Axial Piston Pumps

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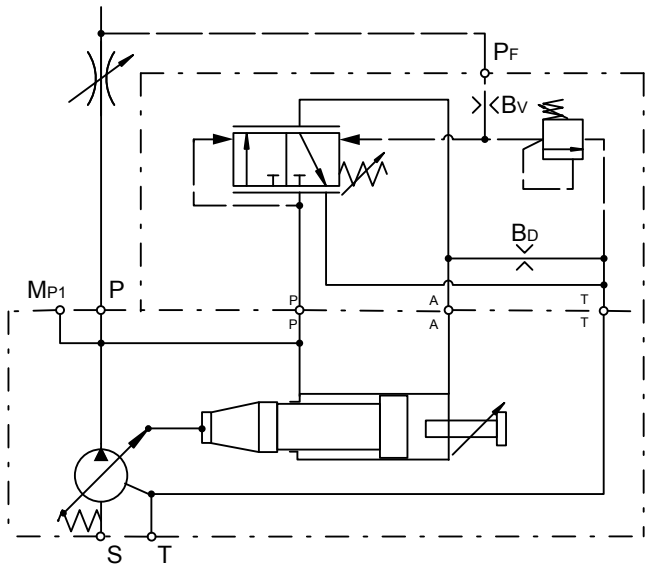
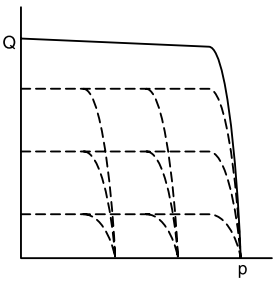
Load Sensing Control

Control option MFC

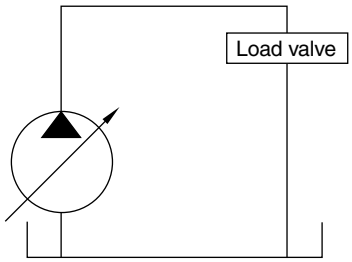
The pilot pressure of the load sensing control is taken from a load sensing port in the hydraulic system. It is used to match pump flow to system demands. Integrated pilot valve allows pmax adjustment.

Control schematics





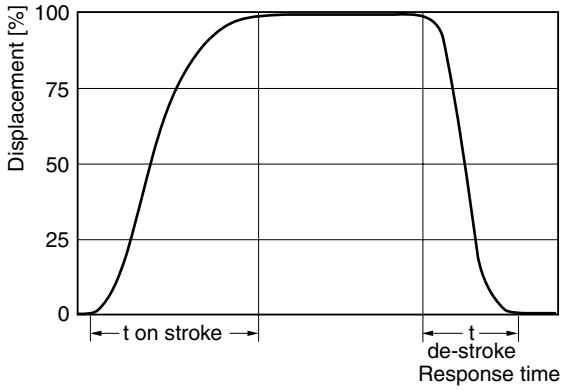
Response times of the pump are collected from a circuit as below by measuring the pumps swash angle movement at different pressures.



	Time on-stroke [ms]		Time de-stroke [ms]	
	stand-by to 50 bar	stand-by to 350 bar	50 bar to stand-by	350 bar to stand-by
PV360	500	690	830	50

Pressure adjustment range	15 to 420 bar
Factory setting pressure	50 bar
Differential pressure adjustment range	10 to 40 bar
Factory setting differential pressure	10 bar
Control oil consumption	Max 8.0 l/min
Typically pilot flow	approx 1,5 l/min

Dynamic characteristic of flow control *



* Curve shown exaggerated

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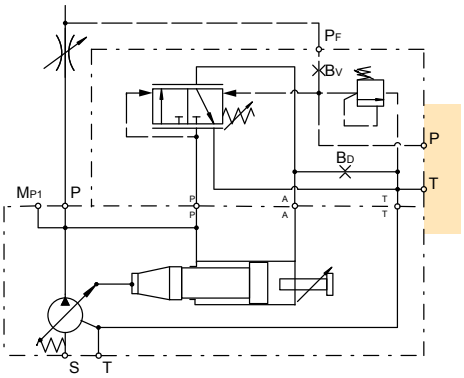
Chemnitz, Germany

Load Sensing Control with NG6 Interface

Control option MF1

With code MF1 the remote pressure control has a valve interface size NG 6 DIN 24340 (CETOP 03 acc. RP35H, NFPA D03) on the top side.

This interface allows the mounting of accessories like multiple pressure selectors without the need of external piping and valve mounting.

