

HIDROSIB

S.A.



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50 l/min	Hydraulic directional control valves NB 6	FC - 1
315 bar		

GENERALITIES

Four- way 2 or 3 position (4/2 or 4/3) spoola valves.

Direct operated:

- manually, by hand lever.
- mechanically, by lever and roller
- electrically, by DC or AC solenoids.
- hydraulically, from a remote oil pilot source.
- pneumatically, from a remote air pilot source.

Spring returned to normal position.

Indexable at manual operated valves and 4/2 solenoid operated valves.

Different control functions, obtained by different spools.

Subplate mounting surface conforms to ISO 4401.

PERFORMANCE DATA

GENERAL

Fixing: face mounting

Mounting position: Functions 11 and 11R: horizontally. Other functions: unrestricted.

Temperature range of environment: -20° ... + 50°C

HIDRAULICE

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

Maximum pressure at port T: 160 bar

Flow: See figure 1, 2, 3

Fluid :

Fluid type: additived mineral oil.

Viscosity range : 10.....500 cSt

Temperature range : -25°C..... + 80°C

Filtration : < 25 μm

SPECIFIC TO DMN VALVES

Handle operating force : 3,5 daNm

SPECIFIC TO DMC VALVES

Operating force : 13 daNm at 160 bar
 Roller stroke : 11,3 mm admissible overstroke: 2,5 mm

SPECIFIC TO DH AND DP VALVES

	DH	DP
Pilot pressure:	25....210 bar	4.5.....10 bar
Shift volume	0,3 cm ³	2 cm ³
Response time: - shift in	15...100 ms ¹	20 ... 200 ms ¹
- shift out	60... 150 ms ¹	30... 300 ms ¹

SPECIFIC TO DE VALVES

Response time : - solenoid energized 20 ... 60 ms²
 - no solenoid energized 10 ... 60 ms²

SOLENOID CHARACTERISTICS

Type of current:	direct current (cc)	alternating current (CA)
Voltage	12 V 24 V 190 V	24 V - 50 Hz 110 V - 50 Hz 220 V - 50 Hz

Voltage admissible deviation : ± 10%
 Relative duty cycle : Da100%
 Maximum switch frequency per hour : 3600

Power input at 20°C :		
- cut-in	35 V	120 VA
- holding	35 V	40 VA

Type of connection: plug-in connector , conforms to ISO 4400

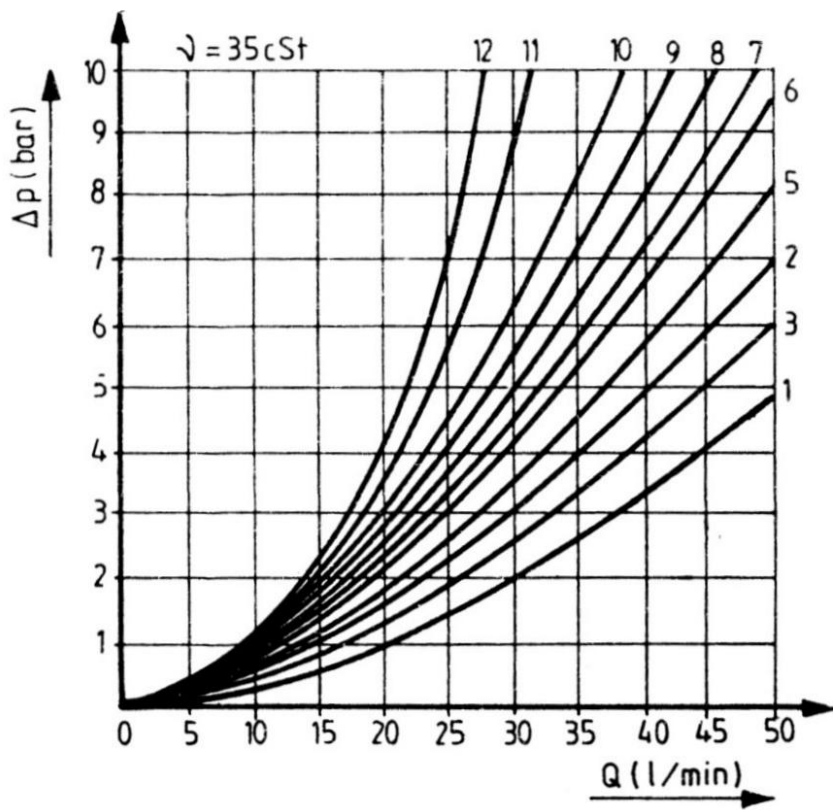
Type of protection: IP65 ; conforms to STAS 5325 (DIN 40050)

NOTES :

- 1 . Response time will vary with pilot pressure and with pilot line width and length.
2. Response time will vary with valve hydraulic power.

