

Table rotary actuator
Basic/high accuracy

GRC/GRC-K Series

● Size: 5/10/20/30/50/80

JIS symbol



Structure and material restriction

	Structure	Material restriction			Model No.
P7 Series	Vacuum treatment				P73
P5 Series (custom order product)	Vacuum treatment	Copper-based materials prohibited	Silicon-based materials prohibited	Halogen-based materials prohibited (fluorine, chlorine, bromine)	P53

Specifications

Descriptions		GRC-5	GRC-10 GRC-K-10	GRC-20 GRC-K-20	GRC-30 GRC-K-30	GRC-50 GRC-K-50	GRC-80 GRC-K-80
Size		5	10	20	30	50	80
Theoretical torque *1	N·m	0.5	1.0	2.0	3.0	5.2	8.1
Actuation		Rack and pinion mechanism					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0					
Min. working pressure *2	Basic	0.1					
	MPa High accuracy	–	0.15			0.1	
Proof pressure	MPa	1.6					
Ambient temperature	°C	0 (32°F) to 60 (no freezing)					
Port size		M5				Rc1/8	
Port size (relief port)		M5					
Cushion		Rubber cushion					
Allowable energy absorption J	Basic/high accuracy	0.005	0.008	0.03		0.04	0.11
Lubrication		Not available					
Volumetric capacity *3	cm ³ 90°	1.3	3.5	7.0	10.5	18.1	28.3
	180°	3.4	6.6	13.4	20.0	34.4	53.7
Oscillating angle adjusting range *4	90°	0° to 100°					
	180°	90° to 190°					
Oscillating time adjusting range *5	s/90°	0.2 to 1.5					
Table deflection (reference value) *6	Basic	±0.17°			±0.23°	±0.26°	±0.32°
	High accuracy	–	±0.026°				

*1: The theoretical torque is for the working pressure of 0.5 MPa.

*2: To push through the rubber cushion in the basic and high accuracy type, the working pressure of 0.3 MPa or greater is required.

*3: Volumetric capacity is for the maximum oscillating angle within the adjusting range.

*4: The oscillating angle adjusting range indicates the values when adjusted by the stopper bolts on both sides.

*5: The oscillating time adjusting range is for the working pressure of 0.5 MPa.

*6: Displacements of the table at 100 mm away from the center of rotation are shown on the technical data (page 302).

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire				Proximity 3-wire			
	T1H/T1V	T2H/T2V	T2YH/T2YV	T2WH/T2WV	T3H/T3V	T3PH/T3PV	T3YH/T3YV	T3WH/T3WV
Applications	Programmable controller, relay, small solenoid valve	Programmable controller			Programmable controller, relay			
Output method	-				NPN output	PNP output	NPN output	
Power supply voltage	-				10 to 28 VDC			
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less			
Load current	5 to 100 mA	5 to 20 mA (*2)			100 mA or less		50 mA or less	
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less			10 µA or less			
Weight g	1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80	1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80	1 m: 18 3 m: 49 5 m: 80		1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80

*1: Refer to page 309 for detailed switch specifications and dimensions.

*2: Max. load current: 20mA at 25°C. The current is lower than 25 mA if the operating ambient temperature around the switch is higher than 20°C. (60 to 5 mA at 10°C)

Minimum oscillating angle with switch

Size	5	10	20	30	50	80
T proximity T 2-color display	20°	15°	17.5°	12.5°	12.5°	12.5°

Theoretical torque table

(Unit: N·m)

Size	Working pressure (MPa)									
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
5	-	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
10	-	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0
20	-	0.8	1.2	1.6	2.0	2.4	2.8	3.2	3.6	4.0
30	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0
50	1.0	2.1	3.1	4.1	5.2	6.2	7.3	8.3	9.3	10.4
80	1.6	3.2	4.9	6.5	8.1	9.7	11.3	13.0	14.6	16.2

