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Россия +7(495)268-04-70

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<https://toyooki.nt-rt.ru> || tik@nt-rt.ru

COMPACT SOLENOID VALVE (HD1N)

COMPACT SOLENOID VALVE (HD1N) SIZE 025



■ Features

HD1 N Series (for 7 MPa)

1. Compact
2. Dust- and water-proof of highest level (IP67), thanks to use of M12-4 pin connector
3. Since it operates at low currency, it can be connected directly to the sequencer and is compatible with a device net.
4. Lamp and grounding terminal are standard equipment.
5. Surge killer is standard equipment.



■ Cautions on use

Please read the Operating Manual carefully to ensure correct usage.

- The piping must be arranged so that the R port is always filled with fluid to make the most of the features of the oil-immersed type valve.
- When installing a no-spring type valve, install it so as to set the spool horizontally.
- Finish the mounting faces to the same quality as the valve faces (3.2 μ mRz).
- Using a valve with the R port plugged can cause operation failure.
- When it is retained without energizing the solenoid on a detent type, the back pressure must be 2 MPa or less.

■ Description of the model designation

HD1N-3W-BCA-025-A1 (A)

Construction category
 HD1N compact solenoid valve 7 MPa

Switching function
 3W : Spring center type
 2WD: No spring detent type
 2S : Spring offset type

Spool type
 See Model column.

Nominal size
 025: Conforming to ISO4401-03-02-094

Optional function (DC type only)
 For wire-saving type (with M12-4 pin connector)
 A: Load side -COMMON right side
 B: Load side -COMMON left side
 C: Load side +COMMON right side
 D: Load side +COMMON left side
 With diode
 S: Load side -COMMON
 T: Load side +COMMON

Voltage indication
 A1: AC100V
 A2: AC200V
 D2: DC24V

■ Valve specifications

Max. operating pressure (MPa)	7
Max. flow rate (L/min)	30
Permissible T port back pressure (MPa)	7 (2) (NOTE 1)
Operation frequency (time/s)	2 or less
Permissible variable voltage range (V)	Rated voltage $\pm$ 10%
Protection structure class	IEC 529 IP65 (IP67) (NOTE 2)
Hydraulic fluid contamination	Complying with ISO11218-Class 12 (NAS1638 Class 12)
Hydraulic fluid (recommended)	ISO VG22, 32, 46
Viscosity (mm ² /s)	15 to 400
Fluid temperature (°C)	0 to 65
Ambient temperature (°C)	-10 to 50
Proper tightening torque (N·m)	6 to 8
Mass (kg)	3W, 2WD: 1.5 2S: 1.2

NOTE 1: Value in () is for the no spring detent type.

NOTE 2: The protection structure class (IP67) is for M12-4 pin connector type.

■ Solenoid specifications

Solenoid model	SLH1N-025-A1		SLH1N-025-A2		SLH1N-025-D2
Rated voltage (V)	AC100	AC110	AC200	AC220	DC24
Frequency (Hz)	50/60	60	50/60	60	—
Starting current (A)	0.92/0.82	0.90	0.46/0.40	0.44	—
Holding current (A)	0.26/0.20	0.24	0.12/0.10	0.11	0.42A

■ Terminal box

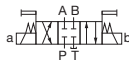
● Size 025B DC type

Solenoid model	Rated voltage	Terminal Box	
		Double Solenoid Type	Single Solenoid Type
HD1 N-***-***-025-D2	DC24V	TBH1N-025-D1W	TBH1N-025-D1S
HD1 N-***-***-025-D2 S	DC24V	TBH1N-025-D1W-S	TBH1N-025-D1S-S
HD1 N-***-***-025-D2 T	DC24V	TBH1N-025-D1W-T	TBH1N-025-D1S-T
HD1 N-***-***-025-D2 A	DC24V	TBH3-025C-D1W-MA	TBH3-025C-D1S-MA
HD1 N-***-***-025-D2 B	DC24V	TBH3-025C-D1W-MB	TBH3-025C-D1S-MB
HD1 N-***-***-025-D2 C	DC24V	TBH3-025C-D1W-MC	TBH3-025C-D1S-MC
HD1 N-***-***-025-D2 D	DC24V	TBH3-025C-D1W-MD	TBH3-025C-D1S-MD

