

## Accessories

### Couplings

#### Coupling Materials and Characteristics

OMRON provides two types of couplings for different application conditions: Resin and metal. Select the best type for the application.

As a general rule, use metal couplings for high resolution and resin couplings for low resolution. (As a rough guide, a high resolution is one that exceeds 3,600 ppr.)  
 Even for applications requiring relatively low resolution, a metal coupling will provide more reliability in applications involving rapid acceleration/deceleration or for Encoders with high starting torque.

#### Comparison of Specifications for 6-mm Shafts

| Machine specification                  | Material<br>Resin<br>(standard type) | Metal<br>(aluminum, helical) |
|--|--------------------------------------|------------------------------|
| Eccentricity (mm)                      | 0.5                                  | 0.15                         |
| Eccentricity (degrees)                 | 6                                    | 3                            |
| Deviation in shaft direction (mm)      | ±0.4                                 | ±0.15                        |
| Allowable torque (N·m)                 | 0.8                                  | 1.6                          |
| Torsion rigidity (Nm/rad)              | 7                                    | 28                           |
| Moment of inertia (kg·m <sup>2</sup> ) | 1.2 × 10 <sup>-7</sup>               | 6 × 10 <sup>-7</sup>         |
| Weight (g)                             | 4                                    | 12                           |

### Characteristics

| Material                             | Advantages   | Disadvantages  |
|--------------------------------------|--|--|
| <b>Resin<br/>(standard type)</b>     | <ul style="list-style-type: none"> <li>Low cost.</li> <li>Easy shaft alignment when mounting.</li> <li>Lightweight and low moment of inertia, placing a smaller load on the drive system.</li> </ul> | <ul style="list-style-type: none"> <li>Low torsion rigidity and thus not suitable for high resolution.</li> <li>Mounting is possible even if the shafts are greatly misaligned, which can cause damage from fatigue over long periods of application.</li> </ul> |
| <b>Metal<br/>(aluminum, helical)</b> | <ul style="list-style-type: none"> <li>High torsion rigidity and thus suitable for high resolution.</li> <li>Transmitted allowable torque is large.</li> </ul>                                       | <ul style="list-style-type: none"> <li>High cost.</li> <li>Heavy and thus place a large load on the drive system.</li> <li>The allowable shaft misalignment is small, so accurate positioning is required when mounting.</li> </ul>                              |

### Coupling Suitability Table

○ : Suitable and provided with product, Δ: Suitable and sold separately, ---: Not suitable.

| Couplings                                 | Specification<br>Shaft interior (tolerance *) exterior dia.<br>Model | Resin, standard type                       |                             |   |                             |                              | Resin, different end diameter        |                                       | Metal                         |                                |
|---|--|--|-----------------------------|---|-----------------------------|------------------------------|--------------------------------------|---------------------------------------|-------------------------------|--------------------------------|
|   |  | 2 dia. (Height: 8), 9 dia.                 | 4 dia. (Height: 8), 13 dia. | 6 dia. (Height: 8), 15 dia.             | 8 dia. (Height: 8), 19 dia. | 10 dia. (Height: 8), 22 dia. | 6 dia., 8 dia., (Height: 8), 19 dia. | 6 dia., 10 dia., (Height: 8), 22 dia. | 6 dia. (Height: 8), 19.1 dia. | 10 dia. (Height: 8), 25.4 dia. |
| Rotary Encoder Model/shaft dia.           | Model  | E69-C02B                                   | E69-C04B                    | E69-C06B                                | E69-C08B                    | E69-C10B                     | E69-C68B                             | E69-C610B                             | E69-C06M                      | E69-C10M                       |
| E6A2-C<br>4 dia.                          |  | ---  | ○                           | ---                                     | ---                         | ---                          | ---                                  | ---                                   | ---                           | ---                            |
| E6B2-C<br>6 dia.                          |  | ---  | ---                         | ○                                       | ---                         | ---                          | Δ                                    | Δ                                     | Δ                             | ---                            |
| E6C2-C<br>6 dia.                          |  | ---  | ---                         | Δ                                       | ---                         | ---                          | Δ                                    | Δ                                     | Δ                             | ---                            |
| E6C3-C<br>8 dia.                          |  | ---  | ---                         | ---                                     | Δ                           | ---                          | Δ                                    | ---                                   | ---                           | ---                            |
| E6D-C<br>6 dia.                           |  | ---  | ---                         | ○                                       | ---                         | ---                          | Δ                                    | Δ                                     | Δ                             | ---                            |
| E6F-C<br>10 dia.                          |  | ---  | ---                         | ---                                     | ---                         | Δ                            | ---                                  | Δ                                     | ---                           | Δ                              |
| E6H-C<br>Hollow shaft interior dia.: 8 mm |  | Hollow-shaft Model; Coupling not required. |                             |   |                             |                              |                                      |                                       |                               |                                |
| E6J-C<br>2 dia.                           |  | ○  | ---                         | ---                                     | ---                         | ---                          | ---                                  | ---                                   | ---                           | ---                            |
| E6C-N<br>6 dia.                           |  | ---  | ---                         | Δ                                       | ---                         | ---                          | Δ                                    | Δ                                     | Δ                             | ---                            |
| E6CP-A<br>6 dia.                          |  | ---  | ---                         | ○ Sold separately only for E6CP-AG5C-C. | ---                         | ---                          | Δ                                    | Δ                                     | Δ                             | ---                            |
| E6C3-A<br>8 dia.                          |  | ---  | ---                         | ---                                     | Δ                           | ---                          | Δ                                    | ---                                   | ---                           | ---                            |
| E6F-A<br>10 dia.                          |  | ---  | ---                         | ---                                     | ---                         | ○ Only Pre-wired Models      | ---                                  | Δ                                     | ---                           | Δ                              |
| E6J-A<br>4 dia.                           |  | ---  | ○                           | ---                                     | ---                         | ---                          | ---                                  | ---                                   | ---                           | ---                            |

