

## Standard AC Motors

# Accessories

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## Accessories

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Motors

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V Series

Clutch &  
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Synchronous  
Motors

Low-Speed  
Synchronous  
Motors

Watertight,  
Dust-Resistant  
Motors

Torque  
Motors

Right-Angle  
Gearheads

Linear Heads

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Accessories

Installation

# Motor/Gearhead Mounting Brackets RoHS

This is an aluminum die cast mounting bracket for gearheads and geared motors. There are also high-strength models available for high-power motors and gearheads. Long, horizontal holes make it easy to make fine adjustments during installation.



## Product Line

Material: Aluminum alloy Surface treatment: paint

### Standard AC Motors

Select the pinion shaft type based on the gearhead to be attached.

Model	Applicable Product		
	Gearhead	Geared Motor Combination Type	Round Shaft Type
<b>SOL0U04</b>	<b>0GN□KA</b>	—	<b>0IK 0RK</b>
<b>SOL2U08</b>	<b>2GN□SA</b>	—	<b>2IK 2RK 2TK</b>
<b>SOL2M4</b>	<b>2GN10XS</b> (Decimal Gearhead)*	<b>VHI2 VHR2</b>	—
<b>SOL3U10</b>	<b>3GN□SA</b>	—	<b>3IK 3RK 3TK</b>
<b>SOL3M5</b>	<b>3GN10XS</b> (Decimal Gearhead)*	—	—
<b>SOL3M6</b>	—	<b>VHI3 VHR3</b>	—
<b>SOL4U10</b>	<b>4GN□SA</b>	—	<b>4IK 4RK 4TK</b>
<b>SOL4M5</b>	<b>4GN10XS</b> (Decimal Gearhead)*	—	—
<b>SOL4AP</b>	—	<b>FPW4</b>	—
<b>SOL4M6</b>	—	<b>VHI4 VHR4</b>	—
<b>SOL5UA</b>	<b>5GN□SA 5GE□SA</b>	—	<b>5IK 5RK 5TK</b>
<b>SOL5M6</b>	<b>5GN10XS</b> (Decimal Gearhead)* <b>5GE10XS</b> (Decimal Gearhead)*	—	—
<b>SOL5M8</b>	—	<b>VHI5 VHR5</b>	—
<b>SOL5AP</b>	—	<b>FPW5</b>	—
<b>SOL6M8</b>	—	<b>BHI62-□</b>	<b>BHI62-A</b>
<b>SOL6AP</b>	—	<b>FPW6</b>	—

\* Use this mounting bracket when using a decimal gearhead with parallel shaft gearhead.

- Enter the gear ratio in the box (□) within the model name.
- Letters are provided in the applicable products table for identifying the series.

### Notes

Not available for the following products.

- **GC, GCH** Pinion Gearheads
- Right-Angle Gearhead (**RH** Type, **RAA** Type)
- Right-Angle Shaft Type (**BH** Series)

● **Brushless Motors and AC Speed Control Motors**

● Select the pinion shaft type based on the gearhead to be attached.

Model	Applicable Product				
	Brushless Motors		AC Speed Control Motors		
	Combination Type	Round Shaft Type	Gearhead	Combination Type	Round Shaft Type
<b>SOL0U04</b>	–	<b>BLH015-A</b>	–	–	–
<b>SOL0B</b>	<b>BLH015-□</b>	–	–	–	–
<b>SOL2U08</b>	–	–	<b>2GN□SA</b>	–	<b>2IK6RA</b> <b>2RK6RA</b>
<b>SOL2M4</b>	<b>BX230-□S</b> <b>BLF230-□</b> <b>BLE23□S</b> <b>BLU220-□</b> <b>BLH230-□</b>	<b>BX230-A</b> <b>BLF230-A</b> <b>BLE23A</b> <b>BLU220-A</b> <b>BLH230-A</b>	<b>2GN10XS</b> (Decimal Gearhead)*	<b>VSI206</b> <b>VSR206</b>	–
<b>SOL3U10</b>	–	–	<b>3GN□SA</b>	–	<b>3IK15RA</b> <b>3RK15RA</b>
<b>SOL3M5</b>	–	–	<b>3GN10XS</b> (Decimal Gearhead)*	–	–
<b>SOL3M6</b>	–	–	–	<b>VSI315</b> <b>VSR315</b>	–
<b>SOL4U10</b>	–	–	<b>4GN□SA</b>	–	<b>4IK25RA</b> <b>4RK25RA</b>
<b>SOL4M5</b>	–	–	<b>4GN10XS</b> (Decimal Gearhead)*	–	–
<b>SOL4M6</b>	<b>BX460-□S</b> <b>BLF460-□</b> <b>BLE46□S</b> <b>BLU440-□</b> <b>BLH450-□</b>	<b>BX460-A</b> <b>BLF460-A</b> <b>BLE46A</b> <b>BLU440-A</b> <b>BLH450-A</b>	–	<b>VSI425</b> <b>VSR425</b>	–
<b>SOL5UA</b>	–	–	<b>5GN□SA</b> <b>5GE□SA</b> <b>5GU□KA</b>	–	<b>5IK40RA</b> <b>5RK40RA</b> <b>5IK60RA</b> <b>5RK60RA</b>
<b>SOL5M6</b>	–	–	<b>5GN10XS</b> (Decimal Gearhead)* <b>5GE10XS</b> (Decimal Gearhead)* <b>5GU10XKB</b> (Decimal Gearhead)*	–	–
<b>SOL5M8</b>	<b>BX5120-□S</b> <b>BLF5120-□</b> <b>BLE512□S</b> <b>BLU590-□</b> <b>BLH5100-□</b>	<b>BX5120-A</b> <b>BLF5120-A</b> <b>BLE512A</b> <b>BLU590-A</b> <b>BLH5100-A</b>	–	<b>VSI540</b> <b>VSI560</b> <b>VSR540</b> <b>VSR560</b>	–
<b>SOL6M8</b>	<b>BX6200-□S</b> <b>BX6400-□S</b> <b>BLF620-□S</b> <b>BLF640-□S</b>	<b>BX6200-A</b> <b>BX6400-A</b> <b>BLF620-A</b> <b>BLF640-A</b>	–	<b>BHF62-□</b>	<b>BHF62-A</b>

\* Use this mounting bracket when using a decimal gearhead with parallel shaft gearhead.

● Enter the gear ratio in the box (□) within the model name.

● Letters are provided in the applicable products table for identifying the series.

**Notes**

Not available for the following products.

● Right-Angle Gearhead (**RH** Type, **RAA** Type)

● Right-Angle Shaft Type (**BHF** Series)

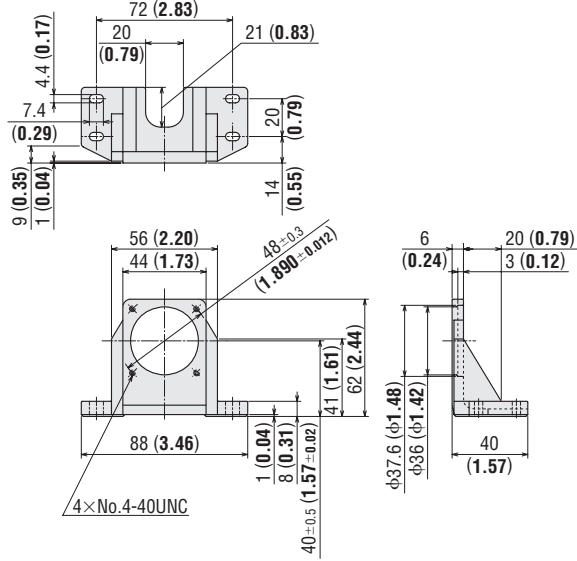
● Hollow Shaft Flat Gearhead (**GFS2G□FR**, **GFS4G□FR**, **GFS5G□FR**, **GFS6G□FR**)

**Dimensions** Unit = mm (in.)

**SOL0U04**

Mass: 85 g (3.0 oz.)

