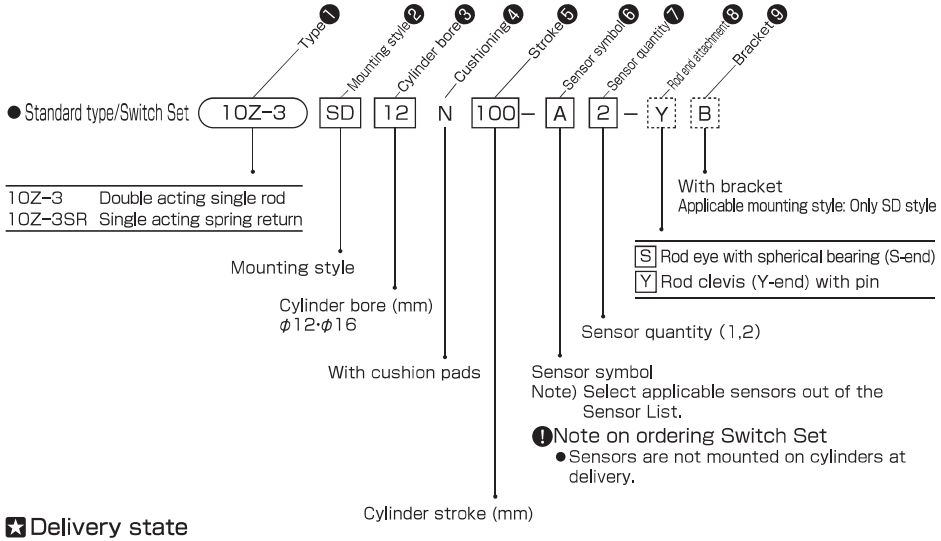
## ● How to order




**! Note on ordering Switch Set**

- Sensors are not mounted on cylinders at delivery.

### ★ Delivery state

- The product will be delivered without the mounting accessory and rod end attachment mounted.

### Standard Stroke Range

**● Double acting type** Unit: mm

| Bore \ Stroke | 15 | 25 | 30 | 50 | 75 | 100 | Stroke limit |
|---|---|---|---|---|---|---|---|
| ϕ12 | ○ | ○ | ○ | ○ | ○ | ○ | 200 |
| ϕ16 | ○ | ○ | ○ | ○ | ○ | ○ | 200 |

- If a stroke other than the above standard strokes (○-marked) is required, consult us.

**● Single acting type (spring return)** Unit: mm

| Bore \ Stroke | 15 | 25 | 30 | 50 | Stroke limit |
|---|---|---|---|---|---|
| ϕ12 | ○ | ○ | ○ | ○ | 50 |
| ϕ16 | ○ | ○ | ○ | ○ | 50 |

- If a stroke other than the above standard strokes (○-marked) is required, consult us.

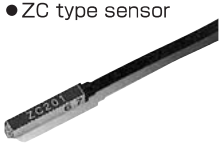


### Sensor List

| Type | Sensor symbol | Load voltage range | Load current range | Max. switching capacity | Protective circuit | Indicating lamp | Wiring method | Cord length | Applicable loads |
|---|---|---|---|---|---|---|---|---|---|
| Reed sensor | JA ZC201A | AC: 115 V or less | AC: 25 mA or less | — | None | None | 0.2 mm², 2-core, outer dia. ϕ3 mm, rear wiring | 1 m | Small relay, programmable controller |
| | JB ZC201B | DC: 28 V or less | DC: 40 mA or less | | | | | 3 m | |
| | JC ZC205A | DC:10 to 28 V | DC:5 to 40 mA | — | None | LED (Lights when sensing) | | 1 m | |
| | JD ZC205B | | | | | | | 3 m | |
| | A JR101 | DC:5 to 50 V | DC:3 to 40 mA | DC:1.5 W | None | LED (Lights in red when sensing) | 0.3 mm², 2-core, outer dia. ϕ3.4 mm, rear wiring | 1.5 m | |
| | B JR105 | AC:5 to 120 V | AC:3 to 20 mA | AC:2 VA | | | | 5 m | |
| Solid state sensor | JJ ZC230A | DC:10 to 28 V | 4 to 50 mA | — | Provided | LED (Lights when sensing) | 0.2 mm², 2-core, outer dia. ϕ3 mm, rear wiring | 1 m | Small relay, programmable controller |
| | JK ZC230B | | | | | | | 3 m | |
| | JL ZC253A | DC: 28 V or less | 100 mA or less | — | Provided | LED (Lights when sensing) | 0.2 mm², 3-core, outer dia. ϕ3 mm, rear wiring | 1 m | |
| | JM ZC253B | | | | | | | 3 m | |
| | I JS211M | DC:10 to 30 V | 6 to 70 mA | — | Provided | LED (Lights in red when sensing) | 0.3 mm², 2-core, outer dia. ϕ3.4 mm, rear wiring | 1.5 m | |
| | O JS215M | | | | | | | 5 m | |

Notes)
- For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
- For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
- We recommend AND Unit (AU series) for multiple sensors connected in series. For details, refer to AND Unit at the end of this catalog.

● ZC type sensor



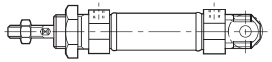
● JR/JS type sensor

### Mounting Style

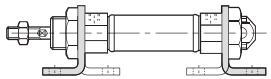
#### Standard type/Switch Set

**Basic style**

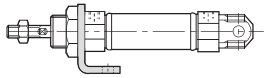
SD Basic style



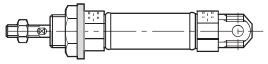
LB End angles



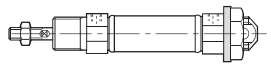
LS End angles



FA Rod flange

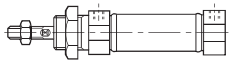


FB Cap flange

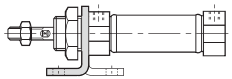


**Clevis cut style**

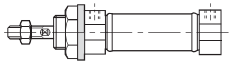
SK Basic style



LK End angles

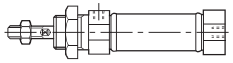


FK Rod flange

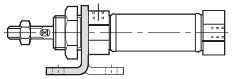


**Rear port style**

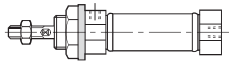
SP Basic style



LP End angles



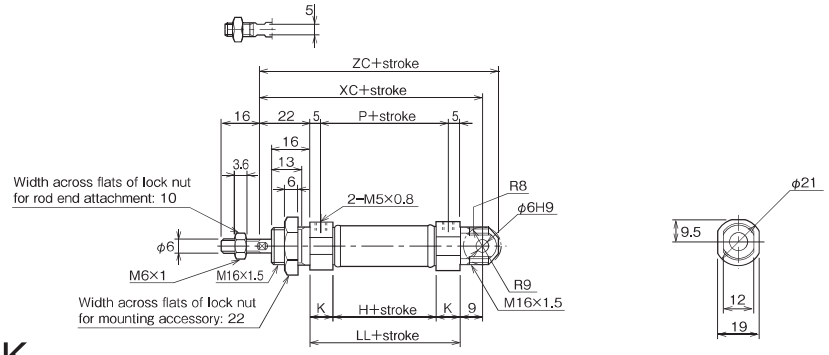
FP Rod flange



10Z-3/TAZ3 Bore A,B CAD/DATA is available.

## SD

Standard type 10Z-3 SD Bore N Stroke

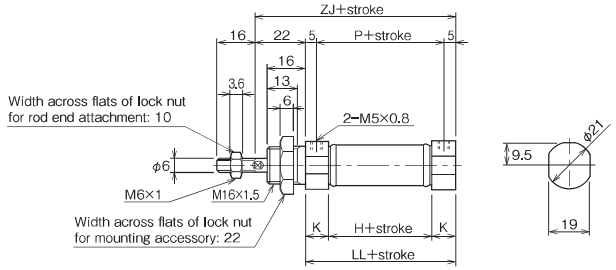






## SK

Clevis cut style 10Z-3 SK Bore N Stroke

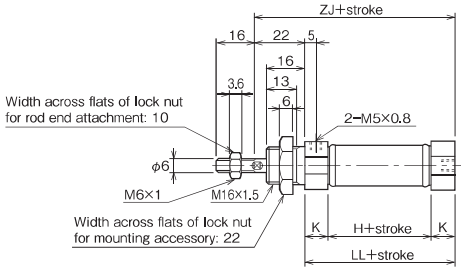


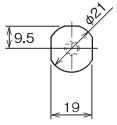




## SP

Rear port style 10Z-3 SP Bore N Stroke




- The double acting and single acting cylinders have the same dimensions.
- The single acting cylinders have a filter in the port on the rod side.

### Dimensional Table

| Symbol / Bore | H | K | LL | P | XC | ZC | ZJ |
|---|---|---|---|---|---|---|---|
| ϕ12 | 25 | 9.5 | 44 | 34 | 75 | 82 | 66 |
| ϕ16 | 31 | 10 | 51 | 41 | 82 | 89 | 73 |

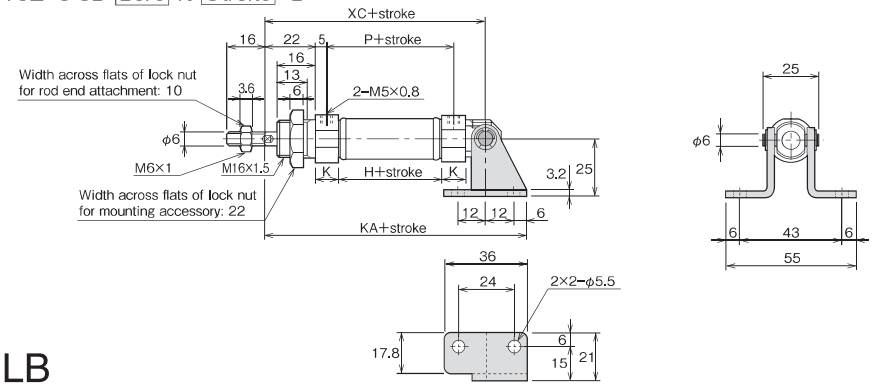




10Z-3/TAZ3 Bore A,B CAD/DATA is available.

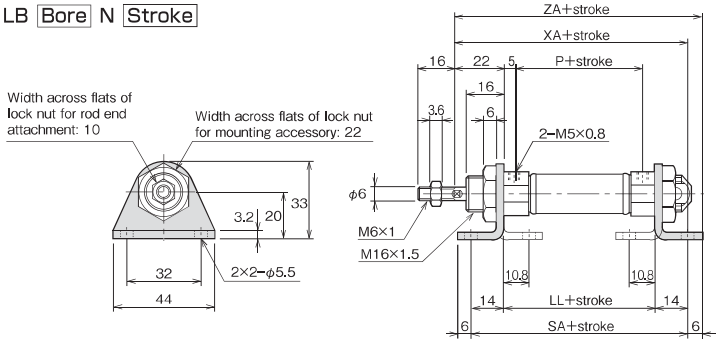
## SD with Bracket

10Z-3 SD Bore N Stroke -B



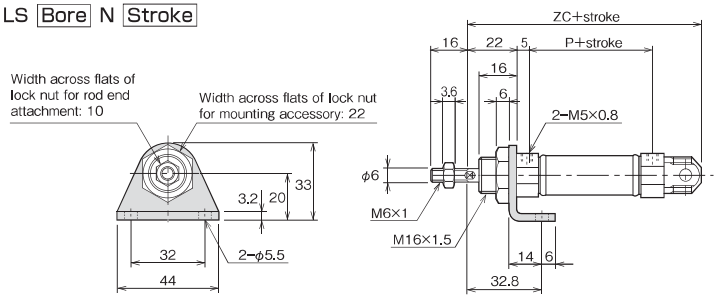

## LB

10Z-3 LB Bore N Stroke




## LS

10Z-3 LS Bore N Stroke




- For dimensions not shown here, refer to the SD style (basic style).
- The double acting and single acting cylinders have the same dimensions.
- The single acting cylinders have a filter in the port on the rod side.

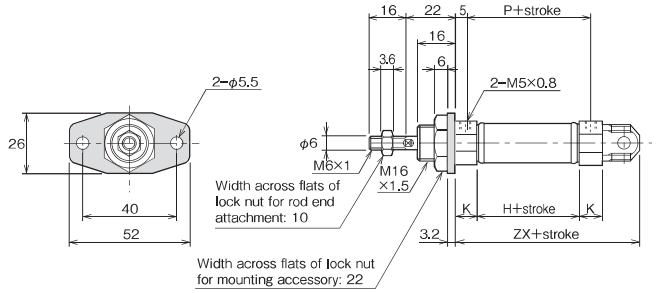
### Dimensional Table

| Symbol / Bore | H | K | KA | LL | P | SA | XA | XC | ZA | ZC |
|---|---|---|---|---|---|---|---|---|---|---|
| ϕ12 | 25 | 9.5 | 93 | 44 | 34 | 72 | 80 | 75 | 86 | 82 |
| ϕ16 | 31 | 10 | 100 | 51 | 41 | 79 | 87 | 82 | 93 | 89 |

10Z-3/TAZ3 Bore A,B CAD/DATA is available.

## FA

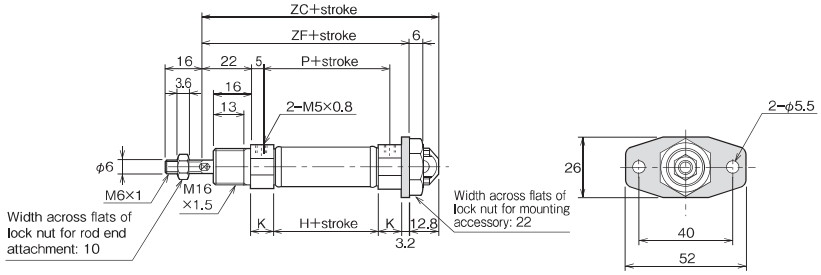
10Z-3 FA Bore N Stroke




Related types: Clevis cut style (FK) and rear port style (FP)

## FB

10Z-3 FB Bore N Stroke




- For dimensions not shown here, refer to the SD style (basic style).
- The double acting and single acting cylinders have the same dimensions.
- The single acting cylinders have a filter in the port on the rod side.

### Dimensional Table

| Bore \ Symbol | H | K | P | ZC | ZF | ZX |
|---|---|---|---|---|---|---|
| ϕ12 | 25 | 9.5 | 34 | 82 | 69.2 | 60 |
| ϕ16 | 31 | 10 | 41 | 89 | 76.2 | 67 |

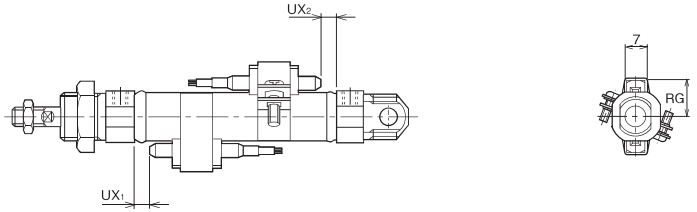


10Z-3/TAZ3 Bore A,B CAD/DATA is available.

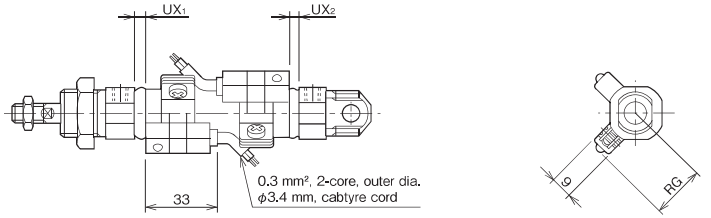
### Switch Set

10Z-3 Mounting style Bore N Stroke – Sensor symbol Sensor quantity

- ZC type sensor




- JR/JS type sensor




- For dimensions not shown here, refer to the SD style (basic style).
- The double acting and single acting cylinders have the same dimensions.

Related types: Clevis cut style (SK) and rear port style (SP)

### Dimensional Table

| Bore mm | RG | | UX1 | | | | | UX2 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Reed sensor | | | Solid state sensor | | Reed sensor | | | Solid state sensor | |
| | ZC type | JR/JS type | ZC201 | ZC205 | JR type | ZC230·ZC253 | JS type | ZC201 | ZC205 | JR type | ZC230·ZC253 | JS type |
| ϕ12 | 15 | 17 | 4.5 | 1 | 0 | 3 | 3 | 5.5 | 2 | 1 | 4 | 3 |
| ϕ16 | 17 | 19 | 9 | 5.5 | 4 | 7.5 | 5 | 8 | 4.5 | 3 | 6.5 | 5 |

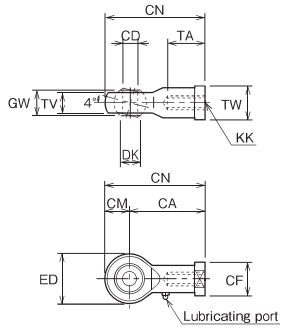
Note) ●Dimension UX indicates the optimum sensor mounting position for detection of stroke end.

### Operating Range and Hysteresis

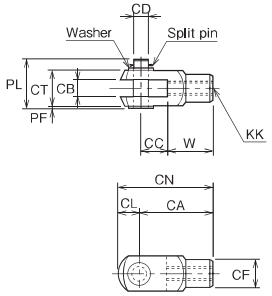
| Bore mm | Reed sensor | | | | | | Solid state sensor | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ZC201 | | ZC205 | | JR type | | ZC230 | | ZC253 | | JS type | |
| | Operating range | Hysteresis | Operating range | Hysteresis | Operating range | Hysteresis | Operating range | Hysteresis | Operating range | Hysteresis | Operating range | Hysteresis |
| ϕ12 | 3 to 6 | 1.5 or less | 4 to 6 | 1.5 or less | 4 to 6 | 2 or less | 1 to 3 | 0.5 or less | 1 to 3 | 0.5 or less | 8 to 10 | 1 or less |
| ϕ16 | 4 to 9 | | 4 to 7 | | | | 1 to 4 | | 2 to 3 | | 9 to 12 | |

## Rod End Attachment

● Rod eye with spherical bearing (S-end)
Rod eye with spherical bearing




● Rod clevis (Y-end)
with pin




## Dimensional Table/S-end

| Symbol / Bore | Part number | CA | CD | CF | CM | CN | DK | ED | GW | KK | TA | TV | TW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ12 | RSA−06−A | 30 | ϕ6H9 | ϕ13 | 9 | 39 | ϕ9 | 18 | $9^{0}_{-0.1}$ | M6×1 | 14 | 6.75±0.1 | 11 |
| ϕ16 | | | | | | | | | | | | | |

## Dimensional Table/Y-end

| Symbol / Bore | Part number | CA | CB | CC | CD | CF | CL | CN | CT | KK | PF | PL | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ12 | RYA−06−A | 24 | $6^{+0.4}_{+0.15}$ | 12 | $\phi 6^{H8}_{f7}$ | ϕ10 | 7 | 31 | □12 | M6×1 | 1.5 | 18.5 | 12 |
| ϕ16 | | | | | | | | | | | | | |

## Lock Nut Part Number

| Bore | Part number |
|---|---|
| ϕ12 | LNA−06Z−A |
| ϕ16 | LNA−06Z−A |

# Handling procedures

## Accessory tightening torque

Tighten each nut and bolt to the tightening torque shown in the following table.

| | M16 (ϕ12, 16) |
|---|---|
| Tightening torque of accessory mounting nut | 53.9 N・m |

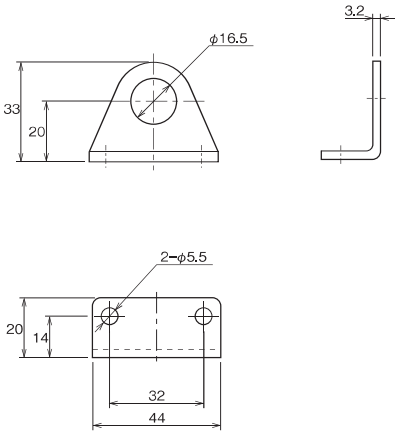
| | M6 (ϕ12, 16) |
|---|---|
| Tightening torque of rod end attachment fixing nut | 4.81 N・m |



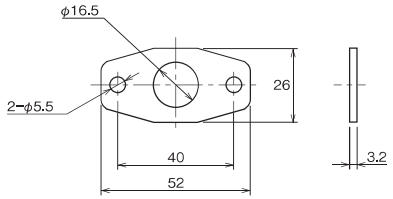


## Mounting Accessory

● End angles

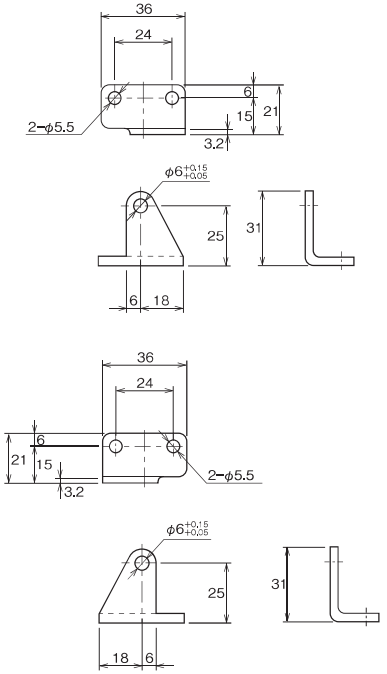



● Flange type



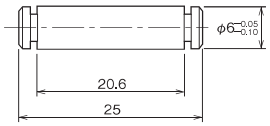

## Bracket

● For SD style (Set of 2 pcs.)




## Pin

● For SD with bracket (With 2 E-rings)




## Mounting Accessory Part Number

| Bore | LB | LS・LK・LP | FA・FB | SD style bracket (with pin) |
|---|---|---|---|---|
| ϕ12 | MAZ3−LB012 | MAZ3−LS012 | MAZ3−FA012 | MAZ3−BK012PA |
| ϕ16 | MAZ3−LB012 | MAZ3−LS012 | MAZ3−FA012 | MAZ3−BK012PA |

# Compact Round Type Pneumatic Cylinder with use of band type small sensor

- The use of stainless steel tubes simplifies the appearance.
- Compatible cylinder body dimension regardless proximity sensors are equipped.
- Band type sensors easy to fit are available.
- The optimum mounting style can be selected from 17 types (11 types for φ50 and φ63).
- Stainless steel (plated with hard chrome) piston rods are used for standard cylinders with bores from 20 to 32 mm.

## Cylinder Specifications/Standard

| Series variations | | Double acting/single rod | | Double acting/double rod | Single acting type (spring return) | Single acting type (spring-extended) |
|---|---|---|---|---|---|---|
| Type | | Standard type/Switch Set | VAL Set/SV Set | Standard type/Switch Set | Standard type/Switch Set | Standard type/Switch Set |
| Series | | 10Z-3 | 10Z-3V2 | 10Z-3D | 10Z-3SR | 10Z-3SH |
| Cylinder bore (mm) | | φ20, φ25, φ32, φ40, φ50, φ63 | φ20, φ25, φ32, φ40 | φ20, φ25, φ32, φ40, φ50, φ63 | φ20, φ25, φ32, φ40 | |
| Working fluid | | Air | | | | |
| Lubrication | | Unnecessary | | | | |
| Working pressure range | | 0.05 to 1 MPa (φ20 to φ40)<br>0.02 to 1 MPa (φ50·φ63) | 0.15 to 1 MPa | 0.05 to 1 MPa (φ20 to φ40)<br>0.02 to 1 MPa (φ50·φ63) | 0.15 to 1 MPa | |
| Proof test pressure | | 1.5 MPa | | | | |
| Note 1) Working speed range | | 20 to 700 mm/s | 20 to 500 mm/s | 50 to 700 mm/s (φ20 to φ40)<br>20 to 700 mm/s (φ50 to φ63) | 50 to 700 mm/s | |
| Note 2) Working temperature range | | −10 to +70℃ | −10 to +50℃ | −10 to +70℃ | −10 to +70℃ | |
| Structure of cushioning | | Standard: With cushion pad (φ20 to φ40), with cushions on both ends (φ50 and φ63) Semi-standard: With cushion (part of types) | | | | |
| Tolerance for thread | | JIS 6g/6H | | | | |
| Tolerance of stroke | | 0 to 250 mm $^{+1.0}_{0}$ 251 to 900 mm $^{+1.5}_{0}$ | | | | |
| Mounting accessory | Basic style | SD, SD w/ bracket (only φ20 to φ40), LS (only φ20 and φ25), LB, FA, FB, TA, TA w/ bracket, TB, TB w/ bracket, CA (only φ50 and φ63), CU (only φ20 to φ40), CU w/ bracket (only φ20 to φ40) | SD, LC, FA, TA, TA w/ bracket, TC, TC w/ bracket, AD, BD | SD, LB, FA, TA, TA w/ bracket, AD, BD | SD, SD w/ bracket, LS (only φ20 and φ25), LB, FA, FB, TA, TA w/ bracket, TB, TB w/ bracket, CU, CU w/ bracket | |
| | Clevis cut style | SK, LK (only φ20 and φ25), FK, TK, TK w/ bracket, AD, BD | — | — | SK, LK (only φ20 and φ25), FK, TK, TK w/ bracket, AD, BD | |
| | Rear port style | SP, LP (only φ20 and φ25), FP, TP, TP w/ bracket, AP, BP | — | — | SP, LP (only φ20 and φ25), FP, TP, TP w/ bracket, AP, BP | — |
| Accessories | Boots | Nylon tarpaulin | | | | |
| | Rod end attachments | Rod eye (T-end; only φ50 and φ63), rod eye with spherical bearing (S-end), rod clevis (Y-end) with pin, floating joint (F-end) | | | | |

Notes) 1.When a sensor is mounted in an intermediate position, set the cylinder maximum speed to 300 mm/s or less for reasons of the load relay response speed, etc.
2.Use the cylinder in a working temperature range in which the fluid does not freeze.
- Consult us when special port position or the cushion valve position is required.



## Cylinder Specifications/Non-rotating type

| Series variations | | Double acting/single rod | | Double acting/double rod | Single acting/single rod |
|---|---|---|---|---|---|
| Type | | Standard type/Switch Set | VAL Set/SV Set | Standard type/Switch Set | |
| Series | | 10Z-3G | 10Z-3V2G | 10Z-3GD | 10Z-3GSR,10Z-3GSH |
| Cylinder bore (mm) | | φ25, φ40, φ50, φ63 | φ25, φ40 | φ25, φ40, φ50, φ63 | φ25, φ40 |
| Working fluid | | Air | | | |
| Lubrication | | Unnecessary | | | |
| Working pressure range | | 0.1 to 1 MPa (φ25·φ40)<br>0.05 to 1 MPa (φ50·φ63) | 0.15 to 1 MPa | 0.1 to 1 MPa (φ25·φ40)<br>0.05 to 1 MPa (φ50·φ63) | 0.15 to 1 MPa |
| Proof test pressure | | 1.5 MPa | | | |
| Note 1) Working speed range | | 50 to 700 mm/s | 50 to 500 mm/s | 50 to 700 mm/s | |
| Note 2) Working temperature range | | −10 to +70℃ | −10 to +50℃ | −10 to +70℃ | |
| Note 3) Structure of cushioning | | Standard: With cushion pad (φ25 and φ40), with cushions on both ends (φ50 and φ63) Semi-standard: With cushion (only φ40) | | | With cushion pads |
| Note 4) Allowable rotating angle | | φ25: ±1.5° φ40: ±1° φ50·φ63: ±0.8° | | | |
| Allowable torque | | φ25: 0.49 N·m or less φ40: 0.98 N·m or less φ50 and φ63: 3.4 N·m or less | | | |
| Tolerance for thread | | JIS 6g/6H | | | |
| Tolerance of stroke | | 0 to 250 mm $^{+1.0}_{0}$ 251 to 900 mm $^{+1.5}_{0}$ | | | |
| Mounting accessory | Basic style | LB | SD, LC, FA, TA, TA w/ bracket, TC, TC w/ bracket, AD, BD | SD, LB, FA, TA, TA w/ bracket, AD, BD | LB |
| | Clevis cut style | SK, LK (only φ25), FK, TK, TK w/ bracket, AD, BD | —— | —— | SK, LK (only φ25), FK, TK, TK w/ bracket, AD, BD |
| | Rear port style | SP, LP (only φ25), FP, TP, TP w/ bracket, AP, BP | —— | —— | SP, LP (only φ25), FP, TP, TP w/ bracket, AP, BP |
| Accessories | Boots | Nylon tarpaulin | | | |
| | Rod end attachments | Rod eye (T-end: only φ50 and φ63), rod eye with spherical bearing (S-end), rod clevis (Y-end) with pin | | | |

Notes) 1.When a sensor is mounted in an intermediate position, set the cylinder maximum speed to 300 mm/s or less for reasons of the load relay response speed, etc.
2.Use the cylinder in a working temperature range in which the fluid does not freeze.
3.Non-rotating (φ25) double rod single acting VAL Set Cylinder with a cushion cannot be fabricated.
4.The allowable rotation angle refers to the clearance in the piston rod rotating direction at the stroke end.
- When using it together with another guide, use a round rod.
- For the working speed range, see the selection materials to check the relationship between the speed and the cushion mechanism.
- Consult us when special port position or the cushion valve position is required.

## Valve Specifications

| Model number | RB512V1SA1D | RB512V1SA1DW | RB512V1SA2D | RB512V1SA2DW | RB512V1SA8D | RB512V1SA8DW |
|---|---|---|---|---|---|---|
| Rated voltage | 100 V AC (50/60Hz) | | 200 V AC (50/60Hz) | | 24 V DC | |
| Regulation of voltage | ±10% of rated voltage | | | | | |
| Power consumption | 50Hz: 6.0VA/60Hz: 4.9VA | | | | 2.5W | |
| Part number of coil ass'y (with DIN socket) | NAS8-22-1D | NAS8-22-1DW (with lamp and protective circuit) | NAS8-22-2D | NAS8-22-2DW (with lamp and protective circuit) | NAS8-22-8D | NAS8-22-8DW (with lamp and protective circuit) |

- For voltage not shown above, contact us.

## Product Lineup

Unit: mm

| Series Variations | | Type | ϕ20 | ϕ25 | ϕ32 | ϕ40 | ϕ50 | ϕ63 |
|---|---|---|---|---|---|---|---|---|
| Standard | Double acting single rod | Standard type/Switch Set 10Z-3 | ● | ● | ● | ● | ● | ● |
| | | VAL Set/SV Set 10Z-3V2 | ● | ● | ● | ● | | |
| | Double acting double rod | Standard type/Switch Set 10Z-3D | ● | ● | ● | ● | ● | ● |
| | Single acting single rod spring return | Standard type/Switch Set 10Z-3SR | ● | ● | ● | ● | | |
| | Single acting single rod spring-extended | Standard type/Switch Set 10Z-3SH | ● | ● | ● | ● | | |
| | With adjustable retracted stroke | Standard type/Switch Set 10Z-3A2 | ● | ● | ● | ● | ● | ● |
| | With adjustable extended stroke | Standard type/Switch Set 10Z-3A1 | ● | ● | ● | ● | ● | ● |
| | Dual stroke (custom made) | Single rod 10Z-3Q1 | ● | ● | ● | ● | ● | ● |
| | | Double rod 10Z-3Q2 | ● | ● | ● | ● | ● | ● |
| Non-rotating | Double acting single rod | Standard type/Switch Set 10Z-3G | | ● | ● | ● | ● | ● |
| | | VAL Set/SV Set 10Z-3V2G | | ● | ● | ● | | |
| | Double acting double rod | Standard type/Switch Set 10Z-3GD | | ● | ● | ● | ● | ● |
| | Single acting single rod spring return | Standard type/Switch Set 10Z-3GSR | | ● | ● | ● | | |
| | Single acting single rod spring-extended | Standard type/Switch Set 10Z-3GSH | | ● | ● | ● | | |
| | Adjustable retracted stroke | Standard type/Switch Set 10Z-3GA2 | | ● | ● | ● | ● | ● |
| | Adjustable extended stroke | Standard type/Switch Set 10Z-3GA1 | | ● | ● | ● | ● | ● |





## Spring Force of Single Acting Cylinders (SR type/SH type)

Unit: N

| Bore (mm) | Load | Stroke (mm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 15 | 25 | 30 | 50 | 75 | 100 | 125 | 150 | 175 | 200 |
| ϕ20 | Initial load | 20.6 | 12.9 | 20.6 | 12.9 | | | | | | |
| | End load | 32.2 | | | | | | | | | |
| ϕ25 | Initial load | 32.5 | 20.4 | 32.5 | 20.4 | | | | | | |
| | End load | 50.7 | | | | | | | | | |
| ϕ32 | Initial load | 51.3 | 32.3 | 51.3 | 32.3 | | | | | | |
| | End load | 79.9 | | | | | | | | | |
| ϕ40 | Initial load | 80.4 | 50.6 | 80.4 | 50.6 | | | | | | |
| | End load | 125.2 | | | | | | | | | |

## Sensor Mountable Minimum Stroke

Unit: mm

| Bore mm | With 1 sensor | | | | | | | | | With 2 sensors | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Reed sensor | | | | | Solid state sensor | | | | Reed sensor | | | | | Solid state sensor | | | |
| | AX type | ZC201 | ZC205 | JR type | SR type | AX type | ZC230 | ZC253 | JS type | AX type | ZC201 | ZC205 | JR type | SR type | AX type | ZC230 | ZC253 | JS type |
| ϕ20 | 10 | 10 | 15 | 10 | 15 | 10 | 10 | 10 | 10 | 15 | 15 | 15 | 15 | 35 | 20 | 10 | 10 | 20 |
| ϕ25 | | | | | | | | | | | | | | | | | | |
| ϕ32 | | | | | 10 | | | | | | | | | | | | | |
| ϕ40 | | | | | | | | | 15 | | | | | | | | | |
| ϕ50 | | | | | | | | | 10 | | | | | | | | | |
| ϕ63 | | | | | | | | | | | | | | | | | | |

Note) The non-rotating, Switch Set and SV Set Cylinders have the same dimensions.

## Cushion Stroke

| Bore | Cushion stroke |
|---|---|
| ϕ50·ϕ63 | 14 mm |

## ● How to order

● Standard type/Switch Set

The item enclosed by broken line needs not to be entered, if unnecessary. Semi-standard specification

❶Type ❷Mounting style ❸Cylinder bore ❹Cushioning ❺Stroke ❻Sensor symbol ❼Sensor quantity ❽Rod end attachment ❾Bracket ❿Boots

10Z-3 | SD | 25 | N | 100 – | AH | 2 – | Y | B | – J

Standard
- 10Z-3 Double acting single rod
- 10Z-3D Double acting double rod
- 10Z-3SR Single acting spring return
- 10Z-3SH Single acting spring-extended

Non-rotating
- 10Z-3G Double acting single rod
- 10Z-3GD Double acting double rod
- 10Z-3GSR Single acting spring return
- 10Z-3GSH Single acting spring-extended

Mounting style

Note) The basic style for non-rotating cylinders is SK.

Cylinder bore (mm)

Standard ϕ20·ϕ25·ϕ32·ϕ40·ϕ50·ϕ63
Non-rotating ϕ25·ϕ40·ϕ50·ϕ63

- N With cushion pad
- B With cushion

Note) B is a standard code for 50mm to 63mm bore.

Cylinder stroke (mm)

Sensor symbol
Note) Select applicable sensors out of the Sensor List.

Sensor quantity (1,2 to n)

- S Rod eye with spherical bearing (S-end)
- T Rod eye (T-end) (only ϕ50 and ϕ63)
- Y Rod clevis (Y-end) with pin
- F Floating joint (F-end)

With bracket
Applicable mounting styles:
SD, TA, TB, TK, CU (ϕ20 to ϕ40),
TA, TB (ϕ50 and ϕ40)

Boots
Nylon tarpaulin
Note) The boots cannot be fitted to AD, BD or BP style.

❗Note on ordering Switch Set
- Sensors are not mounted on cylinders at delivery.

