

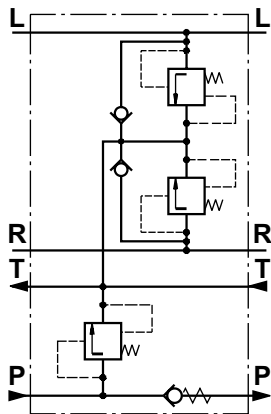
VALVE BLOCKS FOR HKU TYPE BKH...



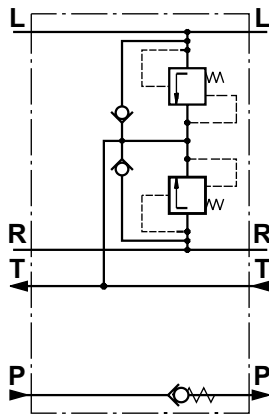
The M+S Hydraulic BKH valves are developed to protect the components of the hydraulic circuit: pumps, steering units and cylinders - from overloads, impacts and cavitation. Some of their advantages are: easy integration into any hydraulic circuit, easy mounting to the steering unit, and quick and easy hose connections.



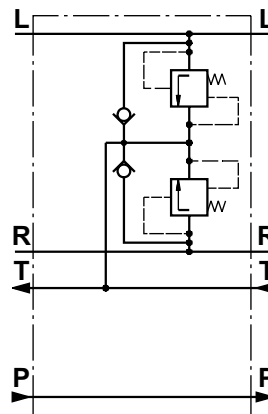
Depending on the design and the built in valves the BKH valves can be divided into 5 types: BKH1 ... BKH4 and BKHR. The maximum flow rate is in compliance with the whole range of HKU steering units but no more than 21 GPM [80 lpm]. The pressure settings for the entry relief valves and the shock valves are given in the table.



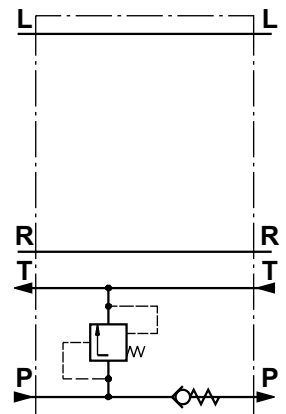
BKH1, BKHR



BKH2



BKH3



BKH4

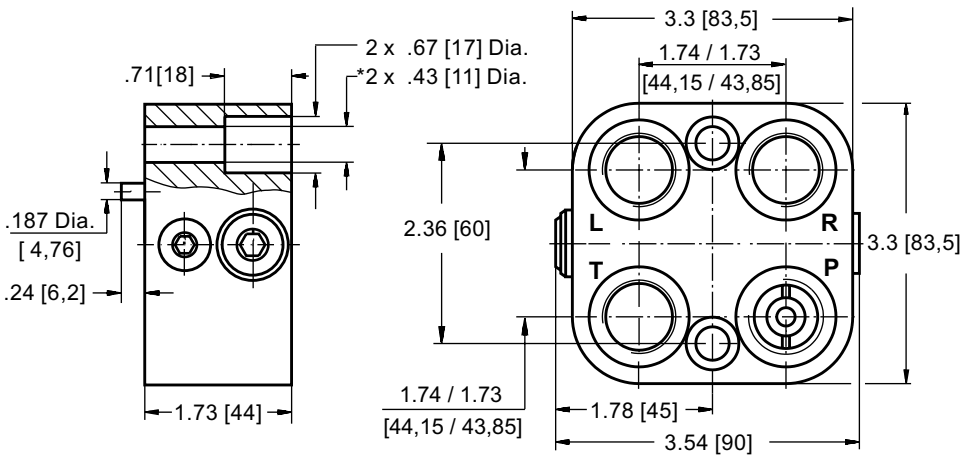
SPECIFICATION DATA

Parameters		Type									
		BKH1, BKHR				BKH2	BKH3	BKH4			
Rated Flow	GPM [lpm]	21.1 [80]									
Rated Pressure	PSI [bar]	2320 [160]									
Relief Valve Pressure Settings*	PSI [bar]	1160 [80]	1450 [100]	1810 [125]	2175 [150]	-	-	1160 [80]	1450 [100]	1810 [125]	2175 [150]
Shock Valves Pressure Settings**	PSI [bar]	2030 [140]	2320 [160]	2610 [180]	2900 [200]	2900 [200]	3480 [240]	-	-	-	-
Weight	lb [kg]	4.0 , 5.1 [1,8] , [2,3]				4.0 [1,8]		4.0 [1,8]			

