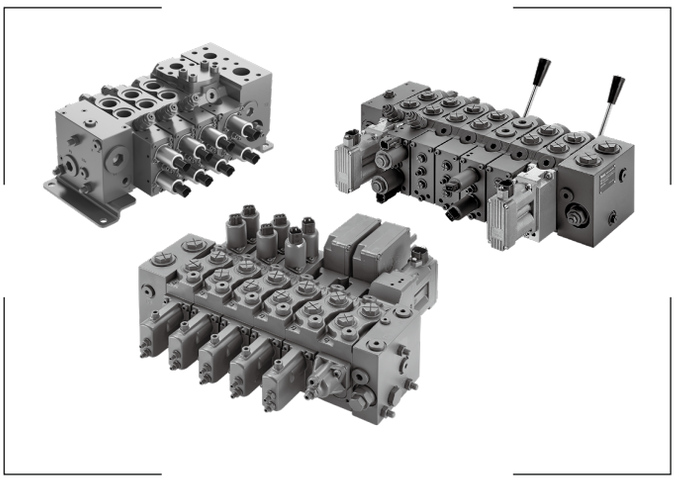
LSPV Series

LOAD SENSING PROPORTIONAL CONTROL VALVE



• Nominal Sizes	12	15	20	25
• Rated pressure(bar) (pump side)	350	350	350	350
(actuator side)	420	420	420	350
• Rated Flow (L/min)	120	200	400	500

Index

Features

1. System
Load pressure independent flow distribution
- Closed center, for load sensing variable pump system
- Open center, for fixed displacement pump system
·Priority function
·Various pilot control methods

2. Structure
·Sandwich plate of design
·Max. 15 middle section (LSPV12)
Max. 9 middle section (LSPV15)
Max. 9 middle section(LSPV20)
Max. 8 middle section(LSPV25)

3. Pressure
·Primary and secondary pressure relief valve
·LS relief valve: With LS pressure relief valve in each section

4. Flow
·Load pressure compensated
·Quick response
·Low hysteresis

5. Applications


Aerial work platform


Forestry machine


Drilling rigs


Mining truck


Concrete pump truck

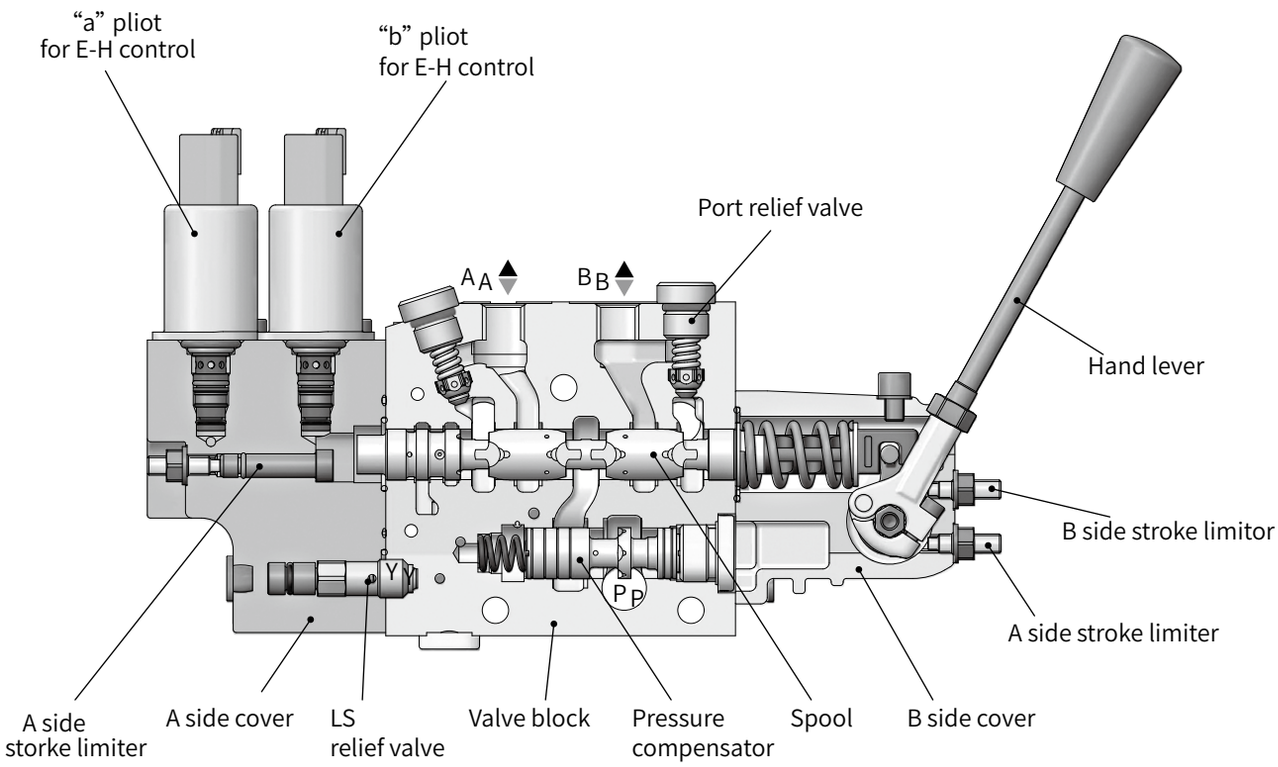

Crane


Telehandler

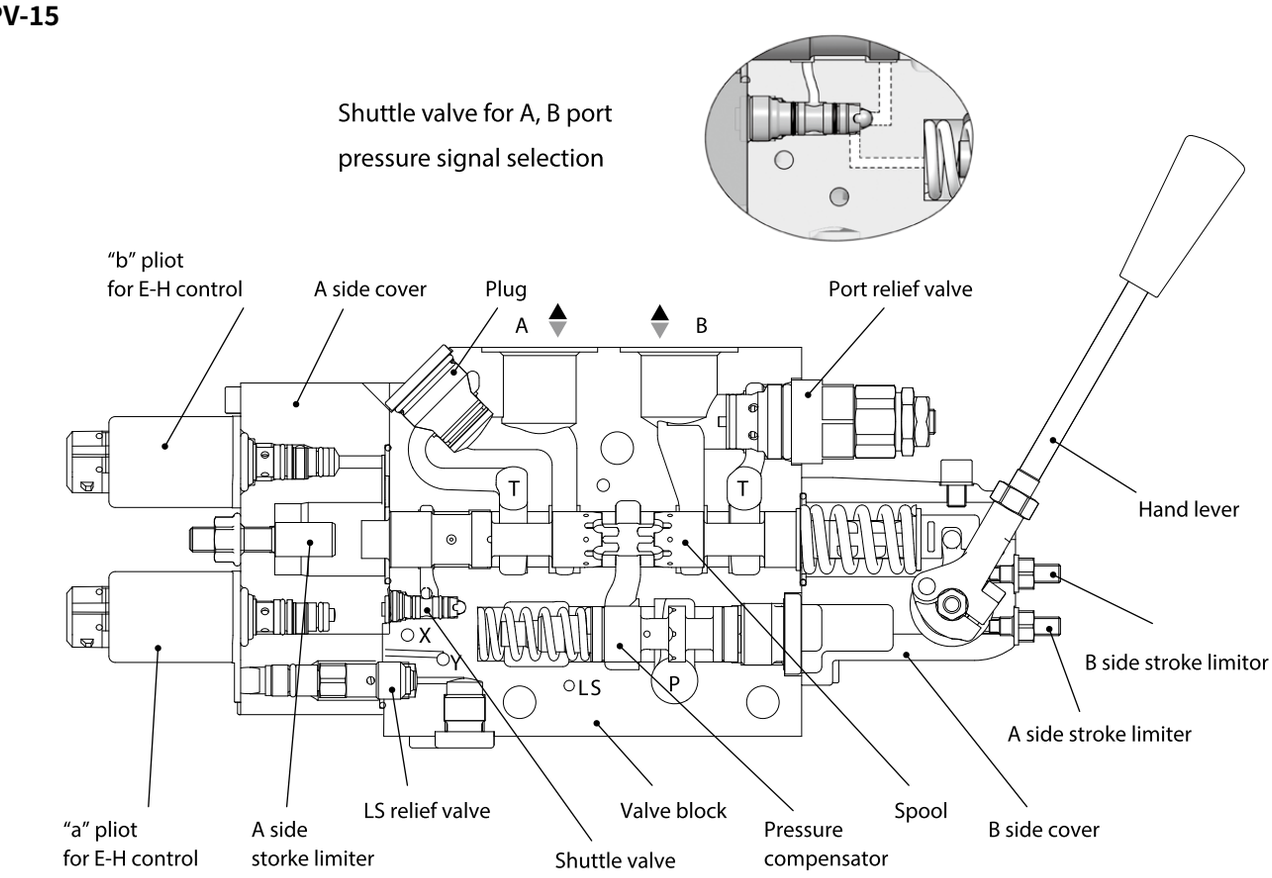

Stone Crusher

Section view

LSPV-12

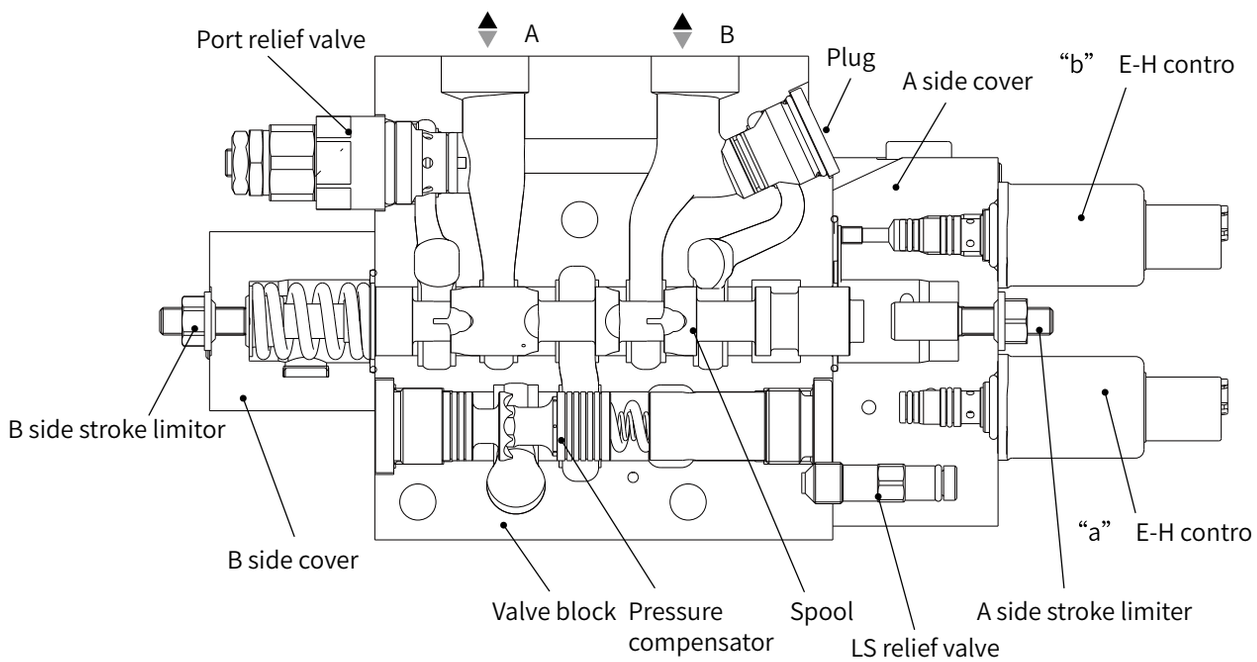


LSPV-15



Section view

LSPV-20



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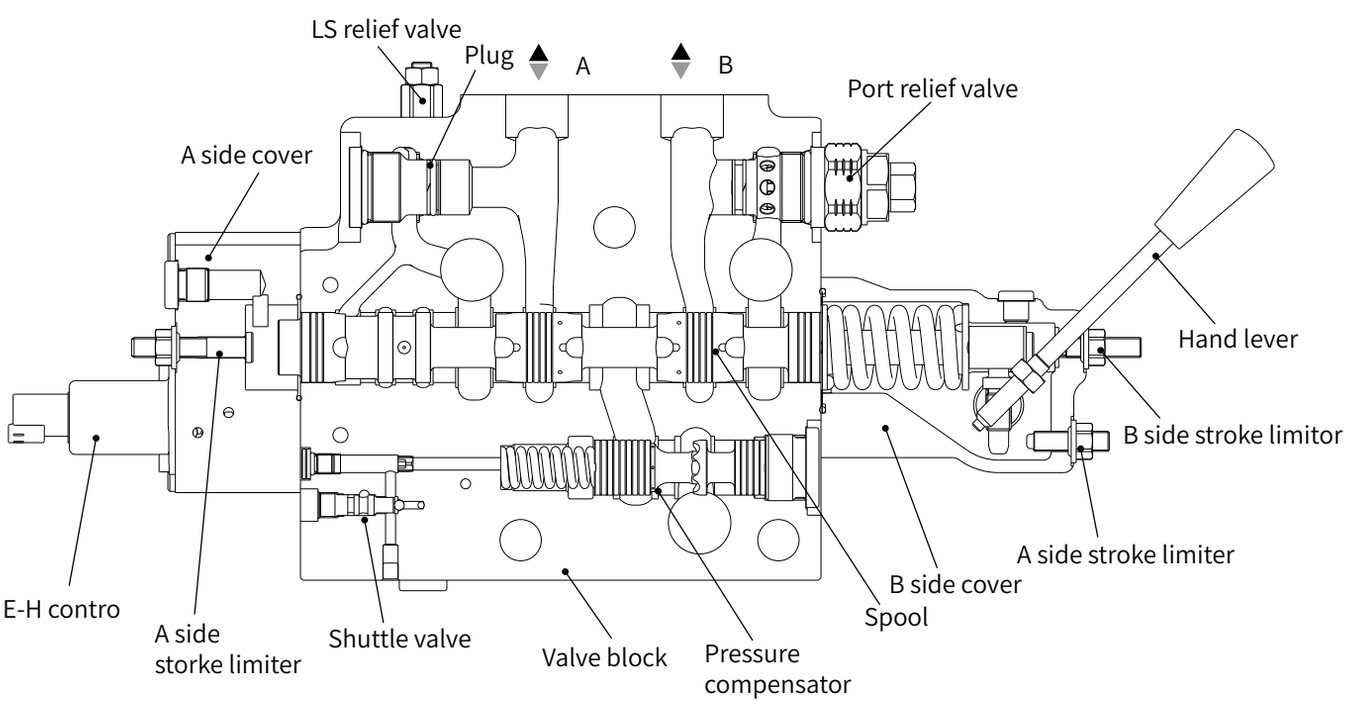


Technical data

General

Nominal Size			12	15	20	25
Structure	Stackable, proportional, load sensing, pre-compensated					
Type of connection	ISO BSP thread, metric thread,ISO 6162 flange interface (Please contact our company for other connection methods)					
Mass (kg)	Inlet element	Open center	5.53/5.29	9.8	17	26.2
		Closed center	4.34	6.5	13.5	25.3
	Middle section	Hydraulic operation	4.25	5.4	/	61.8
		Normal E-H operation	4.65	6.5	12.5	137.5
		Super E-H operation	4.95	7.5	13.5	148.8
	End element		3.09	4.5	8	14.5

Hydraulic

Nominal Size		12	15	20	25
Rated flow Q(L/min)	With load-holding function, without pressure compensator.	140	200	400	500
	Without load-holding function, with pressure compensator.	120	190		400
	With load-holding function, with pressure compensator.	120	150		400
Max. operating pressure at port (bar)	P	350			
	LS	330			
	A/B	420			350
	T	30			
	Y	Less than 2			
Pilot pressure (bar)	a/b	Less than 35			
	X	30			
Pilot pressure control range	For Hydraulic control	7~22bar(102~319psi)	8.5 ~22.5 bar(123 ~ 330 psi)		
Required control Δp at the control block		Compensator-S; C; T: 15bar (218psi) Recommended variable pump set pressure difference: 18~20bar (261~290psi)	Compensator-S; C: 18bar (260psi) Compensator-T: 25bar (360psi)	pressure difference: 25bar (261~290psi)	Compensator-T: 25bar (360psi)
Recommended hydraulic pilot control units		See H-2TH6 characteristic curve 97			
LS pressure relief function (adjustment ranges)		50 ~ 149 bar (725 ~ 2160psi); 150 ~ 350bar (2175 ~ 4800psi))		50 ~ 350 bar	

Electric

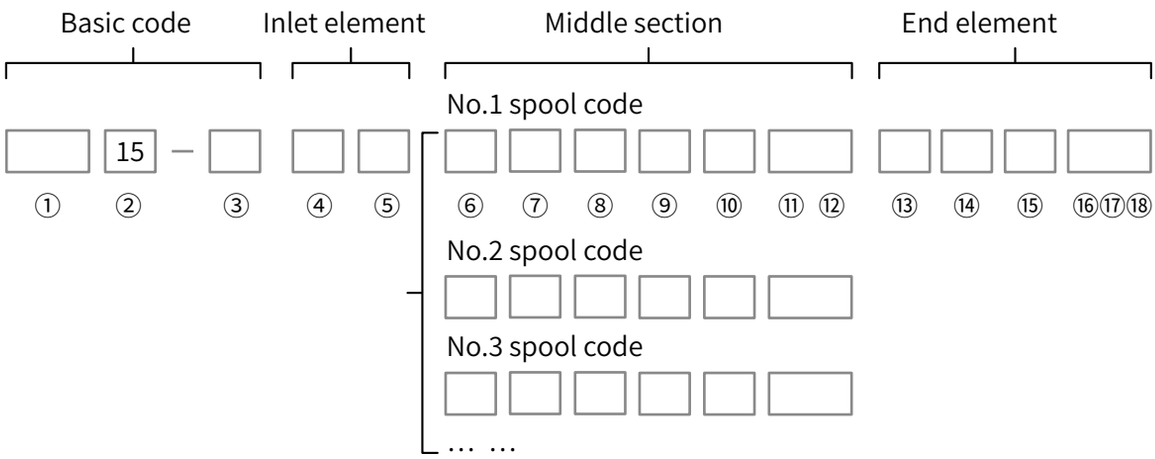
Normal E-H operation	·Electrical on/off valve: Installed on the 'A'side cover ·Connection: Deutsch DT04-2P or AMP Junior-Timer ·Protection class: IP67 ·Supply voltage: 12 or 24VDC	·Electrical proportional valve: Installed on the 'A' side cover ·Dither frequency required: 150Hz ·Hysteresis: Less than 3%(at valid range) ·Connection: Deutsch DT04-2P or AMP Junior-Timer ·Protection class: IP67 ·Reducing pressure range: 0~30 bar ·Control current@24VDC: 0~800mA, @12VDC: 0~1500mA

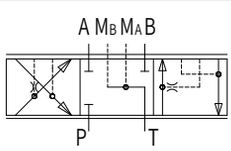
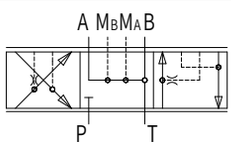
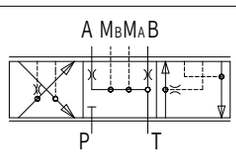
Using environment

Hydraulic fluid	Mineral oil (HL, HLP) according to DIN 51524. Other hydraulic fluids, such as HEES (Synthetic Ester) according to VDMA 24568.
Hydraulic fluid temperature range(°C)	-20 to + 80
Viscosity range v (mm^2/s)	10 to 380
Maximum permissible degree of contamination of the pressure fluid cleanliness class to ISO 4406 (C)	Class 20/18/15, we therefore recommend a filter with a minimum retention rate of β10 ⩾ 75

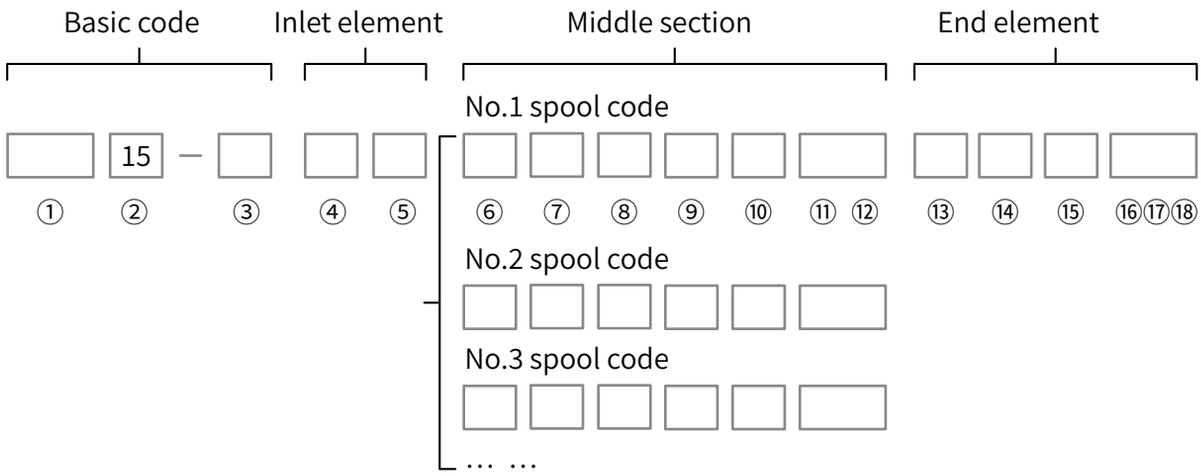
(For applications outside above mentioned parameters, please consult our sales dept.)