● VAL Set/SV Set

❶Type ❷Mounting style ❸Cylinder bore ❹Cushioning ❺Stroke ❻Valve operating method ❼Valve voltage ❽Sensor symbol ❾Sensor quantity ❿Rod end attachment ⓫Bracket ⓬Boots

10Z-3V2 | SD | 25 | N | 100 – | A | 2 | AH | 2 – | Y | B | – J

Standard
- 10Z-3V2 Double acting single rod

Non-rotating
- 10Z-3V2G Double acting single rod

Mounting style

Cylinder bore (mm)
ϕ20·ϕ25·ϕ32·ϕ40
Note) Non-rotating cylinders come in bore sizes of 25 and 40 mm only.

With cushion pad

Cylinder stroke (mm)

- A Energized extending type (with lamp and protective circuit)
- B Energized retracting type (with lamp and protective circuit)
- G Energized extending type (without lamp)
- H Energized retracting type (without lamp)

- 1 AC100V 50/60Hz
- 2 AC200V 50/60Hz
- 8 DC24V

Note) For voltage not shown above, contact us.

Note) For explanation of other types, refer to the standard and Switch Set types.

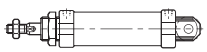


## Mounting Style

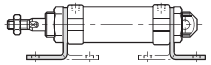
### Standard type/Switch Set

**Basic style**

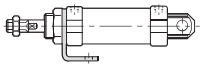
SD Basic style



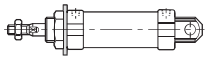
LB End angles



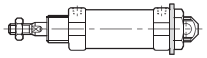
LS End angles (Note)



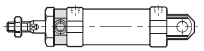
FA Rod flange



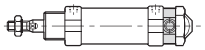
FB Cap flange



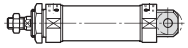
TA Rod trunnion



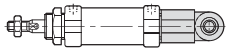
TB Cap trunnion



CA (Cap eye: only ϕ50 and ϕ63)

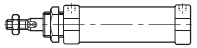


CU Cap eye with spherical bearing

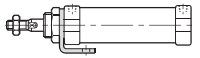


**Clevis cut style**

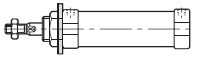
SK Basic style



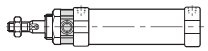
LK End angles (Note)



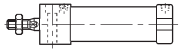
FK Rod flange



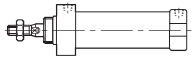
TK Rod trunnion



AD Block type end angles

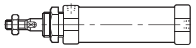


BD Block type flange

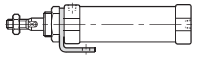


**Rear port style**

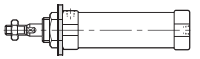
SP Basic style



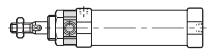
LP End angles (Note)



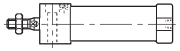
FP Rod flange



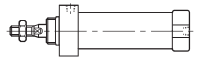
TP Rod trunnion



AP Block type end angles



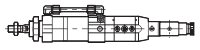
BP Block type flange



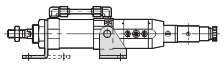
## Mounting Style

### VAL Set/SV Set

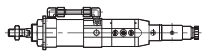
SD Basic style



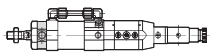
LC End angles



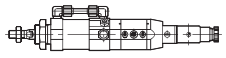
FA Rod flange



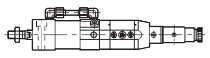
TA Rod trunnion



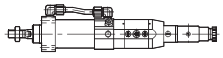
TC Cap trunnion



AD Block type end angles



BD Block type flange



(Note) LS, LK and LP can be used only for 20 and 25 mm bore cylinders.
Non-rotating cylinders of LK and LP style come in a bore size of 25 mm only.

## Sensor List

Semi-standard specification

| Type | Sensor symbol | Load voltage range | Load current range | Max. switching capacity | Protective circuit | Indicating lamp | Wiring method | Cord length | Applicable load |
|---|---|---|---|---|---|---|---|---|---|
| Reed sensor | AF AX101CE | DC: 5 to 30 V AC: 5 to 120 V | DC: 5 to 40 mA AC: 5 to 20 mA | DC: 1.5 W AC: 2 VA | None | LED (Lights in red when sensing) | 0.3 mm², 2-core, outer dia. ϕ4 mm, rear wiring | 1.5 m | Small relay, programmable controller |
| | AG AX105CE | | | | | | | 5 m | |
| | AH AX111CE | | | | Provided | | | 1.5 m | |
| | AJ AX115CE | | | | | | | 5 m | |
| | AE AX125CE | DC: 30 V or less AC: 120 V or less | DC: 40 mA or less AC: 20 mA or less | | None | None | | 5 m | |
| | AK AX11ACE | AC: 5 to 120 V | 5 to 20 mA | 2 VA | Provided | LED (Lights in red when sensing) | 4-pin connector type, rear wiring | 0.5 m | |
| | AL AX11BCE | DC: 5 to 30 V | 5 to 40 mA | 1.5 W | | | | 0.5 m | |
| | AM AX135CE | AC: 90 to 240 V DC: 90 to 240 V | 5 to 300 mA | B contact output | Provided | LED (Lights in red when not sensing) | 0.3 mm², 2-core, outer dia. ϕ4 mm, rear wiring | 5 m | |
| | JA ZC201A | AC: 115 V or less | AC: 25 mA or less | — | None | None | 0.2 mm², 2-core, outer dia. ϕ3 mm, rear wiring | 1 m | |
| | JB ZC201B | DC: 28 V or less | DC: 40 mA or less | | | | | 3 m | |
| | JC ZC205A | DC: 10 to 28 V | DC: 5 to 40 mA | — | None | LED (Lights in red when sensing) | | 1 m | |
| | JD ZC205B | | | | | | | 3 m | |
| | A JR101 | DC: 5 to 50 V AC: 5 to 120 V | DC: 3 to 40 mA AC: 3 to 20 mA | DC: 1.5 W AC: 2 VA | None | LED (Lights in red when sensing) | 0.3 mm², 2-core, outer dia. ϕ3.4 mm, rear wiring | 1.5 m | |
| | B JR105 | | | | | | | 5 m | |
| | S SR405 | AC: 80 to 220 V | 2 to 300 mA | 30 VA | Provided | Neon lamp (Lights in red when not sensing) | 0.5 mm², 2-core, outer dia. ϕ6 mm, rear wiring | 5 m | |
| Solid state sensor | BE AX201CE-1 | DC: 5 to 30 V | 5 to 40 mA | — | Provided | LED (Lights in red when sensing) | 0.3 mm², 2-core, outer dia. ϕ4 mm, rear wiring | 1.5 m | Small relay, programmable controller |
| | BF AX205CE-1 | | | | | | | 5 m | |
| | CE AX211CE-1 | | | | | LED (2-LED type in red/green) | | 1.5 m | |
| | CF AX215CE-1 | | | | | | | 5 m | |
| | JJ ZC230A | DC: 10 to 28 V | 4 to 50 mA | — | Provided | LED (Lights when sensing) | 0.2 mm², 2-core, outer dia. ϕ3 mm, rear wiring | 1 m | |
| | JK ZC230B | | | | | | | 3 m | |
| | JL ZC253A | DC: 28 V or less | 100 mA or less | — | Provided | LED (Lights when sensing) | 0.2 mm², 3-core, outer dia. ϕ3 mm, rear wiring | 1 m | |
| | JM ZC253B | | | | | | | 3 m | |
| | I JS211M | DC: 10 to 30 V | 6 to 70 mA | — | Provided | LED (Lights when sensing) | 0.3 mm², 2-core, outer dia. ϕ3.4 mm, rear wiring | 1.5 m | |
| | O JS215M | | | | | | | 5 m | |
| | CT AX211CE-1 | DC: 5 to 30 V | 5 to 40 mA | — | Provided | LED (2-LED type in red/green) | 0.3 mm², 2-core, outer dia. ϕ4 mm, rear wiring | 1.5 m | |
| | CU AX215CE-1 | | | | | | | 5 m | |
| | CV AX21BCE-1 | | | | | | 4-pin connector type, rear wiring | 0.5 m | |
| | CW AZ211CE-1 | | | | | | 0.3 mm², 2-core, outer dia. ϕ4 mm, upper wiring | 1.5 m | |
| | CX AZ215CE-1 | | | | | | | 5 m | |
| | CY AZ21BCE-1 | | | | | | 4-pin connector type, upper wiring | 0.5 m | |

Notes)
- For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
- The output logic of AX135CE is a B contact. When the piston is detected, the sensor contact turns off (the lamp turns on).
- For the detailed specifications and handling of sensors, see the sensor specifications at the end of this catalog.
- The AX type sensors can be mounted on any type in addition to the above types. See the sensor specifications at the end of this catalog.
- We recommend AND Unit (AU series) for multiple sensors connected in series. For details, refer to AND Unit at the end of this catalog.

● AX type sensor ● ZC type sensor ● JR/JS type sensor ● SR type sensor

Cord type Connector type





## Standard Stroke Range

Unit: mm

| | Series variations | Type | Bore | Cylinder stroke (mm) 15 | 25 | 30 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | Stroke limit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Standard | Double acting single rod | Standard type Switch Set 10Z-3 | ϕ20 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | — | — | 900 |
| | | | ϕ25 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | 900 |
| | | | ϕ32 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | 900 |
| | | | ϕ40 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 900 |
| | | | ϕ50 | — | ○ | — | ○ | ○ | ○ | — | ○ | — | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 900 |
| | | | ϕ63 | — | ○ | — | ○ | ○ | ○ | — | ○ | — | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 900 |
| | Double acting double rod | Standard type Switch Set 10Z-3D | ϕ20 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | — | — | 450 |
| | | | ϕ25 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | 450 |
| | | | ϕ32 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | 450 |
| | | | ϕ40 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | 450 |
| | | | ϕ50 | — | ○ | — | ○ | ○ | ○ | — | ○ | — | ○ | ○ | ○ | ○ | ○ | ○ | — | 450 |
| | | | ϕ63 | — | ○ | — | ○ | ○ | ○ | — | ○ | — | ○ | ○ | ○ | ○ | ○ | ○ | — | 450 |
| | Single acting single rod | Standard type Switch Set 10Z-3SR 10Z-3SH | ϕ20 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | — | — | — | — | 150 |
| | | | ϕ25 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | — | — | 200 |
| | | | ϕ32 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | — | — | 200 |
| | | | ϕ40 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | — | — | 200 |
| Non-rotating | Double acting single rod | Standard type Switch Set 10Z-3G | ϕ25 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | 500 |
| | | | ϕ40 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | 500 |
| | | | ϕ50 | — | ○ | — | ○ | ○ | ○ | — | ○ | — | ○ | ○ | ○ | — | — | — | — | 500 |
| | | | ϕ63 | — | ○ | — | ○ | ○ | ○ | — | ○ | — | ○ | ○ | ○ | — | — | — | — | 500 |
| | Double acting double rod | Standard type Switch Set 10Z-3GD | ϕ25 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | 450 |
| | | | ϕ40 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | 450 |
| | | | ϕ50 | — | ○ | — | ○ | ○ | ○ | — | ○ | — | ○ | ○ | ○ | — | — | — | — | 450 |
| | | | ϕ63 | — | ○ | — | ○ | ○ | ○ | — | ○ | — | ○ | ○ | ○ | — | — | — | — | 450 |
| | Single acting single rod | Standard type Switch Set 10Z-3GSR 10Z-3GSH | ϕ25 | — | ○ | — | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | — | — | 200 |
| | | | ϕ40 | — | ○ | — | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | — | — | 200 |

For the Switch Set Cylinders, see the table of sensor mountable minimum cylinder stroke.

## Mounting Accessory Part Number

| | ϕ20 | ϕ25 | ϕ32 | ϕ40 | ϕ50 | ϕ63 |
|---|---|---|---|---|---|---|
| LB style | MAZ3-LB020 | | MAZ3-LB032 | MAZ3-LB040 | MAZ3-LB050 | MAZ3-LB063 |
| LC style | MAZ3-LC020 | | MAZ3-LC032 | MAZ3-LC040 | — | — |
| LS style<br>LK style<br>LP style | MAZ3-LS020 | | — | — | — | — |
| FA style<br>FB style<br>FK style<br>FP style | MAZ3-FA020 | | MAZ3-FA032 | MAZ3-FA040 | MAZ3-FA050 | MAZ3-FA063 |
| TA style<br>TB style<br>TK style<br>TP style | MAZ3-TA020 | | MAZ3-TA032 | MAZ3-TA040 | MAZ3-TA050 | |
| TC style | MAZ3-TC020 | | MAZ3-TC032 | MAZ3-TC040 | — | — |
| CU style | MAZ3-CU020 | MAZ3-CU025 | MAZ3-CU032 | MAZ3-CU040 | — | — |

## Bracket Part Number

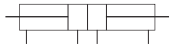
| | ϕ20 | ϕ25 | ϕ32 | ϕ40 | ϕ50 | ϕ63 |
|---|---|---|---|---|---|---|
| For SD (w/ pin) | MAZ3-BK020PA | | MAZ3-BK032PA | MAZ3-BK040PA | — | — |
| For S-end and CU (w/ pin) | MAZ3-BK020PB | MAZ3-BK032PB | | MAZ3-BK040PB | — | — |
| For TA, TB and TC | MAZ3-BK020 | | MAZ3-BK032 | MAZ3-BK040 | MAZ3-BK050 | MAZ3-BK063 |

## Lock Nut Part Number

| Bore | Standard | Non-rotating |
|---|---|---|
| ϕ20 | LNA-08Z-A | — |
| ϕ25 | LNA-10Z-A | LNA-08Z-A |
| ϕ32 | | — |
| ϕ40 | LNA-12Z-A | LNA-12Z-A |
| ϕ50 | LNA-16Z-A | LNA-16Z-A |
| ϕ63 | | |

## Custom Made Specifications

### Dual stroke (double rod)



● 10Z-3Q2

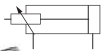
● Cylinder bore (mm): ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63

### Dual stroke (single rod)

● 10Z-3Q1

● Cylinder bore (mm): ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63

### With adjustable stroke (extended stroke)



● 10Z-3A1

● Cylinder bore (mm): ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63

Stroke adjusting range: 0 to 50 mm

### With adjustable stroke(retracted stroke)

● 10Z-3A2

● Cylinder bore (mm): ϕ20, ϕ25, ϕ32, ϕ40, ϕ50, ϕ63

Stroke adjusting range: 0 to 50 mm





## Standard/double acting

Unit: g

| Bore (mm) | Basic weight | | | | | Additional weight per mm of stroke | |
|---|---|---|---|---|---|---|---|
| | Double acting/single rod | | | | Double acting/double rod | | |
| | Basic style | | Clevis cut style | Rear port style | Basic style | | |
| | Standard type | VAL Set | Standard type | Standard type | Standard type | Single rod | Double rod |
| ϕ20 | 155 | 530 | 137 | 137 | 186 | 0.85 | 1.25 |
| ϕ25 | 220 | 600 | 203 | 203 | 274 | 1.15 | 1.8 |
| ϕ32 | 320 | 705 | 297 | 297 | 398 | 1.65 | 2.55 |
| ϕ40 | 520 | 910 | 482 | 487 | 630 | 2.15 | 3.4 |
| ϕ50 | 985 | — | 920 | 935 | 1165 | 3.27 | 5.73 |
| ϕ63 | 1350 | — | 1280 | 1300 | 1530 | 4.36 | 6.82 |

## Standard/single acting

Unit: g

| Bore (mm) | Basic weight | | | Additional weight for stroke | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Single acting/single rod | | | | | | | | |
| | Basic style | Clevis cut style | Rear port style | | | | | | |
| | Standard type | Standard type | Standard type | 15 | 25 | 30 | 50 | 75 | 100 |
| ϕ20 | 221 | 203 | 203 | 12 | 20 | 90 | 106 | 192 | 278 |
| ϕ25 | 312 | 295 | 295 | 16.5 | 27.5 | 125 | 147 | 266.5 | 386 |
| ϕ32 | 457 | 434 | 434 | 24 | 40 | 185 | 217 | 394 | 571 |
| ϕ40 | 701 | 663 | 663 | 31.5 | 52.5 | 244 | 286 | 519.5 | 753 |

## Non-rotating/double acting

Unit: g

| Bore (mm) | Basic weight | | | | | Additional weight per mm of stroke | |
|---|---|---|---|---|---|---|---|
| | Double acting/single rod | | | | Double acting/double rod | | |
| | Basic style | | Clevis cut style | Rear port style | Basic style | | |
| | Standard type | VAL Set | Standard type | Standard type | Standard type | Single rod | Double rod |
| ϕ25 | 220 | 600 | 203 | 203 | 274 | 1.1 | 1.8 |
| ϕ40 | 510 | 900 | 472 | 472 | 620 | 2.1 | 3.4 |
| ϕ50 | 985 | — | 920 | 935 | 1165 | 3.27 | 5.73 |
| ϕ63 | 1350 | — | 1280 | 1300 | 1530 | 4.36 | 6.82 |

## Mounting Accessory/Rod End Attachment Weight

Unit: g

| Bore (mm) | Mounting accessory weight | | | | | | | | | | | | | | | | | | | | | | | Rod end attachment weight | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Basic style | | | | | | | | | | | | Clevis cut style | | | | | | Rear port style | | | | | | | | | |
| | SD w/ bracket | LS | LB | LC | FA FB | CA | TA TB | TA w/ bracket TB w/ bracket | TC | TC w/ bracket | CU | CU w/ bracket | LK | FK | TK | TK w/ bracket | AD | BD | LP | FP | TP | TP w/ bracket | AP | BP | Rod eye (S-end) | Rod eye (T-end) | Rod clevis (Y-end) | F-end |
| ϕ20 | 115 | 60 | 140 | 150 | 55 | — | 55 | 140 | 30 | 100 | 130 | 240 | 60 | 58 | 55 | 140 | 11(29) | 8(76) | 60 | 55 | 55 | 140 | 11(29) | 8(76) | 50 | — | 55 | 60 |
| ϕ25 | 115 | 60 | 140 | 150 | 55 | — | 55 | 140 | 30 | 100 | 130 | 280 | 60 | 55 | 55 | 140 | 38(55) | 26(43) | 60 | 55 | 55 | 140 | 38(55) | 26(43) | 75 | — | 100 | 100 |
| ϕ32 | 150 | — | 220 | 210 | 90 | — | 90 | 210 | 30 | 125 | 125 | 275 | — | 90 | 90 | 210 | 62(85) | 45(68) | — | 90 | 90 | 210 | 62(85) | 45(68) | 75 | — | 100 | 100 |
| ϕ40 | 185 | — | 280 | 280 | 110 | — | 130 | 275 | 70 | 175 | 150 | 335 | — | 110 | 130 | 275 | 78(116) | 49(87) | — | 110 | 130 | 275 | 78(116) | 49(87) | 110 | — | 175 | 100 |
| ϕ50 | — | — | 560 | — | 315 | −30 | 335 | 795 | — | — | — | — | — | 315 | 335 | 795 | 180(245) | 105(170) | — | 315 | 335 | 795 | 180(245) | 105(170) | 210 | 200 | 340 | 380 |
| ϕ63 | — | — | 705 | — | 420 | −30 | 335 | 795 | — | — | — | — | — | 420 | 335 | 795 | 270(335) | 135(200) | — | 420 | 335 | 795 | 270(335) | 135(200) | 210 | 200 | 340 | 380 |

● The parenthesized values indicate the weight of mounting accessories for double rod cylinders.

## Sensor Additional Weight

Unit: g

| Bore (mm) | AX type | | | ZC type | | JR/JS type | | SR type |
|---|---|---|---|---|---|---|---|---|
| | Cord length 1.5 m | Cord length 5 m | Connector type | Cord length 1 m | Cord length 3 m | Cord length 1.5 m | Cord length 5 m | Cord length 5 m |
| ϕ20<br>ϕ25<br>ϕ32<br>ϕ40<br>ϕ50<br>ϕ63 | 50 | 130 | 40 | 25 | 55 | 35 | 98 | 271 |

Note) ● The sensor additional weight includes the weight of the sensor band.

Calculation formula: Cylinder weight (g)=basic weight+(cylinder stroke (mm)×additional weight per mm of stroke)+(sensor additional weight×sensor quantity)+mounting accessory weight+rod end attachment weight

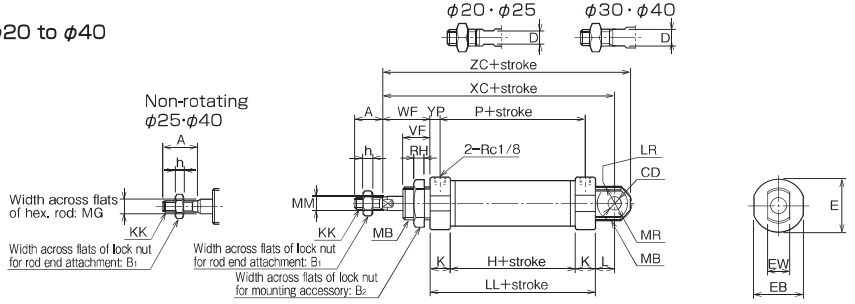
Calculation example: 10Z-3, clevis cut style, bore ϕ20, cylinder stroke 50 mm, 2 pcs of AX215A (cord length 5 m), FK style
137+(0.85×50)+(130×2)+60=499.5g

10Z-3/TAZ3 Bore A CAD/DATA is available.

# SD

Double acting single rod | Standard | 10Z-3 | SD | Bore | Cushioning | Stroke
Non-rotating | 10Z-3G | SK | Bore | Cushioning | Stroke

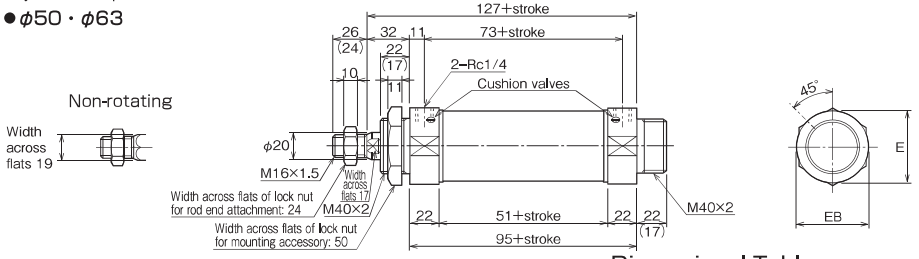
● ϕ20 to ϕ40




● The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.

The non-rotating cylinders are basically mounted in the clevis cut style.

● ϕ50・ϕ63




● The parenthesized values indicate the screw length.
● The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions shown above.

## Dimensional Table

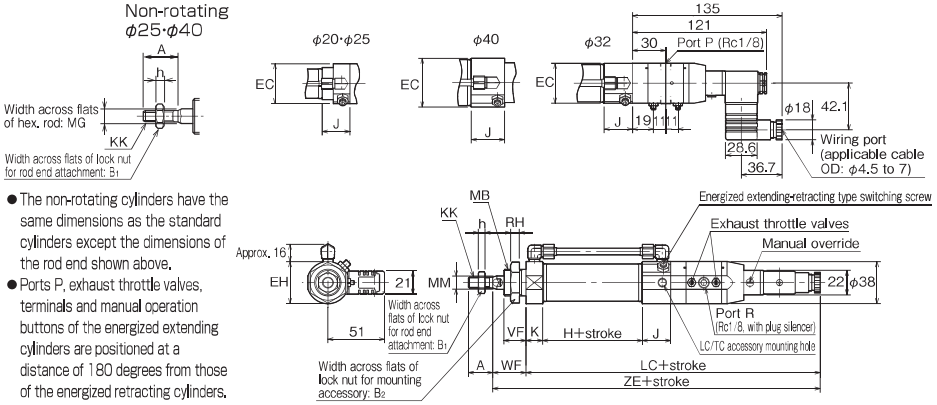
| Bore \ Symbol | E | EB |
|---|---|---|
| ϕ50 | ϕ56 | 54 |
| ϕ63 | ϕ70 | 68 |

Related types: Clevis cut style (SK), rear port style (SP) and type with boots. The non-rotating cylinders are basically mounted in the clevis cut style.

---

Double acting single rod | Standard | 10Z-3V2 | SD | Bore | N | Stroke | – | Valve operating function | Valve voltage
Non-rotating | 10Z-3V2G | SD | Bore | N | Stroke | – | Valve operating function | Valve voltage

● ϕ20 to ϕ40




● The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.
● Ports P, exhaust throttle valves, terminals and manual operation buttons of the energized extending cylinders are positioned at a distance of 180 degrees from those of the energized retracting cylinders.

Related types: Type with boots

This figure shows the dimensional drawing of an energized extending type cylinder.



## Dimensional Table

| Bore \ Symbol | A Standard | A Non-rotating | B1 Standard | B1 Non-rotating | B2 | CD | D | E | EB | EC | EH | EW | H | h Standard | h Non-rotating | J | K | KK Standard | KK Non-rotating |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 20(20) | – | 13 | – | 30 | ϕ8H9 | 6 | ϕ28 | 26 | 36 | ϕ38 | 16 -0.1 -0.3 | 31 | 5 | – | 25 | 14 | M8×1.25 | – |
| ϕ25 | 22(22) | 20(17) | 17 | 13 | 30 | ϕ8H9 | 8 | ϕ31 | 29 | 36 | ϕ38 | 16 -0.1 -0.3 | 35 | 6 | 5 | 25 | 14.5 | M10×1.25 | M8×1.25 |
| ϕ32 | 22(19) | – | 17 | – | 32 | ϕ10H9 | 10 | ϕ38 | 36 | 36 | ϕ38 | 16 -0.1 -0.3 | 40 | 6 | – | 25.5 | 15 | M10×1.25 | – |
| ϕ40 | 24(21) | 24(21) | 19 | 19 | 41 | ϕ12H9 | 12 | ϕ46 | 44 | 44 | ϕ46 | 20 -0.1 -0.3 | 42 | 7 | 7 | 30 | 15 | M12×1.25 | M12×1.25 |

| Bore \ Symbol | L | LC | LL | LR | MB | MG | MM | MR | P | RH | VF | WF | XC | YP | ZC | ZE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 12 | 205 | 59 | R11 | M22×1.5 | – | ϕ8 | R12 | 45 | 7 | 16(13) | 24 | 95 | 7 | 105 | 229 |
| ϕ25 | 12 | 209.5 | 64 | R11 | M22×1.5 | 9 | ϕ10 | R12 | 49 | 7 | 18(15) | 28 | 104 | 7.5 | 114 | 237.5 |
| ϕ32 | 14 | 215.5 | 70 | R13 | M24×2 | – | ϕ12 | R14 | 55 | 8 | 20(16) | 30 | 114 | 7.5 | 126 | 245.5 |
| ϕ40 | 16 | 222 | 72 | R15 | M30×2 | 14 | ϕ14 | R16 | 57 | 9 | 22(18) | 32 | 120 | 7.5 | 132 | 254 |

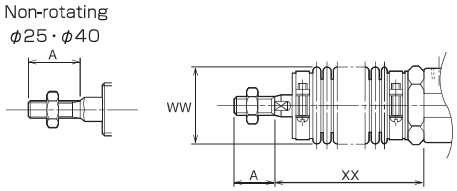
* The parenthesized values of dimensions A and VF indicate the screw length.

---

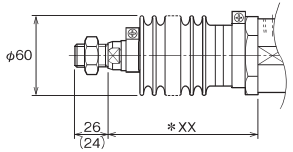
10Z-3/TAZ3 Bore K

## With Boots

ϕ20 to ϕ40




ϕ50・ϕ63




● The parenthesized values indicate the screw length.
*XX=1/4×(stroke)+65
If the calculated value has a fractional part, round it up.

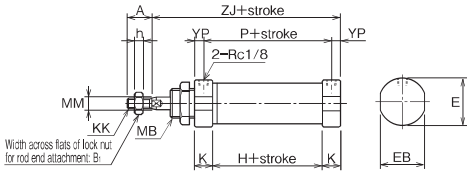
## Dimensional Table

| Bore \ Symbol / Stroke | A Standard | A Non-rotating | WW | Dimension XX for each stroke: to 25 Standard | to 25 Non-rotating | to 50 Standard | to 50 Non-rotating | to 75 Standard | to 75 Non-rotating | to 100 Standard | to 100 Non-rotating | to 125 Standard | to 125 Non-rotating | to 150 Standard | to 150 Non-rotating | to 175 Standard | to 175 Non-rotating | to 200 Standard | to 200 Non-rotating | to 250 Standard | to 250 Non-rotating | to 300 Standard | to 300 Non-rotating | to 350 Standard | to 350 Non-rotating | to 400 Standard | to 400 Non-rotating | to 450 Standard | to 450 Non-rotating | to 500 Standard | to 500 Non-rotating |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 20(20) | – | ϕ36 | 49 | – | 59 | – | 69 | – | 74 | – | 84 | – | 94 | – | 104 | – | 114 | – | 134 | – | 154 | – | 174 | – | 194 | – | 214 | – | 234 | – |
| ϕ25 | 22(22) | 20(17) | ϕ36 | 53 | 46 | 63 | 56 | 73 | 66 | 78 | 71 | 88 | 81 | 98 | 91 | 108 | 101 | 118 | 111 | 138 | 131 | 158 | 151 | 178 | 171 | 198 | 191 | 218 | 211 | 238 | 231 |
| ϕ32 | 22(19) | – | ϕ40 | 45 | – | 55 | – | 65 | – | 70 | – | 80 | – | 85 | – | 95 | – | 100 | – | 120 | – | 130 | – | 150 | – | 170 | – | 190 | – | 210 | – |
| ϕ40 | 24(21) | 24(21) | ϕ45 | 42 | 35 | 52 | 45 | 57 | 50 | 62 | 55 | 72 | 65 | 82 | 75 | 87 | 80 | 92 | 85 | 102 | 95 | 117 | 110 | 127 | 120 | 142 | 135 | 162 | 155 | 182 | 175 |

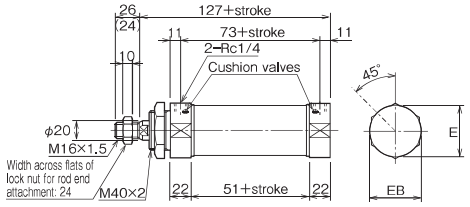
* The parenthesized values of dimension A indicate the screw length.

## Clevis cut style/SK (basic style)

● φ20 to φ40




φ50・φ63

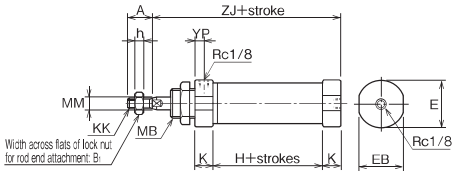



● For the dimensions not shown above, refer to the SD style (basic style).

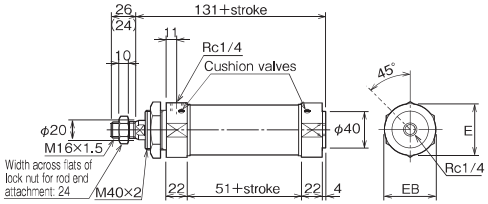
● The parenthesized values indicate the screw length.

## Rear port style/SP (basic style)

● φ20 to φ40




φ50・φ63




● For the dimensions not shown above, refer to the SD style (basic style).

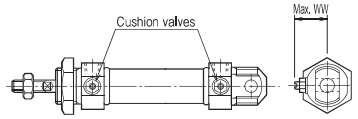
### Dimensional Table

| Bore \ Symbol | E | EB |
|---|---|---|
| φ50 | φ56 | 54 |
| φ63 | φ70 | 68 |

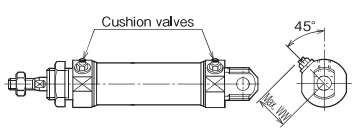
● The parenthesized values indicate the screw length.

## Type with cushion/SD (basic style)

● φ20・φ25

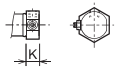



● φ32・φ40




● For the dimensions not shown above, refer to the SD style (basic style).

● Clevis cut style




● Rear port style


● The above figures are the dimensional drawings of 20 and 25 mm bore cylinders.



## Dimensional Table

| Bore \ Symbol | A Standard | A Non-rotating | B1 Standard | B1 Non-rotating | E | EB | H | h Standard | h Non-rotating | K |
|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | 20(20) | — | 13 | — | φ28 | 26 | 31 | 5 | — | 14 |
| φ25 | 22(22) | 20(17) | 17 | 13 | φ31 | 29 | 35 | 6 | 5 | 14.5 |
| φ32 | 22(19) | — | 17 | — | φ38 | 36 | 40 | 6 | — | 15 |
| φ40 | 24(21) | 24(21) | 19 | 19 | φ46 | 44 | 42 | 7 | 7 | 15 |

| Bore \ Symbol | KK Standard | KK Non-rotating | MB | MM | P | WW | YP | ZJ |
|---|---|---|---|---|---|---|---|---|
| φ20 | M8×1.25 | — | M22×1.5 | φ8 | 45 | 21 | 7 | 83 |
| φ25 | M10×1.25 | M8×1.25 | M22×1.5 | φ10 | 49 | 22.5 | 7.5 | 92 |
| φ32 | M10×1.25 | — | M24×2 | φ12 | 55 | 29 | 7.5 | 100 |
| φ40 | M12×1.25 | M12×1.25 | M30×2 | φ14 | 57 | 33 | 7.5 | 104 |

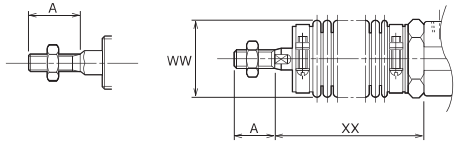
＊The parenthesized values of dimensions A and VF indicate the screw length.

10Z-3/TAZ3 Bore K

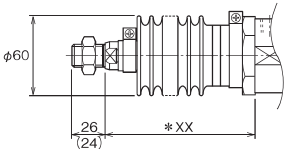
## With Boots

φ20 to φ40

Non-rotating φ25・φ40




φ50・φ63




● The parenthesized values indicate the screw length.

＊XX=1/4×(stroke)+65

If the calculated value has a fractional part, round it up.

### Dimensional Table

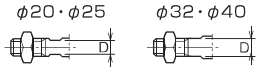
| Bore \ Stroke \ Symbol | A Standard | A Non-rotating | WW | Dimension XX for each stroke: to 25 Standard | to 25 Non-rotating | to 50 Standard | to 50 Non-rotating | to 75 Standard | to 75 Non-rotating | to 100 Standard | to 100 Non-rotating | to 125 Standard | to 125 Non-rotating | to 150 Standard | to 150 Non-rotating | to 175 Standard | to 175 Non-rotating | to 200 Standard | to 200 Non-rotating | to 250 Standard | to 250 Non-rotating | to 300 Standard | to 300 Non-rotating | to 350 Standard | to 350 Non-rotating | to 400 Standard | to 400 Non-rotating | to 450 Standard | to 450 Non-rotating | to 500 Standard | to 500 Non-rotating |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | 20(20) | — | φ36 | 49 | — | 59 | — | 69 | — | 74 | — | 84 | — | 94 | — | 104 | — | 114 | — | 134 | — | 154 | — | 174 | — | 194 | — | 214 | — | 234 | — | | |
| φ25 | 22(22) | 20(17) | φ36 | 53 | 46 | 63 | 56 | 73 | 66 | 78 | 71 | 88 | 81 | 98 | 91 | 108 | 101 | 118 | 111 | 138 | 131 | 158 | 151 | 178 | 171 | 198 | 191 | 218 | 211 | 238 | 231 | | |
| φ32 | 22(19) | — | φ40 | 45 | — | 55 | — | 65 | — | 70 | — | 80 | — | 85 | — | 95 | — | 100 | — | 120 | — | 130 | — | 150 | — | 170 | — | 190 | — | 210 | — | | |
| φ40 | 24(21) | 24(21) | φ45 | 42 | 35 | 52 | 45 | 57 | 50 | 62 | 55 | 72 | 65 | 82 | 75 | 87 | 80 | 92 | 85 | 102 | 95 | 117 | 110 | 127 | 120 | 142 | 135 | 162 | 155 | 182 | 175 | | |

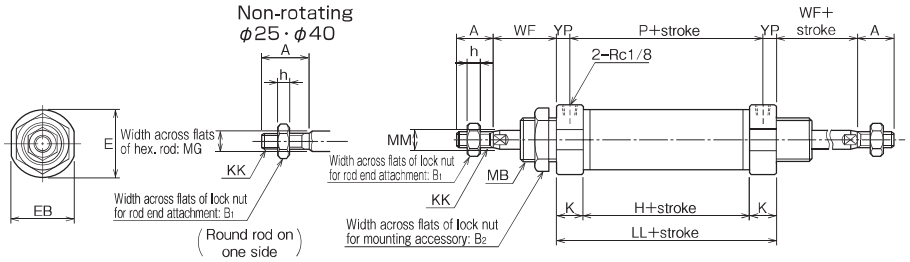
＊The parenthesized values of dimension A indicate the screw length.

