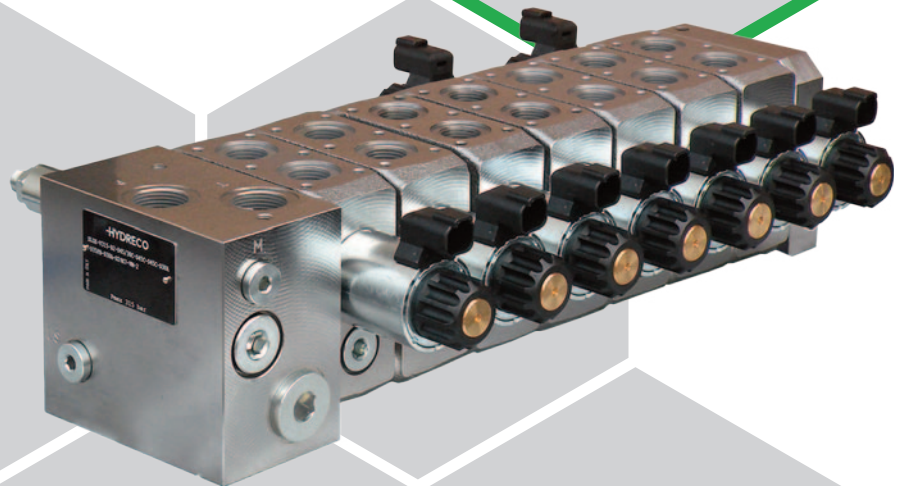




SLSE

SECTIONAL
PROPORTIONAL
DIRECTIONAL VALVE
FOR LOAD SENSING

315 bar 45 l/min



TECHNICAL CATALOGUE

INTRODUCTION

The SLSE is a sectional directional control valve with load sensing feature. It can be assembled with up to 8 working sections (proportional and solenoid valves together).

Each module is equipped with a meter-in compensator that keeps the flow constant, independently from load changes.

Sections with pressure compensator are not influenced by other operated functions, provided that sufficient pump capacity is available. To work correctly, the sum of the flows used at the same time must not overcome the 90% of the inlet flow.

A and B working ports are threaded 1/2" BSP. P and T ports of the inlet section are threaded 3/4" BSP. Versions with SAE ports are also available.

The manual lever override is available as option.

FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, or fluids HFDR type (phosphate esters). For the use of other kinds of fluid such as HFA, HFB, HFC, please consult our technical department.

Using fluids at temperatures higher than 80 °C (180 °F) causes the accelerated degradation of seals as well as the fluid physical and chemical properties.

OPERATING PARAMETERS

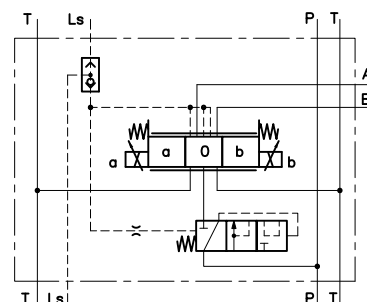
MAXIMUM OPERATING PRESSURE	P - A - B ports	315 bar	4570 psi
	T port	20 bar	290 psi
FLOW CAPACITY WITH Δp 10 BAR (145 PSI)	A - B ports	45 l/min	12 gpm
	P port	100 l/min	26 gpm
	T port	120 l/min	32 gpm

STEP RESPONSE	0 → 100%	50 ms
	100 → 0%	40 ms
HYSTERESIS	% of Q max	< 6%
REPEATABILITY	% of Q max	< ± 2%
VOLTAGE		12V DC 24V DC
COIL CONNECTION		DIN 43650 DT04-2P
WEIGHT	working section	4.5 kg 10 lbs

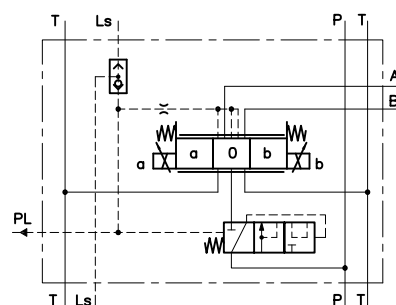
RANGE TEMPERATURES:	ambient	-20 to +60 °C	-4 to +140 °F
	fluid	-20 to +82 °C	-4 to +180 °F
FLUID VISCOSITY	range	10 - 400 cSt	60 - 1900 SUS
	recommended	25 cSt	120 SUS
FLUID CONTAMINATION		ISO 4406:1999 class 18/16/13	

HYDRAULIC SYMBOLS OF WORKING SECTIONS

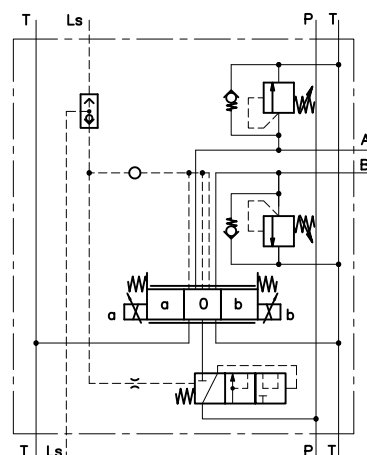
SLSE



SLSE*-*-PL

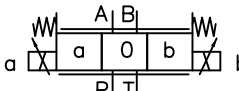
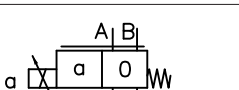
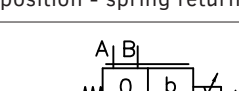


SLSE*-*-A***B***



SLSE - ■■■■ - ■■■■ - ■■■■ - 2 ————— design mark

PORTS SIZE	
B2	1/2" BSPP
S2	3/4"-16 UNF

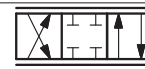
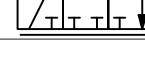
FUNCTION	
D	 double solenoid 3 position - spring centred
A	 single solenoid at side A 2 position - spring return
B	 single solenoid at side B 2 position - spring return

NOMINAL FLOW with Δp P-T 4 bar (58 psi)	
05	5 l/min (1.3 gpm)
15	15 l/min (4 gpm)
30	30 l/min (7.9 gpm)
15-10	15/10 l/min asymmetrical
30-20	30/20 l/min asymmetrical

with Δp P-T 8 bar (116 psi)	
09	9 l/min (2.4 gpm)
25	25 l/min (6.5 gpm)
45	45 l/min (12 gpm)
25-15	25/15 l/min asymmetrical
45-30	45/30 l/min asymmetrical

SEAL	
V	Viton
MANUAL OVERRIDE	
M	built-in with the tube, pin (standard) (*)
B	built-in with the tube, boot protected
K	knob, turning
L	hand lever
VOLTAGE	
D12	12 V DC
D24	24 V DC
COILS	
K1	DIN 43650
K2	AMP Junior
K7	DT04-2P 'deutsch'
WK1	DIN 43650 zinc-nickel plated
WK7	DT04-2P 'deutsch' zinc-nickel plated
ADDITIONAL FEATURES omit if not required	
PRESSURE LIMITATION	
PL	pressure signal (AB) for remote valve
AUXILIARY VALVE side A	
A..	anti-cavitation + antishock
AUXILIARY VALVE side B	
B..	anti-cavitation + antishock

A.. and B.. add the desired set pressure value to the letter:
available pressures: 100, 150, 190, 235, 280, 300, 350.

SPOOLS			
	SYMBOL	DESCRIPTION	APPLICATION
C		closed centre	proportional meter in / meter out
A		open centre	
PA		line A	proportional single flow function type D, flows 35 and 40 only
PB		line B	

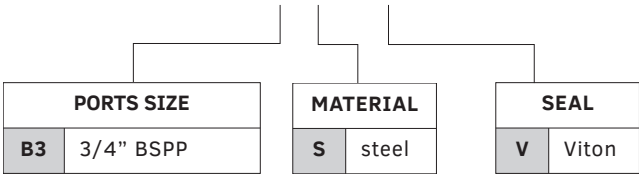
(*) This manual override is not available together with 'WK*' coil types.

