

HIDROSIB

S.A.



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800 l/min	Hydraulic directional control valves Ng 32	FC - 5
315 bar		

GENERALITIES

Four-way 2 or 3 position (4/2 or 4/3) spool valves
Direct oil operated, from a remote pilot source.

Pilot operated by:
 solenoid piloted NG 10 valves
 air piloted NG 10 valve

Spring return to normal position
Different control functions, obtained by different spools.
Subplate mounting conforming to ISO 4401.

PERFORMANCE DATA

GENERAL

Fixing: face mounting

Mounting position: function 11: horizontally; other functions:
unrestricted.

Temperature range of ambient medium: -20°C.....+50°C

HIDRAULIC

Maximum pressure at ports P, A, B : 315 bar

Maximum pressure at port T : internal drain : 80 bar
external drain : 315 bar

Flow: see figure 1.

Fluid :

Fluid type: additived mineral oil.

Viscosity range: 10.....500 cSt

Temperature range: -25°C.....+80°C

Filtration: < 25 µm

SPECIFIC TO DH VALVES

Pilot pressure : 5 315 bar

Shift volume : function 04N : 33,4 cm³; other functions: 23,6 cm³

SPECIFIC TO DPH VALVES

Main valve oil pilot pressure: 5 315 bar

Pilot valve air pilot pressure : 2,5 10 bar

Main valve oil shift volume : function 04N : 33,4 cm³; other functions: 23,6 cm³

Pilot valve air shift volume: 2 cm³

Main valve response time :

-shift in: 30 ...160 ms¹

- shift out: 120.. 200 ms¹

Pilot valve response time:

-shift in: 20 ...200 ms¹

- shift out: 80.. 300 ms¹

SPECIFIC TO DEH VALVES

Main valve pilot pressure : 5 315 bar

Main valve shift volume : function 04N : 33,4 cm³; other functions: 23,6 cm³

Main valve response time :

- shift in: 30 ...160 ms

- shift out: 90.. 150 ms¹

Pilot valve response time :

	DC	AC
- shift in	65 ...100 ms ¹	10 ...25 ms ¹
- shift out	30 ...80 ms ¹	50 ...65 ms ¹

SOLENOID CHARACTERISTICS

Type of current:	Direct current(DC)	Alternating current (AC)
Voltage, Un	24 V 190 V	110 V/50Hz 220 V/50 Hz

Voltage admissible deviation : $\pm 10\%$
 Relative duty cycle : Da100%
 Maximum switch frequency per hour: 3600
 Power input at 20 °C :

cut-in :	38 W	430VA
holding :	38 W	64 VA

Type of connection: plug-in connector , conforming to ISO 4400
 Type of protection : IP65 ; conforming to STAS 5325 (DIN 40050)

1 . Response time will vary with pilot pressure and pilot line length and width.

CHARACTERISTIC CURVES

Pressure drop vs. flow, $\Delta p = f(Q)$, for every kind of control.

