6/2 WAY DIRECTIONAL VALVES KVH

- NG 6
- Up to 315 bar *[4 568 PSI]*
- Up to 50 L/min *[13.2 GPM]*

- Plug-in connector for solenoids to ISO 4400.
- Threaded connections to ISO 9974 (Metric), ISO 1179 (BSPP/Gas), ISO 11926 (UNF).
- Protection of solenoid IP65 to EN 50529 / IEC 60529.
- Fulfil EMC (89/336/EEC).
- For stacking (1-5 units).

KVH-6/2-6-S50-N3

Operation

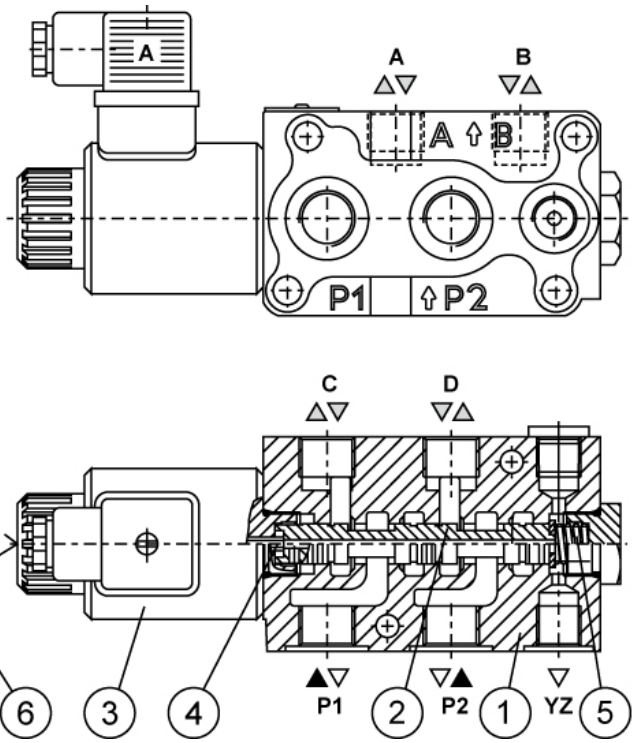
Directional valves type KVH with direct solenoid operation control the direction of the hydraulic medium flow.
They are mostly used as link between two consumers and the basic directional valve, when we want to control both consumers alternately by means of one basic directional valve.

The KVH type directional valves consist of a housing (1), a control spool (2), and a solenoid (3) with return spring (5).

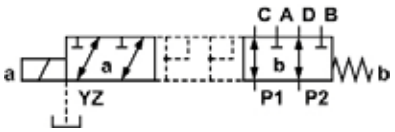
Change-over to the operating position is done by energizing the solenoid (3), whereby the solenoid plunger acts on the control spool (2) via the operating pin (4), thus clearing the corresponding flow ways and establishing respective links between the ports P1, A, B and P2.

When the solenoid (3) is de-energized, the control spool (2) is returned to its neutral position by the return spring (5), thus establishing again the links between ports P1, C, D and P2.

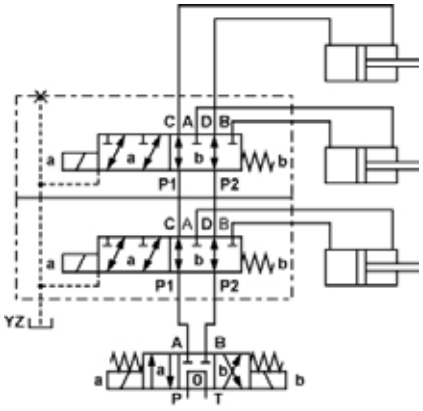
The change-over can also be done manually by pressing the emergency manual override (6).



