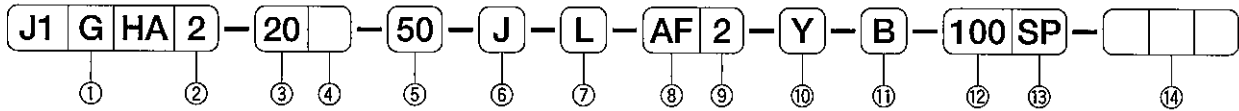


HI-PAL CYLINDER/WITH SOLENOID VALVE

J1○HA series

φ 20, φ 25, φ 32, φ 40

ORDERING INSTRUCTIONS



①Magnet

G	Built-in magnet	Cylinder with switch available
---	-----------------	--------------------------------

②Action

2	Double-acting, single rod Rod extends at power on.
4	Double-acting, single rod Rod retracts at power on.

③Bore (mm)

20	φ 20
25	φ 25
32	φ 32
40	φ 40

④Cushion

No symbol	Damper cushion (Standard)
B	Both-side air cushion

⑤Stroke (mm)

Refer to Standard Strokes (Page 65).

⑥Dustproof cover

No symbol	No dustproof cover provided (Standard)
J	With bellows (Nylon tarpaulin)
JN	With bellows (Chloroprene)
JK	With bellows (CONEX)

CONEX : Registered trademark of Teijin Ltd.

⑦Mounting

N	Nose (Basic type)
L	Both-foot
A	Rod side flange
R	Rod side trunnion

⑧Type of switch

No symbol	No switch			
AF	AX101	DC5~30V AC5~120V		
AG	AX105			
AH	AX111			
AJ	AX115			
AE	AX125	DC5~50V AC5~120V	Reed switch	
AK	AX11A	AC5~120V		
AL	AX11B	DC5~30V		
JA	ZC201A	AC85~115V		
JB	ZC201B	DC5~28V		
JC	ZC205A	DC10~28V		
JD	ZC205B			
S	SR405	AC80~220V		
BE	AX201	DC5~30V		Solid-state switch
BF	AX205			
BH	AX221			
BJ	AX225			
CE	AX211			
CF	AX215			
JJ	ZC230A	DC10~28V		
JK	ZC230B			
JL	ZC253A	DC10~30V		
JM	ZC253B			

⑨Number of switch

No symbol	No switch
2	With 2 units
1	With 1 unit

⑫Voltage

100	AC100/110V
200	AC200/220V
D24	DC24V

⑩Bracket at rod end

No symbol	No bracket
Y	With rod end clevis
I	With rod end eye

(Note) Y : Provided with pin

⑬Wiring

L	Lead wire
SP	Connector with lead wire
UP	Connector with lead wire

⑪Bracket

No symbol	No bracket
B	With bracket

(Note) Models with bracket : R alone

⑭Special shape of rod end

No symbol	Standard
-----------	----------

(Note) Refer to Pages 37 and 38.

Model No. of Mounting Bracket

Bore (mm)	φ 20	φ 25	φ 32	φ 40
Foot mount bracket	J120-L	J120-L	J132-L	J140-L
Flange mount bracket	J120-A	J120-A	J132-A	J140-A
Trunnion mount bracket	J120-R	J120-R	J132-R	J140-R
Bracket for R	J120-BC	J120-BC	J132-BC	J140-BC

