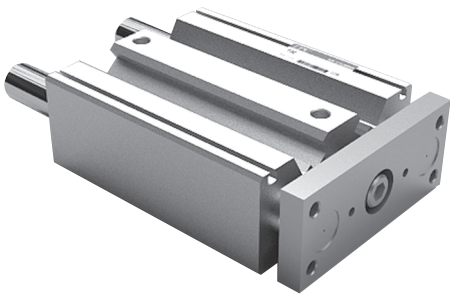


# Series AG

## Compact Guide Cylinder

Bore size(mm) :  $\phi 12(1/2 \text{ Nom.})$ ,  $\phi 16(5/8 \text{ Nom.})$ ,  $\phi 20(3/4 \text{ Nom.})$ ,  $\phi 25(1 \text{ Nom.})$ ,  $\phi 32(1 1/4 \text{ Nom.})$ ,  $\phi 40(1 1/2 \text{ Nom.})$ ,  $\phi 50(2 \text{ Nom.})$ ,  $\phi 63(2 1/2 \text{ Nom.})$ ,  $\phi 80(3 1/4 \text{ Nom.})$ ,  $\phi 100(4 \text{ Nom.})$



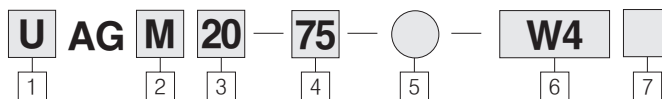
- COMPACT SLIM BODY GUIDE CYLINDER
- 10 BORE SIZES
- MULTIPLE MOUNTING OPTIONS
- FLUSH MOUNTING-AUTO SWITCH
- AVAILABLE WITH BALL BEARING BUSHINGS
- LOW BREAKAWAY
- DESIGNED FOR NON-LUBE APPLICATIONS
- HIGH LOAD BEARING CHARACTERISTICS

Symbol



- 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

### How to Order



**1 Port**

Blank : Rc(PT)  
U : NPT

**2 Type of Bearing**

M : Slide bearing(Suitable for Stopper)  
L : Ball bush bearing (Suitable for Lifting/ Pushing)

**3 Bore Size**

12 :  $\phi 12\text{mm}(1/2 \text{ Nom.})$   
16 :  $\phi 16\text{mm}(5/8 \text{ Nom.})$   
20 :  $\phi 20\text{mm}(3/4 \text{ Nom.})$   
25 :  $\phi 25\text{mm}(1 \text{ Nom.})$   
32 :  $\phi 32\text{mm}(1 1/4 \text{ Nom.})$   
40 :  $\phi 40\text{mm}(1 1/2 \text{ Nom.})$   
50 :  $\phi 50\text{mm}(2 \text{ Nom.})$   
63 :  $\phi 63\text{mm}(2 1/2 \text{ Nom.})$   
80 :  $\phi 80\text{mm}(3 1/4 \text{ Nom.})$   
100 :  $\phi 100\text{mm}(4 \text{ Nom.})$

**4 Cylinder Stroke(mm)**

Refer to Model/Standard Stroke Table.

**Model/Standard Stroke Table**

| Bore Size(mm)                                           | Standard Stroke(mm)         |
|---------------------------------------------------------|-----------------------------|
| $\phi 12, \phi 16$                                      | 10, 20, 30, 40, 50, 75, 100 |
| $\phi 20, \phi 25$                                      | 20, 30, 40, 50, 75, 100     |
| $\phi 32, \phi 40, \phi 50, \phi 63, \phi 80, \phi 100$ | 25, 50, 75, 100, 125, 150   |

**5 Option**

Blank : Standard (Copper-free type is basic for L type of  $\phi 12 \sim \phi 40$ )  
XC16 : Copper-Free (Only L type can be in copper-free type)

• **Intermediate stroke**

As to Intermediate stroke(5, 10, 15, 20, 30, 35...), Spacer of 5, 10, 15, 20mm width will be used.

(Example)AGM50-10 is Produced by installing 15mm spacer in AGM 50-25.

Consult factory when the desired stroke is greater than the standard stroke.

**6 Auto Switch**

Blank : None  
Reed switch

W4 : W4(2 wire DC24V, AC100V)  
( $\phi 32 \sim \phi 100$ )

W13 : W13(z wire, DC24V, AC110V)  
( $\phi 12 \sim \phi 25$ )

Solid State Switch

W1H : W1H(3 wire system, DC24V)  
( $\phi 12 \sim \phi 25$ )

※ The standard, lead wire

length is 0.5m "L" is added for 3m long lead wire (applicable to all models)

(Example) W4L

W2 : ( $\phi 32 \sim \phi 63$ )

**7 Number of Auto Switches**

Blank : 2 pcs

S : 1 pc

N : N pcs

# Series AG

## Part No. of Auto Switch

| Type | Mounting Parts | Bore Size |
|------|----------------|-----------|
| W4   | BQ-4           | 32, 40    |
|      | BQ-4           | 50, 63    |
| W2P  | BQ-2           | 80, 100   |
|      | TGQ-32         | 32~63     |

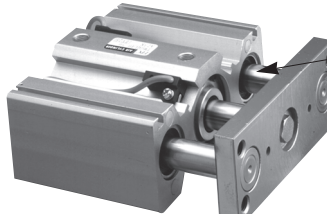
## Specifications

|                               |                                            |
|-------------------------------|--------------------------------------------|
| Operation                     | Double Acting                              |
| Fluid                         | Air                                        |
| Proof pressure                | 1.5MPa(217psi)                             |
| Max. operating pressure       | 1.0MPa(140psi)                             |
| Min. operating pressure       | Ø12, 16 : 0.12MPa{1.2kgf/cm <sup>2</sup> } |
|                               | Ø25~100 : 0.1MPa{1.0kgf/cm <sup>2</sup> }  |
| Ambient and fluid temperature | -10~+60°C(14°F~140°F)                      |
| Piston speed                  | 50~500mm/s                                 |
| Cushion                       | Rubber Cushion at Both Sides               |
| Lubrication                   | Non-Lubrication                            |
| Stroke tolerance              | $^{+1.5}_0$ mm                             |

## Packing List / Exchangeing Parts

| Part Name         | Material | Part Number |         |            |         |                  |                  |                  |                  |                  |                  |
|-------------------|----------|-------------|---------|------------|---------|------------------|------------------|------------------|------------------|------------------|------------------|
|                   |          | φ 12        | φ 16    | φ 20       | φ 25    | φ 32             | φ 40             | φ 50             | φ 63             | φ 80             | φ 100            |
| Piston Packing    | NBR      | TPSA-12     | TPSA-16 | TPSA-20    | TPSA-25 | TPSA-32          | TPSA-40          | TPSA-50          | TPSA-63          | TPSA-80          | TPSA-100         |
| Rod Packing       | NBR      | DRY-6       | DRY-8   | DRY-10SK-K | DRT-12  | DRY-16           | PDU-16Z          | PDU-20Z          | PDU-20Z          | PDU-25Z          | PDU-30Z          |
| Gasket            | NBR      | C-10        | C-14    | C-18       | C-23    | C-29             | C-36             | C-46             | C-60             | C-75             | C-95             |
| Head Cover Gasket | NBR      | -           | -       | -          | -       | TMGQM032-18-1586 | TMGQM040-18-1587 | TMGQM050-18-1588 | TMGQM063-18-1589 | TMGQM080-18-1794 | TMGQM100-18-1796 |

● Space saving cylinder.  
Provides Non-Rotating support for side loads. Suitable for conveyor lines where stopping and lifting are required.



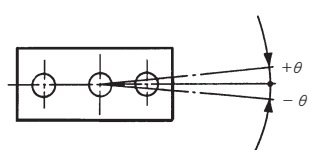
● 2 kinds of bearing

**Slide Bearing -**  
Strength against side load is more than 2 times that of conventional stopper cylinders.

**Ball Bushing Bearing -**  
Smooth operation suitable for pushing, lifting and applications where high precision is required.