● Size 025B AC type

Solenoid	Rated voltage	Terminal Box	
		Double Solenoid Type	Single Solenoid Type
HD1 N-***-***-025- A1 A2	AC100V AC100V	TBH1N-025-A1W	TBH1N-025B-A1S

■ Spool types

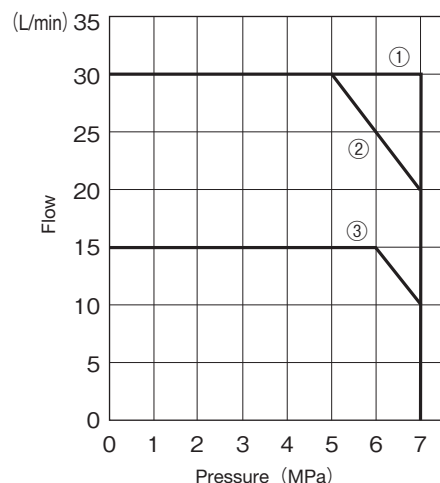
Switching function	Spring Center	No Spring Detent	Spring Offset
Model	HD1N-3W-* -025-*	HD1N-2WD-* -025-*	HD1N-2S-* -025-*
Spool type	3W-BCA 	2WD-BcA 	2S-BcA 
	3W-BGA 		

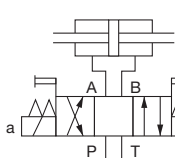
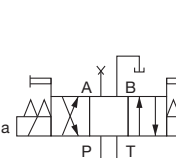
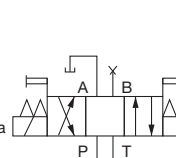
NOTE: When a model not listed above is necessary, consult us separately.

■ Valve performance

Operation Limit (Dynamic Viscosity: 33 mm²/sec)

The performance will vary slightly depending on the circuit conditions and the operation conditions (voltage, pressure, flow, viscosity, etc.). The performance curves show values including the surge pressure and surge flow rate.



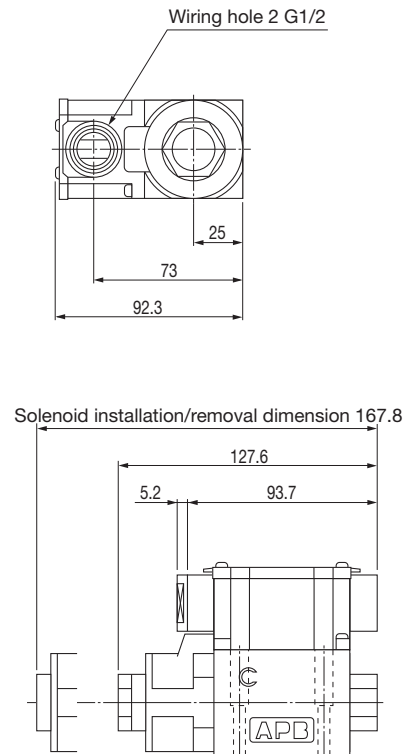
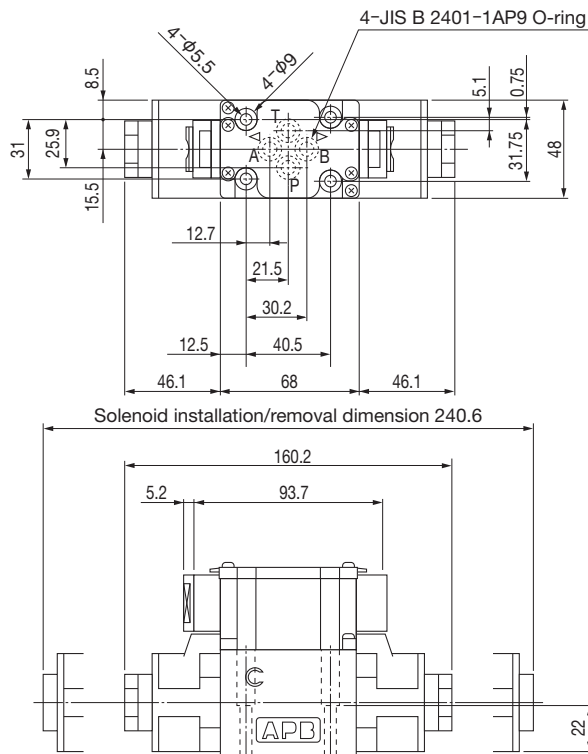
Circuit	Cylinder circuit		A port blocked		B port blocked	
						
