

Provided with linear pulse encoder

- Resolution : 0.1 mm/pulse
- Combination with a computer or an electronic counter ensures high-accuracy position control and position detection.
- Since a permanent magnet is used for the length measuring roller for detection of distance, the length measuring accuracy is improved.



Standard Specifications

Type	Standard type, Switch Set	
Nominal pressure	7 MPa	14 MPa
Maximum allowable pressure	Cap side: 9 MPa Rod side: (B)13.5 MPa (C)11 MPa	Cap side: 18 MPa Rod side: (B)18 MPa (C)14 MPa
Proof test pressure	10.5 MPa	21 MPa
Minimum operating pressure	Cap side: 0.3 MPa or less Rod side: (B) 0.45 MPa or less (C) 0.4 MPa or less	
Working speed range	8 to 300mm/s	
Working temperature range (ambient temp. and oil temp.)	-10 to +50°C (no freezing)	
Structure of cushioning	Metal fitting system	
Applicable fluid	Petroleum-based fluid (When using another fluid, refer to the table of fluid adaptability.)	
Tolerance for thread	JIS 6g/6H	
Tolerance of stroke	0 to 100mm $^{+0.8}$ 631 to 1000mm $^{+1.4}$	
Tube material	Standard type..... ● Carbon steel for machine structural use Switch Set ● Stainless steel	
Mounting style	LA·LB·FG·FH·CT	LA·FG·FH·CT
Accessory	Boots	Standard : Nylon tarpaulin Semi-standard : Chloroprene, Conex
	Rod end attachment	Rod eye (T-end), rod clevis (Y-end) with pin, lock nut Floating joint (F-end) : Only for 7 MPa type

Terminologies

Nominal pressure

Pressure given to a cylinder for convenience of naming.
It is not always the same as the working pressure (rated pressure) that guarantees performance under the specified conditions.

Maximum allowable pressure

Maximum allowable pressure generated in a cylinder (surge pressure, etc.).

Proof test pressure

Test pressure against which a cylinder can withstand without unreliable performance at the return to nominal pressure.

Minimum operating pressure

Minimum pressure at which cylinder installed horizontally operates under no load.

Notes) ● The hydraulic pressure generated in a cylinder due to the inertia of load must be lower than the maximum allowable pressure.

- For the internal structure, refer to the sectional drawings at the end of this catalog.
- Conex is the registered trademark of Teijin Limited.

Product Lineup

Unit: mm

Series Variations	Type	φ40	φ50	φ63	φ80	φ100
General purpose type	Double acting single rod	●	●	●	●	●
	Standard type 70/140P-8	●	●	●	●	●
	Switch Set 70/140P-8R	●	●	●	●	●
General purpose type	Double acting double rod	●	●	●	●	●
	Standard type 70/140P-8D	●	●	●	●	●
	Switch Set 70/140P-8RD	●	●	●	●	●

Notes) ● When using a sensor, use a Switch Set Cylinder.
● DO NOT USE a sensor onto standard type cylinder.

Standard type



Switch Set



Standard Stroke

Unit: mm

Bore	Standard type	Switch Set
φ40·φ50	1200	1200
φ63·φ80	1600	1600
φ100	2000	2000

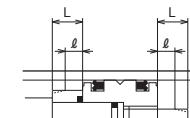
The above strokes indicate the maximum available strokes for the standard type. For the rod buckling, check with the buckling chart in the selection materials. Contact us for longer strokes.

Cushion Stroke Length

Unit: mm

Type	Cushion ring length L	Cushion ring parallel part length ℓ
φ40 to φ63	25	7
φ80 to φ100	25	8

- The cushion stroke lengths in case of cylinders used up to the stroke end.
- In the case that a cylinder is not used up to the stroke end, and it is stopped 5 mm or more before the stroke end, the cushioning effect will be weakened. In this case, consult us.



Detector Specifications

	Standard type	Semi-standard
Power supply voltage	12 V DC	12 to 24 V DC
Output type	12 V DC voltage output Phase A & B (90° phase) 30mA or less	NPN open collector output Phase A & B (90° phase) Applied voltage : 24 V DC or less Sink current : 30mA or less
Resolution	0.1mm/Pulse	
Max. response speed	300mm/s	
Working temperature range	-10 to +50°C (no freezing)	
Note) Length measuring error	0.5mm/m	
Humidity	90%RH (no condensing)	
Output circuit diagram		
Wiring method		
Output mode		

Note) Length measuring error per meter of total moving distance

How to order

General Purpose Type

- Standard type: 140P-8
- Switch Set: 140P-8R

Double acting single rod

- For 7 MPa
 - 70P-8 : Standard type
 - 70P-8R : Switch Set
- For 14 MPa
 - 140P-8 : Standard type
 - 140P-8R : Switch Set

Double acting double rod

- For 7 MPa
 - 70P-8D : Standard type
 - 70P-8RD : Switch Set
- For 14 MPa
 - 140P-8D : Standard type
 - 140P-8RD : Switch Set

- 1 Nitrile rubber
- 2 Urethane rubber
- 3 Fluorocarbon
- 6 HNBR

Mounting style

Cylinder Bore (mm)
φ40 to φ100

Cylinder stroke (mm)

- B Rod B
- C Rod C
- B With cushion on both ends
- R With cushion on rod side
- H With cushion on cap side
- N No cushion

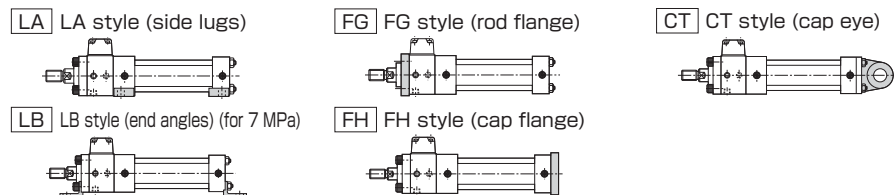
Sensor symbol
Note) Select applicable sensors out of the Sensor List.

Notes on ordering Switch Set

- When no sensor is required, specify 0 for the sensor symbol ④ and the sensor quantity ⑤.
- Sensors are not mounted on cylinders at delivery.

The item enclosed by broken line needs not to be entered, if unnecessary. Semi-standard specification

Mounting Style



Note) The mounting styles for 7 MPa cannot be used at a pressure exceeding 7 MPa as a rule. Contact us for the usage.

Sensor List

Type	Sensor symbol	Load voltage range	Load current range	Max. switching capacity	Protective circuit	Indicating lamp	Wiring method	Cord length	Applicable load	
Reed sensor	AF AX101CE	DC : 5 to 30V AC : 5 to 120V	DC : 5 to 40mA AC : 5 to 20mA	DC : 1.5W AC : 2VA	None	LED (Lights in red when sensing)	0.3mm ² , 2-core, outer dia. φ4mm Rear wiring	1.5m	Small relay, programmable controller	
	AG AX105CE							5m		
	AH AX111CE							1.5m		
	AJ AX115CE							5m		
	AE AX125CE	DC : 30V or less AC : 120V or less	DC : 40mA or less AC : 20mA or less	None	None	4-pin connector type Rear wiring	5m			
	AK AX11ACE	AC : 5 to 120V	5 to 20mA				AC : 2VA	0.5m		
	AL AX11BCE	DC : 5 to 30V	5 to 40mA	DC : 1.5W	Provided	LED (Lights in red when not sensing)	0.3mm ² , 2-core, outer dia. φ4mm Rear wiring	0.5m		
	AM AX135CE	AC/DC : 90 to 240V	5 to 300mA	B contact output	Provided	LED (Lights in red when not sensing)	0.3mm ² , 2-core, outer dia. φ4mm Rear wiring	5m		
	S SR405	AC : 80 to 220V	2 to 300mA	30VA	Provided	Neon lamp (Lights when not sensing)	0.5mm ² , 2-core, outer dia. φ6mm Rear wiring	5m		
	Solid state sensor	BE AX201CE-1	DC : 5 to 30V	5 to 40mA	—	Provided	LED (Lights in red when sensing)	0.3mm ² , 2-core, outer dia. φ4mm Rear wiring		1.5m
BF AX205CE-1		5m								
CE AX211CE-1		1.5m								
CF AX215CE-1		5m								
CT AX211CE-1		1.5m								
CU AX215CE-1		5m								
CV AX21BCE-1		4-pin connector type Rear wiring							0.5m	
CW AZ211CE-1		0.3mm ² , 2-core, outer dia. φ4mm Upper wiring							1.5m	
CX AZ215CE-1		4-pin connector type Upper wiring							5m	
CY AZ21BCE-1		4-pin connector type Upper wiring							0.5m	

Notes) ● For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
 ● The output logic of AX135CE is a B contact. When the piston is detected, the sensor contact turns off (the lamp turns on).
 ● For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
 ● All AX type sensors can be mounted. For types other than the above, see the sensor specifications at the end of this catalog.

Standard type

AX type sensor

Cord type



Connector type



Standard Stroke Range

Unit: mm

Bore	Standard type	Switch Set
φ40 · φ50	1200	1200
φ63 · φ80	1600	1600
φ100	2000	2000

The above strokes indicate the maximum available strokes for the standard type.

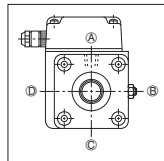
For the rod buckling, check with the buckling chart in the selection materials. Contact us for longer strokes.

Sensor Mountable Minimum Stroke

Unit: mm

Bore	Mounting of 1 sensor		Mounting of 2 sensors	
	AX · AZ type	SR405	AX · AZ type	SR405
φ40	20	30	25	30
φ50				
φ63			25	30
φ80				
φ100	25		25	

★ Standard specifications



- Both ends cushioned
- Port position ① and cushion valve position ②
- Detector specification supply voltage : 12 V DC
Output type : 12 V DC AB-Phase output (90° phase)

★ Change of port and cushion valve positions

The standard port position is ①, and the standard cushion valve position is ②. To change the positions, enter the symbols displayed on the dimensional drawing screen. (On the standard models, the detector is installed on the top.)