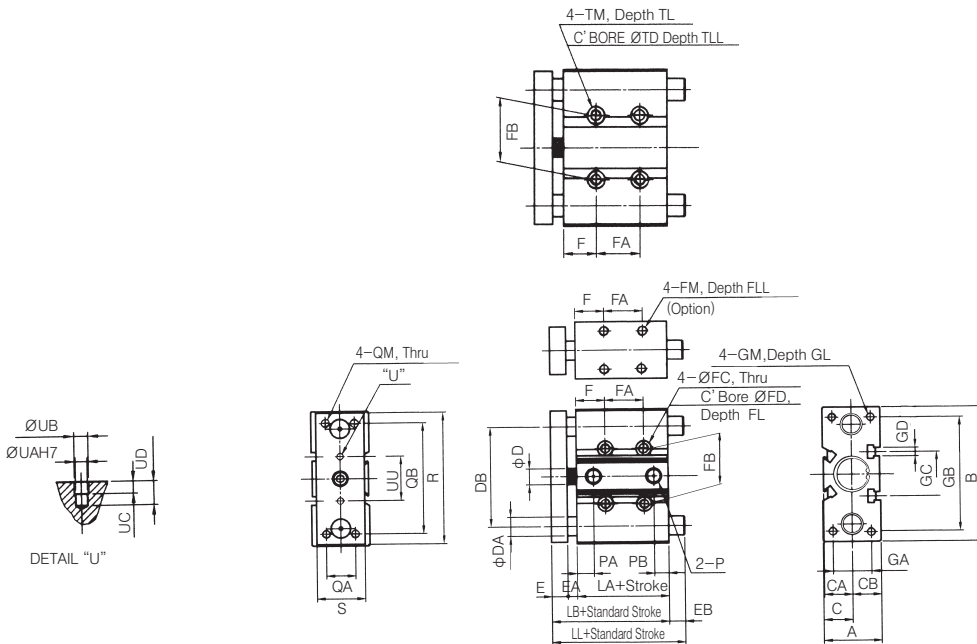
● High Non - Rotating Load Capability

| Bore size | Non-Rotating Accuracy $\theta$ |                  |
|-----------|--------------------------------|------------------|
|           | AGM                            | AGL              |
| φ 12      | $\pm 0.07^\circ$               | $\pm 0.10^\circ$ |
| φ 16      | $\pm 0.06^\circ$               | $\pm 0.09^\circ$ |
| φ 20      | $\pm 0.06^\circ$               | $\pm 0.08^\circ$ |
| φ 25      | $\pm 0.05^\circ$               | $\pm 0.06^\circ$ |
| φ 32      | $\pm 0.04^\circ$               | $\pm 0.05^\circ$ |
| φ 40      | $\pm 0.04^\circ$               | $\pm 0.05^\circ$ |
| φ 50      | $\pm 0.04^\circ$               | $\pm 0.05^\circ$ |
| φ 63      | $\pm 0.04^\circ$               | $\pm 0.05^\circ$ |
| φ 80      | $\pm 0.04^\circ$               | $\pm 0.05^\circ$ |
| φ 100     | $\pm 0.04^\circ$               | $\pm 0.05^\circ$ |



# Series AG

## Ø12~Ø25 / AGM · AGL



※ As to intermediate stroke, spacer will be used.

### AGM · AGL Common Dimensions

(Units : mm)

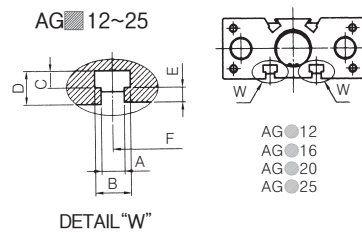
| Bore Size (mm) | A  | B  | C  | CA   | CB | D  | DA  |     | DB | E  | EA | EB        |                 |            |      |      |      | F  | FA        |            | FB | FC | FD | FL  | FH  | FM   | FLL | GA     | GB | GC | GD | GM | GL | LA     | LB |         |            |
|----------------|----|----|----|------|----|----|-----|-----|----|----|----|-----------|-----------------|------------|------|------|------|----|-----------|------------|----|----|----|-----|-----|------|-----|--------|----|----|----|----|----|--------|----|---------|------------|
|                |    |    |    |      |    |    | AGM | AGL |    |    |    | AGM       |                 |            | AGL  |      |      |    | 30st Less | 30st Above |    |    |    |     |     |      |     |        |    |    |    |    |    |        |    |         |            |
|                |    |    |    |      |    |    |     |     |    |    |    | 30st less | 30-40st Between | 50st Above | 10st | 20st | 30st |    |           |            |    |    |    |     |     |      |     |        |    |    |    |    |    |        |    | 40-50st | 50st Above |
| Ø12            | 26 | 60 | 13 | 12.5 | 13 | 6  | 8   | 6   | 46 | 8  | 5  | 0         | 5               | 34         | 3    | 13   | 13   | 23 | 28        | 7          | 20 | 40 | 25 | 4.3 | 8   | 13.5 | 18  | M5×0.8 | 12 | 18 | 50 | 23 | M3 | M4×0.7 | 10 | 29      | 42         |
| Ø16            | 30 | 67 | 15 | 14.5 | 15 | 8  | 10  | 8   | 50 | 8  | 5  | 0         | 5               | 34         | 5    | 20   | 20   | 30 | 35        | 7          | 24 | 44 | 27 | 4.3 | 8   | 12.5 | 22  | M5×0.8 | 12 | 22 | 56 | 24 | M3 | M5×0.8 | 12 | 33      | 46         |
| Ø20            | 36 | 85 | 18 | 17.5 | 18 | 10 | 12  | 10  | 58 | 10 | 6  | 3         | 5               | 47         | -    | 12   | 25   | 35 | 42        | 18         | 24 | 44 | 31 | 5.5 | 9.5 | 13.5 | 24  | M5×0.8 | 13 | 24 | 72 | 28 | M5 | M5×0.8 | 13 | 37      | 53         |
| Ø25            | 42 | 95 | 21 | 20.5 | 21 | 12 | 16  | 13  | 68 | 10 | 6  | 3         | 5               | 47         | -    | 18   | 18   | 37 | 48        | 18         | 24 | 44 | 35 | 5.5 | 9.5 | 14.5 | 30  | M6×1.0 | 15 | 30 | 82 | 34 | M5 | M6×1.0 | 15 | 37.5    | 53.5       |

| Bore Size (mm) | LL        |              |            |      |      | P    | PA   | PB    | QA     | QB   | QM  | R  | S  | TM     | TL | TD | TLL    | UU   | UA | UB  | UC | UD |      |         |            |
|----------------|-----------|--------------|------------|------|------|------|------|-------|--------|------|-----|----|----|--------|----|----|--------|------|----|-----|----|----|------|---------|------------|
|                | AGM       |              | AGL        |      |      |      |      |       |        |      |     |    |    |        |    |    |        |      |    |     |    |    |      |         |            |
|                | 30st less | 40st Between | 50st Above | 10st | 20st |      |      |       |        |      |     |    |    |        |    |    |        |      |    |     |    |    | 30st | 40-50st | 50st Above |
| Ø12            | 42        | 47           | 76         | 45   | 55   | 55   | 65   | 70    | M5×0.8 | 11   | 8.5 | 14 | 48 | M4×0.7 | 58 | 22 | M5×0.8 | Thru | 6  | 4.3 | 23 | 3  | 3.5  | 3       | 6          |
| Ø16            | 46        | 51           | 80         | 51   | 66   | 66   | 76   | 81    | M5×0.8 | 11   | 8   | 16 | 54 | M5×0.8 | 65 | 25 | M5×0.8 | 10   | 6  | 4.3 | 24 | 3  | 3.5  | 3       | 6          |
| Ø20            | 56        | 58           | 100        | -    | 65   | 78   | 88   | 95    | Rc1/8  | 10.5 | 9   | 18 | 70 | M5×0.8 | 83 | 30 | M6×1.0 | 12   | 7  | 8   | 28 | 3  | 3.5  | 3       | 6          |
| Ø25            | 56.5      | 58.5         | 100.5      | -    | 71.5 | 71.5 | 90.5 | 101.5 | Rc1/8  | 11.5 | 9.5 | 26 | 78 | M6×1.0 | 93 | 38 | M6×1.0 | 12   | 7  | 8   | 34 | 4  | 4.5  | 3       | 6          |

### Grooves(Ø12, Ø16, Ø20, Ø25)

These grooves(W) can be used to firmly fix the terminal boards, etc to the main body of the cylinder.

| Model | (Unit : mm) |     |     |     |     |    | Applicable Bolt |
|-------|-------------|-----|-----|-----|-----|----|-----------------|
|       | A           | B   | C   | D   | E   | F  |                 |
| AG□12 | 3.5         | 6   | 2   | 4.3 | 1.5 | 23 | M3              |
| AG□16 | 3.7         | 6.2 | 2   | 4.6 | 1.5 | 24 | M3              |
| AG□20 | 5.5         | 8.5 | 3.5 | 7.8 | 3   | 28 | M5              |
| AG□25 | 5.5         | 8.5 | 3.5 | 8   | 3   | 34 | M5              |



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

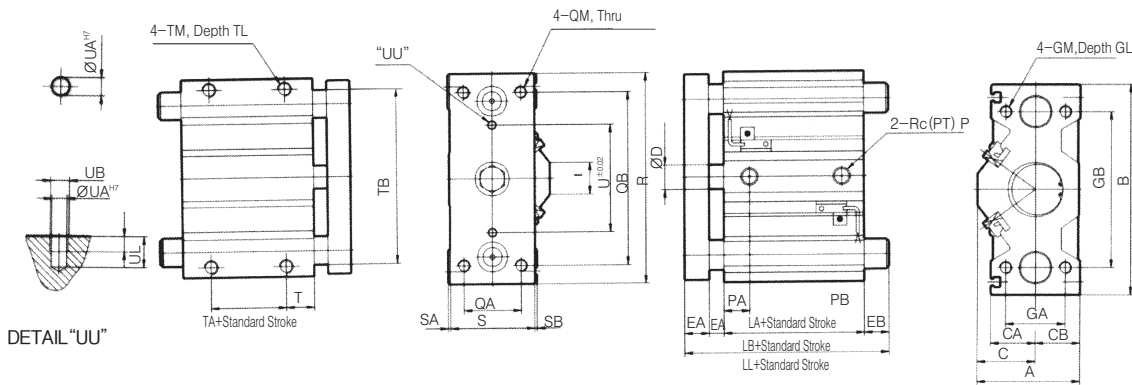
ASTH

NLCD

NLCS

# Series AG

## Ø32~Ø63 / AGM · AGL



\* As to intermediate stroke, spacer will be used.

