

X-Series

Load-Sensing Sectional Control Block

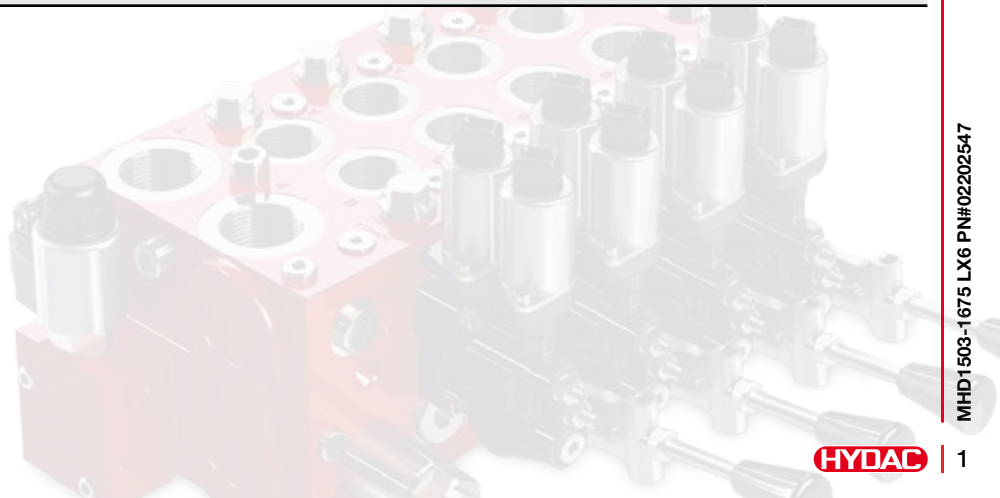
LX-6



- Nominal pressure: 5076 psi (350 bar)
 Nominal flow rate
 ● Pump port: 66 gpm (250 l/min)
 ● Working ports: 42 gpm (160 l/min) with compensator and load holding function

Table of contents

Product features	2
General information and functional description	2
● Overview	2
Technical data	4
Modular structure	5
Example of block specification and type code	6
Inlet plates	7
● Inlet plate CL17	7
● Universal inlet plate UL17 / UL17F	8
● Option blocks for inlet plate UL17F	9
Working sections	11
● Working sections B6 / LS6 / LS6F	11
● Main spool and pressure compensator	12
● LS pressure limitation	16
● Workport valves	17
● Operation units	18
● Spring caps	20
● Option blocks for working section LS6F	21
End plates	24
● End plate ER1	25
● End plates ER2 / ER27 / ER2F	25
● Option blocks for end plate ER2F	26
Solenoid valves and coils	27
Connection type, fastening and tie rods	28
Installation, usage and maintenance information	28
Dimensions	29
Type code	32
Ordering examples	35



Product features

- Load pressure independent flow control with
 - Open Center (OC) system for fixed displacement pump
 - Closed Center (CC) system for variable displacement pump
- Flow-optimized valve design
- High mechanical and electrical resolution
- Compact size and low weight
- Modular design up to 8 working sections
- Types of operation (with/without hand lever):
 - 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 ports A or B independently
- Direct-mounted option blocks for remote control of LS and pilot oil supply
- End plates with additional pilot oil supply options
- Areas of application:
 - Cranes
 - Lifting platforms
 - Drilling machinery
 - Construction
 - Agriculture
 - Forestry
 - Municipal vehicles
 - Truck applications
 - Stationary applications

General information and functional description

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

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 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.

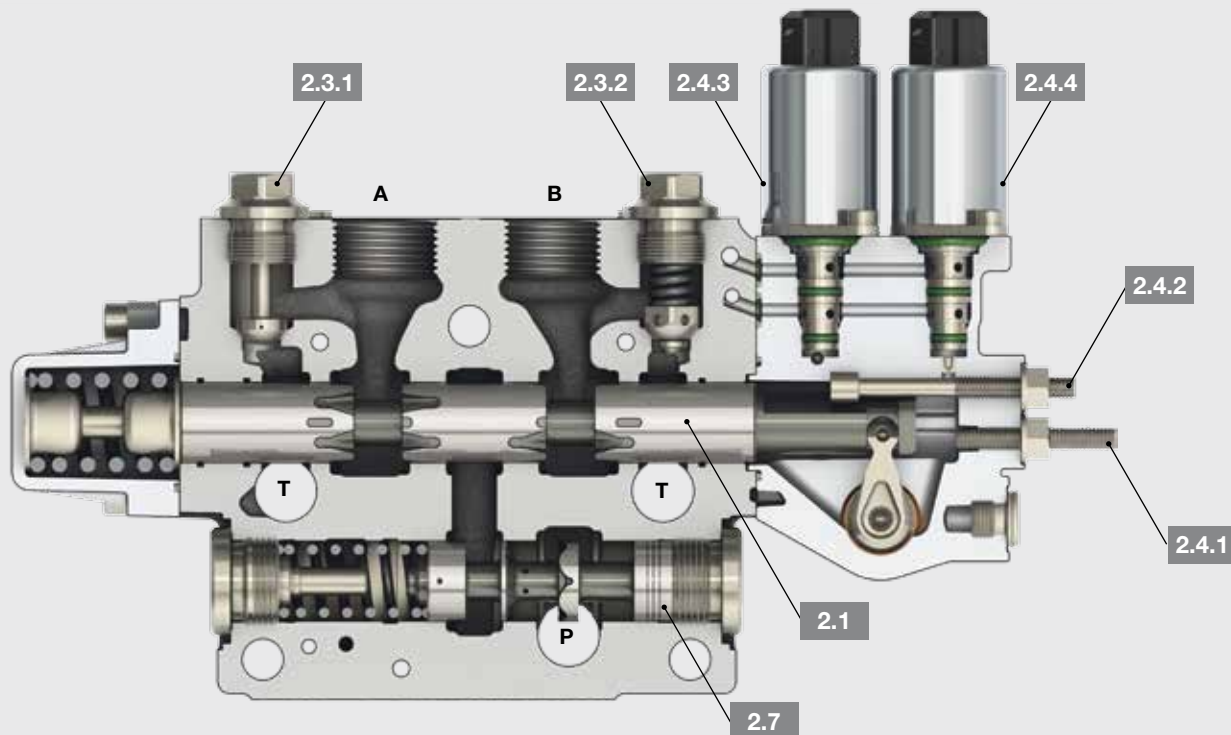
The pressure compensator **2.7** keeps the flow rate to the actuator constant, even if the system pressure varies. Pressure changes at the pump or working ports A and B are compensated for each working section individually.

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 signal the highest load pressure for the valve stack to the inlet plate 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)

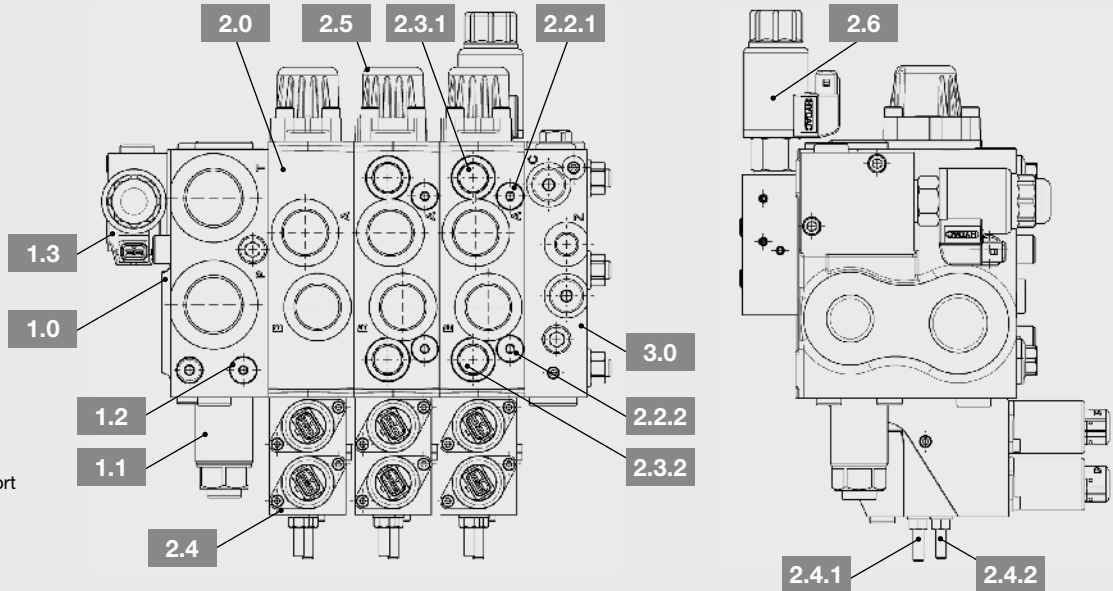
2.4.1 Stroke limiter port A (clockwise rotation)

2.4.2 Stroke limiter port B (counterclockwise rotation)

2.4.3 Pressure control valve port A

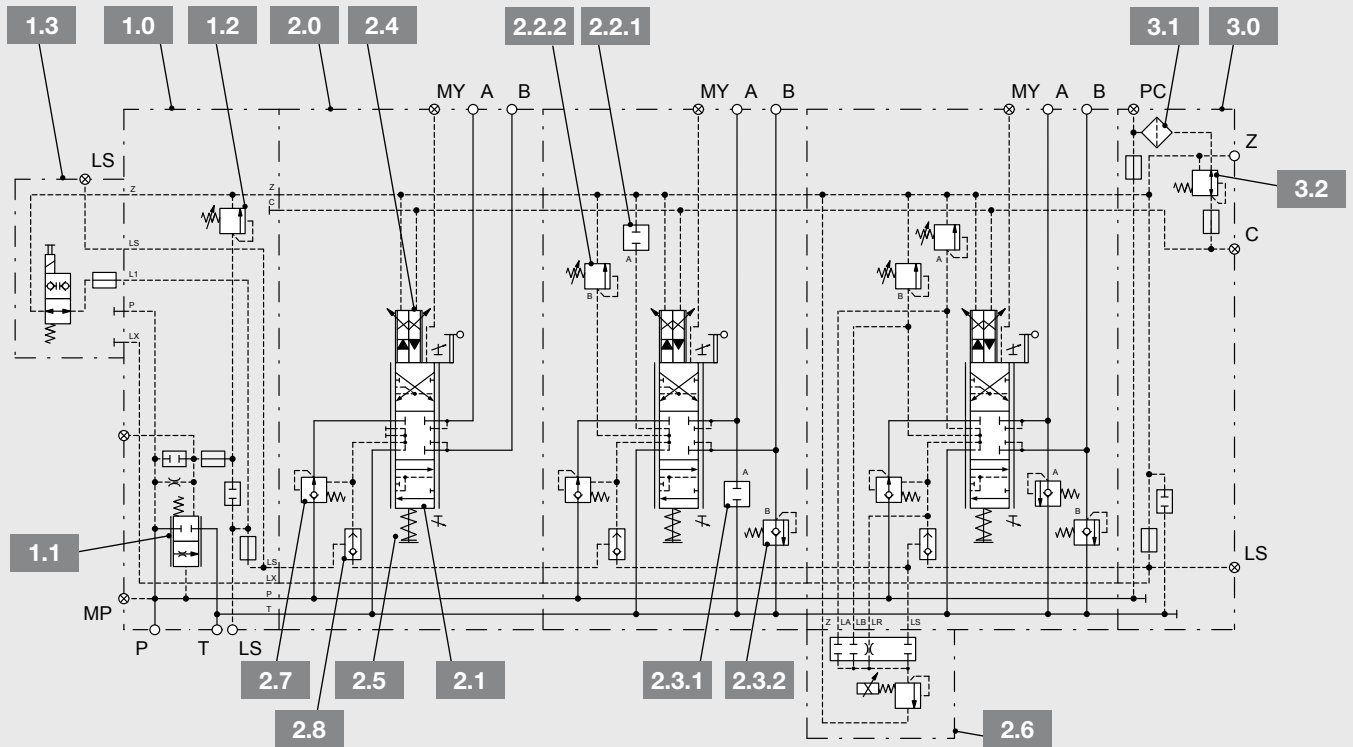
2.4.4 Pressure control valve port B

Overview



Ports

- P Pump
- MP Pump measuring port
- T Tank
- LS Load-sensing
- A, B Working ports
- C Pilot oil supply
- Z Pilot drain
- MY Pilot pressure measuring port (port B)



1.0	Inlet plate
1.1	Main axis of 3-way flow controller or pump pressure limiter
1.2	Pilot pressure relief valve of main axis 1.1
1.3	Option block for inlet plate
2.0	Working section
2.1	Main spool
2.2.1	LS pressure limitation port A
2.2.2	LS pressure limitation port B
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	Option block for working section
2.7	Pressure compensator
2.8	LS shuttle valve
3.0	End plate
3.1	Filter element
3.2	Pressure reducing valve for internal pilot oil supply

Technical data

General data and operating conditions		
No. of working sections:		1–8 ¹⁾
Installation position:		Optional
Mass in lbs (kg):	Inlet plate CL17 / UL17 / UL17F	13.4 / 13.2 / 13.0 (6.1 / 6.0 / 5.9)
	Option block UD1 / UW 1...	0.9 / 2.4 (0.4 / 1.1)
	Working section B6 / LS 6 / LS6F	11.2 / 10.4 / 10.1 (5.1 / 4.7 / 4.6)
	Operation unit H... / E...	0.9 / 2.0 (0.4 / 0.9)
	Hand lever 1 / 2 / 3	0.2 (0.1)
	Option block LD1 / LW... / LW1...	0.7 / 2.6 / 3.5 (0.3 / 1.2 / 1.6)
	End plate ER1 / ER 2 / ER27 / ER2F	8.8 / 8.6 / 9.3 / 8.6 (4.0 / 3.9 / 4.2 / 3.9)
	Option block E1C	1.5 (0.7)
	Tie rod for working sections 2 / 4 / 6 / 8	0.7 / 1.1 / 1.5 / 1.8 (0.3 / 0.5 / 0.7 / 0.8)
Connection type (thread type):		BSPP (acc. to ISO 1179-1); SAE (acc. to ISO 11926-1 or SAE J1626)
Ambient temperature range:		-4 to 140°F (-20 to +60 °C) ¹⁾
Hydraulic fluid temperature range:		-4 to 176°F (-20 to +80 °C) ¹⁾
Painting:		Standard primer and top coat RAL 9005 on inquiry
Hydraulic data		
Nominal flow rate	P / A, B	66 gpm / 42 gpm (250 l/min / 160 l/min)
Nominal pressure		5076 psi (350 bar)
Max. operating pressure at port:	P / A, B	5076 psi / 6092 psi (350 bar / 420 bar)
	T	435 psi (30 bar) for external drained tank line Z 145 psi (10 bar) for internal connection Z → T
	Z	Drained to tank
Max. pilot pressure at port C / X, Y		435 psi (30 bar)
Pilot pressure range		94 to 290 psi (6.5 to 20 bar) hydraulic 65 to 290 psi (4.5 to 20 bar) electrohydraulic
Required control Δp at the control block		247 psi (17 bar)
Hydraulic fluid		Mineral oil (HL/HLP) acc. to DIN 51524, other hydraulic fluids on inquiry
Viscosity range		10 – 400 mm ² /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 section “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 ²⁾
		Deutsch DT04, 2-pin, axial / up to IPX9K ²⁾
Amplifiers and control devices		See Product Catalogue 18.500 – Control Technology for Mobile Machines

¹⁾ Deviation of data on inquiry only

²⁾ Mating plug-in connectors are not included

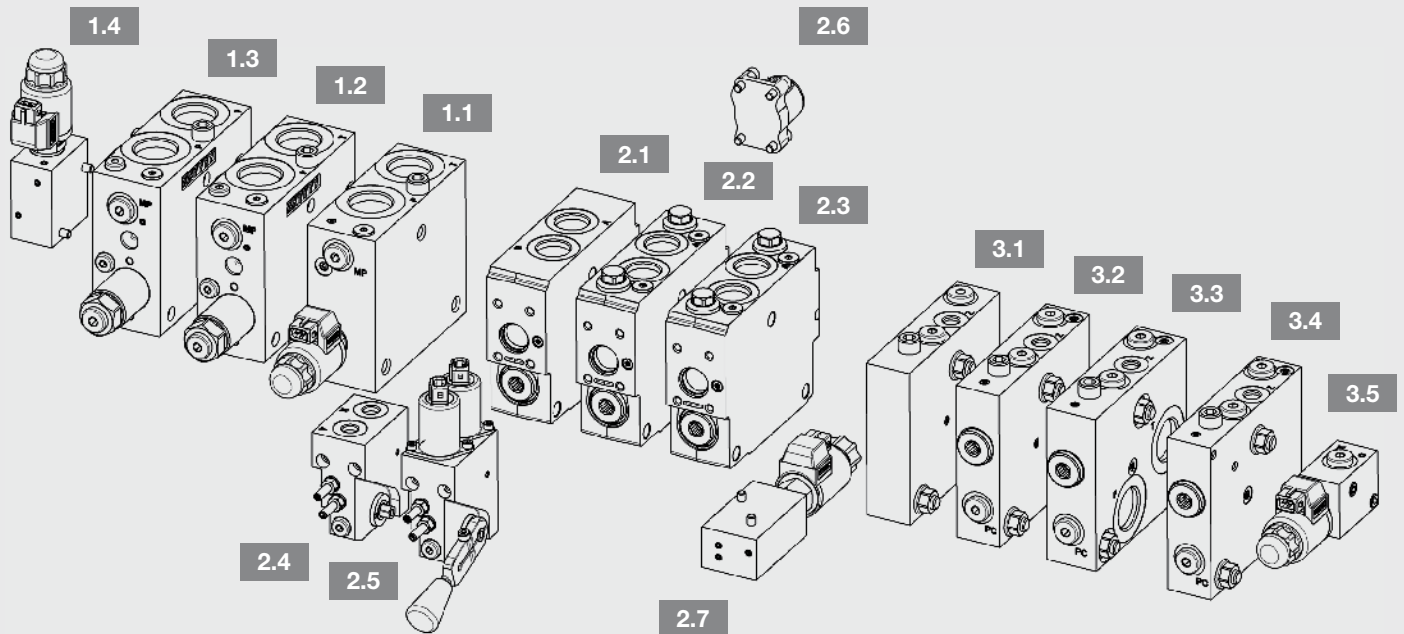
⚠ The technical data and characteristic curves were determined at a viscosity of 32 mm²/s

Modular structure

The LX-6 can be customised to different applications and machines.