(Example)

70P-8R 2FG80BB100 – ① ② AH2
 Port position (A, B, C, D)
 Cushion valve position (A, B, C, D, or O)

- In case that the cushion is not equipped, the cushion valve position is "O".

Adaptability of Fluid to Seal Material

Seal material	Applicable fluid				
	Petroleum-based fluid	Water-glycol fluid	Phosphate ester fluid	Water in oil fluid	Oil in water fluid
① Nitrile rubber	○	○	×	○	○
② Urethane rubber	◎	×	×	△	△
③ Fluorocarbon	○	×	○	○	○
④ HNBR	○	◎	×	◎	◎

- Notes) 1. ◎ : Applicable × : Inapplicable
 Consult us before using the △-marked items.
 2. ◎ shows the seal materials recommended for ensuring the abrasion resistance.

Weight Table

Unit: kg

Bore (mm)	Rod type	Basic weight (SD style)		Additional weight per mm of stroke		Mounting accessory additional weight					Rod end attachment weight			
		Single rod type	Double rod type	Single rod type	Double rod type	LA	LB	FG	FH	CT	Rod eye (T-end)	Rod clevis (Y-end) with pin	Floating joint (F-end)	Lock nut
φ40	B	6.1	7.0	0.011	0.014	0.5	0.5	0.9	1.2	0.5	0.5	0.7	0.75	0.03
	C	6.0	6.9	0.010	0.012								0.39	0.02
φ50	B	8.1	9.5	0.014	0.019	0.9	0.7	1.3	2.0	1.0	1.0	1.2	1.41	0.05
	C	8.0	9.3	0.012	0.014								0.75	0.03
φ63	B	12.0	14.3	0.019	0.027	1.0	1.2	1.4	2.5	2.0	2.7	3.9	2.68	0.11
	C	11.7	13.9	0.017	0.022								1.41	0.05
φ80	B	22.1	26.2	0.032	0.045	1.8	2.0	2.1	4.4	3.1	2.2	3.7	—	0.24
	C	21.7	25.6	0.027	0.035								2.68	0.11
φ100	B	35.5	42.2	0.048	0.067	2.1	2.9	3.5	7.4	5.7	4.2	7.7	—	0.52
	C	34.9	41.1	0.042	0.055								—	0.24

Sensor Additional Weight

Unit: kg

Bore (mm)	AX-AZ type			SR405
	Cord length 1.5 m	Cord length 5 m	Connector type	Cord length 5 m
φ32 to φ50	0.05	0.13	0.04	0.22
φ63	0.07	0.14	0.06	0.22
φ80 · φ100	0.07	0.15	0.06	0.22

Calculation formula : Cylinder weight (kg)=basic weight+(additional weight per mm of stroke×cylinder stroke (mm))+
 (sensor additional weight×sensor quantity)+mounting accessory weight+rod end attachment weight
 Calculation example : 70P-8R, rod B, bore φ50, cylinder stroke 100 mm, mounting style LA, 2 pcs of AX215
 $8.1 + (0.014 \times 100) + (0.05 \times 2) + 0.9 = 10.5 \text{ kg}$

Discontinued

PQCPA Series dedicated to analog pulse output position sensing cylinders



- Environmentally-friendly lead-free indicator
- Analog input and pulse input types are available.
- Provided with multi-point output function (5 points) as a standard function to enable to individually set the upper and lower limits Note 1)
- A 16-bit AD converter is provided to realize high resolution. (Analog input type)
- Provided with a counter with a response frequency of 200 kHz (Pulse input type)
- Provided with a pulse position correcting function Note 2)

Note 1) Setting the bank switching enables to use the multi-output function of up to 15 points.
 Note 2) Position correction can be made by mounting a cylinder sensor. Positional error caused by slippage of the encoder is eliminated.

Standard Specifications

Type	Analog	Pulse
Model number	PQCPA-CU-A	PQCPA-CU-P
Applicable input signals	Analog voltage/analog current	Phase AB
Display range	±999999	
Resolution	Stroke×1/10000	—
Response frequency	1kHz	200kHz
Linearity	±0.02%FS	—
Signals	Voltage input 0 to 10V Voltage input 1 to 5V Current input 4 to 20mA	Open collector input Differential input (line driver input) 12V voltage input 24V voltage input
Monitor output	Voltage output <small>Note)</small>	Line driver output
Sampling speed	1000times/sec	
Display speed	10times/sec	
Display method	Display by fluorescent display tube	
Control input	No-voltage input (reed sensor/solid state sensor)	
Control output	Open collector Max. rating : 50 V DC, 50mA (Provided with multi-point output function (5 points) to enable to individually set the upper and lower limits and pulse position correcting function)	
Power supply voltage	24 V DC ±10%	
Ambient temperature	0 to 50°C (no freezing)	
Ambient humidity	35 to 85%RH (no condensing)	

Note) The monitor output at current input (4 to 20mA) is voltage output of 1 to 5V.

Function Table

Type	Analog input	Pulse input
Model number	PQCPA-CU-A-A	PQCPA-CU-P-12
	PQCPA-CU-A-V	PQCPA-CU-P-24
Functions	—	PQCPA-CU-P-00
	Display of position	Display of position
	Bank switching	Bank switching
	Multi-point output	Multi-point output
	Positional data hold	Positional data hold
	—	0 setting signal
—	Correcting function	

List of Applicable Actuators

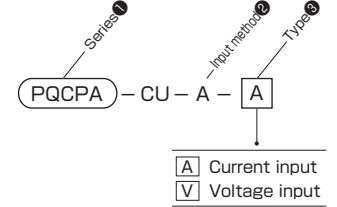
Series	Detection method	Signal type
PTN-1B	Absolute method	Analog type (4 to 20mA, 0 to 10V)
PTH-1B		
PTT-1B		
PSR-1A		
35P-3	Linear pulse encoder	Encoder type
70P-8		
140P-8		

Note) For the details of each cylinder, see the section of each series.

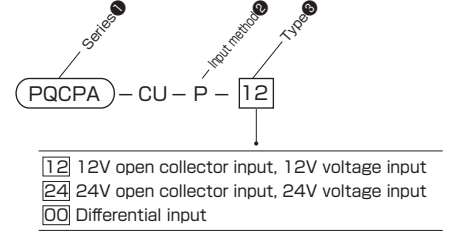
● How to order **Discontinued**

Position Indicator

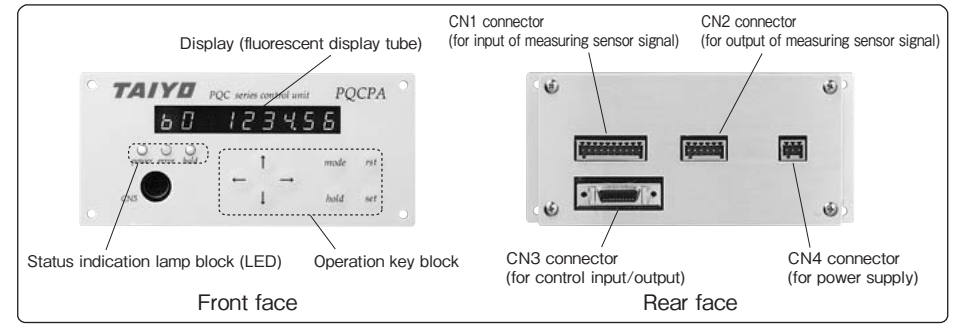
● Analog input



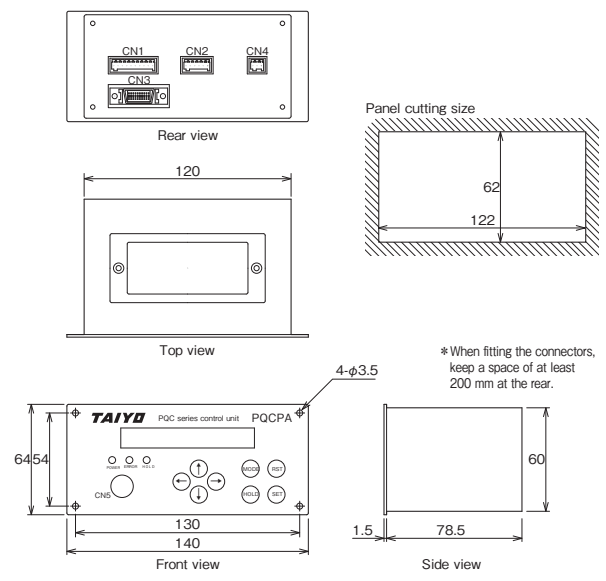
● Pulse input



Note) Cylinders do not come with indicators of [00] differential input type. (Specification to use the indicator in stand-alone state)



Dimensional Drawings



Supplied connector

● CN1 connector (for input of measuring sensor signal)



● CN2 connector (for output of measuring sensor signal)



● CN3 connector (for control input/output)



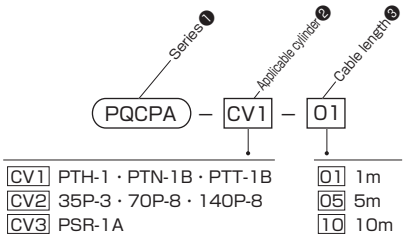
● CN4 connector (for power supply)



* When fitting the connectors, keep a space of at least 200 mm at the rear.

How to order **Discontinued**

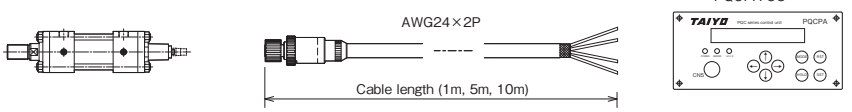
How to order cable between sensor and indicator



- * When ordering a cable, confirm the series name of the actuator on the sensor side. Some models cannot be connected.
- * After wiring, connect the indicator side connector to the CN1 connector on the indicator.