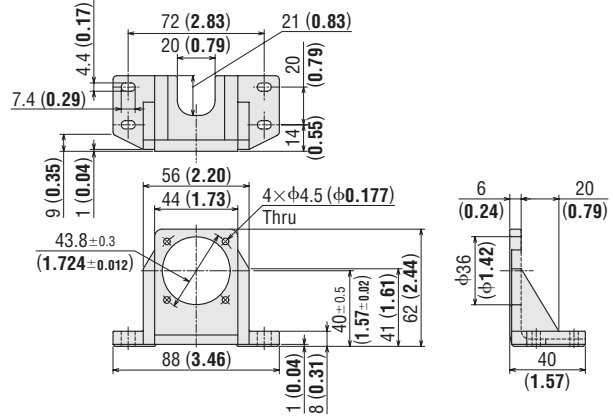
**DXF** A320U



**SOL0B**

Mass: 85 g (3.0 oz.)

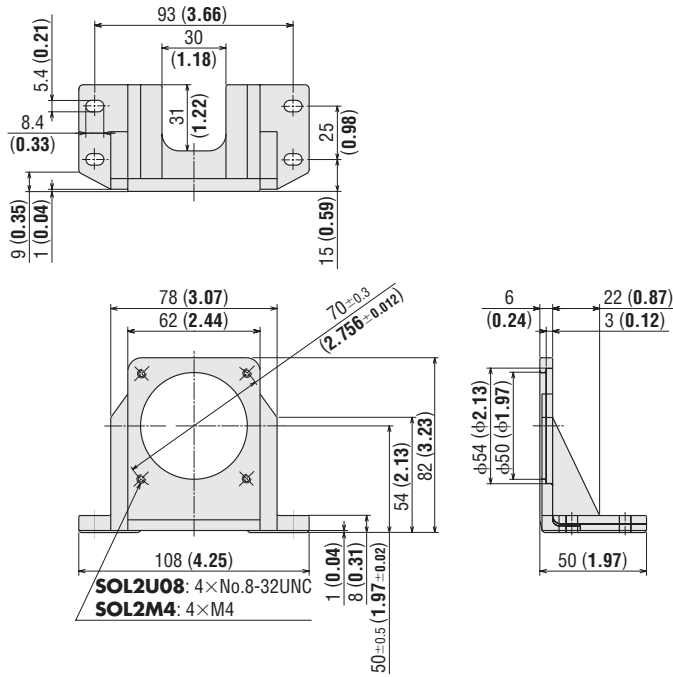
**DXF** B267



**SOL2U08, SOL2M4**

Mass: 135 g (4.8 oz.)

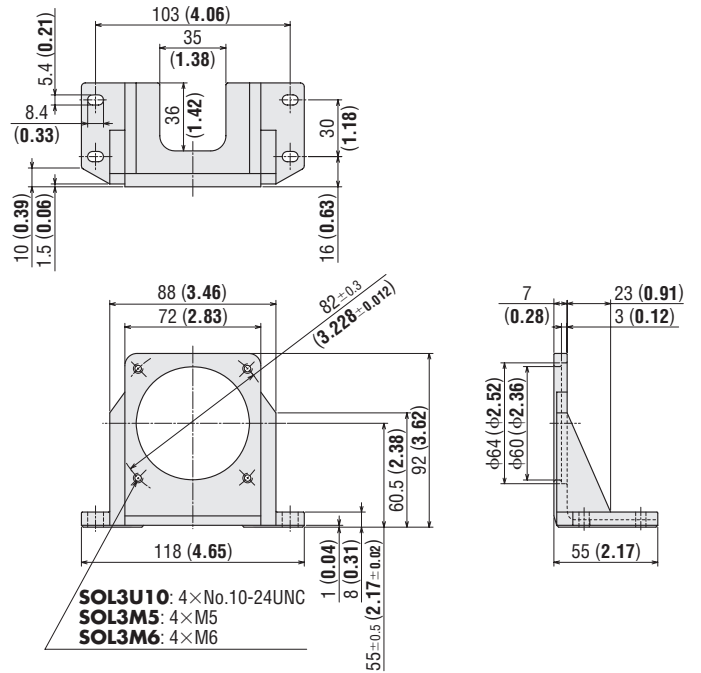
**DXF** A321U (**SOL2U08**)  
A321 (**SOL2M4**)



**SOL3U10, SOL3M5, SOL3M6**

Mass: 175 g (6.2 oz.)

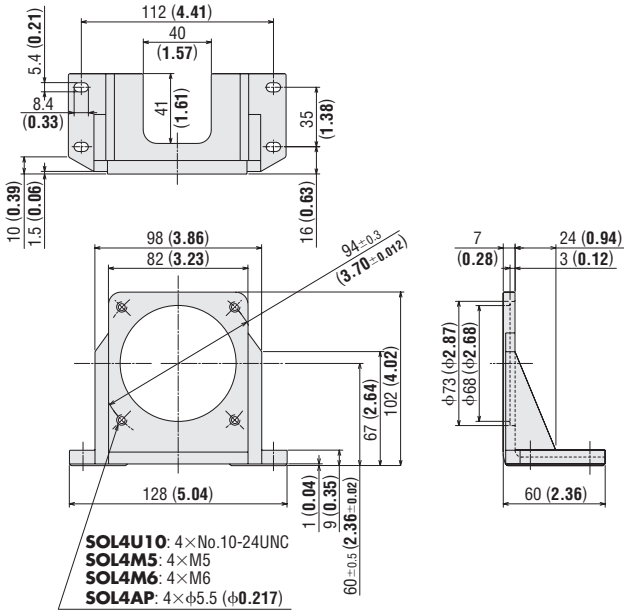
**DXF** A322U (**SOL3U10**)  
A322 (**SOL3M5**)  
A323 (**SOL3M6**)



## SOL4U10, SOL4M5, SOL4M6, SOL4AP

Mass: 210 g (7.4 oz.)