* Pressure Settings are at flow rate of 7.92 GPM [30 lpm] and viscosity 105 SUS [21 mm²/s] at 122°F [50° C].

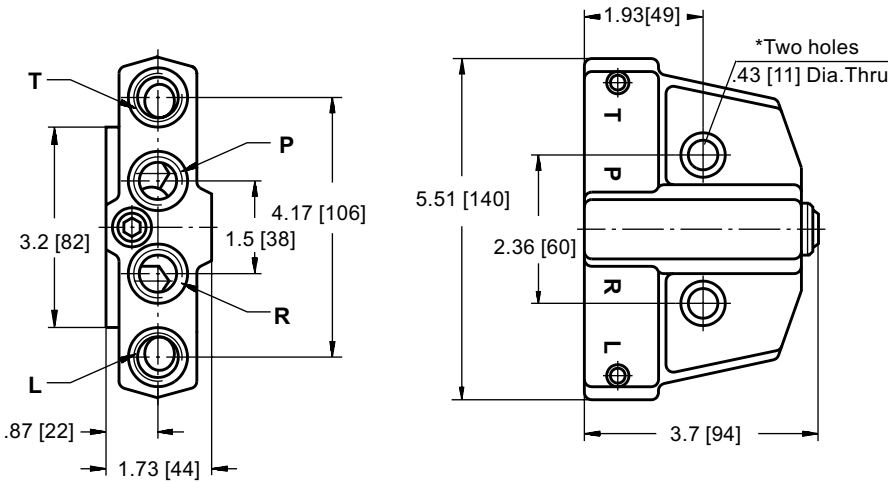
** Pressure Settings are at flow rate of .53 GPM [2 lpm] and viscosity 105 SUS [21 mm²/s] at 122°F [50° C].

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

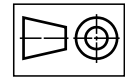


Code	Ports - P, T, R, L Thread
A	3/4 - 16 UNF O-ring .80 [20] depth
-	G1/2 .80 [20] depth
M	M22x1,5 .80 [20] depth

DIMENSIONS AND MOUNTING DATA - BKHR



Code	Ports - P, T, R, L Thread
A	3/4 - 16 UNF O-ring .87 [22] depth
M	M18x1,5 .87 [22] depth



ORDER CODE

B	K	H	1	2	3	4	5
			-	-			

Pos.1 - Versions*

R	1	2	3	4	
•	•			•	- 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
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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
- P** - Painted Low Gloss Color
- PC** - Corrosion Protected Paint

Pos.5 - Design Series

- omit - Factory specified

Notis: * Connection to the HKU is done with 2 screws 3/8-24 UNF ANSI B18.3-76, long 1.5" or with 2 screws M10x1-8.8 DIN 912 long 1.58" [40mm]. Tightening torque: 177÷265 in - lb [2,5±0,5 daNm].

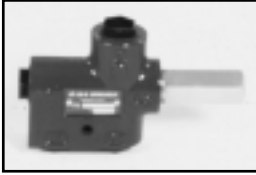
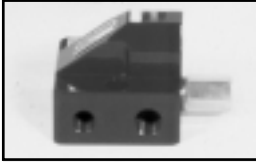
** That does not concern version 2 and 3.

*** For Port size see drawings on page 19.

**** Colour at customer's request.

The valve blocks are mangano-phosphatized as standard.

