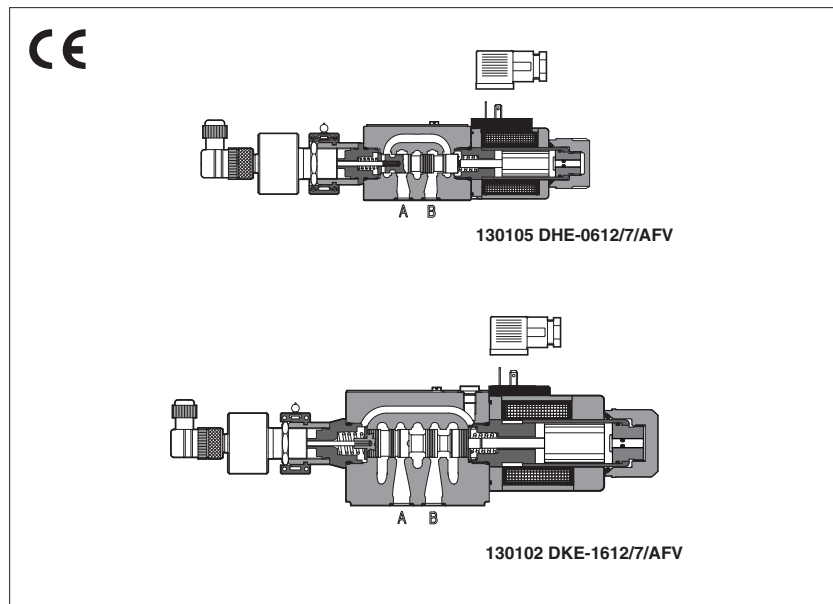


## Safety valves for vertical presses and torque bar press brakes

with specific spool execution and inductive position switch

**Available only on request**



Directional safety valves specifically designed for applications in vertical presses and torque bar press brakes, are provided with ON-OFF inductive position switch FV (double contacts NC/NO) indicating the position of the valve's spool

They are mainly used to intercept the hydraulic line to the beam cylinders in emergency conditions, in order to immediately stop their movement, particularly during the pressing phase.

At this subject the spool configuration is specifically designed to fulfill the particular application requirements.

By checking the position switch status, the machine controller can perform the safety function.

They are available in five different sizes:

- **130105 DHE**: size 06, direct max flow 50 l/min
- **130102 DKE**: size 10, direct max flow 150 l/min
- **130135 DPHE-1**: size 10, direct max flow 160 l/min
- **130133 DPHE-2**: size 10, direct max flow 300 l/min
- **130134 DPHE-4**: size 10, direct, max flow 700 l/min

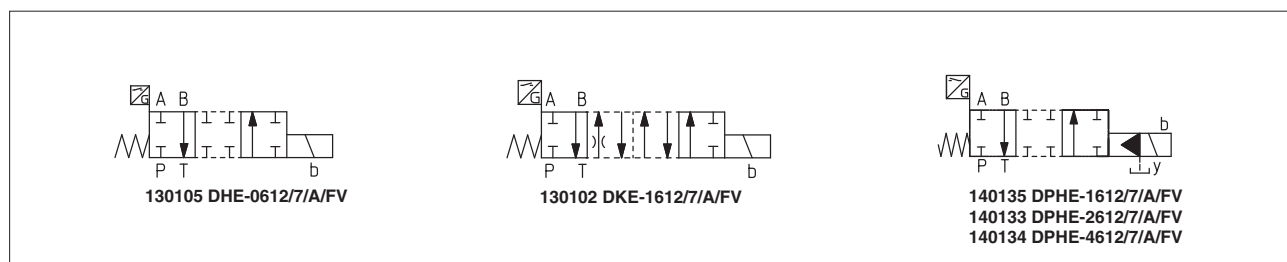
Max pressure: **350 bar**

See the below section 1 for detailed p/Q performance limits.