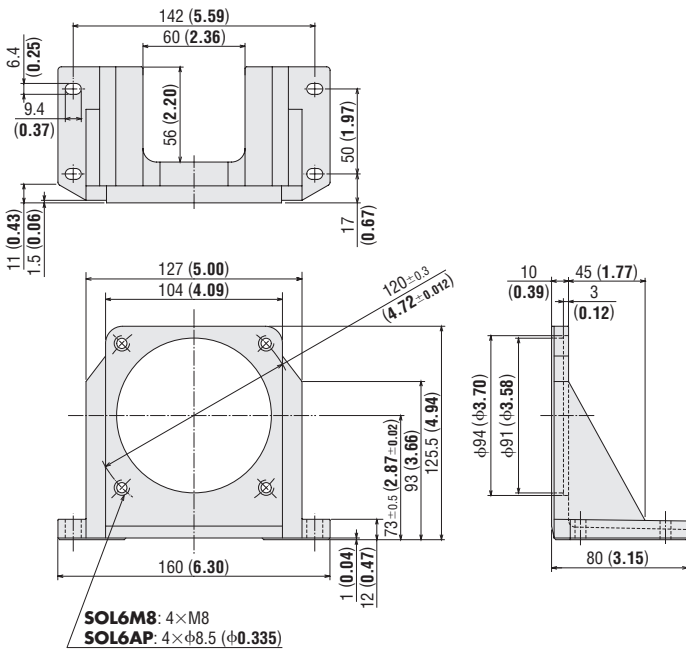
- DXF** A236U (**SOL4U10**)  
 A236 (**SOL4M5**)  
 A237 (**SOL4M6**)  
 A1075 (**SOL4AP**)



## SOL6M8, SOL6AP

Mass: 430 g (15.2 oz.)

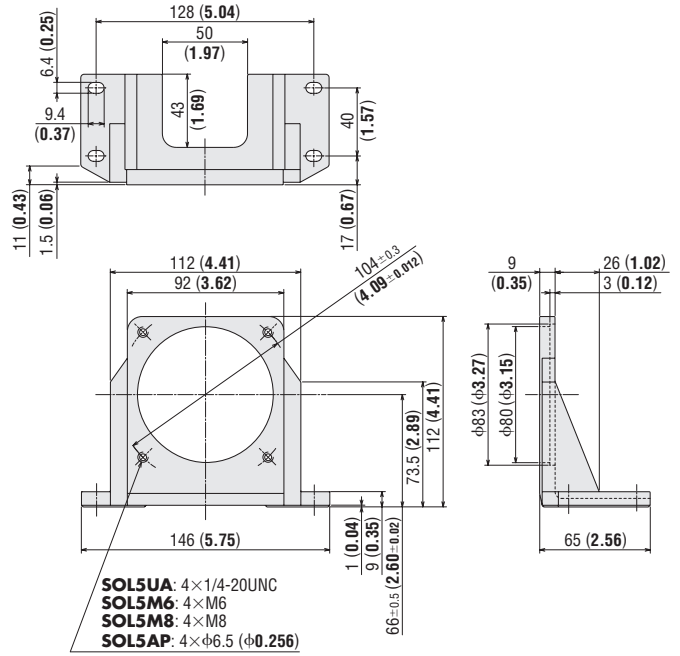
- DXF** A240 (**SOL6M8**)  
 A1076 (**SOL6AP**)



## SOL5UA, SOL5M6, SOL5M8, SOL5AP

Mass: 270 g (9.5 oz.)

- DXF** A238U (**SOL5UA**)  
 A238 (**SOL5M6**)  
 A239 (**SOL5M8**)  
 B270 (**SOL5AP**)



Introduction
Induction Motors
Reversible Motors
Electromagnetic Brake Motors
V Series
Clutch & Brake Motors
Synchronous Motors
Low-Speed Synchronous Motors
Waterright Dust-Resistant Motors
Torque Motors
Right-Angle Gearheads
Linear Heads
Brake Pack
Accessories
Installation

# Torque Arm RoHS

In order to prevent gearheads from rotating due to the reactive force of the shaft being driven, the torque arm acts as an anti-spin mechanism when a right-angle, hollow shaft type gearhead is installed.



## Product Line

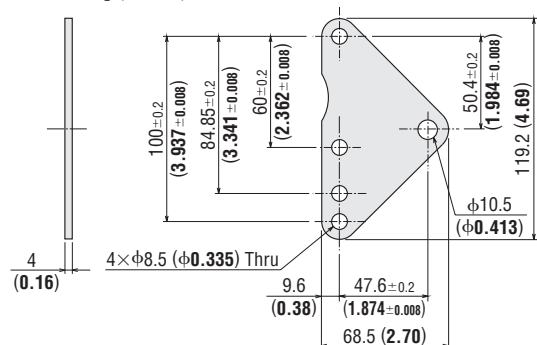
Material: SPCC Surface treatment: paint

Model	Applicable Product			
	Standard AC Motors		Speed Control Motors	
	Gearhead	BH Series	Gearhead	BHF Series
<b>SOT6</b>	<b>5GE□RH</b> <b>5GU□RH</b>	<b>BH162□□RH</b> <b>BH162□T□RH</b> <b>BH162□T2□RH</b> <b>BH162□MT□RH</b>	<b>5GE□RH</b> <b>5GU□RH</b>	<b>BHF62□T□RH</b> <b>BHF62□MT□RH</b>

- Enter the power supply voltage (**A, C, S, F** or **E**) in the box (□) within the model name.
- Enter the gear ratio in the box (□) within the model name.

## Dimensions Unit = mm (in.)

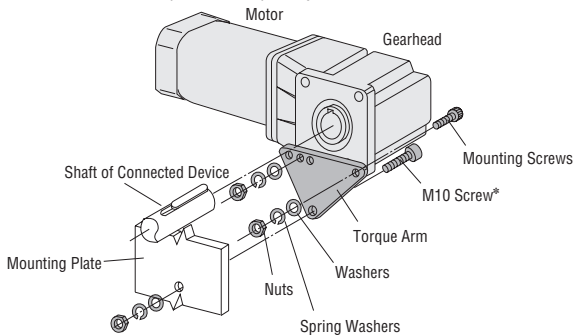
Mass: 145 g (5.1 oz.)



## Mounting Method

When mounting on a device, secure the torque arm firmly using an M10 screw.

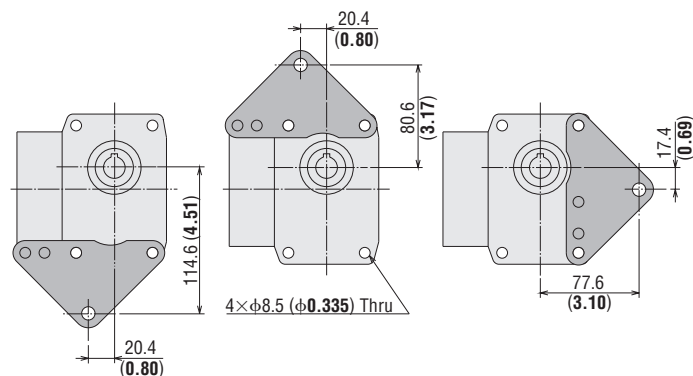
\*M10 screws must be purchased separately.



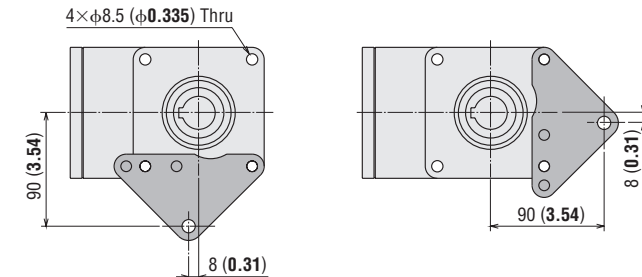
## Mounting Hole Dimensions Unit = mm (in.)

Torque arm mounting holes are processed with the dimensions shown in the figure below.

