

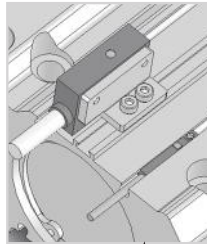
Guide Film Type Cylinder NGQ Series

■ Able to treat long stroke

(Able to manufacture some models until Max. stroke of 300mm)

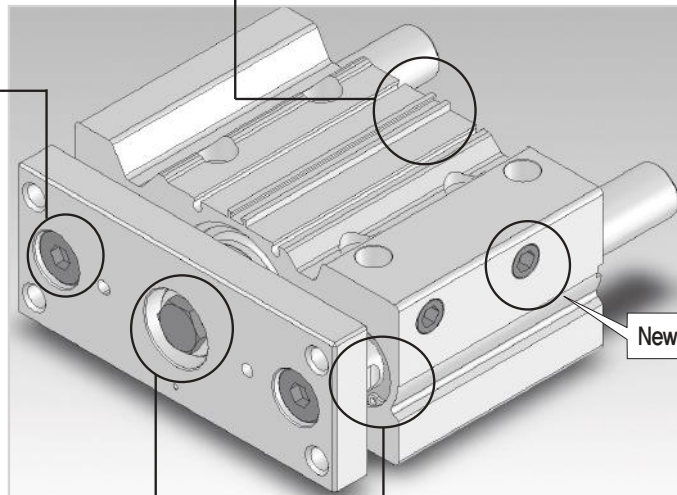
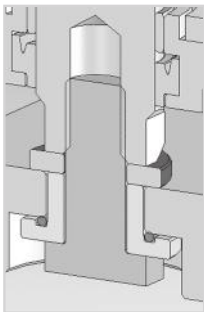
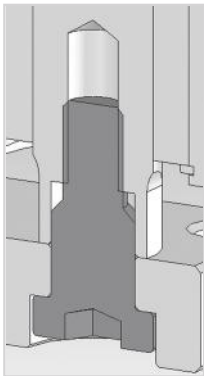
■ Improve plate's squareness and corrosion-resistance by improving process for guide connecting parts

- Apply special high strength bolt



■ Diversify how to apply AUTO Switch

- Apply auto switch of the general type, $\phi 4$ ultra-tiny type, strong magnetic field-resistant type
- Able to install top and bottom (some models) switches



Newly install side port

■ Improve M TYPE's durability

- Use special slide bearing

■ Excellent working performance (100% remove twisted and hung phenomenon during operation)

- Exert smooth operability by endowed with oil gap to plate and piston rod parts
- Insert O-RING to prevent oil gap from making noise

■ Improve customer's convenience for attachment

- Side attachment (OPTION)
- Add T-SLOT grooves on the bottom
- Extend penetration attachment specification
- ※ Refer to attachment related data

■ Improve TUBE's attachment precision

- Size, bottom, and back process

Series NGQ

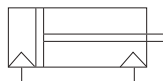
Guide Attachment Compact Cylinder

Bore Size(mm) : Ø12, Ø16, Ø20, Ø25, Ø32, Ø40, Ø50, Ø63, Ø80, Ø100

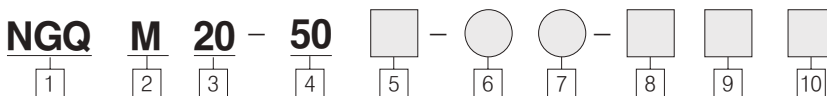


- LATERAL LOAD-RESISTANT AND HIGH-PRECISION CYLINDER TO PREVENT ROTATION
- ABLE TO SELECT GUIDE ROAD BEARING OF 2 KINDS ACCORDING TO EACH USE-SLIDE BEARING AND BALL BEARING
- ENSURE EXCELLENT OPERATIONAL PERFORMANCE AND IMPROVE PRECISION
- APPLY AUTO SWITCH FOR DIVERSIFICATION
- BASICALLY INSTALL SIDE PORT
- IMPROVE CUSTOMER'S CONVENIENCE

Symbol



How to Order



1 NGQ = New Guide Compact Cylinder

2 Applied Bearing Type

M : Slide bearing
L : Ball bearing

3 Bore Size

Spec.	12	16	20	25	32
Bore(mm)	12	16	20	25	32
Spec.	40	50	63	80	100
Bore(mm)	40	50	63	80	100

4 Cylinder Stroke

Type	Bore Size	Standard Stroke (mm)
NGQM	Ø12, Ø16	10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200
	Ø20, Ø25	20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300
NGQL	Ø32, Ø40, Ø50, Ø63	25, 50, 75, 100, 125, 150, 175, 200, 250, 300
	Ø80,	25, 50, 75, 100, 125,
	Ø100	150, 175, 200

Note) Able to manufacture middle stroke in 5mm stroke by mounting spacer on standard stroke.

Ex) In the case of NGQM20-25ST, mount 5mm spacer on NGQM20-30ST, in which the whole product shape is the same as 30ST.

5 Port Type

Classification	Blank	US Type
Ø12, Ø16	M5 X 0.8	UNF
Classification	Blank	EU Type
Ø20~100	RC	G NPT

* Please inquiry for the product when you place an order the port of EU/US type.

6 Attachment Specification

Blank : Non-side attachment hole
H : Side attachment hole

7 Series

Blank : Standard (Copper-free type is basic for L type of Ø12 ~ Ø40)
XC16 : Copper-free type (Only L type can be in copper-free type)

8 Auto Switch

Blank : None
W4 : W4(2Wire DC 24V, AC100V)
W2P : Strong magnetic field-resistant Auto S/W
* The above S/W is applied to the Ø32 ~ Ø100
W8V : Reed switch(Vertical type)
W8H : Reed switch(Horizontal type)
W9V : Solid state switch(Vertical type)
W9H : Solid state switch(Horizontal type)
* The above S/W is applied to the whole equipment.

9 Lead Wire Length

Blank : 0.5 m
L : 3 m

10 Number of Auto Switches

Blank : 2 pcs
S : 1 pc
N : N pcs

ACP

APM

AS

AX

AM2

AM

AL

ALX

AQ

ADQ

AQ2

ADQ2

AJ

AJM

ABK

ACK1

NSK

AG

NGQ

AGX

GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

NLCD

NLCS

Series NGQ

Standard Specification

Item		Specification	
Fluid		Compressed Air	
How to Operate		Double Acting	
Proof Pressure		1.5 Mpa (15kgf/cm ²)	
Pressure Range Applied	Max. Pressure	1.0 Mpa (9.9kgf/cm ²)	
	Min. Pressure	Ø12, Ø16	0.12 Mpa (1.2kgf/cm ²)
		Ø20 ~ Ø100	0.1 Mpa (1.0kgf/cm ²)
Surrounding and Used Fluid Temperature		-10°C ~ +60°C	
Lubrication		Non Lubrication	
Cushion		Both Side Rubber Cushion (Basic)	
Piping		2 Direction Piping (Top and Bottom)	
Cylinder Attachment Type		Through Type Attachment (Top and Bottom), Side Attachment (Option)	
		T-Slot Attachment, Back Attachment	
AUTO S/W		Ultra-tiny AUTO S/W (W8*, W9*), W4	
		Able to Attach 3 Sets of Strong Magnetic Field-Resistant AUTO S/W (W2P)	
Applied Piston Speed		50 ~ 500 mm/S	
Stroke Tolerance		+1.5 ₀ mm	

Theory Output Table

(Unit : kgf)



Bore Size (mm)	ROD Diameter (mm)	Operation Direction	Water Pressure Area (cm ²)	Pressure Applied(kgf/cm ²)								
				2	3	4	5	6	7	8	9	10
12	6	OUT	1.1	2.3	3.4	4.5	5.7	6.8	7.9	9	10.2	11.3
		IN	0.9	1.7	2.5	3.4	4.2	5.1	5.9	6.8	7.6	8.5
16	8	OUT	2	4	6	8	10.1	12.1	14.1	16.1	18.1	20.1
		IN	1.5	3	4.5	6	7.5	9	10.6	12.1	13.6	15.1
20	10	OUT	3.1	6.3	9.4	12.6	15.7	18.8	22	25.1	28.3	31.4
		IN	2.4	4.7	7.1	9.4	11.8	14.1	16.5	18.8	21.2	23.6
25	12	OUT	4.9	9.8	14.7	19.6	24.5	29.4	34.3	39.3	44.2	49.1
		IN	3.8	7.6	11.3	15.1	18.9	22.7	26.4	30.2	34	37.8
32	16	OUT	8	16.1	24.1	32.2	40.2	48.2	56.3	64.3	72.4	80.4
		IN	6	12.1	18.1	24.1	30.1	36.2	42.2	48.2	54.3	60.3
40	16	OUT	12.6	25.1	37.7	50.2	62.8	75.4	87.9	100.5	113	125.6
		IN	10.6	21.1	31.7	42.2	52.8	63.3	73.9	84.4	95	105.5
50	20	OUT	19.6	39.3	58.9	78.5	98.1	117.8	137.4	157	176.6	196.3
		IN	16.5	33	49.5	65.9	82.4	98.9	115.4	131.9	148.4	164.9
63	20	OUT	31.2	62.3	93.5	124.6	155.8	186.9	218.1	249.3	280.4	311.6
		IN	28	56	84.1	112.1	140.1	168.1	196.1	224.1	252.2	280.2
80	25	OUT	50.2	100.5	150.7	201	251.2	301.4	351.7	401.9	452.2	502.4
		IN	45.3	90.7	136	181.3	226.7	272	317.3	362.7	408	453.3
100	30	OUT	78.5	157	235.5	314	392.5	471	549.5	628	706.5	785
		IN	71.4	142.9	214.3	285.7	357.2	428.6	500.1	571.5	642.9	714.4

Note) Theory output(kgf) = Pressure (kgf/cm²) X Piston water pressure area (cm²) 1kgf ≈ 9.8 N, 1kgf/cm² ≈ 0.098Mpa

Series NGQ

Weight Table (product weight)

(Unit : kg)

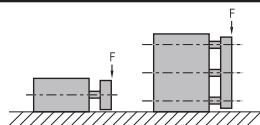
Bore Size	Type	Cylinder Stroke (mm)													
		10	20	25	30	40	50	75	100	125	150	175	200	250	300
Ø 12	M TYPE	0.2	0.3	—	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
Ø 16		0.3	0.4	—	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.3	1.4		
Ø 20		—	0.7	—	0.8	0.8	0.9	1.2	1.4	1.6	1.8	2.0	2.2	2.7	3.1
Ø 25		—	1.0	—	1.1	1.2	1.3	1.7	1.9	2.2	2.5	2.8	3.0	3.6	4.1
Ø 32		—	—	1.7	—	—	2.2	2.5	2.8	3.2	3.6	4.0	4.3	5.3	6.0
Ø 40		—	—	1.8	—	—	2.5	2.8	3.3	3.8	4.2	4.8	5.2	6.4	6.9
Ø 50		—	—	3.1	—	—	3.8	4.5	5.2	5.8	6.5	7.3	7.9	8.8	9.4
Ø 63		—	—	3.7	—	—	4.8	5.4	6.2	6.8	7.6	8.4	9.1	10.1	10.8
Ø 80		—	—	6.6	—	—	7.5	8.8	9.7	10.7	11.6	12.8	13.7		
Ø 100		—	—	9.8	—	—	10.7	12.4	13.7	15.3	16.5	18.0	19.2		
Ø 12	L TYPE	0.2	0.3	—	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.9	0.9		
Ø 16		0.3	0.4	—	0.4	0.5	0.6	0.7	0.8	1.0	1.1	1.2	1.3		
Ø 20		—	0.7	—	0.8	0.9	0.9	1.1	1.3	1.5	1.7	1.9	2.1	2.5	2.9
Ø 25		—	1.0	—	1.1	1.3	1.3	1.6	1.8	2.1	2.3	2.6	2.8	3.3	3.7
Ø 32		—	—	1.5	—	—	2.0	2.3	2.6	2.9	3.3	3.6	3.9	4.6	5.2
Ø 40		—	—	1.7	—	—	2.2	2.7	3.1	3.5	3.9	4.4	4.8	5.6	6.0
Ø 50		—	—	2.8	—	—	3.5	4.2	4.8	5.4	6.0	6.7	7.3	7.8	10.2
Ø 63		—	—	3.5	—	—	4.5	5.1	5.8	6.5	7.1	7.8	8.5	9.2	9.8
Ø 80		—	—	6.3	—	—	7.5	8.8	9.6	10.5	11.2	12.4	13.1		
Ø 100		—	—	9.3	—	—	10.4	12.2	13.4	14.7	15.9	17.2	18.4		