Hydraulic symbol



Mounting example

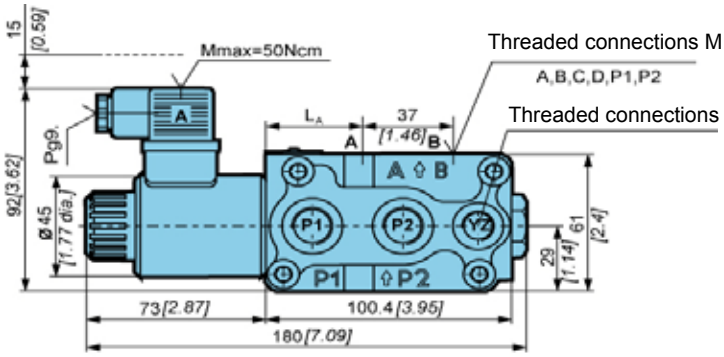


Features

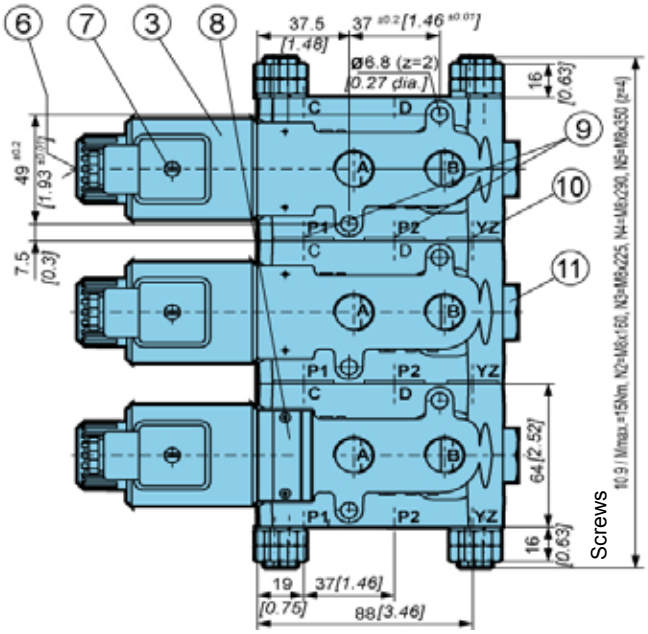
Hydraulic			
Size			**6**
Flow rate		L/min *[GPM]*	50 *[13.21]*
Operating pressure	With YZ	bar *[PSI]*	315 *[4 568]*
	Without YZ		250 *[551]*
Oil temperature range		°C *[°F]*	-20 to +70 *to +158]*
Viscosity range		mm^2/s *[SUS]*	15 to 380 *[3.24 to 82]*
Mounting position			Optional
Mass		kg *[lb]*	2,7 *[5.95]* (N1)
Filtration		NAS 1638	8

Electrical			
Supply voltage		V	12, 24 DC
Power	(12 V DC supply voltage)	W	29
			36
Switching frequency		1/h	15 000
Ambient temperature		°C *[°F]*	to +50 *[to+122]*
Coil temperature		°C *[°F]*	to +180 *[to +356]*
Duty cycle			Continuous

Dimensions



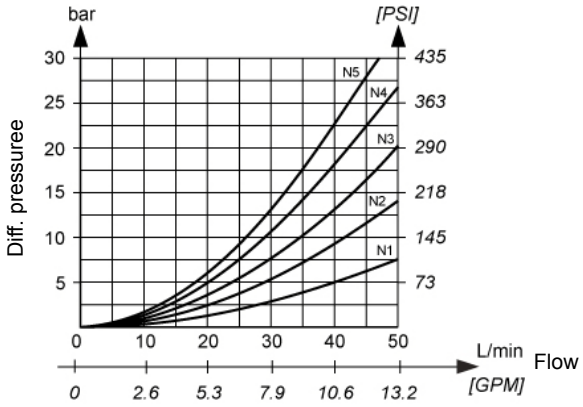
LA= 39,5 (G3/8, M18x1,5)
37,5 *[1.47]* (G1/2, M22x1,5)



3. Solenoid ''a'' MR-045
6. Emergency manual override
7. Plug-in connector <<a>>-grey
8. Nameplate
9. O-Ring ; M18x1,5 / G3/8 = Ø21x2
   M22x1,5 / G1/2 = Ø26x2
10. O-Ring ; M14x1,5 / G1/4 = Ø17x2
11. Valve cap

ΔP-Q Performance curves

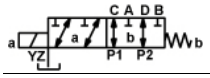
.Measured at 50°C *[122°F]* and viscosity of 32 mm^2/s *[148 SUS]*.]