### ● 5GE□RH, 5GU□RH



### ● BH Series, BHF Series Right-Angle Shaft, Hollow Shaft Type



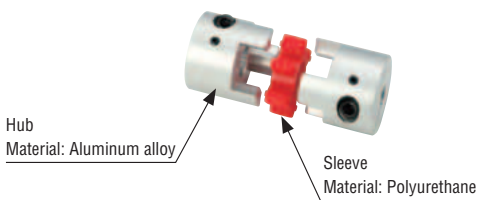
## Flexible Couplings RoHS

These products are clamp type couplings used to connect a motor or gearhead shaft to the shaft of the equipment.

Once the motor or gearhead is determined, the proper coupling can be selected.

### Features

- Good for high torque applications
- Excellent for preventing eccentricity
- The structure features a separated hub and sleeve, so workability during installation is improved.



### Selecting a Flexible Coupling

Once you decide on a motor or gearhead and the shaft diameter of the equipment to be connected, you can select the proper flexible coupling to use. **MCL** couplings are available in several external diameters that provide the strength required for the torque of the motor or gearhead.

Example **MCL 30 F06 F06**

Inner Diameter d1      Inner Diameter d2

- For uniform load, when the gearhead is **4GN□SA** (shaft outer diameter of  $\phi 3/8$  in.) and the shaft diameter of the equipment to be connected is  $\phi 3/8$  in., use **MCL30F06F06**.
- For impact-applied use, when the gearhead is **4GN□SA** (shaft outer diameter of  $\phi 3/8$  in.) and the shaft diameter of the equipment to be connected is  $\phi 3/8$  in., use **MCL40F06F06**.

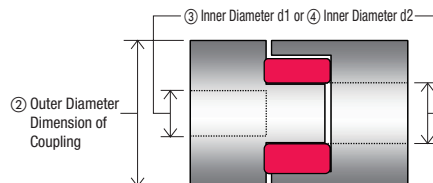


### Product Number Code

## MCL 40 F08 F10

①      ②      ③      ④

①	Flexible Coupling	
②	Outer Diameter of Coupling	<b>20:</b> $\phi 20$ mm ( $\phi 0.79$ in.)~ <b>65:</b> $\phi 65$ mm ( $\phi 2.56$ in.)
③	Inner Diameter d1 (Small Inner Diameter)	<b>06:</b> $\phi 6$ mm ( $\phi 0.2362$ in.)~ <b>25:</b> $\phi 25$ mm ( $\phi 0.9843$ in.) <b>F03:</b> 4.762 mm (3/16 in.)~ <b>F12:</b> 19.05 mm (3/4 in.)
④	Inner Diameter d2 (Large Inner Diameter)	<b>06:</b> $\phi 6$ mm ( $\phi 0.2362$ in.)~ <b>25:</b> $\phi 25$ mm ( $\phi 0.9843$ in.) <b>F03:</b> 4.762 mm (3/16 in.)~ <b>F12:</b> 19.05 mm (3/4 in.)



### Applicable Products

- Couplings are also available for round shaft motors, if a shaft diameter matches.
- For the round shaft type and the geared motor of the low-speed synchronous motor **SMK** Series, refer to the **MCS** coupling.
- For the **BX** Series round shaft type, refer to the **MCS** coupling.

Gearhead Model		Coupling Type	Shaft Diameter		Connected Device Shaft Diameter											
					F03	F04	F05	F06	F08	F10	F12	20	22	25		
Uniform Load	Shock Load		mm	in.	4.762	6.350	7.937	9.525	12.7	15.875	19.05	20	22	25		
					3/16 in.	1/4 in.	5/16 in.	3/8 in.	1/2 in.	5/8 in.	3/4 in.	0.7874 in.	0.8661 in.	0.9843 in.		
<b>0GN</b> □SA	<b>0GN</b> □SA	<b>MCL20</b>	<b>F03</b>	4.762	3/16	○	○	○								
<b>BLH015</b>	<b>BLH015</b>		<b>O6</b>	6	0.2362	○	○	○								
—	—		<b>F04</b>	6.350	1/4	○	○	○								
<b>2GN</b> □SA	—		<b>F05</b>	7.937	5/16	○	○	○								
—	—		<b>O8</b>	8	0.3150	○	○	○								
—	<b>2GN</b> □SA		<b>F04</b>	6.350	1/4			○								
—	—	<b>F05</b>	7.937	5/16			○	○	○							
—	—	<b>O8</b>	8	0.3150			○	○	○							
<b>3GN</b> □SA, <b>4GN</b> □SA, <b>4GN</b> □RAA, <b>5GN</b> □RAA	<b>3GN</b> □SA	<b>MCL30</b>	<b>F06</b>	9.525	3/8			○	○	○						
<b>VH206, VHR206, BX230, BLF230, BLE23, BLU220, BLH230, VSI206, VSR206</b>	—		<b>10</b>	10	0.3937			○	○	○						
<b>VHI315, VHR315, VSI315, VSR315</b>	—		<b>12</b>	12	0.4724			○	○	○						
<b>5GN</b> □SA	—		<b>F08</b>	12.7	1/2				○	○	○					
—	—		<b>F05</b>	7.937	5/16				○							
—	<b>4GN</b> □SA, <b>4GN</b> □RAA, <b>5GN</b> □RAA		<b>F06</b>	9.525	3/8			○	○	○						
—	—	<b>10</b>	10	0.3937			○	○	○							
—	<b>VHI315, VHR315, VSI315, VSR315</b>	<b>12</b>	12	0.4724				○	○	○						
—	<b>5GN</b> □SA, <b>5GC</b> □KA	<b>F08</b>	12.7	1/2				○	○	○						
—	—	<b>14</b>	14	0.5512				○	○	○						
<b>VHI425, VHR425, BX460, BLF460, BLE46, BLU440, BLH450, VSI425, VSR425</b>	—	<b>MCL40</b>	<b>15</b>	15	0.5906				○	○	○					
<b>5GE</b> □SA, <b>5GU</b> □SA, <b>5GE</b> □RAA, <b>5GU</b> □RAA	—		<b>F10</b>	15.875	5/8					○	○					
—	<b>VHI425, VHR425, BX460, BLF460, BLE46, BLU440, BLH450, VSI425, VSR425</b>		<b>15</b>	15	0.5906					○	○	○				
—	<b>5GE</b> □SA, <b>5GU</b> □SA, <b>5GE</b> □RAA, <b>5GU</b> □RAA, <b>5GCH</b> □KA		<b>F10</b>	15.875	5/8						○	○				
<b>VHI540, VHR540, VHI560, VHR560, VHI590, VHR590, BX5120, BLF5120, BLE512, BLU590, BLH5100, VSI540, VSR540, VSI560, VSR560, VSI590, VSR590</b>	—	<b>MCL55</b>	<b>18</b>	18	0.7087						○	○				
<b>BHI62</b> □, <b>BHF62</b> □	—		<b>F12</b>	19.05	3/4							○				
—	—		<b>18</b>	18	0.7087							○	○			
—	<b>BHI62</b> □, <b>BHF62</b> □	<b>MCL65</b>	<b>18</b>	18	0.7087							○	○			
<b>BHI62</b> □RA, <b>BHF62</b> □RA, <b>BX6200, BX6400, BLF6200, BLF6400</b>	—		<b>22</b>	22	0.8661									○	○	○

- Enter the gear ratio in the box (□) within the model name.
- Letters are provided in the applicable products table for identifying the series.