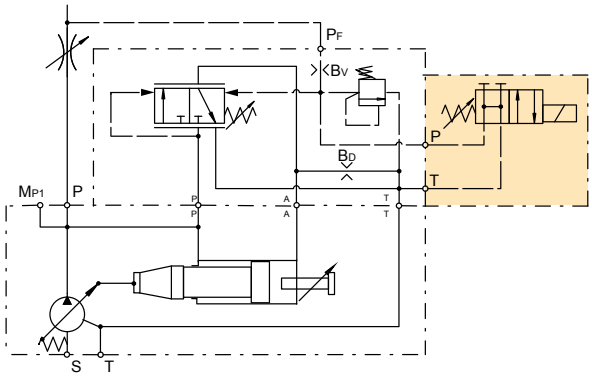


Load Sensing Control with Electrical Unloading

Control option MFW

With code MFW a solenoid operated directional control valve (D1VW002KNJW) for electrical unloading is mounted on the control top side.

When the solenoid is de-energised, the pump compensates at a stand-by pressure of typically 15 bar. When the solenoid is energised, the pump compensates at the pressure adjusted on the integrated pilot valve.

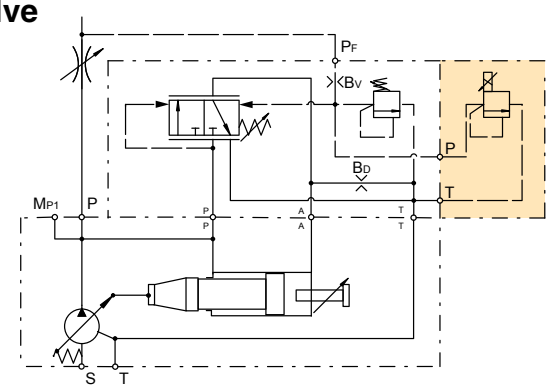


Load Sensing Control with Proportional Pilot Valve

Control option MFK

With code MFK a proportional pilot valve of type PVACRE...K35 (see page 43) is mounted on the top side interface.

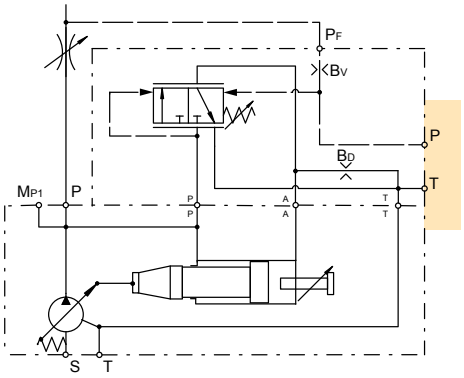
This allows a variation of the pump compensating pressure between 20 and 350 bar by an electrical signal.



Load Sensing Control without Integrated Pressure Pilot Valve

Control option MFZ

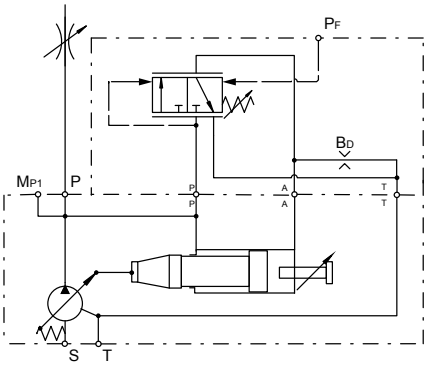
Control MFZ has no integrated pilot valve but a NG6 DIN 24340 interface topside.



This version is recommended for valve accessories.

Control option MFB

Control MFB has no integrated pilot valve.



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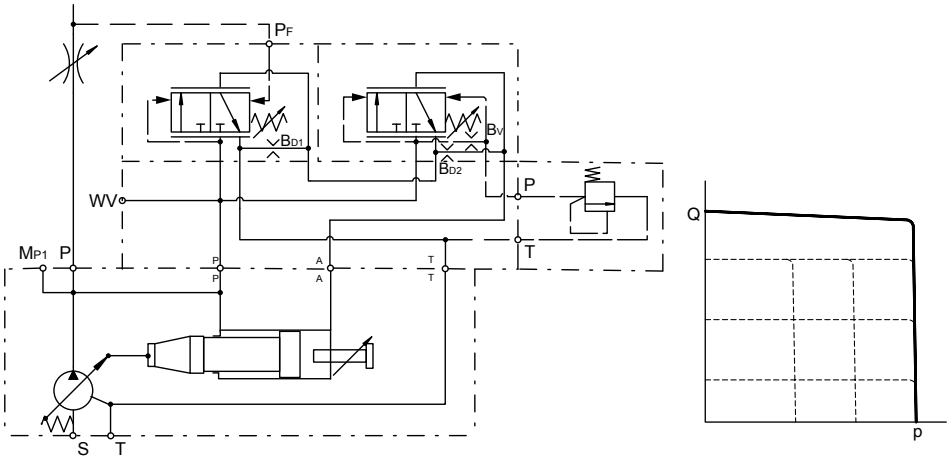
Chemnitz, Germany