The principle sectional design and modular structure consists of an inlet plate, max. 8 working sections and an end plate. A complete control block is defined by a type code system.

Setup with left hand inlet plate



Type code structure

General

LX-6 _ _ / S 0

Connection type B (BSPP) or S (SAE)
No. of working sections (01-08)

Inlet plate

UL17F / ... / UW1...

1.1	Inlet plate CL17
1.2	Inlet plate UL17
1.3	Inlet plate UL17F
1.4	Option block UD1, UW1...

Working section

LS6F / ... / LW...

2.1	Working section B6
2.2	Working section LS6
2.3	Working section LS6F
2.4	Hydraulic operation HY
2.5	Electrohydraulic operation E1Y, EY
2.6	Spring cap
2.7	Option block LD1, LW..., LW1...

End plate

ER2F / ... / E1C...

3.1	End plate ER1
3.2	End plate ER2
3.3	End plate ER27
3.4	End plate ER2F
3.5	Option block E1C

Example of block specifications and type code

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

Type code

Valve type

LX-603 / S0

Inlet plate

CL17 / 300 / V2D

Working section 1

B6 / CS160-160RN / EYHS2D-1 / C1E

Working sections 2 and 3

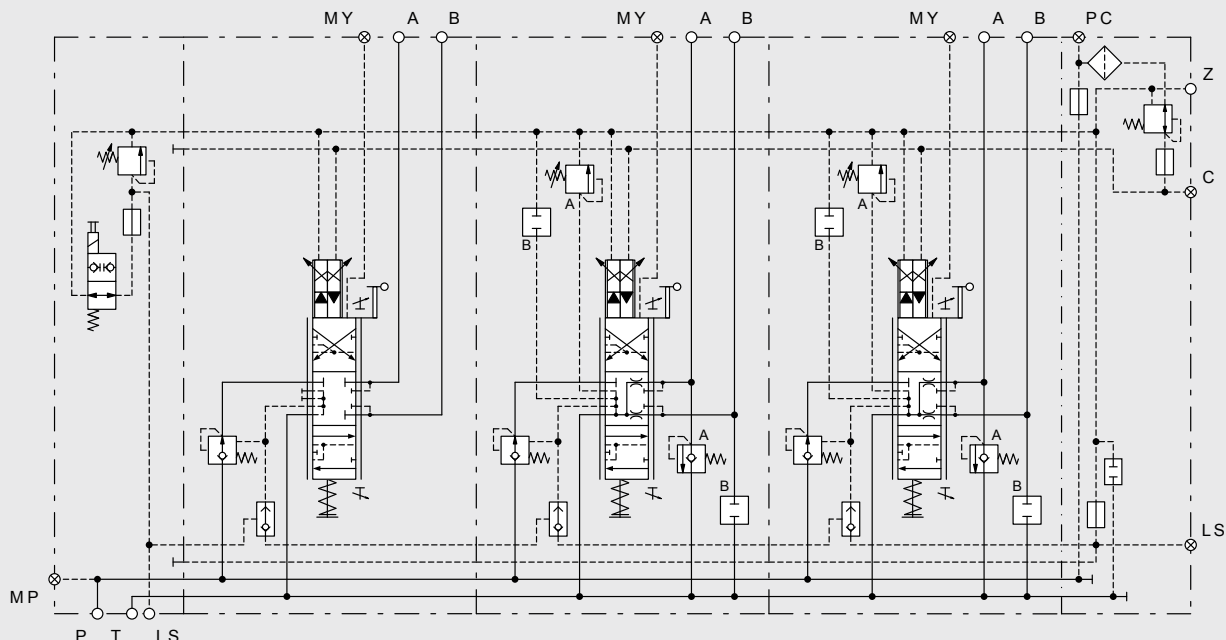
LS6 / CR050-050RG / 200 - P / 250 - P / EYHS2D-1 / C1E

End plate

ER2 / 0

Control block specification

LX-603	LX-6 with 3 working sections
S0	SAE connection type, valve series 0
CL17	Left hand inlet plate for CC systems, w/o primary pressure limiter
300	LS pressure relief valve set to 300 bar
V2D	LS unloading valve (normally open) with 24 V solenoid and connector type Deutsch DT04-2P
B6	Basic section type w/o LS or workport valves
CS - RN	<ul style="list-style-type: none"> - 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
EYHS2D-1	<ul style="list-style-type: none"> - 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
LS6	Working section with LS and workport valves
CR - RG	<ul style="list-style-type: none"> - Main spool type CR (unloaded in neutral position) - Flow rate at working port A and B 50 l/min - Pressure compensator with load holding function, spring type G
200 - P	LS pressure limitation port A 200 bar, port B plug screw
250 - P	Shock valve port A 250 bar, port B plug screw
EYHS2D-1	<ul style="list-style-type: none"> - 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
ER2	Right hand end plate with internal pilot oil supply and external drained tank line
0	No options (standard)

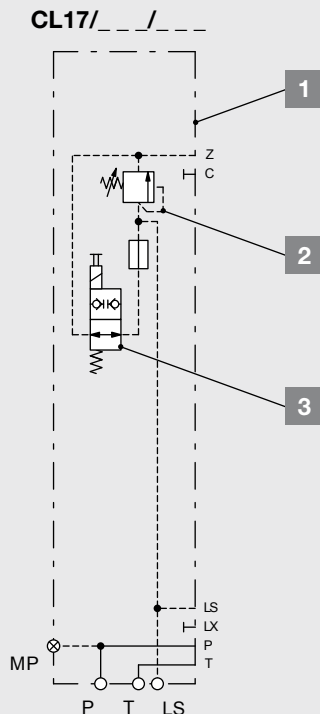


Inlet plate CL17

Type code

CL17 / 300 / V2D

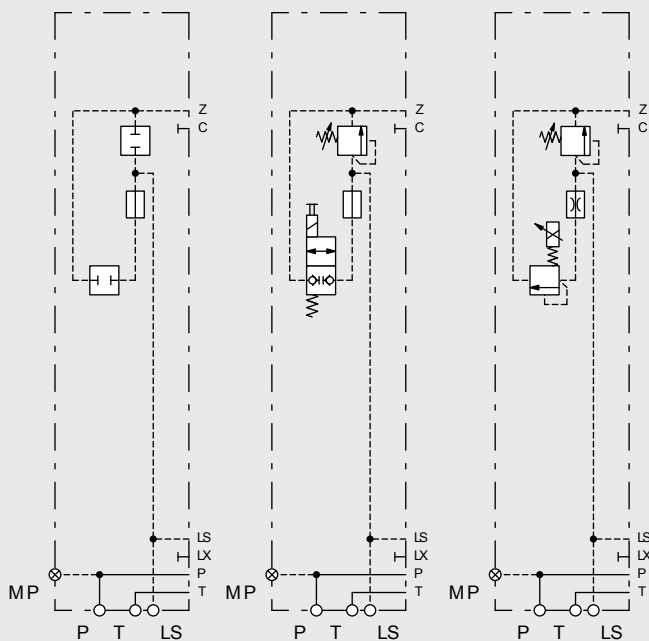
1 2 3



CL17/P/P

CL17/250/W2A

CL17/300/P0A1D



Unloading the LS circuit with the option valves V and W ³ 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. For working sections without pressure compensator (load holding function only), the stand-by pressure of the variable displacement pump has to be taken into account. Note: Other inlet configurations available. Consult factory.

1 Basic type	
C	Closed Center system for variable displacement pump
L	Left hand side
1	Version
7	Port size P / T
2 LS pressure relief valve	
---	Pressure setting in bar, 3-digit, max. 5076 psi (350 bar)
P	Plug screw
3 Option valve for LS circuit ¹⁾	
P	Plug screw
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 _{max} = 1,500 mA 24 V: I _{max} = 750 mA
The electro-proportional pressure relief valve P0A is not suitable for acting as an LS unloading valve. ¹⁾	
Solenoid (supply voltage, connector type)	
1_	12 V
2_	24 V
_A	AMP Junior Timer
_D	Deutsch DT04-2P

Example configurations

CL17/P/P

- Basic type CL17
- w/o LS pressure relief valve (plug screw)
- w/o LS option valve (plug screw)

CL17/300/P0A1D

- Basic type CL17
- LS pressure relief valve set to 300 bar
- LS option valve type P0A, electro-proportional pressure adjustment (pressure stage A: 350 bar)
- 12 V solenoid and connector type Deutsch DT04-2P

¹⁾ See section "Solenoid valves and coils"

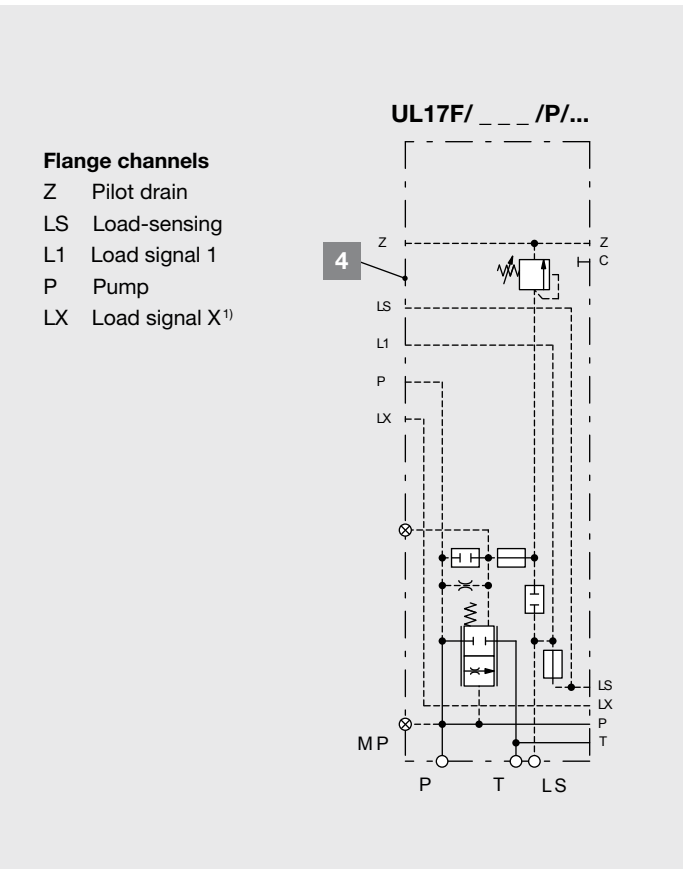
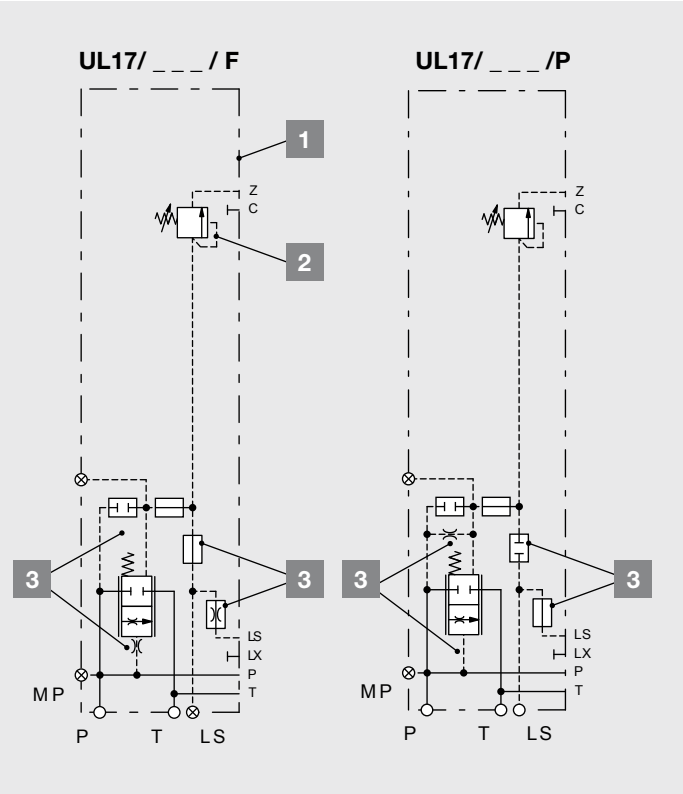
Universal inlet plate UL17 / UL17F

Type code

UL17 / 250 / F

UL17F / 300 / P / UW1V2D

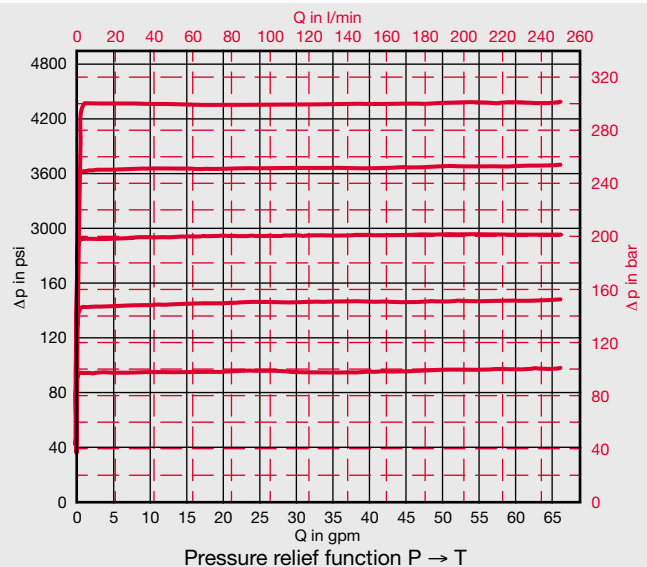
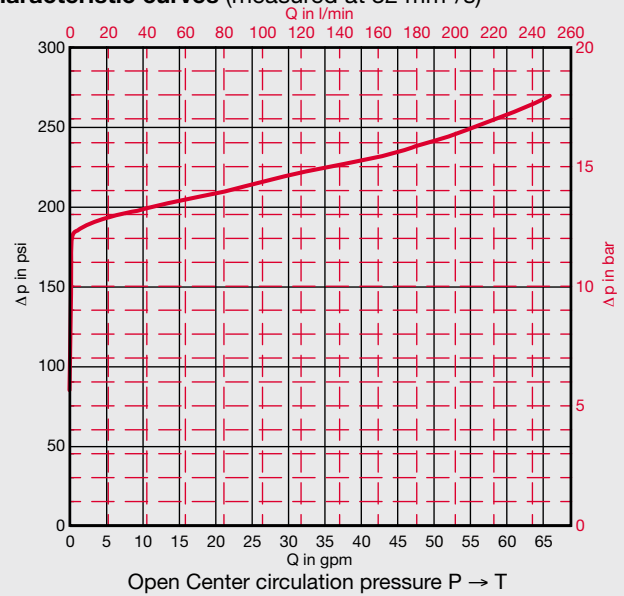
1 2 3 4



¹⁾ Separate, internal channel for optional functions

1 Basic type	
U	Universal plate for OC and CC systems
L	Left hand side
1	Version
7	Port size P / T
F	Flange interface for option blocks
2 Pilot pressure relief valve of main axis	
---	Pressure setting in bar, 3-digit, max. 350 bar
P	Plug screw
3 Logic of main axis	
F	3-way flow controller for fixed displacement pump
P	Pump pressure relief valve for variable displacement pump
4 Option block for basic type UL17F	

Characteristic curves (measured at 32 mm²/s)



Option blocks for inlet plate UL17F

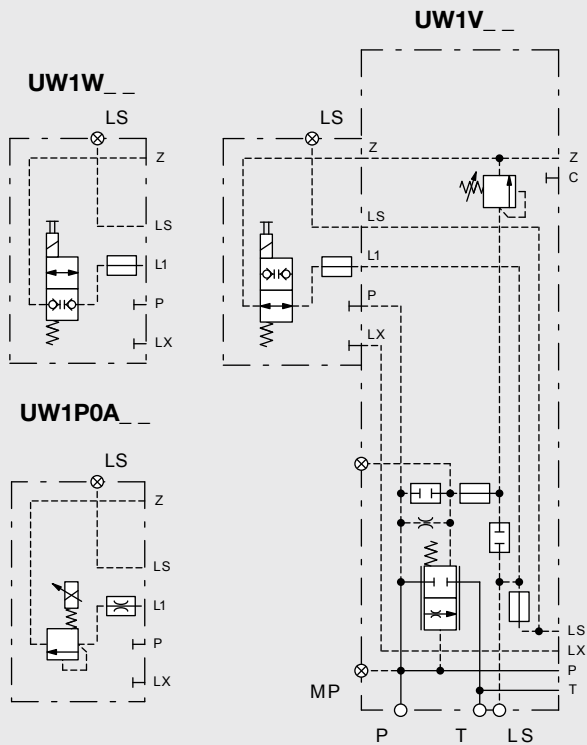
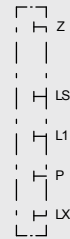
Type code