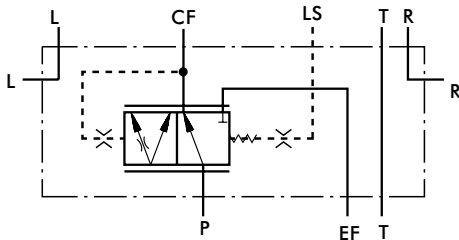
PRIORITY VALVES FOR HKUS.../5... TYPE PR...



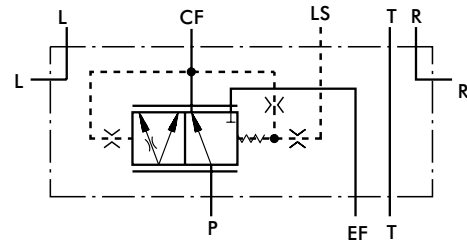
The Priority Valves distribute and trace the hydraulic flow from the supply pump of the hydraulic system to the hydraulic components which control and run the vehicle. The Priority Valves are used only with the HKUS.../5(E)(T)(TE) hydrostatic steering units. When connected, the steering unit and the 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.../5(T)E steering units has to be as short as possible, but should not exceed 4.92 ft [1,5 m] (for iron pipe with .157 in. [4 mm] internal diameter). When a rubber hose is used this length have to be even shorter.

Modulary Mounting

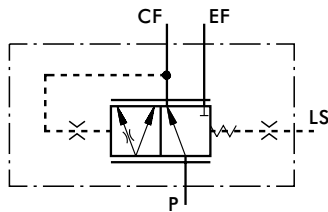


Static signal
PRD 40,80/...

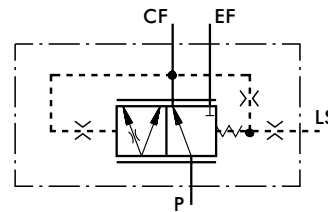


Dynamic signal
PRDD 40,80/...

Pipe Mounting

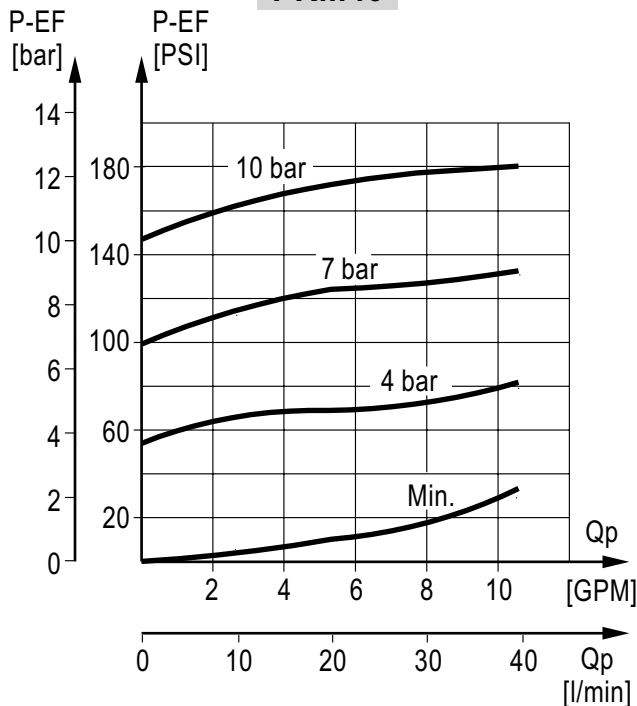


Static signal
PRT 40,80/..., PRTA 40,80/...