### AGM · AGL Common Dimensions

(Unit : mm)

| Bore Size (mm) | Standard Stroke (mm) | A  | B   | C    | CA | CB   | D  | DA  |     | E  | EA | EB   |      |      |       |       |       |      |      |      |       | GA   | GB   | GL | GM  | I  | LA      | LB |       |       |
|----------------|----------------------|----|-----|------|----|------|----|-----|-----|----|----|------|------|------|-------|-------|-------|------|------|------|-------|------|------|----|-----|----|---------|----|-------|-------|
|                |                      |    |     |      |    |      |    | AGM | AGL |    |    | AGM  |      |      |       |       | AGL   |      |      |      |       |      |      |    |     |    |         |    |       |       |
|                |                      |    |     |      |    |      |    |     |     |    |    | 25ST | 50ST | 75ST | 100ST | 125ST | 150ST | 25ST | 50ST | 75ST | 100ST |      |      |    |     |    |         |    | 125ST | 150ST |
| Ø32            | 25, 50               | 53 | 114 | 27   | 25 | 26   | 16 | 20  | 16  | 12 | 10 | 23.2 | 41.2 | 46.2 | 46.2  | 51.2  | 51.2  | 4.4  | 41.4 | 46.4 | 46.4  | 66.4 | 66.4 | 38 | 80  | 20 | M8×1.25 | 22 | 37.5  | 59.5  |
| Ø40            | 75, 100              | 57 | 124 | 31   | 25 | 26   | 16 | 20  | 16  | 12 | 10 | 16.7 | 34.7 | 39.7 | 39.7  | 44.7  | 44.7  | 0    | 34.9 | 39.9 | 39.9  | 59.9 | 59.9 | 38 | 90  | 20 | M8×1.25 | 22 | 44    | 66    |
| Ø50            | 125, 150             | 69 | 140 | 39   | 29 | 30   | 20 | 25  | 20  | 16 | 12 | 27.7 | 39.7 | 49.7 | 49.7  | 54.7  | 54.7  | 2.9  | 44.9 | 49.9 | 49.9  | 69.9 | 69.9 | 44 | 100 | 25 | M10×1.5 | 22 | 44    | 72    |
| Ø63            |                      | 82 | 150 | 45.5 | 29 | 36.5 | 20 | 25  | 20  | 16 | 12 | 22.7 | 34.7 | 44.7 | 44.7  | 49.7  | 49.7  | 0    | 39.9 | 44.9 | 44.9  | 64.9 | 64.9 | 44 | 110 | 25 | M10×1.5 | 31 | 49    | 77    |

| Bore Size (mm) | LL   |       |       |       |       |       |      |       |       |       |       |       |      |      | P    | PA | PB  | QA      | QB  | QM | R | S | SA | SB | T   | TA   | TB      | TL | TM | UU  | UA | UB | UC | UL |
|----------------|------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|------|------|----|-----|---------|-----|----|---|---|----|----|-----|------|---------|----|----|-----|----|----|----|----|
|                | AGM  |       |       |       |       |       |      | AGL   |       |       |       |       |      |      |      |    |     |         |     |    |   |   |    |    |     |      |         |    |    |     |    |    |    |    |
|                | 25ST | 50ST  | 75ST  | 100ST | 125ST | 150ST | 25ST | 50ST  | 75ST  | 100ST | 125ST | 150ST | 25ST | 50ST |      |    |     |         |     |    |   |   |    |    |     |      |         |    |    |     |    |    |    |    |
| Ø32            | 82.7 | 100.7 | 105.7 | 105.7 | 110.7 | 63.9  | 63.9 | 100.9 | 105.9 | 105.9 | 125.9 | 125.9 | 1/8  | 12.5 | 9    | 30 | 96  | M8×1.25 | 112 | 48 | 2 | 1 | 16 | 5  | 100 | 11   | M8×1.25 | 42 | 4  | 4.5 | 3  | 6  |    |    |
| Ø40            | 82.7 | 100.7 | 105.7 | 105.7 | 110.7 | 63.9  | 63.9 | 100.9 | 105.9 | 105.9 | 125.9 | 125.9 | 1/8  | 14   | 10.5 | 30 | 106 | M8×1.25 | 122 | 48 | 2 | 1 | 17 | 10 | 110 | 11   | M8×1.25 | 50 | 4  | 4.5 | 3  | 6  |    |    |
| Ø50            | 99.7 | 111.7 | 121.7 | 121.7 | 126.7 | 74.9  | 74.9 | 116.9 | 121.9 | 121.9 | 141.9 | 141.9 | 1/4  | 14   | 11   | 40 | 120 | M10×1.5 | 138 | 56 | 2 | 1 | 17 | 10 | 124 | 12.5 | M10×1.5 | 56 | 5  | 6   | 4  | 8  |    |    |
| Ø63            | 99.7 | 111.7 | 121.7 | 121.7 | 126.7 | 74.9  | 74.9 | 116.9 | 121.9 | 121.9 | 141.9 | 141.9 | 1/4  | 16.5 | 13.5 | 50 | 130 | M10×1.5 | 148 | 69 | 2 | 0 | 19 | 10 | 132 | 15   | M10×1.5 | 66 | 5  | 6   | 4  | 8  |    |    |

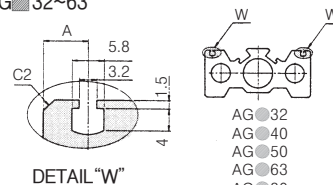
### Grooves (Ø32, Ø40, Ø50, Ø63, Ø80, Ø100)

These grooves can be used to firmly fix the bands of lead wires of the auto switch, and also terminal boards, etc. to the main body of the cylinder.

(Unit : mm)

| Model  | A  |
|--------|----|
| AG□32  | 8  |
| AG□40  | 8  |
| AG□50  | 8  |
| AG□63  | 8  |
| AG□80  | 10 |
| AG□100 | 10 |

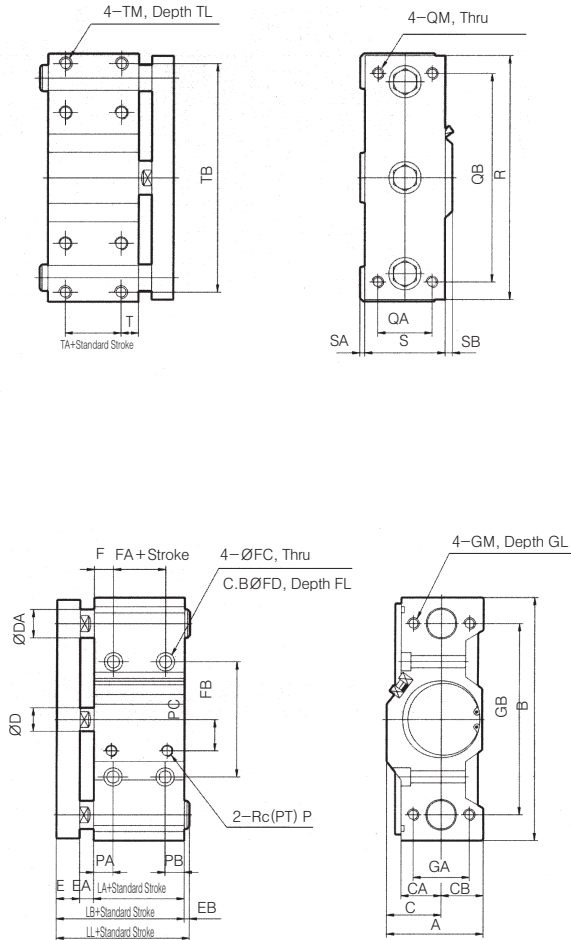
#### AG□32~63



- AG □32
- AG □40
- AG □50
- AG □63
- AG □80
- AG □100

# Series AG

## Ø80~Ø100 / AGM · AGL



※ As to intermediate stroke, spacer will be used.

### AGM · AGL Common Dimensions

(Unit : mm)

| Bore Size (mm) | Standard Stroke (mm) | A     | B   | C  | CA   | CB   | D  | DA  |     | E  | EA | EB   |      |          |           |         |                  | F    | FA   | FB  | FC | FD   | FL | GA | GB  | GL |
|----------------|----------------------|-------|-----|----|------|------|----|-----|-----|----|----|------|------|----------|-----------|---------|------------------|------|------|-----|----|------|----|----|-----|----|
|                |                      |       |     |    |      |      |    | AGM | AGL |    |    | AGM  |      |          | AGL       |         |                  |      |      |     |    |      |    |    |     |    |
|                |                      |       |     |    |      |      |    |     |     |    |    | 25ST | 50ST | 75,100ST | 125,150ST | 25,50ST | 75,100,125,150ST |      |      |     |    |      |    |    |     |    |
| Ø80            | 25,50,75             | 96.5  | 204 | 50 | 38.5 | 46.5 | 25 | 30  | 25  | 22 | 18 | 23.3 | 25.3 | 53.3     | 58.3      | 8.5     | 72.5             | 20.5 | 15.5 | 100 | 11 | 17.5 | 11 | 56 | 155 | 30 |
| Ø100           | 100,125,150          | 114.5 | 238 | 58 | 41   | 56.5 | 30 | 36  | 30  | 25 | 20 | 18.8 | 23.8 | 48.8     | 53.8      | 4.0     | 73.0             | 20.5 | 25   | 120 | 13 | 20   | 13 | 62 | 184 | 35 |