## Specifications

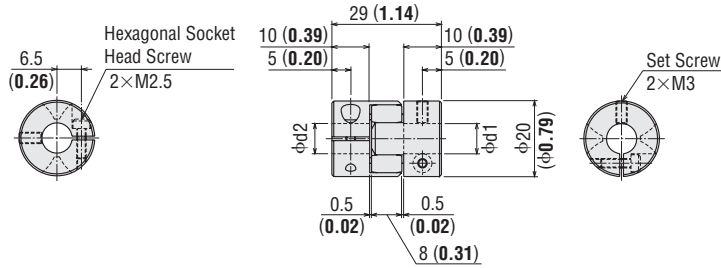
Coupling Type	Model	Dimensions				Nominal Torque	Mass	Moment of Inertia: J	Permissible Eccentricity	Permissible Declination	Permissible End Play	
		Outer Diameter mm (in.)	Length mm (in.)	Shaft Hole Diameter mm (in.)	Shaft Hole Diameter mm (in.)							
MCL20	MCL20F03F03	φ20 (φ0.79)	29 (1.14)	4.762 (0.1875)	4.762 (0.1875)	5 (44)	19 (0.67)	0.01 (0.055)	0.15 (5.9×10 <sup>-3</sup> )		+0.8 0 (+0.031 0)	
	MCL20F03F04				6.35 (0.2500)							
	MCL20F03F05				7.937 (0.3125)							
	MCL2006F03			6 (0.2362)	4.762 (0.1875)							
	MCL2006F04				6.35 (0.2500)							
	MCL2006F05				7.937 (0.3125)							
	MCL20F04F04			6.35 (0.2500)	6.35 (0.2500)							6.35 (0.2500)
	MCL20F04F05											7.937 (0.3125)
	MCL20F05F05											7.937 (0.3125)
	MCL2008F04			8 (0.3150)	6.35 (0.2500)							6.35 (0.2500)
MCL2008F05	7.937 (0.3125)											
MCL30	MCL30F04F05	φ30 (φ1.18)	43.5 (1.71)	6.35 (0.2500)	6.35 (0.2500)	12.5 (110)	66 (2.3)	0.083 (0.45)			+1.0 0 (+0.039 0)	
	MCL30F05F05				7.937 (0.3125)							
	MCL30F05F06			9.525 (0.3750)								
	MCL3008F04			8 (0.3150)	6.35 (0.2500)							
	MCL3008F05				7.937 (0.3125)							
	MCL3008F06				9.525 (0.3750)							
	MCL30F06F06			9.525 (0.3750)	9.525 (0.3750)							9.525 (0.3750)
	MCL30F06F08											12.7 (0.5000)
	MCL3010F05											7.937 (0.3125)
	MCL3010F06			10 (0.3937)	9.525 (0.3750)							9.525 (0.3750)
	MCL3010F08											12.7 (0.5000)
	MCL3012F05			12 (0.4724)	7.937 (0.3125)							7.937 (0.3125)
	MCL3012F06											9.525 (0.3750)
	MCL3012F08											12.7 (0.5000)
	MCL30F08F08			12.7 (0.5000)	12.7 (0.5000)							
MCL40	MCL40F05F06	φ40 (φ1.57)	64 (2.52)	7.937 (0.3125)	7.937 (0.3125)	25.0 (220)	150 (5.3)	0.36 (1.97)	0.2 (7.9×10 <sup>-3</sup> )	1.0	+1.2 0 (+0.047 0)	
	MCL40F06F06				9.525 (0.3750)							
	MCL40F06F08			12.7 (0.5000)								
	MCL4010F05			10 (0.3937)	7.937 (0.3125)							
	MCL4010F06				9.525 (0.3750)							
	MCL4010F08				12.7 (0.5000)							
	MCL4012F06			12 (0.4724)	9.525 (0.3750)							9.525 (0.3750)
	MCL4012F08											12.7 (0.5000)
	MCL4012F10											15.875 (0.6250)
	MCL40F08F08			12.7 (0.5000)	12.7 (0.5000)							12.7 (0.5000)
	MCL40F08F10											15.875 (0.6250)
	MCL4014F06			14 (0.5512)	9.525 (0.3750)							9.525 (0.3750)
	MCL4014F08											12.7 (0.5000)
	MCL4014F10											15.875 (0.6250)
	MCL4015F06			15 (0.5906)	9.525 (0.3750)							9.525 (0.3750)
	MCL4015F08											12.7 (0.5000)
	MCL4015F10											15.875 (0.6250)
	MCL40F10F10			15.875 (0.6250)	15.875 (0.6250)							
MCL55	MCL5515F08	φ55 (φ2.17)	76 (2.99)	15 (0.5906)	12.7 (0.5000)	60.0 (530)	350 (12.4)	1.6 (8.8)			+1.4 0 (+0.055 0)	
	MCL5515F10				15.875 (0.6250)							
	MCL5515F12				19.05 (0.7500)							
	MCL55F10F10			15.875 (0.6250)	15.875 (0.6250)							
	MCL55F10F12				19.05 (0.7500)							
	MCL5518F10				15.875 (0.6250)							
MCL5518F12	19.05 (0.7500)											
MCL65	MCL6518F10	φ65 (φ2.56)	87.5 (3.44)	18 (0.7087)	15.875 (0.6250)	160 (1410)	570 (20)	3.7 (20)			+1.5 0 (+0.059 0)	
	MCL6518F12				19.05 (0.7500)							
	MCL652022			20 (0.7874)	22 (0.8661)							
	MCL652222			22 (0.8661)	22 (0.8661)							
	MCL652225			22 (0.8661)	25 (0.9843)							

● The specifications above are the values when combined with Oriental Motor's motor and gearhead.

**Dimensions** Unit = mm (in.)

**MCL20** Type

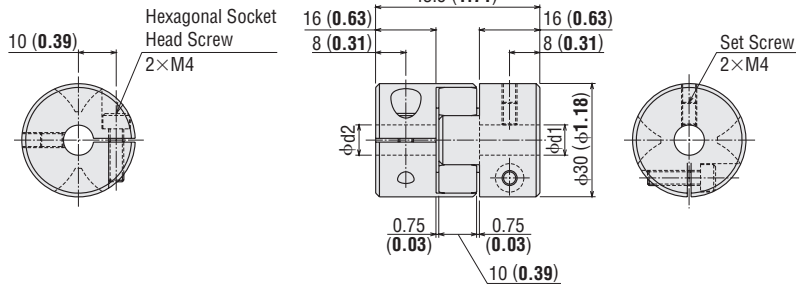
**DXF** A704



Shaft Hole Diameter [ $\phi d1, \phi d2$ ]	Tolerance
<b>F03:</b> $\phi 4.762$ ( $\phi 0.1875$ ) <b>O6:</b> $\phi 6$ ( $\phi 0.2362$ )	+0.018 0 ( $+0.0007$ 0)
<b>F04:</b> $\phi 6.35$ ( $\phi 0.2500$ ) <b>F05:</b> $\phi 7.937$ ( $\phi 0.3125$ ) <b>O8:</b> $\phi 8$ ( $\phi 0.3150$ )	+0.022 0 ( $+0.0009$ 0)

**MCL30** Type

**DXF** A705



Shaft Hole Diameter [ $\phi d1, \phi d2$ ]	Tolerance
<b>F04:</b> $\phi 6.35$ ( $\phi 0.2500$ ) <b>F05:</b> $\phi 7.937$ ( $\phi 0.3125$ ) <b>O8:</b> $\phi 8$ ( $\phi 0.3150$ ) <b>F06:</b> $\phi 9.525$ ( $\phi 0.3750$ )	+0.022 0 ( $+0.0009$ 0)
<b>F08:</b> $\phi 12.7$ ( $\phi 0.5000$ )	+0.027 0 ( $+0.0011$ 0)