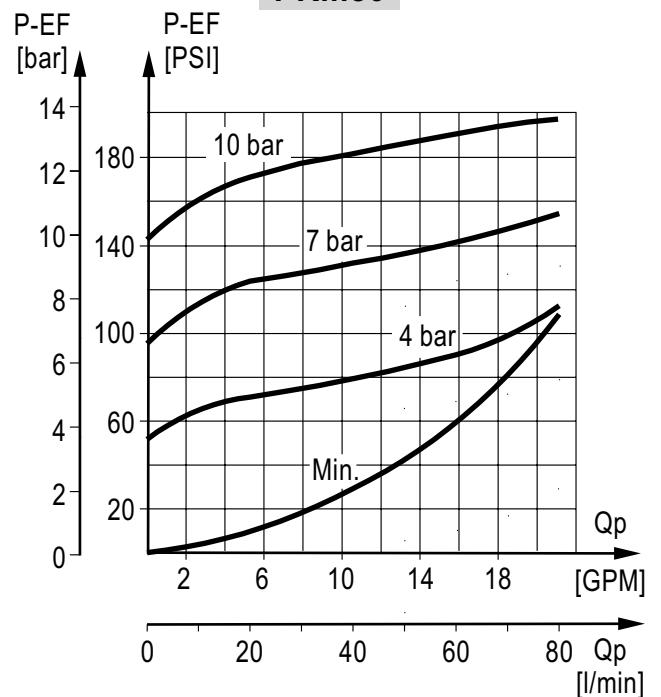


Dynamic signal
PRTD 40,80/..., PRTAD 40,80/...

PR...40



PR...80



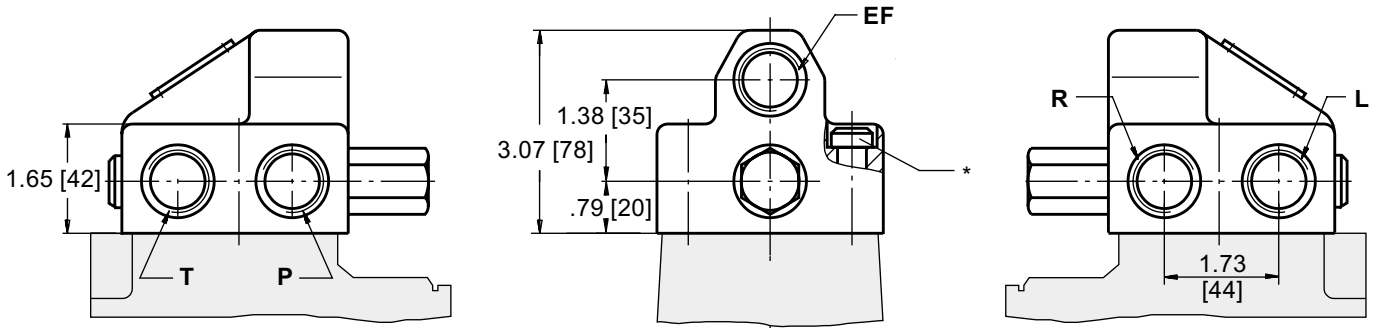
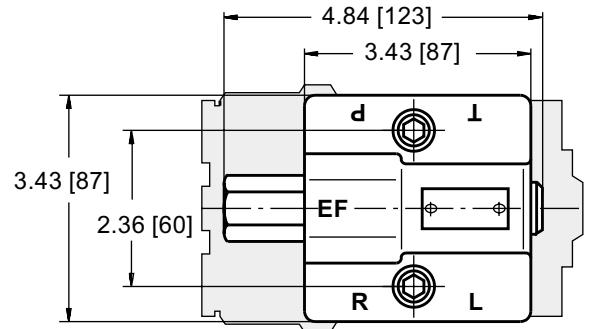
SPECIFICATION DATA

Parameters		Type					
		PRD(D), PRT(D)			PRTA(D)		
Rated Flow	GPM [lpm]	10.6 [40]			21.1 [80]		
Control Spring Pressure	PSI [bar]	58 [4]	101.5 [7]	145 [10]	58 [4]	101.5 [7]	145 [10]
Max. Pressures in Oil Ports:	P, EF, R, L	3625 [250]					
	CF	2540 [175]					
	T	220 [15]					
Weight	lb [kg]	5.95 [2,7]			2.65 [1,2]		

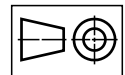
P - pump, **EF** - excess flow, **CF** - control flow (first priority oil flow),
L - left, **R** - right, **LS** - load sensing, **T** - tank (for PRD, PRDD only)

DIMENSIONS AND MOUNTING DATA - PRD(D) 40, 80/...

