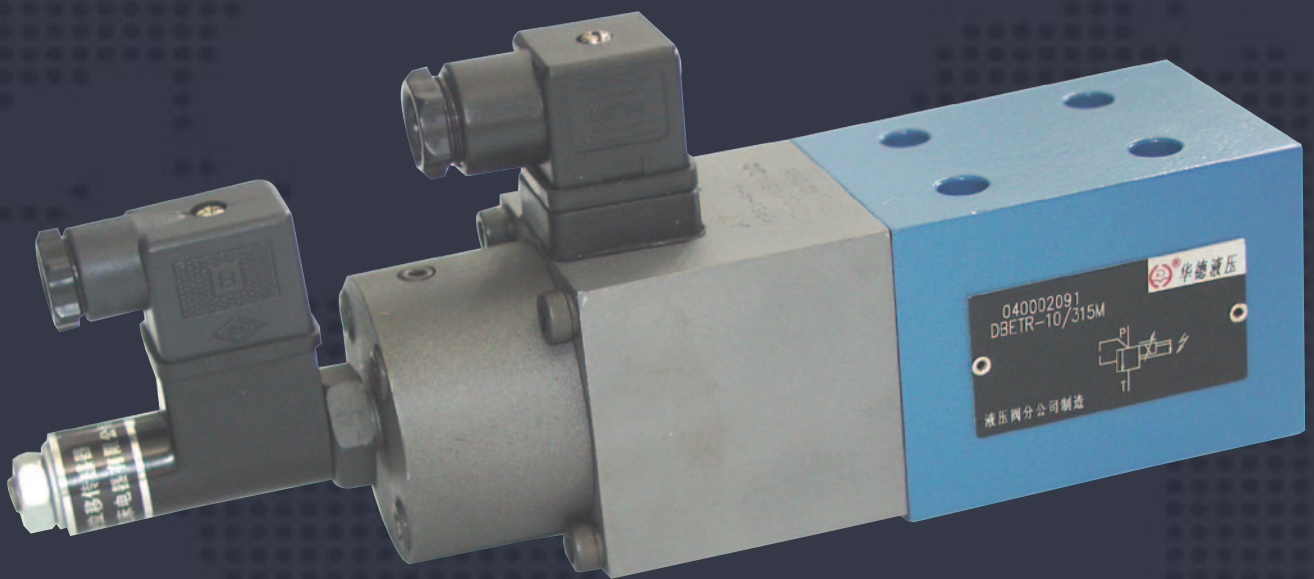




Catálogo de Productos

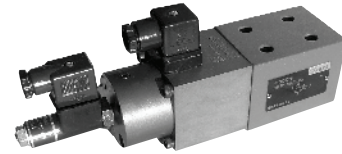


Proportional Pressure Relief Valve Type DBETR

| | | | | |
|---|--|----------------|----------------|------------------|
| BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD. | Proportional Pressure Relief Valve Type DBETR | | | RE 24750/06.2004 |
| | Size 6 | up to 31.5 MPa | up to 10 L/min | Replaces: |

Features:

- Low hysteresis
- Good repeatability
- Electrical closed loop position control of spring pre-tension,
- Proportional solenoid actuation with inductive position transducer (pressure balanced)
- Valve and electronic control from one source



Function, section, symbol

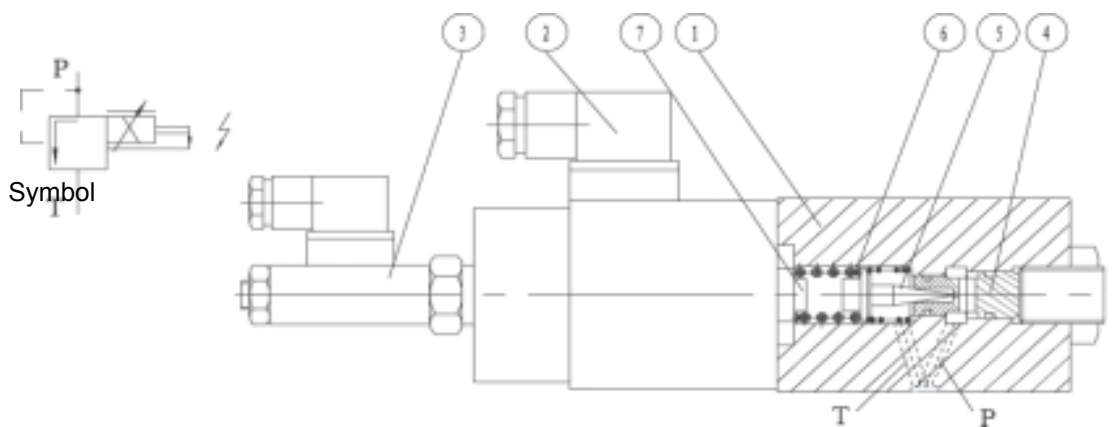
This valve regulates pressure in proportion to the electrical command value.

