

## X-Series

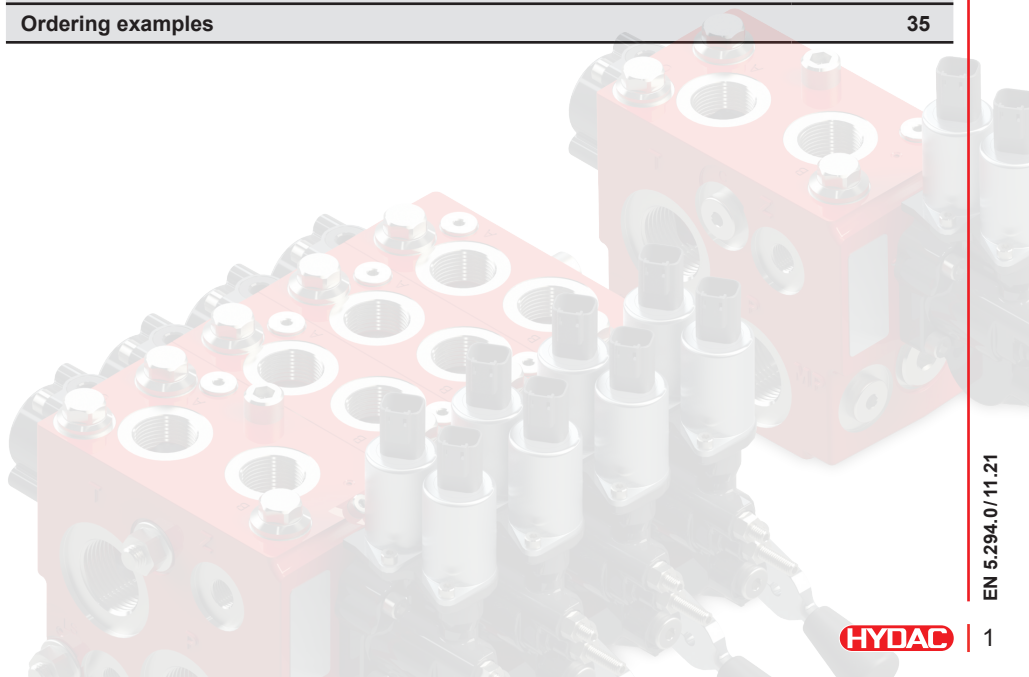
### Load-Sensing Sectional Control Valve LCX-6



- Nominal pressure: 350 bar
- Maximum flow rate
- Pump port: 250 l/min (180 l/min with pressure peak protection unit)
  - Working ports: 180 l/min with compensator and load holding function

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## Product features

The LCX-6 valve series is based on the existing LX-6 valve series with the consistent focus on Closed center hydraulic systems with variable displacement pumps and Compact design in matter of space/weight reduction.

- Flow-optimized valve design
- High mechanical and electrical resolution
- Compact size and low weight
- Modular design up to 10 working sections
- Types of operation (with/without hand lever):
  - Manual
  - Hydraulic
  - Electrohydraulic (on/off, proportional)
- Application-specific main spools with adjustable stroke limiter
- Shock/anti-cavitation valves for protection of actuators

- Adjustable load sense pressure limitation (mechanically or electro proportionally) causes the compensator to block flow to the working A or B
- Optional flange blocks for LS remote control of single sections
- Areas of application:
  - Lifting platforms
  - Drilling machinery
  - Construction
  - Municipal vehicles
  - Truck applications
  - Stationary applications
  - Cranes
  - Forestry
  - Agricultural

⚠ The individual single sections of the LX-6 valve series are used 1:1 in the LCX-6 valve series and are therefore interchangeable. The inlet and end modules cannot be combined or exchanged between the two valve series.

The existing LX-6 product range continues to offer the necessary and increased flexibility for extended functional scopes (e.g. 3-way flow controller for hydraulic systems with fixed displacement pumps) – HYDAC product specification EN 5.282.

## General information and functional description

The LCX-6 is a pre compensated proportional directional control valve according to the load-sensing principle.

The nominal flow rate to the working ports A and B is 160 l/min. The main spool 2.1 determines the flow direction and magnitude of flow rate.

Pressure control valves 2.4.3 and 2.4.4 are providing shifting pressure to the left and right side of the main spool 2.1 to control its position. The level of electric current determines the level of the pilot pressure and therefore the position of the main spool.

Adjustable stroke limiters 2.4.1 and 2.4.2 can be set mechanically to limit the maximum flow rate to the working ports A and B.

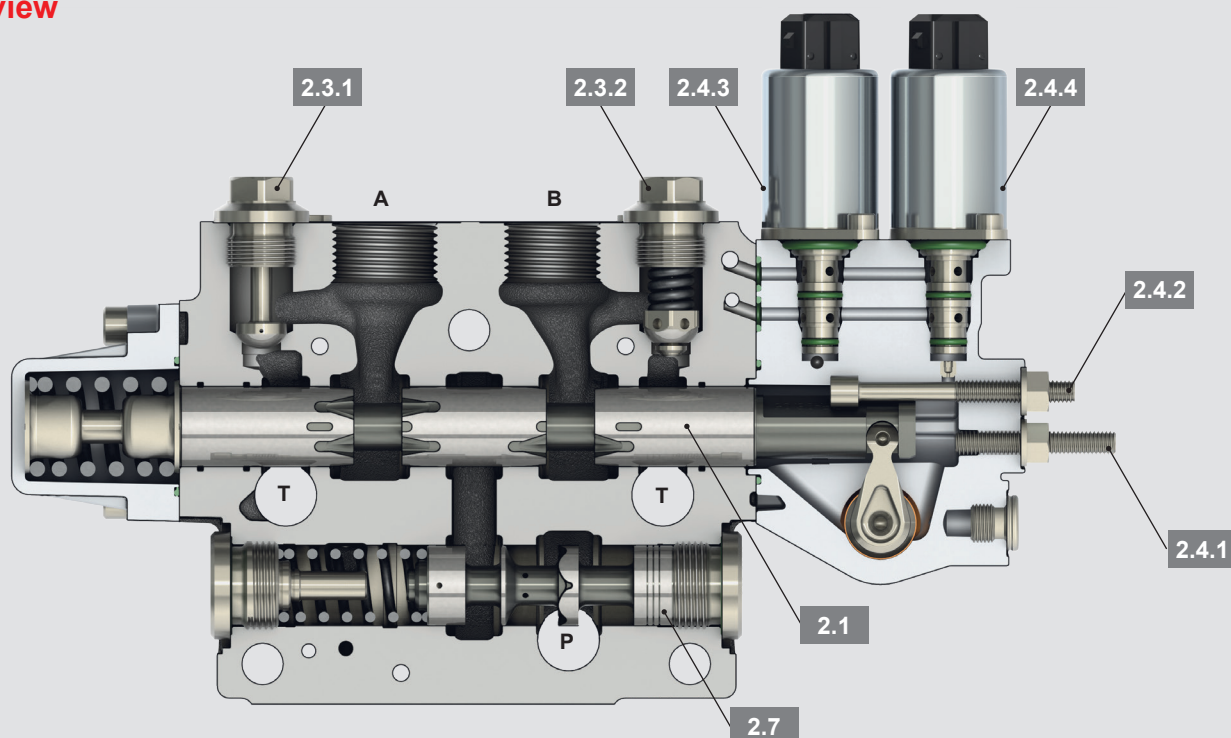
The pressure compensator 2.7 keeps the flow rate to the actuator constant, even if the system pressure varies. Pressure changes at the pump or working ports A and B are compensated for each working section individually.

The maximum operating pressure can be adjusted by LS pressure limitation for working ports A and B separately.

Shock / anti-cavitation valves 2.3.2 protect the working ports A and B from pressure peaks. Anti-cavitation valves 2.3.1 protect the system from cavitation.

Shuttle valves are integrated into the working sections to report the highest load pressure for the valve stack to the inlet section or variable displacement pump.

### Overview



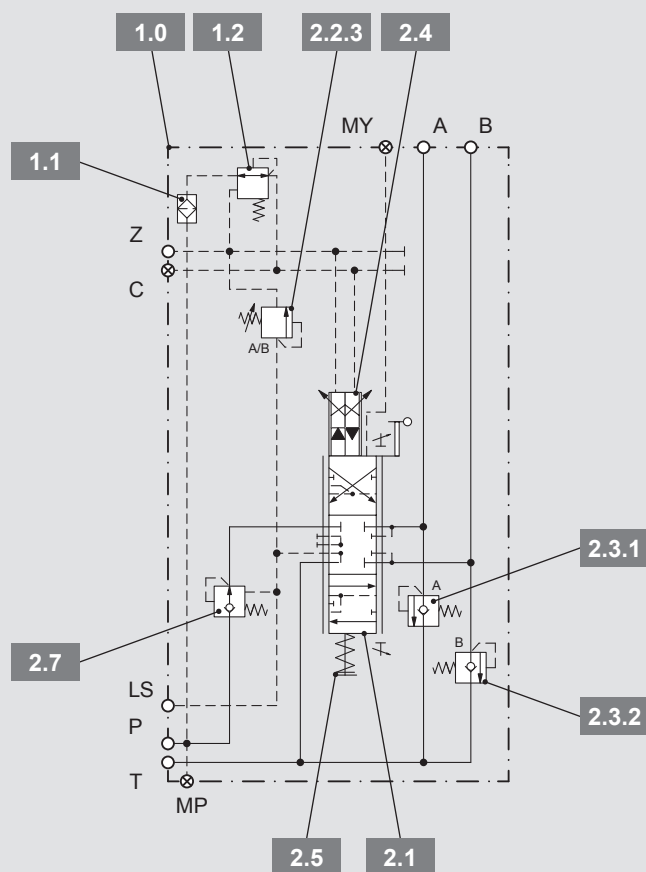
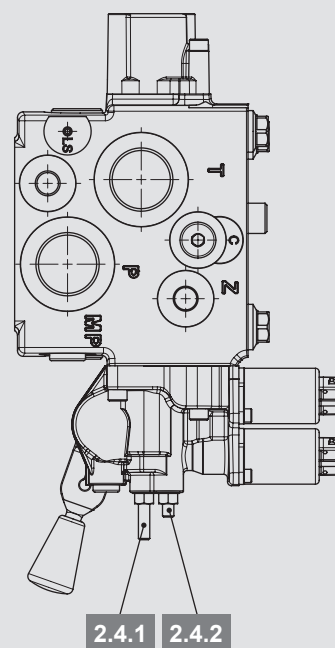
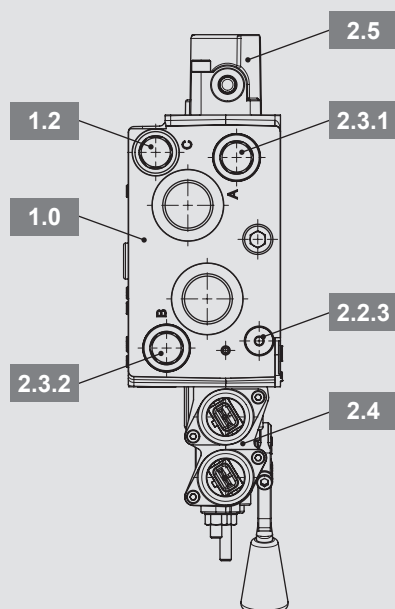
2.7	Pressure compensator
2.1	Main spool
2.3.1	Workport valve port A (anti-cavitation valve)
2.3.2	Workport valve port B (shock / anti-cavitation valve)

2.4.1	Stroke limiter port A (clockwise rotation)
2.4.2	Stroke limiter port B (counterclockwise rotation)
2.4.3	Pressure control valve port A
2.4.4	Pressure control valve port B

## Overview

### Ports

- P Pump
- MP Pump measuring port
- T Tank
- LS Load-sensing
- A, B Working ports
- C Pilot oil supply
- Z Pilot drain
- (must always be connected / depressurized to tank)
- MY Pilot pressure measuring port (port B)



**1.0** Mono section

**1.1** Filter unit

**1.2** Pressure reducing valve for internal pilot oil supply

**2.1** Main spool

**2.2.3** LS pressure limitation port A/B combined

**2.3.1** Workport valve port A

**2.3.2** Workport valve port B

**2.4** Operation unit

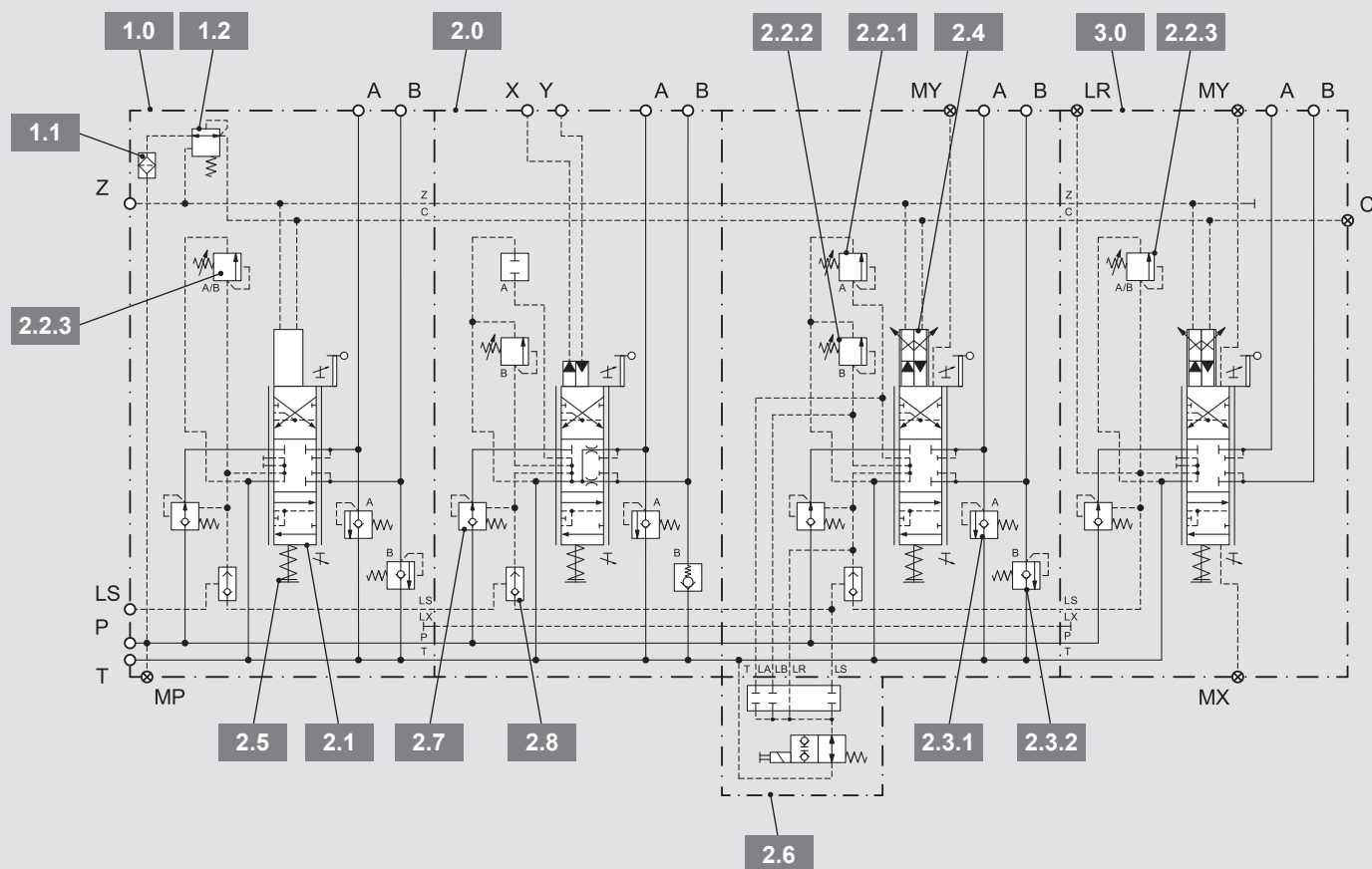
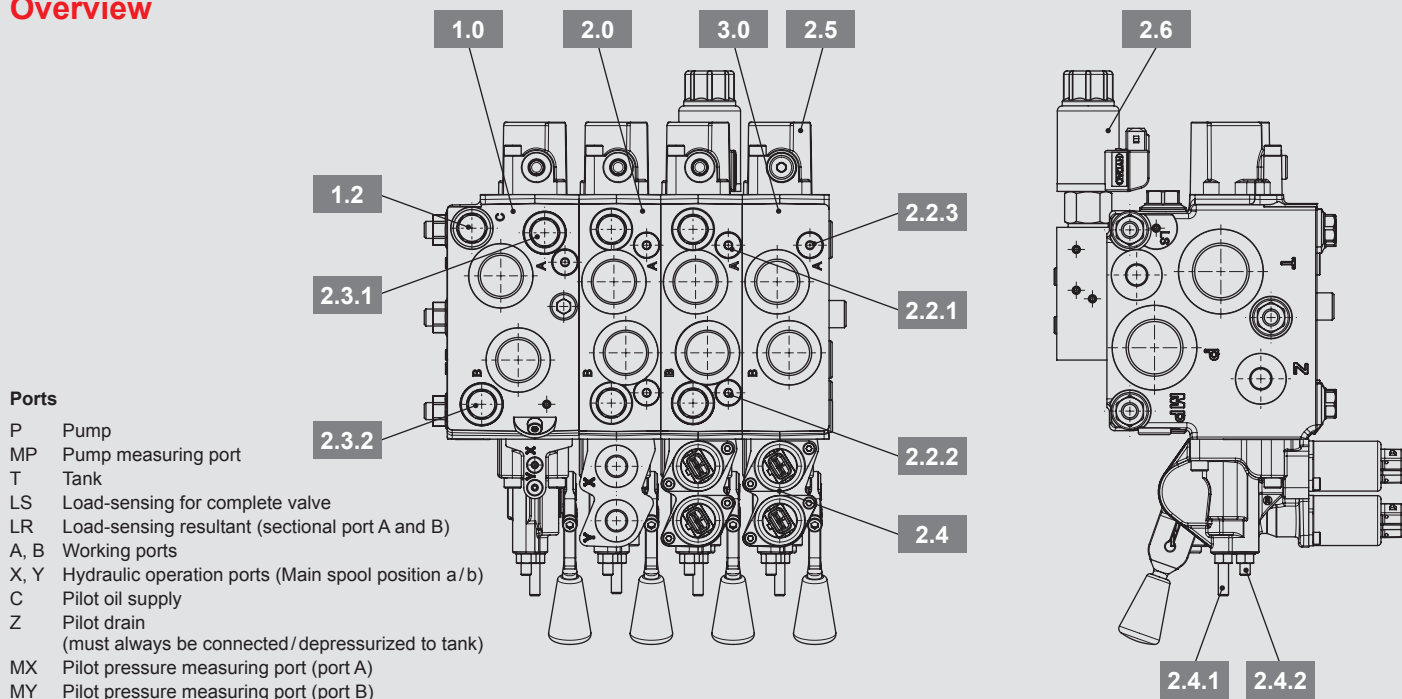
**2.4.1** Stroke limiter of main spool port A