Allowed Load

(Unit : N)

Bore Size	Type	Cylinder Stroke (mm)													
		10	20	25	30	40	50	75	100	125	150	175	200	250	300
Ø 12	M	20	16	—	13	15	13	19	16	14	12	11	10		
	L	20	37	—	31	36	31	14	8	5	3	2	2		
Ø 16	M	32	26	—	22	22	19	29	24	21	19	18	16		
	L	31	54	—	46	52	46	41	27	17	12	8	6		
Ø 20	M	—	52	—	44	43	38	67	58	51	45	40	36	28	19
	L	—	33	—	88	96	87	77	54	35	24	17	13	8	5
Ø 25	M	—	69	—	58	57	50	90	77	67	60	60	55	55	47
	L	—	49	—	39	102	92	91	77	79	70	52	40	25	17
Ø 32	M	—	—	146	—	—	160	143	122	115	102	117	107	92	80
	L	—	—	73	—	—	160	144	123	145	129	116	89	57	39
Ø 40	M	—	—	148	—	—	162	145	124	116	103	119	109	93	81
	L	—	—	73	—	—	160	144	123	144	129	116	89	56	38
Ø 50	M	—	—	238	—	—	236	221	192	179	160	176	161	138	121
	L	—	—	78	—	—	215	194	167	192	172	198	164	107	73
Ø 63	M	—	—	237	—	—	235	220	190	177	158	174	159	136	118
	L	—	—	74	—	—	215	194	165	191	171	198	160	102	69
Ø 80	M	—	—	298	—	—	245	297	258	241	216	226	207		
	L	—	—	100	—	—	69	274	239	212	190	205	188		
Ø 100	M	—	—	431	—	—	375	405	256	331	298	308	272		
	L	—	—	147	—	—	105	426	375	334	301	323	297		

1kgf ≈ 9.8 N, 1kgf/cm² ≈ 0.098Mpa



Series NGQ

Standard Stroke

Classification	Cylinder Stroke (mm)													
	10	20	25	30	40	50	75	100	125	150	175	200	250	300
Ø 12	●	●	—	●	●	●	●	●	●	●	●	●		
Ø 16	●	●	—	●	●	●	●	●	●	●	●	●		
Ø 20	—	●	—	●	●	●	●	●	●	●	●	●	●	●
Ø 25	—	●	—	●	●	●	●	●	●	●	●	●	●	●
Ø 32	—	—	●	—	—	●	●	●	●	●	●	●	●	●
Ø 40	—	—	●	—	—	●	●	●	●	●	●	●	●	●
Ø 50	—	—	●	—	—	●	●	●	●	●	●	●	●	●
Ø 63	—	—	●	—	—	●	●	●	●	●	●	●	●	●
Ø 80	—	—	●	—	—	●	●	●	●	●	●	●		
Ø 100	—	—	●	—	—	●	●	●	●	●	●	●		

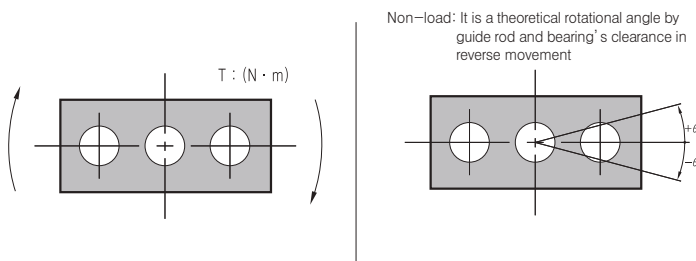
Note) In the case of middle stroke, able to manufacture it in 5 stroke units by mounting spacer (including '—' mark part)

Allowed Rotation Torque (T)

(Unit : N · m)

Bore Size	Type	Cylinder Stroke (mm)													
		10	20	25	30	40	50	75	100	125	150	175	200	250	300
Ø 12	M	0.4	0.4	—	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.2	0.2	—	—
	L	0.4	0.8	—	0.7	0.8	0.7	0.3	0.2	0.1	0.1	0.1	0.1	—	—
Ø 16	M	0.8	0.6	—	0.5	0.5	0.5	0.7	0.6	0.5	0.4	0.4	0.4	—	—
	L	0.7	1.3	—	1.1	1.2	1.1	1	0.6	0.4	0.3	0.2	0.2	—	—
Ø 20	M	—	1.4	—	1.2	1.2	1.1	1.9	1.6	1.4	1.3	1.1	1	0.8	0.5
	L	—	0.9	—	2.5	2.7	2.4	2.2	1.5	1	0.7	0.5	0.4	0.2	0.1
Ø 25	M	—	2.3	—	1.9	1.9	1.7	2.6	2.5	2.2	2	2	1.8	1.8	1.6
	L	—	1.6	—	1.3	3.4	3.1	3	2.6	2.6	2.3	1.7	1.3	0.8	0.5
Ø 32	M	—	—	5.9	—	—	6.4	5.7	4.9	4.6	4.1	4.7	4.3	3.7	3.2
	L	—	—	2.9	—	—	6.4	5.8	4.9	5.8	5.2	4.7	3.6	2.3	1.5
Ø 40	M	—	—	6.5	—	—	7.1	6.3	5.4	5.1	4.5	5.2	4.7	4	3.5
	L	—	—	3.2	—	—	6.9	6.3	5.3	6.3	5.6	5	3.9	2.5	1.7
Ø 50	M	—	—	13.1	—	—	13	12.2	10.5	9.8	8.8	9.7	8.9	7.6	6.6
	L	—	—	4.3	—	—	11.8	10.7	9.2	10.6	9.5	10.9	9	5.9	4
Ø 63	M	—	—	14.7	—	—	14.6	13.7	11.8	11	9.8	10.8	9.9	8.4	7.3
	L	—	—	4.6	—	—	13.3	12	10.3	11.9	10.6	12.3	9.9	6.3	4.3
Ø 80	M	—	—	23.1	—	—	19	23	20	18.7	16.7	17.5	16.1	—	—
	L	—	—	7.7	—	—	5.3	21.3	18.6	16.4	14.7	15.9	14.6	—	—
Ø 100	M	—	—	39.7	—	—	34.4	37.3	32.8	30.5	27.4	29.2	26.9	—	—
	L	—	—	13.6	—	—	9.7	39.2	34.5	30.8	27.7	29.7	27.3	—	—

1kgf $\approx$ 9.8 N, 1kgf/cm² $\approx$ 0.098Mpa



Maximum Rotation Angle

Bore Size	Maximum Rotation Angle(°)	
	NGQM	NGQL
Ø12, 16	±0.10°	±0.07°
Ø20, 25	±0.09°	±0.06°
Ø32, 40	±0.08°	±0.06°
Ø50, 63	±0.06°	±0.05°
Ø80, 100	±0.05°	±0.04°

Series NGQ

Cautions

Please do not insert your hands or fingers between plate and body.

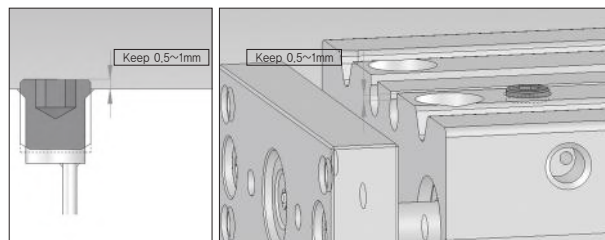
- Please be careful that your hands or fingers are not stuck between cylinder body and plate in air pressure.



In using side port

- When you use side port by attaching plug on top port hole, in the case of cylinder internal diameter of $\varnothing 12, 16$, please assemble it in order to keep 0.5~1mm with top as below figure.

*Narrowed air orifice hole's diameter might cause cylinder operation problems.



Attachment

You can attach it by four methods such as back attachment, side attachment, penetration top attachment, and penetration bottom attachment.

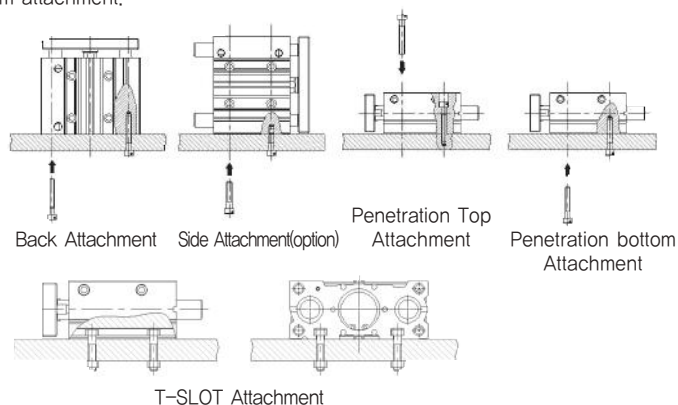


Table 1. T-SLOT Bolts

Bore Size	Applied Bolt	Bore Size	Applied Bolt
$\varnothing 12$	M4	$\varnothing 40$	M6
$\varnothing 16$	M4	$\varnothing 50$	M8
$\varnothing 20$	M5	$\varnothing 63$	M10
$\varnothing 25$	M5	$\varnothing 80$	M12
$\varnothing 32$	M6	$\varnothing 100$	M14

(Note) Used bolt is based on hexagonal (rectangular) bolt.

① Caution in cylinder back attachment

In cylinder back attachment, please process entrance hole in order guide rod's end not to interfere attachment surface (bracket). But in back attachment, as for bolt depth, 1.5d is recommended (Refer to the Table 2. Back attachment area size and bolt size)

② In treating cylinder, please be careful of piston rod or guide rod's damage by impact or strange materials.

- Rod and cylinder damage may cause leakage and malfunction.

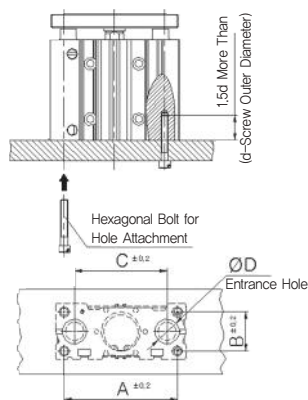


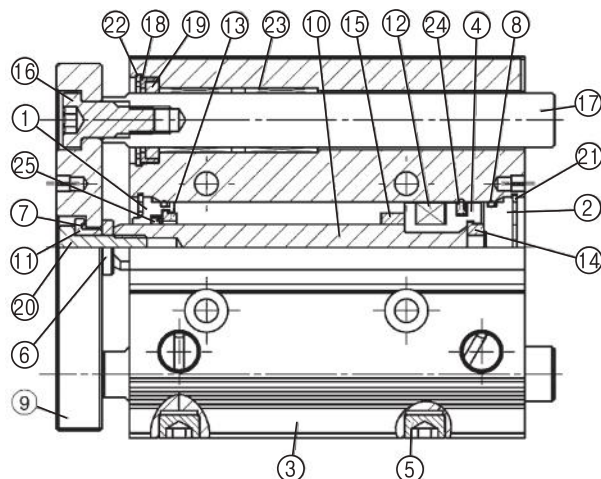
Table 2. Back Attachment Part's Size and Bolt Size

Bore Size	A (mm)	B (mm)	C (mm)	$\varnothing D$ (mm)		Hexagonal wrench bolt for attachment
				NGQM	NGQL	
$\varnothing 12$	50	18	44	10	8	M4 X 0.7
$\varnothing 16$	56	22	48	12	10	M5 X 0.8
$\varnothing 20$	72	24	56	14	12	M5 X 0.8
$\varnothing 25$	82	30	66	18	15	M5 X 0.8
$\varnothing 32$	98	34	80	22	18	M8 X 1.25
$\varnothing 40$	106	40	87	22	18	M8 X 1.25
$\varnothing 50$	130	46	110	27	22	M10 X 1.5
$\varnothing 63$	142	58	124	27	22	M10 X 1.5
$\varnothing 80$	180	54	155	31	28	M12 X 1.75
$\varnothing 100$	210	62	184	39	33	M14 X 2.0

