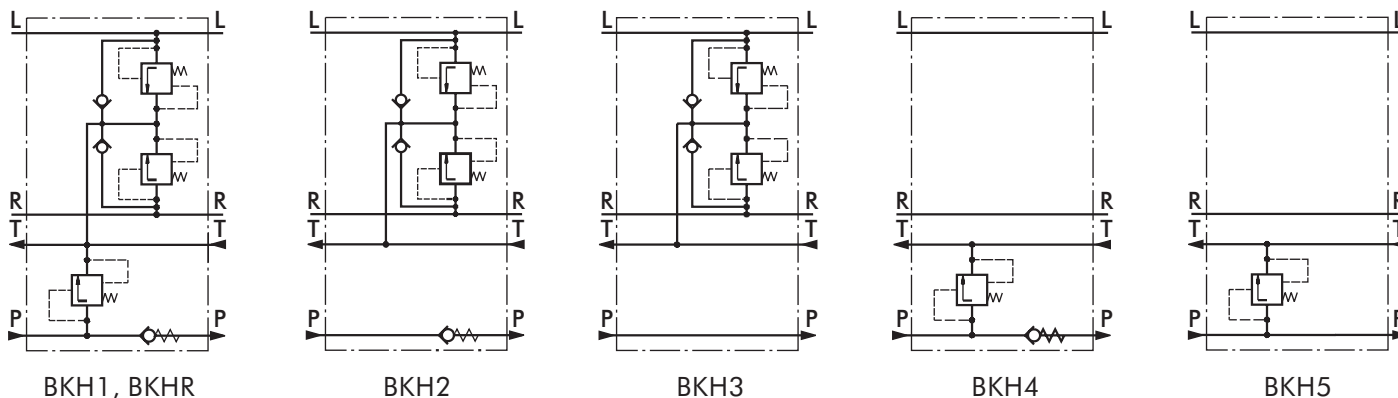


VALVE BLOCKS FOR HKU AND XY TYPE BKH...



The M+S Hydraulic BKH valves are developed to protect the components of the hydraulic circuit: pumps, steering units and cylinders - from overloads, impacts and cavitation. Some of their advantages are: easy integration into any hydraulic circuit, easy mounting to the steering unit, and quick and easy hose connections. Depending on the design and the built in valves the BKH valves can be divided into 6 types: BKH1 ... BKH5 and BKHR, with BKH5 designed for XY steering units only. The maximum flow rate is in compliance with the whole range of HKU and XY steering units but no more than 80 l/min. The pressure settings for the entry relief valves and the shock valves are given in the table.



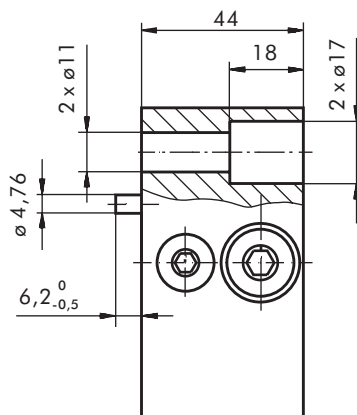
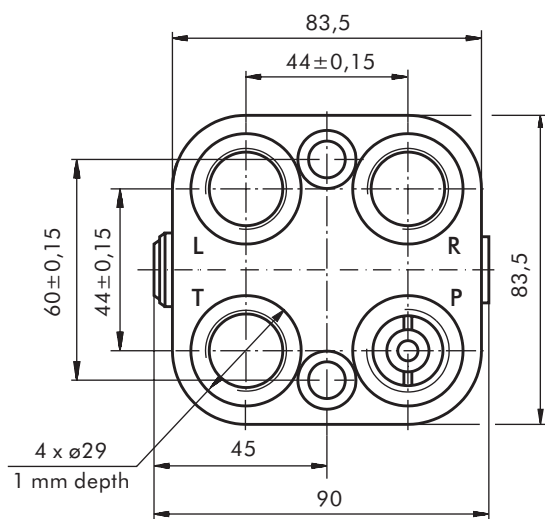
SPECIFICATION DATA

Parameters	Type									
	BKH1, BKHR				BKH2	BKH3	BKH4, BKH5			
Rated Flow [l/min]	80									
Rated Pressure [bar]	160									
Relief Valve Pressure Settings* [bar]	80	100	125	150	-	-	80	100	125	150
Shock Valves Pressure Settings** [bar]	140	160	180	200	200	240				
Weight, avg. [kg]	1,8 ; 2,3				1,8		1,8			

* Pressure Settings are at flow rate of 30 l/min and viscosity 21 mm²/s (50° C).

