1.1

HVSH SERIES

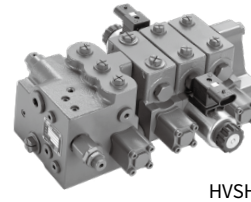
OPEN CENTER CONTROL DIRECTIONAL VALVE

HVSH :

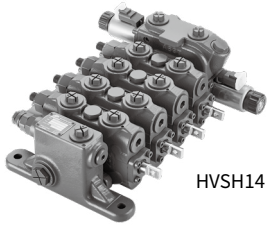
Nominal size	14	14A	16D	16B	20
Rated flow(L/min)	70	30/70	80	90	160
Max. pressure(bar)	315	315	315	315	315
Control electric voltage (VDC)	12/24	12/24	12	12	-

Benefits:

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

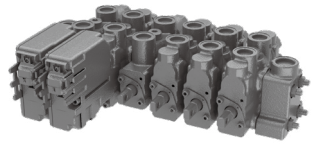


HVSH14A



HVSH14

HVSH16B



HVSH16D

Contents

Features

1. Structure

·Sandwich plate of design（HVSH14，HVSH14A，HVSH16D，HVSH20）

·Monoblock design (HVSH16B)

2. Control

·Electro-hydraulic control（HVSH14，HVSH14A，HVSH16B）

·Manual contro（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

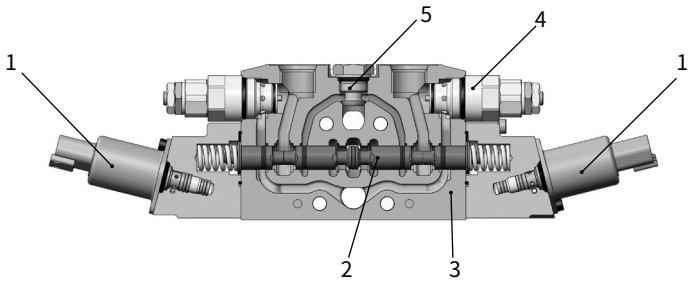
·Mechanical lifter with floating positioning function.

·Optional electro-hydraulic lift taillink.

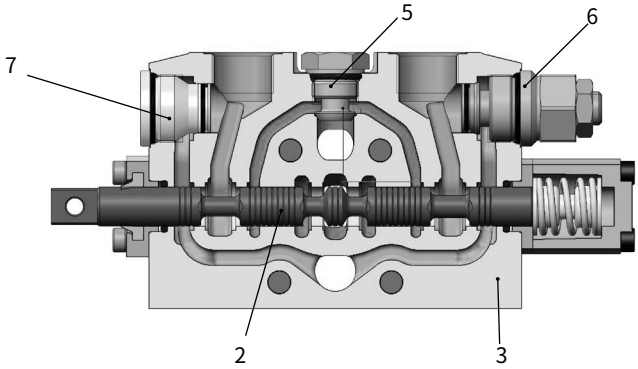
·Port B is equipped with single and double acting switching valve.

Section view

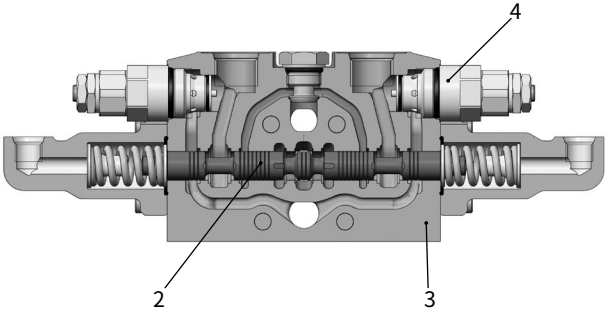
· HVSH14 Electro-hydraulic control



· HVSH14 Manual contro



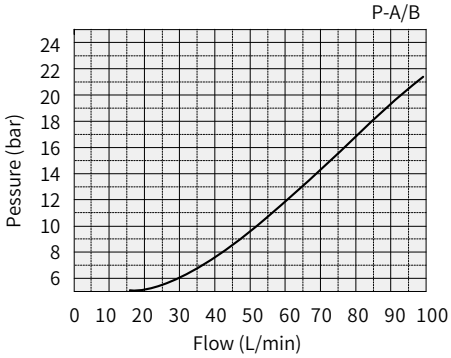
· HVSH14 Hydraulic operation

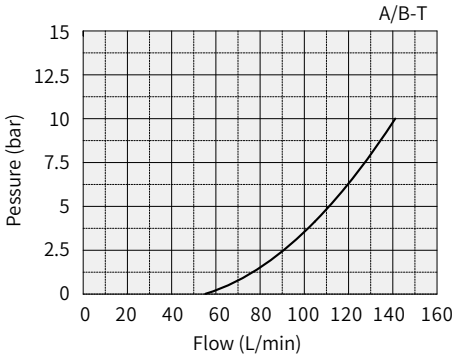


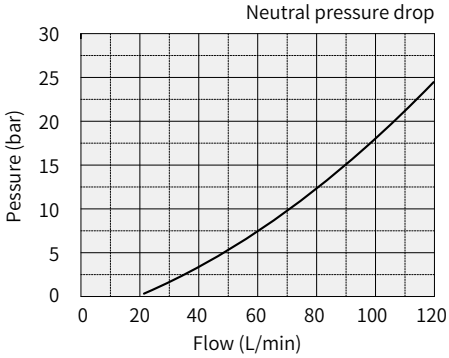
1 Solenoid Valve
2 Spool
3 Valve block
4 Relief valve
5 Check valve
6 Single and double acting switching valve
7 Plug

Characteristic curves

·Pressure drop characteristic curve (HVSH14)