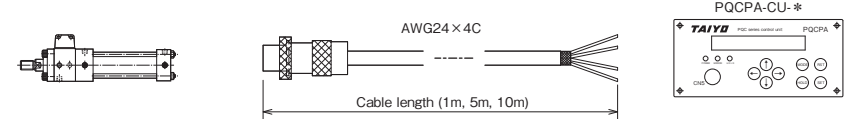
PQCPA-CV1- Cable length

Applicable actuators : PTH-1B/PTN-1B/PTT-1B



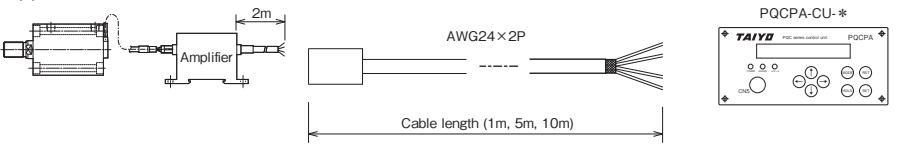
PQCPA-CV2- Cable length

Applicable actuators : 35P-3/70P-8/140P-8



PQCPA-CV3- Cable length

Applicable actuators : PSR-1A

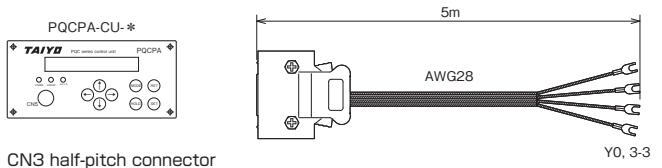


Note) PSR-1A comes with a 2-m cable as a standard accessory. If another cable is required, select this cable. (In this case, disconnect the standard cable (2m) of PSR-1A, and connect the selected cable directly to the amplifier.)

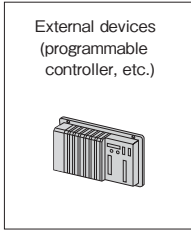
How to order I/O cable



*The I/O cable is 5m length.



CN3 half-pitch connector
Note) Only the CN3 half-pitch connector is supplied as a standard accessory. If you need the connector with a cable, place an order for the connector.



Discontinued

External Input/Output

CN1

Pin No.	Description	Signals
1	Voltage/current input	Analog input
2	NC	-
3	Voltage/current GND	Analog input
4	Phase A	Pulse input
5	-Phase A	Pulse input
6	Phase B	Pulse input
7	-Phase B	Pulse input
8	+24V	Power supply output
9	+12V	Power supply output
10	GND	Power supply output/Phase AB GND

CN3

Pin No.	Description	Signals
1	0 setting signal	Input
2	Positional data hold	Input
3	Correcting function	Input
4	Bank switching 0	Input
5	Bank switching 1	Input
6	Bank switching 2	Input
7	Reserved input	Input
8	Reserved input	Input
9	Input common	Input
10	Input common	Input
11	Multi-point output signal 0	Output
12	Multi-point output signal 1	Output
13	Multi-point output signal 2	Output
14	Multi-point output signal 3	Output
15	Multi-point output signal 4	Output
16	Reserved output	Output
17	Reserved output	Output
18	Reserved output	Output
19	Output common	Output
20	Output common	Output

CN2

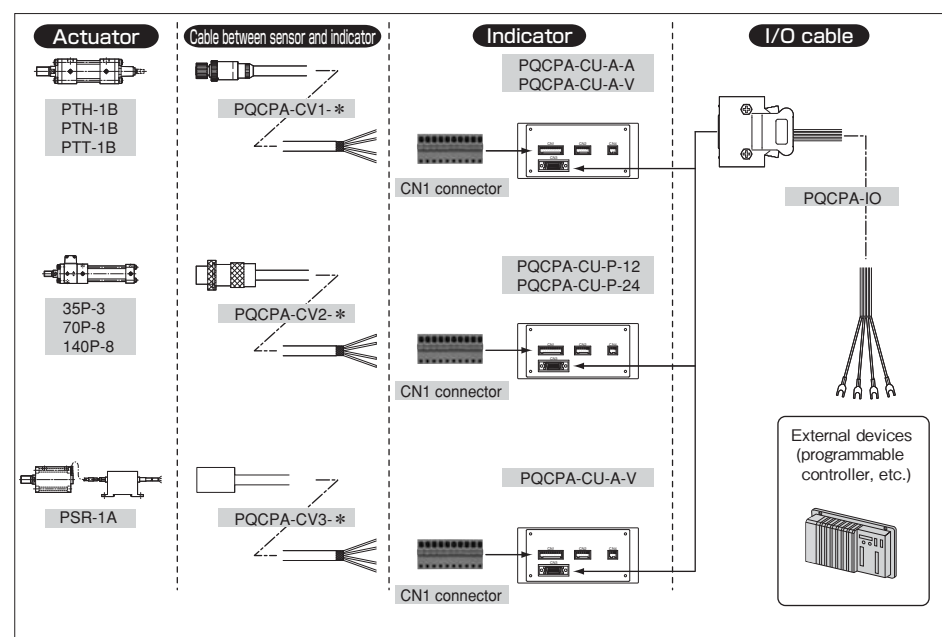
Pin No.	Description	Signals
1	Pout	Analog output
2	Vss	Analog output
3	A pulse	Pulse output
4	A pulse GND	Pulse output
5	B pulse	Pulse output
6	B pulse GND	Pulse output

CN4

Pin No.	Description	Signals
1	P24	Power supply
2	N24	Power supply
3	PE	Power supply

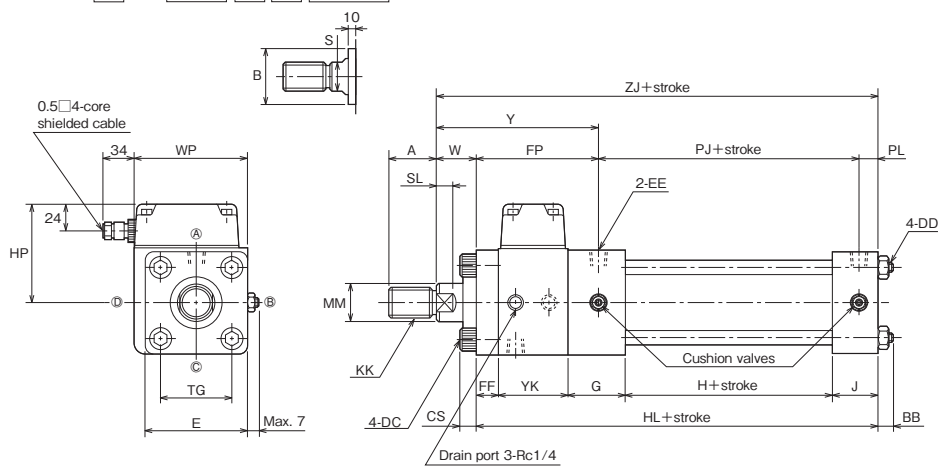
*For details, see the instruction manual.

Example of Product Configuration



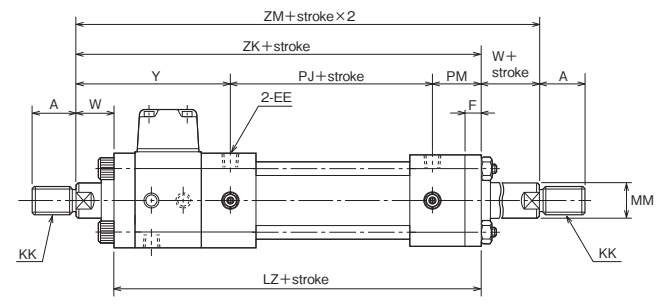
SD

- 70P-8 [2] SD Bore [B] [B] Stroke
- 140P-8 [2] SD Bore [B] [B] Stroke

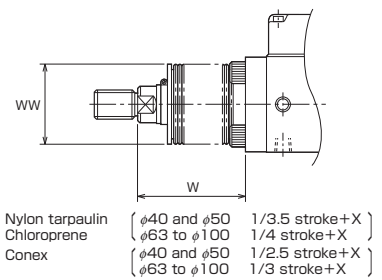


● When mounting a sensor, refer to the "dimensional drawings of Switch Set".
All the contents other than "sensor mounting dimensions" are the same.

Double rod type (both ends loaded)



● Switch Set Cylinders are available.



- Nylon tarpaulin { φ40 and φ50 1/3.5 stroke+X }
 { φ63 to φ100 1/4 stroke+X }
- Chloroprene { φ40 and φ50 1/2.5 stroke+X }
 { φ63 to φ100 1/3 stroke+X }
- Conex { φ40 and φ50 1/2.5 stroke+X }
 { φ63 to φ100 1/3 stroke+X }

● If the calculated value has a fractional part, round up the part.

	Standard	Semi-standard	
Material	Nylon tarpaulin	Chloroprene	Conex
Heat proof	80°C	130°C	200°C

Notes ● Conex is the registered trademark of Teijin Limited.
● The boots have been mounted at our factory prior to delivery.
● The heat proof field shows the allowable temperature limit of the boots.
● The values are not the heat proof temperature of the cylinder body, etc.