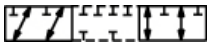
Model code

K V H - 6 / 2 - 6 - ☐ - ☐ - ☐ - ☐☐☐ - ☐ - ☐ - S 5 0 - ☐ - ☐ - ✱

symbol

	**No designation**
	**AB**

Overlap

	**No designation**
	**P**

Manual override option

Emergency manual override	**No designation**
Manual override with rubber cover	**G**
Lockable manual override	**C**

Supply voltage

Direct voltage 24V	**No designation**
Direct voltage 12V	**12 DC**

Connector type

EN 175301-803 without signal lampp	**No designation**
EN 175301-803 with signal lamp	**L**
EN 175301-803 without connector	**K**
AMP Junior timer without connector	**M**
Deutsch	**V**

Overvoltage protection Without overvoltage protection

Without overvoltage protection	**No designation**
With overvoltage protection	**T**

Special requirements to be briefly specified

Number of units

N1	One
N2	Two
N3	Three
N4	Four
N5	Five

Seal type

No designation	NBR seals for mineral oil HL, HLP to DIN 51524
E	FPM seals for HETG, HEES, HEPG to VDMA 24568 and ISO 15380

Drainage

No designation	Without YZ
YZ	With YZ

Threaded connections M ; YZ

No designation	M18x1,5; M14x1,5
M22	M22x1,5; M14x1,5
3/8	G3/8; G1/4
1/2	G1/2; G1/4
SAE 8	3/4-16 UNF-2b; 9/16-18 UNF-2B

6/2 WAY DIRECTIONAL VALVE KVH

- NG 8
- Up to 350 bar *[5 076 PSI]*
- Up to 90 L/min *[23.8 GPM]*
- Threaded connections to ISO 9947 (Metric), ISO 1179 (BSPP/Gas), ISO 11926 (UNF)
- Fulfil EMC (89/336/EEC)
- Plug-in connector for solenoids to ISO 4400/AMP/Deutch
- With internal or external drain release
- For single use or series assembly of 2 to 6 sections

KVH-6/2-8

Operation

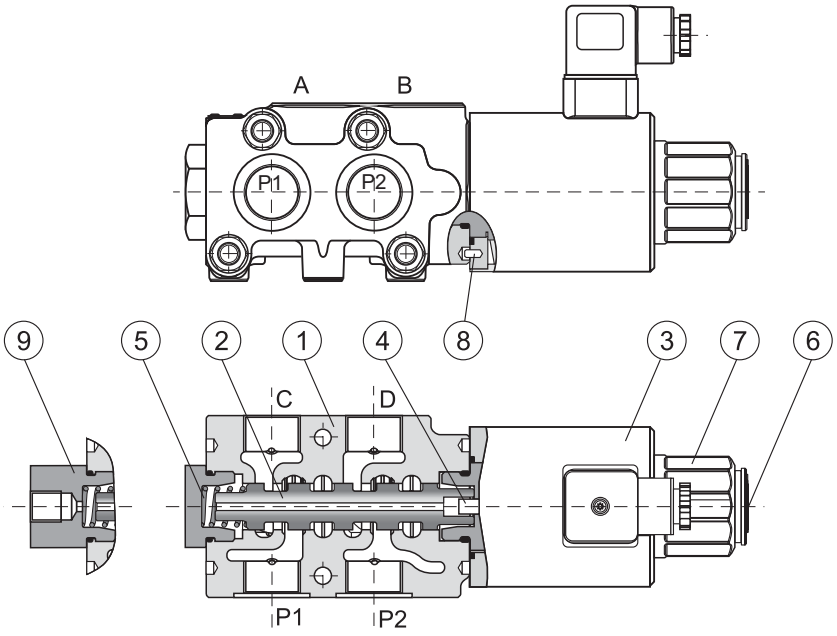
Directional valves type KVH with direct solenoid operation control the direction of the hydraulic medium flow. They are mostly used as circuit selector valve between two (or more) consumers when we want to control two (or more) consumers by means of one basic directional control valve.

A valve basically consists of a housing (1), a control spool (2), a solenoid (3) and a return spring (5).
Change-over to the operating position is done by energizing the solenoid (3), whereby the solenoid plunger acts on the control spool (2) via operating pin (4), thus clearing the corresponding flow ways and establishing respective links between the ports P1-A and P2-B.