The valve consists basically of a housing (1), proportional solenoid (2) with inductive positional transducer (3), valve seat (4) and valve poppet (5).

Pressure is set by adjusting the command value potentiometer (0 to 9 V). Adjusting the command value causes tensioning of the compression spring via the electronic controls and the proportional solenoid (2). Tensioning of the compression spring (6), i.e. the position of the spring plate (7), is determined by the inductive positional transducer (3). Any deviations from the command value are corrected by the closed loop positional control.

The use of this principle eliminates the effect of solenoid friction.

- Advantages:
- Low hysteresis
 - Good repeatability



Ordering details

| | | | | | |
|---|----------------------------|---|---|--|---|
| DBETR | + 10 | B | / | | * |
| Series 10 to 19 (10 to 19: unchanged installation and connection dimensions) | = 10 | | | | Further details in clear text |
| Technology of Beijing Huade Hydraulic | =B | | | | M= mineral oils V = phosphate ester |
| Pressure stage: up to 2.5MPa up to 8MPa up to 18MPa up to 31.5MPa | =25 =80 =180 =315 | | | | No code= let oil inside Y= let oil outside |

Technical data

Hydraulic data

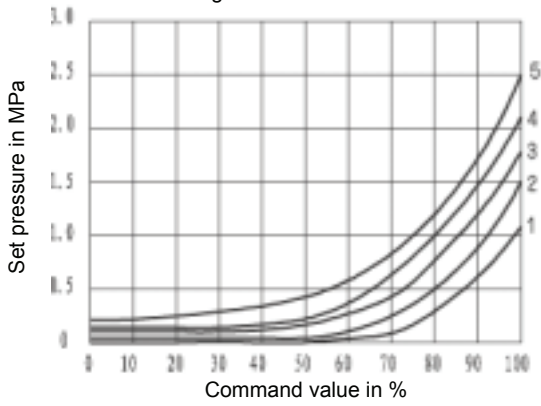
| | | | |
|--|--|--------------------------------------|---------------------------|
| Max. settable pressure (MPa) | Pressure stage 2.5 MPa | 2.5 | |
| | Pressure stage 8.0 MPa | 8 | |
| | Pressure stage 18.0 MPa | 18 | |
| | Pressure stage 31.5 MPa | 31.5 | |
| Min. settable pressure (MPa) | (see $p_{min} - q_v$ characteristic curves) | | |
| Max. Operating pressure (MPa) | port T (with pressure adjusting) | 0.2 | |
| | port T (without pressure adjusting) | 10 | |
| | port P | 31.5 | |
| Max. flow (L/min) | Pressure stage 25 | 10 | |
| | Pressure stage 80 | 3 | |
| | Pressure stage 180 | 3 | |
| | Pressure stage 315 | 2 | |
| Degree of contamination (μm) | ≤ 20 (recommendation 10) | | |
| Hysteresis (%) | < 1 of max. settable pressure | | |
| Repeatability (%) | < 0.5 of max. settable pressure | | |
| Linearity (%) | 180; Pressure stage from 3 to 18 MPa | ≤ 1.5 of max. settable pressure | |
| | 315; Pressure stage from 6 to 31.5MPa | | |
| Typical variation (%) | Valve | ± 3 of max. settable pressure | |
| | Electrical control | < 0.5 | |
| Stepped response 0 to 100% | (ms) | Response time (Pmin-Pmax) | Response time (Pmax-Pmin) |
| Pressure stage 2.5 and 18MPa | 0 to 100 | 100 | 50 |
| Pressure stage 31.5MPa | 0 to 100 | 150 | 100 |
| Pressure fluid | Mineral oil(for NBR seal),Phosphate ester (for FPM seal) | | |
| Viscosity range (mm^2/s) | 2.8 to 380 | | |
| Pressure fluid temperature range ($^{\circ}C$) | -20 to +70 | | |
| Installation position | optional | | |
| Weight (kg) | 4 | | |