UL17F / 300 / P / UW1V2D

Flange channels

Z Pilot drain
 LS Load-sensing
 L1 Load signal 1
 P Pump
 LX Load signal X

UD1



Example configurations

UW1W2A

- Basic type UW1
- LS option valve type W, normally closed
- 24 V solenoid and connector type AMP Junior Timer

UW1P0A1D

- Basic type UW1
- LS option valve type P0A, electro-proportional pressure adjustment (pressure stage A: 350 bar)
- 12 V solenoid and connector type Deutsch DT04-2P

¹⁾ See section "Solenoid valves and coils"

Dummy plate

UD	Basic type
1	Version 1

LS option valves¹⁾

UW1 Basic type

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: $I_{max} = 1,500 \text{ mA}$
 24 V: $I_{max} = 750 \text{ mA}$



The electro-proportional pressure relief valve P0A is not suitable for acting as an LS unloading valve.¹⁾

Solenoid (supply voltage, connector type)

1_ 12 V

2_ 24 V

_A AMP Junior Timer

_D Deutsch DT04-2P

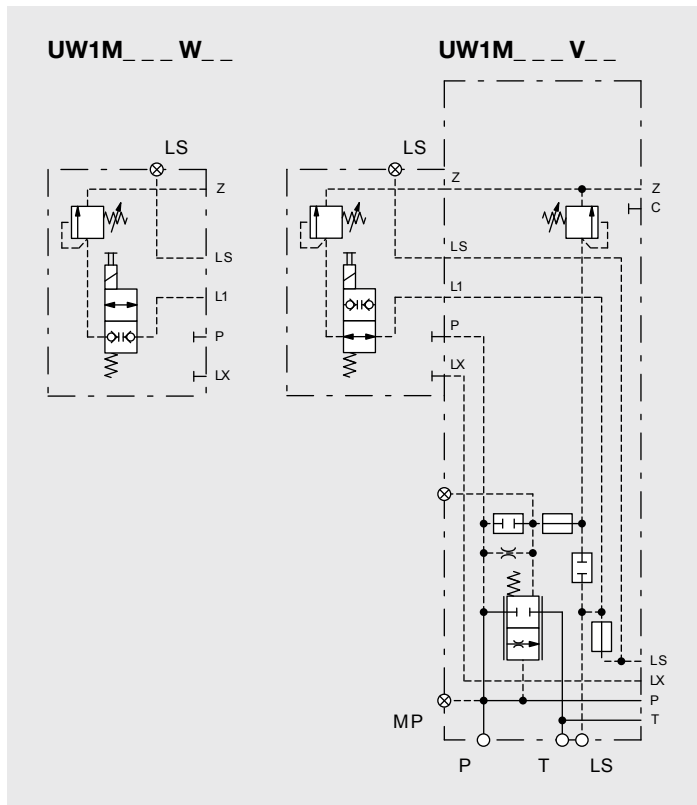


Unloading the LS circuit with the option valves V and W will not block the flow to the working ports A and B completely when the main spool is out of neutral position.

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.

For working sections without pressure compensator (load holding function only), the stand-by pressure of the variable displacement pump or circulation pressure of the fixed displacement pump has to be taken into account.

Option blocks for inlet plate UL17F



Example configurations

UW1M200W2A

- Basic type UW1M
- LS pressure relief valve set to 200 bar
- LS option valve type W, normally closed
- 24 V solenoid and connector type AMP Junior Timer

Switchable LS pressure limitation for LS circuit¹⁾

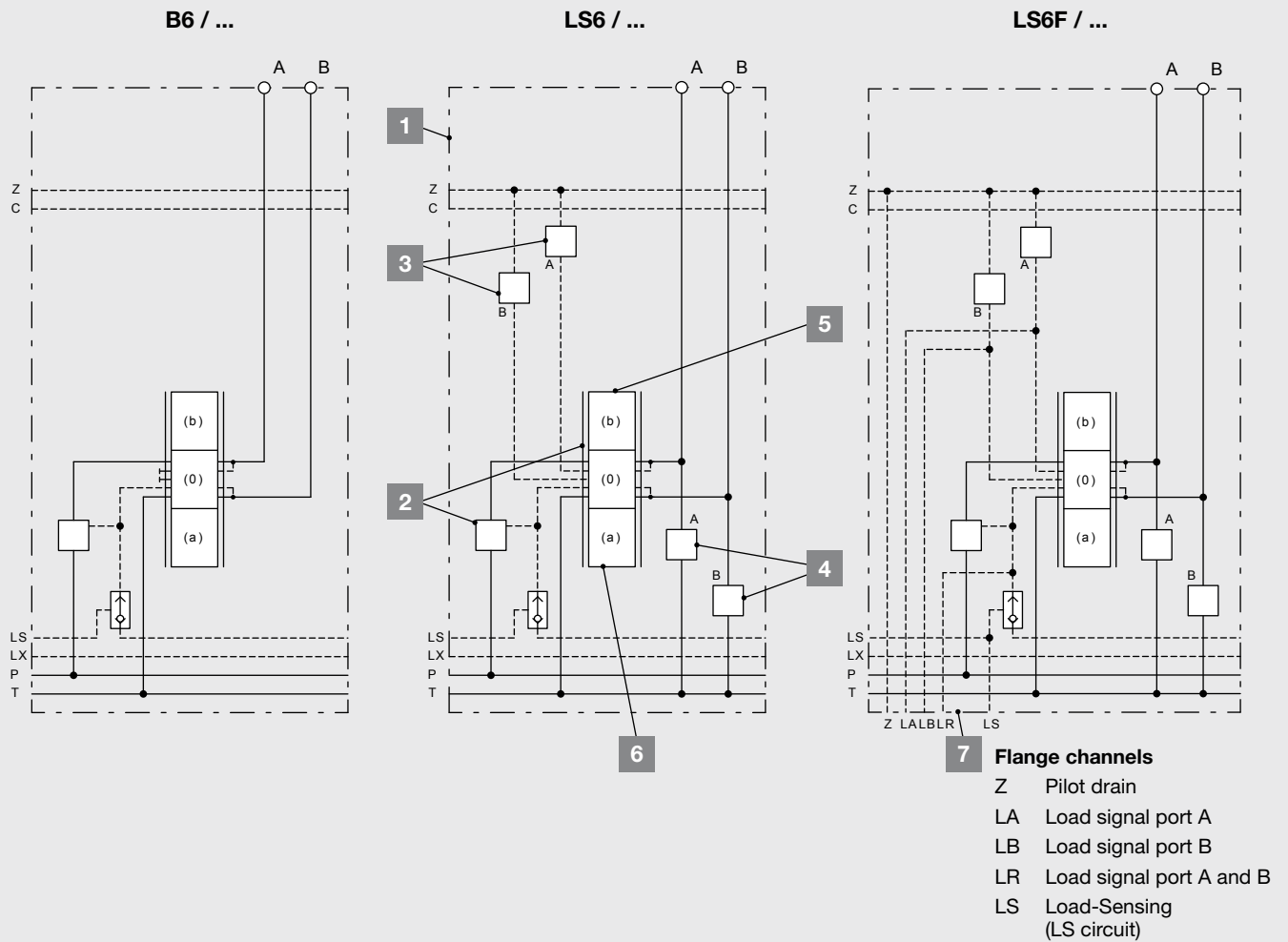
UW1M	Basic type	
---	Pressure setting in bar, 3-digit, max. 350 bar	
V _ _	Normally open (Manual emergency operation)	
W _ _	Normally closed (Manual emergency operation)	

Solenoid (supply voltage, connector type)

1 _	12 V
2 _	24 V
_ A	AMP Junior Timer
_ D	Deutsch DT04-2P

¹⁾ See section "Solenoid valves and coils"

Working sections B6 / LS6 / LS6F



Type code

B6 / CR160-160RN /

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
LS6	Working section with LS pressure limitation and workport valves
LS6F	Working section with LS pressure limitation and workport valves Flange interface for option 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	Option block for basic type LS6F

Main spool and pressure compensator

Type code

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

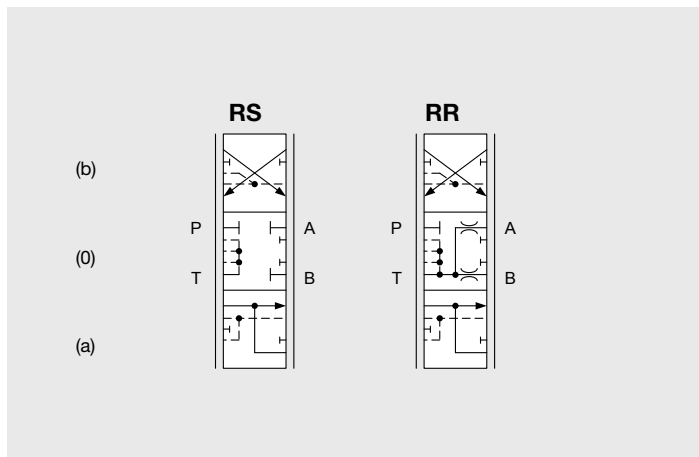
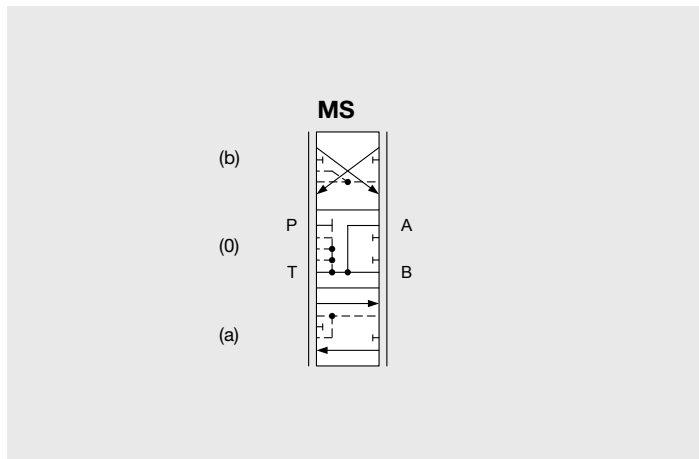
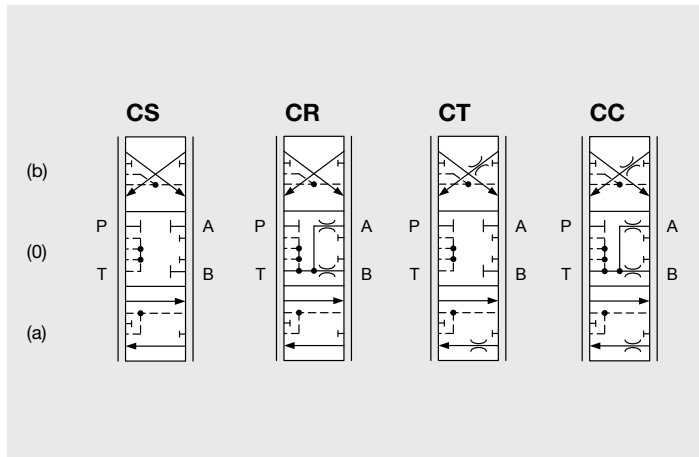
Examples

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



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

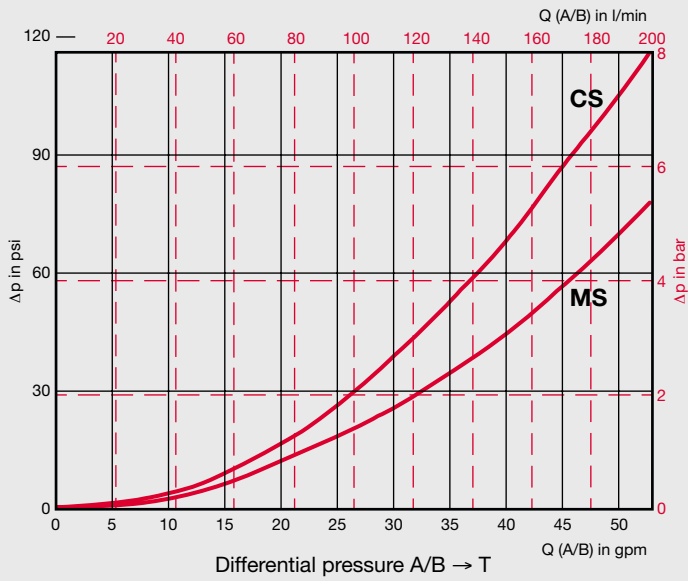
MS	4/3 directional valve open in neutral position
----	------------------------------------------------

Regeneration function

RS	4/3 directional valve closed in neutral position Regeneration function in spool position (a)
RR	4/3 directional valve unloaded in neutral position Regeneration function in spool position (a)

△ Other spool types and configurations on inquiry

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

Max. flow rate to actuator in l/min (Port A - Port B)								2.5		2.6
								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	W	Blue
160 - 160	130 - 130	110 - 110	080 - 080	055 - 055	040 - 040	027 - 027	018 - 018	R	N	None
-	-	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
---------	---------	---------	---------	---------	---------	---------	---------

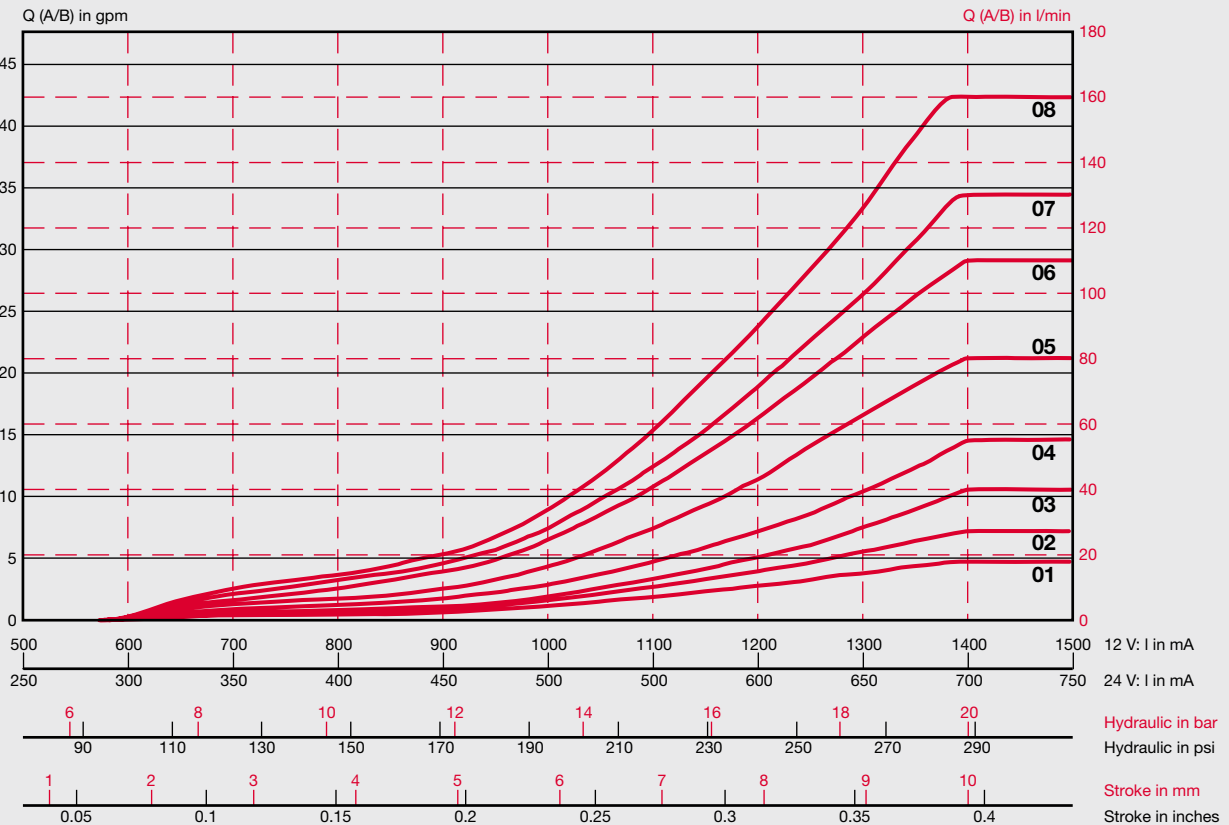
Asymmetrical spools (on inquiry)

The main spool for asymmetrical flow rates can only be defined within one row in the table above. The higher flow rate must be assigned to working port A (e.g. 160 - 130, 100 - 036, 150 - 090).