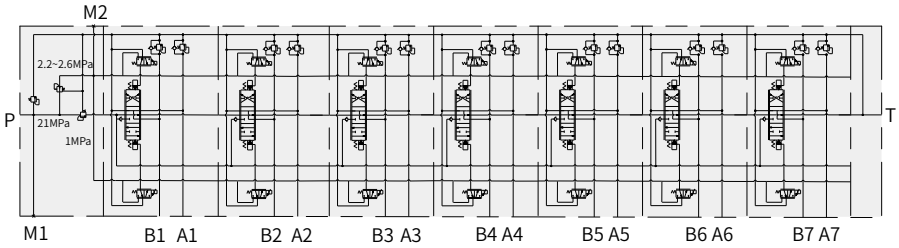




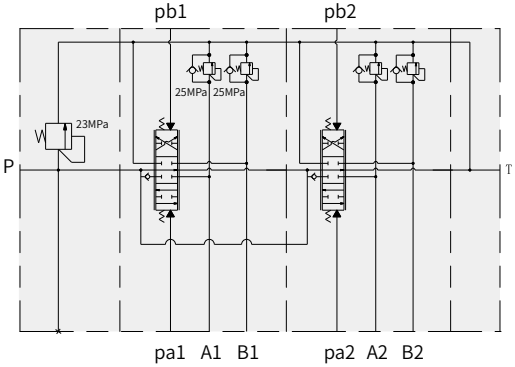


Hydraulic diagram

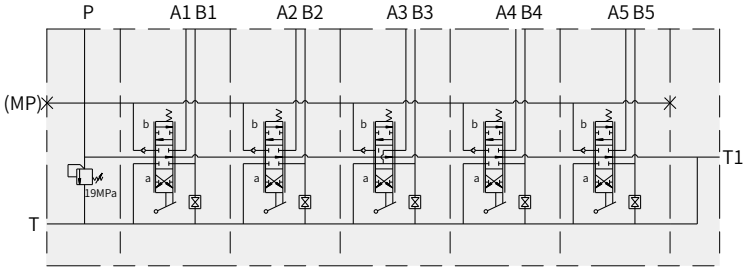
·HVSH14 Electro-hydraulic control



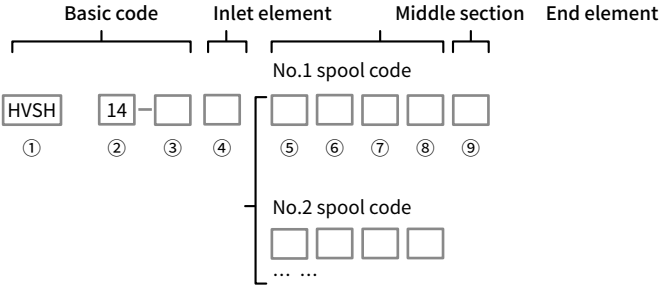
·HVSH14 Hydraulic operation



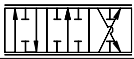
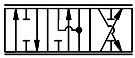
·HVSH14 Manual contro



Ordering code

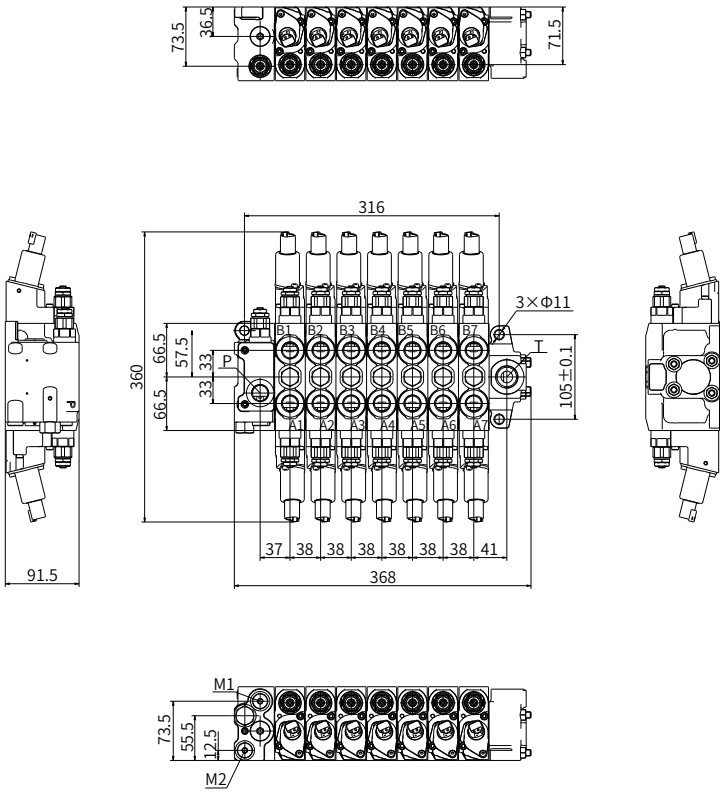


Ordering details: HVSH14 - 03 - P220 - [EG150QH / JQG150M / JQ150SM] -N

Basic code	① Structure	HVSH	Sandwich plate design
	② Nominal size		14
	③ Number of directional middle sections		01-07
Inlet element	④ Main reief valve	P***	With main relief valve, setting pressure, 3- digits, bar
		Q	Without main relief valve
Middle directional section	⑤ Spool function	E	O Type 
		J	Y Type 
	⑥ Relief valve at A side	G***	With relief valve, setting pressure, 3- digits, bar
		Q	With plug
	⑦ Relief valve at B side	G***	With relief valve, setting pressure, 3- digits, bar
		Q	With plug
		S	Single-double action switch (Available in mechanical control link only)
	⑧ Operation type	W21	Electro hydraulic proportional control, 24V (not compatible with other control types)
		W23	Electro hydraulic proportional control, 12V (not compatible with other control types)
		W41	Electro hydraulic switch control, 24V (not compatible with other control types)
		W43	Electro hydraulic switch control, 12V (not compatible with other control types)
		H	Hydraulic operation
		M	Manual contro
Endlet section	⑨ carry-over function	N	Without carry over
*	Other request	Further requirement in the clear text	

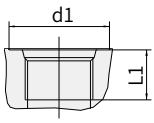
Unit dimensions

·HVSH14 Electro-hydraulic control



Port connection

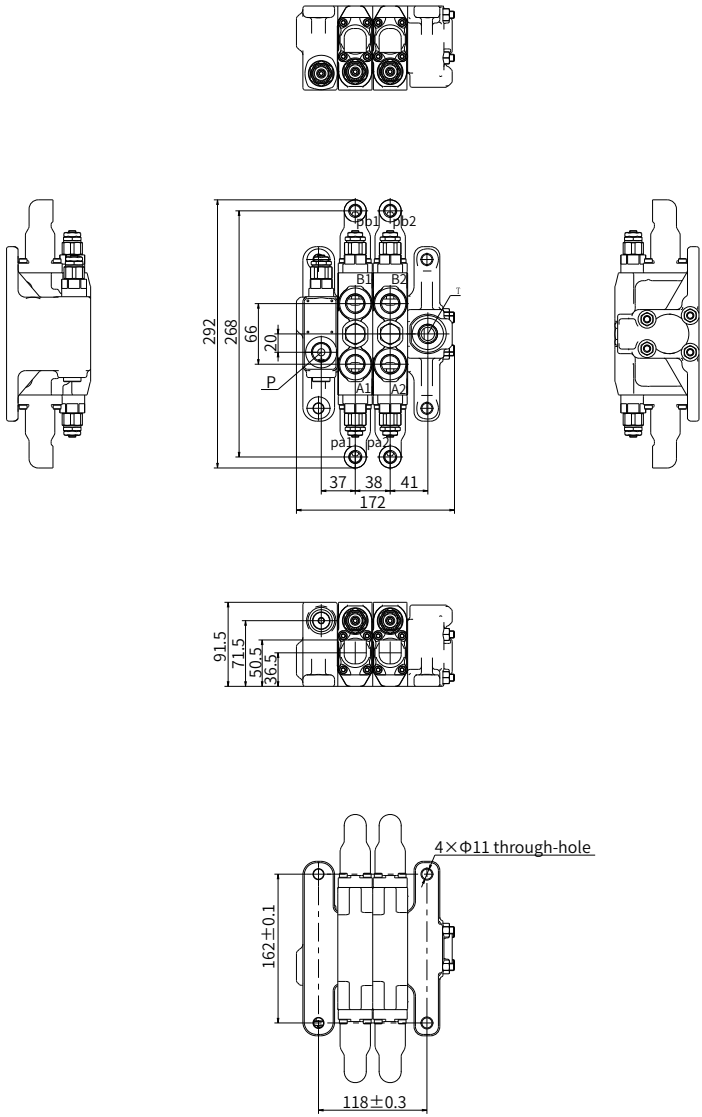
·HVSH14 Electro-hydraulic control



	Port JIS B 2351		Thread	d1	L1
HVSH14	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