# SD

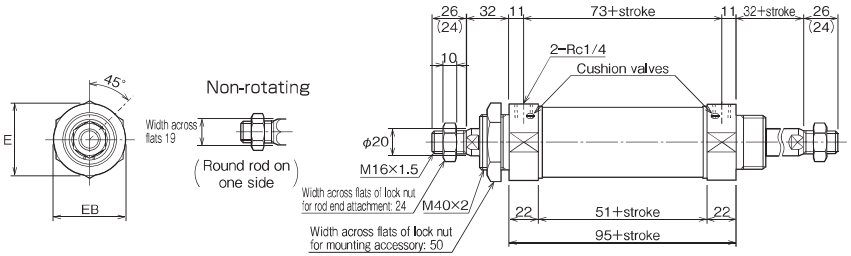
Double acting double rod | Standard | 10Z-3D | SD | Bore | Cushioning | Stroke |
| Non-rotating | 10Z-3GD | SD | Bore | Cushioning | Stroke |

● ϕ20 to ϕ40




● ϕ50・ϕ63




● The parenthesized values indicate the screw length.

Related types: Type with boots

## Dimensional Table

| Bore \ Symbol | E | EB |
|---|---|---|
| ϕ50 | ϕ56 | 54 |
| ϕ63 | ϕ70 | 68 |



## Dimensional Table

| Bore \ Symbol | A | | B1 | | B2 | D | E | EB | H | h | | K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Standard | Non-rotating | Standard | Non-rotating | | | | | | Standard | Non-rotating | |
| ϕ20 | 20(20) | — | 13 | — | 30 | 6 | ϕ28 | 26 | 31 | 5 | — | 14 |
| ϕ25 | 22(22) | 20(17) | 17 | 13 | 30 | 8 | ϕ31 | 29 | 35 | 6 | 5 | 14.5 |
| ϕ32 | 22(19) | — | 17 | — | 32 | 10 | ϕ38 | 36 | 40 | 6 | — | 15 |
| ϕ40 | 24(21) | 24(21) | 19 | 19 | 41 | 12 | ϕ46 | 44 | 42 | 7 | 7 | 15 |

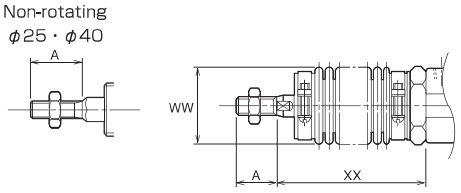
| Bore \ Symbol | KK | | LL | MB | MG | MM | P | WF | YP |
|---|---|---|---|---|---|---|---|---|---|
| | Standard | Non-rotating | | | | | | | |
| ϕ20 | M8×1.25 | — | 59 | M22×1.5 | — | ϕ8 | 45 | 24 | 7 |
| ϕ25 | M10×1.25 | M8×1.25 | 64 | M22×1.5 | 9 | ϕ10 | 49 | 28 | 7.5 |
| ϕ32 | M10×1.25 | — | 70 | M24×2 | — | ϕ12 | 55 | 30 | 7.5 |
| ϕ40 | M12×1.25 | M12×1.25 | 72 | M30×2 | 14 | ϕ14 | 57 | 32 | 7.5 |

＊The parenthesized values of dimension A indicate the screw length.

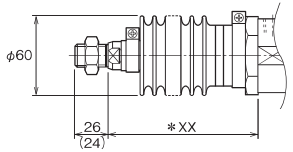
10Z-3/TAZ3 Bore K

## With Boots

ϕ20 to ϕ40




ϕ50・ϕ63




● The parenthesized values indicate the screw length.
＊XX=1/4×(stroke)+65
If the calculated value has a fractional part, round it up.

## Dimensional Table

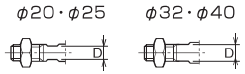
| Bore \ Symbol \ Stroke | A | | WW | Dimension XX for each stroke | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | to 25 | | to 50 | | to 75 | | to 100 | | to 125 | | to 150 | | to 175 | | to 200 | | to 250 | | to 300 | | to 350 | | to 400 | | to 450 | | to 500 | |
| | Stand-ard | Non-rotating | | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating |
| ϕ20 | 20(20) | — | ϕ36 | 49 | — | 59 | — | 69 | — | 74 | — | 84 | — | 94 | — | 104 | — | 114 | — | 134 | — | 154 | — | 174 | — | 194 | — | 214 | — | 234 | — |
| ϕ25 | 22(22) | 20(17) | ϕ36 | 53 | 46 | 63 | 56 | 73 | 66 | 78 | 71 | 88 | 81 | 98 | 91 | 108 | 101 | 118 | 111 | 138 | 131 | 158 | 151 | 178 | 171 | 198 | 191 | 218 | 211 | 238 | 231 |
| ϕ32 | 22(19) | — | ϕ40 | 45 | — | 55 | — | 65 | — | 70 | — | 80 | — | 85 | — | 95 | — | 100 | — | 120 | — | 130 | — | 150 | — | 170 | — | 190 | — | 210 | — |
| ϕ40 | 24(21) | 24(21) | ϕ45 | 42 | 35 | 52 | 45 | 57 | 50 | 62 | 55 | 72 | 65 | 82 | 75 | 87 | 80 | 92 | 85 | 102 | 95 | 117 | 110 | 127 | 120 | 142 | 135 | 162 | 155 | 182 | 175 |

＊The parenthesized values of dimension A indicate the screw length.

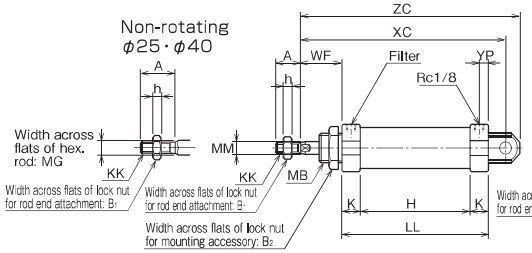
# SD

Single acting type

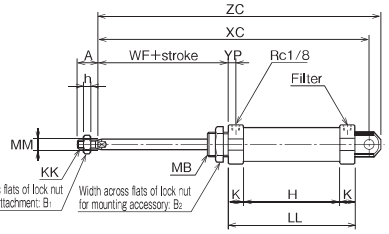
| | | | | | | |
|---|---|---|---|---|---|---|
| Spring return | Standard | 10Z-3SR | SD | Bore | Cushioning | Stroke |
| | Non-rotating | 10Z-3GSR | SK | Bore | Cushioning | Stroke |
| Spring-extended | Standard | 10Z-3SH | SD | Bore | Cushioning | Stroke |
| | Non-rotating | 10Z-3GSH | SK | Bore | Cushioning | Stroke |




● Spring return (SR type)




● Spring-extended (SH type)

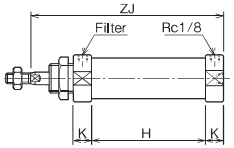



● The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.

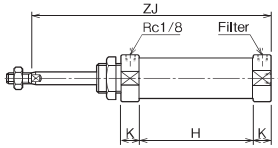
Related types: Clevis cut style (SK), rear port style (SP) and type with boots. The non-rotating cylinders are basically mounted in the clevis cut style.

## Related types Clevis cut style/SK (basic style)

● Spring return (SR type)



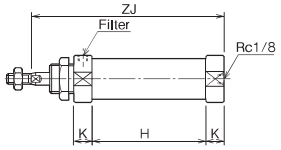

● Spring-extended (SH type)




● For the dimensions of clevis cut and rear port style cylinders not shown above, refer to the SD style (basic style).

## Related types Rear port style/SP (basic style)

● Spring return (SR type)






## Dimensional Table

| Symbol / Stroke / Bore | A | | $B_1$ | | $B_2$ | D | h | | K | KK | | MB | MG | MM | WF | YP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Standard | Non-rotating | Standard | Non-rotating | | | Standard | Non-rotating | | Standard | Non-rotating | | | | | |
| ϕ20 | 20(20) | — | 13 | — | 30 | 6 | 5 | — | 14 | M8×1.25 | — | M22×1.5 | — | ϕ8 | 24 | 7 |
| ϕ25 | 22(22) | 20(17) | 17 | 13 | 30 | 8 | 6 | 5 | 14.5 | M10×1.25 | M8×1.25 | M22×1.5 | 9 | ϕ10 | 28 | 7.5 |
| ϕ32 | 22(19) | — | 17 | — | 32 | 10 | 6 | — | 15 | M10×1.25 | — | M24×2 | — | ϕ12 | 30 | 7.5 |
| ϕ40 | 24(21) | 24(21) | 19 | 19 | 41 | 12 | 7 | 7 | 15 | M12×1.25 | M12×1.25 | M30×2 | 14 | ϕ14 | 32 | 7.5 |

| Symbol / Stroke / Bore | H | | | | | | | | | | LL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 15 | 25 | 30 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 15 | 25 | 30 | 50 | 75 | 100 | 125 | 150 | 175 | 200 |
| ϕ20 | 71 | 81 | 111 | 131 | 181 | 231 | 281 | 331 | 381 | 431 | 99 | 109 | 139 | 159 | 209 | 259 | 309 | 359 | 409 | 459 |
| ϕ25 | 75 | 85 | 115 | 135 | 185 | 235 | 285 | 335 | 385 | 465 | 104 | 114 | 144 | 164 | 214 | 264 | 314 | 364 | 414 | 464 |
| ϕ32 | 80 | 90 | 120 | 140 | 190 | 240 | 290 | 340 | 390 | 440 | 110 | 120 | 150 | 170 | 220 | 270 | 320 | 370 | 420 | 470 |
| ϕ40 | 82 | 92 | 122 | 142 | 192 | 242 | 292 | 342 | 392 | 442 | 112 | 122 | 152 | 172 | 222 | 272 | 322 | 372 | 422 | 472 |

| Symbol / Stroke / Bore | XC | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 15 | | 25 | | 30 | | 50 | | 75 | | 100 | | 125 | | 150 | | 175 | | 200 | |
| | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type |
| ϕ20 | 135 | 150 | 145 | 170 | 175 | 205 | 195 | 245 | 245 | 320 | 295 | 395 | 345 | 470 | 395 | 545 | 445 | 620 | 495 | 695 |
| ϕ25 | 144 | 159 | 154 | 179 | 184 | 214 | 204 | 254 | 254 | 329 | 304 | 404 | 354 | 479 | 404 | 554 | 454 | 629 | 504 | 704 |
| ϕ32 | 154 | 169 | 164 | 189 | 194 | 224 | 214 | 264 | 264 | 339 | 314 | 414 | 364 | 489 | 414 | 564 | 464 | 639 | 514 | 714 |
| ϕ40 | 160 | 175 | 170 | 195 | 200 | 230 | 220 | 270 | 270 | 345 | 320 | 420 | 370 | 495 | 420 | 570 | 470 | 645 | 520 | 720 |

| Symbol / Stroke / Bore | ZC | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 15 | | 25 | | 30 | | 50 | | 75 | | 100 | | 125 | | 150 | | 175 | | 200 | |
| | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type |
| ϕ20 | 145 | 160 | 155 | 180 | 185 | 215 | 205 | 255 | 255 | 330 | 305 | 405 | 355 | 480 | 405 | 555 | 455 | 630 | 505 | 705 |
| ϕ25 | 154 | 169 | 164 | 189 | 194 | 224 | 214 | 264 | 264 | 339 | 314 | 414 | 364 | 489 | 414 | 564 | 464 | 639 | 514 | 714 |
| ϕ32 | 166 | 181 | 176 | 201 | 206 | 236 | 226 | 276 | 276 | 351 | 326 | 426 | 376 | 501 | 426 | 676 | 476 | 651 | 526 | 726 |
| ϕ40 | 172 | 187 | 182 | 207 | 212 | 242 | 232 | 282 | 282 | 357 | 332 | 432 | 382 | 507 | 432 | 582 | 482 | 657 | 532 | 732 |

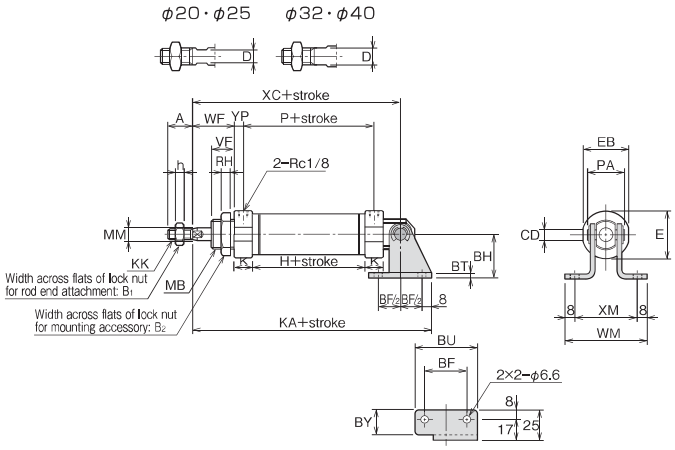
| Symbol / Stroke / Bore | ZJ | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 15 | | 25 | | 30 | | 50 | | 75 | | 100 | | 125 | | 150 | | 175 | | 200 | |
| | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type |
| ϕ20 | 123 | 138 | 133 | 158 | 163 | 193 | 183 | 233 | 233 | 308 | 283 | 383 | 333 | 458 | 383 | 533 | 433 | 608 | 483 | 683 |
| ϕ25 | 132 | 147 | 142 | 167 | 172 | 202 | 192 | 242 | 242 | 317 | 292 | 392 | 342 | 467 | 392 | 542 | 442 | 617 | 492 | 692 |
| ϕ32 | 140 | 155 | 150 | 175 | 180 | 210 | 200 | 250 | 250 | 325 | 300 | 400 | 350 | 475 | 400 | 550 | 450 | 625 | 500 | 700 |
| ϕ40 | 144 | 159 | 154 | 179 | 184 | 214 | 204 | 254 | 254 | 329 | 304 | 404 | 354 | 479 | 404 | 554 | 454 | 629 | 504 | 704 |

＊The parenthesized values of dimension A indicate the screw length.

# SD with Bracket

Double acting single rod [Standard] 10Z-3 SD [Bore] [Cushioning] [Stroke] – B

● φ20 to φ40




● Non-rotating cylinders of this type are not available.
● For dimensions not shown here, refer to the SD style (basic style).

Related types: Type with cushion, type with boots



## Dimensional Table

| Symbol / Bore | A | B1 | B2 | BF | BH | BT | BU | BY | CD | D | E | EB | H | h | K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | 20(20) | 13 | 30 | 32 | 32 | 3.2 | 48 | 21.8 | φ8 | 6 | φ28 | 26 | 31 | 5 | 14 |
| φ25 | 22(22) | 17 | 30 | 32 | 32 | 3.2 | 48 | 21.8 | φ8 | 8 | φ31 | 29 | 35 | 6 | 14.5 |
| φ32 | 22(19) | 17 | 32 | 36 | 36 | 4 | 52 | 21 | φ10 | 10 | φ38 | 36 | 40 | 6 | 15 |
| φ40 | 24(21) | 19 | 41 | 40 | 40 | 4 | 56 | 21 | φ12 | 12 | φ46 | 44 | 42 | 7 | 15 |

| Symbol / Bore | KA | KK | MB | MM | P | PA | RH | VF | WF | WM | XC | XM | YP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | 119 | M8×1.25 | M22×1.5 | φ8 | 45 | 31 | 7 | 16(13) | 24 | 67 | 95 | 51 | 7 |
| φ25 | 128 | M10×1.25 | M22×1.5 | φ10 | 49 | 31 | 7 | 18(15) | 28 | 67 | 104 | 51 | 7.5 |
| φ32 | 140 | M10×1.25 | M24×2 | φ12 | 55 | 32 | 8 | 20(16) | 30 | 67 | 114 | 51 | 7.5 |
| φ40 | 148 | M12×1.25 | M30×2 | φ14 | 57 | 36 | 9 | 22(18) | 32 | 71 | 120 | 55 | 7.5 |

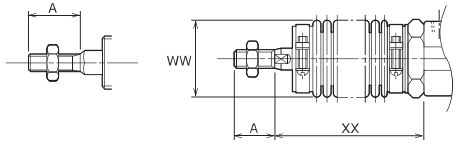
＊The parenthesized values of dimensions A and VF indicate the screw length.

10Z-3/TAZ3 [Bore] K

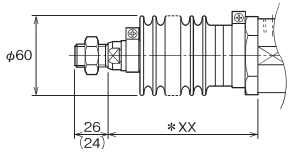
## With Boots

φ20 to φ40

Non-rotating φ25・φ40




φ50・φ63




● The parenthesized values indicate the screw length.
＊XX=1/4×(stroke)+65
If the calculated value has a fractional part, round it up.

## Dimensional Table

| Symbol / Stroke / Bore | A | | WW | Dimension XX for each stroke | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | to 25 | | to 50 | | to 75 | | to 100 | | to 125 | | to 150 | | to 175 | | to 200 | | to 250 | | to 300 | | to 350 | | to 400 | | to 450 | | to 500 | |
| | Standard | Non-rotating | | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating |
| φ20 | 20(20) | — | φ36 | 49 | — | 59 | — | 69 | — | 74 | — | 84 | — | 94 | — | 104 | — | 114 | — | 134 | — | 154 | — | 174 | — | 194 | — | 214 | — | 234 | — |
| φ25 | 22(22) | 20(17) | φ36 | 53 | 46 | 63 | 56 | 73 | 66 | 78 | 71 | 88 | 81 | 98 | 91 | 108 | 101 | 118 | 111 | 138 | 131 | 158 | 151 | 178 | 171 | 198 | 191 | 218 | 211 | 238 | 231 |
| φ32 | 22(19) | — | φ40 | 45 | — | 55 | — | 65 | — | 70 | — | 80 | — | 85 | — | 95 | — | 100 | — | 120 | — | 130 | — | 150 | — | 170 | — | 190 | — | 210 | — |
| φ40 | 24(21) | 24(21) | φ45 | 42 | 35 | 52 | 45 | 57 | 50 | 62 | 55 | 72 | 65 | 82 | 75 | 87 | 80 | 92 | 85 | 102 | 95 | 117 | 110 | 127 | 120 | 142 | 135 | 162 | 155 | 182 | 175 |

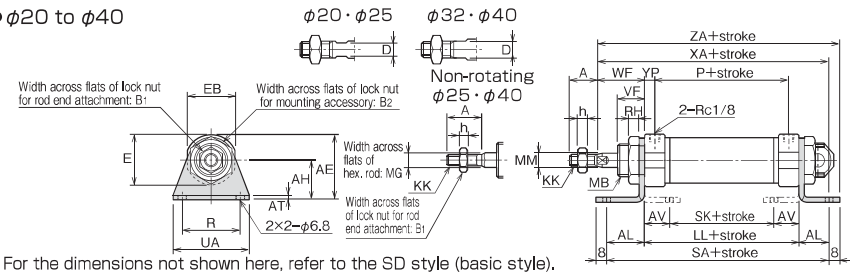
＊The parenthesized values of dimension A indicate the screw length.

CAD/DATA is available.
10Z-3/TAZ3 Bore A

# LB

Double acting single rod | Standard | 10Z-3 | LB | Bore | Cushioning | Stroke |
Non-rotating | 10Z-3G | LB | Bore | Cushioning | Stroke |

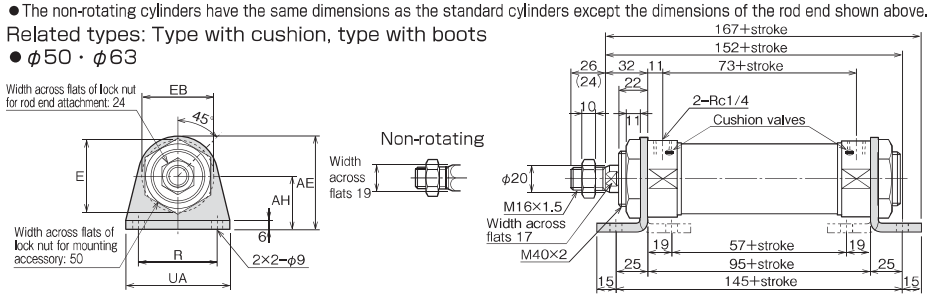
● φ20 to φ40




● For the dimensions not shown here, refer to the SD style (basic style).
● The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.

Related types: Type with cushion, type with boots

● φ50・φ63




● The parenthesized values indicate the screw length.
● The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions shown above.

Related types: Type with boots

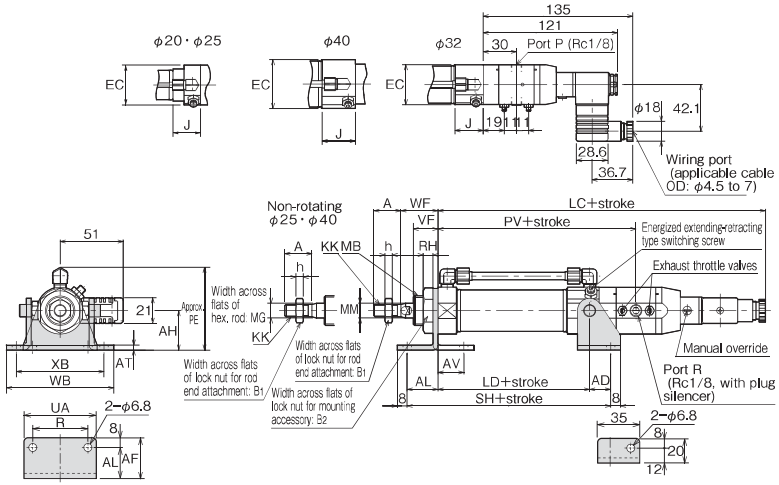
## Dimensional Table

| Bore \ Symbol | AE | AH | E | EB | R | UA |
|---|---|---|---|---|---|---|
| φ50 | 70 | 40 | φ56 | 54 | 60 | 80 |
| φ63 | 80 | 45 | φ70 | 68 | 74 | 95 |

# LC VAL Set

Double acting single rod | Standard | 10Z-3V2 | LC | Bore | N | Stroke | − | Valve operating function | Valve voltage |
Non-rotating | 10Z-3V2G | LC | Bore | N | Stroke | − | Valve operating function | Valve voltage |

● φ20 to φ40




- For dimensions not shown here, refer to the SD style (basic style).
- The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.
- Ports P, exhaust throttle valves, terminals and manual operation buttons of the VAL Set and SV Set Cylinders of the energized extending type are positioned at a distance of 180 degrees from those of the energized retracting type.

Related types: Type with boots  This figure shows the dimensional drawing of an energized extending type cylinder.



## Dimensional Table

| Bore \ Symbol | A Standard | A Non-rotating | AD | AE | AF | AH | AL | AT | AV | B1 Standard | B1 Non-rotating | B2 | D | E | EB | EC | h Standard | h Non-rotating | J | KK Standard | KK Non-rotating |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | 20(20) | — | 19 | 42 | 24 | 25 | 16 | 3.2 | 12.8 | 13 | — | 30 | 6 | φ28 | 26 | 36 | 5 | — | 25 | M8×1.25 | — |
| φ25 | 22(22) | 20(17) | 19 | 42 | 24 | 25 | 16 | 3.2 | 12.8 | 17 | 13 | 30 | 8 | φ31 | 29 | 36 | 6 | 5 | 25 | M10×1.25 | M8×1.25 |
| φ32 | 22(19) | — | 17 | 51 | 33 | 32 | 25 | 4 | 21 | 17 | — | 32 | 10 | φ38 | 36 | 36 | 6 | — | 25.5 | M10×1.25 | — |
| φ40 | 24(21) | 24(21) | 15 | 59 | 33 | 36 | 25 | 4 | 21 | 19 | 19 | 41 | 12 | φ46 | 44 | 44 | 7 | 7 | 30 | M12×1.25 | M12×1.25 |

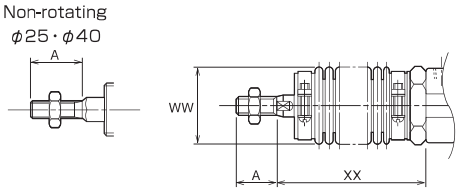
| Bore \ Symbol | LC | LD | LL | MB | MG | MM | P | PE | PV | R | RH | SA | SH | SK | UA | VF | WB | WF | XA | XB | YP | ZA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | 205 | 62.5 | 59 | M22×1.5 | — | φ8 | 45 | 59 | 100 | 40 | 7 | 91 | 97.5 | 33.4 | 55 | 16(13) | 87 | 24 | 99 | 71 | 7 | 107 |
| φ25 | 209.5 | 67 | 64 | M22×1.5 | 9 | φ10 | 49 | 59 | 104.5 | 40 | 7 | 96 | 102 | 38.4 | 55 | 18(15) | 87 | 28 | 108 | 71 | 7.5 | 116 |
| φ32 | 215.5 | 73 | 70 | M24×2 | — | φ12 | 55 | 66 | 110.5 | 45 | 8 | 120 | 115 | 28 | 60 | 20(16) | 87 | 30 | 125 | 71 | 7.5 | 133 |
| φ40 | 222 | 77 | 72 | M30×2 | 14 | φ14 | 57 | 74 | 117 | 50 | 9 | 122 | 117 | 30 | 65 | 22(18) | 95 | 32 | 129 | 79 | 7.5 | 137 |

＊The parenthesized values of dimensions A and VF indicate the screw length.

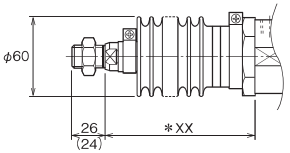
10Z-3/TAZ3 Bore K

## With Boots

φ20 to φ40




φ50・φ63




● The parenthesized values indicate the screw length.
＊XX=1/4×(stroke)+65
If the calculated value has a fractional part, round it up.

## Dimensional Table

| Bore \ Symbol / Stroke | A Standard | A Non-rotating | WW | to 25 Standard | to 25 Non-rotating | to 50 Standard | to 50 Non-rotating | to 75 Standard | to 75 Non-rotating | to 100 Standard | to 100 Non-rotating | to 125 Standard | to 125 Non-rotating | to 150 Standard | to 150 Non-rotating | to 175 Standard | to 175 Non-rotating | to 200 Standard | to 200 Non-rotating | to 250 Standard | to 250 Non-rotating | to 300 Standard | to 300 Non-rotating | to 350 Standard | to 350 Non-rotating | to 400 Standard | to 400 Non-rotating | to 450 Standard | to 450 Non-rotating | to 500 Standard | to 500 Non-rotating |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Dimension XX for each stroke | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| φ20 | 20(20) | — | φ36 | 49 | — | 59 | — | 69 | — | 74 | — | 84 | — | 94 | — | 104 | — | 114 | — | 134 | — | 154 | — | 174 | — | 194 | — | 214 | — | 234 | — |
| φ25 | 22(22) | 20(17) | φ36 | 53 | 46 | 63 | 56 | 73 | 66 | 78 | 71 | 88 | 81 | 98 | 91 | 108 | 101 | 118 | 111 | 138 | 131 | 158 | 151 | 178 | 171 | 198 | 191 | 218 | 211 | 238 | 231 |
| φ32 | 22(19) | — | φ40 | 45 | — | 55 | — | 65 | — | 70 | — | 80 | — | 85 | — | 95 | — | 100 | — | 120 | — | 130 | — | 150 | — | 170 | — | 190 | — | 210 | — |
| φ40 | 24(21) | 24(21) | φ45 | 42 | 35 | 52 | 45 | 57 | 50 | 62 | 55 | 72 | 65 | 82 | 75 | 87 | 80 | 92 | 85 | 102 | 95 | 117 | 110 | 127 | 120 | 142 | 135 | 162 | 155 | 182 | 175 |

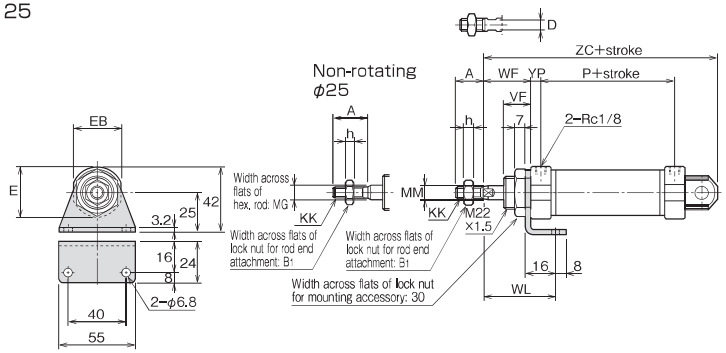
＊The parenthesized values of dimension A indicate the screw length.

10Z-3/TAZ3 Bore A CAD/DATA is available.

# LS

Double acting single rod | Standard | 10Z-3 | LS | Bore | Cushioning | Stroke |
Non-rotating | 10Z-3G | LK | Bore | Cushioning | Stroke |

● φ20・φ25




- For dimensions not shown here, refer to the SD style (basic style).
- The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.

Related types: Clevis cut style (LK), rear port style (LP), type with cushion, type with boots. The non-rotating cylinders are basically mounted in the clevis cut style.





## Dimensional Table

| Symbol / Bore | A | | B1 | | D | E | EB | h | |
|---|---|---|---|---|---|---|---|---|---|
| | Standard | Non-rotating | Standard | Non-rotating | | | | Standard | Non-rotating |
| φ20 | 20(20) | — | 13 | — | 6 | φ28 | 26 | 5 | — |
| φ25 | 22(22) | 20(17) | 17 | 13 | 8 | φ31 | 29 | 6 | 5 |

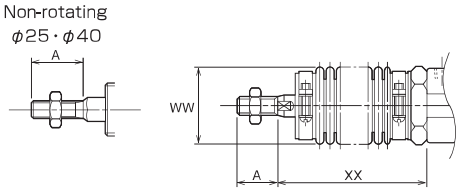
| Symbol / Bore | KK | | MM | MG | P | VF | WF | WL | YP | ZC |
|---|---|---|---|---|---|---|---|---|---|---|
| | Standard | Non-rotating | | | | | | | | |
| φ20 | M8×1.25 | — | φ8 | — | 45 | 16 | 24 | 36.8 | 7 | 105 |
| φ25 | M10×1.25 | M8×1.25 | φ10 | 9 | 49 | 18 | 28 | 40.8 | 7.5 | 114 |

＊The parenthesized values of dimension A indicate the screw length.

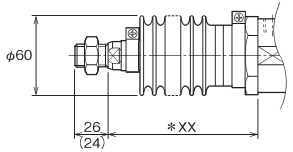
10Z-3/TAZ3 Bore K

## With Boots

φ20 to φ40




φ50・φ63




- The parenthesized values indicate the screw length.

＊XX=1/4×(stroke)+65
If the calculated value has a fractional part, round it up.

## Dimensional Table

| Symbol / Stroke / Bore | A | | WW | Dimension XX for each stroke | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | to 25 | | to 50 | | to 75 | | to 100 | | to 125 | | to 150 | | to 175 | | to 200 | | to 250 | | to 300 | | to 350 | | to 400 | | to 450 | | to 500 | |
| | Standard | Non-rotating | | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating |
| φ20 | 20(20) | — | φ36 | 49 | — | 59 | — | 69 | — | 74 | — | 84 | — | 94 | — | 104 | — | 114 | — | 134 | — | 154 | — | 174 | — | 194 | — | 214 | — | 234 | — |
| φ25 | 22(22) | 20(17) | φ36 | 53 | 46 | 63 | 56 | 73 | 66 | 78 | 71 | 88 | 81 | 98 | 91 | 108 | 101 | 118 | 111 | 138 | 131 | 158 | 151 | 178 | 171 | 198 | 191 | 218 | 211 | 238 | 231 |
| φ32 | 22(19) | — | φ40 | 45 | — | 55 | — | 65 | — | 70 | — | 80 | — | 85 | — | 95 | — | 100 | — | 120 | — | 130 | — | 150 | — | 170 | — | 190 | — | 210 | — |
| φ40 | 24(21) | 24(21) | φ45 | 42 | 35 | 52 | 45 | 57 | 50 | 62 | 55 | 72 | 65 | 82 | 75 | 87 | 80 | 92 | 85 | 102 | 95 | 117 | 110 | 127 | 120 | 142 | 135 | 162 | 155 | 182 | 175 |

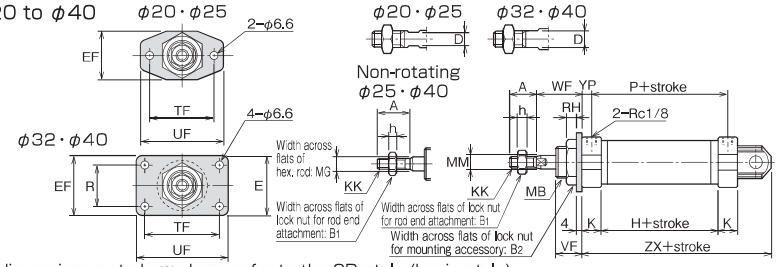
＊The parenthesized values of dimension A indicate the screw length.

CAD/DATA is available.
10Z-3/TAZ3 Bore A

# FA

Double acting single rod | Standard | 10Z-3 | FA | Bore | Cushioning | Stroke |
Non-rotating | 10Z-3G | FK | Bore | Cushioning | Stroke |

● ϕ20 to ϕ40

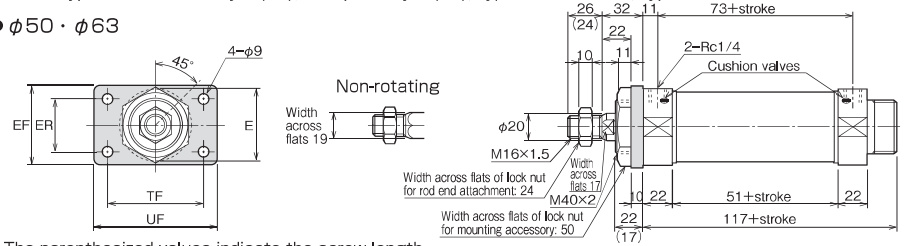



- For dimensions not shown here, refer to the SD style (basic style).
- The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.

The non-rotating cylinders are basically mounted in the clevis cut style.

Related types: Clevis cut style (FK), rear port style (FP), type with cushion, type with boots

● ϕ50・ϕ63




- The parenthesized values indicate the screw length.
- The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions shown above.