Series NGQ

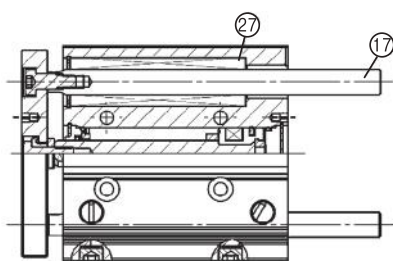
Structural Drawing/Part List, Packing List

◎ NGQM 12~25

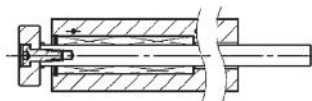


* Ø12, 16

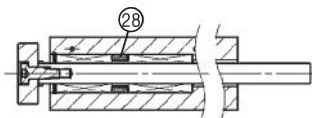
◎ NGQL 12~25



* Ø12, 16 : More than 10ST
 * Ø20 : More than 20ST
 * Ø25 : More than 30ST



* Ø12, 16 : Between 10ST and 30ST
 * Ø20 : Between 20ST and 30ST



* Ø12, 16, 20, 25 : More than 30ST

Part List

No.	Part Name	Material	No.	Part Name	Material	No.	Part Name	Material
1	ROD COVER	Aluminum Alloy	11	RETAINER	Carbon Steel	19	FELT	Wool
2	HEAD COVER	Aluminum Alloy	12	MAGNET	NBR	20	PLATE ATTACHMENT BOLT	CarbonTool Steel
3	CYLINDER TUBE	Aluminum Alloy	13	BUMPER-A	Urethane	21	SNAP RING-A	CarbonTool Steel
4	PISTON	Aluminum Alloy	14	BUMPER-B	Urethane	22	SNAP RING-B	CarbonTool Steel
5	PORT PLUG	CarbonTool Steel	15	SPACER	Aluminum Alloy (Non-standard ST)	23	SLIDE BEARING	Copper Alloy
6	RETAINER WASHER	Stainless Steel	16	GUIDE ROD BOLT	CarbonTool Steel	24	PISTON PACKING	NBR
7	O-RING	NBR	17	GUIDE ROD	NGQM Carbon Steel NGQL High carbon chromium bearing steel	25	ROD PACKING	NBR
8	GASKET	NBR	18	HOLDER	Carbon Steel	26	SCRAPER	NBR
9	PLATE	Carbon Steel				27	BALL BEARING	—
10	PISTON ROD	Stainless Steel				28	GUIDE SPACER	Aluminum Alloy

Packing List/Replacement Part

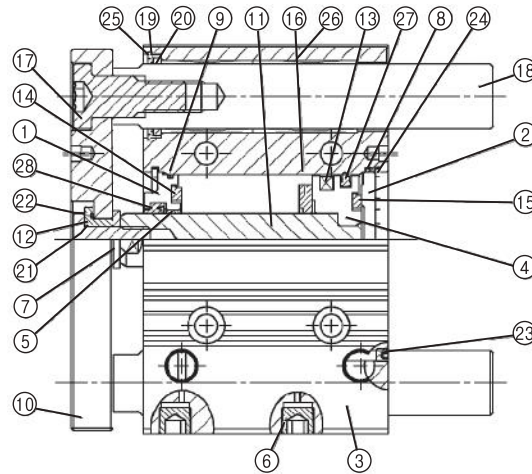
NO.	Part Name	Part Number			
		Ø12	Ø16	Ø20	Ø25
8	GASKET	C-10	C-14	C-18	C-23
24	PISTON PACKING	TPSA-12	TPSA-16	TPSA-20	TPSA-25
25	ROD PACKING	DYR-6	DYR-8	DYR-10SK-K	DYR-12
	SEAL KIT	NGQ12-SK	NGQ16-SK	NGQ20-SK	NGQ25-SK

* As for Seal KIT, 8, 9, 27, and 28 replacement parts are comprised in one type.

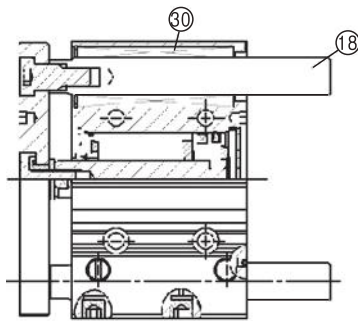
Series NGQ

Structural Drawing/Part List, Packing List

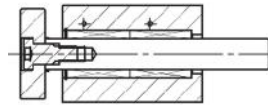
◎ NGQM 32~63



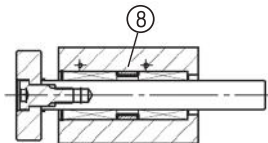
◎ NGQL 32~63



* Less than 25ST



* Between 25ST and 50ST



* More than 50ST

Part List

No.	Part Name	Material	No.	Part Name	Material	No.	Part Name	Material
1	ROD COVER	Aluminum Alloy	11	PISTON ROD	Carbon Steel	20	FELT	Wool
2	HEAD COVER	Aluminum Alloy	12	RETAINER	Carbon Steel	21	PLATE ATTACHMENT BOLT	CarbonTool Steel
3	CYLINDER TUBE	Aluminum Alloy	13	MAGNET	NBR	22	O-RING	NBR
4	PISTON	Aluminum Alloy	14	BUMPER-A	Urethane	23	ACEPHALIA BOLT	CarbonTool Steel
5	BUSH	Copper Alloy (Ø32and 40 are Excluded)	15	BUMPER-B	Urethane	24	SNAP RING-A	CarbonTool Steel
6	PORT PLUG	CarbonTool Steel	16	SPACER	Aluminum Alloy (Non-standard ST)	25	SNAP RING-B	CarbonTool Steel
7	RETAINER WASHER	Carbon Steel	17	GUIDE ROD BOLT	CarbonTool Steel	26	SLIDE BUSH	Copper Alloy
8	HEAD COVER GASKET	NBR	18	GUIDE ROD	NGQM Carbon Steel NGQL High carbon chromium bearing steel	27	PISTON PACKING	NBR
9	GASKET	NBR	19	HOLDER	Carbon Steel	28	ROD PACKING	NBR
10	PLATE	Carbon Steel				30	BALL BEARING	—
						31	GUIDE SPACER	Aluminum Alloy

Packing List/Replacement Part

NO.	Part Name	Part Number			
		Ø32	Ø40	Ø50	Ø63
8	HEAD COVER GASKET	TGQM032-18-1586	TGQM040-18-1587	TGQM050-18-1588	TGQM063-18-1589
9	GASKET	C-29	C-36	C-46	C-60
27	PISTON PACKING	TPSA-32	TPSA-40	TPSA-50	TPSA-63
28	ROD PACKING	DYR-16	PDU-16Z	PDU-20Z	PDU-20Z
	SEAL KIT	NGQ32-SK	NGQ40-SK	NGQ50-SK	NGQ63-SK

* As for Seal KIT, 8, 9, 27, and 28 replacement parts are comprised in one type.

ACP

APM

AS

AX

AM2

AM

AL

ALX

AQ

ADQ

AQ2

ADQ2

AJ

AJM

ABK

ACK1

NSK

AG

NGQ

AGX

GX

NP

ADR

AMR

NDM

ARD

NST

AST

ASTH

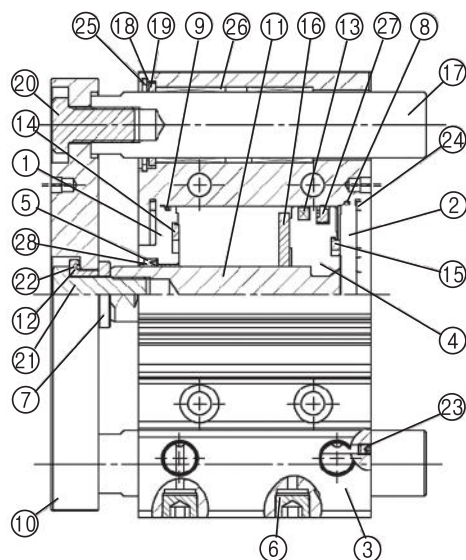
NLCD

NLCS

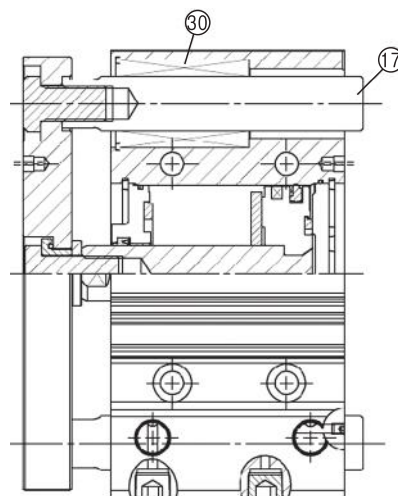
Series NGQ

Structural Drawing/Part List, Packing List

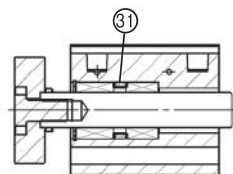
◎ NGQM 80~100



◎ NGQL 80~100



* Less than 50ST



* More than 50ST

Part List

No.	Part Name	Material	No.	Part Name	Material	No.	Part Name	Material
1	ROD COVER	Aluminum Alloy	12	RETAINER	Carbon Steel	21	PLATE ATTACHMENT BOLT	CarbonTool Steel
2	HEAD COVER	Aluminum Alloy	13	MAGNET	NBR	22	O-RING	NBR
3	CYLINDER TUBE	Aluminum Alloy	14	BUMPER-A	Urethane	23	ACEPHALIA BOLT	CarbonTool Steel
4	PISTON	Aluminum Alloy	15	BUMPER-B	Urethane	24	SNAP RING-A	CarbonTool Steel
5	BUSH	Copper Alloy	16	SPACER	Aluminum Alloy (Non-standard ST)	25	SNAP RING-B	CarbonTool Steel
6	PORT PLUG	CarbonTool Steel	17	GUIDE ROD	NGQM: Carbon Steel NGQL: High carbon chromium bearing steel	26	SLIDE BUSH	Copper Alloy
7	RETAINER WASHER	Carbon Steel	18	HOLDER	Carbon Steel	27	PISTON PACKING	NBR
8	HEAD COVER GASKET	NBR	19	FELT	Wool	28	ROD PACKING	NBR
9	GASKET	NBR	20	GUIDE ROD BOLT	CarbonTool Steel	30	BALL BEARING	—
10	PLATE	Carbon Steel				31	GUIDE SPACER	Aluminum Alloy
11	PISTON ROD	Carbon Steel						

