



1.1

HVSH SERIES

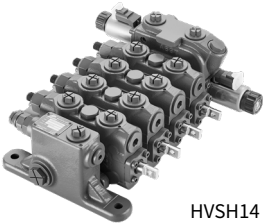
OPEN CENTER CONTROL DIRECTIONAL VALVE

HVSH :

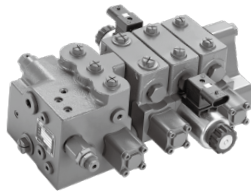
Nominal size	14	14A	16D	16B	20
Rated flow(L/min)	70	30/70	80	90	160
Max. pressure(bar)	315	315	315	315	315
Control electric voltage (VDC)	12/24	12/24	12	12	-

Benefits:

- Low pressure drop, more energy-efficient
- Sandwich plate structure or monoblock design, flexible adjustment
- Emergency valve, prevent misuse
- Small and light



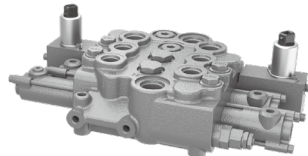
HVSH14 (片式)



HVSH14A (片式)



HVSH16D (片式)



HVSH16B (整体式)

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Features

1. Structure

- Sandwich plate of design (HVSH14, HVSH14A, HVSH16D, HVSH20)
- Monoblock design (HVSH16B)

2. Control

- Electro-hydraulic control (HVSH14, HVSH14A, HVSH16B)
- Manual control (HVSH14, HVSH14A, HVSH16D, HVSH20)
- Hydraulic operation (HVSH14, HVSH20)

3. Applications



Hooklift



Wrecker



Sweeper



Compression vehicle



Skid steer loader



Backhoe loaders



Tractor
(HVSH16D)



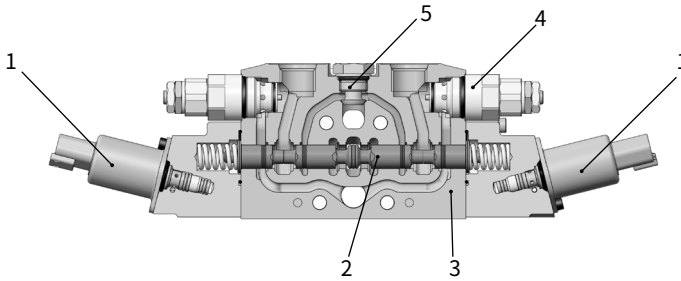
Rice harvester
(HVSH14A)

4. Technical characteristics (The HVSH16D is used in tractors)

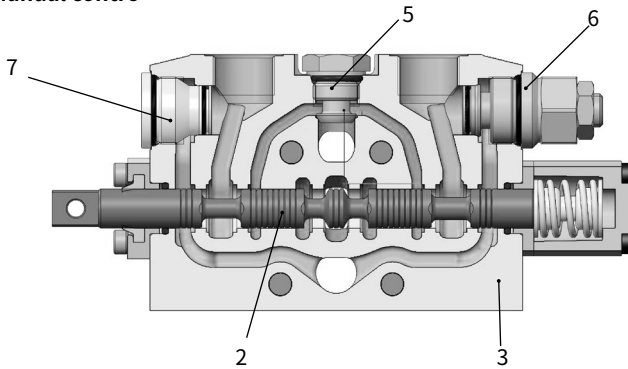
- Mechanical lifter with mechanical holding function.
- The mechanical elevator is connected with the lift positioning + automatic reset function
- Mechanical lifter with floating positioning function.
- Optional electro-hydraulic lift taillink.
- Port B is equipped with single and double acting switching valve.

Section view

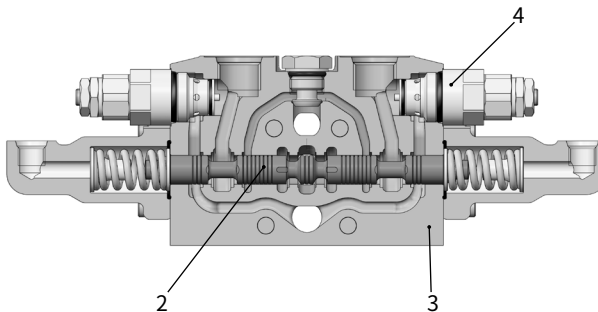
· HVSH14 Electro-hydraulic control



· HVSH14 Manual contro



· HVSH14 Hydraulic operation



1 Solenoid Valve

2 Spool

3 Valve block

4 Relief valve

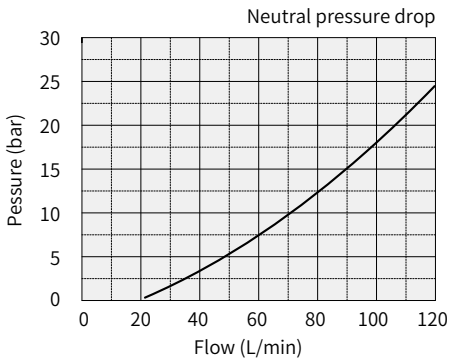
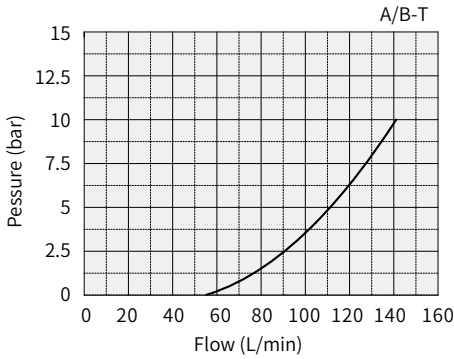
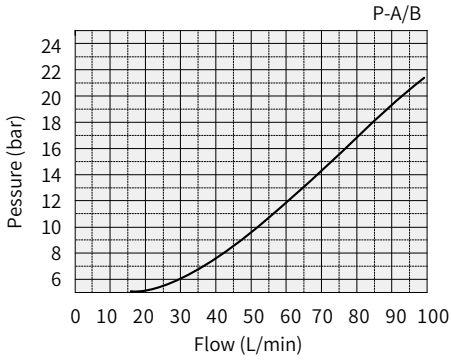
5 Check valve

