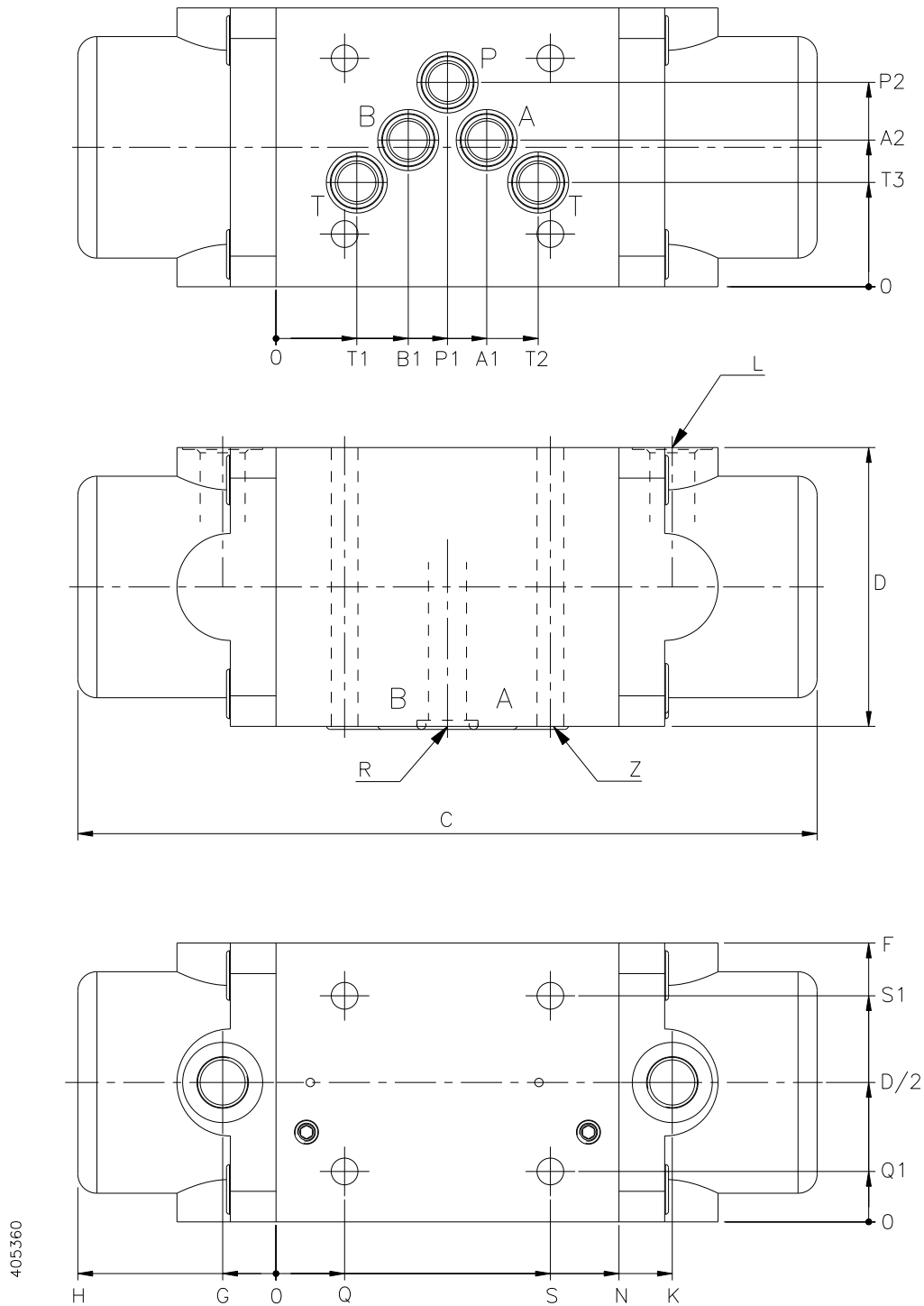
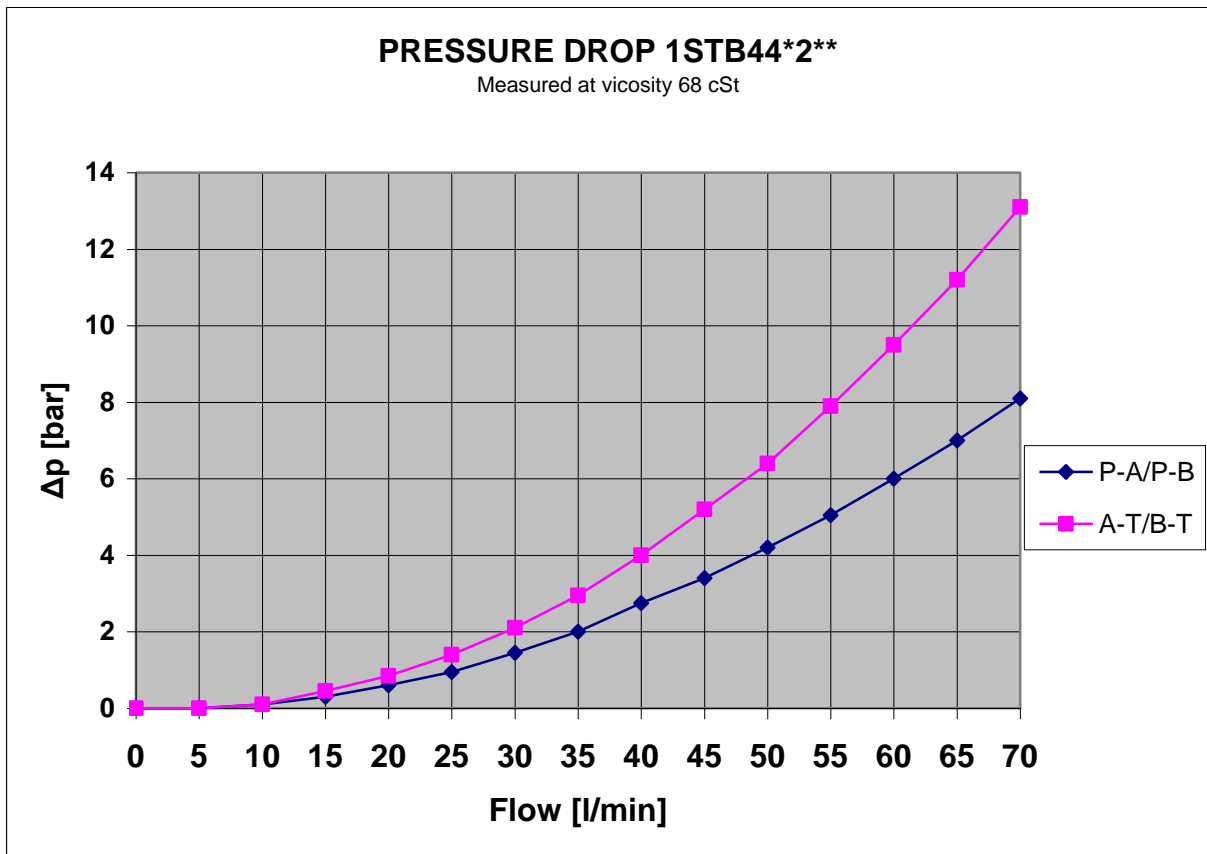