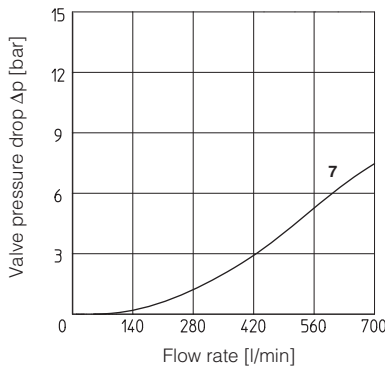
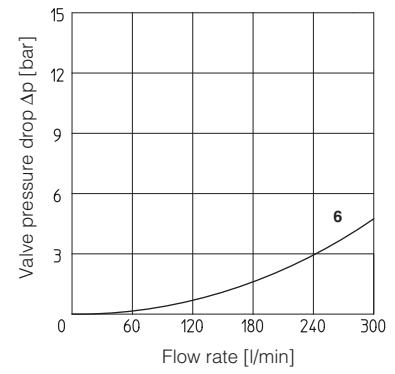
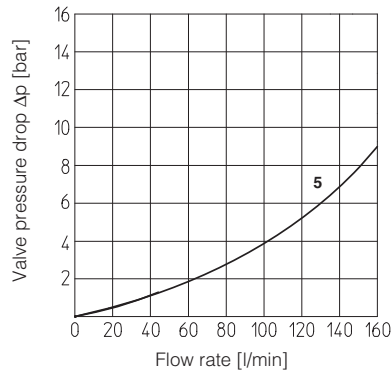
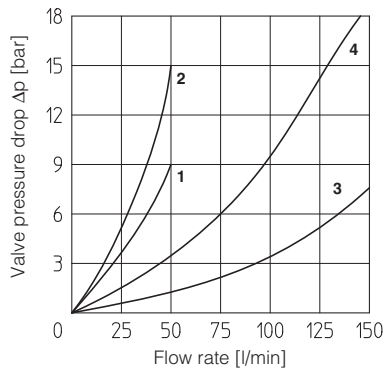
### 1 MODEL CODE

<b>130105 DHE-0</b>	-	<b>61</b>	<b>2/7</b>	/	<b>A</b>	/	<b>FV</b>	-	<b>X</b>	<b>24DC</b>	<b>**</b>	<b>/*</b>
<p>Type valve  <b>130105 DHE-0</b> = size 06  <b>130102 DKE-1</b> = size 10  <b>140135 DPHE-1</b> = size 10  <b>140133 DPHE-2</b> = size 16  <b>140134 DPHE-4</b> = size 25</p> <p>Valve configuration  <b>61</b> = single solenoid, central plus external, spring centered</p> <p>Spool type, see section 2</p> <p>Solenoid mounted at side of port B</p> <p>Type of switch:  <b>FV</b> = inductive position switch (double contacts)</p>												
											<p>Series number</p> <p>- = NBR  PE = FKM</p>	
											<p>Voltage code  <b>24</b> = 24 VDC (other voltages on request)</p>	
										<p><b>X</b> = without solenoid connector, to be order separately (see tab. K500)</p>		

### 2 CONFIGURATIONS and SPOOLS

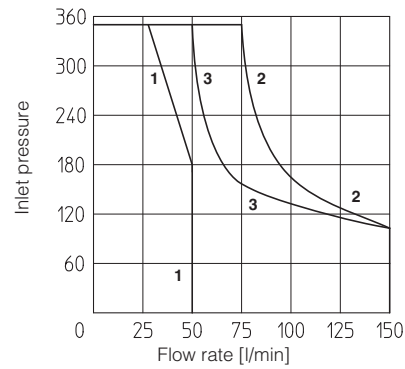


**3 Q/ΔP DIAGRAMS** based on mineral oil ISO VG 46 at 50°C



- 130105 DHE**  
**1 = P-A 2 = B-T**
- 130102 DKE**  
**3 = P-A 4 = B-T**
- 140135 DPHE-1**  
**5 = P-A, B-T**
- 140133 DPHE-2**  
**6 = P-A, B-T**
- 140134 DPHE-4**  
**7 = P-A, B-T**