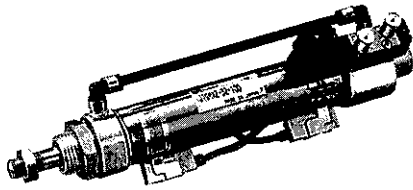
Model No. of Packing Kit

Bore (mm)	Packing kit
φ 20	J120-PS
φ 25	J125-PS
φ 32	J132-PS
φ 40	J140-PS

(Note) Packing kit : Rod packing alone

HI-PAL CYLINDER/WITH SOLENOID VALVE J1○HA series

φ 20, φ 25, φ 32, φ 40



SPECIFICATIONS

Action	Unit	Double-acting			
Fluid		Non-lubricated air			
Pressure range	MPa	0.2~0.7			
Proof pressure	MPa	1.05			
Temperature range	°C	5~50			
Piston speed range	mm/s	50~500			
Cushion		Damper cushion (Standard) Air cushion (Custom-made)			
Piston stroke allowance	mm	Below 250mm : $\begin{matrix} +1.0 \\ 0 \end{matrix}$ 251~900mm : $\begin{matrix} +1.4 \\ 0 \end{matrix}$			
Mounting		Nose, Both-foot, Rod-side flange, Rod side trunnion			
Solenoid valve		PCS245			
Rated voltage	V	AC100/110, 200/220 DC24			
Insulation grade		JIS B			
Permissible voltage fluctuation	%	AC : ± 10 DC : $\begin{matrix} +10 \\ -15 \end{matrix}$			
Frequency	Hz	50/60			
Apparent power	AC	Hold	50Hz	VA	(100/200) 2.5
			60Hz	VA	(100/200) 2.0
		Start	50Hz	VA	(100/200) 2.9
			60Hz	VA	(100/200) 2.5
Power consumption	W	1.8			

(Note) •When setting a switch at the intermediate position, set the maximum cylinder speed to less than 300 mm/s by reason of the relation with the response speed of relays etc.
•Use the cylinder within a temperature range where it is not frozen.

STANDARD STROKE

(Unit : mm)

Bore	Standard stroke																Max. stroke
	15	25	30	50	75	100	125	150	175	200	250	300	350	400	450	500	
φ 20	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	900
φ 25	○	○	○	○	○	○	○	○	○	○	○	○	—	—	—	—	900
φ 32	○	○	○	○	○	○	○	○	○	○	○	○	○	○	—	—	900
φ 40	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	900

HI-PAL CYLINDER/WITH SOLENOID VALVE J1○HA series

MODEL WITH SWITCH/For detailed specifications, handling precautions and mounting method of switches, refer to Page 80.

●AX Type Switch

●ZC Type Switch

●SR Type Switch

Cord type

Connector type



LIST OF SWITCHES

Type	Symbol of switch	Load voltage range	Load current range	Max. switching capacity	Protective circuit	Pilot lamp	Connection	Cord length	Applicable load			
Reed switch	AF AX101	DC5~30V	DC: 5~40mA AC: 5~20mA	DC: 1.5W AC: 2VA	Not provided	LED (Red LED lights up at ON.)	0.3 mm ² 2-core, OD φ 4 mm Cord direction : Axial	1.5m	Miniature relay PLC			
	AG AX105							5m				
	AH AX111				AC5~120V	DC: 5~40mA AC: 5~20mA		DC: 1.5W AC: 2VA		Provided	LED (Red LED lights up at ON.)	1.5m
	AJ AX115											5m
	AE AX125	DC5~50V AC5~120V				Not provided	Not provided			5m		
	AK AX11A	AC5~120V	5~20mA	2VA	Provided	LED (Red LED lights up at ON.)	4-pin connector Cord direction : Axial	0.5m				
	AL AX11B	DC5~30V	5~40mA	1.5W				0.5m				
	JA ZC201A	AC85~115V	AC: 2~25mA	—	Not provided	Not provided	0.2 mm ² 2-core, OD φ 3 mm Cord direction : Axial	1m				
	JB ZC201B	DC5~28V	DC: 0.1~40mA	—				3m				
	JC ZC205A	DC10~28V	DC: 5~40mA	—	Not provided	LED (Red LED lights up at ON.)	0.2 mm ² 2-core, OD φ 3 mm Cord direction : Axial	1m				
	JD ZC205B							3m				
S SR405	AC80~220V	2~300mA	30VA	Provided	Neon lamp (Red lights up at OFF.)	0.5 mm ² 2-core, OD φ 6 mm Cord direction : Axial	5m					
Solid-state switch	BE AX201	DC5~30V	5~40mA	—	Provided	LED (Red LED lights up at ON.)	0.3 mm ² 2-core, OD φ 4 mm Cord direction : Axial	1.5m				
	BF AX205							5m				
	CE AX211							LED (Dual light : Red/green)	1.5m			
	CF AX215								5m			
	BH AX221	DC5~30V	Max. 200mA NPN open collector output	—	Provided	LED (Red LED lights up at ON.)	0.3 mm ² 3-core, OD φ 4 mm Cord direction : Axial	1.5m				
	BJ AX225							5m				
	JJ ZC230A	DC10~28V	5~40mA	—	Provided	LED (Lights up at ON.)	0.2 mm ² 2-core, OD φ 3 mm Cord direction : Axial	1m				
	JK ZC230B							3m				
	JL ZC253A	DC4.5~28V	MAX.100mA	—	Provided	LED (Lights up at ON.)	0.2 mm ² 3-core, OD φ 3 mm Cord direction : Axial	1m				
	JM ZC253B							3m				