**Pressure Settings are at flow rate of 2 l/min and viscosity 21 mm²/s (50° C).

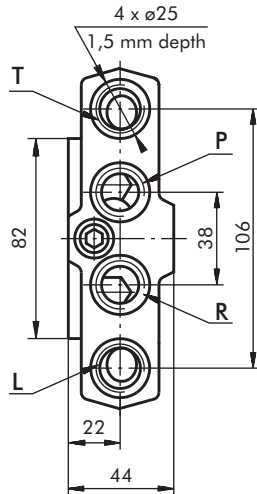
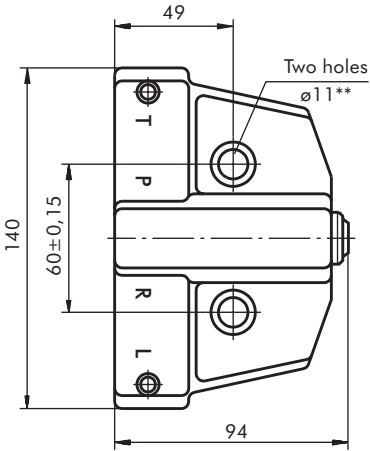
DIMENSIONS AND MOUNTING DATA - BKH1, 2, 3, 4



code	Ports - P, T, R, L Thread
-	G1/2 20 mm depth
A	3/4 - 16 UNF O-ring 20 mm depth
M	M22x1,5 20 mm depth

Connection to the HKU is done with 2 screws M10x1x40-8.8 DIN 912 or with 2 screws 3/8-24 UNF, 37,5 mm long. Tightening torque: 2,5±0,5 daNm

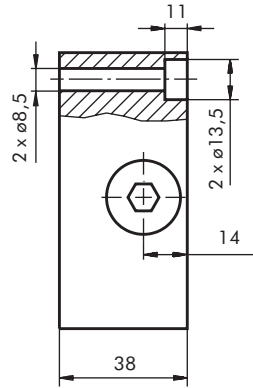
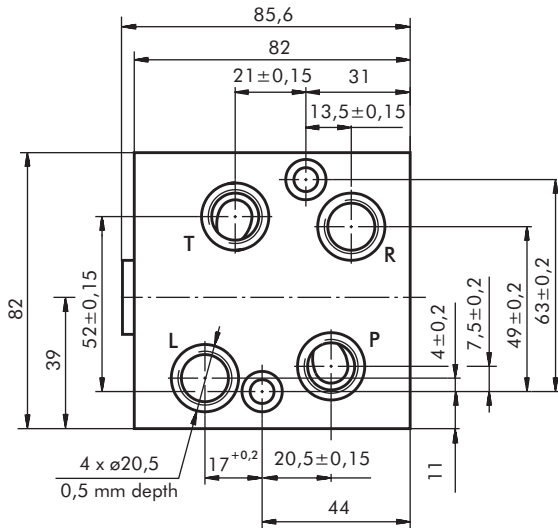
DIMENSIONS AND MOUNTING DATA - BKHR



code	Ports - P, T, R, L Thread
	A 3/4 - 16 UNF O-ring 22 mm depth
	M M18x1,5 22 mm depth

**Connection to the HKU is done with 2 screws M10x1x40-8.8 DIN 912 or with 2 screws 3/8-24 UNF, 37,5 mm long.
Tightening torque: 2,5±0,5 daNm

DIMENSIONS AND MOUNTING DATA - BKH5



code	Ports - P, T, R, L Thread
	M M16x1,5 14 mm depth

Connection to the XY is done with 2 screws M8x40-8.8 DIN 912
Tightening torque: 2,5±0,5 daNm

ORDER CODE

	1	2	3	4	5
B K H		-	-		

Pos.1 - Versions*

R	1	2	3	4	5	with built-in valves:
•	•			•	•	-Input relief valve on line "P".
•	•	•		•		-Input check (non-return) valve on line "P".
•	•	•	•			-Shock valves on lines "R" and "L".
•	•	•	•			-Anti-cavitation valves on lines "R" and "L".

Pos.2 - Relief Valve Pressure Settings, bar**

80	100	125	150
-----------	------------	------------	------------

Pos.3 - Ports

- omit - BSPP (ISO 228)
- A** - SAE (ANSI B 1.1 - 1982)
- M** - Metric (ISO 262)

Pos.4 - Option (Paint)***

- omit - No Paint
- 1** - Painted Low Gloss Color
- 2** - Corrosion Protected Paint

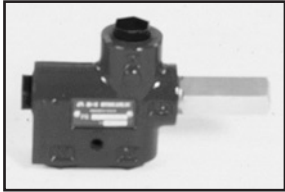
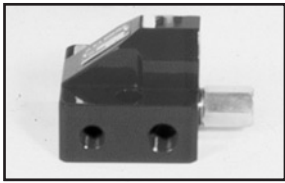
Pos.5 - Design Series

- omit - Factory specified

NOTES: * Versions **R, 1, 2, 3, 4**-for HKU; **5** - for XY
** That does not concern version **2** and **3**.
*** The colour is by customer's request.

The valve blocks are mangano-phosphatized as standard.

PRIORITY VALVES FOR HKUS.../5... TYPE PR...

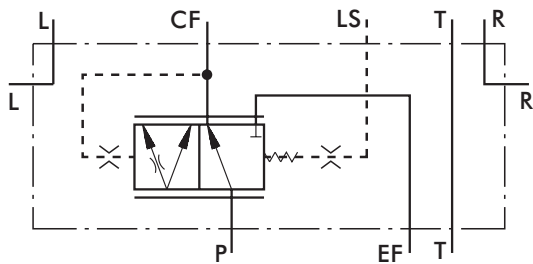


The Priority Valves distribute and trace the hydraulic flow from the supply pump of the hydraulic system to the hydraulic components which control and run the vehicle.