CODE EXAMPLES:

SLSE-A25C-D12K7-VM-2
SLSE-D25C-A235B235-D12K7-VM-2
SLSE-D25C-PL-D12WK7-VB-2

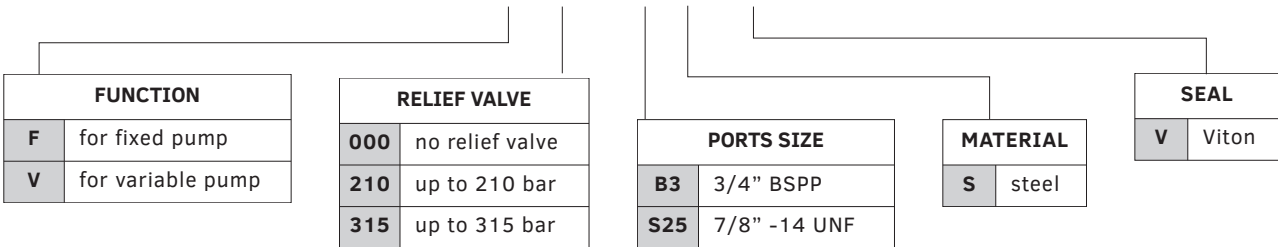
BASIC INLET SECTIONS

SLSX -  S-V-1 ————— design mark



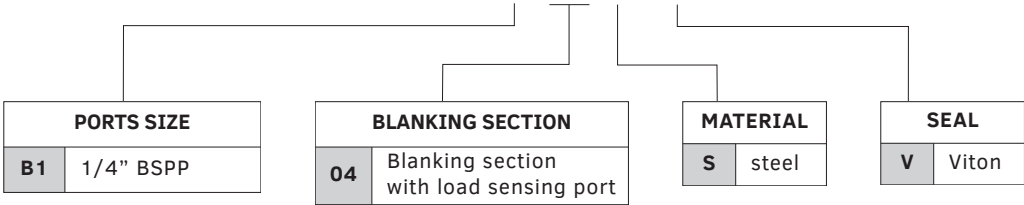
INLET SECTIONS WITH COMPENSATOR

SLSX-- S-V-3 ————— design mark



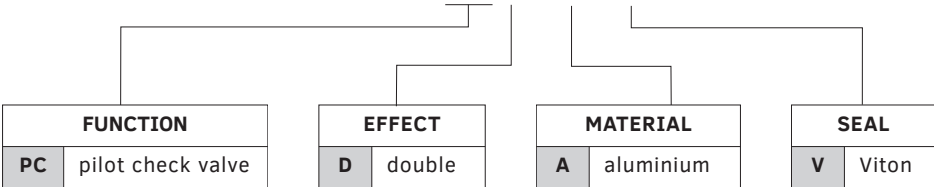
OUTLET SECTION

SLSX -  04S - V - 1 ————— design mark



FLANGEABLE TOP MODULE

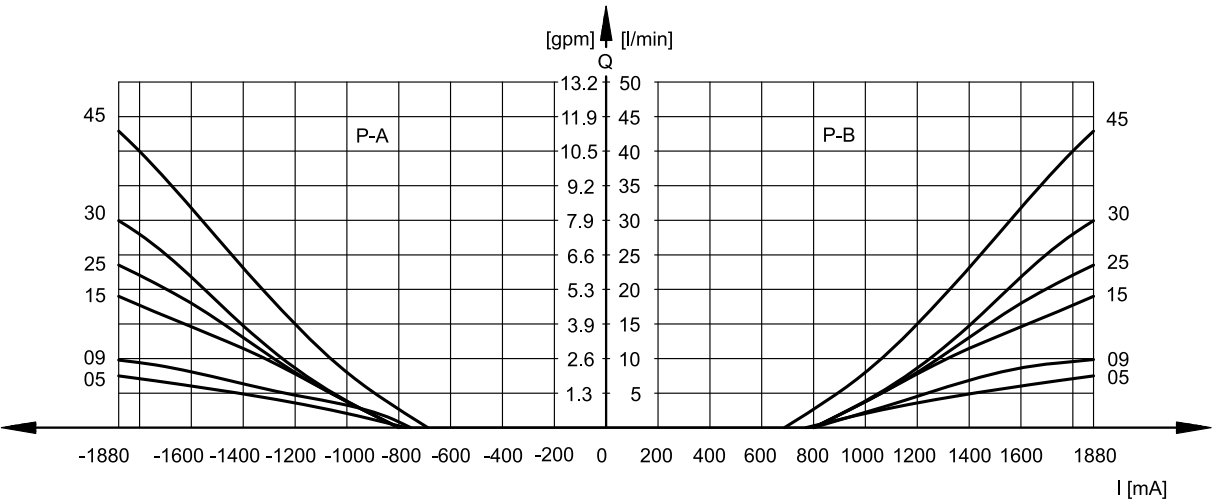
SLSZ - PCD - A - V - 1 ————— design mark



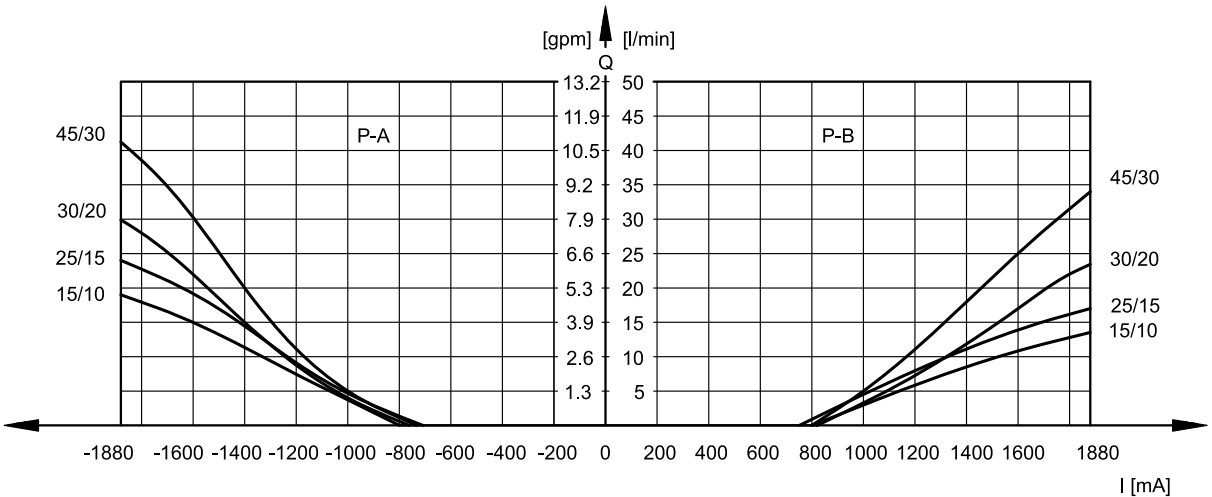
Aluminium
p max = 230 bar
Q max = 30 l/min

Typical constant flowrate obtained through the embedded compensator, and current with 12V solenoid type (for D24 version the maximum current is 860 mA).

