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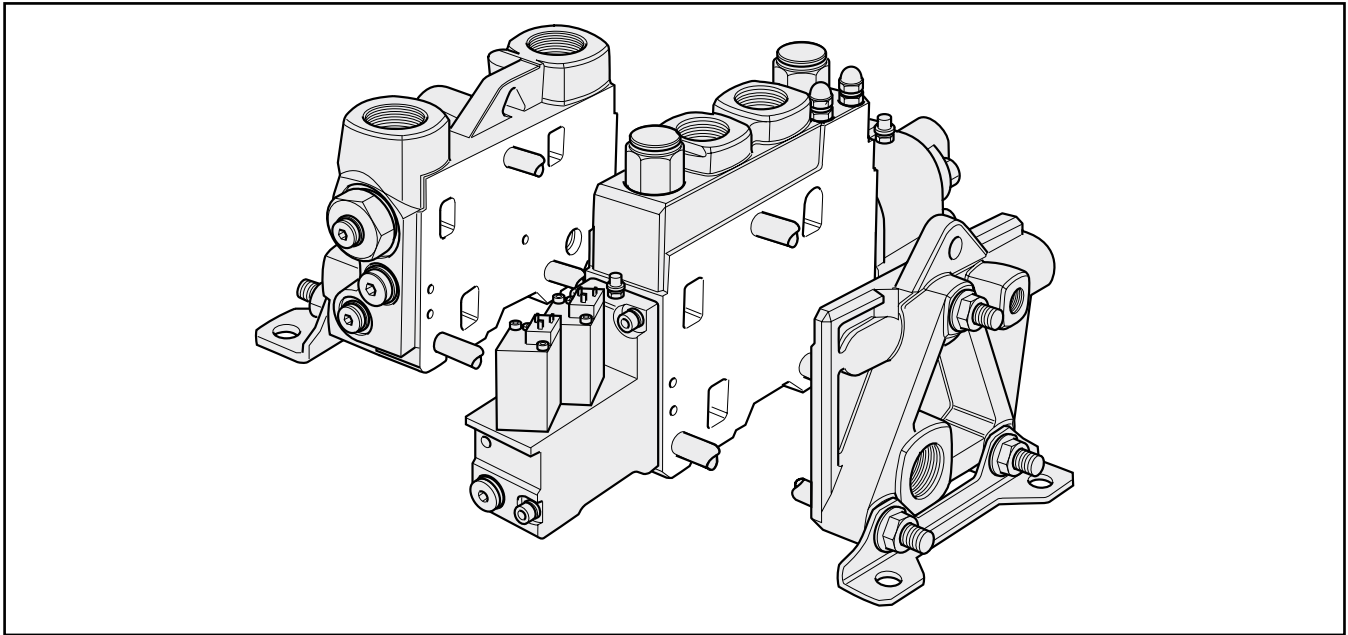
K170LS

Mobile Directional Control Valve

Proportional, Load Sensing, Pre-compensated



ENGINEERING YOUR SUCCESS.



The K170LS is a stackable, proportional, load-sensing (LS), pressure-compensated directional control valve, which can also be adapted to give force-feedback. It is designed for many different applications, both mobile and industrial, and is widely used in machines such as front-end loaders, backhoe loaders, excavators, cranes, forestry equipment, metal presses and forging hammers.

With its function-adapted spool sections, wide range of additional functions and standard accessories, the K170LS enables the user to optimise the machine and its hydraulic system in the following ways:

Compact system construction

While the K170LS can contain many integrated functions, it requires a minimum of external piping. With the aid of a special combo-inlet, it can be mounted directly to the similar, smaller-flow L90LS directional valve, giving great compactness and outstanding operating economy.

Freedom in machine design

The K170LS is designed for proportional hydraulic or electro-hydraulic remote control. This gives great freedom in the location of components, and in the running of pipework, hoses and cables.

Economy

The K170LS can be modified or expanded to suit customer specifications. Function and application adaptation enables energy consumption to be kept to a minimum.

Control characteristics

The control characteristics for both lifting and lowering movements are outstanding,

thanks to the unique function adaptation of spools, pressure compensators, feed reducing valves etc. Each function is completely independent of other simultaneously operated functions.

Construction

The K170LS is a stackable valve, and can be delivered in combinations of 1 to 9 spool sections. It is designed for system pressures of up to 330 bar, and can be fitted with motor-port relief valves that open at a maximum pressure of 350 bar. Suitable flow range can be up to 280 l/min (2x280 l/min with mid inlet). The recommended flow per section is 170 l/min with a pressure compensator, and 220 l/min without.