Product weight

(Unit: kg)

Oscillating angle Model No.	90°		180°		Outer mount shock absorber weight	Switch weight (per switch)
	Basic	High accuracy	Basic	High accuracy		
GRC- 5	0.39	-	0.43	-	0.20	0.02
GRC-10	0.48	0.50	0.56	0.58	0.30	
GRC-20	0.78	0.80	0.88	0.90	0.40	
GRC-30	1.05	1.30	1.25	1.50	0.50	
GRC-50	1.80	2.10	2.10	2.40	0.60	
GRC-80	2.30	2.60	2.70	3.00	0.70	

GRC/GRC-K Series

How to order

● Without switch (Magnet for switch incorporated)

GRC - 10 - 90 ————— **P73**

● With switch (Magnet for switch incorporated)

GRC - 30 - 180 - T2H* - R - P73

A Model No.

B Size

C Oscillating angle

D Switch model No.

E Switch quantity

F Clean room Specifications

⚠ Precautions for model No. selection

*1: Port position of basic high accuracy is provided on side surface. Other ports are plugged.

*2: "P53" is a custom order product.

*3: Refer to page 284 for combination of variations/options.

[Example of model No.]

GRC-10-180-T2V-D-P73

Double acting

A Model No. : Basic

B Size : 10

C Oscillating angle : 180°

D Switch model No. : Proximity/2 wires
Radial lead wire with 1 m lead wire

E Switch quantity : 2

F Clean room specifications: Vacuum treatment

Code	Content
A Model No.	
GRC	Basic
GRC-K	High accuracy

B Size (0.5 MPa)			
Model No.	Theoretical torque	GRC	GRC-K
5	0.5 [N·m]	●	-
10	1.0 [N·m]	●	●
20	2.0 [N·m]	●	●
30	3.0 [N·m]	●	●
50	5.2 [N·m]	●	●
80	8.1 [N·m]	●	●

C Oscillating angle	
90	90°
180	180°

D Switch model No.						
Lead wire straight	Lead wire L-shaped	Contact	Voltage		Display	Lead wire
			AC	DC		
T1H*	T1V*	Proximity	●		1-color display	2 wires
T2H*	T2V*			●		2 wires
T3H*	T3V*			●		3 wires
T3PH*	T3PV*	Proximity		●	1-color display	3 wires
T2WH*	T2WV*			●	2-color display	2 wires
T2YH*	T2YV*			●		2 wires
T3WH*	T3WV*			●		3 wires
T3YH*	T3YV*			●	3 wires	

* Lead wire length	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

E Switch quantity	
R	1 With clockwise rotation
L	1 With counterclockwise rotation
D	2

F Clean room specifications		
	Structure	Material restriction
P73	Vacuum treatment	-
P53	Vacuum treatment	Copper-based/silicon-based/halogen-based materials (fluorine, chlorine, bromine) are prohibited

SCPD3

SCM

SSD2

MDC2

SMG

LCM

LCR

LCG

LCX

STM

STG

STR2

MRL2

GRC

Cylinder
Switch

MN3E
MN4E

4GA/B

M4GA/B

MN4GA/B

F.R. (module
unit)