Code	Ports - P, EF Thread	Ports - T, R, L Thread
A	7/8 - 14 UNF O-ring .71 [18] depth	3/4 - 16 UNF O-ring .71 [18] depth
-	G1/2 .71 [18] depth	G3/8 .71 [18] depth
M	M22x1,5 .71 [18] depth	M18x1,5 .71 [18] depth

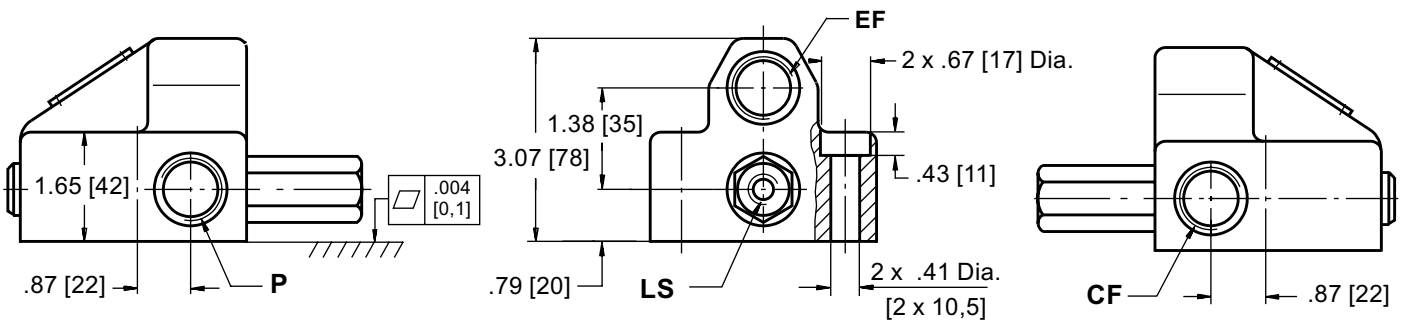
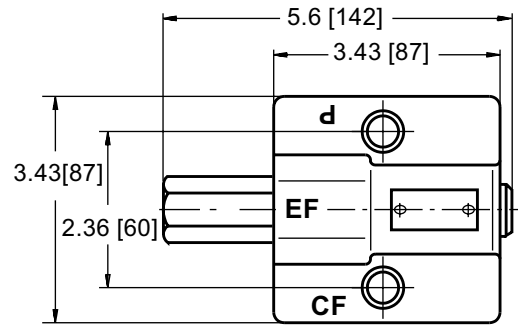


* Connection to the HKUS.../5... is done with 2 screws 3/8-24 UNF ANSI B18.3-76, 1.75" long
or with 2 screws M10x1 -10.9 DIN 912 long 1.77" [45 mm].
Tightening torque: 360 ÷ 440 in - lb [4,5±0,5 daNm].