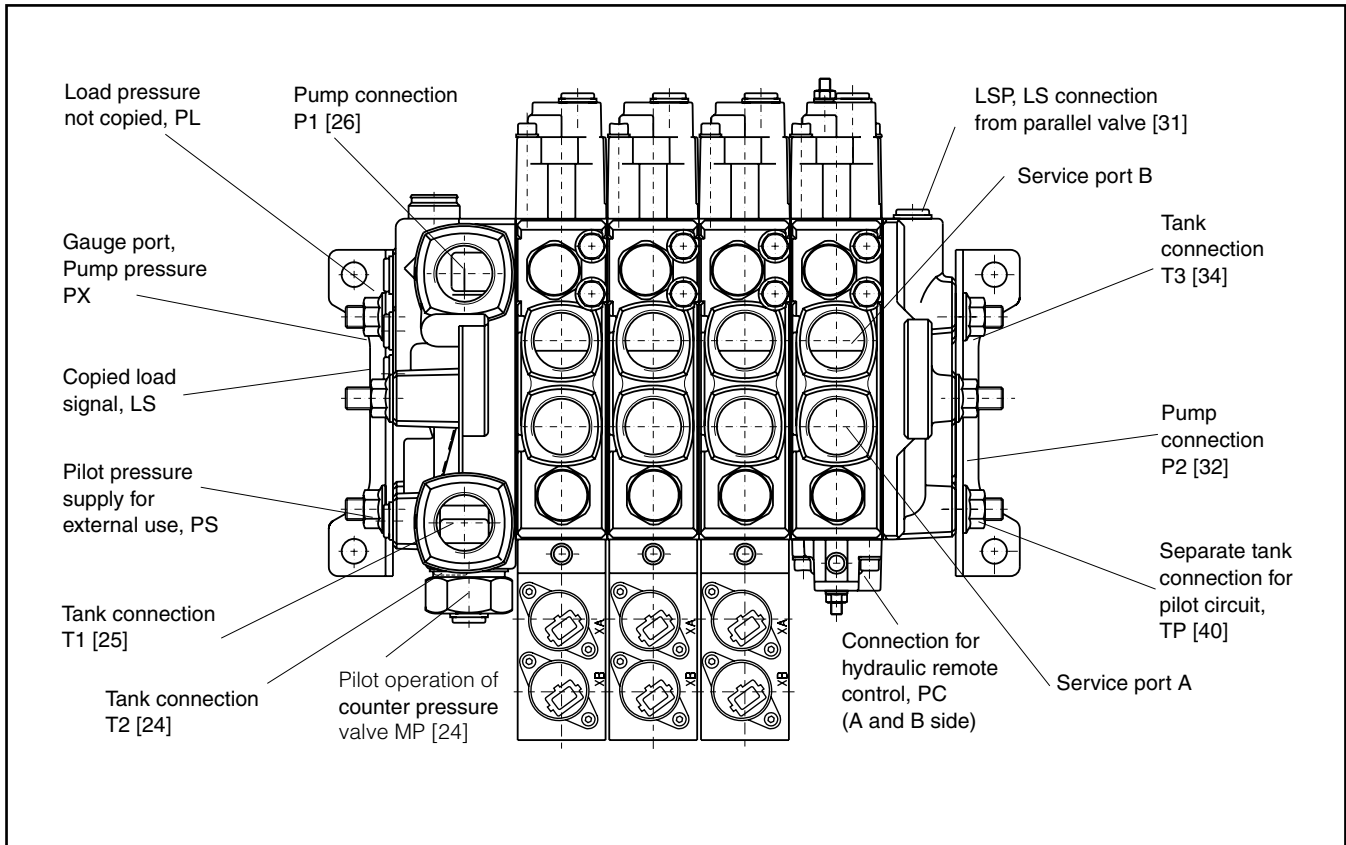
As an optional, the K170LS can be given a built-in pilot pressure supply in the inlet section, as well as pressure compensation and feed reduction in the spool sections. The feed reducer is adjustable from 30 to 330 bar. Force feedback (optional) enables a force-sensing function to be incorporated in to the valve. Moreover, fixed or pilot-operated counter pressure valves can be integrated into inlet section to give back-pressure supported load lowering and exceptionally good anti-cavitation characteristics.

System adaptation

The K170LS is a load sensing, pressure-compensated directional valve with unique possibilities for adaptation in respect of both functions and applications to systems with variable LS pumps.

Valve characteristics

- Copied load signal - The system permits consumption in the load signal line to the pump, without the signal level being affected.
- Pressure compensation - Pressure-compensated spools for lifting and lowering movements. Separate compensator for each spool section for excellent pressure compensation.
- Feed reducers - Individually adjustable for each service port. Reduction can also be controlled remotely.
- Force feedback-provider "feeling" to the operator, gentle transition across speed changes and greater stability in the hydraulic system.
- Counter pressure valve - Built-in counter pressure valve in two versions (fixed setting or pilot control) for best application-adaptation.
- Flexible, modular construction makes it easy to re-build or expand the valve to meet changing needs.
- Our port-relief valves have outstanding pressure characteristics, even as secondary pressure limiters, and respond very quickly to sudden changes in load.
- The valve can be flanged to specially adapted Parker function blocks that enable even more functions to be integrated into a compact, single unit with minimal piping.