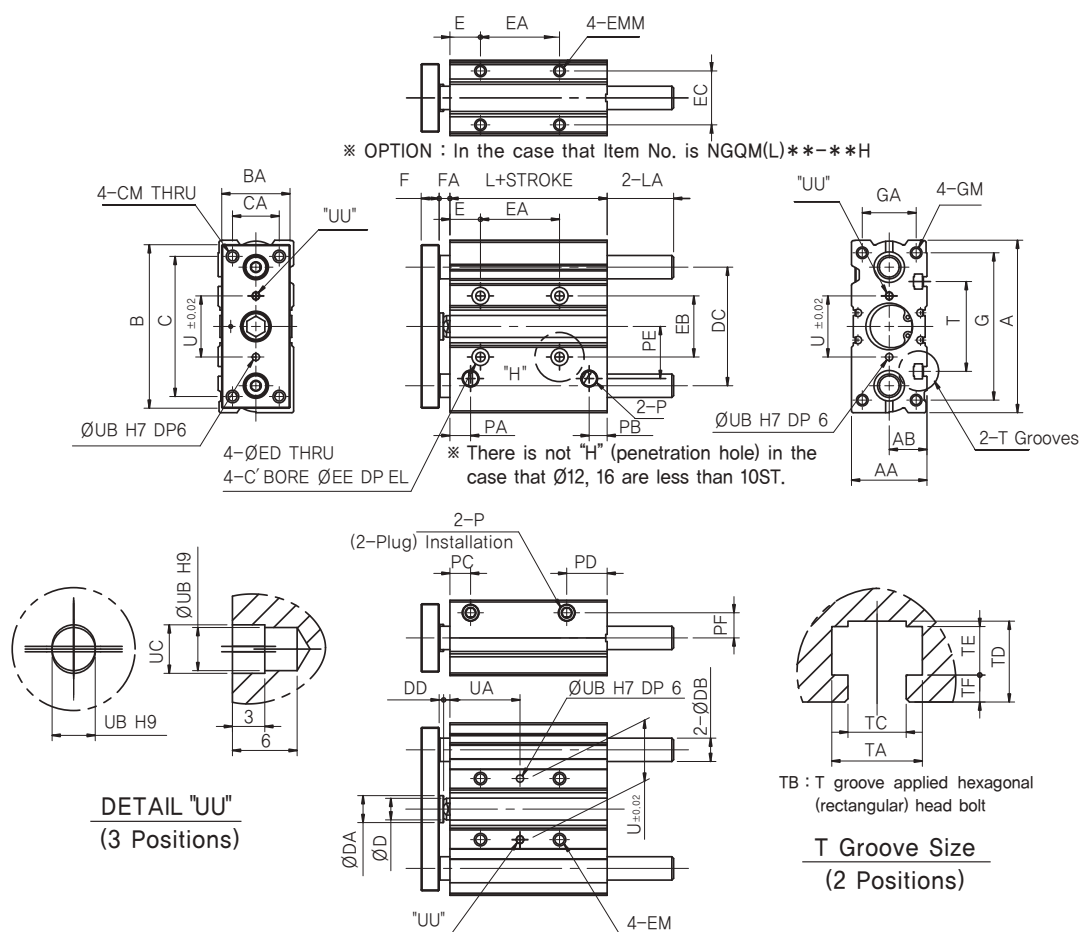
Packing List/Replacement Part

NO.	Part Name	Part Number	
		Ø80	Ø100
8	HEAD COVER GASKET	TGQM080-18-1794	TGQM100-18-1796
9	GASKET	C-75	C-95
27	PISTON PACKING	TPSA-80	TPSA-100
28	ROD PACKING	PDU-25Z	PDU-30Z
	SEAL KIT	NGQ80-SK	NGQ100-SK

* As for Seal KIT, 8, 9, 27, and 28 replacement parts are comprised in one type.

Series NGQ

Size Drawing/NGQM, NGQL Ø12~25



NGQM・NGQL Common Size Table(Ø12~25)

Bore Size (mm)	A	AA	AB	B	BA	C	CA	CM	D	DA	DB		DC	DD	F	FA	G	GA	GM	P	PA	PB	PC	PD	PE	PF	T	TA	TB	TC	TD	TE	TF	
											NGO M	NGO L																						
12	61	26	13	56	22	48	14	M4×0.7	6	10	8	6	44	2	8	5	50	18	M4×0.7 DP 6	M5×0.8	14.5	12	14.5	12	10.5	8	37	7.4	M4	4.4	6.2	3.7	2	2.5
16	68	30	15	62	25	54	16	M5×0.8	8	11	10	8	44	2	8	5	56	22	M5×0.8 DP 8	M5×0.8	15	12	14.5	15	12	10	38	7.4	M4	4.4	6.7	3.7	2.5	2.5
20	84	36	18	81	30	70	18	M5×0.8	10	12	12	10	56	2.5	10	6	62	24	M5×0.8 DP 10	1/8	11	9.5	11	22	13	44	8.4	M5	5.4	7.5	4.5	2.5	2.5	
25	96	42	21	91	38	78	26	M6×1.0	12	15	16	13	66	2.5	10	6	72	30	M6×1.0 DP 12	1/8	11.5	10	11.5	22.5	29	14	50	8.4	M5	5.4	7.5	4.5	2.5	2.5

NGQM・NGQL Common Size Table(Ø12~16)

Bore Size (mm)	E	EA			EB	EC	ED	EE	EL	EM	EMM	L	LA						U	UA			UB	UC						
		Less than 30	Between 30 and 100	Between 100 and 200									NGQM				NGQL								Less than 30	Between 30 and 100	Between 100 and 200	Between 30 and 100	Between 100 and 200	
													Less than 30	Between 30 and 50	Between 50 and 150	Between 150 and 200	Less than 10	Between 10 and 30		Between 30 and 50	Between 50 and 100	Between 100 and 150								Between 150 and 200
12	5	20	40	110	23	18	4.3	8	4.5	M5x0.8 DP 10	M4x0.7 DP 6	29	3	9	37	0	14	24	29	34	39	23	15	25	60	3	3.5			
16	5	24	44	110	24	22	4.3	8	4.5	M5x0.8 DP 10	M5x0.8 DP 8	33	5	9	38	43	0	20	30	35	45	55	24	17	27	60	3	3.5		

NGQM・NGQL Common Size Table(Ø20~25)

Bore Size (mm)	E	EA										EB	EC	ED	EE	EL	EM	EMM	L	LA										U	UA				UB	UC				
		Less than 30				Between 30 and 100				Between 100 and 200										Between 200 and 300		NGQM				NGOL					Less than 30		Between 30 and 100				Between 100 and 200		Between 200 and 300	
		Less than 30	Between 30 and 50	Between 50 and 100	Between 100 and 200	Between 200 and 300	Between 30 and 50	Between 50 and 100	Between 100 and 200	Between 200 and 300	Less than 30									Between 30 and 50	Between 50 and 100	Between 100 and 200	Between 200 and 300	Less than 30	Between 30 and 50	Between 50 and 100	Between 100 and 200	Between 200 and 300	Less than 30		Between 30 and 50	Between 50 and 100	Between 100 and 200	Between 200 and 300						
20	17	24	44	120	200	200	28	25	5.2	9.5	5.5	M6X10 DP 10	M5X8 DP 8	37	3	6.5	6.5	46.5	0	26	36	41	51	61	76	28	29	39	77	117	3	3.5								
25	17	24	44	120	200	200	34	30	5.2	9.5	5.5	M6X10 DP 12	M6X10 DP 12	37.5	3	6	46	56	61	0	27	37	47	57	72	87	34	29	39	77	117	4	3.5							

ACP

APM

AS

AX

AM2

AM

 $\frac{AL}{AL_v}$

AQ
ADO

AQ2

AJ

ARK

ACK1

NSK

AG

NGO

AGX

ND

ADD

AMD

NDM

ADD

NOT

ACT

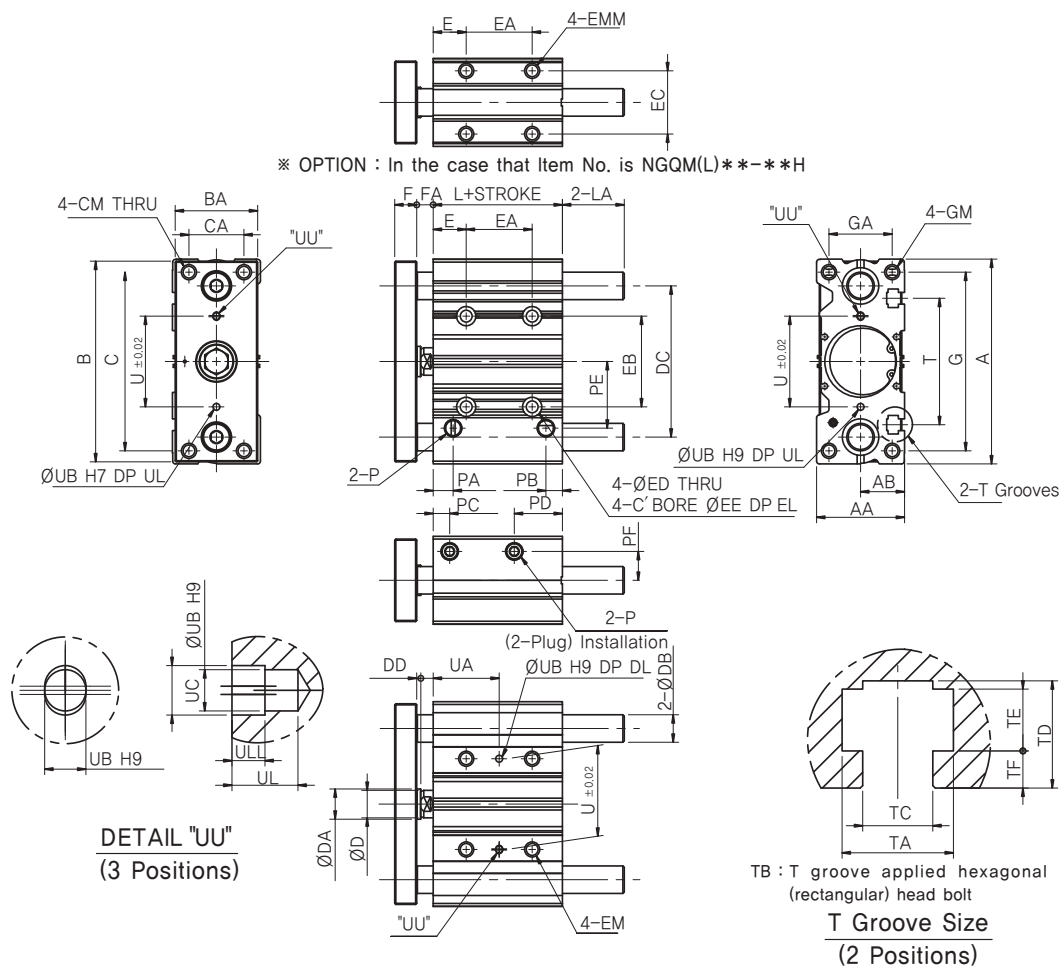
ACTU

ALL OF

1100

Series NGQ

Size Drawing/NGQM, NGQL Ø32~63



NGQM · NGQL Common Size Table(Ø32~63)

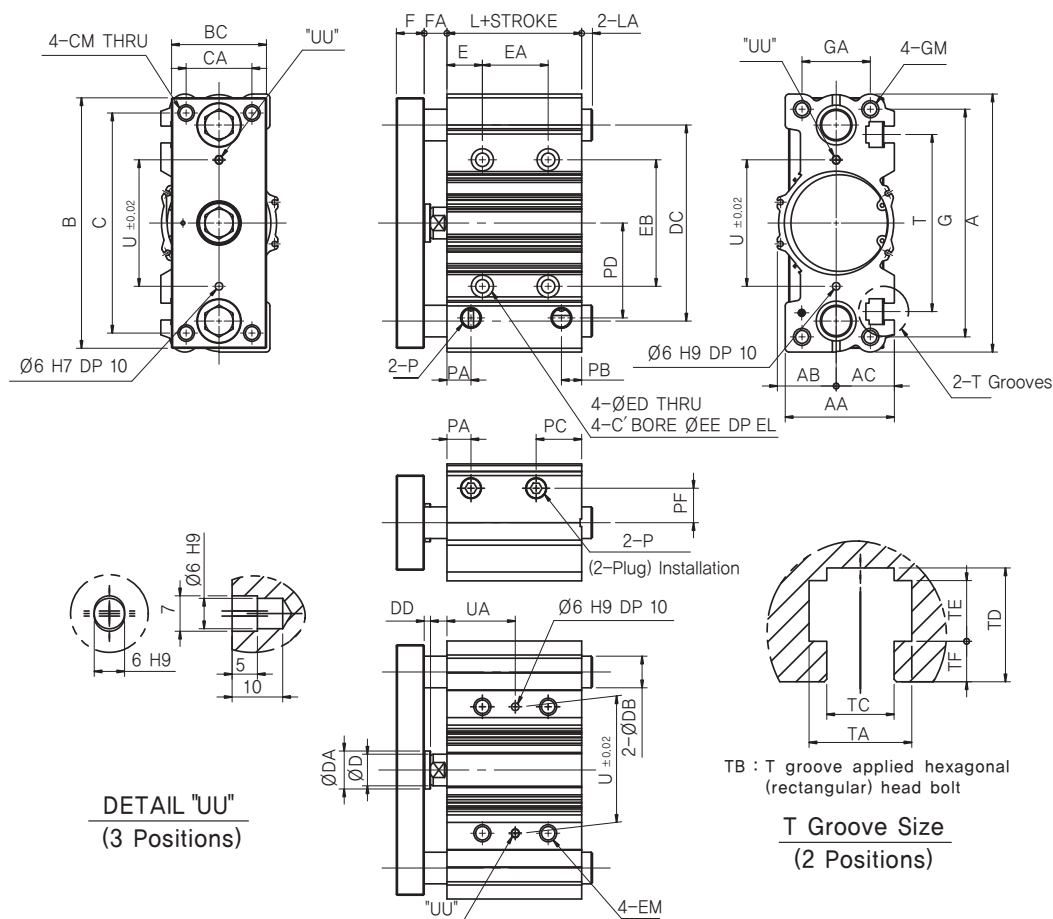
Bore Size (mm)	A	AA	AB	B	BA	C	CA	CM	D	DA	DB		DC	DD	F	FA	G	GA	GM	P	PA	PB	PC	PD	PE	PF
											NGQ M	NGQ L														
32	113	48	24	110	44	96	30	M8x1.25	16	18	20	16	80	3	12	10	98	34	M8x1.25 DP 16	1/8	12.5	9	12.5	28	36.5	16
40	121	54	27	118	44	104	30	M8x1.25	16	18	20	16	87	3	12	10	106	40	M8x1.25 DP 16	1/8	14	10.5	14	30	40.5	18
50	149	64	32	146	60	130	40	M10x1.5	20	22	25	20	110	3	16	12	130	46	M10x1.5 DP 20	1/4	14.5	11	12	35	48.5	21
63	162	77.5	39	158	70	130	50	M10x1.5	20	22	25	20	124	3	16	12	142	58	M10x1.5 DP 20	1/4	16.5	13.5	16.5	35	55	26.5