Spool Type	AC	DC	AC	DC	AC	DC
3W-BCA	①	①	①	②	①	②
3W-BGA	①	①	①	②	①	②
2WD-BcA	①	①	①	①	①	①
2S-BcA	①	①	①	①	③ (NOTE)	③ (NOTE)

NOTE: Where used out of the operating range, consult us.

Outside dimensions

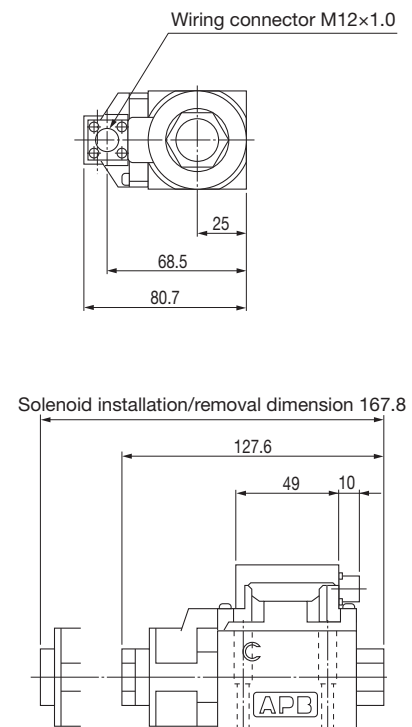
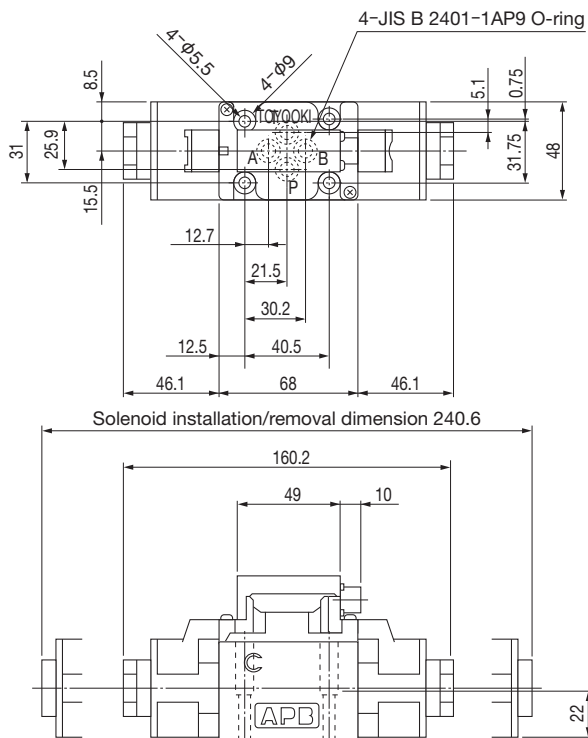
Standard type

