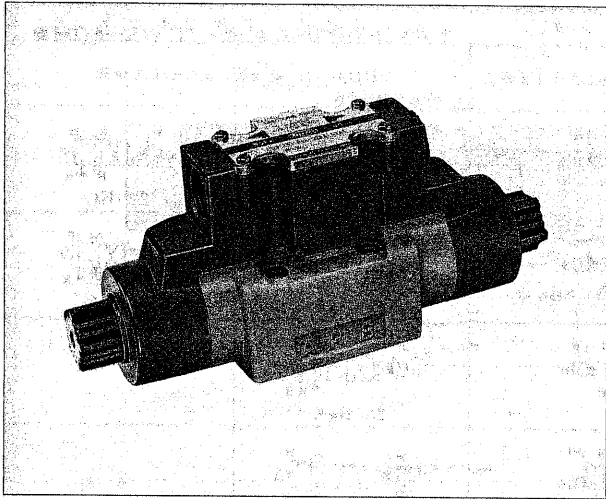


低電力電磁切換弁 (HD3-LY※) 025形

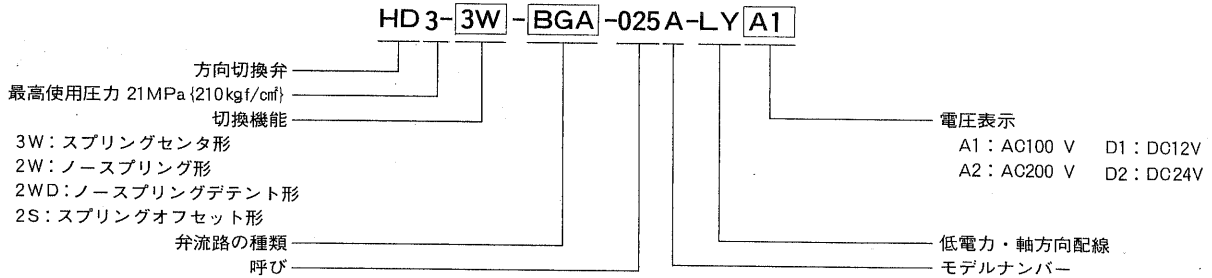


●特長

1. 低電力形で超小形リレー、パイロットランプと同じ電力で駆動できます。
2. 交流ソレノイドの場合、あやまってダブルソレノイド弁の両側のソレノイドを同時通電しても焼損しません。
3. AC形、DC形ともに通電表示ランプがついています。
4. サージキラーは、標準装備です。

- 使用するOリング 4
JIS B2401-1AP9 4個
JIS B2401-1AP3 2個(2W形のみ使用)
日本オイルシール S25 2個
- ノースプリング形のバルブの取付けは、スプール軸が水平になるように取付けてください。
- 取付面は、バルブ面と同等(3,2Z)に仕上げてください。
- Rポートを詰栓して使用すると、作動不良をおこしますのでご注意ください。
- デテント付において、ソレノイドに通電せずに保持する場合は、背圧を2MPa {20kgf/cm²}以下にしてください。
- 使用油は、ISO VG32または、VG56(140タービン油) 相当粘度のものを御用ください。
- 電磁油圧式構造ですので、P、Rポート間に0.4MPa {4 kgf/cm²}以上の圧力差がでるようにしてください。但し、AEB、BDAは、パイロット圧力確保用チェック弁付です。

●形式説明



●仕様

呼 び	025	
最高使用圧力 MPa {kgf/cm ² }	21 {210}	
定格流量 L/min	20 (注1)	
最大流量 L/min (注3)	40	
Rポート許容範囲 MPa {kgf/cm ² }	7 {70} (2 {20}) (注2)	
動作頻度 回/s	2 以下	
電圧変動許容範囲	定格電圧の±10%	
使用するサブプレート	SHD025-02T1A SHD025-03T1A	SHD025-02T3A SHD025-03T3A
付属品(ボルト)	はP386 はP394を参照してください。	
	JIS B1176 M5×45	

(注1) ()内の数値は、BDAとAEBの場合です。
 (注2) ()内の数値は、ノースプリングデテント形(2WD)の場合です。
 (注3) 最大流量は、機種・回路により異なるためP114の最大流量を参照してください。

●ソレノイド特性

交流用

形 式	SLH3-L3-A1			SLH3-L3-A2		
	AC100V 50 Hz	AC100V 60 Hz	AC110V 60 Hz	AC200V 50 Hz	AC200V 60 Hz	AC220V 60 Hz
定格電圧						
起動電流 A	0.29	0.24	0.265	0.145	0.12	0.135
保持電流 A	0.19	0.135	0.165	0.095	0.07	0.085
消費電力 W	6.1	4.1	5.3	6.1	4.1	5.3