Bore Size (mm)	T	TA	TB	TC	TD	TE	TF	E	EA				EB	EC	ED	EE	EL	EM	EMM
									Less than 25	Between 25 and 100	Between 100 and 200	Between 200 and 100							
32	63	10.5	M6	6.5	9	5.5	3	21	24	48	124	200	42	36	6.6	11	7.5	M8×1.25 DP 16	M8×1.25 DP 12
40	72	10.5	M6	6.5	12	5.5	4	22	24	48	124	200	50	38	6.6	11	8.5	M8×1.25 DP 16	M8×1.25 DP 12
50	92	13.5	M8	8.5	13	7.5	4.5	24	24	48	124	200	66	46	8.6	14	12	M10×1.5 DP 20	M10×1.5 DP 12
63	110	17.8	M10	11	19	10	7.5	24	28	52	128	200	80	52	8.6	14	15	M10×1.5 DP 20	M10×1.5 DP 18

Bore Size (mm)	L	LA										U	UA				UB	UC	UL	ULL
		NGQM					NGQL						Less than 25	Between 25 and 100	Between 100 and 200	Between 200 and 100				
		Less than 25	Between 25 and 50	Between 50 and 100	Between 100 and 150	Between 150 and 300	Less than 25	Between 25 and 50	Between 50 and 100	Between 100 and 150	Between 150 and 300									
32	37.5	23.5	41.5	46.5	51.5	71.5	4.5	41.5	46.5	66.5	91.5	42	33	45	83	121	4	4.5	6	3
40	44	17	35	40	45	65	0	35	40	60	85	50	34	46	84	122	4	4.5	6	3
50	44	24	40	50	55	75	3	45	50	70	95	66	36	48	86	124	5	6	8	4
63	49	19	35	45	50	70	0	40	45	65	90	80	38	50	88	124	5	6	8	4

Series NGQ

Size Drawing/NGQM, NGQL Ø80~100



NGQM · NGQL Common Size Table(Ø80, 100)

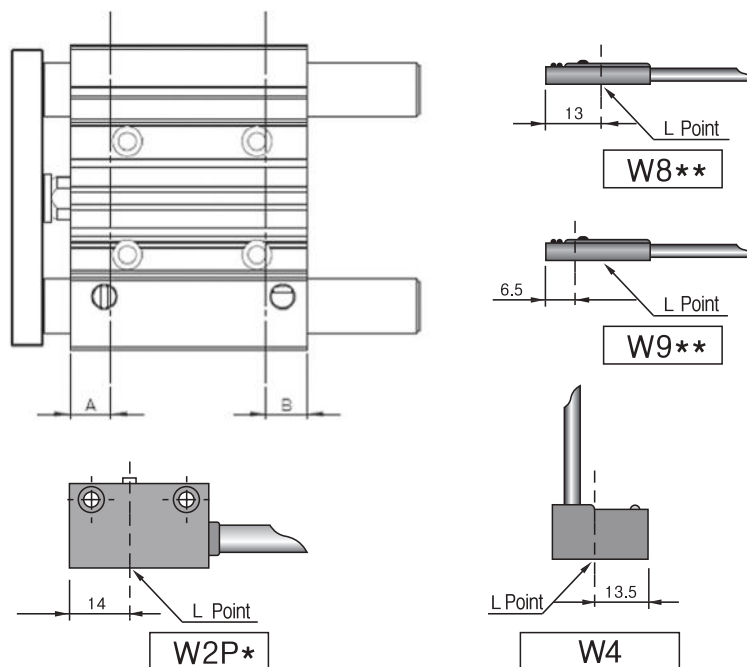
Bore Size (mm)	A	AA	AB	AC	B	BA	C	CA	CM	D	DA	DB		DC	DD	F	FA	G	GA	GM
80	204	86.25	46.5	46	198	75	174	52	M12×1.75	25	30	NGQ M	NGQ L	155	5	22	18	180	54	M12×1.75 DP 18
100	238	102.75	55.5	56	236	90	210	64	M14×2.0	30	35	36	30	184	5	25	25	210	62	M14×2.0 DP 25

Bore Size (mm)	P	PA	PB	PC	PD	PE	T	TA	TB	TC	TD	TE	TF	E	EA			EB	ED	EE	EL	EM
															25	50 ~ 100	125 ~ 200					
80	3/8	19	15.5	36	75	27.25	140	20.3	M12	13.3	22.5	12	8	28	28	52	128	100	10.6	17.5	11	M12×1.75 DP 24
100	3/8	23	19	41	89	33.75	166	23.3	M14	15.3	26.5	13.5	10	11	48	52	148	124	12.5	20	11	M14×2.0 DP 28

Bore Size (mm)	L	LA								U	UA		
		NGQM					NGQL				Less than 25	Between 25 and 100	Between 200 and 200
		Less than 25	Between 25 and 50	Between 50 and 100	Between 100 and 150	Between 150 and 200	Less than 50	Between 50 and 100	Between 100 and 200				
80	56.5	23.5	25.5	53.5	58.5	78.5	8.5	72.5	87.5	100	42	54	92
100	66	19	24	49	54	74	4	73	88	124	35	47	85

Series NGQ

Auto Switch's Proper Attachment Position (Under Condition that Forward and Backward Full Stroke is Used)



(Unit : mm)

Bore Size	A Point Position	B Point Position
Ø12	14	15
Ø16	16.5	16.5
Ø20	16.5	21
Ø25	17.5	20
Ø32	18	20
Ø40	22.5	22
Ø50	20	24
Ø63	23	26.5
Ø80	26	31
Ø100	30	36

(Unit : mm)

Switch Type	L Point Position (Detection Position)	Remarks
W8 **	13	Able to use all the NGQ
W9 **	6.5	
W4	13.5	Able to use internal diameter between Ø32 and Ø100
W2P *	14	

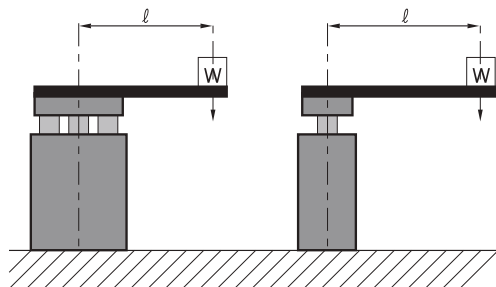
★ In attaching switch, please use it after matching cylinder's A point or B point with the switch's L point.

〈Cautions〉

In attaching two auto switches, Min. stroke should be operated more than 10 stroke. But in attaching W2P* switch, it can be operated more than 15 stroke.

Series NGQ

In Vertical Attachment – NGQM / Slide Bearing



(Selected Example)

1. How to Attach : Vertical Attachment
2. Applied Bearing : Ball Bearing
3. Max. Cylinder Speed: 20mm/s
4. Applied Load : 7kgf
5. Applied Stroke : 50 Stroke
6. Eccentric Distance : 50mm

※Selection

1. Select ball bearing among vertical attached graphs.
2. Select a graph to endure load more than 7kgf
→ NGQL Ø20 ~ Ø100
3. Select a graph matched with 50 stroke and eccentric distance of 50mm and then, select device below the graph's line
→ Select NGQL Ø20 and apply eccentric distance of 50mm.
4. Selected device is NGQL Ø20-50ST

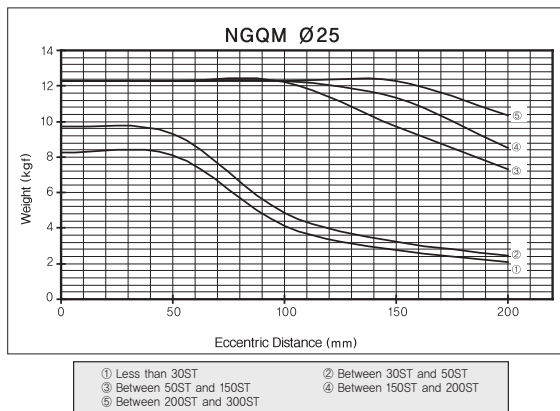
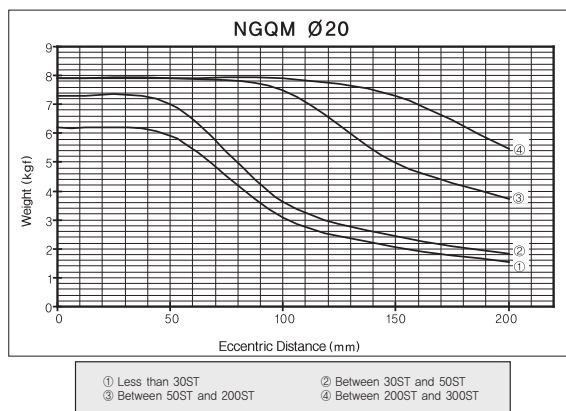
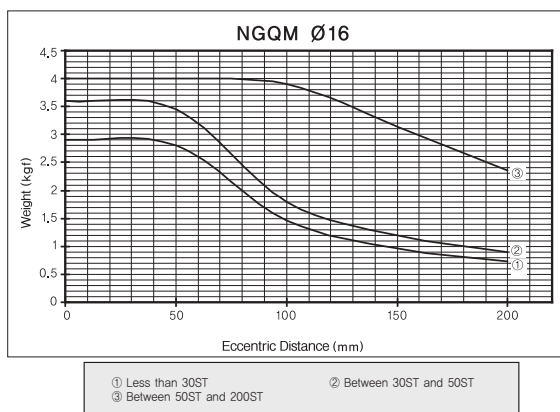
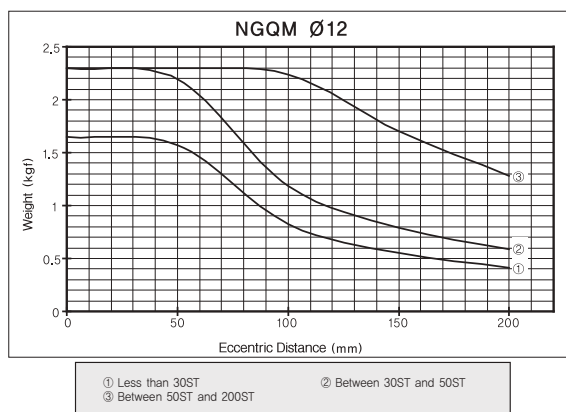
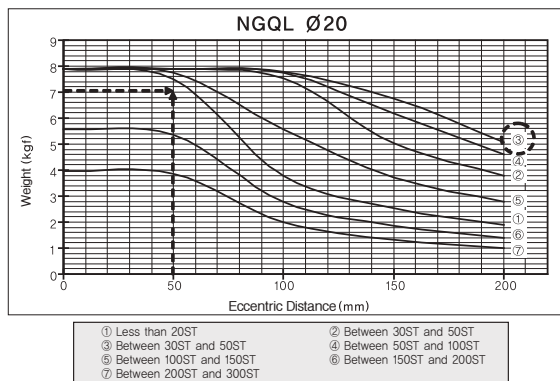
※ Using Condition

Pressure Applied $P = 5 \sim 7 \text{ kgf/cm}^2$
 Cylinder Speed $V \div 250 \text{ mm/s}$ (50 ~ 300 mm/s)
 Eccentric Distance = l (mm)
 Applied Weight = W (kgf)

Note 1) Used pressure of $5 \sim 7 \text{ kgf/cm}^2$ is recommended.