6 Single and double acting
switching valve

7 Plug

Characteristic curves

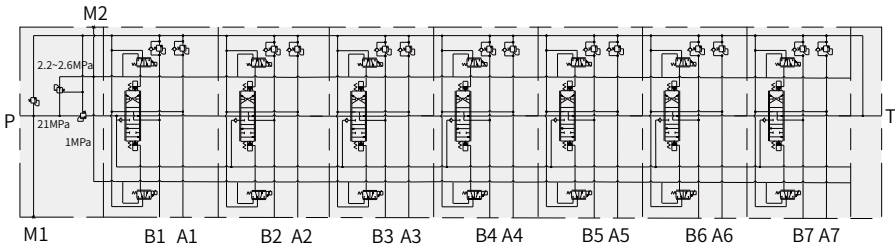
· Pressure drop characteristic curve (HVSH14)



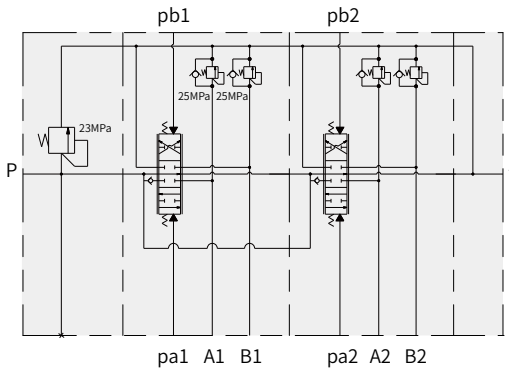
01

Hydraulic diagram

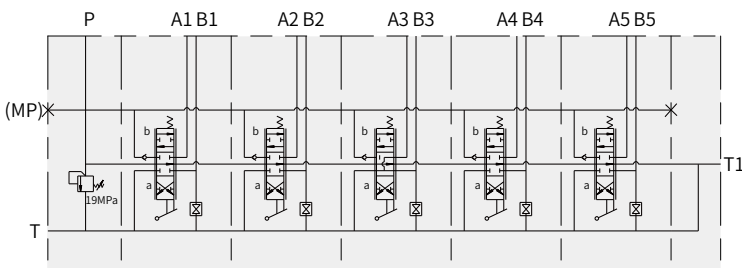
· HVSH14 Electro-hydraulic control



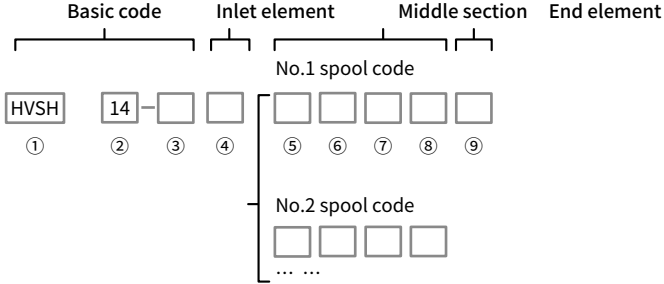
· HVSH14 Hydraulic operation




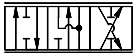
· HVSH14 Manual contro



Ordering code

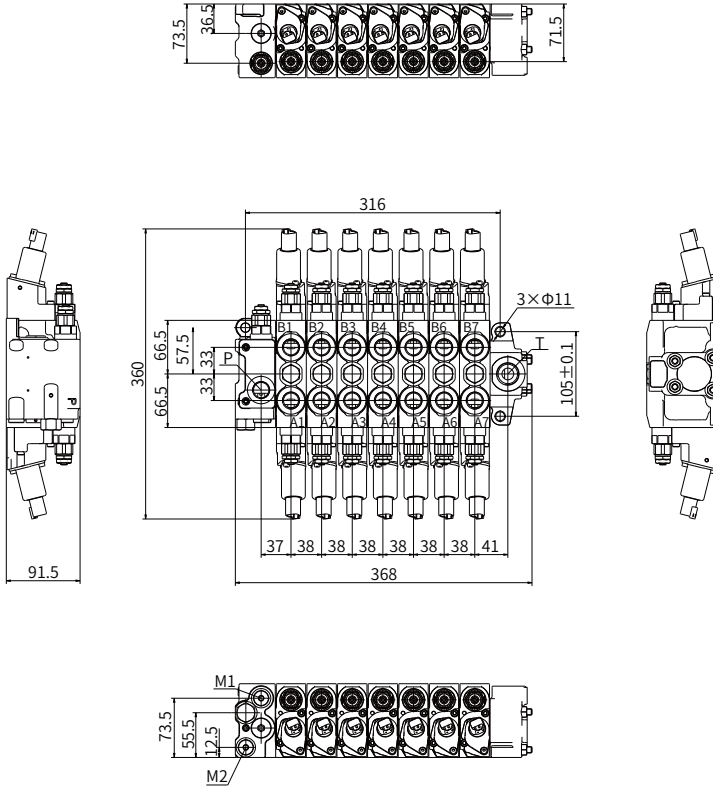


Ordering details: HVSH14 - 03 - P220 - $\left[\begin{array}{l} \text{O150PH} \\ \text{YP150M} \\ \text{Y150SM} \end{array} \right] - \text{N}$

Basic code	① Structure	HVSH	Sandwich plate design
	② Nominal size		14
	③ Number of directional middle sections		01-07
Inlet element	④ Main relief valve	P***	With main relief valve, setting pressure, 3- digits, bar
		C	Without main relief valve
Middle directional section	⑤ Spool function	O	O Type 
		Y	Y Type 
	⑥ Relief valve at A side	***	With relief valve, setting pressure, 3- digits, bar
		P	With plug
	⑦ Relief valve at B side	***	With relief valve, setting pressure, 3- digits, bar
		P	With plug
		S	Single-double action switch (Available in mechanical control link only)
	⑧ * Operation type	E	Electro-hydraulic control
H		Hydraulic operation	
M		Manual contro	
Endlet section	⑨ carry-over function	N	Without carry over
*	Other request	Further requirement in the clear text	

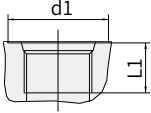
Unit dimensions

· HVSH14 Electro-hydraulic control



Port connection

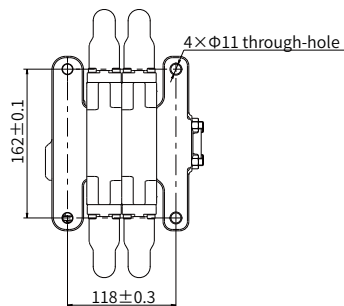
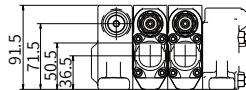
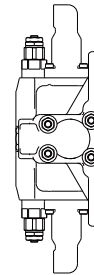
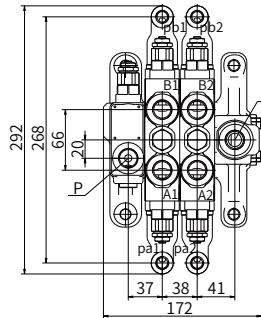
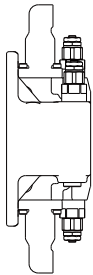
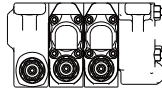
·HVSH14 Electro-hydraulic control