When the solenoid (3) is de-energized, the control spool (2) is returned to its neutral position by the return spring (5), thus establishing again the links betweeen ports P1-C and P2-D.
The change-over can also be done manually by pressing the pin for emergency manual override on the solenoid core (6).

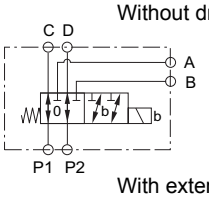
Solenoid coil is fastened to the core by retaining nut (7).
Position of the coil is pre-defined by a pin on the coil (8) and fixation hole on the valve housing.

Wet pin tube of the solenoid core is loaded by working pressure.
When the valve is used at pressure over 250 bar the pressure in the tube must be released by external drain port (9) to tank (option YZ), or internally over the check valves to the lower pressure port - alternatively P1/P2 (option YN).

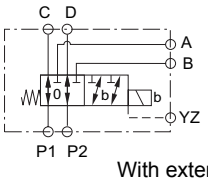


Hydraulic symbols

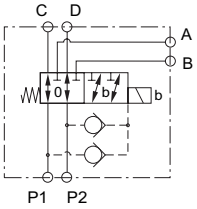
Without drain



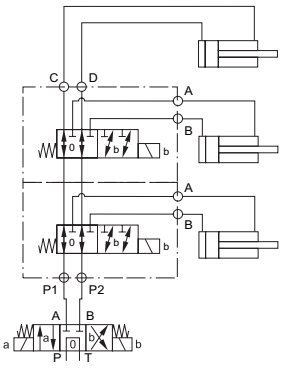
With external drain YZ



With external drain YN



Mounting example

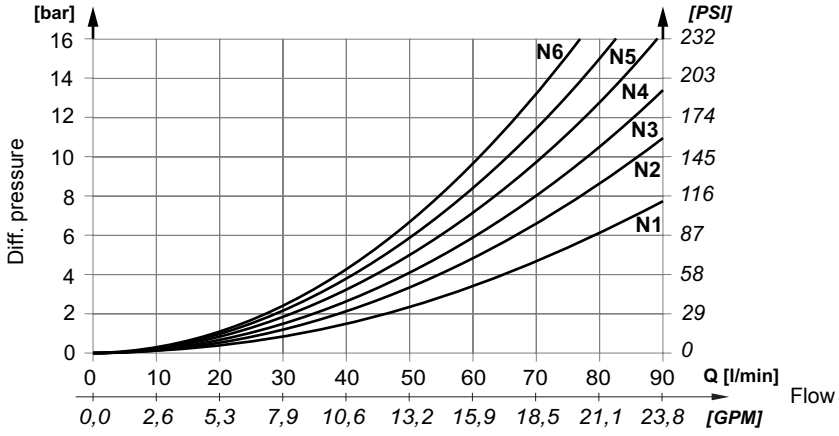


Features

Hydraulic			
Size			**8**
Flow rate		L/min *[GPM]*	90 *[24]*
Operating pressure	with YN or YZ	bar *[PSI]*	350 *[5 076]*
	without drain release	bar *[PSI]*	250 *[3 625]*
Viscosity range		mm^2/s *[SUS]*	15 to 380 *[69.5 to 1 760]*
Oil temperature range		°C *[°F]*	-20 to +70 *[-4 to +158]*
Filtration		ISO 4406:1999	19/17/14
Mass		kg *[lb]*	3,8 *[7.71]*
Mounting position			Optional
Electrical			
Supply voltage		V	12 DC, 24 DC
Max. allowable voltage variation			+/- 10 %
Power		W	45
Ambient temperature		°C *[°F]*	to 50 *[122]*
Coil temperature		°C *[°F]*	to 180 *[356]*
Duty cycle			Continuous
Protection class to EN 50529 / IEC 60529			