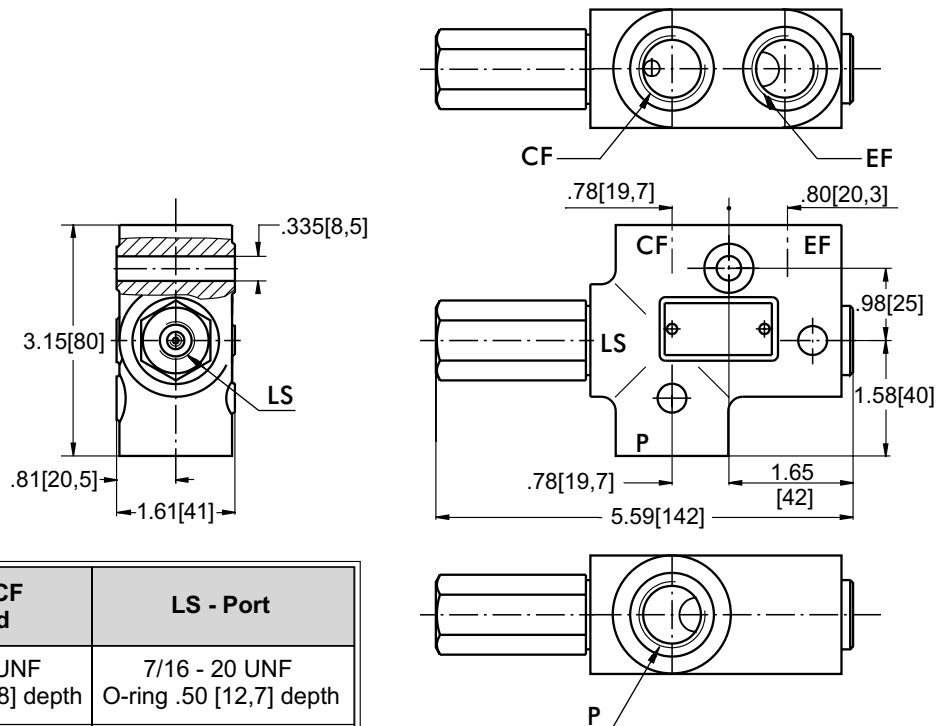


DIMENSIONS AND MOUNTING DATA - PRT(D) 40, 80/...

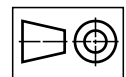
Code	Ports - P, EF Thread	Port - CF Thread	LS - Port
A	7/8 - 14 UNF O-ring .71 [18] depth	3/4 - 16 UNF O-ring .71 [18] depth	7/16 - 20 UNF O-ring .50 [12,7] depth
-	G1/2 .71 [18] depth	G1/2 .71 [18] depth	G1/4 .55 [14] depth
M	M22x1,5 .71 [18] depth	M22x1,5 .71 [18] depth	G1/4 .55 [14] depth



DIMENSIONS AND MOUNTING DATA - PRTA(D) 40, 80/...



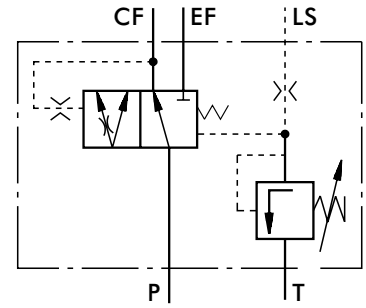
Code	Ports - P, EF Thread	Port - CF Thread	LS - Port
A	7/8 - 14 UNF O-ring .71 [18] depth	3/4 - 16 UNF O-ring .71 [18] depth	7/16 - 20 UNF O-ring .50 [12,7] depth
-	G1/2 .71 [18] depth	G1/2 .71 [18] depth	G1/4 .55 [14] depth
M	M22x1,5 .71 [18] depth	M22x1,5 .71 [18] depth	G1/4 .55 [14] depth



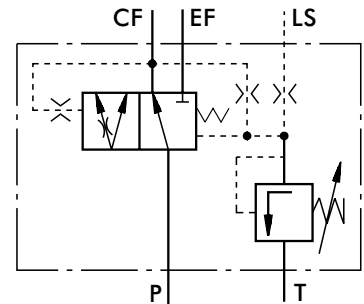
PRIORITY VALVES FOR HKUS.../5T... TYPE PRT...160/...



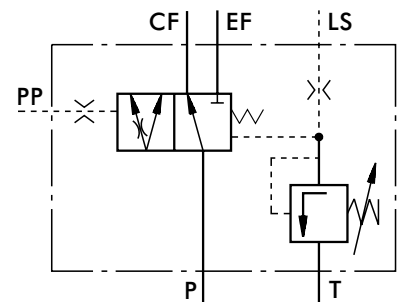
The Priority Valves PRT...160 have built-in a pilot pressure relief valve, who protects the steering unit against excess pressure. The pilot pressure relief valve operates with the Shuttle of the Priority valve to limit the maximum steering pressure P-T measured across the steering units ports.



Static signal
PRT 160/...



Dynamic signal
PRTD 160/...