**2.4.2** Stroke limiter of main spool port B

**2.5** Spring cap

**2.7** Pressure compensator

## Overview



1.0	Inlet section
1.1	Filter unit
1.2	Pressure reducing valve for internal pilot oil supply
2.0	Single section
2.1	Main spool
2.2.1	LS pressure limitation port A
2.2.2	LS pressure limitation port B
2.2.3	LS pressure limitation port A/B combined
2.3.1	Workport valve port A


2.3.2	Workport valve port B
2.4	Operation unit
2.4.1	Stroke limiter of main spool port A
2.4.2	Stroke limiter of main spool port B
2.5	Spring cap
2.6	Optional flange block for working section
2.7	Pressure compensator
2.8	LS shuttle valve
3.0	End section

## Technical data

### General data and operating conditions

No. of working sections:	1 – 10
Installation position:	Preferred horizontal to the main spool axis or vertical with the operation unit to the top (spring cap to the bottom)
Mass in kg:	Mono section M...7-CS6 / M...6P-CS6 8.3 / 8.1 Inlet section ML...7-CS6 / ML...6P-CS6 7.8 / 7.6 Single section B6 / CS6 / LS6 / LS6F 5.1 / 4.9 / 4.7 / 4.6 End section SR16...-C6 / SR16...-CS6 5.5 / 5.3
	Operation unit MHS / HHS / EYHS / ES 0.3 / 0.4 / 0.7 / 0.6 Hand lever 1 / 2 / 3 0.1 Optional flange block LD1 / LW... / LW1... 0.3 / 1.2 / 1.6
	Tie rod for working sections 2 / 4 / 6 / 8 / 10 0.3 / 0.5 / 0.7 / 0.9 / 1.1
Connection type (thread type):	BSPP acc. to ISO 1179-1 (SAE on inquiry only)
Ambient temperature range:	-20 to +60 °C <sup>1)</sup>
Hydraulic fluid temperature range:	-20 to +80 °C <sup>1)</sup>
Painting:	Standard primer and top coat RAL 9005 on inquiry

### Hydraulic data

Maximum flow rate	P / A, B	250 l/min P port size 7 (180 l/min P port size 6) / 180 l/min
Nominal pressure		350 bar
Max. operating pressure at port:	P / A, B	350 bar / 420 bar
	T	30 bar
	Z	Drained to tank  must always be connected / depressurized to tank
Max. pilot pressure at port C / X, Y		30 bar
Pilot pressure range		6.5 to 20 bar hydraulic 4.5 to 20 bar electrohydraulic
Required control $\Delta p$ at the control block		17 bar
Hydraulic fluid		Mineral oil (HL/HLP) acc. to DIN 51524, other hydraulic fluids on inquiry
Viscosity range		10 – 400 mm <sup>2</sup> /s
Max. permitted degree of contamination of the hydraulic fluid		20/18/15 acc. to ISO 4406 (c) Please contact HYDAC Filtration Technology to ensure system cleanliness

### Electrical data

Supply voltages	12 V DC / 24 V DC
Solenoid data	See chapter "Operation units" and "Solenoid valves and coils"
Connector type and IP protection class (with mating connector mounted and locked)	AMP Junior Timer, 2-pin, axial / up to IP6K6 <sup>2)</sup> Deutsch DT04, 2-pin, axial / up to IPX9K <sup>2)</sup>
Amplifiers and control devices	See Product Catalogue 18.500 – Control Technology for Mobile Machines

<sup>1)</sup> Deviation of data on inquiry only

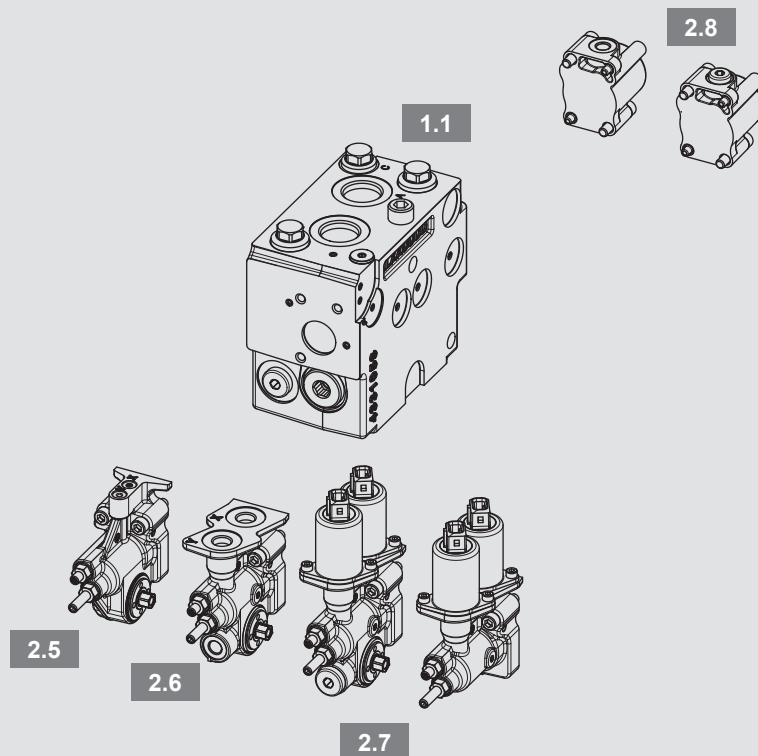
<sup>2)</sup> Mating plug-in connectors are not included

 The technical data and characteristic curves were determined at a viscosity of 32 mm<sup>2</sup>/s

□

It consists of one mono section which does not require separate inlet and end plates – everything is included. It can be customised to different applications and machines.

## Setup with mono section



## Type code structure

## General

**LCX-601 / B 0**

**- Connection type B (BSPP)**

Mono section

M27

CS6 / ...

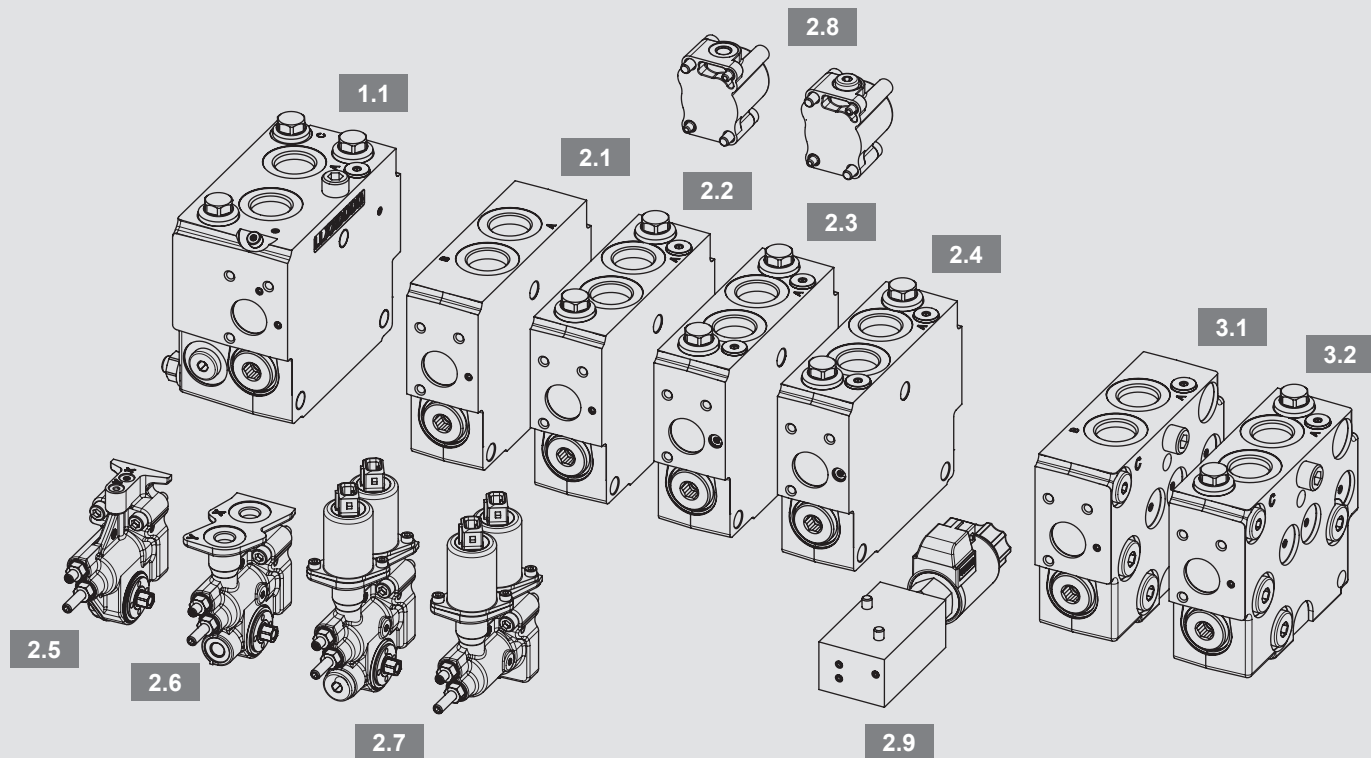
1.1	Mono section M27-CS6, M17-CS6 , M26P-CS6, M16P-CS6
2.5	Manual operation MHS
2.6	Hydraulic operation HHS
2.7	Electrohydraulic operation EYHS, E1YHS, ES, E1S
2.8	Spring cap C1..., C1X...



## Modular structure

If two or more hydraulic functions are needed, the LCX-6 valve series provides a modular structure. It consists of an inlet and outlet section with integrated working function and can be combined with further single sections from the LX-6 valve series (LCX-602 up to LCX-610).

### Setup with left hand inlet section



### Type code structure

General

LCX-6 \_\_ / B 0

Connection type B (BSPP)  
No. of working sections (02-10)

Inlet section

ML27

1.1

Inlet section ML27-CS6, ML17-CS6, ML26P/...-CS6, ML16P/...-CS6

CS6 / ...

Single sections

LS6F / ... / LW...

2.1

Single section B6

B6 / ...

2.2

Single section CS6

.

2.3

Single section LS6

.

2.4

Single section LS6F

.

2.5

Manual operation MHS

.

2.6

Hydraulic operation HHS

.

2.7

Electrohydraulic operation EYHS, E1YHS, ES, E1S

.

2.8

Spring cap C1..., C1X...

LS6 / ...

2.9

Optional flange block LD1, LW..., LW1...

End section

SR16C

3.1

End section SR16C-C6, SR16-C6

CS6 / ...

3.2

End section SR16C-CS6, SR16-CS6

## Example of valve specifications and type code

Example: mono section control valve for hydraulic system with variable displacement pump (CC system)

### Type code

Valve type

**LCX-601 / B0**

Mono section / valve

**M27**

**CS6 / CS160-160RN / 250 / 300-300 / EYHS2D-1 / C1E**

### Control valve specification

**LCX-601**

LCX-6 with 1 working section

**B0**

BSPP connection type, valve series 0

**M27**

Mono section for CC systems with internal pilot oil supply, port C with plug screw

**CS6**

Section type with combined LS and workport valves

**CS-RN**

- Main spool type CS (closed in neutral position)
- Flow rate at working port A and B 160 l/min
- Pressure compensator with load holding function, spring type N

**250**

LS pressure limitation port A/B 250 bar

**300-300**

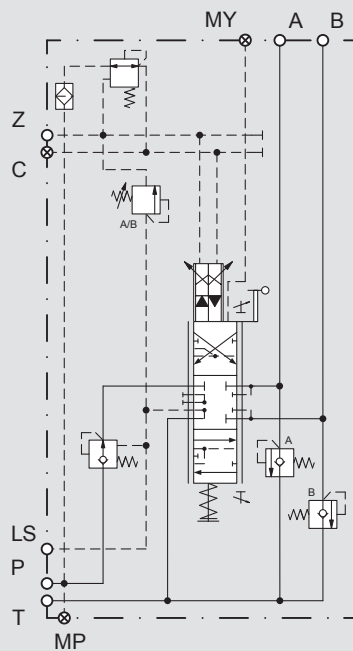
Shock valve port A 300 bar, port B 300 bar

**EYHS2D-1**

- Electrohydraulic operation and measuring port MY
- Hand lever axis and stroke limiter
- 24 V solenoid and connector type Deutsch DT04-2P
- Hand lever type 1

**C1E**

Spring cap for electrohydraulic operation



Example: sectional control valve for hydraulic system with variable displacement pump (CC system)

### Type code

Valve type

**LCX-603 / B0**

Inlet section

**ML27**

**CS6 / CS160-160RN / 250 / 300-300 / EYHS2D-1 / C1E**

### Control valve specification

**LCX-603**

LCX-6 with 3 working sections

**B0**

BSPP connection type, valve series 0

**ML27**

Left hand inlet section for CC systems, with internal pilot oil supply

**CS6**

Section type with combined LS and workport valves

**CS-RN**

- Main spool type CS (closed in neutral position)
- Flow rate at working port A and B 160 l/min
- Pressure compensator with load holding function, spring type N



## Example of valve specifications and type code

### Type code

### Single section

**LS6 / CS050-050RG / P-200 / P-230 / EYHS2D-1 / C1E**

### End section

**SR16C**

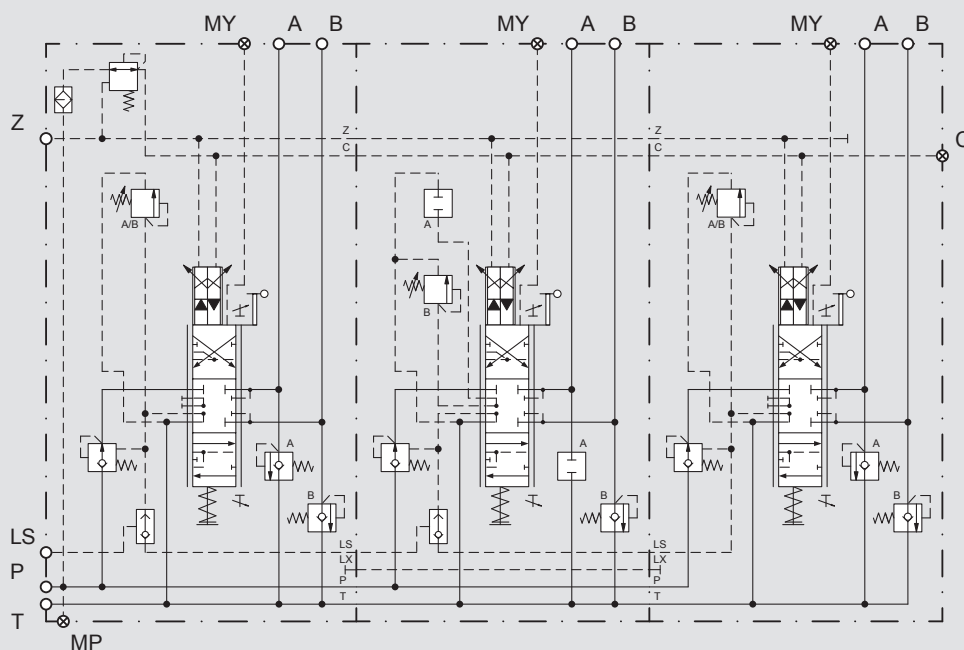
**CS6 / CS030-030RG / 130 / 160-160 / EYHS2D-1 / C1E**

### Control valve specification

<b>250</b>	LS pressure limitation port A/B 250 bar
<b>300 – 300</b>	Shock valve port A 300 bar, port B 300 bar
<b>EYHS2D-1</b>	- Electrohydraulic operation and measuring port MY - Hand lever axis and stroke limiter - 24 V solenoid and connector type Deutsch DT04-2P - Hand lever type 1
<b>C1E</b>	Spring cap for electrohydraulic operation

<b>LS6</b>	Single section with LS and workport valves
<b>CS-RG</b>	- Main spool type CS (closed in neutral position) - Flow rate at working port A and B 50 l/min - Pressure compensator with load holding function, spring type G
<b>P-200</b>	LS pressure limitation port A plug screw, port B 200 bar
<b>P-230</b>	Shock valve port A plug screw, port B 230 bar
<b>EYHS2D-1</b>	- Electrohydraulic operation and measuring port MY - Hand lever axis and stroke limiter - 24 V solenoid and connector type Deutsch DT04-2P - Hand lever type 1
<b>C1E</b>	Spring cap for electrohydraulic operation

<b>SR16C</b>	Right hand end section, port C with plug screw
<b>CS6</b>	Section type with combined LS and workport valves
<b>CS-RG</b>	- Main spool type CS (closed in neutral position) - Flow rate at working port A and B 30 l/min - Pressure compensator with load holding function, spring type G
<b>130</b>	LS pressure limitation port A/B 130 bar
<b>160 – 160</b>	Shock valve port A 160 bar, port B 160 bar
<b>EYHS2D-1</b>	- Electrohydraulic operation and measuring port MY - Hand lever axis and stroke limiter - 24 V solenoid and connector type Deutsch DT04-2P - Hand lever type 1
<b>C1E</b>	Spring cap for electrohydraulic operation



## Mono section M27 / M17 including single section type CS6

### Type code

**M27 - CS6**

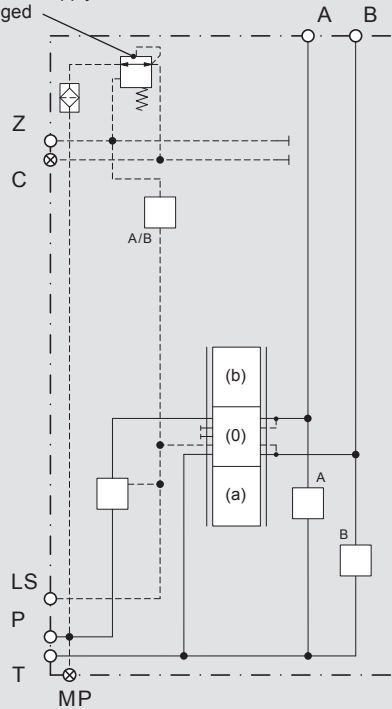
**M17 - CS6**

1

2

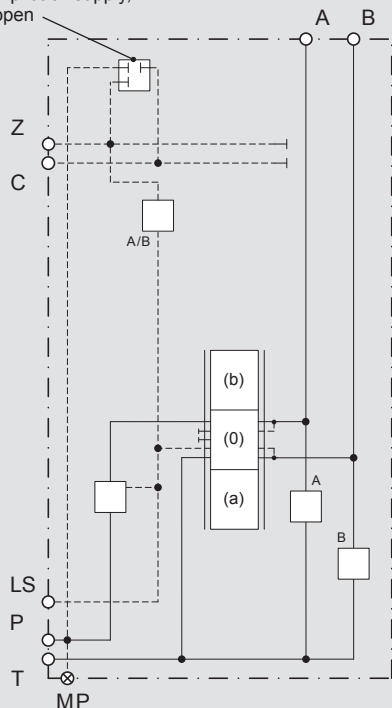
#### M27 CS6 / ...

