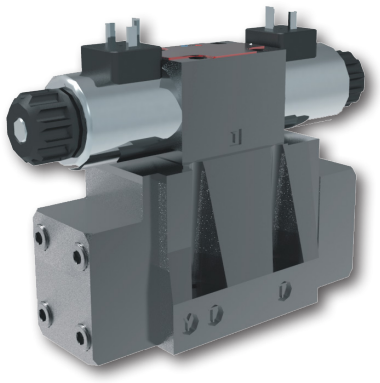
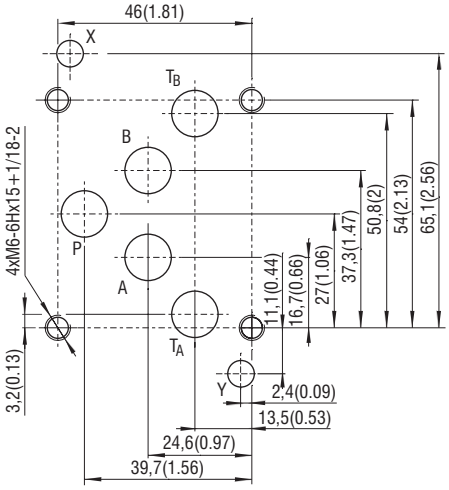
RNEH1-10

Size 10 (D05) • Q_{max} 150 l/min (40 GPM) • p_{max} 320 bar (4600 PSI) / 420 bar (6100 PSI)

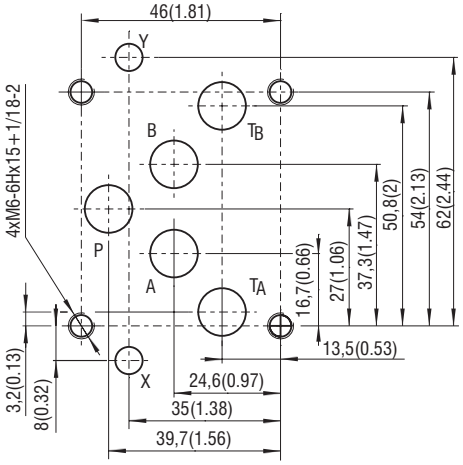


CETOP 4.2-4 P05-320 STANDARD PATTERN



Ports P, A, B, T - max.- ∅11.2 mm (0.44 in)
Ports X, Y - max. - ∅6.3 mm (0.25 in)

ISO 4401-05-05-0-05 CETOP 4.2-4 R05-320



Ports P, A, B, T - max.- ∅11.2 mm (0.44 in)
Ports X, Y - max. - ∅6.3 mm (0.25 in)

Operating limits

Operating limits for maximum hydraulic power at rated temperature and supplied with voltage equal to 90% of the nominal value

Maximum flow rates in l/min (GPM)	at pressure	
	210 bar (3050 PSI)	320 bar (4640 PSI)
Spool type C11	500 (133)	450 (119)
All other spools	600 (159)	500 (133)

Technical Features

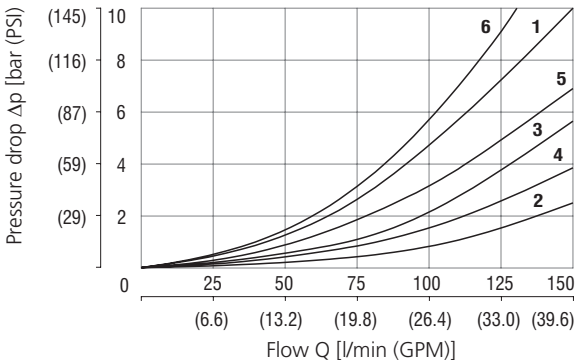
- Directional control valve internally or externally pilot operated with standard mounting interface CETOP 4.2-4 P05-320, optional interface acc. to ISO 4401-05-05-0-05
- Driven by an ISO 4401-03 (CETOP 03) solenoid operated directional valve (RNEH) or a hydraulic pilot operated directional valve (RNH)
- Electrohydraulic and hydraulic control ports X and Y
- Version for high pressures 420 bar (6090 PSI) available
- High transmitted hydraulic power, optimized design to minimize the pressure drop
- Flexibly changed from internal pilot or drain to external by inserting or removing threaded plugs in the main control valve body
- Wide range of interchangeable spools and valve controls available
- Soft-shift, spool speed, main stroke limiter control options
- In the standard version, the valve housing is phosphated and steel are parts zinc-coated for 240 h protection acc. to ISO 9227
- Enhanced surface protection for mobile sector for up to 520h salt spray acc to ISO 9227