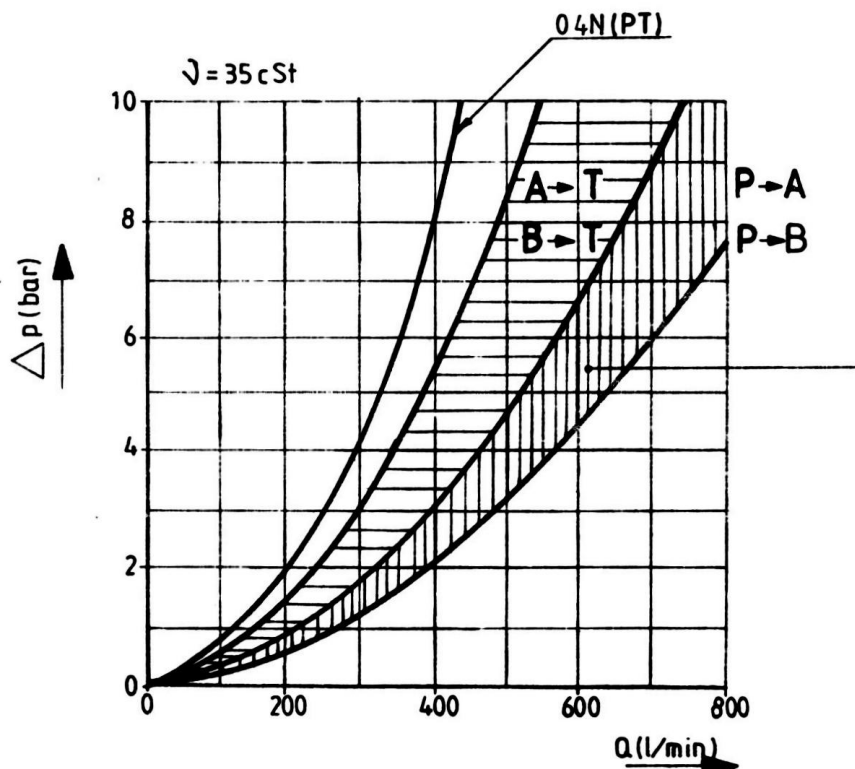


Fig. 1

Admissible flow vs. working pressure

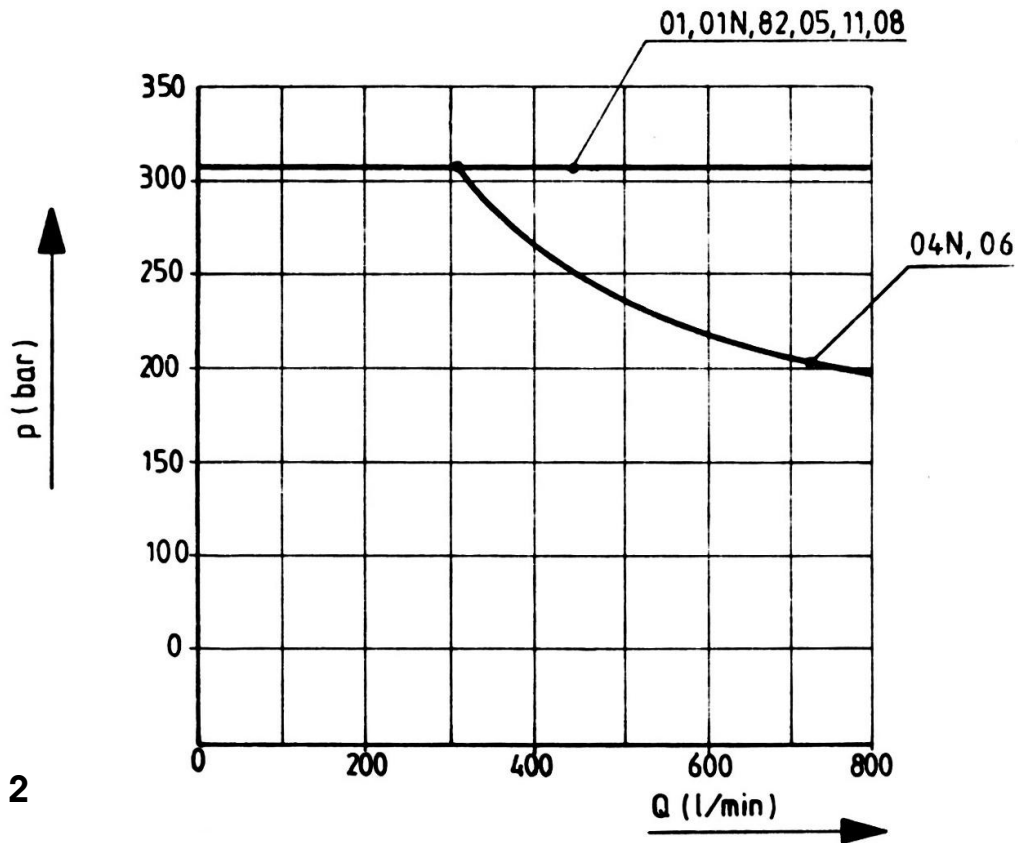


Fig. 2

VALVE FUNCTIONS

Direct oil operated valves

Table. 3

Spool type	Lap ²	Symbol
01	+	
11	+	
02		
04N	-	
05		

Special equipments:

DH type, direct oil operated valves are provided with ability to adjust spool stroke, by means of adjusting screws located in main valve side covers. For delivery, model code should subsequently include mark C.

Pilot operated valves







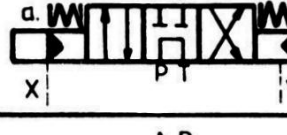


Main valve operated by NG 10 pilot valve oil pressure, with solenoid control - for DEH valves - or air control - for DPH valves.

Oil supply for pilot valve can be effected directly from main valve P channel (internal control) or from an outer circuit, X (external control). Pilot valve can be connected to main valve return T (internal drain) or to a separate drain circuit, Y (external drain).