CHARACTERISTIC CURVES

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

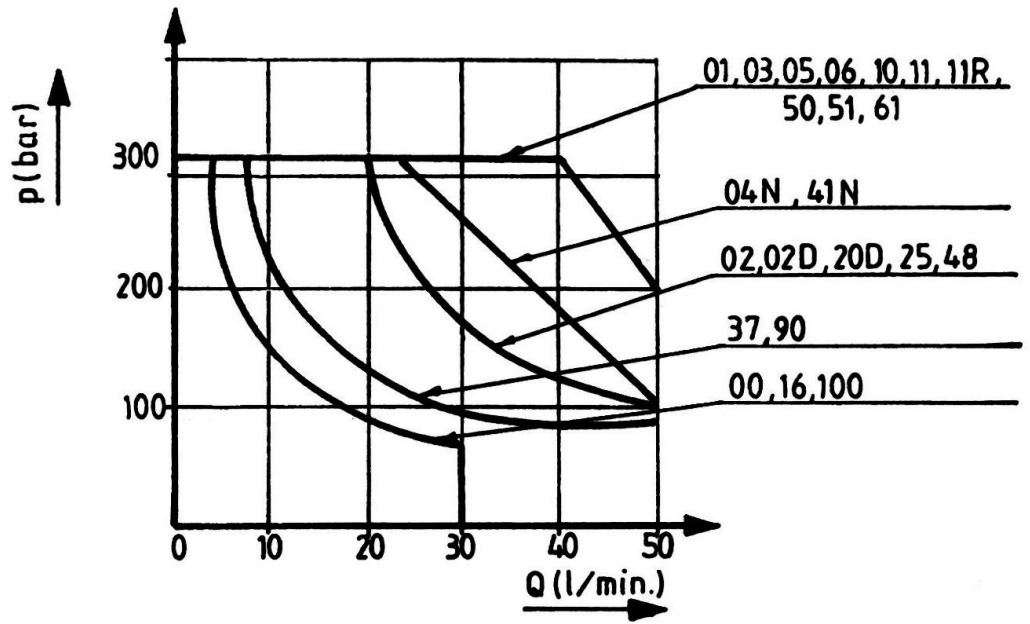


Spool type	Curve number				
	PA	PB	AT	BT	PT
06	1	1	1	1	-
05	2	2	9	10	-
04N	11	12	11	10	7
02	8	2	7	8	-
03	1	1	2	2	-
11	5	5	9	10	-
10	5	5	9	10	-
01	5	5	9	10	-
41N	11	-	-	10	7
50	2	-	-	10	-
02D	8	2	10	10	-
11R	5	5	9	10	-
48	2	2	7	10	-
25	2	-	-	10	-
00	1	7	5	7	-
51	-	2	9	-	-
61	-	1	1	-	-
16	-	3	7	-	-
37	6	6	-	-	-
90	-	3	7	-	-
20D	8	-	-	10	-
100	1	7	9	7	-

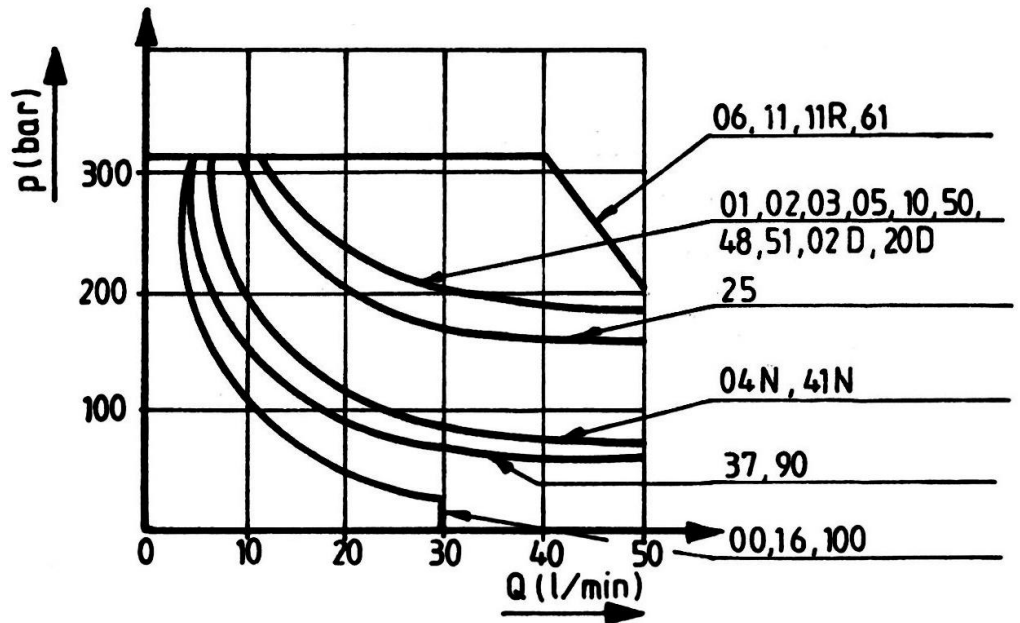
Fig. 1

Admissible flow vs. working pressure

DMN, DMC, DH, DP and DE valves, with I solenoid (at minimal voltage of 0,9 Un)