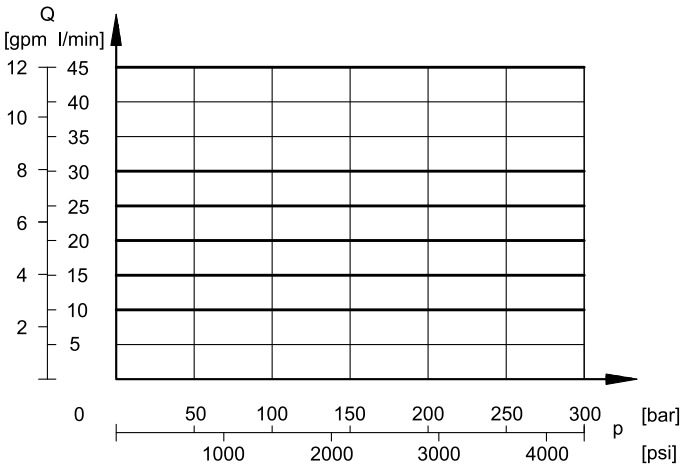
PRESSURE DROPS Δp -Q - SYMMETRICAL SPOOLS TYPE C, A



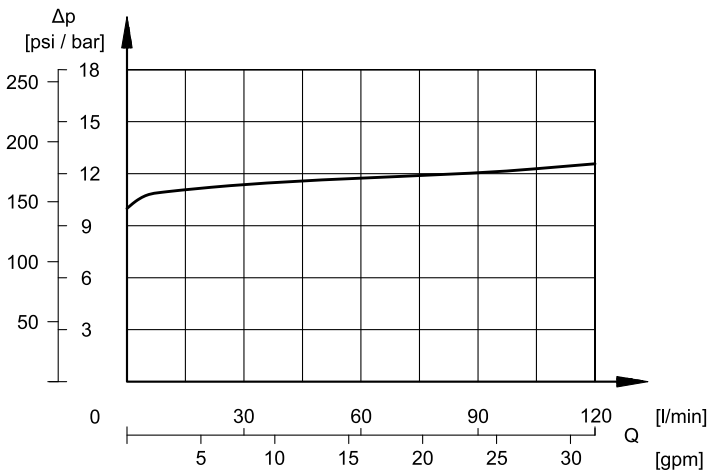
PRESSURE DROPS Δp -Q - ASYMMETRICAL SPOOLS TYPE C, A



FLOWRATE BY PRESSURE



PRESSURE DROPS Δp -Q OF INLET SECTIONS TYPE F, V



The proportional solenoid consists of tube and coil.
The coil is fit on the tube and fastened to it by a ring retainer.

The coils can be indexed to any position allowing for convenient location of the connector.

DUTY CYCLE	100%
ELECTROMAGNETIC COMPATIBILITY (EMC)	according to European directive 2014/30/EU
PROTECTION CLASS FOR INSULATION	copper wire class H (180 °C)
	coil class F (155 °C)

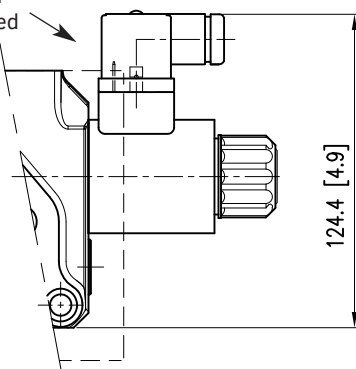
	Nominal voltage [V]	Resistance at 20 °C [Ω]	Current at 20 °C. [A]	Coil codes for spare parts				
				K1	K2	K7	WK1	WK7
D12	12	4.4	1.88	1903080	1903100	1902940	3984000001	3984000101
D24	24	18.6	0.86	1903081	1903101	1902941	3984000002	3984000102

The declared IP ratings are intended according to EMC 2014/30/EU, only for both valve and connectors of equivalent IP degree, installed properly.

WK1 and WK7 coils reach a better IP rating than standard coils thanks to the zinc-nickel plating and a number of design precautions. The valves with these coils have a salt spray resistance up to 600 hours (test performed according to UNI EN ISO 9227 and assessment test performed according to UNI EN ISO 10289).

K1

DIN connector
always included



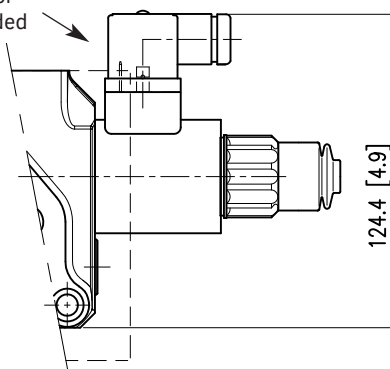
DIN 43650 (EN 175301-803)

IP degree of electrical connection: IP65

IP degree of whole valve: IP 65

WK1

DIN connector
always included



DIN 43650 (EN 175301-803)

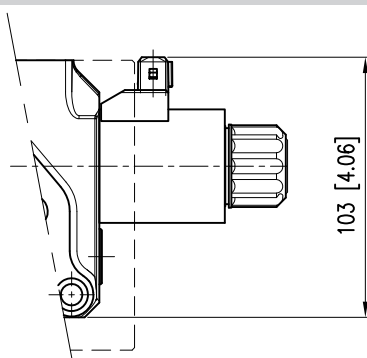
Zinc-nickel plated coil.

IP degree of electrical connection: IP66

IP degree of whole valve: IP66

The pin for manual override is boot-protected (code B).

K2

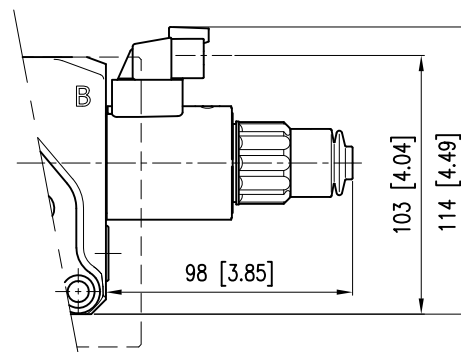


AMP Junior

IP degree of electrical connection: IP65/IP67

IP degree of whole valve: IP 65

WK7



DEUTSCH DT04 MALE

Zinc-nickel plated coil.

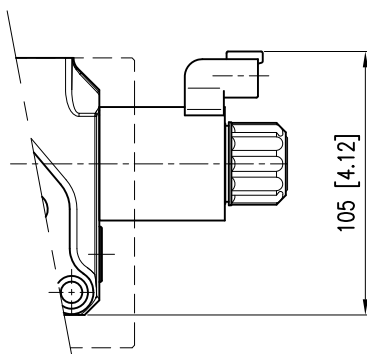
IP degree of electrical connection: IP66/IP68/IP69

IP degree of whole valve: IP66/IP68/IP69

IP degree according to ISO 20653: IP69K

The pin for manual override is boot-protected (code B).