Table 4 includes - for each function - available variants for control and drain. For additional options, it is required to get in touch with the manufacturer.

Using internal control for functions which have P-T connection on middle position, or underlap at shifting in, is not advisable.

Table .4

Spool typ	Simplified symbol	Lap 2	DEH 				DPH 
			Voltage				
			024/00 ³⁾	190/00	110/50	220/50 ³⁾	
01		+	XY PY		XY PY	PY	XY
01N		-	PY			PY	
11		+			PY		XY
02			XY PT PY XT				
04N		-	XY PY		XY PY	XY	XY
05			XY PY XT	XY	PY	XY PY	XY PT
06			XY				

2. The lap during shifting represents the mode of effecting the connections between P,A,B,T channels during spool travel.

Overlap (+) : during shifting channels don't intercommunicate.

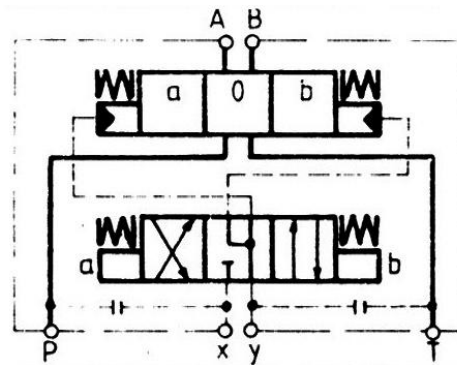
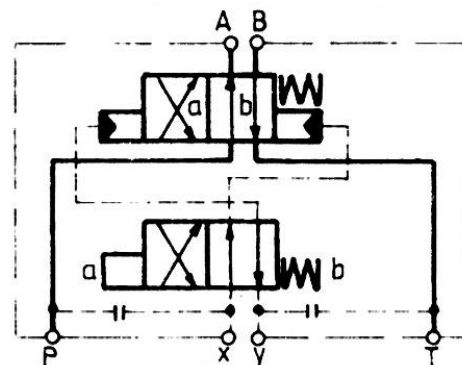
Underlap (-) : during shifting channels intercommunicate.

3. Preferred.

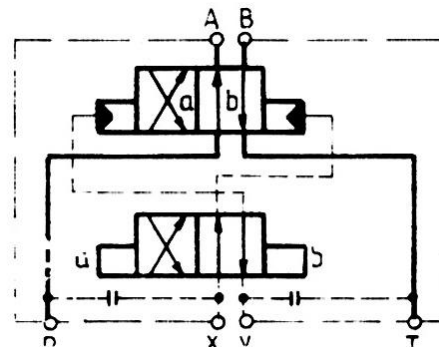
Valve type

Spool type

Symbol

4/3 spring return
valve02
04 N
05
064/2 spring return
valve01
01 N4/2 no spring return
valves

11

**SPECIAL EQUIPMENTS**

DEH and DPH valves are provided with:

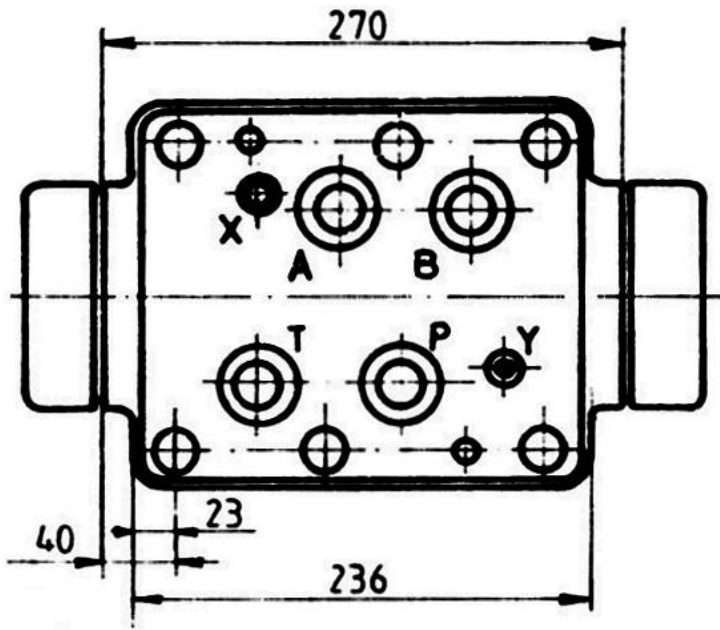
-ability to adjust shifting time for 4/3 valves which operate at pilot pressures above 100 bar, by means of a throttling plate mounted between main and pilot valves. Plate supplied along with valve, by subsequently marking T in the model code.