Dimensional Table

Symbol Bore	Rod B							Rod C							BB	CS	DC	DD
	A	B	HP	KK	MM	S	SL	A	B	HP	KK	MM	S	SL				
φ 40	30	φ 40	84.5	M20×1.5	φ22.4	19	11	25	φ 36	82	M16×1.5	φ18	14	10	11	10	M10×1.25	M10×1.25
φ 50	35	φ 46	87	M24×1.5	φ28	24	14	30	φ 40	84	M20×1.5	φ22.4	19	11	11	10	M10×1.25	M10×1.25
φ 63	45	φ 55	91	M30×1.5	φ35.5	30	16	35	φ 46	87	M24×1.5	φ28	24	14	13	12	M12×1.5	M12×1.5
φ 80	60	φ 65	95.5	M39×1.5	φ45	41	20	45	φ 55	95	M30×1.5	φ35.5	30	16	16	16	M16×1.5	M16×1.5
φ 100	75	φ 80	107.5	M48×1.5	φ56	50	23	60	φ 65	107.5	M39×1.5	φ45	41	20	18	18	M18×1.5	M18×1.5

Symbol Bore	E	EE	F	FF	FP	G	H	HL	J	LZ	PJ	PL	PM	TG	W	WP	Y	YK	ZJ	ZK	ZM
φ 40	□65	Rc3/8	11	22	109	50	44	212	36	237	90	13	38	□45	30	87.5	139	60	242	267	297
φ 50	□76	Rc1/2	13	24	113	54	48	226	40	253	98	15	42	□52	30	92.5	143	60	256	283	313
φ 63	□90	Rc1/2	15	24	121	56	52	238	40	269	102	15	46	□63	35	100	156	66	273	304	339
φ 80	□110	Rc3/4	18	30	144	66	54	272	46	310	110	18	56	□80	35	110	179	76	307	345	380
φ 100	□135	Rc3/4	20	32	150	66	60	284	46	324	116	18	58	□102	40	135	190	80	324	364	404

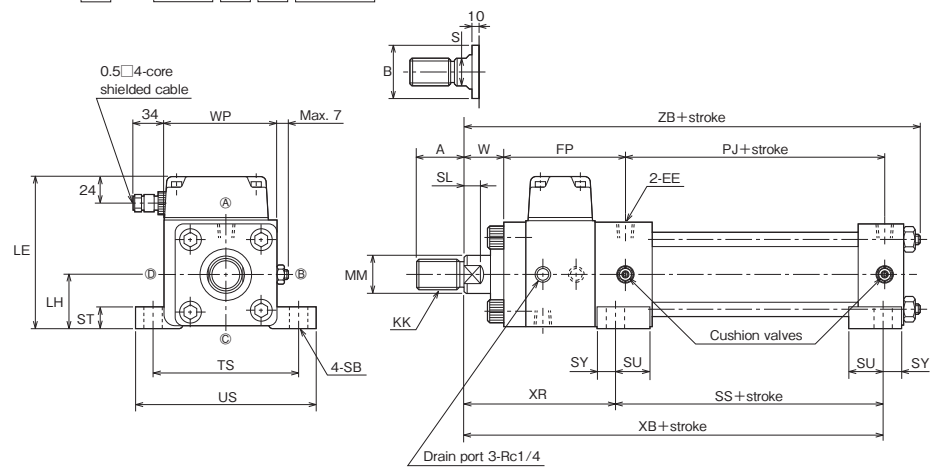
● The tolerance of MM is f8.

With Boots

Symbol Bore	WW		X
	Rod B	Rod C	
φ 40	φ 50	φ 50	45
φ 50	φ 63	φ 50	45
φ 63	φ 71	φ 63	55
φ 80	φ 80	φ 71	55
φ 100	φ 100	φ 80	55

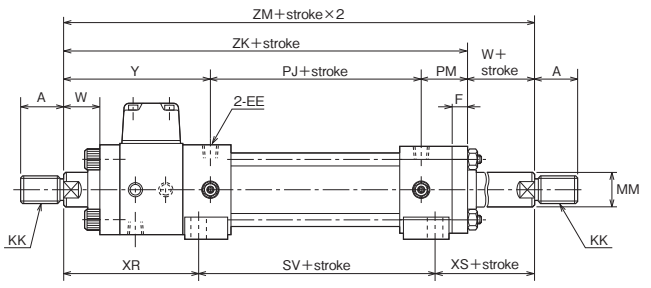
LA

- 70P-8 LA Bore B Stroke
- 140P-8 LA Bore B Stroke

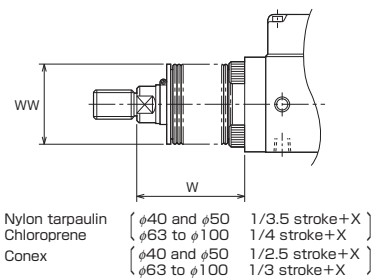


- When mounting a sensor, refer to the "dimensional drawings of Switch Set". All the contents other than "sensor mounting dimensions" are the same.

Double rod type (both ends loaded)



- Switch Set Cylinders are available.



	Standard	Semi-standard	
Material	Nylon tarpaulin	Chloroprene	Conex
Heat proof	80°C	130°C	200°C

- Notes) ●Conex is the registered trademark of Teijin Limited.
- The boots have been mounted at our factory prior to delivery.
 - The heat proof field shows the allowable temperature limit of the boots.
 - The values are not the heat proof temperature of the cylinder body, etc.

- If the calculated value has a fractional part, round up the part.

Dimensional Table

Symbol	Rod B								Rod C								EE	F	FP	LH
	A	B	KK	LE	MM	S	SL	A	B	KK	LE	MM	S	SL						
φ 40	30	φ40	M20×1.5	122	φ22.4	19	11	25	φ 36	M16×1.5	119.5	φ 18	14	10	Rc3/8	11	109	37.5±0.15		
φ 50	35	φ46	M24×1.5	132	φ28	24	14	30	φ 40	M20×1.5	129	φ 22.4	19	11	Rc1/2	13	113	45±0.15		
φ 63	45	φ55	M30×1.5	141	φ35.5	30	16	35	φ 46	M24×1.5	137	φ 28	24	14	Rc1/2	15	121	50±0.15		
φ 80	60	φ65	M39×1.5	155.5	φ45	41	20	45	φ 55	M30×1.5	155	φ 35.5	30	16	Rc3/4	18	144	60±0.25		
φ 100	75	φ80	M48×1.5	178.5	φ56	50	23	60	φ 65	M39×1.5	178.5	φ 45	41	20	Rc3/4	20	150	71±0.25		

Symbol	PJ	PM	SB	SS	ST	SU	SV	SY	TS	US	W	WP	XB	XR	XS	Y	ZB	ZK	ZM
φ 40	90	38	φ 11	98	14	31	112	13	95	118	30	87.5	226	128	57	139	253	267	297
φ 50	98	42	φ 14	108	17	34	122	14	115	145	30	92.5	239	131	60	143	267	283	313
φ 63	102	46	φ 18	106	19	32	122	18	132	165	35	100	252	146	71	156	286	304	339
φ 80	110	56	φ 18	124	25	42	144	18	155	190	35	110	286	162	74	179	323	345	380
φ 100	116	58	φ 22	122	27	38	142	22	190	230	40	135	299	177	85	190	342	364	404

- The tolerance of MM is f8.

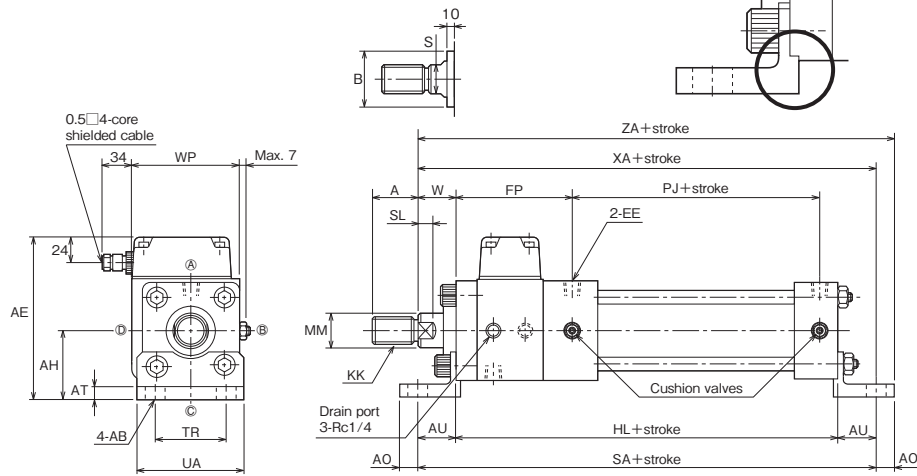
With Boots

Symbol	WW		X
	Rod B	Rod C	
φ 40	φ 50	φ 50	45
φ 50	φ 63	φ 50	45
φ 63	φ 71	φ 63	55
φ 80	φ 80	φ 71	55
φ 100	φ 100	φ 80	55

LB For 7 MPa

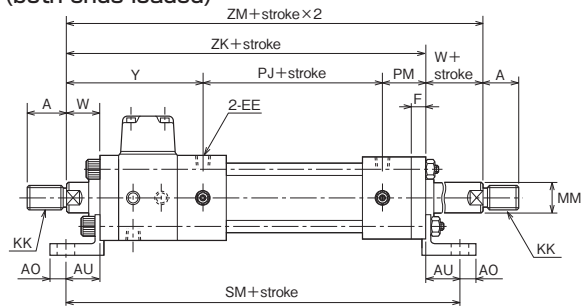
70P-8 2 LB Bore B B Stroke

LB attachment working face ($\phi 100$)

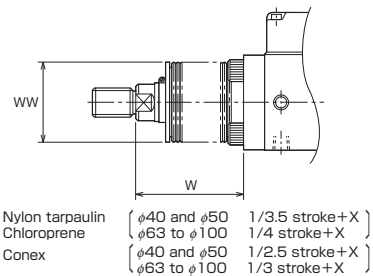


- When mounting a sensor, refer to the "dimensional drawings of Switch Set". All the contents other than "sensor mounting dimensions" are the same.

Double rod type (both ends loaded)



- Switch Set Cylinders are available.



Nylon tarpaulin	{ $\phi 40$ and $\phi 50$	{ 1/3.5 stroke+X
Chloroprene	{ $\phi 63$ to $\phi 100$	{ 1/4 stroke+X
Conex	{ $\phi 40$ and $\phi 50$	{ 1/2.5 stroke+X
	{ $\phi 63$ to $\phi 100$	{ 1/3 stroke+X

- If the calculated value has a fractional part, round up the part.

	Standard	Semi-standard	
Material	Nylon tarpaulin	Chloroprene	Conex
Heat proof	80°C	130°C	200°C

Notes) ●Conex is the registered trademark of Teijin Limited.