(Note) •When using inductive load (relay etc.) in a switch without a protective circuit, be sure to fit a protective circuit (SK-100) to the load.
•AX type switch can be mounted on other type than above-mentioned. Refer to Specifications for Switches at the end of this catalog.

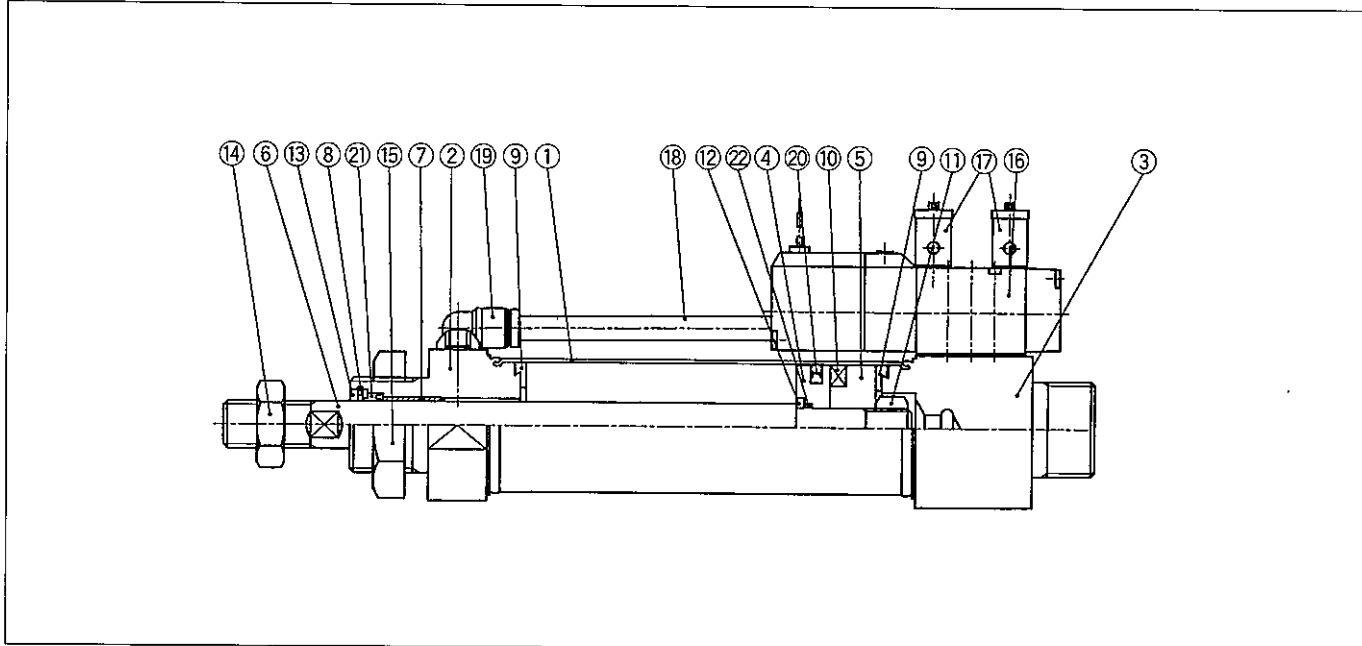
MINIMUM STROKE FOR AIR CYLINDER WITH SWITCH

(Unit : mm)

Bore	Number of mounted switch										
	With 1 unit						With 2 units				
	Reed switch				Solid-state switch		Reed switch			Solid-state switch	
	AX	ZC201	ZC205	SR	AX	ZC	AX	ZC	SR	AX	ZC
φ 20, φ 25	10	10	15	15	10	10	15	15	35	20	10
φ 32, φ 40				10							