\*Tolerance conforms to JIS standard: JIS B 0401. →Refer to page 2.

(Unit: mm)

## Coupling Dimensions

Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

### E69-C02B



Material: Glass-reinforced PBT

Applicable model: E6J-C

### E69-C04B



Material: Glass-reinforced PBT

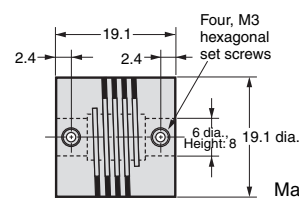
Applicable model: E6A2-C, E6J-A

### E69-C06B



Material: Glass-reinforced PBT

### E69-C06M



Material: Extra-super duralumin

Applicable model: E6B2-C, E6C2-C, E6D-C, E6C-N, E6CP-A

### E69-C10B



Material: Glass-reinforced PBT

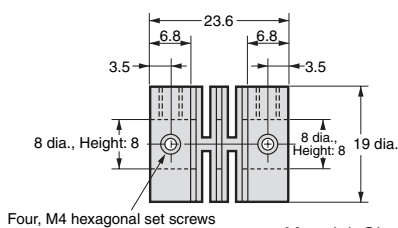
### E69-C10M



Material: Extra-super duralumin

Applicable model: E6F-C, E6F-A

### E69-C08B



Material: Glass-reinforced PBT

Applicable model: E6C3-A, E6C3-C

### E69-C68B

#### Model with Different End Diameter



Material: Glass-reinforced PBT

Applicable model: E6B2-C, E6C2-C, E6C3-C, E6D-C, E6C-N, E6CP-A, E6C3-A

### E69-C610B

#### Model with Different End Diameter



Material: Glass-reinforced PBT

Applicable model: E6B2-C, E6C2-C, E6D-C, E6F-C, E6C-N, E6CP-A, E6F-A

| Standard hole dimensions (mm) |      | Tolerance (μm) |
|-------------------------------|------|----------------|
| Min.                          | Max. | Height: 8      |
| ---                           | 3    | +14<br>0       |
| 3                             | 6    | +18<br>0       |
| 6                             | 10   | +22<br>0       |

## Flanges and Servo Mounting Brackets

### Flange and Servo Mounting Bracket Suitability Table

○: Suitable and provided with product, Δ: Suitable and sold separately, ---: Not suitable.

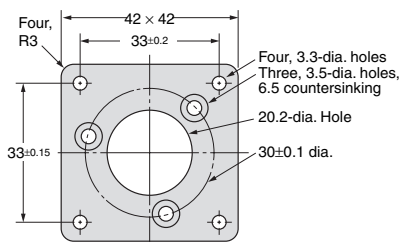
| Rotary Encoder Model | Type<br>Model Remarks | Flange                                   |         |           |           |           | Servo Mounting Bracket |                               |       |  |
|----------------------|-----------------------|--|---------|-----------|-----------|-----------|------------------------|-------------------------------|-------|--|
|                      |                       | E69-FBA                                  | E69-FCA | E69-FCA03 | E69-FBA02 | E69-FCA02 | E69-FCA04              | E69-1                         | E69-2 |  |
| E6A2-C               |                       | ---                                      | ---     | ---       | ---       | ---       | ---                    | ○ Provided with the E6A2-CWZ. | ---   |  |
| E6B2-C               |                       | Δ  | ---     | ---       | Δ         | ---       | ---                    | ---                           | Δ     |  |
| E6C2-C               |                       | ---                                      | Δ       | ---       | ---       | Δ         | ---                    | ---                           | Δ     |  |
| E6C3-C               |                       | ---                                      | ---     | Δ         | ---       | ---       | ---                    | ---                           | Δ     |  |
| E6D-C                |                       | ---                                      | ---     | ---       | ---       | ---       | ---                    | ---                           | ○     |  |
| E6F-C                |                       | ---                                      | ---     | ---       | ---       | ---       | ---                    | ---                           | Δ     |  |
| E6H-C                |                       | Hollow-shaft Model; Flange not required. |         |           |           |           |                        |                               |       |  |
| E6C-N                |                       | ---                                      | Δ       | ---       | ---       | Δ         | ---                    | ---                           | Δ     |  |
| E6CP-A               |                       | ---                                      | ---     | ---       | ---       | ---       | ---                    | ---                           | ○     |  |
| E6C3-A               |                       | ---                                      | ---     | Δ         | ---       | ---       | ---                    | ---                           | Δ     |  |
| E6F-A                |                       | ---                                      | ---     | ---       | ---       | ---       | ---                    | ---                           | ○     |  |