Clean
F.R

Precision
R

Press gauge
Diff. press gauge

Electro-
pneumatic R

Speed
controller

Auxiliary
valve

Fitting/
tube

Clean
air unit

Pressure
sensor

Flow rate
sensor

Valve for
air blow

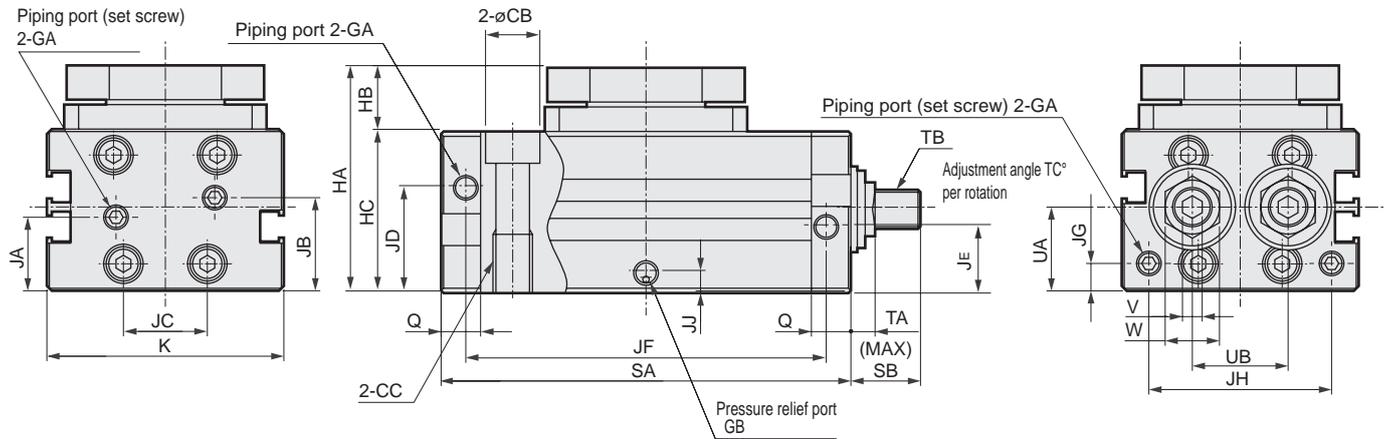
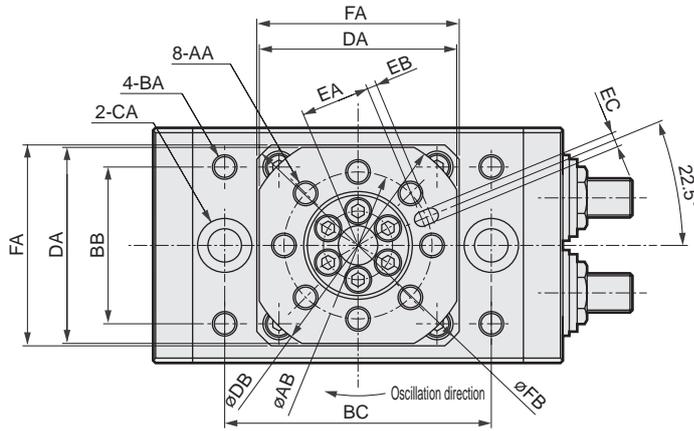
Ending

GRC/GRC-K Series

Dimensions (size 5, 10 N·m)

- GRC-5, 10 basic
- GRC-K-5, 10 high accuracy

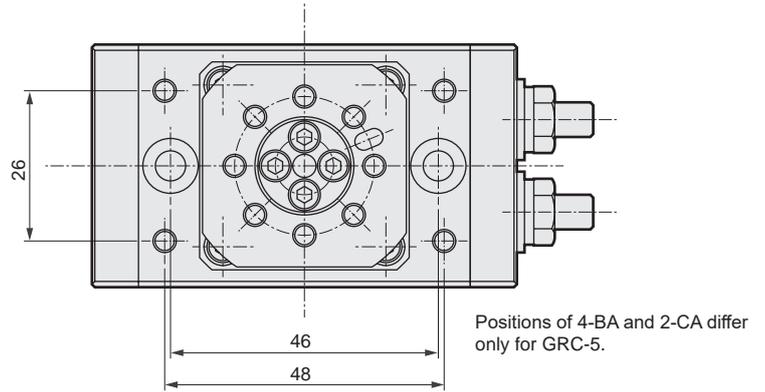
- SCPD3
- SCM
- SSD2
- MDC2
- SMG
- LCM
- LCR
- LCG
- LCX
- STM
- STG
- STR2
- MRL2
- GRC**
- Cylinder switch
- MN3E
MN4E
- 4GA/B
- M4GA/B
- MN4GA/B
- F.R (module unit)
- Clean F.R
- Precision R
- Press gauge
Diff. press gauge
- Electro-pneumatic R
- Speed controller
- Auxiliary valve
- Fitting/tube
- Clean air unit
- Pressure sensor
- Flow rate sensor
- Valve for air blow
- Ending