2 Spool Load Sensing Control

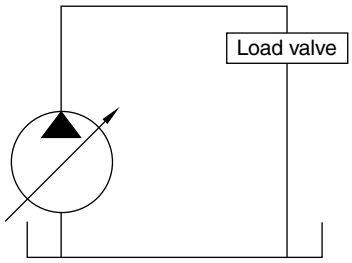
Control option MTP

The pilot pressure of the load sensing control is taken from a load sensing port in the hydraulic system. It is used to match pump flow to system demands. With the 2 spool control the interaction of the two control functions is avoided by using two separate control valves for flow and pressure compensation.

Control schematics



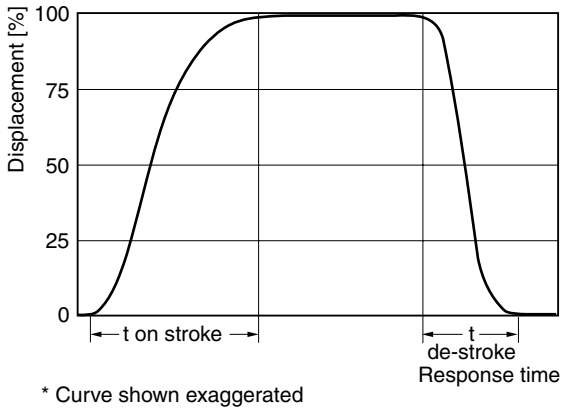
Response times of the pump are collected from a circuit as below by measuring the pumps swash angle movement at different pressures.



	Time on-stroke [ms]		Time de-stroke [ms]	
	stand-by to 50 bar	stand-by to 350 bar	50 bar to stand-by	350 bar to stand-by
PV360	920	670	1000	170

Pressure adjustment range	15 to 420 bar
Factory setting pressure	50 bar
Differential pressure adjustment range	10 to 40 bar
Factory setting differential pressure load sensing	10 bar
Factory setting differential pressure, pressure control	15 bar
Control oil consumption	Max 8.0 l/min
Typically pilot flow	approx 1,5 l/min

Dynamic characteristic of flow control *



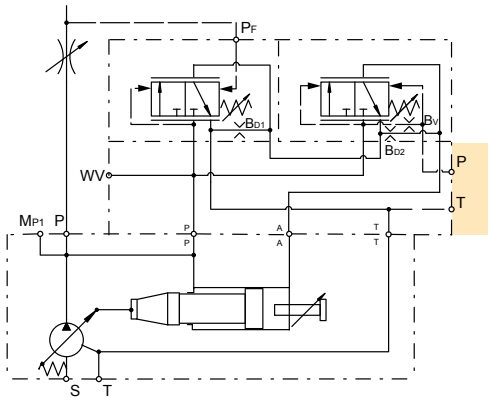
* Curve shown exaggerated

2 Spool Load Sensing Control with NG6 Interface without Integrated Pressure Pilot Valve

Control option MT1 & MTZ

Control MT1 & MTZ has no integrated pressure pilot valve but NG 6 DIN 24340 (CETOP 03 acc. RP35H, NFPA D03) on the top side.

This interface allows the mounting of accessories like multiple pressure selectors without the need of external piping and valve mounting.

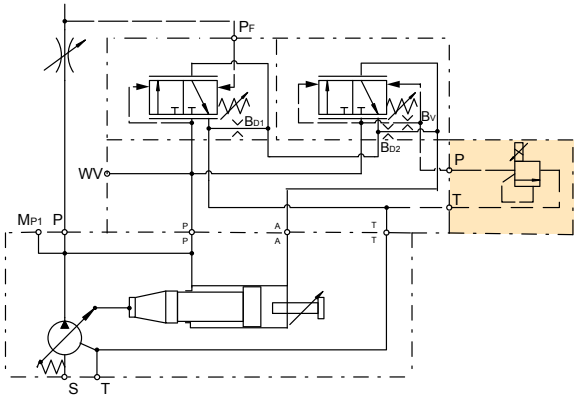


2 Spool Load Sensing Control with Proportional Pilot Valve

Control option MTK

With code MTK a proportional pilot valve of type PVACRE...K35 (see page 43) is mounted on the top side interface.

