

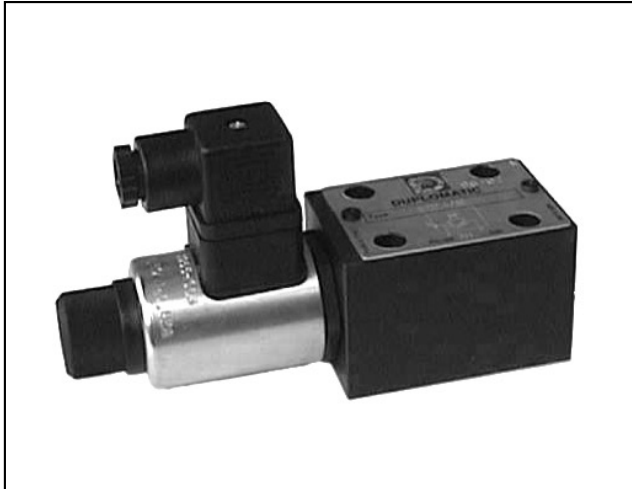


DIPLOMATIC
HYDRAULICS

81 200/100 ED

CDE

DIRECT OPERATED PRESSURE CONTROL VALVE WITH ELECTRIC PROPORTIONAL CONTROL SERIES 51



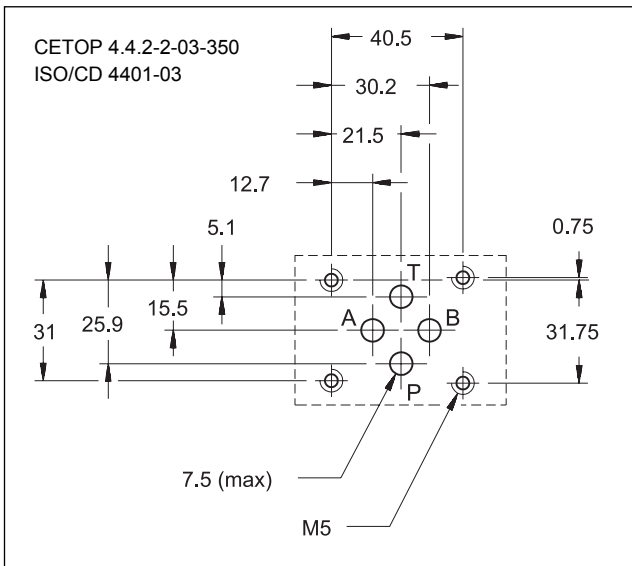
SUBPLATE MOUNTING

CETOP 03

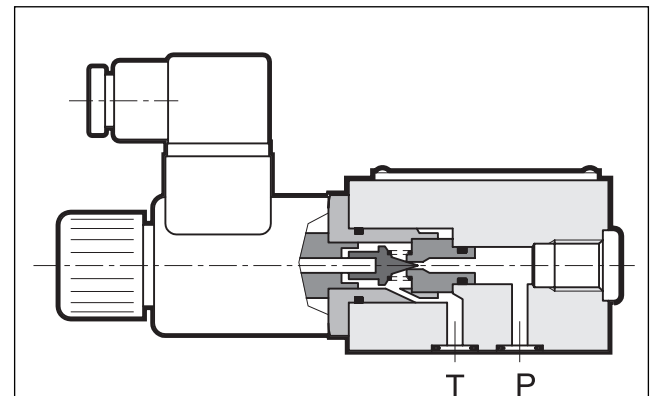
p max **350** bar

Q max **3** l/min

MOUNTING INTERFACE



OPERATING PRINCIPLE



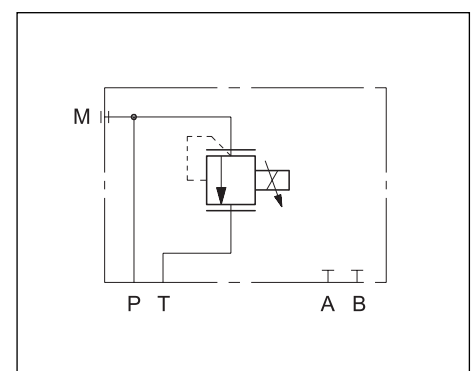
- The CDE valve is a direct operated pressure control valve with electric proportional control and mounting interface in compliance with CETOP and ISO standards.
- It is suitable to pilot two-stage valves, or for pressure control in hydraulic circuits.

