

New-Generation Heavy Payload QUICK-CHANGE

QUICK-CHANGE GIGA™

GIGA is a device for automatic tool changing, designed for robots handling heavy-payloads, with weight capacities of 350kg, 400kg, 500kg, and 700kg. GIGA is used for body in white handling and jig base changing in the automotive industry. It is also used in other industries for heavy load palletizing, and loading and unloading of CNC machines. In addition to handling applications, GIGA can be used in spot-welding gun changing applications. GIGA can also use our QUICK-CHANGE ZEUS Series modules.

Lock without touching

The Master plate can lock onto the Tool plate with a gap between them

Enhanced mechanical fail-safe function!

Our proven mechanical fail-safe mechanism has been further enhanced with the addition of a spring back-up for greater reliability, so the Master and Tool Plates will not separate, even if pneumatic pressure fails.

Conforms to ISO standards for robot flanges!

The GIGA bolt pattern is compatible with heavy payload robot flanges.

Bolt pattern: PCD 200, M12x6 pcs

Safety feature : fool-proof

Built-in lock/unlock sensor (selection NPN/PNP)

Built-in approach sensor (detecting clearance of Tool Plate)

Standardly equipped mechanical safety valve that allows Tool Plate to separate from Master Plate only at a certain spot on tool stand.

Master plate
(GIGA-MN-SEAM-FL6BM-WPCM-SCDM-VE)



Tool plate
(GIGA-T-SEAT-FL6BT-WPCT-SCDT-V)

Specifications

| Main body | | Electric signal connection (Built-in) | |
|---|---------------------------|---|---------------------------------|
| Load capacity (Rated load) | 6,860N(700kg) | Connector(Master side) | 5A×20 |
| Positional repeatability ※a | ±0.025mm | Connector(Tool side) | ※c |
| Allowable dynamic moment | Bending direction (Tx,Ty) | Ball-locking mechanism | |
| | Twisting direction (Tz) | Lock/unlock operation required air pressure | |
| Coupling force (at 0.49MPa air pressure) ※b | 63,239N(6,453kgf) | Allowable temperature and humidity range | 0~50°C, 35~90% (Non-condensing) |
| Material | Frame | Lock/unlock sensor | Lock status |
| | Lock/unlock mechanism | Unlock status | Unlock status |
| Overall dimension (When coupled) | φ350×H160mm | Drop prevention valve | Mechanical Valve |
| Product weight (Main body) | Master Plate | | |
| | Tool Plate | | |

Accessories for master plate

W/O insulation (IN12 or IN16)---parallel pin (φ12×22)×1pc, bolts (M12×90)×6pcs, flat washers (for M12 bolts, small)×6pcs, spring washers (for M12 bolts)×6pcs, resin collars (inner φ12.5)×6pcs
With insulation (IS)---insulation locating pins (φ12×30)×2pcs, bolts (M12×100)×6pcs, flat washers (for M12 bolts, small)×6pcs, spring washers (for M12 bolts)×6pcs, resin collars (inner φ12.5), insulation plate×1pc

(※a) Positional repeatability means the accuracy of position between the one master plate and the one tool plate(A) repeat coupled and uncoupled.It is not possible to apply this positional repeatability to different tool plate(B).
(※b) Coupling force is the force to achieve specified repeatability.Coupling will be maintained until unlock pressure is applied or the device is damaged.
(※c) Max.93.6A is allowed as connector.