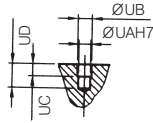
  

| Bore Size (mm) | GM       | LA   | LB   | LL    |       |          |           |         |                  |     |      | P    | PA | PB | PC  | QA       | QB  | QM | R   | S    | SA   | SB   | T   | TA | TB       | TL | TM |
|----------------|----------|------|------|-------|-------|----------|-----------|---------|------------------|-----|------|------|----|----|-----|----------|-----|----|-----|------|------|------|-----|----|----------|----|----|
|                |          |      |      | AGM   |       |          |           | AGL     |                  |     |      |      |    |    |     |          |     |    |     |      |      |      |     |    |          |    |    |
|                |          |      |      | 25ST  | 50ST  | 75,100ST | 125,150ST | 25,50ST | 75,100,125,150ST |     |      |      |    |    |     |          |     |    |     |      |      |      |     |    |          |    |    |
| Ø80            | M12×1.75 | 56.5 | 96.5 | 119.8 | 121.8 | 149.8    | 154.8     | 105     | 169              | 3/8 | 19   | 15.2 | 28 | 60 | 174 | M12×1.75 | 198 | 80 | 6.5 | 10   | 20.5 | 15.5 | 182 | 18 | M12×1.75 |    |    |
| Ø100           | M14×2    | 66   | 111  | 129.8 | 134.8 | 159.8    | 164.8     | 115     | 184              | 3/8 | 22.5 | 18.8 | 35 | 64 | 200 | M14×2    | 231 | 95 | 9   | 10.5 | 20.5 | 25   | 211 | 21 | M14×2    |    |    |

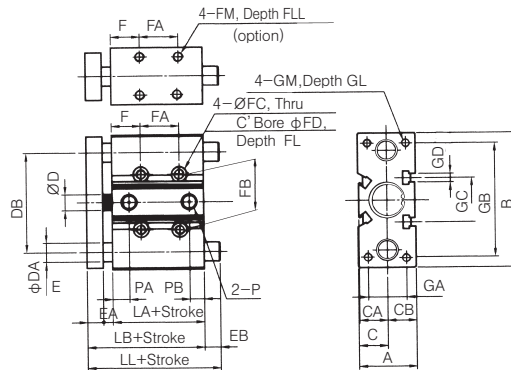
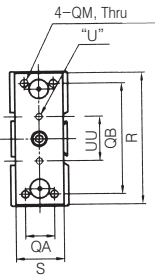
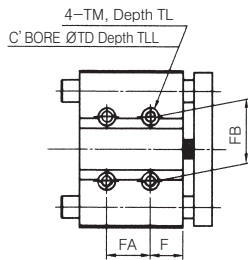
- ACP
- APM
- AS
- AX
- AM2
- AM
- AL
- ALX
- AQ
- ADQ
- AQ2
- ADQ2
- AJ
- AJM
- ABK
- ACK1
- NSK
- AG**
- NGQ
- AGX
- GX
- NP
- ADR
- AMR
- NDM
- ARD
- NST
- AST
- ASTH
- NLCD
- NLCS

# Series AG

## Ø12(0.47)~Ø25(0.98)/UAGM · UAGL (inch)



DETAIL "U"



### UAGM · UAGL Common Dimensions

※ As to intermediate stroke, spacer will be used. (inch)

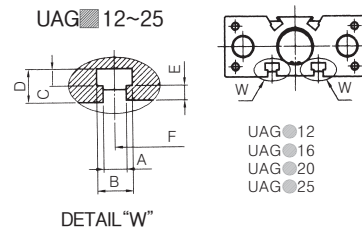
| Bore mm (inch) | A    | B    | C    | CA   | CB   | D    | DA   |      | DB   | E    | EA   | EB   |         |      |      |      |      |         |      | F    | FA   |       | FB   | FC   | FD   | FL   | FH   | FM     | FLL  | GA   | GB   | GC   | GD | GM     | GL   | LA   | LB   |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|---------|------|------|------|------|---------|------|------|------|-------|------|------|------|------|------|--------|------|------|------|------|----|--------|------|------|------|
|                |      |      |      |      |      |      | UAGM | UAGL |      |      |      | UAGM |         |      |      | UAGL |      |         |      |      | Less | Above |      |      |      |      |      |        |      |      |      |      |    |        |      |      |      |
|                |      |      |      |      |      |      |      |      |      |      |      | 30ST | 40-50ST | 50ST | 10ST | 20ST | 30ST | 40-50ST | 50ST |      |      |       |      |      |      |      |      |        |      |      |      |      |    |        |      |      |      |
| Ø12(1/2 Nom.)  | 1.02 | 2.36 | 0.51 | 0.49 | 0.51 | 0.24 | 0.32 | 0.24 | 1.81 | 0.32 | 0.20 | 0    | 0.20    | 1.34 | 0.12 | 0.51 | 0.51 | 0.91    | 1.10 | 0.28 | 0.79 | 1.58  | 0.98 | 0.17 | 0.32 | 0.53 | 0.71 | M5×0.8 | 0.47 | 0.71 | 1.97 | 0.91 | M3 | M4×0.7 | 0.39 | 1.14 | 1.65 |
| Ø16(5/8 Nom.)  | 1.18 | 2.64 | 0.59 | 0.57 | 0.59 | 0.32 | 0.39 | 0.32 | 1.97 | 0.32 | 0.20 | 0    | 0.20    | 1.34 | 0.20 | 0.79 | 0.79 | 1.18    | 1.38 | 0.28 | 0.95 | 1.73  | 1.06 | 0.17 | 0.32 | 0.49 | 0.87 | M5×0.8 | 0.47 | 0.87 | 2.21 | 0.95 | M3 | M5×0.8 | 0.47 | 1.30 | 1.81 |
| Ø20(3/4 Nom.)  | 1.42 | 3.35 | 0.71 | 0.69 | 0.71 | 0.39 | 0.47 | 0.39 | 2.28 | 0.39 | 0.24 | 0.12 | 0.20    | 1.85 | -    | 0.47 | 0.98 | 1.38    | 1.65 | 0.71 | 0.95 | 1.73  | 1.22 | 0.22 | 0.37 | 0.53 | 0.95 | M5×0.8 | 0.51 | 0.95 | 2.84 | 1.10 | M5 | M5×0.8 | 0.51 | 1.46 | 2.09 |
| Ø25(1 Nom.)    | 1.65 | 3.74 | 0.83 | 0.81 | 0.83 | 0.47 | 0.63 | 0.51 | 2.68 | 0.39 | 0.24 | 0.12 | 0.20    | 1.85 | -    | 0.71 | 0.71 | 1.46    | 1.89 | 0.71 | 0.95 | 1.73  | 1.38 | 0.22 | 0.37 | 0.57 | 1.18 | M6×1.0 | 0.59 | 1.18 | 3.23 | 1.34 | M5 | M6×1.0 | 0.59 | 1.48 | 2.11 |

| Bore mm (inch) | LL        |              |            |      |      |      |          |      |      |      |      |      |        |      |      |        |         |      | PA   | PB   | QA   | QB   | QM   | R    | S | TM | TL | TD | TLL | UU | UA       | UB | UC | UD | P |
|----------------|-----------|--------------|------------|------|------|------|----------|------|------|------|------|------|--------|------|------|--------|---------|------|------|------|------|------|------|------|---|----|----|----|-----|----|----------|----|----|----|---|
|                | UAGM      |              |            |      |      |      | UAGL     |      |      |      |      |      |        |      |      |        |         |      |      |      |      |      |      |      |   |    |    |    |     |    |          |    |    |    |   |
|                | 30ST Less | 40ST Between | 50ST Above | 10ST | 20ST | 30ST | 40-50 ST | 50ST |      |      |      |      |        |      |      |        |         |      |      |      |      |      |      |      |   |    |    |    |     |    |          |    |    |    |   |
| Ø12(1/2 Nom.)  | 1.65      | 1.85         | 2.99       | 1.77 | 2.17 | 2.17 | 2.56     | 2.76 | 0.43 | 0.33 | 0.55 | 1.89 | M4×0.7 | 2.28 | 0.87 | M5×0.8 | Through | 0.24 | 0.17 | 0.91 | 0.12 | 0.14 | 0.12 | 0.24 |   |    |    |    |     |    | 10-32UNF |    |    |    |   |
| Ø16(5/8 Nom.)  | 1.81      | 2.13         | 3.15       | 2.00 | 2.60 | 2.60 | 2.99     | 3.19 | 0.43 | 0.32 | 0.63 | 2.13 | M5×0.8 | 2.56 | 0.98 | M5×0.8 | 0.39    | 0.24 | 0.17 | 0.95 | 0.12 | 0.14 | 0.12 | 0.24 |   |    |    |    |     |    | 10-32UNF |    |    |    |   |
| Ø20(3/4 Nom.)  | 2.09      | 2.28         | 3.94       | -    | 2.56 | 3.07 | 3.46     | 3.74 | 0.41 | 0.35 | 0.71 | 2.76 | M5×0.8 | 3.27 | 1.18 | M6×1.0 | 0.47    | 0.28 | 0.32 | 1.10 | 0.12 | 0.14 | 0.12 | 0.24 |   |    |    |    |     |    | NPT1/8   |    |    |    |   |
| Ø25(1 Nom.)    | 2.22      | 2.30         | 3.96       | -    | 2.81 | 2.81 | 3.56     | 4.0  | 0.45 | 0.37 | 1.02 | 3.07 | M6×1.0 | 3.66 | 1.50 | M6×1.0 | 0.47    | 0.28 | 0.32 | 1.34 | 0.16 | 0.18 | 0.12 | 0.24 |   |    |    |    |     |    | NPT 1/8  |    |    |    |   |