HI-PAL CYLINDER/WITH SOLENOID VALVE J1○HA series

CONSTRUCTIONS



PARTS LIST

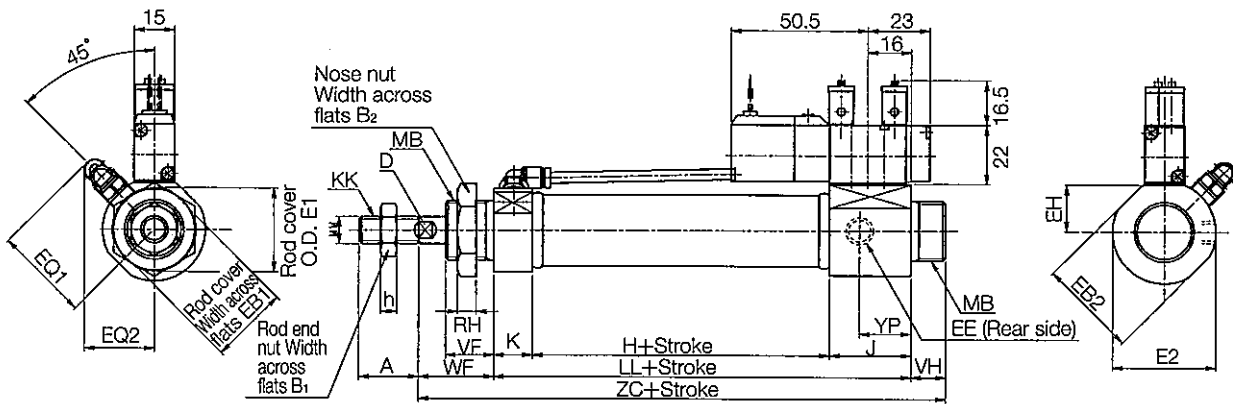
No.	Description	Material	No.	Description	Material
①	Cylinder tube	Stainless steel	⑪	Piston nut	Rolled steel for general structure
②	Rod cover	Aluminium alloy	⑫	Piston washer	Cold rolled steel
③	Head cover	Aluminium alloy	⑬	Snap ring	Spring steel
④	Piston A	Aluminium alloy	⑭	Rod end nut	Rolled steel for general structure
⑤	Piston B	Aluminium alloy	⑮	Nose nut	Rolled steel for general structure
⑥	Piston rod	$\phi 20\sim 32$: Stainless steel (Hard chromium plating) $\phi 40$: Carbon steel for machine structure (Hard chromium plating)	⑯	Solenoid valve	
⑦	Bushing	Dry bearing	⑰	Metering valve	
⑧	Rod packing hold-down plate	Cold rolled steel	⑱	Tube	Synthetic resins
⑨	Cushion pad	Urethane rubber	⑲	Instant fitting	Nitril rubber
⑩	Magnet	—	⑳	Piston packing	Nitril rubber
			㉑	Rod packing	Nitril rubber
			㉒	O-ring for piston rod	Nitril rubber

HI-PAL CYLINDER/WITH SOLENOID VALVE J1○HA series

DIMENSIONS

(Unit : mm)

Nose mounting/N



Bore	A	B1	B2	D	E1	E2	EB1	EB2	EH	H	h	J	K	KK
φ 20	20 (20)	13	30	6	φ 28	φ 38	26	36	17.3	31	5	30	14	M 8×1.25
φ 25	22 (22)	17	30	8	φ 31	φ 38	29	36	17.3	35	6	30	14.5	M10×1.5
φ 32	22 (22)	19	32	10	φ 38	φ 40	36	38	18.5	40	7	30	15	M12×1.25
φ 40	24 (24)	22	41	12	φ 46	φ 50	44	48	23.8	42	8	30	15	M14×1.5

Bore	LL	MB	MM	RH	VF	VH	WF	YP	ZC	EE	EQ1	EQ2
φ 20	75	M22×1.5	φ 8	7	16	13	24	19	112	Rc $\frac{1}{8}$	35	26
φ 25	79.5	M22×1.5	φ 10	7	18	13	28	19	120.5	Rc $\frac{1}{8}$	35	26
φ 32	85	M24×2	φ 12	8	20	16	30	19	131	Rc $\frac{1}{8}$	40.5	30
φ 40	87	M30×2	φ 14	9	22	16	32	19	135	Rc $\frac{1}{8}$	45.5	34