直流用

形 式	SLH3-L3-D1	SLH3-L3-D2
定格電圧	DC12V	DC24V
電 流 A	0.4	0.2
消費電力 W	4.8	4.8

● 弁流路の種類

種別	スプリングセンタ		ノースプリング		スプリングオフセット	
形式	HD3-3W-***-025A-LY**		HD3-2W(D)-***-025A-LY**		HD3-2S-***-025A-LY**	
形式	3W-BCA	3W-BMA	2W-BcA		2S-BcA	2S-BC
	3W-BDA	3W-BM1A	2W-BdA		2S-BdA	2S-BG
	3W-BGA	3W-BNA	2W-BgA		2S-BgA	
	3W-BG1A	3W-BN1A	2WD-BcA		2S-KcP	
	3W-AEB					

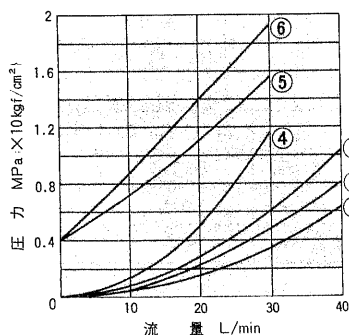
● 最大流量

(単位: L/min)

回路	圧力MPa {kgf/cm ² }	Rポート背圧MPa {kgf/cm ² }	図はスプリングセンタ形を示す。 ノースプリング形、スプリングオフセット形も同様です。		Aポートブロック			Bポートブロック					
			7 {70}	14 {140}	21 {210}	7 {70}	14 {140}	21 {210}	7 {70}	14 {140}	21 {210}		
機種			0	0	7 {70}	0	7 {70}	0	0	0	7 {70}	14 {140}	21 {210}
3W	BCA		40			40			40				
	BDA		30		25	30	15	10	30	20	15		
	AEB	30		20	12	30	15	12	30	25	15		
	BGA												
	BG1A												
	BMA			40			40			40			
	BM1A												
	BNA												
BN1A													
2W	BcA												
	BdA			40									
	BgA												
2WD	BcA	40			40								
	BcA								40	30	20		
	BdA			40					40	20	15		
	BgA									40			
	KcP								40	20	15		
	BC										40		
2S	BG			40									
	BG												

注. 最大流量は回路により異なります。

● 圧力降下025形



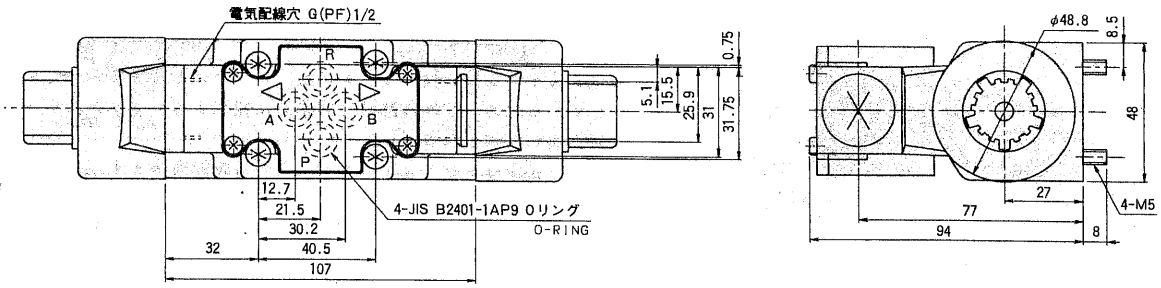
● 圧力降下曲線の符号

(粘度: 33mm²/s {cSt})

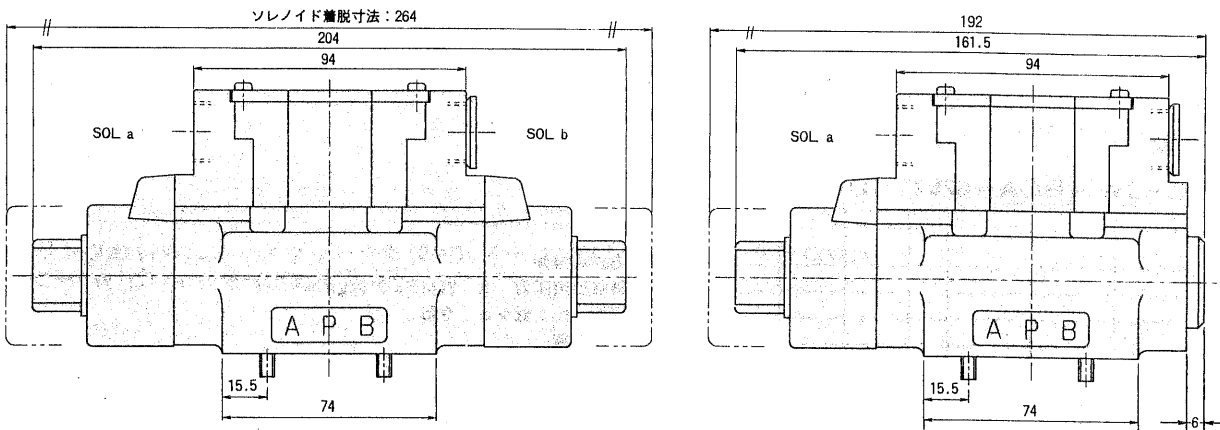
機種	3W									2W			2WD	2S			
	BCA	BDA	AEB	BGA	BG1A	BMA	BM1A	BNA	BN1A	BcA	BdA	BgA	BcA	BcA	BdA	BgA	KcP
流れ	②	⑤	⑥	②	②	②	②	②	②	②	①	②	②	③	①	③	②
P→A	②	⑤	⑥	②	②	②	②	②	②	②	①	②	②	③	①	③	②
P→B	②	⑤	⑥	②	②	②	②	②	②	②	①	②	②	③	①	③	②
A→R	②	①	④	①	②	②	②	①	②	②	①	①	③	②	②	③	
B→R	②	①	④	①	②	①	②	②	②	②	①	①	③	②	②	②	
P→R		⑤	⑤														