### Grooves(Except for Ø12, Ø16, Ø20, Ø25)

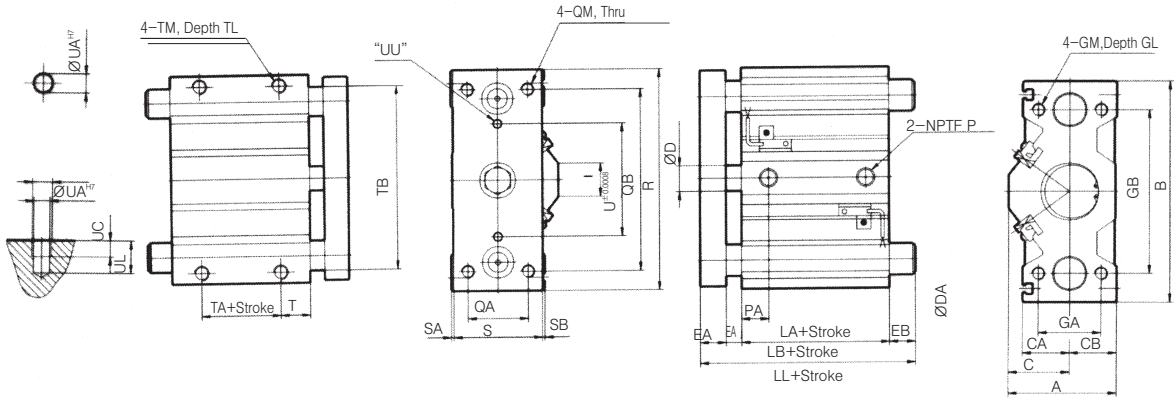
These grooves can be used to firmly fix the lead wires of the auto switch, and also terminal boards, etc., to the main body of the cylinder.

| Model    | (inch) |      |      |      |      |      |    | Applicable Bolt |
|----------|--------|------|------|------|------|------|----|-----------------|
|          | A      | B    | C    | D    | E    | F    |    |                 |
| UAG + 12 | 0.14   | 0.24 | 0.08 | 0.17 | 0.06 | 0.91 | M3 |                 |
| UAG + 16 | 0.15   | 0.24 | 0.08 | 0.18 | 0.06 | 0.95 | M3 |                 |
| UAG + 20 | 0.22   | 0.33 | 0.14 | 0.31 | 0.12 | 1.10 | M5 |                 |
| UAG + 25 | 0.22   | 0.33 | 0.14 | 0.32 | 0.12 | 1.34 | M5 |                 |



# Series AG

∅32(Nom. 1<sup>1</sup>/<sub>4</sub>)~∅63(Nom. 2<sup>1</sup>/<sub>2</sub>)/UAGM · UAGL (inch)



※ For intermediate strokes. Spacers will be used.

## UAGM · UAGL Common Dimensions

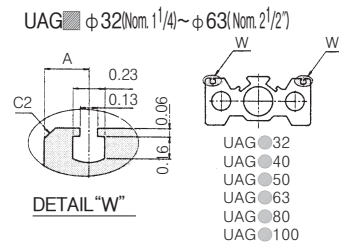
| Bore Size mm (inch)                    | Standard Stroke (mm) | EB   |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |      |      |       | GA   | GB   | GL   | GM   | I    | LA      | LB   |       |       |
|----------------------------------------|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|------|------|-------|------|------|------|------|------|---------|------|-------|-------|
|                                        |                      | UAGM |      |      |      |      |      |      |      |      |      | UAGL |      |      |       |       |       |      |      |      |       |      |      |      |      |      |         |      |       |       |
|                                        |                      | A    | B    | C    | CA   | CB   | D    | UAGM | UAGL | E    | EA   | 25ST | 50ST | 75ST | 100ST | 125ST | 150ST | 25ST | 50ST | 75ST | 100ST |      |      |      |      |      |         |      | 125ST | 150ST |
| ∅32(1 <sup>1</sup> / <sub>4</sub> Nom) | 25, 50               | 2.09 | 4.49 | 1.06 | 0.98 | 1.02 | 0.63 | 0.79 | 0.63 | 0.47 | 0.39 | 0.91 | 1.62 | 1.82 | 1.82  | 2.02  | 2.02  | 0.17 | 1.63 | 1.83 | 1.83  | 2.61 | 2.61 | 1.50 | 3.15 | 0.79 | M8×1.25 | 0.87 | 1.48  | 2.34  |
| ∅40(1 <sup>1</sup> / <sub>2</sub> Nom) | 75, 100              | 2.24 | 4.88 | 1.22 | 0.98 | 1.02 | 0.63 | 0.79 | 0.63 | 0.47 | 0.39 | 0.66 | 1.37 | 1.56 | 1.56  | 1.76  | 1.76  | -    | 1.37 | 1.57 | 1.57  | 2.36 | 2.36 | 1.50 | 3.54 | 0.79 | M8×1.25 | 0.87 | 1.73  | 2.60  |
| ∅50(2Nom)                              | 125, 150             | 2.72 | 5.51 | 1.54 | 1.14 | 1.18 | 0.79 | 0.98 | 0.79 | 0.63 | 0.47 | 1.09 | 1.56 | 1.96 | 1.96  | 2.15  | 2.15  | 0.11 | 1.77 | 1.96 | 1.96  | 2.75 | 2.75 | 1.73 | 3.94 | 0.98 | M10×1.5 | 0.87 | 1.73  | 2.84  |
| ∅63(2 <sup>1</sup> / <sub>2</sub> Nom) |                      | 3.23 | 5.91 | 1.79 | 1.14 | 1.44 | 0.79 | 0.98 | 0.79 | 0.63 | 0.47 | 0.89 | 1.37 | 1.76 | 1.76  | 1.96  | 1.96  | -    | 1.57 | 1.77 | 1.77  | 2.56 | 2.56 | 1.73 | 4.33 | 0.98 | M10×1.5 | 1.22 | 1.93  | 3.03  |

| Bore Size mm (inch)                    | LL   |      |      |       |       |       |      |      |      |       |       |       |        |      |      | P    | PA   | PB      | QA   | QB   | QM   | R    | S    | SA   | SB   | T    | TA      | TB   | TL   | TM   | U    | UA   | UB | UC | UL |
|----------------------------------------|------|------|------|-------|-------|-------|------|------|------|-------|-------|-------|--------|------|------|------|------|---------|------|------|------|------|------|------|------|------|---------|------|------|------|------|------|----|----|----|
|                                        | UAGM |      |      |       |       | UAGL  |      |      |      |       |       |       |        |      |      |      |      |         |      |      |      |      |      |      |      |      |         |      |      |      |      |      |    |    |    |
|                                        | 25ST | 50ST | 75ST | 100ST | 125ST | 150ST | 25ST | 50ST | 75ST | 100ST | 125ST | 150ST |        |      |      |      |      |         |      |      |      |      |      |      |      |      |         |      |      |      |      |      |    |    |    |
| ∅32(1 <sup>1</sup> / <sub>4</sub> Nom) | 3.26 | 3.96 | 4.16 | 4.16  | 4.36  | 4.36  | 2.52 | 3.97 | 4.17 | 4.17  | 4.96  | 4.96  | NPT1/8 | 0.49 | 0.35 | 1.18 | 3.78 | M8×1.25 | 4.41 | 1.89 | 0.08 | 0.04 | 0.63 | 0.20 | 3.94 | 0.43 | M8×1.25 | 1.65 | 0.16 | 0.18 | 0.12 | 0.24 |    |    |    |
| ∅40(1 <sup>1</sup> / <sub>2</sub> Nom) | 3.26 | 3.96 | 4.16 | 4.16  | 4.36  | 4.36  | 2.52 | 3.97 | 4.17 | 4.17  | 4.96  | 4.96  | NPT1/8 | 0.55 | 0.41 | 1.18 | 4.17 | M8×1.25 | 4.80 | 1.89 | 0.08 | 0.04 | 0.67 | 0.39 | 4.33 | 0.43 | M8×1.25 | 1.97 | 0.16 | 0.18 | 0.12 | 0.24 |    |    |    |
| ∅50(2Nom)                              | 3.93 | 4.40 | 4.79 | 4.79  | 4.99  | 4.99  | 2.95 | 4.60 | 4.80 | 4.80  | 5.59  | 5.59  | NPT1/4 | 0.55 | 0.43 | 1.58 | 4.72 | M10×1.5 | 5.43 | 2.21 | 0.08 | 0.04 | 0.67 | 0.39 | 4.88 | 0.49 | M10×1.5 | 2.21 | 0.20 | 0.24 | 0.16 | 0.31 |    |    |    |
| ∅63(2 <sup>1</sup> / <sub>2</sub> Nom) | 3.93 | 4.40 | 4.79 | 4.79  | 4.99  | 4.99  | 2.95 | 4.60 | 4.80 | 4.80  | 5.59  | 5.59  | NPT1/4 | 0.65 | 0.53 | 1.97 | 5.12 | M10×1.5 | 5.83 | 2.72 | 0.08 | -    | 0.75 | 0.39 | 5.20 | 0.59 | M10×1.5 | 2.60 | 0.20 | 0.24 | 0.16 | 0.31 |    |    |    |