Internal pilot oil supply,  
port C plugged



#### M17 CS6 / ...

External pilot oil supply,  
port C open



### 1 Basic type

M	Mono section for CC systems
2 or 1	2: Internal pilot oil supply, port C plugged 1: External pilot oil supply, port C open
7	Port size P/T



Max. flow rate pump port P: 180 l/min

### 2 Section type

CS6	Section type with combined LS pressure limitation and workport valves
-----	---

# **Mono section M26P / M16P including single section type CS6**

## **Type code**

**M26P / 250 - CS6**

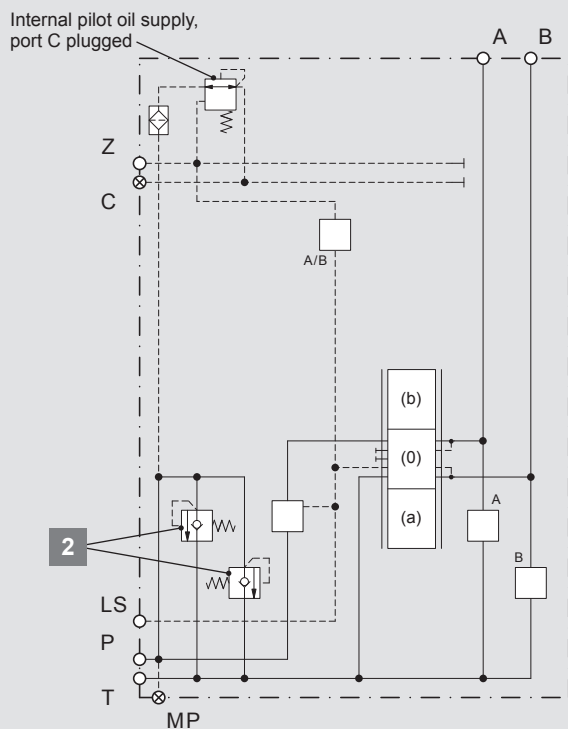
**M16P / 300 - CS6**

**1**

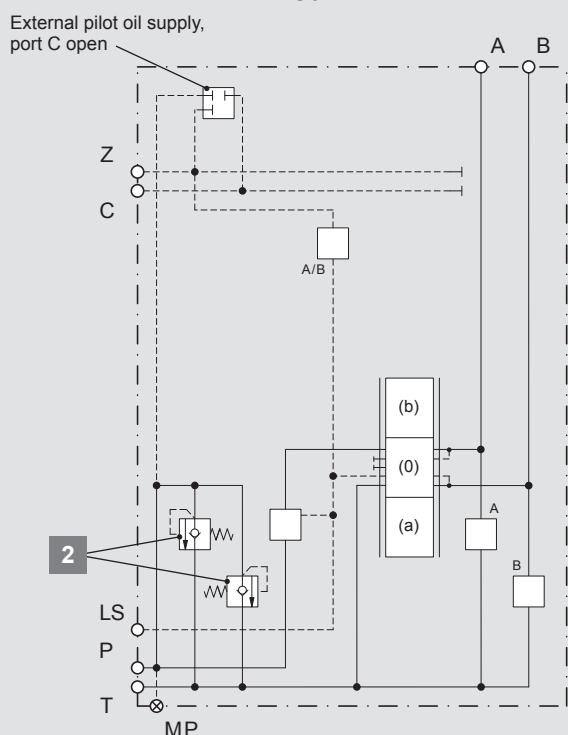
**2**

**3**

**M26P / ---  
CS6 / ...**



**M16P / ---  
CS6 / ...**



## **1 Basic type**

<b>M</b>	Mono section for CC systems
<b>2 or 1</b>	2: Internal pilot oil supply, port C plugged 1: External pilot oil supply, port C open
<b>6</b>	Port size P (port size T: 7)
<b>P</b>	Pressure peak protection unit
	Max. flow rate pump port P: 180 l/min

## **2 Pressure peak protection setting**

**---** Pressure setting in bar, 3-digit (fixed)

Possible settings:  
200, 210, 230, 240, 250, 265, 280, 300, 320

Preparation of 2 shock/ anti-cavitation valves (same setting) for pressure peak protection and anti-cavitation prevention only.

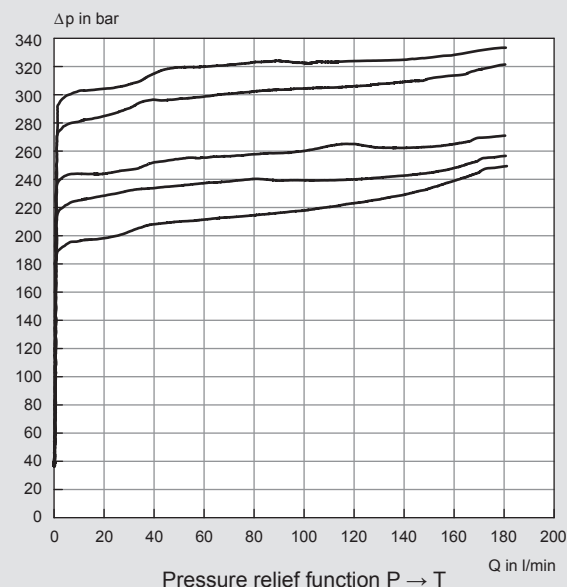
The setting has to be min. 30 bar higher than the LS pressure limitation setting in the working sections and other relevant devices of the complete hydraulic system.

The setting for shock/anti-cavitation valves are fixed and defined at a flow rate of 10 l/min.<sup>1)</sup>

## **3 Section type**

**CS6** Section type with combined LS pressure limitation and workport valves

## **Characteristic curves (measured at 32 mm<sup>2</sup>/s)**



<sup>1)</sup> See chapter "Workport valves"

## Inlet section ML27 / ML17 including single section type CS6

### Type code

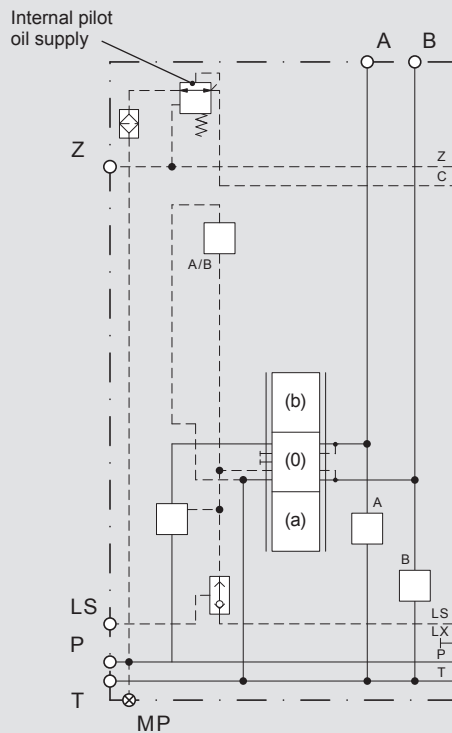
ML27 - CS6

ML17 - CS6

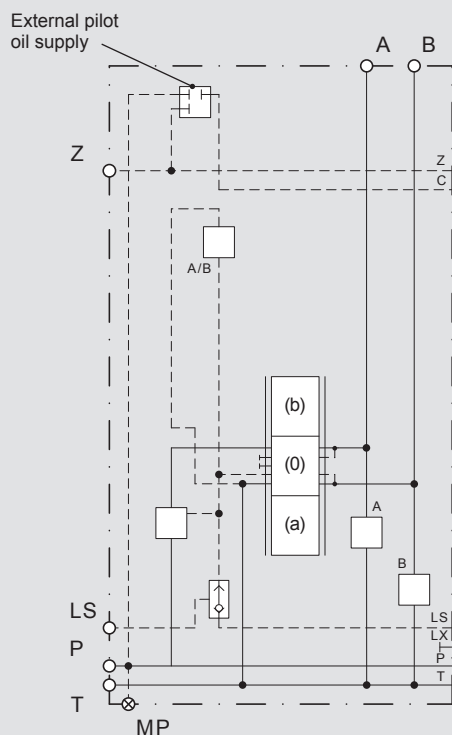
1

2

#### ML27 CS6 / ...



#### ML17 CS6 / ...



### 1 Basic type

M Multi inlet section for CC systems

L Left hand side

2 or 1 2: Internal pilot oil supply  
1: External pilot oil supply

7 Port size P/T



Max. flow rate pump port P: 250 l/min

### 2 Section type

CS6 Section type with combined LS pressure limitation and workport valves

# Inlet section ML26P / ML16P including single section type CS6

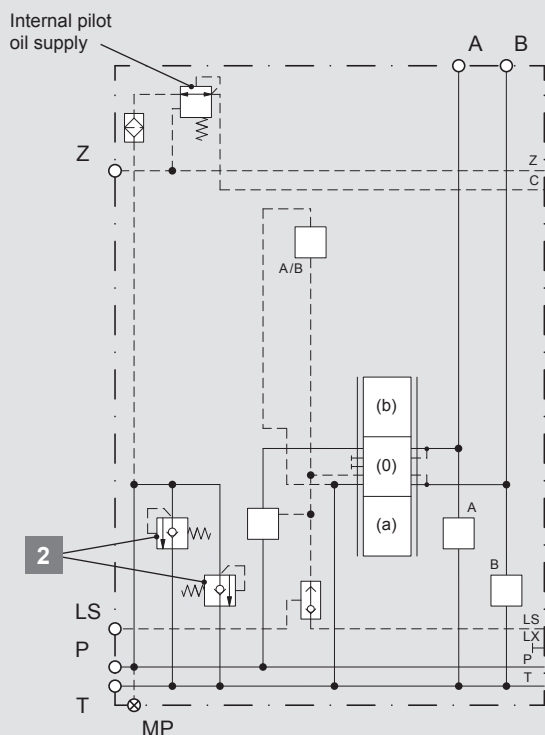
## Type code

ML26P / 250 - CS6

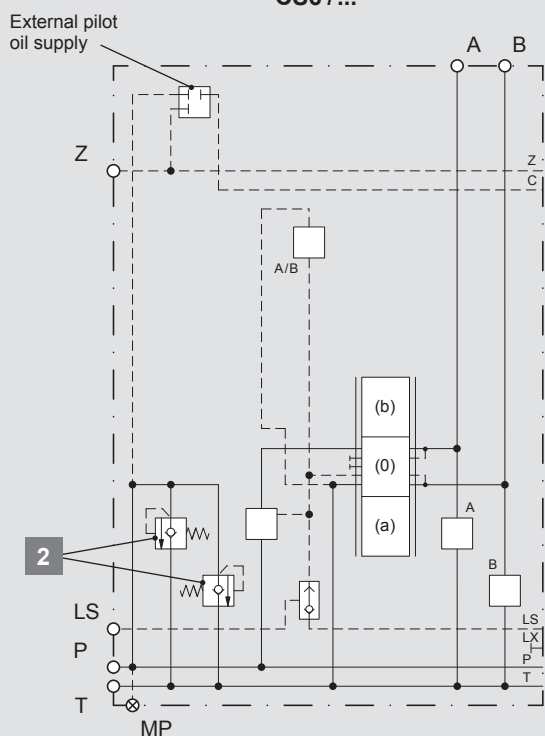
ML16P / 300 - CS6

1 2 3

### ML26P / --- CS6 / ...



### ML16P / --- CS6 / ...



## 1 Basic type

M Multi inlet for CC systems

L Left hand side

2 or 1 2: Internal pilot oil supply  
1: External pilot oil supply

6 Port size P (port size T : 7)

P Pressure peak protection unit

⚠ Max. flow rate pump port P: 180 l/min

## 2 Pressure peak protection setting

--- Pressure setting in bar, 3-digit (fixed)

Possible settings:  
200, 210, 230, 240, 250, 265, 280, 300, 320

⚠ Preparation of 2 shock/ anti-cavitation valves (same setting) for pressure peak protection and anti-cavitation prevention only.

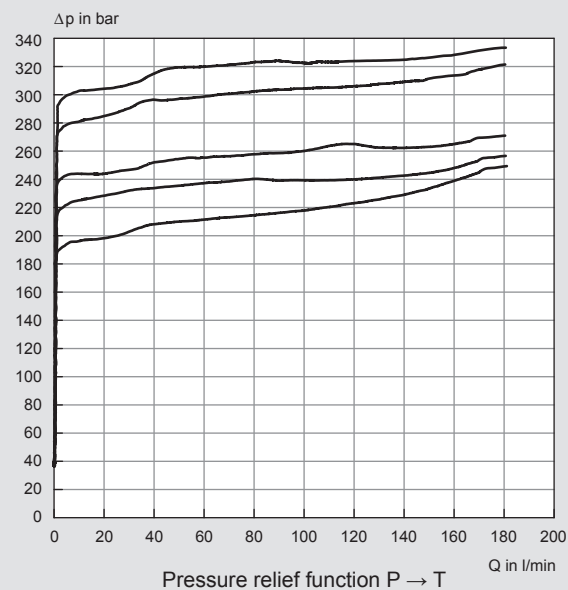
The setting has to be min. 30 bar higher than the LS pressure limitation setting in the working sections and other relevant devices of the complete hydraulic system.