## Dimensional Table

| Bore \ Symbol | E | EF | ER | TF | UF |
|---|---|---|---|---|---|
| ϕ50 | ϕ56 | 60 | 40 | 74 | 94 |
| ϕ63 | ϕ70 | 70 | 50 | 80 | 100 |

Related types: Clevis cut style (FK), rear port style (FP), type with boots

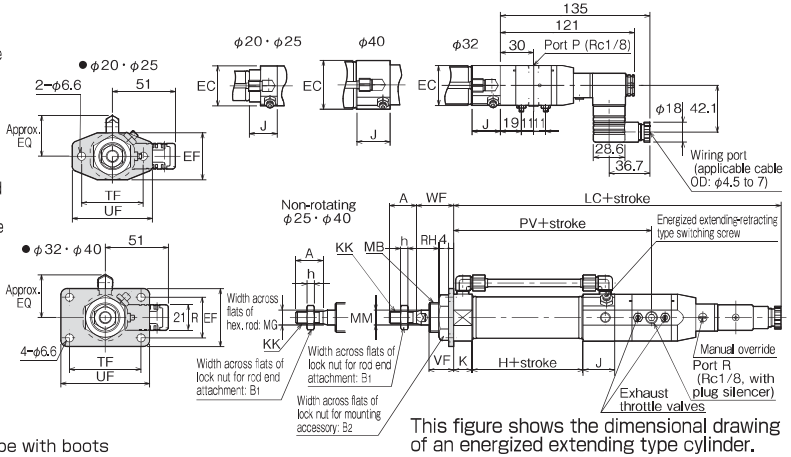
The non-rotating cylinders are basically mounted in the clevis cut style.

## VAL Set

Double acting single rod | Standard | 10Z-3V2 | FA | Bore | N | Stroke | − | Valve operating function | Valve voltage |
Non-rotating | 10Z-3V2G | FA | Bore | N | Stroke | − | Valve operating function | Valve voltage |

● ϕ20 to ϕ40

- For dimensions not shown here, refer to the SD style (basic style).
- The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.
- Ports P, exhaust throttle valves, terminals and manual operation buttons of the VAL Set and SV Set Cylinders of the energized extending type are positioned at a distance of 180 degrees from those of the energized retracting type.




Related types: Type with boots

This figure shows the dimensional drawing of an energized extending type cylinder.



## Dimensional Table

| Bore \ Symbol | A Standard | A Non-rotating | B1 Standard | B1 Non-rotating | B2 | D | E | EC | EF | EQ | H | h Standard | h Non-rotating | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 20(20) | — | 13 | — | 30 | 6 | ϕ28 | 36 | 38 | 34 | 31 | 5 | — | 25 | 14 |
| ϕ25 | 22(22) | 20(17) | 17 | 13 | 30 | 8 | ϕ31 | 36 | 38 | 34 | 35 | 6 | 5 | 25 | 14.5 |
| ϕ32 | 22(19) | — | 17 | — | 32 | 10 | ϕ38 | 36 | 47 | 34 | 40 | 6 | — | 25.5 | 15 |
| ϕ40 | 24(21) | 24(21) | 19 | 19 | 41 | 12 | ϕ46 | 44 | 51 | 38 | 42 | 7 | 7 | 30 | 15 |

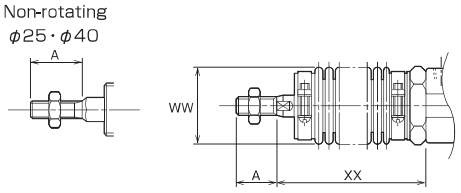
| Bore \ Symbol | KK Standard | KK Non-rotating | LC | MB | MG | MM | P | PV | R | RH | TF | UF | VF | WF | YP | ZX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | M8×1.25 | — | 205 | M22×1.5 | — | ϕ8 | 45 | 100 | — | 7 | 50 | 65 | 16 | 24 | 7 | 81 |
| ϕ25 | M10×1.25 | M8×1.25 | 209.5 | M22×1.5 | 9 | ϕ10 | 49 | 104.5 | — | 7 | 50 | 65 | 18 | 28 | 7.5 | 86 |
| ϕ32 | M10×1.25 | — | 215.5 | M24×2 | — | ϕ12 | 55 | 110.5 | 33 | 8 | 58 | 72 | 20 | 30 | 7.5 | 96 |
| ϕ40 | M12×1.25 | M12×1.25 | 222 | M30×2 | 14 | ϕ14 | 57 | 117 | 36 | 9 | 70 | 84 | 22 | 32 | 7.5 | 100 |

＊The parenthesized values of dimension A indicate the screw length.

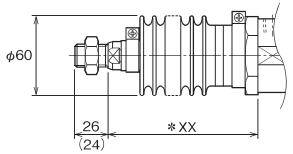
10Z-3/TAZ3 Bore K

## With Boots

ϕ20 to ϕ40




ϕ50・ϕ63




- The parenthesized values indicate the screw length.

＊XX=1/4×(stroke)+65
If the calculated value has a fractional part, round it up.

## Dimensional Table

| Bore \ Stroke | A Standard | A Non-rotating | WW | Dimension XX for each stroke: to 25 Standard | to 25 Non-rotating | to 50 Standard | to 50 Non-rotating | to 75 Standard | to 75 Non-rotating | to 100 Standard | to 100 Non-rotating | to 125 Standard | to 125 Non-rotating | to 150 Standard | to 150 Non-rotating | to 175 Standard | to 175 Non-rotating | to 200 Standard | to 200 Non-rotating | to 250 Standard | to 250 Non-rotating | to 300 Standard | to 300 Non-rotating | to 350 Standard | to 350 Non-rotating | to 400 Standard | to 400 Non-rotating | to 450 Standard | to 450 Non-rotating | to 500 Standard | to 500 Non-rotating |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 20 | 20 | — | ϕ36 | 49 | — | 59 | — | 69 | — | 74 | — | 84 | — | 94 | — | 104 | — | 114 | — | 134 | — | 154 | — | 174 | — | 194 | — | 214 | — | 234 | — |
| ϕ25 | 22 | 22 | 20 | 17 | ϕ36 | 53 | 46 | 63 | 56 | 73 | 66 | 78 | 71 | 88 | 81 | 98 | 91 | 108 | 101 | 118 | 111 | 138 | 131 | 158 | 151 | 178 | 171 | 198 | 191 | 218 | 211 | 238 | 231 |
| ϕ32 | 22 | 19 | — | ϕ40 | 45 | — | 55 | — | 65 | — | 70 | — | 80 | — | 85 | — | 95 | — | 100 | — | 120 | — | 130 | — | 150 | — | 170 | — | 190 | — | 210 | — |
| ϕ40 | 24 | 21 | 24 | 21 | ϕ45 | 42 | 35 | 52 | 45 | 57 | 50 | 62 | 55 | 72 | 65 | 82 | 75 | 87 | 80 | 92 | 85 | 102 | 95 | 117 | 110 | 127 | 120 | 142 | 135 | 162 | 155 | 182 | 175 |

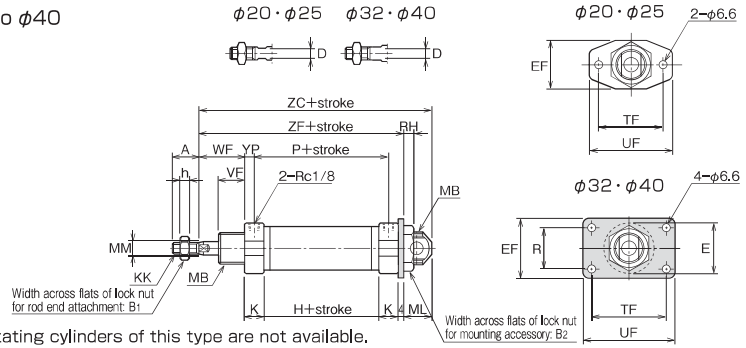
＊The parenthesized values of dimension A indicate the screw length.

10Z-3/TAZ3 Bore A CAD/DATA is available.

# FB

Double acting single rod | Standard | 10Z-3 FB | Bore | Cushioning | Stroke

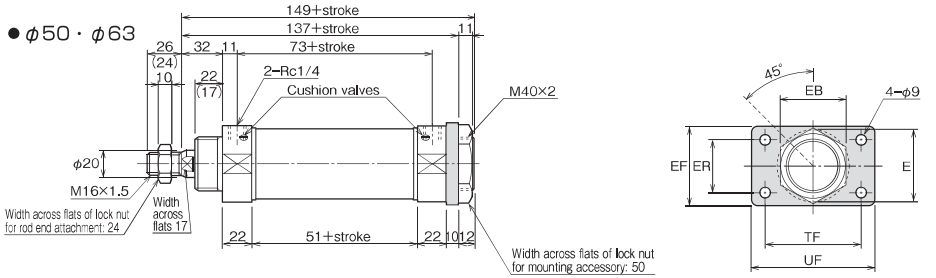
●ϕ20 to ϕ40




●Non-rotating cylinders of this type are not available.
●For dimensions not shown here, refer to the SD style (basic style).

Related types: Type with cushion, type with boots

●ϕ50・ϕ63




●Non-rotating cylinders of this type are not available.
●The parenthesized values indicate the screw length.

Related types: Type with boots

## Dimensional Table

| Bore \ Symbol | E | EB |
|---|---|---|
| ϕ50 | ϕ56 | 54 |
| ϕ63 | ϕ70 | 68 |



## Dimensional Table

| Bore \ Symbol | A | $B_1$ | $B_2$ | D | E | EF | H | h | K | KK | MB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 20(20) | 13 | 30 | 6 | ϕ28 | 38 | 31 | 5 | 14 | M8×1.25 | M22×1.5 |
| ϕ25 | 22(22) | 17 | 30 | 8 | ϕ31 | 38 | 35 | 6 | 14.5 | M10×1.25 | M22×1.5 |
| ϕ32 | 22(19) | 17 | 32 | 10 | ϕ38 | 47 | 40 | 6 | 15 | M10×1.25 | M24×2 |
| ϕ40 | 24(21) | 19 | 41 | 12 | ϕ46 | 51 | 42 | 7 | 15 | M12×1.25 | M30×2 |

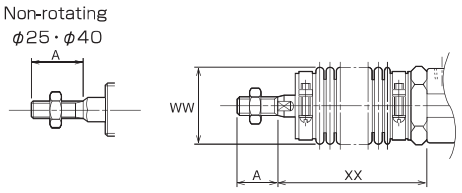
| Bore \ Symbol | ML | MM | P | R | RH | TF | UF | VF | WF | YP | ZC | ZF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 18 | ϕ8 | 45 | — | 7 | 50 | 65 | 16(13) | 24 | 7 | 105 | 87 |
| ϕ25 | 18 | ϕ10 | 49 | — | 7 | 50 | 65 | 18(15) | 28 | 7.5 | 114 | 96 |
| ϕ32 | 22 | ϕ12 | 55 | 33 | 8 | 58 | 72 | 20(16) | 30 | 7.5 | 126 | 104 |
| ϕ40 | 24 | ϕ14 | 57 | 36 | 9 | 70 | 84 | 22(18) | 32 | 7.5 | 132 | 108 |

＊The parenthesized values of dimensions A and VF indicate the screw length.

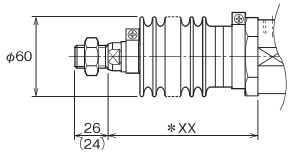
10Z-3/TAZ3 Bore K

## With Boots

ϕ20 to ϕ40




ϕ50・ϕ63




●The parenthesized values indicate the screw length.
＊XX=1/4×(stroke)+65
If the calculated value has a fractional part, round it up.

## Dimensional Table

| Bore \ Symbol / Stroke | A | | WW | Dimension XX for each stroke | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | to 25 | | to 50 | | to 75 | | to 100 | | to 125 | | to 150 | | to 175 | | to 200 | | to 250 | | to 300 | | to 350 | | to 400 | | to 450 | | to 500 | |
| | Stand-ard | Non-rotating | | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating |
| ϕ20 | 20 | 20 | ϕ36 | 49 | — | 59 | — | 69 | — | 74 | — | 84 | — | 94 | — | 104 | — | 114 | — | 134 | — | 154 | — | 174 | — | 194 | — | 214 | — | 234 | — |
| ϕ25 | 22 | 20 | ϕ36 | 53 | 46 | 63 | 56 | 73 | 66 | 78 | 71 | 88 | 81 | 98 | 91 | 108 | 101 | 118 | 111 | 138 | 131 | 158 | 151 | 178 | 171 | 198 | 191 | 218 | 211 | 238 | 231 |
| ϕ32 | 22 | — | ϕ40 | 45 | — | 55 | — | 65 | — | 70 | — | 80 | — | 85 | — | 95 | — | 100 | — | 120 | — | 130 | — | 150 | — | 170 | — | 190 | — | 210 | — |
| ϕ40 | 24 | 24 | ϕ45 | 42 | 35 | 52 | 45 | 57 | 50 | 62 | 55 | 72 | 65 | 82 | 75 | 87 | 80 | 92 | 85 | 102 | 95 | 117 | 110 | 127 | 120 | 142 | 135 | 162 | 155 | 182 | 175 |

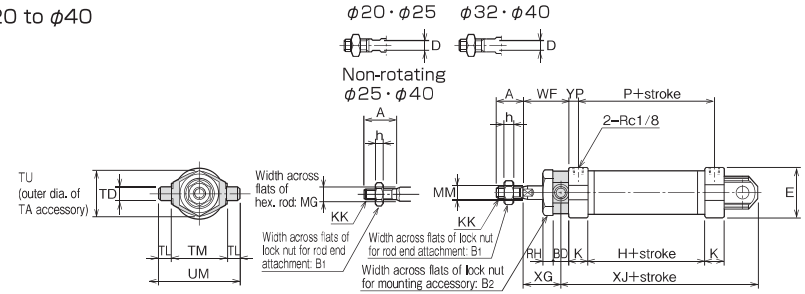
＊The parenthesized values of dimension A indicate the screw length.

10Z-3/TAZ3 Bore A CAD/DATA is available.

# TA

Double acting single rod | Standard | 10Z-3 | TA | Bore | Cushioning | Stroke |
Non-rotating | 10Z-3G | TK | Bore | Cushioning | Stroke |

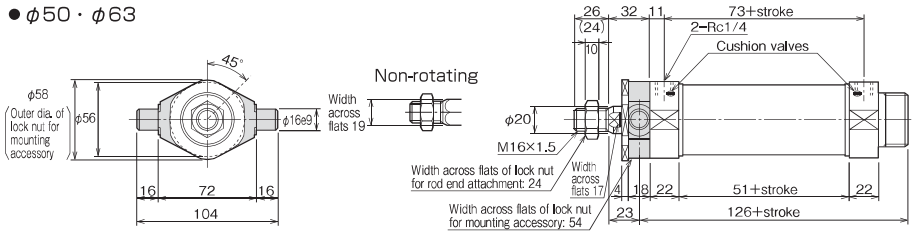
● φ20 to φ40




● For dimensions not shown here, refer to the SD style (basic style). The non-rotating cylinders are basically mounted in the clevis cut style.
● The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.

Related types: Clevis cut styles (TK), rear port style (TP), type with cushion, type with boots

● φ50・φ63



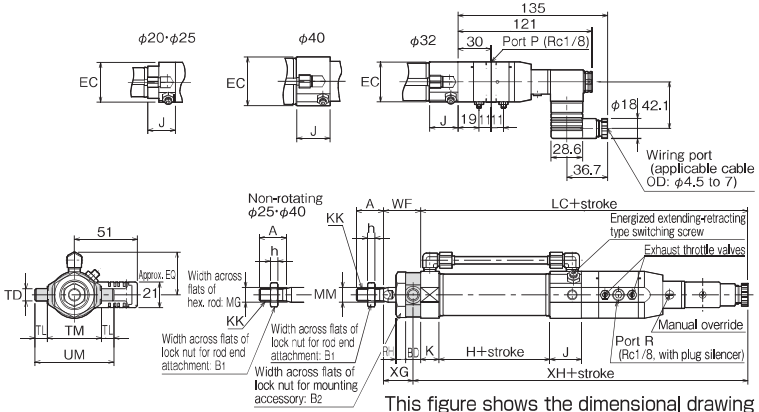

● The parenthesized values indicate the screw length.
● The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.
Related types: Clevis cut style (TK), rear port style (TP). The non-rotating cylinders are basically mounted in the clevis cut style.

## VAL Set

Double acting single rod | Standard | 10Z-3V2 | TA | Bore | N | Stroke | – | Valve operating function | Valve voltage |
Non-rotating | 10Z-3V2G | TA | Bore | N | Stroke | – | Valve operating function | Valve voltage |

● φ20 to φ40

- For dimensions not shown here, refer to the SD style (basic style).
- The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.
- Ports P, exhaust throttle valves, terminals and manual operation buttons of the VAL Set and SV Set Cylinders of the energized extending type are positioned at a distance of 180 degrees from those of the energized retracting type.




This figure shows the dimensional drawing of an energized extending type cylinder.

Related types: Type with boots



## Dimensional Table

| Bore \ Symbol | A | | B1 | | B2 | BD | D | E | EC | EQ | H | h | | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Standard | Non-rotating | Standard | Non-rotating | | | | | | | | Standard | Non-rotating | | |
| φ20 | 20(20) | — | 13 | — | 30 | 10 | 6 | φ28 | 36 | 34 | 31 | 5 | — | 25 | 14 |
| φ25 | 22(22) | 20(17) | 17 | 13 | 30 | 10 | 8 | φ31 | 36 | 34 | 35 | 6 | 5 | 25 | 14.5 |
| φ32 | 22(19) | — | 17 | — | 32 | 12 | 10 | φ38 | 36 | 34 | 40 | 6 | — | 25.5 | 15 |
| φ40 | 24(21) | 24(21) | 19 | 19 | 41 | 14 | 12 | φ46 | 44 | 38 | 42 | 7 | 7 | 30 | 15 |

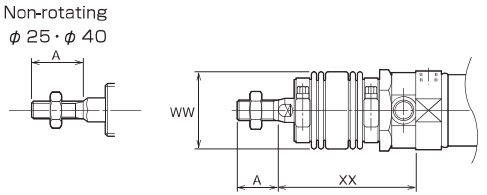
| Bore \ Symbol | KK | | LC | MG | MM | P | RH | TD | TL | TM | TU | UM | WF | XG | XH | XJ | YP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Standard | Non-rotating | | | | | | | | | | | | | | | |
| φ20 | M8×1.25 | — | 205 | — | φ8 | 45 | 7 | φ8e9 | 8 | 36 | 32 | 52 | 24 | 19 | 210 | 86 | 7 |
| φ25 | M10×1.25 | M8×1.25 | 209.5 | 9 | φ10 | 49 | 7 | φ8e9 | 8 | 36 | 32 | 52 | 28 | 23 | 214.5 | 91 | 7.5 |
| φ32 | M10×1.25 | — | 215.5 | — | φ12 | 55 | 8 | φ10e9 | 10 | 44 | 36 | 64 | 30 | 24 | 221.5 | 102 | 7.5 |
| φ40 | M12×1.25 | M12×1.25 | 222 | 14 | φ14 | 57 | 9 | φ12e9 | 12 | 50 | 44 | 74 | 32 | 25 | 229 | 107 | 7.5 |

＊The parenthesized values of dimension A indicate the screw length.

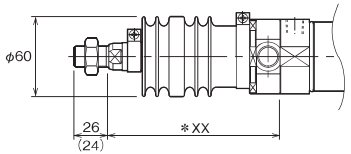
10Z-3/TAZ3 Bore K

## With Boots

φ20 to φ40




φ50・φ63




● The parenthesized values indicate the screw length.
＊XX=1/4×(stroke)+65
However, when the stroke is less than 50, XX=1/4×(stroke)+80.
If the calculated value has a fractional part, round it up.

## Dimensional Table

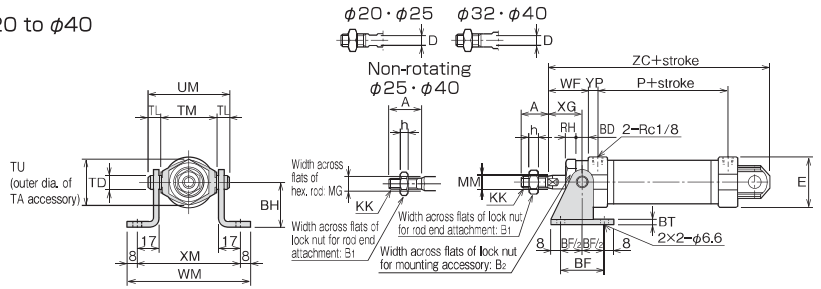
| Bore \ Symbol \ Stroke | A | | WW | Dimension XX for each stroke | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | to 25 | | to 50 | | to 75 | | to 100 | | to 125 | | to 150 | | to 175 | | to 200 | | to 250 | | to 300 | | to 350 | | to 400 | | to 450 | | to 500 | |
| | Standard | Non-rotating | | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating | Standard | Non-rotating |
| φ20 | 20(20) | — | φ36 | 59 | — | 69 | — | 79 | — | 84 | — | 94 | — | 104 | — | 114 | — | 124 | — | 144 | — | 164 | — | 184 | — | 204 | — | 224 | — | 244 | — |
| φ25 | 22(22) | 20(17) | φ36 | 63 | 56 | 73 | 66 | 83 | 76 | 88 | 81 | 98 | 91 | 108 | 101 | 118 | 111 | 128 | 121 | 148 | 141 | 168 | 161 | 188 | 181 | 208 | 201 | 228 | 221 | 248 | 241 |
| φ32 | 22(19) | — | φ40 | 55 | — | 65 | — | 75 | — | 80 | — | 90 | — | 95 | — | 105 | — | 110 | — | 130 | — | 140 | — | 160 | — | 180 | — | 200 | — | 220 | — |
| φ40 | 24(21) | 24(21) | φ45 | 52 | 45 | 62 | 55 | 67 | 60 | 72 | 65 | 82 | 75 | 92 | 85 | 97 | 90 | 102 | 95 | 112 | 105 | 127 | 120 | 137 | 130 | 152 | 145 | 172 | 165 | 192 | 185 |

＊The parenthesized values of dimension A indicate the screw length.

# TA with Bracket

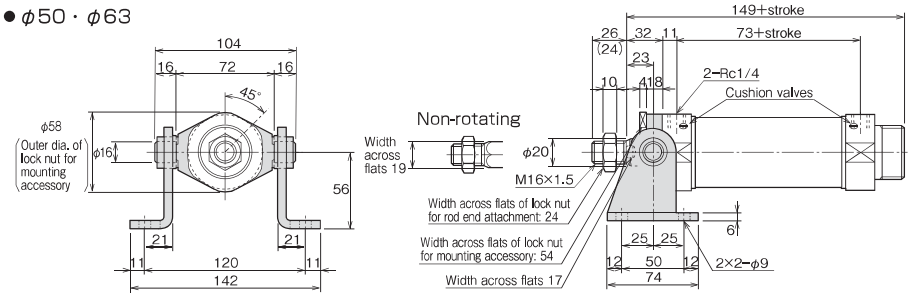
Double acting single rod | Standard | 10Z-3 | TA | Bore | Cushioning | Stroke | - B
Non-rotating | 10Z-3G | TK | Bore | Cushioning | Stroke | - B

● φ20 to φ40




● For dimensions not shown here, refer to the SD style (basic style). The non-rotating cylinders are basically mounted in the clevis cut style.
● The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.
Related types: Clevis cut styles (TK with bracket), rear port style (TP with bracket), type with cushion, type with boots

● φ50・φ63



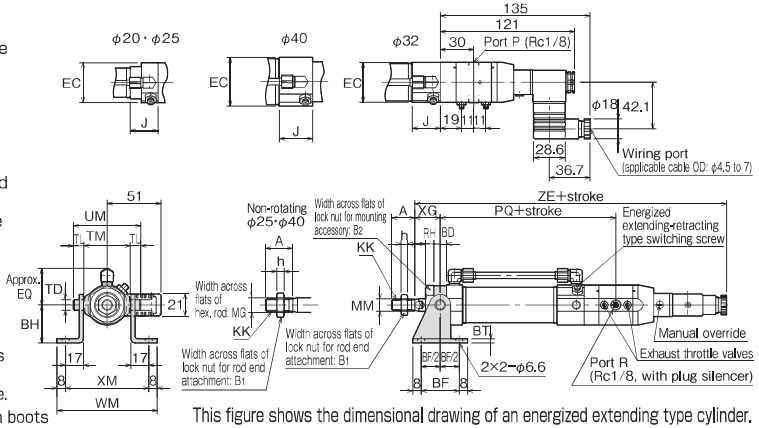

● The parenthesized values indicate the screw length.
● The non-rotating cylinders have the same dimensions as the standard types except the dimensions shown above.
Related types: Clevis cut style (TK), rear port style (TP) The non-rotating cylinders are basically mounted in the clevis cut style.

## VAL Set

Double acting single rod | Standard | 10Z-3V2 | TA | Bore | N | Stroke | - | Valve operating function | Valve voltage | - B
Non-rotating | 10Z-3V2G | TA | Bore | N | Stroke | - | Valve operating function | Valve voltage | - B

● φ20 to φ40

- For dimensions not shown here, refer to the SD style (basic style).
- The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.
- Ports P, exhaust throttle valves, terminals and manual operation buttons of the VAL Set and SV Set Cylinders of the energized extending type are positioned at a distance of 180 degrees from those of the energized retracting type.




Related types: Type with boots

This figure shows the dimensional drawing of an energized extending type cylinder.



## Dimensional Table

| Bore \ Symbol | A Standard | A Non-rotating | B1 Standard | B1 Non-rotating | B2 | BD | BF | BH | BT | D | E | EC | EQ | h Standard | h Non-rotating | J |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | 20(20) | — | 13 | — | 30 | 10 | 32 | 32 | 3.2 | 6 | φ28 | 36 | 34 | 5 | — | 25 |
| φ25 | 22(22) | 20(17) | 17 | 13 | 30 | 10 | 32 | 32 | 3.2 | 8 | φ31 | 36 | 34 | 6 | 5 | 25 |
| φ32 | 22(19) | — | 17 | — | 32 | 12 | 36 | 36 | 4 | 10 | φ38 | 36 | 35 | 6 | — | 25.5 |
| φ40 | 24(21) | 24(21) | 19 | 19 | 41 | 14 | 40 | 40 | 4 | 12 | φ46 | 44 | 39 | 7 | 7 | 30 |

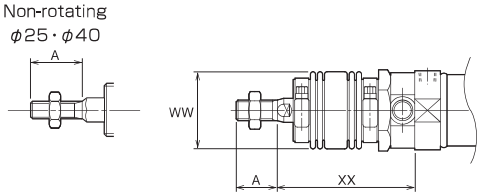
| Bore \ Symbol | KK Standard | KK Non-rotating | MG | MM | P | PQ | RH | TD | TL | TM | TU | UM | WF | WM | XG | XM | YP | ZC | ZE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | M8×1.25 | — | — | φ8 | 45 | 105 | 7 | φ8e9 | 8 | 36 | 32 | 52 | 24 | 87 | 19 | 71 | 7 | 105 | 229 |
| φ25 | M10×1.25 | M8×1.25 | 9 | φ10 | 49 | 109.5 | 7 | φ8e9 | 8 | 36 | 32 | 52 | 28 | 87 | 23 | 71 | 7.5 | 114 | 237.5 |
| φ32 | M10×1.25 | — | — | φ12 | 55 | 116.5 | 8 | φ10e9 | 10 | 44 | 36 | 64 | 30 | 95 | 24 | 79 | 7.5 | 126 | 245.5 |
| φ40 | M12×1.25 | M12×1.25 | 14 | φ14 | 57 | 124 | 9 | φ12e9 | 12 | 50 | 44 | 74 | 32 | 101 | 25 | 85 | 7.5 | 132 | 254 |

*The parenthesized values of dimension A indicate the screw length.

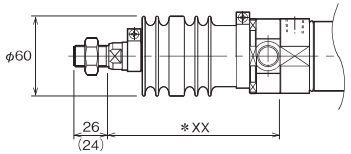
10Z-3/TAZ3 Bore K

## With Boots

φ20 to φ40




φ50・φ63




● The parenthesized values indicate the screw length.
*XX=1/4×(stroke)+65
However, when the stroke is less than 50, XX=1/4×(stroke)+80.
If the calculated value has a fractional part, round it up.

## Dimensional Table

| Bore \ Symbol | A Standard | A Non-rotating | WW | Dimension XX for each stroke: to 25 Standard | to 25 Non-rotating | to 50 Standard | to 50 Non-rotating | to 75 Standard | to 75 Non-rotating | to 100 Standard | to 100 Non-rotating | to 125 Standard | to 125 Non-rotating | to 150 Standard | to 150 Non-rotating | to 175 Standard | to 175 Non-rotating | to 200 Standard | to 200 Non-rotating | to 250 Standard | to 250 Non-rotating | to 300 Standard | to 300 Non-rotating | to 350 Standard | to 350 Non-rotating | to 400 Standard | to 400 Non-rotating | to 450 Standard | to 450 Non-rotating | to 500 Standard | to 500 Non-rotating |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | 20(20) | — | φ36 | 59 | — | 69 | — | 79 | — | 84 | — | 94 | — | 104 | — | 114 | — | 124 | — | 144 | — | 164 | — | 184 | — | 204 | — | 224 | — | 244 | — |
| φ25 | 22(22) | 20(17) | φ36 | 63 | 56 | 73 | 66 | 83 | 76 | 88 | 81 | 98 | 91 | 108 | 101 | 118 | 111 | 128 | 121 | 148 | 141 | 168 | 161 | 188 | 181 | 208 | 201 | 228 | 221 | 248 | 241 |
| φ32 | 22(19) | — | φ40 | 55 | — | 65 | — | 75 | — | 80 | — | 90 | — | 95 | — | 105 | — | 110 | — | 130 | — | 140 | — | 160 | — | 180 | — | 200 | — | 220 | — |
| φ40 | 24(21) | 24(21) | φ45 | 52 | 45 | 62 | 55 | 67 | 60 | 72 | 65 | 82 | 75 | 92 | 85 | 97 | 90 | 102 | 95 | 112 | 105 | 127 | 120 | 137 | 130 | 152 | 145 | 172 | 165 | 192 | 185 |

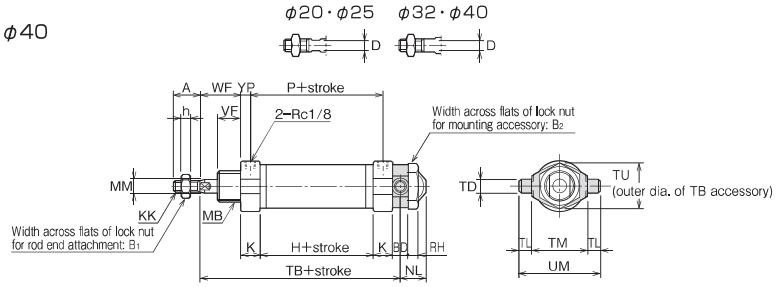
*The parenthesized values of dimension A indicate the screw length.

10Z-3/TAZ3 Bore A CAD/DATA is available.

# TB

Double acting single rod | Standard | 10Z-3 TB | Bore | Cushioning | Stroke

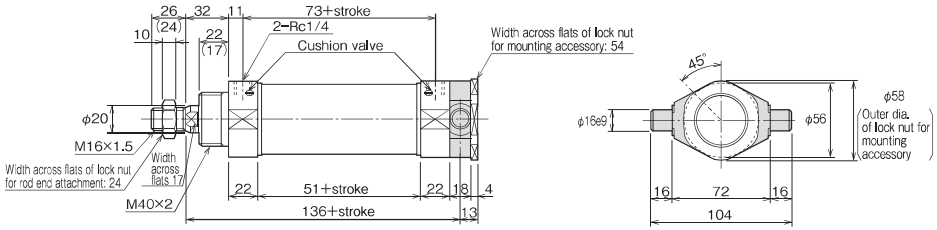
● ϕ20 to ϕ40




- Non-rotating cylinders of this type are not available.
- For dimensions not shown here, refer to the SD style (basic style).

Related types: Type with cushion, type with boots

● ϕ50・ϕ63



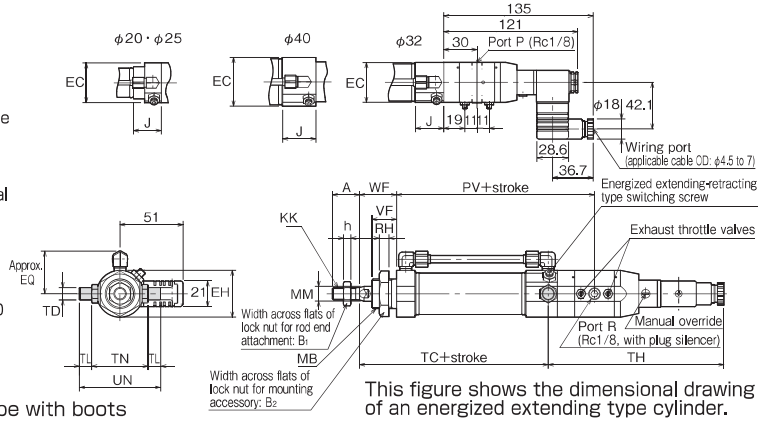

- Non-rotating cylinders of this type are not available.
- The parenthesized values indicate the screw length.

Related types: Type with boots

# TC VAL Set

Double acting single rod | Standard | 10Z-3V2 TC | Bore | N | Stroke | – | Valve operating function | Valve voltage

● ϕ20 to ϕ40




- For dimensions not shown here, refer to the SD style (basic style).
- Ports P, exhaust throttle valves, terminals and manual operation buttons of the VAL Set and SV Set Cylinders of the energized extending type are positioned at a distance of 180 degrees from those of the energized retracting type.

This figure shows the dimensional drawing of an energized extending type cylinder.

Related types: Type with boots





## Dimensional Table

| Symbol / Bore | A | B1 | B2 | BD | D | EC | EH | EQ | H | h | J | K | KK | MB | MM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 20(20) | 13 | 30 | 10 | 6 | 36 | ϕ38 | 34 | 31 | 5 | 25 | 14 | M8×1.25 | M22×1.5 | ϕ8 |
| ϕ25 | 22(22) | 17 | 30 | 10 | 8 | 36 | ϕ38 | 34 | 35 | 6 | 25 | 14.5 | M10×1.25 | M22×1.5 | ϕ10 |
| ϕ32 | 22(19) | 17 | 32 | 12 | 10 | 36 | ϕ38 | 35 | 40 | 6 | 25.5 | 15 | M10×1.25 | M24×2 | ϕ12 |
| ϕ40 | 24(21) | 19 | 41 | 14 | 12 | 44 | ϕ46 | 39 | 42 | 7 | 30 | 15 | M12×1.25 | M30×2 | ϕ14 |

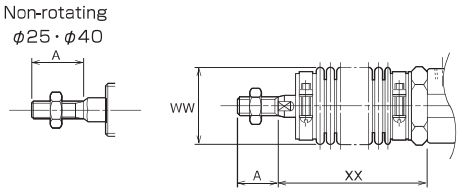
| Symbol / Bore | NL | P | PV | RH | TB | TC | TD | TH | TL | TM | TN | TU | UM | UN | VF | WF | YP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 17 | 45 | 100 | 7 | 88 | 86.5 | ϕ8e9 | 142.5 | 8 | 36 | 46 | 32 | 52 | 62 | 16(13) | 24 | 7 |
| ϕ25 | 17 | 49 | 104.5 | 7 | 97 | 95 | ϕ8e9 | 142.5 | 8 | 36 | 46 | 32 | 52 | 62 | 18(15) | 28 | 7.5 |
| ϕ32 | 20 | 55 | 110.5 | 8 | 106 | 103 | ϕ10e9 | 142.5 | 10 | 44 | 46 | 36 | 64 | 66 | 20(16) | 30 | 7.5 |
| ϕ40 | 21 | 57 | 117 | 9 | 111 | 109 | ϕ12e9 | 145 | 12 | 50 | 54 | 44 | 74 | 78 | 22(18) | 32 | 7.5 |

*The parenthesized values of dimensions A and VF indicate the screw length.

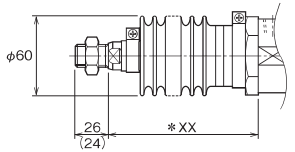
10Z-3/TAZ3 Bore K

## With Boots

ϕ20 to ϕ40




ϕ50・ϕ63




- The parenthesized values indicate the screw length.

*XX=1/4×(stroke)+65

If the calculated value has a fractional part, round it up.