DE valves, with AC solenoid (at minimal voltage of 0,9 Un)



VALVE FUNCTIONS

Note: variants followed by a dot are used usually, others are produce upon customer's request

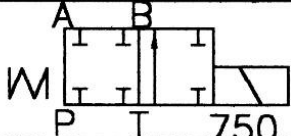
Spool type	Symbol	Lap	DEIZ										DMN	DMC	DH	DP				
			012/00	024/00	048/00	060/00	110/00	190/00	220/00	012/50	024/50	048/50					060/50	110/50	190/50	220/50
00		+		●												●	●	●	●	●
01		+		●												●	●	●	●	●
02		+		●												●	●	●	●	●
02D		+		●												●	●	●	●	●
03		+		●												●	●	●	●	●
04N		-		●												●	●	●	●	●
05		+		●												●	●	●	●	●
06		+		●												●	●	●	●	●
07		+		●												●	●	●	●	●
08		+		●												●	●	●	●	●
09		+		●												●	●	●	●	●
10		+		●												●	●	●	●	●
11		+		●												●	●	●	●	●

VALVE FUNCTIONS			DEFIZ												DMN	DMC	DH	DP			
Spool type	Symbol	Lap	012/00	024/00	048/00	060/00	110/00	190/00	220/00	012/50	024/50	048/50	060/50	110/50	190/50	220/50	230/50				
11R		+	●													●		●	●	●	●
15		+	●													●		●	●	●	●
16		+	●													●		●	●	●	●
20D		+	●													●		●	●	●	●
21		+	●													●		●	●	●	●
25		+	●													●		●	●	●	●
34N		-	●													●		●	●	●	●
37		+	●													●		●	●	●	●
41N		-	●													●		●	●	●	●
44N		-	●													●		●	●	●	●
48		+	●													●		●	●	●	●
49		+	●													●		●	●	●	●
50		+	●													●		●	●	●	●

VALVE FUNCTIONS

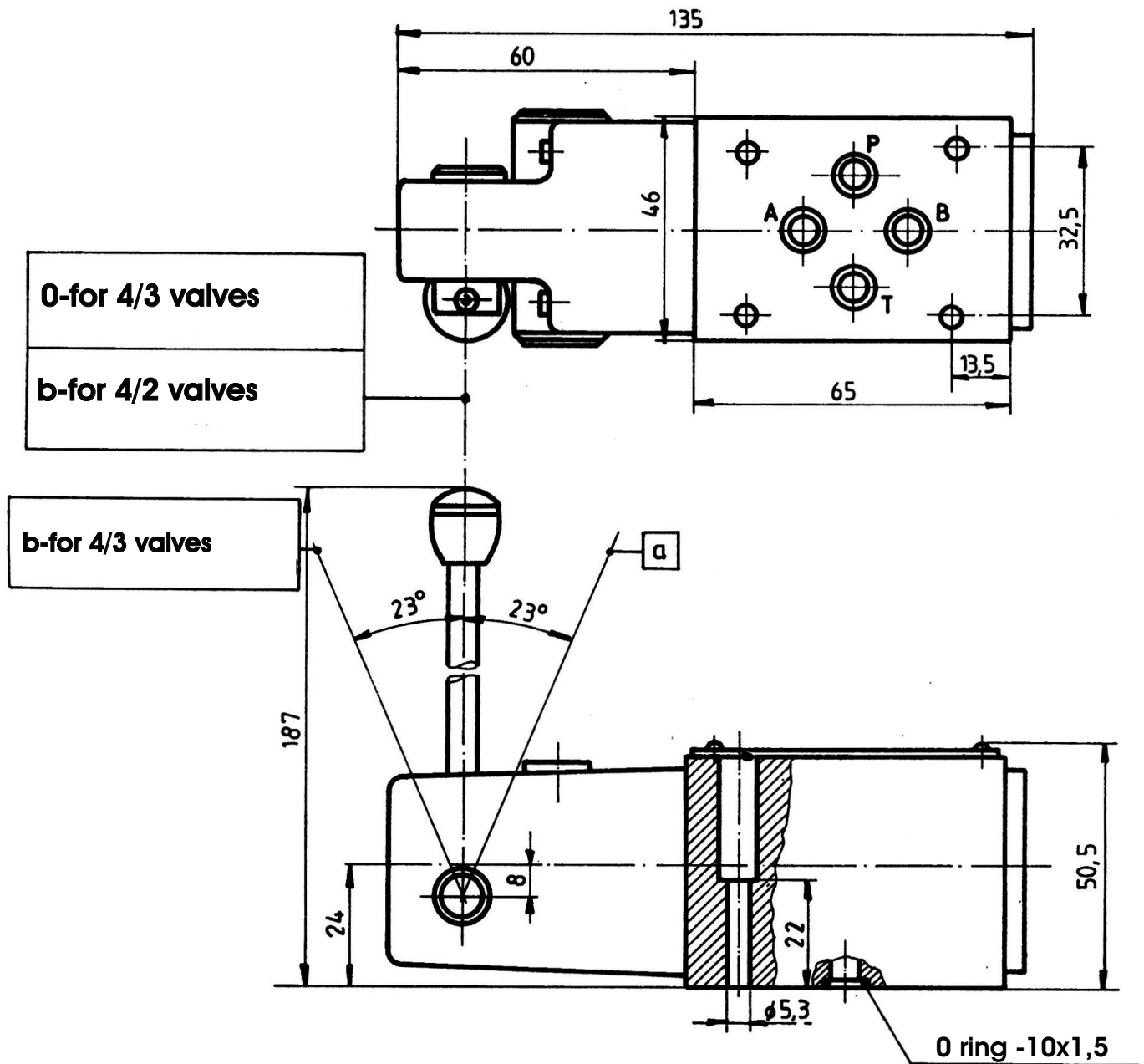
Spool type	Symbol	Lap	DF CZ										DMN	DMC	DH	DP			
			012/00	024/00	048/00	060/00	110/00	190/00	220/00	012/50	024/50	048/50					060/50	110/50	190/50
51		+		●												●	●	●	●
57		+		●												●	●	●	●
61		+		●												●	●	●	●
75		+		●												●	●	●	●
90		+		●												●	●	●	●
100		+		●												●	●	●	●
134N		+		●												●	●	●	●
244N		-		●												●	●	●	●
340N		-		●												●	●	●	●
341N		-		●												●	●	●	●
440N		-		●												●	●	●	●
441N		-		●												●	●	●	●
510		+		●												●	●	●	●