K7

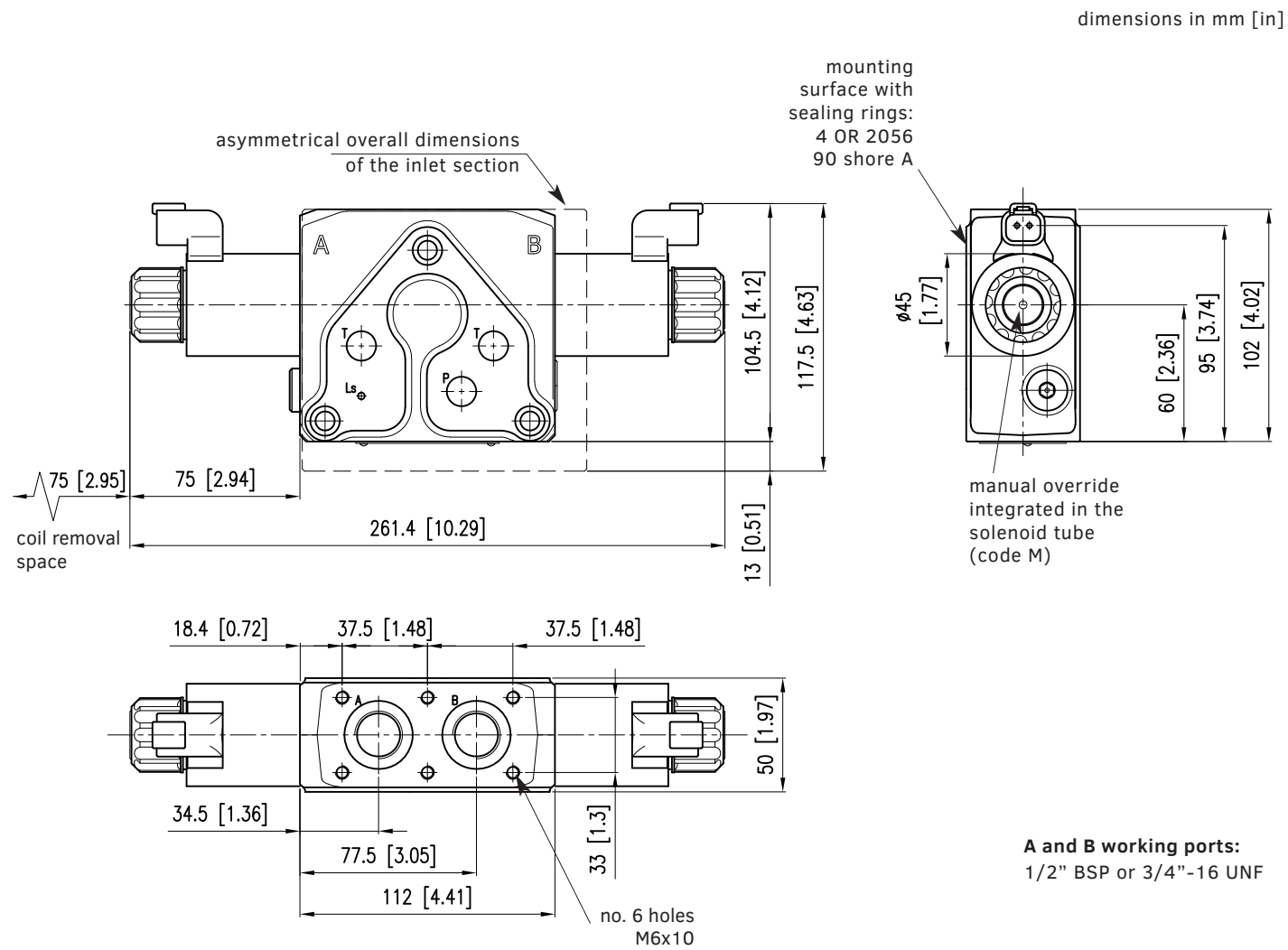


DEUTSCH DT04 MALE

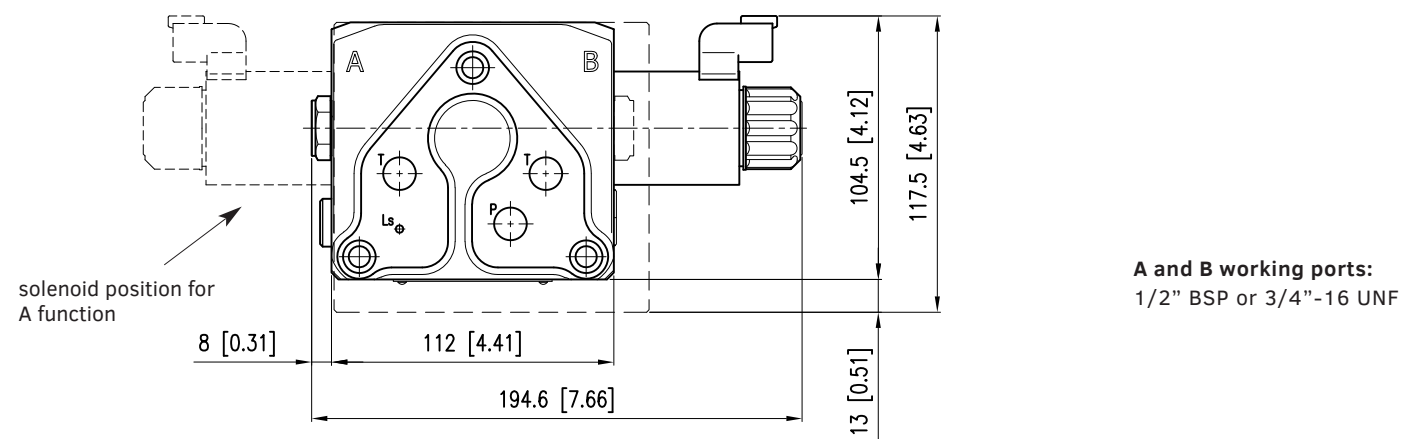
IP degree of electrical connection: IP65/IP67

IP degree of whole valve: IP 65

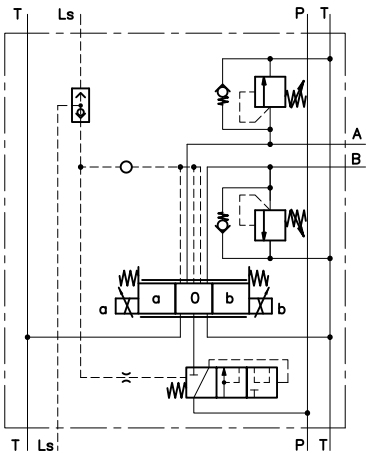
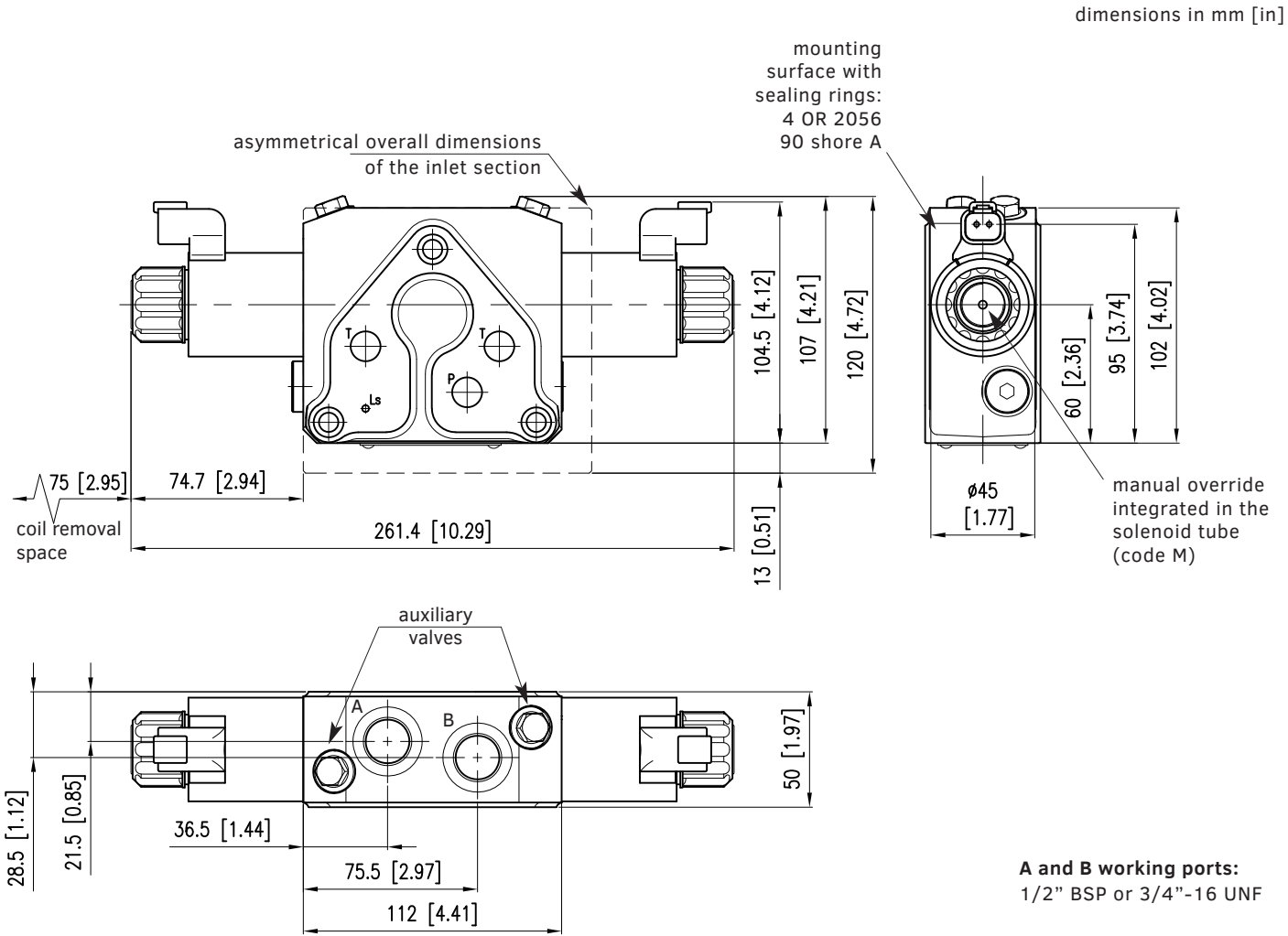
SLSE WORKING SECTION - DOUBLE SOLENOID (K7 COIL)