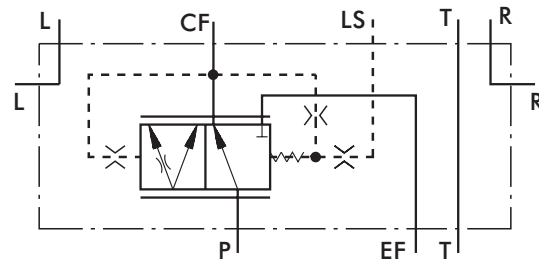
The Priority Valves are used only with the HKUS.../5(E)(T)(TE) hydrostatic steering units. When connected, the steering unit and the priority valve represent sophisticated hydraulic tracing system that controls the flow in both main pipelines of the hydraulic system (the working and control one) at any time of its operation.

As a static signal, the "LS" signal must be used in systems with circuit stability. The connection between the PRT, PRTA priority valves and the HKUS.../5T(TE) steering units has to be as short as possible, but should not exceed 1,5m (for iron pipe with $\varnothing 4$ internal diameter). When a rubber hose is used this length have to be even shorter.

Modulary Mounting

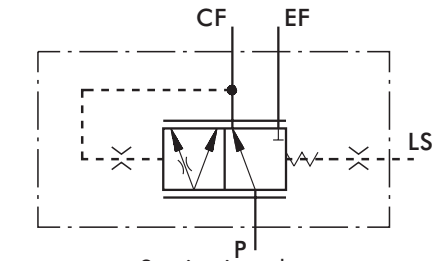


Static signal
PRD.../40,80...

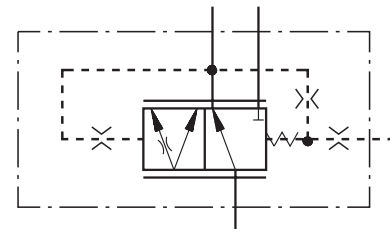


Dinamic signal
PRDD.../40,80...

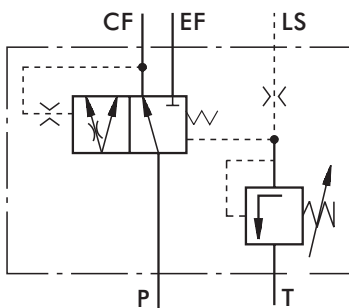
Pipe Mounting



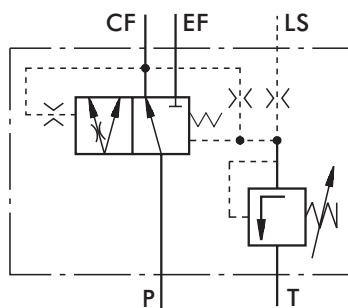
Static signal
PRT.../40,80...; PRTA.../40,80...



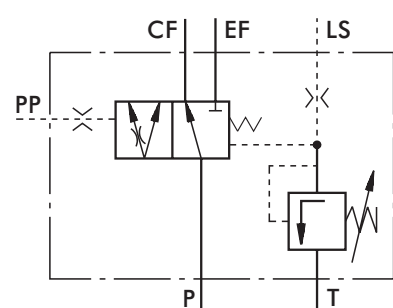
Dinamic signal
PRTD.../40,80...; PRTAD.../40,80...



Static signal
PRT/160...

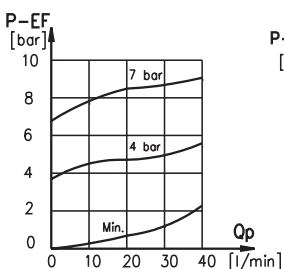


Dinamic signal
PRTD/160...

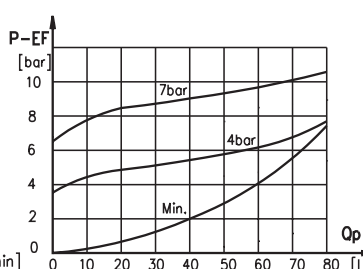


Static signal with External Pilot
PRTE/160...