Ordering code



Basic code	① Structure	LSPV	Stackable, proportional control, load sensing, pressure compensated
	② Nominal size		12/15/20/25
	③ Number of blocks	..	01~09
Inlet element	④ Circuit types	J	Closed center, for variable piston pump system
		p	Open center, for fixed displacement pump system
	⑤ Main relief valve	Q	Without main pressure relief valve(not for open center)
		…	With main pressure relief valve,(pressure in bar, 3-digits)
Middle section	⑥ Spool function	S	With load-holding function, with pressure compensator
		T	Without load-holding function, with pressure compensator
		C	With load-holding function, without pressure compensator
	⑦ LS relief valve	QMQ	With LS pressure relief plug, with LS measuring port
		...M...	With LS pressure relief valve, with LS measuring port (pressure in bar, 3-digits)
		...MQ	Only with A port LS pressure relief valve, with LS measuring port (pressure in bar, 3-digits)
		QM...	Only with B port LS pressure relief valve, with LS measuring port (pressure in bar, 3-digits)
		...R...	With remote LS pressure relief valve, decreasing characteristic curve, with LS measuring port (pressure in bar, 3-digits)
		...L...	With remote LS pressure relief valve, increasing characteristic curve, with LS measuring port (pressure in bar, 3-digits)
	⑧ Spool symbol	E	 =E
		J	 =J
		Q	 =Q
	⑨ A/B flow	...—...	Flow in l/min, 3-digits, e.g. 50-50

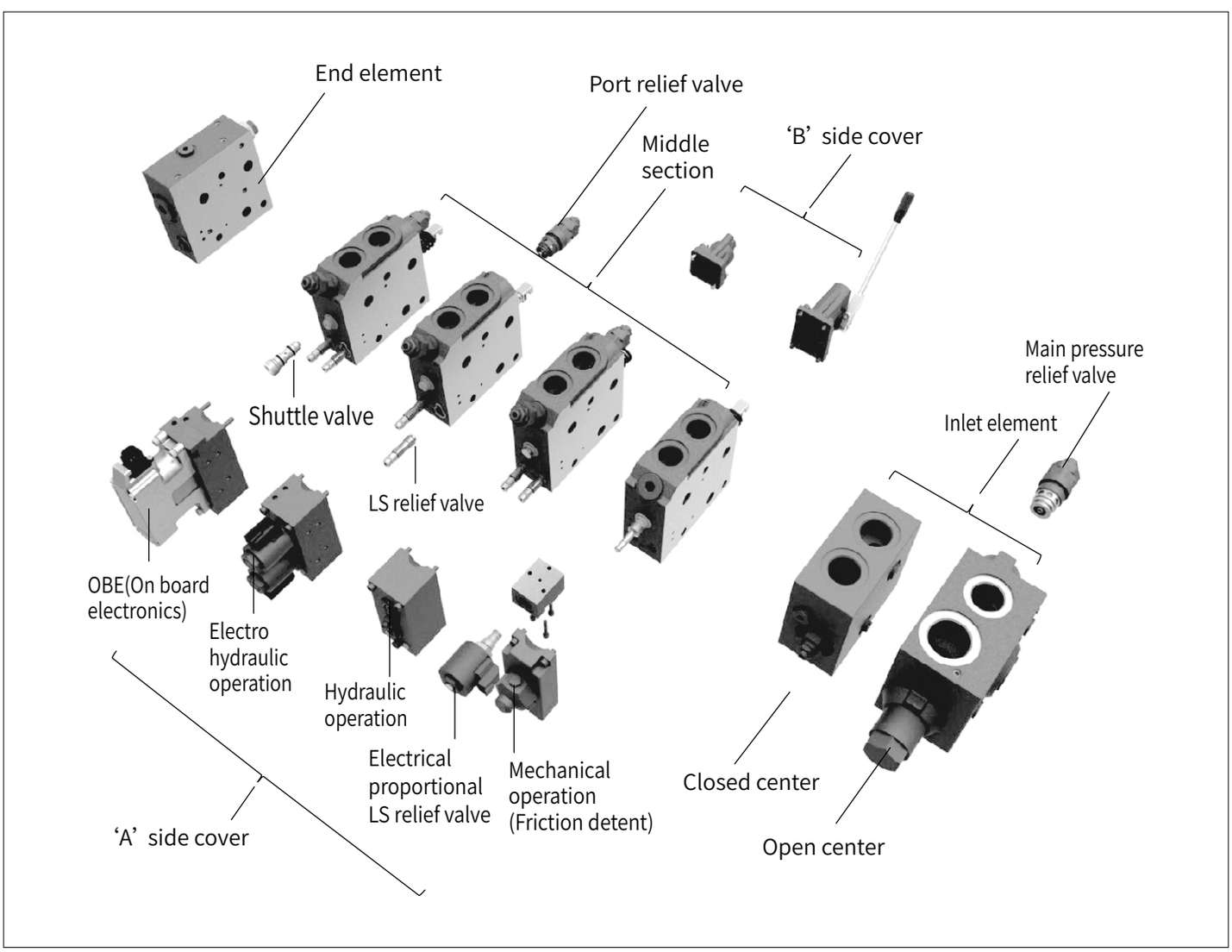
Ordering code



Middle section	⑩ 'A' side cover	M0	Mechanical, standard spring centered (M1: Mechanical, friction detent)	
		H	Hydraulic	
		W21	E-H operation, proportional control, 24V	
		W23	E-H operation, proportional control, 12V	
		W41	E-H operation, on/off control, 24V	
		W43	E-H operation, on/off control, 12V	
		OBE	Super high performance E-H control	
	⑪ 'B' side cover	Blank	Standard cover	
		1(K/L)	Hand lever	
			Hand lever position	
			K	L —**
			Hand lever position 60°	Others (L—45°)
		2	Without hand lever (can be added if any demand)	
	⑫ A/B port relief valve	QQ	Plug, without relief valve (port relief valve can be added)	
		GG	Check valve, for anti-cavitation function	
		H...H...	H320H320, pressure in bar, pressure details of port relief valve in 3 digits	
End element	⑬ LS unload	LZ	Without LS unload function	
		LA	With LS unload function	
	⑭ Additional P port	Blank	Without additional P port	
		PT	With additional P port	
	⑮ Pilot pressure control	X	Internal pilot pressure supply	
		Y	External pilot pressure supply	
Others	⑯ Sealing type	V	FKM	
		N	NBR	
	⑰ Design code	001		
	⑱ Special application	Blank	Without special requirement	-450 Without aluminum material
*	Other request	Further requirement in the clear text		

Ordering code

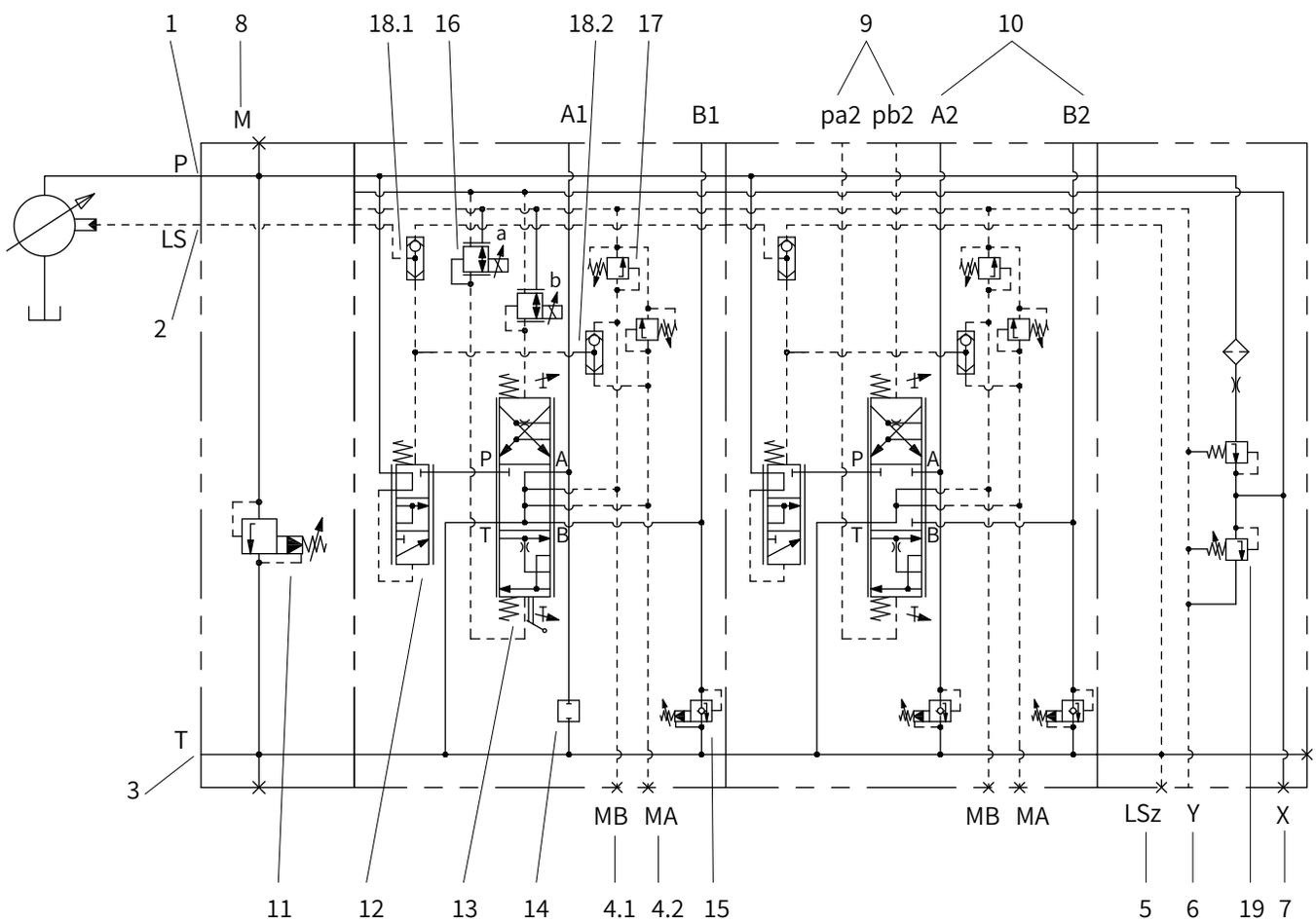
Basic code	LSPV12, LSPV15，LSPV20，LSPV25		
1- Inlet element	P		Open center, for fixed displacement pump system
	J		Closed center, for variable displacement pump system
2- Middle section	'A' side cover	M0	Mechanical, standard spring centered
		M1	Mechanical, friction detent
		H	Hydraulic
		W21	E-H operation, proportional control, 24V
	'B'side cover	1K	Hand lever
		Blank	Standard cover
3- End element	LS unload	LZ	Without LS unload function
		LA	With LS unload function
	Pilot pressure control	X	Internal pilot pressure supply
		Y	



Exploded view (example: LSPV15)

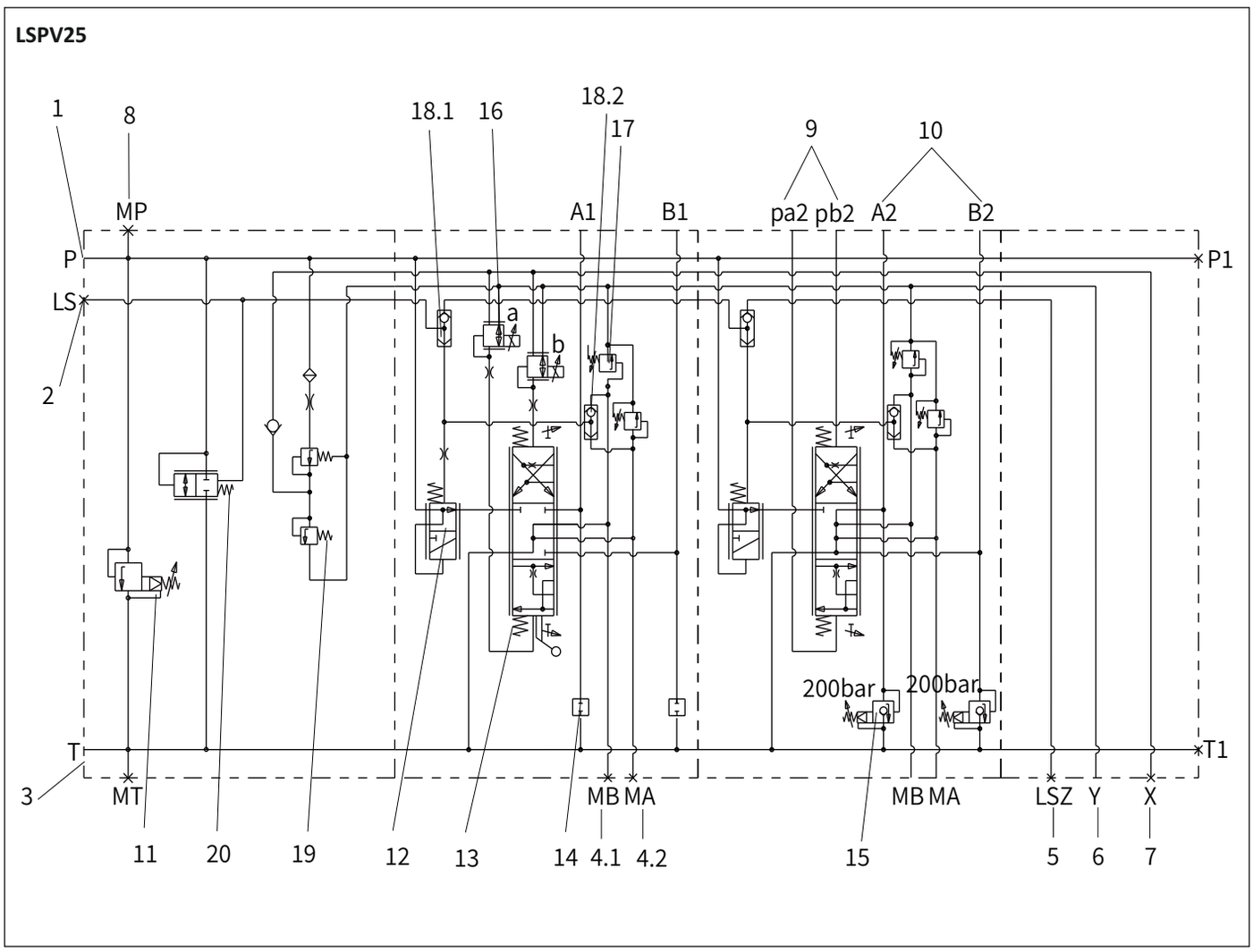
Hydraulic Diagram

LSPV12/15/20



1. Pump connection
2. Load sensing port
3. Tank connection
4.1. B side LS pressure measure port
4.2. A side LS pressure measure port
5. Load-signal connection for parallel- valve (plugged)
6. No back pressure connection to tank
7. External pilot oil supply
8. Pump pressure measure port
9. Pilot port
10. Work port
11. Main pressure relief valve
12. Pressure compensator
13. Spool
14. Plug
15. Port pressure relief valve
16. Electrical proportional reducing valve
17. LS pressure relief valve
18.1 / 18.2. Shuttle valve
19. Pressure reducing and relief valve

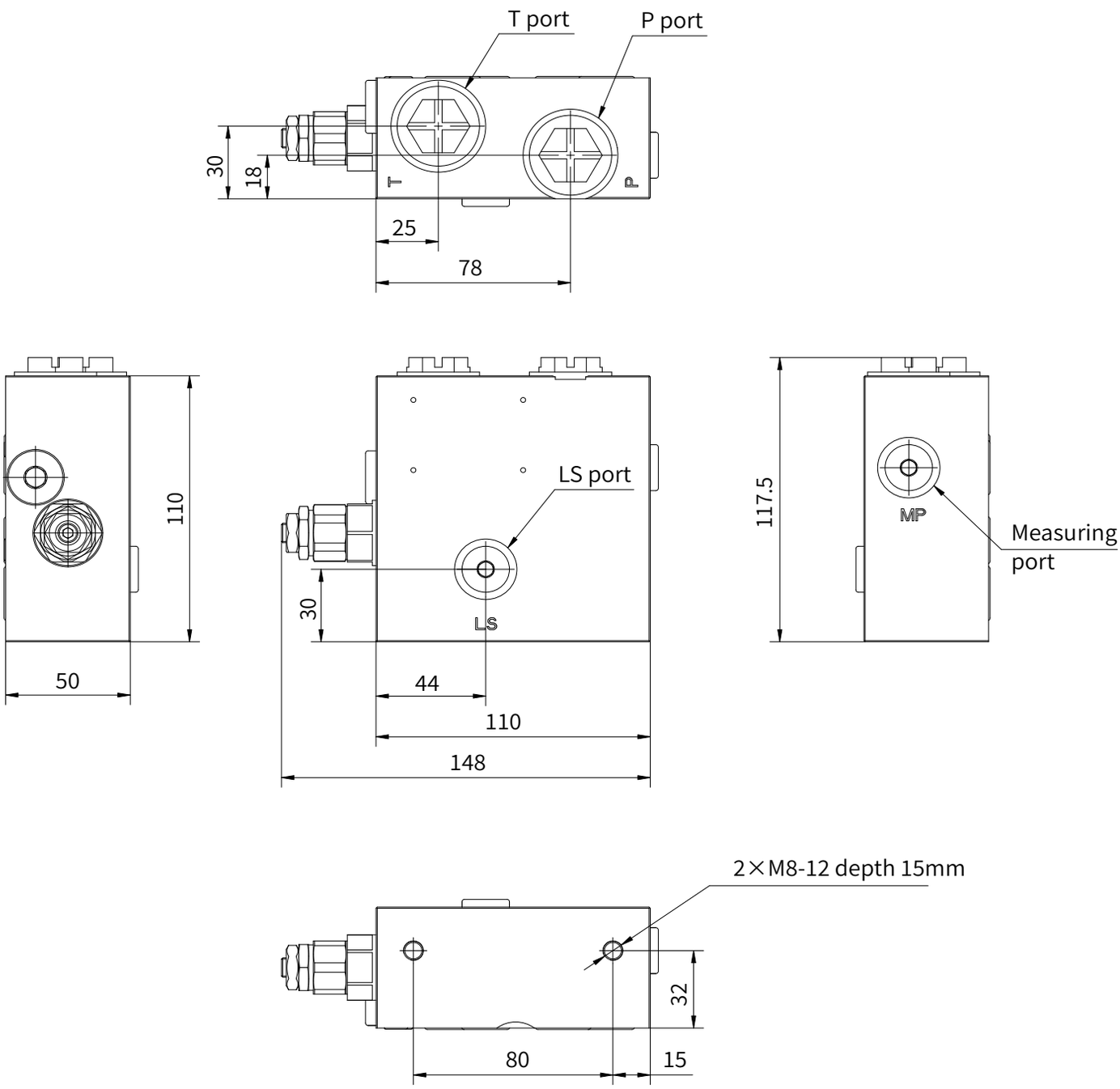
Hydraulic Diagram

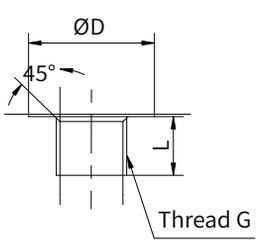


1. Pump connection
2. Load sensing port
3. Tank connection
4.1. B side LS pressure measure port
4.2. A side LS pressure measure port
5. Load-signal connection for parallel- valve (plugged)
6. No back pressure connection to tank
7. External pilot oil supply
8. Pump pressure measure port
9. Pilot port
10. Work port
11. Main pressure relief valve
12. Pressure compensator
13. Spool
14. Plug
15. Port pressure relief valve
16. Electrical proportional reducing valve
17. LS pressure relief valve
18.1 / 18.2. Shuttle valve
19. Pressure reducing and relief valve

Inlet Section - Closed Center

LSPV12

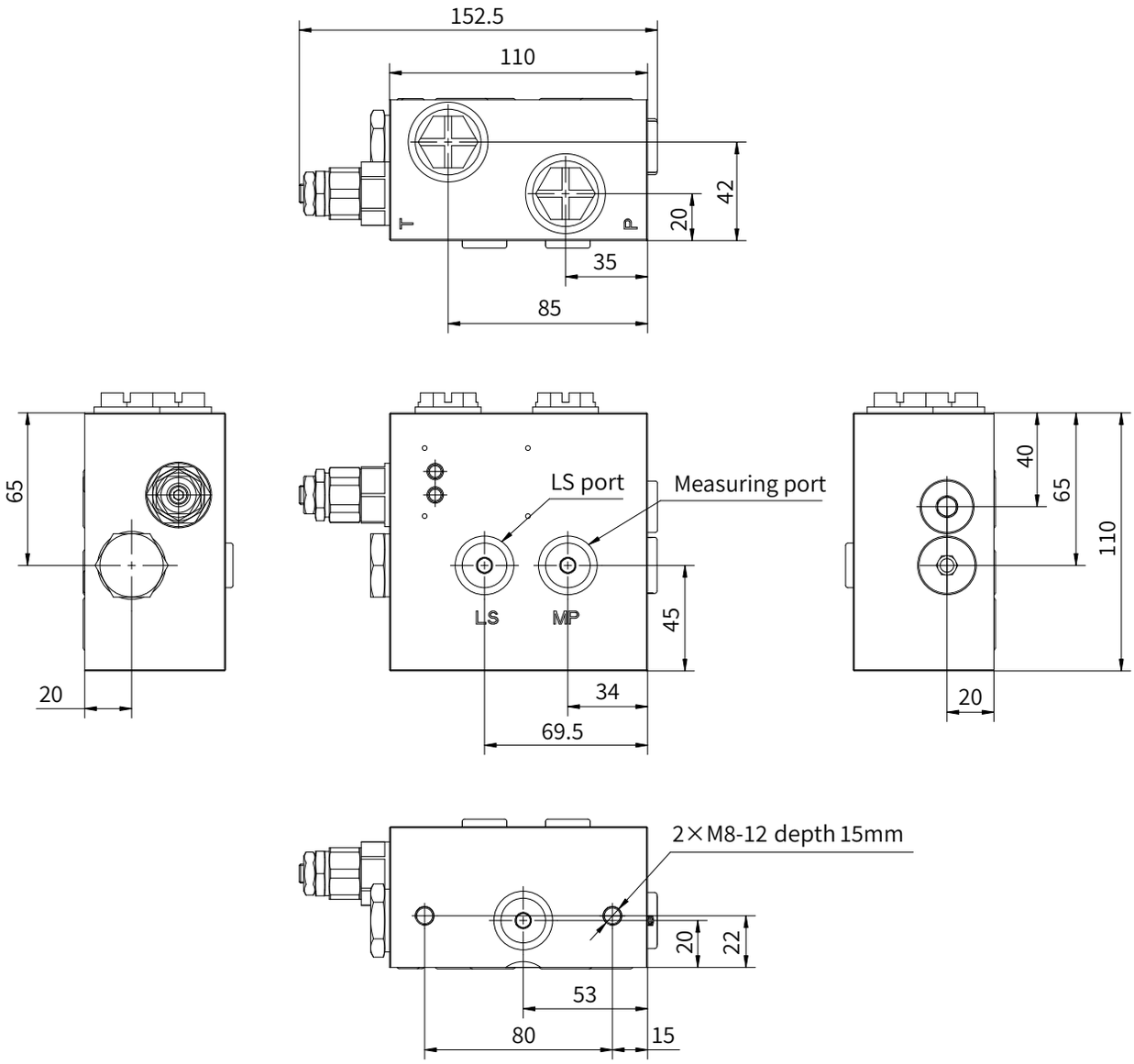


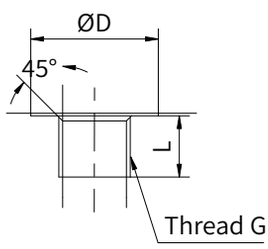


Port dimension		Thread dimensions		
P port:	G3/4	G3/4:	ΦD 38	L 16
T port:	G3/4	G1/4:	ΦD 24	L 12
LS port:	G1/4			
Measuring port:	G1/4			

Inlet Section - Open Center

LSPV12

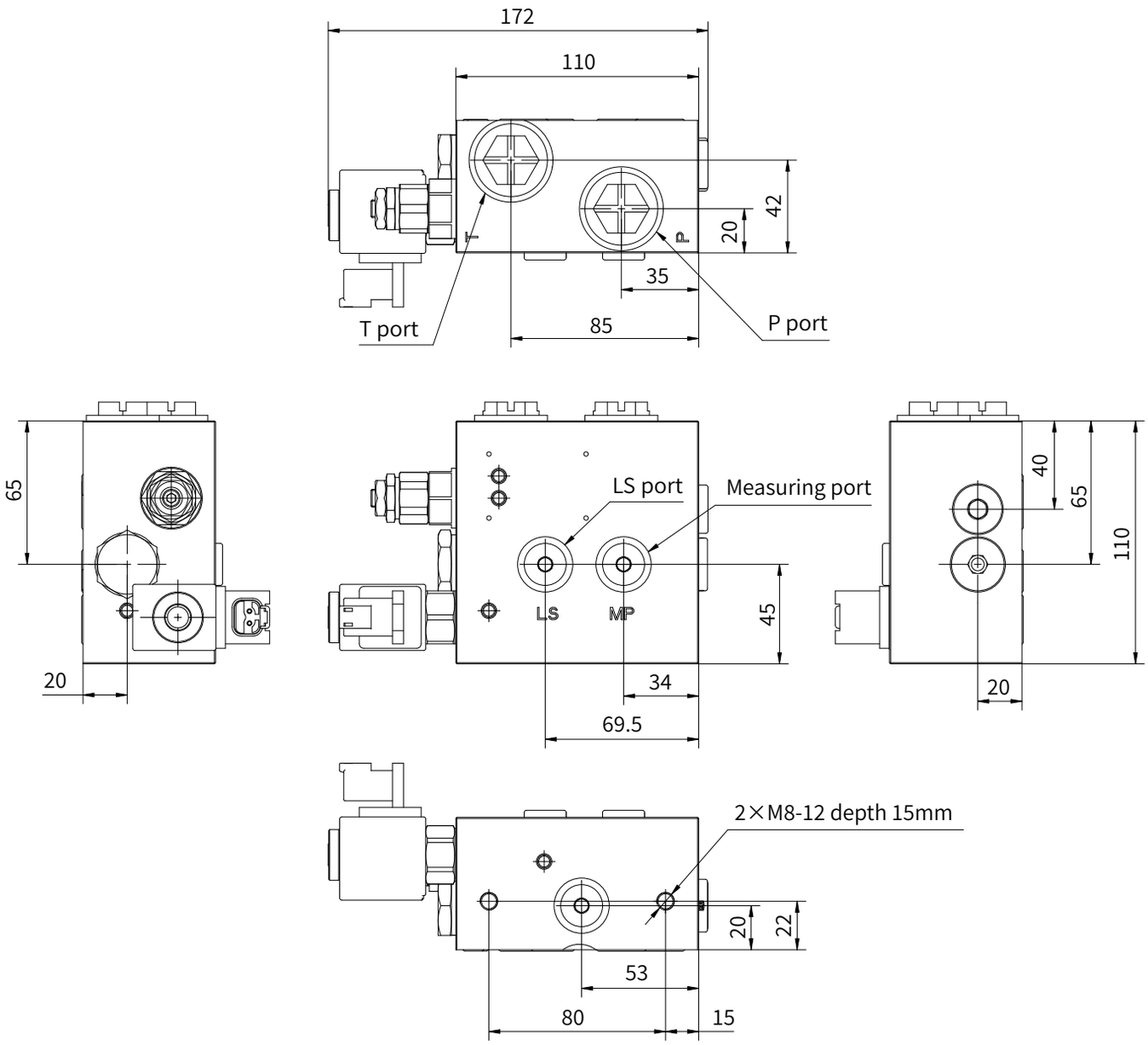


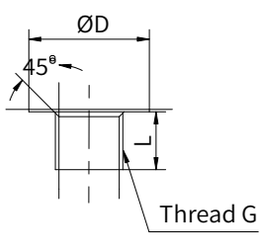


Port dimension		Thread dimensions		
P port:	G1/2	G1/2:	ΦD 30	L 15
T port:	G1/2	G1/4:	ΦD 24	
LS port:	G1/4			
:	G1/4			