SLSE WORKING SECTION - SINGLE SOLENOID SIDE B (K7 COIL)

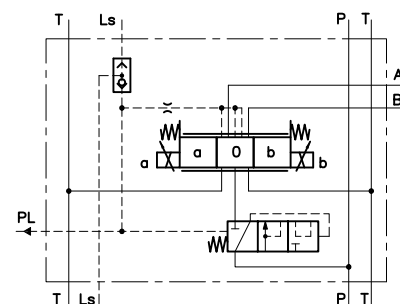
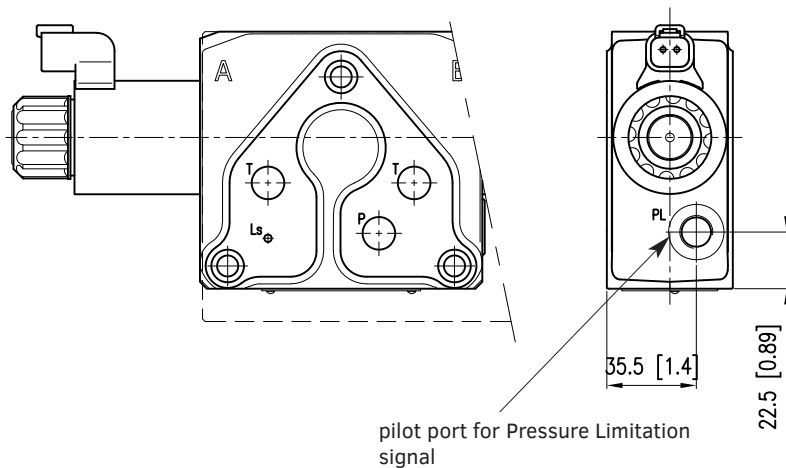


SLSE WORKING SECTION - WITH AUXILIARY VALVES (K7 COIL)



SLSE WORKING SECTION - WITH PILOT PORT FOR REMOTE PRESSURE LIMITATION (K7 COIL)

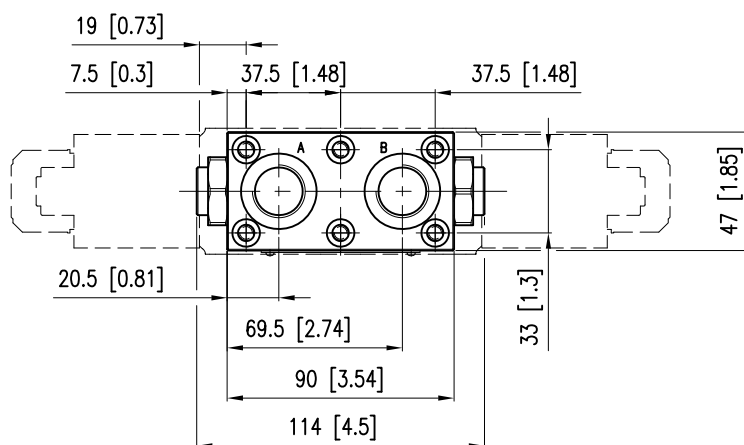
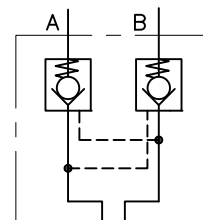
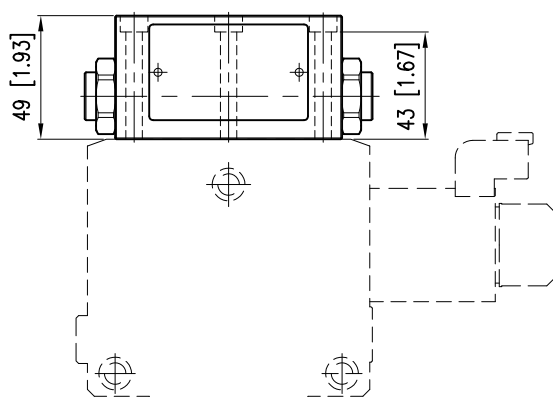
This special configuration has to be intended for use with a remote pressure control valve. The pilot signal coming from this port is from both the working ports, A and B.



A and B working ports:
1/2" BSP or 3/4"-16 UNF

PL port:
1/4" BSP or
9/16-18 UNF -UN-2B

FLANGEABLE TOP ELEMENT SLSZ - PCD - A - V - 1



A and B working ports:
1/2" BSP

cracking pressure: 3 bar
fixing screws: M6x50

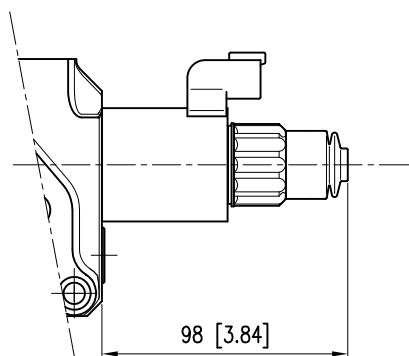
Aluminium
p max = 230 bar
Q max = 30 l/min

The standard valve has override pins integrated in the tube (code M). The operation of this control must be executed with a suitable tool, carefully so as not to damage the sliding surface.

Further manual overrides are available, entering the proper code in the model number.

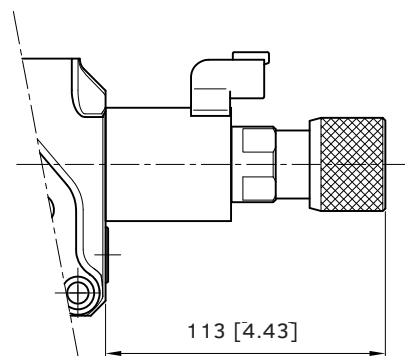
OVERRIDE PIN INTEGRATED IN THE TUBE, BOOT PROTECTED

Code B



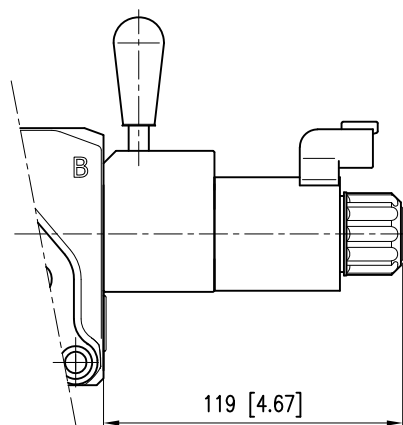
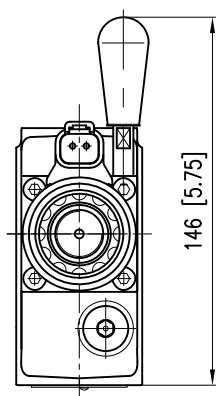
KNOB, TURNING

Code K



HAND LEVER:

Code L

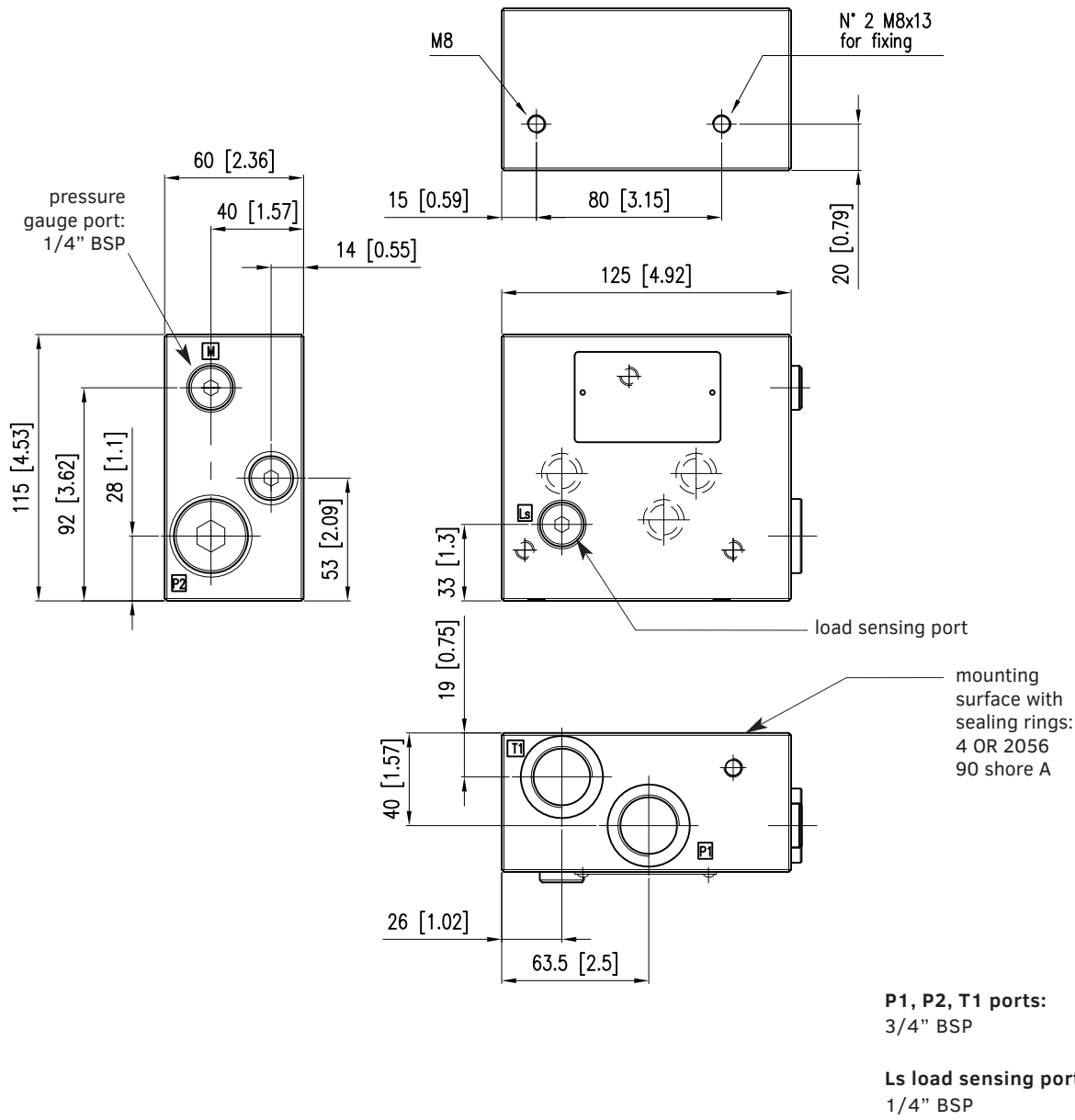


Valves with 'WK' coils are equipped with the boot for solenoid tube protection.

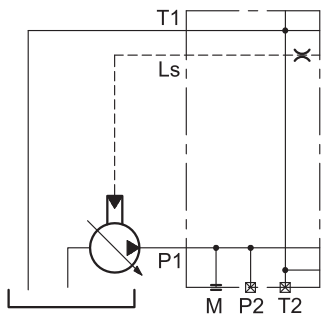
The lever device is placed on the B side.

BASIC INLET SECTION SLSX - B3S - V - 1

dimensions in mm [in]

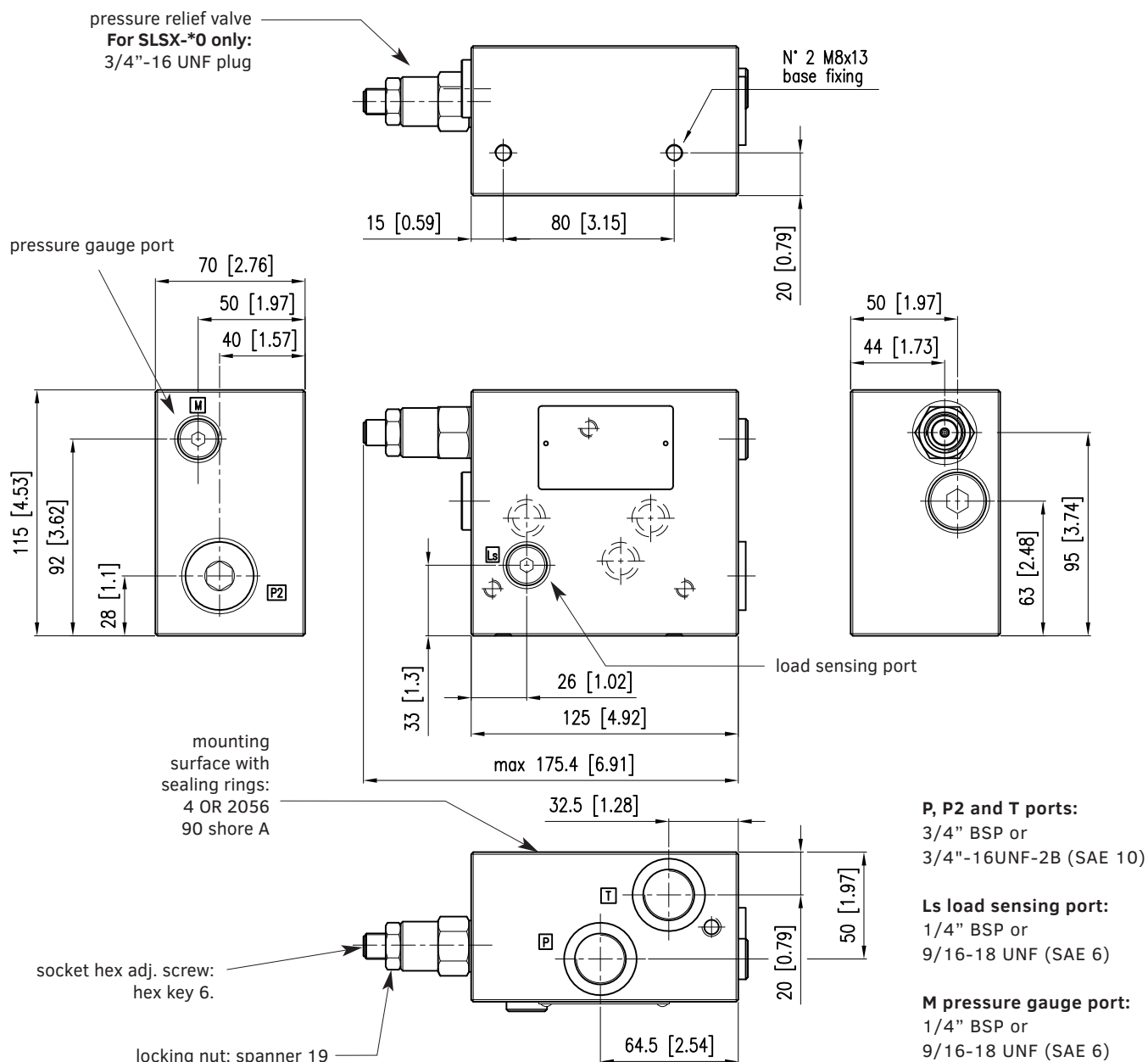


SLSX-B3S-V-1

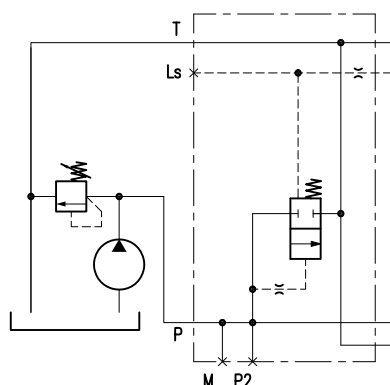


INLET SECTION WITH COMPENSATOR SLSX -****-B3S - V - 3

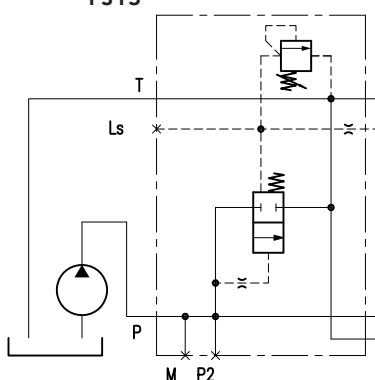
dimensions in mm [in]