Note 2) When cylinder speed exceeds 30mm/s

Table 3. Applied Load Ratio



ACP

APM

AS

AX

AM2

AM

AL

ALX

AQ

ADQ

AQ2

ADQ2

AJ

AJM

ABK

ACK1

NSK

AG

NGQ

AGX

GX

NP

ADR

AMR

NDM

ARD

NST

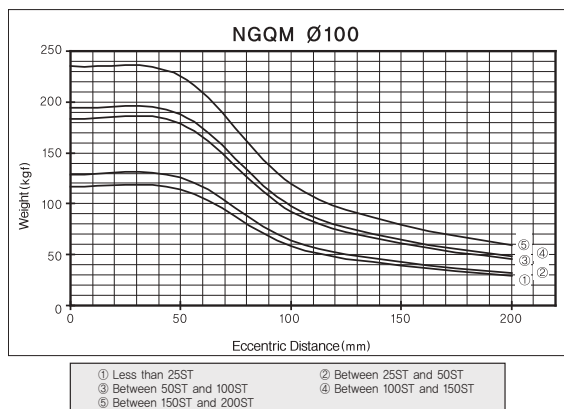
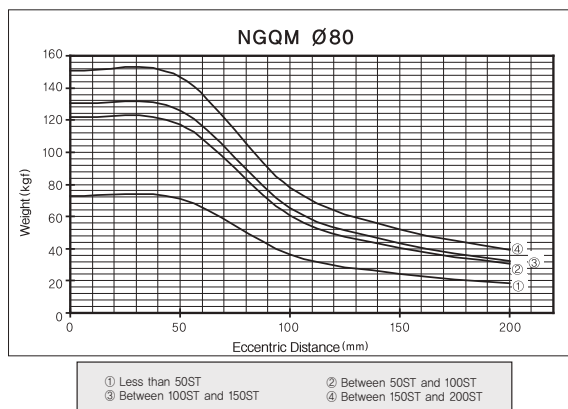
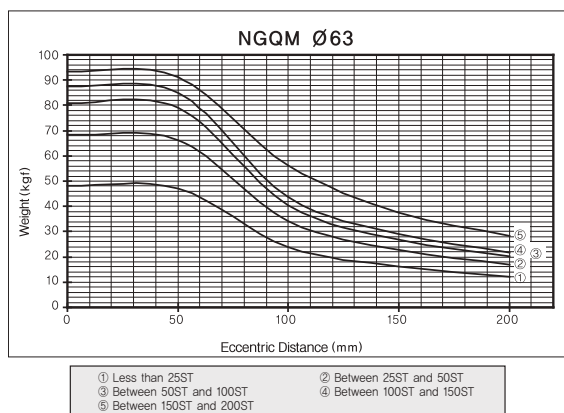
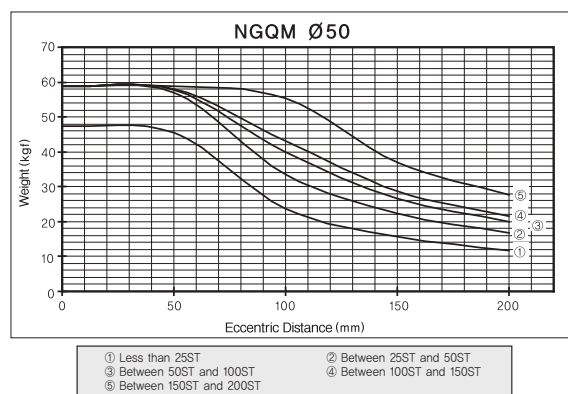
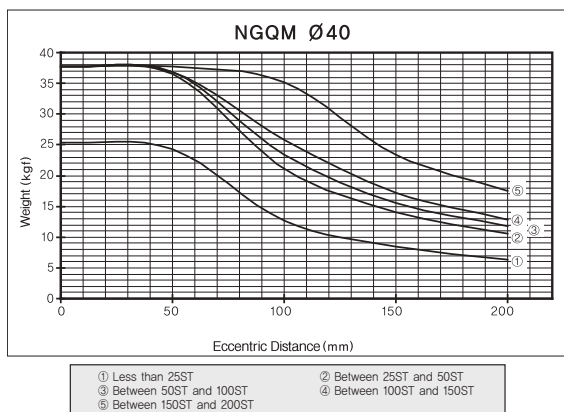
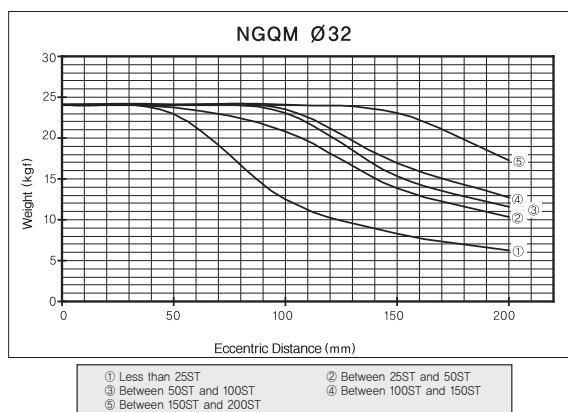
AST

ASTH

NLCD

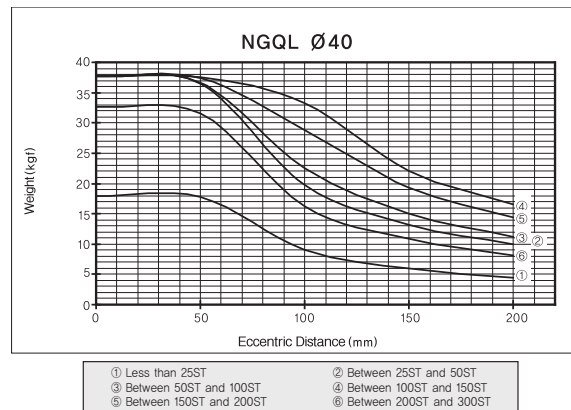
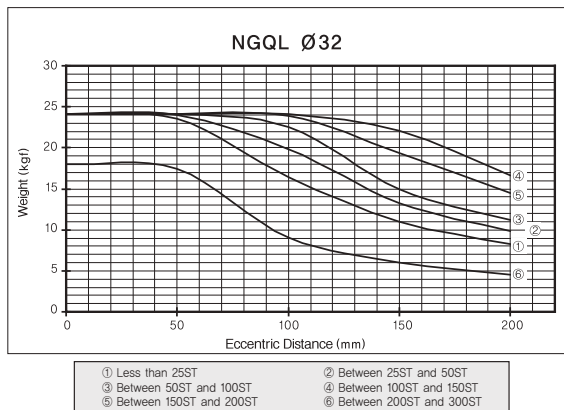
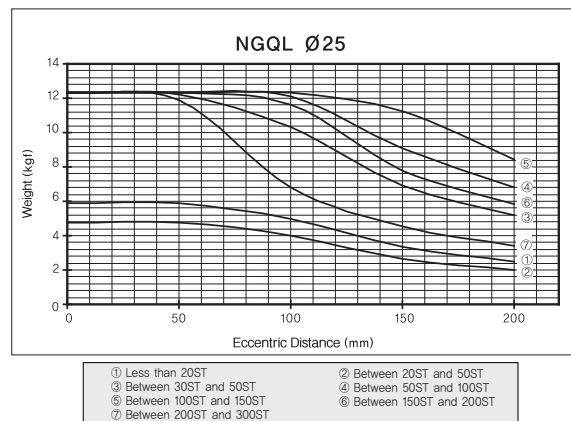
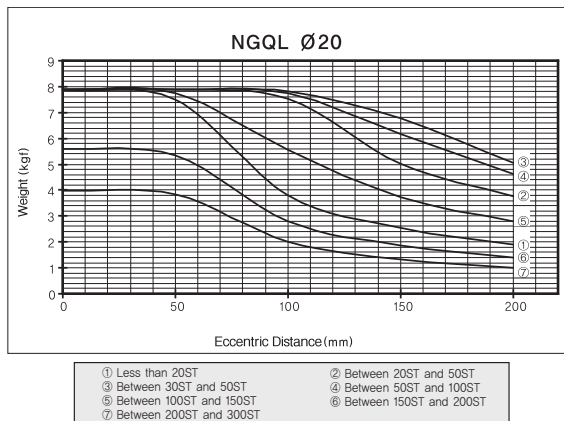
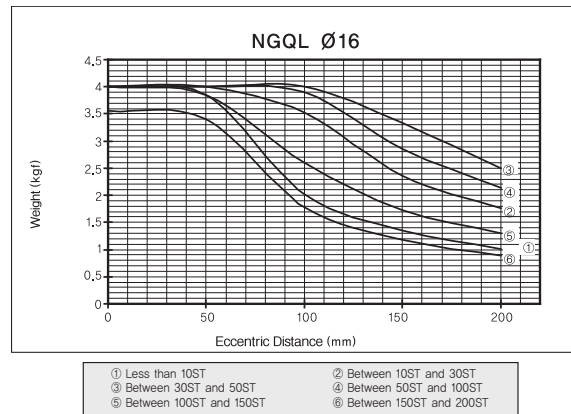
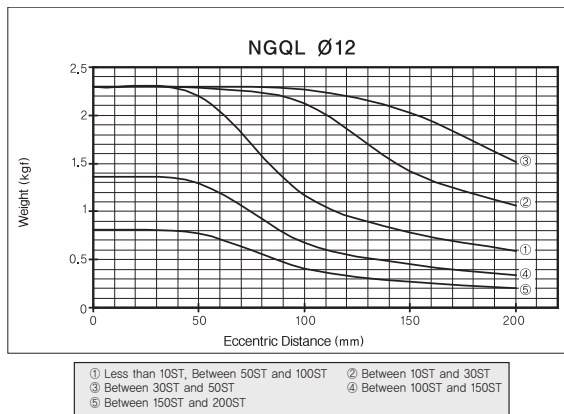
NLCS