## Dimensional Table

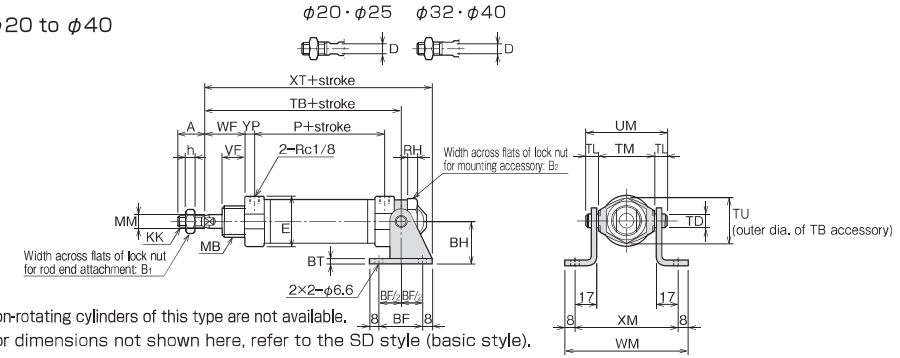
| Symbol / Stroke / Bore | A | | WW | Dimension XX for each stroke | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | to 25 | | to 50 | | to 75 | | to 100 | | to 125 | | to 150 | | to 175 | | to 200 | | to 250 | | to 300 | | to 350 | | to 400 | | to 450 | | to 500 | |
| | Stand-ard | Non-rotating | | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating |
| ϕ20 | 20(20) | — | ϕ36 | 49 | — | 59 | — | 69 | — | 74 | — | 84 | — | 94 | — | 104 | — | 114 | — | 134 | — | 154 | — | 174 | — | 194 | — | 214 | — | 234 | — |
| ϕ25 | 22(22) | 20(17) | ϕ36 | 53 | 46 | 63 | 56 | 73 | 66 | 78 | 71 | 88 | 81 | 98 | 91 | 108 | 101 | 118 | 111 | 138 | 131 | 158 | 151 | 178 | 171 | 198 | 191 | 218 | 211 | 238 | 231 |
| ϕ32 | 22(19) | — | ϕ40 | 45 | — | 55 | — | 65 | — | 70 | — | 80 | — | 85 | — | 95 | — | 100 | — | 120 | — | 130 | — | 150 | — | 170 | — | 190 | — | 210 | — |
| ϕ40 | 24(21) | 24(21) | ϕ45 | 42 | 35 | 52 | 45 | 57 | 50 | 62 | 55 | 72 | 65 | 82 | 75 | 87 | 80 | 92 | 85 | 102 | 95 | 117 | 110 | 127 | 120 | 142 | 135 | 162 | 155 | 182 | 175 |

*The parenthesized values of dimension A indicate the screw length.

# TB with Bracket

Double acting single rod | Standard | 10Z-3 TB | Bore | Cushioning | Stroke | - B

● ϕ20 to ϕ40

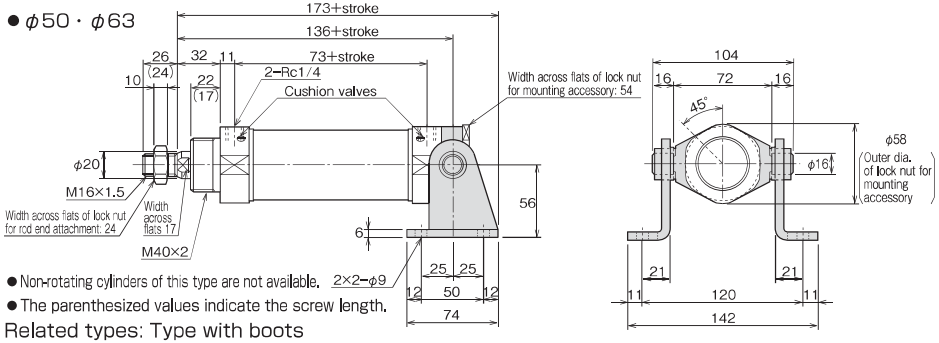



● Non-rotating cylinders of this type are not available.

● For dimensions not shown here, refer to the SD style (basic style).

Related types: Type with cushion, type with boots

● ϕ50・ϕ63




● Non-rotating cylinders of this type are not available.

● The parenthesized values indicate the screw length.

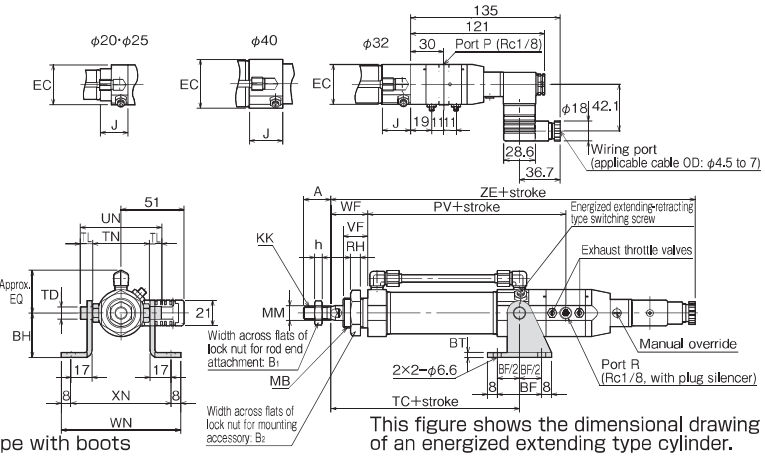
Related types: Type with boots

# TC with Bracket VAL Set

Double acting single rod | Standard | 10Z-3V2 TC | Bore | N | Stroke | - | Valve operating function | Valve voltage | - B

● ϕ20 to ϕ40

- For dimensions not shown here, refer to the SD style (basic style).
- Ports P, exhaust throttle valves, terminals and manual operation buttons of the VAL Set and SV Set Cylinders of the energized extending type are positioned at a distance of 180 degrees from those of the energized retracting type.




This figure shows the dimensional drawing of an energized extending type cylinder.

Related types: Type with boots





## Dimensional Table

| Symbol / Bore | A | B1 | B2 | BF | BH | BT | D | E | EC | EQ | h | J | KK | MB | MM | P | PV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 20(20) | 13 | 30 | 32 | 32 | 3.2 | 6 | ϕ28 | 36 | 34 | 5 | 25 | M8×1.25 | M22×1.5 | ϕ8 | 45 | 100 |
| ϕ25 | 22(22) | 17 | 30 | 32 | 32 | 3.2 | 8 | ϕ31 | 36 | 34 | 6 | 25 | M10×1.25 | M22×1.5 | ϕ10 | 49 | 104.5 |
| ϕ32 | 22(19) | 17 | 32 | 36 | 36 | 4 | 10 | ϕ38 | 36 | 35 | 6 | 25.5 | M10×1.25 | M24×2 | ϕ12 | 55 | 110.5 |
| ϕ40 | 24(21) | 19 | 41 | 40 | 40 | 4 | 12 | ϕ46 | 44 | 39 | 7 | 30 | M12×1.25 | M30×2 | ϕ14 | 57 | 117 |

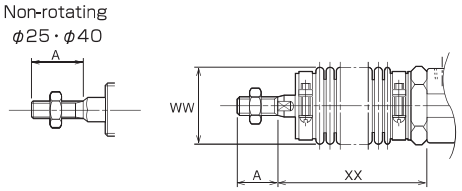
| Symbol / Bore | RH | TB | TC | TD | TL | TM | TN | TU | UM | UN | VF | WF | WM | WN | XM | XN | XT | YP | ZE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 7 | 88 | 86.5 | ϕ8e9 | 8 | 36 | 46 | 32 | 52 | 62 | 16(13) | 24 | 87 | 97 | 71 | 81 | 112 | 7 | 229 |
| ϕ25 | 7 | 97 | 95 | ϕ8e9 | 8 | 36 | 46 | 32 | 52 | 62 | 18(15) | 28 | 87 | 97 | 71 | 81 | 121 | 7.5 | 237.5 |
| ϕ32 | 8 | 106 | 103 | ϕ10e9 | 10 | 44 | 46 | 36 | 64 | 66 | 20(16) | 30 | 95 | 97 | 79 | 81 | 132 | 7.5 | 245.5 |
| ϕ40 | 9 | 111 | 109 | ϕ12e9 | 12 | 50 | 54 | 44 | 74 | 78 | 22(18) | 32 | 101 | 105 | 85 | 89 | 139 | 7.5 | 254 |

* The parenthesized values of dimensions A and VF indicate the screw length.

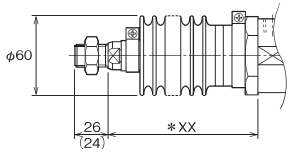
10Z-3/TAZ3 | Bore | K

## With Boots

ϕ20 to ϕ40




ϕ50・ϕ63




● The parenthesized values indicate the screw length.

*XX=1/4×(stroke)+65

If the calculated value has a fractional part, round it up.

## Dimensional Table

| Symbol / Stroke / Bore | A | | WW | Dimension XX for each stroke | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | to 25 | | to 50 | | to 75 | | to 100 | | to 125 | | to 150 | | to 175 | | to 200 | | to 250 | | to 300 | | to 350 | | to 400 | | to 450 | | to 500 | |
| | Stand-ard | Non-rotating | | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating | Stand-ard | Non-rotating |
| ϕ20 | 20(20) | — | ϕ36 | 49 | — | 59 | — | 69 | — | 74 | — | 84 | — | 94 | — | 104 | — | 114 | — | 134 | — | 154 | — | 174 | — | 194 | — | 214 | — | 234 | — |
| ϕ25 | 22(22) | 20(17) | ϕ36 | 53 | 46 | 63 | 56 | 73 | 66 | 78 | 71 | 88 | 81 | 98 | 91 | 108 | 101 | 118 | 111 | 138 | 131 | 158 | 151 | 178 | 171 | 198 | 191 | 218 | 211 | 238 | 231 |
| ϕ32 | 22(19) | — | ϕ40 | 45 | — | 55 | — | 65 | — | 70 | — | 80 | — | 85 | — | 95 | — | 100 | — | 120 | — | 130 | — | 150 | — | 170 | — | 190 | — | 210 | — |
| ϕ40 | 24(21) | 24(21) | ϕ45 | 42 | 35 | 52 | 45 | 57 | 50 | 62 | 55 | 72 | 65 | 82 | 75 | 87 | 80 | 92 | 85 | 102 | 95 | 117 | 110 | 127 | 120 | 142 | 135 | 162 | 155 | 182 | 175 |

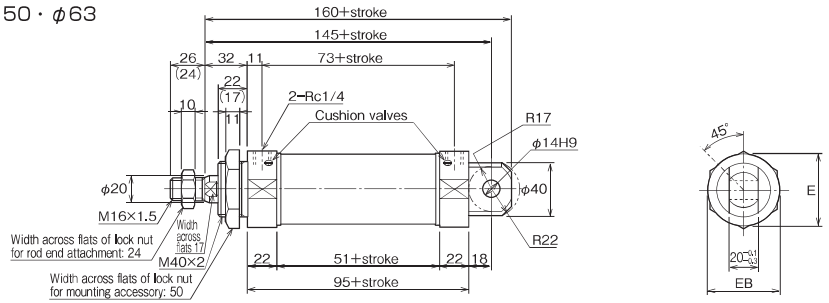
* The parenthesized values of dimension A indicate the screw length.

10Z-3/TAZ3 Bore A CAD/DATA is available.

# CA

Double acting single rod | Standard | 10Z-3 CA | Bore | Cushioning | Stroke

● φ50・φ63




● Non-rotating cylinders of this type are not available.
● The parenthesized values indicate the screw length.
● For dimensions not shown here, refer to the SD style (basic style).

Related types: Type with boots

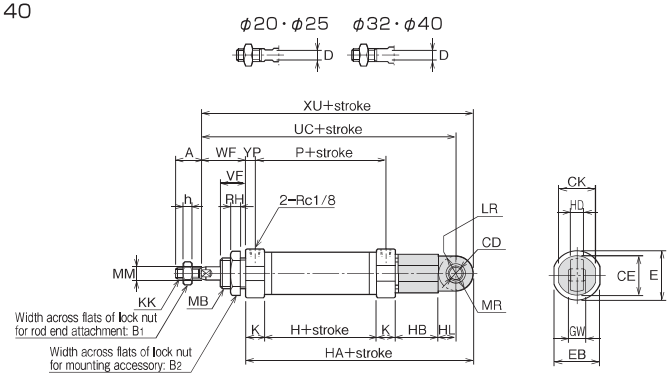
Dimensional Table

| Bore \ Symbol | E | EB |
|---|---|---|
| φ50 | φ56 | 54 |
| φ63 | φ70 | 68 |

# CU

Double acting single rod | Standard | 10Z-3 CU | Bore | Cushioning | Stroke

● φ20 to φ40




● Non-rotating cylinders of this type are not available.
● For dimensions not shown here, refer to the SD style (basic style).

Related types: Type with cushion, type with boots



Dimensional Table

| Bore \ Symbol | A | B1 | B2 | BF | BH | BT | BU | BY | CD | CE | CK | D | E | EB | GW | H | HA | HB | HD | HL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | 20(20) | 13 | 30 | 32 | 32 | 3.2 | 48 | 21.8 | φ8 | φ32 | 30 | 6 | φ28 | 26 | $12^{0}_{-0.3}$ | 31 | 121 | 33 | 10.5 | 15 |
| φ25 | 22(22) | 17 | 30 | 36 | 36 | 4 | 52 | 21 | φ10 | φ32 | 30 | 8 | φ31 | 29 | $14^{0}_{-0.3}$ | 35 | 126 | 33 | 10.5 | 15 |
| φ32 | 22(19) | 17 | 32 | 36 | 36 | 4 | 52 | 21 | φ10 | φ32 | 30 | 10 | φ38 | 36 | $14^{0}_{-0.3}$ | 40 | 132 | 33 | 10.5 | 15 |
| φ40 | 24(21) | 19 | 41 | 40 | 40 | 4 | 56 | 21 | φ12 | φ38 | 36 | 12 | φ46 | 44 | $16^{0}_{-0.3}$ | 42 | 142 | 37 | 12 | 17 |

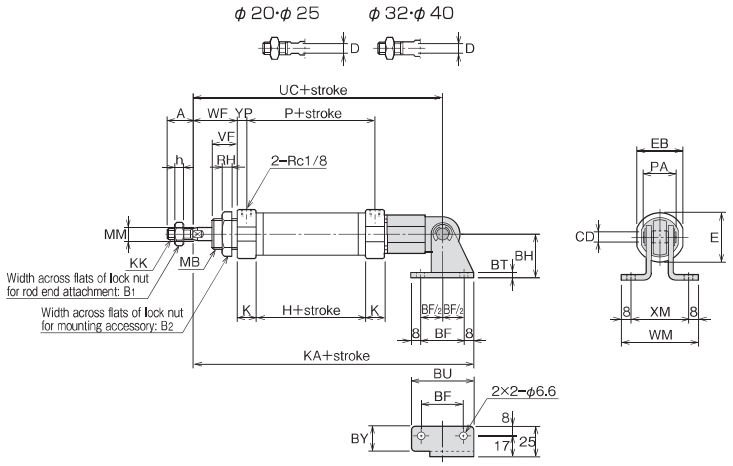
| Bore \ Symbol | h | K | KA | KK | LR | MB | MM | MR | P | PA | RH | UC | VF | WF | WM | XM | XU | YP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | 5 | 14 | 155 | M8×1.25 | R14 | M22×1.5 | φ8 | R14 | 45 | 27 | 7 | 131 | 16(13) | 24 | 63 | 47 | 145 | 7 |
| φ25 | 6 | 14.5 | 166 | M10×1.25 | R14 | M22×1.5 | φ10 | R14 | 49 | 29 | 7 | 140 | 18(15) | 28 | 65 | 49 | 154 | 7.5 |
| φ32 | 6 | 15 | 174 | M10×1.25 | R14 | M24×2 | φ12 | R14 | 55 | 29 | 8 | 148 | 20(16) | 30 | 65 | 49 | 162 | 7.5 |
| φ40 | 7 | 15 | 186 | M12×1.25 | R16 | M30×2 | φ14 | R16 | 57 | 32 | 9 | 158 | 22(18) | 32 | 67 | 51 | 174 | 7.5 |

＊The parenthesized values of dimensions A and VF indicate the screw length.

# CU with Bracket

Double acting single rod | Standard | 10Z-3 CU | Bore | Cushioning | Stroke | - B

● φ20 to φ40




● Non-rotating cylinders of this type are not available.
● For dimensions not shown here, refer to the SD style (basic style).

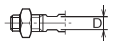
Related types: Type with cushion, type with boots

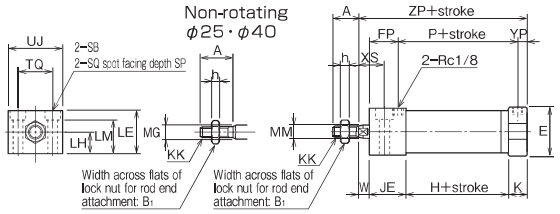
10Z-3/TAZ3 Bore A,B CAD/DATA is available.

# AD

Double acting single rod | Standard | 10Z-3 | AD | Bore | Cushioning | Stroke |
Non-rotating | 10Z-3G | AD | Bore | Cushioning | Stroke |

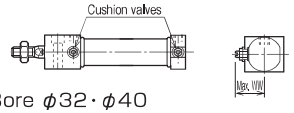
● $\phi$20 to $\phi$40 $\phi$20・$\phi$25 $\phi$32・$\phi$40



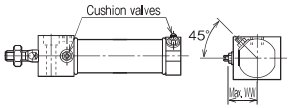




Related type With cushion

● Bore $\phi$20・$\phi$25



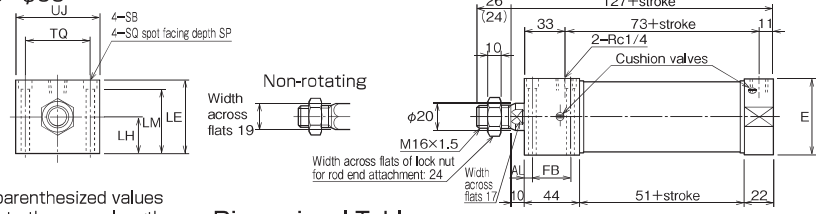

● Bore $\phi$32・$\phi$40




Related types: Rear port style (AP), type with cushion

Basic style: Clevis cut

● $\phi$50・$\phi$63




- The parenthesized values indicate the screw length.
- The non-rotating cylinders have the same dimensions as the standard types except the dimensions shown above.

## Dimensional Table

| Bore \ Symbol | AL | E | FB | LE | LH | LM | SB | SP | SQ | TQ | UJ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $\phi$50 | 7 | $\phi$56 | 30 | 56 | 28 | 49.5 | $\phi$6.6 | 6.5 | $\phi$11 | 50 | 64 |
| $\phi$63 | 9 | $\phi$70 | 27 | 70 | 35 | 61.4 | $\phi$9 | 8.6 | $\phi$14 | 56 | 74 |

Related types: Rear port style (AP)

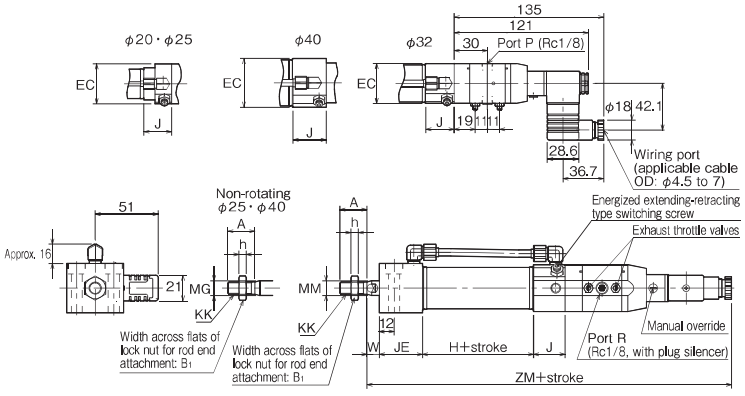
The standard and non-rotating cylinders are basically mounted in the clevis cut style.

## VAL Set

Double acting single rod | Standard | 10Z-3V2 | AD | Bore | N | Stroke | – | Valve operating function | Valve voltage |
Non-rotating | 10Z-3V2G | AD | Bore | N | Stroke | – | Valve operating function | Valve voltage |

● $\phi$20 to $\phi$40

- For the dimensions not shown here, see the above drawings.
- The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.
- Ports P, exhaust throttle valves, terminals and manual operation buttons of the VAL Set and SV Set Cylinders of the energized extending type are positioned at a distance of 180 degrees from those of the energized retracting type.




This figure shows the dimensional drawing of an energized extending type cylinder.



## Dimensional Table

| Bore \ Symbol | A Standard | A Non-rotating | $B_1$ Standard | $B_1$ Non-rotating | D | E | EC | FP | H | h Standard | h Non-rotating | J | JE | K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $\phi$20 | 20(20) | – | 13 | – | 6 | $\phi$28 | 36 | 23 | 31 | 5 | – | 25 | 30 | 14 |
| $\phi$25 | 22(22) | 20(17) | 17 | 13 | 8 | $\phi$31 | 36 | 25.5 | 35 | 6 | 5 | 25 | 32.5 | 14.5 |
| $\phi$32 | 22(19) | – | 17 | – | 10 | $\phi$38 | 36 | 28 | 40 | 6 | – | 25.5 | 35 | 15 |
| $\phi$40 | 24(21) | 24(21) | 19 | 19 | 12 | $\phi$46 | 44 | 30 | 42 | 7 | 7 | 30 | 37 | 15 |

| Bore \ Symbol | KK Standard | KK Non-rotating | LE | LH | LM | MG | MM | P | SB | SP | SQ | TQ | UJ | W | WW | XS | YP | ZP | ZM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $\phi$20 | M8×1.25 | – | 28 | 14 | 21.5 | – | $\phi$8 | 45 | $\phi$6.6 | 6.5 | $\phi$11 | 20 | 34 | 8 | 25.5 | 18 | 7 | 83 | 229 |
| $\phi$25 | M10×1.25 | M8×1.25 | 34 | 17 | 27.5 | 9 | $\phi$10 | 49 | $\phi$6.6 | 6.5 | $\phi$11 | 24 | 38 | 10 | 27 | 20 | 7.5 | 92 | 237.5 |
| $\phi$32 | M10×1.25 | – | 40 | 20 | 31.4 | – | $\phi$12 | 54.5 | $\phi$9 | 8.6 | $\phi$14 | 30 | 46 | 10 | 35 | 22 | 7.5 | 100 | 245.5 |
| $\phi$40 | M12×1.25 | M12×1.25 | 48 | 24 | 37.2 | 14 | $\phi$14 | 56.5 | $\phi$11 | 10.8 | $\phi$17.5 | 36 | 56 | 10 | 39 | 22 | 7.5 | 104 | 254 |

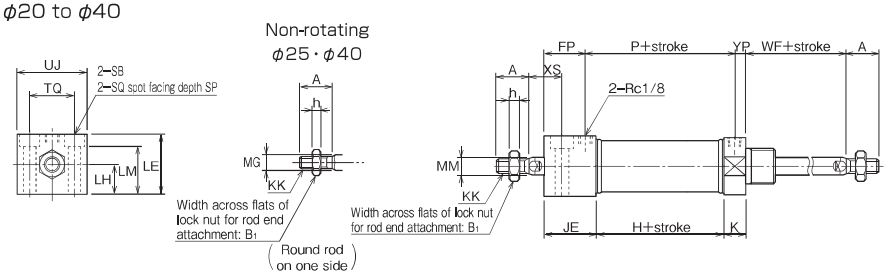
* The parenthesized values of dimension A indicate the screw length.

# AD

Double acting double rod

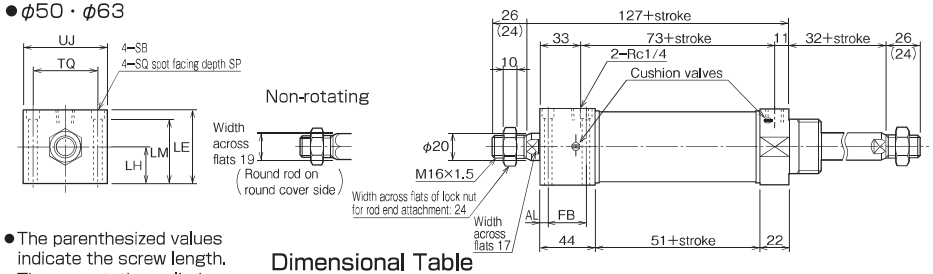
| | | | | | | |
|---|---|---|---|---|---|---|
| Standard | 10Z-3D | AD | Bore | Cushioning | Stroke | |
| Non-rotating | 10Z-3GD | AD | Bore | Cushioning | Stroke | |

●ϕ20 to ϕ40




●For the dimensions not shown here, refer to the AD style (basic style).
●The non-rotating cylinders have the same dimensions as the standard types except the dimensions shown above.
Related types: Type with cushion

●ϕ50・ϕ63




●The parenthesized values indicate the screw length.
●The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions shown above.

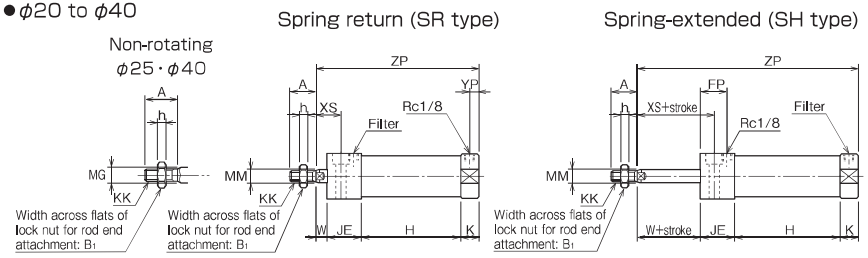
Dimensional Table

| Bore \ Symbol | AL | E | FB | LE | LH | LM | SB | SP | SQ | TQ | UJ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ50 | 7 | ϕ56 | 30 | 56 | 28 | 49.5 | ϕ6.6 | 6.5 | ϕ11 | 50 | 64 |
| ϕ63 | 9 | ϕ70 | 27 | 70 | 35 | 61.4 | ϕ9 | 8.6 | ϕ14 | 56 | 74 |

Single acting type

| | | | | | | |
|---|---|---|---|---|---|---|
| Spring return | Standard | 10Z-3GSR | AD | Bore | Cushioning | Stroke |
| | Non-rotating | 10Z-3GSR | AD | Bore | Cushioning | Stroke |
| Spring-extended | Standard | 10Z-3GSH | AD | Bore | Cushioning | Stroke |
| | Non-rotating | 10Z-3GSH | AD | Bore | Cushioning | Stroke |

●ϕ20 to ϕ40




●For the dimensions not shown here, refer to the AD style (basic style).
●The non-rotating cylinders have the same dimensions as the standard types except the dimensions shown above.
Related types: Rear port style (AP)

Basic style: Clevis cut



Dimensional Table

| Bore \ Symbol | A | | B1 | | FP | h | | JE | K | KK | | LE | LH | LM | MG | MM | P | SB | SP | SQ | TQ | UJ | XS | W | WF | YP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Standard | Non-rotating | Standard | Non-rotating | | Standard | Non-rotating | | | Standard | Non-rotating | | | | | | | | | | | | | | | |
| ϕ20 | 20 (20) | — | 13 | — | 23 | 5 | — | 30 | 14 | M8×1.25 | — | 28 | 14 | 21.5 | — | ϕ8 | 45 | ϕ6.6 | 6.5 | ϕ11 | 20 | 34 | 18 | 8 | 24 | 7 |
| ϕ25 | 22 (22) | 20 (17) | 17 | 13 | 25.5 | 6 | 5 | 32.5 | 14.5 | M10×1.25 | M8×1.25 | 34 | 17 | 27.5 | 9 | ϕ10 | 49 | ϕ6.6 | 6.5 | ϕ11 | 24 | 38 | 20 | 10 | 28 | 7.5 |
| ϕ32 | 22 (19) | — | 17 | — | 28 | 6 | — | 35 | 15 | M10×1.25 | — | 40 | 20 | 31.4 | — | ϕ12 | 54.5 | ϕ9 | 8.6 | ϕ14 | 30 | 46 | 22 | 10 | 30 | 7.5 |
| ϕ40 | 24 (21) | 24 (21) | 19 | 19 | 30 | 7 | 7 | 37 | 15 | M12×1.25 | M12×1.25 | 48 | 24 | 37.2 | 14 | ϕ14 | 56.5 | ϕ11 | 10.8 | ϕ17.5 | 36 | 56 | 22 | 10 | 32 | 7.5 |

| Bore \ Symbol / Stroke | H | | | | | | | ZP | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Double rod | Single acting type | | | | | | 15 | | 25 | | 30 | | 50 | | 75 | | 100 | | | | | |
| | | 15 | 25 | 30 | 50 | 75 | 100 | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type | SR type | SH type |
| ϕ20 | 31 | 71 | 81 | 111 | 131 | 181 | 231 | 123 | 138 | 133 | 158 | 163 | 193 | 183 | 233 | 233 | 308 | 283 | 383 | | | | |
| ϕ25 | 35 | 75 | 85 | 115 | 135 | 185 | 235 | 132 | 147 | 142 | 167 | 172 | 202 | 192 | 242 | 242 | 317 | 292 | 392 | | | | |
| ϕ32 | 40 | 80 | 90 | 120 | 140 | 190 | 240 | 140 | 155 | 150 | 175 | 180 | 210 | 200 | 250 | 250 | 325 | 300 | 400 | | | | |
| ϕ40 | 42 | 82 | 92 | 122 | 142 | 192 | 242 | 144 | 159 | 154 | 179 | 184 | 214 | 204 | 254 | 254 | 329 | 304 | 404 | | | | |

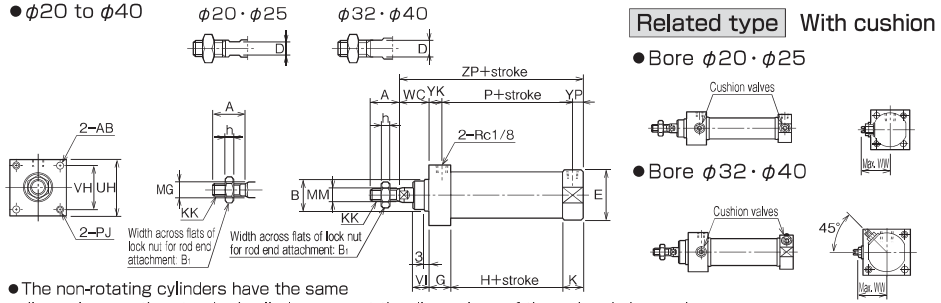
＊The parenthesized values of dimension A indicate the screw length.

10Z-3/TAZ3 Bore A,B CAD/DATA is available.

# BD

Double acting single rod | Standard | 10Z-3 | BD | Bore | Cushioning | Stroke |
Non-rotating | 10Z-3G | BD | Bore | Cushioning | Stroke |

● ϕ20 to ϕ40




Related type With cushion

● Bore ϕ20・ϕ25




● Bore ϕ32・ϕ40

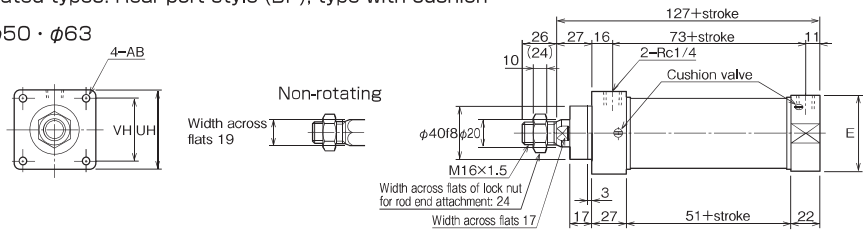



● The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.

Basic style: Clevis cut

Related types: Rear port style (BP), type with cushion

● ϕ50・ϕ63




● The parenthesized values indicate the screw length.
● The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions shown above.

Related types: Rear port style (BP)

Dimensional Table

| Bore \ Symbol | AB | E | VH | UH |
|---|---|---|---|---|
| ϕ50 | ϕ6.6 | ϕ56 | □48 | □62 |
| ϕ63 | ϕ9 | ϕ70 | □58 | □74 |

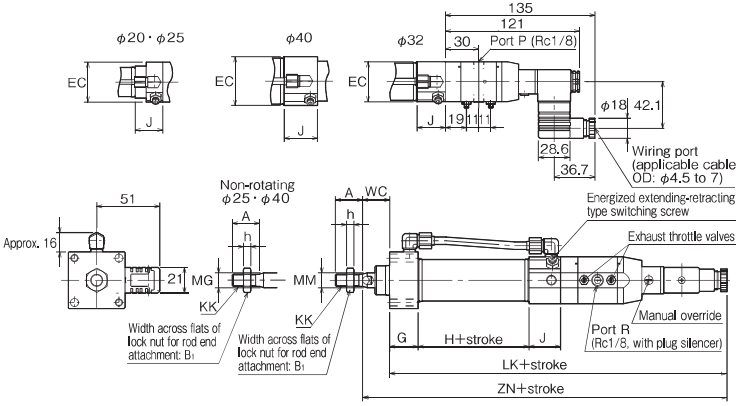
The standard and non-rotating cylinders are basically mounted in the clevis cut style.

## VAL Set

Double acting single rod | Standard | 10Z-3V2 | BD | Bore | N | Stroke | – | Valve operating function | Valve voltage |
Non-rotating | 10Z-3V2G | BD | Bore | N | Stroke | – | Valve operating function | Valve voltage |

● ϕ20 to ϕ40

- For the dimensions not shown here, see the above drawings.
- The non-rotating cylinders have the same dimensions as the standard cylinders except the dimensions of the rod end shown above.
- Ports P, exhaust throttle valves, terminals and manual operation buttons of the VAL Set and SV Set Cylinders of the energized extending type are positioned at a distance of 180 degrees from those of the energized retracting type.




This figure shows the dimensional drawing of an energized extending type cylinder.



## Dimensional Table

| Bore \ Symbol | A Standard | A Non-rotating | AB | B | B1 Standard | B1 Non-rotating | D | E | EC | G | H | h Standard | h Non-rotating | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 20 (20) | — | ϕ5.5 | ϕ20f8 | 13 | — | 6 | ϕ28 | 36 | 20 | 31 | 5 | — | 25 | 14 |
| ϕ25 | 22 (22) | 20 (17) | ϕ5.5 | ϕ22f8 | 17 | 13 | 8 | ϕ31 | 36 | 22.5 | 35 | 6 | 5 | 25 | 14.5 |
| ϕ32 | 22 (19) | — | ϕ6.6 | ϕ24f8 | 17 | — | 10 | ϕ38 | 36 | 23 | 40 | 6 | — | 25.5 | 15 |
| ϕ40 | 24 (21) | 24 (21) | ϕ9 | ϕ28f8 | 19 | 19 | 12 | ϕ46 | 44 | 25 | 42 | 7 | 7 | 30 | 15 |

| Bore \ Symbol | KK Standard | KK Non-rotating | LK | MG | MM | P | PJ | UH | VI | VH | WC | WW | YK | YP | ZP | ZN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | M8×1.25 | — | 211 | — | ϕ8 | 45 | M5×0.8 | □34 | 10 | □24 | 18 | 25.5 | 13 | 7 | 83 | 229 |
| ϕ25 | M10×1.25 | M8×1.25 | 217.5 | 9 | ϕ10 | 49 | M5×0.8 | □38 | 10 | □28 | 20 | 27 | 15.5 | 7.5 | 92 | 237.5 |
| ϕ32 | M10×1.25 | — | 223.5 | — | ϕ12 | 54.5 | M6×1 | □46 | 12 | □36 | 22 | 35 | 16 | 7.5 | 100 | 245.5 |
| ϕ40 | M12×1.25 | M12×1.25 | 232 | 14 | ϕ14 | 56.5 | M8×1.25 | □56 | 12 | □42 | 22 | 39 | 18 | 7.5 | 104 | 254 |

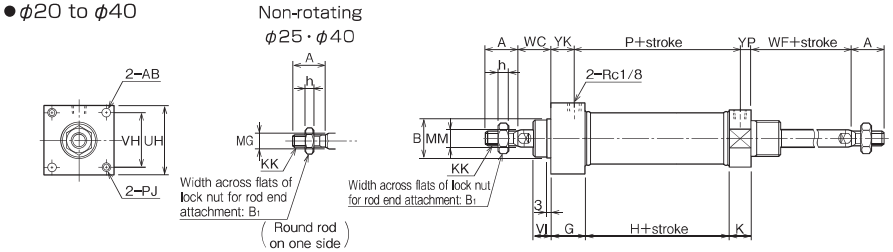
* The parenthesized values of dimension A indicate the screw length.