- Pressure can be modulated continuously in proportion to the current supplied to the solenoid.
- The valve can be controlled directly by a current control supply unit or by means of the relative electronic control units to exploit valve performance to the full (see par. 8).
- The valve is available in five pressure control ranges up to 350 bar.

SPECIFICATIONS (obtained with mineral oil with viscosity of 36 cSt at 50°C in conjunction with UEIK-11 electronic control unit)

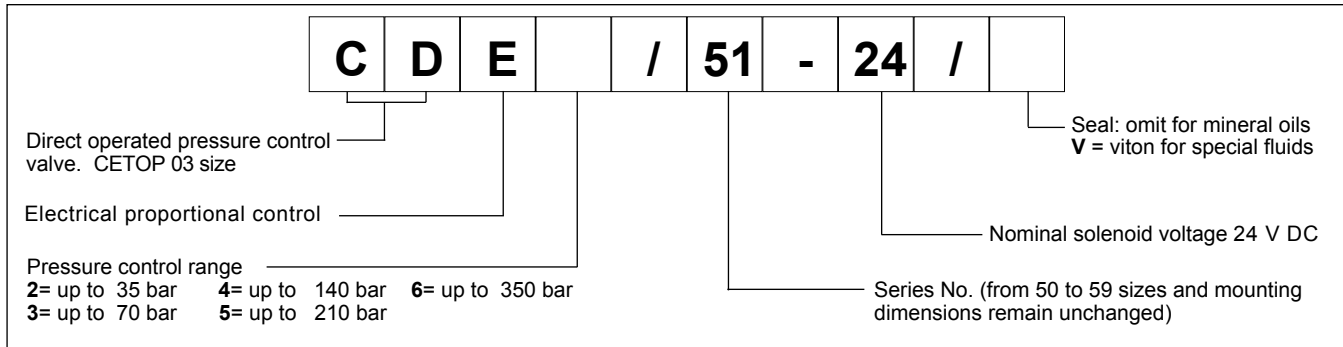
| | | |
|--|--------------------------|-------------|
| Maximum operating pressure: – P port – T port | bar bar | 350 2 |
| Minimum controlled pressure | see diagram $\Delta p-Q$ | |
| Nominal flow | l/min. | 1 |
| Maximum flow | l/min. | 3 |
| Step response | see par. 5 | |
| Hysteresis | % of p range | < 5% |
| Repeatability | % of p range | < $\pm 2\%$ |
| Electrical characteristics | see par. 4 | |
| Ambient temperature range | °C | -10 ÷ +50 |
| Fluid temperature range | °C | -20 ÷ +70 |
| Fluid viscosity range | cSt | 13 ÷ 380 |
| Recommended filtration | μm absolute | ≤ 25 |
| Recommended viscosity | cSt | 25 |
| Mass | kg | 1,4 |

HYDRAULIC SYMBOL



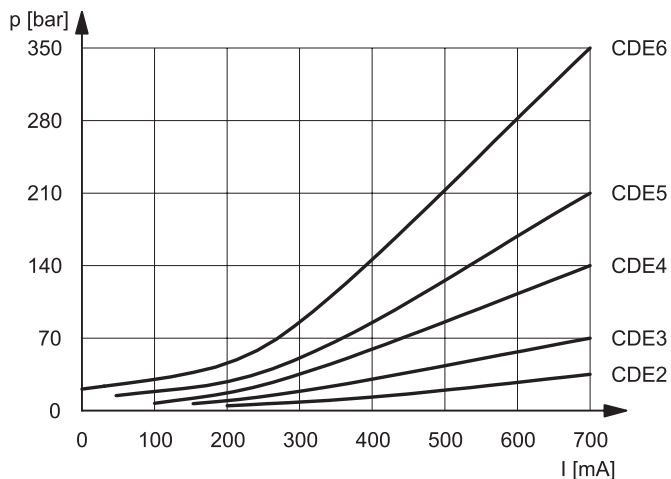


1 - IDENTIFICATION CODE



2 - CHARACTERISTIC CURVES (measured with viscosity of 36 cSt at 50°C)