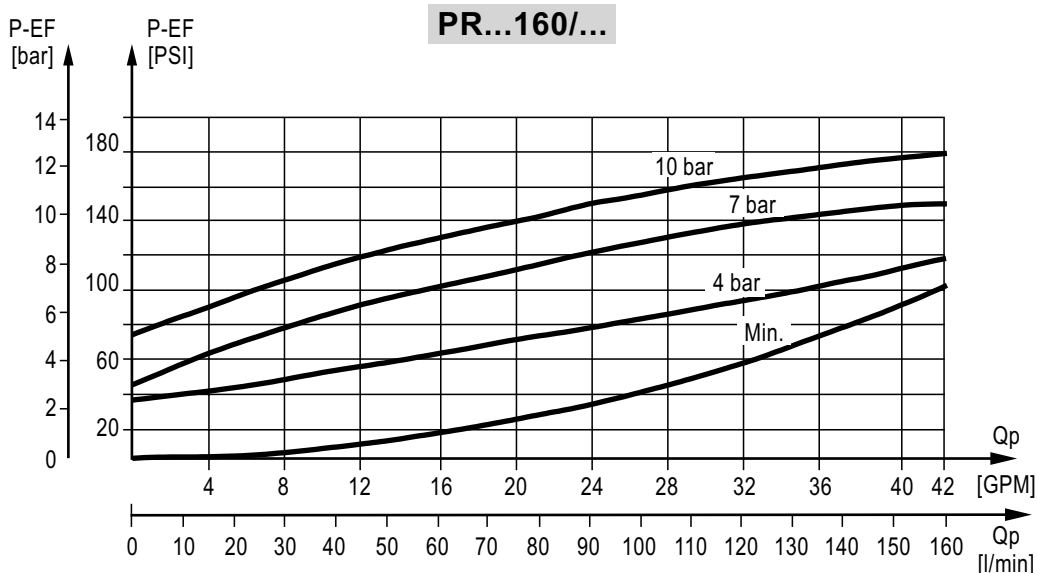
Static signal with External Pilot
PRTE 160/...