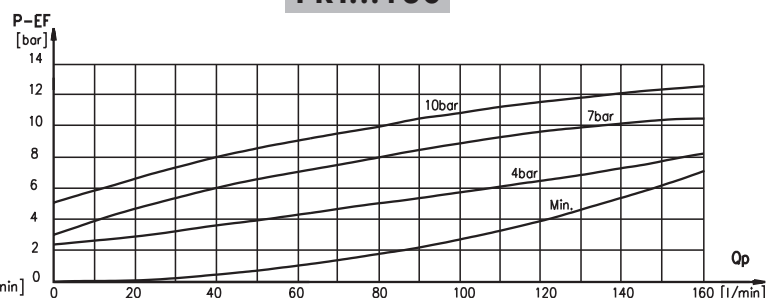
PR...40



PR...80



PRT...160



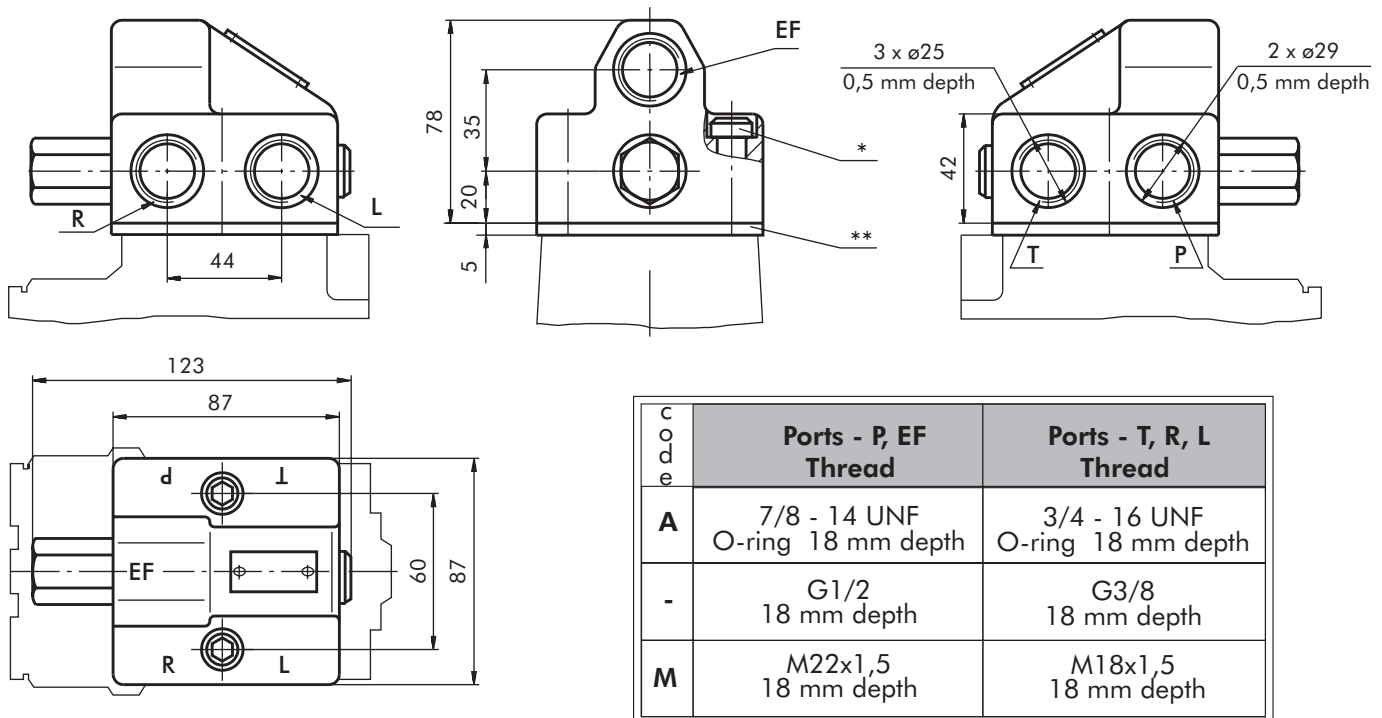
SPECIFICATION DATA

Parameters	Type								
	PRD(D), PRT(D)			PRTA(D)			RPT(D), PRTE		
Rated Flow [l/min]	40; 80						160		
Control Spring Pressure [bar]	4	7	10	4	7	10	4	7	10
Max. Pressures in Oil Ports: P, EF, R, L [bar]	250						250		
	CF						210		
	T						15		
	PP						210		
Standart Relief Valve Pressure Settings [bar]	-						175*		
Weight, avg. [kg]	2,7			1,2			4,4		

* - Adjusted valve pressure from 80 till 210 bar upon customer request.

P - pump, **EF** - excess flow, **CF** - control flow (first priority oil flow), **L** - left, **R** - right, **LS** - load sensing, **T** - tank, **PP** - pilot pressure

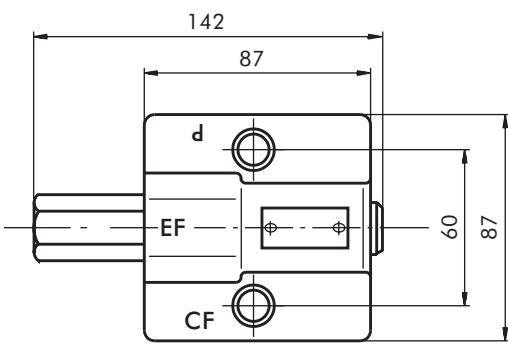
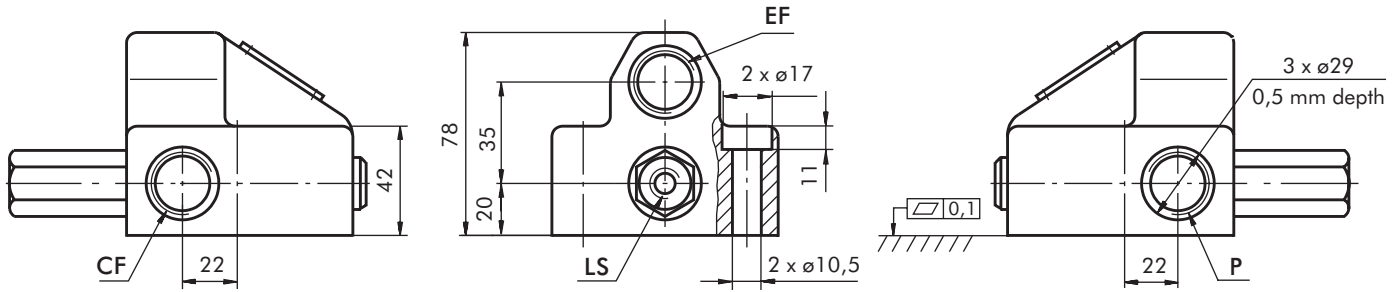
DIMENSIONS AND MOUNTING DATA - PRD/ 40,80