	HVSH14	Port JIS B 2351		Thread	d1	L1
		P	Inlet port	G1/2	34	16
		T	Outlet port	G3/4	43	17
		A/B	Work port	G1/2	34	16
		MP	Other oil orifice	G1/4	24	15

01

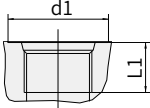
Unit dimensions

· HVSH14 Hydraulic operation



Port connection

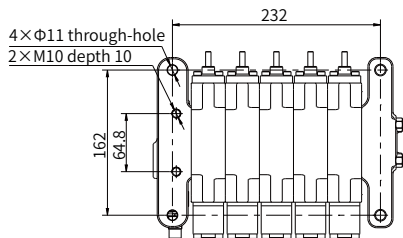
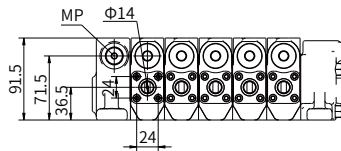
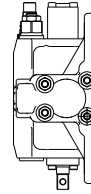
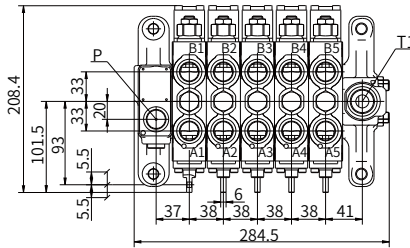
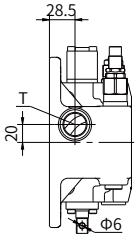
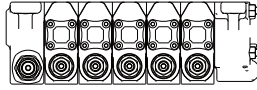
· HVSH14 Hydraulic operation

	HVSH14	Port JIS B 2351		Thread	d1	L1
		P	Inlet port	G1/2	34	16
		T	Outlet port	G3/4	43	17
		A/B	Work port	G1/2	34	16
		pa/pb	Pilot port	G1/4	24	15
		M1	Other oil orifice	G1/4	24	15

01

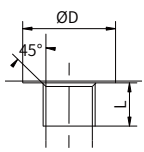
Unit dimensions

· HVSH14 Manual contro



Port connection

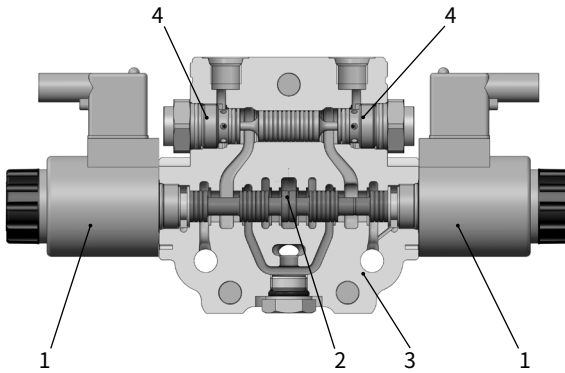
· HVSH14 Manual contro

	HVSH14	Port ISO 9974		Thread	ΦD	L1
		P	Inlet port	M22*1.5	28	14
		T	Outlet port	M27*2	33	16
		A/B	Work port	M22*1.5	28	14
		MP	Other oil orifice	M14*1.5	20	12

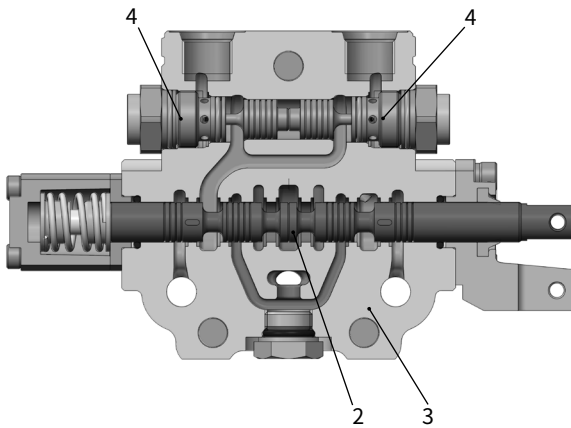
01

Section view

· HVSH14A Electromagnetic direct thrust



· HVSH14A Manual contro



1 Electromagnet

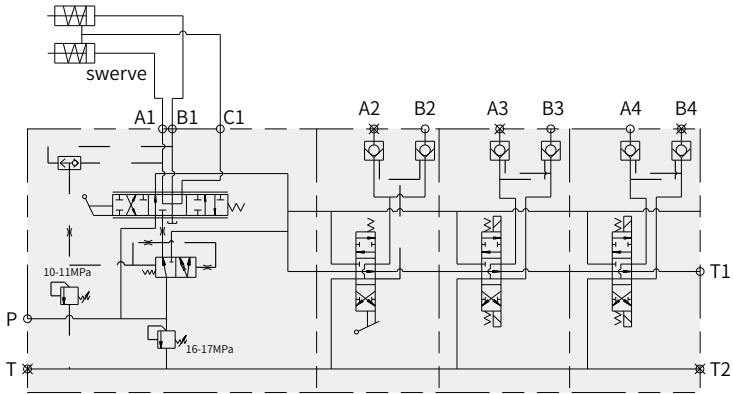
2 Spool

3 Valve block

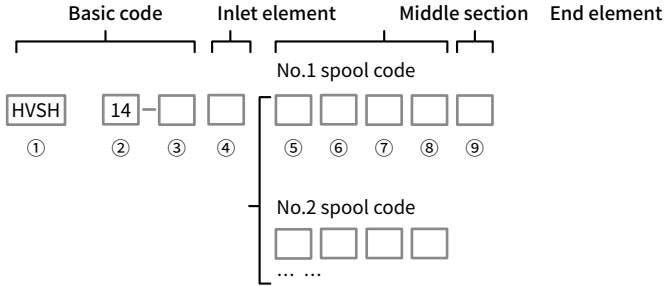
4 Check valve

Hydraulic diagram

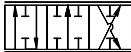
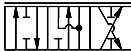
· HVSH14A



