

INSTRUCTION MANUAL

MODEL YG-128 C

MODEL YG-162 C

MODEL YG-203 C

MODEL YG-203 D

< ROTARY AIR CYLINDER >

Kitagawa Iron Works Co., Ltd.

77-1, Motomachi Fuchu-shi, Hiroshima 726-8610 Japan

TEL:0847(40)0526

FOR SAFE OPERATION

Please read this manual and following instructions carefully.

We cannot assume responsibility for any damage or accident caused by misuse, through non-compliance with the safety instructions.

1. SWITCH OFF power before setting, inspecting and changing the cylinder.
Danger by catching operator in a machine.
2. Use built-in lock/relief valve and route solenoid valve to keep the secure clamp even if power is interrupted.
Failing to do so could cause fly-out of the clamped workpiece.
3. Never operate the selector valve and the solenoid valve during spindle rotation.
Failing to do so could cause fly-out of the clamped workpiece.
4. Secure the clamp bolts with specified torque.

Bolt size M6 : Clamping torque 10N · m

Failing to do so could cause fly-out of the clamped workpiece.
5. Cover the periphery of the cylinder.
Failing to do so could cause catching the operator in the machine.
6. Never give a shock!
Failing to do so could result in damage to the cylinder, which could cause fly-out of the workpiece.
7. Set pneumatic pressure under 0.8MPa and also make fit with the chuck specification.
Failing to do so could result in damage to the chuck and the cylinder, which could cause fly-out of the workpiece.
8. Never attempt to operate a machine while under the influence of alcohol or drugs.
Failing to do so could cause operational mistakes and impair judgment.
9. Secure the draw pipe.
Coat the threaded part of the draw pipe with adhesive and screw it with the specified torque.
Loose fitting will shorten the jaws stroke of the chuck, which could cause fly-out of the workpiece.
10. Remove any dirt completely from inside of the pipe, and then install it.
Failing to do so could result in damage to the cylinder, which could cause fly-out of the workpiece.
11. Danger by discharge of workpiece because cylinder may seize if foreign matter is entered into cylinder. Filter accuracy 5µm or less

1. SPECIFICATION

Table 1 Specifications

SPECIFICATIONS				
Type	YG-128C	YG-162C	YG-203C	YG-203D
Thru Hole Dia	130 mm	75 mm	100 mm	
Piston Stroke	15 mm	10 mm		
Force (at 0.5MPa)	Push	4.9 kN	1.6 kN	2.9 kN
	Pull	4.7 kN	1.4 kN	2.7 kN
Max. operate Pressure	0.8MPa			
Max. Speed	12000 min ⁻¹	5000 min ⁻¹		12000 min ⁻¹
Mass	6.0 kg	3.1 kg	4.4 kg	
Moment of inertia	0.014 kg·m ²	0.002 kg·m ²	0.049 kg·m ²	

2. Mounting

- Make the support so that the drain hose does not turn during operation by using the sleeve cover tap (3-M5,PCD49)..
- Provide a gap so that any force will not be applied to the sleeve body when the support is mounted to the lathe.
- When mounting the cylinder ,rotate the spindle in order to check run-out on the cylinder periphery and upper or lower side of sleeve (See Fig.1).

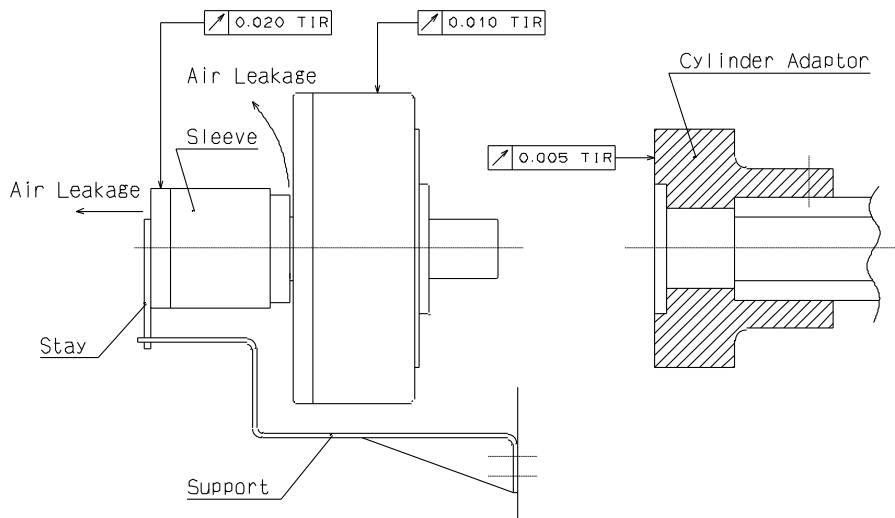


Fig. 1 Run-out of cylinder after mounting

In order to obtain the required value shown above, run -out on cylinder adaptor front face should be minimized.

- Tightening torque of mounting bolt(M6) for rotary pneumatic cylinder :10N · m
- To screw in the draw pipe to the piston, make sure that you move the piston to the front end. It is to prevent the guide pin from being affected by the torque load.