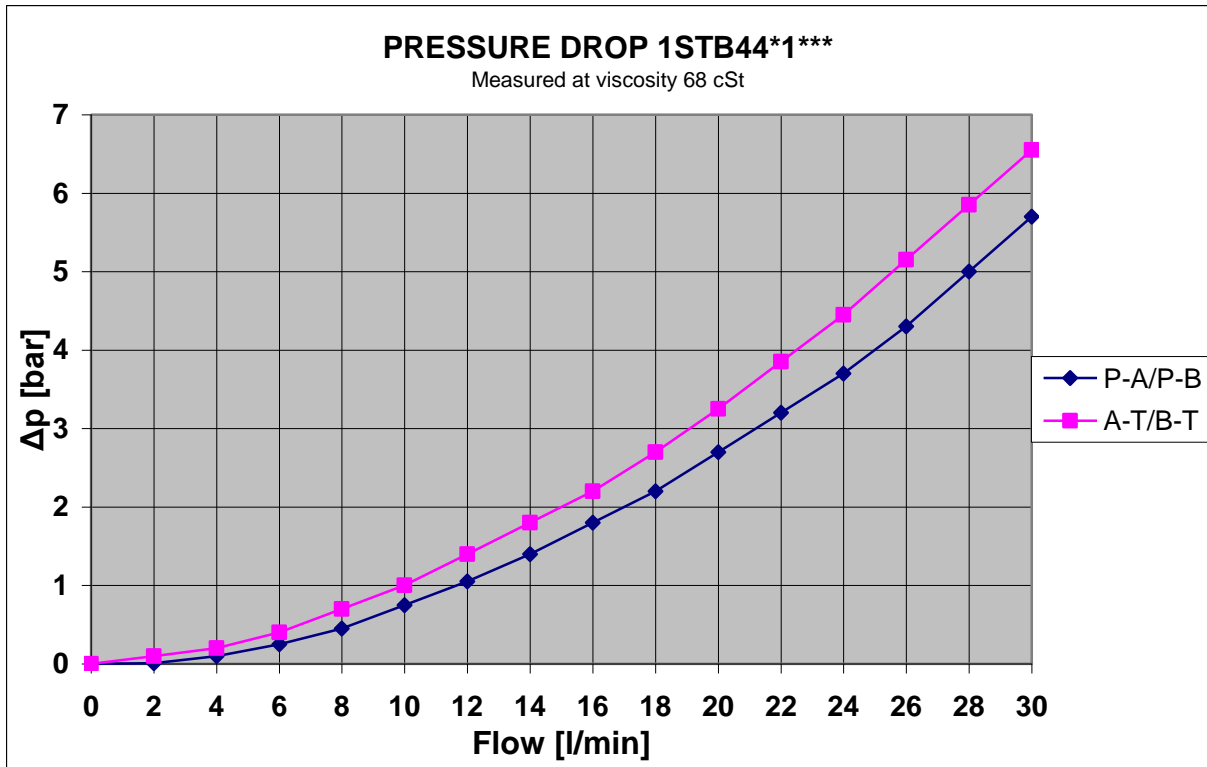