Ordering code

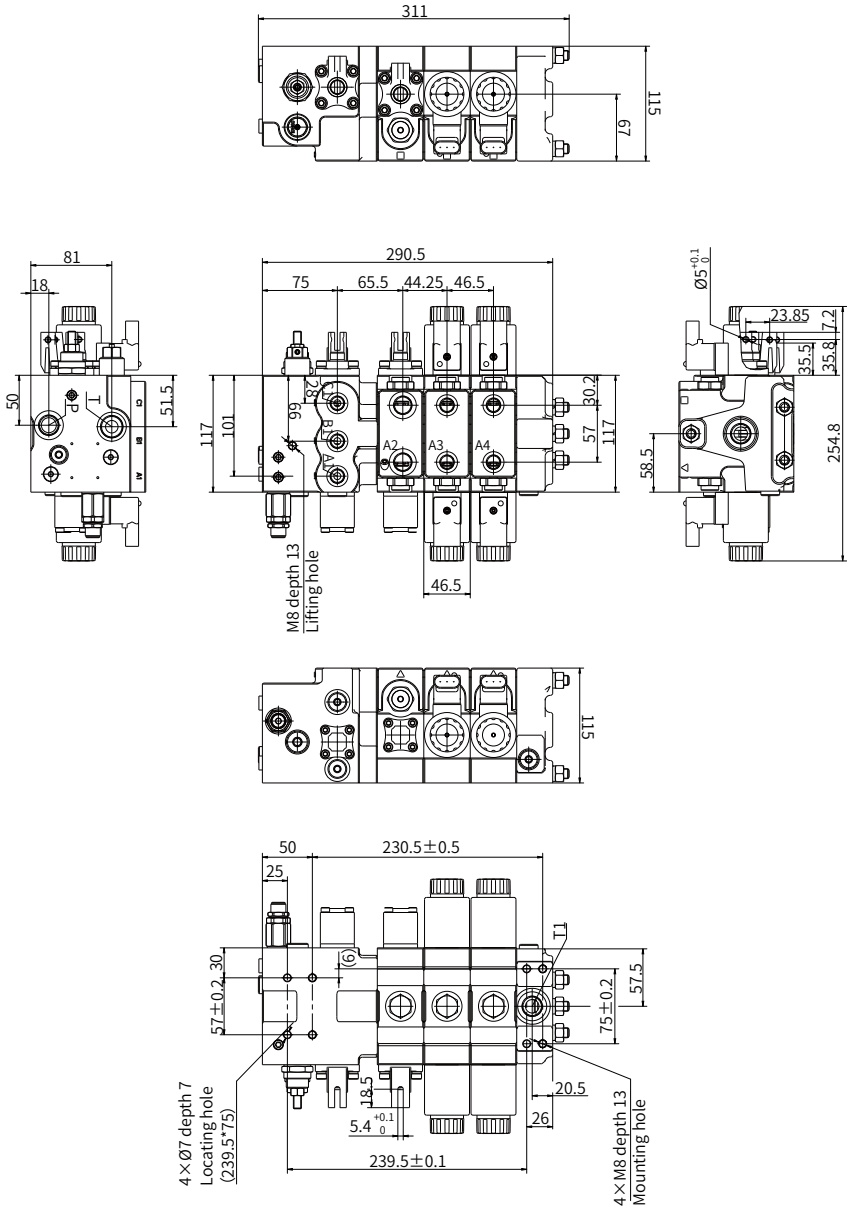


Ordering details: HVSH14A - 03 - P220 - $\left[\begin{array}{l} \text{O150PM} \\ \text{YQQE} \\ \text{YQQE} \end{array} \right] - \text{HN}$

Basic code	① Structure	HVSH	Sandwich plate design
	② Nominal size		14A
	③ Number of directional middle sections		01-07
Inlet element	④ Main relief valve	P***	With main relief valve, setting pressure, 3- digits, bar
Middle directional section	⑤ Spool function	O	O Type 
		Y	Y Type 
	⑥ Relief valve at A side	***	With relief valve, setting pressure, 3- digits, bar
		P	With plug
		Q	Hydraulic lock (A and B should be selected at the same time)
	⑦ Relief valve at B side	***	With relief valve, setting pressure, 3- digits, bar
		W	With plug
		P	With plug
	⑧ * Operation type	Q	Hydraulic lock (A and B should be selected at the same time)
E		Electromagnetic direct thrust (Maximum flow: 30L/min)	
Endlet section	M	Manual contro (Maximum flow: 70L/min)	
	⑨ carry-over function	N	Without carry over
*	Other request	Further requirement in the clear text	

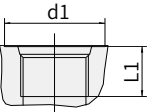
Unit dimensions

· HVSH14A



Port connection

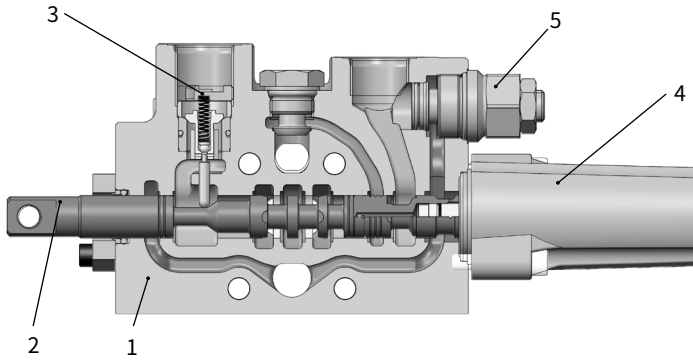
· HVSH14A

	HVSH14A	Port ISO 6149		Thread	d1	L1
		P	Inlet port	M20*1.5	29	14.5
		T	Outlet port	M22*1.5	34	15.5
		T1, T2		M20*1.5	29	14.5
		A/B	Work port	M14*1.5	21	11.5
			27	14.5		