Electrical

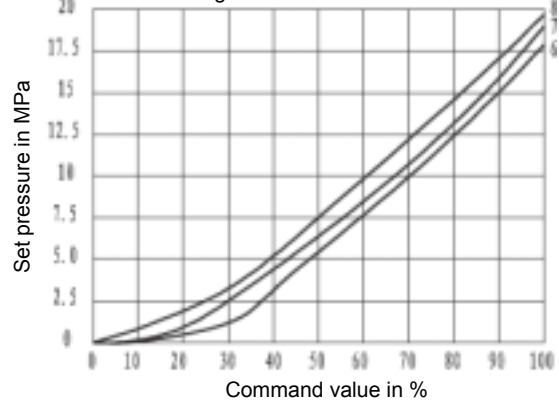
| | | | |
|--|---------------------------------|--------------|-----|
| Amplifier associated | VT-5003S30 | | |
| Supply voltage | DC | | |
| Coil resistance (Ω) | Cold value at 20 $^{\circ}C$ | 10 | |
| | Max. warm value | 13.9 | |
| (Working state) Duty | Continuous | | |
| Pressure fluid temperature ($^{\circ}C$) | +50 | | |
| Amplifier voltage | commutate completely | 24 \pm 10% | |
| | commute three electrical source | 24 to 35 | |
| Max. power consumption (VA) | 50 | | |
| Coil resistance at 20 $^{\circ}C$ (Ω) | 1 | 11 | 111 |
| | 56 | 56 | 112 |
| Inductivity (transducer) (mH) | 6 to 8 | | |
| Oscillator frequency (transducer) (KHz) | 2.5 | | |
| Protection to DIN 40 050 | IP65 | | |

Characteristic curves:(measured at $v=36 \times 10^{-6}m^2/S$ $t=50^{\circ}C$)