⚠ The setting for shock/anti-cavitation valves are fixed and defined at a flow rate of 10 l/min.<sup>1)</sup>

## 3 Section type

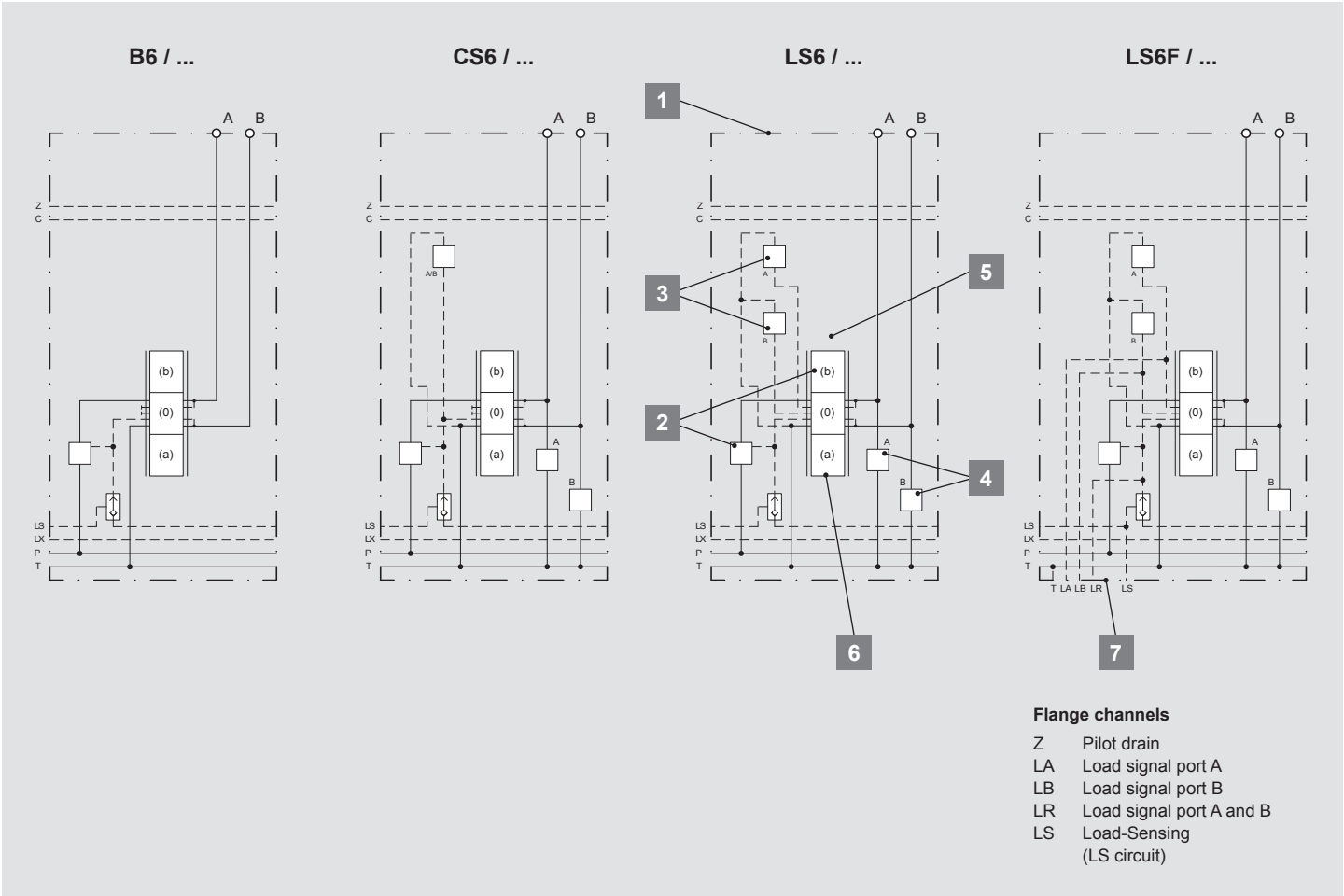
CS6 Section type with combined LS pressure limitation and workport valves

## Characteristic curves (measured at 32 mm<sup>2</sup>/s)



<sup>1)</sup> See chapter "Workport valves"

# Single section B6 / CS6 / LS6 / LS6F



## Type code

B6

/ CR160-160RN /

EYHS2D-1 / C1E

CS6

/ CR160-160RN / 250

/ 300 – P / EYHS2D-1 / C1E

LS6

/ CR160-160RN / 250 – P / 300 – P / EYHS2D-1 / C1E

LS6F

/ CR160-160RN / 250 – P / 300 – P / EYHS2D-1 / C1E / LWRV2D

- 1

2

3

4

5

6

7

1	Basic type
B6	Basic section type w/o LS pressure limitation and workport valves
CS6	Section type with combined LS pressure limitation and workport valves
LS6	Section type with LS pressure limitation and workport valves
LS6F	Section type with LS pressure limitation and workport valves Flange interface for optional flange blocks
	Port size 6 for working ports A/B
2	Main spool and pressure compensator
3	LS pressure limitation
4	Workport valves
5	Operation unit
6	Spring cap
7	Optional flange blocks for basic type LS6F

## 15



# Main spool and pressure compensator

## Type code

LS6F / **CR160-160RN** / 250 – P / 300 – P / EYHS2D-1 / C1E / LWRV2D

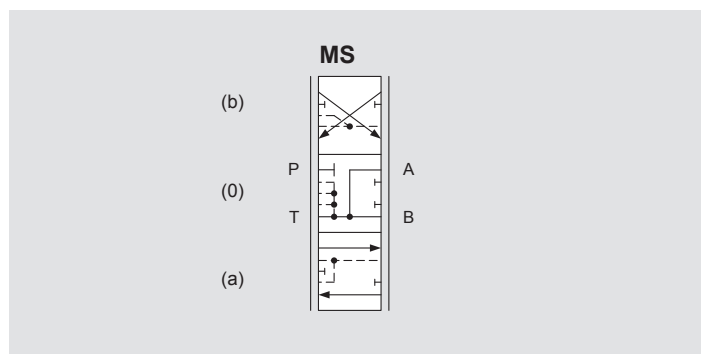
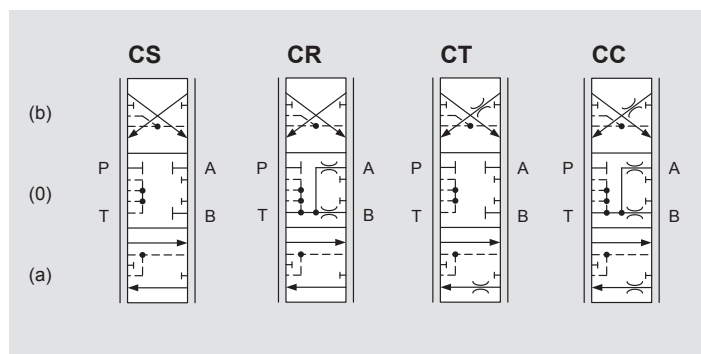
### Examples

**CR** 160 - 160 R N  
**MS** 180 - 180 L

2.1 2.2 2.3 2.4 2.5 2.6

2.1	Basic type of main spool
2.2	Max. flow at port A to actuator in l/min
2.3	Characteristic curve and overlap
2.4	Max. flow at port B to actuator in l/min
2.5	Basic type of pressure compensator / load holding function
2.6	Pressure compensator spring type

## Basic type of main spool



⚠ Other spool types and configurations on inquiry

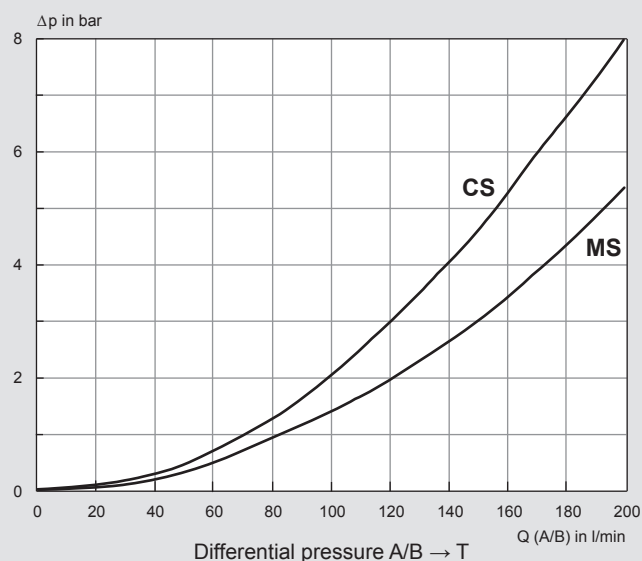
### Cylinder as actuator

CS	4/3 directional valve closed in neutral position
CR	4/3 directional valve unloaded in neutral position
CT	4/3 directional valve closed in neutral position 20 bar return orifice for A and B → T to support system stability
CC	4/3 directional valve unloaded in neutral position 20 bar return line orifice for port A and B → T to support system stability

### Motor as actuator

MS	4/3 directional valve open in neutral position
----	--

## Characteristic curves (measured at 32 mm²/s)



**CS:** Cylinder spool type – nominal control edge size: 08  
**MS:** Motor spool type – nominal control edge size: 08

## Main spool and pressure compensator

### Type code

LS6F / **CR160-160RN** / 250 – P / 300 – P / EYHS2D-1 / C1E / LWRV2D

CR **160** - **160** **R** **N**

2.1

2.2

2.3

2.4

2.5

2.6

### Main spool flow range

#### Symmetrical spools

2.2

2.4

2.5

2.6

Max. flow rate to actuator in l/min (Port A - Port B)

									Pressure compensator Type	Pressure compensator spring Type	Identifier
180 - 180	150 - 150	125 - 125	090 - 090	062 - 062	045 - 045	030 - 030	020 - 020	–	R	Y	Yellow
170 - 170	138 - 138	116 - 116	085 - 085	058 - 058	042 - 042	028 - 028	019 - 019	–	R	B	Blue
<b>160 - 160</b>	<b>130 - 130</b>	<b>110 - 110</b>	<b>080 - 080</b>	<b>055 - 055</b>	<b>040 - 040</b>	<b>027 - 027</b>	<b>018 - 018</b>	<b>010 - 010</b>	<b>R</b>	<b>N</b>	<b>None</b>
–	–	100 - 100	072 - 072	050 - 050	036 - 036	025 - 025	016 - 016	–	R	G	Green

Nominal control edge size

08 - 08	07 - 07	06 - 06	05 - 05	04 - 04	03 - 03	02 - 02	01 - 01	00 - 00
---------	---------	---------	---------	---------	---------	---------	---------	---------

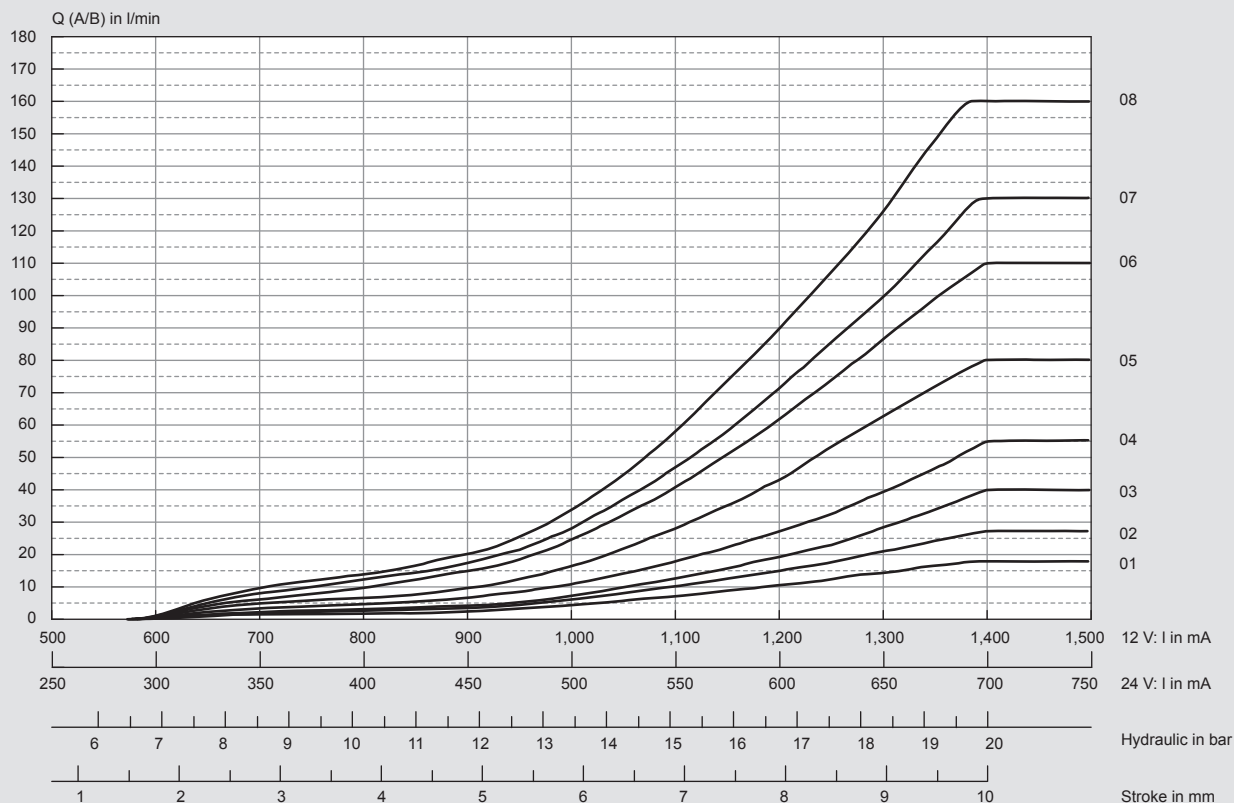
#### Asymmetrical spools

Nominal control edge size

08 - 06	07 - 05	06 - 04	05 - 03	04 - 02	03 - 02	02 - 01	01 - 00
08 - 05							

⚠ Place working sections (machine functions) with maximum flow as close as possible to inlet section (port P and T).

### Characteristic curves for nominal flow rates of main spool (measured at 32 mm²/s)



#### Example:

Max. flow to the actuator at working port A and B: 120 l/min

- See table above: nominal control edge size 06 – 06 with pressure compensator spring Y →  $Q_{\max} = 125 - 125$  l/min
- Setting to final target value 120 l/min by stroke limiter

## Main spool and pressure compensator

### Type code

LS6F / **CR160-160RN** / 250 – P / 300 – P / EYHS2D-1 / C1E / LWRV2D

CR	160	-	160	R	N
2.1	2.2	2.3	2.4	2.5	2.6

### Flow control by section pressure compensator

Figure A

Main spool in neutral position  
(Type CR – A/B unloaded to T)

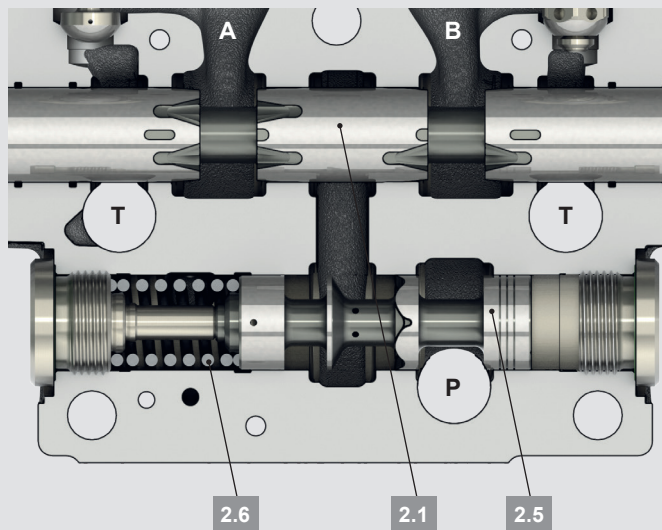
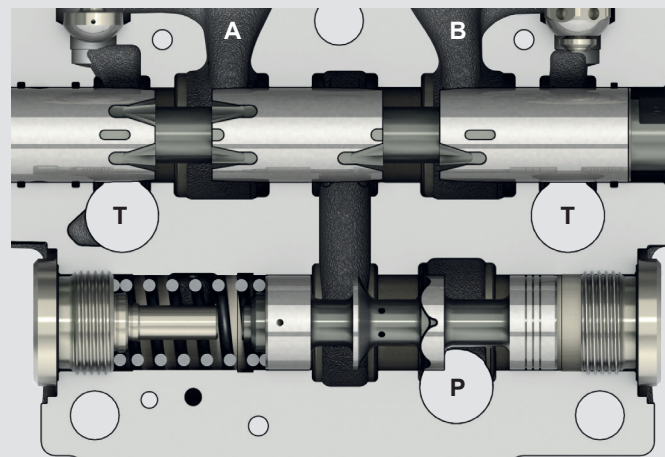


Figure B

Main spool out of neutral position  
(P → B, A → T)



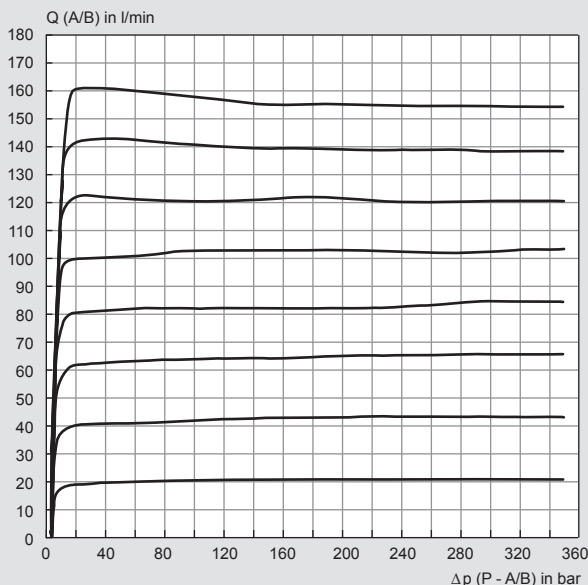
P is not connected to the working ports A and B when the main spool **2.1** is in neutral position (Fig. A). The compensator spool **2.5** is moved to left against the compensator spring **2.6** by pump pressure and blocks flow to the main spool.

When the main spool **2.1** is operated out of the neutral position (Fig. B), the load pressure (LS pressure) of the working port A or B is connected to the spring chamber of the pressure compensator and moves the compensator spool to the right into a corresponding controlled position.

The flow rate through the main spool (= metering orifice) is kept constant by the pressure compensator when sections are in parallel operation with different load or pump pressures.

The characteristic flow rate curve of a main spool can be adapted and optimized to each application by using the different pressure compensator spring types Y, B, N or G.

### Pump pressure compensation (measured at 32 mm<sup>2</sup>/s)

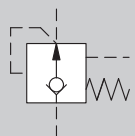


### Basic types of pressure compensator / load holding function

**R** Pressure compensator spool - released with load holding function (standard type)

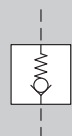
⚠ The load holding function is not free of leak oil, the hydraulic schematic / symbol is simplified

The pressure compensator R must always be indicated in the type code with the corresponding compensator spring type Y, B, N or G.



**L** Load holding function only

⚠ The load holding function is not free of leak oil, the hydraulic schematic / symbol is simplified.



Different load or pump pressures are not compensated when sections are in parallel operation. The flow rate to the actuator depends on the pressure difference between pump pressure and load (LS pressure). Main spool definition and detailed system setup on inquiry. The pressure compensator spring **2.6** is not indicated for the load holding function in the type code.