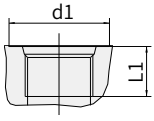
Unit dimensions

·HVSH14 Hydraulic operation



Port connection

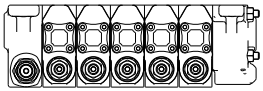
·HVSH14 Hydraulic operation

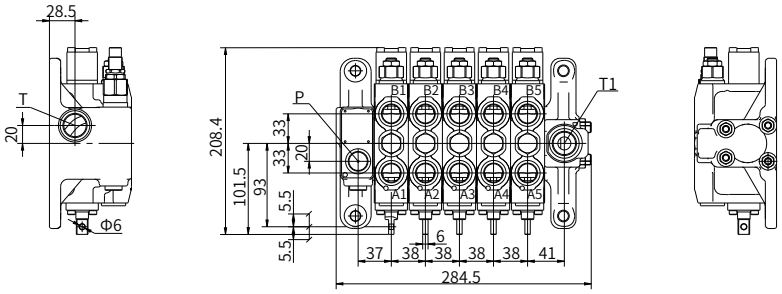


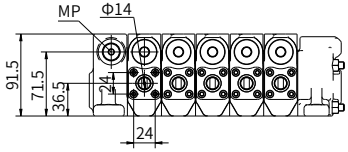
	Port JIS B 2351		Thread	d1	L1
HVSH14	P	Inlet port	G1/2	34	16
	T	Outlet port	G3/4	43	17
	A/B	Work port	G1/2	34	16
	pa/pb	Pilot port	G1/4	24	15
	M1	Other oil orifice	G1/4	24	15

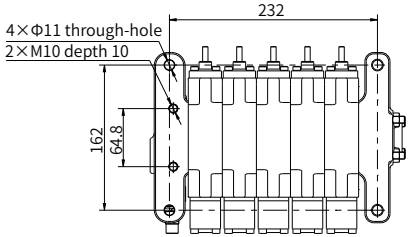
Unit dimensions

·HVSH14 Manual contro



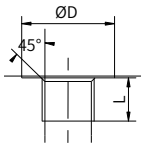






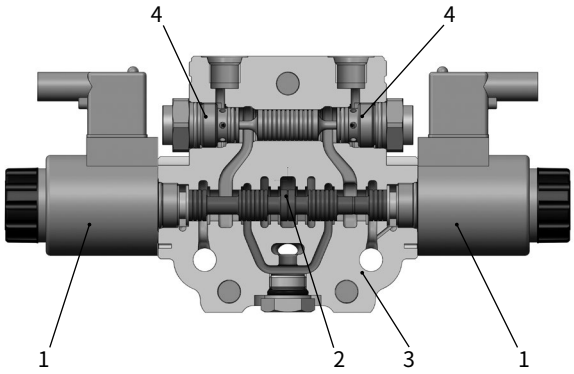
Port connection

·HVSH14 Manual contro

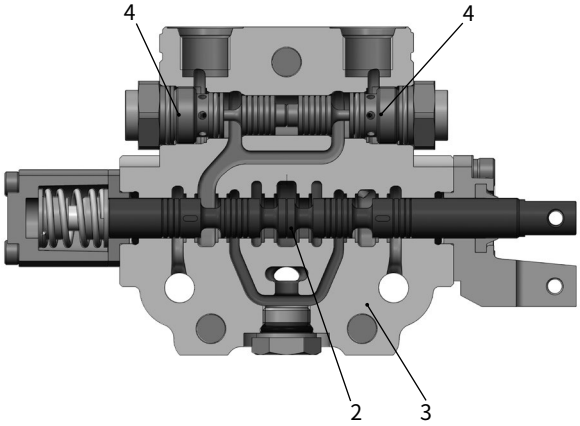
		Port ISO 9974		Thread	**ΦD**	L1
	**HVSH14**	P	Inlet port	M22*1.5	28	14
		T	Outlet port	M27*2	33	16
		A/B	Work port	M22*1.5	28	14
		MP	Other oil orifice	M14*1.5	20	12

Section view

· HVSH14A Electromagnetic direct thrust



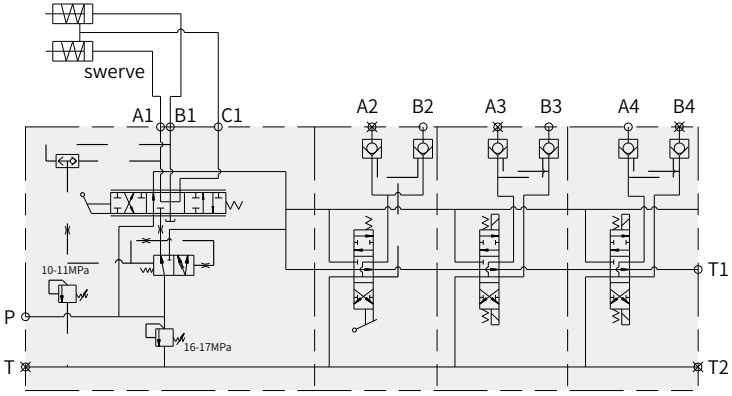
· HVSH14A Manual contro



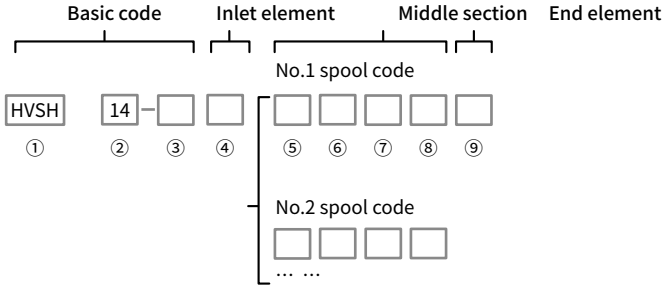
1 Electromagnet
2 Spool
3 Valve block
4 Check valve

Hydraulic diagram

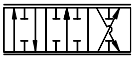
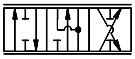
·HVSH14A