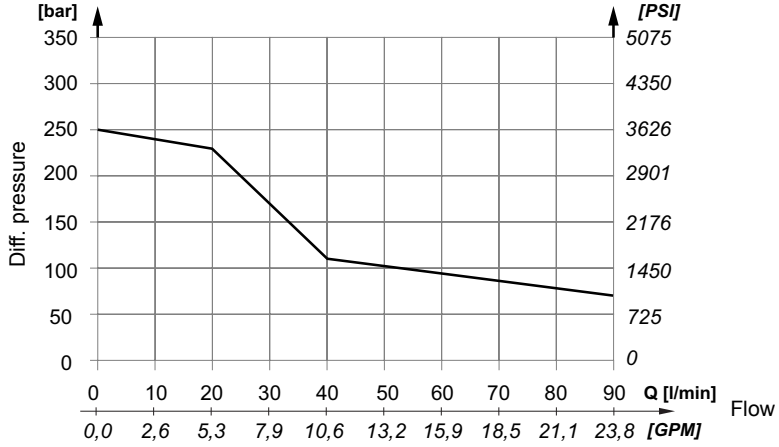
- Connector ISO 4400 - IP65
- Connector AMP - IP65
- Connector Deutsch - IP69K

ΔP-Q Performance curves



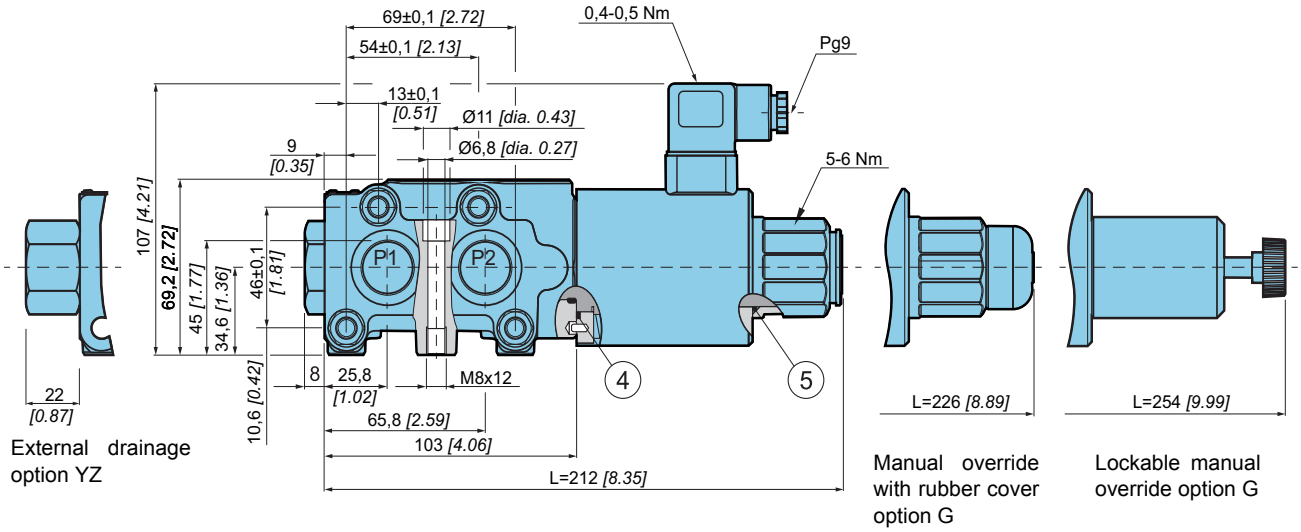
Pressure drop curves for flow in one direction, measured on the valves with ports M22x1,5 and spool with negative overlapping.

P-Q Operating limits



Change-over of the spool is assured in the p-Q range below the operating limit curve.
However, stability of the spool in position “0” or “b” is assured in the whole p-Q range up to 350 bar and up to 90 l/min *[23.8 GPM]*.