● 外観寸法図

● HD3-※W(D)-※※※-025A-LYA※



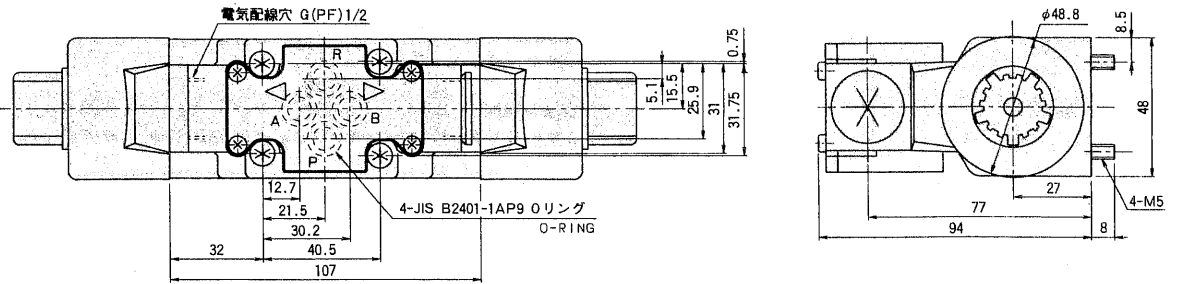
● HD3-2S-※※※-025A-LYA※



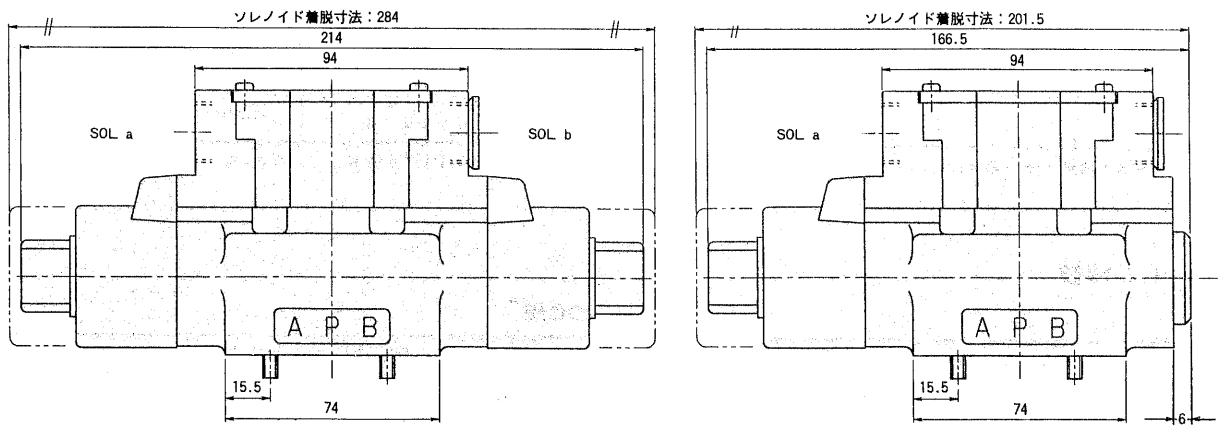
質量 2.2kg

質量 2kg

● HD3-※W(D)-※※※-025A-LYD※ (S)



● HD3-2S-※※※-025A-LYD※

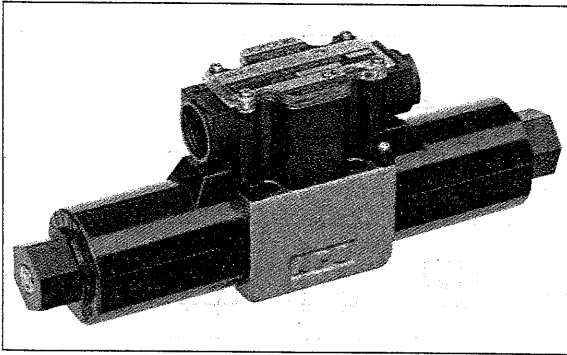


質量 2.2kg

質量 2kg

PRESENT MODEL

SOLENOID VALVE (HD*-WY*) SIZE 025 / 03



FEATURES

HD3 Series (for 25 MPa)

1. Compact
2. High pressure and large capacity
3. Increased rated flow rate
4. Increased permissible back pressure
5. Dust- and water-proof to IEC IP65
6. Lamp and grounding terminal are standard.
7. Surge killer is standard.