Pressure

Pump inlet	max 330 ¹⁾ bar (4800 ¹⁾ psi)
Service ports	max 350 ¹⁾ bar (5000 ¹⁾ psi)
Pump regulator	Δp min 18 ²⁾ bar (260 ²⁾ psi)
Compensator K3	Δp min 30 ²⁾ bar (435 ²⁾ psi)
Return line pressure, static	max 20 bar (290 psi)
1) Pressures given are maximum absolute relief pressures	
2) Pressure drop pump to valve max 3 bar (44 psi)	

Internal pilot pressure

Standard setting	35 bar (500 psi)
Optional setting	45 bar (650 psi)

Feed reducer

Adjustment range	30 to 330 bar (435 to 4800 psi)
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Counter pressure valve

Fixed setting	5 bar (70 psi)
Pilot operated, signal pressure	max 30 bar (435 psi)
Pressure ratio, pilot signal : counter pressure	1.2 : 1

Recommended flow rates

Pump connection	max 280 ³⁾ l/min (75 USgpm)
Service port with compensator	max 170 ⁴⁾ l/min (45 USgpm)
Service port without compensator	max 220 ⁴⁾ l/min (60 USgpm)
Return from service port	max 280 l/min (75 USgpm)
3) 2 x 280 l/min (2 x 75 USgpm) with mid inlet section	
4) Depending on spool version	

Temperature

Oil temperature, working range +20 to 90 °C (68 to 194 °F)*

* Product operating limits are broadly within the above range, but satisfactory operation within the specification may not be accomplished. Leakage and response will be affected when used at temperature extremes and it is up to the user to determine acceptability at these levels.

Filtration

Filtration must be arranged so that Target Contamination Class 20/18/14 according to ISO 4406 is not exceeded. For the pilot circuit, Target Contamination Class 18/16/13 according to ISO 4406 must not be exceeded.

Hydraulic fluids

Best performance is obtained using mineral-base oil of high quality and cleanness in the hydraulic system. Hydraulic fluids of type HLP (DIN 51524), oil for automatic gear-boxes Type A and engine oil type API CD can be used.

Viscosity, working range 15-380 mm²/s**

Technical information in this catalogue is applicable at an oil viscosity of 30 mm²/s and temperature of 50 °C using nitrile rubber

Weight

Inlet section	8.5 kg	18.7 lb	approx.
Spool section type PC	9.1 kg	20.1 lb	approx.
Spool section type EC	10.8 kg	23.8 lb	approx.
End section	4.1 kg	9.0 lb	approx.
Combo-inlet	11.5 kg	25.4 lb	approx.

** Performance efficiency will be reduced if outside the ideal values. These extreme conditions must be evaluated by the user to establish suitability of the products performance.

Connections

Unless stated otherwise, all standard connections are available in two versions: G-version (BSP pipe thread) for flat seal (type Tredo) as per ISO 228/1 and UNF-version for O-ring seal as per ISO 11926-1.

Connection	In section	G-version.	UNF-version
P1	inlet section	G 1	1 5/16-12 UN-2B
T1, T2	inlet section	G 1	1 5/16-12 UN-2B
P1	combo-inlet CL	Flange SAE 1 High pressure ISO 6162-2	
T1	combo-inlet CL	Flange SAE 1 1/4 Std pressure ISO 6162-1	
T2	combo-inlet CL	G 1	1 5/16-12 UN-2B
LS, PL, PX, PS	inlet, combo-inlet CL	G 1/4	9/16-18 UNF-2B
MP	inlet section	G1/4	9/16-18 UNF-2B
P2	end section	G 1	1 5/16-12 UN-2B
T3	end section	G 1/4	9/16-18 UNF-2B
TP	end section	G1/4	9/16-18 UNF-2B
TP	combo-inlett CL	G 3/8	3/4-16 UNF-2B
PS	end section and combo-inlett CL	G 1/4	9/16-18 UNF-2B
LSP	spool/end section MU	9/16-18 UNF-2A (ORFS pipe end, male)	
LSP	end section	G 3/8	9/16-18 JIC (37°) (male)
YS	inlet, combo-inlet CL	G1/4	9/16-18 JIC (37°) (male)
A, B	spool section	G 3/4	1 1/16-12 UN-2B
PC	spool section	G 1/4	9/16-18 UNF-2B



HydraTorque

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