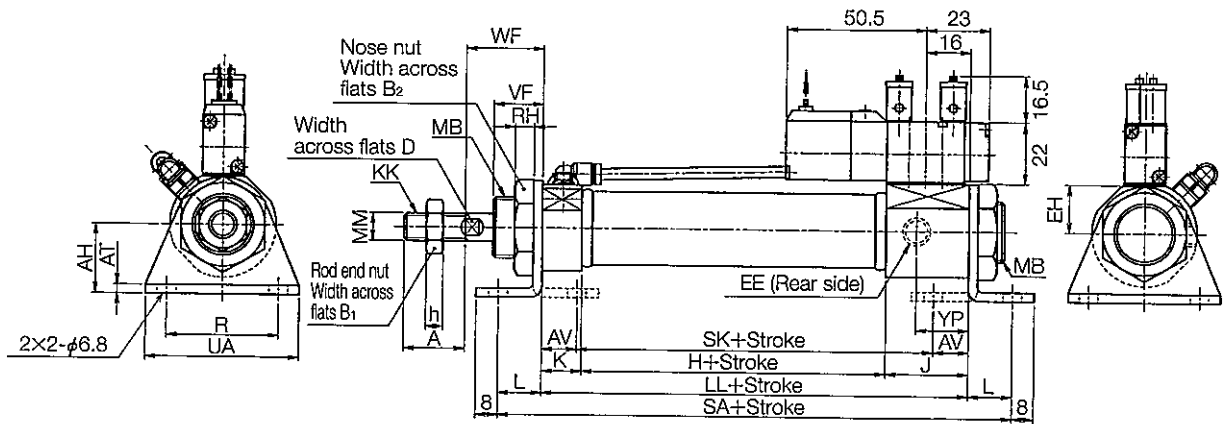
(Note) Bracketed figures in size A columns are thread lengths.

HI-PAL CYLINDER/WITH SOLENOID VALVE J1○HA series

DIMENSIONS

(Unit : mm)

Both-foot mounting/L



Bore	A	B1	B2	D	EH	H	h	J	K	KK	LL	MB	MM
φ 20	20 (20)	13	30	6	17.3	31	5	30	14	M 8×1.25	75	M22×1.5	φ 8
φ 25	22 (22)	17	30	8	17.3	35	6	30	14.5	M10×1.5	79.5	M22×1.5	φ 10
φ 32	22 (22)	19	32	10	18.5	40	7	30	15	M12×1.25	85	M24×2	φ 12
φ 40	24 (24)	22	41	12	23.8	42	8	30	15	M14×1.5	87	M30×2	φ 14

Bore	RH	VF	WF	YP	EE	AH	AT	AV	L	R	SA	SK	UA
φ 20	7	16	24	19	Rc1/8	25	3.2	12.8	16	40	107	49.4	55
φ 25	7	18	28	19	Rc1/8	25	3.2	12.8	16	40	111.5	53.9	55
φ 32	8	20	30	19	Rc1/8	32	4	21	25	45	135	43	60
φ 40	9	22	32	19	Rc1/8	36	4	21	25	50	137	45	65

(Note) Bracketed figures in size A columns are thread lengths.

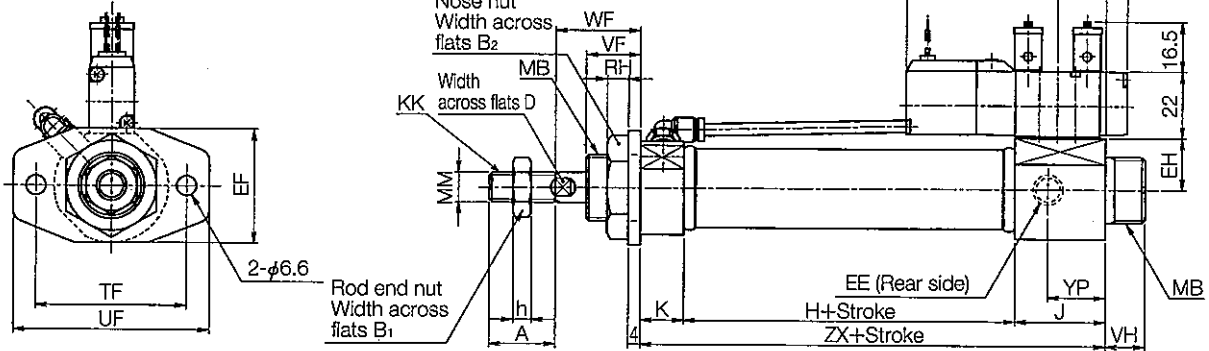
HI-PAL CYLINDER/WITH SOLENOID VALVE J1○HA series