* Connection to the HKUS.../5... is done with 2 screws M10x1x45-12.9 DIN 912 or with 2 screws 3/8-24 UNF, 44,5 mm long.
Tightening torque: 4,5±0,5 daNm.

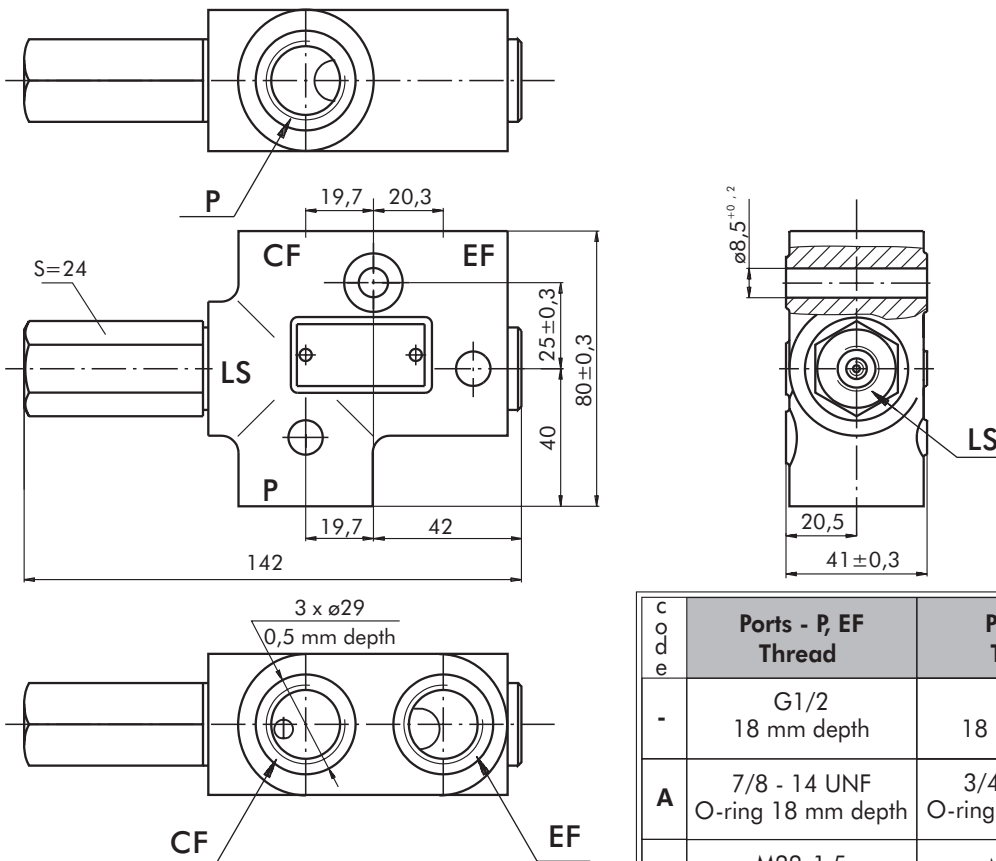
**Intermediate plate for temperature isolation. Order No56122 805 00.