01

Section view

·HVSH16D



1 Valve block

2 Spool

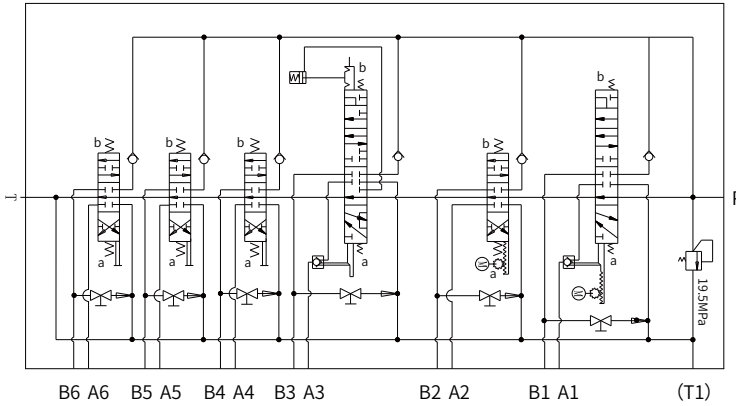
3 Mechanical holding valve

4 Rise positioning + automatic reset

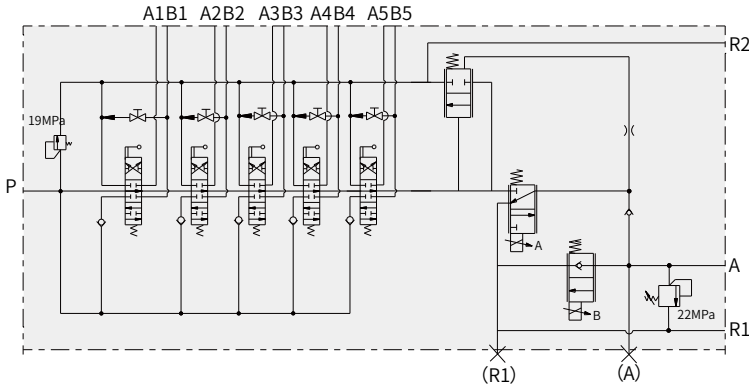
5 Single and double acting switching valve

Hydraulic diagram

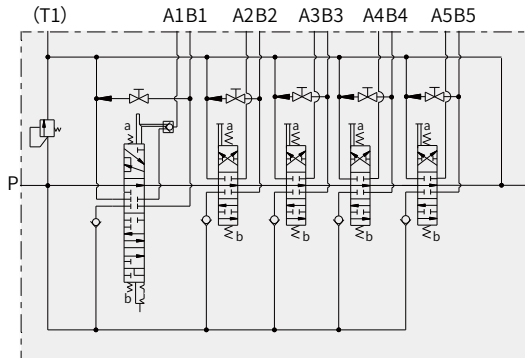
• HVSH16D CAN bus motor



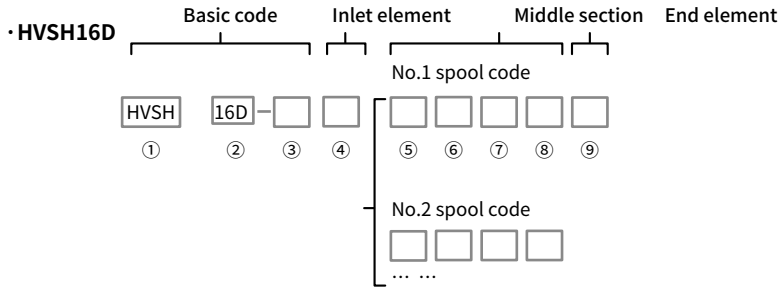
• HVSH16D Electro-hydraulic lifting




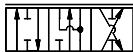
• HVSH16D Mechanical lifting



Ordering code

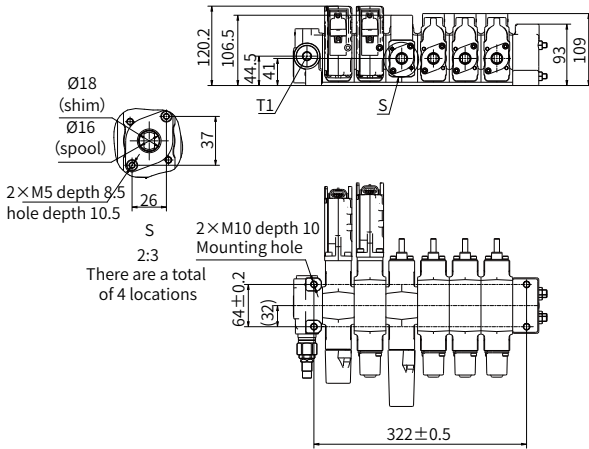
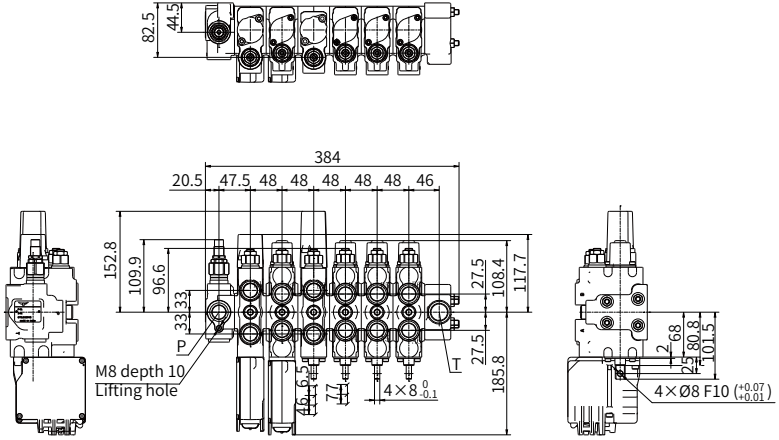


Ordering details: HVSH16D - 03 - P220 - $\left[\begin{matrix} L \\ YP150M \\ Y150SM \end{matrix} \right] - N$

Basic code	① Structure	HVSH	Sandwich plate design
	② Nominal size		16D
	③ Number of directional middle sections		01-07
Inlet element	④ With mechanical holding valve and floating position	P***	With main relief valve, setting pressure, 3- digits, bar
		C	Without main relief valve
Hoist	⑤ Lifting function (Note: need to be next to the first link)	C	CAN bus motor lifting Electrical connectors, Delphi Metri Pack 150.2
		L	Mechanical lifter · Lift positioning + automatic reset function · Floating positioning function.
Ordinary middle directional section	⑥ Spool function	O	O Type 
		Y	Y Type 
	⑦ Relief valve at A side	***	With relief valve, setting pressure, 3- digits, bar
		P	With plug (mutually exclusive with C manipulation type)
	⑧ Relief valve at B side	***	With relief valve, setting pressure, 3- digits, bar
		P	With plug (mutually exclusive with C manipulation type)
⑨ * Operation type	S	Single and double action switching	
	E	CAN bus motor control	
Endlet section	⑩ carry-over function	M	Manual control
		Z	Electro-hydraulic lift taillink
*	Other request		N No carry over
			Further requirement in the clear text