3. Air piping

- Mount the air control unit as near the cylinder as possible.
- For piping, use rust proof nylon air hose, etc.
- Thoroughly remove foreign matters into the piping before assembling. If foreign matters enters the cylinder, the cylinder rotary valve may be seized and the damage to the hose, etc., may result, thereby causing the danger.
- Design the air circuit so as to change the cylinder with solenoid valve on 4-port 2-position. Thus the work-piece clamped with the solenoid valve demagnetized.
(See Fig.2)

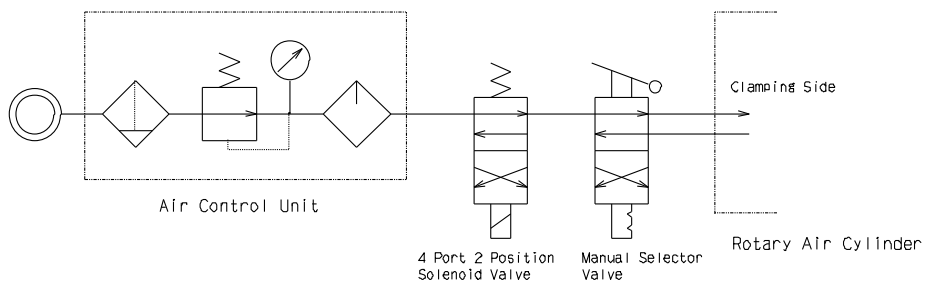


Fig.2

4. Precautions and Maintenance Inspection

- Check that the regular power voltage flows.
- First, set the pneumatic pressure to low pressure (0.05~0.1MPa) for checking that the chuck is adequately operated. After that, increase the pressure to allowable pressure slowly to check fault on each part. However, the air leakage from between Sleeve and Rotary valve is not failure. (See Fig.1)
- Fill the turbine oil into the lubricator of the air control unit (equivalent to viscosity ISO VG32) and adjust the lubricator console so that 1~2 drops fall.
- Rotate the spindle for lathe at speed of 100~200min⁻¹ and then, increase spindle speed sequentially. If the rotating vibration of spindle is excessive, it is necessary to recheck the run-out of adapter.
- Never operate the selector valve and solenoid valve during the spindle rotation.
- Disassemble and clean the cylinder and replace O-rings, etc., if air leakage is found. At this time, coat the slide way and O-rings on each part with oil sufficiently and reassemble the cylinder so as not to be damaged. If foreign matter, etc., are entered into the cylinder when reassembling it, take care because the cylinder may seize.
- Disassemble the machine every 250 thousands of use, and replace seals and check components carefully.
- When the running-in is performed in a high speed after mounting the cylinder, the sleeve may heat. At this time, stop the running-in and repeat a piston stroke operation so that the turbine oil is supplied onto the sleeve.
- Check the turbine oil not to run out (equivalent to viscosity ISO VG32).
- Periodically drain water in the filter.

5. Parts list

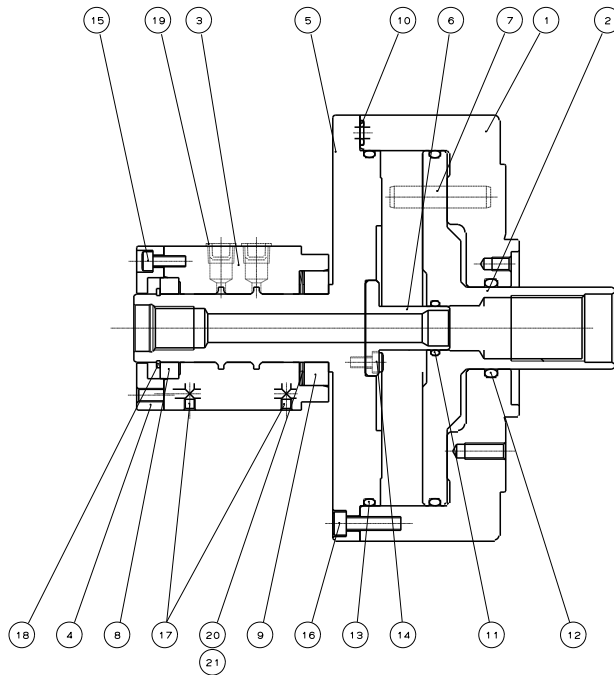


Fig3

Table2 Parts list

No.	Name of parts	Quantity	No.	Name of parts	Quantity
1	Cylinder	1	12	O-ring	1
2	Piston	1	13	O-ring	2
3	Sleeve	1	14	Hexagon socket head cap screw	4
4	Sleeve cover	1	15	Hexagon socket head cap screw	3
5	Rotation valve	1	16	Hexagon socket head cap screw	12
6	Valve tube	1	17	Hexagon socket head cap screw	2
7	Guide pin	2	18	Retaining ring	1
8	Bearing	1	19	Nylon cap	2
9	Bearing	1	20	Disc spring	1
10	O-ring	1	21	Spacer	1
11	O-ring	1			

Table3 Consumable parts

No.	Name of parts	YG-128C	YG-162C	YG-203C	YG-203D	Quantity
10	O-ring (JIS B 2401)	P6	P6	P6	P6	1
11	O-ring (JIS B 2401)	P16	P16	P16	P16	1
12	O-ring (JIS B 2401)	P30	P28	P28	P28	1
13	O-ring (JIS B 2401)	G125	G70	G95	G95	2

【メモ】

【改暦】

2017.05.19 改正1

YG-128C、162C、203C、203D を合体

P4 ドローパイプ取付時のピストン位置について 2. 取付 追記

改行位置 旧単位の削除 誤記訂正等