DIMENSIONS AND MOUNTING DATA - PRT/40,80



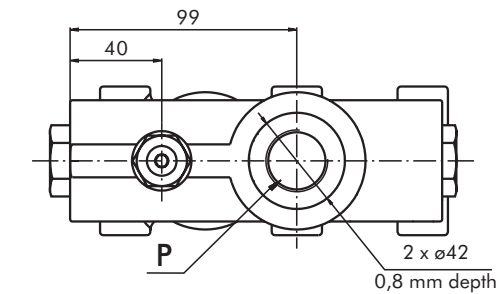
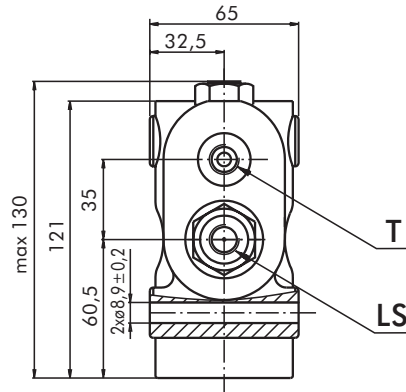
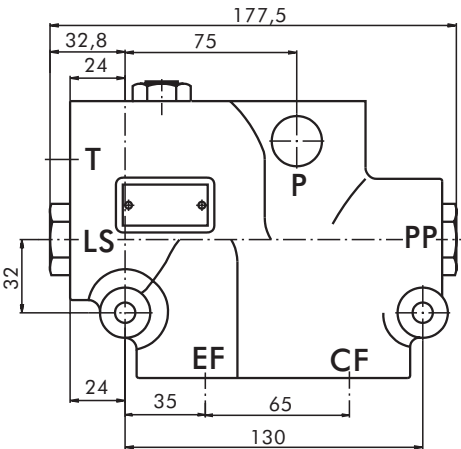
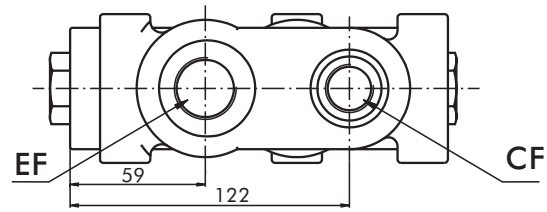
code	Ports - P, EF Thread	Port - CF Thread	LS - Port
-	G1/2 18 mm depth	G1/2 18 mm depth	G1/4 14 mm depth
A	7/8 - 14 UNF O-ring 18 mm depth	3/4 - 16 UNF O-ring 18 mm depth	7/16 - 20 UNF O-ring 12,7 mm depth
M	M22x1,5 18 mm depth	M22x1,5 18 mm depth	G1/4 14 mm depth

DIMENSIONS AND MOUNTING DATA - PRTA/40,80



code	Ports - P, EF Thread	Port - CF Thread	LS - Port
-	G1/2 18 mm depth	G1/2 18 mm depth	G1/4 14 mm depth
A	7/8 - 14 UNF O-ring 18 mm depth	3/4 - 16 UNF O-ring 18 mm depth	7/16 - 20 UNF O-ring 12,7 mm depth
M	M22x1,5 18 mm depth	M22x1,5 18 mm depth	G1/4 14 mm depth

DIMENSIONS AND MOUNTING DATA - PRT/160



code	Ports - P, EF Thread	Port - CF Thread	LS, PP, T - Ports
-	G3/4 20,5 mm depth	G1/2 18,5 mm depth	G1/4 12,5 mm depth
A	1 1/16 - 12 UN O-ring 20,5 mm depth	3/4 - 16 UNF O-ring 18,5 mm depth	7/16 - 20 UNF O-ring 12,5 mm depth
M	M27x2 20,5 mm depth	M18x1,5 18,5 mm depth	M12x1,5 12,5 mm depth

ORDER CODE

1	2	3	4	5	6	7
P R			/		-	

Pos.1 - Mounting

- D** - Modularly Mounting
- T** - Pipe Mounting (Model 1)
- TA** - Pipe Mounting (Model 2)

Pos.2 - Signal Type

- omit - with Static signal
- D** - with Dinamic signal
- E*** - with Static signal w/ External Pilot

Pos.3 - Rated Flow, l/min

40	80	160**
-----------	-----------	--------------

Pos.4 - Control Spring Pressure , bar

4	7	10
----------	----------	-----------

Pos.5 - Ports

- omit - BSPP (ISO 228)
- A** - SAE (ANSI B 1.1 - 1982)
- M** - Metric (ISO 262)

Pos.6 - Option (Paint)***

- omit - No Paint
- 1** - Painted Low Gloss Color
- 2** - Corrosion Protected Paint

Pos.7 - Design Series

- omit - Factory specified

NOTES:* Only for PRT/160
** Only for PRT
*** Colour at customer's request.

The priority valves are mangano-phosphatized as standard.

STEERING COLUMNS TYPE KK...



The M+S Hydraulic KK Steering Columns transfer the torque from the steering wheel of the vehicle to the HKU, HKUS or other of the same class steering units. The KK steering columns are consisted of a pipe in which is centred the control shaft.

MOUNTING

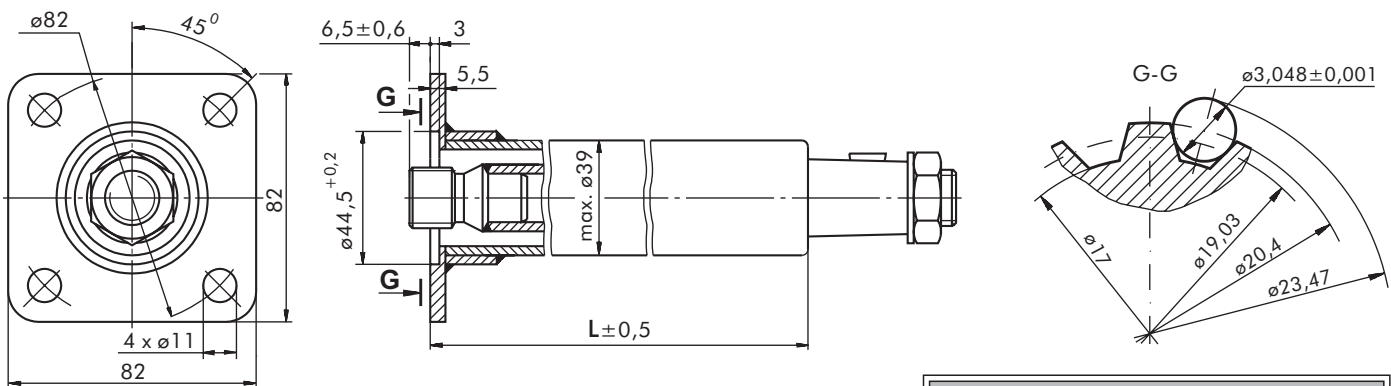
The KK steering column is hard-mounted to the steering unit by its welded flange using four screws M10 at minimal depth 10 mm fitted in the steering unit with tightening torque of 2 daNm.