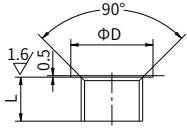
Unit dimensions

· HVSH16D CAN bus motor



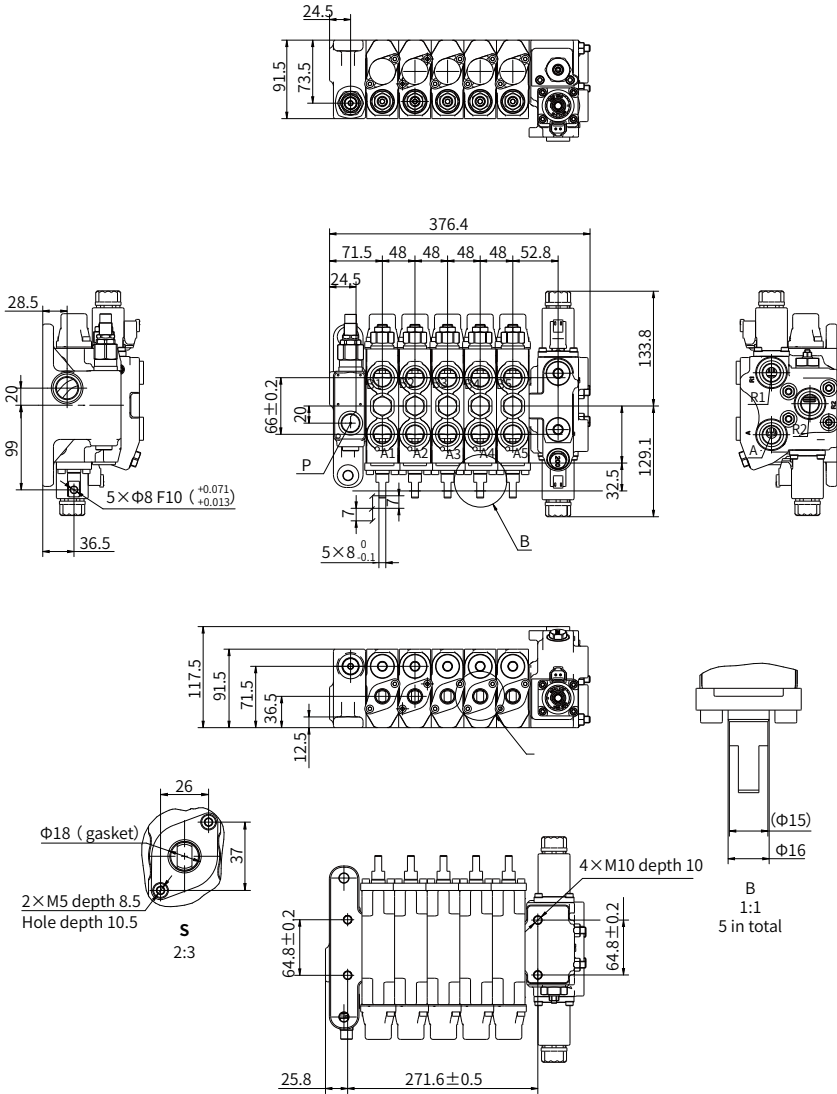
Port connection

• HVSH16D CAN bus motor

	HVSH16D	Port ISO 9974		Thread	ΦD	L
		P	Inlet port	M22*1.5	28	14
		A / B/ R	Work port	M22*1.5	28	14
		T	Outlet port	M27*2	33	16

Unit dimensions

· HVSH16D Electro-hydraulic lifting



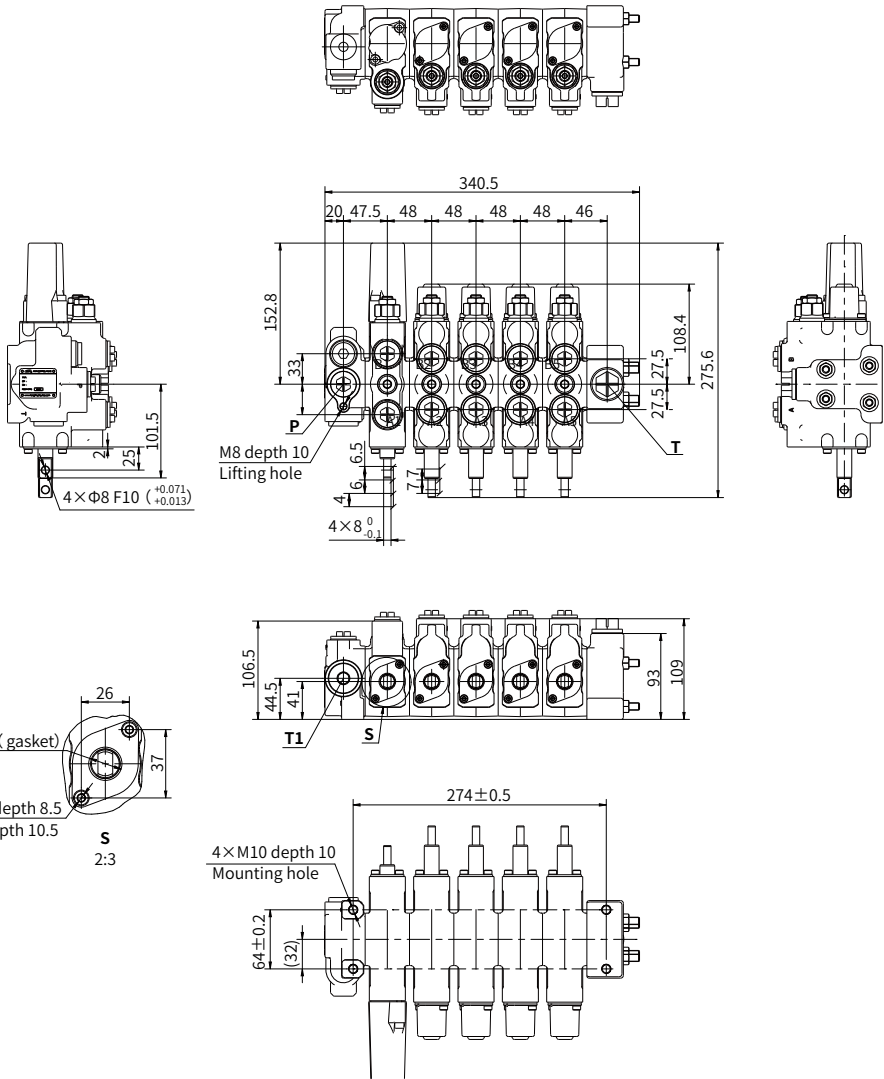
Port connection

• HVSH16D Electro-hydraulic lifting

	HVSH16D	Port ISO 9974		Thread	ΦD	L
		P	Inlet port	M22*1.5	28	14
		A / B/ R	Work port	M22*1.5	28	14
		T	Outlet port	M27*2	33	16