Inlet section — open center (With LS solenoid unloading valve)

LSPV12

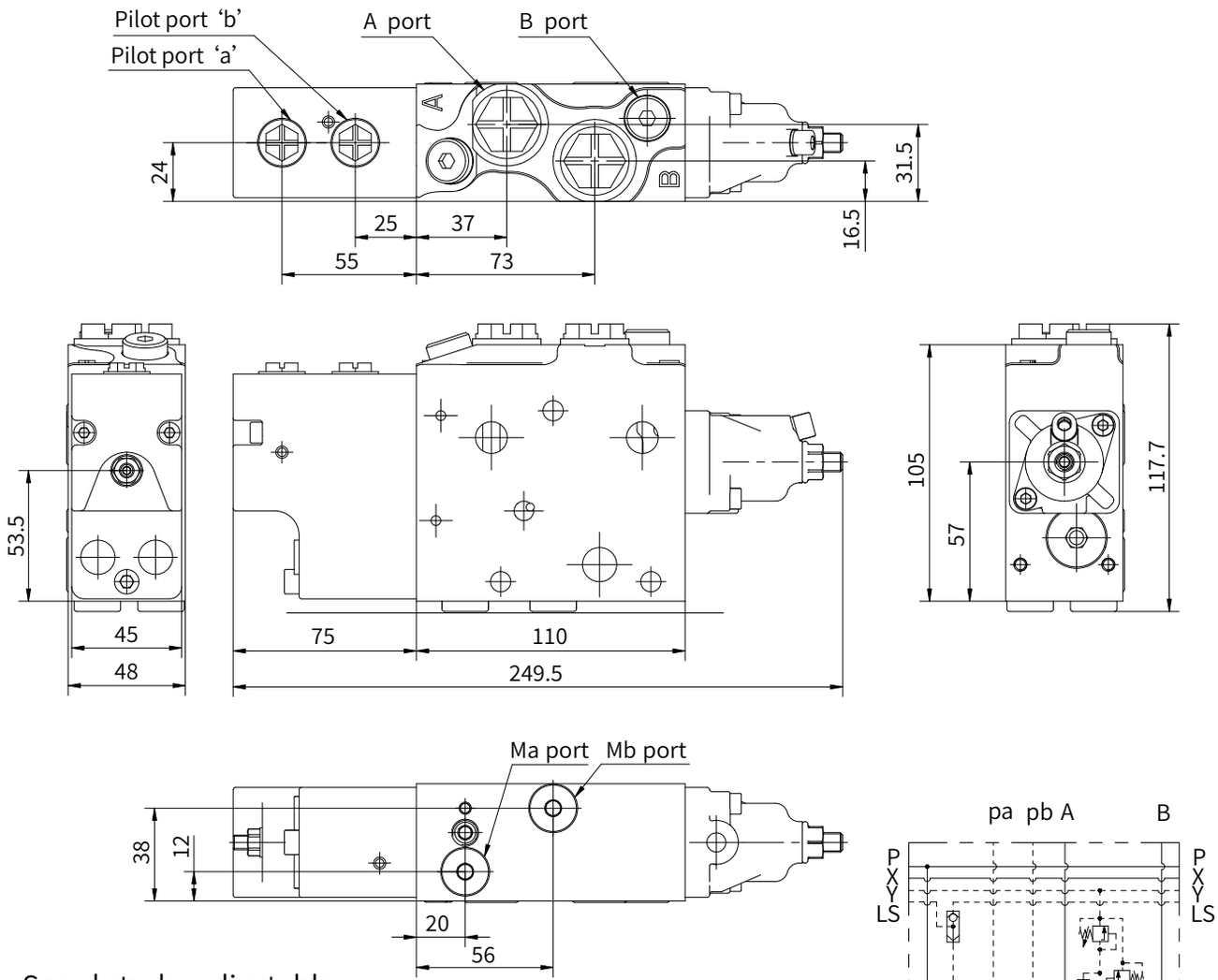




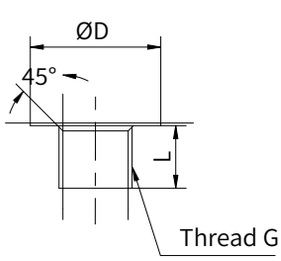
Port dimension		Thread dimensions		
P port:	G3/4	G3/4:	ΦD 38	L 16
T port:	G3/4	G1/4:	ΦD 24	L 12
LS port:	G1/4			
Measuring port:	G1/4			

Middle section—hydraulic

LSPV12



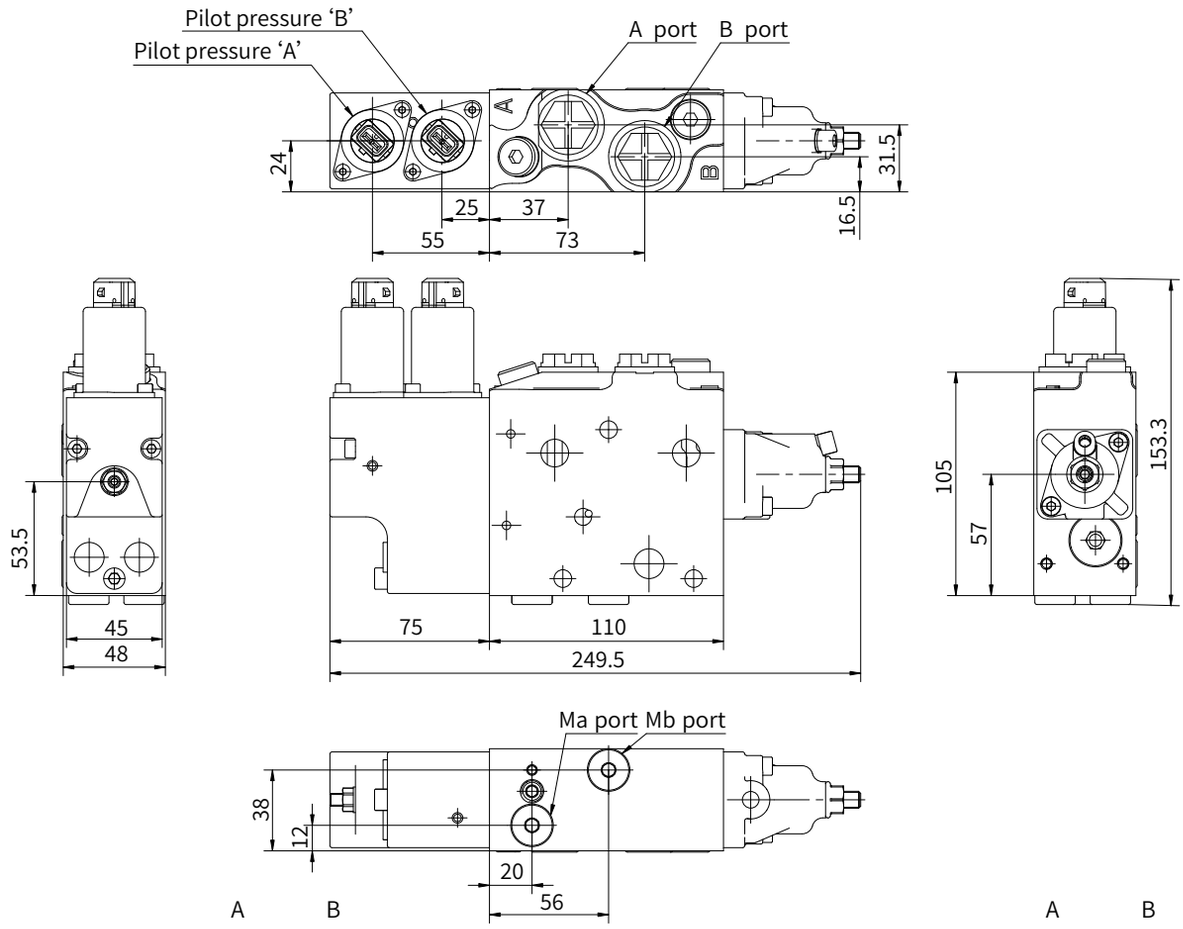
- Spool stroke adjustable

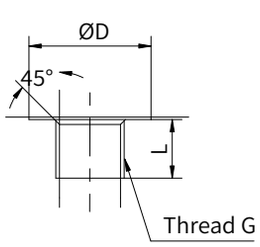


Port dimension		Thread dimensions		
A/B port:	G1/2 or G3/8	G1/4:	ΦD 24	L 12
MA/MB/ Pilot port:	G1/4	G3/8:	ΦD 28	L 12.5
		G1/2:	ΦD 30	L 15

Middle section—electro-hydraulic

LSPV12





Port dimension

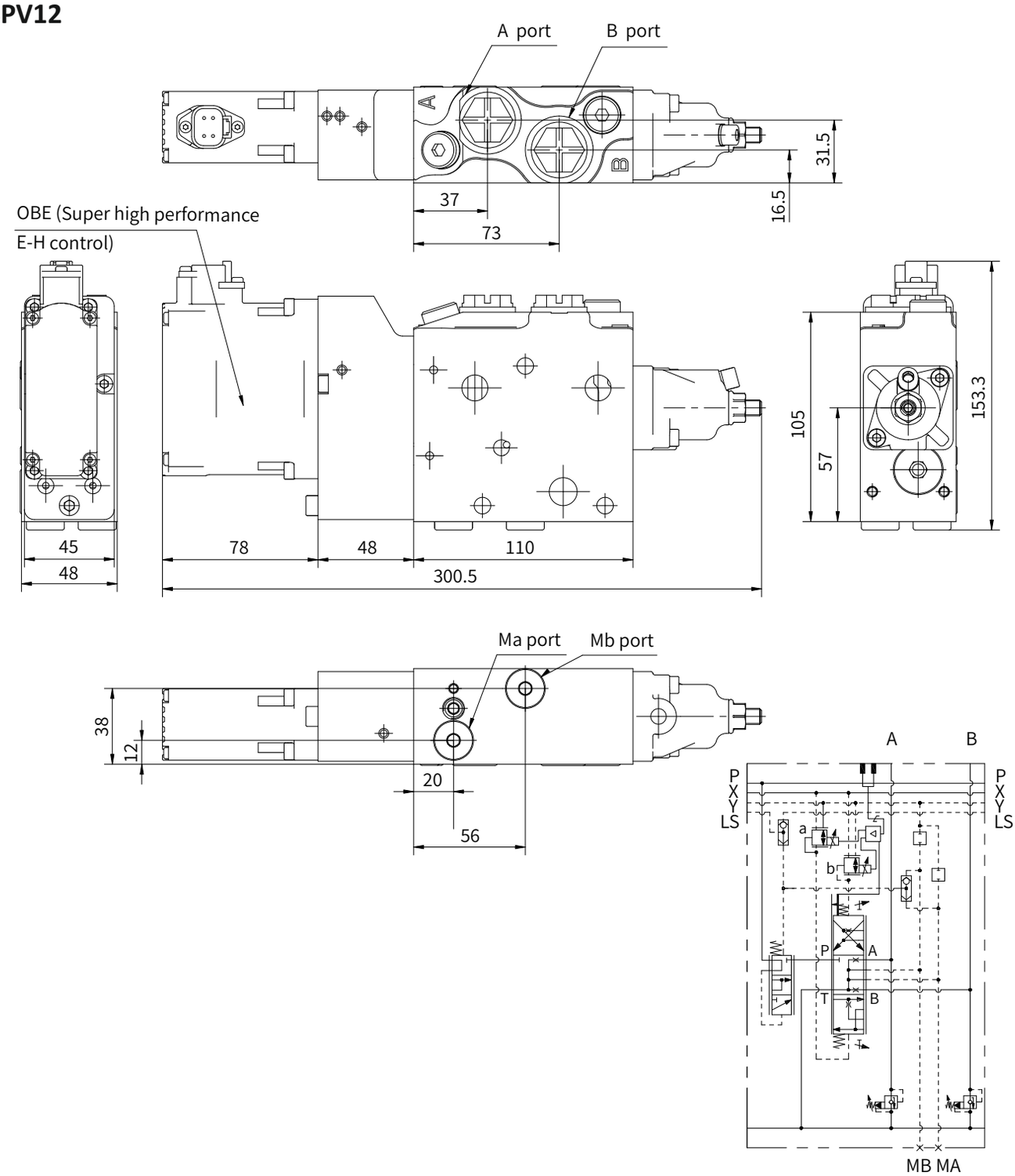
A/B port:	G1/2 or G3/8
MA/MB port:	G1/4

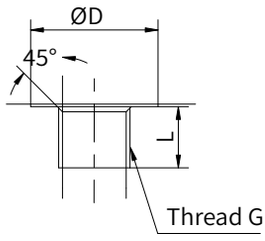
Thread dimensions

G1/4：	ΦD 24	L 12
G3/8：	ΦD 28	L 12.5
G1/2：	ΦD 30	

Middle section—OBE (Super high performance E-H control)

LSPV12

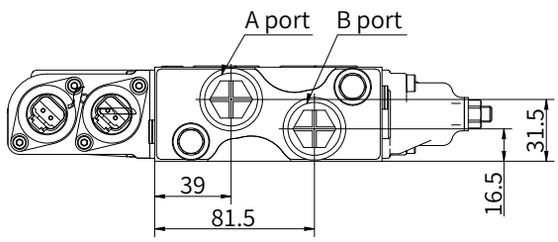


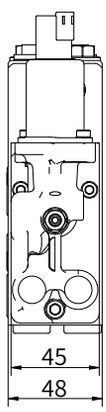


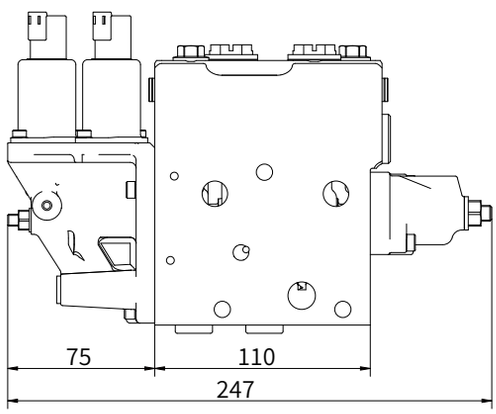
Port dimension		Thread dimensions		
A/B port:	G1/2 or G3/8	G1/4：	ΦD 24	L 12
MA/MB port:	G1/4	G3/8：	ΦD 28	L 12.5
		G1/2：	ΦD 30	L 15

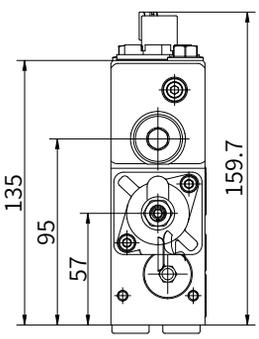
Middle section—Integrated with hydraulic lock

LSPV12

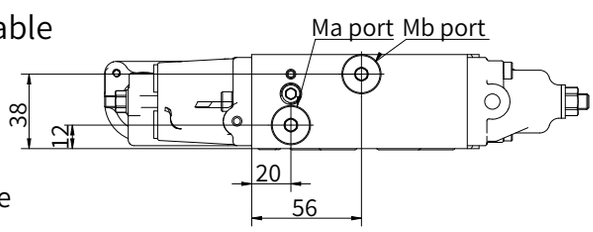




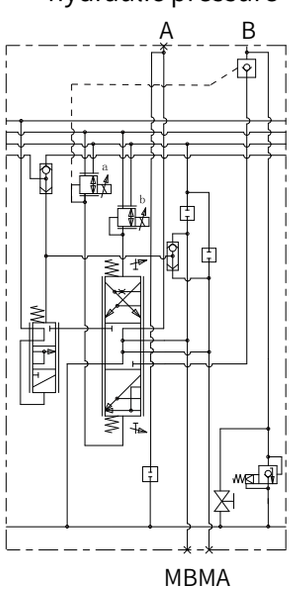




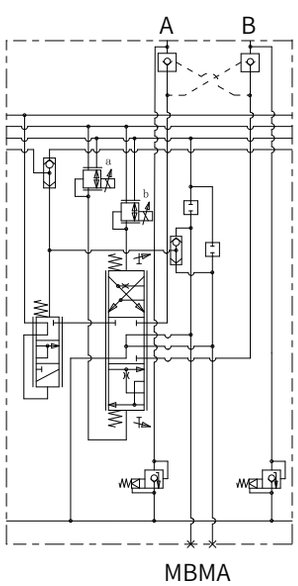
- Spool stroke adjustable

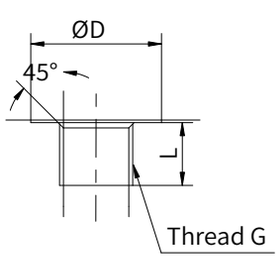


☐ Unidirectional hydraulic pressure



☐ two-way hydraulic lock





Port dimension

A/B port: G1/2 或 G3/8

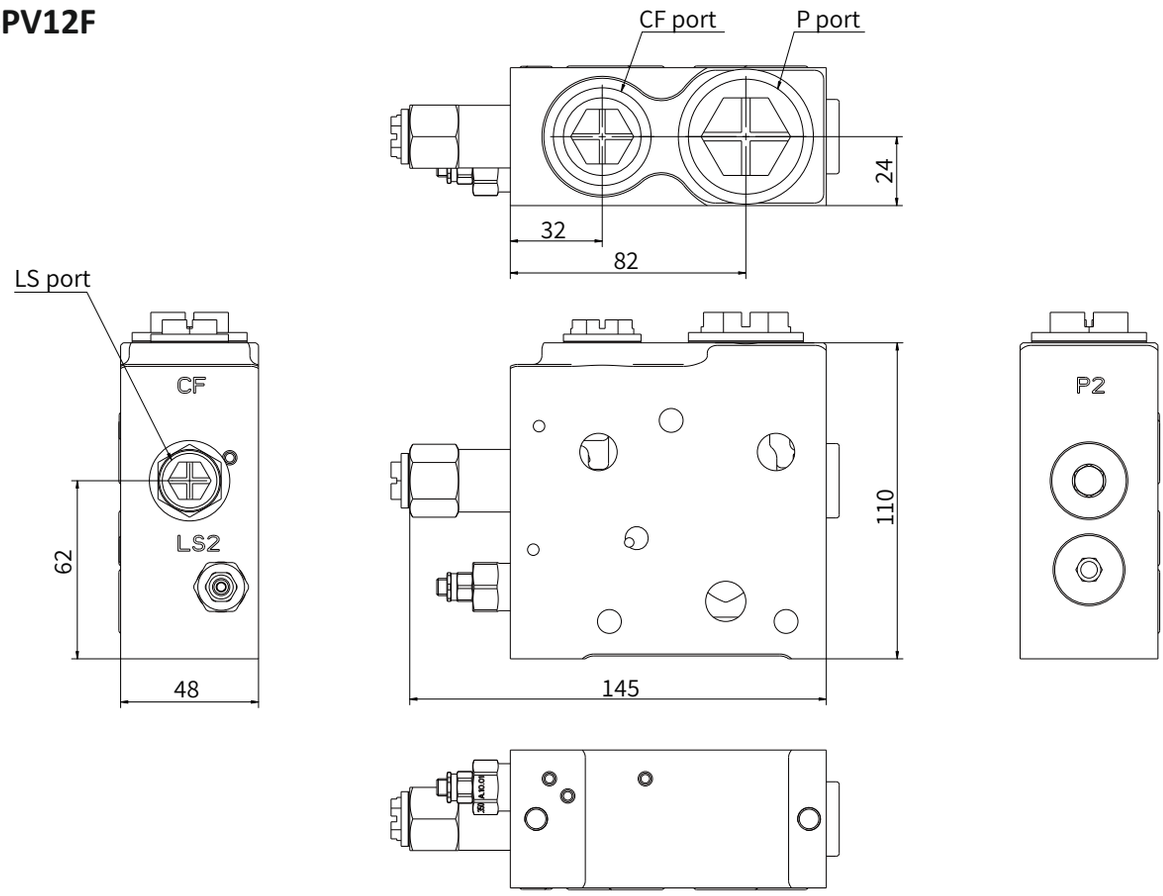
MA/MB port: G1/4

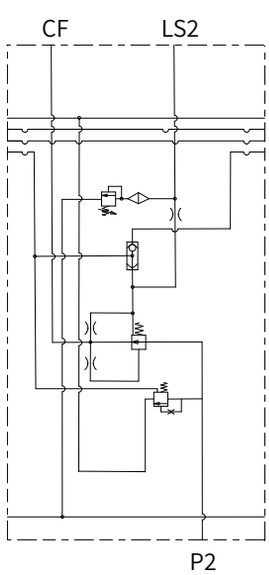
Thread dimensions

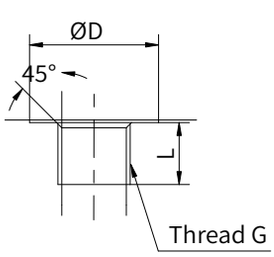
G1/4：	ΦD 24	L 12
G3/8：	ΦD 28	L 12.5
G1/2：	ΦD 30	L 15

Middle section—Integrated with stearing priority

LSPV12F







Port dimension

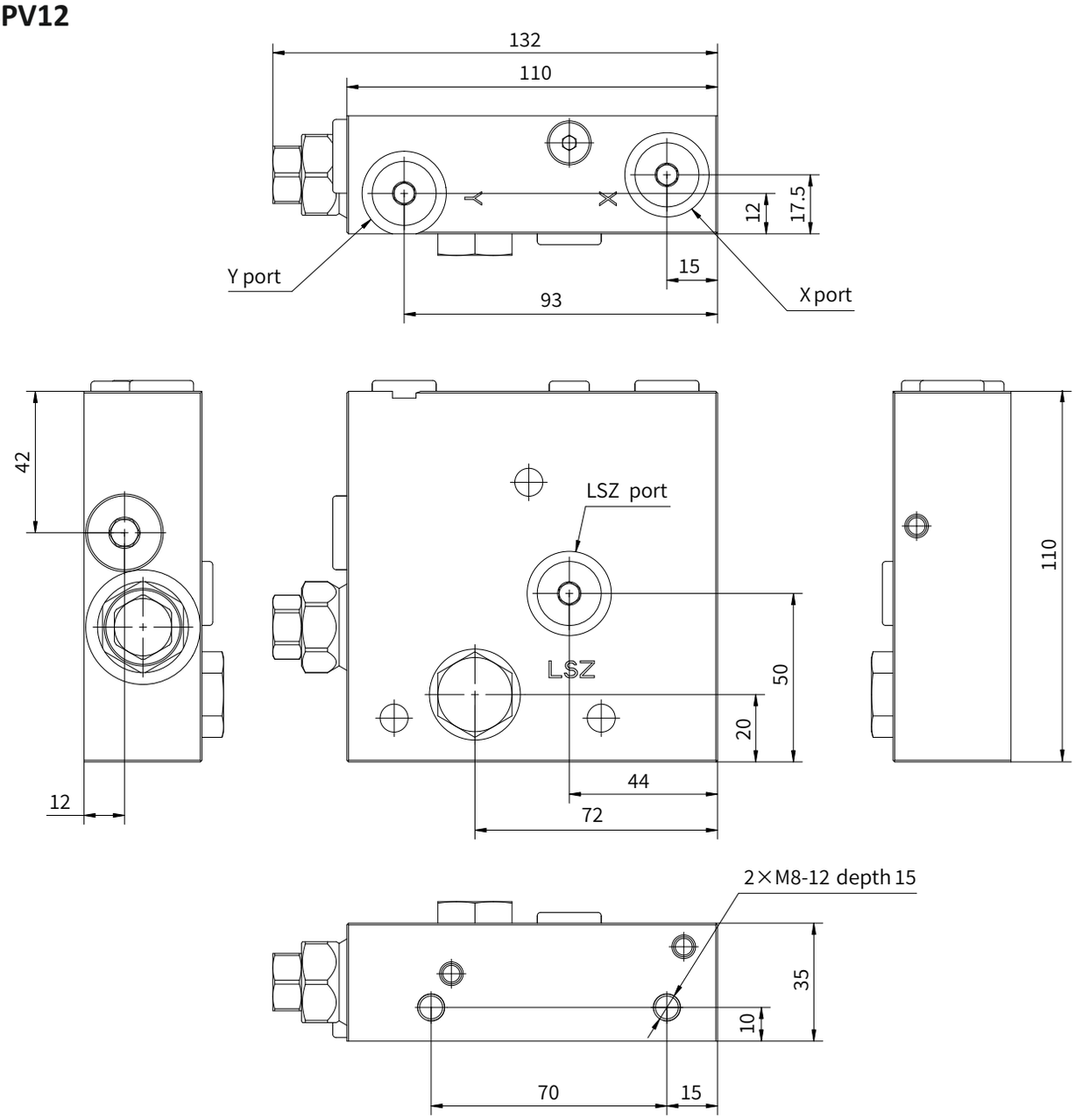
CFport:	G1/2
P port:	G1
LS port:	G1/4

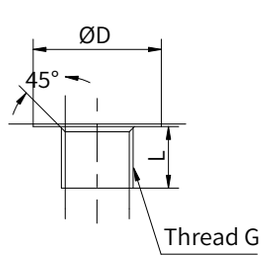
Thread dimensions

G1/4：	ΦD 24	L 12
G1/2:	ΦD 30	L 15
G1:	ΦD 47	L 19

Endlet section assembly (without additional P port)