**4 OPERATING LIMITS** based on mineral oil ISO VG 46 at 50°C



- 130105 DHE**  
**1 = P-A, B-T**
- 130102 DKE**  
**2 = P-A**  
**3 = B-T**

**5 MAIN CHARACTERISTICS**

Installation position	Any position	
Subplate surface finishing	Roughness index Ra 0,4 - flatness ratio 0,01/100 (ISO 1101)	
Ambient temperature	from -20°C to +70°C	
Fluid	Hydraulic oil as per DIN 51524 .... 535; for other fluids see section 1	
Recommended viscosity	15 ÷ 100 mm <sup>2</sup> /s at 40°C (ISO VG 15 ÷ 100)	
Fluid contamination class	ISO 4406 class 21/19/16 NAS 1638 class 10, in line filters of 25 μm (β <sub>10</sub> ≥ 75 recommended)	
Fluid temperature	-20°C +60°C (standard seals) -20°C +80°C (/PE seals)	
Flow direction	As shown in the symbols of tables 2	
Operating pressure	<b>DHE</b>	<b>P, A, B = 350 bar</b> <b>T = 210 bar</b>
	<b>DKE</b>	<b>P, A, B = 350 bar</b> <b>T = (with Y port not connected to tank) 210 bar</b> <b>T = (with Y port drained to tank) 250 bar</b>
	<b>DPHE</b>	<b>P, A, B, X = 350 bar</b> <b>T = 250 bar</b> Ports Y = 0 bar Minimum pilot pressure for correct operation is 8 bar
Maximum flow	<b>DHE</b>	<b>50 l/min</b> see technical table E015, section 9, operating limits
	<b>DKE</b>	<b>150 l/min</b> see technical table E025, section 9, operating limits
	<b>DPHE</b>	<b>DPHE-1: 160 l/min; DPHE-2: 300 l/min; DPHE-4: 700 l/min;</b>

**5.1 Coils characteristics**

Insulation class	<b>H (180°C)</b> Due to the occurring surface temperatures of the solenoid coils, the European standards EN ISO 13732-1 EN ISO 4413 must be taken into account
Connector protection degree	IP 65
Relative duty factor	100%
Supply voltage and frequency	See electric feature 6
Supply voltage tolerance	± 10%

**WARNING:** the inobservance of following prescriptions invalidates the certification and may represent a risk for personnel injury

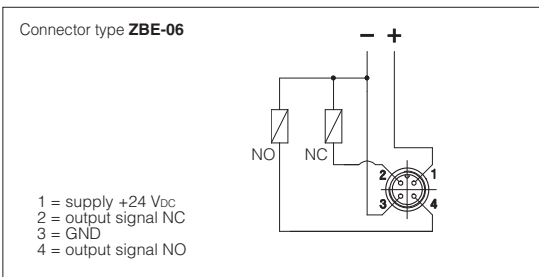


- Safety valves must be installed and commissioned only by qualified personnel
- Safety valves must not be disassembled
- The inductive proximity switch or the position switch can be adjusted only by the manufacturer
- Valve's components cannot be interchanged
- The valves must operate without switching shocks and spool / poppet vibrations

**6 TECHNICAL CHARACTERISTICS OF INDUCTIVE PROXIMITY AND POSITION SWITCHES**

Type of switch		position switch /FV
Supply voltage	[V]	20÷32
Ripple max	[%]	≤ 10
Max current	[mA]	400
Power consumption	[mA]	-
Voltage drop	[V]	-
Max switching frequency	[Hz]	-
Max peak pressure	[bar]	400
Mechanical life		virtually infinite
Switch logic		PNP