Technical Data

Valve type			RN*1-10	RN*1H-10
Valve size			10 (D05)	
Max. flow		l/min (GPM)	150 (37)	
Max. operating pressure at port P, A, B		bar (PSI)	320 (4640)	420 (6090)
- at port T (external drain)			210 (3050)	350 (5080)
- at port T (internal drain)			210 (3050)	
Minimum pilot pressure		bar (PSI)	12 (174)	
Maximum pilot pressure		bar (PSI)	210 (3050)*	350 (5080)*
Fluid temperature range (NBR)		°C (°F)	-30 ... +80 (-22 ... +176)	
Fluid temperature range (FPM)		°C (°F)	-20 ... +80 (-4 ... +176)	
Ambient temperature range		°C (°F)	-30 ... +50 (-22 ... +122)	
Supply voltage tolerance		%	AC: ±10	DC: ±10
Max. switching frequency		1/h	10 000	
Enclosure type acc.to EN 60529			IP 65	
Switching time at ν=32 mm²/s (156 SUS)	ON	ms	AC: 45 ... 60	DC: 55 ... 75
	OFF		AC: 60 ... 90	DC: 60 ... 90
Weight	RNH1-10	kg (lbs)	4.6 (10.1)	
	RNEH1-102		6.4 (14.1)	
	RNEH1-103		7 (15.4)	
		Data Sheet	Type	
General information		GI_0060	products and operating conditions	
Mounting interface		SMT_0019	Size 10	
Spare parts		SP_8010		
*For higher system pressure use option „Z“				

Characteristics measured at ν = 32 mm²/s (156 SUS)

Pressure drop related to flow rate



	Spool position	P-A	P-B	A-T	B-T	P-T		Spool position	P-A	P-B	A-T	B-T	P-T
Z11	Energized	1	1	2	3		J17, J27	Energized	1	1	4	3	
H11	De-energized					6*	R51, R52, X51, X52	De-energized	1			3	
	Energized	5	5	2	4			Energized		1	4		
Y11	De-energized			1**	1***		P11	De-energized					6***
	Energized	1	1	2	4			Energized	6	6	3	5	
C11	De-energized					6							
	Energized	6	6	3	5								

*A-B blocked **B blocked ***A blocked

Subject to change · RNEH1-10_4075_1en_06/2016

Ordering Code

RN □□ - □□□ / □□□ / □□□□ - □

4/2 and 4/3 directional control valve, internally and externally pilot operated

Type of control
electrohydraulically operated **EH**
hydraulically operated **H**

Design series
standard 320 bar **1**
high pressure 420 bar **1H**
(not available for C11 spools)

Valve size and connecting pattern
Standard pattern **10**
Pattern ISO 4401-05-05-0-05 **10R**

Number of spool positions
two positions **2**
three positions **3**

Spool symbols
see the table spool symbols

Control Options
without additional features **No designation**
main spool stroke limiter **C**
main spool shifting speed control **D**
shifting speed control, with orifice (0.8 mm) in port P of solenoid pilot valve **PF**

Piloting
internal **No designation**
not available for spools 3H11, 3C11, 2R52, 2X52, 2J27
internal with installed pressure reducing valve, fixed 30 bar setting **Z**
external **E**

Drain
No designation external
I internal

see data sheet RPE3-06 (4010) for other pilot valve options

Rated supply voltage of solenoids
(at the coil terminal)
01200 12 V DC / 2,72 A
02400 24 V DC / 1,29 A
12060 120 V AC / 0,35 A / 50 (60) Hz
23050 230 V AC / 0,17 A / 50 (60) Hz

Solenoid electrical terminals
E1 EN 175301-803-A
E2 E1 with quenching diode
E5 EN 1745301-803-A with integrated rectifier