DIMENSIONS

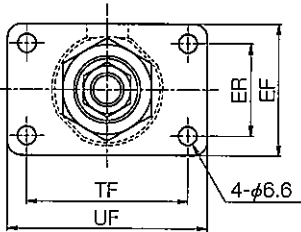
(Unit : mm)

Rod side flange mounting/A

φ 20, φ 25



φ 32, φ 40



Bore	A	B1	B2	D	EH	H	h	J	K	KK	MB	MM	RH
φ 20	20 (20)	13	30	6	17.3	31	5	30	14	M 8×1.25	M22×1.5	φ 8	7
φ 25	22 (22)	17	30	8	17.3	35	6	30	14.5	M10×1.5	M22×1.5	φ 10	7
φ 32	22 (22)	19	32	10	18.5	40	7	30	15	M12×1.25	M24×2	φ 12	8
φ 40	24 (24)	22	41	12	23.8	42	8	30	15	M14×1.5	M30×2	φ 14	9

Bore	VF	VH	WF	YP	EE	EF	ER	TF	UF	ZX
φ 20	16	13	24	19	Rc1/8	38	—	50	65	75
φ 25	18	13	28	19	Rc1/8	38	—	50	65	79.5
φ 32	20	16	30	19	Rc1/8	47	33	58	72	85
φ 40	22	16	32	19	Rc1/8	51	36	70	84	87

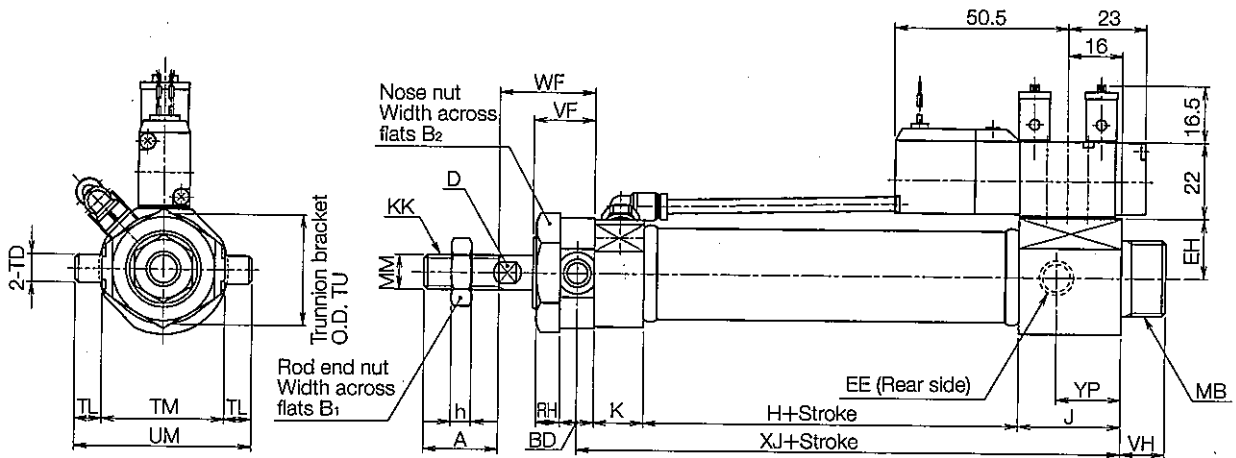
(Note) Bracketed figures in size A columns are thread lengths.