Option

Module for A side and B side

| Model | Capacity and number of contacts | Connector for Master Plate side | Connector for Tool Plate side |
|------------------------|------------------------------------|--|--------------------------------------|
| Servo module | SEAM (T) SEBM (T) | Servo powers 20A (500V) ×6 ※1 | D/MS3102A20-17P D/MS3102A20-17S |
| | SEYAM (T) SEYBM (T) | Electric signals 5A (220V) ×17 ※2 | D/MS3102A20-29P D/MS3102A20-29S |
| | SEPAM (T) SEPBM (T) | Servo powers 20A (500V) ×6 ※1 | D/MS3102A20-17P D/MS3102A20-17S |
| | Electric signals 5A (220V) ×17 ※2 | D/MS3102A20-29P D/MS3102A20-29S | |
| Fluid module ※3 | FL4AM/FL4BM | 4 ports | Master Plate side Tool Plate side |
| | FL4AT/FL4BT | 4 ports | Master Plate side Tool Plate side |
| | FL6AM/FL6BM | 6 ports | Master Plate side Tool Plate side |
| | FL6AT/FL6BT | 6 ports | Master Plate side Tool Plate side |
| Pneumatic port | P38AM (T) * P38BM (T) * | 4 ports | Rc3/8×4 (pass-through) |
| | RXAT * RXBT * | 5A×16 (without connector) ※9 | terminal for solder |
| Electric signal module | JXAM (T) * JXBM (T) * | 5A×16 ※7 | JMR-2116M-D JMR-2116F-D |
| | MWXAM (T) MWXBM (T) | Resistance to dust and water 13A×10 | D/MS3102A 18-1P D/MS3102A 18-1S |
| | BNXAM (BDXAT) * BNXBM (BDXBT) * | non-contact electric signal 15 NPN output | WEBR2119MS-D WEBR2116FS-D |
| | BPKAM (BDKAT) * BPKBM (BDKBT) * | non-contact electric signal 15 PNP output | WEBR2119MS-D WEBR2116FS-D |
| Ground contact module | E51AM (T) * E51BM (T) * | 500A×1 (usage : 50%) | |
| | GLAM (T) GLBM (T) | Attachment module for A and B side. (For adding conventional Quick change options) | |
| Cover | LCAM (T) LCBM (T) | Cover for A and B side (always use cover when the modules are not in use) | |

Module for C side and D side

| Model | Capacity and number of contacts | Connector for Master Plate side | Connector for Tool Plate side |
|------------------------|---------------------------------|--|----------------------------------|
| Primary current module | WPCM (T) WPDm (T) | 200A (usage: 25%) 600V | D/MS3102A36-3P D/MS3102A36-3S |
| | WSCM (T) WSDm (T) | Sequence 100A (600V) ×3 ※4 Thermo signal: 5A (200V) ×3 | Seal connector ABS-3632 |
| Pneumatic port | P18CM (T) * P18DM (T) * | 4 ports | Rc1/8×4 (pass-through) |
| | P3WCM (T) * P3WDM (T) * | 2 ports | Rc3/8×2 (pass-through) |
| Electric signal module | JCM (T) * JDM (T) * | 5A×16 ※7 | JMR-2116M-D JMR-2116F-D |
| | RCT/RDT | 5A×16 (without connector) ※9 | terminal for solder |
| | MCM (T) * MDM (T) * | 13A×10 ※8 | D/MS3102A18-1P D/MS3102A18-1S |
| | MWCM (T) MWDM (T) | Resistance to dust and water 13A×10 | D/MS3102A18-1P D/MS3102A18-1S |
| Ground contact module | BNCM (BDCT) * BNDM (BDdT) * | non-contact electric signal 15 NPN output | WEBR2119MS-D WEBR2116FS-D |
| | BPCM (BDCT) * BPDM (BDdT) * | non-contact electric signal 15 NPN output | WEBR2119MS-D WEBR2116FS-D |
| Attachment module | E51CM (T) * E51DM (T) * | 500A×1 (usage : 50%) | |
| | GSCM (T) GSDM (T) | Attachment module for C and D side (For fitting conventional Quick change options onto C-side) | |
| Cover | SCCM (T) SCDM (T) | Cover for C and D side (always use cover when the modules are not in use) | |

Miscellaneous accessories

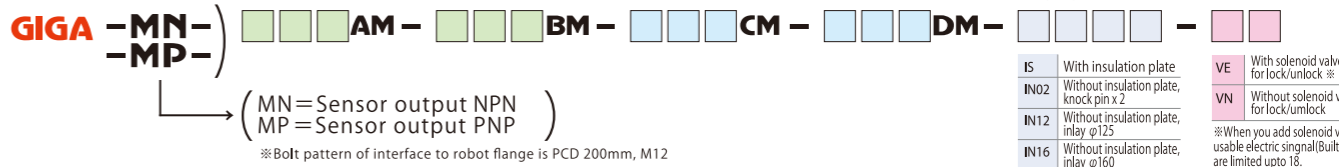
| | | |
|----------------------------|----|--|
| Lock/unlock Solenoid valve | VE | With solenoid valve for lock/unlock |
| | VN | Without solenoid valve for lock/unlock |