Series NGQ



Series NGQ

In Vertical Attachment – NGQL / Ball Bearing



ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQAGX
GX

NP

ADR

AMR

NDM

ARD

NST

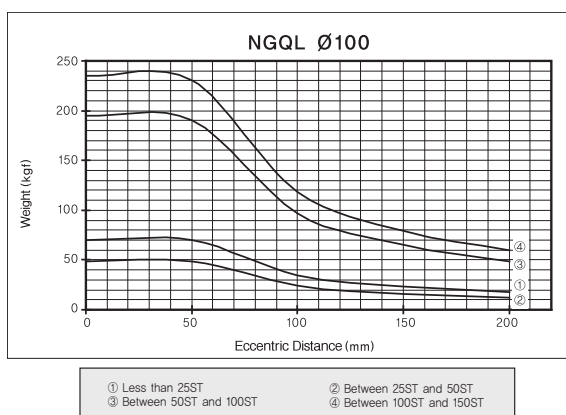
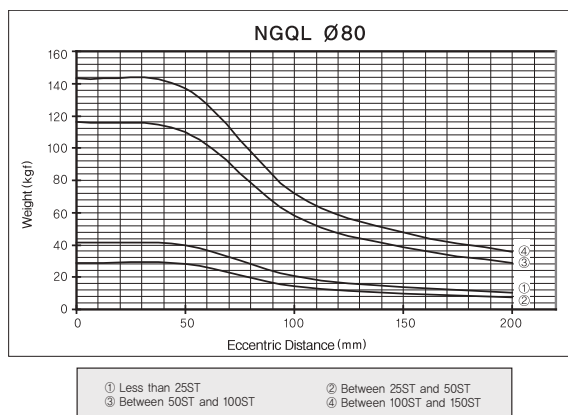
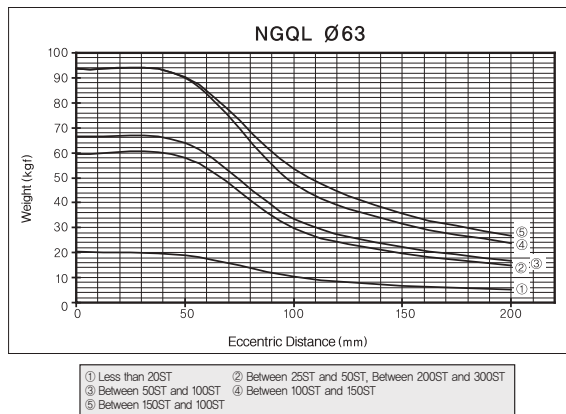
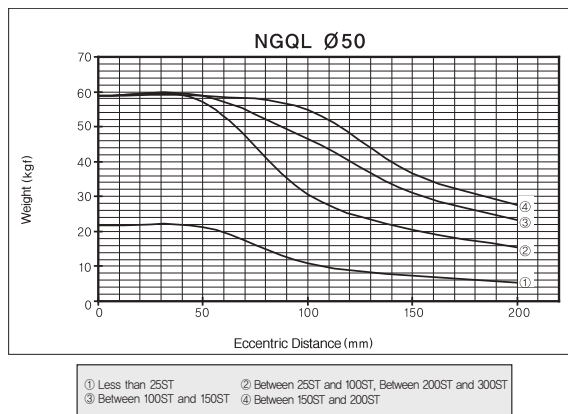
AST

ASTH

NLCD

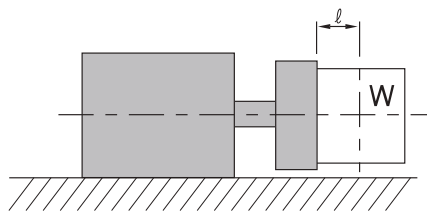
NLCS

Series NGQ



Series NGQ

In Horizontal Attachment – NGQM / Slide Bearing



〈Selected Example〉

1. How to Attach : Horizontal Attachment
2. Applied Bearing : Ball Bearing
3. Max. Cylinder Speed : 250 mm/s
4. Applied Load : 5 kgf
5. Applied Stroke : 75 Stroke
6. Eccentric Distance : 100 mm

※ Selection

1. Select Slide bearing among vertical attached graphs.
2. Select a graph to endure load more than 5kgf
→ NGQM Ø20 ~ Ø100
3. Select a graph matched with 75 stroke and eccentric distance of 100mm and then, select device below the graph's line
→ Select NGQM Ø25 ② and apply 75 stroke.
4. Selected device is NGQL Ø25-75ST

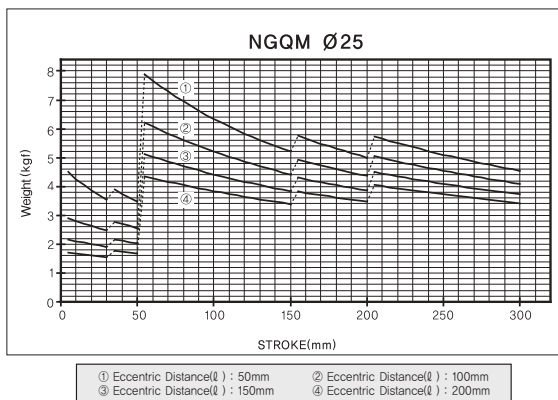
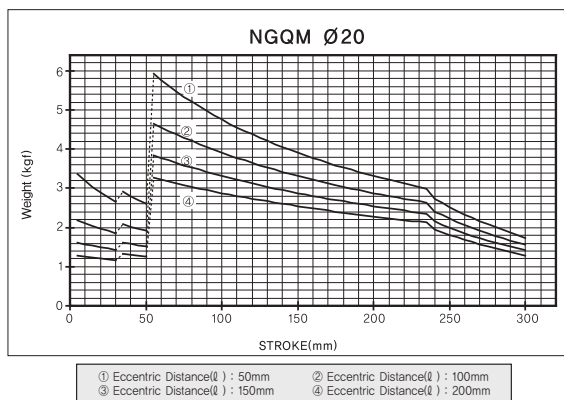
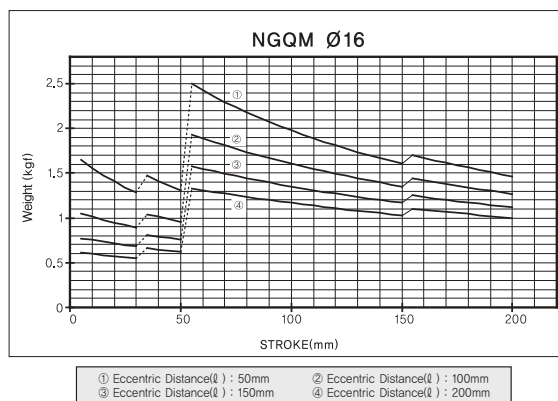
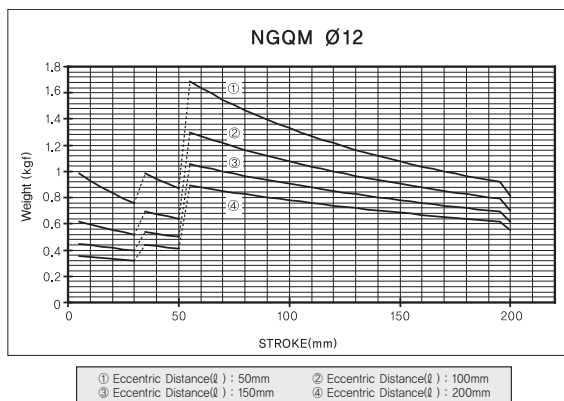
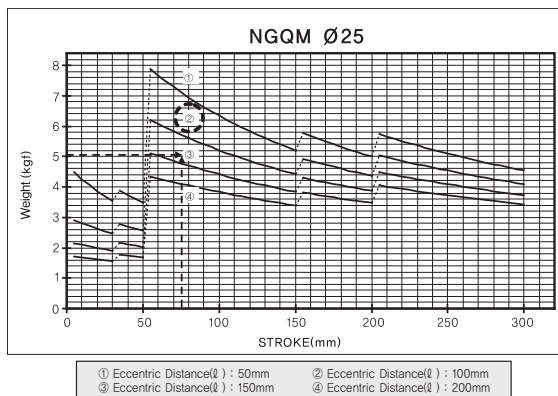
※ Using Condition

Pressure Applied $P = 5 \sim 7 \text{ kgf/cm}^2$
 Cylinder Speed $V \approx 250 \text{ mm/s}$ (50 ~ 300 mm/s)
 Eccentric Distance = l (mm)
 Applied Weight = W (kgf)

Note 1) Used pressure of $5 \sim 7 \text{ kgf/cm}^2$ is recommended.

Note 2) When cylinder speed exceeds 30mm/s

Table 3. Applied Load Ratio



ACP

APM

AS

AX

AM2

AM

AL

ALX

AQ

ADQ

AQ2

ADQ2

AJ

AJM

ABK

ACK1

NSK

AG

NGQ

AGX

GX

NP

ADR

AMR

NDM

ARD

NST

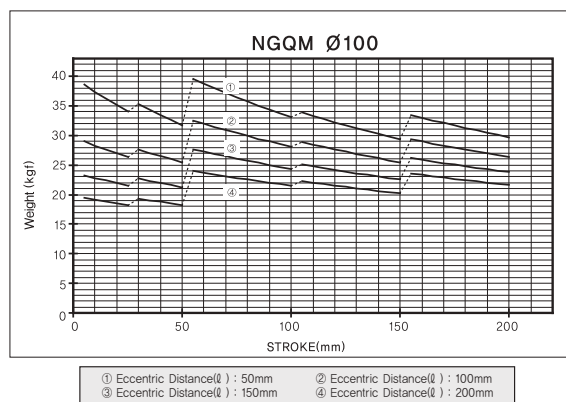
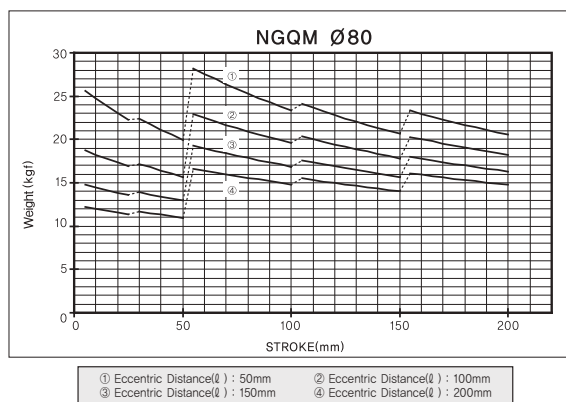
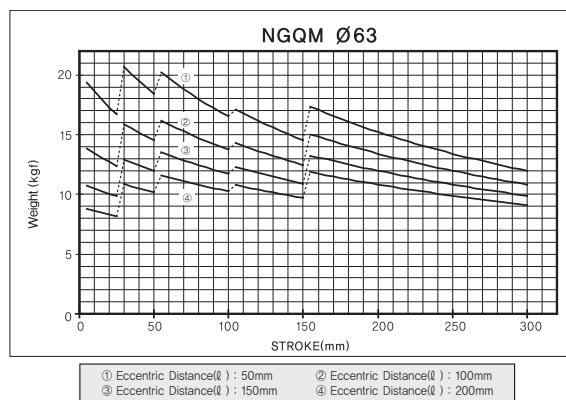
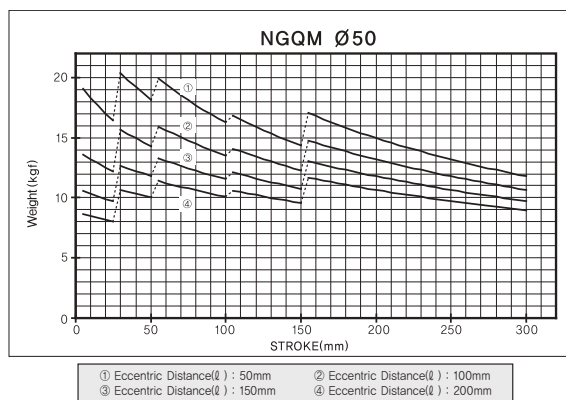
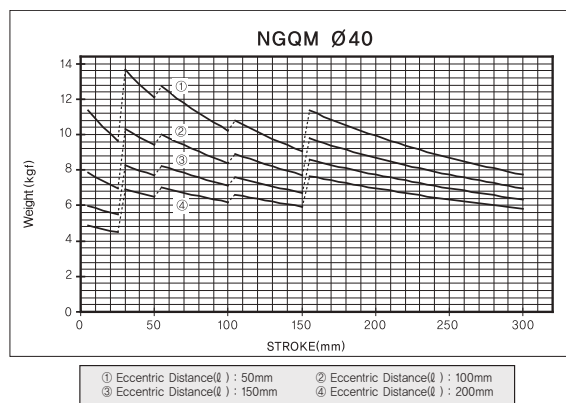
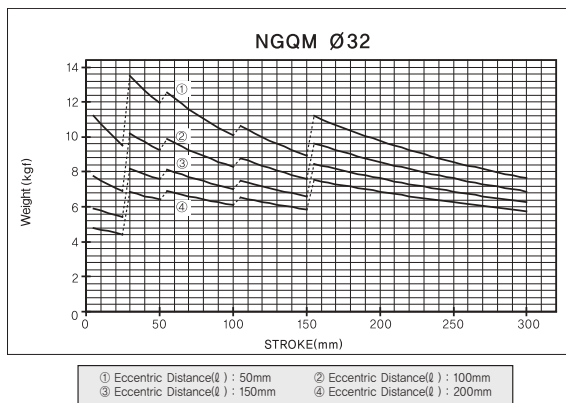
AST