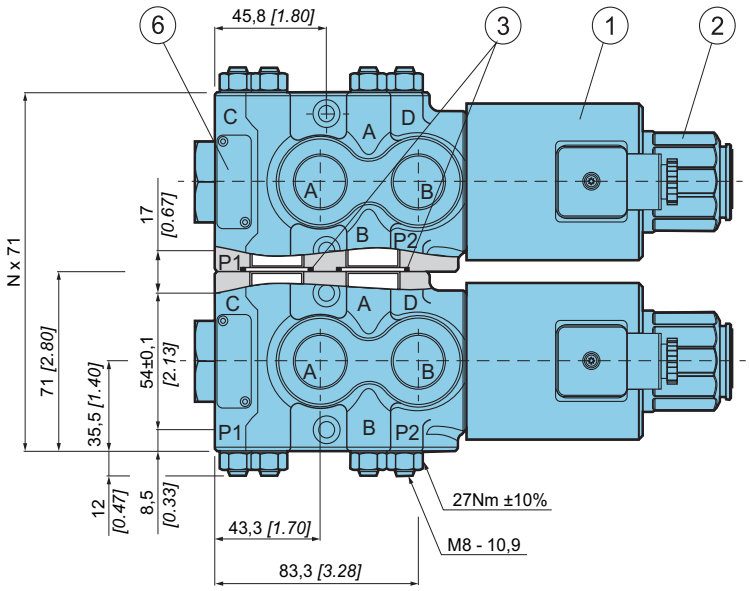
Dimensions



External drainage option YZ

Manual override with rubber cover option G

Lockable manual override option G

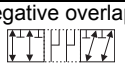


1. Solenoid coil - MR-060-O...
2. Retaining nut - MR-060-M...
3. O-ring FI 26x2
4. O-ring FI 35x2
5. O-ring FI 31x2
6. Nameplate

Model code

K V H - 6 / 2 - 8 - ☐ - ☐ - ☐☐☐ - ☐ - ☐ - ☐ - ☐ - ☐

Spool/Overlap

negative overlap 	**No designation**
positive overlap 	**P**

Manual override option

Emergency manual override	**No designation**
Manual override with rubber cover	**G**
Lockable manual override	**C**

Supply voltage

24V DC	**No designation**
12V DC	**12DC**
without coil	**WC**

Connector type

EN 175301-803 without signal lamp	**No designation**
EN 175301-803 with signal lamp	**L**
EN 175301-803 without connector	**K**
AMP Junior timer without connector	**M**
Deutch without connector	**V**

Overvoltage protection

Without protection	**No designation**
With overvoltage protection (transil diode)	**T**

Threaded connections P1, P2, A, B, C, D (YZ)

M22x1,5 (M12x1,5)	**M22**
G1/2 (G1/4)	**1/2**
3/4 - 16 UNF (9/16 - 18 UNF)	**SAE8**

Seal type

NBR seals for mineral oil HL, HPL to DIN 51524	**No designation**
FPM seals for HETG, HEES, HEPG to VDMA 24 568 and ISO 15 380	**E**

Drainage (see hydraulic symbol)

Without drain	**No designation**
Internal drain release to P1/P2*	**YN**
External drain port on plug**	**YZ**

* Functional when the valve is used in standalone application

** On series assembly of 2 or more sections YZ port has to be released to tank from every section with working pressure over 250 bar

Number of units

1 unit	**No designation**
X units (2 to 6)	**NX**

Special options

Zinc coated surface	**No designation**
Phosphate coated	**PF**
Painted with RALXXXX	**RALXXXX**
Low leakage spool	**LL**
Without identification plate	**S4**
Identification plate with customer logo	**S5**
Customer marking on the identification plate	**S6**
Solenoid on the opposite side	**I**

6/2 WAY DIRECTIONAL VALVES KVH

- NG 10
- Up to 315 bar *[4 568* PSI]
- Up to 120 L/min *[31.70 GPM]*

- Plug-in connector for solenoids to ISO 4400.
- Threaded connections to ISO 9974 (Metric), ISO 1179 (BSPP/Gas), ISO 11926 (UNF).
- Protection of solenoid IP 65 to EN 50529 / IEC 60529.

KVH-6/2-10-N2

Operation

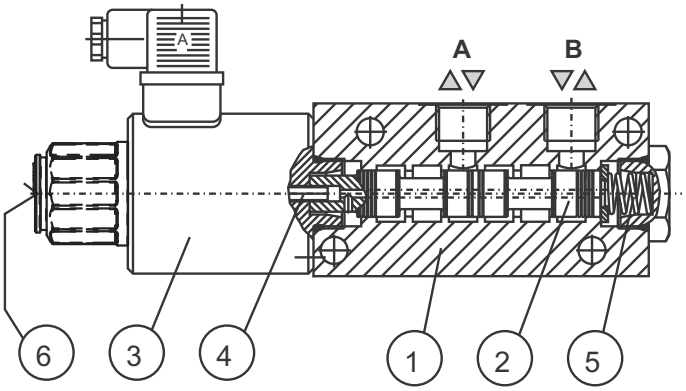
Directional valves type KVH with direct solenoid operation control the direction of the hydraulic medium flow. They are mostly used as link between two consumers and the basic directional valve, when we want to control both consumers alternately by means of one basic directional valve.