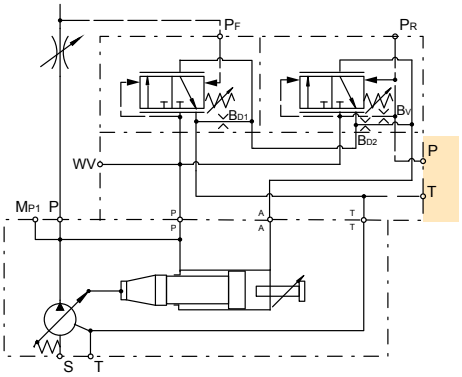
This allows a variation of the pump compensating pressure between 20 and 350 bar by an electrical signal.



2 Spool Load Sensing Control without Integrated Pressure Pilot Valve

Control option MT2

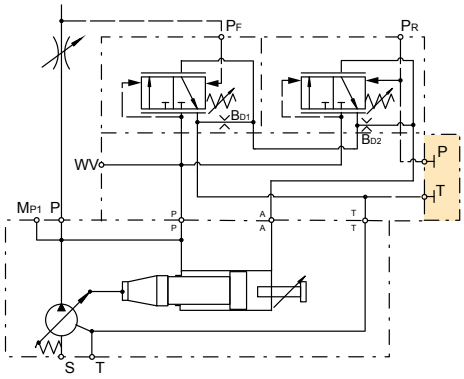
Control MT2 has a valve interface NG6 DIN 24340 on the top side and remote pressure port internal supply.



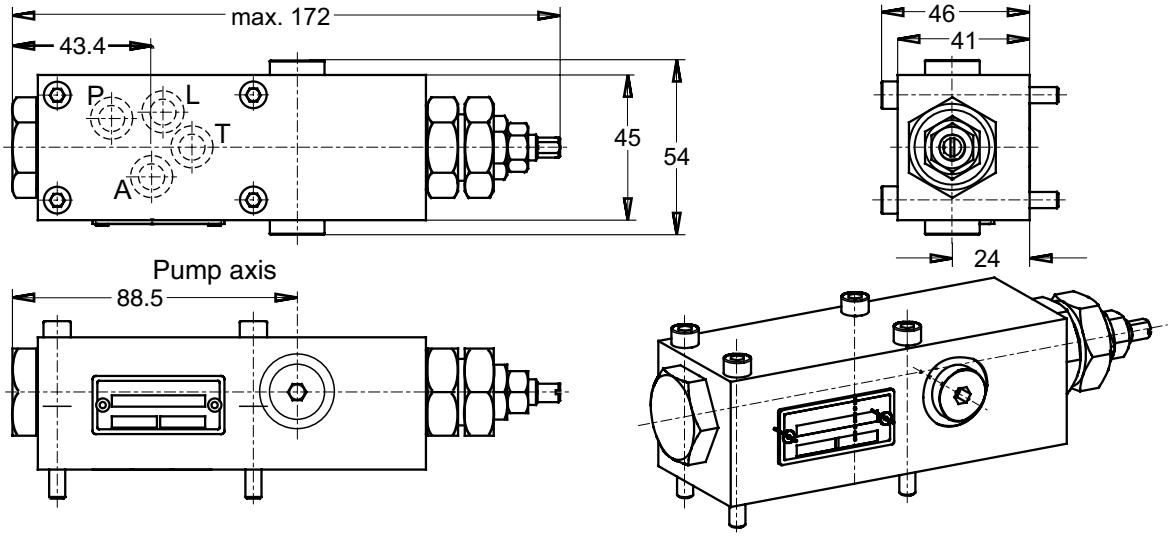
2 Spool Load Sensing Control without Integrated Pressure Pilot Valve

Control option MT3

Control MT3 with pressure remote port external supply.