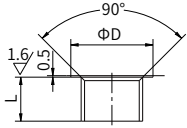
Unit dimensions

· HVSH16D Mechanical lifting



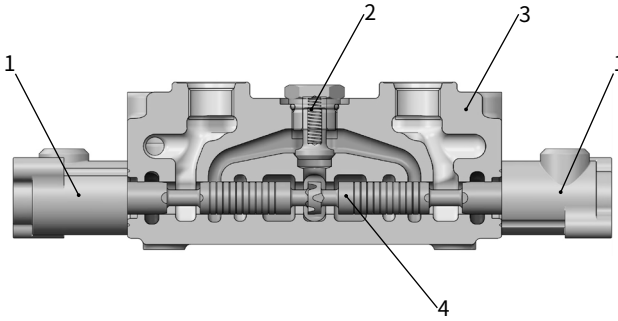
Port connection

• HVSH16D Mechanical lifting

	HVSH16D	Port ISO 9974		Thread	ΦD	L
		P	Inlet port	M22*1.5	28	14
		A / B / R	Work port	M22*1.5	28	14
		T	Outlet port	M27*2	33	16

Section view

· HVSH16B



1 Cover

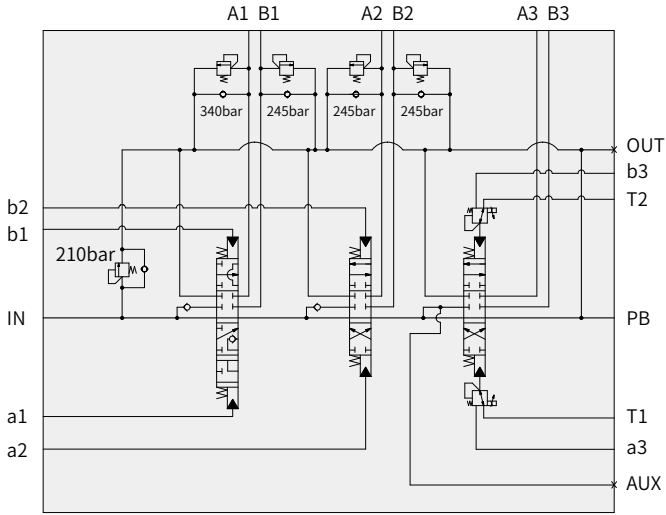
2 Check valve

3 Valve block

4 Spool

Hydraulic diagram

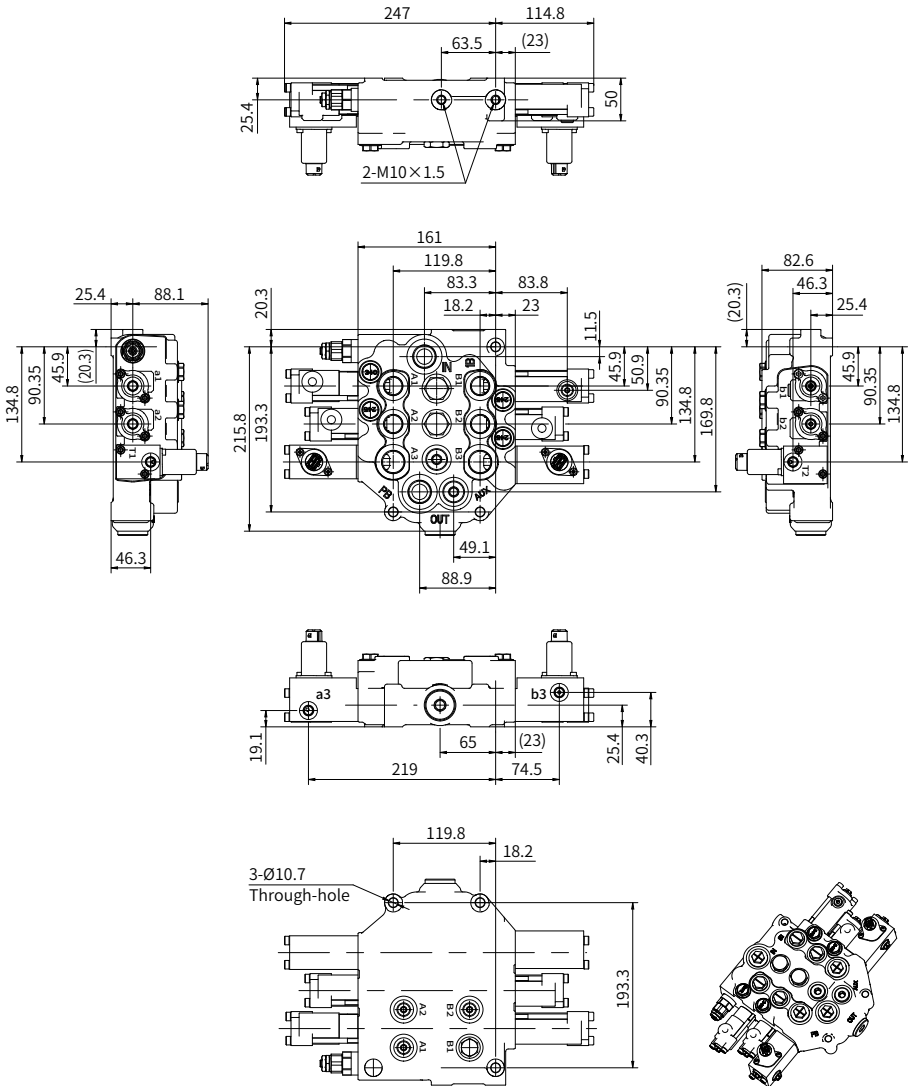
· HVSH16B



01

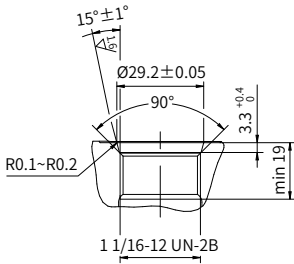
Unit dimensions

· HVSH16B

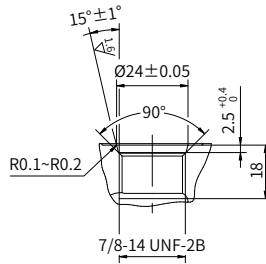


Port connection

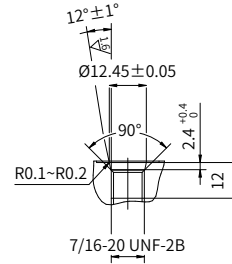
·HVSH16B



IN, OUT,
PB, A3, B3 Port



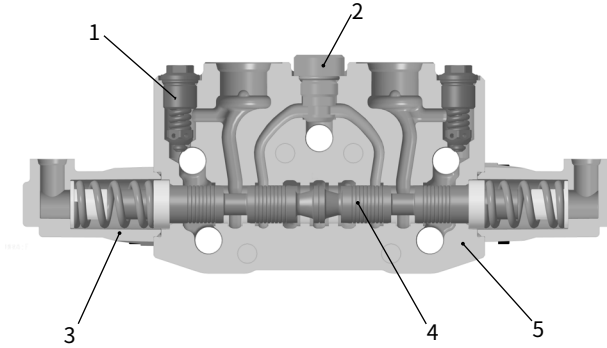
AUX, A1, B1,
A2, B2 Port



a1, b1, a2, b2,
a3, b3, T1, T2 Port

Section view

· HVSH20 Hydraulic operation



1 Relief valve

2 Check valve

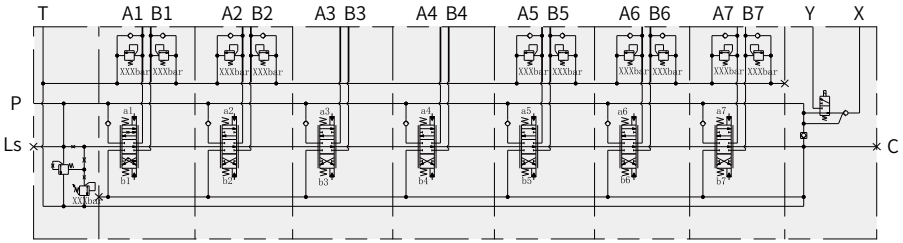
3 Hydraulic control end cap component

4 Spool

5 Valve block

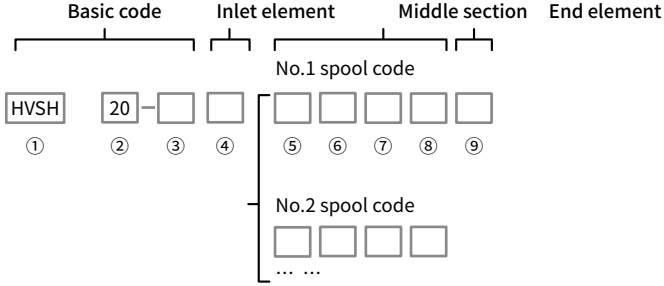
Hydraulic diagram

· HVSH20 Hydraulic operation

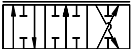



01

Ordering code

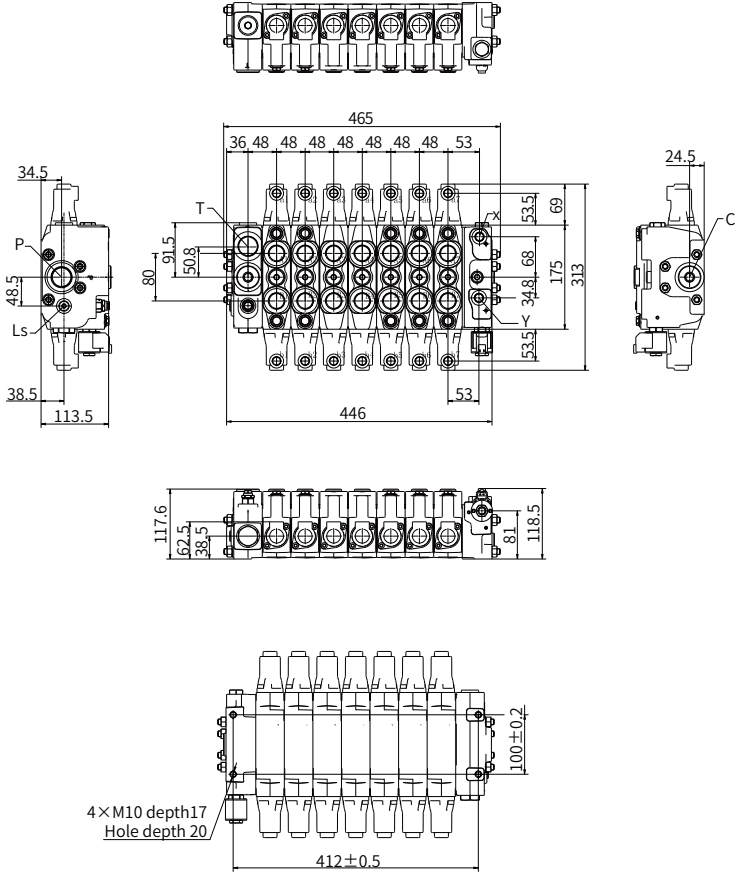