VALVE FUNCTIONS

Spool type	Symbol	Lap	DFZ										DMN	DMC	DH	DP		
			012/00	024/00	048/00	060/00	110/00	190/00	220/00	012/50	024/50	048/50					060/50	110/50
750		+	●											●	●	●	●	●

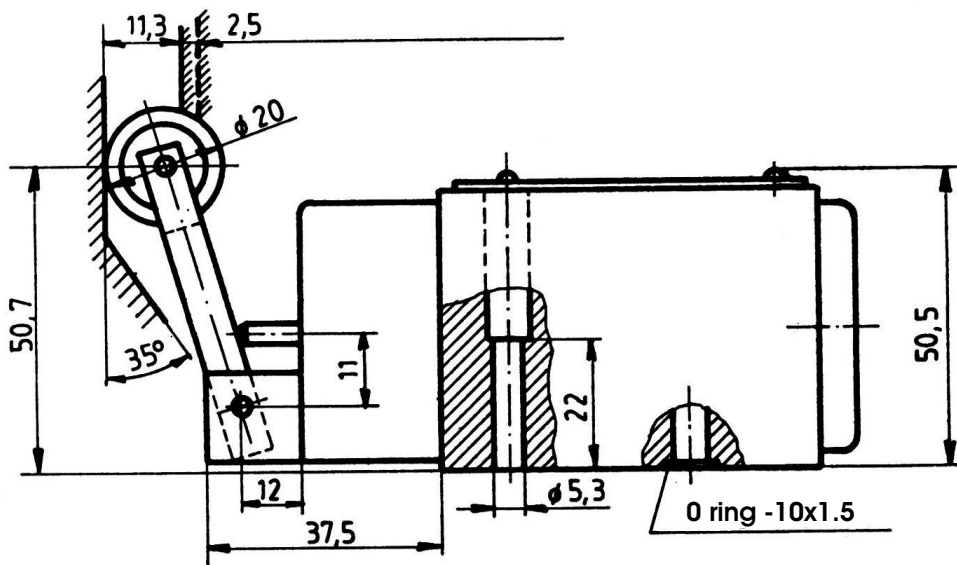
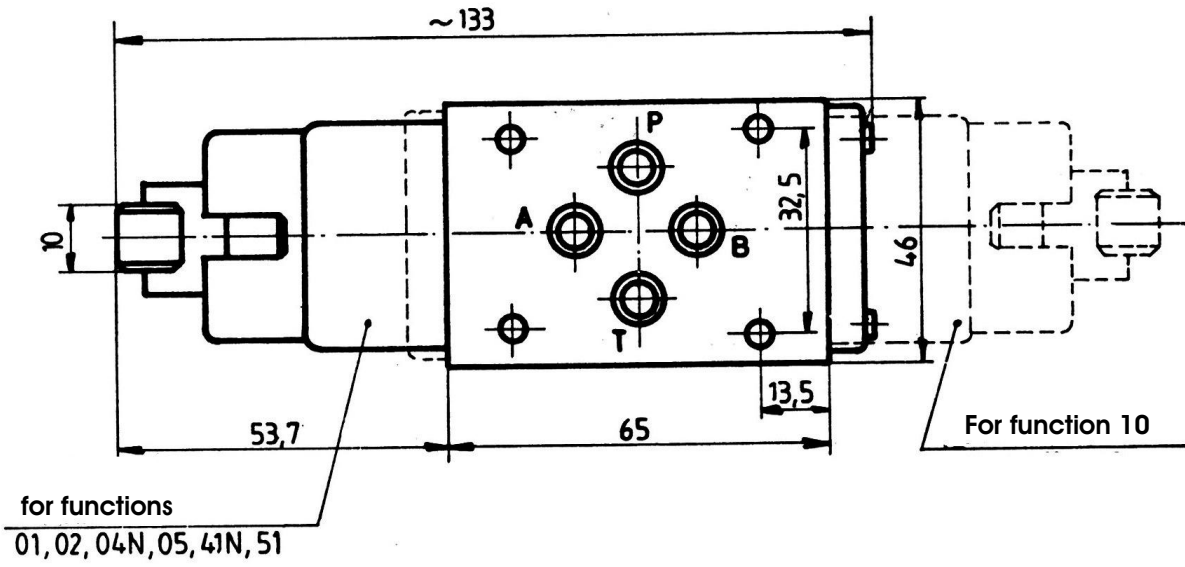
DIMENSIONS

