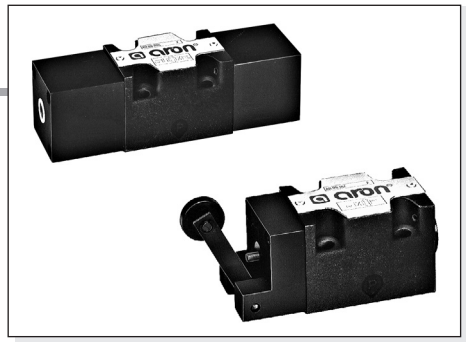


# DIRECTIONAL CONTROL VALVES
# OTHER OPERATOR CETOP 3/NG6

brevini


| OTHER OPERATOR | |
|---|---|
| STANDARD SPOOLS | CH. I PAGE 10 |
| AD3P... | CH. I PAGE 17 |
| AD3O... | CH. I PAGE 17 |
| AD3M... | CH. I PAGE 18 |
| AD3D... | CH. I PAGE 18 |

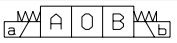
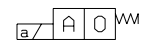
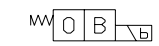
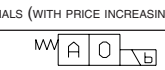
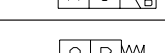
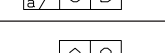
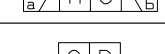
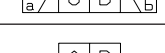

## INTRODUCTION

The ARON directional control valves NG6 are designed for subplate mounting with an interface in accordance with with UNI ISO 4401 - 03 - 02 - 0 - 94 standard (ex CETOP R 35 H 4.2-4-03), and can be used in all fields on account of their high flow rate and pressure capacities combined with compact overall dimensions.
The use of solenoids with wet armatures allows a very practical, safe construction completely dispensing with dynamic seals; the solenoid tube is screwed directly onto the valve chest whilst the coil is kept in position by means of a lock nut.
The special, precise construction of the ports and the improvement of the spools enables relatively high flow rates to be accommodated with a minimal pressure drop (Δp).
The centre position is obtained by means of calibrated length springs which reposition the spool in the centre or end of travel position once the action of the impulse is over.
The valves are designed for use with DIN 51524 standard hydraulic mineral oils and it is recommended that filters should be fitted to ensure a maximum contamination level of class 10 in accordance with NAS 1638, $ß_{25} \geq 75$.

## ORDERING CODE

| | |
|---|---|
| **AD** | Directional valve |
| **3** | CETOP 3/NG06 |
| * | Type of operator<br>**P** = Pneumatic<br>**O** = Oleodynamic<br>**M** = Mechanically<br>**D** = Direct mechanically<br>(For other operator see past pages) |
| ** | Spool (see page I•10) |
| * | Mounting type (tab.1) |
| **z** | No voltage |
| ** | Variants:<br>**00** = no variant<br>**V1** = Viton<br>**H1** = Marine version (for AD3P only)<br>**DI(*)** = Internal draining (for AD3O only) |
| **2** | Serial No. |

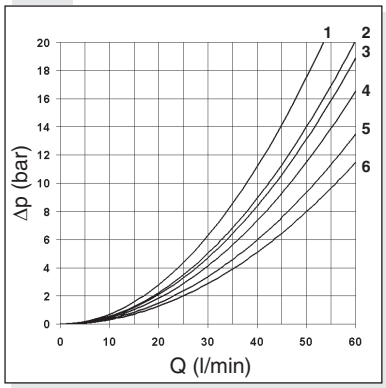
## TAB.1 MOUNTING

| STANDARD | |
|---|---|
| **C** |  |
| **D** |  |
| **E** |  |
| **F** |  |
| SPECIALS (WITH PRICE INCREASING) | |
| **G** |  |
| **H** |  |
| **I** |  |
| **L** |  |
| **M** |  |

• In case of **mounting D** with detent a maximum supply time of 2 sec is needed (only for AC coils).