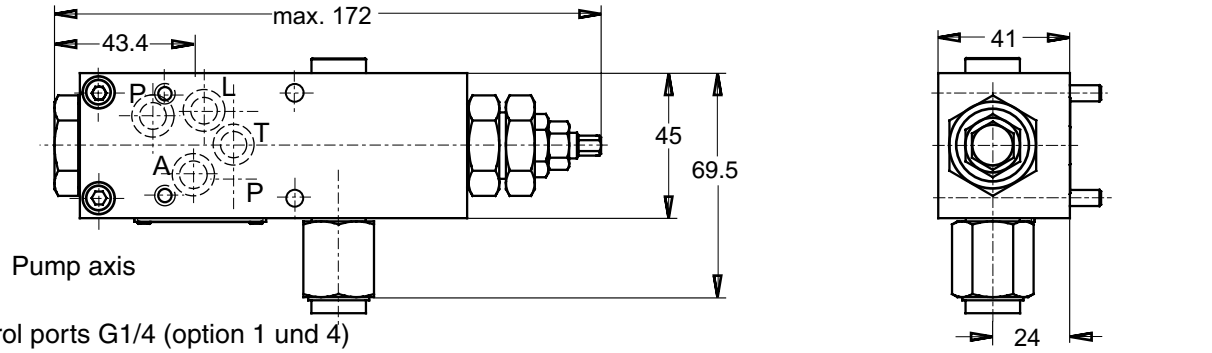


Dimensions standard pressure control, code ...MMC

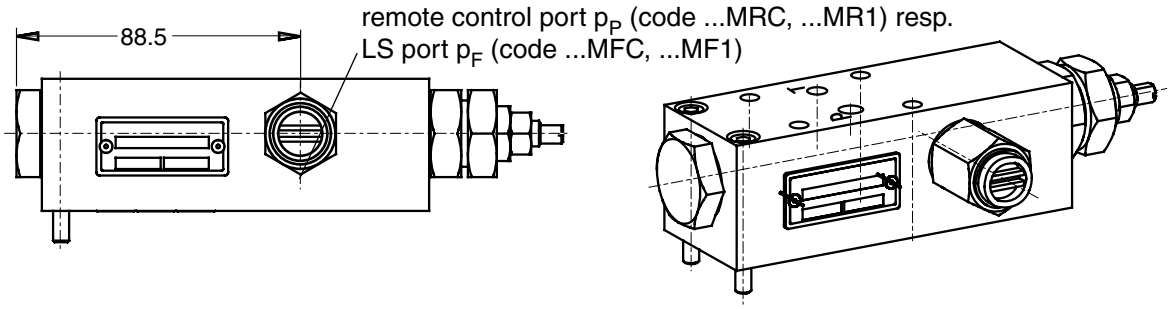


Controls with code ...MM1 have a NG6 / Cetop 3 interface topside (as shown below)

Dimensions remote pressure and load sensing control, codes ...MR1, ...MF1

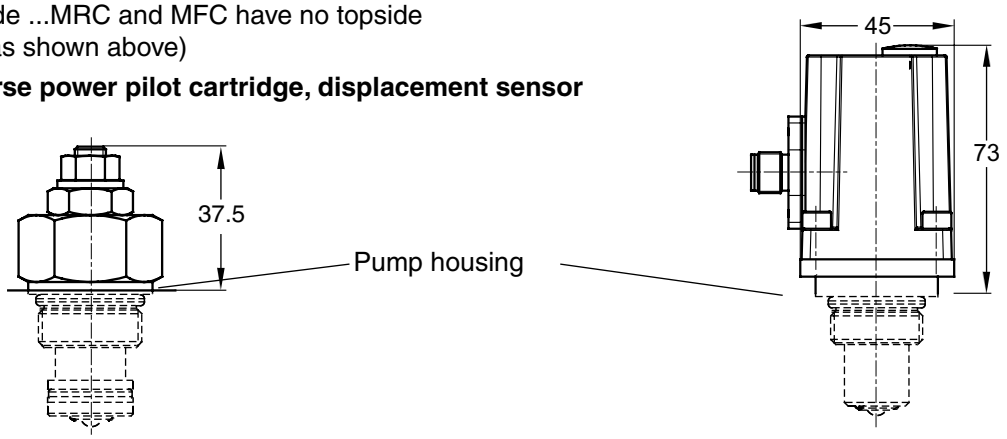


control ports G1/4 (option 1 und 4)
optional 7/16-20 UNF (option 3)
optional M12x1,5 (option 8)