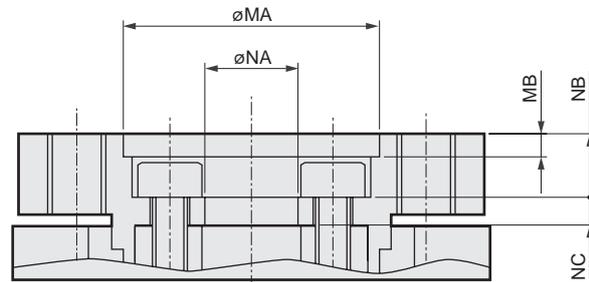
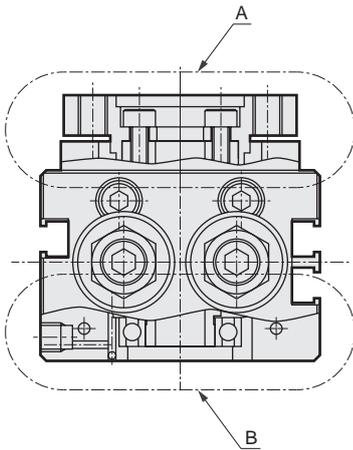
Size	AA	AB	BA	BB	BC	CA	CB	CC	DA	DB	EA	EB	EC	FA	FB	GA
5	M4 Depth 7	24	M4 Depth 6.5	26	48	Spot face $\phi 9.5$ depth 5.4	5.2	M6 Depth 12	35	42	11	2	3 ^{+0.07} _{+0.02} depth 3.5	36	48h9	M5 depth 4
10	M5 Depth 7	30	M5 Depth 7	32	54	Spot face $\phi 11$ depth 6.5	6.6	M8 Depth 12	40	46	14	2	3 ^{+0.07} _{+0.02} depth 3.5	41	54h9	M5 depth 4

Size	PA	PB	Q	SA		SB	TA	TB	TC	UA	UB	V	W	X
				90°	180°									
5	12H9	3.5	8	73	90	14	6.5	M6 × 1	8.7	16.6	16	3	10	12.6
10	18H9	2.5	8	83	107	15	4.9	M8 × 0.75	4.9	17.1	19.4	4	11	13.1

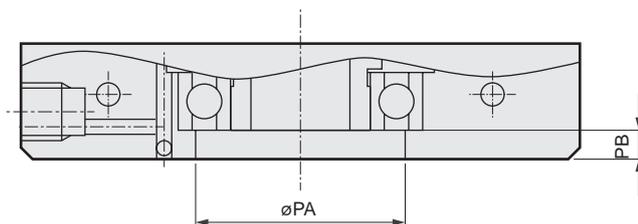
Dimensions (size 5, 10 N·m)



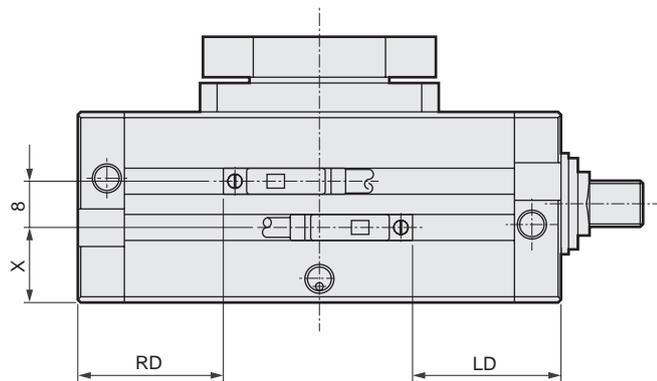
- GRC-5, 10 basic
- GRC-K-5, 10 high accuracy