Characteristic curve and overlap 2.3

- Progressive/positive (standard)

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

1. See table above: nominal control edge size 06 - 06 with pressure compensator spring Y → $Q = 125 - 125$ l/min
2. 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)

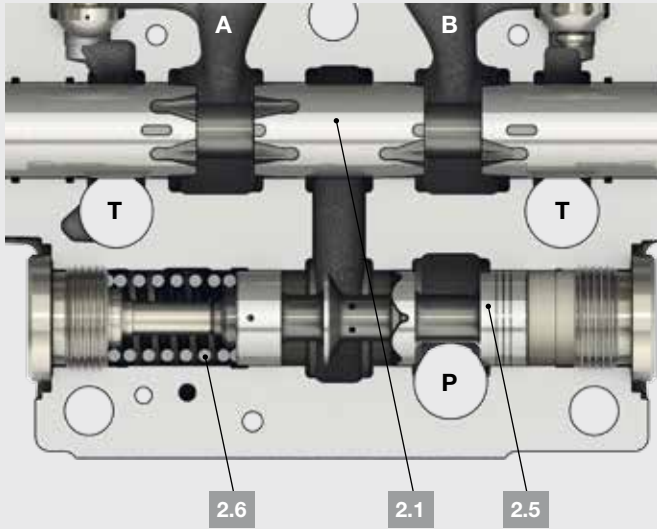
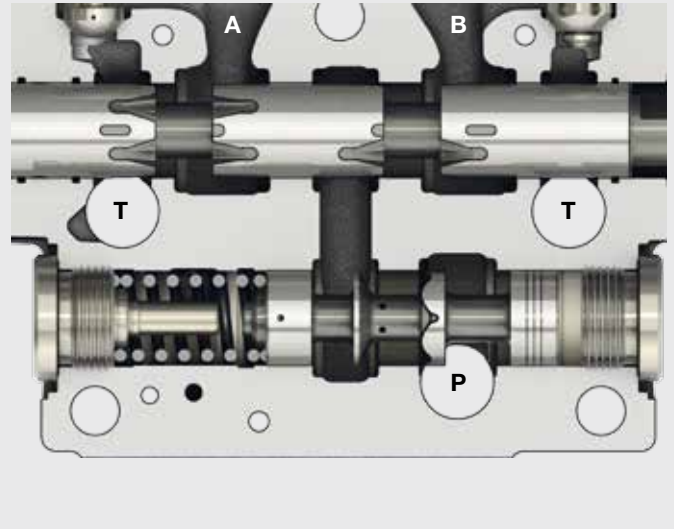


Figure B

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



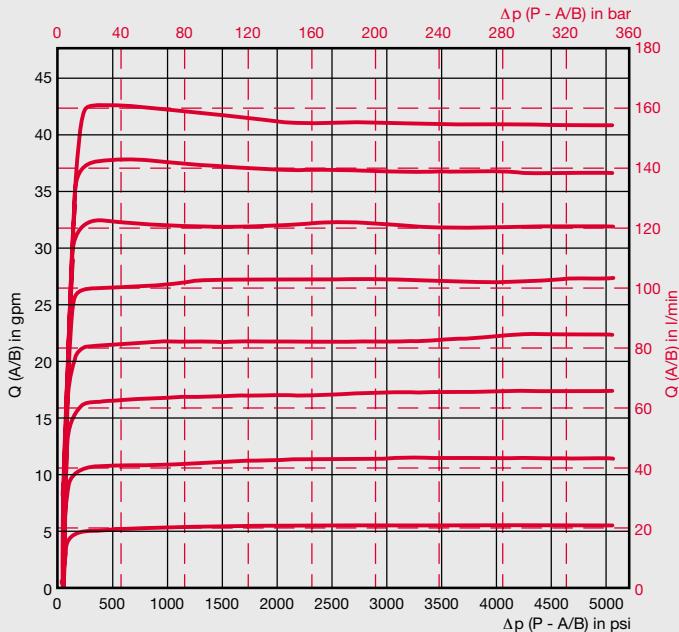
P is not connected to the working ports A and B when the main spool **2.1** is in neutral position (Fig. A). The compensator spool **2.5** is moved to left against the compensator spring **2.6** by pump pressure and blocks flow to the main spool.

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 mm²/s)

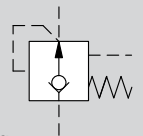


Basic types of pressure compensator / load holding function

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

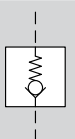
⚠ The load holding function is not free of leak oil, the hydraulic schematic / symbol is simplified

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

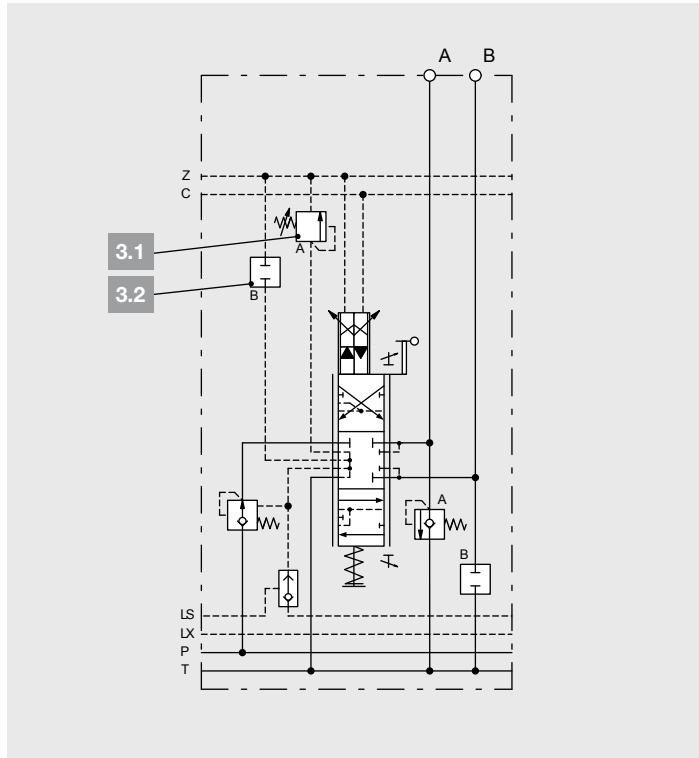
LS6F / CR160-160RN / **250 - P** / 300 - P / EYHS2D-1 / C1E / LWRV2D

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 section "Option blocks for working section LS6F".



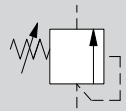
⚠ The max. pressure setting in the inlet plate has to be min. 20 bar higher than the LS pressure limitation in the working section.

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



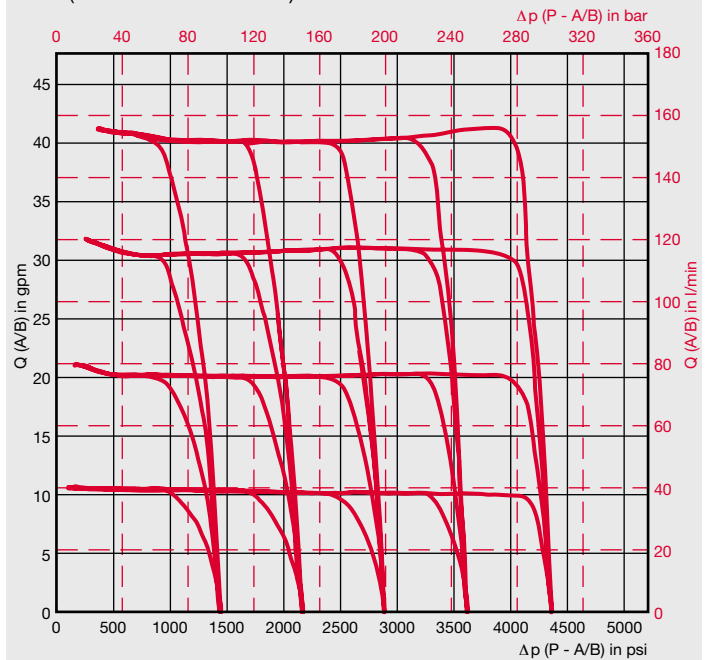
P Plug screw



U LS unloading – permanent
(3/3 directional valve function)



Load pressure compensation / limitation (measured at 32 mm²/s)



Workport valves

Type code

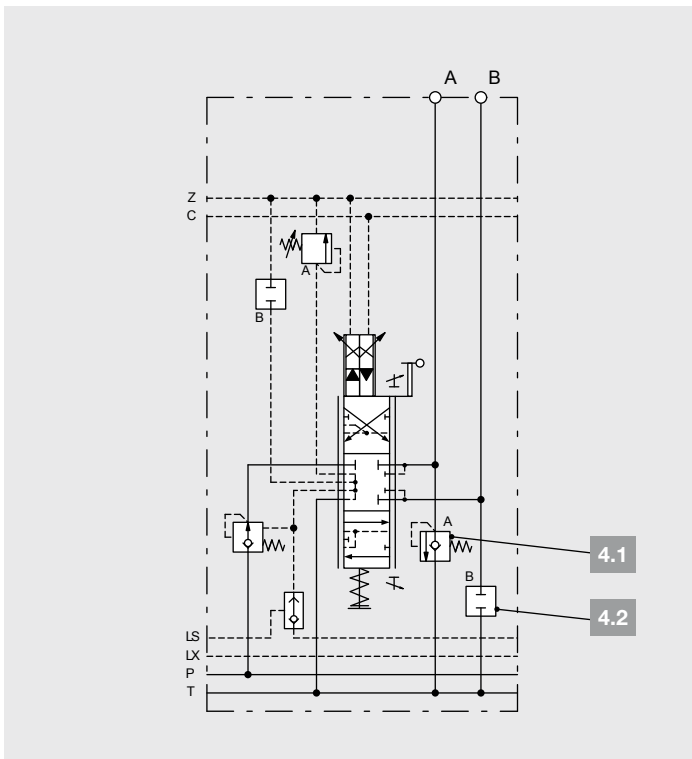
LS6F / CR160-160RN / 250 - P / **300 - P** / EYHS2D-1 / C1E / LWRV2D

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 setting for shock/anti-cavitation valves are fixed ex works. The pressure setting is defined at a flow rate of 10 l/min.



- ⚠ In case of shock/anti-cavitation valves for all working ports, the LS pressure relief valve in the inlet plate CL17 or UL17/.../F has to be defined min. 20 bar below the highest shock relief valve setting.

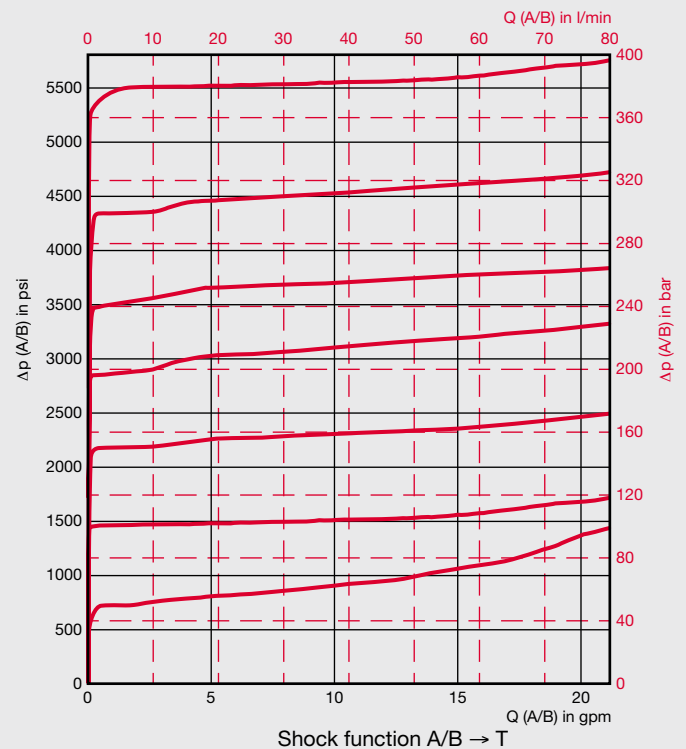
4.1 Workport valve port A

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)



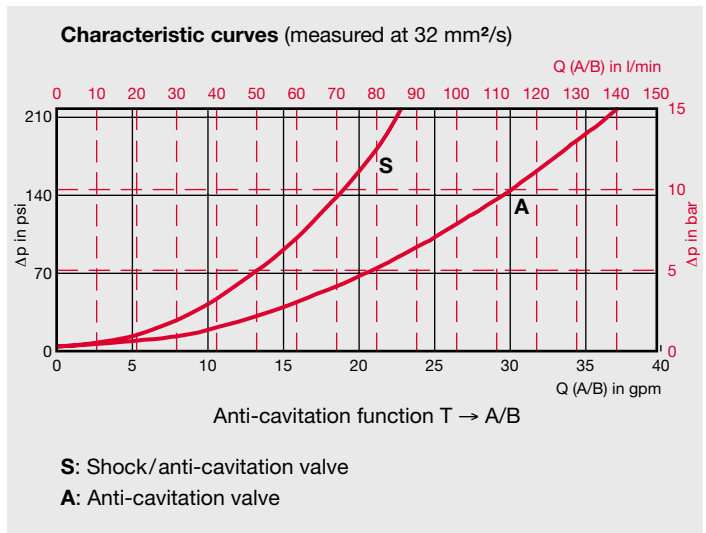
Workport valves

△ 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 $p_{\text{shock}} < 2200$ psi (150 bar):
 $p_{\text{shock}} - p_{\text{LS}} > 290$ psi (20 bar)

Shock valve setting $p_{\text{shock}} \geq 2200$ psi (150 bar):
 $p_{\text{shock}} - p_{\text{LS}} > 435$ psi (30 bar)



Shock / anti-cavitation valve pressure settings (fixed)

Settings	psi	725	940	1160	1450	1800	2030	2176	2321	2538	2756	2900	3046	3336	3481	3626	3844	4061	4351	4641	5076	5511
	bar	050	065	080	100	125	140	150	160	175	190	200	210	230	240	250	265	280	300	320	350	380
Tolerance range	± psi	72	72	72	72	100	100	100	100	145	145	145	145	145	145	145	175	175	175	175	175	218
	± bar	5	5	5	5	7	7	7	7	10	10	10	10	10	10	10	12	12	12	12	12	15
Max. LS pressure cut-off	psi	-	725	870	1160	1523	1740	1740	1885	2103	2321	2466	2611	2900	3046	3191	3408	3626	3916	4206	4641	4641
	bar	-	050	060	080	105	120	120	130	145	160	170	180	200	210	220	235	250	270	290	320	320

(Min./max. LS pressure limitation setting: 050/320 bar)

Operation units

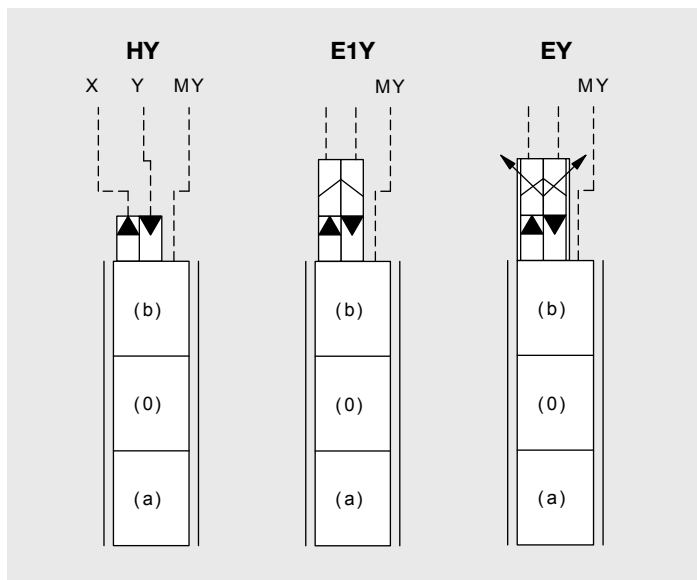
Type code

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

E Y H S 2D - 1
H Y S
 5.1 5.2 5.3 5.4

- 5.1 Basic type
- 5.2 Hand lever axis/main spool stroke limiter
- 5.3 Electrical supply voltage, connector type
- 5.4 Hand lever

Basic types 5.1



- HY** Unit for hydraulic operation:
 Port X: spool position (a)
 Port Y: spool position (b)
 Pilot pressure measuring port MY: spool position (b)
- E1Y** Unit for electrohydraulic operation, on/off:
 orifice setup 1 (orifice 1,0 mm)
 Pilot pressure measuring port MY: spool position (b)
- EY** Unit for electrohydraulic operation, proportional:
 Pilot pressure measuring port MY: spool position (b)

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 ²⁾	
Deutsch DT04, 2-pin, axial		up to IPX9K ²⁾	
Protective screen	μm	125	

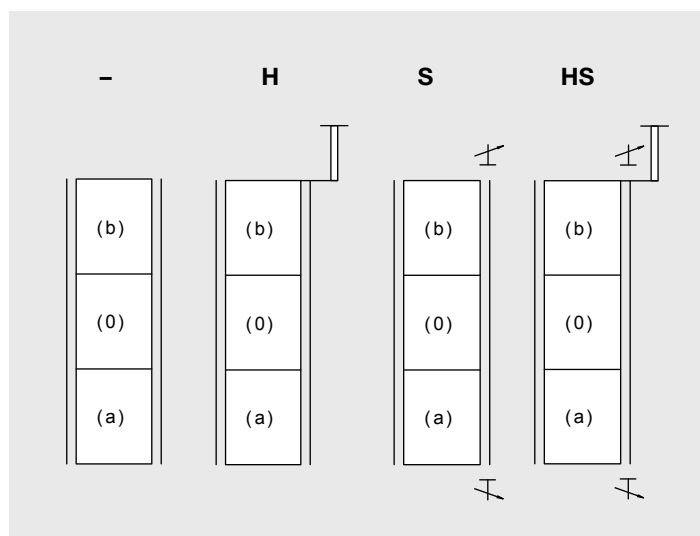
Pressure control valve (proportional)			
Supply voltage	V DC	12	24
Max. control current	mA	1,500	750
PWM frequency (recommended) ¹⁾	Hz	100 ... 150	

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.

Hand lever axis/main spool stroke limiter 5.2



-	w/o hand lever axis – w/o stroke limiter (n/a)
H	Hand lever axis – w/o stroke limiter
S	Stroke limiter – w/o hand lever axis
HS	Hand lever axis – stroke limiter

Interface of hand lever axis and hand lever:
Hexagon WAF9

⚠ Stroke limiter must be used for the fine adjustment of max. flow rates to the working ports A and B. (see section "Main spool and pressure compensator").