Permissible loads on the steering column are as follows:

Max. torque applied to the steering wheel	24 daNm
Max. bending moment	20 daNm
Max. axial load	100 daN

The steering column must be additionally supported when the length L exceeds 150 mm.

DIMENSIONS AND MOUNTING DATA



SPECIFICATION DATA

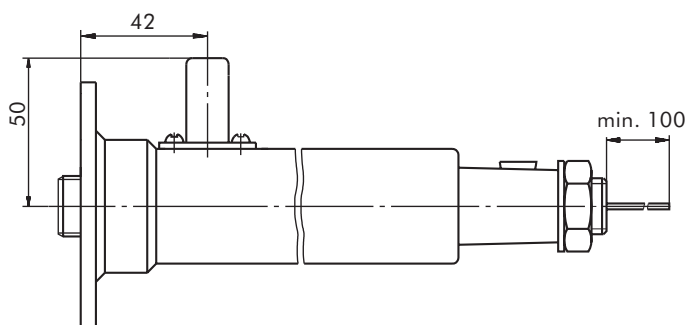
Parameters	Type			
	KK 75	KK 150	KK 390	KK 750
L [mm]	78	168,2	393	777,8
Weight, avd [kg]	0,75	1,1	1,9	3,3

Involute Spline Data		
Modul	m	1,5875
Number of Teeth	z	12
Pressure Angle	α	30°
Pitch	p_t	4,986

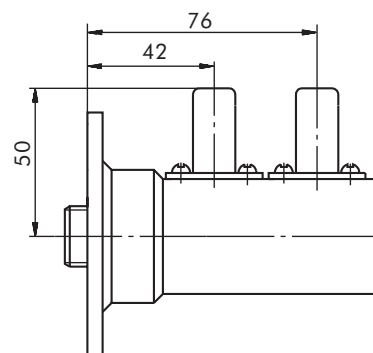
Please, contact factory or your regional manager regarding other lengths.

SOUND SIGNAL CONNECTION

E Option

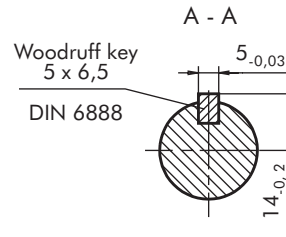
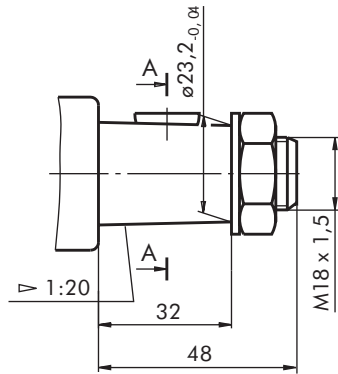


EE Option

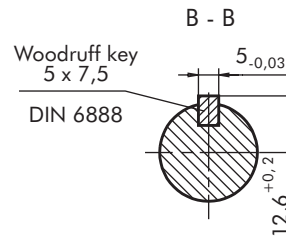
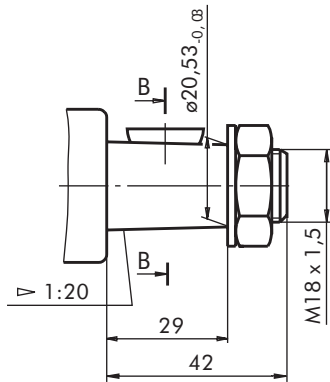


SHAFT EXTENSIONS

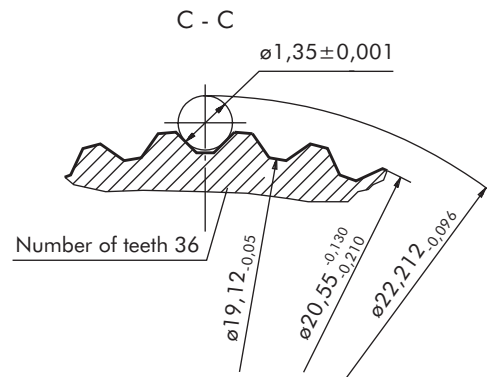
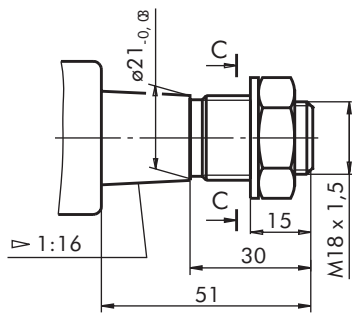
TYPE I