- The boots have been mounted at our factory prior to delivery.
- The heat proof field shows the allowable temperature limit of the boots.
- The values are not the heat proof temperature of the cylinder body, etc.

Dimensional Table

Symbol Bore	Rod B							Rod C							AB	AH	AO
	A	B	AE	KK	MM	S	SL	A	B	AE	KK	MM	S	SL			
$\phi 40$	30	$\phi 40$	127.5	M20x1.5	$\phi 22.4$	19	11	25	$\phi 36$	125	M16x1.5	$\phi 18$	14	10	$\phi 11$	43±0.15	13
$\phi 50$	35	$\phi 46$	137	M24x1.5	$\phi 28$	24	14	30	$\phi 40$	134	M20x1.5	$\phi 22.4$	19	11	$\phi 14$	50±0.15	15
$\phi 63$	45	$\phi 55$	151	M30x1.5	$\phi 35.5$	30	16	35	$\phi 46$	147	M24x1.5	$\phi 28$	24	14	$\phi 18$	60±0.15	18
$\phi 80$	60	$\phi 65$	167.5	M39x1.5	$\phi 45$	41	20	45	$\phi 55$	167	M30x1.5	$\phi 35.5$	30	16	$\phi 18$	72±0.25	20
$\phi 100$	75	$\phi 80$	192.5	M48x1.5	$\phi 56$	50	23	60	$\phi 65$	192.5	M39x1.5	$\phi 45$	41	20	$\phi 22$	85±0.25	23

Symbol Bore	AT	AU	EE	F	FP	HL	PJ	PM	SA	SM	TR	UA	W	WP	XA	Y	ZA	ZK	ZM
	$\phi 40$	8	32	Rc3/8	11	109	212	90	38	276	301	46	69	30	87.5	274	139	287	267
$\phi 50$	8	35	Rc1/2	13	113	226	98	42	296	323	58	85	30	92.5	291	143	306	283	313
$\phi 63$	10	42	Rc1/2	15	121	238	102	46	322	353	65	98	35	100	315	156	333	304	339
$\phi 80$	12	50	Rc3/4	18	144	272	110	56	372	410	87	118	35	110	357	179	377	345	380
$\phi 100$	12	55	Rc3/4	20	150	284	116	58	394	434	109	150	40	135	379	190	402	364	404

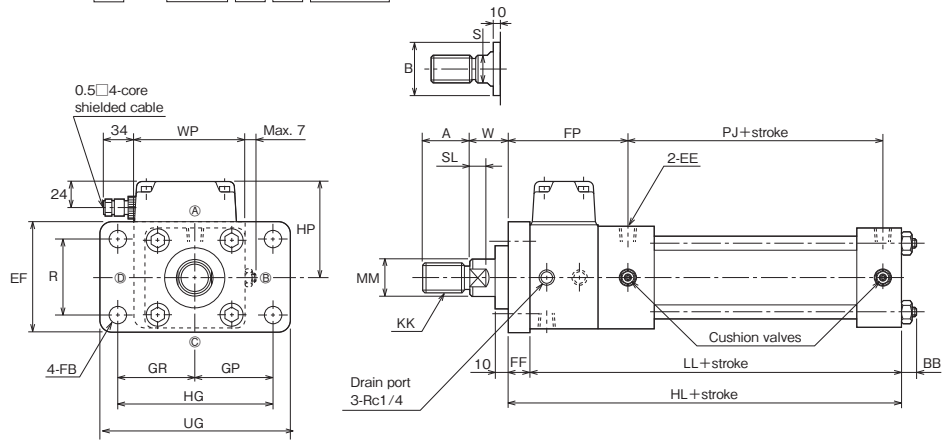
- The tolerance of MM is f8.

With Boots

Symbol Bore	WW		X
	Rod B	Rod C	
$\phi 40$	$\phi 50$	$\phi 50$	45
$\phi 50$	$\phi 63$	$\phi 50$	45
$\phi 63$	$\phi 71$	$\phi 63$	55
$\phi 80$	$\phi 80$	$\phi 71$	55
$\phi 100$	$\phi 100$	$\phi 80$	55

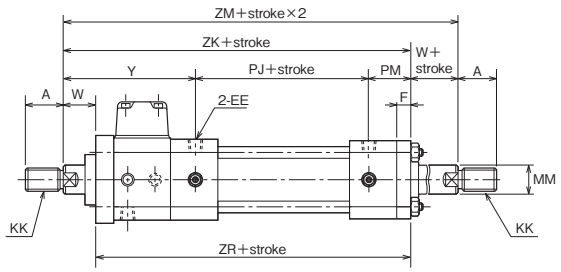
FG

- 70P-8 2 FG Bore B B Stroke
- 140P-8 2 FG Bore B B Stroke

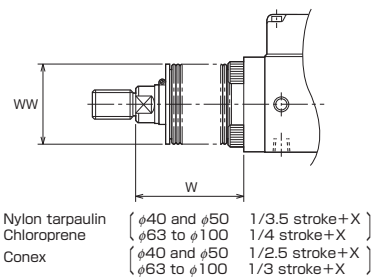


● When mounting a sensor, refer to the "dimensional drawings of Switch Set".
All the contents other than "sensor mounting dimensions" are the same.

Double rod type (both ends loaded)



● Switch Set Cylinders are available.



	Standard	Semi-standard	
Material	Nylon tarpaulin	Chloroprene	Conex
Heat proof	80°C	130°C	200°C

Notes) ● Conex is the registered trademark of Teijin Limited.
● The boots have been mounted at our factory prior to delivery.
● The heat proof field shows the allowable temperature limit of the boots.
● The values are not the heat proof temperature of the cylinder body, etc.

● If the calculated value has a fractional part, round up the part.

Dimensional Table

Symbol Bore	Rod B							Rod C							BB	EE	EF
	A	B	HP	KK	MM	S	SL	A	B	HP	KK	MM	S	SL			
φ 40	30	φ 40	84.5	M20×1.5	φ 22.4	19	11	25	φ 36	82	M16×1.5	φ 18	14	10	11	Rc3/8	72
φ 50	35	φ 46	87	M24×1.5	φ 28	24	14	30	φ 40	84	M20×1.5	φ 22.4	19	11	11	Rc1/2	85
φ 63	45	φ 55	91	M30×1.5	φ 35.5	30	16	35	φ 46	87	M24×1.5	φ 28	24	14	13	Rc1/2	98
φ 80	60	φ 65	95.5	M39×1.5	φ 45	41	20	45	φ 55	95	M30×1.5	φ 35.5	30	16	16	Rc3/4	118
φ 100	75	φ 80	107.5	M48×1.5	φ 56	50	23	60	φ 65	107.5	M39×1.5	φ 45	41	20	18	Rc3/4	150

Symbol Bore	F	FB	FF	FP	GP	GR	HG	HL	LL	PJ	PM	R	UG	W	WP	Y	ZK	ZM	ZR
φ 40	11	φ 11	22	109	48	67	115	212	190	90	38	46	139	30	87.5	139	267	297	237
φ 50	13	φ 14	24	113	58	70	128	226	202	98	42	58	158	30	92.5	143	283	313	253
φ 63	15	φ 18	24	121	66	72	138	238	214	102	46	65	172	35	100	156	304	339	269
φ 80	18	φ 18	30	144	77.5	77.5	155	272	242	110	56	87	190	35	110	179	345	380	310
φ 100	20	φ 22	32	150	95	95	190	284	252	116	58	109	230	40	135	190	364	404	324

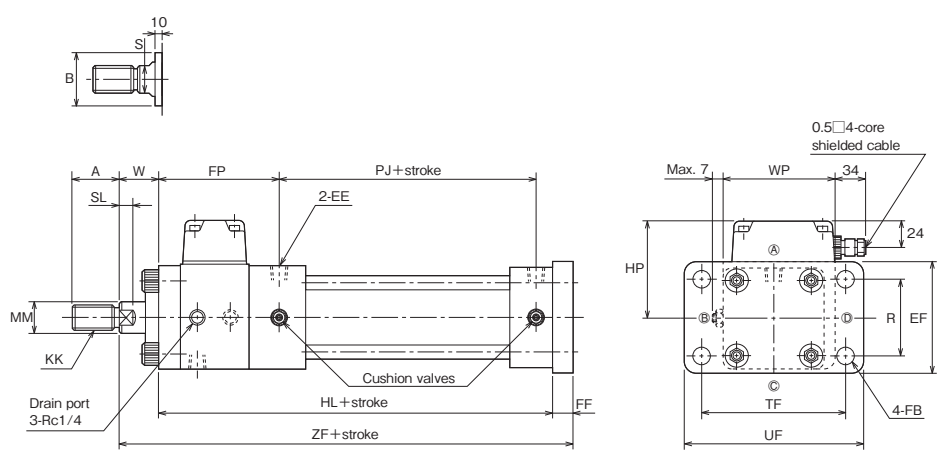
● The tolerance of MM is f8.

With Boots

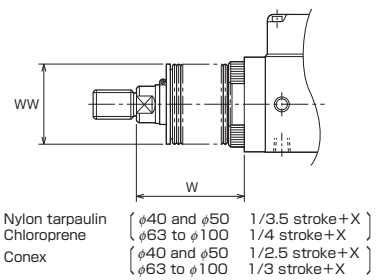
Symbol Bore	WW		X
	Rod B	Rod C	
φ 40	φ 50	φ 50	45
φ 50	φ 63	φ 50	45
φ 63	φ 71	φ 63	55
φ 80	φ 80	φ 71	55
φ 100	φ 100	φ 80	55

FH

70P-8	2	FH	Bore	B	B	Stroke
140P-8	2	FH	Bore	B	B	Stroke



● When mounting a sensor, refer to the "dimensional drawings of Switch Set".
All the contents other than "sensor mounting dimensions" are the same.



Nylon tarpaulin	{ φ40 and φ50	1/3.5 stroke+X
Chloroprene	{ φ63 to φ100	1/4 stroke+X
Conex	{ φ40 and φ50	1/2.5 stroke+X
	{ φ63 to φ100	1/3 stroke+X

● If the calculated value has a fractional part, round up the part.