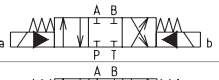
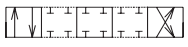
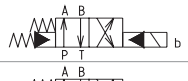
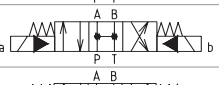
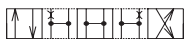
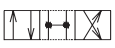
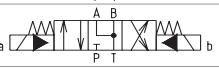
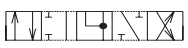
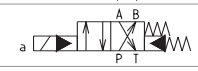
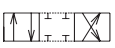
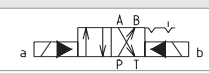
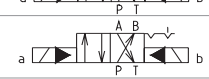
Manual override (only for RNEH)
No designation Standard
N1 protected with retaining nut
N2 protected with rubber boot

Seals
No designation NBR
V FPM (Viton)

Surface treatment
No designation phosphated body, steel parts for 240h salt spray test (ISO 9227)
B 520 h salt spray test (ISO 9227)

Installation note:
- Piloting must always be external for all types RNH and for types RNEH with spools H11, C11, R52, X52, J27.
- For directional valves with two solenoids, one solenoid must be without supply voltage charge before the other solenoid can be charged.
- The AC coils correspond to E5 Solenoid electrical terminal.
- Other voltage of solenoids see data sheet HA 8007
- The solenoid operated valves are delivered without connectors.
- Connectors are not supplied. For connectors versions see data sheet HA 8008.
- Configurations with centering and recall springs can be mounted in any position; type J17, J27 valves - without springs and with mechanical retention must be mounted with the longitudinal axis horizontal.
- Other special versions are available. Consult our technical department.

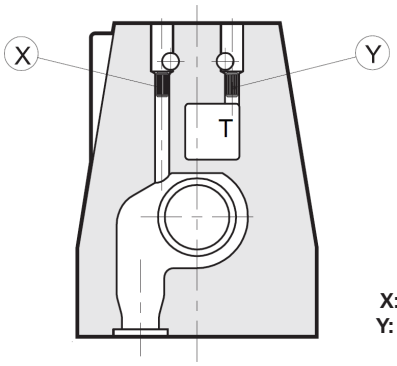
Spool Symbols

Three positions with centering spring			Two positions with return spring		
Z11			R51		
H11			R52		
Y11			X51		
C11			X52		
P11			Two positions with mechanical detent on pilot valve		
Symbols are referred to the solenoid valve RNEH. For the hydraulic control version RNH please see the connection schematic (see page 3)			J17		
			J27		

Pilot and Drain

The RNEH valves are available with pilot and drain, both internal and external. The version with external drain allows for a higher back pressure on the outlet.

Type of valve		Plug assembly	
		X	Y
RNEH1-10**/*	internal pilot and external drain	NO	YES
RNEH1-10**/*I	internal pilot and internal drain	NO	NO
RNEH1-10**/*E	external pilot and external drain	YES	YES
RNEH1-10**/*EI	external pilot and internal drain	YES	NO



X: plug M5x6 for external pilot
Y: plug M5x6 for external drain

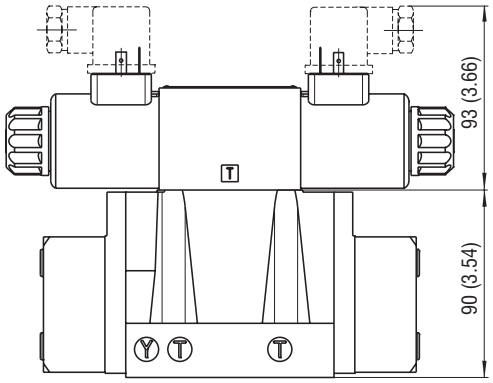
Electrical Features

Solenoids
The operating solenoids are DC solenoids. For AC supply, the solenoids are provided with a rectifier integrated in the DIN connector socket as part of the solenoid. The connectors can be turned by 90°. By loosening the nut, the solenoids can be turned or replaced without interfering with any seals of the valve. In case of a solenoid malfunction or power failure, the spool of the valve can be shifted by manual override, provided the pressure in port T does not exceed 25 bar.