Ordering code

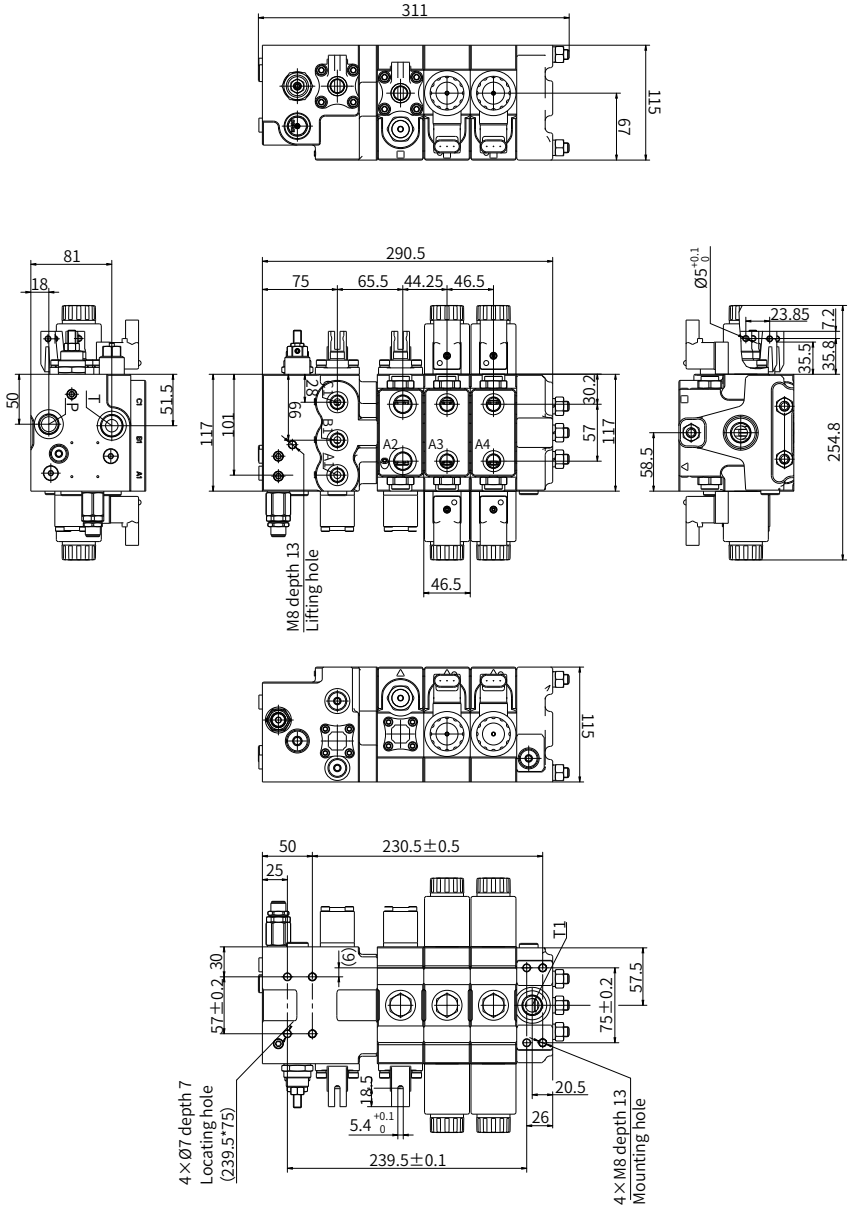


Ordering details: HVSH14A - 03 - P220 - [EG150QM / JLLW41 / JLLW41] - HN

Basic code	① Structure	HVSH	Sandwich plate design
	② Nominal size		14A
	③ Number of directional middle sections		01-07
Inlet element	④ Main reief valve	P***	With main relief valve, setting pressure, 3- digits, bar
Middle directional section	⑤ Spool function	Q	No main safety valve
		E	E Type 
		J	J Type 
	⑥ Relief valve at A side	G***	With relief valve, setting pressure, 3- digits, bar
		Q	With plug
		L	Hydraulic lock (A and B should be selected at the same time)
	⑦ Relief valve at B side	G***	With relief valve, setting pressure, 3- digits, bar
		Q	With plug
		L	Hydraulic lock (A and B should be selected at the same time)
	⑧ Operation type	W41	Electric switch control, 24V (Maximum flow: 30L/min)
		W43	Electric switch control, 12V (Maximum flow: 30L/min)
		M	Manual contro (Maximum flow: 70L/min)
Endlet section	⑨ carry-over function	N	Without carry over
*	Other request	Further requirement in the clear text	

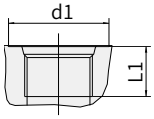
Unit dimensions

·HVSH14A



Port connection

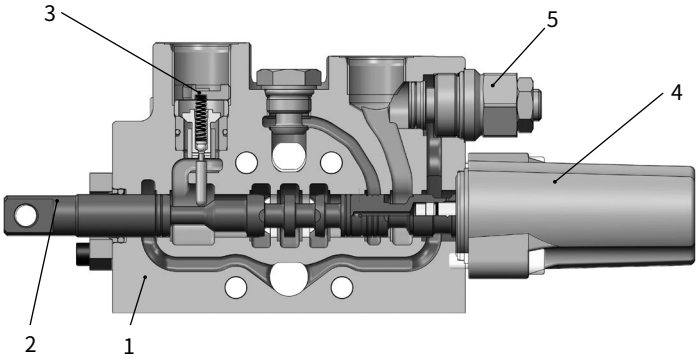
·HVSH14A



	Port ISO 6149		Thread	d1	L1
HVSH14A	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

Section view

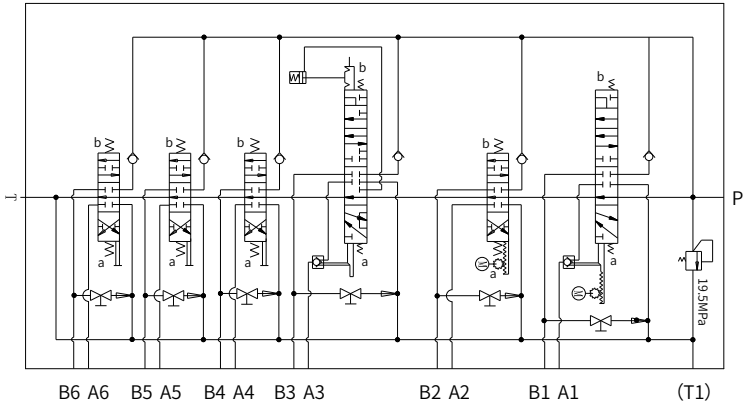
·HVSH16D



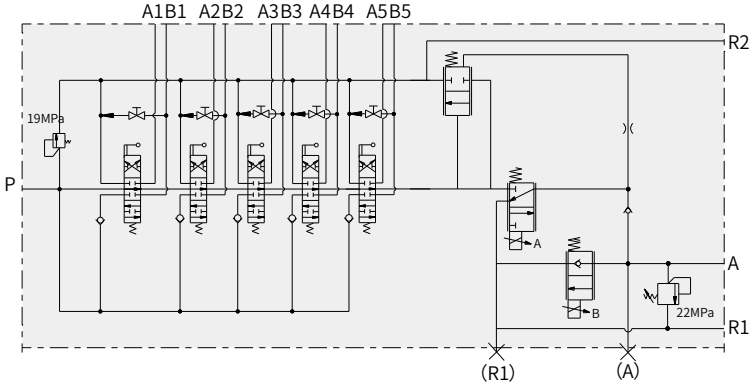
1 Valve block
2 Spool
3 Mechanical holding valve
4 Rise positioning + automatic reset
5 Single and double acting switching valve