	Standard	Semi-standard	
Material	Nylon tarpaulin	Chloroprene	Conex
Heat proof	80°C	130°C	200°C

Notes) ● Conex is the registered trademark of Teijin Limited.
● The boots have been mounted at our factory prior to delivery.
● The heat proof field shows the allowable temperature limit of the boots.
● The values are not the heat proof temperature of the cylinder body, etc.

Dimensional Table

Symbol Bore	Rod B							Rod C							EE
	A	B	HP	KK	MM	S	SL	A	B	HP	KK	MM	S	SL	
φ 40	30	φ 40	84.5	M20×1.5	φ 22.4	19	11	25	φ 36	82	M16×1.5	φ 18	14	10	Rc3/8
φ 50	35	φ 46	87	M24×1.5	φ 28	24	14	30	φ 40	84	M20×1.5	φ 22.4	19	11	Rc1/2
φ 63	45	φ 55	91	M30×1.5	φ 35.5	30	16	35	φ 46	87	M24×1.5	φ 28	24	14	Rc1/2
φ 80	60	φ 65	95.5	M39×1.5	φ 45	41	20	45	φ 55	95	M30×1.5	φ 35.5	30	16	Rc3/4
φ 100	75	φ 80	107.5	M48×1.5	φ 56	50	23	60	φ 65	107.5	M39×1.5	φ 45	41	20	Rc3/4

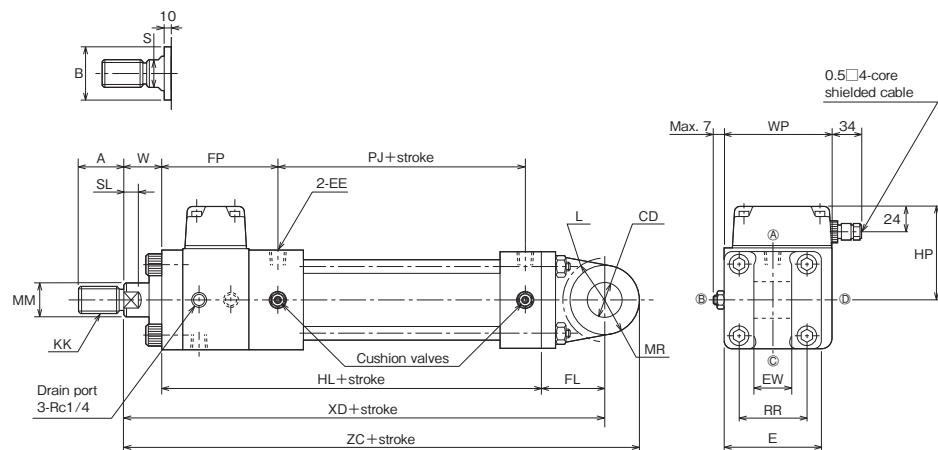
Symbol Bore	EF	FB	FF	FP	HL	PJ	R	TF	UF	W	WP	ZF
φ 40	72	φ 11	22	109	212	90	46	95	118	30	87.5	264
φ 50	85	φ 14	24	113	226	98	58	115	145	30	92.5	280
φ 63	98	φ 18	24	121	238	102	65	132	165	35	100	297
φ 80	118	φ 18	30	144	272	110	87	155	190	35	110	337
φ 100	150	φ 22	32	150	284	116	109	190	230	40	135	356

● The tolerance of MM is f8.

With Boots

Symbol Bore	WW		X
	Rod B	Rod C	
φ 40	φ 50	φ 50	45
φ 50	φ 63	φ 50	45
φ 63	φ 71	φ 63	55
φ 80	φ 80	φ 71	55
φ 100	φ 100	φ 80	55

CT

70P-8 CT 140P-8 CT 

- When mounting a sensor, refer to the "dimensional drawings of Switch Set". All the contents other than "sensor mounting dimensions" are the same.
- Dimension L indicates the maximum size of the connecting part.

Dimensional Table

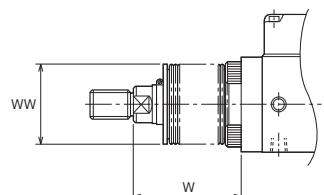
Symbol Bore	Rod B							Rod C							CD
	A	B	HP	KK	MM	S	SL	A	B	HP	KK	MM	S	SL	
φ 40	30	φ 40	84.5	M20×1.5	φ 22.4	19	11	25	φ 36	82	M16×1.5	φ 18	14	10	φ 16H9
φ 50	35	φ 46	87	M24×1.5	φ 28	24	14	30	φ 40	84	M20×1.5	φ 22.4	19	11	φ 20H9
φ 63	45	φ 55	91	M30×1.5	φ 35.5	30	16	35	φ 46	87	M24×1.5	φ 28	24	14	φ 31.5H9
φ 80	60	φ 65	95.5	M39×1.5	φ 45	41	20	45	φ 55	95	M30×1.5	φ 35.5	30	16	φ 31.5H9
φ 100	75	φ 80	107.5	M48×1.5	φ 56	50	23	60	φ 65	107.5	M39×1.5	φ 45	41	20	φ 40H9

Symbol Bore	E	EE	EW	FL	FP	HL	L	MR	PJ	RR	W	WP	XD	ZC
φ 40	□ 65	Rc3/8	25 ^{-0.1} _{-0.4}	38	109	212	R20	R16	90	□ 45	30	87.5	280	296
φ 50	□ 76	Rc1/2	31.5 ^{-0.1} _{-0.4}	45	113	226	R25	R20	98	□ 52	30	92.5	301	321
φ 63	□ 90	Rc1/2	40 ^{-0.1} _{-0.4}	63	121	238	R46	R31.5	102	□ 63	35	100	336	367.5
φ 80	□ 110	Rc3/4	40 ^{-0.1} _{-0.4}	72	144	272	R52	R31.5	110	□ 80	35	110	379	410.5
φ 100	□ 135	Rc3/4	50 ^{-0.1} _{-0.4}	84	150	284	R62	R40	116	□ 102	40	135	408	448

- The tolerance of MM is f8.
- Dimension L indicates the possible radius of swinging.

With Boots

Symbol Bore	WW		X
	Rod B	Rod C	
φ 40	φ 50	φ 50	45
φ 50	φ 63	φ 50	45
φ 63	φ 71	φ 63	55
φ 80	φ 80	φ 71	55
φ 100	φ 100	φ 80	55



Nylon tarpaulin	{ φ40 and φ50	1/3.5 stroke+X
Chloroprene	{ φ63 to φ100	1/4 stroke+X
Conex	{ φ40 and φ50	1/2.5 stroke+X
	{ φ63 to φ100	1/3 stroke+X

- If the calculated value has a fractional part, round up the part.

	Standard	Semi-standard	
Material	Nylon tarpaulin	Chloroprene	Conex
Heat proof	80°C	130°C	200°C

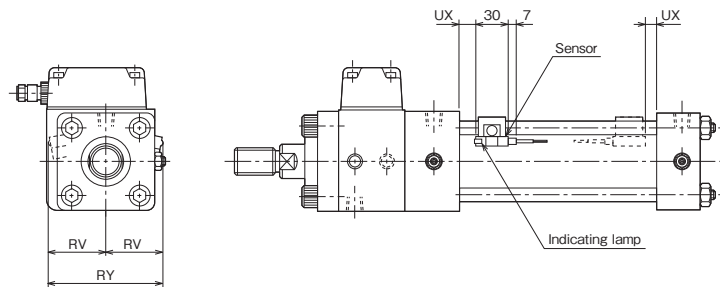
Notes) ● Conex is the registered trademark of Teijin Limited.

- The boots have been mounted at our factory prior to delivery.
- The heat proof field shows the allowable temperature limit of the boots.
- The values are not the heat proof temperature of the cylinder body, etc.

Switch Set

70P-8R	2	Mounting style	Bore	B	B	Stroke	—	Sensor symbol	Sensor quantity
140P-8R	2	Mounting style	Bore	B	B	Stroke	—	Sensor symbol	Sensor quantity

● AX type



● All dimensions of the cylinders are the same as those of the standard type.

Dimensional Table

Bore	Symbol	RV		RY		UX	
		AX type	SR type	AX type	SR type	AX type	SR type
φ 40		40	46	80	92	14	6
φ 50		43	50	86	100	15	7
φ 63		50	56	100	112	17	10
φ 80		60	64	120	128	19	11
φ 100		70	74	140	148	21	13

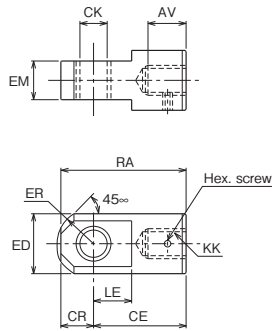
Note) Dimension UX indicates the optimum sensor mounting position for detection of stroke end.