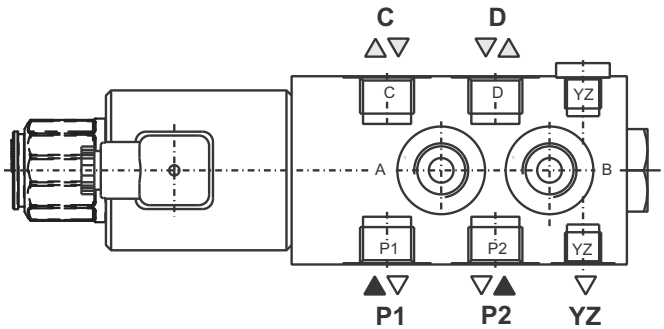
The KVH type directional valves consist of a housing (1), a control spool (2), and a solenoid (3) with return spring (5).

Change-over to the operating position is done by energizing the solenoid (3), whereby the solenoid plunger acts on the control spool (2) via the operating pin (4), thus clearing the corresponding flow ways and establishing respective links between the ports P1, A, B and P2.

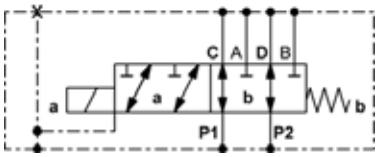
When the solenoid (3) is de-energized, the control spool (2) is returned to its neutral position by the return spring (5), thus establishing again the links between ports P1, C, D and P2.

The change-over can also be done manually by pressing the emergency manual override (6).