### Flange Dimensions

(Unit: mm)

Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

#### E69-FBA

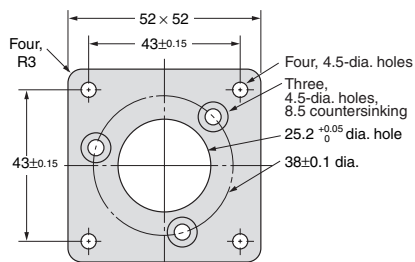


Material: SPCC  
Thickness: 3.2

Applicable model: E6B2-C

Note: Three phillips screws M3 × 6 provided

#### E69-FCA

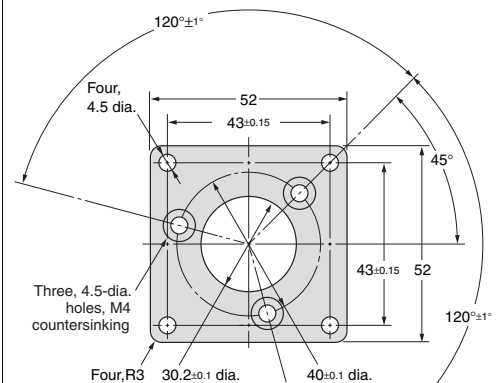


Material: SPCC  
Thickness: 3.2

Applicable model: E6C2-C, E6C-N

Note: Three phillips screws M4 × 8 provided

#### E69-FCA03

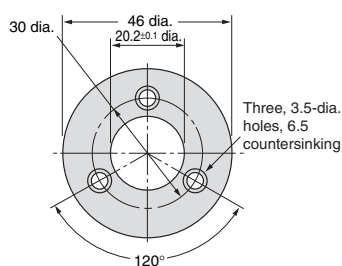


Material: SPCC  
Thickness: 3.2

Applicable model: E6C3-A, E6C3-C

Note: Three phillips screws M4 × 8 provided

#### E69-FBA02

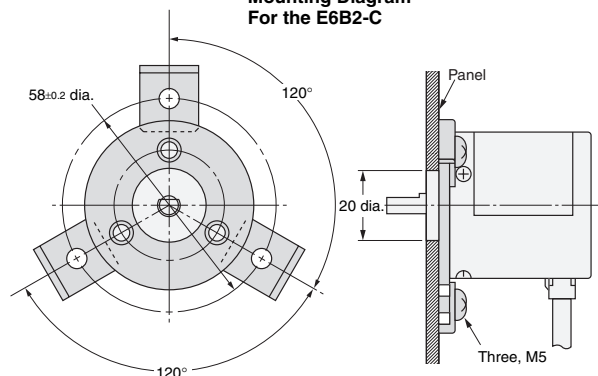


Material: SPCC  
Thickness: 3.2

Applicable model: E6B2-C

Note: Three phillips screws M3 × 10 provided, E69-2 Servo Mounting Bracket provided

#### Mounting Diagram For the E6B2-C



## E69-FCA02



## E69-FCA04



## Servo Mounting Bracket Dimensions

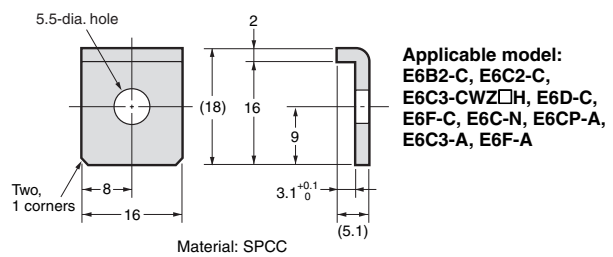
(Unit: mm)

Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

### E69-1 (Three brackets in a set.)



### E69-2 (Three brackets in a set.)



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Industrial Automation Company

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