**(*) The DI variant is recommended in the environments characterised by the presence of dust or any type of contamination.**

## PRESSURE DROPS




| Spool type | Connections | | | | |
|---|---|---|---|---|---|
| | P→A | P→B | A→T | B→T | P→T |
| 01 | 5 | 5 | 5 | 5 | |
| 02 | 6 | 6 | 6 | 6 | 5 |
| 03 | 5 | 5 | 6 | 6 | |
| 04 | 1 | 1 | 2 | 2 | 4 |
| 05 | 5 | 5 | 5 | 5 | |
| 06 | 5 | 5 | 6 | 5 | |
| 66 | 5 | 5 | 5 | 6 | |
| 07 | | 4 | 6 | | |
| 08 | 6 | 6 | | | |
| 09 | | 5 | | 5 | |
| 10 | 5 | 5 | 5 | 5 | |
| | Curve No. | | | | |

| Spool type | Connections | | | | |
|---|---|---|---|---|---|
| | P→A | P→B | A→T | B→T | P→T |
| 11 | 4 | | | 6 | |
| 22 | | 4 | 6 | | |
| 12 | | 5 | | 6 | |
| 13 | | 5 | 6 | 6 | |
| 14 | 2 | 1 | 1 | 1 | 2 |
| 28 | 1 | 2 | 1 | 1 | 2 |
| 15 - 19 | 4 | 4 | 6 | 6 | |
| 16 | 5 | 5 | 4 | 4 | |
| 17 - 21 | 1 | 3 | | | |
| 18 | 5 | 5 | | | |
| 20 | 4 | 4 | 4 | 4 | |
| | Curve No. | | | | |

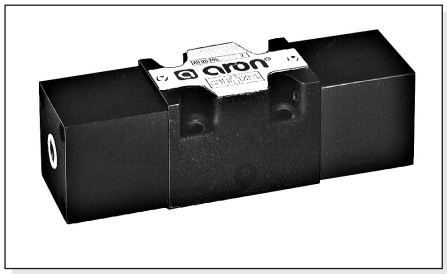
The diagram at the side shows the pressure drop curves for spools during normal usage. The fluid used is a mineral oil with a viscosity of 46 mm²/s at 40°C; the tests have been carried out at a fluid temperature of 40°C. For higher flow rates than those in the diagram, the losses will be those expressed by the following formula:

$$\Delta p1 = \Delta p \times (Q1/Q)^2$$

where Δp will be the value for the losses for a specific flow rate Q which can be obtained from the diagram, Δp1 will be the value of the losses for the flow rate Q1 that is used.

# AD3P... PNEUMATIC OPERATION TYPE VALVES CETOP 3/NG6





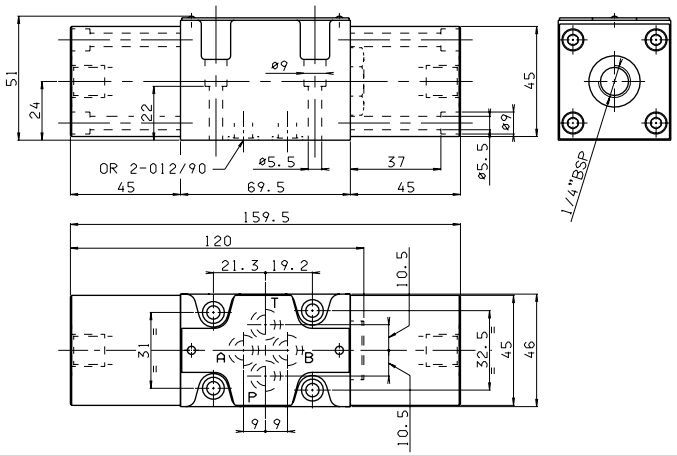
| | |
|---|---|
| Max. pressure ports P/A/B | 320 bar |
| Max. pressure port T | 160 bar |
| Max. flow | 60 l/min |
| Minimum operating pressure | 2 + [0.027 x (pt*)] bar - see note |
| Maximum operating pressure | 20 bar |
| Fluid viscosity | 10 ÷ 500 mm²/s |
| Fluid temperature | -25°C ÷ 75°C |
| Ambient temperature | -25°C ÷ 60°C |
| Max. contamination level | |
| class 10 in accordance with NAS 1638 with filter $ß_{25}≥75$ | |
| Weight single pilot | 1,2 Kg |
| Weight twin pilot | 1,8 Kg |