HD1 Series (for 7 MPa)

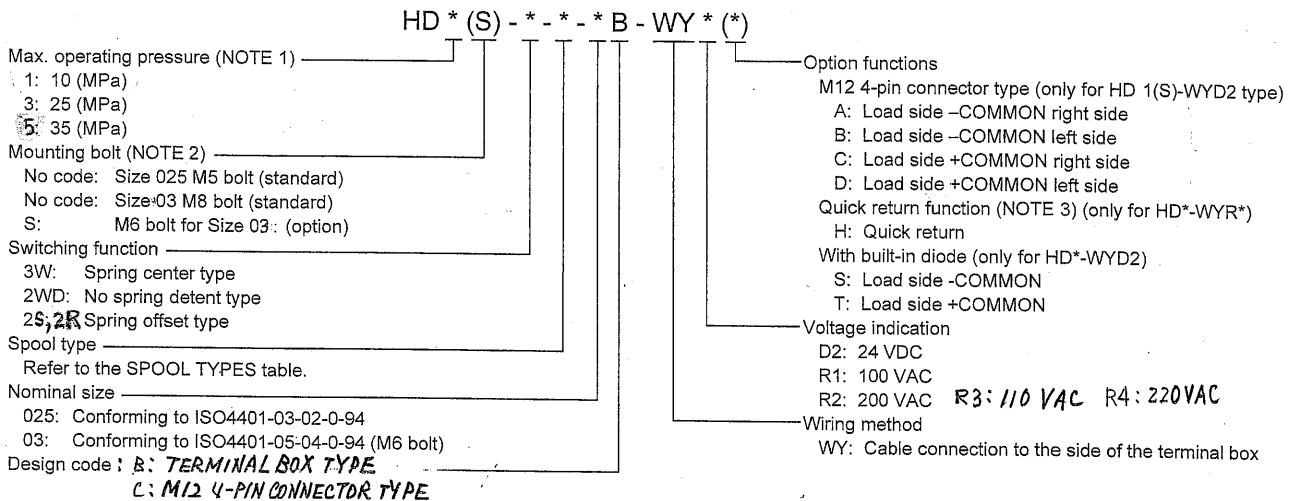
1. Directly controllable by a programmable controller since the valve operates at low power. (Refer to the solenoid characteristics).

⚠ Cautions on Use

Please read the Instruction 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 μmRz).
- Using a valve with the R port plugged can cause operation failure.
- For valves with detent, to hold the spool position without supplying power to the solenoid the back pressure must be 5 MPa or lower for the HD3 series or 2 MPa or lower for the HD1 series.

MODEL DESIGNATION



NOTE 1: A solenoid valve of 35 MPa operating pressure is available only for the 025B series.

NOTE 2: Model with "S" designation is available only for the 03B series.

NOTE 3: The valve with quick return function provides faster response for switching to OFF.

SERIES SELECTION TABLE

	Series	Power Source		Low Voltage	Surge Absorber	M12 4-pin Connector	Quick Return	Compatibility to DeviceNet
		DC	AC					
Low-pressure Type	HD1(S)-WYD*	○		○	CR + Varistor			
	HD1(S)-WYD* (A to D)	○		○	Diode	○		○
	HD1(S)-WYD* (S or T)	○		○	Diode			○
	HD1(S)-WYR*		○	○	Rectifier			
	HD1(S)-WYR*H		○	○	Rectifier		○	
High-pressure Type	HD3 / HD5(S)-WYD*	○			CR + Varistor			
	HD3 / HD5(S)-WYD* (S or T)	○			Diode			○ (NOTE)
	HD3 / HD5(S)-WYD*		○		Rectifier			
	HD3 / HD5(S)-WYD*H		○		Rectifier		○	

NOTE: Select the slave unit carefully since the solenoid current value is high.

VALVE SPECIFICATIONS

Size	Size 025			Size 03	
Series	HD1	HD3	HD5	HD1	HD3
Max. operating pressure (MPa)	10	25	35	10	25
Max. flow (NOTE 1) (L/min)	40	80	80	60	120
Permissible back pressure at T port (NOTE 2) (MPa)	10(2)	16(5)	16(5)	10(2)	16(5)
Switching frequency (CYCLE/s)	2 or lower				
Permissible voltage variation range	Rated voltage $\pm 10\%$ V				
Protection structure class	IEC529 IP65				
Operating fluid (recommendation)	ISO VG22, 32, 46				
Viscosity (mm ² /s)	15 to 400				
Fluid temperature (°C)	0 to 65				
Ambient temperature (°C)	-10 to 50				
Tightening torque (N-m)	6 to 8	8 to 9		M6: 10 to 12 M8: 13 to 15	
Mass (kg)	3W, 2WD: 2.5 2S: 1.8			3W, 2WD: 4.8 2S: 3.5	

NOTE 1: For details, refer to the operation limit.