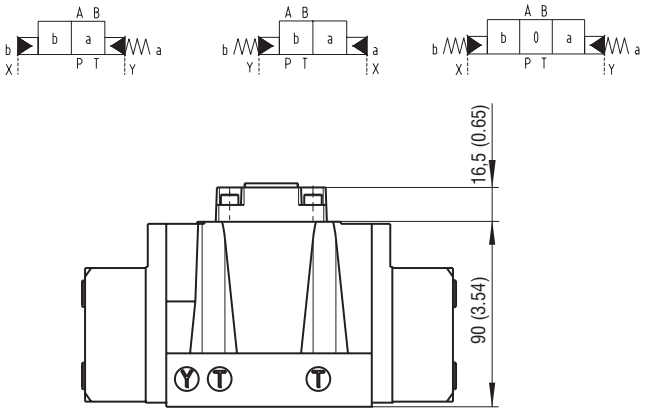
For detail information on the pilot valve RPE3-06 refer to data sheet No. 4010.

Actuation in millimeters (inches)

Solenoid control: RNEH
The valve is supplied with an RPE3-06 pilot solenoid valve.



Hydraulic control: RNH
The valve is supplied with a cross-connection cover plate.
X and Y connections are used for the hydraulic control of the valve.



The minimum piloting pressure can be as low as 5 bar at low flow rates, but with higher flow rates a pressure of 12 bar is needed.

If the valve operates with higher pressures it is necessary to use the version with external pilot and reduced pilot pressure.
Otherwise, the valve with internal pilot and a pressure reducing valve with a 30 bar fixed setting can be ordered.

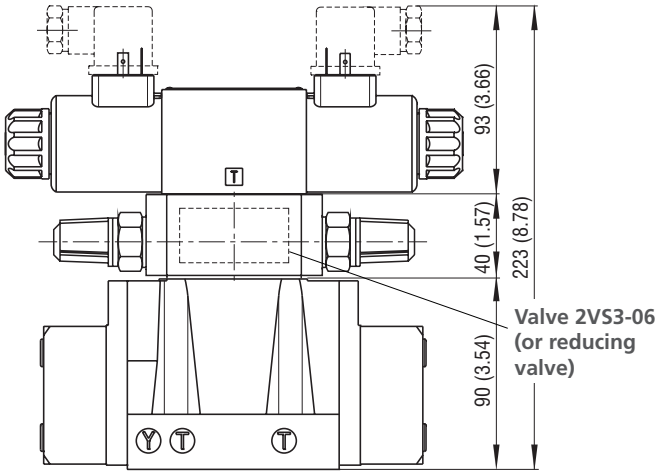
Control Options - Special Features

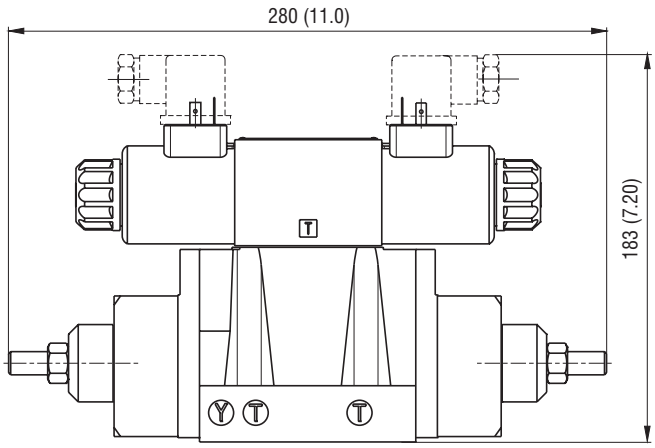
Control of the main spool shifting speed: D
By placing a 2VS3-06 flow control valve between the pilot solenoid valve and the hydropiloted valve, the pilot flow rate can be controlled and therefore the shifting speed adjusted. Add the letter **D** to the identification code to request this device.

Pilot pressure reducing valve - 30 bar fixed setting: Z
Internal piloting with mounted pressure reducing valve with 30 bar fixed setting. The option **Z** may be used together with option **D**.

Control of the main spool stroke: C
Using special side plugs, it is possible to introduce stroke control the piloted valve so as to vary the maximum spool opening clearance. This solution allows the control of the flow rate from the pump to the actuator and from the actuator to the outlet, resulting in double adjustable control of the actuator. Add the letter C to the identification code to request this device.