HI-PAL CYLINDER/WITH SOLENOID VALVE J1○HA series

DIMENSIONS

(Unit : mm)

Rod side trunnion mounting/R



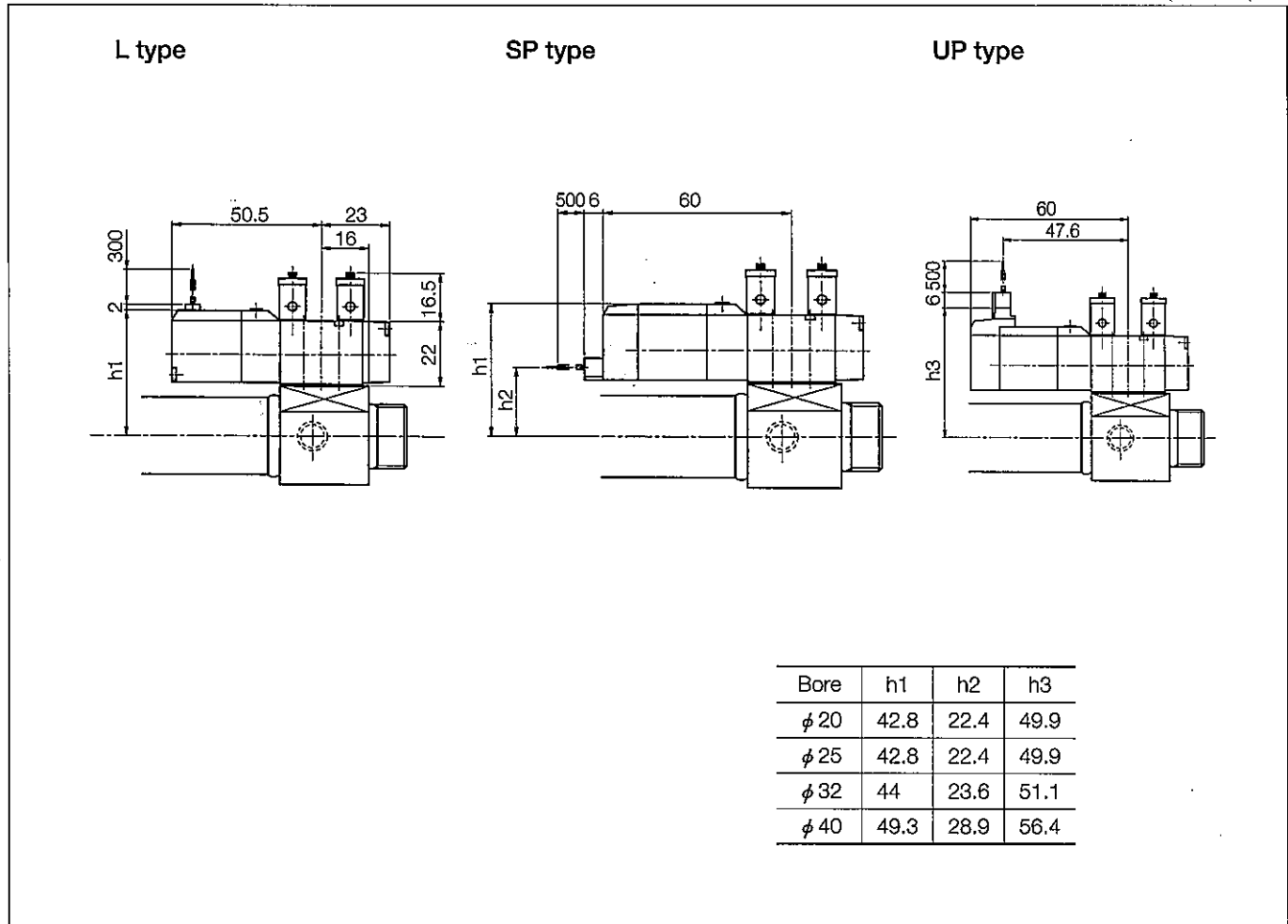
Bore	A	B1	B2	D	EH	H	h	J	K	KK	MB	MM	RH
φ 20	20 (20)	13	30	6	17.3	31	5	30	14	M 8×1.25	M22×1.5	φ 8	7
φ 25	22 (22)	17	30	8	17.3	35	6	30	14.5	M10×1.5	M22×1.5	φ 10	7
φ 32	22 (22)	19	32	10	18.5	40	7	30	15	M12×1.25	M24×2	φ 12	8
φ 40	24 (24)	22	41	12	23.8	42	8	30	15	M14×1.5	M30×2	φ 14	9

Bore	VF	VH	WF	YP	EE	BD	TD	TL	TM	TU	UM	XJ
φ 20	16	13	24	19	Rc1/8	10	φ 8 ^{e8}	8	36	32	52	80
φ 25	18	13	28	19	Rc1/8	10	φ 8 ^{e8}	8	36	32	52	84.5
φ 32	20	16	30	19	Rc1/8	12	φ 10 ^{e8}	10	44	36	64	91
φ 40	22	16	32	19	Rc1/8	14	φ 12 ^{e8}	12	50	44	74	94

(Note) Bracketed figures in size A columns are thread lengths.