Ordering details: HVSH20 - 02 - P220 - $\left[\begin{array}{l} \text{O150PH} \\ \text{YP150M} \end{array} \right] \text{-K}$

Basic code	① Structure	HVSH	Sandwich plate design
	② Nominal size		20
	③ Number of directional middle sections		01-07
Inlet element	④ Main relief valve	P***	With main relief valve, setting pressure, 3- digits, bar
		C	Without main relief valve
Middle directional section	⑤ Spool function	O	O Type 
		Y	Y Type 
	⑥ Relief valve at A side	***	With relief valve, setting pressure, 3- digits, bar
		P	Without relief valve
	⑦ Relief valve at B side	***	With relief valve, setting pressure, 3- digits, bar
		P	Without relief valve
⑧ * Operation type	H	Hydraulic operation	
Endlet section	⑨ External control solenoid valve	N	Without external control solenoid valve
		K	With external control solenoid valve
*	Other request	Further requirement in the clear text	

Unit dimensions

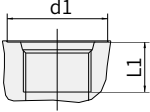
· HVSH20 Hydraulic operation



01

Port connection

· HVSH20 Hydraulic operation

	HVSH20	Port ISO11926		Thread	d1	L1
		P/T/C	Inlet port	1-5/16-12UN	49	19
		A/B	Work port	1-1/16-12UN	41	19
		Pa/Pb	Pilot oil port	9/16-18UNF	25	12.7
		X/Y/LS	Other oil orifice	9/16-18UNF	25	12.7

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