DMN type, hand lever operated valves



Weight :1,700 kg

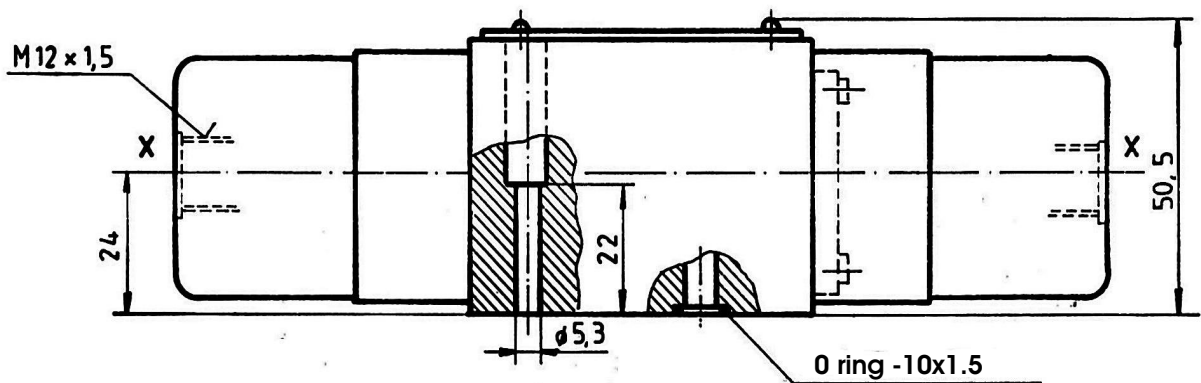
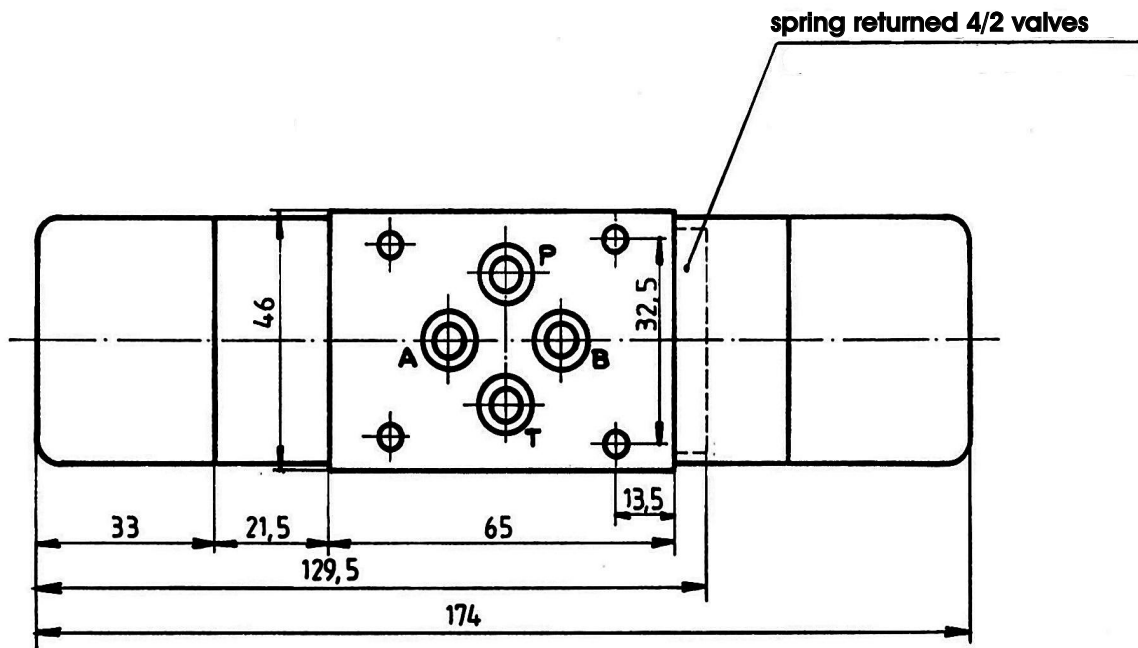
DMC type roller operated valves :