Hydraulic diagram

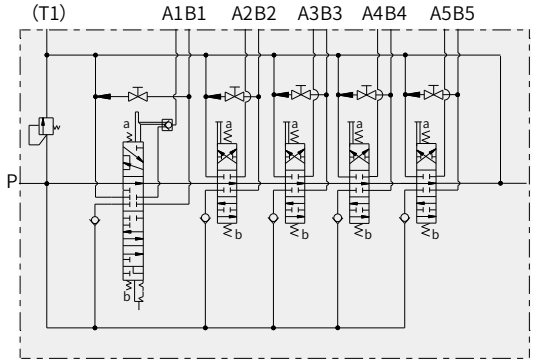
·HVSH16D CAN bus motor



·HVSH16D Electro-hydraulic lifting

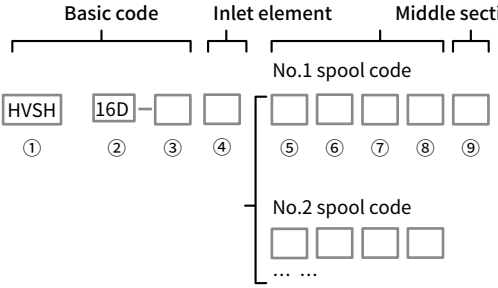


·HVSH16D Mechanical lifting

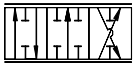
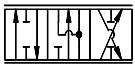


Ordering code

·HVSH16D

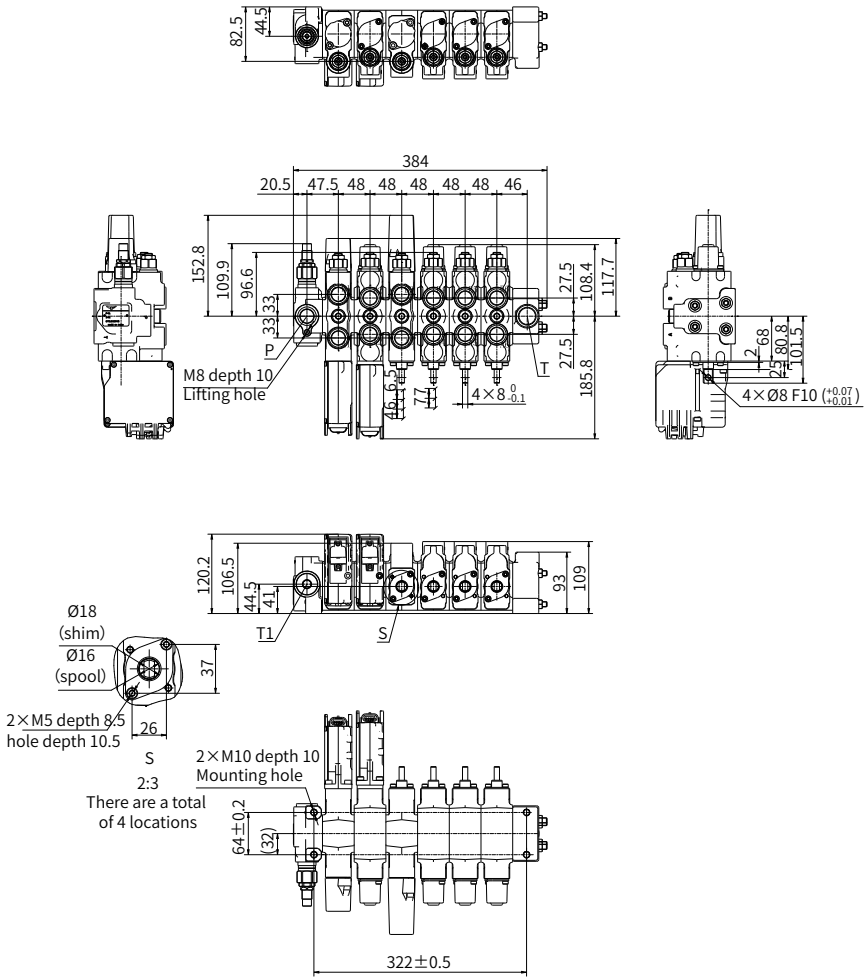


Ordering details: HVSH16D - 03 - P220 - [L / JQG150M / JG150SM] - N

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
		Q	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	E	E Type 
		J	J Type 
	⑦ Relief valve at A side	G***	With relief valve, setting pressure, 3- digits, bar
		Q	With plug（mutually exclusive with C manipulation type）
	⑧ Relief valve at B side	G***	With relief valve, setting pressure, 3- digits, bar
		Q	With plug（mutually exclusive with C manipulation type）
		S	Single and double action switching
	⑨ Operation type	E	CAN bus motor control
		W21	Electro hydraulic proportional control, 24V (not compatible with other control types)
		W23	Electro hydraulic proportional control, 12V (not compatible with other control types)
		W41	Electro hydraulic switch control, 24V (not compatible with other control types)
		W43	Electro hydraulic switch control, 12V (not compatible with other control types)
		M	Manual control
Endlet section	⑩ carry-over function	Z	Electro-hydraulic lift taillink
		N	No carry over
*	Other request	Further requirement in the clear text	