• Possible mountings:
**C/D/E/F/G/H/I L/M**

Ordering code see page before

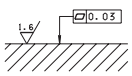
(**pt***)= pressure at port T

## OVERALL DIMENSIONS



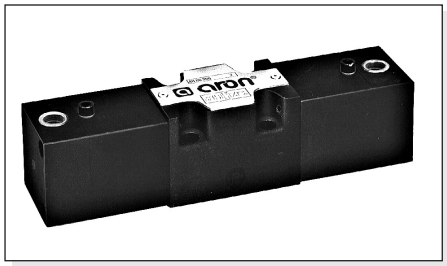

Fixing screws UNI 5931 M5x30
with material specifications min. 8.8
Tightening torque 5 Nm / 0.5 Kgm

Support plane specifications




IAD3P - 02/2000/e

# AD3O... OLEODYNAMIC OPERATION TYPE VALVES CETOP 3/NG6



| | |
|---|---|
| Max. pressure ports P/A/B | 320 bar |
| Max. pressure port T | 160 bar |
| Max. flow | 60 l/min |
| Minimum operating pressure | 15 + [0.1 x (pt*)] bar - see note |
| Maximum operating pressure | 250 bar |
| Fluid viscosity | 10 ÷ 500 mm²/s |
| Fluid temperature | 0°C ÷ 75°C |
| Ambient temperature | -25°C ÷ 60°C |
| Max. contamination level | |
| class 10 in accordance with NAS 1638 with filter $ß_{25}≥75$ | |
| Weight single pilot | 1,5 Kg |
| Weight twin pilot | 2,3 Kg |

• Possible mountings:
**C/D/E/F/G/H/I L/M**

Ordering code see page before

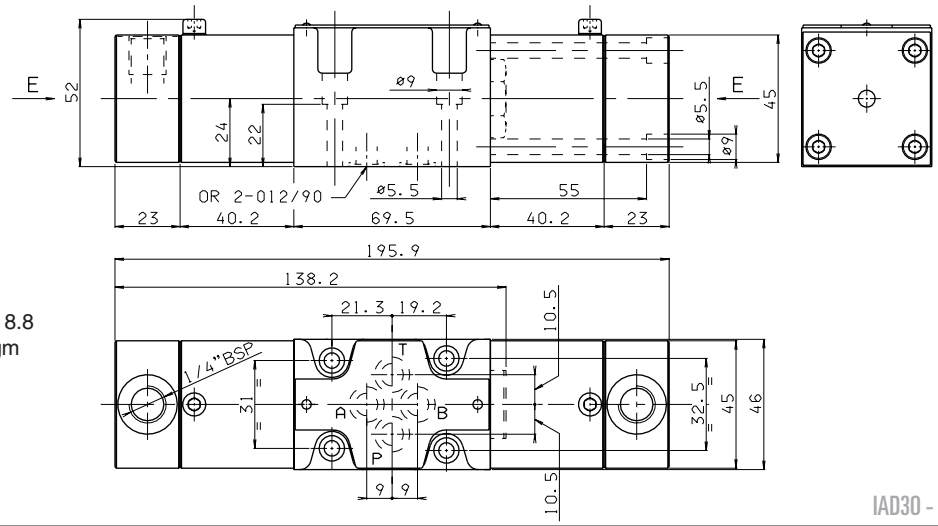
(**pt***)= pressure at port "T".