Operating Range and Hysteresis

Bore (mm)	Reed sensor				Solid state sensor	
	AX1**		SR type		AX2**	
	Operating range	Hysteresis	Operating range	Hysteresis	Operating range	Hysteresis
φ 40	4 to 14	2 or less	7 to 12	3 or less	3 to 8	1 or less
φ 50			10 to 16		4 to 10	
φ 63						
φ 80	11 to 18					
φ 100						

Rod End Attachment

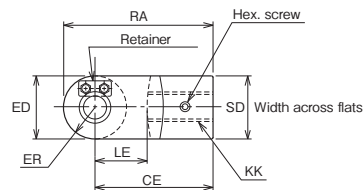
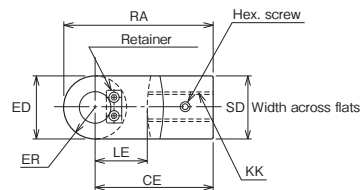
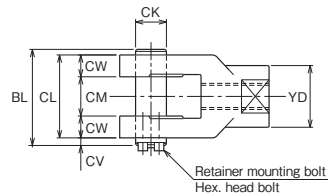
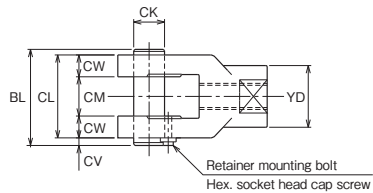
● Rod eye (T-end)



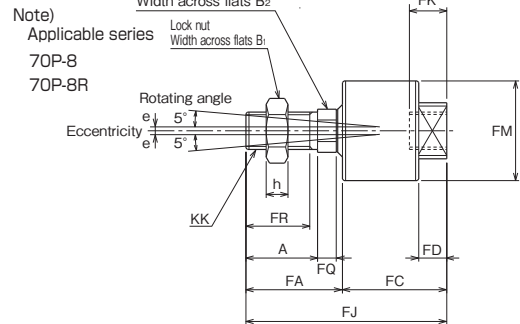
● Rod clevis (Y-end) with pin

● $\phi 40$ to $\phi 80$

● $\phi 100$



● Floating joint (F-end)



- The insertion of the floating joint into the socket shall not equal or exceed the dimension of screw diameter. (Return the joint one or two turns after it gets into contact with the socket bottom, and fix it with a lock nut.) Excessive insertion can cause operation failure.
- DO NOT use together with CT accessory.
- The lock nut is indispensable in using the floating joint. Please don't miss to order the lock nut with the floating joint.

Dimensional Table/Rod eye (T-end)

Symbol	Part number		AV		CE	CK	CR	ED	EM	ER	KK		LE	RA
	Rod B	Rod C	Rod B	Rod C							Rod B	Rod C		
$\phi 40$	RTH-20-H	RTH-16-H	32	27	60	$\phi 16H10$	20	$\phi 39$	$25_{-0.1}^{-0.4}$	R23	M20×1.5	M16×1.5	23	80
$\phi 50$	RTH-24-H	RTH-20-1-H	37	32	70	$\phi 20H10$	25	$\phi 49$	$31.5_{-0.1}^{-0.4}$	R29	M24×1.5	M20×1.5	28	95
$\phi 63$	RTH-30-H	RTH-24-1-H	47	37	115	$\phi 31.5H10$	35	$\phi 62$	$40_{-0.1}^{-0.4}$	R39	M30×1.5	M24×1.5	43	150
$\phi 80$	RTH-39-H	RTH-30-H	62	47	115	$\phi 31.5H10$	35	$\phi 62$	$40_{-0.1}^{-0.4}$	R39	M39×1.5	M30×1.5	43	150
$\phi 100$	RTH-48-H	RTH-39-1-H	77	62	145	$\phi 40H10$	40	$\phi 79$	$50_{-0.1}^{-0.4}$	R45	M48×1.5	M39×1.5	55	185

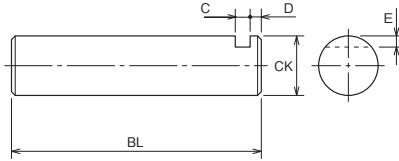
Dimensional Table/Rod clevis (Y-end) with pin

Symbol	Part number		BL	CE	CK	CL	CM	CV	CW	ED	ER	KK		LE	RA	SD	YD
	Rod B	Rod C										Rod B	Rod C				
$\phi 40$	RYH-20-H	RYH-16-H	62	60	$\phi 16_{\frac{H10}{18}}$	50	$25_{+0.1}^{+0.4}$	7	12.5	32	R16	M20×1.5	M16×1.5	27	76	32	32
$\phi 50$	RYH-24-H	RYH-20-1-H	76.5	70	$\phi 20_{\frac{H10}{18}}$	63.5	$31.5_{+0.1}^{+0.4}$	8	16	40	R20	M24×1.5	M20×1.5	32	90	41	40
$\phi 63$	RYH-30-H	RYH-24-1-H	93	115	$\phi 31.5_{\frac{H10}{18}}$	80	$40_{+0.1}^{+0.4}$	8	20	60	R30	M30×1.5	M24×1.5	50	145	60	60
$\phi 80$	RYH-39-H	RYH-30-H	93	115	$\phi 31.5_{\frac{H10}{18}}$	80	$40_{+0.1}^{+0.4}$	8	20	60	R30	M39×1.5	M30×1.5	50	145	60	60
$\phi 100$	RYH-48-H	RYH-39-1-H	117	145	$\phi 40_{\frac{H10}{18}}$	100	$50_{+0.1}^{+0.4}$	12	25	80	R40	M48×1.5	M39×1.5	60	185	80	80

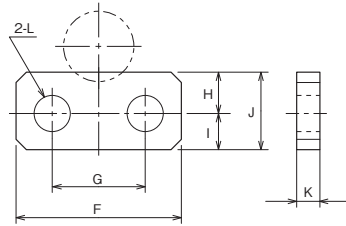
Dimensional Table/Floating joint (F-end)

Applicable bore	Part number	A	B ₁	B ₂	e	FA	FC	FD	FJ	FK	FM	FN	FQ	FR	h	KK
—	$\phi 40$ RFH-16	32	22	17	1.5	43	46	13	89	16	$\phi 40$	24	8	28	10	M16×1.5
$\phi 40$	$\phi 50$ RFH-20	40	27	22	2	53	57	15	110	22	$\phi 50$	30	9	35	12	M20×1.5
$\phi 50$	$\phi 63$ RFH-24	46	32	24	2.5	62	67	18	129	24	$\phi 64$	36	12	41	14	M24×1.5
$\phi 63$	$\phi 80$ RFH-30	58	41	32	2.5	78	83	21	161	30	$\phi 76$	46	14	52	17	M30×1.5

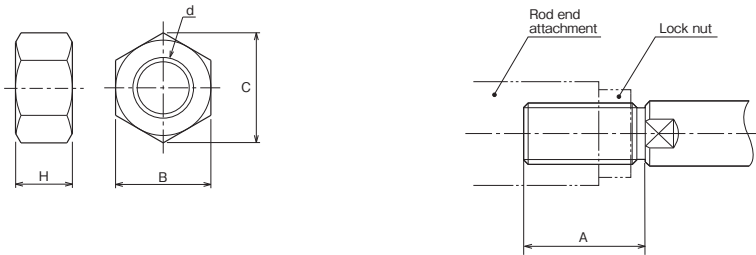
Parallel Pin



Retainer



Lock Nut



The standard fitting length of the rod end attachment and piston rod is about 80% of the thread diameter. If the fitting length is insufficient due to the use of the lock nut, it is necessary to increase the thread length (dimension A) as shown below. If the length is not specified, the rod will be manufactured in the standard length.

Dimensional Table/Parallel pin

Symbol	BL	C	CK	D	E
φ 40	62	4	φ16	3	3
φ 50	76.5	5	φ20	3	3
φ 63	93	5	φ31.5	3	4.75
φ 80	93	5	φ31.5	3	4.75
φ 100	117	7	φ40	5	5

● The tolerance of CK is f8.

Dimensional Table/Retainer

Symbol	F	G	H	I	J	K	L	Retainer mounting bolt size
φ 40	25	14	7	7	14	3	φ6.5	M6
φ 50	32	18	7.5	7.5	15	4.5	φ7	M6
φ 63	32	18	7.5	7.5	15	4.5	φ7	M6
φ 80	32	18	7.5	7.5	15	4.5	φ7	M6
φ 100	50	30	10	10	20	6	φ10	M8

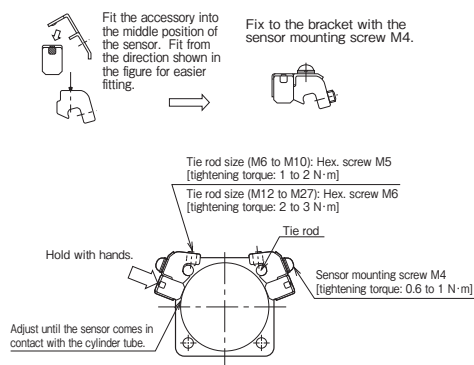
Dimensional Table/Lock nut

Symbol	Lock nut for rod B					Lock nut for rod C				
	Part number	B	C	d	H	Part code	B	C	d	H
φ 40	LNH-20F-H	27	31.2	M20×1.5	12	LNH-16F-H	22	25.4	M16×1.5	10
φ 50	LNH-24F-H	32	37.0	M24×1.5	14	LNH-20F-H	27	31.2	M20×1.5	12
φ 63	LNH-30F-H	41	47.3	M30×1.5	17	LNH-24F-H	32	37.0	M24×1.5	14
φ 80	LNH-39F-H	55	63.5	M39×1.5	20	LNH-30F-H	41	47.3	M30×1.5	17
φ 100	LNH-48F-H	70	80.8	M48×1.5	26	LNH-39F-H	55	63.5	M39×1.5	20

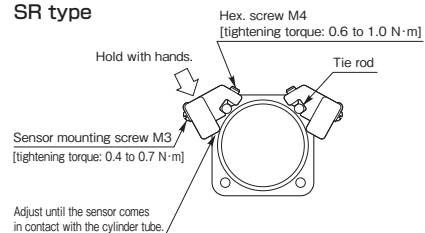
Symbol	Dimension A	
	Rod B	Rod C
φ 40	45	40
φ 50	50	45
φ 63	60	50
φ 80	80	60
φ 100	95	80

Setting method of sensor detecting position

AX type



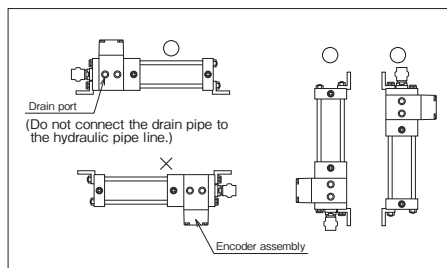
SR type



- Loosen the two hex. screws with a hex. wrench, and move them along the tie rod.
- Adjust the detecting position (for the 2-LED type, the position where the green lamp lights up) 2 to 5 mm (about half of the working range is appropriate) before the required position where the sensor indicator lamp starts to light up (ON). Then, gently hold the top of the sensor so that the cylinder tube contacts the detecting face of the sensor, and clamp the hex. screw to an appropriate tightening torque.
- The indicating lamp lights up when the sensor is set to the ON position. (The lamp of SR405 goes out when the sensor turns on.)
- Sensors can be mounted to any of four tie rods and on the most suitable position depending on the mounting space of the cylinder and wiring method.
- Mount a sensor to the most suitable position to detect the stroke end with the "switch mounting dimension" (dimension UX).