# BD

Double acting double rod

| | | | | | | |
|---|---|---|---|---|---|---|
| Standard | 10Z-3D | BD | Bore | Cushioning | Stroke |
| Non-rotating | 10Z-3GD | BD | Bore | Cushioning | Stroke |

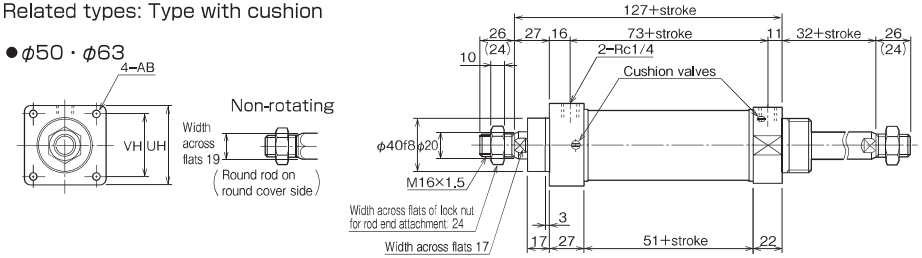
●ϕ20 to ϕ40




●For the dimensions not shown here, refer to the SD style (basic style).
●The non-rotating cylinders have the same dimensions as the standard types except the dimensions shown above.

Related types: Type with cushion

●ϕ50・ϕ63




●The parenthesized values indicate the screw length.
●The non-rotating cylinders have the same dimensions as the standard types except the rod dimensions shown above.

Dimensional Table

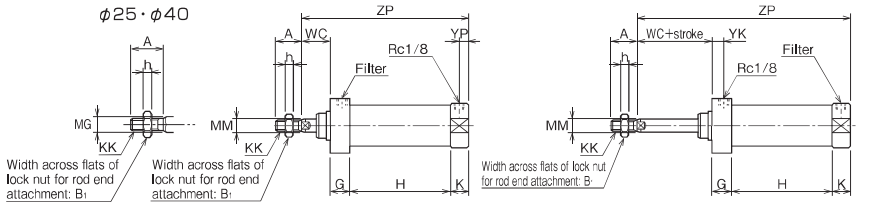
| Bore \ Symbol | AB | E | VH | UH |
|---|---|---|---|---|
| ϕ50 | ϕ6.6 | ϕ56 | □48 | □62 |
| ϕ63 | ϕ9 | ϕ70 | □58 | □74 |

Single acting type

| | | | | | | |
|---|---|---|---|---|---|---|
| Spring return | Standard | 10Z-3GSR | BD | Bore | Cushioning | Stroke |
| | Non-rotating | 10Z-3GSR | BD | Bore | Cushioning | Stroke |
| Spring-extended | Standard | 10Z-3GSH | BD | Bore | Cushioning | Stroke |
| | Non-rotating | 10Z-3GSH | BD | Bore | Cushioning | Stroke |

●ϕ20 to ϕ40

Non-rotating ϕ25・ϕ40 | Spring return (SR type) | Spring-extended (SH type)




●For the dimensions not shown here, refer to the SD style (basic style).
●The non-rotating cylinders have the same dimensions as the standard types except the dimensions shown above.

Related types: Rear port style (BP) Basic style: Clevis cut



Dimensional Table

| Bore \ Symbol | A Standard | A Non-rotating | AB | B | B1 Standard | B1 Non-rotating | G | h Standard | h Non-rotating | K | KK Standard | KK Non-rotating | MG | MM | P | PJ | UH | VH | VI | WC | WF | YK | YP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 20(20) | — | ϕ5.5 | ϕ20f8 | 13 | — | 20 | 5 | — | 14 | M8×1.25 | — | — | ϕ8 | 45 | M5×0.8 | □34 | □24 | 10 | 18 | 24 | 13 | 7 |
| ϕ25 | 22(22) | 20(17) | ϕ5.5 | ϕ22f8 | 17 | 13 | 22.5 | 6 | 5 | 14.5 | M10×1.25 | M8×1.25 | 9 | ϕ10 | 49 | M5×0.8 | □38 | □28 | 10 | 20 | 28 | 15.5 | 7.5 |
| ϕ32 | 22(19) | — | ϕ6.6 | ϕ24f8 | 17 | — | 23 | 6 | — | 15 | M10×1.25 | — | — | ϕ12 | 54.5 | M6×1 | □46 | □36 | 12 | 22 | 30 | 16 | 7.5 |
| ϕ40 | 24(21) | 24(21) | ϕ9 | ϕ28f8 | 19 | 19 | 25 | 7 | 7 | 15 | M12×1.25 | M12×1.25 | 14 | ϕ14 | 56.5 | M8×1.25 | □56 | □42 | 12 | 22 | 32 | 18 | 7.5 |

| Bore \ Symbol / Stroke | H Double rod | H Single acting type 15 | 25 | 30 | 50 | 75 | 100 | ZP 15 SR type | 15 SH type | 25 SR type | 25 SH type | 30 SR type | 30 SH type | 50 SR type | 50 SH type | 75 SR type | 75 SH type | 100 SR type | 100 SH type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 31 | 71 | 81 | 111 | 131 | 181 | 231 | 123 | 138 | 133 | 158 | 163 | 193 | 183 | 233 | 233 | 308 | 283 | 383 |
| ϕ25 | 35 | 75 | 85 | 115 | 135 | 185 | 235 | 132 | 147 | 142 | 167 | 172 | 202 | 192 | 242 | 242 | 317 | 292 | 392 |
| ϕ32 | 40 | 80 | 90 | 120 | 140 | 190 | 240 | 140 | 155 | 150 | 175 | 180 | 210 | 200 | 250 | 250 | 325 | 300 | 400 |
| ϕ40 | 42 | 82 | 92 | 122 | 142 | 192 | 242 | 144 | 159 | 154 | 179 | 184 | 214 | 204 | 254 | 254 | 329 | 304 | 404 |

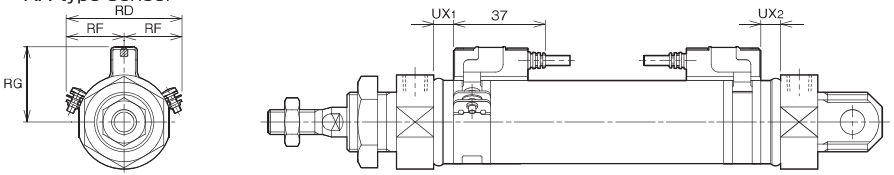
＊The parenthesized values of dimension A indicate the screw length.

## Switch Set/SV Set
## Double acting type

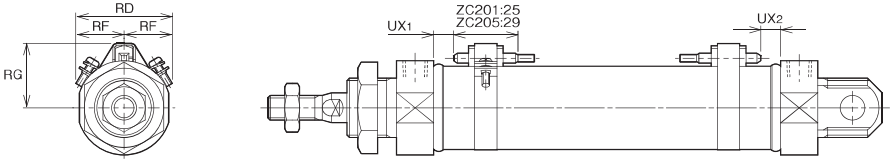
10Z-3 | Mounting style | Bore | Cushioning | Stroke | – | Sensor symbol | Sensor quantity

10Z-3V2 | Mounting style | Bore | N | Stroke | – | Valve operating function | Valve voltage | Sensor symbol | Sensor quantity

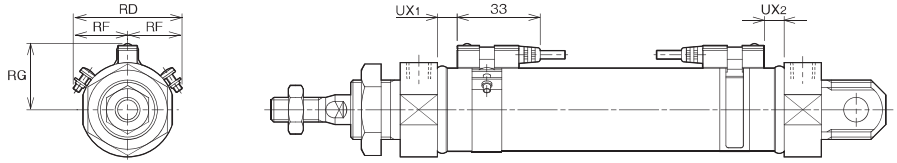
● AX type sensor



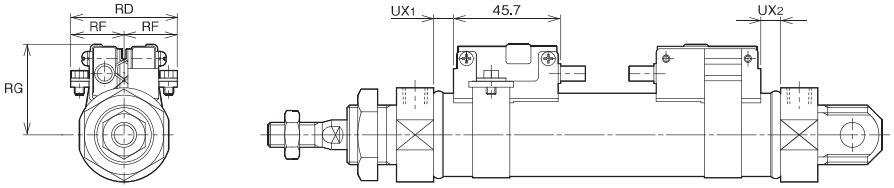

● ZC type sensor




● JR/JS type sensor

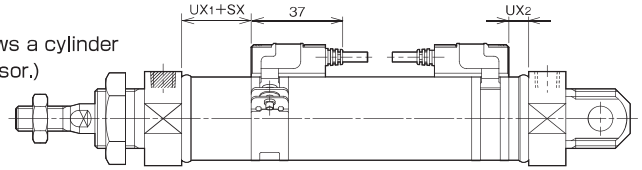



● SR type sensor



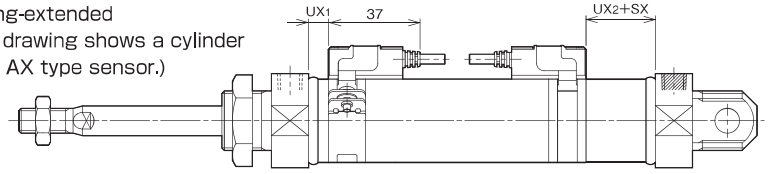

10Z-3SR | Mounting style | Bore | N | Stroke | – | Sensor symbol | Sensor quantity

● Spring return
(The drawing shows a cylinder with AX type sensor.)




10Z-3SH | Mounting style | Bore | N | Stroke | – | Sensor symbol | Sensor quantity

● Spring-extended
(The drawing shows a cylinder with AX type sensor.)






## Dimensional Table

| Symbol / Bore | RD | | | | RF | | | | RG | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AX type | ZC type | JR/JS type | SR type | AX type | ZC type | JR/JS type | SR type | AX type | ZC type | JR/JS type | SR type |
| ϕ20 | 38 | 33 | 40 | 50 | 19 | 16.5 | 20 | 25 | 25 | 20 | 21 | 33 |
| ϕ25 | 44 | 36 | 42 | 52 | 22 | 18 | 21 | 26 | 27 | 22 | 23 | 35 |
| ϕ32 | 48 | 39 | 46 | 54 | 24 | 19.5 | 23 | 27 | 31 | 26 | 27 | 38 |
| ϕ40 | 54 | 43 | 50 | 58 | 27 | 21.5 | 25 | 29 | 35 | 30 | 31 | 43 |
| ϕ50 | 60 | 49 | 50 | 48 | 30 | 24.5 | 25 | 24 | 39 | 35 | 37 | 46 |
| ϕ63 | 68 | 49 | 60 | 52 | 34 | 24.5 | 30 | 26 | 47 | 42 | 43 | 53 |

| Symbol / Bore | AX1＊ type | | AX2＊ type | | ZC201 type | | ZC205 type | | ZC230/253 type | |
|---|---|---|---|---|---|---|---|---|---|---|
| | $UX_1$ | $UX_2$ | $UX_1$ | $UX_2$ | $UX_1$ | $UX_2$ | $UX_1$ | $UX_2$ | $UX_1$ | $UX_2$ |
| ϕ20 | 7 | 7 | 7 | 7 | 9.5 | 7.5 | 6 | 4 | 8 | 6 |
| ϕ25 | 9 | 8 | 9 | 8 | 11 | 10 | 7.5 | 6.5 | 9.5 | 8.5 |
| ϕ32 | 10 | 10 | 10 | 10 | 13.5 | 12.5 | 10 | 9 | 12 | 11 |
| ϕ40 | 12 | 12 | 12 | 12 | 13.5 | 15.5 | 10 | 11 | 12 | 13 |
| ϕ50 | 16 | 16 | 16 | 16 | 18.5 | 18.5 | 15 | 15 | 17 | 17 |
| ϕ63 | 16 | 17 | 16 | 17 | 18.5 | 18.5 | 15 | 15 | 17 | 17 |

| Symbol / Bore | JR type | | JS type | | SR type | | SX | | |
|---|---|---|---|---|---|---|---|---|---|
| | $UX_1$ | $UX_2$ | $UX_1$ | $UX_2$ | $UX_1$ | $UX_2$ | Stroke 15 | Stroke 30 | Standard strokes other than those shown left |
| ϕ20 | 4 | 3 | 5 | 5 | 2 | 0 | 25 | 50 | Stroke |
| ϕ25 | 6 | 5 | 8 | 8 | 1 | 1 | | | |
| ϕ32 | 8 | 8 | 10 | 10 | 5 | 5 | | | |
| ϕ40 | 8 | 9 | 12 | 12 | 6 | 6 | | | |
| ϕ50 | 12 | 12 | 16 | 16 | 7 | 7 | – | – | – |
| ϕ63 | 12 | 12 | 16 | 16 | 7 | 7 | – | – | – |

## Operating Range and Hysteresis

| Bore mm | Reed sensor | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | AX1＊＊ type | | ZC201 type | | ZC205 type | | JR type | | SR type | |
| | Operating range | Hysteresis | Operating range | Hysteresis | Operating range | Hysteresis | Operating range | Hysteresis | Operating range | Hysteresis |
| ϕ20 | 4 to 9 | 1 or less | 5 to 9 | 2 or less | 6 to 8 | 2 or less | 4 to 5 | 2 or less | 6 to 9 | 2 or less |
| ϕ25 | 5 to 9 | | | | 6 to 9 | | 7 to 8 | | 7 to 10 | |
| ϕ32 | | | 6 to 11 | | | | | | | |
| ϕ40 | | | 6 to 10 | | | | | | | |
| ϕ50 | 6 to 10 | | 7 to 11 | | 7 to 10 | | 8 to 9 | | 8 to 11 | |
| ϕ63 | 8 to 11 | | 8 to 13 | | 8 to 12 | | | | | |

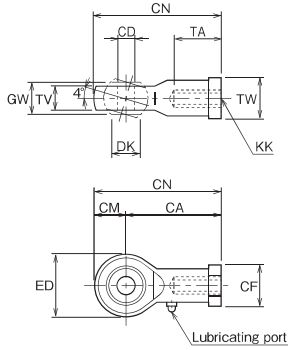
| Bore mm | Solid state sensor | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AX2＊＊ type | | ZC230 type | | ZC253 type | | JS type | |
| | Operating range | Hysteresis | Operating range | Hysteresis | Operating range | Hysteresis | Operating range | Hysteresis |
| ϕ20 | 2 to 5 | 1 or less | 1 to 4 | 0.5 or less | 2 to 4 | 0.5 or less | 10 to 13 | 1 or less |
| ϕ25 | | | 2 to 4 | | | | 11 to 14 | |
| ϕ32 | 2 to 6 | | | | | | 12 to 15 | |
| ϕ40 | | | 2 to 5 | | | | 13 to 16 | |
| ϕ50 | | | 2 to 4 | | | | 14 to 17 | |
| ϕ63 | 3 to 6 | | 3 to 5 | | 3 to 5 | | | |

10Z-3/TAZ3 Bore K CAD/DATA is available.

## Rod End Attachment

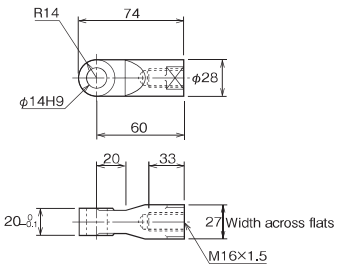
### Rod eye with spherical bearing (S-end)

ϕ20 to ϕ63




### Rod eye (T-end)

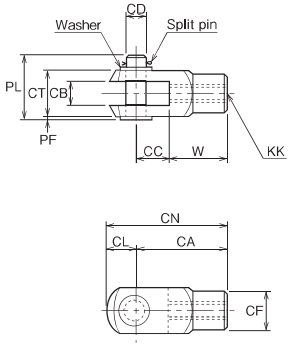
ϕ50・ϕ63



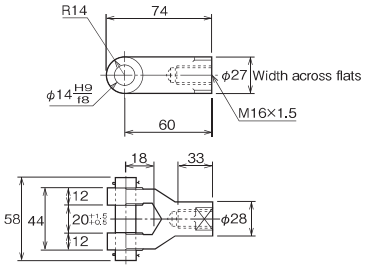

Part number: RTA-16-A

### Rod clevis (Y-end) with pin

ϕ20 to ϕ40



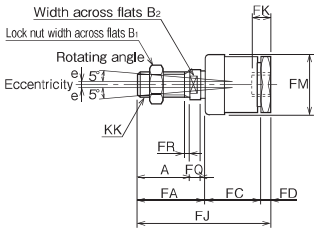

ϕ50・ϕ63



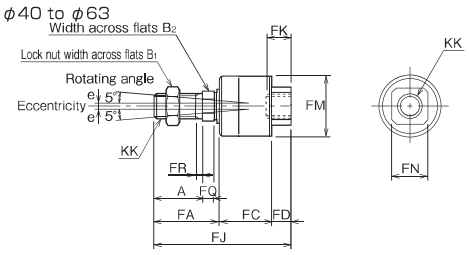

Part number: RYA-16-A

### Floating joint (F-end)

ϕ20 to ϕ32




ϕ40 to ϕ63




Notes) ● The insertion of the floating joint into the socket shall not equal or exceed the dimension of screw diameter. (Return the joint one or two turns after it gets into contact with the socket bottom, and fix it with a lock nut.) Excessive insertion can cause operation failure.
● DO NOT use together with TA, TB, TC, and CU accessories.



### Dimensional Table/Rod eye with spherical bearing (S-end)

| Symbol / Bore | Part number | CA | CD | CF | CM | CN | DK | ED | GW | KK | TA | TV | TW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | RSA-08-A | 36 | ϕ8H9 | ϕ16 | 11 | 47 | ϕ10.4 | 22 | $12^{0}_{-0.1}$ | M8×1.25 | 17 | 9±0.1 | 14 |
| ϕ25 | RSA-10-A | 43 | ϕ10H9 | ϕ19 | 13 | 56 | ϕ12.9 | 26 | $14^{0}_{-0.1}$ | M10×1.25 | 21 | 10.5±0.1 | 17 |
| ϕ32 | | | | | | | | | | | | | |
| ϕ40 | RSA-12-A | 50 | ϕ12H9 | ϕ22 | 15 | 65 | ϕ15.4 | 30 | $16^{0}_{-0.1}$ | M12×1.25 | 24 | 12±0.1 | 19 |
| ϕ50 | RSA-16-A | 64 | ϕ16H9 | ϕ27 | 19 | 83 | ϕ19.4 | 38 | $21^{0}_{-0.1}$ | M16×1.5 | 33 | 15±0.1 | 22 |
| ϕ63 | | | | | | | | | | | | | |

*For the 25 mm bore non-rotating cylinder, use the accessory for the 20 mm bore cylinder shown above.

### Dimensional Table/Rod clevis (Y-end) with pin

| Symbol / Bore | Part number | CA | CB | CC | CD | CF | CL | CN | CT | KK | PF | PL | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | RYA-08-A | 32 | $8^{+0.4}_{+0.15}$ | 16 | $\phi 8^{H8}_{f7}$ | ϕ14 | 10 | 42 | □16 | M8×1.25 | 2 | 24.5 | 16 |
| ϕ25 | RYA-10-A | 40 | $10^{+0.4}_{+0.15}$ | 20 | $\phi 10^{H8}_{f7}$ | ϕ18 | 12 | 52 | □20 | M10×1.25 | 2.5 | 30 | 20 |
| ϕ32 | | | | | | | | | | | | | |
| ϕ40 | RYA-12-A | 48 | $12^{+0.4}_{+0.15}$ | 24 | $\phi 12^{H8}_{f7}$ | ϕ20 | 14 | 62 | □24 | M12×1.25 | 3 | 36.5 | 24 |

*For the 25 mm bore non-rotating cylinder, use the accessory for the 20 mm bore cylinder shown above.

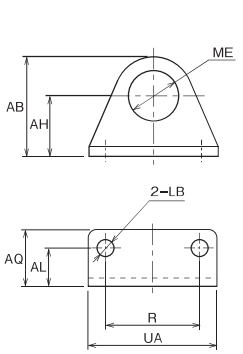
### Dimensional Table/Floating joint (F-end)

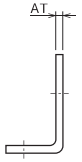
| Symbol / Bore | Part number | A | $B_1$ | $B_2$ | e | FA | FC | FD | FJ | FK | FM | FN | FQ | FR | KK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | RFS-08T | 22.5 | 13 | 8 | 0.5 | 28 | 22.5 | 3.5 | 54 | 9 | ϕ20 | 19 | 4.5 | 2.5 | M8×1.25 |
| ϕ25 | RFS-10T | 24.5 | 17 | 10 | 1 | 31 | 28 | 4 | 63 | 11 | ϕ25 | 24 | 4.5 | 2.5 | M10×1.25 |
| ϕ32 | | | | | | | | | | | | | | | |
| ϕ40 | RFS-12T | 24 | 19 | 13 | 1 | 33 | 25.5 | 11 | 69.5 | 13.5 | ϕ32 | □19 | 7 | 3.5 | M12×1.25 |
| ϕ50 | RFS-16T | 32 | 22 | 17 | 1.5 | 43 | 33 | 13 | 89 | 16 | ϕ40 | □24 | 8 | 4 | M16×1.5 |
| ϕ63 | | | | | | | | | | | | | | | |

*For the 25 mm bore non-rotating cylinder, use the accessory for the 20 mm bore cylinder shown above.

## Mounting Accessory

● LB (end angles)

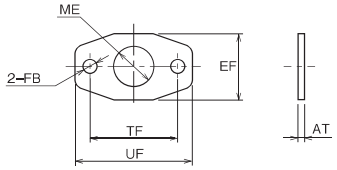


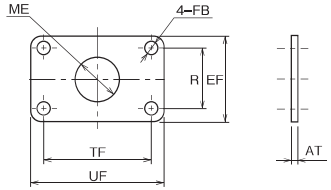

2 pcs. in one set
(with one nut for fitting the accessory)

● FA (rod flange) and FB (cap flange)

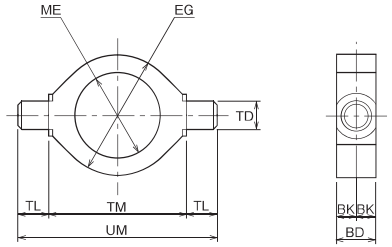
ϕ20 · ϕ25



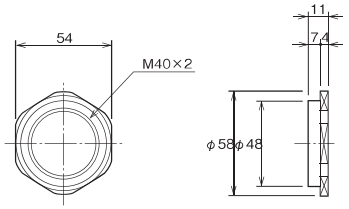

ϕ32 to ϕ63



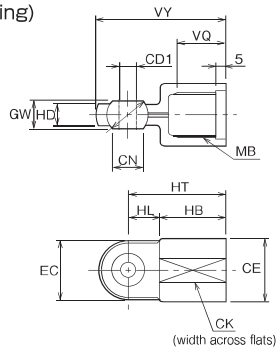

● TA (rod trunnion) and TB (cap trunnion)




● Lock nut for trunnion accessory Only ϕ50 and ϕ63




● CU (cap eye with spherical bearing)








## Dimensional Table/LB (end angles)

| Symbol / Bore | Part number | AB | AH | AL | AQ | AT | LB | ME | R | UA |
|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | MAZ3–LB020 | 42 | 25 | 16 | 24 | 3.2 | ϕ6.8 | ϕ22.5 | 40 | 55 |
| ϕ25 | | | | | | | | | | |
| ϕ32 | MAZ3–LB032 | 50 | 32 | 25 | 33 | 4 | ϕ6.8 | ϕ24.5 | 45 | 60 |
| ϕ40 | MAZ3–LB040 | 58 | 36 | 25 | 33 | 4 | ϕ6.8 | ϕ30.5 | 50 | 65 |
| ϕ50 | MAZ3–LB050 | 70 | 40 | 25 | 40 | 6 | ϕ9 | ϕ40.5 | 60 | 80 |
| ϕ63 | MAZ3–LB063 | 77 | 45 | 25 | 40 | 6 | ϕ9 | ϕ40.5 | 74 | 95 |

## Dimensional Table/FA (rod flange) and FB (cap flange)

| Symbol / Bore | Part number | AT | EF | FB | ME | TF | UF | R |
|---|---|---|---|---|---|---|---|---|
| ϕ20 | MAZ3–FA020 | 4 | 38 | ϕ6.6 | ϕ22 | 50 | 65 | – |
| ϕ25 | | | | | | | | |
| ϕ32 | MAZ3–FA032 | 4 | 47 | ϕ6.6 | ϕ24 | 58 | 72 | 33 |
| ϕ40 | MAZ3–FA040 | 4 | 51 | ϕ6.6 | ϕ30 | 70 | 84 | 36 |
| ϕ50 | MAZ3–FA050 | 10 | 60 | ϕ9 | ϕ40 | 74 | 94 | 40 |
| ϕ63 | MAZ3–FA063 | 10 | 70 | ϕ9 | ϕ40 | 80 | 100 | 50 |

## Dimensional Table/TA (rod trunnion) and TB (cap trunnion)

| Symbol / Bore | Part number | BD | BK | EG | ME | TD | TM | TL | UM |
|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | MAZ3–TA020 | 10 | 5 | ϕ32 | ϕ22.5 | ϕ8e9 | 36 | 8 | 52 |
| ϕ25 | | | | | | | | | |
| ϕ32 | MAZ3–TA032 | 12 | 6 | ϕ36 | ϕ24.5 | ϕ10e9 | 44 | 10 | 64 |
| ϕ40 | MAZ3–TA040 | 14 | 7 | ϕ44 | ϕ30.5 | ϕ12e9 | 50 | 12 | 74 |
| ϕ50 | MAZ3–TA050 | 18 | 9 | ϕ56 | ϕ40.5 | ϕ16e9 | 72 | 16 | 104 |
| ϕ63 | | | | | | | | | |

## Dimensional Table/CU (cap eye with spherical bearing)

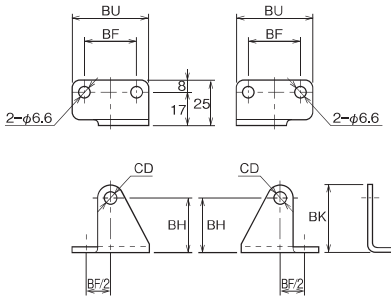
| Symbol / Bore | Part number | CD1 | CE | CK | CN | EC | GW | HB | HD | HL | HT | MB | VQ | VY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | MAZ3–CU020 | ϕ8H9 | ϕ32 | 30 | ϕ14.8 | 28 | $12^{0}_{-0.3}$ | 31 | 10.5 | 15 | 46 | M22×1.5 | 23 | 60 |
| ϕ25 | MAZ3–CU025 | ϕ10H9 | ϕ32 | 30 | ϕ14.8 | 28 | $14^{0}_{-0.3}$ | 31 | 10.5 | 15 | 46 | M22×1.5 | 23 | 60 |
| ϕ32 | MAZ3–CU032 | ϕ10H9 | ϕ32 | 30 | ϕ14.8 | 28 | $14^{0}_{-0.3}$ | 31 | 10.5 | 15 | 46 | M24×2 | 23 | 60 |
| ϕ40 | MAZ3–CU040 | ϕ12H9 | ϕ38 | 36 | ϕ15.4 | 32 | $16^{0}_{-0.3}$ | 35 | 12 | 17 | 52 | M30×2 | 26 | 68 |

10Z-3/TAZ3 Bore K CAD/DATA is available.

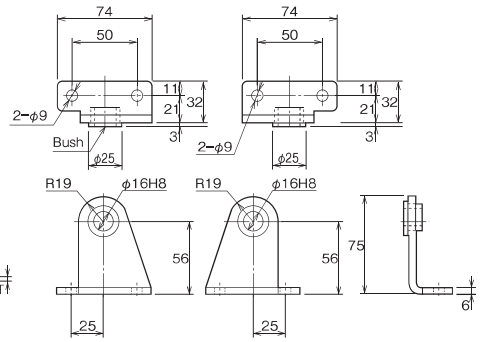
## Bracket

● For SD, CU, TA, TB and TC

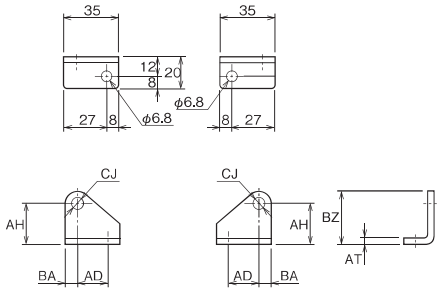
ϕ20 to ϕ40




ϕ50・ϕ63

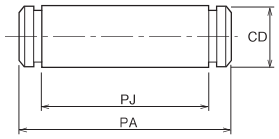



● Bracket for LC




● Pin

● For SD with bracket
● For CU with bracket






## Dimensional Table/Brackets for SD, CU, TA, TB and TC

| Symbol / Bore | Part number For SD | Part number For CU | Part number For TA, TB and TC | BF | BH | BK | BT | BU | CD |
|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | MAZ3−BK020PA | MAZ3−BK020PB | MAZ3−BK020 | 32 | 32 | 40 | 3.2 | 48 | ϕ8 |
| ϕ25 | | MAZ3−BK032PB | | | | | | | |
| ϕ32 | MAZ3−BK032PA | | MAZ3−BK032 | 36 | 36 | 46 | 4 | 52 | ϕ10 |
| ϕ40 | MAZ3−BK040PA | MAZ3−BK040PB | MAZ3−BK040 | 40 | 40 | 52 | 4 | 56 | ϕ12 |

## Dimensional Table/Brackets for LC (VAL Set)

| Symbol / Bore | Part number | AD | AH | AT | BA | BZ | CJ |
|---|---|---|---|---|---|---|---|
| ϕ20 | MAZ3−LC020 | 19 | 25 | 3.2 | 8 | 33 | ϕ8 |
| ϕ25 | | | | | | | |
| ϕ32 | MAZ3−LC032 | 17 | 32 | 4 | 10 | 42 | ϕ10 |
| ϕ40 | MAZ3−LC040 | 15 | 36 | 4 | 12 | 48 | ϕ12 |

## Dimensional Table/Pins

| Symbol / Bore | CD For SD | CD For CU | PA For SD | PA For CU | PJ For SD | PJ For CU |
|---|---|---|---|---|---|---|
| ϕ20 | ϕ8 | ϕ8 | 31 | 27 | 26 | 22 |
| ϕ25 | ϕ8 | ϕ10 | 31 | 29 | 26 | 24 |
| ϕ32 | ϕ10 | ϕ10 | 32 | 29 | 27 | 24 |
| ϕ40 | ϕ12 | ϕ12 | 36 | 32 | 31 | 27 |

## Specifications for Adjustable Stroke Cylinders

| Type | WIth adjustable extended stroke | With adjustable retracted stroke |
|---|---|---|
| | Standard type/Switch Set | Standard type/Switch Set |
| Series | 10Z–3A1 | 10Z–3A2 |
| Cylinder bore (mm) | ϕ20・ϕ25・ϕ32・ϕ40・ϕ50・ϕ63 | |
| Working fluid | Air | |
| Lubrication | Unnecessary | |
| Working pressure range | ϕ20 to ϕ40: 0.05 to 0.7 MPa, ϕ50・ϕ63: 0.02 to 0.7 MPa | |
| Working speed range | 20 to 700mm/s | |
| Proof test pressure | 1.5 MPa | |
| Working temperature range | −10 to +70℃ (No freezing) | |
| Structure of cushioning | ϕ20 to ϕ40: With cushion pads on both ends<br>ϕ50 and ϕ63: With cushions on both ends<br>(cushion pad at rod extending end for adjustment) | ϕ20 to ϕ40: With cushion pads on both ends<br>(none at rod retracting end for adjustment)<br>ϕ50 and ϕ63: With cushions on both ends<br>(none at rod retracting end for adjustment) |
| Stroke adjusting type | Stopper adjustment | Adjuster screw adjustment |
| Stroke adjusting range | 0 to 25 mm | |
| Tolerance for thread | JIS 6H/6g | |
| Mounting style | SD (basic style), FA, TA, TA with bracket | SD (basic style), LB, FA, FB, TA, TA with bracket, TB, TB with bracket |

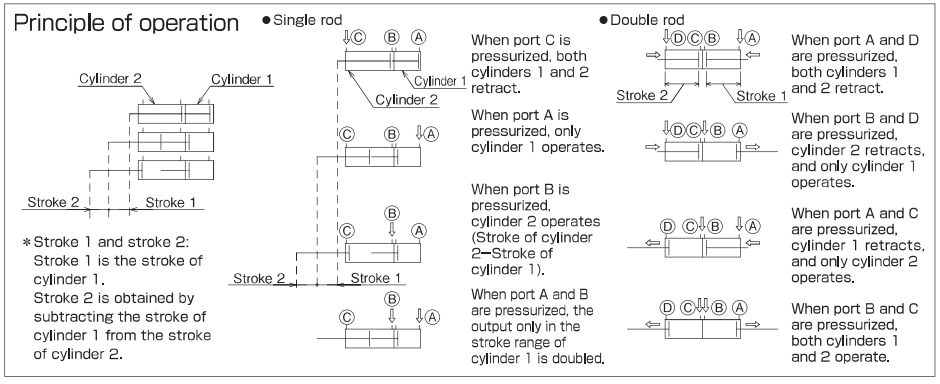
Note) For the working speed range, see the selection materials to check the relationship between the speed and the cushion mechanism.

## Custom Made Specifications
## Specifications for Dual Stroke Cylinders

| Type | Single rod | Double rod |
|---|---|---|
| | Standard type/Switch Set | Standard type/Switch Set |
| Series | 10Z–3Q1 | 10Z–3Q2 |
| Cylinder bore (mm) | ϕ20・ϕ25・ϕ32・ϕ40・ϕ50・ϕ63 | |
| Working fluid | Air | |
| Lubrication | Unnecessary | |
| Working pressure range | 0.1 to 0.7 MPa | ϕ20 to ϕ40: 0.05 to 0.7 MPa<br>ϕ50・ϕ63: 0.02 to 0.7 MPa |
| Working speed range | 50 to 700mm/s | |
| Proof test pressure | 1.5 MPa | |
| Working temperature range | −10 to +70℃ (No freezing) | |
| Structure of cushioning | ϕ20 to ϕ40: With cushion pads on both ends<br>ϕ50 and ϕ63: With cushions on both ends | |
| Tolerance for thread | JIS 6H/6g | |
| Mounting style | SD (basic style), SD with bracket, LB, FA, FB, TA, TA with bracket, TB, TB with bracket | SD (basic style), LB, FA, TA, TA with bracket |

Note) For the working speed range, see the selection materials to check the relationship between the speed and the cushion mechanism.