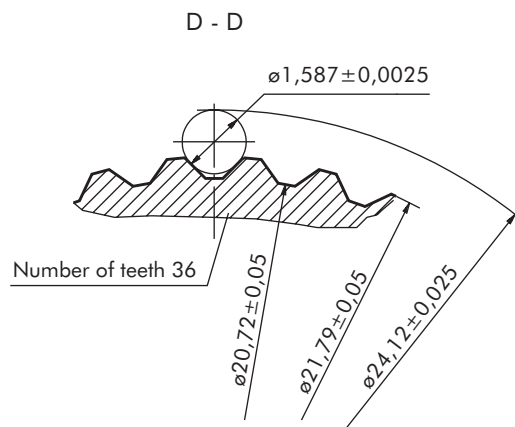
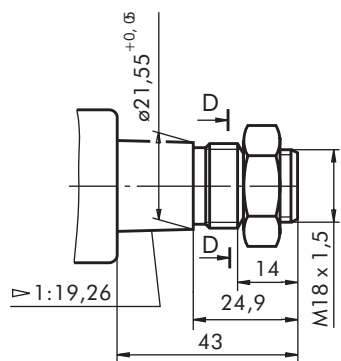
TYPE II



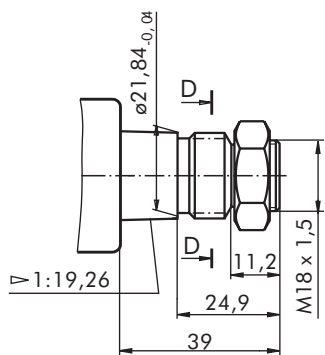
TYPE III



TYPE IV

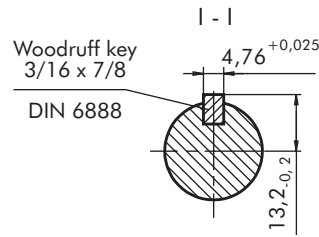
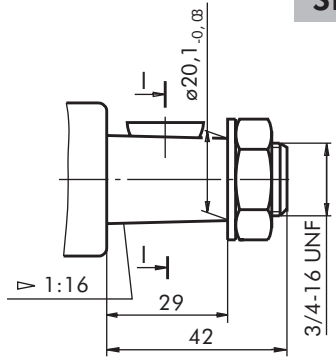


TYPE V

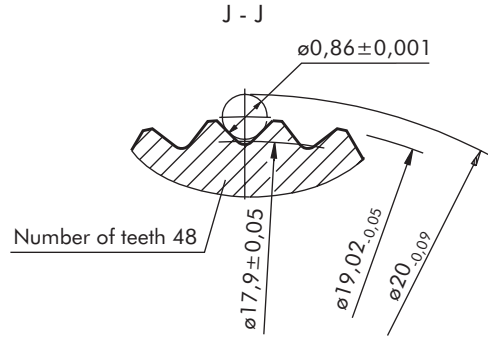
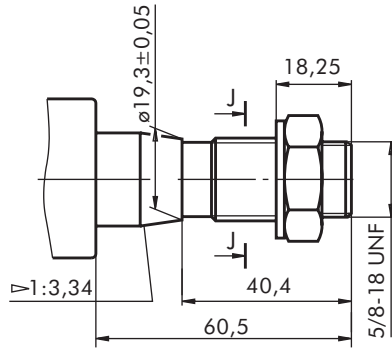


SHAFT EXTENSIONS

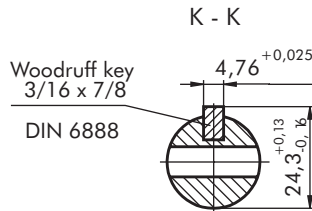
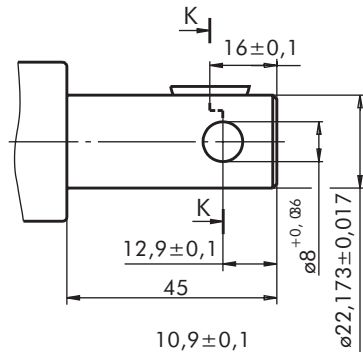
TYPE VI



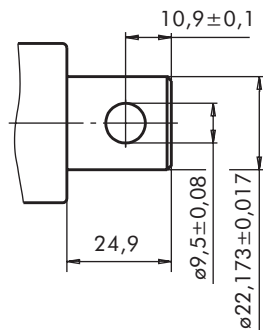
TYPE VII



TYPE VIII



TYPE IX



ORDER CODE

1	2	3	4	5
K	K			

Pos.1 - **Length, mm** (acc. to table)

Pos.2 - **Shaft Extensions**

I, II, III, IV, V, VI, VII, VIII, IX

Pos.3 - **Signal Connection** (Option)

omit - without electric signal connection

E - with one electric signal connection

EE - with two electric signal connection

Pos.4 - **Option** (Paint)*

omit - No Paint

1 - Painted Low Gloss Color

2 - Corrosion Protected Paint

Pos.5 - **Design Series**

omit - Factory specified

NOTES:

* Colour at customer's request.

The steering columns are yellow galvanized as standard.