**MCL3010F05**

**MCL3010F06**

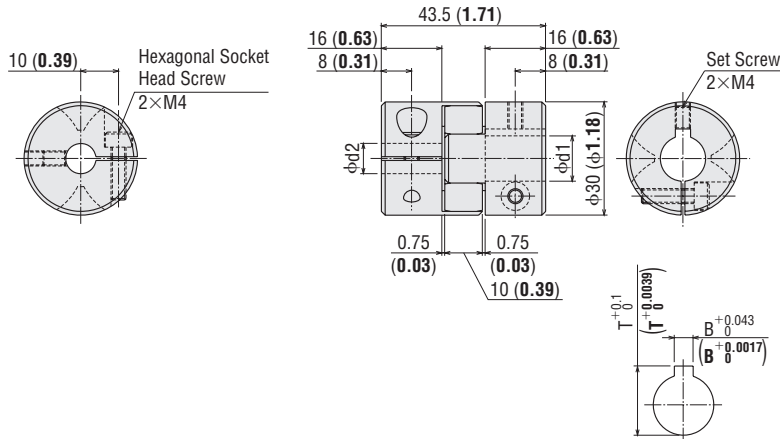
**MCL3010F08**

**MCL3012F05**

**MCL3012F06**

**MCL3012F08**

**DXF** A705



Shaft Hole Diameter [ $\phi d1$ ]	Tolerance	Key Slot Width B	Key Slot Length T
<b>10:</b> $\phi 10$ ( $\phi 0.3937$ )	+0.022 0 ( $+0.0009$ 0)	4 (0.1575)	11.8 (0.465)
<b>12:</b> $\phi 12$ ( $\phi 0.4724$ )	+0.027 0 ( $+0.0011$ 0)		13.8 (0.543)

Shaft Hole Diameter [ $\phi d2$ ]	Tolerance
<b>F05:</b> $\phi 7.937$ ( $\phi 0.3125$ ) <b>F06:</b> $\phi 9.525$ ( $\phi 0.3750$ )	+0.022 0 ( $+0.0009$ 0)
<b>F08:</b> $\phi 12.7$ ( $\phi 0.5000$ )	+0.027 0 ( $+0.0011$ 0)

Key Slot

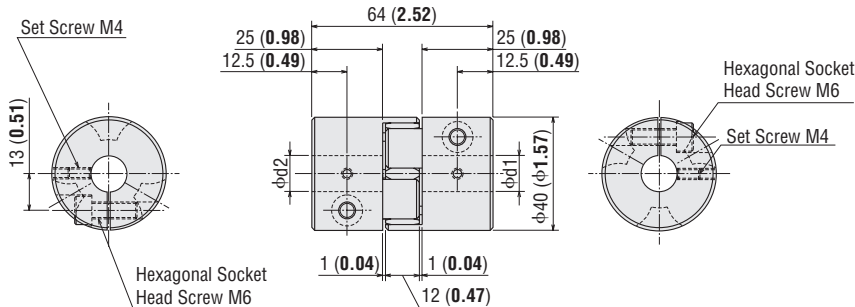
**MCL40F05F06**

**MCL40F06F06**

**MCL40F06F08**

**MCL40F08F08**

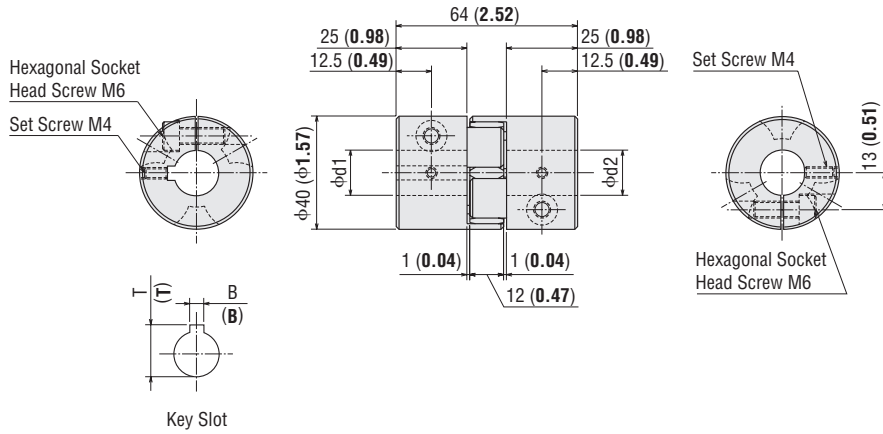
**DXF** A706



Shaft Hole Diameter [ $\phi d1, \phi d2$ ]	Tolerance
<b>F05:</b> $\phi 7.937$ ( $\phi 0.3125$ ) <b>F06:</b> $\phi 9.525$ ( $\phi 0.3750$ )	+0.022 0 ( $+0.0009$ 0)
<b>F08:</b> $\phi 12.7$ ( $\phi 0.5000$ )	+0.027 0 ( $+0.0011$ 0)

**MCL4010F05**  
**MCL4010F06**  
**MCL4010F08**  
**MCL4012F06**  
**MCL4012F08**  
**MCL40F08F10**  
**MCL4014F06**  
**MCL4014F08**  
**MCL4015F06**  
**MCL4015F08**

**DXF** A706

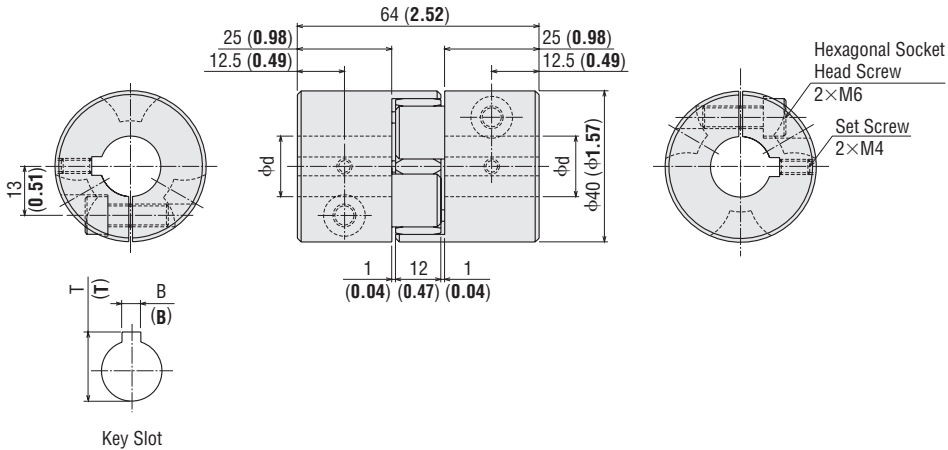


Shaft Hole Diameter [φd1]	Tolerance	Key Slot Width B	Tolerance	Key Slot Length T	Tolerance
<b>10:</b> φ10 (φ0.3937)	+0.022 0 (+0.0009 0)	4 (0.1575)	+0.043 0 (+0.0017 0)	11.8 (0.465)	+0.1 0 (+0.004 0)
<b>12:</b> φ12 (φ0.4724)	+0.027 0 (+0.0011 0)			13.8 (0.543)	
<b>14:</b> φ14 (φ0.5512)		5 (0.1969)	16.3 (0.642)		
<b>15:</b> φ15 (φ0.5906)			17.3 (0.681)		
<b>F10:</b> φ15.875 (φ0.6250)		4.763 (0.1875)	+0.051 0 (+0.0020 0)	18.009 (0.709)	