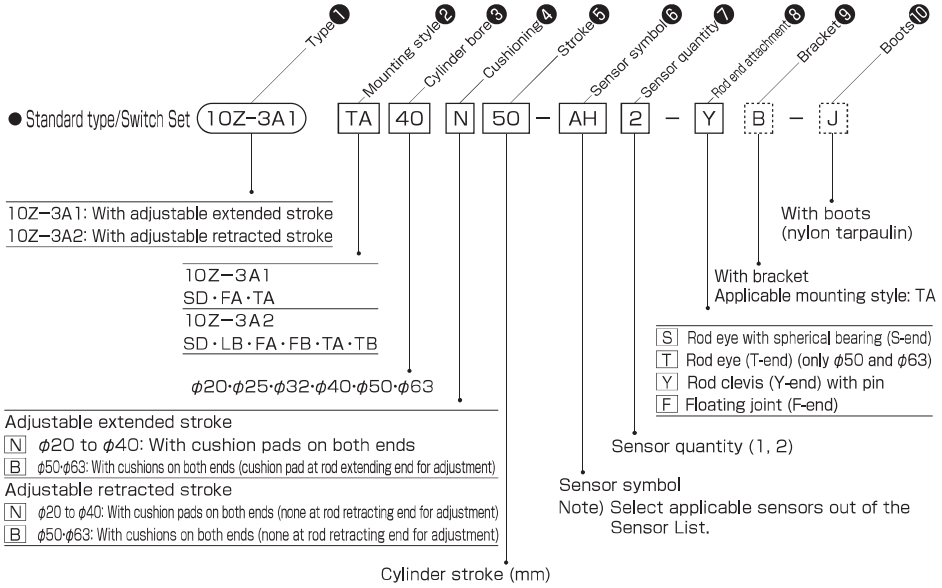
### Principle of operation





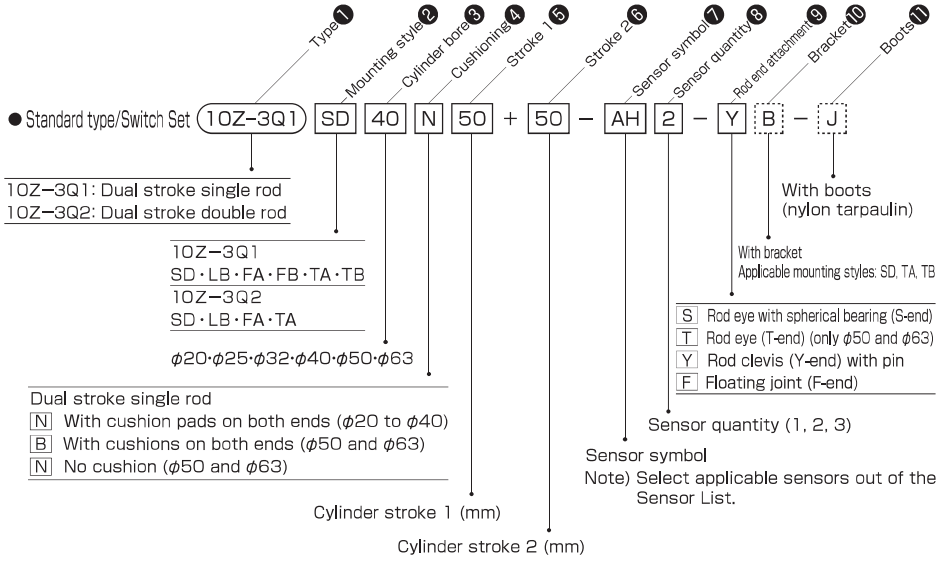



## ● How to order




＊For details, please contact us.

## ● How to order

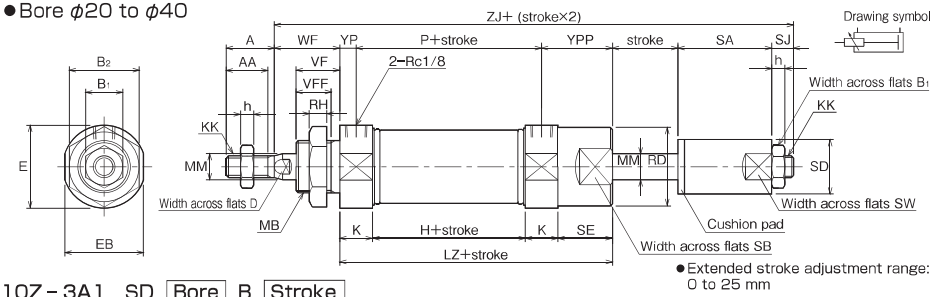



＊For details, please contact us.

## Adjustable extended stroke

10Z－3A1 SD Bore N Stroke

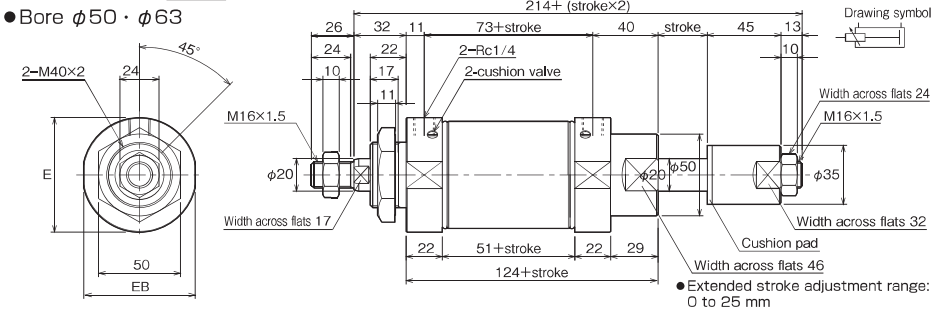
●Bore φ20 to φ40




●Extended stroke adjustment range: 0 to 25 mm

10Z－3A1 SD Bore B Stroke

●Bore φ50・φ63

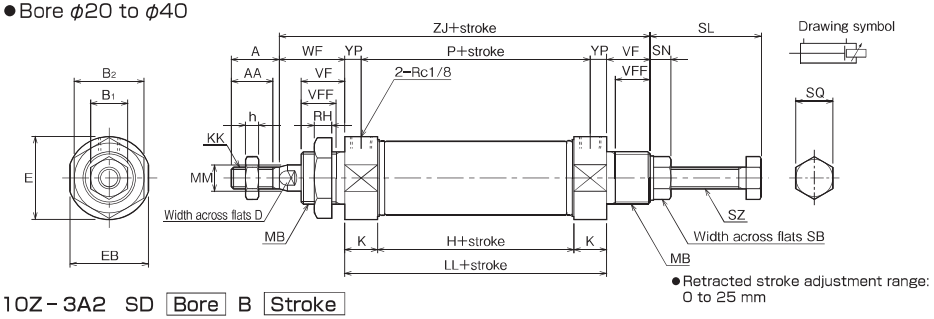



●Extended stroke adjustment range: 0 to 25 mm

## Adjustable retracted stroke

10Z－3A2 SD Bore N Stroke

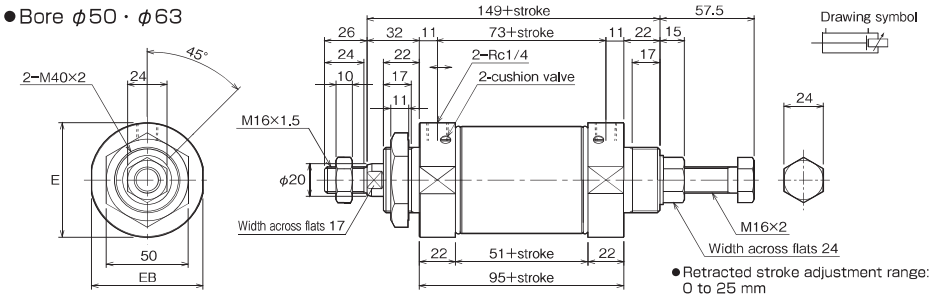
●Bore φ20 to φ40




●Retracted stroke adjustment range: 0 to 25 mm

10Z－3A2 SD Bore B Stroke

●Bore φ50・φ63




●Retracted stroke adjustment range: 0 to 25 mm

## Dimensional Table/With adjustable extended stroke

| Symbol / Bore | A | AA | B₁ | B₂ | D | E | EB | H | h | K | KK | LZ | MB | MM | P | RD | RH | SA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | 20 | 20 | 13 | 30 | 6 | φ28 | 26 | 31 | 5 | 14 | M8×1.25 | 82 | M22×1.5 | φ8 | 45 | φ30 | 7 | 39 |
| φ25 | 22 | 22 | 17 | 30 | 8 | φ31 | 29 | 35 | 6 | 14.5 | M10×1.25 | 87 | M22×1.5 | φ10 | 49 | φ30 | 7 | 39 |
| φ32 | 22 | 19 | 17 | 32 | 10 | φ38 | 36 | 40 | 6 | 15 | M10×1.25 | 95 | M24×2 | φ12 | 55 | φ35 | 8 | 43 |
| φ40 | 24 | 21 | 19 | 41 | 12 | φ46 | 44 | 42 | 7 | 15 | M12×1.25 | 99 | M30×2 | φ14 | 57 | φ45 | 9 | 43 |
| φ50 | – | – | – | – | – | φ56 | 54 | – | – | – | – | – | – | – | – | – | – | – |
| φ63 | – | – | – | – | – | φ70 | 68 | – | – | – | – | – | – | – | – | – | – | – |

| Symbol / Bore | SB | SD | SE | SJ | SW | VF | VFF | WF | YP | YPP | ZJ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | 27 | φ20 | 23 | 8 | 17 | 16 | 13 | 24 | 7 | 30 | 153 |
| φ25 | 27 | φ20 | 23 | 9 | 17 | 18 | 15 | 28 | 7.5 | 30.5 | 163 |
| φ32 | 32 | φ25 | 25 | 9 | 22 | 20 | 16 | 30 | 7.5 | 32.5 | 177 |
| φ40 | 41 | φ30 | 27 | 10 | 27 | 22 | 18 | 32 | 7.5 | 34.5 | 184 |
| φ50 | – | – | – | – | – | – | – | – | – | – | – |
| φ63 | – | – | – | – | – | – | – | – | – | – | – |

## Dimensional Table/With adjustable retracted stroke

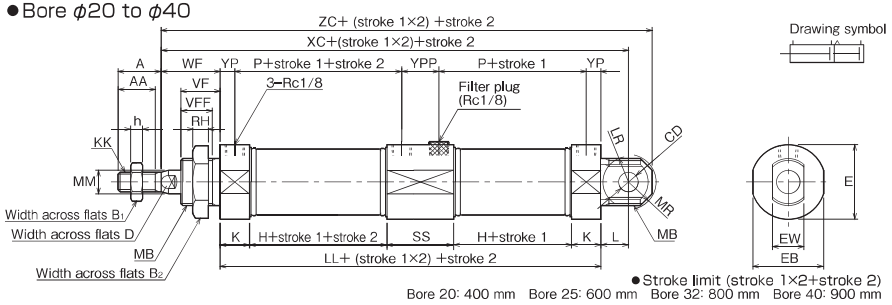
| Symbol / Bore | A | AA | B₁ | B₂ | D | E | EB | H | h | K | KK | LL | MB | MM | P | RH | SB | SL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| φ20 | 20 | 20 | 13 | 30 | 6 | φ28 | 26 | 31 | 5 | 14 | M8×1.25 | 59 | M22×1.5 | φ8 | 45 | 7 | 13 | 48 |
| φ25 | 22 | 22 | 17 | 30 | 8 | φ31 | 29 | 35 | 6 | 14.5 | M10×1.25 | 64 | M22×1.5 | φ10 | 49 | 7 | 13 | 46.5 |
| φ32 | 22 | 19 | 17 | 32 | 10 | φ38 | 36 | 40 | 6 | 15 | M10×1.25 | 70 | M24×2 | φ12 | 55 | 8 | 17 | 51 |
| φ40 | 24 | 21 | 19 | 41 | 12 | φ46 | 44 | 42 | 7 | 15 | M12×1.25 | 72 | M30×2 | φ14 | 57 | 9 | 19 | 52 |
| φ50 | – | – | – | – | – | φ56 | 54 | – | – | – | – | – | – | – | – | – | – | – |
| φ63 | – | – | – | – | – | φ70 | 68 | – | – | – | – | – | – | – | – | – | – | – |

| Symbol / Bore | SN | SQ | SZ | VF | VFF | WF | YP | ZJ |
|---|---|---|---|---|---|---|---|---|
| φ20 | 8 | 13 | M8×1.25 | 16 | 13 | 24 | 7 | 99 |
| φ25 | 8 | 13 | M8×1.25 | 18 | 15 | 28 | 7.5 | 110 |
| φ32 | 9.5 | 17 | M10×1.5 | 20 | 16 | 30 | 7.5 | 120 |
| φ40 | 12 | 19 | M12×1.75 | 22 | 18 | 32 | 7.5 | 126 |
| φ50 | – | – | – | – | – | – | – | – |
| φ63 | – | – | – | – | – | – | – | – |

## Dual stroke/single rod

10Z-3Q1 SD [Bore] N [Stroke 1] + [Stroke 2]

● Bore $\phi$20 to $\phi$40

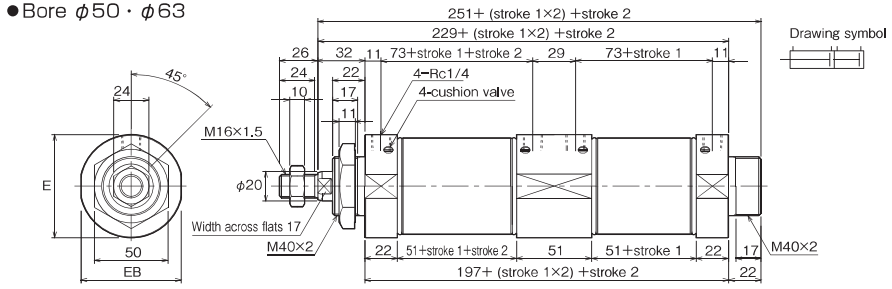



● Stroke limit (stroke 1×2+stroke 2)

Bore 20: 400 mm Bore 25: 600 mm Bore 32: 800 mm Bore 40: 900 mm

10Z-3Q1 SD [Bore] B [Stroke 1] + [Stroke 2]

● Bore $\phi$50 · $\phi$63

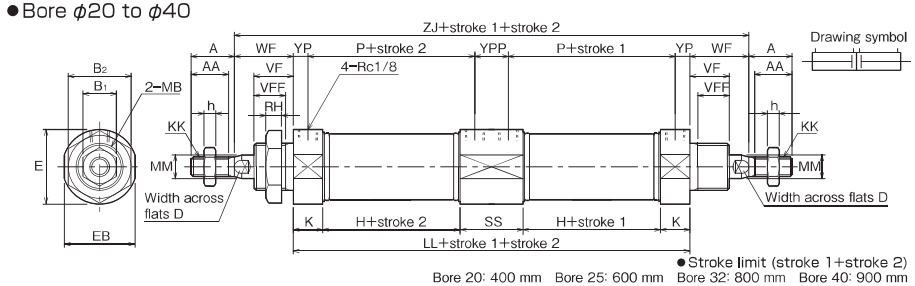



● Stroke limit (stroke 1×2+stroke 2): 900 mm

## Dual stroke/double rod

10Z-3Q2 SD [Bore] N [Stroke 1] + [Stroke 2]

● Bore $\phi$20 to $\phi$40

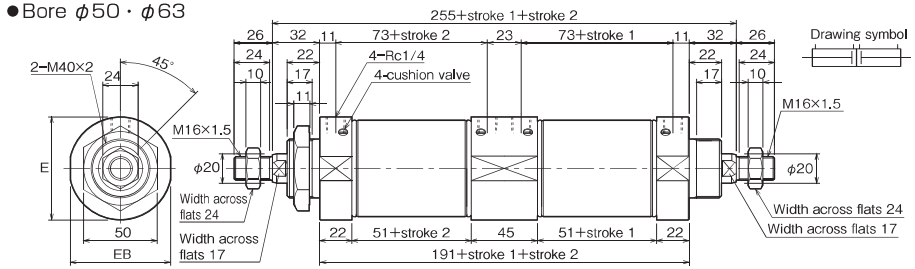



● Stroke limit (stroke 1+stroke 2)

Bore 20: 400 mm Bore 25: 600 mm Bore 32: 800 mm Bore 40: 900 mm

10Z-3Q2 SD [Bore] B [Stroke 1] + [Stroke 2]

● Bore $\phi$50 · $\phi$63




● Stroke limit (stroke 1+stroke 2): 900 mm





## Dimensional Table/Dual stroke/Single rod

| Symbol / Bore | A | AA | $B_1$ | $B_2$ | CD | D | E | EB | EW | H | h | K | KK | L | LL | LR | MB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $\phi$20 | 20 | 20 | 13 | 30 | $\phi$8H9 | 6 | $\phi$28 | 26 | $16^{-0.1}_{-0.3}$ | 31 | 5 | 14 | M8×1.25 | 12 | 121 | R11 | M22×1.5 |
| $\phi$25 | 22 | 22 | 17 | 30 | $\phi$8H9 | 8 | $\phi$31 | 29 | $16^{-0.1}_{-0.3}$ | 35 | 6 | 14.5 | M10×1.25 | 12 | 130 | R11 | M22×1.5 |
| $\phi$32 | 22 | 19 | 17 | 32 | $\phi$10H9 | 10 | $\phi$38 | 36 | $16^{-0.1}_{-0.3}$ | 40 | 6 | 15 | M10×1.25 | 14 | 144 | R13 | M24×2 |
| $\phi$40 | 24 | 21 | 19 | 41 | $\phi$12H9 | 12 | $\phi$46 | 44 | $20^{-0.1}_{-0.3}$ | 42 | 7 | 15 | M12×1.25 | 16 | 149 | R15 | M30×2 |
| $\phi$50 | – | – | – | – | – | – | $\phi$56 | 54 | – | – | – | – | – | – | – | – | – |
| $\phi$63 | – | – | – | – | – | – | $\phi$70 | 68 | – | – | – | – | – | – | – | – | – |

| Symbol / Bore | MM | MR | P | RH | SS | VF | VFF | WF | XC | YP | YPP | ZC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $\phi$20 | $\phi$8 | R12 | 45 | 7 | 31 | 16 | 13 | 24 | 157 | 7 | 17 | 167 |
| $\phi$25 | $\phi$10 | R12 | 49 | 7 | 31 | 18 | 15 | 28 | 170 | 7.5 | 17 | 180 |
| $\phi$32 | $\phi$12 | R14 | 55 | 8 | 34 | 20 | 16 | 30 | 188 | 7.5 | 19 | 200 |
| $\phi$40 | $\phi$14 | R16 | 57 | 9 | 35 | 22 | 18 | 32 | 197 | 7.5 | 20 | 209 |
| $\phi$50 | – | – | – | – | – | – | – | – | – | – | – | – |
| $\phi$63 | – | – | – | – | – | – | – | – | – | – | – | – |

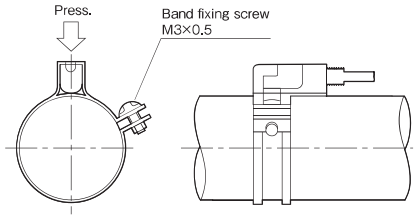
## Dimensional Table/Dual stroke/Double rod

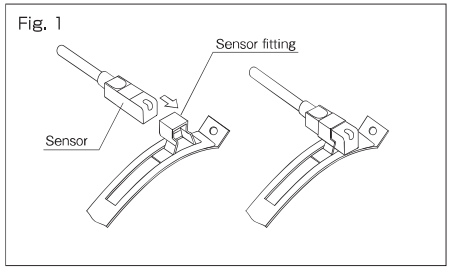
| Symbol / Bore | A | AA | $B_1$ | $B_2$ | D | E | EB | H | h | K | KK | LL | MB | MM | P | RH | SS | VF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $\phi$20 | 20 | 20 | 13 | 30 | 6 | $\phi$28 | 26 | 31 | 5 | 14 | M8×1.25 | 121 | M22×1.5 | $\phi$8 | 45 | 7 | 31 | 16 |
| $\phi$25 | 22 | 22 | 17 | 30 | 8 | $\phi$31 | 29 | 35 | 6 | 14.5 | M10×1.25 | 130 | M22×1.5 | $\phi$10 | 49 | 7 | 31 | 18 |
| $\phi$32 | 22 | 19 | 17 | 32 | 10 | $\phi$38 | 36 | 40 | 6 | 15 | M10×1.25 | 142 | M24×2 | $\phi$12 | 55 | 8 | 32 | 20 |
| $\phi$40 | 24 | 21 | 19 | 41 | 12 | $\phi$46 | 44 | 42 | 7 | 15 | M12×1.25 | 146 | M30×2 | $\phi$14 | 57 | 9 | 32 | 22 |
| $\phi$50 | – | – | – | – | – | $\phi$56 | 54 | – | – | – | – | – | – | – | – | – | – | – |
| $\phi$63 | – | – | – | – | – | $\phi$70 | 68 | – | – | – | – | – | – | – | – | – | – | – |

| Symbol / Bore | VFF | WF | YP | YPP | ZJ |
|---|---|---|---|---|---|
| $\phi$20 | 13 | 24 | 7 | 17 | 167 |
| $\phi$25 | 15 | 28 | 7.5 | 17 | 182 |
| $\phi$32 | 16 | 30 | 7.5 | 17 | 196 |
| $\phi$40 | 18 | 32 | 7.5 | 17 | 203 |
| $\phi$50 | – | – | – | – | – |
| $\phi$63 | – | – | – | – | – |

## Setting method of sensor detecting position

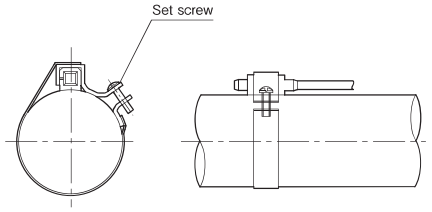
### AX type sensor

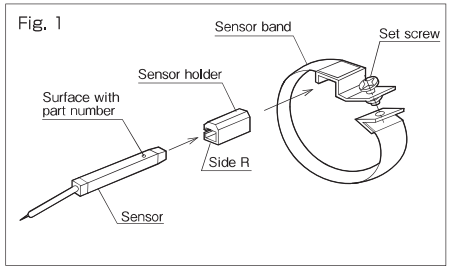



1. Twist the band body, and draw out one end of the sensor fitting from the slit in the band.
2. Insert the sensor to the sensor fitting along the groove, and attach the sensor fitting to the band body. (Fig. 1)
3. After removing the band fixing screw (M3), wind the band on the cylinder tube, and set the band around the detecting position.
4. Align the band mounting hole and the threaded portion, and lightly tighten the band fixing screw to temporarily secure the band.
5. Move the band and the sensor on the tube to determine the detecting position.
   When the sensor turns on, the lamp lights up. The detecting position delicately changes depending on the piston rotating speed and ambient temperature. Therefore, for reliable detection, shift the sensor 2 to 3 mm from the sensor ON position toward the piston start position. To mount a sensor to detect the stroke end, refer to dimension UX shown in the catalog. When a 2-LED sensor is used, ensure that the green lamp lights up at the desired position.
6. After determining the sensor position, gently hold the top of the sensor, and tighten the band fixing screw to secure the band.
   [Recommended tightening torque: 0.3 N·m]
   Note) Inappropriate tightening torque may cause the off-center of the sensor position.

### ZC type sensor



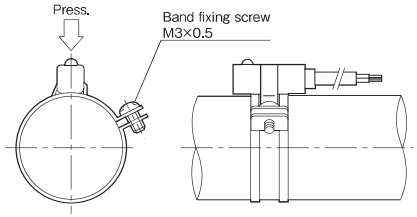



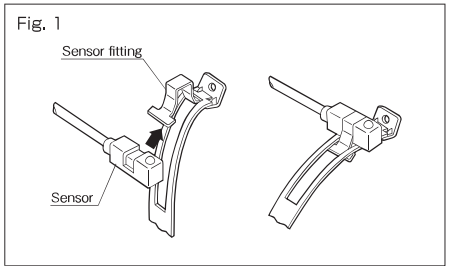

1. Fit the sensor to the sensor holder. (Fig. 1)
   Set the side R of the sensor holder downward, and set the sensor surface with part number upward.
2. Temporarily secure the sensor holder with its side R downward using the sensor band.
3. Keep pressing the top of the sensor at the detecting position, and tighten the set screw to secure the band.
   [Recommended tightening torque: 0.5 N·m]
   Note) Tighten the set screw to the proper tightening torque. Inappropriate tightening torque may cause the off-center of the sensor position.
4. To make a fine adjustment to the sensor position in the axial direction, slightly loosen the set screw, and only the sensor can be moved.





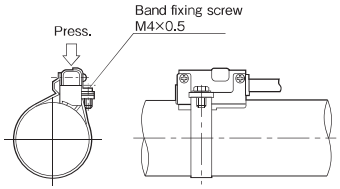
### JR/JS type sensor




1. Twist the band body, and draw out one end of the sensor fitting from the slit in the band.
2. Insert the sensor to the sensor fitting along the groove, and attach the sensor fitting to the band body. (Fig. 1)
3. After removing the band fixing screw (M3), wind the band on the cylinder tube, and set the band around the detecting position.
4. Align the band mounting hole and the threaded portion, and lightly tighten the band fixing screw to temporarily secure the band.
5. Move the band and the sensor on the tube to determine the detecting position.
   When the sensor turns on, the lamp lights up. The detecting position delicately changes depending on the piston rotating speed and ambient temperature. Therefore, for reliable detection, shift the sensor 2 to 3 mm from the sensor ON position toward the piston start position. To mount a sensor to detect the stroke end, refer to dimension UX shown in the catalog.
6. After determining the sensor position, gently hold the top of the sensor, and tighten the band fixing screw to secure the band.
   [Recommended tightening torque: 0.3 N·m]
   Note) Inappropriate tightening torque may cause the off-center of the sensor position.

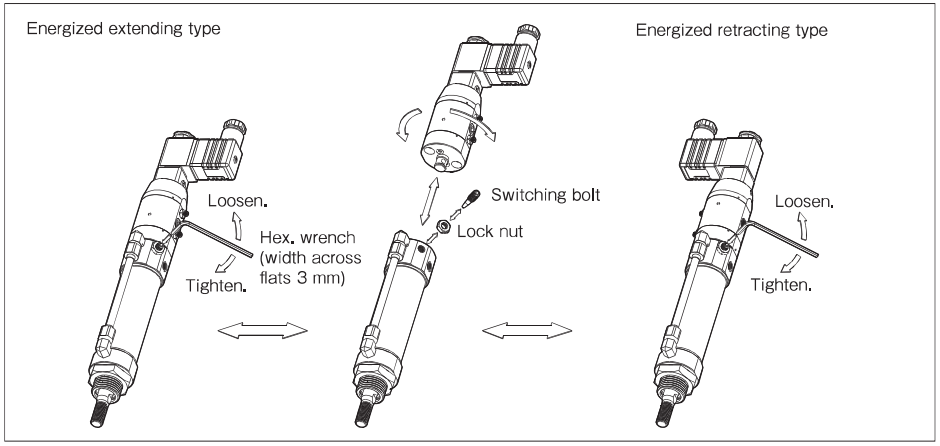
### SR type sensor




1. Attach the sensor to the band with two sensor mounting screws (M3).
   [Recommended tightening torque: 0.3 N·m]
2. After removing the band fixing screw (M4), wind the band on the cylinder tube, and set the band around the detecting position.
3. Align the band mounting hole and the threaded portion, and lightly tighten the band fixing screw to temporarily secure the band.
4. Move the band and the sensor on the tube to determine the detecting position.
   The operation lamp goes out when the sensor turns on. The detecting position delicately changes depending on the piston rotating speed and ambient temperature. Therefore, for reliable detection, shift the sensor 2 to 3 mm from the sensor ON position toward the piston start position. To mount a sensor to detect the stroke end, refer to dimension UX shown in the catalog.
5. After determining the sensor position, gently hold the top of the sensor, and tighten the band fixing screw to secure the band.
   [Recommended tightening torque: 0.3 N·m]
   Note) Inappropriate tightening torque may cause the off-center of the sensor position.

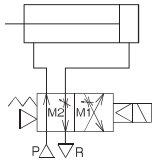
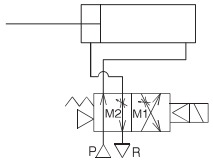
## VAL Set handling procedures

### Procedures for switching between energized extending and energized retracting types




As shown in the figure, tighten the energized extending-retracting type switching mechanism with a hex. wrench having a width across flats of 3 mm.
To change the type, turn the mechanism 180°, and tighten the switching bolt.
Recommended tightening torque: 2.40 N·m

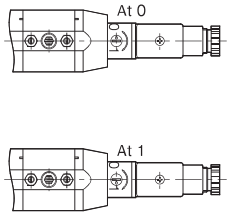
### How to use exhaust throttle valves

| ●Energized extending type | ●Energized retracting type |
|---|---|
|  |  |
| Extending speed control: Adjust the exhaust throttle valve M1. Retracting speed control: Adjust the exhaust throttle valve M2. | Retracting speed control: Adjust the exhaust throttle valve M1. Extending speed control: Adjust the exhaust throttle valve M2. |



- Adjust the exhaust throttle valve with a slotted screwdriver, and secure it with the lock nut. Recommended tightening torque: 0.69 N·m
- Do not loosen the exhaust throttle valve 4 turns or more from the fully closed state. (The valve is fully opened by giving approx. 3.6 turns from the fully closed state.)

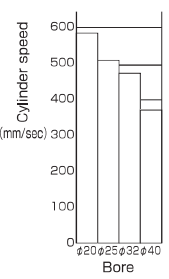
### How to use manual override




- Energized extending type
  When the manual override is positioned at 1, the cylinder will move forward without current applied to the solenoid.
- Energized retracting type
  When the manual override is positioned at 1, the cylinder will move backward without current applied to the solenoid.

After performing the manual operation, return the manual override to the initial state (to 0).

### Average speed (max. value) of VAL Set Cylinder




Cylinder load rate: 50 % (actual load)
Supply pressure: 0.5 MPa
Average speed: Average speed after the cylinder starts moving until it reaches the stroke end

Use the graph to find the approximate cylinder speed. Note that the actual speed varies depending on the working conditions. Ensure that the working speed does not exceed the working speed range.

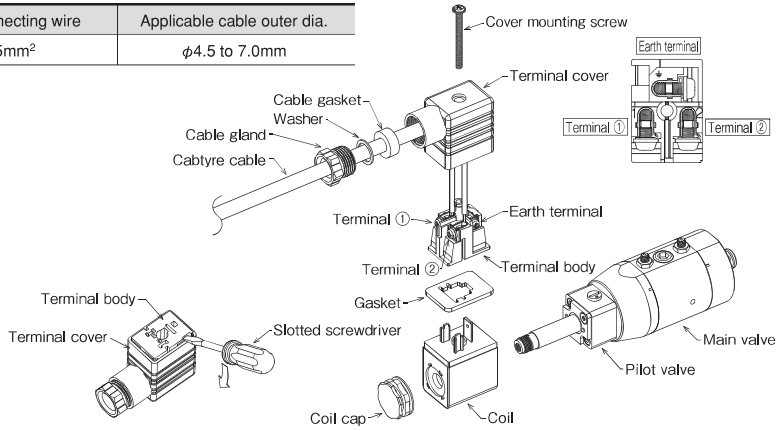




## Valve wiring procedures

(1)Loosen the cover set screw, remove the DIN socket from the coil, and separate the terminal cover and the terminal body using a slotted screwdriver.
(2)Fit the cable gland, washer and cable gasket to the cable (cabtyre cord) in turn, and insert the cable to the terminal cover.
(3)Loosen the screws of the terminals ① and ② and earth terminal, and connect the wires. The power supply cable does not have polarity. (When crimp-style terminals are used, use terminals for screw diameter M3.)
(4)Put the terminal body in the terminal cover, tighten the cover mounting screw, and attach the cover to the coil. (Recommended tightening torque: 0.4 N·m)
(5)Tighten the cable gland on the terminal cover. (Recommended tightening torque: 0.6 N·m)

| Applicable connecting wire | Applicable cable outer dia. |
|---|---|
| 0.5 to 1.5mm² | ϕ4.5 to 7.0mm |




＊Loosen the coil cap, and the coil can be separated from the pilot valve. (Recommended tightening torque: 0.6 N·m)

## Cushion adjusting procedures (for type with cushion)

- Cushion adjustment depends on air pressure, load weight and cylinder speed. Therefore, when adjusting the cushion, set the actual load under the same conditions as the actual working conditions.
- To adjust the cushion, gradually loosen the cushion valve after opening it 45 to 90° from the fully closed state. Adjust the cushion decreasing the cushioning power from high to low. In the high cushioning power range, the kinetic energy and absorbed energy are not transferred smoothly, and bounding occurs. In the low cushioning power range, the absorbed energy is lower than the kinetic energy, and the piston gets into direct contact with the cover, thereby causing impact noise and damaging the cover. Adjust the cushion carefully observing the behavior of the cylinder.

| Cylinder bore | Applicable tools | Recommended lock nut tightening torque |
|---|---|---|
| ϕ20, ϕ25 | 7-mm spanner and slotted screwdriver | 0.69N・m |
| ϕ32, ϕ40 | 8-mm spanner and slotted screwdriver | 1.42N・m |

## Recommended accessory/attachment tightening torque

Tighten each nut and bolt to the recommended tightening torque shown in the following table.

| | M22 (ϕ20, ϕ25) | M24 (ϕ32) | M30 (ϕ40) |
|---|---|---|---|
| Recommended tightening torque of accessory mounting nut | 147N·m | 181N·m | 363N·m |

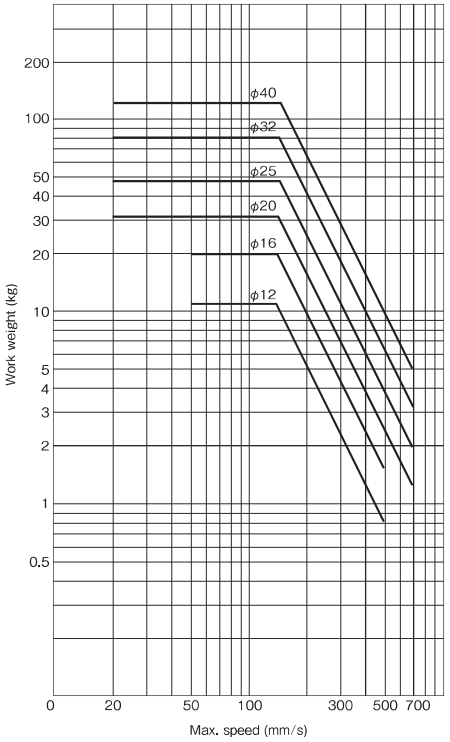
| | M8 (ϕ20, ϕ25) | M10 (ϕ32) | M12 (ϕ40) |
|---|---|---|---|
| Recommended tightening torque of rod end attachment fixing nut | 12.0N·m | 24.0N·m | 42.2N·m |

Note) For standard and non-rotating cylinders with a bore of 25 mm, use rod end screws M10 and M8, respectively.

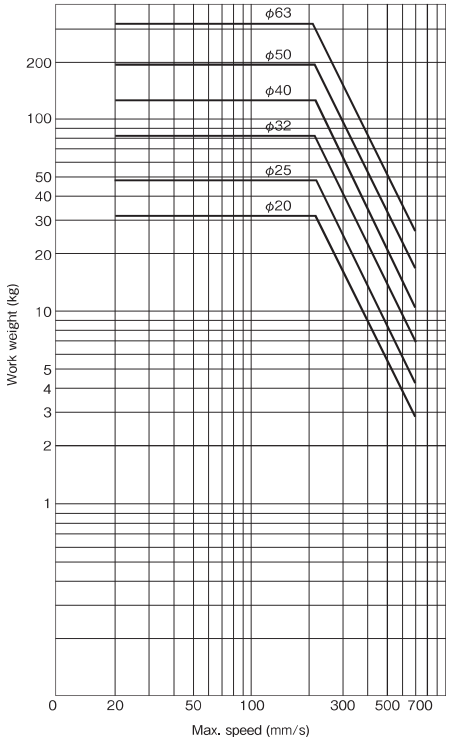
## Selection Materials

## Allowable Kinetic Energy

● Cylinders with cushion pads (on both ends)




● Cylinders with air cushions (on both ends)




### Allowable Kinetic Energy

| Cylinder bore (mm) | With cushion pads | With air cushions |
|---|---|---|
| ϕ12 | 0.11J | — |
| ϕ16 | 0.21J | — |
| ϕ20 | 0.31J | 0.69J |
| ϕ25 | 0.50J | 1.1J |
| ϕ32 | 0.81J | 1.8J |
| ϕ40 | 1.3J | 2.7J |
| ϕ50 | — | 4.4J |
| ϕ63 | — | 7.0J |

For the cylinders, two kinds of built-in cushioning mechanisms, cushion pads and air cushions, are used. (Some types cannot be provided with built-in cushioning mechanisms. See the outline of the types.) To select a cushioning mechanism, determine the kinetic energy of the load with the formula shown right, or ensure that the energy does not exceed the allowable kinetic energy according to the allowable kinetic energy chart. If the energy exceeds the allowable value, increase the cylinder bore, or provide an external stopper, such as a shock absorber.