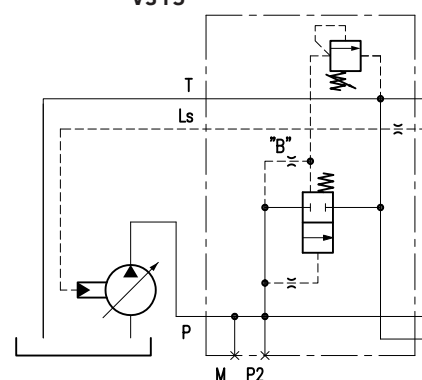
SLSX-F0



SLSX-F210
F315

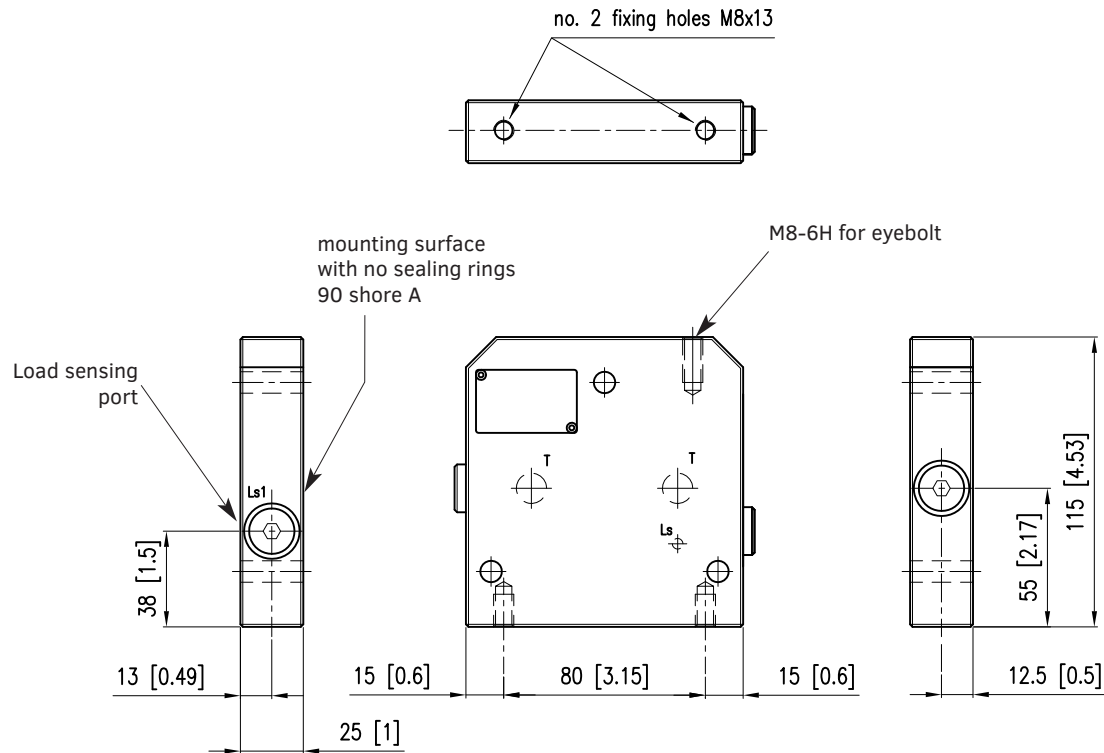


SLSX-V210
V315



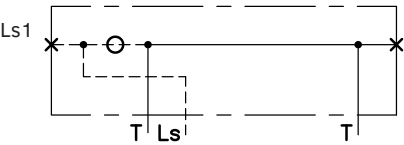
OUTLET SECTION SLSX - B1- 04S - V - 1

dimensions in mm [in]

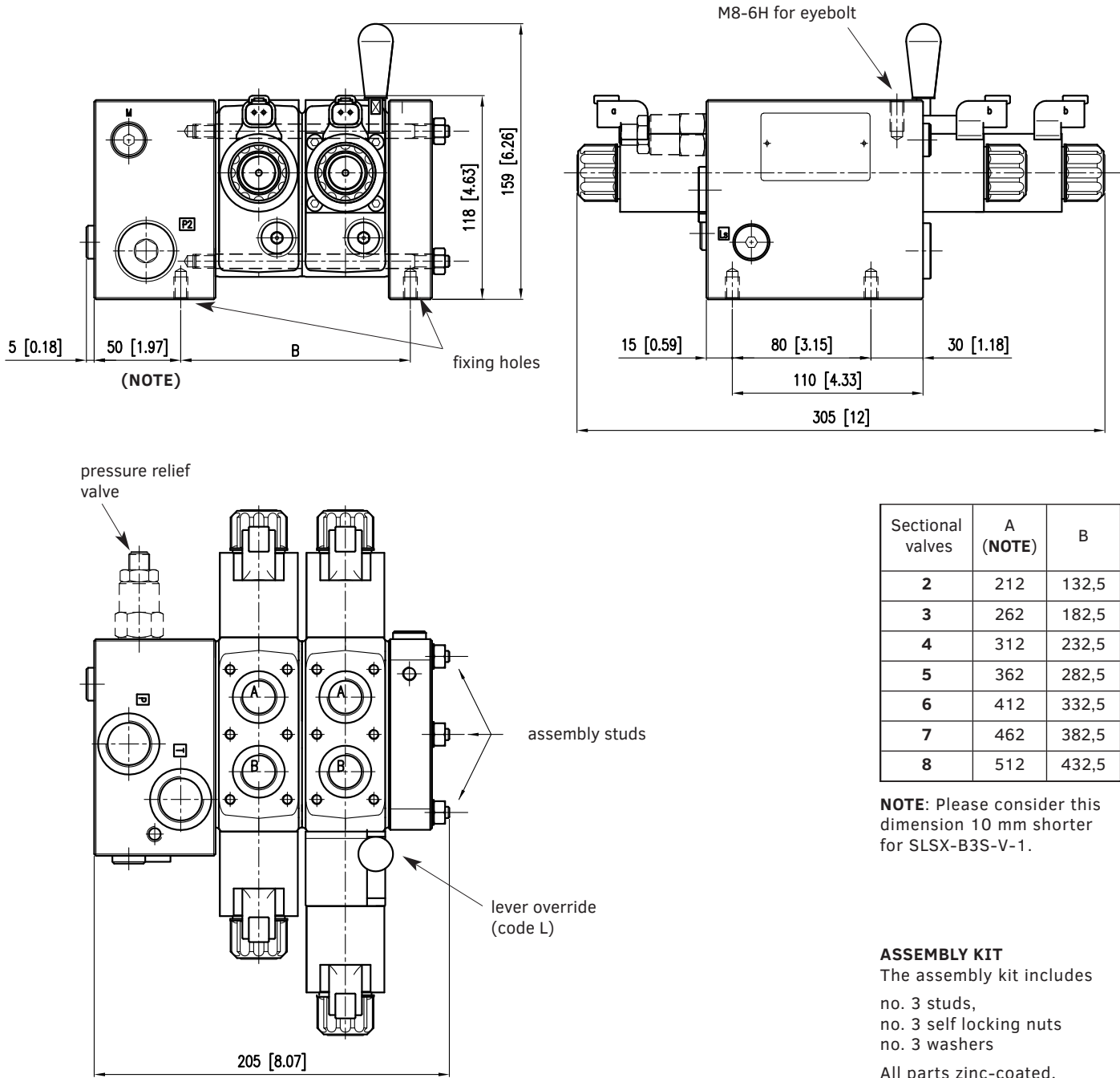


Ls load sensing port:
1/4" BSP

SLSX-B1-04S



dimensions in mm [in]



Sectional valves	A (NOTE)	B
2	212	132,5
3	262	182,5
4	312	232,5
5	362	282,5
6	412	332,5
7	462	382,5
8	512	432,5

NOTE: Please consider this dimension 10 mm shorter for SLSX-B3S-V-1.