SPECIFICATION DATA

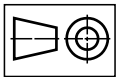
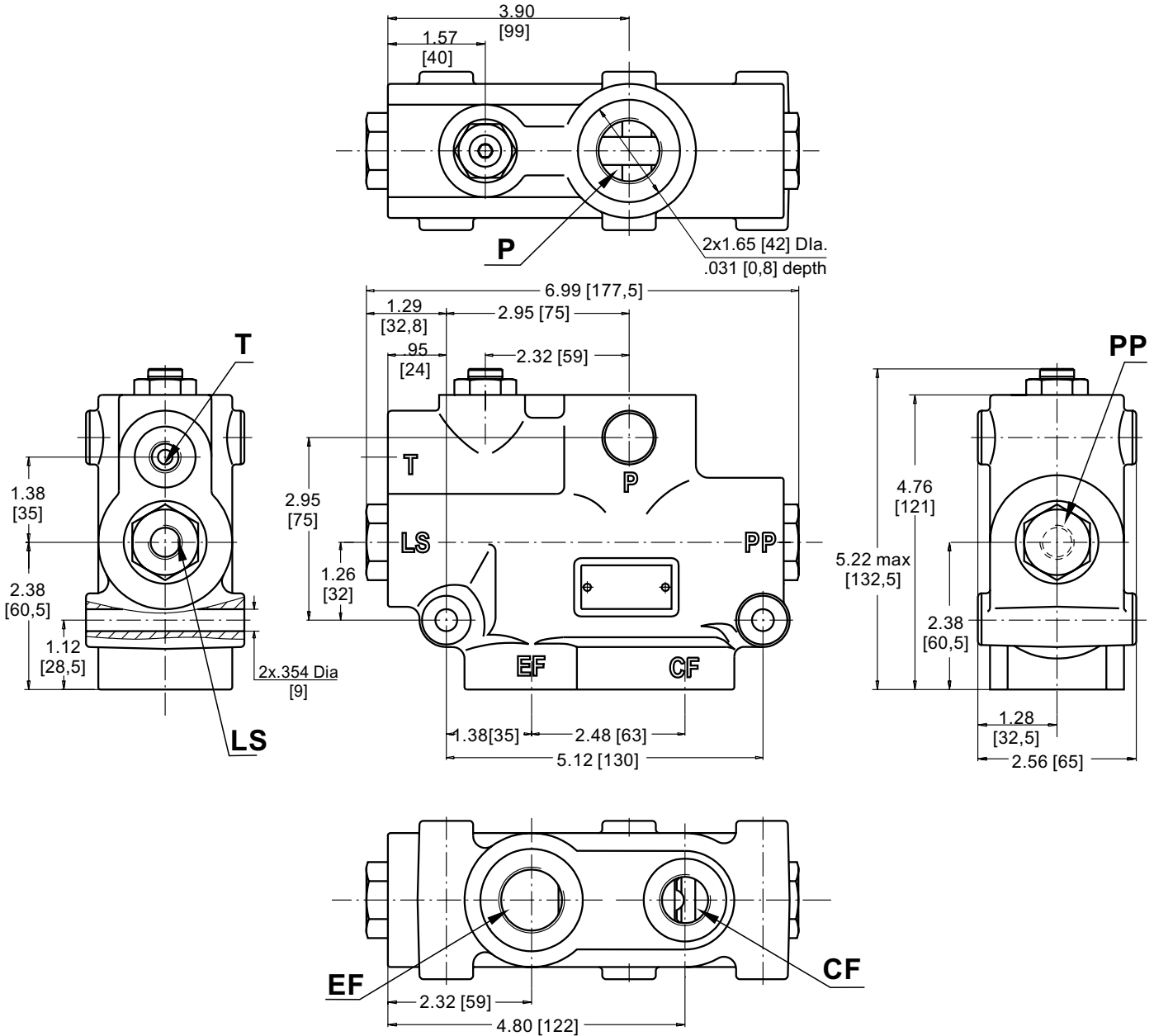
Parameters	Type			
	PRT(D), PRTE			
Rated Flow	GPM [lpm]	42.3 [160]		
Control Spring Pressure	PSI [bar]	58 [4]	101.5 [7]	145 [10]
Max. Pressures in Oil Ports:	PSI [bar]	P, EF	3625 [250]	
		CF	3045 [210]	
		T	220 [15]	
		PP	3045 [210]	
Standart Relief Valve Pressure Settings	PSI [bar] *	2540 [175]		
Weight	lb	9.70		
	[kg]	[4,4]		

* - Adjusted valve pressure from 1160 [80] till 3045 [210] PSI [bar] upon customer request.

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



DIMENSIONS AND MOUNTING DATA - PRT(D)(E)160/...



Code	Ports - P, EF Thread	Port - CF Thread	LS, PP, T - Ports
A	1 1/16 - 12 UN O-ring .81 [20,5] depth	3/4 - 16 UNF O-ring .73 [18,5] depth	7/16 - 20 UNF O-ring .49 [12,5] depth
-	G3/4 .81 [20,5] depth	G1/2 .73 [18,5] depth	G1/4 .49 [12,5] depth
M	M27x2 .81 [20,5] depth	M18x1,5 .73 [18,5] depth	M12x1,5 .49 [12,5] depth

ORDER CODE

	1	2	3	4	5	6	7
PR			/		-		

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 Dynamic signal
- E*** - with Static signal w/ External Pilot

Pos.3 - Rated Flow, l/min

40	80	160**
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Pos.4 - Control Spring Pressure , bar

4	7	10
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Pos.5 - Ports [see pages 21, 22]

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

Pos.6 - Option [Paint]***

- omit - No Paint
- P** - Painted Low Gloss Color
- PC** - Corrosion Protected Paint

Pos.7 - Design Series

- omit - Factory specified

Notes: * For PRT 160/... only
 ** For PRT only
 *** Colour at customer's request.

The priority valves are mangano-phosphatized as standard.