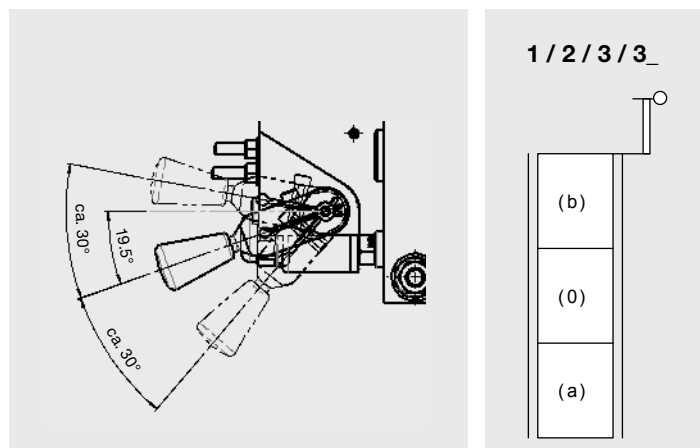
Dimension X for max. spool stroke:
See section "Dimensions"

Electrical supply voltage, connector type 5.3

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

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

Hand lever 5.4



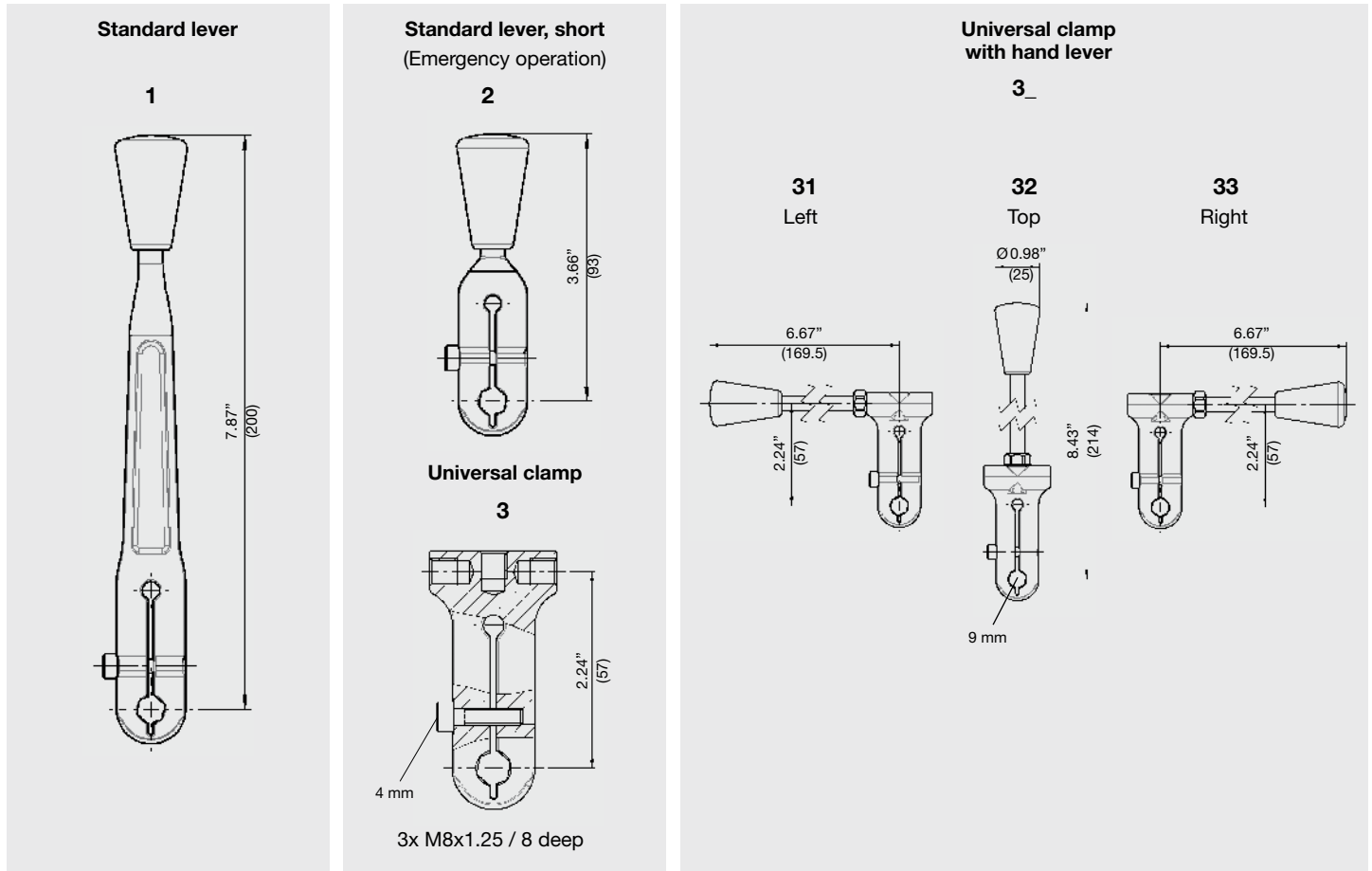
-	w/o hand lever (n/a)
1	Standard lever
2	Standard lever, short for emergency operation
3	Universal clamp without hand lever
3_	Universal clamp with hand lever (standard length)

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 5.2 .

Operation units



Possible hand lever positions: see section "Dimensions"

Actuating torque on execution: - Hydraulic: min. 3.7 – 14 ft-lbs (5 – 19 Nm)
- Electrohydraulic: min. 2.2 – 14 ft-lbs (3 – 19 Nm)

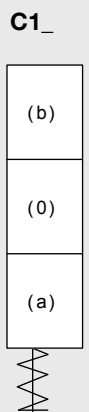
Spring caps

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)
w/o 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**.

H Hydraulic operation type HY

E Electrohydraulic operation type E1Y, EY

Option blocks for working section LS6F

Type code

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

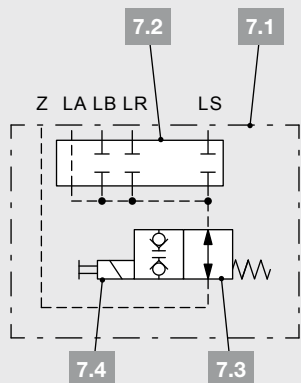
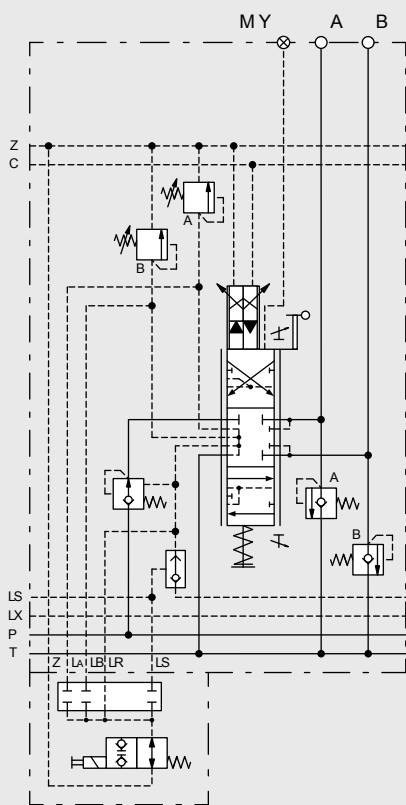
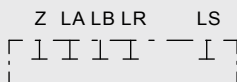
LW **R** **V** **2D**
 7.1 7.2 7.3 7.4

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

Flange channels

Z Pilot drain
 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 valves¹⁾

⚠ 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: 5100 psi (350 bar) 12 V: I _{max} = 1,500 mA 24 V: I _{max} = 750 mA	

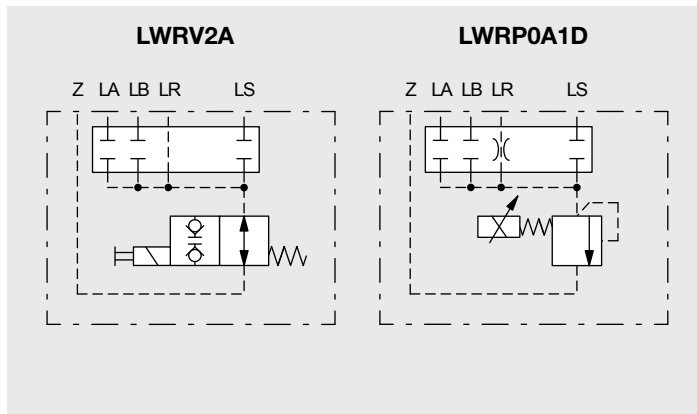
⚠ The electro-proportional pressure relief valve P0A is not suitable for acting as an unloading valve¹⁾

7.4 Solenoid (supply voltage, connector type)

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

¹⁾ See section "Solenoid valves and coils"

Option blocks for working section LS6F



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

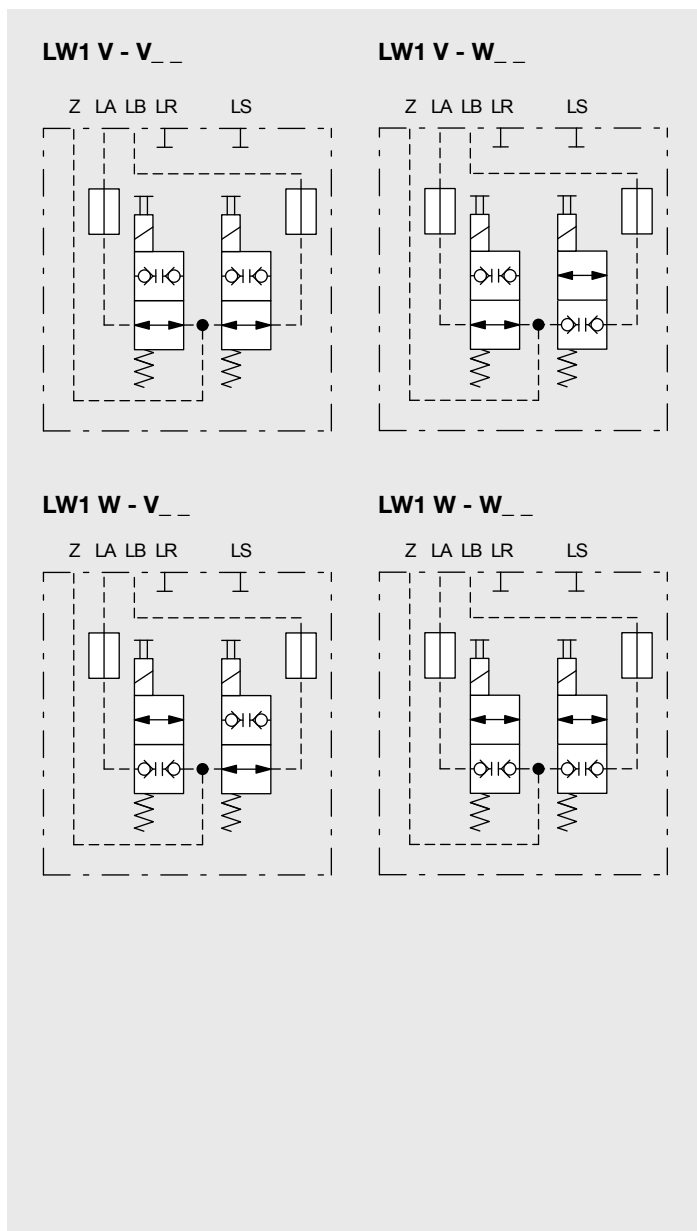
- Basic type LW
- Load signal port A and B
- LS option valve type P0A, electro-proportional pressure adjustment (pressure stage A: 350 bar)
- 12 V solenoid and connector type Deutsch DT04-2P

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 option blocks can be used only in combination with the sectional pressure compensator type R



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

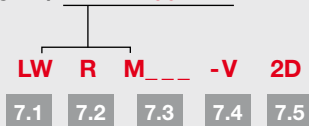
_A AMP Junior Timer

_D Deutsch DT04-2P

Option blocks for working section LS6F

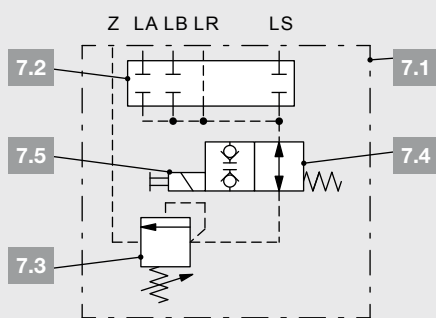
Type code

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

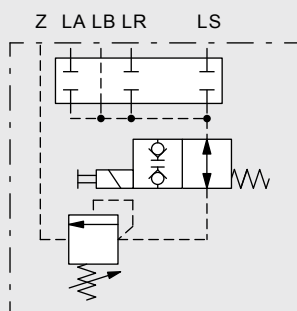


⚠ The LS option blocks can be used only in combination with the sectional pressure compensator type R

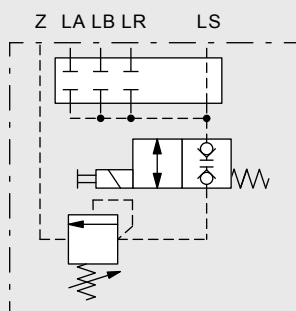
LWRM ___-V___



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)¹⁾

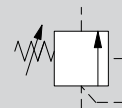
7.1 Basic type LWM

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)

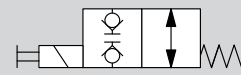
7.3 LS pressure limitation

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

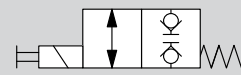


7.4 Solenoid valve

V Normally open (Manual emergency operation)



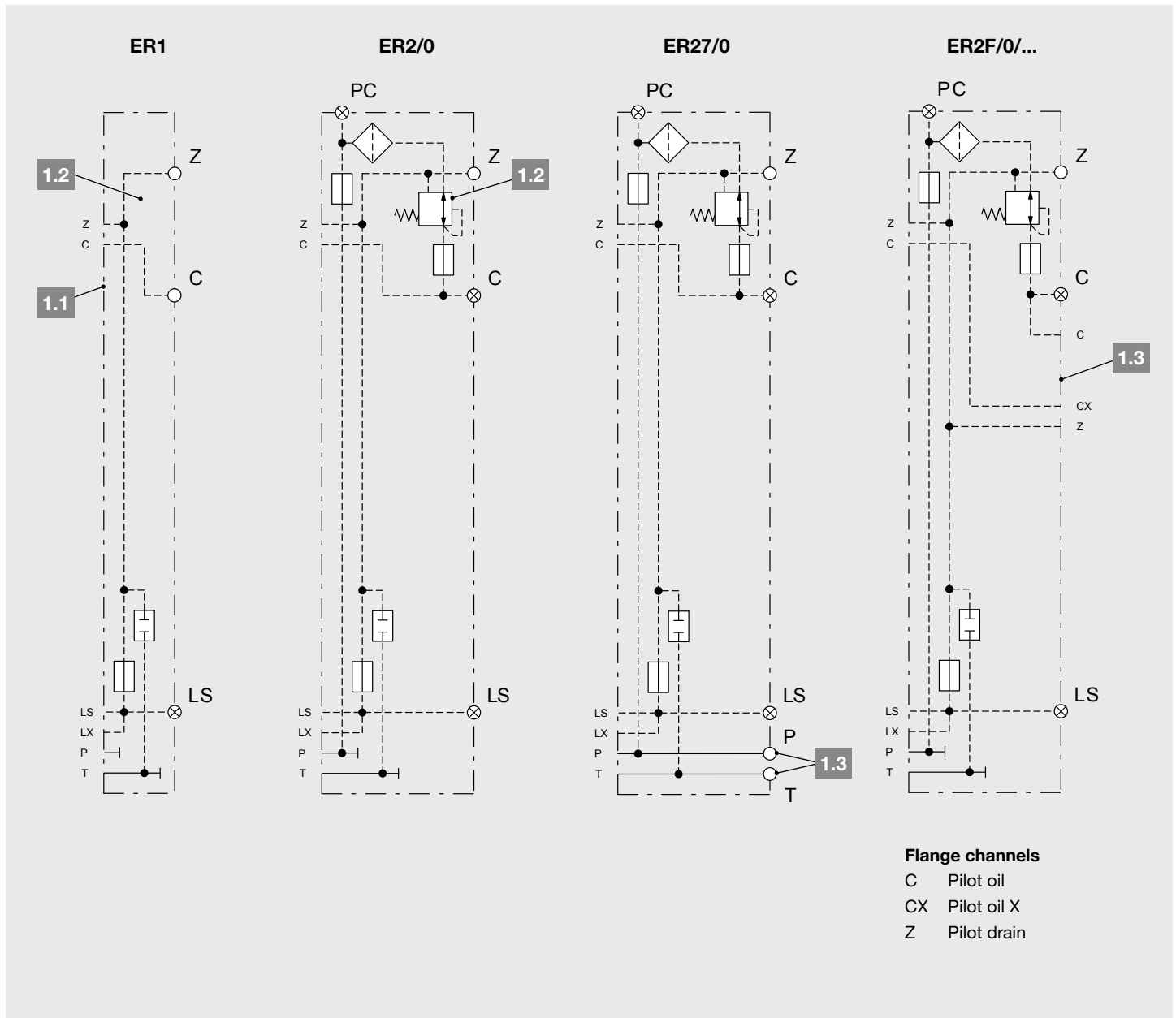
W Normally closed (Manual emergency operation)