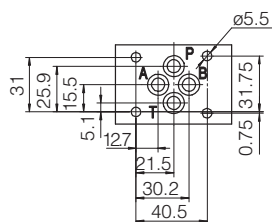
**7 CONNECTING SCHEMES OF POSITION SWITCHES**



**NOTE:** the /FV position switch are not provided with a protective earth connection

**8 DIMENSIONS [mm]**

**130105 DHE-0612/7/A/FV**



**P** = PRESSURE PORT  
**A, B** = USE PORT  
**T** = TANK PORT

**ISO 4401: 2005**

**Mounting surface: 4401-03-02-0-05**

Fastening bolts:

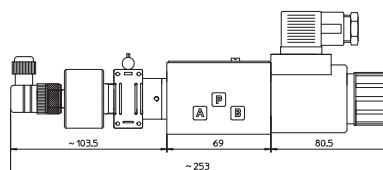
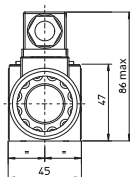
4 socket head screws: M5x50 class 12.9 (DHI, DHU)

M5x30 class 12.9 (DHE, DHER)

Tightening torque = 8 Nm

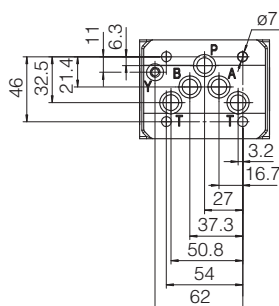
Seals: 4 OR 108

Ports P,A,B,T: Ø = 7.5 mm (max)



Mass: kg 1,7

**130102 DKE-1612/7/A/FV**



**P** = PRESSURE PORT  
**A, B** = USE PORT  
**T** = TANK PORT  
**Y** = DRAIN PORT

**ISO 4401: 2005**

**Mounting surface according to 4401-05-05-0-05 (without X port, Y port optional)**

Fastening bolts:

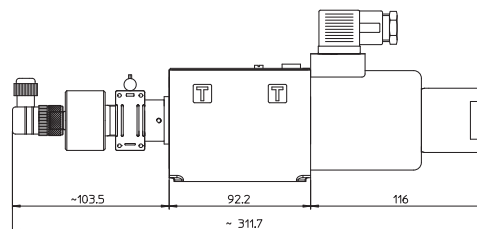
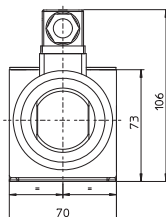
4 socket head screws M6x40 class 12.9

Tightening torque = 15 Nm

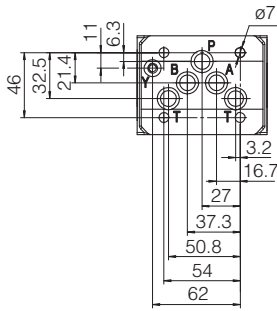
Seals: 5 OR 2050 and 1 OR 108

Ports P,A,B,T: Ø = 11.5 mm (max)

Ports Y: Ø = 5 mm



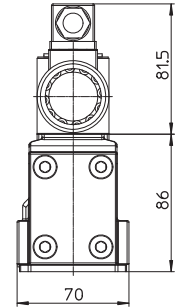
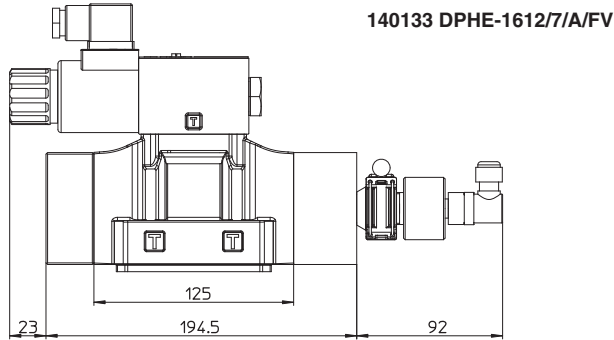
Mass: kg 4,4