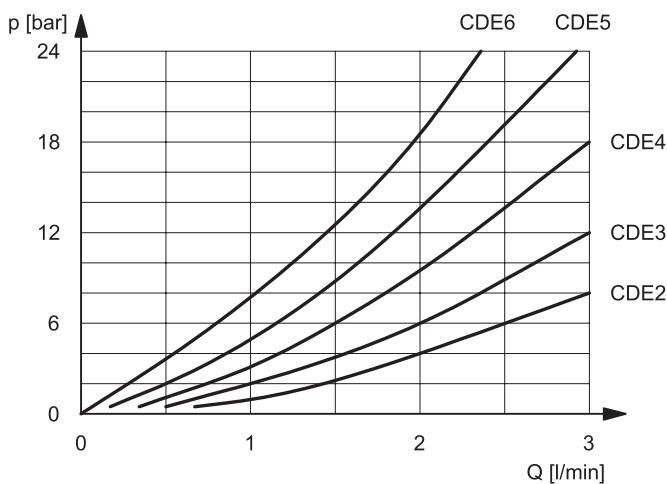
PRESSURE CONTROL $p=f(I)$



Typical control curves according to the current supplied to the solenoid for pressure control ranges: 2-3-4-5-6, measured with input flow rate $Q=1$ l/min.

For flow rates over 1 l/min add pressure drop values to the typical curves in the diagram in accordance to the relative pressure control range.

PRESSURE DROP $\Delta p=f(Q)$





3 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids with anti-foam and anti-oxidant additives.

For use with other types of fluids (water glycol, phosphate esters and others) consult our technical department.

Operation with fluid temperature exceeding 70°C causes premature deterioration of the quality of the fluid and seals. The physical and chemical properties of the fluid must be maintained.

4 - ELECTRICAL CHARACTERISTICS

Proportional solenoid

The proportional solenoid comprises two parts: tube and coil.

The tube, screwed to the valve body, contains the armature which is designed to maintain friction to a minimum thereby reducing hysteresis.

The coil is mounted on the tube secured by means of a lock nut and can be rotated through 360° depending on installation clearances.

5 - STEP RESPONSE (with mineral oil with viscosity of 36 cSt at 50°C in conjunction with UEIK-11 electronic control unit)

Step response is the time taken for the valve to reach 90% of the set pressure value following a step change of reference signal.

The table illustrates typical step response times measured with a valve of pressure range up to 140 bar and with input flow rate Q = 2 l/min.

| | | |
|---|-------------------------------|-------------|
| NOMINAL VOLTAGE | V DC | 20 |
| COIL RESISTANCE (at 20°C) | Ω | 18,5 |
| CURRENT nominal maximum | A | 0,7 0,82 |
| DUTY CYCLE | 100% | |
| ELECTROMAGNETIC COMPATIBILITY (EMC) - EMISSIONS EN 50081-1 - IMMUNITY EN 50082-2 | in compliance with 89/336 EEC | |
| PROTECTION TO ATMOSPHERIC AGENTS (according to IEC 144 standards) | IP 65 | |

| | | | | |
|------------------------------|--------|--------|--------|--------|
| REFERENCE SIGNAL STEP | 0→100% | 100%→0 | 25→75% | 75→25% |
| Step response [ms] | 80 | 40 | 50 | 30 |

6 - INSTALLATION

The CDE valve can be installed in any position without impairing correct operation.

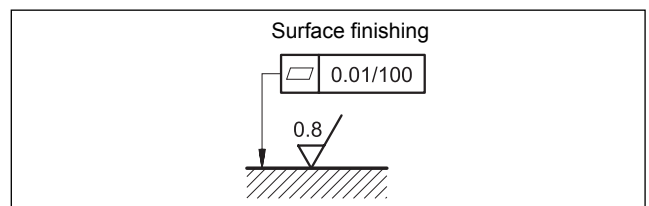
Ensure that there is no air in the hydraulic circuit.

Connect the T port on the valve directly to the tank.

Add any backpressure value detected in the T line to the controlled pressure value.