7.5 Solenoid (supply voltage, connector type)

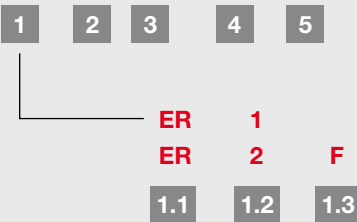
1_	12 V
2_	24 V
_A	AMP Junior Timer
_D	Deutsch DT04-2P

¹⁾ See section "Solenoid valves and coils"



Type code

ER1 ...
ER2 ... / 0
ER27 ... / 0
ER2F ... / 0 / **E1C2D** / *



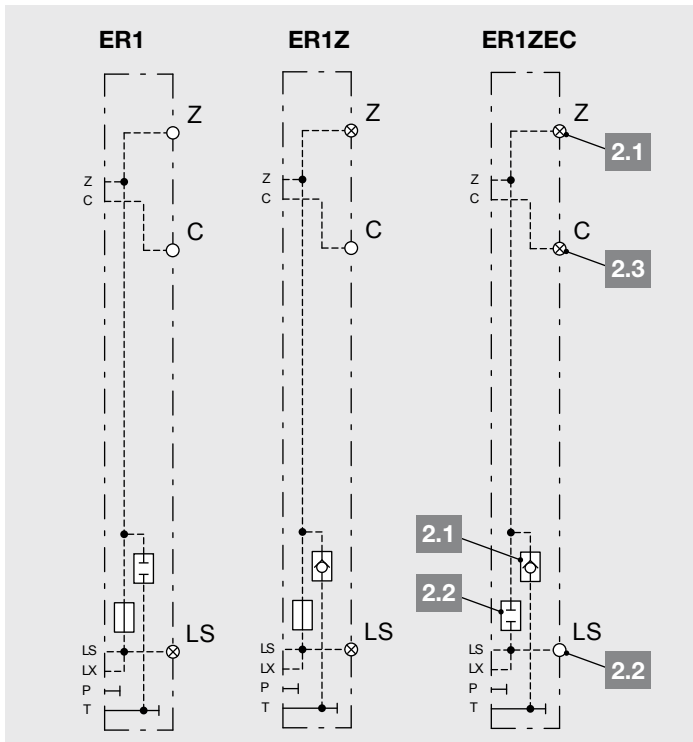
1	Basic type	
1.1	ER	End plate, right hand side
1.2	1	w/o or external pilot oil supply
	2	Internal pilot oil supply (channel P)
1.3	7	Port size P / T
	F	Flange interface for option blocks
2	Configuration ¹⁾	
3	Options ¹⁾	
4	Option block for basic type ER2F	
5	Reference to clear text Special, customer-specific information	

¹⁾ Can also be retrofitted

End plate ER1

Type code

ER1 ...
 1 2



1	Basic type	
	ER1	End plate, right hand side w/o or external pilot oil supply
2	Configuration	
	-	Standard (n/a)
2.1	Z	Internal connection Z → T with check valve Port Z with plug screw
	⚠	For configuration Z, the max. permitted operating pressure at port T is 10 bar.
2.2	E	External LS signal input Port LS open Internal LS-unloading with plug screw
2.3	C	Port C with plug screw w/o pilot oil supply for manual and hydraulic operation units only
The individual configurations Z, E and C can be combined as follows: ZE, ZC, EC, ZEC		

Example configurations

ER1

- Basic type ER1
- Standard configuration

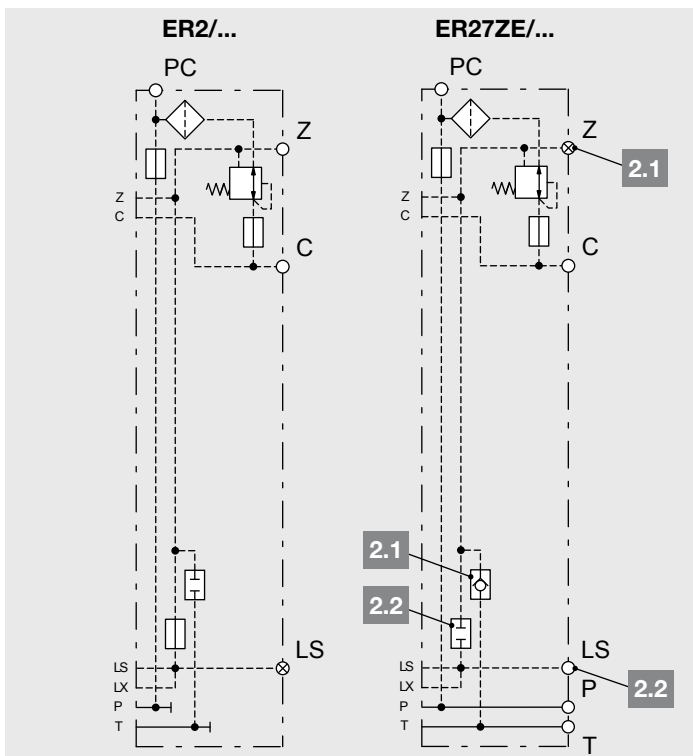
ER1Z

- Basic type ER1
- Internal connection Z → T with check valve
Port Z with plug screw

End plates ER2, ER27, and ER2F

Type code

ER2 ... / 0
 1 2 3



1	Basic type	
	ER2	End plate, right hand side Internal pilot oil supply (channel P)
	ER27	Same as ER2, with additional P / T ports Port size 7
	ER2F	Same as ER2, with flange interface for option blocks
2	Configuration	
	-	Standard (n/a)
2.1	Z	Internal connection Z → T with check valve Port Z with plug screw
	⚠	For configuration Z, the max. permitted operating pressure at port T is 10 bar.
2.2	E	External LS signal input Port LS open Internal LS-unloading with plug screw
The individual configurations Z and E can also be combined: ZE		

Example configurations

(Options 3 see next page)

ER2/...

- Basic type ER2
- Standard configuration

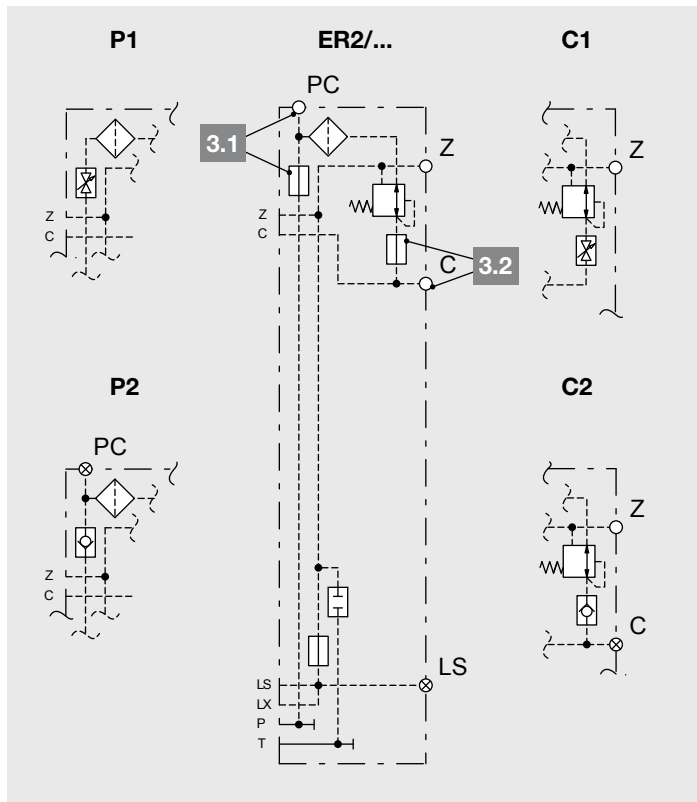
ER27ZE/...

- Basic type ER27
- Internal connection Z → T with check valve
Port Z with plug screw
- External LS signal input, Port LS open
Internal LS-unloading with plug screw

End plate ER2

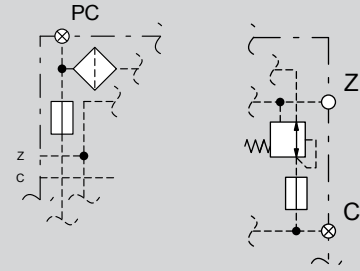
Type code

ER2 ... / 0
 1 2 3



3 Options at port PC and C

0 w/o options (standard)
 Port PC and C with plug screw



3.1 Options at port PC (Port C with plug screw)

P1 Cut-off valve, mechanical with knurled screw

⚠ Port PC not usable.
 Operation of cut-off valve < 50 bar system pressure.

P2 Check valve
 Port PC with plug screw

3.2 Options at port C (Port PC with plug screw)

C1 Cut-off valve, mechanical with knurled screw

⚠ Port C not usable.

C2 Check valve
 Port C with plug screw

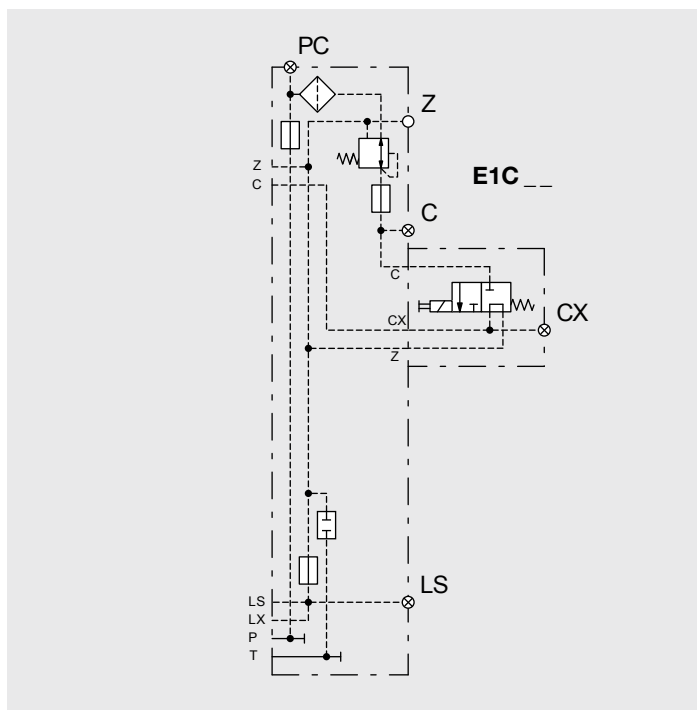
The individual options can be combined as follows:
 P1C2, P2C1, P2C2

Example: ER2/P1C2

Option blocks for end plate ER2F

Type code

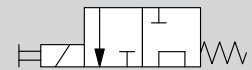
ER2F ... / 0 / E1C2D



Pilot oil option valve¹⁾

E1 Basic type

C__ Pilot oil unloading
 Normally open
 (Manual emergency operation)



Solenoid (supply voltage, connector type)

1_ 12 V

2_ 24 V

_A AMP Junior Timer

_D Deutsch DT04-2P

¹⁾ See section "Solenoid valves and coils"

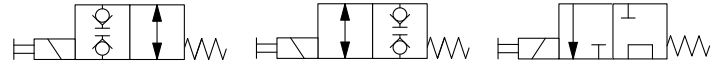
Solenoid valves and coils

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

Option valves for connecting plate CL17 and option blocks:

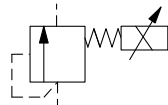
On/Off valves:

With manual emergency operation (push-button)



Valve type		V		W		C	
Design		Poppet valve		Poppet valve		Spool valve	
Nominal voltage U_N	V DC	12	24	12	24	12	24
Nominal current I_N	A	1.50	0.80	2.20	1.10	1.50	0.80
Min. current I_{min}	A	1.05	0.56	1.54	0.77	1.05	0.56
Nominal power P_N	W	18	19	26	26.7	18	19
Response time	On: ms	40		30		85	
	Off: ms	60		40		80	
Max. permitted voltage deviation from U_N	%	±15					
Duty cycle at 115% U_N	%	100					
Ambient temperature range ²⁾	°C	-4 to 140°F (-20 to +60°C)					
Max. permitted coil temperature ³⁾	°C	180 °C					
Insulation class as per EN 60085		H					
Integrated free-wheeling diode		Yes		Yes		Yes	
Coil length X	mm	40		50		40	
Connector type and IP protection class (with mating connector mounted)		AMP Junior Timer, 2-pin – axial / up to IP6K6 ⁴⁾ Deutsch DT04, 2-pin – axial / up to IPX9K ⁴⁾					
Valve body and coil surface protection		Zinc-Nickel (ZnNi)					

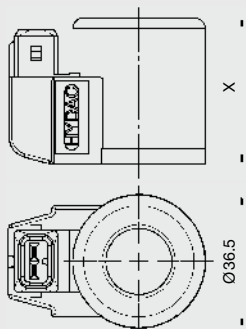
Proportional pressure relief valve: bleed screw below coil nut (torque 2.5 + 0.5 Nm)



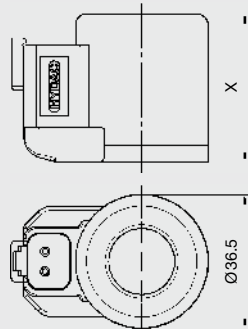
Valve type		P__	
Nominal voltage U_N	V DC	12	24
Coil resistance at +20 °C (±5%)	Ω	4.1	17.6
Max. control current I_{max}	mA	1,500	750
PWM frequency (recommended) ¹⁾	Hz	150 – 200	
Duty cycle at I_{max}	%	100	
Ambient temperature range ²⁾	°F/(°C)	-4 to 140/(-20 to +60)	
Max. permitted coil temperature ³⁾	°F/(°C)	356/(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 ⁴⁾	
Deutsch DT04, 2-pin – axial		up to IPX9K ⁴⁾	
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)

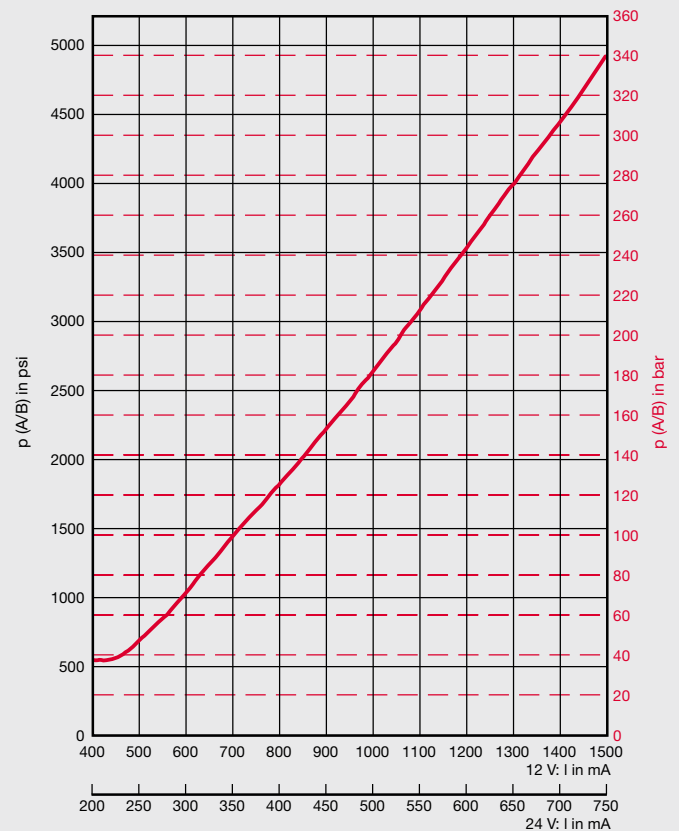
AMP Junior Timer, axial



Deutsch DT04, axial



Characteristic curve (measured at 32 mm²/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.

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

²⁾ Deviation of data on inquiry only

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

⁴⁾ Mating plug-in connectors are not included

Connection type, fastening and tie rods

Type code

LX-6 03 / S 0

1 2 3 4

⚠ Only use of fittings with deformable seal materials

1	Valve type
2	Specification type
--	Complete control block No. of working sections (01-08)
0X	Single modules (inlet plate, working section, end plate, option block)
3	Connection type
B	BSPP acc. to ISO 1179-1
S	SAE acc. to ISO 11926-1 or SAE J1626
4	Valve series

Connection type				B	Countersink Ø in mm	S	Countersink Ø in mm	
Inlet plate	CL17	P	Pump	G 1	50	1 5/16-12 UN	SAE 16	49
	UL17	T	Tank	G 1	50	1 5/16-12 UN	SAE 16	49
	UL17F	MP	Pump measuring port	G 1/4	25	9/16-18 UNF	SAE 6	25
		LS	Load-sensing	G 1/4	25	9/16-18 UNF	SAE 6	25
Working section	B6	A/B	Working ports	G 3/4	38	1 1/16-12 UN	SAE 12	38
	LS6	X	Hydraulic operation port (spool position a)	G 1/4	25	7/16-20 UNF	SAE 4	21
	LS6F	Y	Hydraulic operation port (spool position b)	G 1/4	25	7/16-20 UNF	SAE 4	21
		MY	Pilot pressure measuring port (spool position b)	G 1/8	15	G 1/8	-	15
End plate	ER1	PC	Pump measuring port (for options)	G 1/4	25	9/16-18 UNF	SAE 6	25
	ER2	C	Pilot oil supply	G 1/4	25	9/16-18 UNF	SAE 6	25
	ER27	Z	Tank, depressurized	G 1/4	25	9/16-18 UNF	SAE 6	25
	ER2F	LS	External Load-Sensing input	G 1/4	25	9/16-18 UNF	SAE 6	25
		P	Pump	G 1	50	1 5/16-12 UN	SAE 16	49
		T	Tank	G 1	50	1 5/16-12 UN	SAE 16	49
Option blocks	UW1...	LS	Load-sensing	G 1/4	25	9/16-18 UNF	SAE 6	25
	E1C...	CX	Pilot oil supply X	G 1/4	25	9/16-18 UNF	SAE 6	25

Fastening:

The control block must be mounted at three fixation points without tensioning.

see also section "Dimensions"

Fastening thread				B	S	
Inlet plate	CL17	2 x	13 mm deep	M10x1.5	7/16-20 UNF	SAE 4
	UL17					
	UL17F					
End plate	ER1	1 x	13 mm deep	M10x1.5	7/16-20 UNF	SAE 4
	ER2					
	ER27					
	ER2F					

Fastening screws:

- Minimum screw-in depth: 10 mm
- Recommended screw clamp length: ≥30 mm

Property class	10.9
Fastening torque	53 ft-lb (72 Nm) ±2 (±3)

Tie rod:

M10 tie rod with flange nut WAF 16, $M_z = 29.5 \pm 1.5$ ft-lb
(40 ±2 Nm)

⚠ Only use of genuine LX-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.