For the other valves, shifting time adjustment can be effected by using DR 1M-10-H-0 modular throttle valve, which is controlled individually. For further details, please see the catalog card regarding this item (FC-23).

-ability to adjust main spool stroke, by means of adjusting screws located in main valve side covers. For delivery purpose, model code should subsequently include mark C.

-ability to limit pilot flow, for internally controlled valves, by mounting a nozzle inside main valve body. For delivery purpose, model code should subsequently include mark Z.

DH type direct oil operated valves



Weight : 40 kg

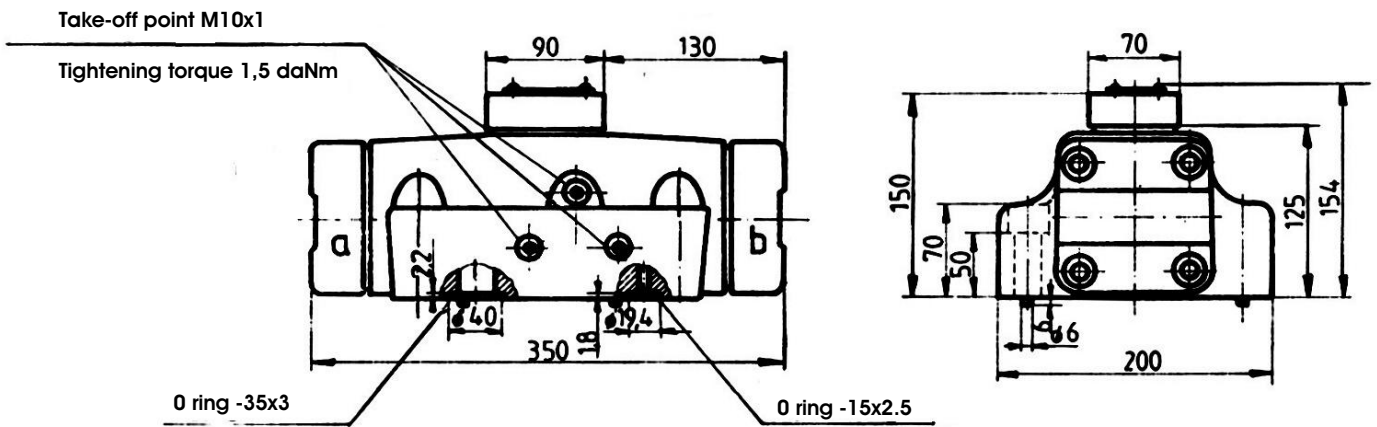
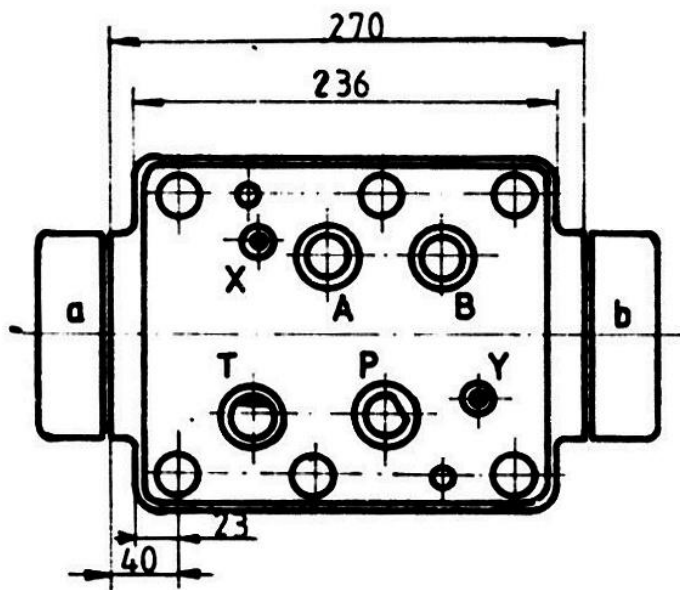