ASTH

NLCD

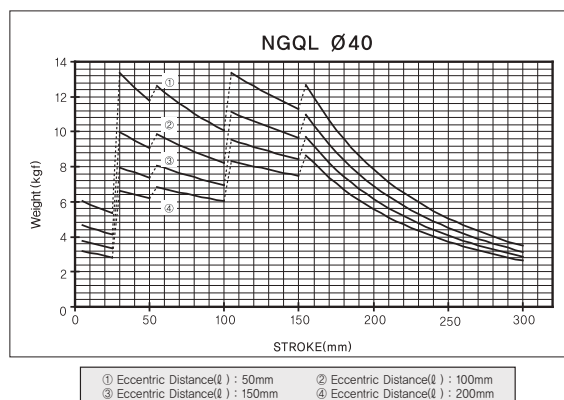
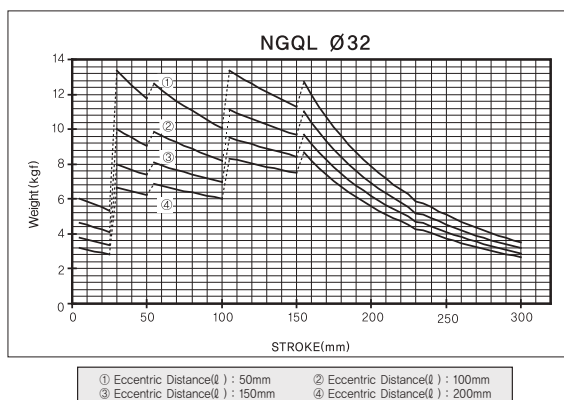
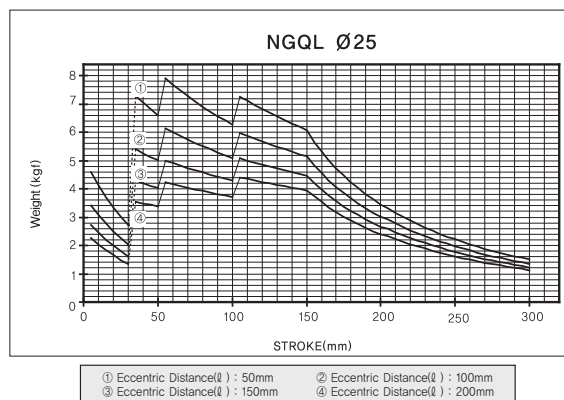
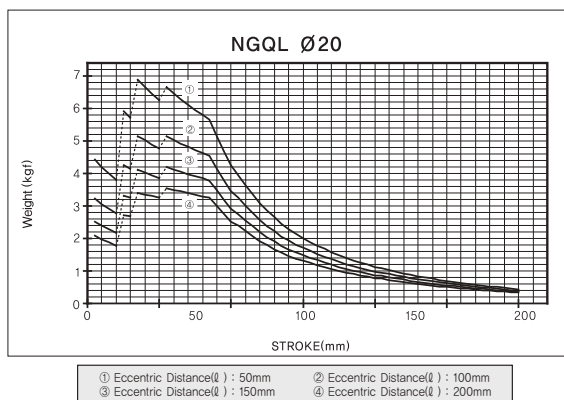
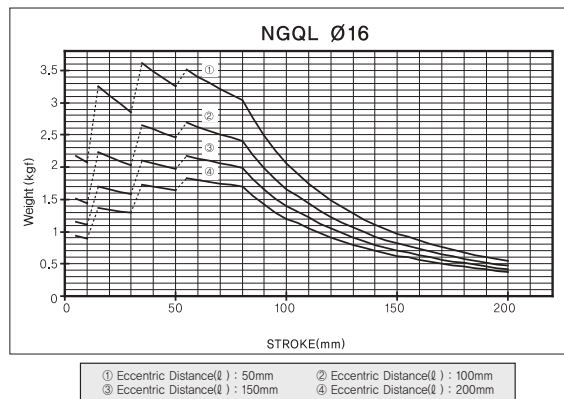
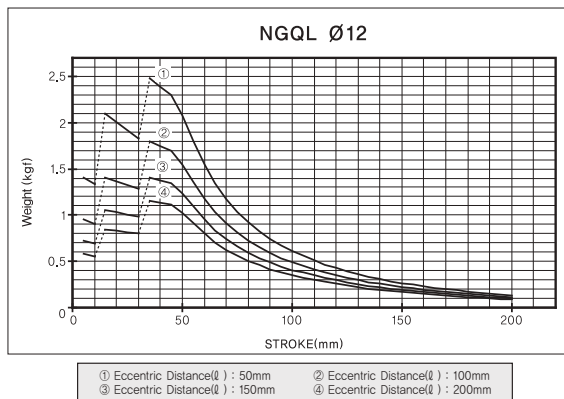
NLCS

Series NGQ



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In Horizontal Attachment – NGQL / Ball Bearing



ACP

APM

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AX

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AM

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ALXAQ
ADQAQ2
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AJM

ABK

ACK1

NSK

AG

NGQAGX
GX

NP

ADR

AMR

NDM

ARD

NST

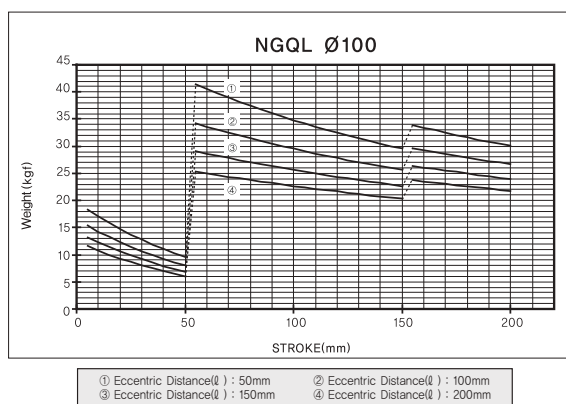
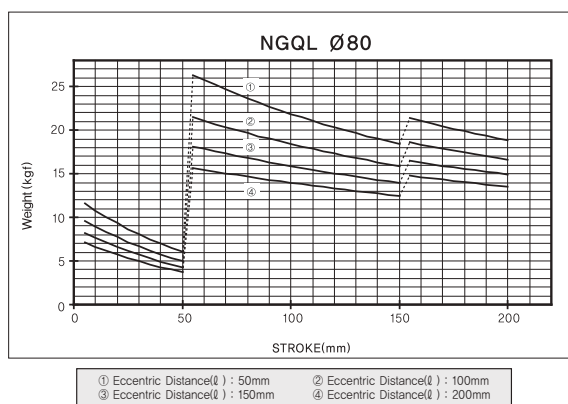
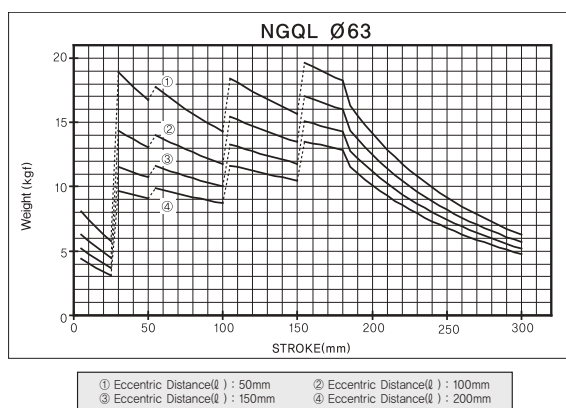
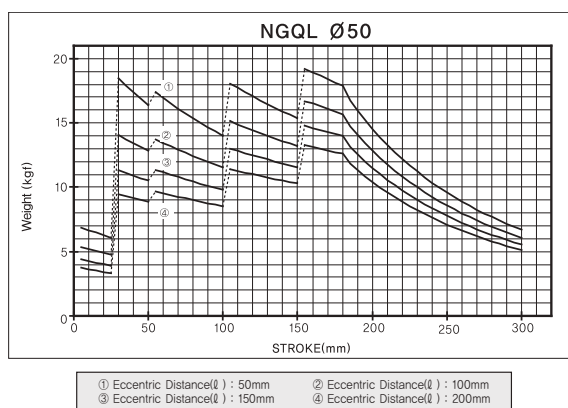
AST

ASTH

NLCD

NLCS

Series NGQ



Applied Load Ratio

Table 3. Applied Load Ratio When Cylinder Speed is Faster Than 300mm/s

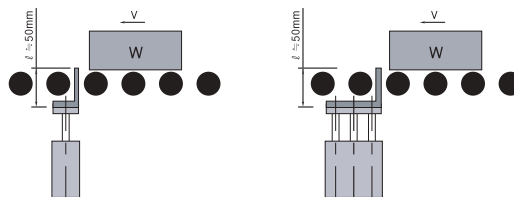
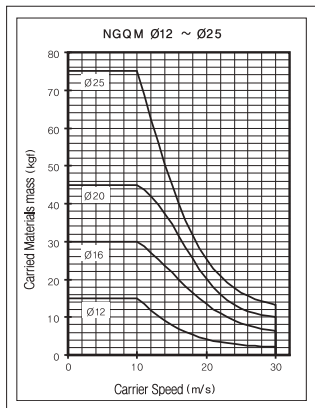
Bore Size	Applied Load Ratio			
	Vertical Attachment		Horizontal Attachment	
	NGQM	NGQL	NGQM	NGQL
Ø12	Lower than 15%	Lower than 20%	Lower than 25%	Lower than 40%
Ø16	Lower than 30%	Lower than 30%	Lower than 40%	Lower than 60%
Ø20	Lower than 20%	Lower than 25%	Lower than 25%	Lower than 50%
Ø25	Lower than 25%	Lower than 25%	Lower than 30%	Lower than 60%
Ø32	Lower than 20%	Lower than 25%	Lower than 30%	Lower than 50%
Ø40	Lower than 25%	Lower than 30%	Lower than 60%	Lower than 80%
Ø50	Lower than 30%	Lower than 30%	—	—
Ø63	Lower than 35%	Lower than 35%	—	—
Ø80	Lower than 30%	Lower than 35%	—	—
Ø100	Lower than 40%	Lower than 40%	—	—

※Recommend that the previous table's selected load is applied to the above table's ratio.

Series NGQ

Load Range When it is Used for Stopper

Bore Size $\varnothing 12 \sim \varnothing 25$ / NGQM12~25(Slide Bearing)

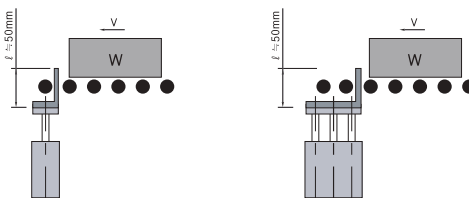
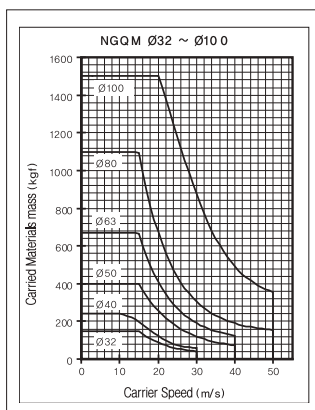


※ When L size is longer, please select right equipment having enough tube internal diameter.

Note 1) When it is used as stopper, please select 30 stroke and lower.

Note 2) NGQL (ball bearing) can be used as stopper.

Bore Size $\varnothing 32 \sim \varnothing 100$ / NGQM32~100(Slide Bearing)



※ When L size is longer, please select right equipment having enough tube internal diameter.

Note 1) When it is used as stopper, please select 50 stroke and lower.

Note 2) NGQL (ball bearing) can be used as stopper.

ACP

APM

AS

AX

AM2

AM

AL
ALXAQ
ADQAQ2
ADQ2AJ
AJM

ABK

ACK1

NSK

AG

NGQAGX
GX

NP

ADR

AMR

NDM

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