Figure 3 1STB4422 Dimensions

| Size [mm] | C    | D    | E    | F    | G  | H    | K   | N    | Z  | A1   | A2     |
|-----------|------|------|------|------|----|------|-----|------|----|------|--------|
| 10        | 194  | 73   |      | 73   | 14 | 52   | 104 | 90   | 7  | 55.3 | 38.4   |
|           | B1   | T1   | T2   | T3   | P1 | P2   | Q   | Q1   | S  | S1   | SA/SB  |
|           | 34.7 | 21.2 | 68.8 | 27.3 | 45 | 53.5 | 18  | 13.2 | 72 | 59.2 | ¼"BSPP |



## **PRESSURE DROP**



## TECHNICAL DATA

| Description  | Symbol           | Data   |
|--|------------------|--|
| Max. operating pressure in port P, A, B, T                     | P <sub>max</sub> | 350 bar  |
| Max. pressure in port SA/SB NG6 (ISO-03)                       | P <sub>max</sub> | 250 bar  |
| Max. pressure in port SA/SB NG10 (ISO-05)                      | P <sub>max</sub> | 160 bar  |
| Directional valve pilot pressure (for changing spool position) | SA/SB            | 6 bar  |
| Test Pressure  |                  | 420 bar  |
| Hydraulic fluid  |                  | Mineral oils for hydraulic system                          |
| Viscosity range:   | v                | 10 to 350 mm <sup>2</sup> /s (cST)                         |
| Viscosity index:   | VI               | > 120  |
| Filtration, recommended filter with $\beta_{20} \geq 100$      |                  | Class 9 according to NAS 1638, 18/15 according to ISO 4406 |
| Fluid temperature range:                                       | T                | -20°C to + 70°C  |
| Ambient temperature range                                      | T                | -20°C to + 50°C  |
| Standard Body Material   |                  | EN-GJS-400-15 (GGG 40)                                     |
| Standard O-rings   |                  | Nitrile shore 70   |

### Flow and Weight:

| Size | Max. Flow | Weight |
|------|-----------|--------|
| 6    | 25 l/min  | 1.8 kg |
| 10   | 50 l/min  | 4.2 kg |

### Interfaces:

| Size | Description                   | Data                          |
|------|-------------------------------|-------------------------------|
|      | <i>Screws</i>                 | <i>Tightening Torque [Nm]</i> |
| 6    | 4 off M 5 x 65 - DIN 931      | 7.0                           |
| 10   | 4 off M 6 x 85 - DIN 912-10.9 | 15.5                          |
|      | <i>O-rings</i>                | <i>Size [mm]</i>              |
| 6    | 4 off                         | 9.25 x 1.78                   |
| 10   | 5 off                         | 11.3 x 2.4                    |



## **INSTALLATION**

The Direction Control Valves 1STB442\*\*\* are installed with 4 off screws to a SUB plate (ISO 4401). Please refer to 'Interfaces', for details about screws and o-rings.

## **OPERATION**

### **Remote**

An external pilot pressure moves the spool to the requested position – on/off.

## **MAINTENANCE**

Check the valve for proper function. Visually check the valve and if required, paint unpainted (damaged) areas.

## **STORAGE**

If storage longer than 6 months is expected, the valve must be kept in a dry room, free from dust and protected against sudden large temperature variations. For storage longer than 12 months, the valve must be filled with inhibition oil. Before use check all visible seals and flush with clean oil.

## **MARKING**

Inlets and outlets are marked, refer to figure in section 'General Description'.