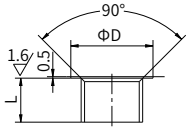
Unit dimensions

·HVSH16D CAN bus motor



Port connection

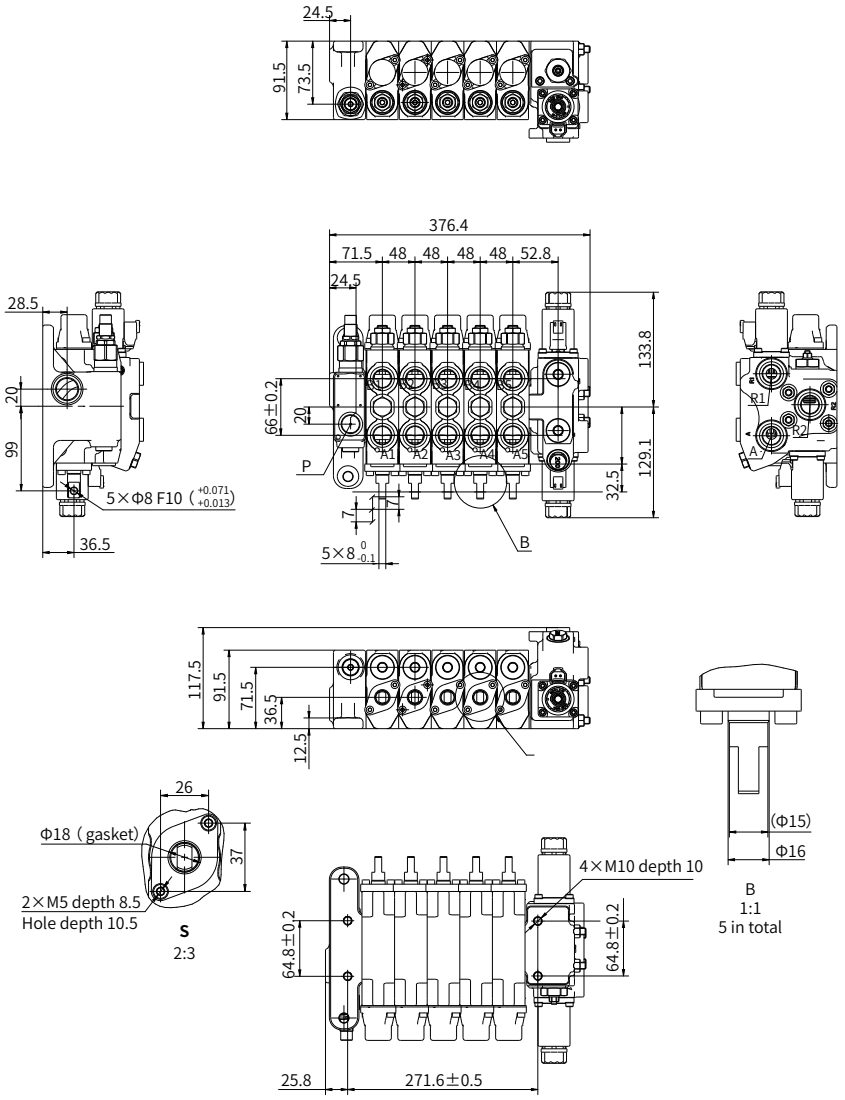
·HVSH16D CAN bus motor



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

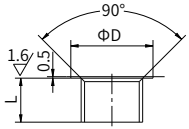
Unit dimensions

·HVSH16D Electro-hydraulic lifting



Port connection

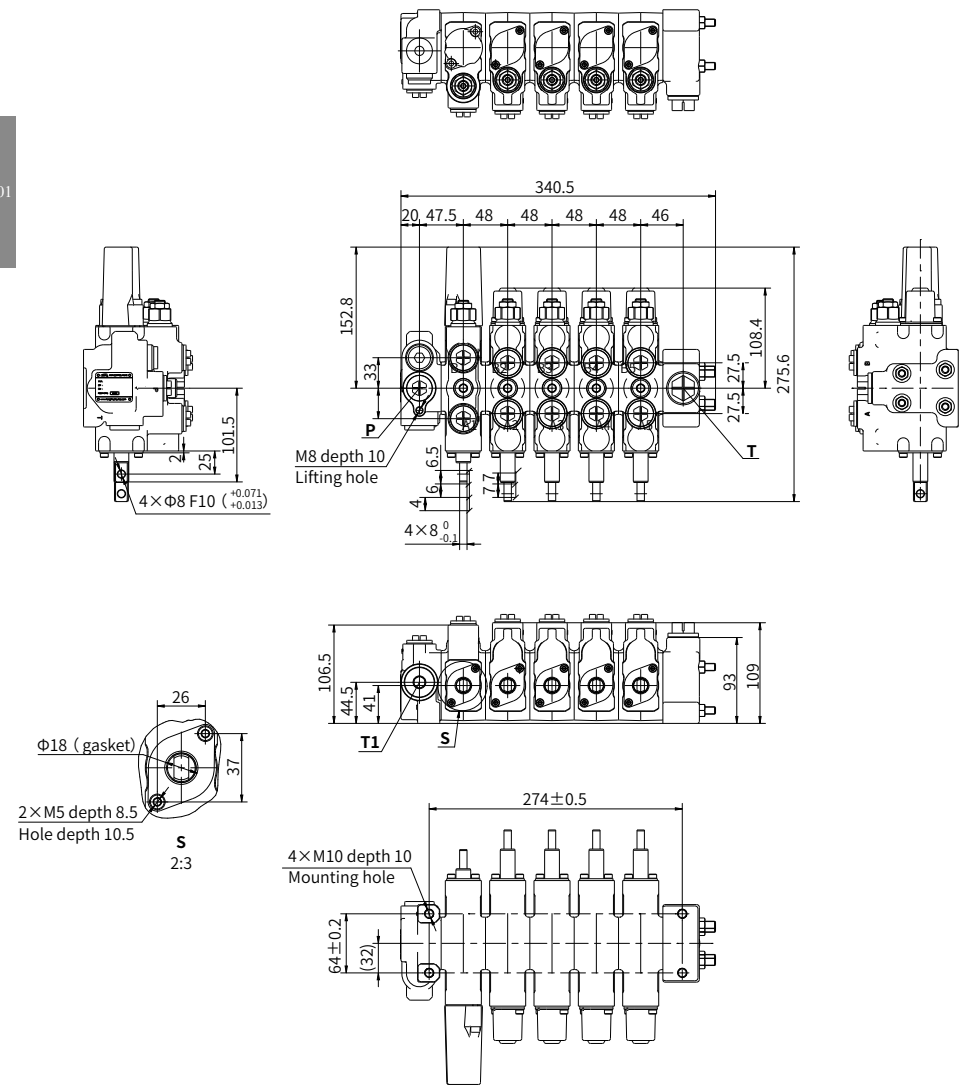
·HVSH16D Electro-hydraulic lifting



	Port ISO 9974		Thread	ΦD	L
HVSH16D	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