HD1N-**-025-A*	HD1N-**-025-D2
HD1N-**-025-D2S	HD1N-**-025-D2T



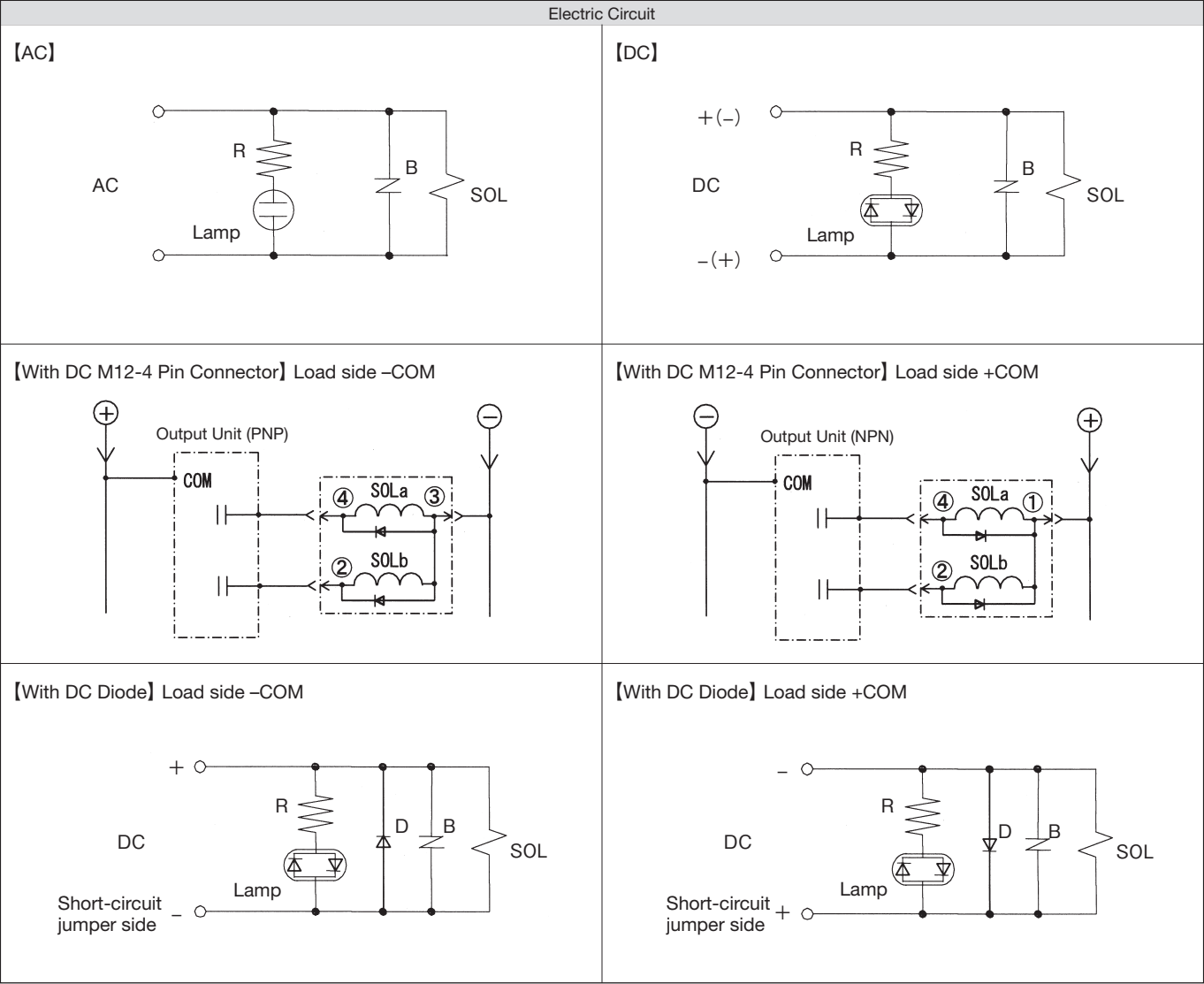
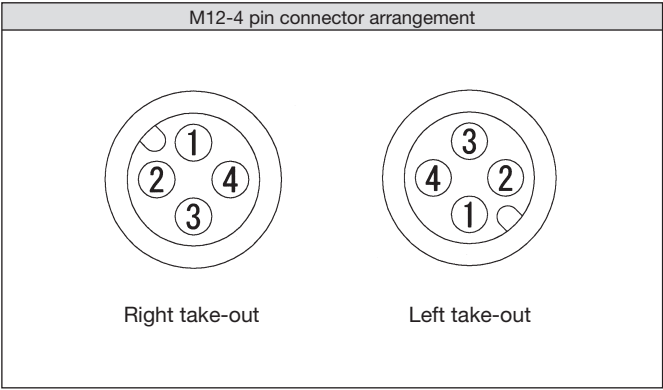
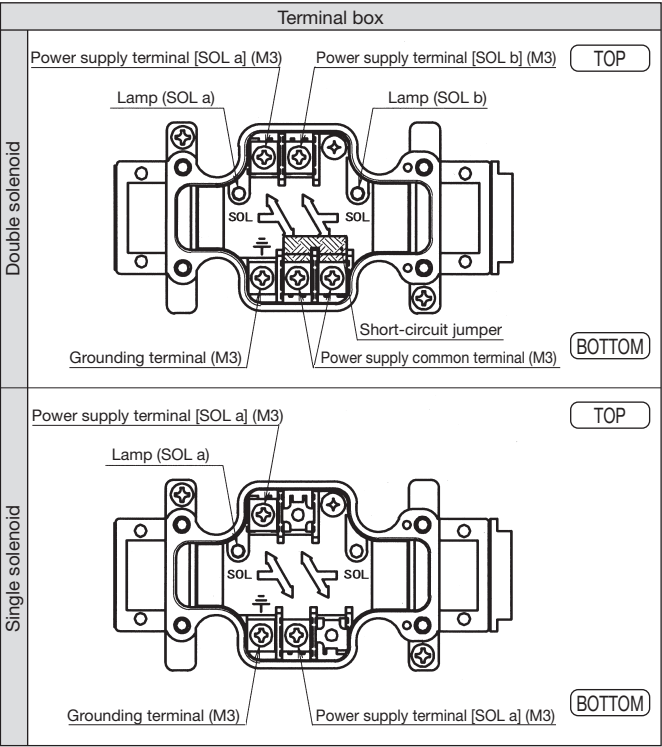
M12-4 pin connector type