**Example:** MS180-180L

## LS pressure limitation

### Type code

LS6F / CR160-160RN / **250 – P** / 300 – P / EYHS2D-1 / C1E / LWRV2D

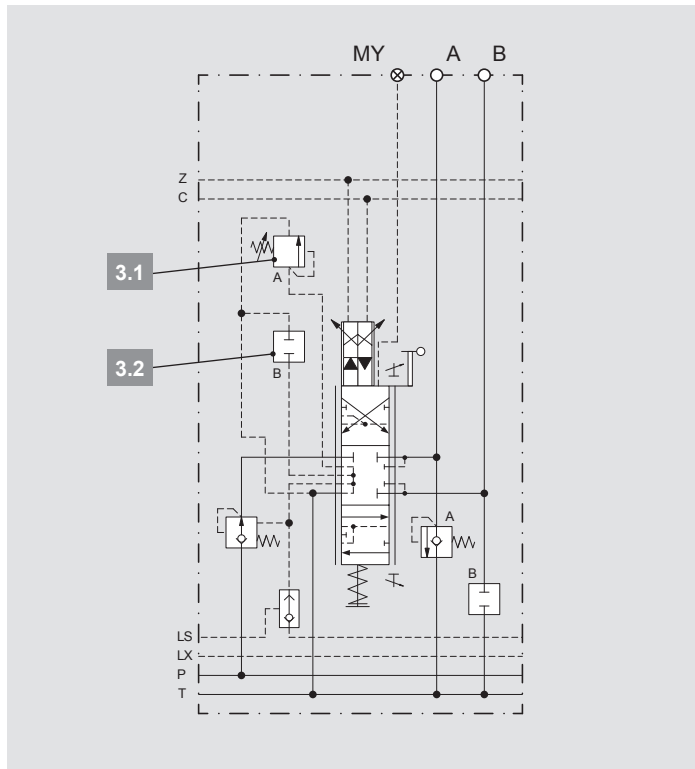
**250 – P**

3.1

3.2

Adjustable LS pressure limitation by blocking the sectional flow rate to the working ports A and B.

For LS option valves and electro-proportional pressure adjustment, see chapter "Optional flange blocks for working section LS6F".



⚠ The optional pressure peak protection setting in the inlet section has to be min. 30 bar higher than the LS pressure limitation setting in the working sections and other relevant devices of the complete hydraulic system.

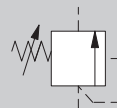
⚠ Min./Max. LS pressure limitation setting: 050/320 bar

3.1 LS pressure limitation port A

3.2 LS pressure limitation port B

#### Basic type

--- Pressure setting in bar, 3-digit  
Minimum setting: 050 bar  
Maximum setting: 320 bar

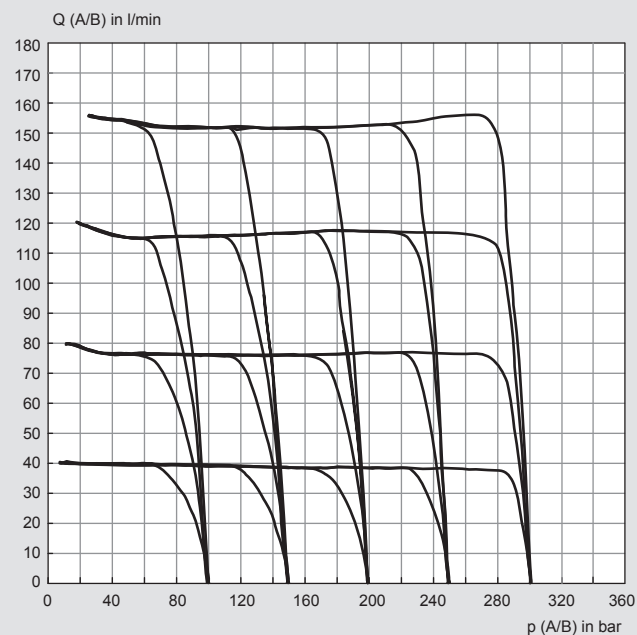


P Plug screw



#### Load pressure compensation / limitation

(measured at 32 mm<sup>2</sup>/s)



## Type code

LS6F / CR160-160RN / 250 – P / **300 – P** / EYHS2D-1 / C1E / LWRV2D

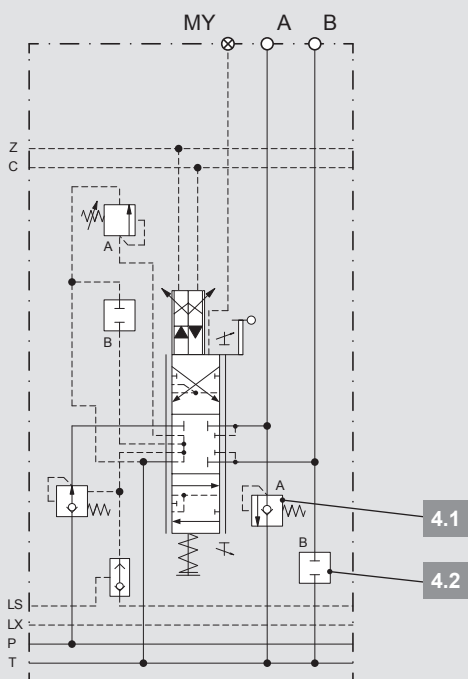
**300 – P**

4.1

4.2

Fixed shock/anti-cavitation valves protect working ports A and B against pressure peaks and cavitation. Anti-cavitation valves protect the system against cavitation.

- ⚠ Shock/anti-cavitation valves are only for reduction of pressure peaks and should not be used as pressure relief valves.
- ⚠ The settings for shock/anti-cavitation valves are fixed ex works. The pressure setting is defined at a flow rate of 10 l/min.

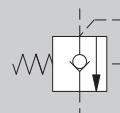


4.1 Workport valve port A

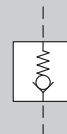
4.2 Workport valve port B

### Basic type

Shock/anti-cavitation valve  
Pressure setting in bar, 3-digit (fixed)  
See table on next page for settings



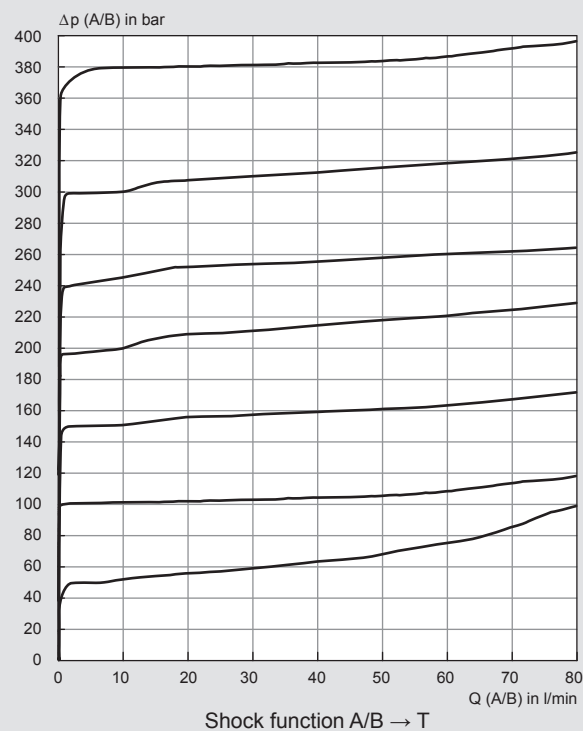
A Anti-cavitation valve



P Plug screw



### Characteristic curves (measured at 32 mm²/s)



## Workport valves

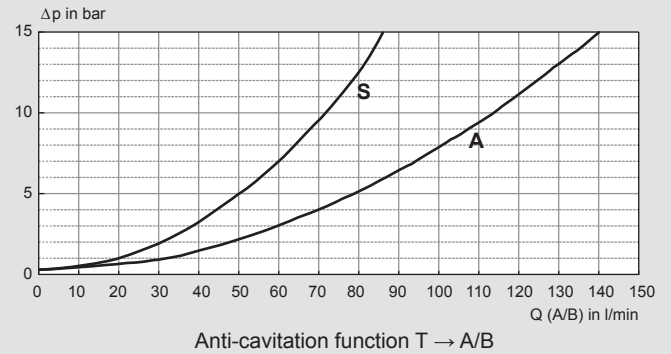
△ The maximum pressure setting for the shock/anti-cavitation valves depends on the chosen pressure settings for the LS limitations port A and B. To avoid interaction recommended values are shown in the following table.

The values listed in the table are calculated according to the following guidelines:

Shock valve setting  $p_{\text{shock}} < 150 \text{ bar}$ :  $p_{\text{shock}} - p_{\text{LS}} > 20 \text{ bar}$

Shock valve setting  $p_{\text{shock}} \geq 150 \text{ bar}$ :  $p_{\text{shock}} - p_{\text{LS}} > 30 \text{ bar}$

Characteristic curves (measured at 32 mm²/s)



S: Shock/anti-cavitation valve

A: Anti-cavitation valve

### Shock / anti-cavitation valve pressure settings (fixed)

Settings	bar	050	065	080	100	125	140	150	160	175	190	200	210	230	240	250	265	280	300	310	320	350	380
Tolerance range	± bar	5	5	5	5	7	7	7	7	10	10	10	10	10	10	10	12	12	12	12	12	12	15
Max. LS pressure cut-off	bar	-	050	060	080	105	120	120	130	145	160	170	180	200	210	220	235	250	270	280	290	320	320

△ Min./Max. LS pressure limitation setting: 050/320 bar

## Operation units

### Type code

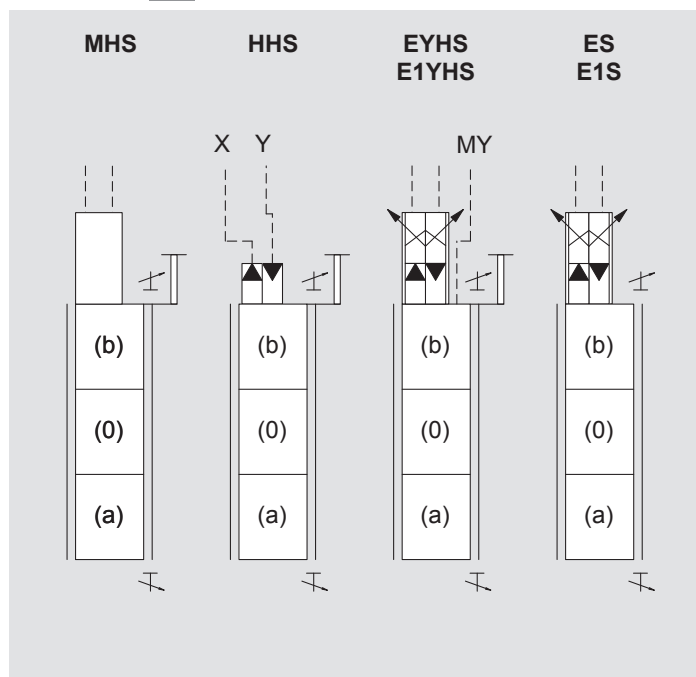
LS6F / CR160-160RN / 250 – P / 300 – P / **EYHS2D-1** / C1E / LWRV2D

**EYHS**    **2D-1**  
**HS**

5.1    5.2    5.3

5.1	Basic type
5.2	Electrical supply voltage, connector type
5.3	Hand lever

### Basic types 5.1



MHS	Unit for manual operation Hand lever axis and spool stroke limiter
HHS	Unit for hydraulic operation Hand lever axis and spool stroke limiter Port X: spool position (a) Port Y: spool position (b)
EYHS	Unit for electrohydraulic operation proportional Pilot pressure measuring port MY: spool position (b) Hand lever axis and spool stroke limiter
E1YHS	Unit for electrohydraulic operation proportional Dampening orifice with diameter 1 mm Pilot pressure measuring port MY: spool position (b) Hand lever axis and spool stroke limiter
ES	Unit for electrohydraulic operation proportional Spool stroke limiter
E1S	Unit for electrohydraulic operation proportional Dampening orifice with diameter 1 mm Spool stroke limiter



Dampened E1 ... units have to be used for pure on/off actuations



For all operation unit types port Z must always be connected/depressurized to tank

Operation units

Technical data for electrohydraulic pilot valves (on/off and proportional)

General			
Supply voltage	V DC	12	24
Coil resistance at 20 °C (±5%)	Ω	4.7	20.8
Duty cycle	%	100	
Connector type and IP protection class (with mating connector mounted and locked)			
AMP Junior Timer, 2-pin, axial		up to IP6K6 <sup>2)</sup>	
Deutsch DT04, 2-pin, axial		up to IPX9K <sup>2)</sup>	
Protective screen	µm	125	

Pressure control valve (proportional)			
Supply voltage	V DC	12	24
Max. control current	mA	1,500	750
PWM frequency (recommended) <sup>1)</sup>	Hz	100 ... 150	

1) The PWM frequency is to be optimized depending on the application

2) Mating plug-in connectors are not included

⚠ Standards ISO 13732-1 and ISO 4413 must be observed in regard to the surface temperatures occurring on the coils.

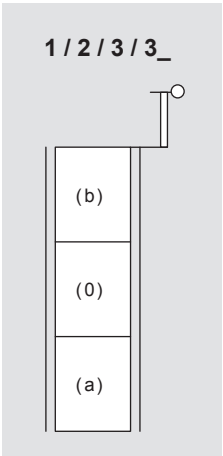
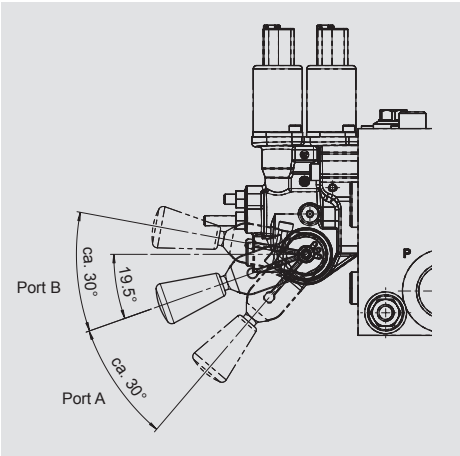
Electrical supply voltage, connector type 5.2

1_	12 V
2_	24 V
_A	AMP Junior Timer
_D	Deutsch DT04-2P



Electrohydraulic operation can be overridden by mechanical operation .  
The hand lever is directly connected to the main spool and follows the movement of the spool.

Hand lever 5.3



-	w/o hand lever (n/a)
1	Standard lever
2	Standard lever, short for emergency operation
3	Universal clamp without hand lever
3_	Universal clamp with hand lever (standard length)

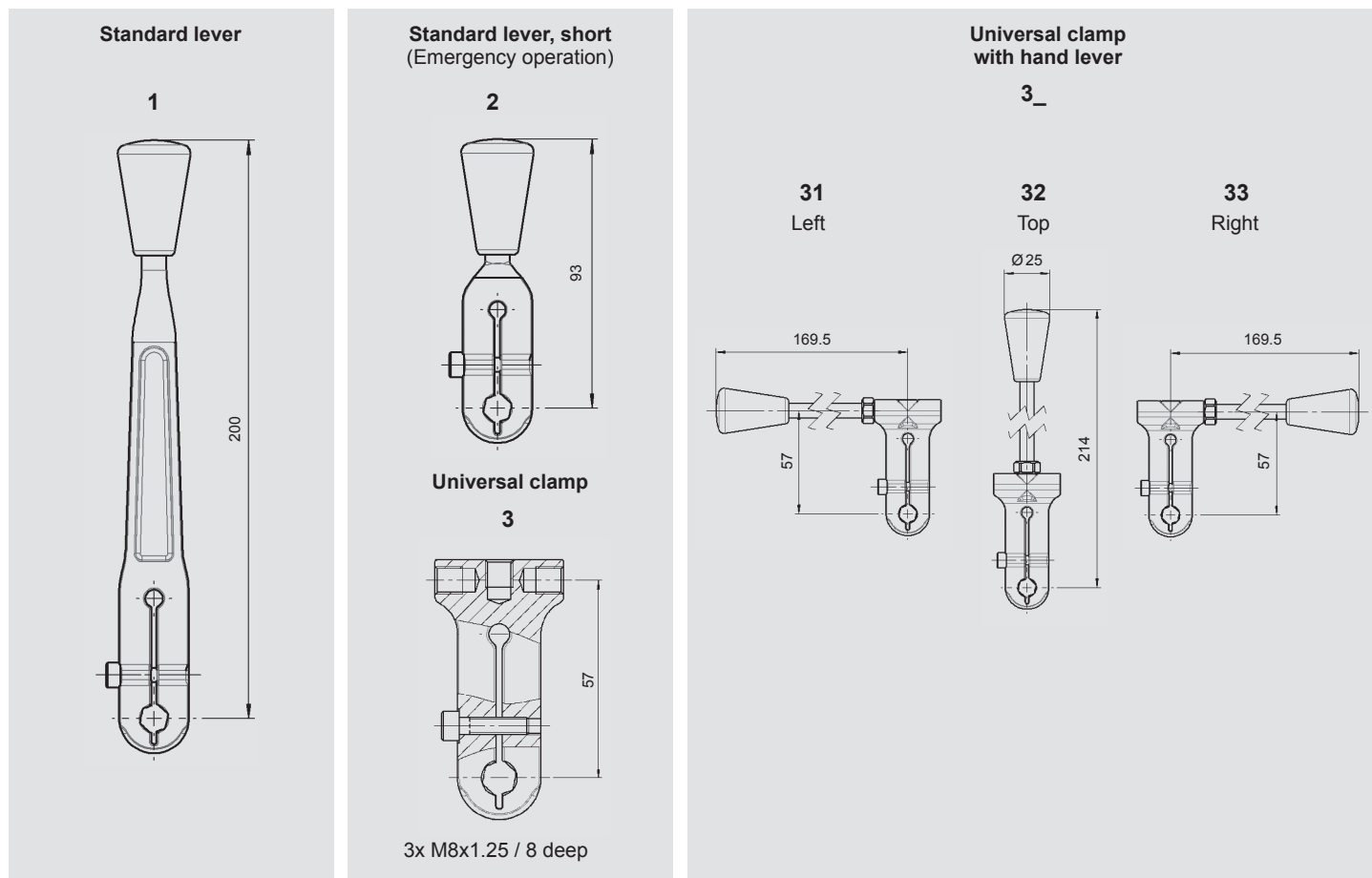
Interface of hand lever axis and hand lever:  
Hexagon WAF9



The hand lever is directly connected to the main spool and follows the movement of the spool.  
A hand lever can only be specified in combination with a hand lever axis type H 5.1 .