A section details



B section details



Switch mounting position

	GB	HA	HB	HC	JA	JB	JC	JD	JE	JF		JG	JH	JJ	K	MA	MB	NA	NB	NC
										90°	180°									
	M5 depth 4	43	13	30	15	18	16	21	11.5	65	82	5.6	29	4.1	42	17H9	2	4H9	5.5	2.4
	M5 depth 3.5	46	13	33	15	19	20	21.5	12	75	99	5.6	37	4.1	48	22H9	2	8H9	5.5	2.4

	LD		RD	
	90°	180°	90°	180°
	21.5	25.5	22.5	25.5
	24.5	30.5	26	30.5

SCPD3

SCM

SSD2

MDC2

SMG

LCM

LCR

LCG

LCX

STM

STG

STR2

MRL2

GRC

Cylinder Switch

MN3E

MN4E

4GA/B

M4GA/B

MN4GA/B

F.R. (module unit)

Clean F.R.

Precision R

Press gauge

Diff. press gauge

Electro-pneumatic R

Speed controller

Auxiliary valve

Fitting/tube

Clean air unit

Pressure sensor

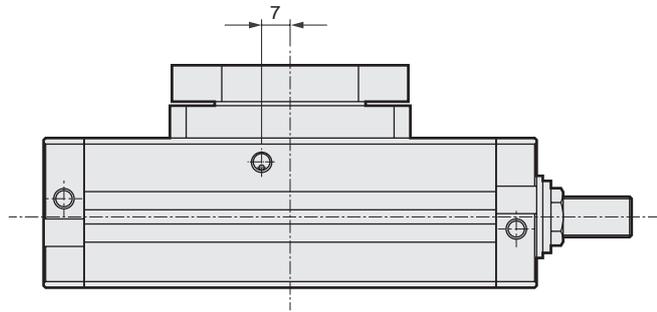
Flow rate sensor

Valve for air blow

Ending

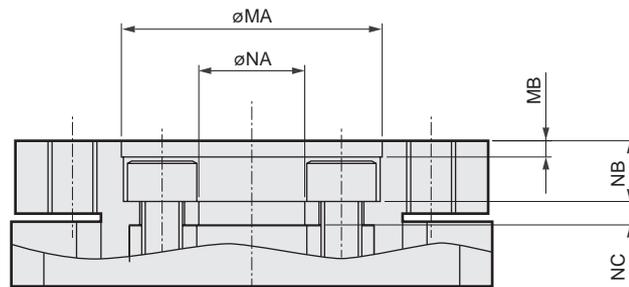
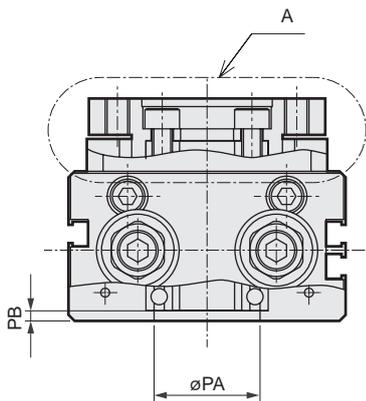
Dimensions (size 20 - 80 N·m)

- GRC-20 to 80 basic
- GRC-K-20 to 80 high accuracy

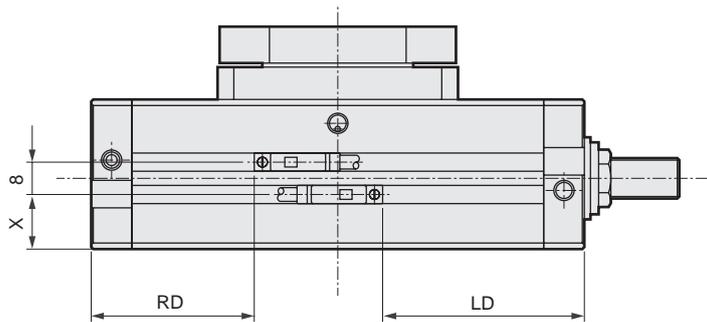


Position of GB differs only for GRC-30 and GRC-K-30.