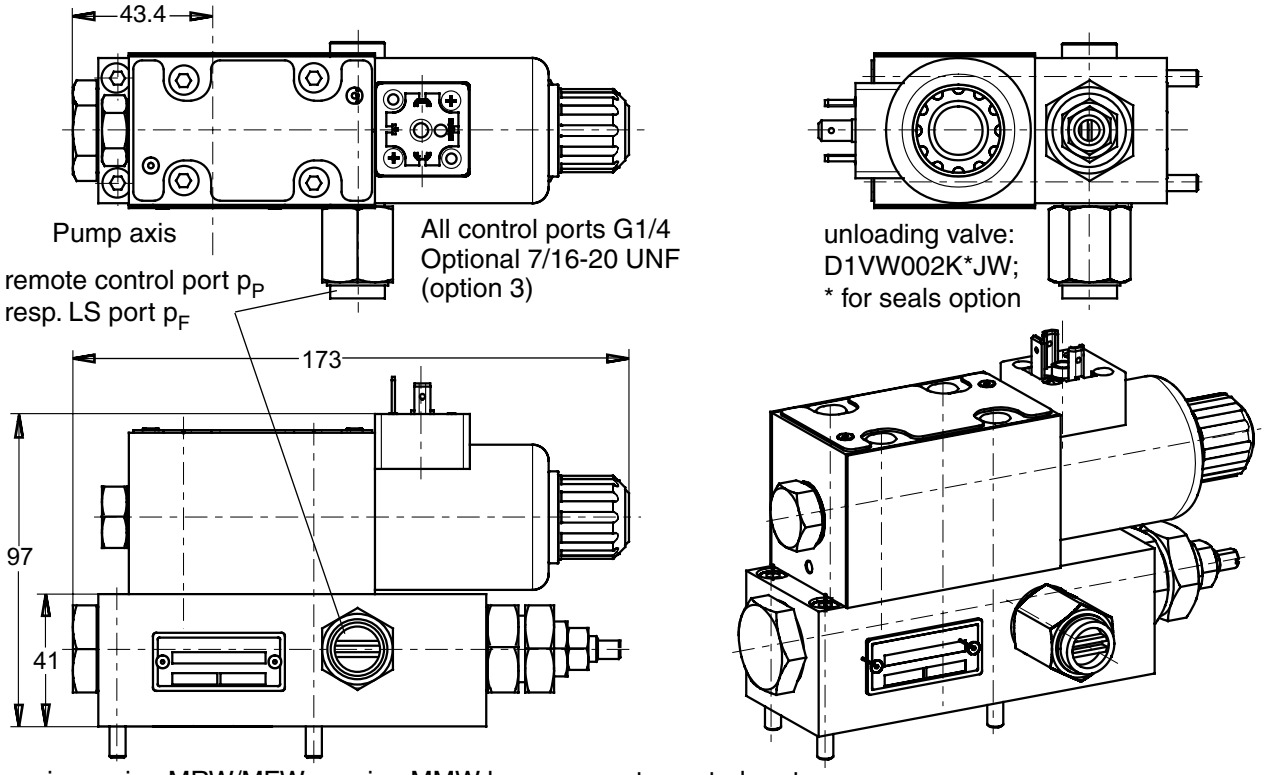


Controls with code ...MRC and MFC have no topside valve interface (as shown above)