NOTE 2: Values in parentheses are for the detent type.

SOLENOID SPECIFICATIONS

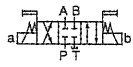
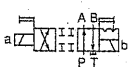
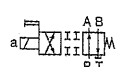
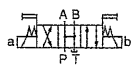
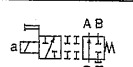
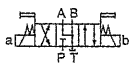

● HD1 Series

Valve Size	Size 025			Size 03		
Solenoid model	SLH1-025B-D2	SLH1-025B-R1	SLH1-025B-R2	SLH1-03B-D2	SLH1-03B-R1	SLH1-03B-R2
Rated voltage	24 VDC	100 VAC	200 VAC	24 VDC	100 VAC	200 VAC
Frequency	—	50/60 Hz	50/60 Hz	—	50/60 Hz	50/60 Hz
Holding current	0.2 A	0.07 A	0.05 A	0.2 A	0.06 A	0.03 A
Power consumption	4.8 W	6.5 W	8.1 W	4.8 W	5.8 W	6.6 W
Voltage variation range	$\pm 10\%$ V					

● HD3 / HD5 Series

Valve Size	Size 025			Size 03		
Solenoid model	SLH5-025B-D2	SLH5-025B-R1	SLH5-025B-R2	SLH5-03B-D2	SLH5-03B-R1	SLH5-03B-R2
Rated voltage	24 VDC	100 VAC	200 VAC	24 VDC	100 VAC	200 VAC
Frequency	—	50/60 Hz	50/60 Hz	—	50/60 Hz	50/60 Hz
Holding current	1.2 A	0.35 A	0.19 A	1.5 A	0.46 A	0.25 A
Power consumption	29 W	31 W	33 W	36 W	40 W	44 W
Voltage variation range	$\pm 10\%$ V					