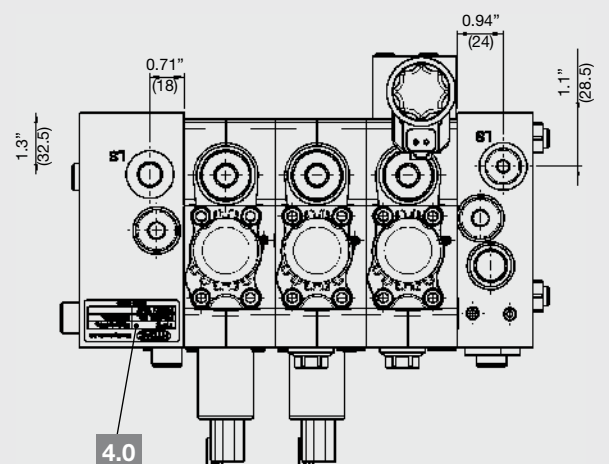
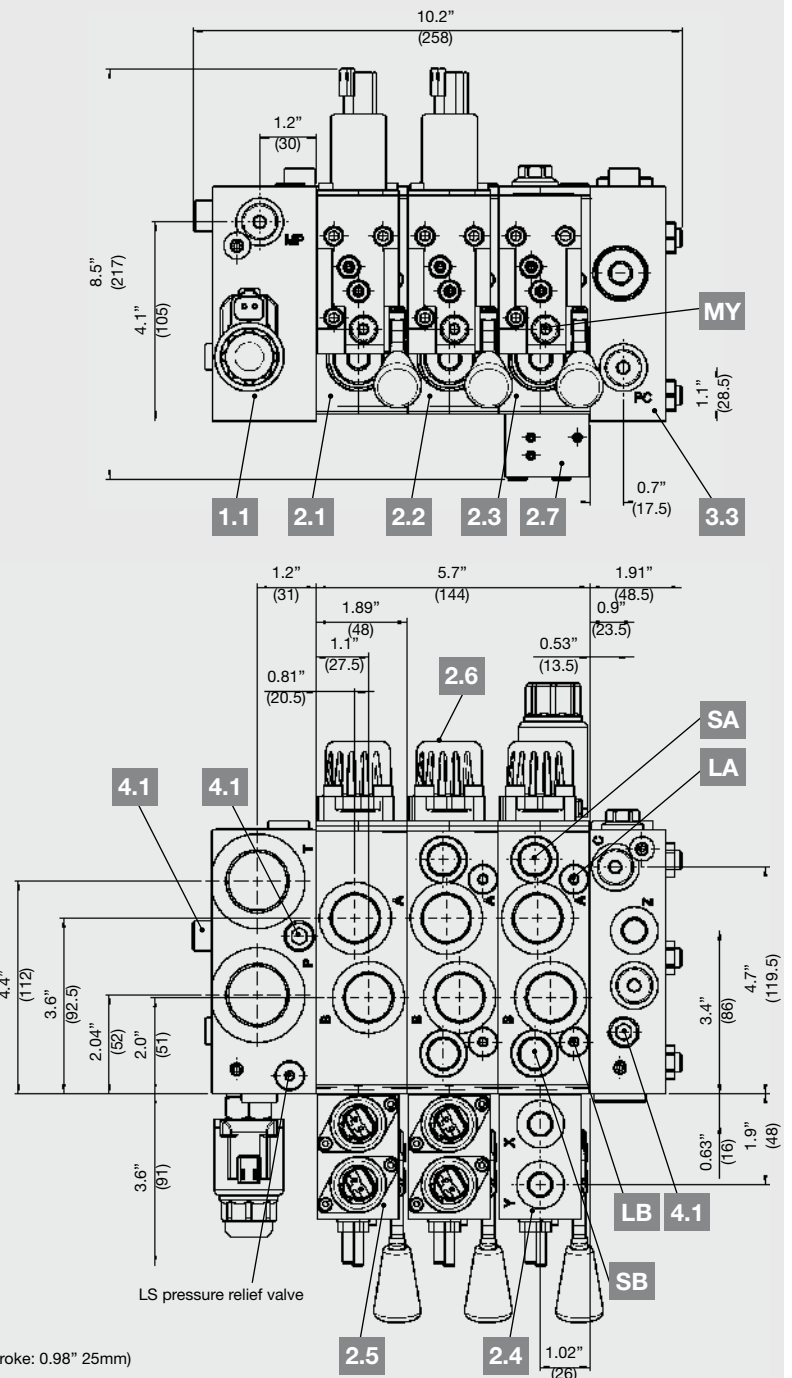
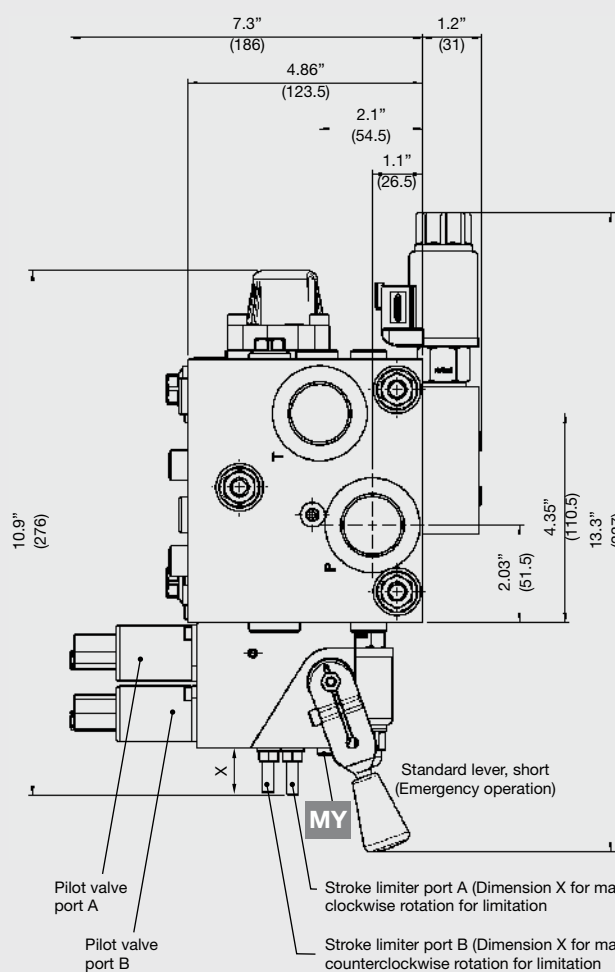
Dimensions

All dimensions in mm, subject to change.

Example for control block with Closed Center inlet plate and end plate with P/T ports (see also section "Modular structure")

Connector types: Deutsch DT04, 2-pin, axial

1.1	Inlet plate CL17
2.1	Working section B6
2.2	Working section LS6
2.3	Working section LS6F
2.4	Hydraulic operation HY
2.5	Electrohydraulic operation E1Y, EY
2.6	Spring cap C1E
2.7	Option block LW.../LW...M... ¹⁾
3.3	End plate ER27



LA	LS pressure limitation port A
LB	LS pressure limitation port B
SA	Secondary valves port A
SB	Secondary valves port B
4.0	Type plate
4.1	3x M10x1.5 – 12 deep for crane gear

¹⁾ Option block LW1... not shown

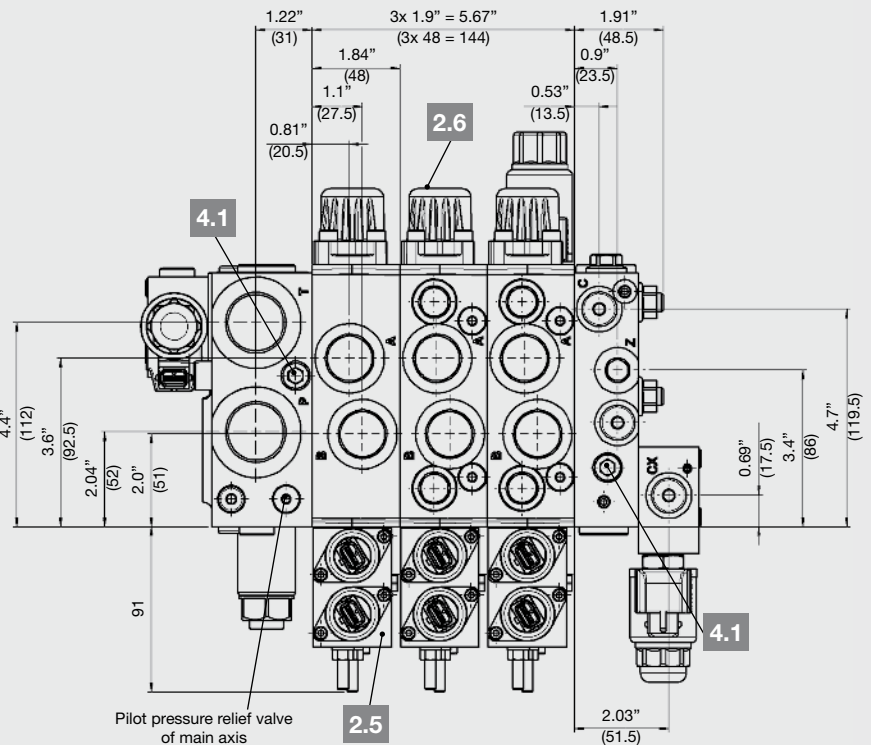
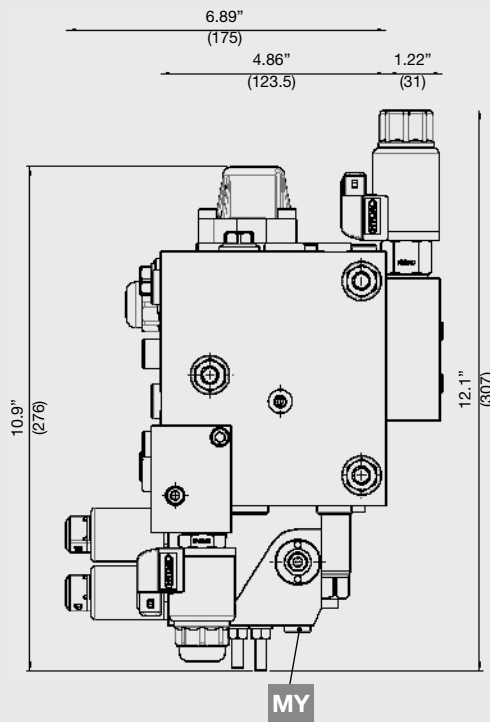
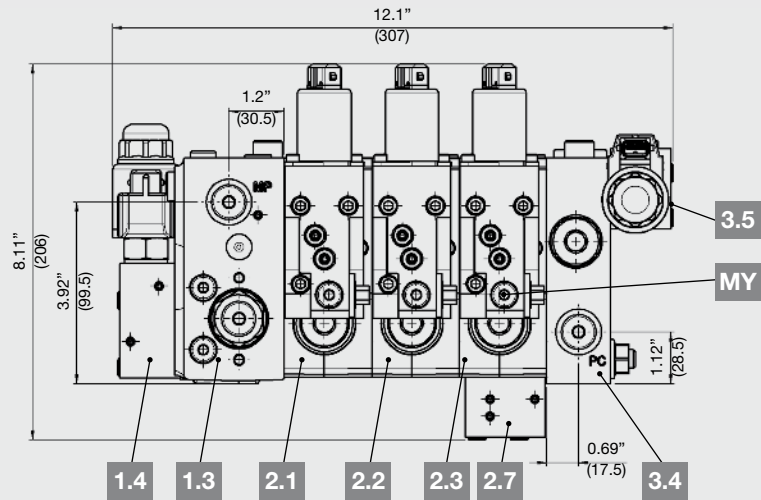
Dimensions

All dimensions in mm, subject to change.

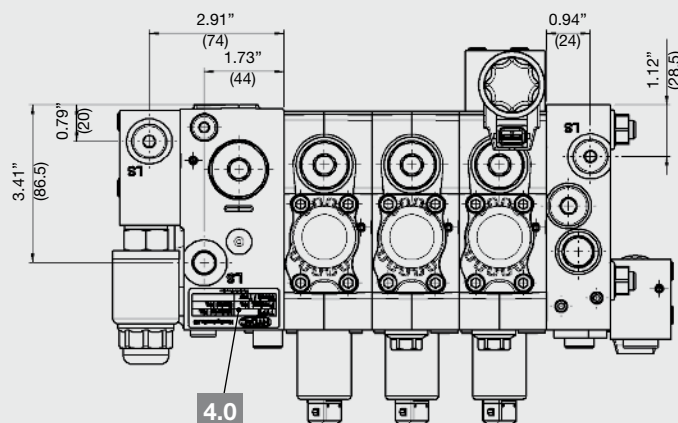
Example for control block with universal inlet plate and option blocks (see also section "Modular structure")

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

- 1.3** Inlet plate UL17F¹⁾
- 1.4** Option block UW1...
- 2.1** Working section B6
- 2.2** Working section LS6
- 2.3** Working section LS6F
- 2.5** Electrohydraulic operation E1Y, EY
- 2.6** Spring cap C1E
- 2.7** Option block LW.../LW...M...²⁾
- 3.4** End plate ER2F³⁾
- 3.5** Option block E1C...



- 4.0** Type plate
- 4.1** 3x M10x1.5 – 12 deep for crane gear



¹⁾ Inlet plates UL17F and UL17 have the same dimensions

²⁾ Option block LW1... not shown

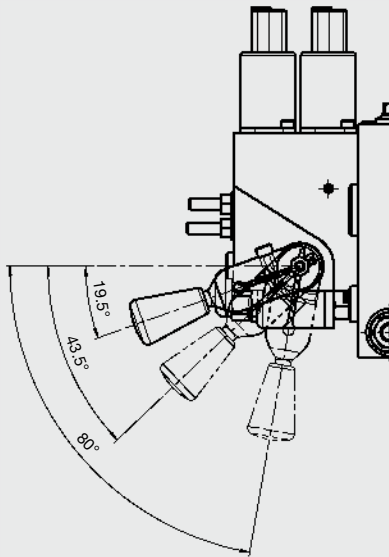
³⁾ End plates ER2F, ER2, and ER1 have the same dimensions

Dimensions

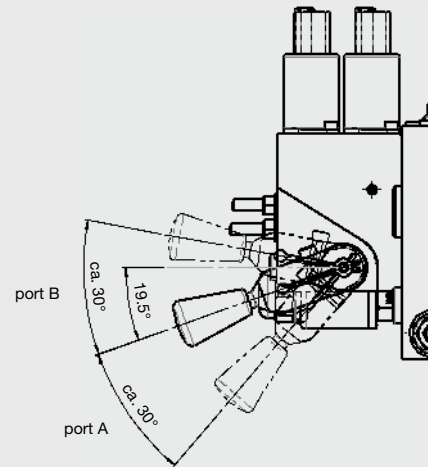
All dimensions in mm, subject to change.