Kinetic energy of load $Ex=\frac{W}{2g}V^2$

W: Work weight (kg)

g : Mass acceleration, 980 (cm/s²)

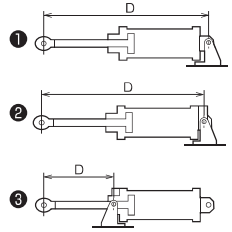
V : Piston speed (cm/s)

<How to read the chart>
To determine the work weight (rod end load) applicable to a 32 mm bore cylinder with cushion pads at the maximum speed of 500 mm/s: Find the intersection of the vertical line of 500 mm/s with the line of 32 mm bore cylinder, and draw a line from the intersection to the left. Then, the obtained load is 6 kg.



## Selection of Stroke

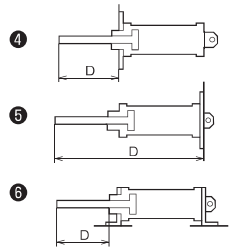
● Pin joints at both ends (D=L)




Max. Stroke Unit: mm

| Mounting style / Working pressure MPa / Bore (mm) | CA style 0.3 | CA style 0.5 | CA style 0.7 | CA style 1 | TA style 0.3 | TA style 0.5 | TA style 0.7 | TA style 1 | TB style 0.3 | TB style 0.5 | TB style 0.7 | TB style 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ12 | 237 | 173 | 139 | 109 | — | — | — | — | — | — | — | — |
| ϕ16 | 163 | 115 | 89 | 67 | — | — | — | — | — | — | — | — |
| ϕ20 | 243 | 176 | 139 | 107 | 563 | 427 | 355 | 291 | 247 | 179 | 143 | 111 |
| ϕ25 | 313 | 228 | 183 | 143 | 707 | 538 | 447 | 367 | 317 | 232 | 187 | 146 |
| ϕ32 | 355 | 260 | 209 | 164 | 800 | 609 | 508 | 417 | 359 | 264 | 213 | 168 |
| ϕ40 | 389 | 285 | 230 | 180 | 872 | 665 | 554 | 456 | 393 | 289 | 234 | 185 |
| ϕ50 | 667 | 497 | 407 | 326 | 1455 | 1116 | 936 | 775 | 671 | 502 | 411 | 331 |
| ϕ63 | 511 | 377 | 305 | 241 | 1145 | 876 | 733 | 605 | 516 | 381 | 310 | 246 |

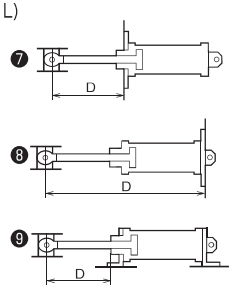
● Fixed cylinder and free rod end (D=L/2)




Max. Stroke Unit: mm

| Mounting style / Working pressure MPa / Bore (mm) | SD style (rod cover screwed) and LB style 0.3 | 0.5 | 0.7 | 1 | FA style 0.3 | 0.5 | 0.7 | 1 | FB style 0.3 | 0.5 | 0.7 | 1 | SD style (cap cover screwed) 0.3 | 0.5 | 0.7 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ12 | 244 | 180 | 147 | 116 | 247 | 183 | 150 | 119 | 99 | 67 | 50 | 35 | 100 | 68 | 51 | 36 |
| ϕ16 | 174 | 126 | 100 | 78 | 177 | 129 | 103 | 81 | 60 | 36 | 23 | 12 | 61 | 37 | 25 | 13 |
| ϕ20 | 257 | 189 | 153 | 121 | 261 | 193 | 157 | 125 | 99 | 65 | 47 | 31 | 99 | 65 | 47 | 31 |
| ϕ25 | 326 | 241 | 196 | 156 | 330 | 245 | 200 | 160 | 131 | 89 | 66 | 46 | 131 | 89 | 66 | 46 |
| ϕ32 | 371 | 276 | 225 | 180 | 375 | 280 | 229 | 184 | 151 | 103 | 77 | 55 | 151 | 103 | 77 | 55 |
| ϕ40 | 405 | 301 | 246 | 196 | 409 | 305 | 250 | 200 | 166 | 114 | 87 | 62 | 166 | 114 | 87 | 62 |
| ϕ50 | 694 | 525 | 434 | 354 | 714 | 545 | 454 | 374 | 295 | 210 | 165 | 124 | 300 | 215 | 170 | 129 |
| ϕ63 | 539 | 404 | 333 | 269 | 559 | 424 | 353 | 289 | 217 | 150 | 114 | 82 | 222 | 155 | 119 | 87 |

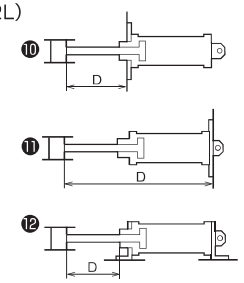
● Fixed cylinder and rod end guide (pin joint) (D=1.4 L)




Max. Stroke Unit: mm

| Mounting style / Working pressure MPa / Bore (mm) | SD style (rod cover screwed) and LB style 0.3 | 0.5 | 0.7 | 1 | FA style 0.3 | 0.5 | 0.7 | 1 | FB style 0.3 | 0.5 | 0.7 | 1 | SD style (cap cover screwed) 0.3 | 0.5 | 0.7 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ12 | 752 | 574 | 479 | 395 | 755 | 577 | 482 | 398 | 352 | 263 | 216 | 174 | 354 | 265 | 218 | 175 |
| ϕ16 | 554 | 421 | 350 | 286 | 557 | 424 | 353 | 289 | 250 | 183 | 148 | 116 | 252 | 185 | 149 | 118 |
| ϕ20 | 798 | 609 | 507 | 417 | 802 | 613 | 511 | 421 | 370 | 275 | 224 | 179 | 370 | 275 | 224 | 179 |
| ϕ25 | 1003 | 766 | 639 | 527 | 1007 | 770 | 643 | 531 | 469 | 351 | 288 | 231 | 469 | 351 | 288 | 231 |
| ϕ32 | 1133 | 866 | 724 | 597 | 1137 | 870 | 728 | 601 | 531 | 398 | 327 | 263 | 531 | 398 | 327 | 263 |
| ϕ40 | 1234 | 943 | 788 | 651 | 1238 | 947 | 792 | 655 | 581 | 436 | 358 | 289 | 581 | 436 | 358 | 289 |
| ϕ50 | 2048 | 1573 | 1321 | 1095 | 2068 | 1593 | 1341 | 1115 | 972 | 734 | 608 | 495 | 977 | 739 | 613 | 500 |
| ϕ63 | 1613 | 1237 | 1036 | 857 | 1633 | 1257 | 1056 | 877 | 754 | 566 | 466 | 376 | 759 | 571 | 471 | 381 |

● Fixed cylinder and rod end guide (D=2L)




Max. Stroke Unit: mm

| Mounting style / Working pressure MPa / Bore (mm) | SD style (rod cover screwed) and LB style 0.3 | 0.5 | 0.7 | 1 | FA style 0.3 | 0.5 | 0.7 | 1 | FB style 0.3 | 0.5 | 0.7 | 1 | SD style (cap cover screwed) 0.3 | 0.5 | 0.7 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ12 | 1090 | 836 | 701 | 580 | 1093 | 839 | 704 | 583 | 522 | 394 | 327 | 266 | 523 | 396 | 328 | 268 |
| ϕ16 | 808 | 617 | 516 | 425 | 811 | 620 | 519 | 428 | 377 | 282 | 231 | 186 | 379 | 283 | 232 | 187 |
| ϕ20 | 1159 | 888 | 744 | 615 | 1163 | 892 | 748 | 619 | 550 | 415 | 342 | 278 | 550 | 415 | 342 | 278 |
| ϕ25 | 1454 | 1115 | 935 | 774 | 1458 | 1119 | 939 | 778 | 695 | 526 | 435 | 355 | 695 | 526 | 435 | 355 |
| ϕ32 | 1640 | 1259 | 1056 | 875 | 1644 | 1263 | 1060 | 879 | 785 | 594 | 493 | 402 | 785 | 594 | 493 | 402 |
| ϕ40 | 1787 | 1371 | 1150 | 953 | 1791 | 1375 | 1154 | 957 | 857 | 650 | 539 | 441 | 857 | 650 | 539 | 441 |
| ϕ50 | 2951 | 2272 | 1912 | 1590 | 2971 | 2292 | 1932 | 1610 | 1423 | 1084 | 903 | 742 | 1428 | 1089 | 908 | 747 |
| ϕ63 | 2330 | 1792 | 1505 | 1250 | 2350 | 1812 | 1525 | 1270 | 1112 | 843 | 700 | 572 | 1117 | 848 | 705 | 577 |

# The safety lock mechanism reliably locks the piston rod in an emergency.

- Dropping and trouble at the restart are prevented to ensure the safety of workers and equipment.
- The safety mechanisms for rod and cap sides are available. One of the two types can be selected according to the purpose of use.
- The lock can be released easily by manual operation.
- The optimum mounting style can be selected from 14 types.

## Cylinder Specifications

| Series variation | | Double acting/single rod | |
|---|---|---|---|
| Type | | Standard type/Switch Set | |
| | | With safety lock on rod side | With safety lock on cap side |
| Series | | 10Z-3L1 | 10Z-3L2 |
| Cylinder bore (mm) | | $\phi$20·$\phi$25·$\phi$32·$\phi$40 | |
| Working fluid | | Air | |
| Lubrication | | Unnecessary | |
| Working pressure range | | 0.2 to 1 MPa | |
| Proof test pressure | | 1.5 MPa | |
| Note 1) Working speed range | | 20 to 700mm/s | |
| Working temperature range | | −10 to +70℃ (No freezing) | |
| Structure of cushioning | | With cushion pads | |
| Tolerance for thread | | JIS 6g/6H | |
| Tolerance of stroke | | 0 to 250 mm $^{+1.0}_{0}$ 251 to 900mm $^{+1.5}_{0}$ | |
| Mounting style | Basic style | SD·SD w/ bracket·LS·LB·FA·FB·TB·TB w/ bracket·CU·CU w/ bracket | SD·SD w/ bracket·LS·LB·FA·FB·TA·TA w/ bracket·CU·CU w/ bracket |
| | Clevis cut style | SK·LK·FK | SK·LK·FK·TK·TK w/ bracket·AD·BD |
| | Rear port style | SP·LP·FP | SP·LP·FP·TP·TP w/ bracket·AP·BP |
| Accessories | Boots | Nylon tarpaulin | |
| | Rod end attachments | Rod eye with spherical bearing (S-end), rod clevis (Y-end), floating joint (F-end) | |
| Lock specifications | Backlash | $\phi$20 and $\phi$25: 1 mm or less | $\phi$32 and $\phi$40: 1.5 mm or less |
| | Note 2) Holding force | $\phi$20: 220N | $\phi$25: 330N |
| | | $\phi$32: 550N | $\phi$40: 860N |

(Notes)
1. When a sensor is mounted in an intermediate position, set the cylinder maximum speed to 300 mm/s or less for reasons of the load relay response speed, etc.
2. Use the cylinders at a load rate of less than 65%.

## Standard Stroke Range

Unit: mm

| Bore \ Stroke | 15 | 25 | 30 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | Stroke limit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $\phi$20 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | — | — | 900 |
| $\phi$25 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | — | — | 900 |
| $\phi$32 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | 900 |
| $\phi$40 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 900 |

●If a stroke other than the above standard strokes (○-marked) is required, consult us.



## Product Lineup

Unit: mm

| Series Variation | Type | $\phi$20 | $\phi$25 | $\phi$32 | $\phi$40 |
|---|---|---|---|---|---|
| Standard: Double acting single rod | With safety lock on rod side 10Z-3L1 | ● | ● | ● | ● |
| | With safety lock on cap side 10Z-3L2 | ● | ● | ● | ● |

## Outline of types

| | | SD Basic style | SD/B Basic style with bracket | LB End angles/both ends | LS End angles/one side | FA Rod flange | FB Cap flange | TA Rod trunnion | TA/B Rod trunnion with bracket | TB Cap trunnion | TB/B Cap trunnion with bracket | CU Cap eye with spherical bearing | CU/B Cap eye with spherical bearing and bracket | AD Block type end angles | BD Block type flange |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| With safety lock on rod side 10Z-3L1 | Basic style | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | Clevis cut style | ● | ● | | ● | ● | | | | | | | | | |
| | Rear port style | ● | ● | | ● | ● | | | | | | | | | |
| With safety lock on cap side 10Z-3L2 | Basic style | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | Clevis cut style | ● | ● | | ● | ● | | ● | ● | | | | | ● | ● |
| | Rear port style | ● | ● | | ● | ● | | ● | ● | | | | | ● | ● |

## Weight Table

Unit: g

| Bore (mm) | Basic weight | | | Additional weight per mm of stroke | Mounting accessory weight | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Basic style | | | | | |
| | Basic style | Clevis cut style | Rear port style | | SD with bracket | LB | LS | FA FB | TA TB | TA with bracket TB with bracket |
| $\phi$20 | 163(167) | 145(149) | 145(157) | 0.85 | 115 | 140 | 60 | 55 | 55 | 140 |
| $\phi$25 | 226(233) | 209(216) | 209(224) | 1.15 | 115 | 140 | 60 | 55 | 55 | 140 |
| $\phi$32 | 364(377) | 341(354) | 341(364) | 1.65 | 150 | 220 | — | 90 | 90 | 210 |
| $\phi$40 | 573(587) | 535(549) | 535(564) | 2.15 | 185 | 280 | — | 110 | 130 | 275 |

| Bore (mm) | Mounting accessory weight | | | | | | | | | | | | Rod end attachment weight | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Clevis cut style | | | | | | Rear port style | | | | | | | | |
| | LK | FK | TK | TK with bracket | AD | BD | LP | FP | TP | TP with bracket | AP | BP | Rod eye (S-end) | Rod clevis (Y-end) with pin | Floating joint (F-end) |
| $\phi$20 | 60 | 55 | 55 | 140 | 11 | 8 | 60 | 55 | 55 | 140 | 11 | 8 | 50 | 55 | 60 |
| $\phi$25 | 60 | 55 | 55 | 140 | 38 | 26 | 60 | 55 | 55 | 140 | 38 | 26 | 75 | 100 | 100 |
| $\phi$32 | — | 90 | 90 | 210 | 62 | 45 | — | 90 | 90 | 210 | 62 | 45 | 75 | 100 | 100 |
| $\phi$40 | — | 110 | 130 | 275 | 78 | 59 | — | 110 | 130 | 275 | 78 | 59 | 110 | 175 | 100 |

Note) ●The parenthesized values indicate the weight of the cylinders with safety lock on the cap side.

## Sensor Additional Weight

Unit: g

| Bore (mm) | AX type | | | ZC type | | JR/JS type | | SR type |
|---|---|---|---|---|---|---|---|---|
| | Cord length 1.5 m | Cord length 5 m | Connector type | Cord length 1 m | Cord length 3 m | Cord length 1.5 m | Cord length 5 m | Cord length 5 m |
| $\phi$20 | 50 | 130 | 40 | 25 | 55 | 35 | 98 | 247 |
| $\phi$25 | | | | | | | | |
| $\phi$32 | | | | | | | | |
| $\phi$40 | | | | | | | | |

Note) ●The sensor additional weight includes the weight of the sensor band.

Calculation formula: Cylinder weight (g)=basic weight+(cylinder stroke (mm)×additional weight per mm of stroke)+(sensor additional weight×sensor quantity)+mounting accessory weight+rod end attachment weight

Calculation example: 10Z-31L, clevis cut style, bore $\phi$20, cylinder stroke 50 mm, 2 pcs of AX215A (cord length 5 m), LK
145+(0.85×50)+(130×2)+60=507.5g

## ● How to order

● With safety lock 10Z-3L1

| ❶ Type | ❷ Mounting style | ❸ Cylinder bore | ❹ Cushioning | ❺ Stroke | ❻ Sensor symbol | ❼ Sensor quantity | ❽ Rod end attachment | ❾ Bracket | ❿ Boots |
|---|---|---|---|---|---|---|---|---|---|
| 10Z-3L1 | SD | 25 | N | 100 | AH | 2 | S | B | J |

10Z-3L1: With safety lock on rod side
10Z-3L2: With safety lock on cap side

❷ Mounting style

❸ Bore (mm)
ϕ20, ϕ25, ϕ32, ϕ40
Note) LS, LK and LP are applicable only to 20 and 25 mm bore cylinders.

❹ With cushion pads

❺ Cylinder stroke (mm)

❻ Sensor symbol
Note) Select applicable sensors out of the Sensor List.

❼ Sensor quantity (1, 2)

❽
S Rod eye with spherical bearing (S-end)
Y Rod clevis (Y-end) with pin
F Floating joint (F-end)

❾ With bracket
Applicable mounting styles:
SD, TA, TB, TK, TP

❿ Boots
Nylon tarpaulin
Note) The boots cannot be fitted to AD, BD or BP style.

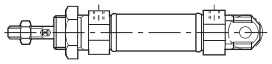
**! Note on ordering Switch Set**
● Sensors are not mounted on cylinders at delivery.

## Mounting style

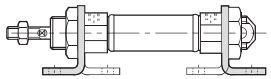
### Standard type/Switch Set

#### Basic style

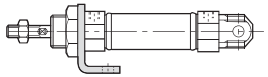
SD Basic style



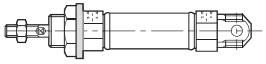
LB End angles



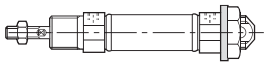
LS End angles



FA Rod flange

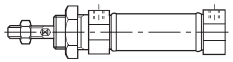


FB Cap flange

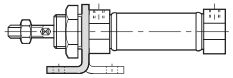


#### Clevis cut style

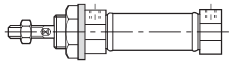
SK Basic style



LK End angles

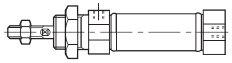


FK Rod flange

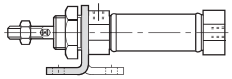


#### Rear port style

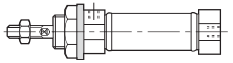
SP Basic style



LP End angles



FP Rod flange





## Sensor List

Semi-standard specification

| Type | Sensor symbol | Load voltage range | Load current range | Max. switching capacity | Protective circuit | Indicating lamp | Wiring method | Cord length | Applicable load |
|---|---|---|---|---|---|---|---|---|---|
| Reed sensor | AF AX101CE | DC: 5 to 30V AC: 5 to 120V | DC: 5 to 40mA AC: 5 to 20mA | DC: 1.5W AC: 2VA | None | LED (Lights in red when sensing) | 0.3 mm², 2-core, outer dia. ϕ4 mm, rear wiring | 1.5m | Small relay, programmable controller |
| | AG AX105CE | | | | | | | 5m | |
| | AH AX111CE | | | | Provided | | | 1.5m | |
| | AJ AX115CE | | | | | | | 5m | |
| | AE AX125CE | DC: 30V or less AC: 120V or less | DC: 40mA or less AC: 20mA or less | | None | None | | 5m | |
| | AK AX11ACE | AC: 5 to 120V | 5 to 20mA | 2VA | Provided | LED (Lights in red when sensing) | 4-pin connector type, rear wiring | 0.5m | |
| | AL AX11BCE | DC: 5 to 30V | 5 to 40mA | 1.5W | | | | 0.5m | |
| | AM AX135CE | AC: 90 to 240V DC: 90 to 240V | 5 to 300mA | B contact output | Provided | LED (Lights in red when not sensing) | 0.3 mm², 2-core, outer dia. ϕ4 mm, rear wiring | 5m | |
| | JA ZC201A | AC: 115V or less | AC: 25mA or less | — | None | None | 0.2 mm², 2-core, outer dia. ϕ3 mm, rear wiring | 1m | |
| | JB ZC201B | DC: 28V or less | DC: 40mA or less | | | | | 3m | |
| | JC ZC205A | DC: 10 to 28V | DC: 5 to 40mA | — | None | LED (Lights when sensing) | | 1m | |
| | JD ZC205B | | | | | | | 3m | |
| | A JR101 | DC: 5 to 50V AC: 5 to 120V | DC: 3 to 40mA AC: 3 to 20mA | DC: 1.5W AC: 2VA | None | LED (Lights in red when sensing) | 0.3 mm², 2-core, outer dia. ϕ3.4 mm, rear wiring | 1.5m | |
| | B JR105 | | | | | | | 5m | |
| | S SR405 | AC: 80 to 220V | 2 to 300mA | 30VA | Provided | Neon lamp (Lights when not sensing) | 0.5 mm², 2-core, outer dia. ϕ6 mm, rear wiring | 5m | |
| Solid state sensor | BE AX201CE-1 | DC: 5 to 30V | 5 to 40mA | — | Provided | LED (Lights in red when sensing) | 0.3 mm², 2-core, outer dia. ϕ4 mm, rear wiring | 1.5m | Small relay, programmable controller |
| | BF AX205CE-1 | | | | | | | 5m | |
| | CE AX211CE-1 | | | | | LED (2-LED type in red/green) | | 1.5m | |
| | CF AX215CE-1 | | | | | | | 5m | |
| | JJ ZC230A | DC: 10 to 28V | 4 to 50mA | — | Provided | LED (Lights when sensing) | 0.2 mm², 2-core, outer dia. ϕ3 mm, rear wiring | 1m | |
| | JK ZC230B | | | | | | | 3m | |
| | JL ZC253A | DC: 4.5 to 28V | 100mA or less | — | Provided | LED (Lights when sensing) | 0.2 mm², 3-core, outer dia. ϕ3 mm, rear wiring | 1m | |
| | JM ZC253B | | | | | | | 3m | |
| | I JS211M | DC: 10 to 30V | 6 to 70mA | — | Provided | LED (Lights in red when sensing) | 0.3 mm², 2-core, outer dia. ϕ3.4 mm, rear wiring | 1.5m | |
| | O JS215M | | | | | | | 5m | |

Notes)
- For the sensors without a protective circuit, be sure to provide a protective circuit (SK-100) with the load when using any induction load (relay, etc.).
- The output logic of AX135CE is a B contact. When the piston is detected, the sensor contact turns off (the lamp turns on).
- For handling of sensors, be sure to see the sensor specifications at the end of this catalog.
- We recommend AND Unit (AU series) for multiple sensors connected in series. For details, refer to AND Unit at the end of this catalog.
- Sensors conforming CE Marking are available.

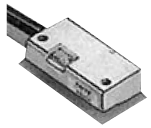
● AX type sensor
Cord type

Connector type

● ZC type sensor

● JR/JS type sensor

● SR type sensor



## Lock Nut Part Number

| Bore | Part number |
|---|---|
| ϕ20 | LNA-08Z-A |
| ϕ25 | LNA-10Z-A |
| ϕ32 | |
| ϕ40 | LNA-12Z-A |

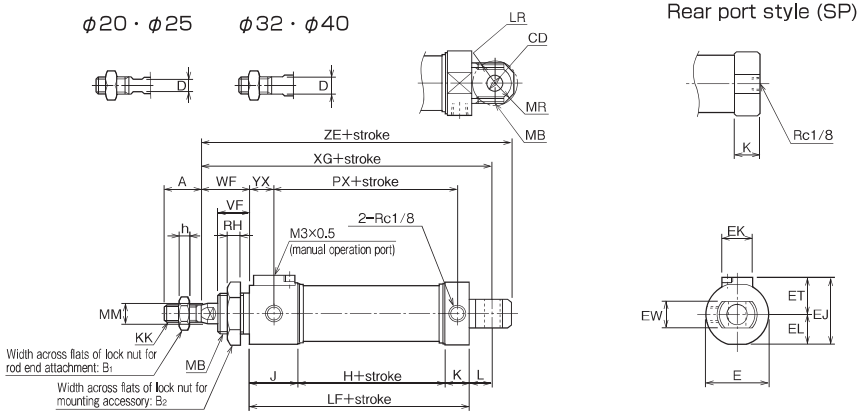
## ★ Delivery state

● The cylinders will be delivered without mounting accessory and rod end attachment mounted.

CAD/DATA is available.
10Z-3/TAZ3 Bore B

# SD

● With safety lock on rod side 10Z-3L1 SD Bore N Stroke

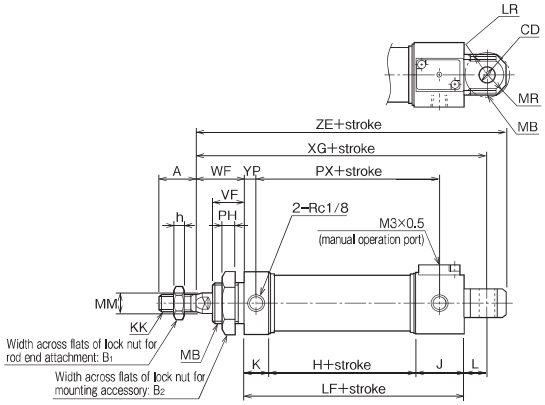



Rear port style (SP)

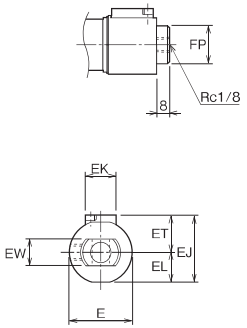



Related types: Clevis cut style (SK), type with boots
For details, see the section of 10Z-3 Series Small Pneumatic Cylinders.

● With safety lock on cap side 10Z-3L2 SD Bore N Stroke




Rear port style (SP)




Related types: Clevis cut style (SK), type with boots
For details, see the section of 10Z-3 Series Small Pneumatic Cylinders.



## Dimensional Table

| Symbol / Bore | A | $B_1$ | $B_2$ | CD | D | E | EJ | EK | EL | ET | EW | FP | H | h | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 20(20) | 13 | 30 | ϕ8H9 | 6 | ϕ28 | 31.5 | 12.5 | 13 | 18.5 | $16^{-0.1}_{-0.3}$ | ϕ22 | 31 | 5 | 24 | 14 |
| ϕ25 | 22(22) | 17 | 30 | ϕ8H9 | 8 | ϕ31 | 34 | 12.5 | 14.5 | 19.5 | $16^{-0.1}_{-0.3}$ | ϕ22 | 35 | 6 | 24.5 | 14.5 |
| ϕ32 | 22(19) | 17 | 32 | ϕ10H9 | 10 | ϕ38 | 40.5 | 18 | 18 | 22.5 | $16^{-0.1}_{-0.3}$ | ϕ24 | 40 | 6 | 30 | 15 |
| ϕ40 | 24(21) | 19 | 41 | ϕ12H9 | 12 | ϕ46 | 48 | 18 | 22 | 26 | $20^{-0.1}_{-0.3}$ | ϕ30 | 42 | 7 | 30 | 15 |

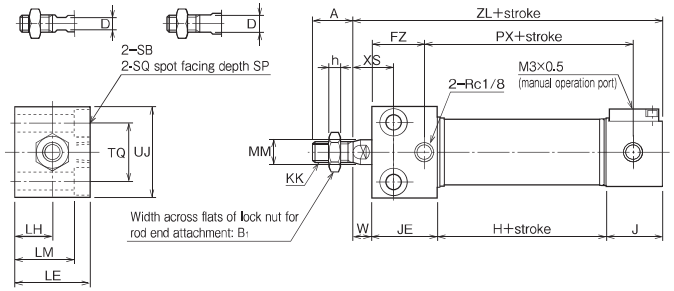
| Symbol / Bore | KK | L | LF | LR | MB | MM | MR | PX | RH | VF | WF | XG | YX | YP | ZE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | M8×1.25 | 12 | 69 | R11 | M22×1.5 | ϕ8 | R12 | 50 | 7 | 16(13) | 24 | 105 | 12 | 7 | 115 |
| ϕ25 | M10×1.25 | 12 | 74 | R11 | M22×1.5 | ϕ10 | R12 | 54.5 | 7 | 18(15) | 28 | 114 | 12 | 7.5 | 124 |
| ϕ32 | M10×1.25 | 14 | 85 | R13 | M24×2 | ϕ12 | R14 | 62.5 | 8 | 20(16) | 30 | 129 | 15 | 7.5 | 141 |
| ϕ40 | M12×1.25 | 16 | 87 | R15 | M30×2 | ϕ14 | R16 | 64.5 | 9 | 22(18) | 32 | 135 | 15 | 7.5 | 147 |

＊ ● The parenthesized values of dimensions A and VF indicate the screw length.
● For other mounting accessories, see the section of 10Z-3 Series.

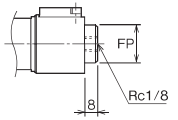
# AD

●With safety lock on cap side 10Z-3L2 AD Bore N Stroke

ϕ20・ϕ25 ϕ32・ϕ40




Rear port style (AP)

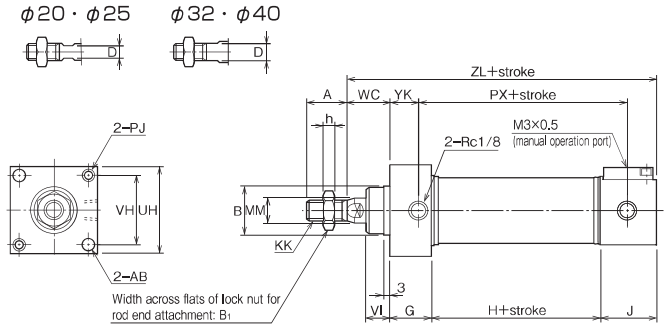



Basic style: Clevis cut

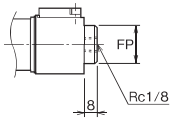
# BD

●With safety lock on cap side 10Z-3L2 BD Bore N Stroke

ϕ20・ϕ25 ϕ32・ϕ40




Rear port style (BP)




Basic style: Clevis cut



## Dimensional Table

| Symbol / Bore | A | AB | B | B1 | D | FP | FZ | G | H | h | J | JE | KK | LE | LH | LM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | 20(20) | ϕ5.5 | ϕ20f8 | 13 | 6 | ϕ22 | 23 | 20 | 31 | 5 | 24 | 30 | M8×1.25 | 28 | 14 | 21.5 |
| ϕ25 | 22(22) | ϕ5.5 | ϕ22f8 | 17 | 8 | ϕ22 | 25.5 | 22.5 | 35 | 6 | 24.5 | 32.5 | M10×1.25 | 34 | 17 | 27.5 |
| ϕ32 | 22(19) | ϕ6.6 | ϕ24f8 | 17 | 10 | ϕ24 | 28 | 23 | 40 | 6 | 30 | 35 | M10×1.25 | 40 | 20 | 31.4 |
| ϕ40 | 24(21) | ϕ9 | ϕ28f8 | 19 | 12 | ϕ30 | 30 | 25 | 42 | 7 | 30 | 37 | M12×1.25 | 48 | 24 | 37.2 |

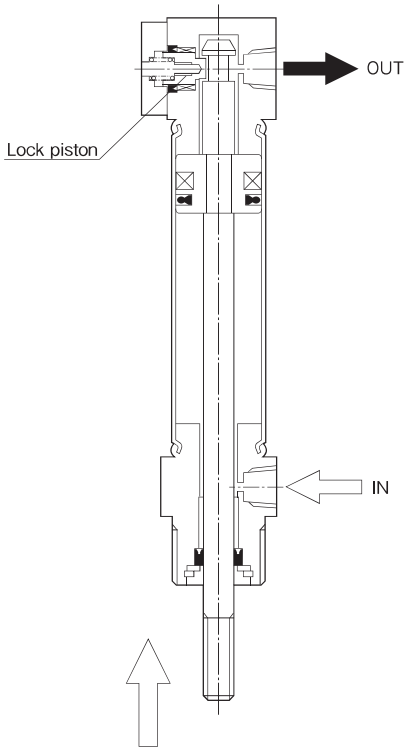
| Symbol / Bore | MM | PJ | PX | SB | SP | SQ | TQ | UH | UJ | VH | VI | W | WC | XS | YK | ZL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ϕ20 | ϕ8 | M5×0.8 | 50 | ϕ6.6 | 6.5 | ϕ11 | 20 | □34 | 34 | □24 | 10 | 8 | 18 | 18 | 13 | 93 |
| ϕ25 | ϕ10 | M5×0.8 | 54.5 | ϕ6.6 | 6.5 | ϕ11 | 24 | □38 | 38 | □28 | 10 | 10 | 20 | 20 | 15.5 | 102 |
| ϕ32 | ϕ12 | M6×1 | 62.5 | ϕ9 | 8.6 | ϕ14 | 30 | □46 | 46 | □36 | 12 | 10 | 22 | 22 | 16 | 115 |
| ϕ40 | ϕ14 | M8×1.25 | 64.5 | ϕ11 | 10.8 | ϕ17.5 | 36 | □56 | 56 | □42 | 12 | 10 | 22 | 22 | 18 | 119 |

＊ ●The parenthesized values of dimension A indicate the screw length.

## Principle of operation

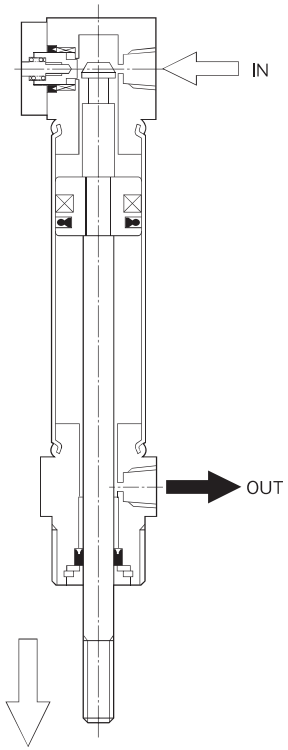
### ●Locking

When the piston moves to the stroke end and air is discharged, the lock piston is actuated by the spring force to mechanically lock the piston rod.




### ●Unlocking

When the lock mechanism side is pressurized, the lock piston functions to unlock the piston rod, and the piston rod moves.



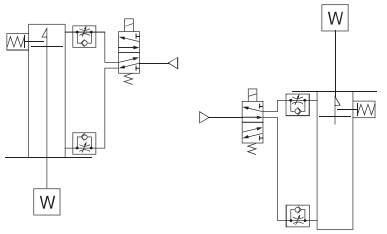





## Handling procedures

### Pneumatic circuit

- Before starting (unlocking), once apply pressure to the port without the lock mechanism. If the lock is released with load on the lock mechanism (lock piston), the mechanism may malfunction or be damaged, or the piston rod may suddenly move, thereby causing a hazardous situation.
- Select a valve through which the pressure on the lock side can be completely discharged. If a 3-position closed center or 3-position pressure center valve through which pressure cannot be discharged is used, the piston rod cannot be locked.
- If exhaust pressure is applied to the port on the lock side while the lock is on, the lock may be released. Design the pneumatic circuit so that exhaust pressure is not applied to the port. Care should be taken when a manifold type valve is used and the exhaust side is connected to centralized piping.




With lock on cap side

With lock on rod side

### Manual unlocking procedures

To manually unlock, insert an M3 (about 20 mm long) bolt from the manual operation port, screw the bolt into the internal lock piston, and pull the bolt. Then, the lock will be released. Remove the bolt before starting regular operation.