## Operation units



Possible hand lever positions: see chapter "Dimensions"

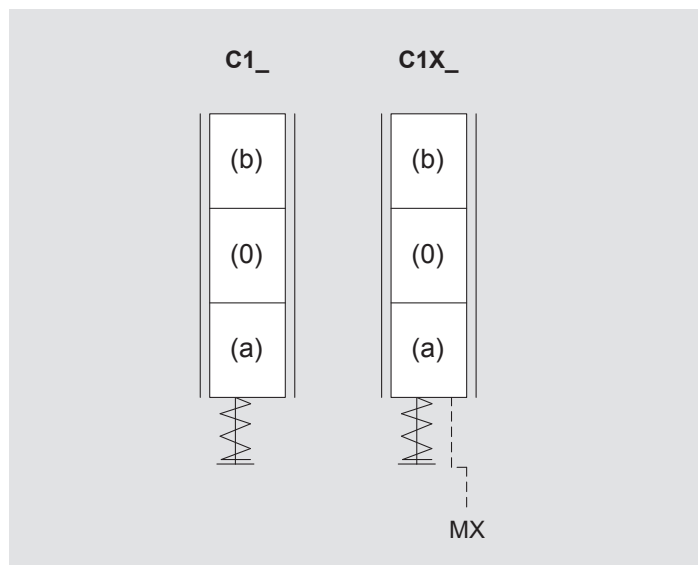
Actuation torques: - Manual: min. 2.5 – 4 Nm  
 - Hydraulic: min. 5 – 19 Nm  
 - Electrohydraulic: min. 3 – 19 Nm

## Spring caps

### Type code

LS6F / CR160-160RN / 250 – P / 300 – P / EYHS2D-1 / **C1E** / LWRV2D

**C1** **E**  
 6.1 6.2



#### 6.1 Basic type

C1	Type 1 (standard)
C1X	Type 1 (standard) Pilot pressure measuring port MX: spool position (a)

#### 6.2 Main spool spring package

⚠ The spring package must be specified according to the operation unit **5.1**.

M	Manual operation type MHS
H	Hydraulic operation type HHS
E	Electrohydraulic operation type EYHS, E1YHS, ES, E1S

## Optional flange blocks for single section type LS6F

### Type code

LS6F / CR160-160RN / 250 – P / 300 – P / EYHS2D-1 / C1E / **LWRV2D**

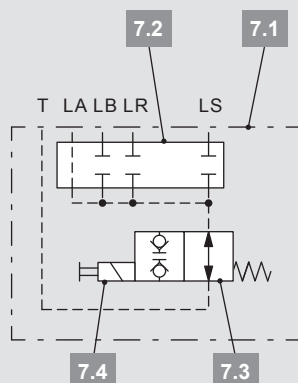
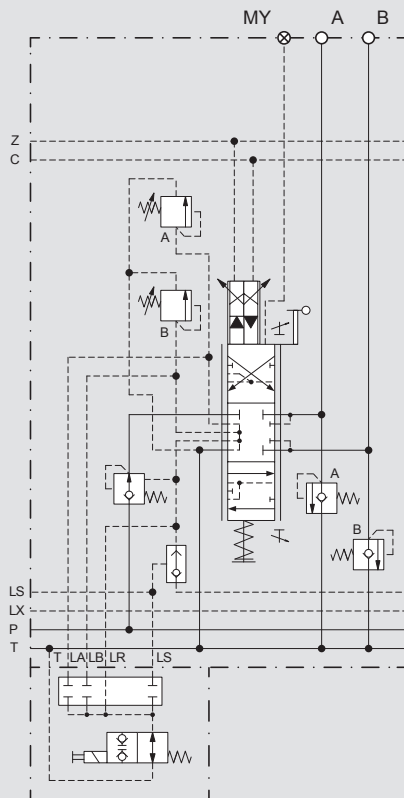
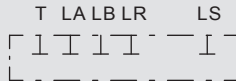
**LW** **R** **V** **2D**  
7.1 7.2 7.3 7.4

⚠ The LS optional flange blocks can be used only in combination with the sectional pressure compensator type R

#### Flange channels

T	Tank	
LA	Load signal port A	
LB	Load signal port B	
LR	Load signal port A and B	
LS	Load-Sensing (LS circuit)	

**LD1**



#### Dummy plate

LD	Basic type
1	Version 1

#### LS option valves<sup>1)</sup>

⚠ Unloading the load signal or LS circuit with the option valves V and W will not block the flow to the working ports A and B completely when the main spool is out of neutral position. Regardless of viscosity or parallel operation, the working pressure during blocking can be up to 15 bar depending on the selected pressure compensator spring type.

#### 7.1 Basic type LW

#### 7.2 Flange channel

A	Load signal port A
B	Load signal port B
R	Load signal port A and B
S	Load-Sensing (LS circuit)

#### 7.3 Solenoid valve

V	LS unloading Normally open (Manual emergency operation)	
W	LS unloading Normally closed (Manual emergency operation)	
P0A	Electro-proportional pressure adjustment Pressure stage A: 350 bar 12 V: I <sub>max</sub> = 1,500 mA 24 V: I <sub>max</sub> = 750 mA	

⚠ The electro-proportional pressure relief valve P0A is not suitable for acting as an unloading valve<sup>1)</sup>

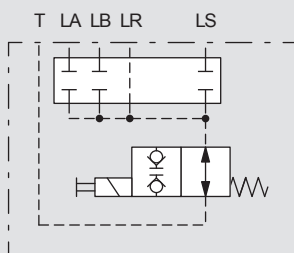
#### 7.4 Solenoid (supply voltage, connector type)

1_	12 V
2_	24 V
_A	AMP Junior Timer
_D	Deutsch DT04-2P

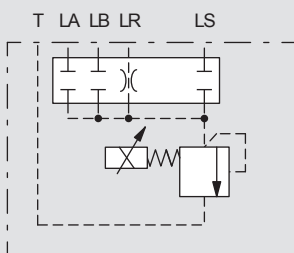
<sup>1)</sup> See chapter "Solenoid valves and coils"

## Optional flange blocks for single section type LS6F

**LWRV2A**



**LWRP0A1D**



### Example configurations

#### LWRV2A

- Basic type LW
- Load signal port A and B
- LS option valve type V, normally open
- 24 V solenoid and connector type AMP Junior Timer

#### LWRP0A1D

- Basic type LW
- Load signal port A and B
- LS option valve type P0A, electro-proportional pressure adjustment (pressure stage A: 350 bar)
- 12 V solenoid and connector type Deutsch DT04-2P

## Type code

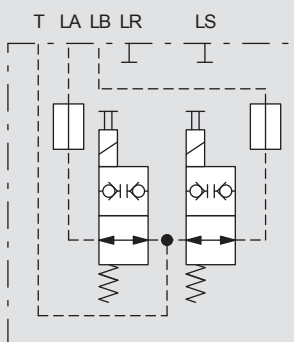
LS6F / CR160-160RN / 250 – P / 300 – P / EYHS2D-1 / C1E / **LW1V-V2D**

**LW1 V - V 2D**

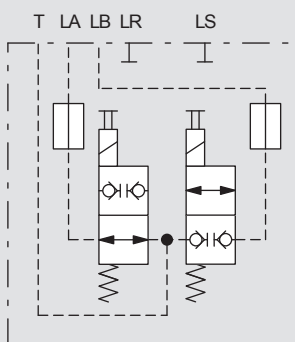
7.1 7.2 7.3 7.4

⚠ The LS optional flange blocks can be used only in combination with the sectional pressure compensator type R

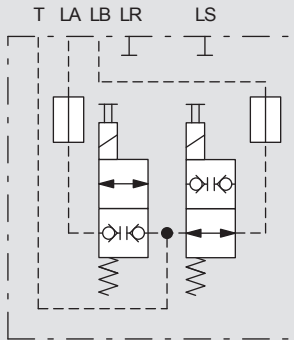
**LW1 V - V\_\_**



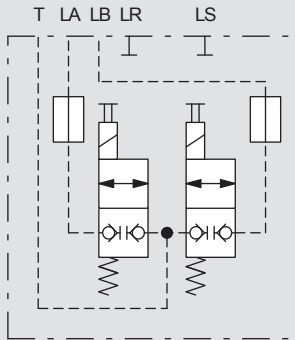
**LW1 V - W\_\_**



**LW1 W - V\_\_**



**LW1 W - W\_\_**



#### 7.1 Basic type LW1

#### 7.2 Solenoid valve for load signal port A

#### 7.3 Solenoid valve for load signal port B

V	LS unloading Normally open (Manual emergency operation)	
W	LS unloading Normally closed (Manual emergency operation)	

#### 7.4 Solenoid (supply voltage, connector type)

1_	12 V
2_	24 V
_A	AMP Junior Timer
_D	Deutsch DT04-2P

## Optional flange blocks for single section type LS6F

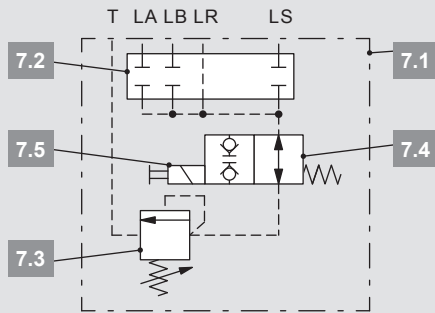
### Type code

LS6F / CR160-160RN / 250 – P / 300 – P / EYHS2D-1 / C1E / **LWRM100-V2D**

**LW** **R** **M**\_\_ **-V** **2D**  
 7.1 7.2 7.3 7.4 7.5

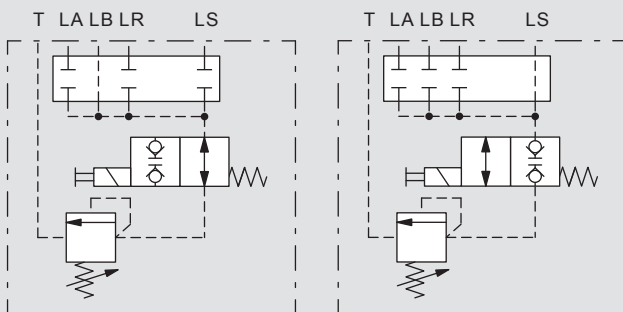
⚠ The LS optional flange blocks can be used only in combination with the sectional pressure compensator type R

LWRM\_\_-V\_\_



LWBM200-V1A

LWSM250-W2D



### Example configurations

#### LWBM200-V1A

- Basic type LWM
- Load signal port B
- LS pressure limitation set to 200 bar
- LS option valve type V, normally open
- 12 V solenoid and connector type AMP Junior Timer

#### LWSM250-W2D

- Basic type LWM
- Load-Sensing (LS circuit)
- LS pressure limitation set to 250 bar
- LS option valve type W, normally closed
- 24 V solenoid and connector type Deutsch DT04-2P

### Switchable LS pressure limitation (2. pressure stage)<sup>1)</sup>

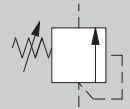
#### 7.1 Basic type LWM

#### 7.2 Flange channel

A	Load signal port A
B	Load signal port B
R	Load signal port A and B
S	Load-Sensing (LS circuit)

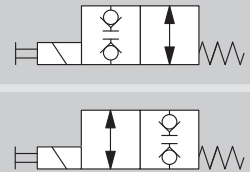
#### 7.3 LS pressure limitation

---	LS pressure setting in bar, 3-digit Minimum setting: 050 bar Maximum setting: 320 bar
-----	---



#### 7.4 Solenoid valve

V	Normally open (Manual emergency operation)
W	Normally closed (Manual emergency operation)



#### 7.5 Solenoid (supply voltage, connector type)

1_	12 V
2_	24 V
_A	AMP Junior Timer
_D	Deutsch DT04-2P

<sup>1)</sup> See chapter "Solenoid valves and coils"

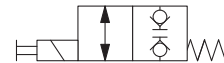
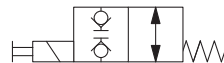
## Solenoid valves and coils

**Electrohydraulic pilot valves (on/off and proportional):** see chapter "Operation units"

**Optional valves for flange blocks:**

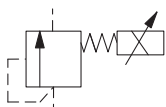
**On/Off valves:**

With manual emergency operation (push-button)



Valve type		V		W	
Design		Poppet valve		Poppet valve	
Nominal voltage U <sub>N</sub>	V DC	12	24	12	24
Nominal current I <sub>N</sub>	A	1.50	0.80	2.20	1.10
Min. current I <sub>min</sub>	A	1.05	0.56	1.54	0.77
Nominal power P <sub>N</sub>	W	18	19	27	27
Response time	On: ms	40		30	
	Off: ms	60		40	
Max. permitted voltage deviation from U <sub>N</sub>	%	±15			
Duty cycle at 115% U <sub>N</sub>	%	100			
Ambient temperature range <sup>2)</sup>	°C	-20 to +60			
Max. permitted coil temperature <sup>3)</sup>	°C	180			
Insulation class as per EN 60085		H			
Integrated free-wheeling diode		Yes		Yes	
Coil length X	mm	40		50	
Connector type and IP protection class (with mating connector mounted)		AMP Junior Timer, 2-pin – axial / up to IP6K6 <sup>4)</sup> Deutsch DT04, 2-pin – axial / up to IPX9K <sup>4)</sup>			
Valve body and coil surface protection		Zinc-Nickel (ZnNi)			

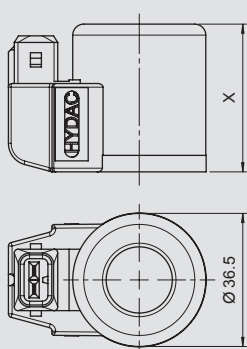
**Proportional pressure relief valve:** bleed screw below coil nut (torque 2.5 + 0.5 Nm)



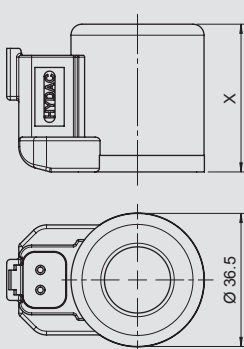
Valve type		P_--	
Nominal voltage $U_N$	V DC	12	24
Coil resistance at +20 °C ( $\pm 5\%$ )	$\Omega$	4.1	17.6
Max. control current $I_{max}$	mA	1,500	750
PWM frequency (recommended) <sup>1)</sup>	Hz	150 – 200	
Duty cycle at $I_{max}$	%	100	
Ambient temperature range <sup>2)</sup>	°C	-20 to +60	
Max. permitted coil temperature <sup>3)</sup>	°C	180	
Insulation class as per EN 60085		H	
Coil length X	mm	50	
Connector type and IP protection class (with mating connector mounted)			
AMP Junior Timer, 2-pin – axial		up to IP6K6 <sup>4)</sup>	
Deutsch DT04, 2-pin – axial		up to IPX9K <sup>4)</sup>	
Valve body and coil surface protection		Zinc-Nickel (ZnNi)	

⚠ In order to achieve optimal function, any trapped air should be vented with the bleed screw. Recommended installation position downwards (suspended for self-ventilation)

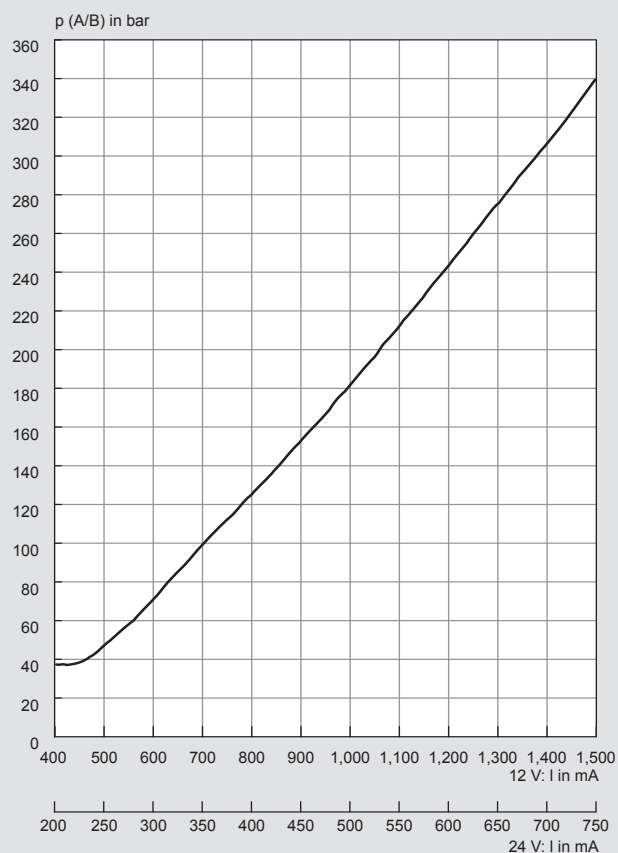
**AMP Junior Timer, axial**



**Deutsch DT04, axial**



**Characteristic curve** (measured at 32 mm<sup>2</sup>/s)  
LS pressure limiting function p/l (rising curve)



⚠ The electro-proportional pressure relief valve P\_-- is not suitable for acting as an LS unloading valve.