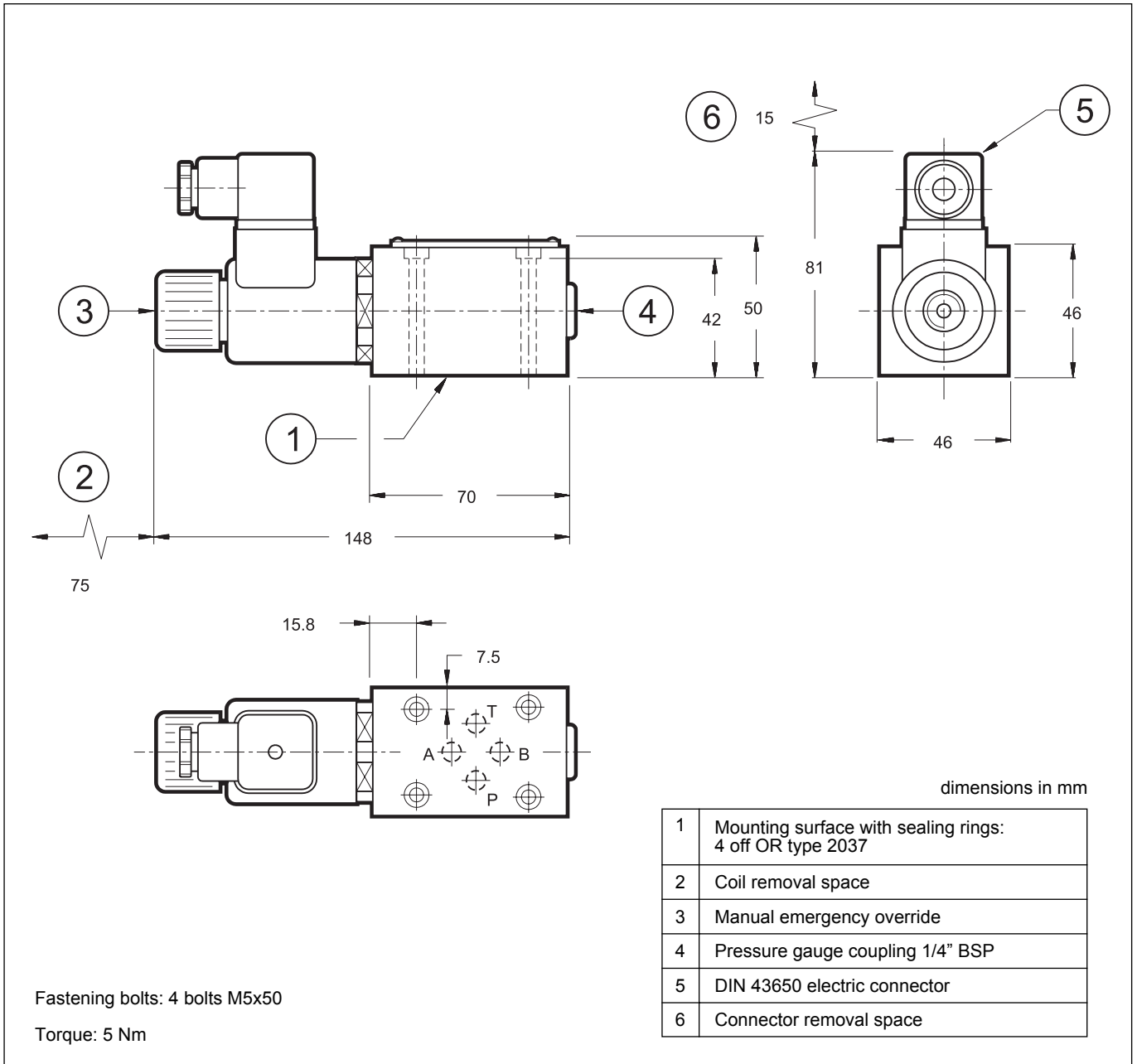
Maximum admissible backpressure in the T line, under operational conditions, is 2 bar.

Valves are fixed by means of screws or tie rods on a flat surface with planarity and roughness equal to or better than those indicated in the relative symbols. If minimum values are not observed, fluid can easily leak between the valve and support surface.





7 - OVERALL AND MOUNTING DIMENSIONS



8 - ELECTRONIC CONTROL UNITS

| | |
|------------------------|--------------------------------|
| EPC-110 plug version | (see cat. 89 110) |
| EPA-M110 rail mounting | DIN EN 50022 (see cat. 89 220) |
| UEIK-11 Eurocard type | (see cat. 89 300) |

9 - SUBPLATES (see 51 000)

| |
|---|
| PMMD-AI3G with ports on rear |
| PMMD-AL3G with side ports |
| Ports dimensions: P, T, A, B: 3/8" BSP thread |

| | |
|--|---|
| | <p>DIPLOMATIC OLEODINAMICA SpA 20025 LEGNANO (MI) - P.le Bozzi, 1 / Via Edison Tel. 0331/472111-472236 - Fax 0331/548328</p> |
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