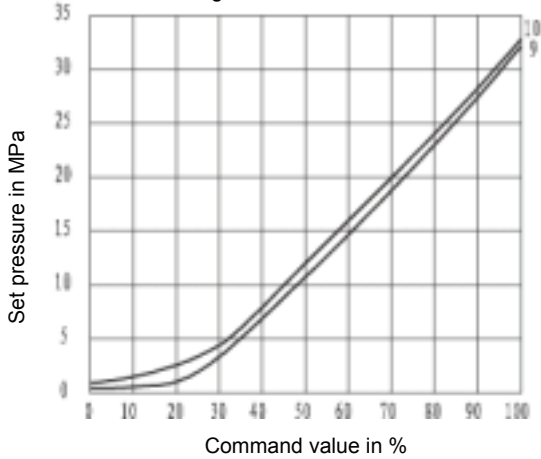
Pressure stage 2.5MPa



Pressure stage 18MPa

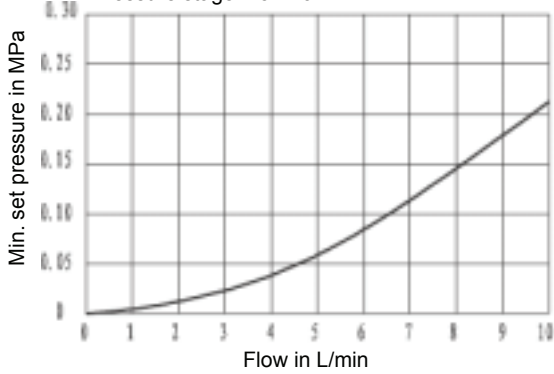


Pressure stage 31.5MPa

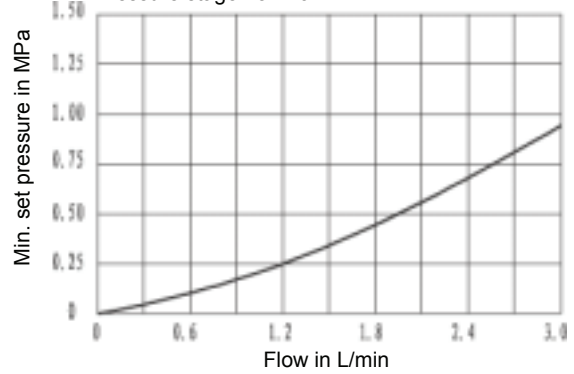


- Curve 1 - flow = 2 L/min
- Curve 2 - flow = 4 L/min
- Curve 3 - flow = 6 L/min
- Curve 4 - flow = 8 L/min
- Curve 5 - flow = 10 L/min
- Curve 6 - flow = 0.5 L/min
- Curve 7 - flow = 1.5 L/min
- Curve 8 - flow = 3L/min
- Curve 9 - flow = 1 L/min
- Curve 10 - flow = 2 L/min

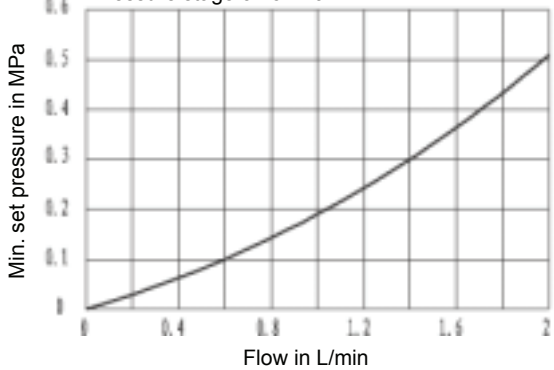
Pressure stage 2.5MPa



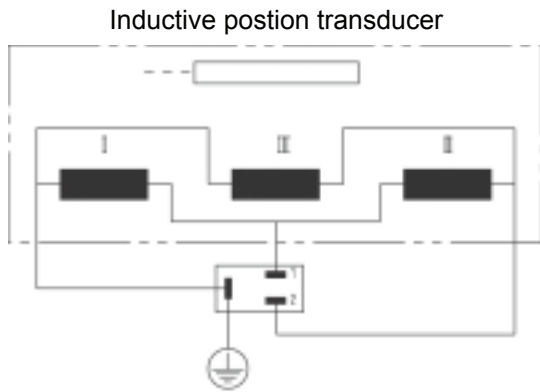
Pressure stage 18MPa



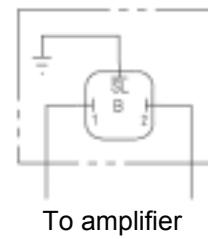
Pressure stage 31.5MPa



Electrical connections (Inductive position transducer)