SPOOL TYPES

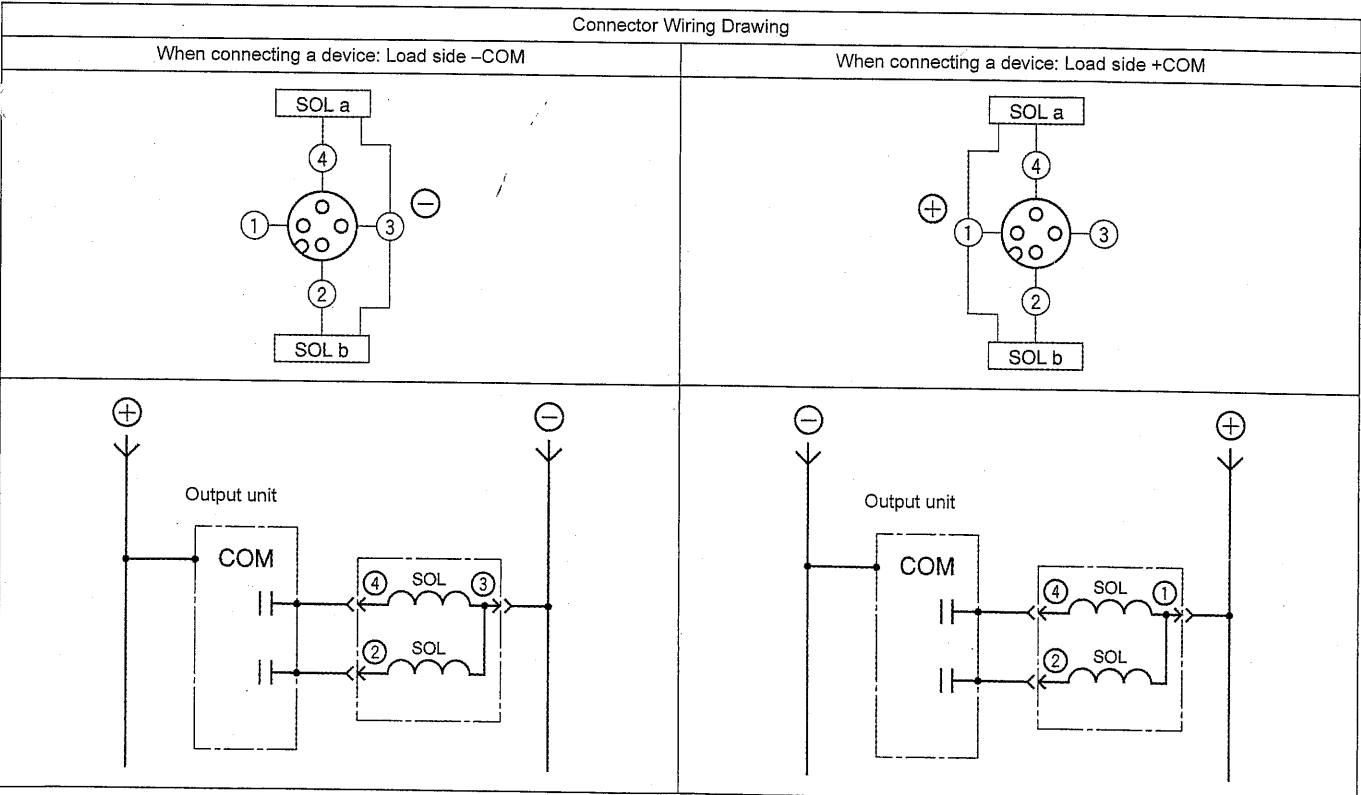
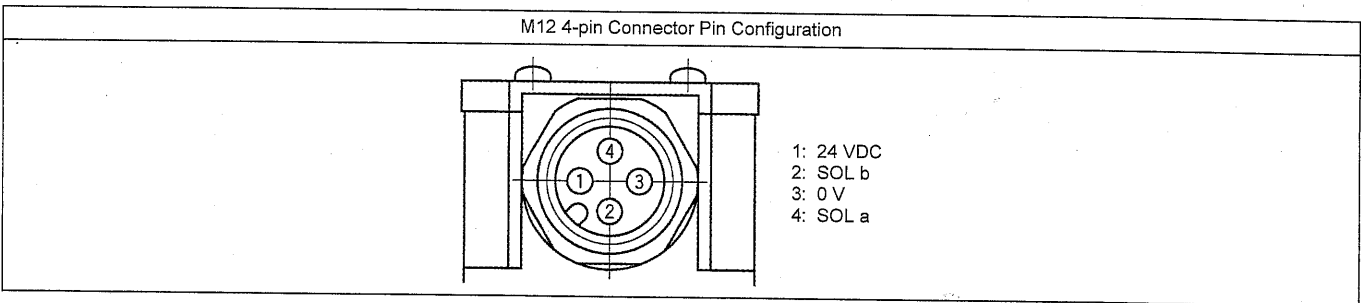
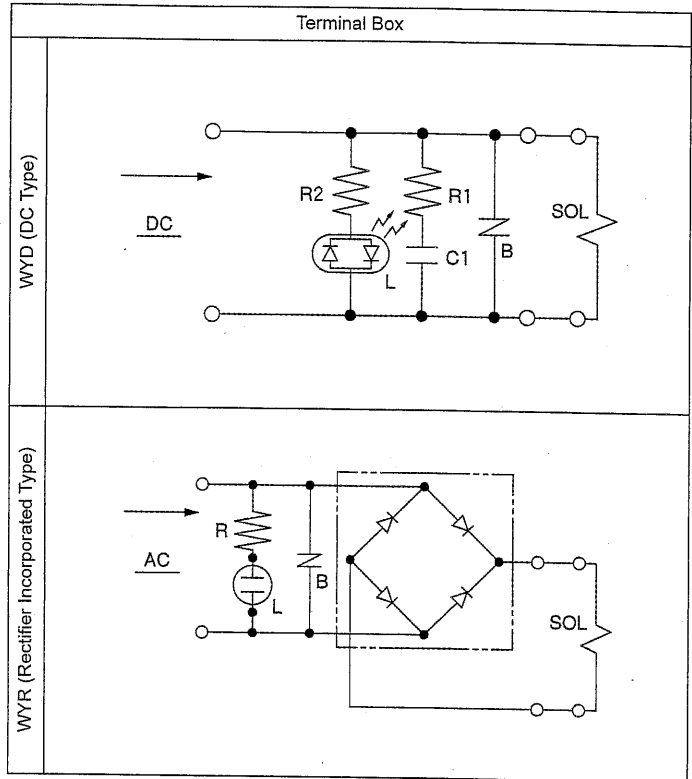
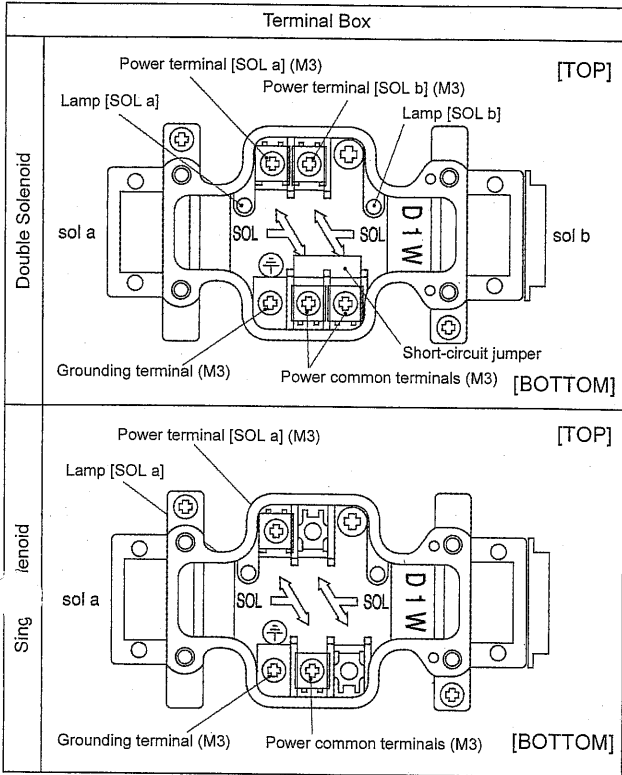
Type	Spring Center	No Spring Detent	Spring Offset
Model	HD*-3W-*-B-WY*	HD*-2WD-*-B-WY*	HD*-2S-*-B-WY*
Spool Type	3W-BCA 	2WD-BcA 	2S-BcA 
	3W-BDA 		2S-KcP 
	3WBGA 		
	3W-AEB (NOTE) 		