LSPV12

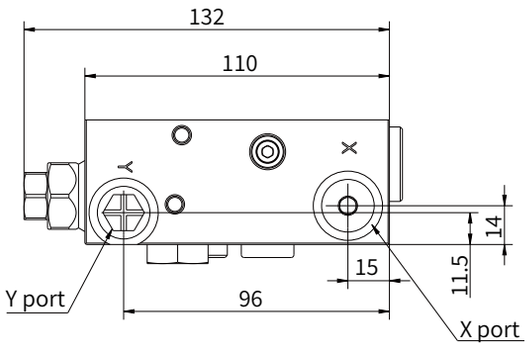


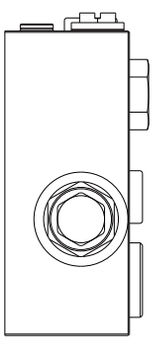


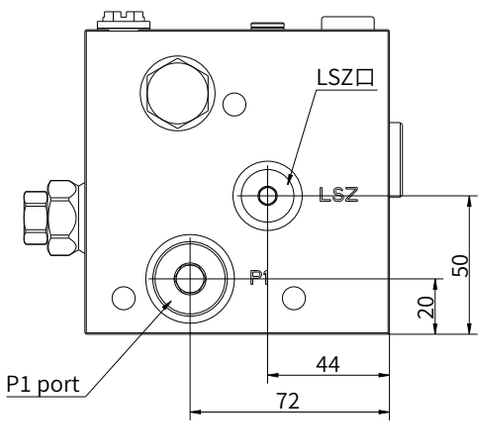
Port dimension		Thread dimensions	
Y port:	G1/4	G1/4:	ΦD 24
X port:	G1/4		
LSZ port:	G1/4		

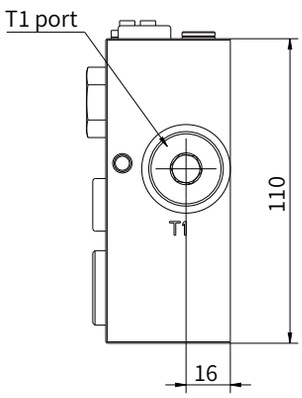
Endlet section assembly (with additional P port)

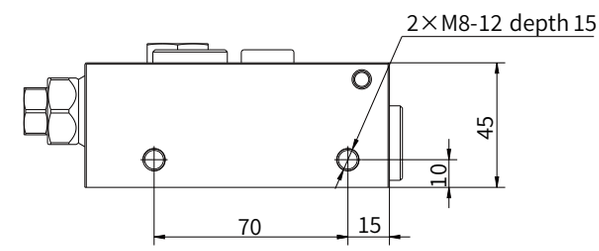
LSPV12

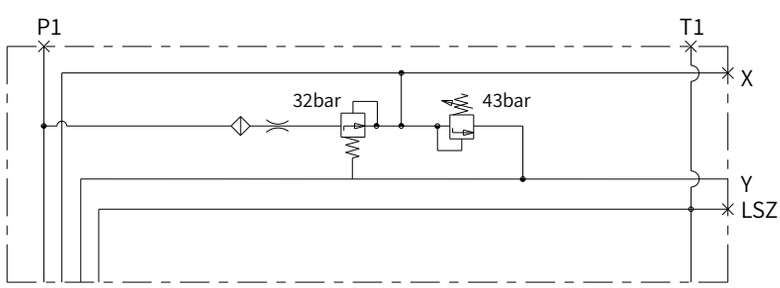


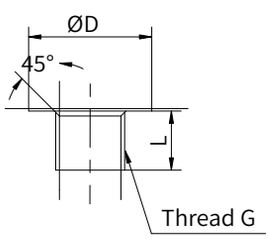












Port dimension		Thread dimensions		
Y port:	G1/4	G1/4:	ΦD 24	L 12
X port:	G1/4	G1/2:	ΦD 30	
LSZ port:	G1/4			
P1 port:	G1/2			
T1 口:	G1/2			

Preferred spool flow

LSPV12

•Symmetry spool

compensator	Flow(L/min)						
S	100-100	76-76	54-54	33-33	22-22	14-14	07-07
	90-90	68-68	47-47	29-29	19-19	12-12	06-06
	80-80	60-60	40-40	25-25	15-15	10-10	05-05
C	120-120	90-90	60-60	40-40	25-25	15-15	10-10
T	100-100	76-76	54-54	33-33	22-22	14-14	07-07

• Asymmetry spool

Please consult the company's technology sales.

Example:

* Pressure compensator: S

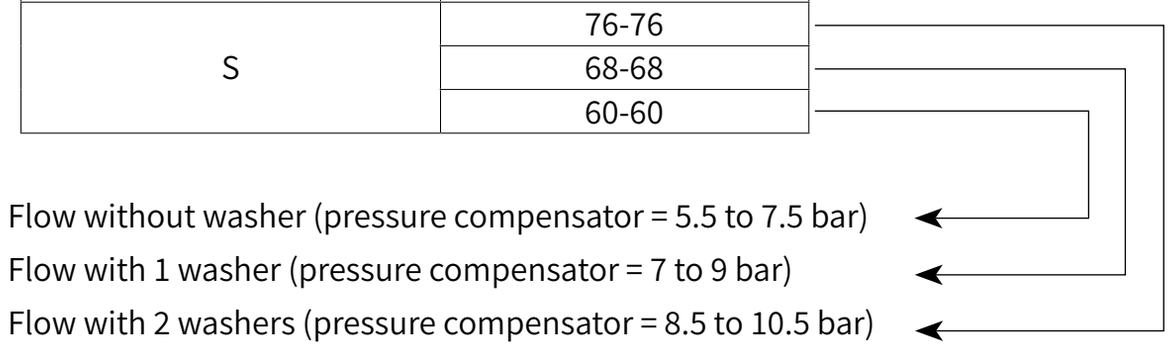
* Command flow value: Qac= 72 L/min

Solution:

→ 60 L/min spool + 2 washers = 76 L/min

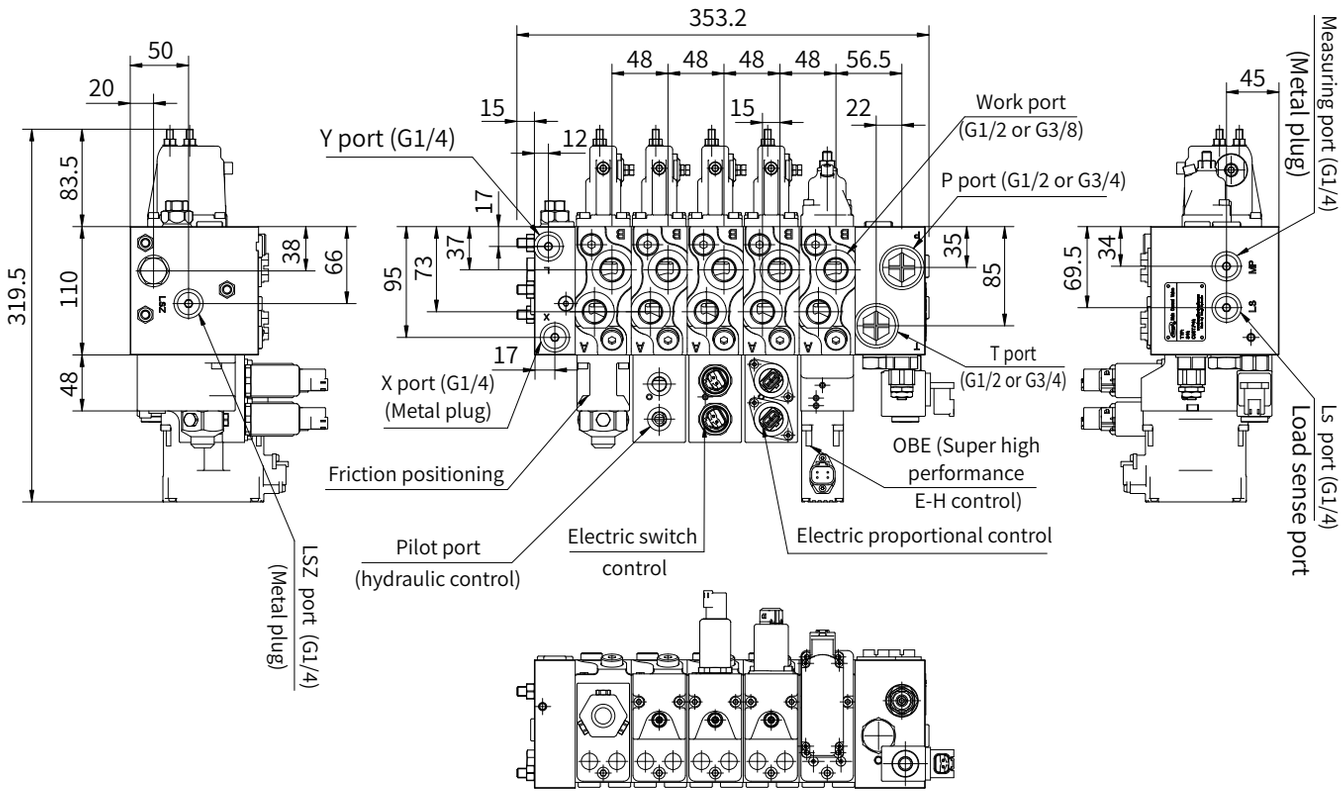
→ Set 72 L/min via stroke limitation

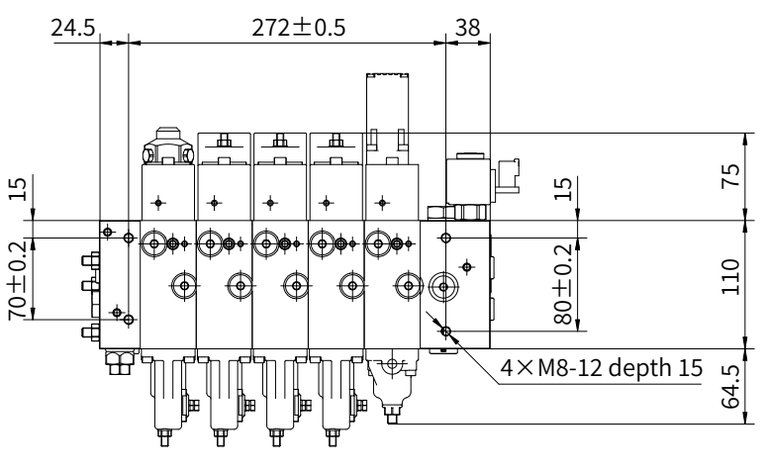
Pressure compensator	Flow (L/min)
S	76-76
	68-68
	60-60



Unit dimensions

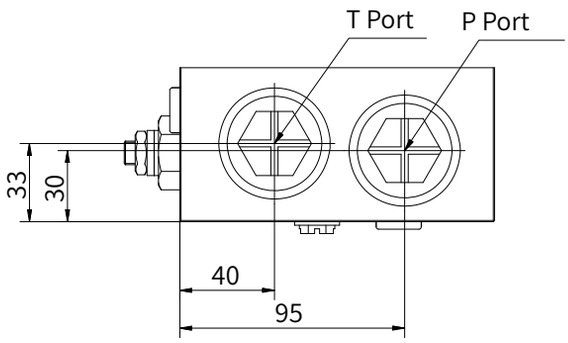
LSPV12

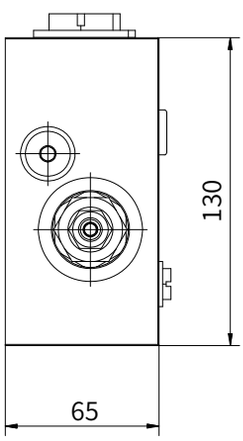


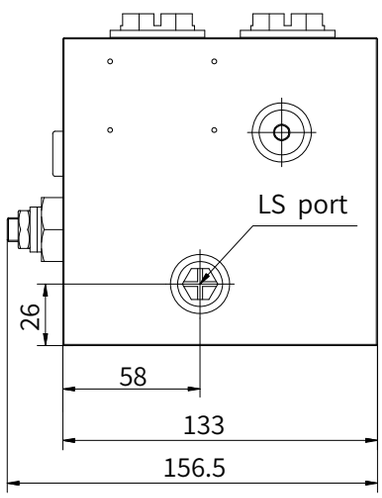


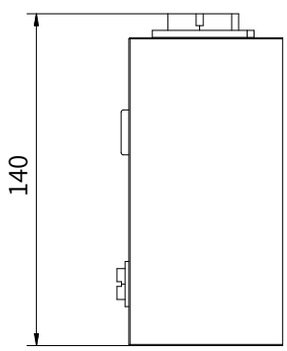
Inlet section — closed center

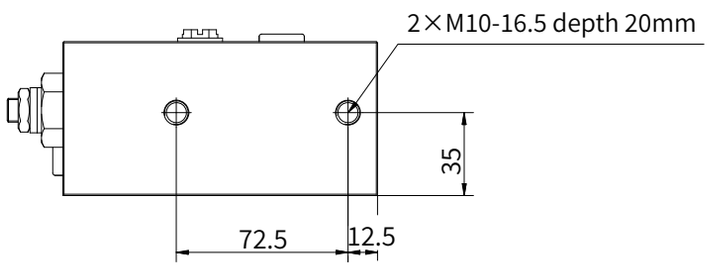
LSPV15

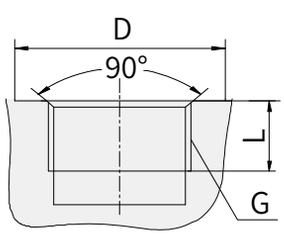








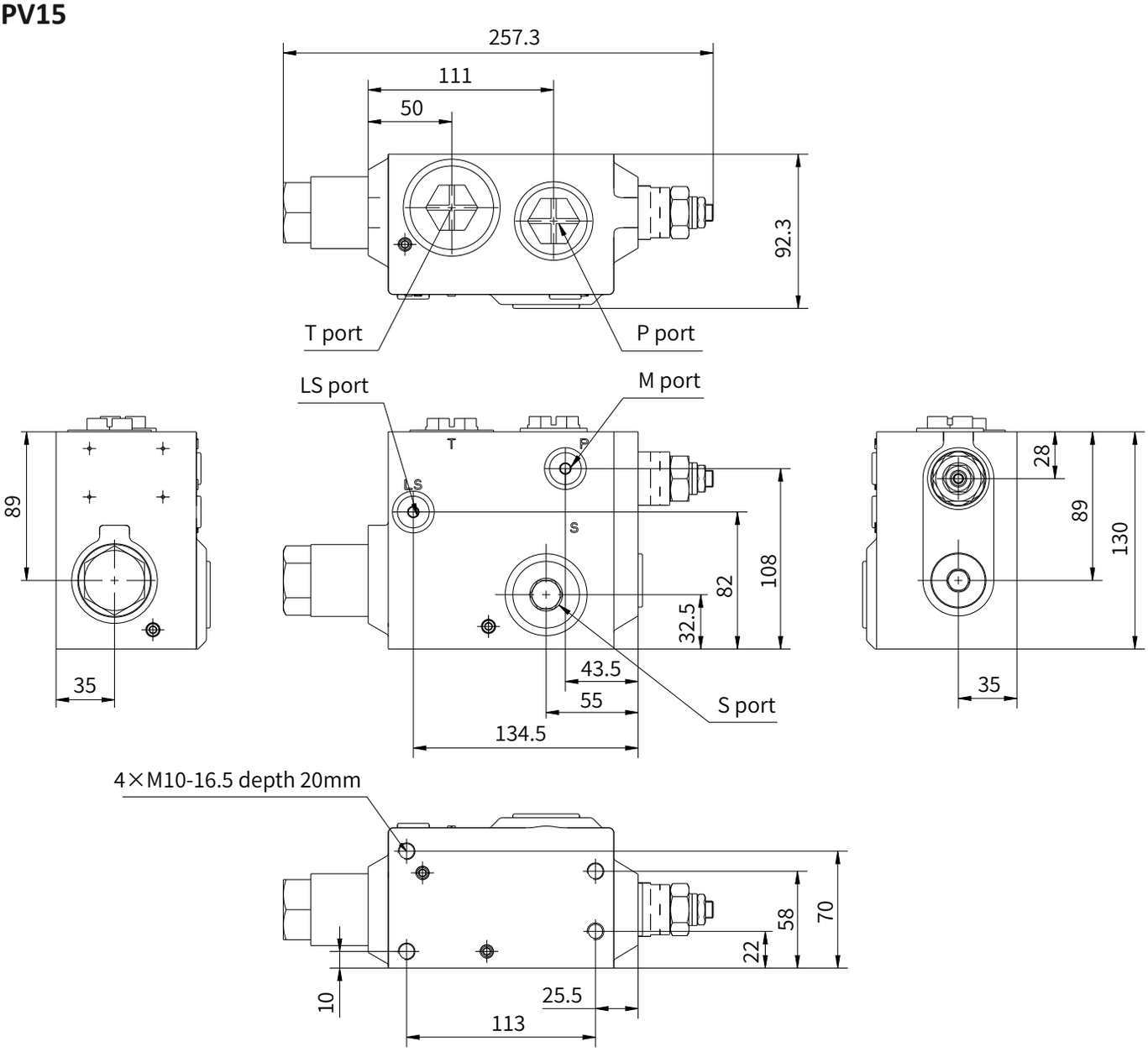


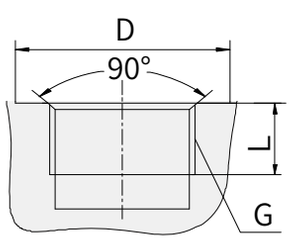


Port dimension		Thread dimensions		
P port:	G1	G1:	ΦD 47	L 19
T port:	G1	G1/4:	ΦD 24	L 12
LS port:	G1/4			

Inlet section — open center

LSPV15

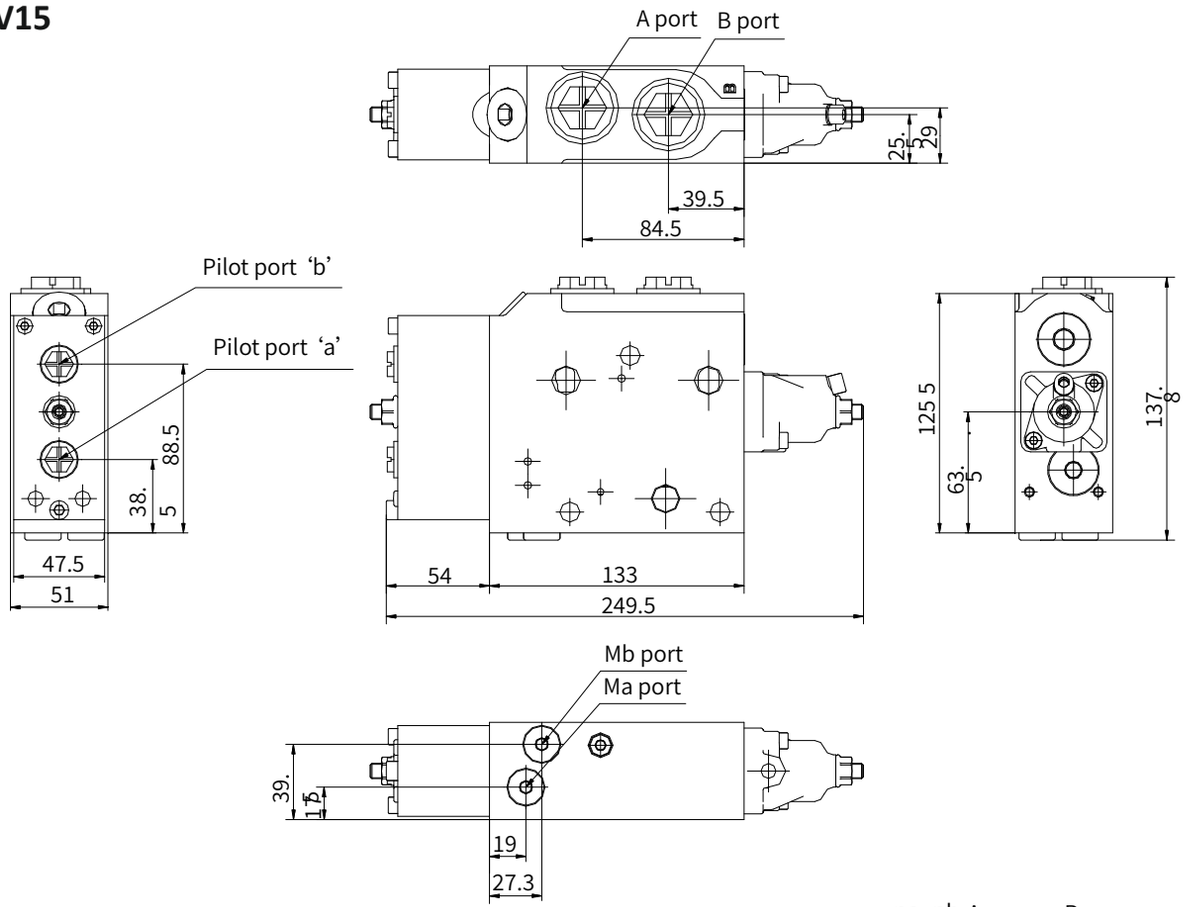


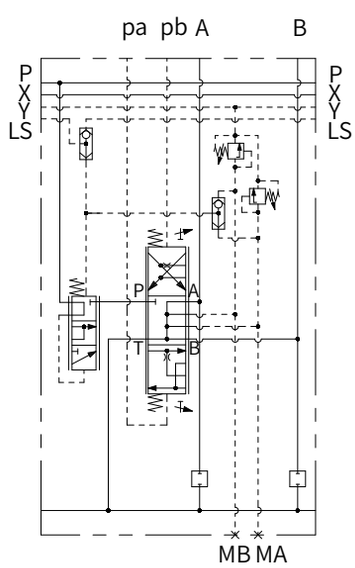


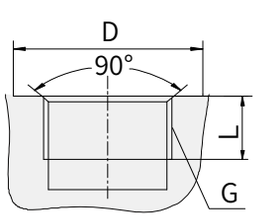
		Thread dimensions		
	G1	G1 1/4 :	ΦD 58	L 21.5
T port:	G1 1/4	G1:	ΦD 47	L 19
LS port:	G1/4	G1/4:	ΦD 24	L 12
S port:	G1			