<sup>1)</sup> The PWM frequency is to be optimized depending on the application

<sup>2)</sup> Deviation of data on inquiry only

<sup>3)</sup> Standards ISO 13732-1 and ISO 4413 must be observed in regard to the surface temperatures occurring on the coils

<sup>4)</sup> Mating plug-in connectors are not included

## Connection type, fastening and tie rods

### Type code

LCX-6 03 / B 0

1

2

3

4

⚠ Only use fittings with deformable seal materials

1	Valve type
2	Specification type
--	Complete control valve No. of working sections (01-10)
0X	Single modules (Inlet/single/end section/optional block)
3	Connection type
B	BSPP acc. to ISO 1179-1 (SAE on inquiry only)
4	Valve series

Connection type				B	Countersink Ø in mm
Mono section	M27	P	Pump (M27, M17)	G 1	50
	M17	P	Pump (M26P, M16P)	G 3/4	44
	M26P	T	Tank	G 1	50
	M16P	A/B	Working ports	G 3/4	38
		MP	Pump measuring port (M27, M17)	G 1/4	30
		MP	Pump measuring port (M26P, M16P)	G 1/4	25
		LS	Load sensing	G 1/4	30
		Z	Tank, depressurized	G 1/4	30
		C	Pilot oil supply	G 1/4	30
Inlet section	ML27	P	Pump (ML27, ML17)	G 1	50
	ML17	P	Pump (ML26P, ML16P)	G 3/4	44
	ML26P	T	Tank	G 1	50
	ML16P	A/B	Working ports	G 3/4	38
		MP	Pump measuring port (ML27, ML17)	G 1/4	30
		MP	Pump measuring port (ML26P, ML16P)	G 1/4	25
		LS	Load sensing	G 1/4	30
		Z	Tank, depressurized	G 1/4	30
Single sections	A/B	Working ports		G 3/4	38
Operation unit	H...	X/Y	Hydraulic operation port (spool position a/b)	G 1/4	25
	C1X	MX	Pilot pressure measuring port (spool position a)	G 1/8	15
	EY...	MY	Pilot pressure measuring port (spool position b)	G 1/8	15
End section	SR16C	A/B	Working ports	G 3/4	38
	SR16	C	Pilot oil supply	G 1/4	25

### Fastening:

The control valve must be mounted at three (mono section at two) fixation points without tensioning. see also section "Dimensions"

Fastening thread			B
Mono section M27/M17/M26P/M16P	2 x	15 mm deep	M10x1.5
Inlet section ML27/ML17/ML26P/ML16P			
End section SR16C SR16	1 x	15 mm deep	M10x1.5

### Fastening screws:

Property class		10.9
Fastening torque	Nm	72 ±5 %

### Tie rod:

M10 tie rod with flange nut WAF 16  $M_z = 40 \pm 5 \%$   
or hexagon socked head screws WAF 8  $M_z = 40 \pm 5 \%$

⚠ Only use of genuine LCX-6 tie rod kits.

## Installation, usage, and maintenance information

Installation, adjustment, maintenance must be done by authorized and trained staff.

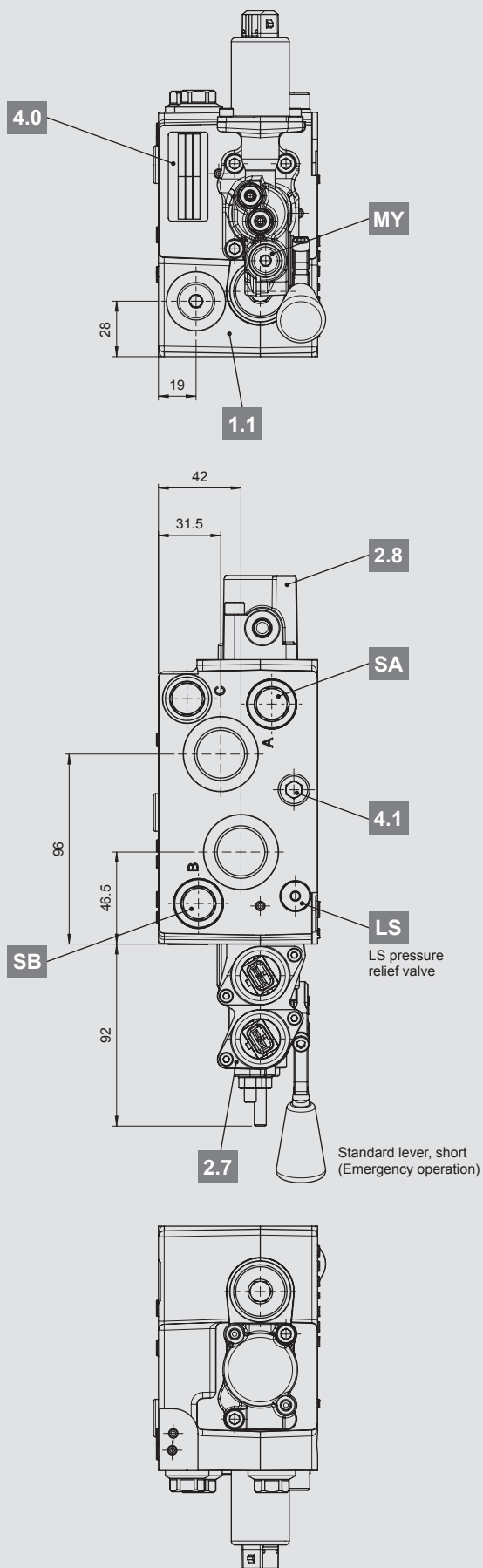
The use of this product outside the specified technical limits, use of non specified fluids and/or use of not genuine spare parts will cause the expiration of the warranty.

## Dimensions

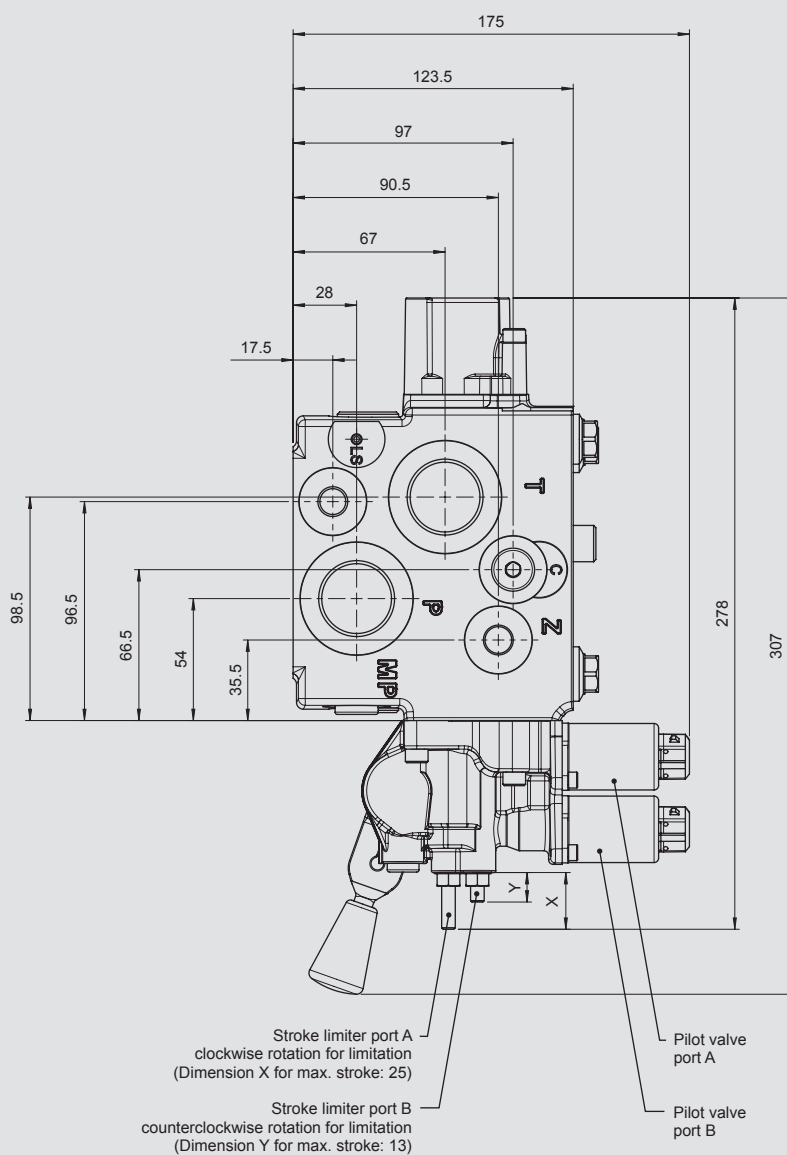
All dimensions in mm, subject to change.

### Example for control valve with mono section

Connector types: AMP Junior Timer, 2-pin, axial



- 1.1 Mono section M27 - CS6
- 2.7 Electrohydraulic operation EYHS, E1YHS
- 2.8 Spring cap C1E



- LS Combined LS pressure limitation port A/B
- MY Pilot pressure measuring port
- SA Secondary valve port A
- SB Secondary valve port B
- 4.0 Type plate
- 4.1 1 x M10x1.5 – 15 deep for crane gear

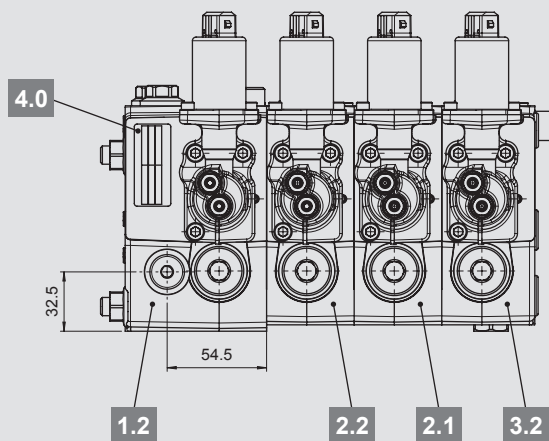


## Dimensions

All dimensions in mm, subject to change.

### Example for control valve with inlet section, single sections and end section

Connector types: AMP Junior Timer, 2-pin, axial



1.2 Inlet section ML26P - CS6

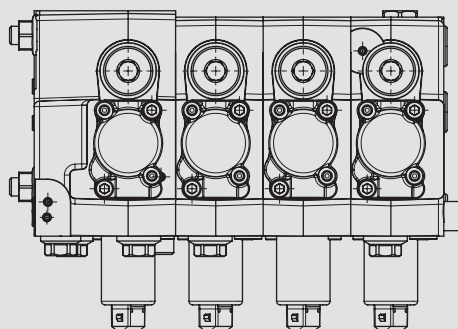
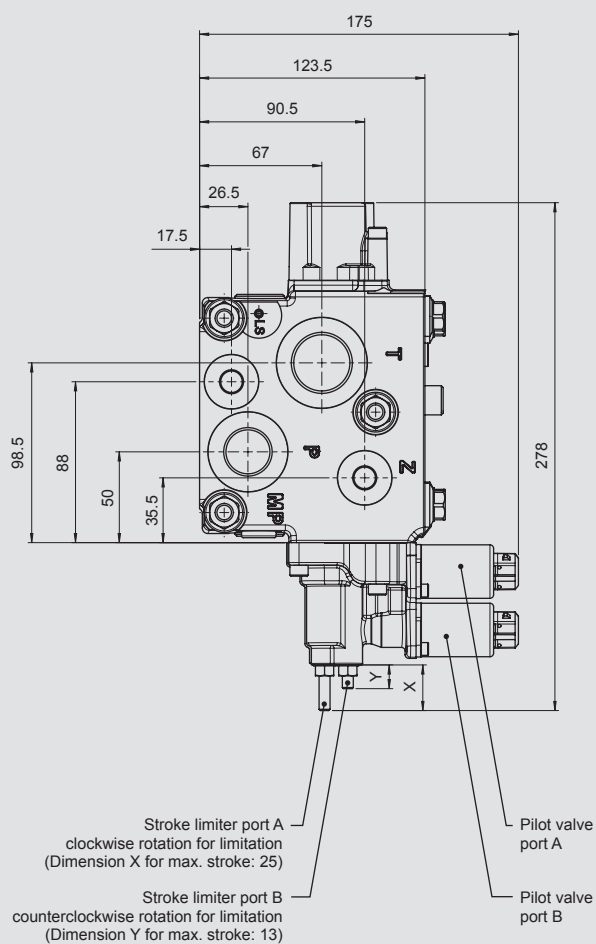
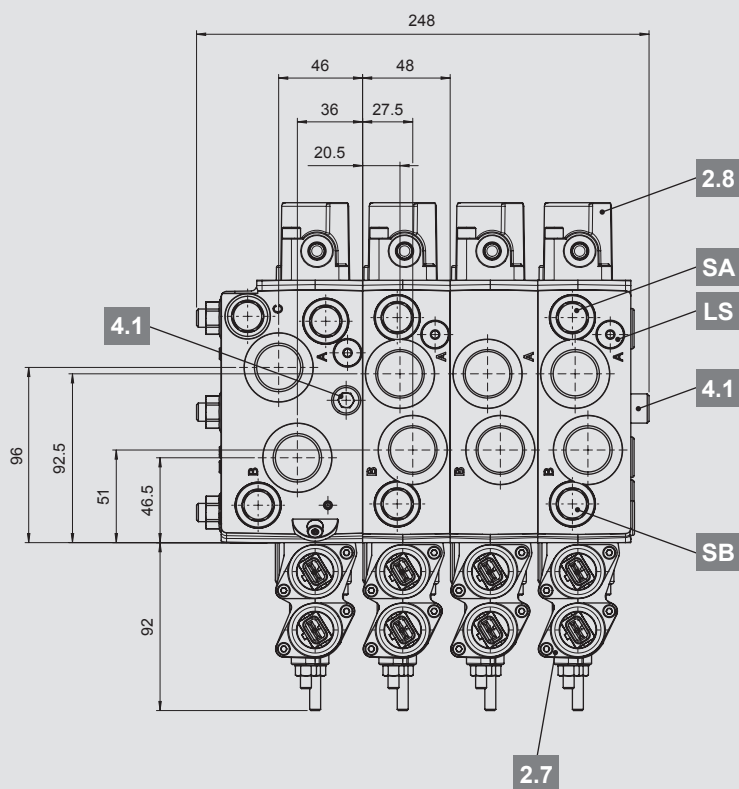
2.1 Single section B6

2.2 Single section CS6

2.7 Electrohydraulic operation ES, E1S

2.8 Spring cap C1E

3.2 End section SR16C - CS6



LS Combined LS pressure limitation port A/B

SA Secondary valve port A

SB Secondary valve port B

4.0 Type plate

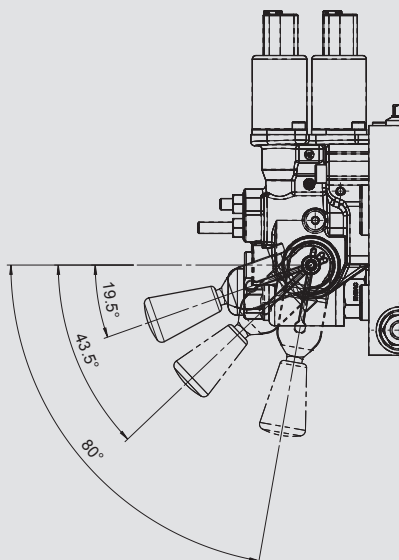
4.1 2x M10x1.5 – 15 deep for crane gear

## Dimensions

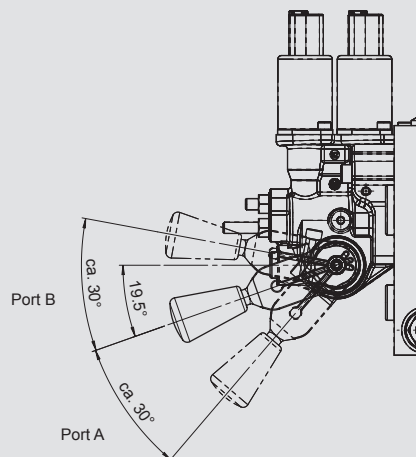
All dimensions in mm, subject to changes.