*include attachment module
(※1) Allowable current is Max.20A for pin(13A for pin No.F) and total allowable current is 71.6A for connector. (※2) Allowable current is total 81.7A for connector. (※3) Port with self-sealing of Fluid module cannot be used for vacuum. (※4) Allowable current is total 290.6A for connector. (※5) Allowable current is total 83.7A for connector. Connector has 7 pins. (※6) Allowable current is total 120.2A for connector. (※7) Allowable current is total 30.4A for connector. (※8) Allowable current is total 57.2A for connector. (※9) Type of connector for master side is JMA.

In case of order options as part, model might be different from the above table. Please ask to our company's staff.

Ordering Information

Master plate

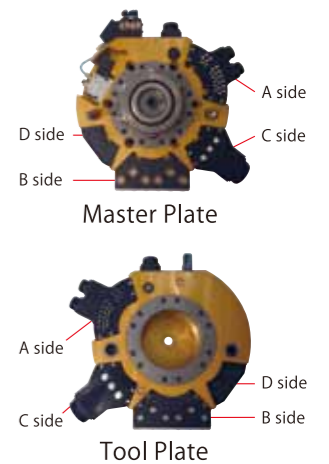


Tool plate



| [Servo module] | [Pneumatic port] | [Primary current module] | [Electric signal module] |
|---|--|---|---|
| SE Servo power 20A×6 ※1 Electric signal 5A×17 ※2 | P38 Pneumatic Rc3/8×4 | WP 200A(usage:25%) 600V WS Sequence 100A(600V)×3 ※6 Thermo signal: 5A(200V)×3 (WP: receptacle type WS: seal connector type) | J J16A module 5A×16 R 5A×16 (without connector) for Tool Plate |
| SEY Servo power 20A×6 ※1 Electric signal 5A×17 ※2 Connector for motor has 7pins | LC Cover for A and B side (always use the cover when the modules are not in use) | SC Cover for C and D side (always use the cover when the modules are not in use) | M 13A×10 (insertion contact) MW 13A×10 Resistance to dust and water |
| SEP Servo power 20A×6 ※1 Electric signal 5A×17 ※2 Electric signal 5A×37 ※6 37probe contacts is added in serve module | J J16A module 5A×16 R 5A×16 for Tool Plate | [Pneumatic port] P18 Pneumatic Rc1/8×4 P3W Pneumatic Rc3/8×2 | BN Remote sensor 15 NPN output (available for master plate only) BP Remote sensor 15 PNP output (available for master plate only) |
| LC Cover for A and B side (always use the cover when the modules are not in use) | BP Remote sensor 15 NPN output for Master Plate BD Remote sensor 15 Sensor input for Tool Plate | SC Cover for C and D side (always use the cover when the modules are not in use) | BD Remote sensor 15 Sensor input (available for tool plate only) SC Cover for C and D side (always use the cover when the modules are not in use) |
| [Fluid module] | [Other] | [Other] | [Other] |
| FL4 4 cooling water ports or pneumatic port | ES1 500A×1 | ES1 500A×1 | ES1 500A×1 |
| FP4 4 pneumatic ports for Tool Plate | GL Attachment module | GL Attachment module | GS Attachment module |
| FL6 6 cooling water ports or pneumatic port | LC Cover for A and B side (always use the cover when the modules are not in use) | LC Cover for A and B side (always use the cover when the modules are not in use) | SC Cover for C and D side (always use the cover when the modules are not in use) |
| FP6 6 pneumatic ports for Tool Plate | | | |
| LC Cover for A and B side (always use the cover when the modules are not in use) | | | |

Installing position



Please contact BL Autotec, Ltd. for detailed information on the options.

- The electric connector and plugs are user-provided. Please contact BL Autotec, Ltd. for detailed information on the modules.
- Please contact BL Autotec, Ltd. for special conditions and specific applications. Please refer to the Installation & Maintenance Manual when using.

The configuration and specifications for this series are subject to change.