Shaft Hole Diameter [φd2]	Tolerance
<b>F05:</b> φ7.937 (φ0.3125)	+0.022 0 (+0.0009 0)
<b>F06:</b> φ9.525 (φ0.3750)	
<b>F08:</b> φ12.7 (φ0.5000)	+0.027 0 (+0.0011 0)

**MCL4012F10**  
**MCL4014F10**  
**MCL4015F10**  
**MCL40F10F10**

**DXF** A706

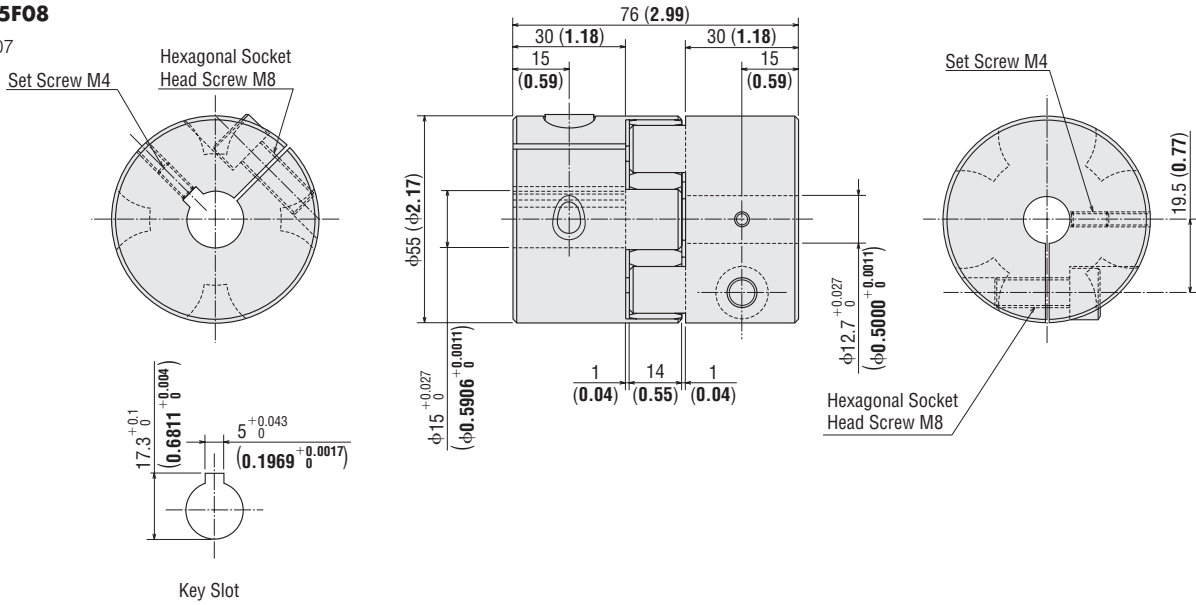


Shaft Hole Diameter (φd)	Tolerance	Key Slot Width B	Tolerance	Key Slot Length T	Tolerance
<b>10:</b> φ10 (φ0.3937)	+0.022 0 (+0.0009 0)	4 (0.1575)	+0.043 0 (+0.0017 0)	11.8 (0.465)	+0.1 0 (+0.004 0)
<b>12:</b> φ12 (φ0.4724)	+0.027 0 (+0.0011 0)			13.8 (0.543)	
<b>14:</b> φ14 (φ0.5512)		5 (0.1969)	16.3 (0.642)		
<b>15:</b> φ15 (φ0.5906)			17.3 (0.681)		
<b>F10:</b> φ15.875 (φ0.6250)		4.763 (0.1875)	+0.051 0 (+0.0020 0)	18.009 (0.709)	

Introduction  
 Induction Motors  
 Reversible Motors  
 Electronic Brake Motors  
 V Series  
 Clutch & Brake Motors  
 Synchronous Motors  
 Low-Speed Synchronous Motors  
 Watertight Dust-Resistant Motors  
 Torque Motors  
 Right-Angle Gearheads  
 Linear Heads  
 Brake Pack  
 Accessories  
 Installation