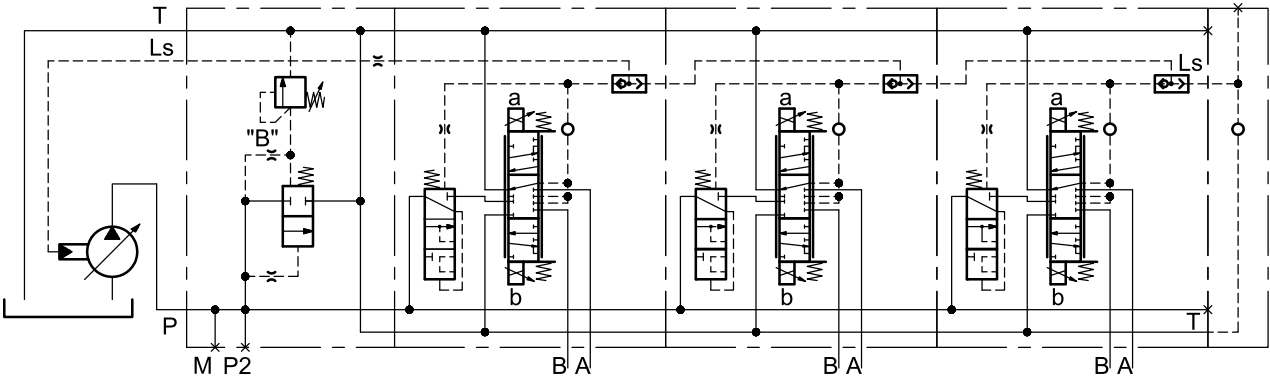
ASSEMBLY KIT
The assembly kit includes
no. 3 studs,
no. 3 self locking nuts
no. 3 washers
All parts zinc-coated.
Please use these codes to order the kit:

Sectional valves	Code
2	3404150010
3	3404150011
4	3404150012
5	3404150013
6	3404150014
7	3404150015
8	3404150016

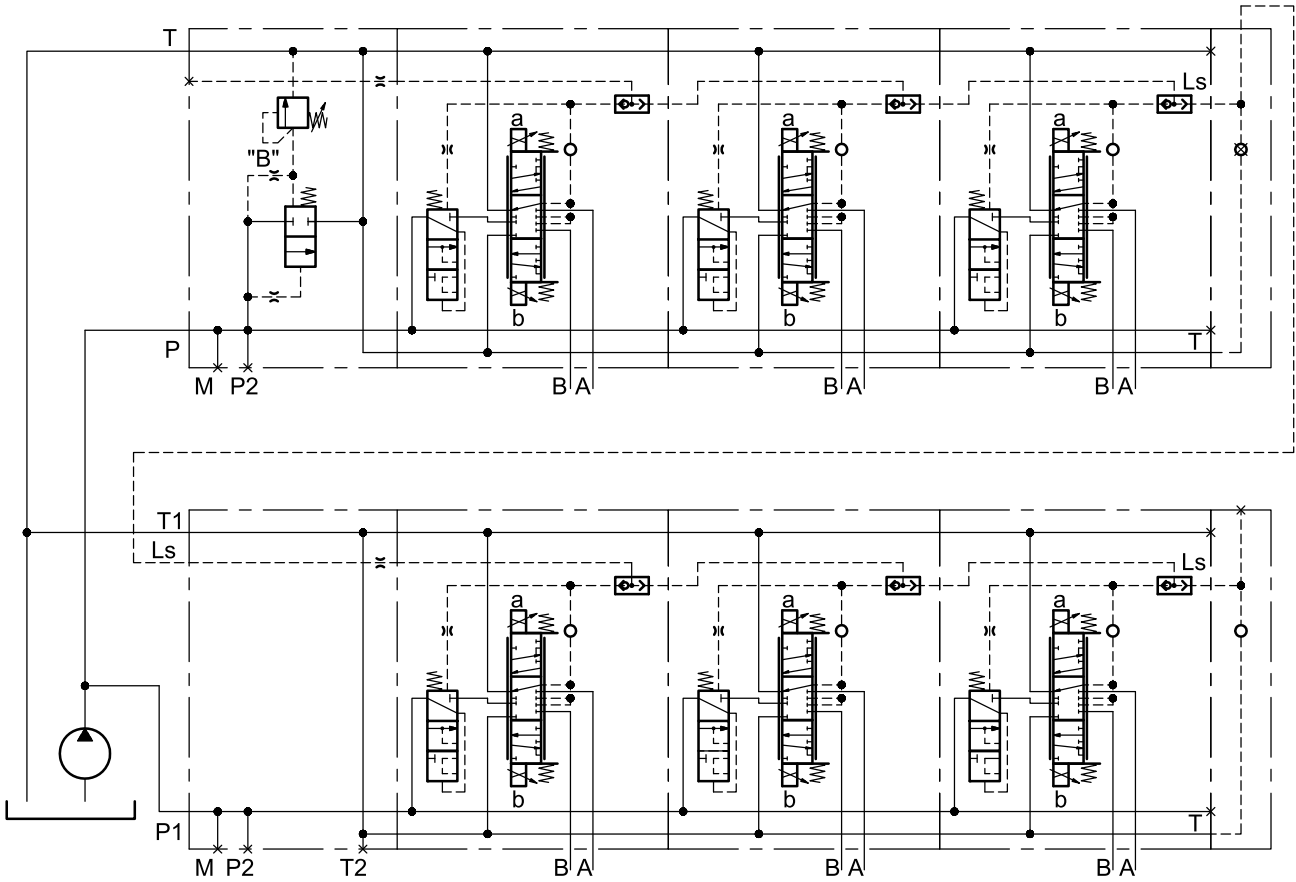
Tightening torque: 25 Nm

CIRCUIT EXAMPLES

SLSE sectional assembly with pressure relief valve for variable displacement pumps.



Two SLSE sectional assemblies linked together by parallel connection for the pump and by serial connection for LS port.



IP DEGREE TIPS

The technical reference standard for IP degree is IEC 60529, which classifies and rates the degree of protection provided by equipments and electrical enclosures against intrusions.

The first digit (6) concerns the protection from solid particles (body parts to dust).

The second digit of the IP rating concerns the liquid ingress protection. It indicates three different types of atmospheric agents from which protection is provided:

Values from 1 to 6 → water jets.

Values 7 and 8 → immersion.

Value 9 → high pressure and high temperature water jets.

This means that IP66 covers all the lower steps, rating IP68 covers IP67 but not IP66 and lower. Instead, IP69 does not cover any of them. Whether a device meets two types of protection requirements it must be indicated by listing both separated by a slash. (E.g. a marking of an equipment covered both by temporary immersion and water jets is IP66/IP68).

INSTALLATION

These valves can be installed in any position without impairing correct operation.

Ensure that there is no air in the hydraulic circuit.

Supported by a worldwide network



CONTACT INFORMATION

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AMERICAS

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APAC

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