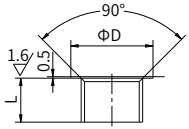
Unit dimensions

·HVSH16D Mechanical lifting



Port connection

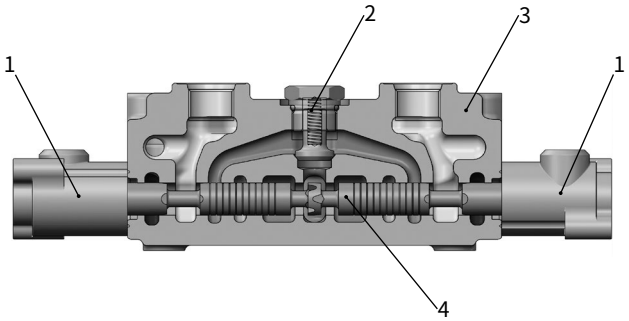
·HVSH16D Mechanical lifting



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

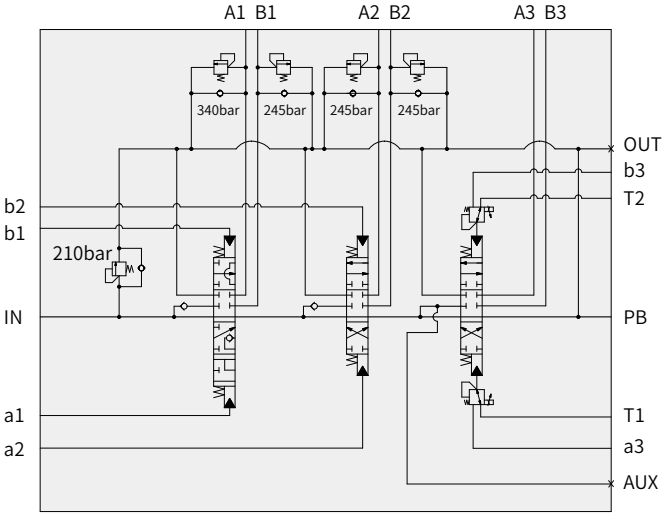
·HVSH16B



1 Cover
2 Check valve
3 Valve block
4 Spool

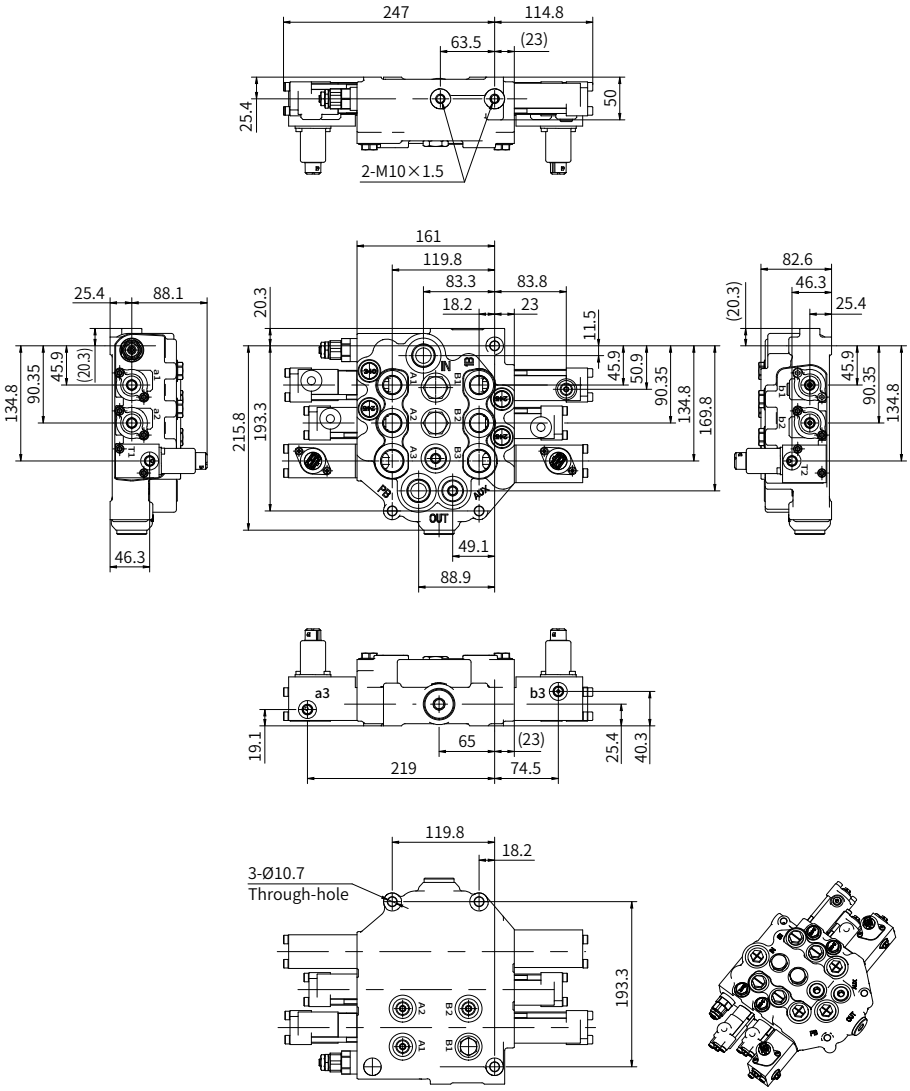
Hydraulic diagram

·HVSH16B



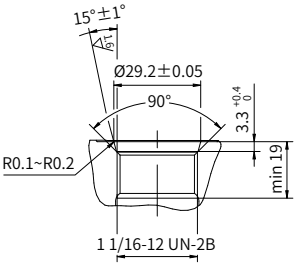
Unit dimensions

·HVSH16B

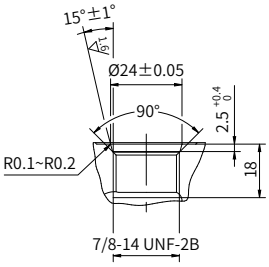


Port connection

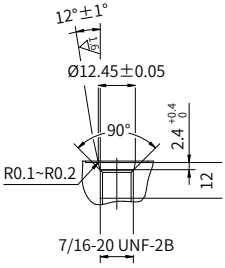
·HVSH16B



IN、OUT、
PB、A3、B3 Port



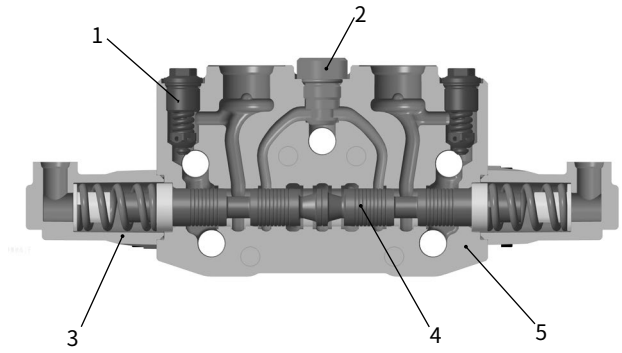
AUX、A1、B1、
A2、B2 Port



a1、b1、a2、b2、
a3、b3、T1、T2 Port

Section view

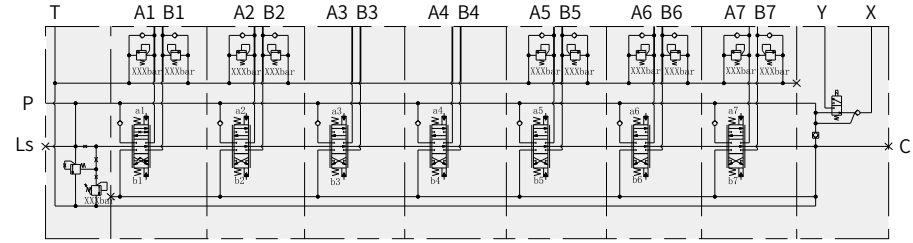
·HVSH20 Hydraulic operation



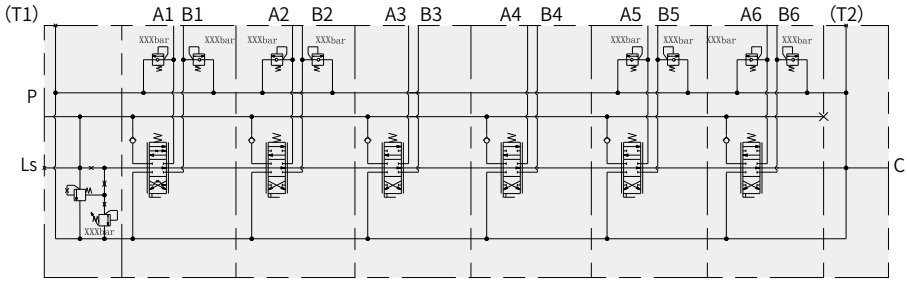
1 Relief valve
2 Check valve
3 Hydraulic control end cap component
4 Spool
5 Valve block