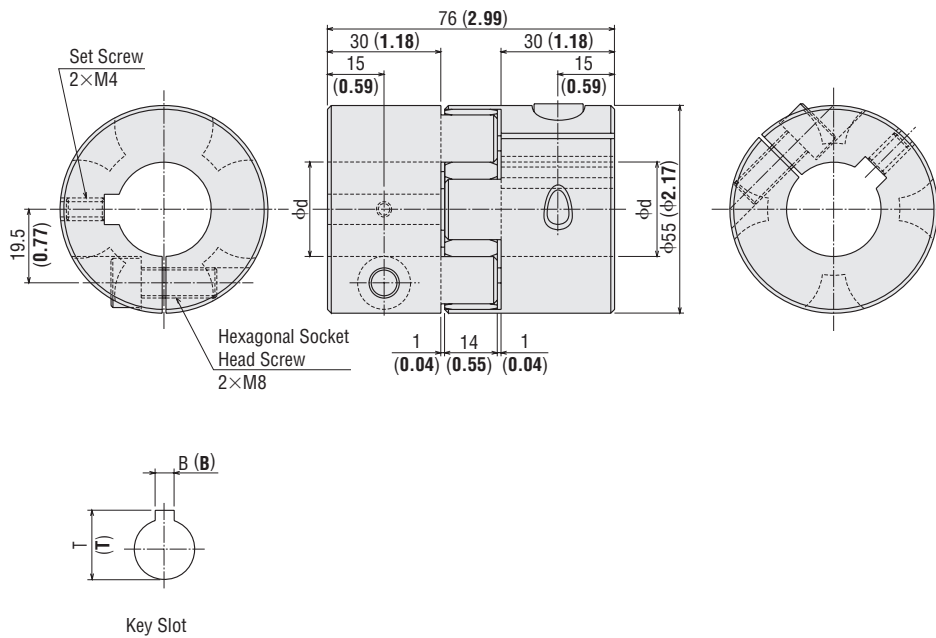
**MCL515F08**

**DXF** A707



**MCL55 Type**

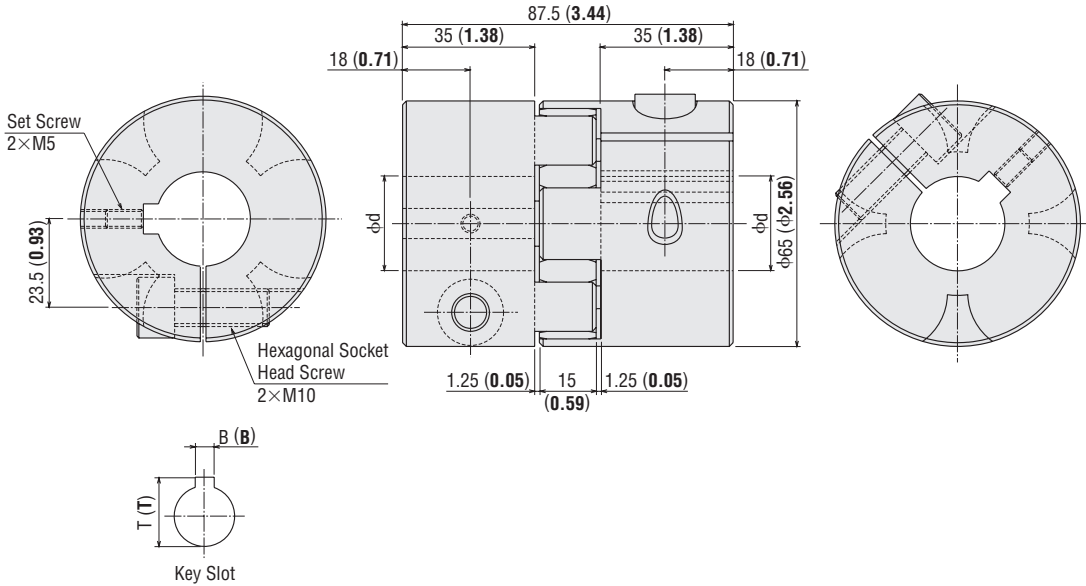
**DXF** A707



Shaft Hole Diameter ( $\phi d$ )	Tolerance	Key Slot Width B	Tolerance	Key Slot Length T	Tolerance
<b>15:</b> $\phi 15$ ( $\phi 0.5906$ )	$+0.027$ 0 ( $+0.0011$ 0)	5 (0.1969)	$+0.043$ 0 ( $+0.0017$ 0)	17.3 (0.681)	$+0.1$ 0 ( $+0.004$ 0)
<b>18:</b> $\phi 18$ ( $\phi 0.7087$ )		6 (0.2362)	$+0.052$ 0 ( $+0.0020$ 0)	20.8 (0.819)	
<b>F10:</b> $\phi 15.875$ ( $\phi 0.6250$ )	$+0.033$ 0 ( $+0.0013$ 0)	4.763 (0.1875)	$+0.051$ 0 ( $+0.0020$ 0)	18.009 (0.709)	$+0.254$ 0 ( $+0.010$ 0)
<b>F12:</b> $\phi 19.050$ ( $\phi 0.7500$ )		4.763 (0.1875)		21.260 (0.837)	

MCL65 Type

DXF A708



Shaft Hole Diameter ( $\phi d$ )	Tolerance	Key Slot Width B	Tolerance	Key Slot Length T	Tolerance
<b>18:</b> $\phi 18$ ( $\phi 0.7087$ )	$+0.027$ 0 ( $+0.0011$ 0)	6 (0.2362)	$+0.052$ 0 ( $+0.0020$ 0)	20.8 (0.819)	$+0.1$ 0 ( $+0.004$ 0)
<b>F10:</b> $\phi 15.875$ ( $\phi 0.6250$ )		4.763 (0.1875)		18.009 (0.709)	
<b>F12:</b> $\phi 19.05$ ( $\phi 0.7500$ )	$+0.033$ 0 ( $+0.0013$ 0)	4.763 (0.1875)	$+0.051$ 0 ( $+0.0020$ 0)	21.260 (0.837)	$+0.254$ 0 ( $+0.010$ 0)
<b>20:</b> $\phi 20$ ( $\phi 0.7874$ )		6 (0.2362)		22.8 (0.898)	
<b>22:</b> $\phi 22$ ( $\phi 0.8661$ )		8 (0.3150)		24.8 (0.976)	
<b>25:</b> $\phi 25$ ( $\phi 0.9843$ )				28.3 (1.114)	$+0.2$ 0 ( $+0.008$ 0)

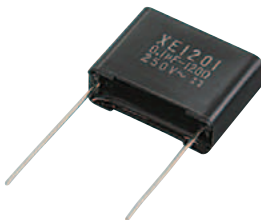
## CR Circuit for Surge Suppression RoHS

This product is used to protect the contacts of the relay or switch used in the forward/reverse circuit section or the instantaneous stop circuit section of a motor.

### Product Line

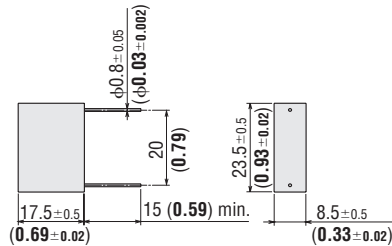
**EPCR1201-2**

250 VAC (120  $\Omega$ , 0.1  $\mu$ F)



### Dimensions Unit = mm (in.)

Mass: 5 g (0.18 oz.)



# Watertight Extension Cables RoHS

Use with the watertight power relay box. An extension of 5 m (16.4 ft.) and 10 m (32.8 ft.) is possible.

## Product Line

Conductors	Model	Applicable Product	Cable Length L [m (ft.)]
4 Conductors	<b>CC05AC43P</b>	<b>FPW Series</b>	5 (16.4)
	<b>CC10AC43P</b>		10 (32.8)

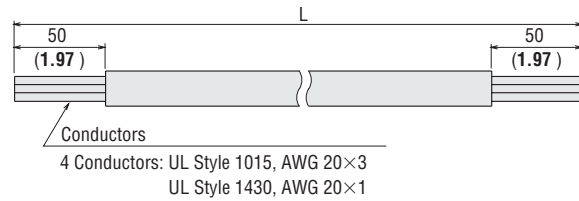
## Specifications

Conductor construction: Refer to the dimension on the right

Finished outer diameter:  $\phi 7.8$  mm ( $\phi 0.31$  in.)

Outer casing: Heat-resistant vinyl chloride

## Dimensions Unit = mm (in.)



# Watertight Power Relay Box RoHS

## Product Line

**TB4-0608** (4-Terminal Type)



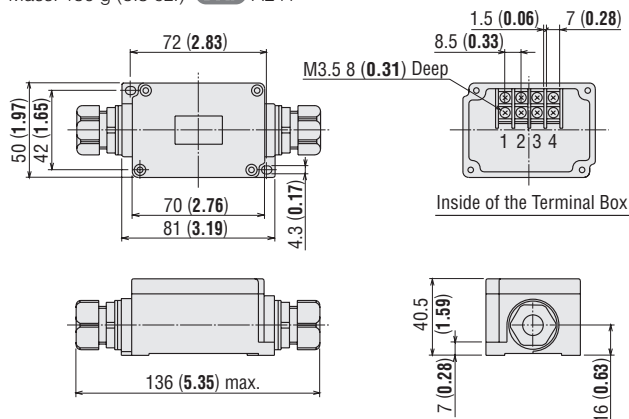
## Applicable Products

- FPW Series**
- BH Series**

Applicable cable diameter:  $\phi 6.5 \sim \phi 8.5$  mm ( $\phi 0.26 \sim \phi 0.33$  in.)

## Dimensions Unit = mm (in.)

Mass: 150 g (5.3 oz.) DXF A241



- The power relay box conforms to IP65 only when used with a extension cable for watertight type for **FPW Series**.  
(Does not conform to IP65 when used with **BH Series**.)

Screws for the sealed connector and the cover of power relay box should be adjusted to the torque shown below.

- Sealed connector 1.0~1.5 N·m (8.8~13.2 lb-in)
- Cover of power relay box 0.54~0.66 N·m (4.7~5.8 lb-in)

- This product can be used with lead wire type. However, they are not watertight. Also, note that lead wires cannot be fixed with the sealed connectors.