Middle section - hydraulic

LSPV15



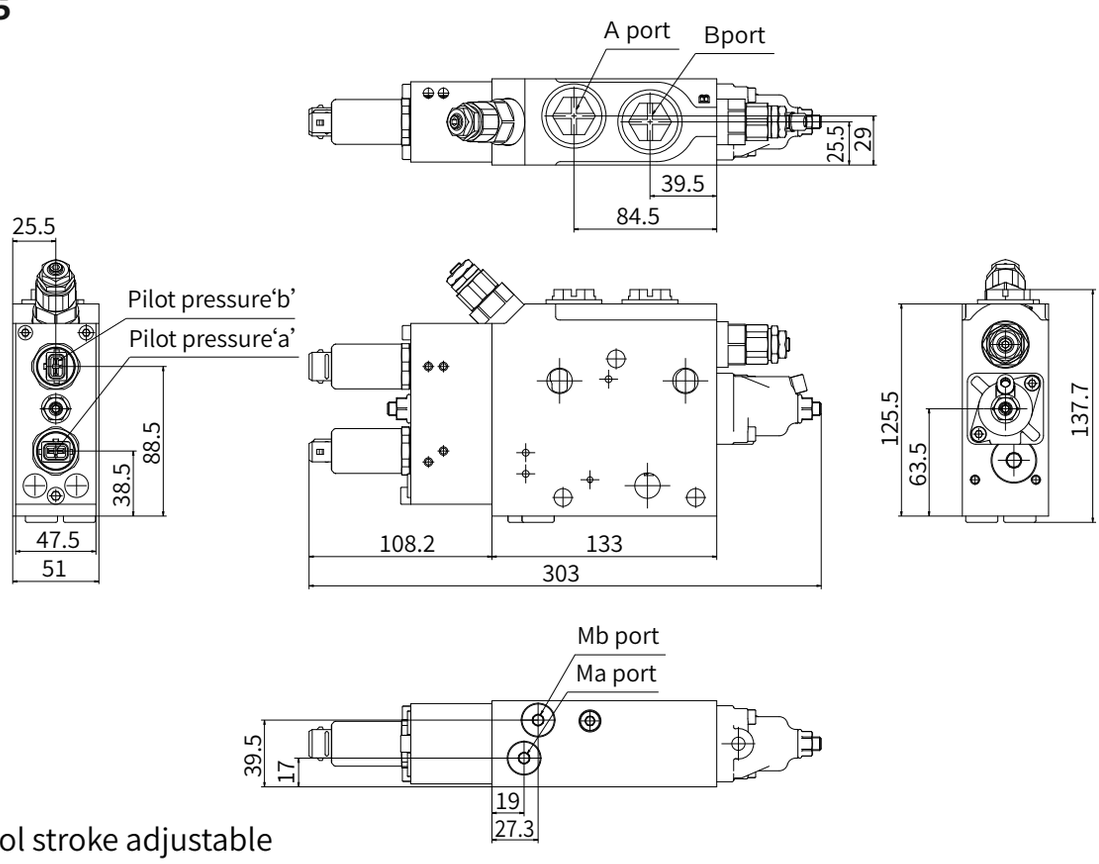




Port dimension	Thread dimensions		
A/B port: G3/4	G3/4:	ΦD 38	L 16
Pilot port/Ma/Mb port: G1/4	G1/4:	ΦD 24	L 12

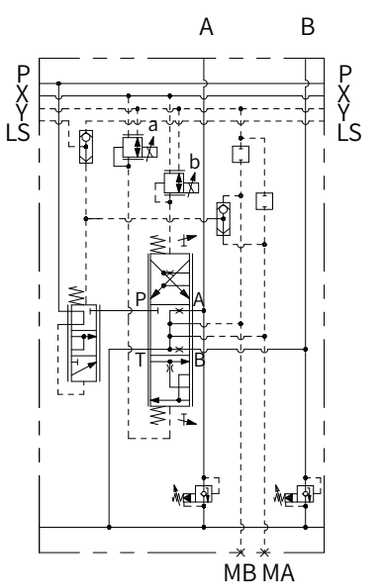
Middle section - electro-hydraulic

LSPV15

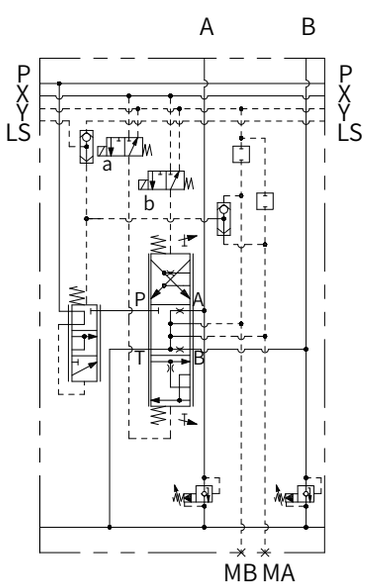


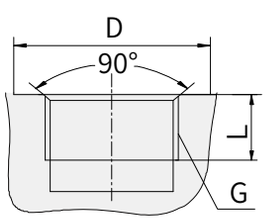
- Spool stroke adjustable

☐ E-H proportional control
W21 24V; W23 12V



☐ E-H on/off control
W41 24V; W43 12V

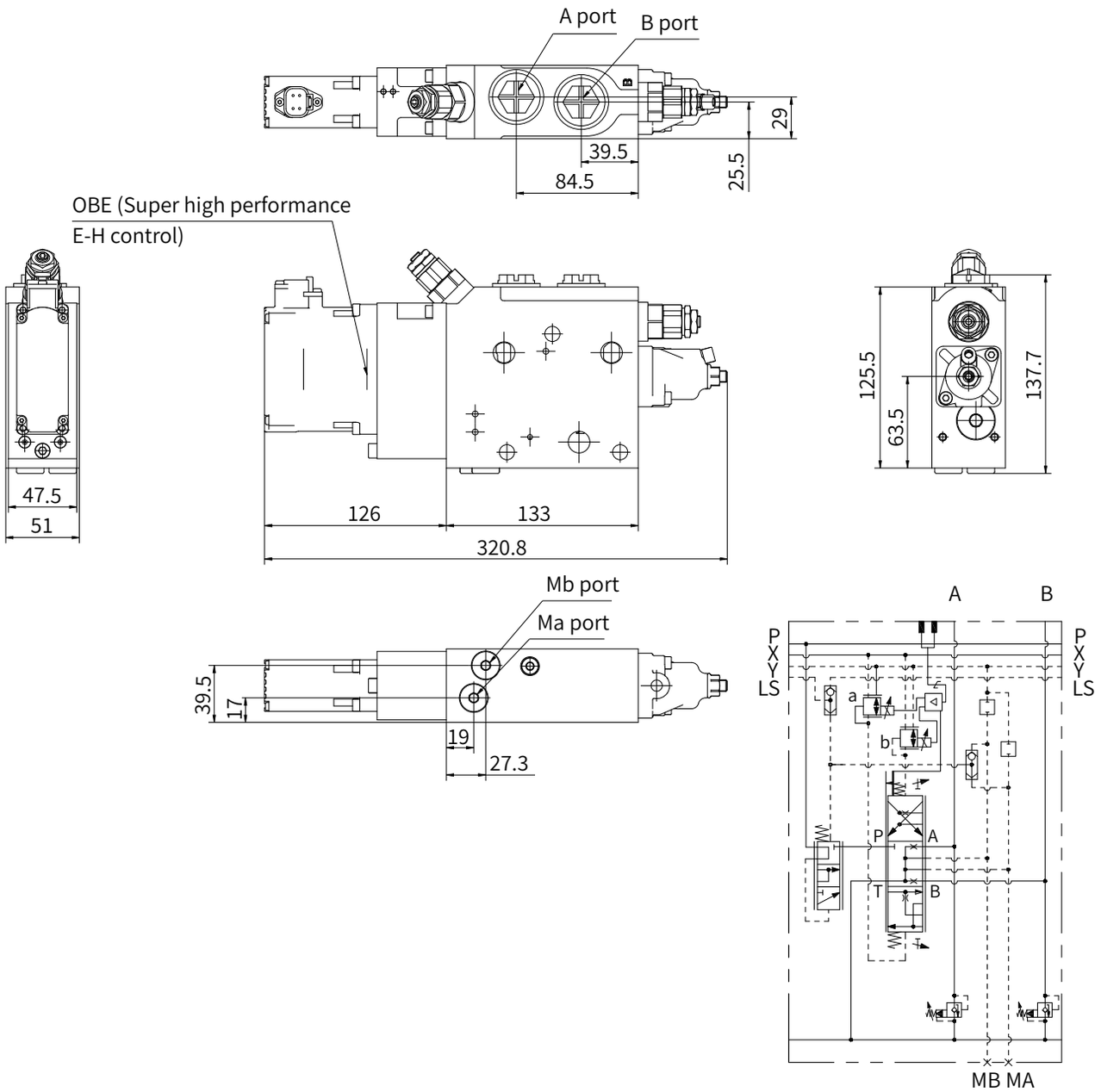


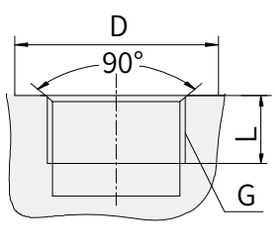


Port dimension	Thread dimensions		
A/B port: G3/4	G3/4:	ΦD 38	L 16
Ma/Mb port: G1/4	G1/4:	ΦD 24	L 12

Middle section—OBE （Super high performance E-H control）

LSPV15

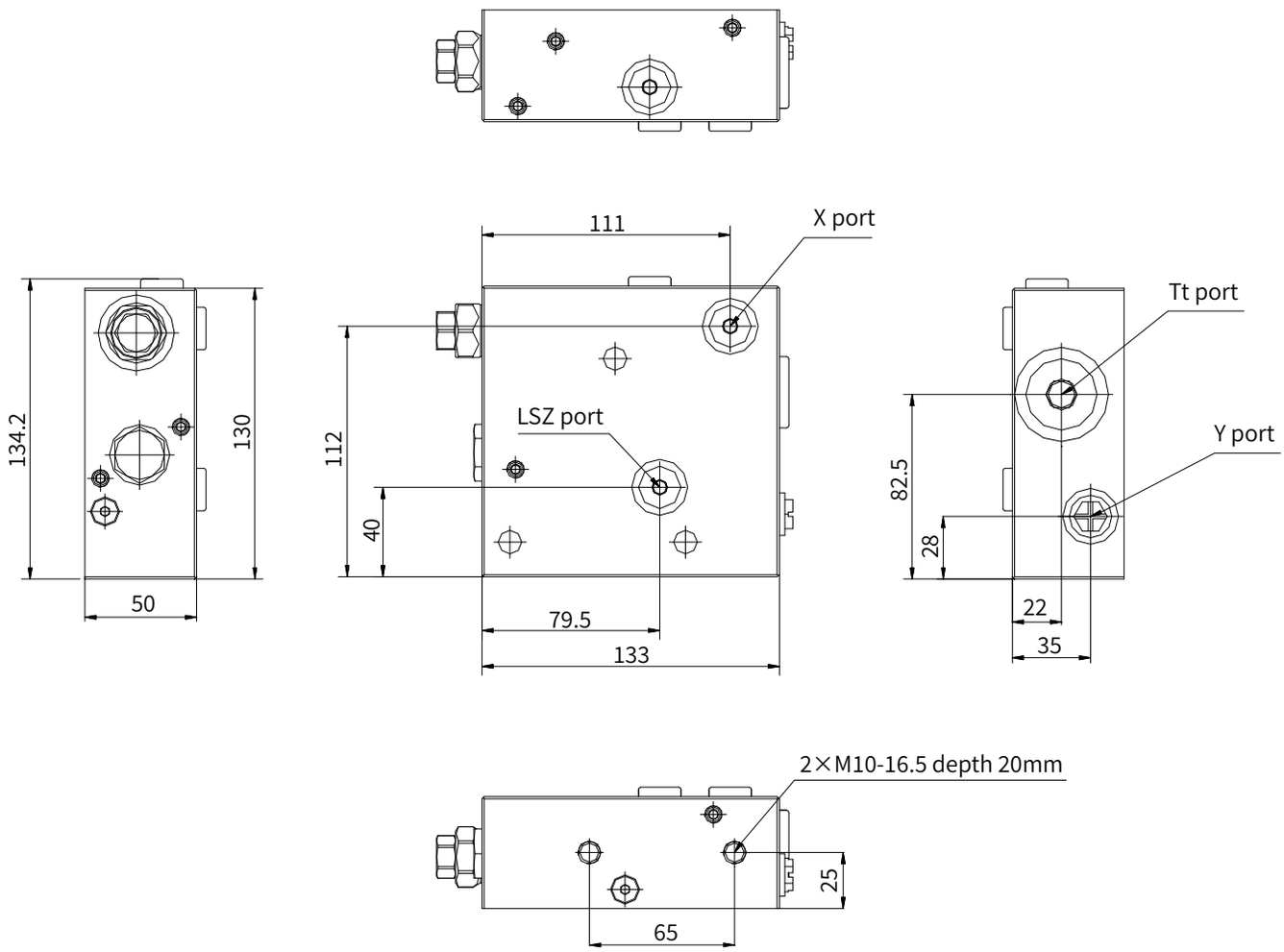


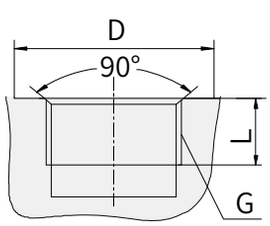


Port dimension	Thread dimensions		
A/B port: G3/4	G3/4:	ΦD 38	L 16
Ma/Mb port: G1/4	G1/4:	ΦD 24	L 12

Endlet section assembly (without additional P port)

LSPV15





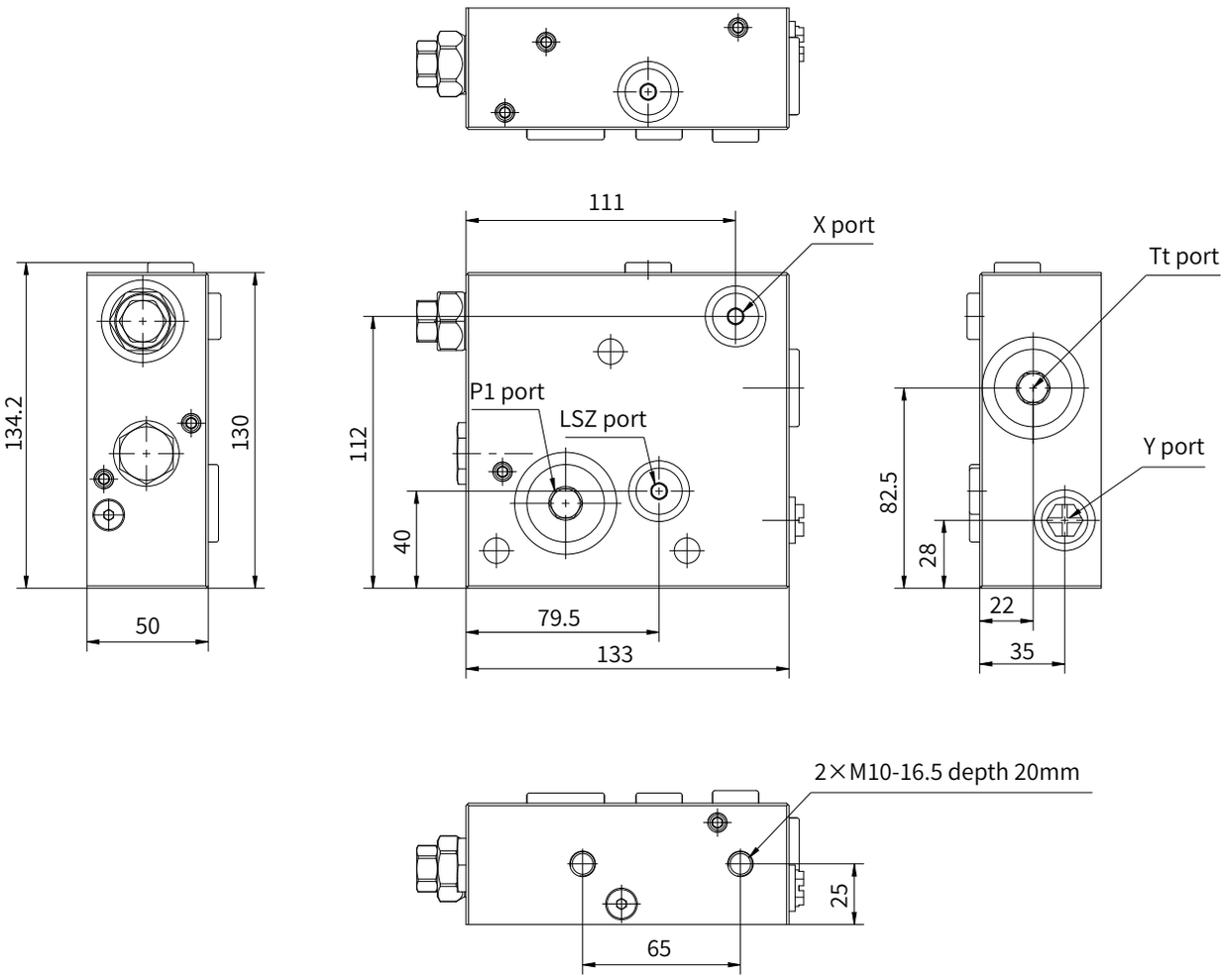
	G3/4
Y port:	G1/4
X port:	G1/4
LSZ port:	G1/4

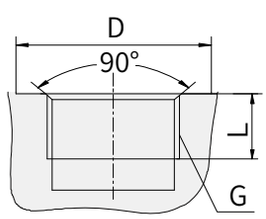
Thread dimensions

G3/4:	ΦD 38	L 16
G1/4:	ΦD 24	L 12

Endlet section assembly (with additional P port)

LSPV15





	G3/4
Tt Port:	G3/4
Y Port:	G1/4
X Port:	G1/4
LSZ Port:	G1/4

Thread dimensions

G3/4:	ΦD 38	L 16
G1/4:	ΦD 24	L 12

Preferred spool flow

LSPV15

•Symmetry spool

Pressure compensator	Flow(L/min)						
S	150-150	120-120	080-080	050-050	032-032	023-023	
	140-140	130-130	100-100	070-070	045-045	028-028	020-020
	120-120	110-110	085-085	060-060	040-040	025-025	017-017
C	200-200	175-175	145-145	110-110	080-080	045-045	028-028
T	190-190	160-160	100-100	065-065	040-040		

• Asymmetry spool

Pressure compensator	Flow(L/min)				
S	150-120	120-180	080-050	050-032	023-014
	130-110	100-070	070-045	045-028	020-012
	110-085	085-060	060-040	040-025	017-010
C	175-145	145-110	110-080	080-045	
T	190-160	160-100	100-065		

* Pressure compensator: S

* Command flow value: Qac= 145 L/min

Solution:

→ 110 L/min spool + 2 washers = 150 L/min

→ Set 145 L/min via stroke limitation

Pressure compensator	Flow in L/min
S	150-150
	130-130
	110-110

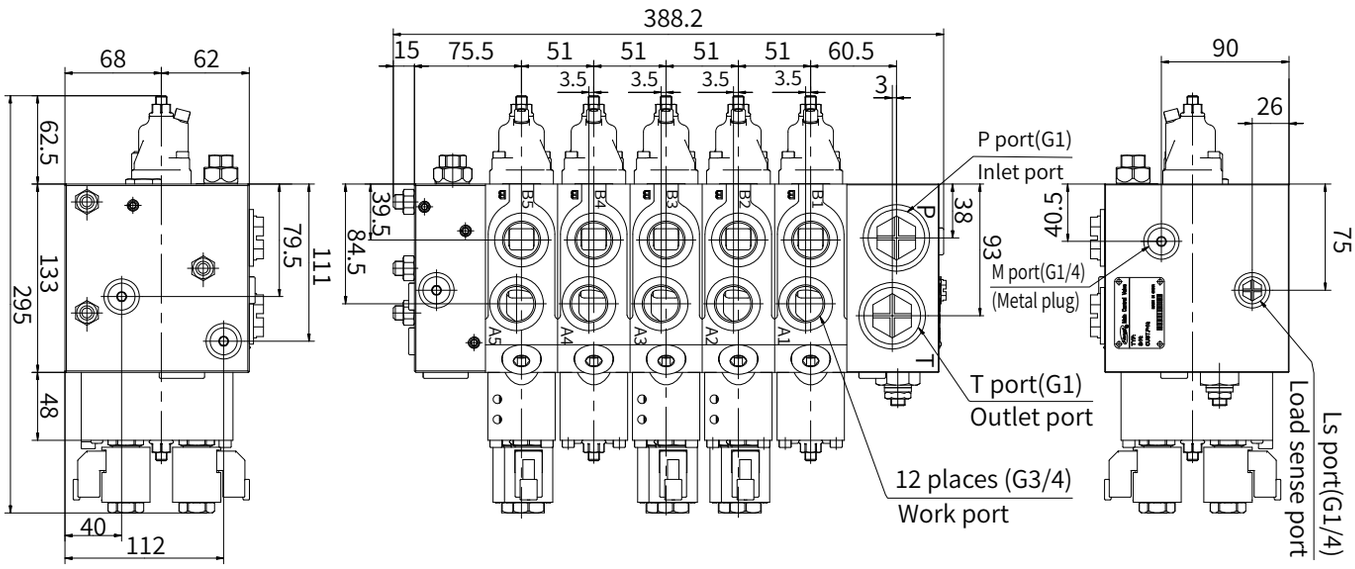
Flow without washer (pressure compensator = 6 to 9 bar)

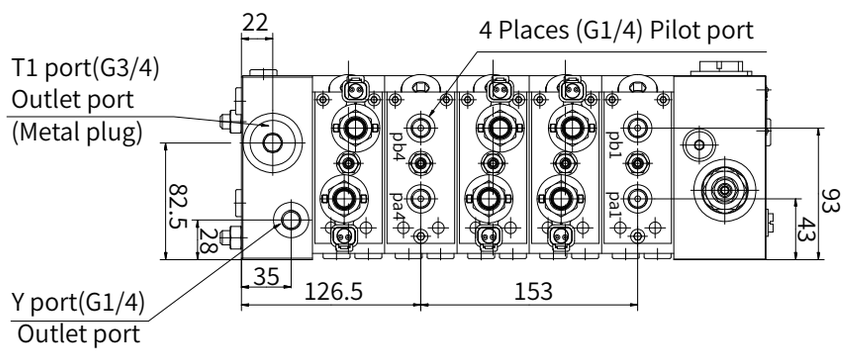
Flow with 1 washer (pressure compensator = 7.5 to 10 bar)

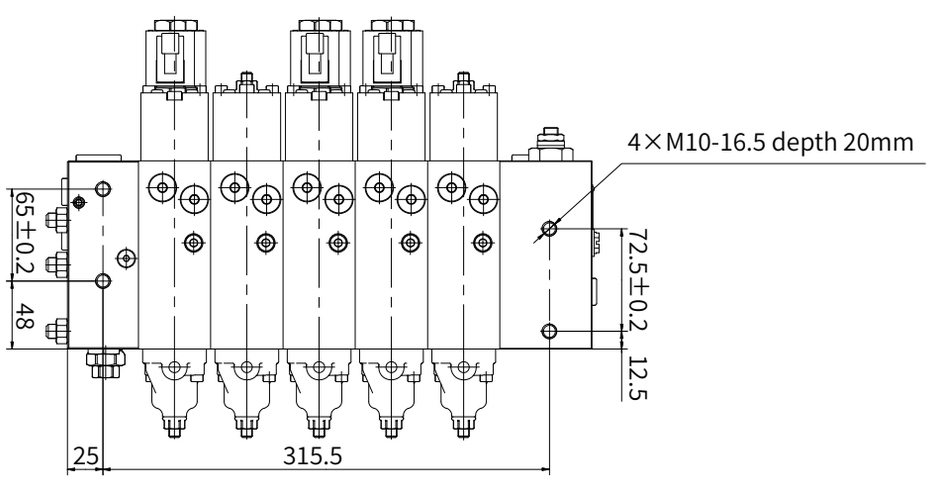
Flow with 2 washers (pressure compensator = 9 to 12 bar)