HI-PAL CYLINDER/WITH SOLENOID VALVE J1○HA series

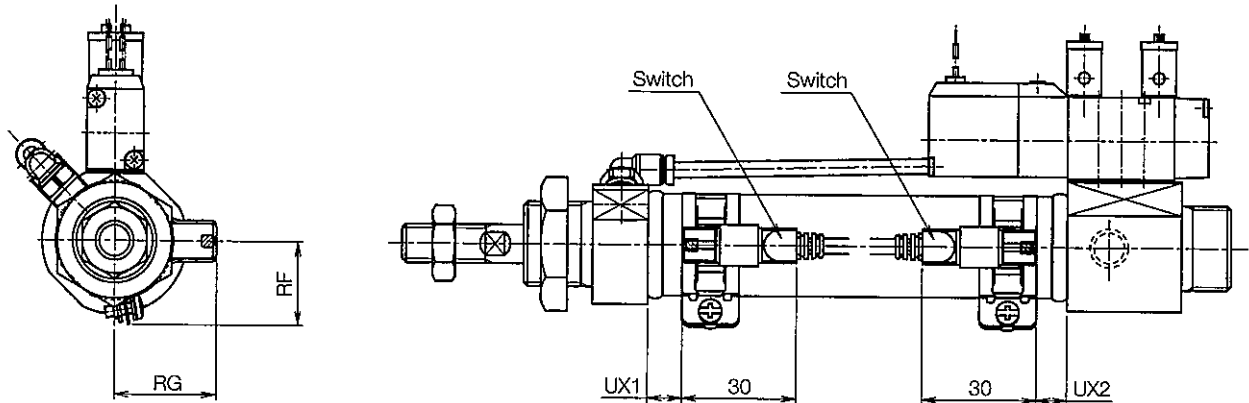
DIMENSIONS ACCORDING TO WIRING SPECIFICATIONS FOR SOLENOID VALVES (Unit : mm)



HI-PAL CYLINDER/WITH SOLENOID VALVE J1○HA series

SWITCH SET POSITION

(Unit : mm)



Bore	RF			RG		
	AX type	ZC type	SR type	AX type	ZC type	SR type
φ 20	19	16.5	25	25	20	33
φ 25	22	18	26	27	22	35
φ 32	24	19.5	27	31	26	38
φ 40	27	21.5	29	35	30	43

●The above drawing shows an air cylinder with AX type switch.

Bore	UX1					UX2				
	AX1□□	AX2□□	ZC201	ZC205	ZC230 ZC253	AX1□□	AX2□□	ZC201	ZC205	ZC230 ZC253
φ 20	7	7	9.5	6	8	7	7	7.5	4	6
φ 25	9	9	11	7.5	9.5	8	8	10	6.5	8.5
φ 32	10	10	13.5	10	12	10	10	12.5	9	11
φ 40	12	12	13.5	10	12	12	12	15.5	11	13

HYSTERESIS AND RESPONSE RANGE OF SWITCHES

(Unit : mm)

Bore	Reed switch								Solid-state switch					
	AX1□□		ZC201		ZC205		SR		AX2□□		ZC230		ZC253	
	Response range	Hysteresis	Response range	Hysteresis	Response range	Hysteresis	Response range	Hysteresis	Response range	Hysteresis	Response range	Hysteresis	Response range	Hysteresis
φ 20	4~9	Below 1	5~9	Below 2	6~8	0.5~1.5	6~9	Below 2	2~5	Below 1	1~4	Below 0.5	2~4	Below 0.5
φ 25	5~9				6~9	Below 2	7~10		2~6		2~4			
φ 32					6~11	2~5								
φ 40	6~10	2~6	2~5											