Precautions for use

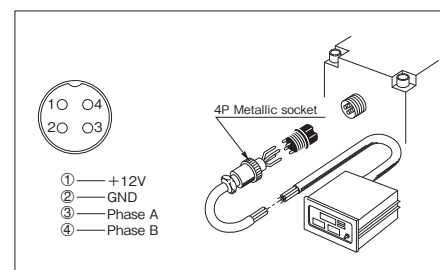
- The working temperature range of the detector block is from -10 to $+50^{\circ}\text{C}$. If the temperature is out of the range, the detector will be damaged.
- If the piston rod rotates, the measurement will fluctuate. When using the cylinder, take care that the piston rod does not rotate.
- If the encoder is soaked in oil, etc., the detector will be damaged. Connect a drain pipe to any of the drain ports Rc 1/8 and 1/4 in three places of the casing (the lower one when the cylinder is installed). If the cylinder is operated with iron particles, contaminants or dust on the length measuring roller and the permanent magnet, counting error may occur, or the rod may be scratched.
- Never install the cylinder with the encoder positioned down.



*If another manufacturer's amplifier is used, refer to the following information.

Notes on wiring

- Miswiring may damage the internal circuit. When wiring, carefully check the polarity of the power supply voltage.
- If the signal cable is connected to the wiring system of the power line, the cylinder may malfunction due to the induced current from the power line. Connect the signal cable to another system.
- If the signal cable length exceeds 30 m, counting error may be caused by the influence of line resistance and line-to-line capacity. To also avoid induced noise, lay the cable taking the shortest route.
- For wiring, connect 0.5 mm^2 4-core shielded wire to the supplied 4-core metallic socket. (Outer diameter of shielded wire : 6 mm)



Selection of counter

12-VDC power supply

To actuate the encoder, a power supply of 12 V DC (80 mA or more) is necessary. Almost all counters which can be connected to this series have a built-in regulated power supply. If the counter to be used does not have one, it is necessary to externally install a regulated power supply.

Reversible counter

The encoder outputs phase-A and -B rectangular waves to add and subtract read values by normal and reverse rotations, or forward and backward movements. Therefore, if a counter which cannot discriminate the direction is used, all pulses given by the encoder will be added to display the total running distance, and the current position cannot be determined.

Preset counter

To stop the cylinder in the middle of the stroke, a preset counter (which outputs a signal when the counter's value becomes identical to the set value) is necessary. Commercially available preset

counters can normally output signals at two positions. If more than two preset values are required, it is necessary to connect a multi-stage programmable counter or a microcomputer.

Response frequency of pulse counter

Select a pulse counter which has a response frequency higher than the following value.

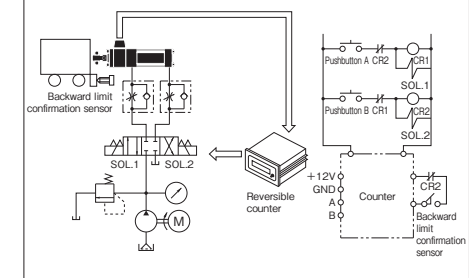
$$\text{Pulse counter response frequency (Hz)} = \text{Cylinder speed (mm/s)} \times 10 \text{ (pulse/mm)} \times 2 \text{ (ratio delay)}$$

Zero-point correction

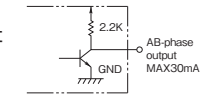
The encoder in the cylinder cannot make zero-point correction. If the power supply is disconnected upon power suspension or after the completion of operation, the current position will be unknown. Therefore, it is necessary to determine the cylinder original position and reset the cylinder to the zero point.

This will reduce the accumulated error.

Example of zero-point correction



- Switch Set Cylinders convenient for zero-point correction can be produced. However, zero-point correction in the middle of the stroke includes the hysteresis of the reset sensor. Therefore, it is recommended to make zero-point correction at the forward or backward limit.
- Some counters cannot use the encoder output as it is. Check the matching between them.



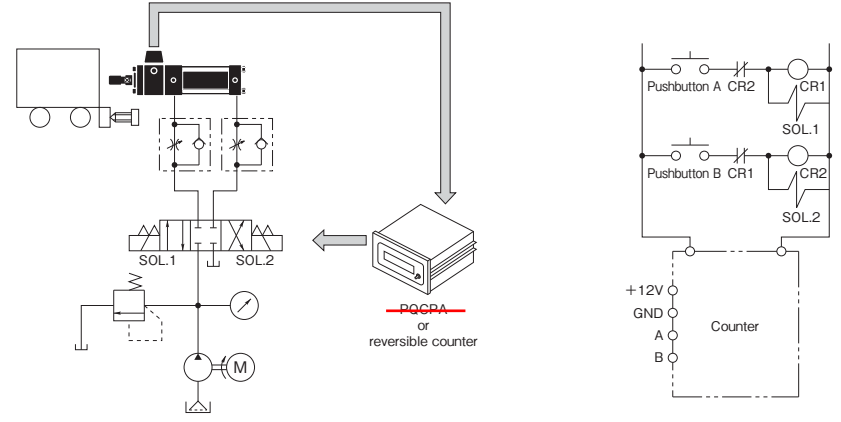
Selection of solenoid valve

- Use a DC voltage type solenoid valve. The stopping accuracy greatly depends on the response accuracy of the solenoid valve. Generally, DC voltage type solenoid valves have higher repeatability of response speed than AC voltage type ones.

Application Examples

Manual remote operation

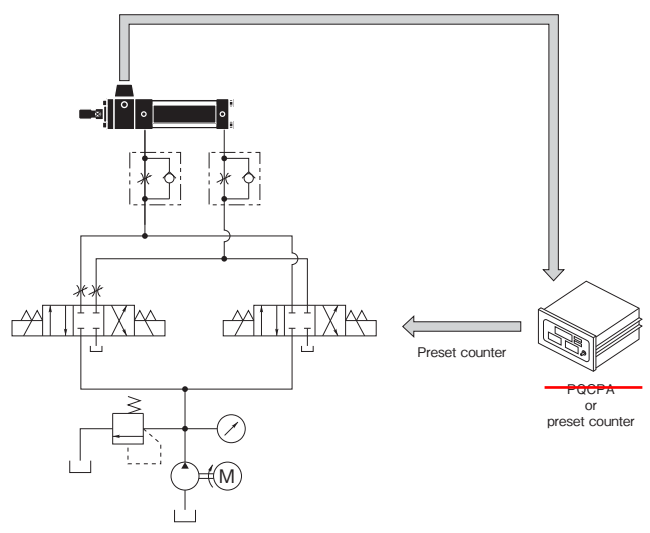
Even when a cylinder is installed in a concealed place or in the distance and its operations cannot be directly checked, the counter shows constantly its operations and facilitates position adjustment and inching.



Application example : Opening and closing of gate

Position control and speed control by preset counter

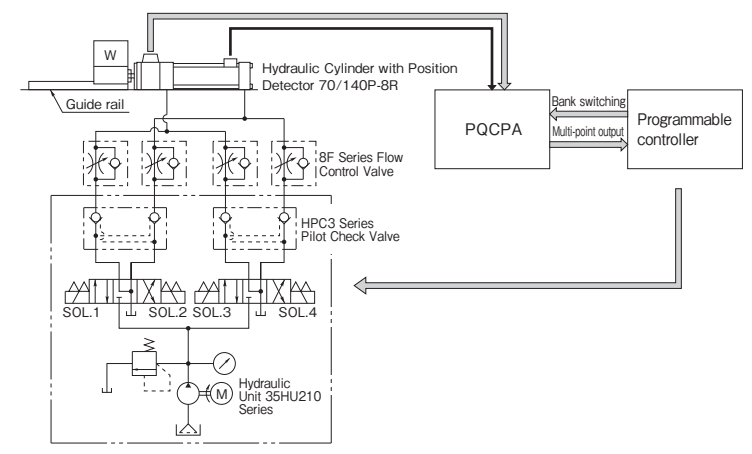
Combination with a multi-stage setting preset counter facilitates decelerating and stopping the cylinder at any position and changing the position.



Application example : Multi-stage transfer equipment

Multi-point positioning control by analog position control unit (PQCPA) recommended by us

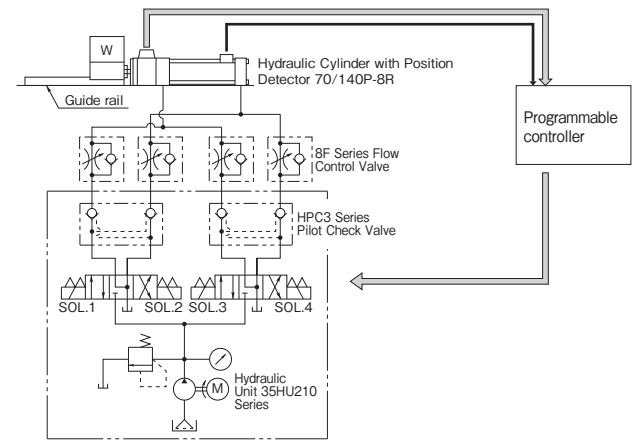
Combination with the analog position control unit (PQCPA) enables setting of up to 15 stop positions and ensures multi-functional positioning control.



System for 2-stage speed control and multi-point positioning control of work

Multi-point positioning control by PLC provided with high-speed counter unit

Advanced multi-point positioning control is realized. Since input and output can be freely allocated, the cylinder can be controlled as requested.



System for 2-stage speed control and multi-point positioning control of work