Unit Dimensions

LSPV15

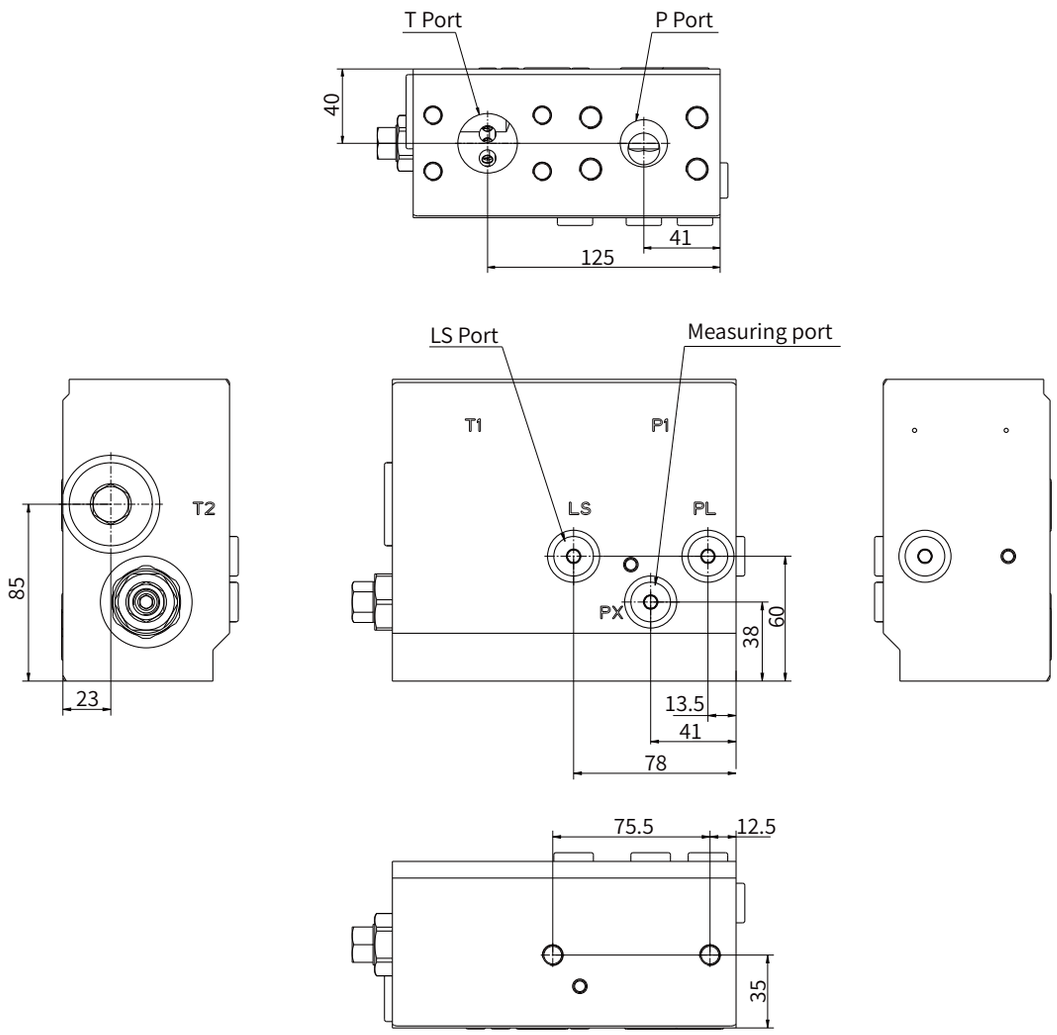


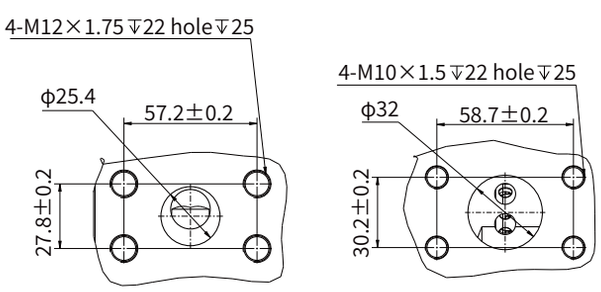




Inlet section — closed center

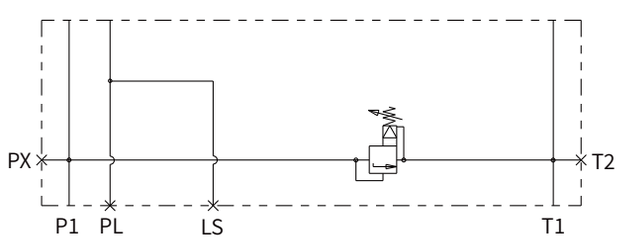
LSPV20

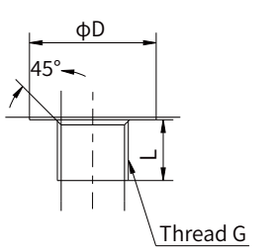




1’ port flange interface(high pressure)

1-1/4’ port flange interface

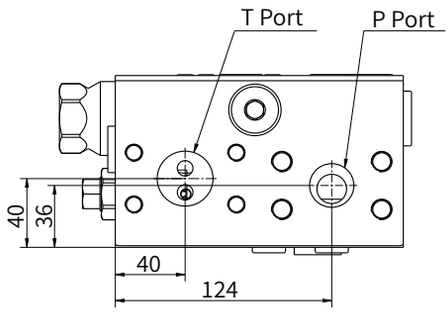


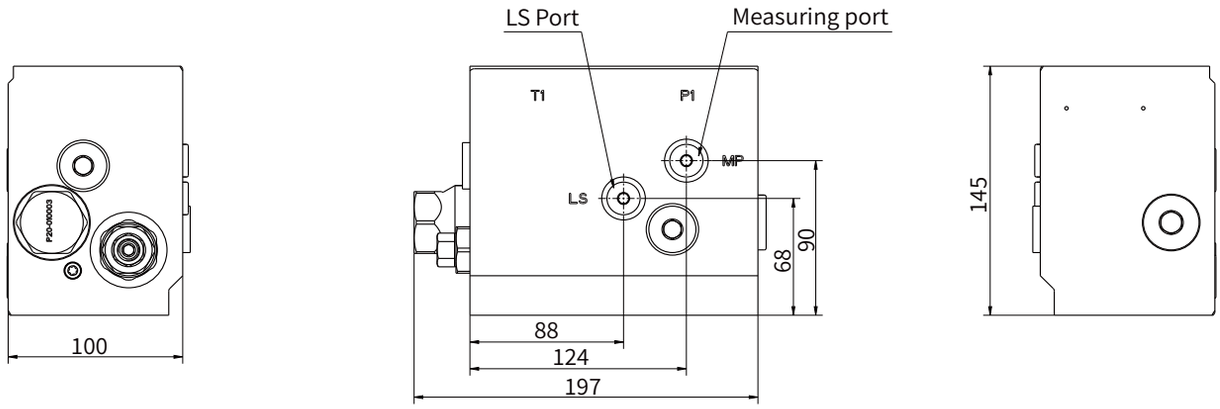


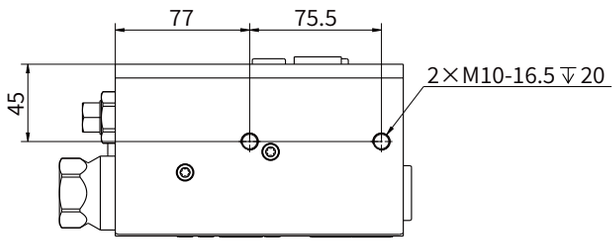
Port dimension	Thread dimensions
LS port: G1/4	G1/4： ΦD 25 L 12
Measuring port：G1/4	

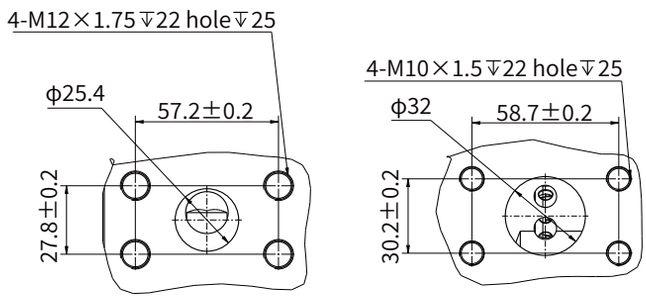
Inlet section — open center

LSPV20

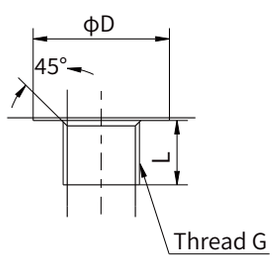








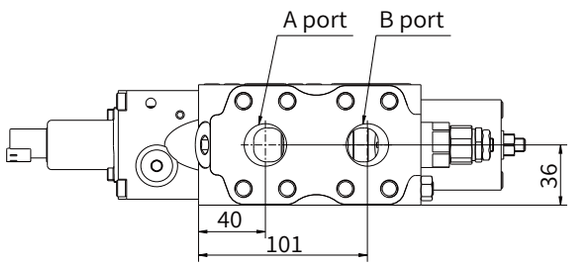
1’ port flange interface(high pressure)1-1/4’ port flange interface

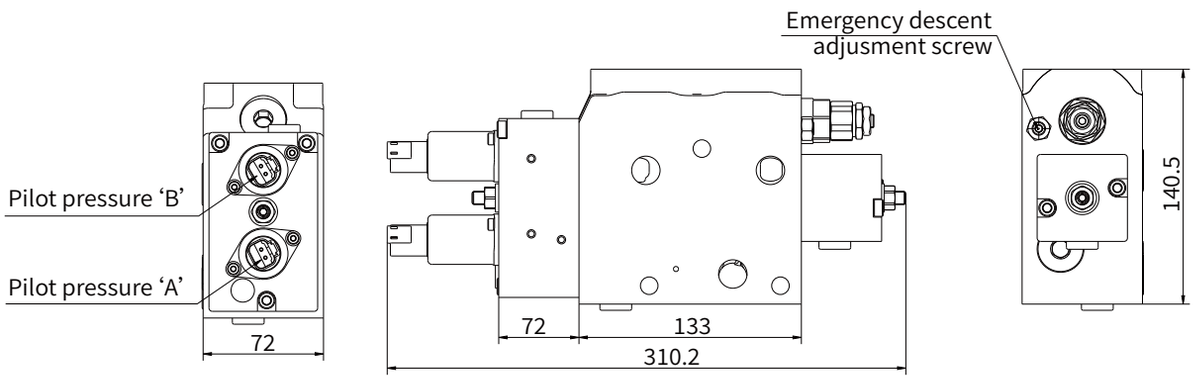


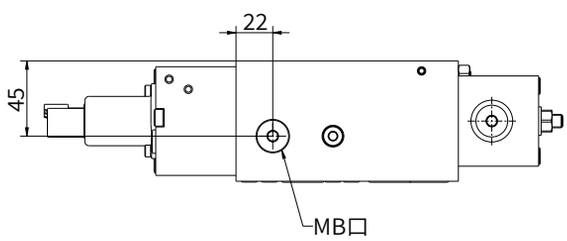
Port dimension	Thread dimensions
LS port: G1/4	G1/4: ΦD 25 L 12
Measuring port:G1/4	

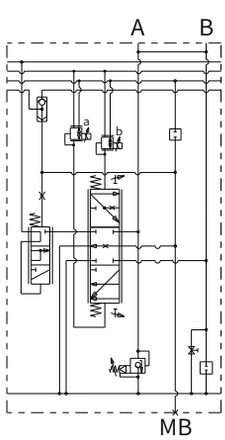
Middle section—electro-hydraulic

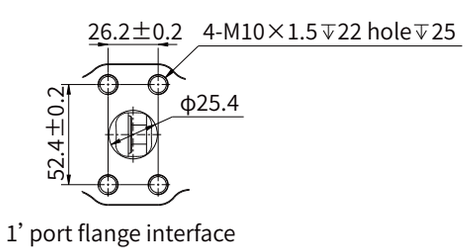
LSPV20



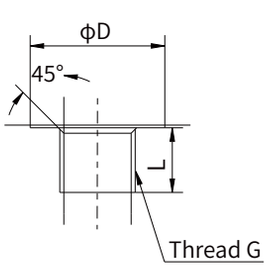








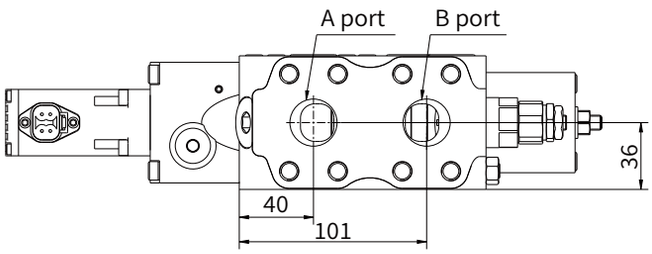
1' port flange interface

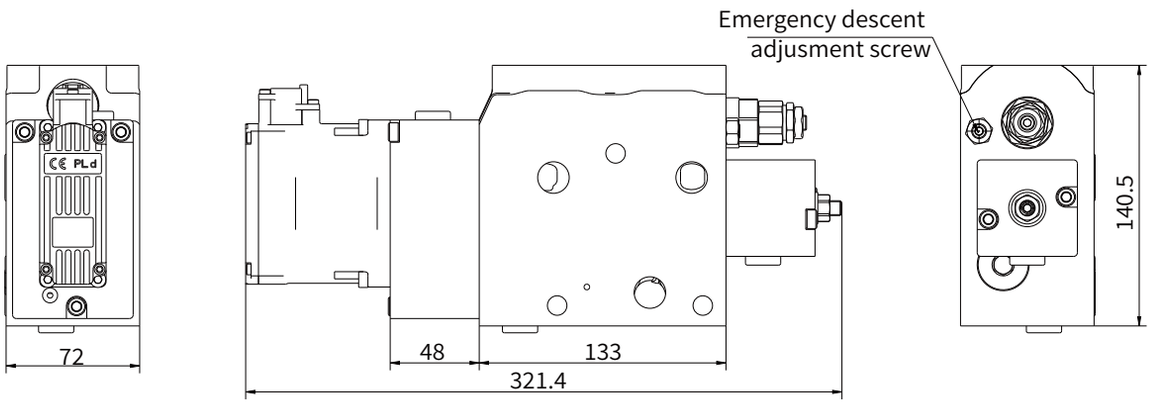


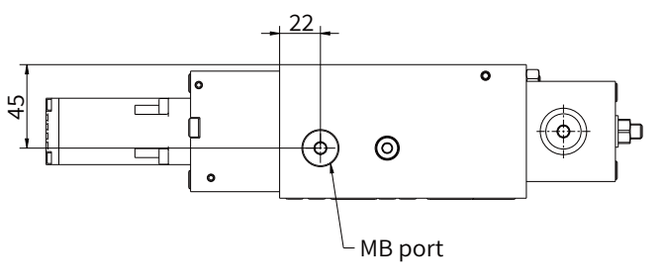
Port dimension		Thread dimensions			
MB port:	G1/4	G1/4 :	ΦD 25	L 12	

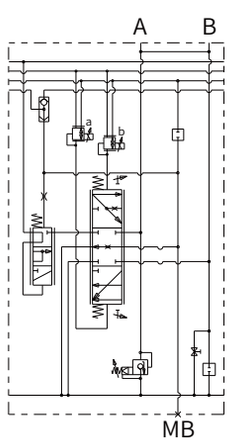
Middle section—OBE (Super high performance E-H control)

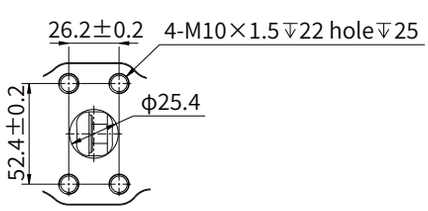
LSPV20



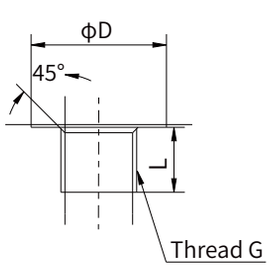








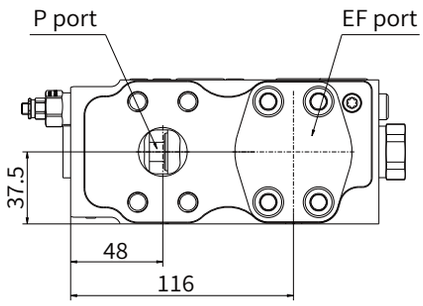
1' port flange interface

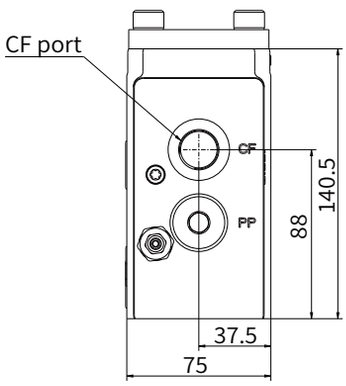


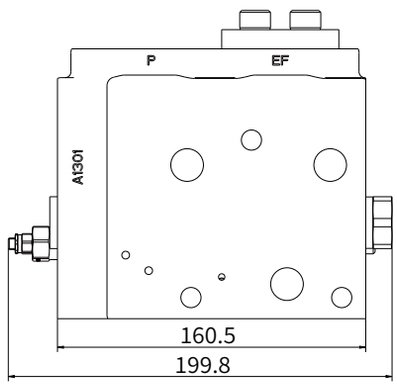
Port dimension		Thread dimensions			
MB port:	G1/4	G1/4 :	ΦD 25	L 12	

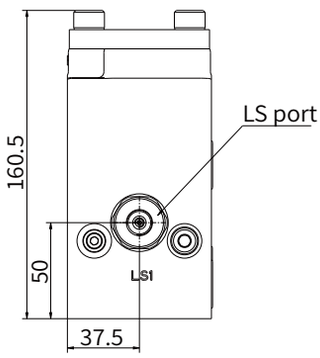
Middle section——Integrated with stearing priority

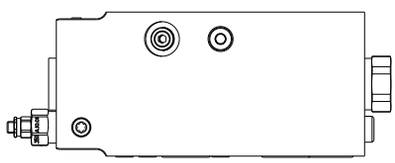
LSPV20F

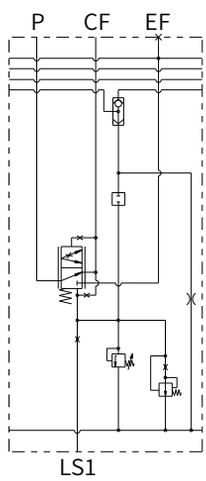


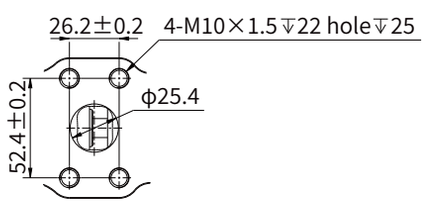




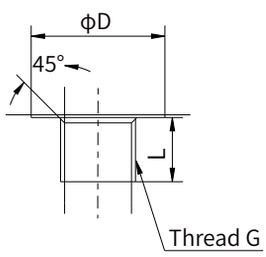








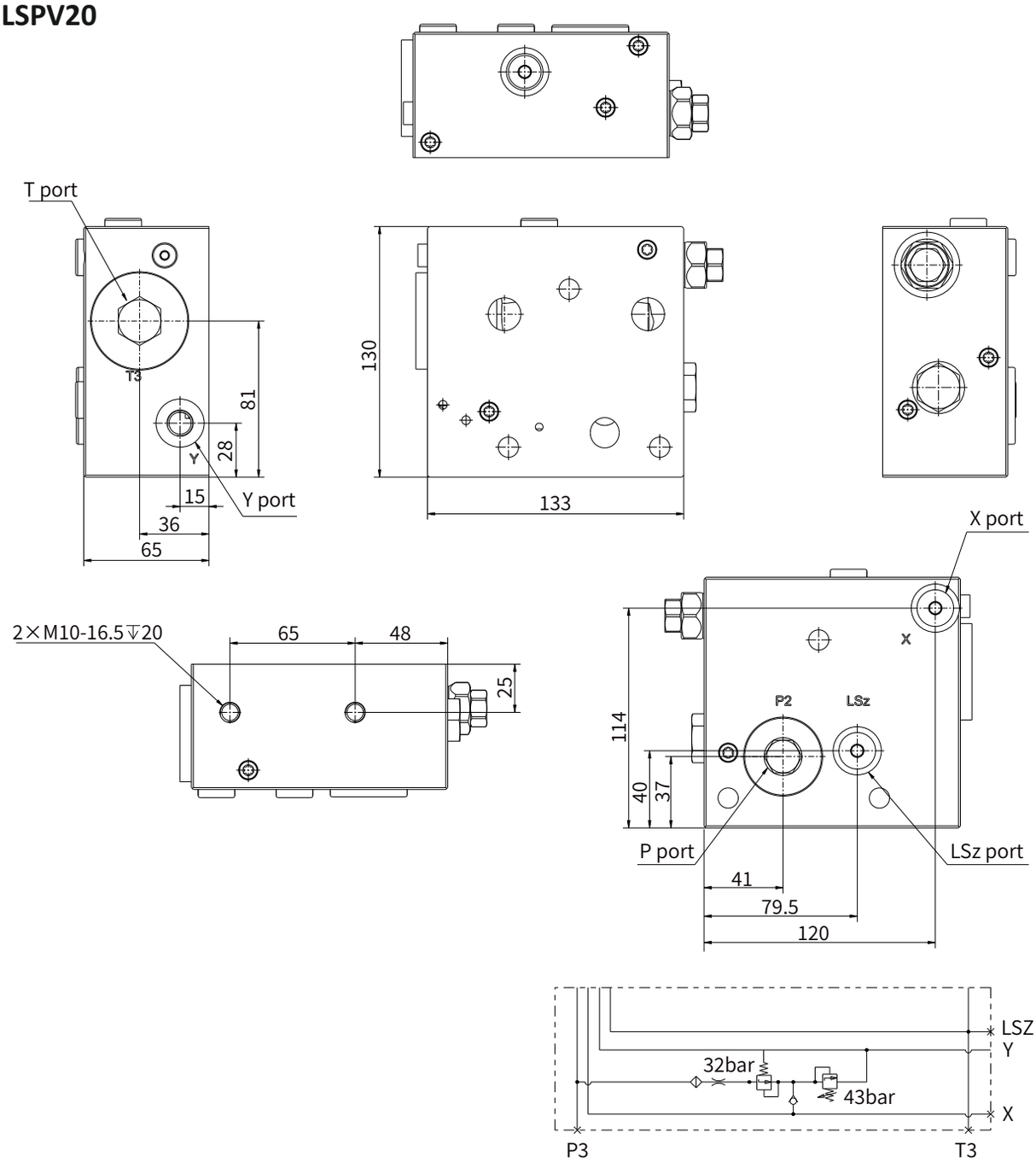
1’ port flange interface

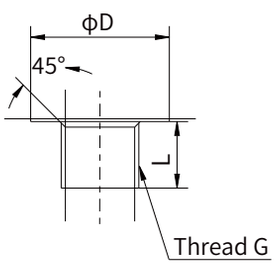


Port dimension		Thread dimensions		
CF port:	G1/2	G1/4：	ΦD 25	L 12
P port:	1 ’	G1/2：	ΦD 32	L 15
LS port:	G1/4			
EF port:	1 ’			

Endlet section assembly (with additional P port)

LSPV20





Port dimension		Thread dimensions			
Y port:	G1/4	G1/4：	ΦD 25	L 12
X port:	G1/4	P:G1	ΦD 41	
LSZ port:	G1/4	T:G1 1/4	ΦD 41	
P port:	G1/2			
T port:	G1/2			