NOTE 1: Spool type 3W-AEB is available only for the HD3 and HD5 series.

NOTE 2: For spool types not shown above, please consult us.

WIRING METHODS

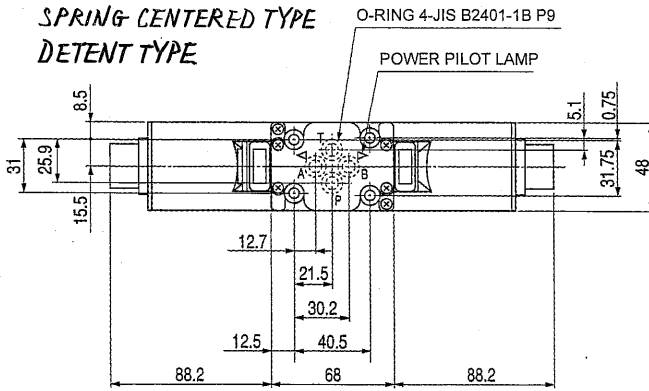
When attaching a lid after connecting cables, be sure to attach it correctly.



EXTERNAL DIMENSIONS

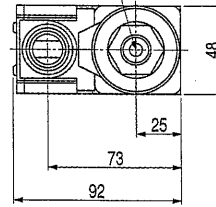
● SIZE 025 SERIES

SPRING CENTERED TYPE
DETENT TYPE



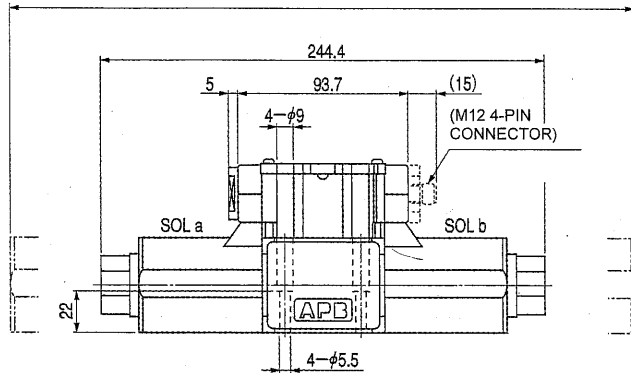
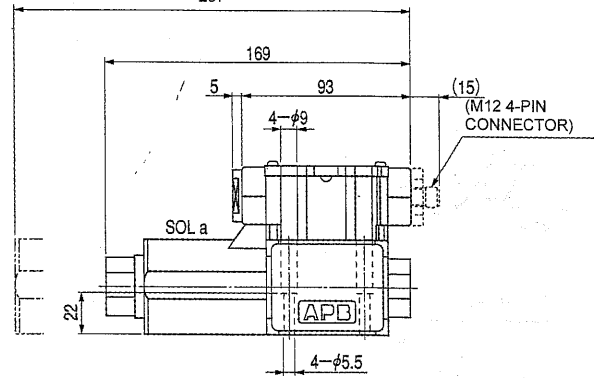
CLEARANCE REQUIRED TO REMOVE SOLENOID
381