Hydraulic diagram

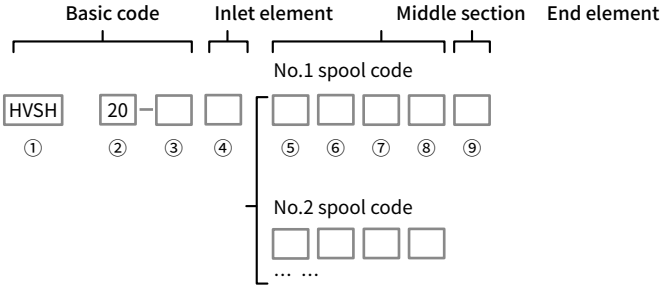
·HVSH20 Hydraulic operation



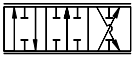
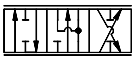
·HVSH20 Mechanical control



Ordering code

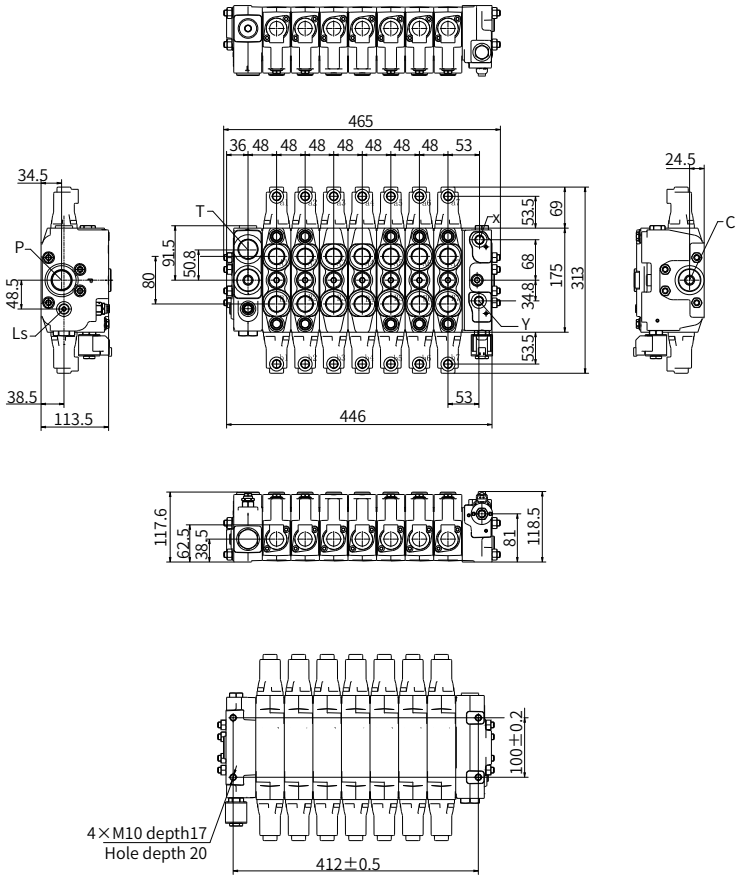


Ordering details: HVSH20 - 02 - P220 - [EG150QH / JQG150M] -K

Basic code	① Structure	HVSH	Sandwich plate design
	② Nominal size		20
	③ Number of directional middle sections		01-07
Inlet element	④ Main reief valve	P***	With main relief valve, setting pressure, 3- digits, bar
		Q	Without main relief valve
Middle directional section	⑤ Spool function	E	O Type 
		J	Y Type 
	⑥ Relief valve at A side	G***	With relief valve, setting pressure, 3- digits, bar
		Q	Without relief valve
	⑦ Relief valve at B side	G***	With relief valve, setting pressure, 3- digits, bar
		Q	Without relief valve
	⑧ Operation type	H	Hydraulic operation
		M	Mechanical control
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	

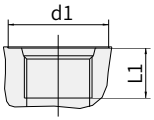
Unit dimensions

·HVSH20 Hydraulic operation



Port connection

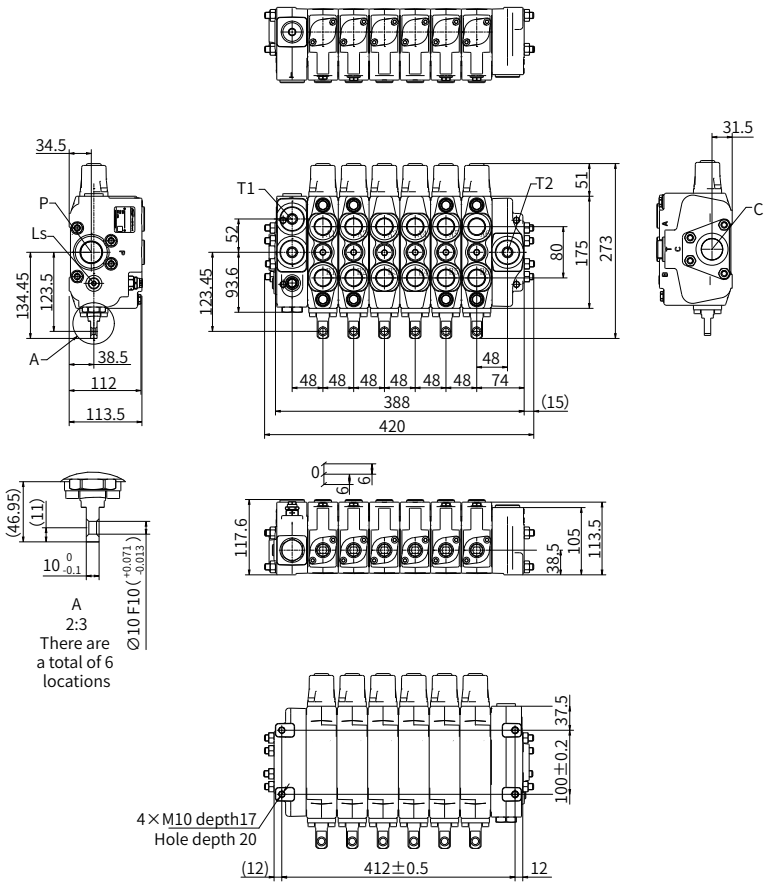
·HVSH20 Hydraulic operation



	Port ISO11926		Thread	d1	L1
HVSH20	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

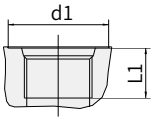
Unit dimensions

·HVSH20 Mechanical control



Port connection

·HVSH20 Mechanical control



	Port ISO 11926		Thread	d1	L1
HVSH20	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

01

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