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

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



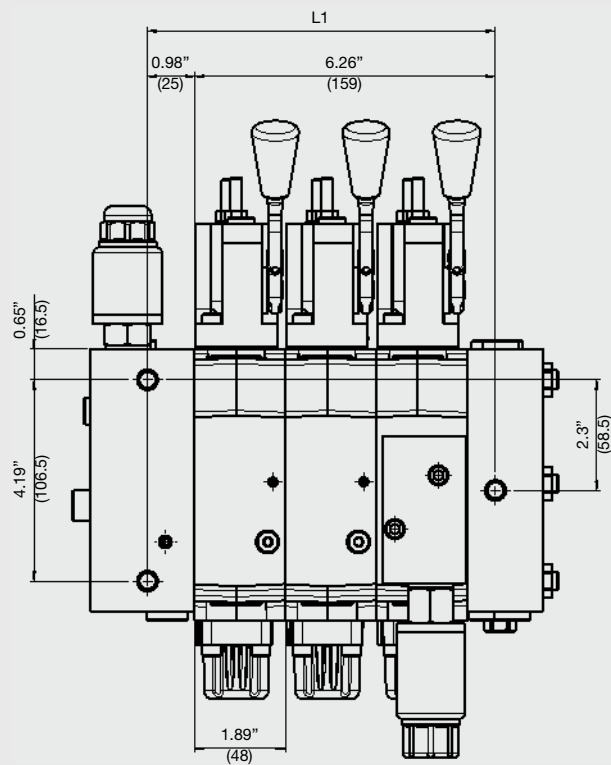
Max. travel for port A / port B



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

Control block fastening points (3x M10x1.5 – 13 deep)

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



No. of working sections		1	2	3	4	5	6	7	8
L1	inches	3.46"	5.35"	7.24"	9.13"	11.02"	12.91"	14.8"	16.69"
	mm	88	136	184	232	280	328	376	424

Type code

Structure and sequence:	1.	General	(control block always defined from left to right)
	2.	Inlet plate	
	3.	Working section 1 Working section 2 Working section n	
	4.	End plate	

1. General						
Valve type:	LX-6	03	/	S	0	
Pos.	1	2		3	4	

Pos./designation:	Type code:	Description/function	Comment:
1 Load-sensing valve series	LX-6	Load-sensing X-series Size 6	
2 No. of working sections Specification/identification of single modules	1) -- 0X	2-digit, 01–08 Inlet plate, working section, end plate or option block	Max. 8 working sections
3 Connection thread	B S	BSPP acc. to ISO 1179-1 SAE acc. to ISO 11926-1 or SAE J1626	
4 Valve series	0	Unchanged installation and connection dimensions	

2. Inlet plate						
Type:	CL17	/	P	/	V2D	
	UL17	/	250	/	F	
	UL17F	/	350	/	P	UW1V2A
Pos.	1		2		3	4

Pos./designation:	Type code:	Description/function	Comment:
1 Basic type			
Standard for variable displacement pump	CL17	CC system Left 1 version 7 port size P/T	Port size 7:
Universal for fixed and variable displacement pump	UL17	Universal Left 1 version 7 port size P/T	BSPP: G1; SAE: 1 5/16-12 UN
Universal like UL17 with option block	UL17F	Flange interface for option block	
2 Pressure relief valve			
	---	Pressure setting in bar, 3-digit (mechanically adjustable)	Max. 350 bar
	P	Plug screw	w/o pressure relief valve
3 LS option valves			
⚠ For basic type CL17 only	P	Plug screw	w/o LS option valve
	V __	LS unloading Valve type V	Normally open
	W __	LS unloading Valve type W	Normally closed
	POA __	Electro-prop. pressure adjustment Orifice setup: 1.0 mm Valve type P Pressure stage A : 350 bar	Rising curve
Supply voltage DC	1 _	12 V	
	2 _	24 V	
Connector type	_ A	AMP – Junior Timer, 2-pin, axial	
	_ D	Deutsch – DT04, 2-pin, axial	
Logic of main axis			
⚠ For basic types UL17 and UL17F only	F	Flow controller (3-way)	For fixed displacement pump
	P	Pump pressure relief valve (pilot-operated)	For variable displacement pump
4. Option blocks			
⚠ For basic type UL17F only	UD1	Dummy plate 1 version	
For logic of main axis F or P For channel: L1 Load signal 1	UW1V __	LS unloading L1 channel Valve type V	Normally open
	UW1W __	LS unloading L1 channel Valve type W	Normally closed
	UW1POA __	Electro-proport. press. adjust. Orifice setup: 1.0 mm L1 channel Valve type P Pressure stage A : 350 bar	Rising curve
	UW1M __ V __	Second pressure stage (On/Off) L1 channel Valve type V Mechanically adjust. in bar, 3-digit	Second pressure level when de-energized
	UW1M __ W __	Second pressure stage (On/Off) L1 channel Valve type W Mechanically adjust. in bar, 3-digit	Second pressure level when energized
Supply voltage DC	1 _	12 V	
	2 _	24 V	
Connector type	_ A	AMP – Junior Timer, 2-pin, axial	
	_ D	Deutsch – DT04, 2-pin, axial	

Type code

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

Pos./designation:	Type code:	Description/function	Comment:
1. Basic type			
Basic section w/o option valves	B6	Basic section 6 port size A/B	Port size 6:
Section like B6 with option valves	LS6	Like B6 with LS pressure limitation and Shock/anti-cavitation valves	BSPP: G3/4, SAE: 1 1/16-12 UN
Section like LS6 with option block	LS6F	Like LS6 with Flange interface for option block	
2. Main spool			
	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 section "Main spool and pressure compensator"	
3. Max. flow rate to actuator			
	A B		See section "Main spool valve and pressure compensator"
	1) --- - ---	Maximum flow to port A / B in l/min, 3-digit	
4. Pressure compensator axis (spool + spring)			
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
Load holding function	L	Load holding function only w/o pressure compensation	Use of compensator spring type G
5. LS pressure limitation			
⚠ For basic types 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
	U	Unloading - permanent	3/3 directional valve function
6. Workport valves			
⚠ For basic types LS6 and LS6F only	A B		
	--- - ---	Shock/anti-cavitation valve for port A / B in bar, 3-digit	See section "Workport valves"
	A	Anti-cavitation valve	
	P	Plug screw	w/o workport valves
7. Operation units			
	HY	H hydraulic MY port	Pilot pressure MY – spool position (b)
	E1Y	E1 electrohydraulic on/off, orifice setup 1 MY port	orifice 1.0 mm
	EY	E electrohydraulic proportional MY port	
	n/a	w/o hand lever axis - w/o stroke limiter	
Other options:	_H	Hand lever axis	
	_S	Stroke limiter	
	_HS	Hand lever axis and Stroke limiter	
⚠ For operation unit E... only			
Supply voltage DC	1 _	12 V	
	2 _	24 V	
Connector type	_A	AMP – Junior Timer, 2-pin, axial	
	_D	Deutsch – DT04, 2-pin, axial	
8. Hand lever type			
Hand lever does not come assembled			
⚠ For operation option _H only			
	n/a	No hand lever	
Standard lever	1	Standard	See section "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	
9. Spring caps			
Standard for operation unit H...	C1H	C standard cap 1 version H hydraulic	Pilot pressure range: 6.5 – 20 bar
Standard for operation unit E...	C1E	C standard cap 1 version E electrohydraulic	Pilot pressure range: 4.5 – 20 bar

¹⁾ Deviation of data on inquiry only

Type code

10 Option blocks					
⚠	For basic type LS6F only	LD1	Dummy plate	1 version	
	For channel: LA Load signal port A	LW_V__	LS unloading	LWA, LWB, LWR or LWS channel	Valve type V Normally open
	LB Load signal port B	LW_W__	LS unloading	LWA, LWB, LWR or LWS channel	Valve type W Normally closed
	LR Load signal port A and B	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
	or LS Load Sensing (LS circuit)	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	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		

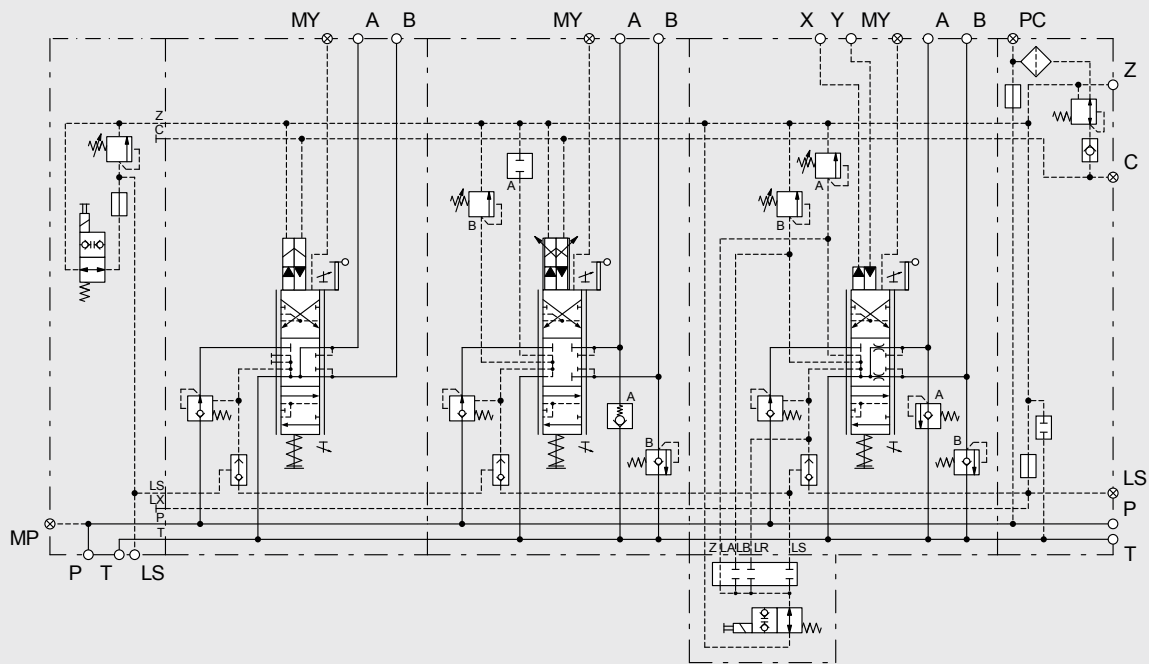
4. End plate										
Type:	ER2		/	0						
	ER2F	ZE	/	0	/	E1C2A	/	*		
Pos.	1	2	3	4	5					

Pos./designation:	Type code:	Description/function	Comment
1 Basic type			
Standard with/without external pilot oil supply	ER1	End plate Right	1 external pilot oil supply
Standard with internal pilot oil supply	ER2		2 internal pilot oil supply from channel P
End plate like ER2 with ports P/T	ER27		7 port size P/T
End plate like ER2 with option block	ER2F		F flange interface for option block
2 Configuration			
For all basic types	n/a	Standard	External depressurized drain line to Tank No external LS signal input
For ports: Z, LS	Z	Internal connection Z → T with check valve	Port Z closed
	E	External LS signal input / internal LS-unloading with plug screw	Port LS open
For basic type ER1 only	C	w/o external pilot oil supply for manual and hydraulic operations only	Port C closed
3 Options			
⚠ For basic type ER2... only	0	Standard w/o options	Ports PC and C closed
For ports: PC and C	P1	Port PC: Cut-off valve, mechanical with knurled screw	Port PC not usable
	P2	Port PC: Check valve	Port PC closed ex works
	C1	Port C: Cut-off valve, mechanical with knurled screw	Port C not usable
	C2	Port C: Check valve	Port C closed ex works
4 Option blocks			
⚠ For basic type ER2F only	E1C__	E1 Basic type	Pilot oil unloading Valve type C Normally open
Supply voltage DC	1 _	12 V	
	2 _	24 V	
Connector type	_ A	AMP - Junior Timer, 2-pin, axial	
	_ D	Deutsch - DT04, 2-pin, axial	
5 Reference to clear text	*	Special, customer-specific information/data in attached clear text	



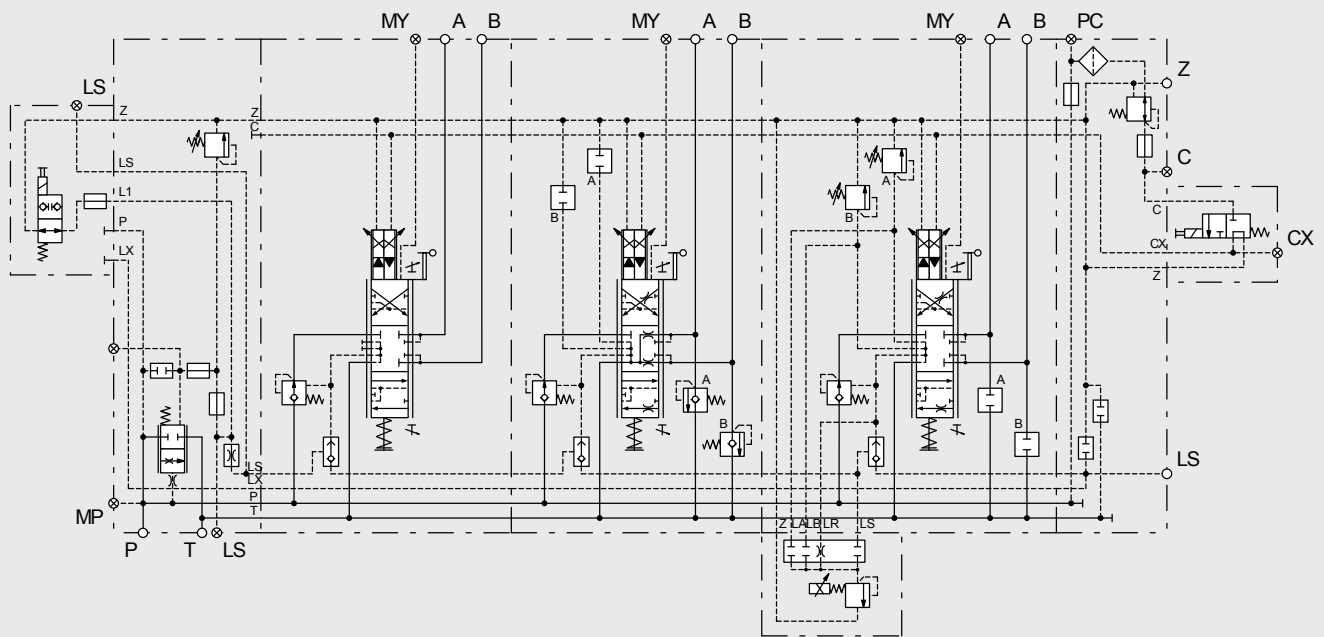
Ordering examples

Example for control block with Closed Center inlet plate and end plate with P/T ports (see also section "Dimensions")



General	LX-603/S0
Inlet plate	CL17/300/V1D
Working section 1	B6/MS100-100RG/E1YHS1D-2/C1E
Working section 2	LS6/CS160-160RN/P - 200/A - 250/EYHS1D-2/C1E
Working section 3	LS6F/CR135-040RB/250 - 250/280 - 280/HYHS-2/C1H/LWAV1D
End plate	ER27/C2

Example for control block with universal inlet plate and option blocks (see also section "Dimensions")



General	LX-603/S0
Inlet plate	UL17F/300/F/UW1V2A
Working section 1	B6/CS070-070RG/EYHS2A/C1E
Working section 2	LS6/CC160-055RN/P - P/350 - 350/EYHS2A/C1E
Working section 3	LS6F/CT150-150RY/250 - 250/P - P/EYHS2A/C1E/LWRP0A2A
End plate	ER2FE/0/E1C2A

Global Headquarters
HYDAC INTERNATIONAL
GMBH

Industriegebiet
D – 66280 Sulzbach/Saar
Germany

Tel.: +49 6897 509-01

Fax: +49 6897 509-577

Internet: www.hydac.com
Email: info@hydac.com

HYDAC North America Locations**USA**www.HYDACusa.com**HYDAC TECHNOLOGY CORPORATION****Filter Division**

2260 City Line Road
Bethlehem, PA 18017

+1.610.266.0100

HYDAC TECHNOLOGY CORPORATION**Accessory Division**

2204 Avenue C
Bethlehem, PA 18017

+1.610.266.0100

HYDAC TECHNOLOGY CORPORATION**Electronic Division
Process Filter Division****HYDAC CORPORATION
Accumulator Division**

90 Southland Drive
Bethlehem, PA 18017

+1.610.266.0100

HYDAC TECHNOLOGY CORPORATION**Filter System Division
Process Filter Division**

580 West Park Road
Leetsdale, PA 15056

+1.724.318.1100

HYDAC TECHNOLOGY CORPORATION**Hydraulic Division - Compact Hydraulics**

450 Windy Point Drive
Glendale Heights, IL 60139

+1.630.545.0800

HYDAC TECHNOLOGY CORPORATION**Mobile Hydraulic Division**

1660 Enterprise Parkway • Suite E
Wooster, OH 44691

+1.610.266.0100

HYDAC CYLINDERS LLC

540 Carson Road North
Birmingham, AL 35217

+1.205.520.1220

HYDAC TECHNOLOGY CORPORATION**Cooling System Division**

1051 Airlie Parkway
Denver, NC 28037

+1.610.266.0100

HYDAC TECHNOLOGY CORPORATION**Cooling System Division - Industrial Office**

445 Windy Point Drive
Glendale Heights, IL 60139

+1.630.545.0800

HYDAC TECHNOLOGY CORPORATION**HYDAC CORPORATION
Sales Office & Operations**

1718 Fry Road, Suite 100
Houston, TX 77084

+1.281.579.8100

HYDAC TECHNOLOGY CORPORATION**HYDAC CORPORATION
NE Sales Office**

1660 Enterprise Parkway • Suite E
Wooster, OH 44691

+1.610.266.0100

HYDAC TECHNOLOGY CORPORATION**HYDAC CORPORATION
SE Sales Office**

1051 Airlie Parkway
Denver, NC 28037

+1.610.266.0100

HYDAC TECHNOLOGY CORPORATION**HYDAC CORPORATION
NW Sales Office**

1201 NE 144th St. Bldg. B, Suite 111
Vancouver, WA 98685

+1.610.266.0100

Canadawww.HYDAC.ca**HYDAC CORPORATION**

14 Federal Road
Welland, Ontario, Canada L3B 3P2

+1.905.714.9322

HYDAC CORPORATION**Sales Office**

101 - 18207 114 AVE W
Edmonton, Alberta, Canada T5S 2P6

+1.780.484.4228

HYDAC CORPORATION**Sales Office**

Montreal, Québec, Canada J2M 1K9

+1.877.539.3388

Mexicowww.HYDACmex.com**HYDAC INTERNATIONAL SA de CV**

Calle Alfredo A Nobel No 35
Col Puente de Vigas
Tlalnepantla, Edo Mexico
CP 54090
Mexico

+011.52.55.4777.1262