MANUAL OPERATION HOLE



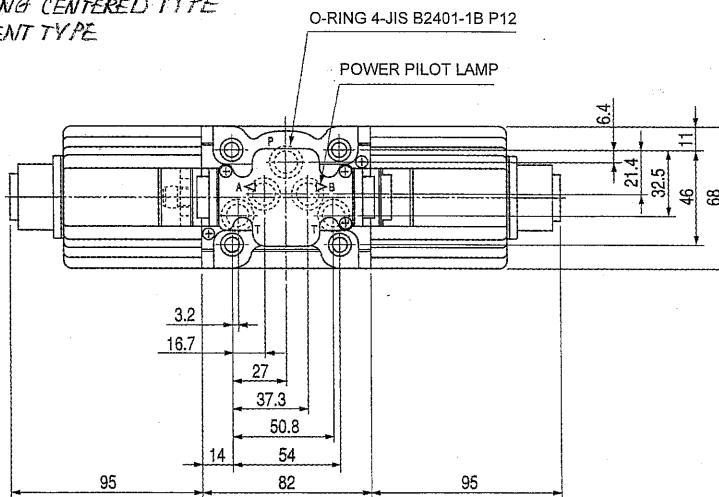
SPRING OFFSET TYPE

CLEARANCE REQUIRED TO REMOVE SOLENOID
237

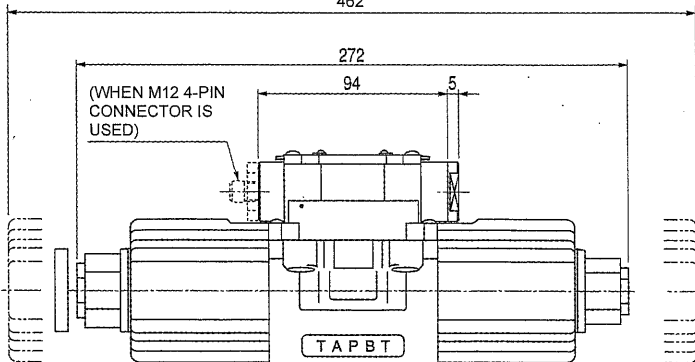


● SIZE 03 SERIES

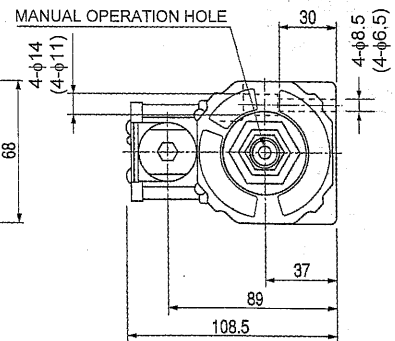
SPRING CENTERED TYPE
DETENT TYPE



CLEARANCE REQUIRED TO REMOVE SOLENOID
462



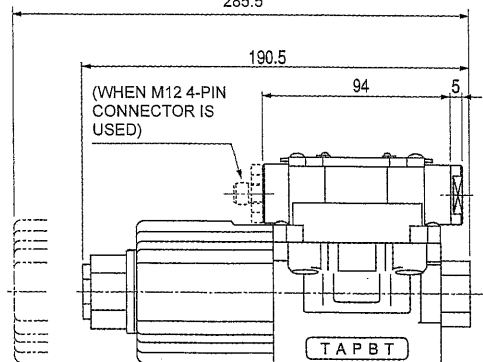
MANUAL OPERATION HOLE



(): Indicates the size of HD3S (M6).

SPRING OFFSET TYPE

CLEARANCE REQUIRED TO REMOVE SOLENOID
285.5

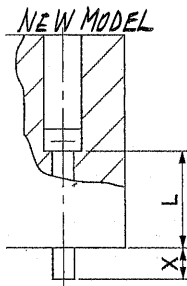


MOUNTING BOLTS

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

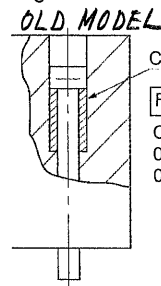
Since the mounting bolt seat height of new type valves differs from that of conventional valves, please order the adjusting collars or mounting bolts for a new type valve when replacing a valve in a circuit where stack valves are used.

For the 03B series with M6 type mounting bolts, please order the mounting bolts for a new type valve.



Unit: mm

Series	X	L
025B	8	22
03B	10	30



COLLAR

FOR REPLACING CONVENTIONAL VALVE

Collar Model
025: HH-00200 (4 bolts)
03: HH-00271 (4 bolts)

025B Series Mounting Bolts for the HY-TEGRA System

● Hexagon socket head bolt

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

● 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

03B Series Mounting Bolts for the HY-TEGRA System

● M6 hexagon socket head bolt

No. of Stack Levels	Bolt Type
1	JIS B 1176 M6 × 40
2	HKS-NA-6 × 95
3	HKS-NA-6 × 150
4	HKS-NA-6 × 205
5	HKS-NA-6 × 260

● M6 stud bolt

No. of Stack Levels	Bolt Type
1	—
2	HKS-NC-6 × 106
3	HKS-NC-6 × 161
4	HKS-NC-6 × 216
5	HKS-NC-6 × 271

● M8 hexagon socket head bolt

No. of Stack Levels	Bolt Type
1	JIS B 1176 M8 × 40
2	HKS-NA-8 × 95
3	HKS-NA-8 × 150
4	HKS-NA-8 × 205
5	HKS-NA-8 × 260

● M8 stud bolt

No. of Stack Levels	Bolt Type
1	—
2	HKS-NC-8 × 106
3	HKS-NC-8 × 161
4	HKS-NC-8 × 216
5	HKS-NC-8 × 271

NOTE 1: Use mounting bolts of the strength category class 12.9.

NOTE 2: Stud bolts are supplied with nuts.

NOTE 3: If an M6 type solenoid valve is used for the 03B series, also use an M6 type (H*3HS) HY-TEGRA valve.

COMPATIBILITY WITH STANDARDS

● CE

All types of valves in the catalogs conform to "CE marking" directives.
Directive: 73/23EEC, 93/68/EEC Low Voltage Directive (VDE 0580:200)

● UL

Please consult us.

● CCC

Not compatible as of April of 2004.