HD1N-**-025-D2A	HD1N-**-025-D2B
HD1N-**-025-D2C	HD1N-**-025-D2D



● For the sub-plate SHD025-**T1A, refer to page L-2.
SHD025-**T3A, refer to page L-6.

■Connecting method

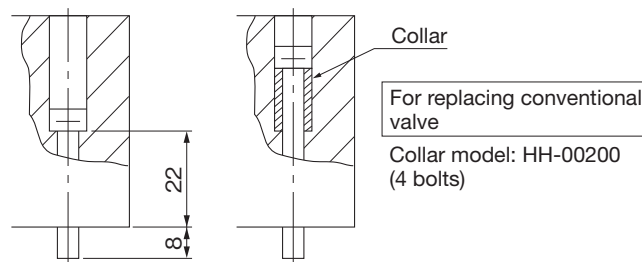


■ Mounting bolts

Mounting bolts are not supplied with valves and should be ordered separately.

Since the mounting bolt seat height of new type valves differs from that of conventional valves, please order the adjusting collars or mounting bolts for a new type valve when replacing a valve in a circuit where stack valves are used.

Where HD*-*-025B-WY* is used, it is not necessary to purchase mounting bolts.



Mounting Bolts for the HY-TEGRA System

Hexagon socket head bolt

No. of Stack Levels	Bolt Type
1	JIB B 1176 M5×30
2	HKS-NA-5×65
3	HKS-NA-5×100
4	HKS-NA-5×135
5	HKS-NA-5×170

① Use mounting bolts of the strength category class 12.9.

② Stud bolts are supplied with nuts.

Stud bolt

No. of Stack Levels	Bolt Type
1	—
2	HKS-NC-5×71
3	HKS-NC-5×106
4	HKS-NC-5×141
5	HKS-NC-5×176

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