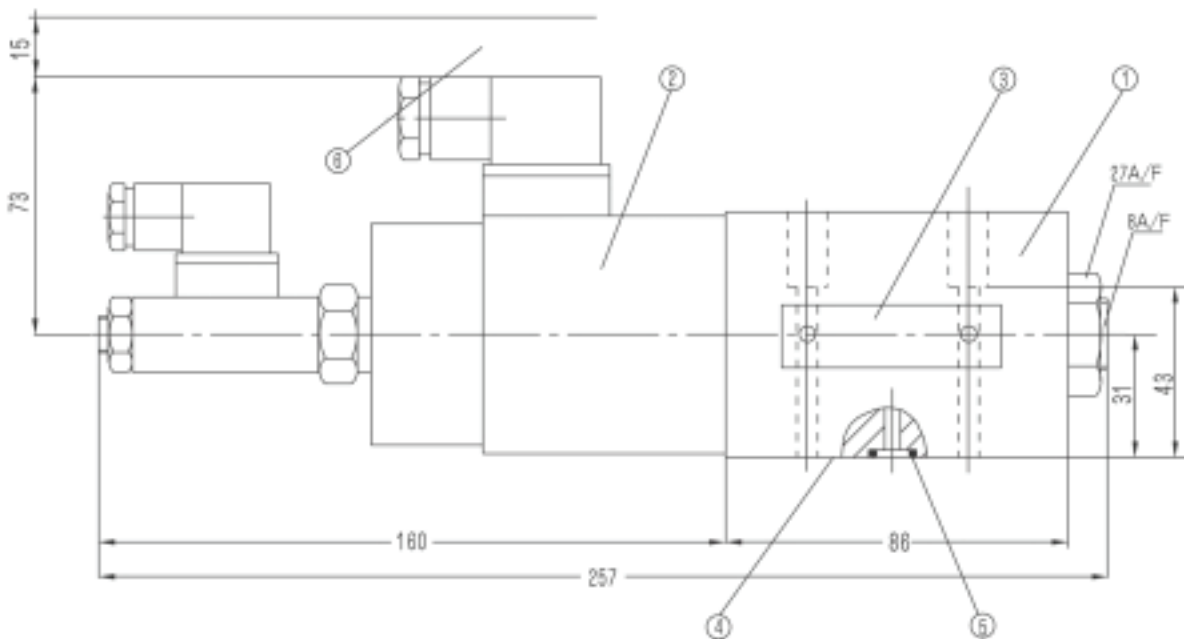


Type Connection of plug-in connector

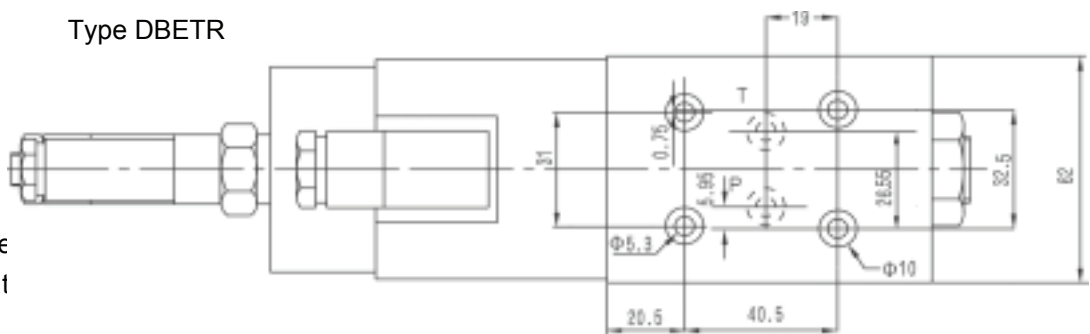


Unit dimensions

(Dimensions in mm)

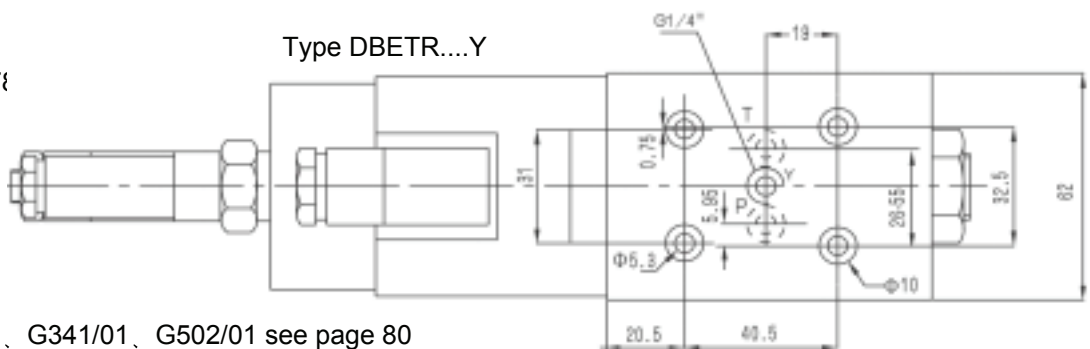


Type DBETR



- 1 Valve housing
- 2 Proportional solenoid inductive position transducer
- 3 Nameplate
- 4 Machined valve surface
- 5 O-ring 9.25 x 1.75
- 6 Space required to remove the plug-in connector

Type DBETR...Y



Subplates: G340/01, G341/01, G502/01 see page 80

ANNOTATIONS :

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