GRC-30/GRC-K-30



A section details



Switch mounting position

	GB	HA	HB	HC	JA	JB	JC	JD	JE	JF		JG	JH	JJ	K	MA	MB	NA	NB	NC
										90°	180°									
	M5 depth 4	53	16	37	14.5	20.5	27	22	13	86	115	5.6	47	5.8	58	27H9	2	11H9	6.5	3.9
	M5 depth 4	55	18	37	14.5	20.5	37	22	13	111	155	5.6	57	6.2	68	32H9	2	13H9	7.5	2.9
	M5 depth 4	71	23	48	21.5	27.5	36	32.5	17.5	129	177	8.1	58	8.5	75	37H9	4	14H9	10.5	5.3
	M5 depth 4	80	25	55	24	30	40	35	19	135	183	8.1	58	12.9	80	40H9	3	17H9	9.5	4.4

	LD		RD	
	90°	180°	90°	180°
	31	37.5	31	37.5
	38.5	49.5	40	49.5
	48.5	61	51	61
	51.5	64	54	64

SCPD3

SCM

SSD2

MDC2

SMG

LCM

LCR

LCG

LCX

STM

STG

STR2

MRL2

GRC

Cylinder Switch

MN3E
MN4E

4GA/B

M4GA/B

MN4GA/B

F.R. (module unit)

Clean F.R

Precision R

Press gauge
Diff. press gauge

Electro-pneumatic R

Speed controller

Auxiliary valve

Fitting/tube

Clean air unit

Pressure sensor

Flow rate sensor

Valve for air blow

Ending

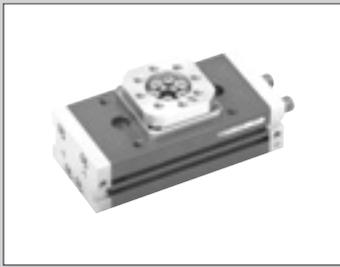


Table type rotary actuator
Fine speed/high accuracy fine speed

GRC-F/GRC-KF Series

● Size: 5/10/20/30/50/80

JIS symbol



Structure and material restriction

	Structure	Model No.
P7 Series	Vacuum treatment	P73

Specifications

Descriptions	GRC-F-5	GRC-F-10 GRC-KF-10	GRC-F-20 GRC-KF-20	GRC-F-30 GRC-KF-30	GRC-F-50 GRC-KF-50	GRC-F-80 GRC-KF-80
Size	5	10	20	30	50	80
Theoretical torque *1	N·m					
	0.5	1.0	2.0	3.0	5.2	8.1
Actuation	Rack and pinion mechanism					
Working fluid	Compressed air					
Max. working pressure	MPa					
	1.0					
Min. working pressure	MPa					
Basic	0.1					
High accuracy		0.15			0.1	
Proof pressure	MPa					
	1.6					
Ambient temperature	°C					
	5 to 60					
Allowable absorbed energy	J					
	0.005	0.008	0.03		0.04	0.11
Cushion	Basic high accuracy					
	Rubber cushion					
Oscillating angle	Basic high accuracy					
adjusting range *2	90° specifications		0° to 100°			
	180° specifications		90° to 190°			
Oscillating time adjusting range	s/90°					
	0.2 to 25					
Port size	M5				Rc1/8	
Port size (relief port)	M5					
Lubrication	Lubrication not possible					

*1: The theoretical torque is for the working pressure of 0.5 MPa.