Shifting speed control: PF
with an orifice (0.8 mm) in port P of the solenoid pilot valve
Add **PF** to the identification code to request this device

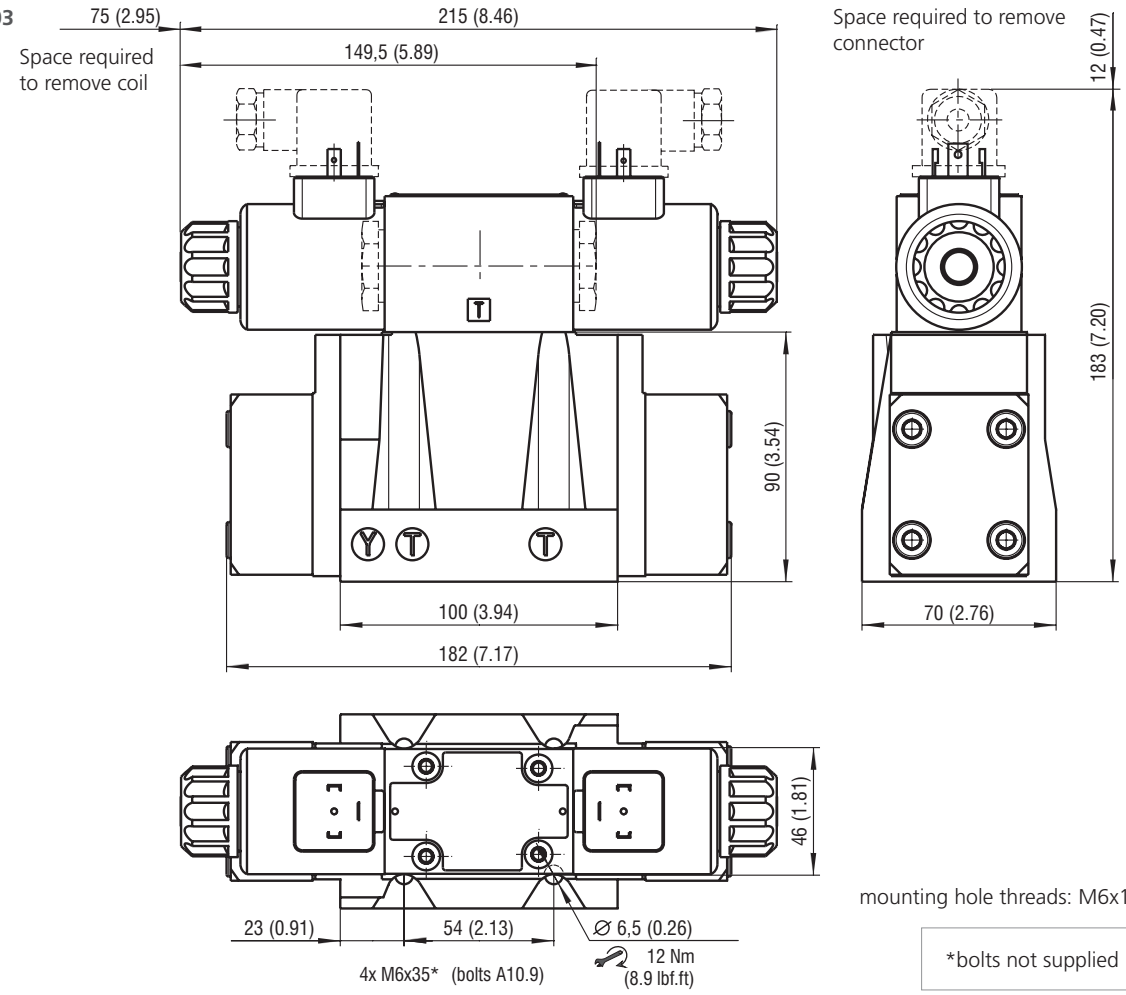




Solenoid operated distributor with pilot valve in the configuration 3H11
It is possible to deliver the solenoid operated distributor with the pilot valve in configuration 3H11 (all the ports at the outlet).
This configuration is used with external piloting in order to allow the unloading of the piloting line when the solenoid operated valve is in the rest position.
With this option, the piloting is necessarily external.

Dimensions in millimeters (inches)

RNEH1-102, RNEH1-103



mounting hole threads: M6x10

*bolts not supplied