Preferred spool flow

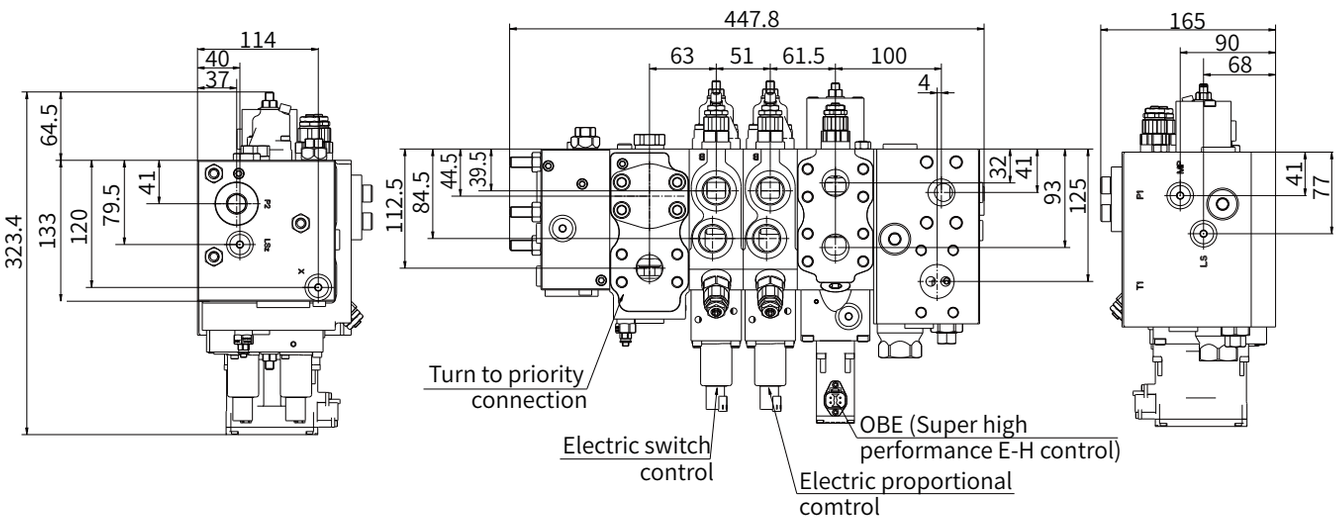
LSPV20

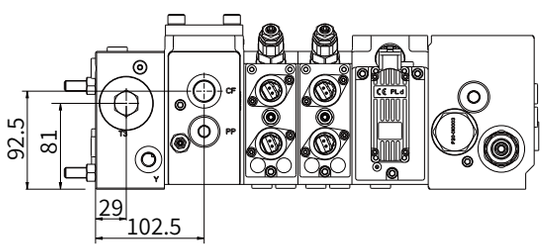
•Single acting valve core(L/min)

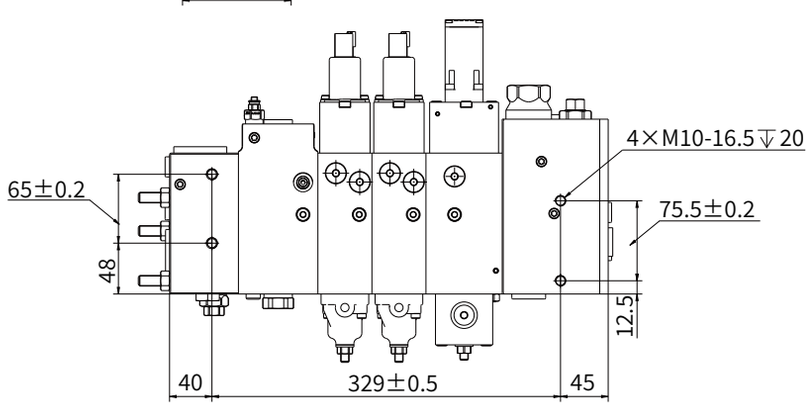
A port	0
B port	200-400

Unit Dimensions

LSPV20

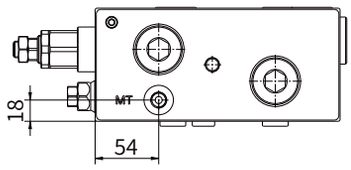


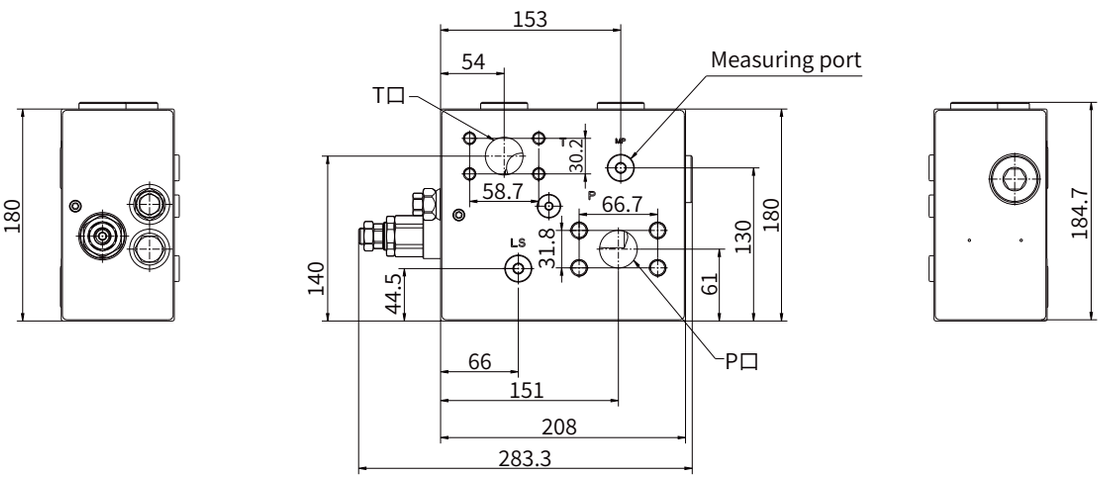


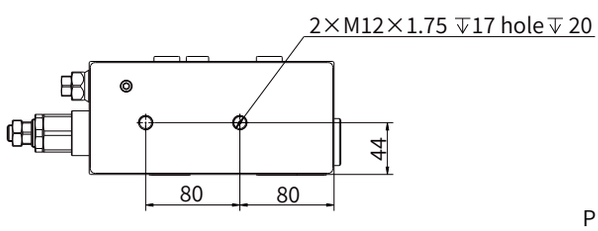


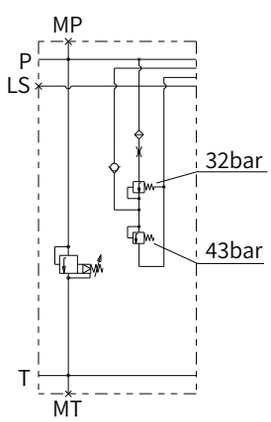
Inlet section — closed center

LSPV25

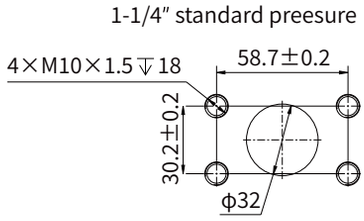




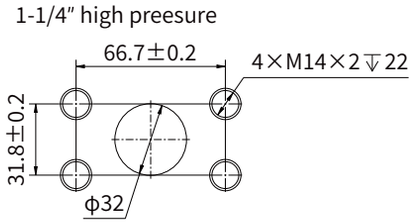


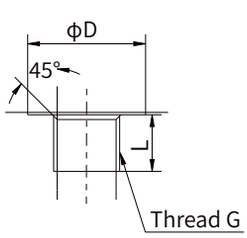


1-1/4" standard preesure



1-1/4" high preesure

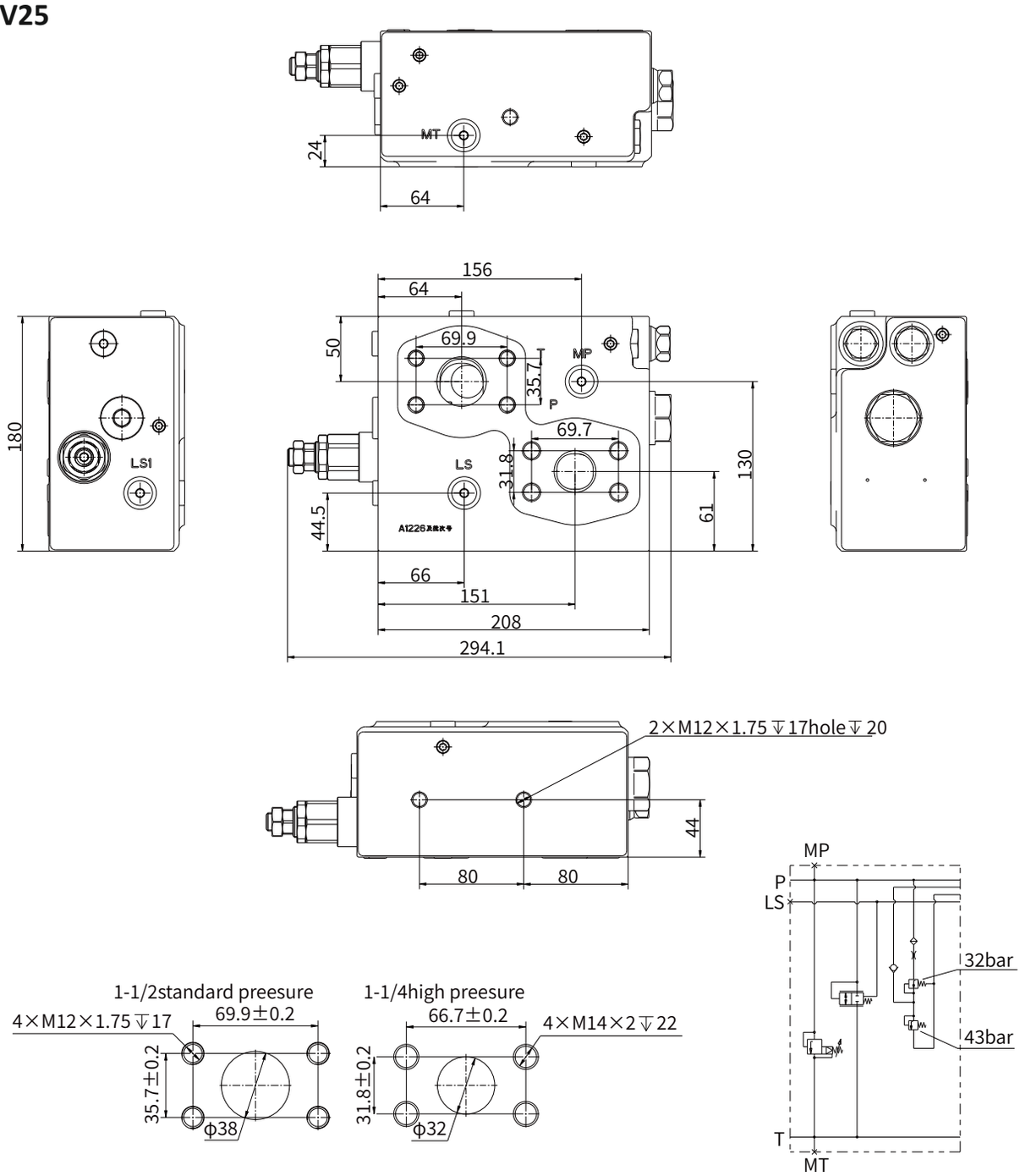


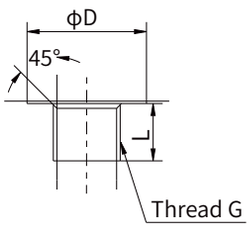


Port dimension		Thread dimensions			
P port:	1 1/4	G3/8：	ΦD 30	L 15	
T port:	1 1/4				
LS port:	G3/8				
MB port:	G3/8				

Inlet section — open center

LSPV25

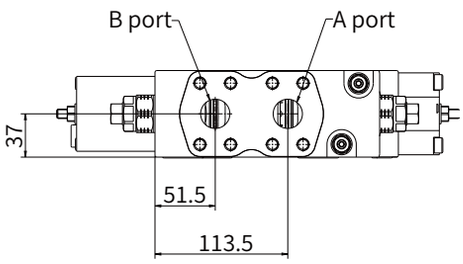


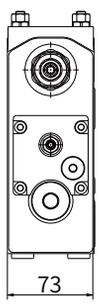


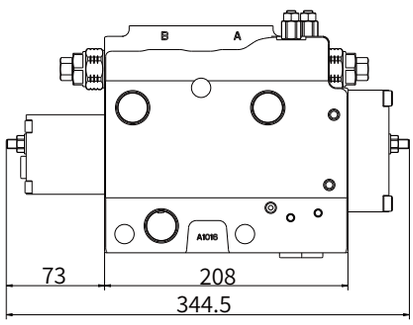
Port dimension		Thread dimensions		
P port:	1 1/4	G3/8：	ΦD 30	L 15
T port:	1 1/2	G1/4：	ΦD 24	L 12
LS port:	G3/8			
MP port:	G3/8			
MT port:	G1/4			

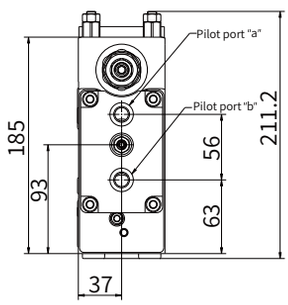
Middle section—hydraulic

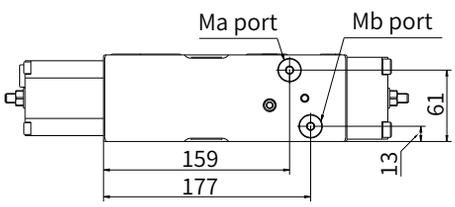
LSPV25

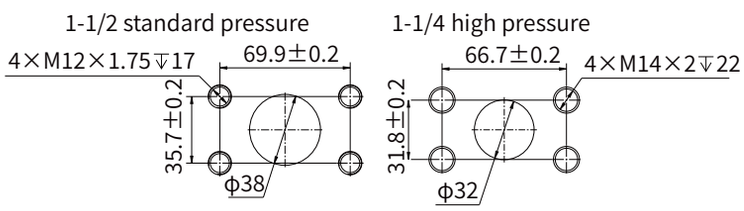


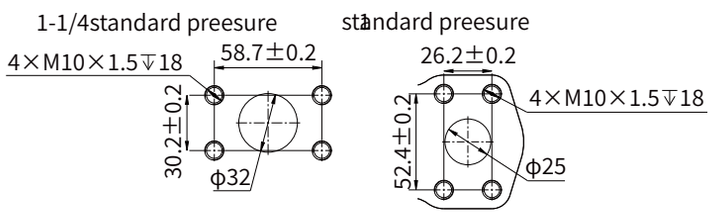


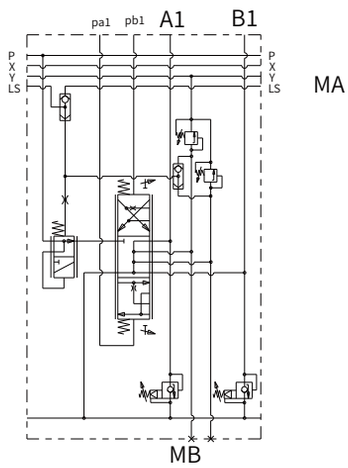


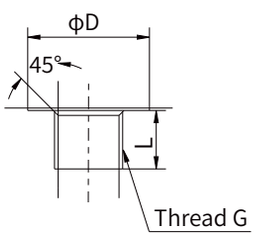








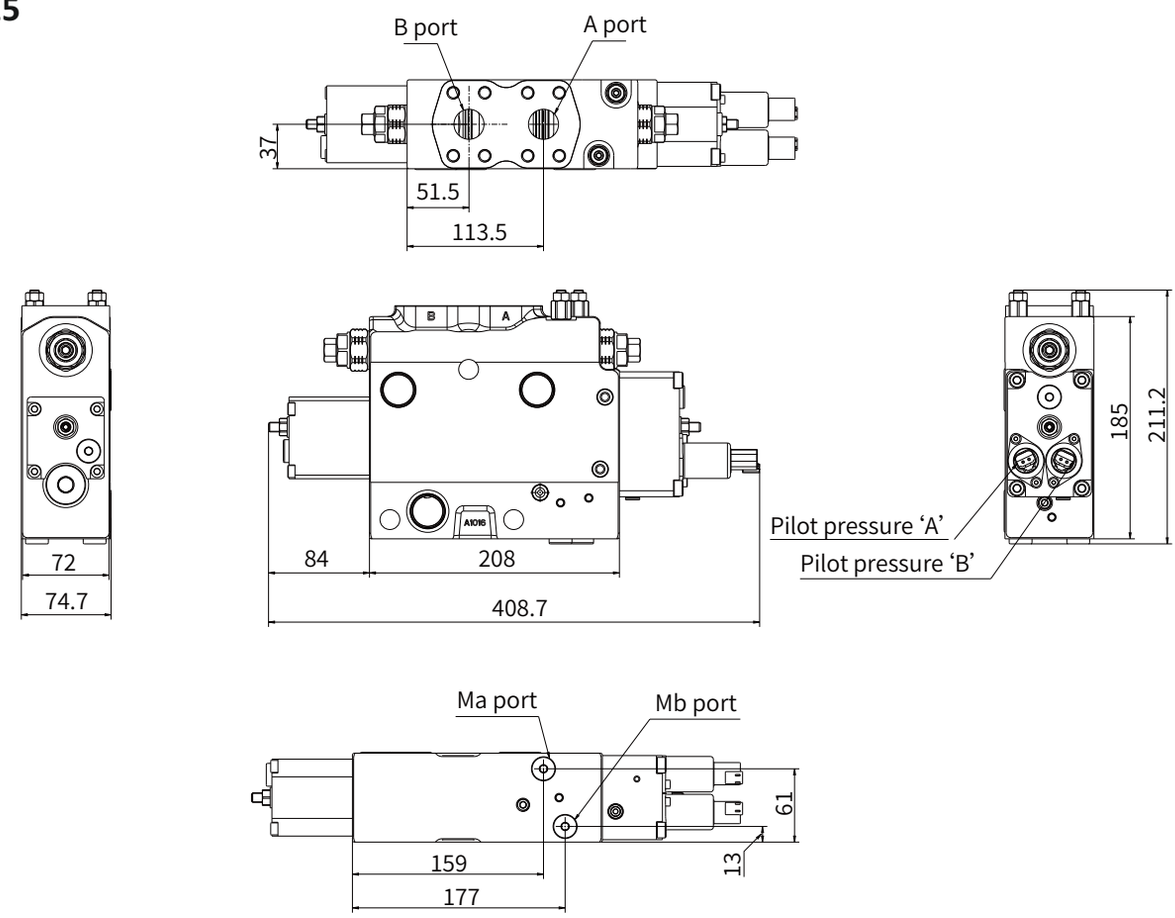


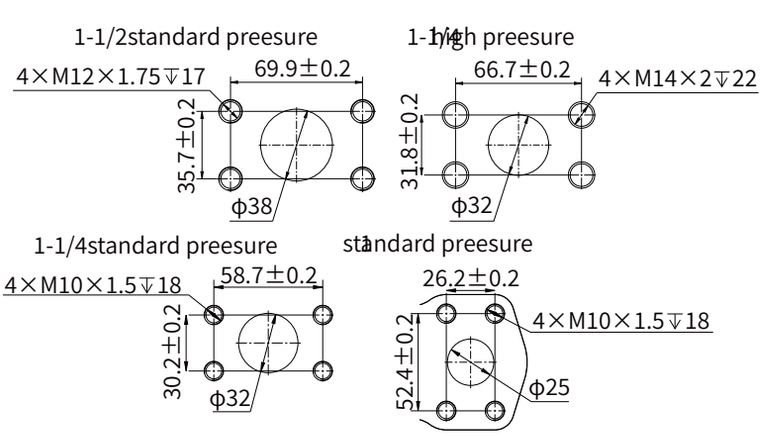


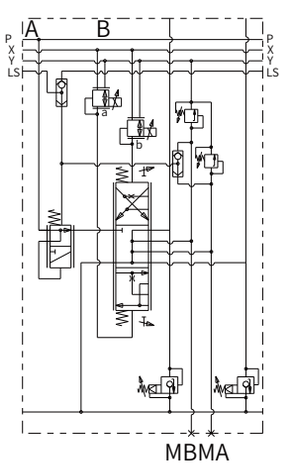
Port dimension	1 1/4	Thread dimensions		
A/B port:		G1/4 :	ΦD 25	L 12
MA/MB/Pilot port:G1/4				

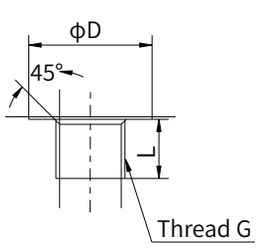
Middle section—electro-hydraulic

LSPV25





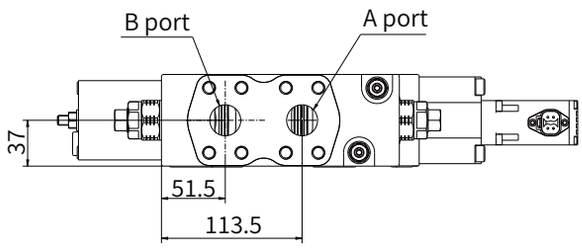


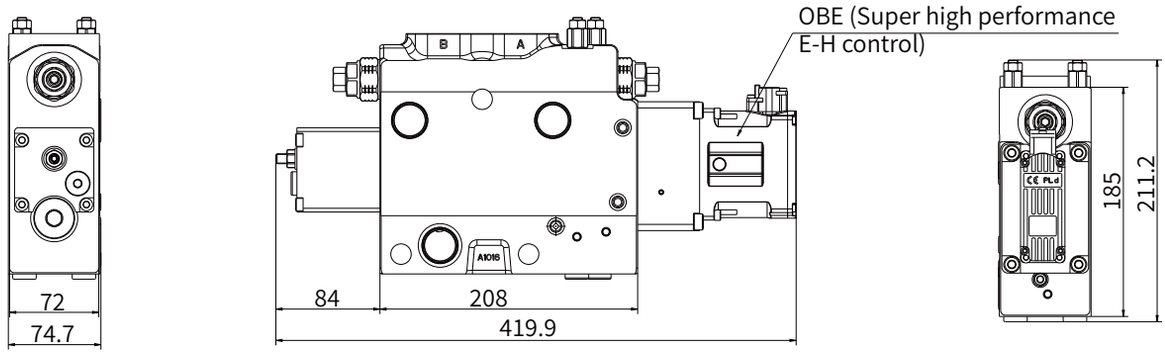


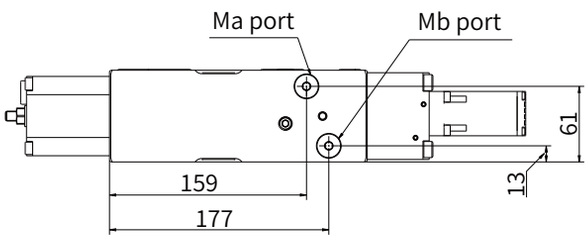
Port dimension	1	Thread dimensions		
A/B port:		G1/4：	ΦD 25	L 12
MA/MB/Pilot port：G1/4				

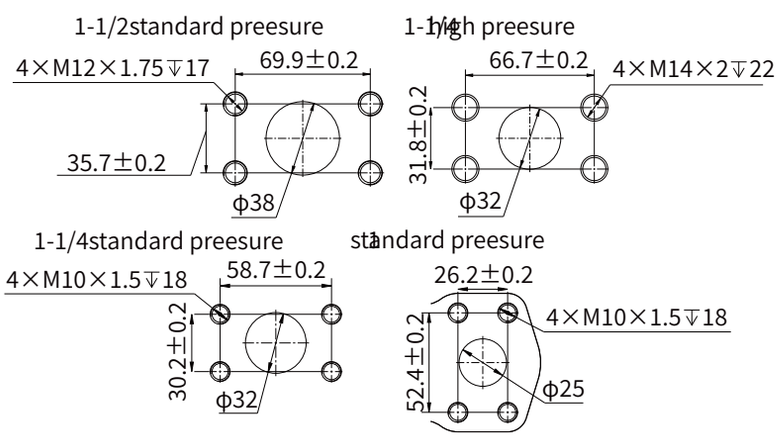
Middle section—OBE (Super high performance E-H control)