Fig . 3

DEH type, solenoid operated valves



For single solenoid valves

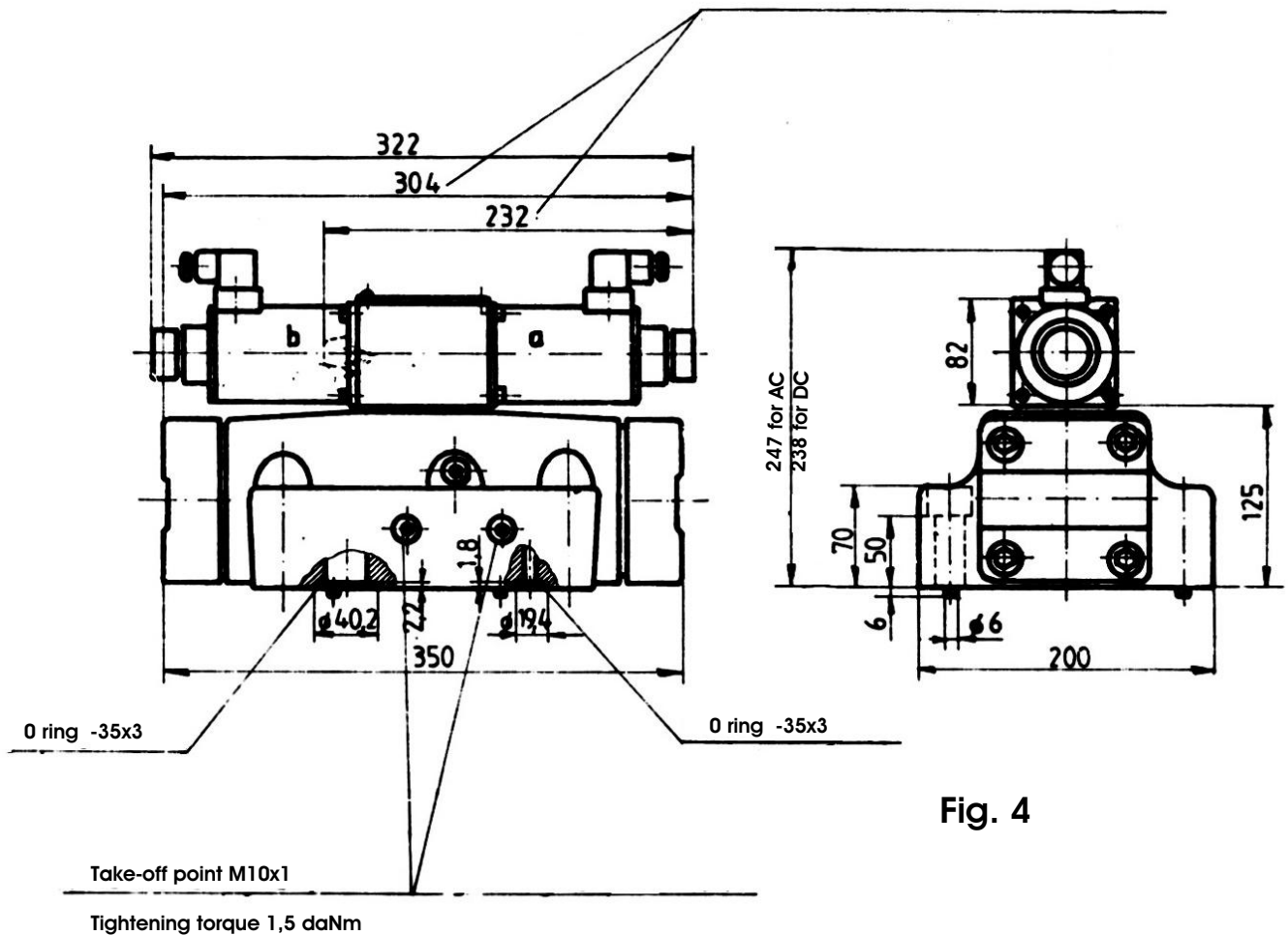


Fig. 4

Weight:

	CC	CA
Single solenoid valves	44,50 kg	44,0 kg
Double solenoid valves	46,500kg	45,500kg