## Grooves(Except for ∅32, ∅40, ∅50, ∅63)

These grooves can be used to firmly fix the lead wires of the auto switch, and terminal boards, etc., to the main body of the cylinder.

| Model   | (inch) |
|---------|--------|
| UAG□32  | 0.32   |
| UAG□40  | 0.32   |
| UAG□50  | 0.32   |
| UAG□63  | 0.32   |
| UAG□80  | 0.39   |
| UAG□100 | 0.39   |



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

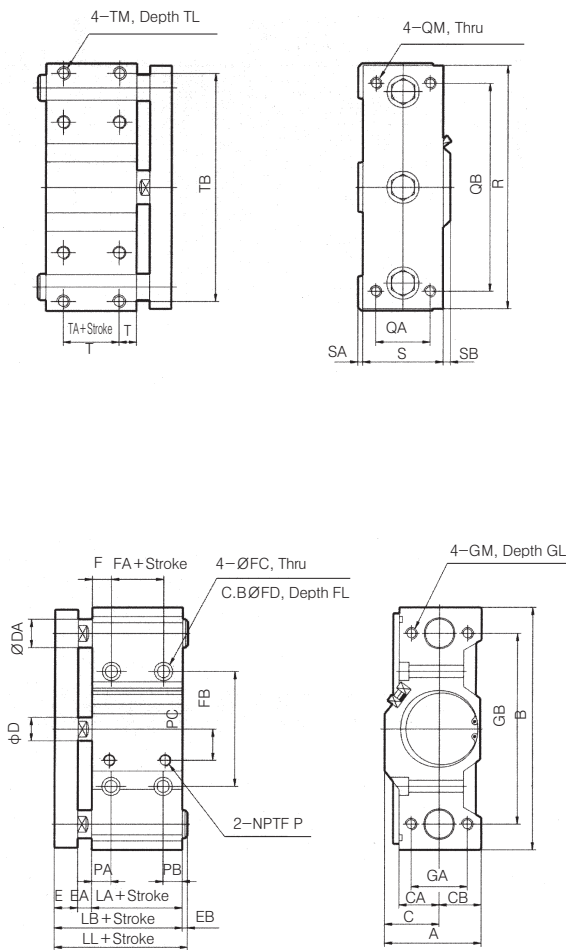
ASTH

NLCD

NLCS

# Series AG

## Ø80(3.15)~Ø100(3.94)/UAGM · UAGL (inch)



\* For intermediate strokes, spacers will be used.

UAGM · UAGL Common Dimensions

| Bore Size<br>mm(inch) | Standard Stroke<br>mm | A    | B    | C    | CA   | CB   | D    | DA   |      | E    | EA   | EB   |      |        |         |       |                |      |      | F    | FA   | FB   | FC   | FD   | FL   | GA   | GB | GL |
|-----------------------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|--------|---------|-------|----------------|------|------|------|------|------|------|------|------|------|----|----|
|                       |                       |      |      |      |      |      |      | UAGM | UAGL |      |      | UAGM |      |        |         | UAGL  |                |      |      |      |      |      |      |      |      |      |    |    |
|                       |                       |      |      |      |      |      |      |      |      |      |      | 25   | 50   | 75,100 | 125,150 | 25,50 | 75,100,125,150 |      |      |      |      |      |      |      |      |      |    |    |
| Ø80(3.15)Nom          | 20, 50, 75, 100       | 3.80 | 8.03 | 1.97 | 1.52 | 1.83 | 0.98 | 1.18 | 0.98 | 0.87 | 0.71 | 0.91 | 1.00 | 2.10   | 2.30    | 0.33  | 2.85           | 0.81 | 0.61 | 3.94 | 0.43 | 0.69 | 0.43 | 2.20 | 6.10 | 1.18 |    |    |
| Ø100(4)Nom            | 125, 150              | 4.51 | 9.37 | 2.28 | 1.61 | 2.22 | 1.18 | 1.42 | 1.18 | 0.98 | 0.79 | 0.74 | 0.94 | 1.92   | 2.12    | 0.16  | 2.87           | 0.81 | 0.98 | 4.72 | 0.51 | 0.79 | 0.51 | 2.44 | 7.24 | 1.38 |    |    |

| Bore Size<br>mm(inch) | GM       | LA   | LB   | LL   |      |        |         |       |                |        |      | P    | PA   | PB   | PC   | QA       | QB   | QM   | R    | S    | SA   | SB   | T    | TA   | TB       | TL | TM |
|-----------------------|----------|------|------|------|------|--------|---------|-------|----------------|--------|------|------|------|------|------|----------|------|------|------|------|------|------|------|------|----------|----|----|
|                       |          |      |      | UAGM |      |        |         | UAGL  |                |        |      |      |      |      |      |          |      |      |      |      |      |      |      |      |          |    |    |
|                       |          |      |      | 25   | 50   | 75,100 | 125,150 | 25,50 | 75,100,125,150 |        |      |      |      |      |      |          |      |      |      |      |      |      |      |      |          |    |    |
| Ø80(3.15)Nom          | M12×1.75 | 2.22 | 3.80 | 4.72 | 4.80 | 5.90   | 6.09    | 4.13  | 6.65           | NPT3/8 | 0.75 | 0.60 | 1.10 | 2.36 | 6.85 | M12×1.75 | 7.80 | 3.15 | 0.26 | 0.39 | 0.81 | 0.61 | 7.17 | 0.71 | M12×1.75 |    |    |
| Ø100(4)Nom            | M14×2    | 2.60 | 4.37 | 5.11 | 5.31 | 6.29   | 6.49    | 4.53  | 7.24           | NPT3/8 | 0.89 | 0.74 | 1.38 | 2.52 | 7.87 | M14×2    | 9.09 | 3.74 | 0.35 | 0.41 | 0.81 | 0.98 | 8.31 | 0.83 | M14×2    |    |    |





# Series AG

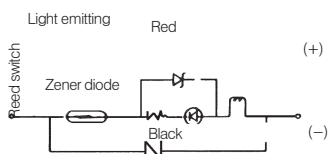


## Auto Switch Specifications

|                                              |                             |        |
|----------------------------------------------|-----------------------------|--------|
| Auto Switch Model                            | W4                          |        |
| Application                                  | Relay, Sequence Control     |        |
| Voltage                                      | DC24V                       | AC110V |
| Range of Load Current                        | 5~40mA                      | 5~20mA |
| Protection Circuit for Contact Breaker Point | None                        |        |
| Internal Voltage Drop                        | 2.4V or less                |        |
| Indicator Lamp                               | ON:Red light emitting diode |        |

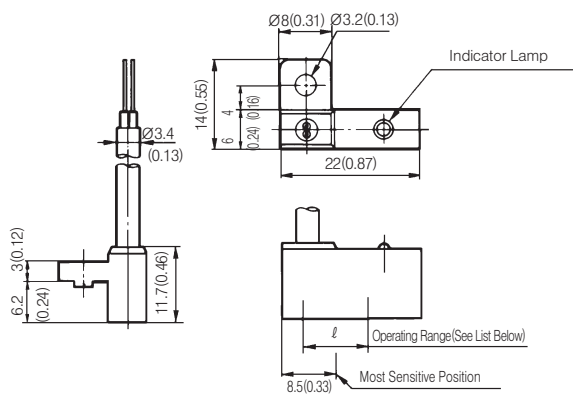
- Leakage current - None
  - Response time - 1.2 ms
  - Lead Wire - Oil proof vinyl Ø3.4, 0.2mm<sup>2</sup>, 2 wire(red, black), 0.5 m
  - Impact Resistance - 30G
  - Insulation Resistance - 50MΩ or more under the test voltage 500VDC (Between case and cable)
  - Breakdown Voltage - 1500VAC 1min(between case and cable)
  - Ambient Temperature - 5~60°C
  - Protection Structure - IEC spec IP67, Water-proof(JISC 0920), oil-proof.
- ※ If 3m lead wire is required, L is put at end of model numbers.  
(Example) W4L

## Auto Switch/Internal Circuit



## Auto Switch Dimensions

mm(inch)



## Operating Range (ℓ Dimensions)

mm(inch)

| Series | Bore Size inch(mm)                     |                                        |              |                                        |                                        |              |
|--------|----------------------------------------|----------------------------------------|--------------|----------------------------------------|----------------------------------------|--------------|
|        | Ø32(4 <sup>1</sup> / <sub>4</sub> Nom) | Ø40(1 <sup>1</sup> / <sub>2</sub> Nom) | Ø50(2Nom)    | Ø63(2 <sup>1</sup> / <sub>2</sub> Nom) | Ø80(3 <sup>1</sup> / <sub>4</sub> Nom) | Ø100(4Nom)   |
| UAG    | 12<br>(0.47)                           | 11<br>(0.43)                           | 10<br>(0.39) | 12<br>(0.47)                           | 12<br>(0.47)                           | 13<br>(0.51) |