Dimensions horse power pilot cartridge, displacement sensor

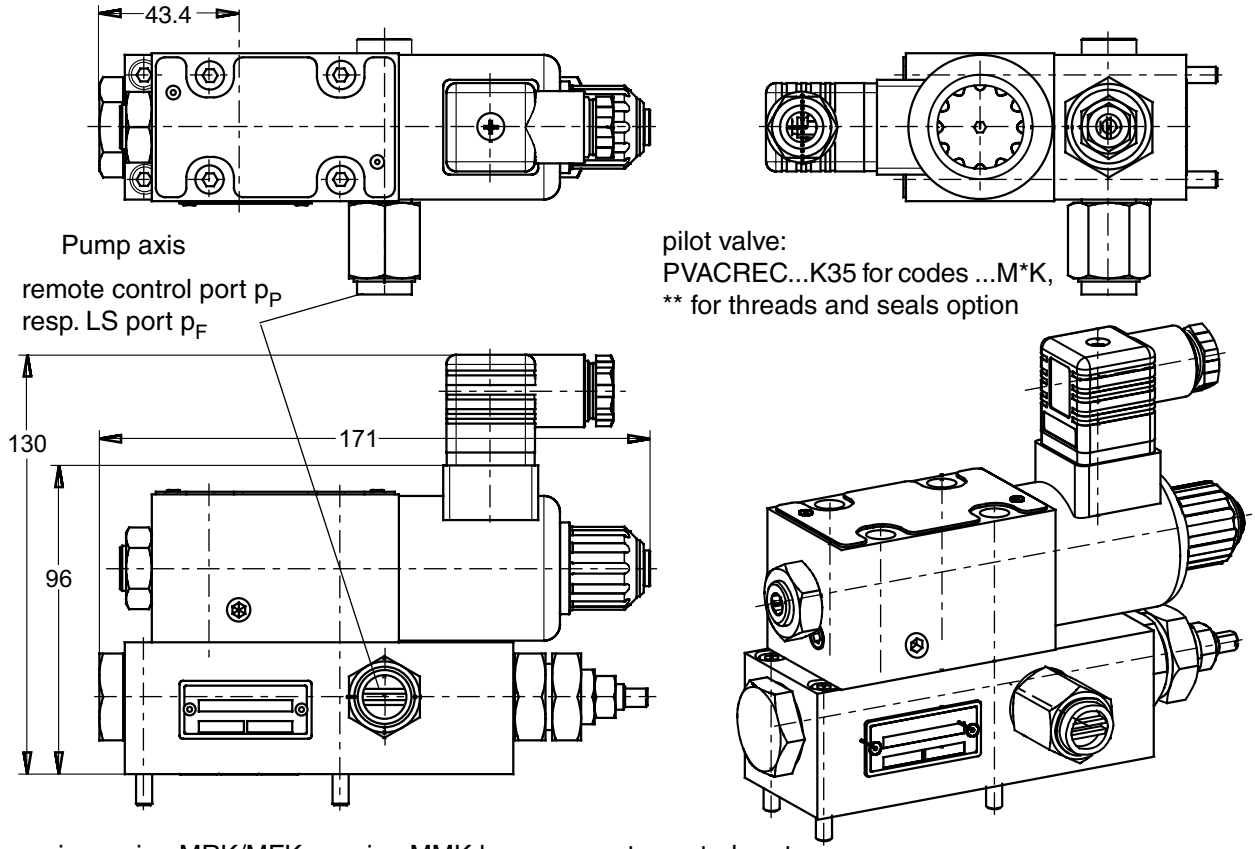


Dimensions for controls with unloading valve, codes ...M*W



Shown in version MRW/MFW, version MMW has no remote control port.

Dimensions for controls with proportional pressure pilot valve, codes ...M*K



Shown in version MRK/MFK, version MMK has no remote control port.
Dimensions for horse power compensator *L* and *C* are identical to MM* respectively MF*.