Pilot valve fixing screws tightening torque: $1.1^{+0.3}$ daNm

DPH type, air piloted valves

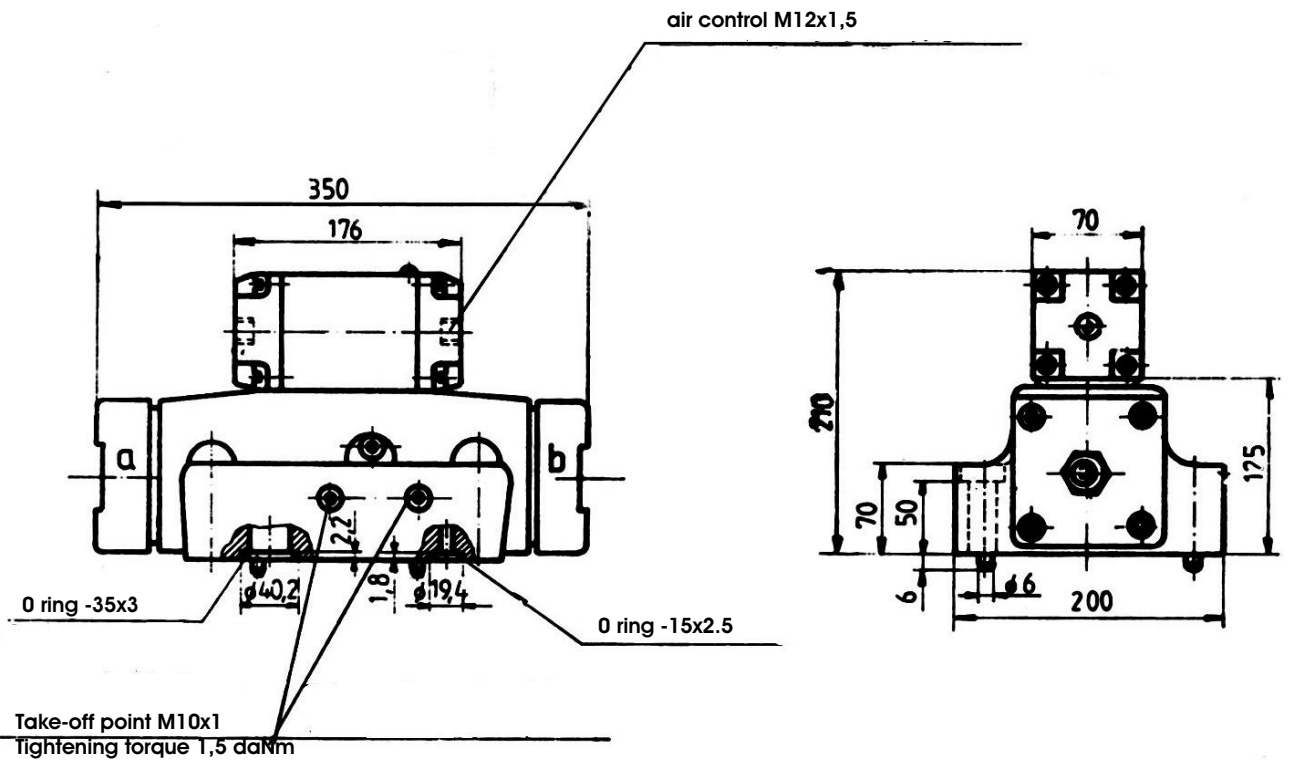
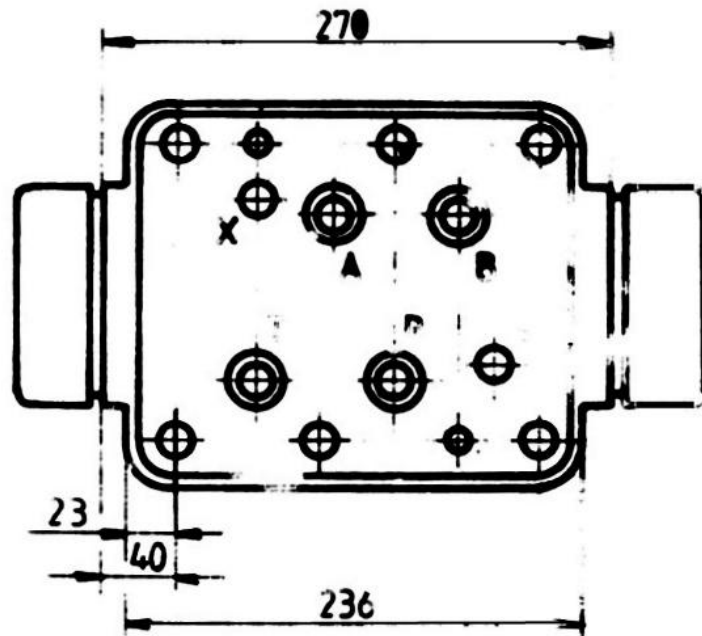


Fig .5

Weight:

Single control-cover valves : 43,0 kg

Double control-cover valves : 43,5kg

Special equipment valves:
Adjustable shifting DEH and DPH type valves

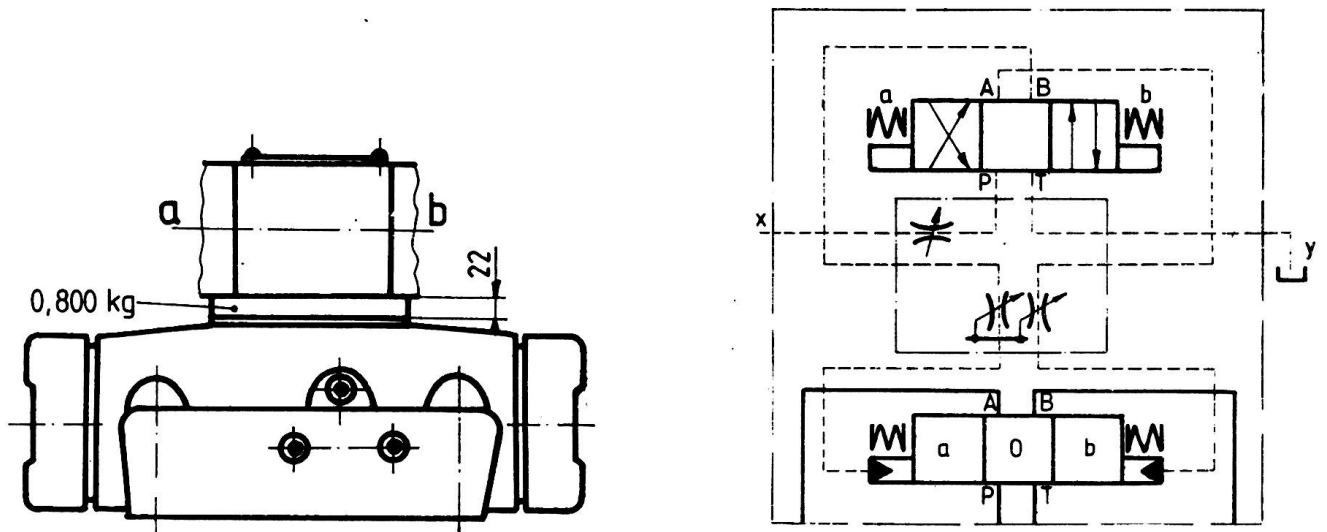


FIG. 6

Ajustable spool stroke DH, DEH and DPH type valves

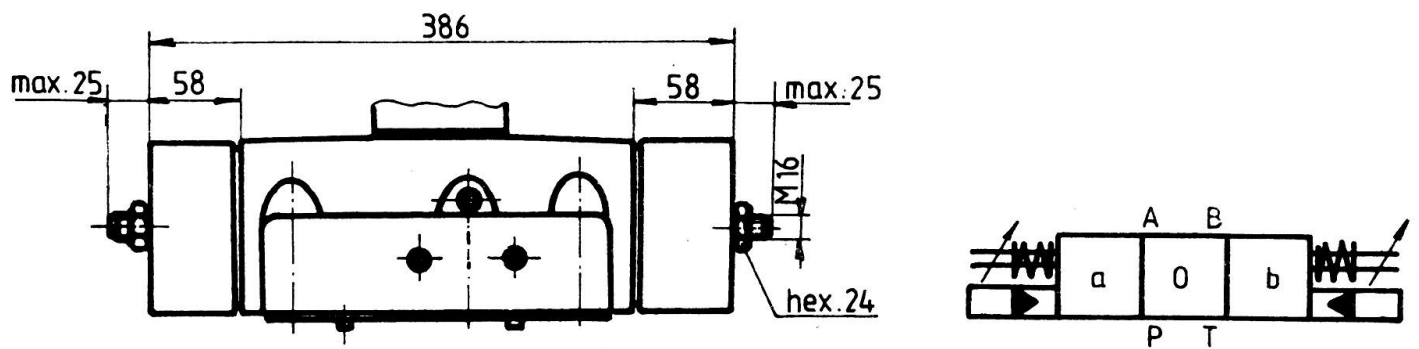


Fig.7

SUBPLATE

Weight: 16.00 kg

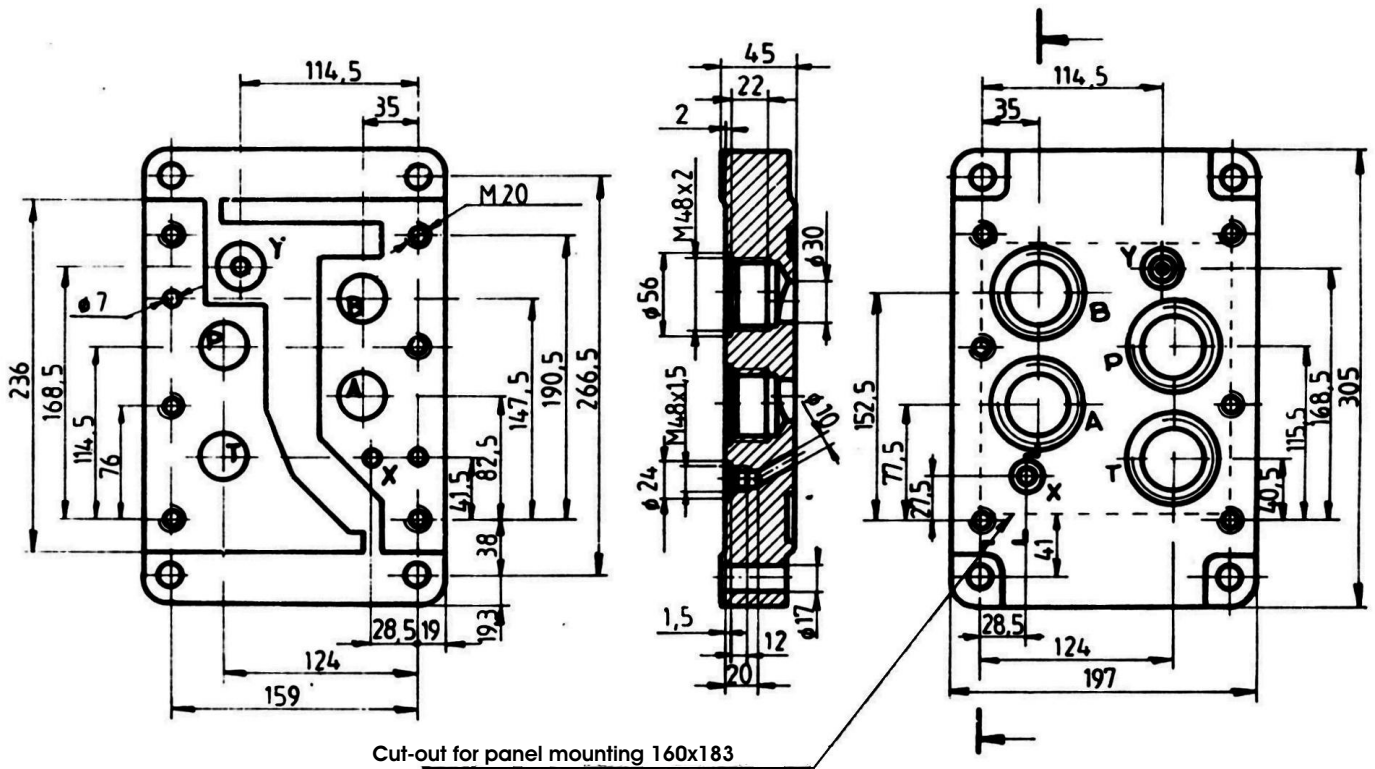


Fig. 8

Model code : PBD 32-1

6 fixing screws M20x75 SR ISO 4762:1993, gr.10.9. Tightening torque 45^{+11} daNm
Screws supplied with valve.

MODEL CODE

123-4567-8-9/10-11-12

- 1 . D - Directional control valves
- 2 . Valve actuation:
 - H - direct oil operated
 - EH - solenoid-pilot operated
 - PH - air-pilot operated
- 3 . 32 - Nominal bore
- 4. Valve functions conforming to tables 3, 4
- 5. Shifting time adjusting:
 - T - for adjustable variants
 - without mark - for not adjustable variants
- 6. Spool stroke adjusting
 - C - for adjustable variants
 - without mark - for not adjustable variants
- 7. Pilot flow limiting
 - Z - for limiting variants
 - without mark - for not limiting variants
- 8, Oil control and drain
 - XY - external control, external drain
 - PT - internal control, internal drain
 - PY - internal control, external drain
 - XT - external control, internal drain
- 9/10 - Solenoid voltage
 - 024/00-24V
 - 190/00-190V
 - 110/50-110V 50Hz
 - 220/50-220V 50Hz
- 11.S - Plug-in connector
- 12 O - Series

Model code forming:

- for DH type valves: DH 32-4 6-12
- for DEH type valves: DEH 32-4567-8-9/10-11-12
- for DPH type valves: DPH 32-4567-8-12