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

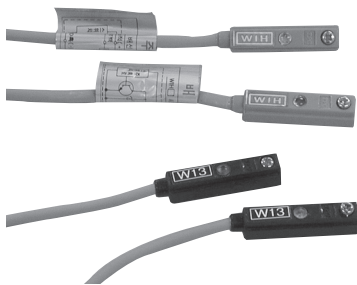
AST

ASTH

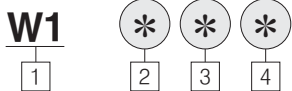
NLCD

NLCS

# Series AG

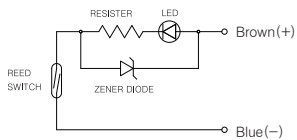


## How to Order

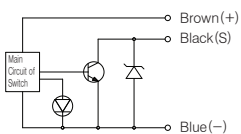


- 1 TPC Auto Switch Model
- 2 3 : Reed 2 wire AUTO S/W  
H : Solid State 3 wire AUTO S/W
- 3 N : 3 wire(NPN)  
P : 3 wire(PNP)
- 4 Blank : LEAD WIRE(0.5m)  
M : LEAD WIRE(1m)  
L : LEAD WIRE(3m)

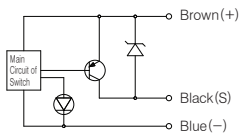
## Internal Circuit



2 wire reed circuit



3 wire NPN solid state circuit



3 wire PNP solid state circuit

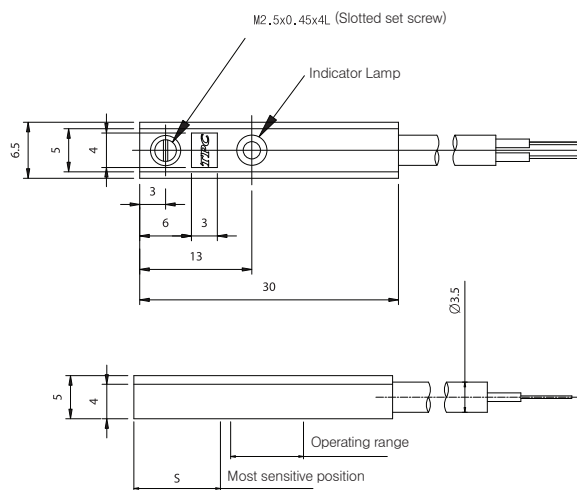
## Caution

Please read and understand the instructions before use. Refer to the auto switch precautions before using auto switches.

## Specifications

| Part No.                   | W13                                                         | W1HN(P)                |
|----------------------------|-------------------------------------------------------------|------------------------|
| Contact wiring             | Contact 2 wire                                              | Without contact 3 wire |
| Application                | Relay, Sequence Control                                     |                        |
| Voltage                    | DC24V                                                       | AC100V DC24V           |
| Current                    | 5~40mA                                                      | 5~20mA ≤40mA           |
| Contact Protection Circuit | None                                                        | Built-in               |
| Internal Voltage Drop      | ≤2.4V                                                       | ≤1.5V                  |
| Indicator Lamp             | ON : When Red LED                                           |                        |
| Output                     | -                                                           | NPN(PNP)               |
| Current Consumption        | -                                                           | ≤5mA                   |
| Current Leakage            | None                                                        | ≤100μA                 |
| Operation Time             | ≤1ms                                                        | ≤2ms                   |
| Lead Wire                  | Oil Resistant Vinyl Code                                    |                        |
| Shock Resistance           | 30G 100G                                                    |                        |
| Insulation Resistance      | 100MΩ or more (500DVC Mega) between lead wire and case      |                        |
| Voltage Resistance         | For 1 min. (in AC1500V/between a lead wire case)            |                        |
| Temperature                | -10 ~ 60°C                                                  |                        |
| Protection Structure       | IEC Standard IP67, Water Proof, and(JISCO920),Oil Structure |                        |

## Protection Structure



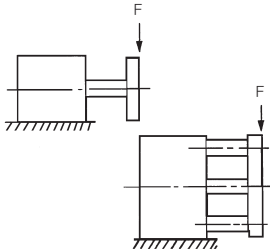
## Operating Range

| Section                    | W13      | W1HN(P)  |
|----------------------------|----------|----------|
| Most sensitive position(S) | 10mm     | 1 ~ 2mm  |
| Operation range(L)         | 6 ~ 12mm | 4 ~ 10mm |

# Series AG

## Operating Conditions

### Permissible Lateral Load (F)



Units : N

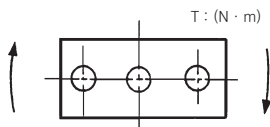
| Bore Size | Model | Stroke(mm) |    |    |     |     |     |     |
|-----------|-------|------------|----|----|-----|-----|-----|-----|
|           |       | 10         | 20 | 30 | 40  | 50  | 75  | 100 |
| Ø12       | AGM   | 26         | 20 | 18 | 18  | 17  | 29  | 25  |
|           | AGL   | 24         | 36 | 29 | 40  | 34  | 26  | 20  |
| Ø16       | AGM   | 42         | 34 | 30 | 28  | 26  | 39  | 34  |
|           | AGL   | 36         | 54 | 43 | 58  | 51  | 37  | 30  |
| Ø20       | AGM   | -          | 53 | 47 | 45  | 42  | 88  | 76  |
|           | AGL   | -          | 39 | 64 | 112 | 100 | 75  | 62  |
| Ø25       | AGM   | -          | 70 | 61 | 60  | 54  | 116 | 100 |
|           | AGL   | -          | 61 | 50 | 134 | 120 | 98  | 81  |

1N≐0.102kgf  
Units : N

| Bore Size | Model | Stroke(mm) |     |      |      |     |     |
|-----------|-------|------------|-----|------|------|-----|-----|
|           |       | 25         | 50  | 75   | 100  | 125 | 150 |
| Ø32       | AGM   | 196        | 167 | 137  | 108  | 91  | 76  |
|           | AGL   | 88         | 59  | 275  | 216  | 239 | 223 |
| Ø40       | AGM   | 196        | 167 | 137  | 108  | 91  | 76  |
|           | AGL   | 88         | 59  | 275  | 216  | 239 | 293 |
| Ø50       | AGM   | 294        | 255 | 215  | 176  | 151 | 130 |
|           | AGL   | 137        | 88  | 392  | 313  | 313 | 294 |
| Ø63       | AGM   | 294        | 255 | 215  | 176  | 151 | 130 |
|           | AGL   | 137        | 88  | 392  | 313  | 313 | 294 |
| Ø80       | AGM   | 353        | 304 | 255  | 206  | -   | -   |
|           | AGL   | 235        | 157 | 863  | 686  | -   | -   |
| Ø100      | AGM   | 539        | 470 | 412  | 343  | -   | -   |
|           | AGL   | 470        | 313 | 1370 | 1070 | -   | -   |

1N≐0.102kgf

### Permissible Rotary Torque of Plate(T)



Units : N · m

| Bore Size | Model | Stroke(mm) |      |      |      |      |      |      |
|-----------|-------|------------|------|------|------|------|------|------|
|           |       | 10         | 20   | 30   | 40   | 50   | 75   | 100  |
| Ø12       | AGM   | 0.42       | 0.34 | 0.28 | 0.31 | 0.27 | 0.48 | 0.42 |
|           | AGL   | 0.51       | 0.88 | 0.75 | 1.06 | 0.96 | 0.78 | 0.64 |
| Ø16       | AGM   | 0.76       | 0.64 | 0.54 | 0.52 | 0.47 | 0.73 | 0.62 |
|           | AGL   | 0.82       | 1.43 | 1.23 | 1.64 | 1.52 | 1.23 | 1.06 |
| Ø20       | AGM   | -          | 1.14 | 1.02 | 0.98 | 0.80 | 1.90 | 1.65 |
|           | AGL   | -          | 1.14 | 2.03 | 3.40 | 3.19 | 2.65 | 2.32 |
| Ø25       | AGM   | -          | 1.79 | 1.58 | 1.53 | 1.38 | 2.96 | 2.57 |
|           | AGL   | -          | 2.10 | 1.86 | 4.74 | 4.46 | 4.01 | 3.53 |

1N · m≐10.2kgf.cm  
Units : N · m

| Bore Size | Model | Stroke(mm) |       |       |       |      |      |
|-----------|-------|------------|-------|-------|-------|------|------|
|           |       | 25         | 50    | 75    | 100   | 125  | 150  |
| Ø32       | AGM   | 3.92       | 2.94  | 2.45  | 1.96  | 1.47 | 1.03 |
|           | AGL   | 1.96       | 0.98  | 5.88  | 4.41  | 5.76 | 5.12 |
| Ø40       | AGM   | 4.41       | 3.43  | 2.94  | 2.45  | 1.84 | 1.35 |
|           | AGL   | 2.45       | 1.47  | 6.37  | 5.39  | 6.87 | 6.17 |
| Ø50       | AGM   | 7.35       | 5.88  | 4.90  | 4.41  | 3.31 | 2.41 |
|           | AGL   | 3.43       | 2.45  | 10.78 | 8.33  | 9.63 | 8.63 |
| Ø63       | AGM   | 7.84       | 6.37  | 5.39  | 4.90  | 3.60 | 2.59 |
|           | AGL   | 3.92       | 2.45  | 11.76 | 9.31  | 9.61 | 8.51 |
| Ø80       | AGM   | 11.76      | 9.80  | 7.84  | 6.86  | -    | -    |
|           | AGL   | 9.31       | 5.88  | 31.36 | 24.50 | -    | -    |
| Ø100      | AGM   | 22.54      | 19.60 | 16.66 | 14.70 | -    | -    |
|           | AGL   | 21.56      | 13.72 | 63.70 | 49.00 | -    | -    |