*2: The angle adjusting range applies when adjusted with the stopper bolts (shock absorbers) on both sides.
If a shock absorber is provided, the fine speed specifications will not apply to the shock absorber section.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire				Proximity 2-wire			
	T1H/T1V	T2H/T2V	T2YH/T2YV	T2WH/T2WV	T3H/T3V	T3PH/T3PV	T3YH/T3YV	T3WH/T3WV
Applications	Programmable controller, relay, small solenoid valve	Programmable controller			Programmable controller, relay			
Output method	-				NPN output	PNP output	NPN output	
Power supply voltage	-				10 to 28 VDC			
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less			
Load current	5 to 100 mA (*2)	5 to 20 mA (*2)			100 mA or less		50 mA or less	
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less			10 µA or less			
Weight	g	1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80	1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80	1 m: 18 3 m: 49 5 m: 80	1 m: 33 3 m: 87 5 m: 142	1 m: 18 3 m: 49 5 m: 80

*1: Refer to page 309 for detailed switch specifications and dimensions.

*2: Max. load current: 20mA at 25°C. The current is lower than 25 mA if the operating ambient temperature around the switch is higher than 20°C. (60 to 5 mA at 10°C)

How to order

- Without switch (Magnet for switch incorporated)

GRC-F - 10 - 90 - P73

- With switch (Magnet for switch incorporated)

GRC-F - 30 - 180 - T2H* - R - P73

A Model No.

B Size

C Oscillating angle

D Switch model No.

E Switch quantity

F Clean room specifications

⚠ Precautions for model No. selection

*1: Port position of basic high accuracy is provided on side surface. Other ports are plugged.

*2: Refer to page 284 for combination of variations/options.

[Example of model No.]

GRC-F-10-180-T2V-D-P73

Double acting

- A** Model No. : Fine speed
- B** Size : 10
- C** Oscillating angle : 180°
- D** Switch model No. : Proximity/2 wires radial lead wire/lead wire 1 m
- E** Switch quantity : 2
- F** Clean room specifications: Vacuum treatment

Dimensions

Dimensions are the same as the basic GRC Series or the high load GRC-K Series. Refer to pages 290 to 293.

Code	Content
A Model No.	
GRC-F	Basic
GRC-KF	High accuracy

B Size			
Model No.	Theoretical torque	GRC-F	GRC-KF
5	0.5 [N·m]	●	-
10	1.0 [N·m]	●	●
20	2.0 [N·m]	●	●
30	3.0 [N·m]	●	●
50	5.2 [N·m]	●	●
80	8.1 [N·m]	●	●

C Oscillating angle	
90	90°
180	180°

D Switch model No.						
Lead wire straight	Lead wire L-shaped	Contact	Voltage		Indicator	Lead wire
			AC	DC		
T1H*	T1V*	Proximity	●		1-color display	2 wires
T2H*	T2V*			●		2 wires
T3H*	T3V*			●		3 wires
T3PH*	T3PV*			●	2-color display	3 wires
T2WH*	T2WV*			●		2 wires
T2YH*	T2YV*			●		2 wires
T3WH*	T3WV*			●	3 wires	
T3YH*	T3YV*			●	3 wires	

* Lead wire length	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

E Switch quantity	
R	1 With clockwise rotation
L	1 With counterclockwise rotation
D	2

F Clean room specifications		
	Structure	Material restriction
P73	Vacuum treatment	-

SCPD3
SCM
SSD2
MDC2
SMG
LCM
LCR
LCG
LCX
STM
STG
STR2
MRL2
GRC
Cylinder Switch
MN3E
MN4E
4GA/B
M4GA/B
MN4GA/B
F.R.(module unit)
Clean F.R
Precision R
Press gauge
Diff. press gauge
Electro-pneumatic R
Speed controller
Auxiliary valve
Fitting/tube
Clean air unit
Pressure sensor
Flow rate sensor
Valve for air blow
Ending