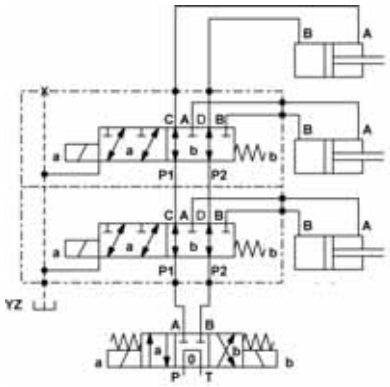




Hydraulic symbol



Mounting example

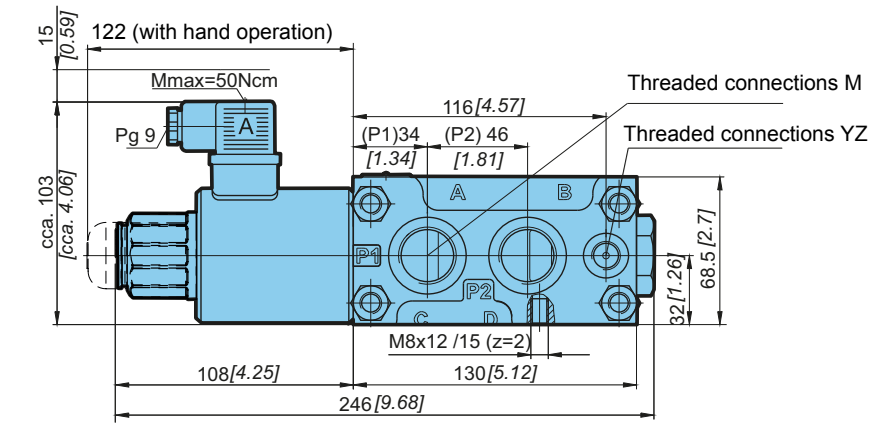


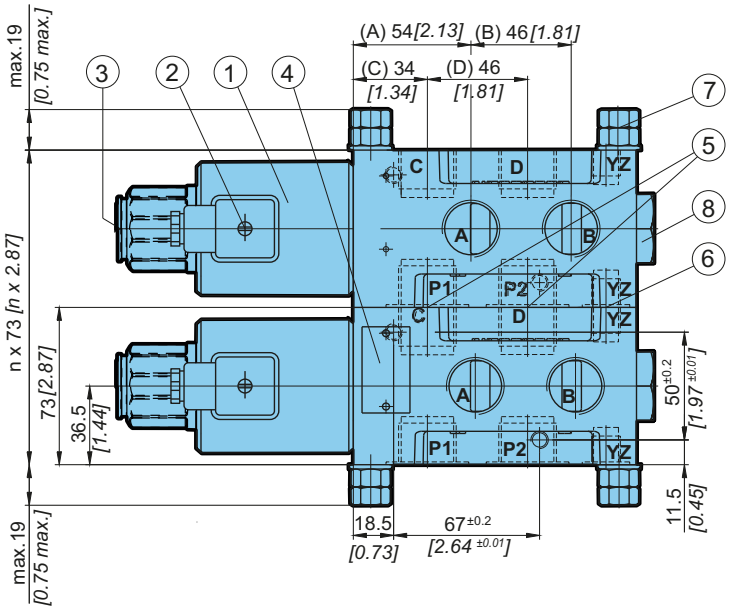
Features

Hydraulic			
Size			**10**
Flow rate		L/min *[GPM]*	120 *[31.70]*
Operating pressure	With YZ	bar *[PSI]*	315 *[4 568]*
	Without YZ		250 *[551]*
Oil temperature range		°C *[°F]*	-20 to +70 *[-4 to+158]*
Viscosity range		mm^2/s *[SUS]*	15 to 380 *[3.24 to 82]*
Mounting position			Optional
Mass		kg *[lb]*	5,5 *[12.12]*
Filtration		NAS 1638	8

Electrical		
Supply voltage	V	12, 24 DC
Power	W	45
Switching frequency	1/h	15 000
Ambient temperature	°C *[°F]*	to +50 *[to +122]*
Coil temperature	°C *[°F]*	to +180 *[to +356]*
Duty cycle		Continuous

Dimensions



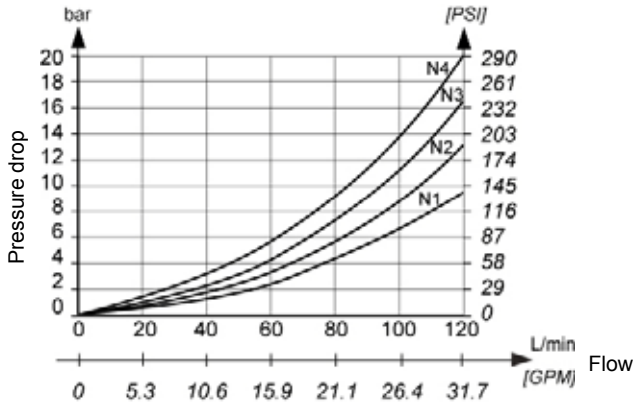


Mmax. = 20Nm

1. Solenoid ”a” MR-060
2. Plug-in connector «a» - grey
3. Emergency manual override
4. Nameplate
5. O-Ring ; 26x2 = KVH-6/2-10-G1/2 (M22)
   31x2 = KVH-6/2-10-G3/4 (M27)
6. O-Ring 17x2
7. Screws M10 - 10.9 (z=4)
8. Valve cap

ΔP-Q Performance curves

Measured at 50°C *[122°F]* and viscosity of 32 mm²/s *[148 SUS]*.



Model code

K V H - 6 / 2 - 10 - □ - □ □ □ - □ - □ - S 4 0 - □ - □ - ✱

Manual override option

Emergency manual override	**No designation**
Manual override with rubber cover	**G**
Lockable manual override	**C**

Supply voltage

Direct voltage 24V	**No designation**
Direct voltage 12V	**12 DC**

Connector type

EN 175301-803 without signal lamp	**No designation**
EN 175301-803 with signal lamp	**L**
175301-803 without connector	**K**
AMP Junior timer without connector	**M**
Deutsch	**V**

Overvoltage protection

Without overvoltage protection	**No designation**
With overvoltage protection	**T**

Threaded connections M; YZ

M22x1,5; M14x1,5	**M22**
M27x2; M14x1,5	**M27**
G1/2; G1/4	**G1/2**
G3/4; G1/4	**G3/4**
7/8-14 UNF-2B; 9/16-18 UNF-2B	**SAE 10**

Drainage

Without YZ	**No designation**
With YZ	**YZ**

Seal type

NBR seals for mineral oil HL, HLP to DIN 51524	**No designation**
FPM seals for HETG, HEES, HEPG to VDMA 24568 and ISO 15380	**E**

Special requirements to be briefly specified

Number of units

N1	One
N2	Two
N3	Three
N4	Four
N5	Five