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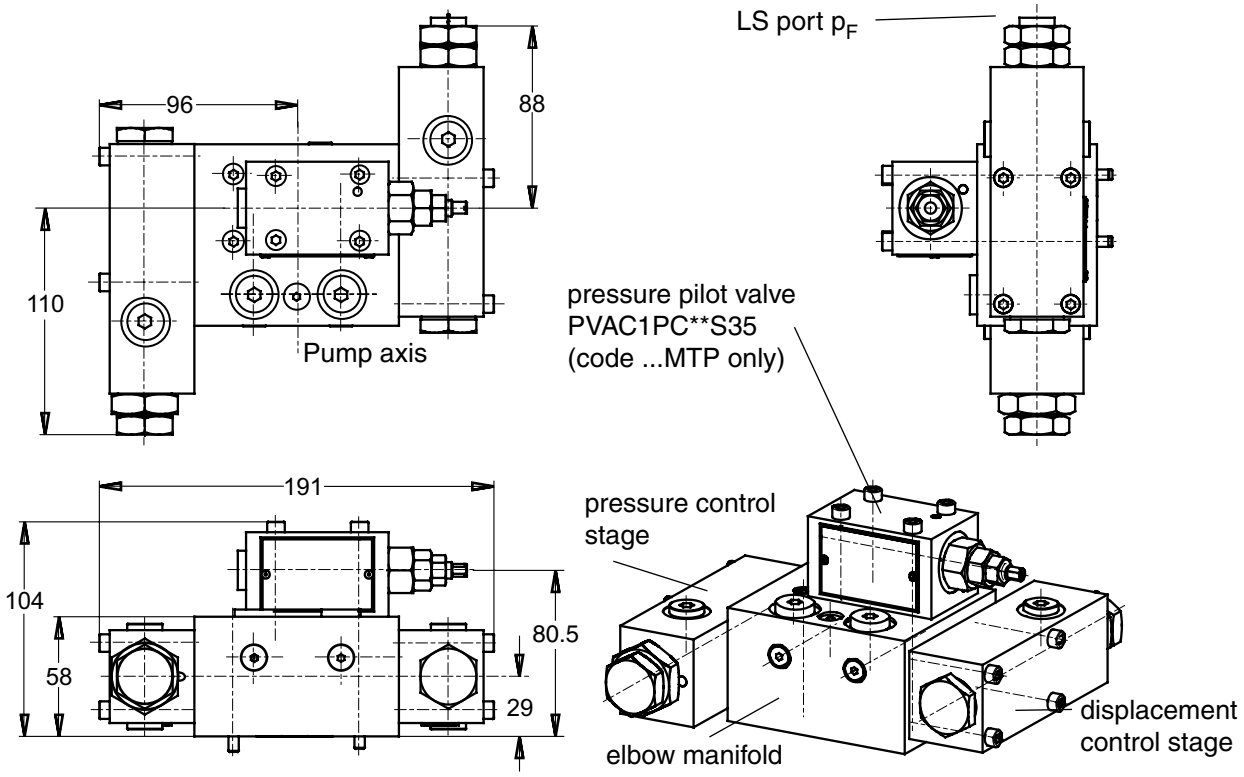
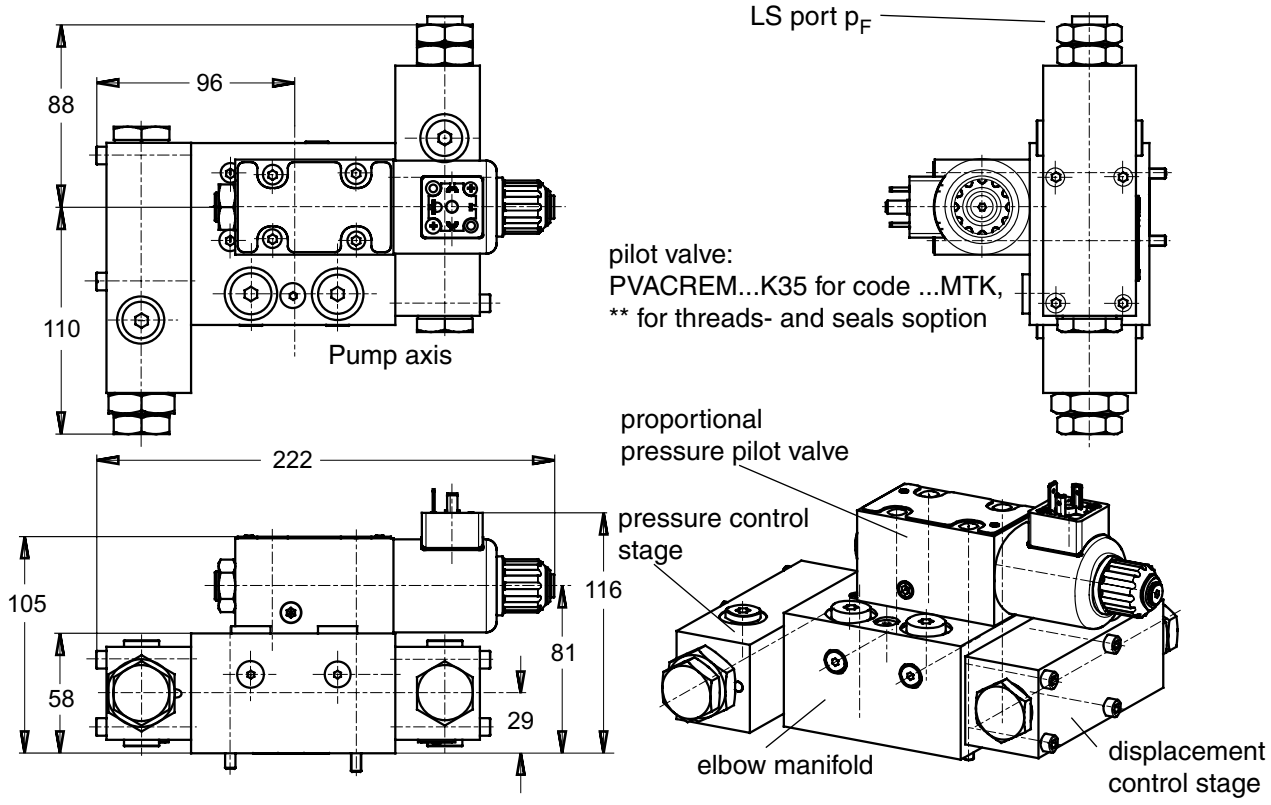
Dimensions two spool load sensing control, code ...MT1, ...MTP



Dimensions two spool load sensing control with proportional pressure pilot valve, code ...MTK



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