**P** = PRESSURE PORT  
**A, B** = USE PORT  
**T** = TANK PORT  
**Y** = DRAIN PORT

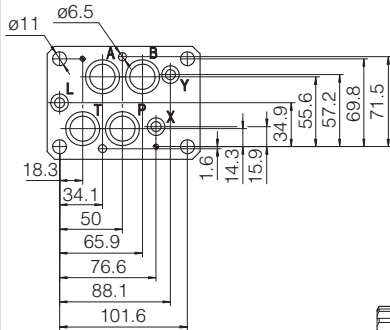
**ISO 4401: 2005**  
**Mounting surface according to 4401-05-05-0-05 (without X port)**

Fastening bolts:  
 4 socket head screws M6x40 class 12.9  
 Tightening torque = 15 Nm  
 Seals: 5 OR 2050 and 1 OR 108  
 Ports P,A,B,T:  $\varnothing = 11.5$  mm (max)  
 Ports Y:  $\varnothing = 5$  mm

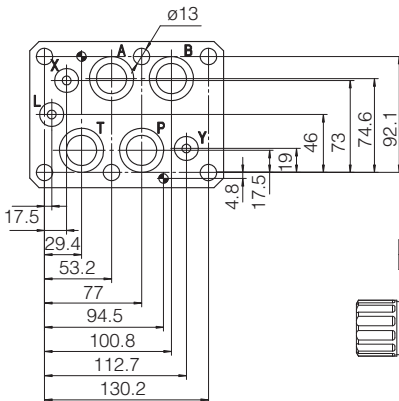
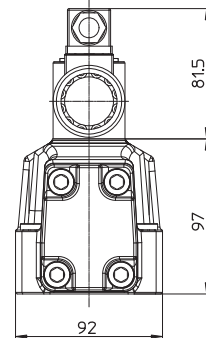
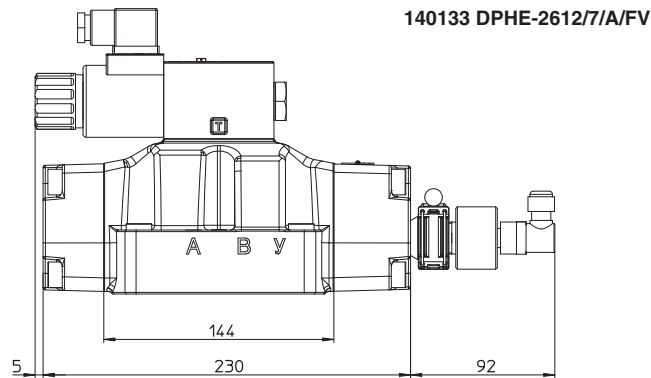


**ISO 4401: 2005**  
**Mounting surface: 4401-07-07-0-05**

Fastening bolts:  
 4 socket head screws M10x50 class 12.9  
 Tightening torque = 70 Nm  
 2 socket head screws M6x45 class 12.9  
 Tightening torque = 15 Nm  
 Diameter of ports A, B, P, T:  $\varnothing = 20$  mm;  
 Diameter of ports X, Y:  $\varnothing = 7$  mm;  
 Seals: 4 OR 130, 2 OR 2043



**P** = PRESSURE PORT  
**A, B** = USE PORT  
**T** = TANK PORT  
**X** = EXTERNAL OIL PILOT PORT  
**Y** = DRAIN PORT



**P** = PRESSURE PORT  
**A, B** = USE PORT  
**T** = TANK PORT  
**X** = EXTERNAL OIL PILOT PORT  
**Y** = DRAIN PORT

**ISO 4401: 2005**  
**Mounting surface: 4401-08-08-0-05**

Fastening bolts:  
 6 socket head screws M12x60 class 12.9  
 Tightening torque = 125 Nm  
 Diameter of ports A, B, P, T:  $\varnothing = 24$  mm;  
 Diameter of ports X, Y:  $\varnothing = 7$  mm;  
 Seals: 4 OR 4112, 2 OR 3056