**Hand lever: neutral positions and max. travel** (see also chapter "Operation units")

Neutral positions: for all hand lever types 1 – 3:



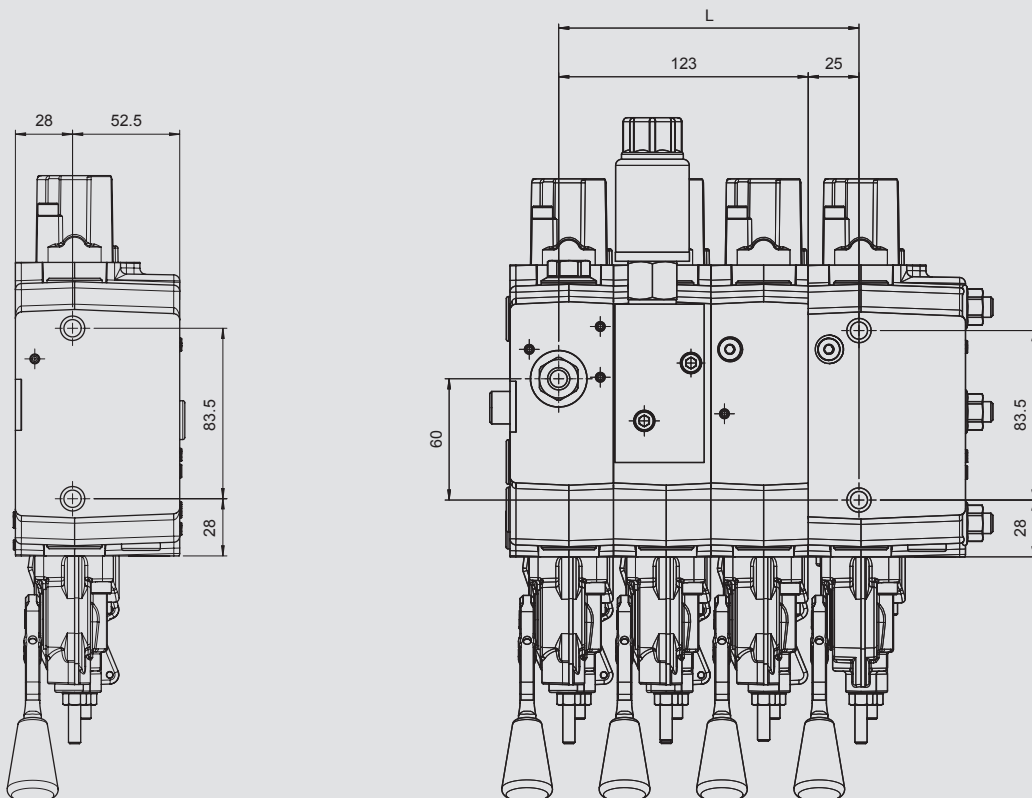
Max. travel for port A / port B



Shown: Standard lever, short (emergency operation) – Type 2

**Control valve fastening points** (2x or 3x M10x1.5 – 15 deep)

The fastening points are equal for all types of inlet and end sections



No. of working sections	2	3	4	5	6	7	8	9	10
L mm	52	100	148	196	244	292	340	388	436

## Type code

Structure and sequence:	1.	General (control valve always defined from left to right)				
	2.	Mono or Inlet section				
	3.	Single section 1 Single section 2 Single section n				
	4.	End section				

1.	General					
Valve type:		LCX-6	03	/	B	0
Pos.		1	2		3	4

Pos./designation:	Type code:	Description/function	Comment:
1 Load-sensing valve series	LCX-6	Load-sensing Compact X-series Size 6	
2 No. of working sections Specification/identification of single modules	— — 0X	2-digit, 01–10 Inlet/single/end section or optional flange block	Max. 10 working sections
3 Connection thread	B	BSPP acc. to ISO 1179-1 (SAE on inquiry only)	
4 Valve series	0	Unchanged installation and connection dimensions	

2. Mono section						
Type:	M27	/	250	-	CS6	...
	M17	/	300	-	CS6	...
	M26P	/	250	-	CS6	...
	M16P	/	300	-	CS6	...
Pos.	1	2				... see main point 3 "Single sections" next page

Pos./designation:	Type code:	Description/function	Comment:
1 Basic type			
Standard mono section	M27	Mono section 2 Internal pilot oil supply 7 Port size P/T	Port size P: BSPP G1
	M17	Mono section 1 External pilot oil supply 7 Port size P/T	Port size T: BSPP G1
Mono section with pressure peak protection	M26P	Mono section 2 Internal pilot oil supply 6 Port size P Pressure peak protection	Port size P: BSPP G3/4
	M16P	Mono section 1 External pilot oil supply 6 Port size P Pressure peak protection	Port size T: BSPP G1
2 Pressure peak protection			
	— — —	Shock/anti-cavitation valve for port P in bar, 3-digit	

2. Inlet section						
Type:	ML27	/	250	-	CS6	...
	ML17	/	300	-	CS6	...
	ML26P	/	250	-	CS6	...
	ML16P	/	300	-	CS6	...
Pos.	1	2				... see main chart 3 "Single sections" next page

Pos./designation:	Type code:	Description/function	Comment:
1 Basic type			
Standard Inlet section	ML27	Multi inlet Left hand 2 Internal pilot oil supply 7 Port size P/T	Port size P: BSPP G1
	ML17	Multi inlet Left hand 1 External pilot oil supply 7 Port size P/T	Port size T: BSPP G1
Inlet section with pressure peak protection	ML26P	Multi inlet Left hand 2 Internal pilot oil supply 6 Port size P Pressure peak protection	Port size P: BSPP G3/4
	ML16P	Multi inlet Left hand 1 External pilot oil supply 6 Port size P Pressure peak protection	Port size T: BSPP G1
2 Pressure peak protection			
	— — —	Shock/anti-cavitation valve for port P in bar, 3-digit	

## Type code


3. Single sections													
Type	Single section 1	B6	/	CR	160 – 160	RN	/		/	EYHS2A	-	1	C1E
	Single section 2	CS6	/	CS	160 – 160	RN	/	250	/	300 – 300	/	EYHS2A	- 1 / C1E
	Single section 3	LS6	/	CS	150 – 035	RN	/	300 – 200	/	P – P	/	EYHS2A	/ C1E
	Single section 4	LS6F	/	CR	060 – 060	RY	/	300 – 300	/	350 – 350	/	HHS	- 1 / C1H / LWRV2A
	Single section 5		/		–		/	–	/	...			
Pos.		1		2	3	4		5		6		7	8 9 10

Pos./designation:	Type code:	Description/function	Comment:
<b>1. Basic type</b>			
Basic section w/o optional valves	B6	Basic section 6 port size A/B	Port size 6
Section like B6 with optional valves	CS6	Like B6 with Combined LS pressure limitation and Shock/anti-cavitation valves	BSPP: G3/4
Section like B6 with optional valves	LS6	Like B6 with LS pressure limitation and Shock/anti-cavitation valves	
Section like LS6 with optional block	LS6F	Like LS6 with Flange interface for optional flange block	
<b>2. Main spool</b>			
	CS	Cylinder spool Standard Pos. 0: A, B closed	
	CR	Cylinder spool Released Pos. 0: A, B unloaded to T	
	MS	Motor spool Standard Pos. 0: A, B open to T	
	...	For other types, see chapter "Main spool and pressure compensator"	
<b>3. Max. flow rate to actuator</b>			
	A B		
	1) --- - ---	Maximum flow to port A / B in l/min, 3-digit	See chapter "Main spool valve and pressure compensator"
<b>4. Pressure compensator axis (spool + spring)</b>			
Pressure compensator – released with load holding function (standard)	RY	Released pressure compensator Y spring identifier yellow	9.5 – 11.5 bar
	RB	B spring identifier blue	8.0 – 10.0 bar
	RN	N spring identifier unmarked	7.0 – 9.0 bar (nominal)
	RG	G spring identifier green	5.5 – 7.5 bar
Pressure compensator – released with load holding function (standard) and measuring port LR for sectional load-sensing pressure	RYM	Like RY with M measuring port LR	9.5 – 11.5 bar
	RBM	Like RB with M measuring port LR	8.0 – 10.0 bar
	RNM	Like RN with M measuring port LR	7.0 – 9.0 bar (nominal)
	RGM	Like RG with M measuring port LR	5.5 – 7.5 bar
Load holding function	L	Load holding function only w/o pressure compensation	Use of compensator spring type G
<b>5. LS pressure limitation</b>			
⚠ For basic types CS6, LS6 and LS6F only	A B		
	--- - ---	Pressure setting for port A / B in bar, 3-digit (mechanically adjustable)	Min. 050 bar, max. 320 bar
	P	Plug screw	w/o LS pressure limitation
<b>6. Workport valves</b>			
⚠ For basic types CS6, LS6 and LS6F only	A B		
	--- - ---	Shock/anti-cavitation valve for port A / B in bar, 3-digit	See chapter "Workport valves"
	A	Anti-cavitation valve	
	P	Plug screw	w/o workport valves
<b>7. Operation units</b>			
	MHS	Manual Hand lever axis Stroke limiter	
	HHS	Hydraulic Hand lever axis Stroke limiter	
	EYHS	Electrohydraulic MY port Hand lever axis Stroke limiter	Pilot pressure MY – spool position (b)
	E1YHS	Electrohydraulic 1 dampened MY port Hand lever axis Stroke limiter	Dampening setup 1 – orifice 1.0 mm
	ES	Electrohydraulic Stroke limiter	
⚠ For operation unit E... only	E1S	Electrohydraulic 1 dampened Stroke limiter	Dampening setup 1 – orifice 1.0 mm
Supply voltage DC	1 _	12 V	
	2 _	24 V	
Connector type	_ A	AMP – Junior Timer, 2-pin, axial	
	_ D	Deutsch – DT04, 2-pin, axial	
<b>8. Hand lever type</b>			
Levers not assembled during shipment			
⚠ For operation types _H_ only	n/a	No hand lever	
Standard lever	1	Standard	See chapter "Operation units"
Standard lever, short	2	Standard for emergency operation	
Universal clamp without hand lever	3	For application-specific solutions	
Universal clamp with standard lever	31	Lever orientation: left	
	32	Lever orientation: top	
	33	Lever orientation: right	
<b>9. Spring caps</b>			
Standard for operation unit M...	C1M	C Standard cap 1 Version Manual	
Standard for operation unit H...	C1H	C Standard cap 1 Version Hydraulic	Pilot pressure range: 6.5 – 20 bar
Standard for operation unit E...	C1E	C Standard cap 1 Version Electrohydraulic	Pilot pressure range: 4.5 – 20 bar
Option for operation unit E...	C1XE	C Standard cap 1 Version MX port E Electrohydraulic	Pilot pressure MX – spool position (a)

<sup>1)</sup> Deviation of data on inquiry only

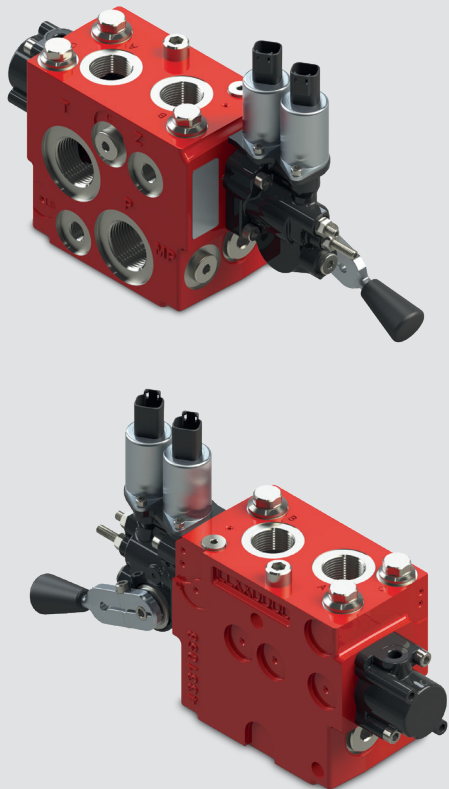
Type code

10	Optional flange blocks				
	For basic type LS6F only For channel: LA Load signal port A LB Load signal port B LR Load signal port A and B or LS Load Sensing (LS circuit)	LD1	Dummy plate		1 version
		LW_V__	LS unloading	LWA, LWB, LWR or LWS channel	Valve type V Normally open
		LW_W__	LS unloading	LWA, LWB, LWR or LWS channel	Valve type W Normally closed
		LW_P0A__	Electro-prop. pres. adj. Orifice setup: 1.0 mm	LWA, LWB, LWR or LWS channel Pressure stage A: 350 bar	Valve type P Rising curve
		LW_M___V__	Second pressure stage (On/Off)	LWA, LWB, LWR or LWS channel Mech. adjustable in bar, 3-digit	Valve type V Second pressure level when de-energized
		LW_M___W__	Second pressure stage (On/Off)	LWA, LWB, LWR or LWS channel Mech. adjustable in bar, 3-digit	Valve type W Second pressure level when energized
	For channel: LA and LB	LW1 V - V__	LW1 basic type Valve type V – normally open Valve type W – normally closed		Load signal port A - Load signal port B Valve type V and W selected as desired
	Supply voltage DC	1 _	12 V		
		2 _	24 V		
	Connector type	_ A	AMP – Junior Timer, 2-pin, axial		
		_ D	Deutsch – DT04, 2-pin, axial		

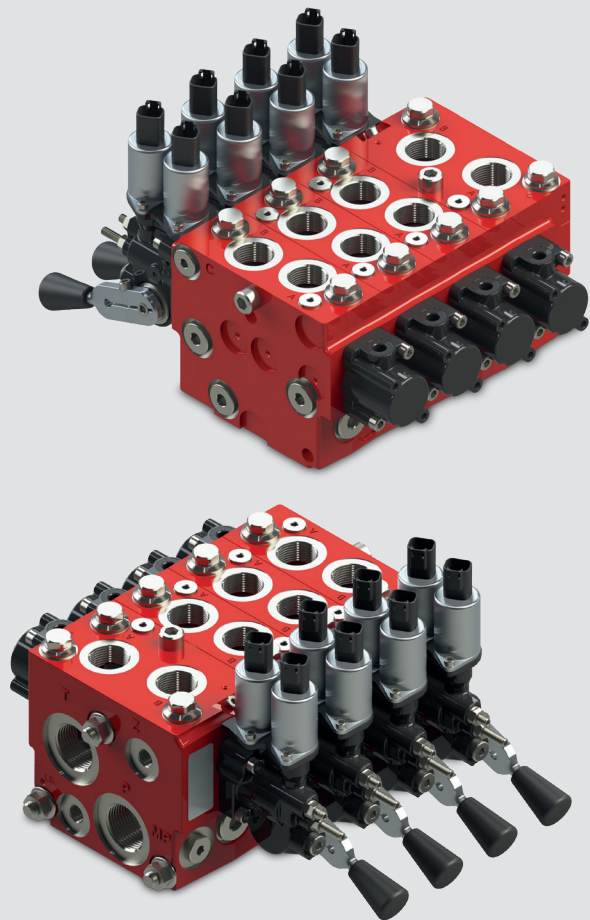
4. End section				
Type:	SR16C	-	C6	...
	SR16C	-	CS6	...
	SR16	-	C6	...
	SR16	-	CS6	...
Pos.	1	see main chart 3 "Single sections" previous page		

Pos./designation:	Type code:	Description/function	Comment
1 Basic type			
Standard end section for internal pilot oil supply	SR16C	Section Right 1 Version 1 6 Port size A/B C Port plugged	Port size 6 BSPP: G1
Standard end section for external pilot oil supply	SR16	Section Right 1 Version 1 6 Port size A/B	

Example for control valve with mono section  
(see also chapter "Dimensions")

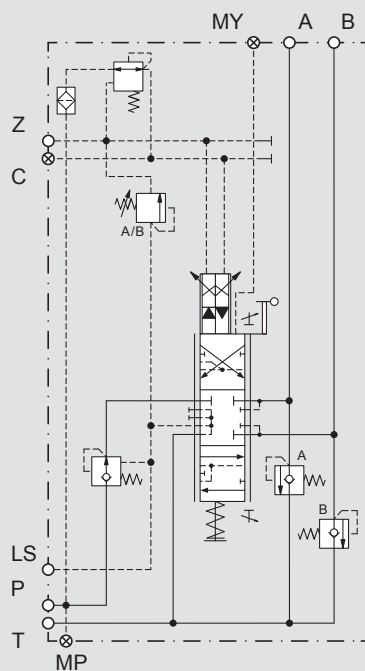


Example for control valve with inlet section, single sections and end section  
(see also chapter "Dimensions")



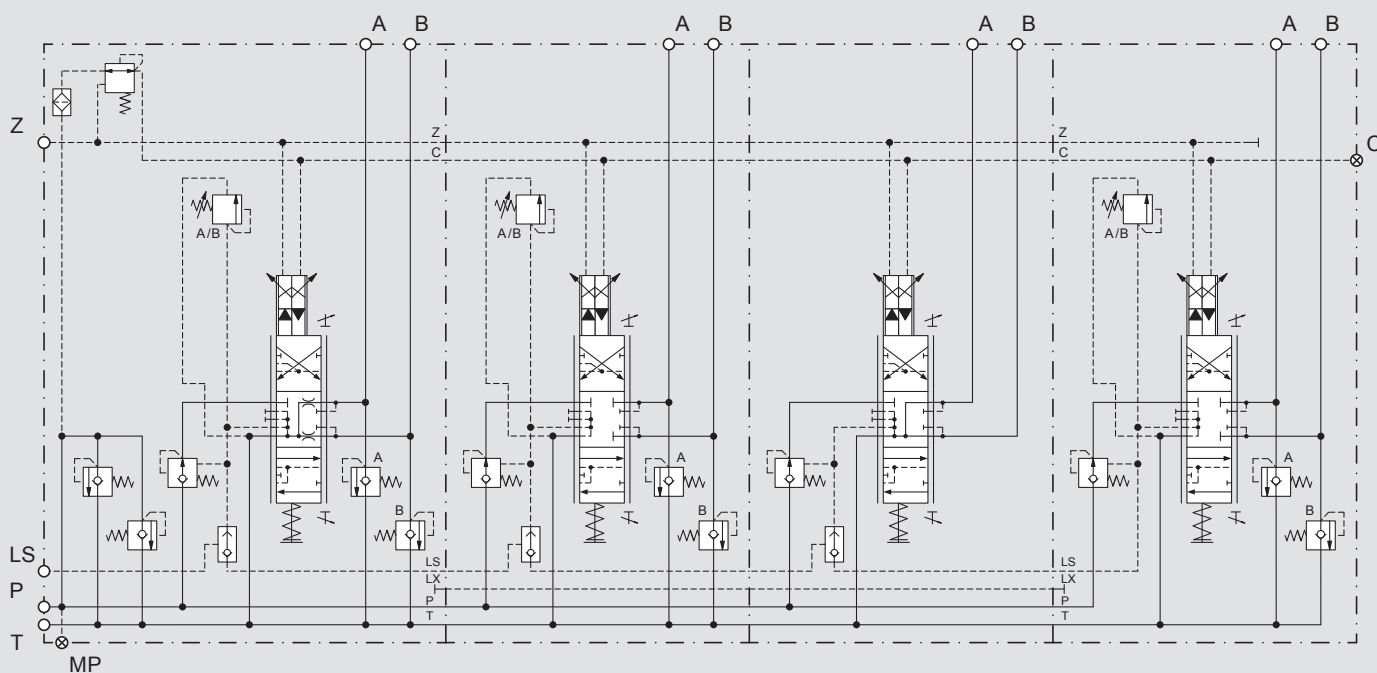
## Ordering examples

### Example for control valve with mono section (see also chapter "Dimensions")



General	LCX-601/B0
Mono section	M27 CS6/CS160-160RN/250/300-300/EYHS2A-2/C1E

### Example for control valve with inlet section, single sections and end section (see also chapter "Dimensions")



General	LCX-604/B0
Inlet section	ML26P/300 CS6/CR160-160RN/210/240-240/ES1A/C1E
Single section 1	CS6/CS110-110RN/180/210-210/ES1A/C1E
Single section 2	B6 /MS050-050RG /ES1A/C1E
End section	SR16C CS6/CS050-050RG/120/140-140/ES1A/C1E

## Note

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical and other changes.



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