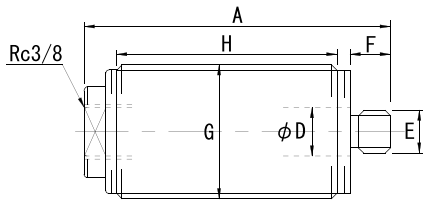
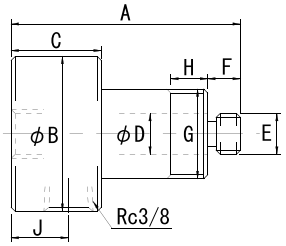
Mini-Cylinder BR/BRS series (single-acting and return-by-spring type)

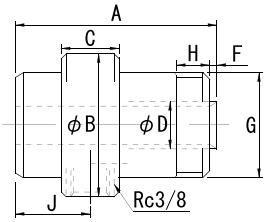
BRS type



BR type



BR-4-20D type



The center hole diameter of BR-4-20D is ϕ18.5.

■Specification

※The mini-cylinder doesn't include a coupler.

		10kN		20kN		40kN		
Type		BRS-1-10	BR-1-10	BRS-2-20	BR-2-20	BRS-4-20	BR-4-20	BR-4-20D
Maximum operating pressure	MPa	70		70		70		
Maximum output	kN	10		20		40		
Effective area	cm^2	1.53		3.14		6.42		6.81
Stroke	mm	10		20		20		20
Minimum overall length	A	87		97		90		107
Inner diameter of the cylinder	ϕ	14		20		28.6		38
Outside diameter of the cylinder	ϕB	–	55	–	60	–	60	70
Cylinder outside shape length	C	–	36	–	40	–	45	30
Piston diameter	ϕD	12		16		25		
Piston screw diameter	E	M12×1.5		M16×1.5		M18×1.5		–
Piston ejection length	F	10		16		10		2
Collar thread diameter	G	M33×2		M36×2		M42×2		M52×2
Collar thread length	H	65	15	70	15	65	15	20
Coupler position	J	–	22	–	25	–	25	35
Coupler connection diameter	–	Rc3/8		Rc3/8		Rc3/8		
Necessary oil level	cm^3	2		7		13		14
Approximate weight	kg	0.4	0.8	0.5	1.1	0.7	1.3	1.7

Hydraulic Cylinder with Stroke Sensor

Custom-order

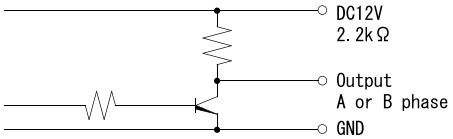
- The cylinder with a stroke sensor detects positions by the built-in rotary encoder, which reduces the size and improves the precision of the equipment.
- The roller in contact with the piston changes the linear motion of the piston into rotary motion. The incremental rotary encoder connected to the roller then converts this rotary motion into an electrical pulse and outputs it.
- The cylinder can be attached to almost any Riken double-acting hydraulic cylinder.
- Mounted on the top of the cylinder and can be handled as a conventional cylinder.
- Generates no backlash and is highly durable.

■Sensor Specification

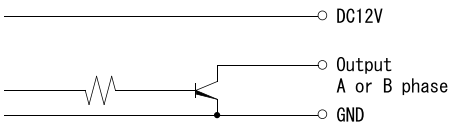
Power supply voltage		DC12V ±0.5%
Power current		Max 40mA
Output waveform		Block pulse
Resolving power		600 pulse/rpm, 0.1 mm/pulse
Output phase		A・B
A/B phase difference		90° ±45°
Light source		LED
Light source life		50,000 hours
Output impedance		2.2kΩ
Response speed		10kHz
Output signal	1 (High)	+11V MIN
	0 (Low)	+1V MAX
Display accuracy		±(0.1+0.01/60×L) L: Cylinder stroke (mm)
Travel distance		300km
Range of operating temperature		5-50 °C
Upper limit of operating humidity		90% RH (No condensation)

Structure of the final output stage

DC12V specification



DC12V open collector specification



※The counter is optional.
※When counted by sequencer, the cylinder should be used at a cylinder speed appropriate for the maximum frequency of the two-phase counter of the sequencer.
※The cylinder speed should be kept at 500 mm/sec or below.
※To avoid accumulated errors, an external switch to set a reference point should be provided, or a zero reset should be performed once every few times at the end of the stroke.
※The open collector specification is recommended for the final output stage when the sensor cable is 20 m or longer.

Pin No	Wiring color	Name of signal
1	Red	Vcc : DC12V
2	Black	GND
3	Green	A phase
4	Yellow	B phase
Attached connector : SCN1404PR		