1N≐0.102kgf

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

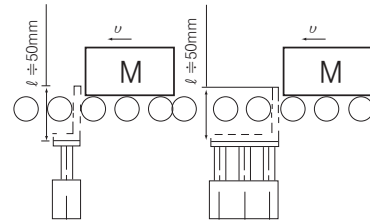
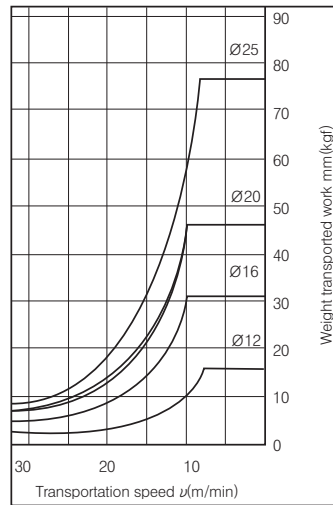
# Series AG

## Operating Range When Used as Stopper

### Bore Size $\varnothing 12\sim\varnothing 25$ / AGM12~25(Slide Bearing)

| Bore Size         | Non-Rotation Accuracy |                  |
|-------------------|-----------------------|------------------|
|                   | AGM                   | AGL              |
| $\varnothing 12$  | $\pm 0.07^\circ$      | $\pm 0.10^\circ$ |
| $\varnothing 16$  |                       |                  |
| $\varnothing 20$  |                       |                  |
| $\varnothing 25$  | $\pm 0.06^\circ$      | $\pm 0.09^\circ$ |
| $\varnothing 32$  | $\pm 0.06^\circ$      | $\pm 0.08^\circ$ |
| $\varnothing 40$  |                       |                  |
| $\varnothing 50$  | $\pm 0.05^\circ$      | $\pm 0.06^\circ$ |
| $\varnothing 63$  | $\pm 0.04^\circ$      | $\pm 0.05^\circ$ |
| $\varnothing 80$  |                       |                  |
| $\varnothing 100$ |                       |                  |

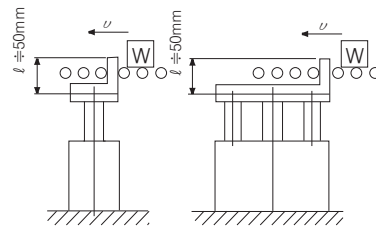
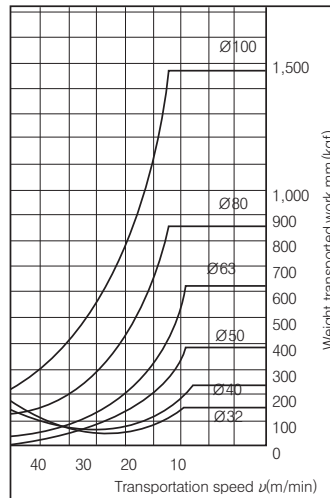
AGM12~25



- ※ When selecting the machine type, if the dimension gets longer, select a certain cylinder having a sufficient bore.
- Note 1) When a stopper is used for the cylinder, use at 50 strokes or less.
- Note 2) AGL(Ball bush bearing) should not be used as stopper.

### Bore Size $\varnothing 32\sim\varnothing 100$ / AGM32~100(Slide Bearing)

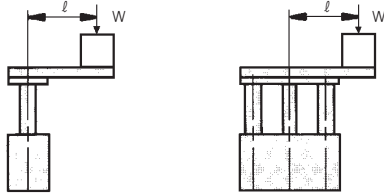
AGM32~100



- ※ When selecting the machine type, if the dimension gets longer, select a certain cylinder having a sufficient bore.
- Note 1) When a stopper is used for the cylinder, use at 50 strokes or less.
- Note 2) AGL(Ball bush bearing) should not be used as stopper.

# Series AG

## Operating Range When Used as Lifter

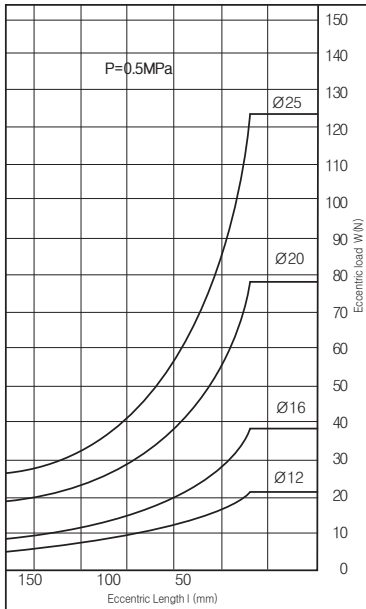


● Be sure to select a proper bore size so that the mass remains at or below the theoretical output (refer to the chart below)

| Bore Size | Theoretical Output |
|-----------|--------------------|
| Ø12, Ø16  | 40% or Below       |
| Ø20, Ø25  | 50% or Below       |
| Ø32, Ø100 | 60% or Below       |

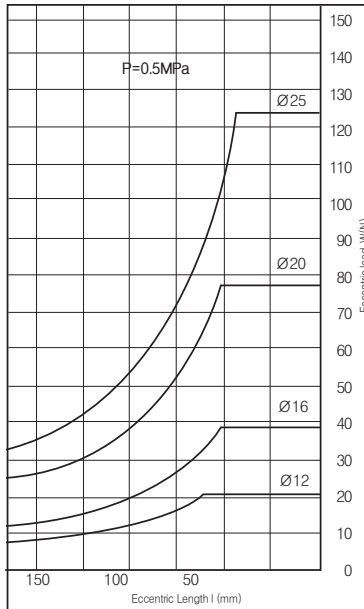
### AGM/Slide Bearing

AGM Ø12~Ø25-□

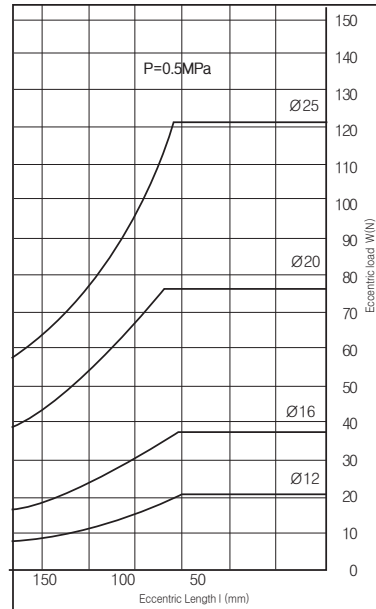


### AGL/Ball Bush Bearing

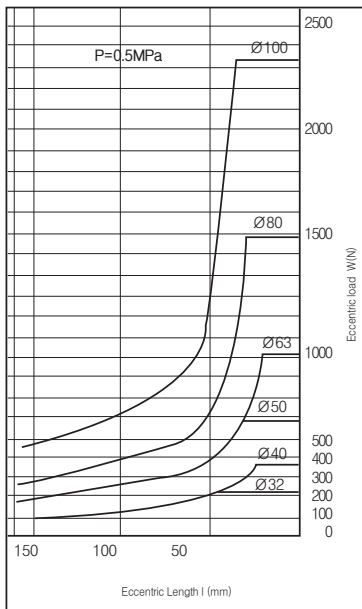
AGL Ø12~Ø25-<sup>10</sup>/<sub>20</sub><sup>30</sup>



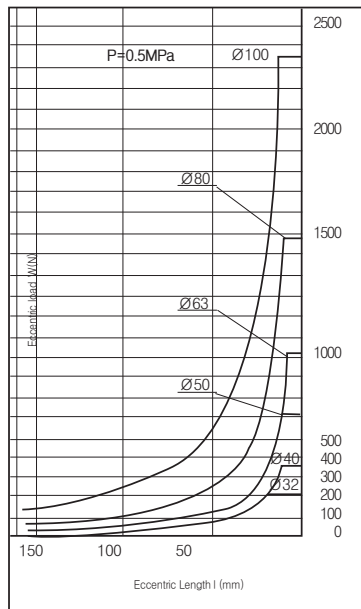
AGL Ø12~Ø25-30 more stroke



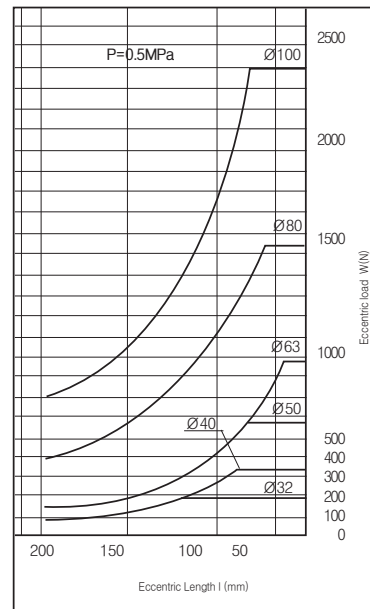
AGM Ø32~Ø100



AGL Ø32~Ø100-<sup>25</sup>/<sub>50</sub>



AGL Ø32~Ø105-<sup>75</sup>/<sub>100</sub>



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