Weight: 1500 kg

Fig. 5

DH type direct oil operated valves:

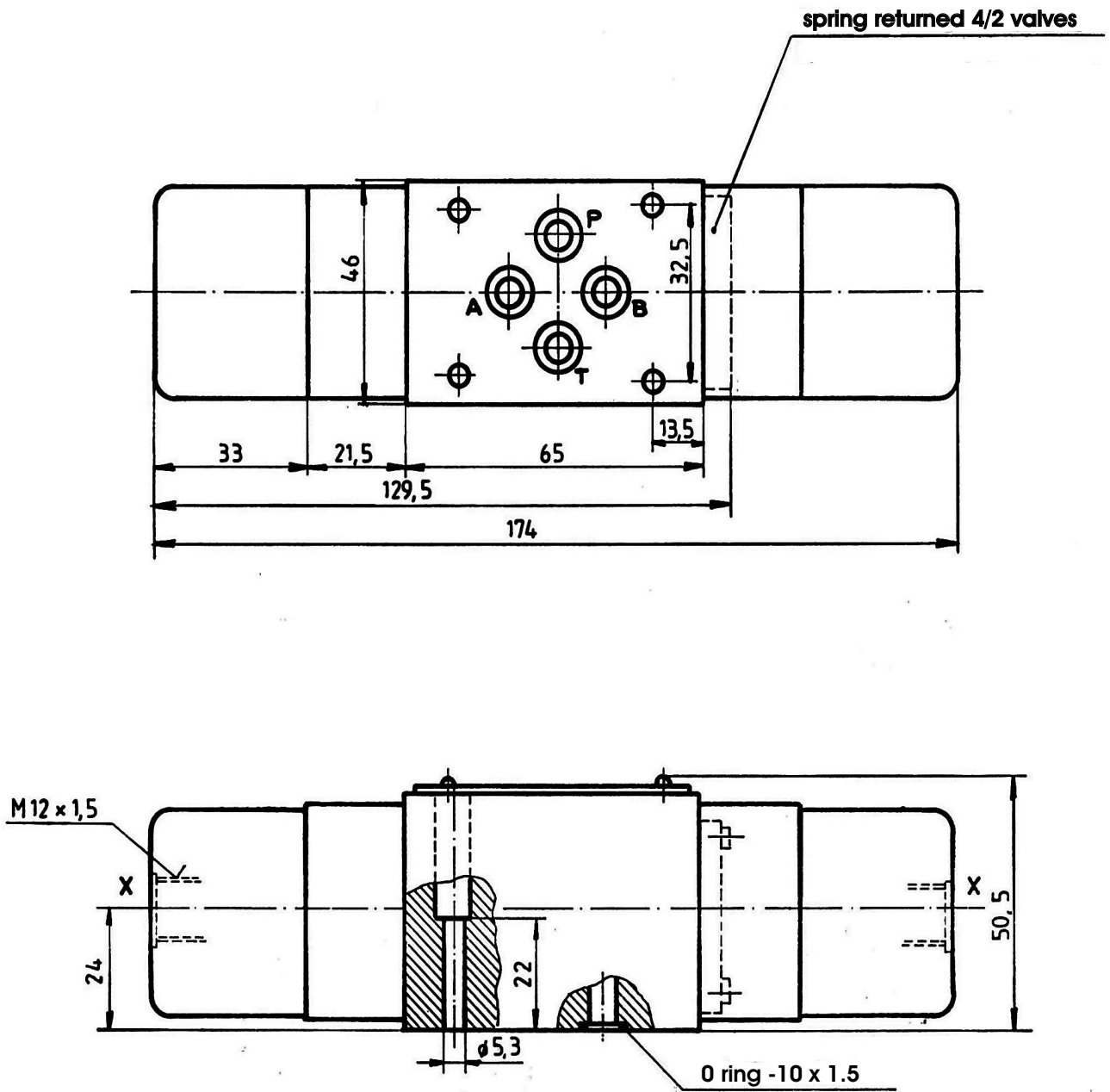


Fig, 6

Weight:
4/2 spring returned valves: 1,6 kg

Other valves: 2,4 kg

DP type direct air operated valves



Fig, 6

Weight:

4/2 spring returned valves : 1,6 kg

Other valves : 2,0 kg

DE type solenoid operated valves

spring returned 4/2 valves

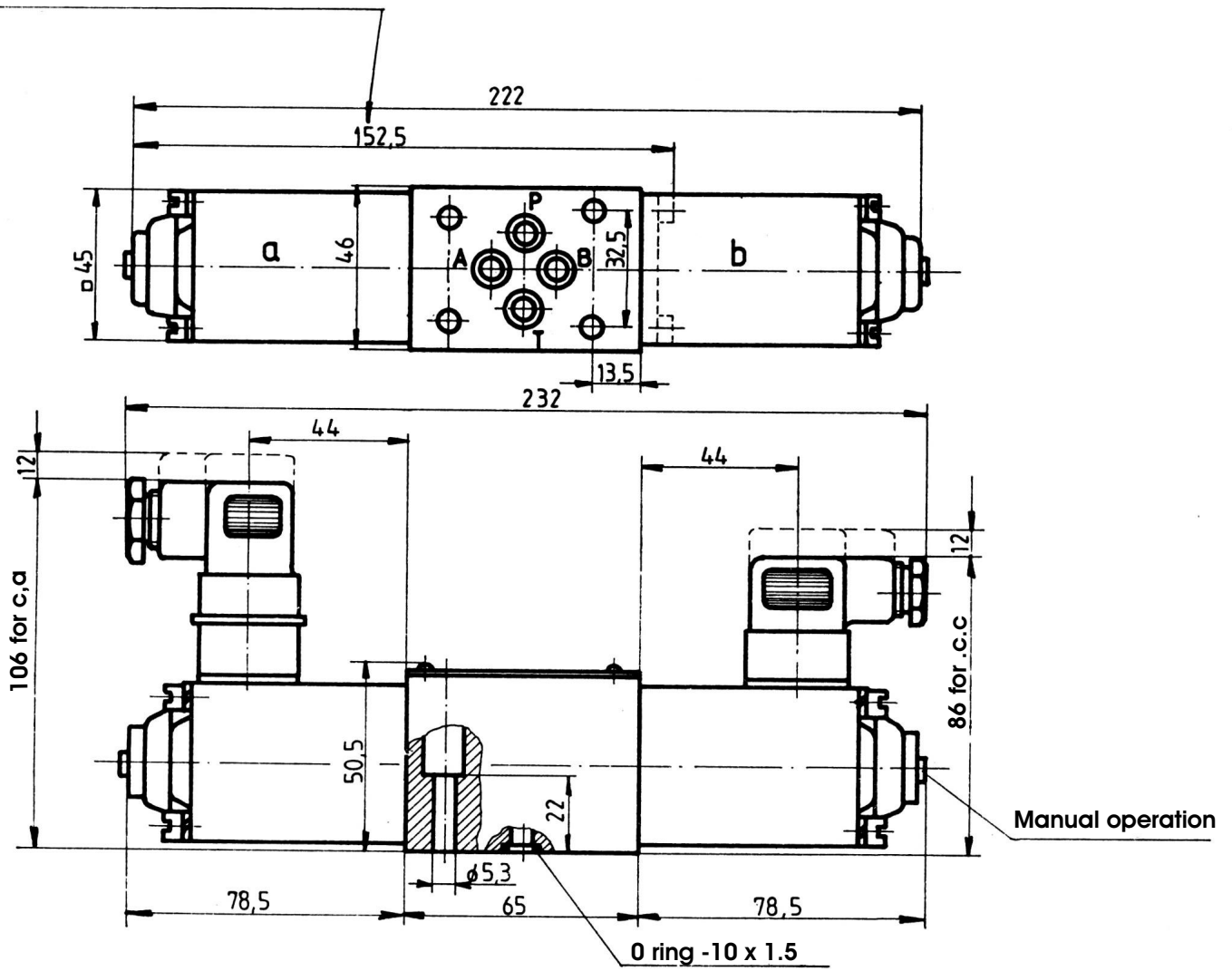


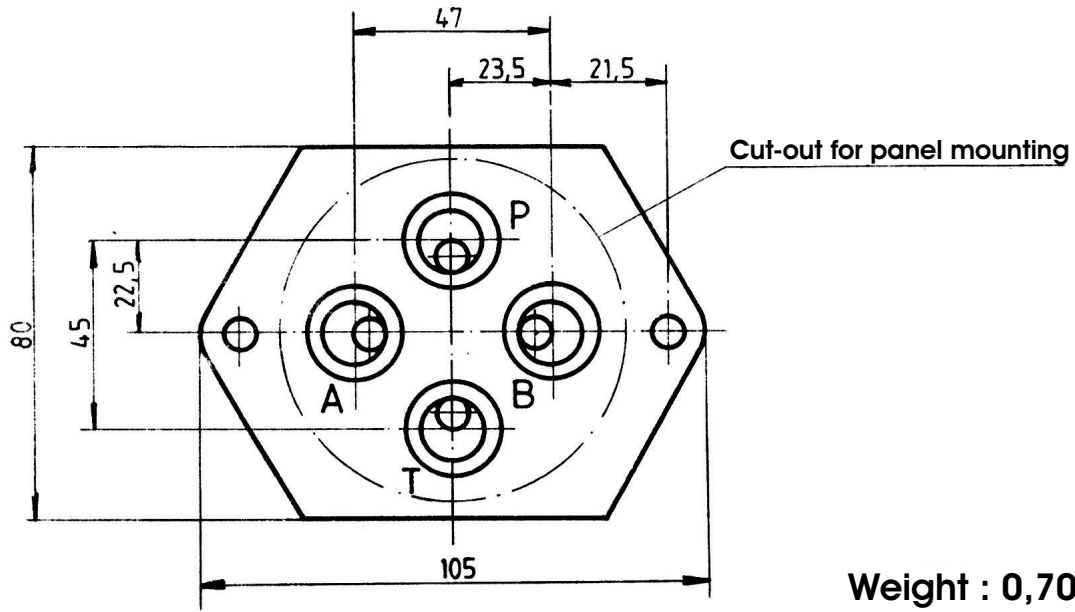
Fig.8

Weight :

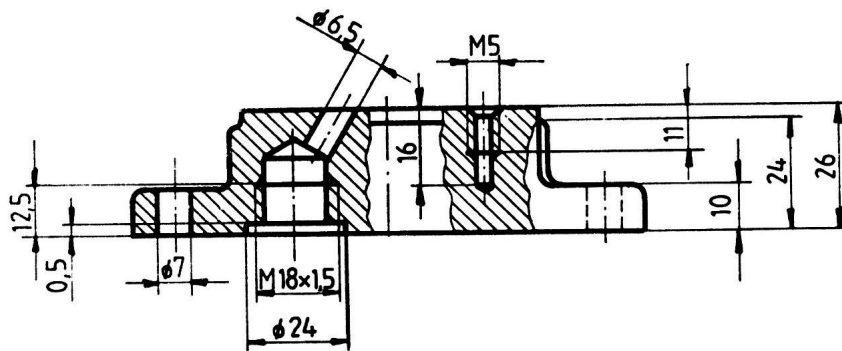
Single solenoid valves : 1,8 kg

Double solenoid valves : 2,3 kg

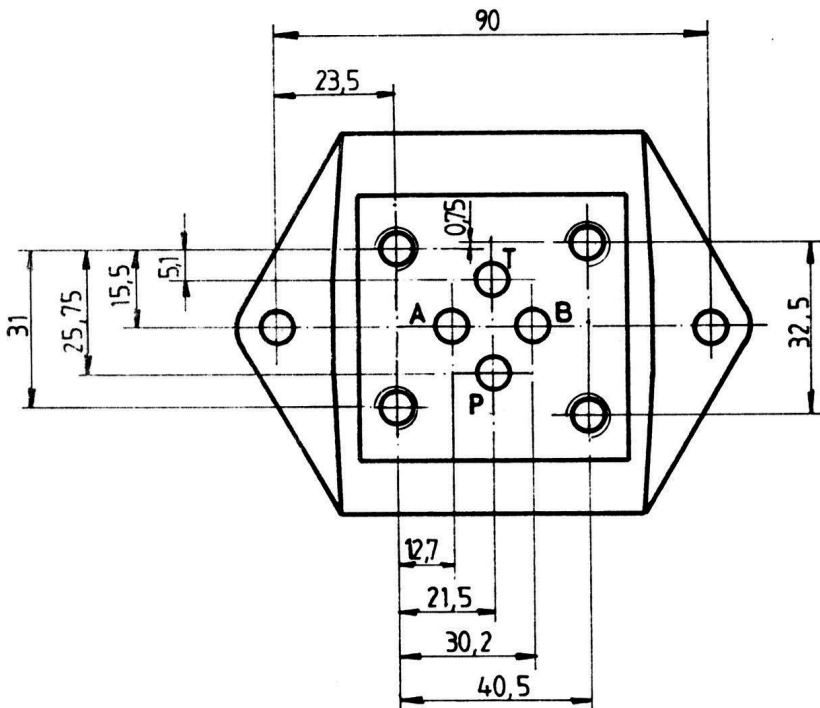
SUBPLATE



Weight : 0,700 kg



Model code
PBD6-1



Fig,9

- 4 fixing screws M 5x30 SR ISO 4762:1993, gr.10.9. Tightening torque: $0,6^{+0.2}$ daNm.
Supplied with the valve.

MODEL CODE

123-4-5*/6*-7-8

*Only for DE valves

1 . D - Directional control valve

2 . Valve actuation

MN - hand lever operated

MC - roller operated

H - direct oil operated

P - direct air operated

E - solenoid operated

3 . 6 - Nominal bore

4 . Valve functions, conform to table 3.

5/6 . Solenoid voltage

012/00 - 12 V

024/00 - 24 V

190/00 - 190 V

024/50 - 24 V, 50 Hz

110/50 - 110 V, 50 Hz

220/50 - 220 V, 50 Hz

7 . S - plug-in connector

8 . O - Series