**Minimum pilot pressure depends on spool scheme, flow rate and pressure.**
**To allow the spool to return to nautral position, the pilot pressure must be below 3 bar.**

**The DI variant is recommended in the environments characterised by the presence of dust or any type of contamination.**

| **Further technical specifications (for DI variant only)** | |
|---|---|
| Minimum operating pressure | [10 + (pt*)] bar - see note |
| Maximum operating pressure | 250 bar |
| Max. piloting leakage | 1 l/min |

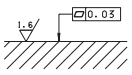
## OVERALL DIMENSIONS




**E** = Manual override

Fixing screws UNI 5931 M5x30
with material specifications min. 8.8
Tightening torque 5 Nm / 0.5 Kgm

Support plane specifications

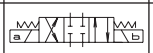
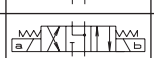
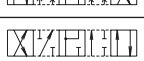
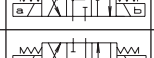
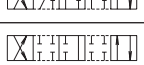
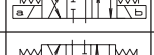
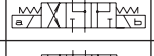
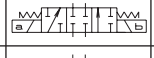
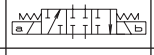
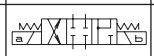
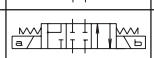
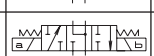
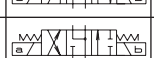



IAD3O - 04/2015/e

# DIRECTIONAL CONTROL VALVES
# STANDARD SPOOLS CETOP 3/NG6

brevini

## TWO SOLENOIDS, SPRING CENTRED "C" MOUNTING

| Spool type | | Covering | Transient position |
|---|---|---|---|
| 01 |  | + |  |
| 02 |  | - |  |
| 03 |  | + |  |
| 04* |  | - |  |
| 44* |  | - |  |
| 05 |  | + |  |
| 66 |  | + |  |
| 06 |  | + |  |
| 07* |  | + |  |
| 08* |  | + |  |
| 09* |  | + |  |
| 10* |  | + |  |
| 22* |  | + |  |
| 11* |  | + |  |
| 12* |  | + |  |
| 13* |  | + |  |
| 14* |  | - |  |
| 28* |  | - |  |

## ONE SOLENOID, SIDE A "E" MOUNTING

| Spool type | | Covering | Transient position |
|---|---|---|---|
| 01 |  | + |  |
| 02 |  | - |  |
| 03 |  | + |  |
| 04* |  | - |  |
| 44* |  | - |  |
| 05 |  | + |  |
| 66 |  | + |  |
| 06 |  | + |  |
| 08* |  | + |  |
| 10* |  | + |  |
| 12* |  | + |  |
| 15 |  | - |  |
| 16 |  | + |  |
| 17 |  | + |  |
| 14* |  | - |  |
| 28* |  | - |  |

## NOTE

**(*)** Spool with price increasing

- With spools **15** / **16** / **17** only mounting **E** / **F** are possible
- **16 / 19** / **20** / **21** spool not planned for **AD3E...J***
- For lever operated the spools used are different.
Available spools for this kind of valve see AD3L..

## ONE SOLENOID, SIDE B "F" MOUNTING

| Spool type | | Covering | Transient position |
|---|---|---|---|
| 01 |  | + |  |
| 02 |  | - |  |
| 03 |  | + |  |
| 04* |  | - |  |
| 44* |  | - |  |
| 05 |  | + |  |
| 66 |  | + |  |
| 06 |  | + |  |
| 08* |  | + |  |
| 09* |  | + |  |
| 10* |  | + |  |
| 22* |  | + |  |
| 12* |  | + |  |
| 13* |  | + |  |
| 07* |  | + |  |
| 15 |  | - |  |
| 16 |  | + |  |
| 17 |  | + |  |
| 14* |  | - |  |
| 28* |  | - |  |

## TWO SOLENOIDS "D" MOUNTING

| Spool type | | Covering | Transient position |
|---|---|---|---|
| 19* |  | - |  |
| 20* |  | + |  |
| 21* |  | + |  |