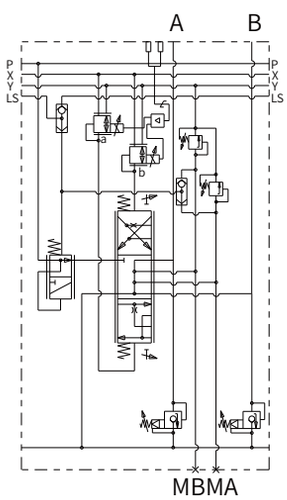
LSPV25

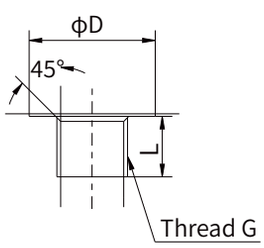








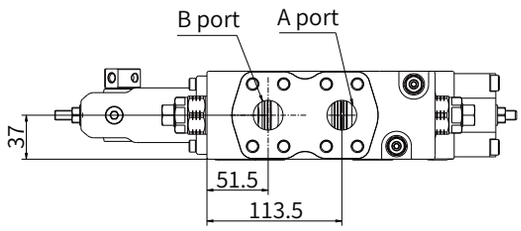


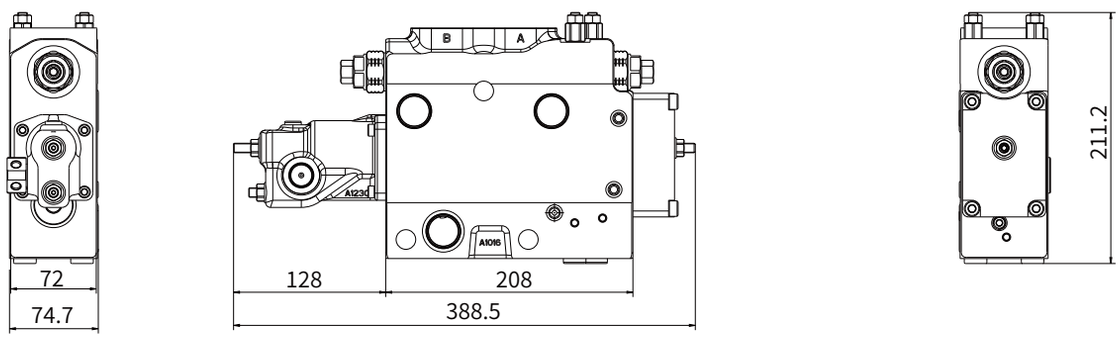


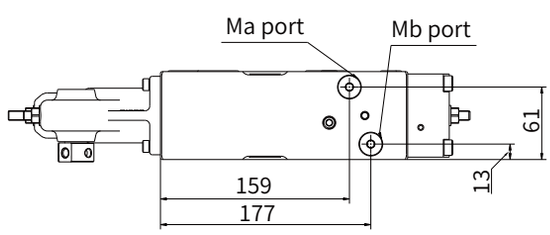
Port dimension	1	Thread dimensions			
A/B port:		G1/4：	ΦD 25	L 12	
MA/MB/Pilot port：G1/4					

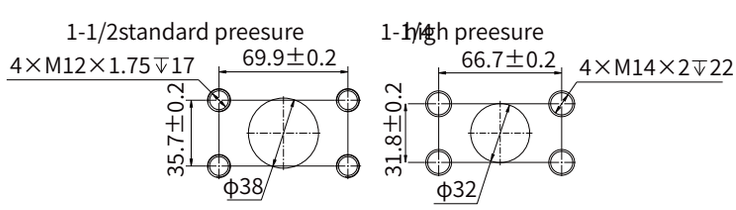
Middle section—manual control

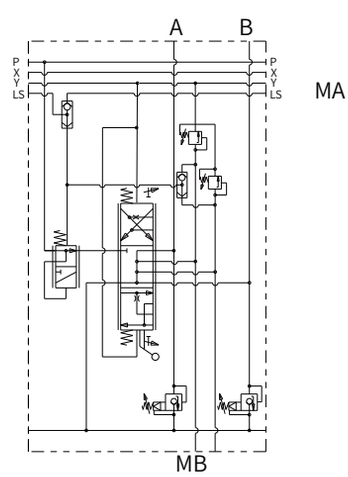
LSPV25

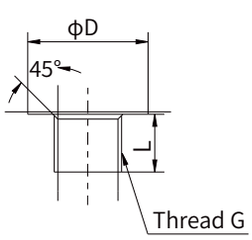








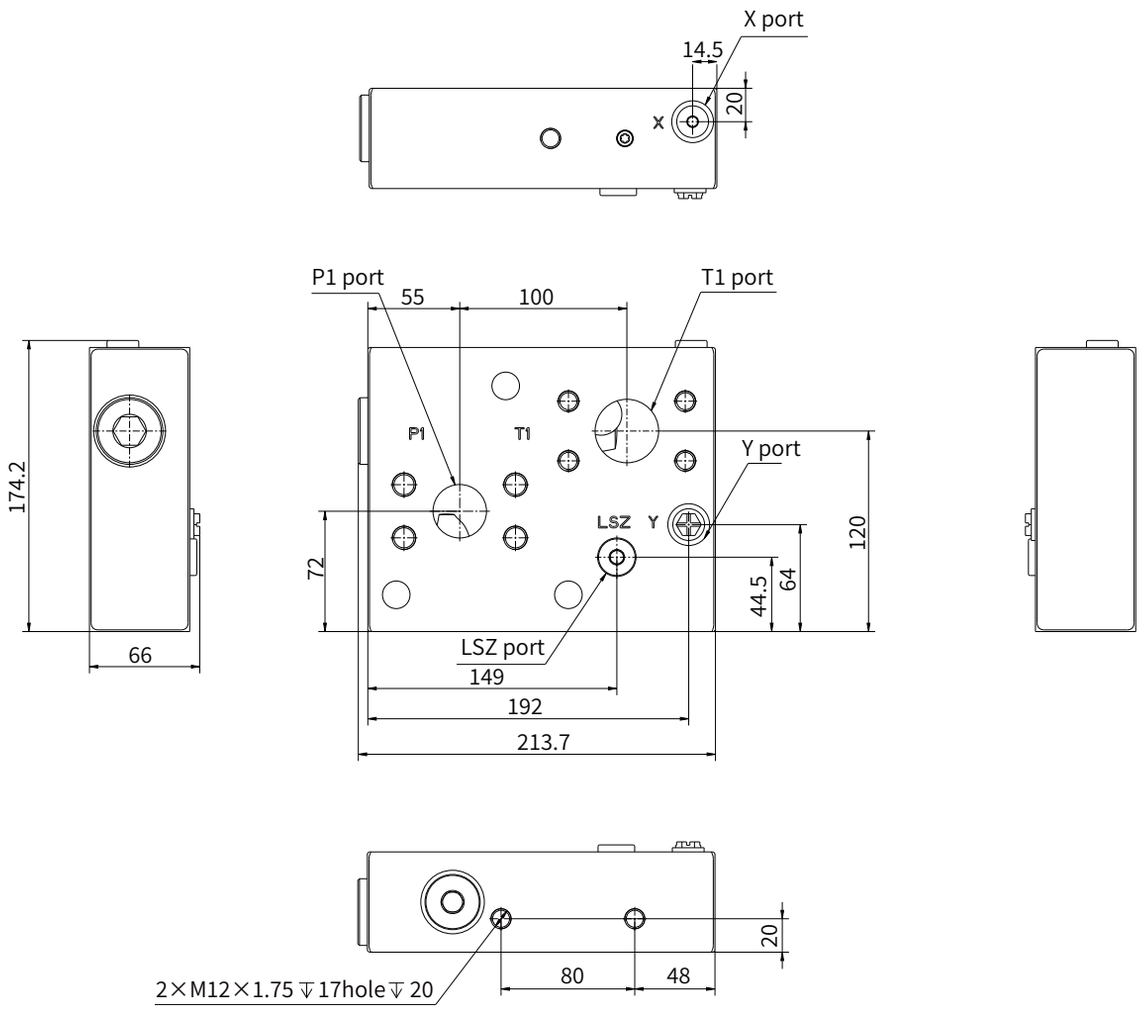


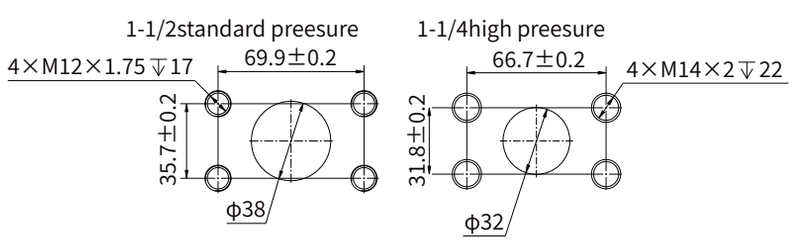


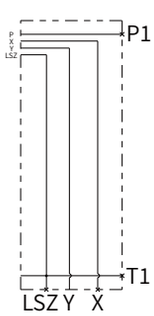
Port dimension	1	Thread dimensions		
A/B port:		G1/4：	ΦD 25	L 12
MA/MB/Pilot port：G1/4				

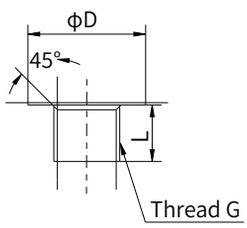
Endlet section assembly (with additional P port)

LSPV25





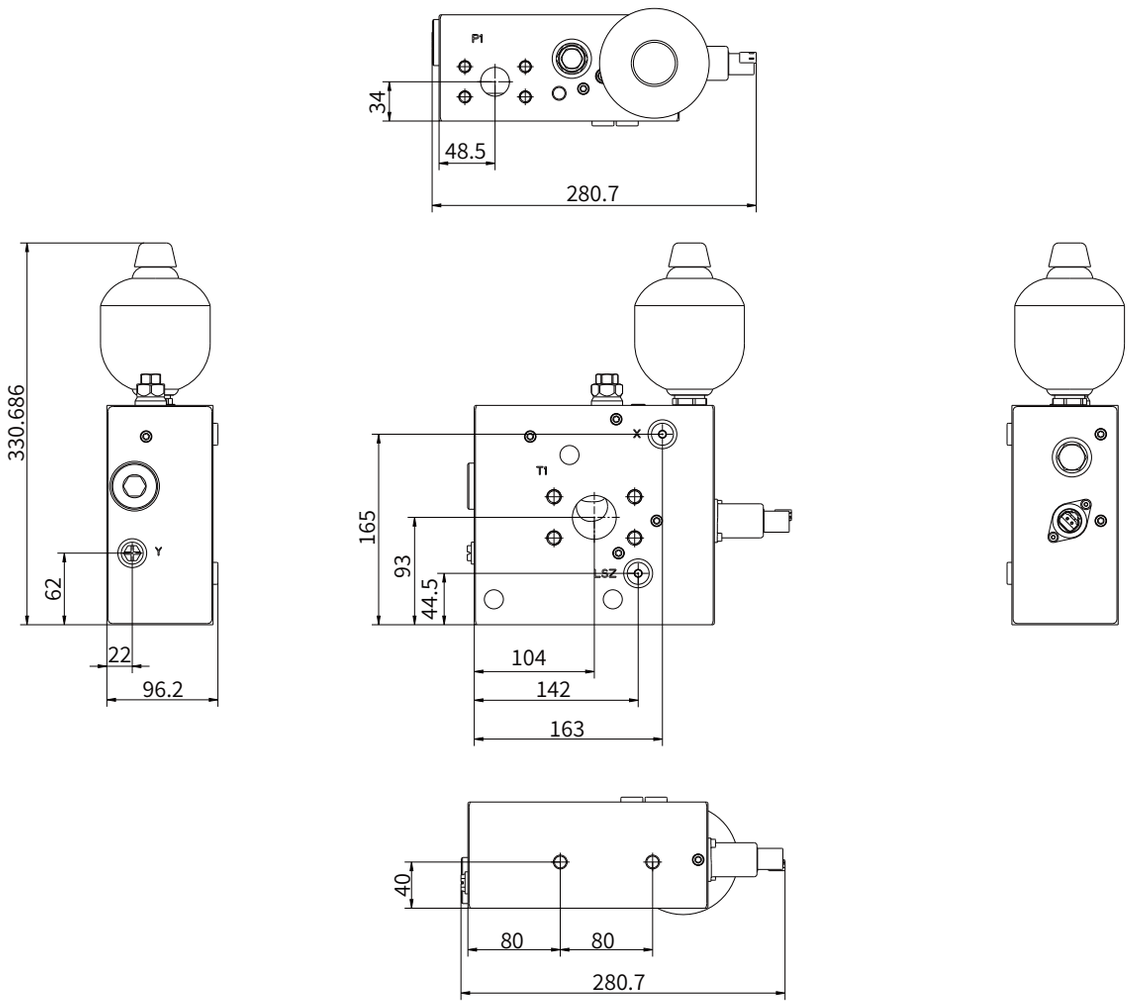


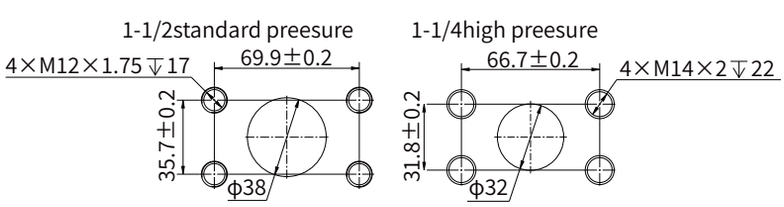


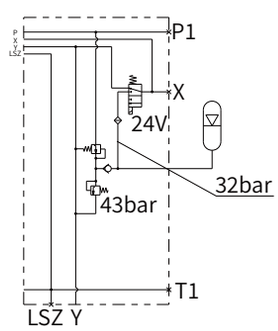
Port dimension		Thread dimensions		
P 1 port:	1 1/4	G3/8：	ΦD 23	L 12.5
T1 port:	1 1/2	G1/4：	ΦD 25	L 12
X/Y port:	G1/4			
LSZ port:	G3/8			

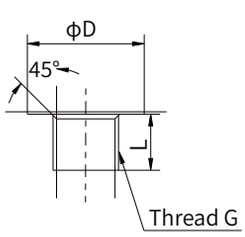
Endlet section assembly (with additional P port)

LSPV25









Port dimension		Thread dimensions		
P 1 port:	1 1/4	G3/8:	ΦD 23	L 12.5
T1 port:	1 1/2	G1/4:	ΦD 25	L 12
X/Y port: G1/4				
LSZ port: G3/8				

Preferred spool flow

LSPV25

- **Symmetry spool**

Pressure compensator	Flow(L/min)					
T	500	400	300	200	100	50

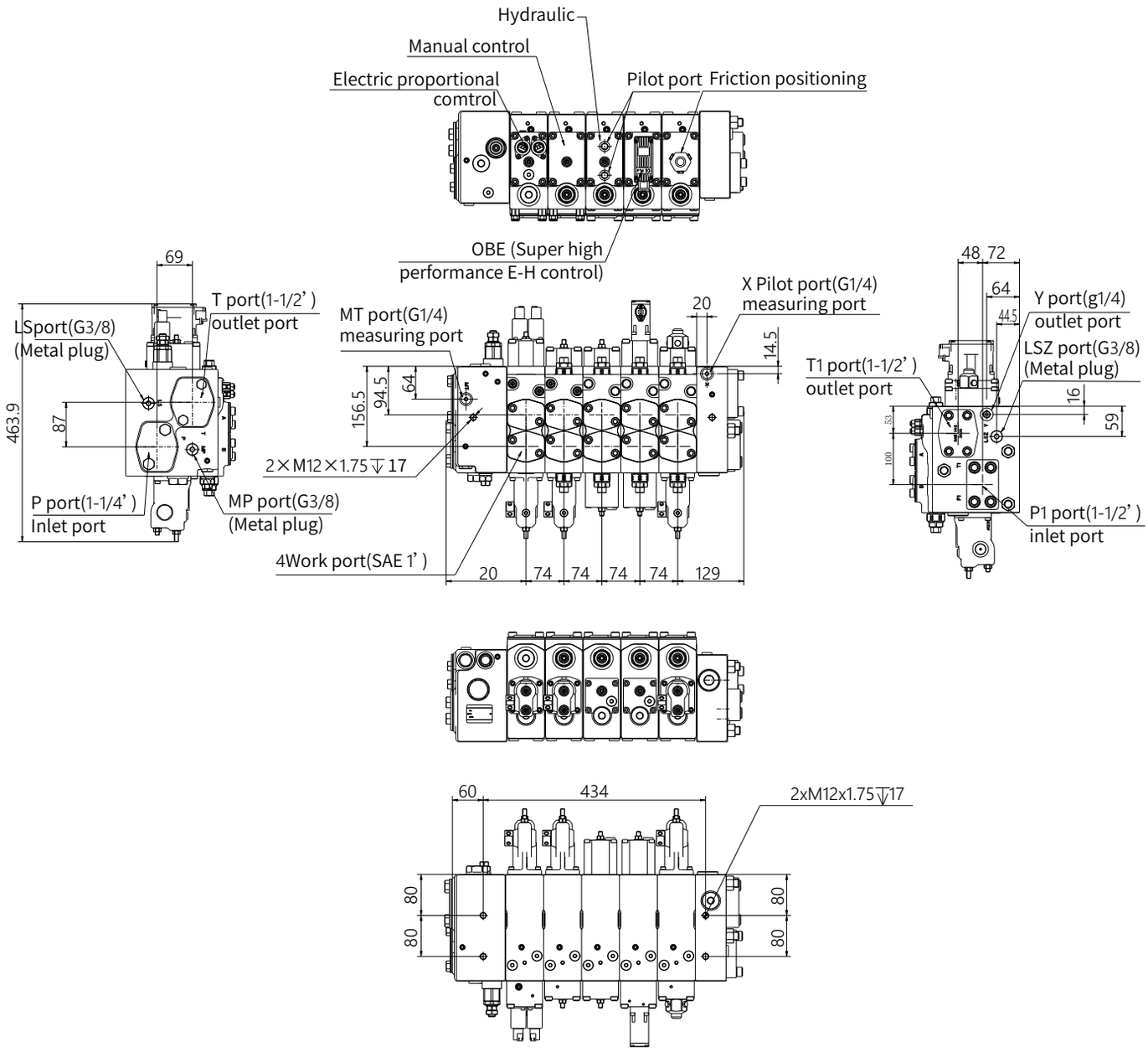
- **Asymmetry Spool**

Pressure compensator	Flow(L/min)				
T	500-400	400-300	300-200	200-100	100-50

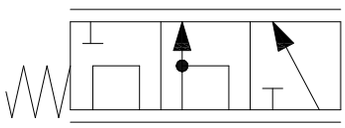
(*For other parameter requirements,please consult our company)

Unit dimensions

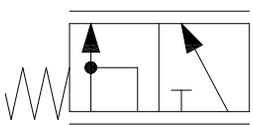
LSPV25



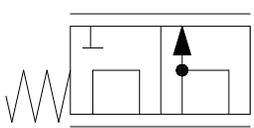
Pressure compensator type



Code 'S'
With pressure compensator
With load holding function

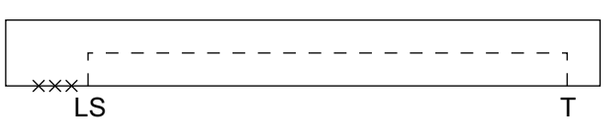


Code 'T'
With pressure compensator
Without load holding function

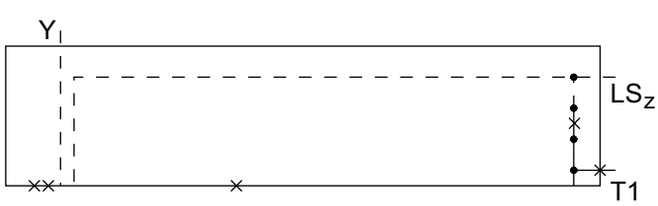


Code 'C'
Without pressure compensator
With load holding function

End elements option



End element with LS unloading
Ordering code: LA



End element without LS unloading
Ordering code: LZ
Short description
Supply of tandem switched LS signals

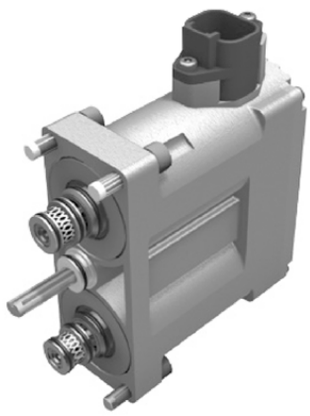
On-board electronics: OBE

The internal closed loop positon control configuration of the OBE control cover makes the valve spool achieve the desired postion with accuracy levels approaching the performance of a servo- valve, by continuously comparing the set-point of a remote control device (poteniometer, joystick , machine management system) with the feedback signal generated by a high precision hall effect position transducer.

Choice between different types of control:

1 - Analog control (0 – 5V), with following auxiliary signals available:
- spool postion feedback
- 5V for external potentiometer or joystick

2 - CANbus control (J1939 or CANopen protocols)



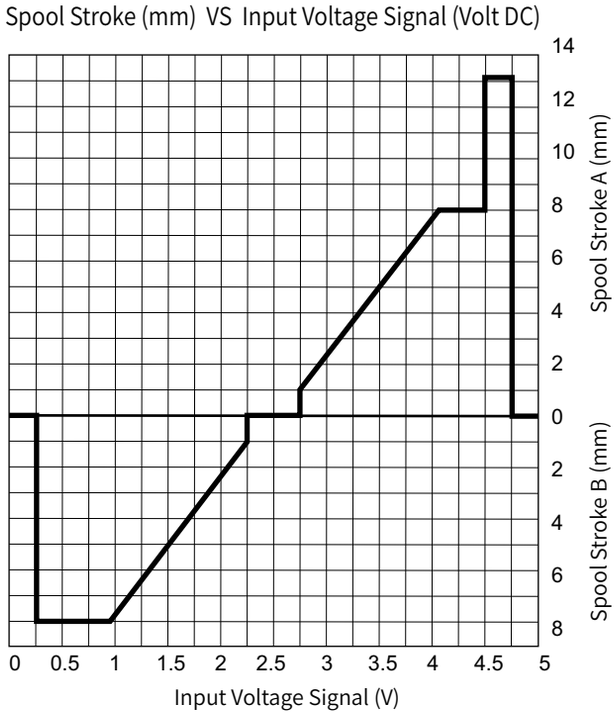
SPOOL STROKE A

When the input voltage signal fed to the MLT FD5 actuator is maintained within 2.25 and 2.75V, the directional valve spool is at rest (Neutral Dead Band). When Vin = 2.75V, the spool steps up from NEUTRAL to MINIMUM FLOW control position. A linear ramp from MIN. to MAX. spool stroke will follow by increasing Vin from 2.75 to 4.1V. At Vin = 4.50V, the spool is brought into its FLOAT POSITION, if present. By decreasing the input voltage from 4.1 to 2.75V, the spool stroke is linearly reduced and after the oil flow is fully shut-off, a step-down from MINIMUM FLOW to NEUTRAL position takes place.

SPOOL STROKE B

Same as for STROKE A, by varying Vin from 2.25 to 0.9V, the spool will go from NEUTRAL to MAX. STROKE in the opposite direction.

Spool Stroke (mm) VS Input Voltage Signal (Volt DC)



ALARM / FAIL - SAFE MODE

An input voltage variation beyond the calibration range (<0.25V or >4.75V) will bring the system into an ALARM mode, urging the spool to return to its NEUTRAL position until Vin is brought back to its nominal control range.

On-board electronics: OBE

Technical data

Hydraulic specifications:

Max. supply pressure: 35 bar

Min. supply pressure: 12bar

Max. back pressure: 1.5bar

Pilot flow requirement: 0.2 L/min

Filtration: 18/15(ISO 4406)

Electrical specifications:

Operating valtage: 10-30VDC

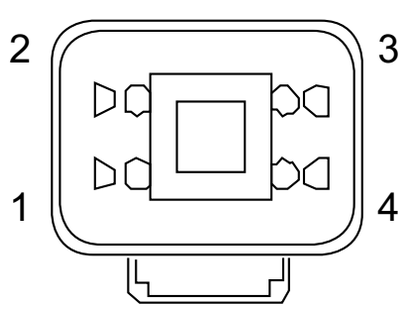
Max,. current consumption: 750mA

Analog input impedance: >40kOhm

Analog input signal: 0-5 V

Protection class: IP67

Connector pinout (Front view)



D/A0

1. + Power Supply
2. Do not Connect
3. Control Signal
4. - Power Supply (GND)

D/A5

1. + Power Supply
2. + 5V Aux. Supply voltage
3. Control Signal
4. - Power Supply (GND)

D/AF

1. + Power Supply
2. Sensor Feedback Output
3. Control Signal
4. - Power Supply (GND)

D/C0

1. + Power Supply
2. CANL
3. CANH
4. - Power Supply (GND)

The specified data is for product description purposes only and may not be deemed to be guaranteed unless expressly confirmed in the contract.

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