

Spot-welding Gun-Changer

GC-300A

The BL QUICK-CHANGE Model GC-300A is a device for automatic tool changing, specially designed for changing material handling welding guns or guns with built-in transformers in a spot-welding line. Primary current, air pressure and electrical signals (Servo) modules can be selected for the GC-300A.The GC-300A provides increased production line efficiency and cost effectiveness.

Unidirectional cable and hose

The power and control cables and the pneumatic hose are oriented in a single direction.

The primary current module contains a floating mechanism

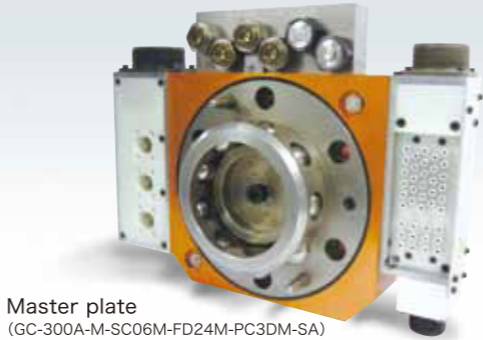
The primary current module is equipped with a self-cleaning function and a floating mechanism.

Self-sealing coolant ports

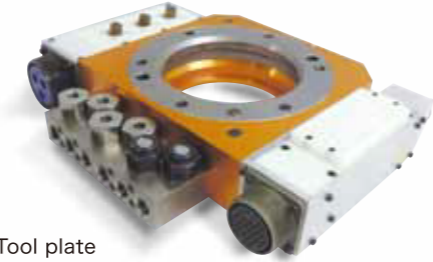
The check valves of the circulating coolant ports are equipped with a PTFE sleeve to prevent liquid spillage.

Superior fail-safe locking mechanism

BL's unique lock/unlock mechanism contains a mechanical fail-safe feature which does not allow the Master and Tool plates to uncouple if the air pressure is shut off.



Master plate
(GC-300A-M-SC06M-FD24M-PC3DM-SA)



Tool plate
(GC-300A-T-SC06T-FD24T-PC3DT)



- Master plate Attachments
- 1 Insulation plate
 - 2 insulation pins
 - 6 insulation washers
 - 6 insulation pipes
 - 6 bolts (M10×30)
 - 1 locating pin
 - 6 plain washers

Specifications

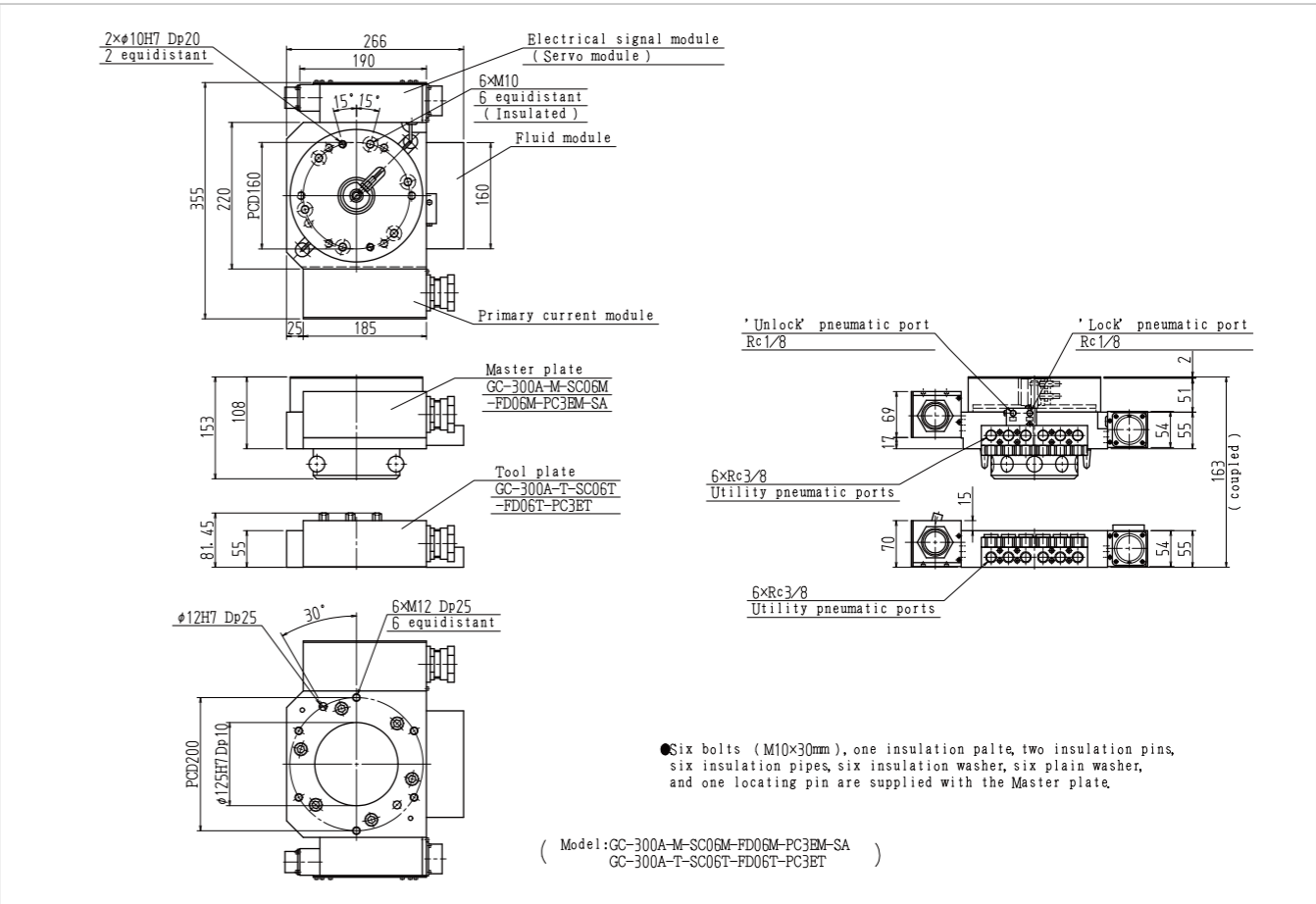
| Main Body | |
|---|--|
| Load capacity (rated load) | 2,940N (300kg) |
| Positional repeatability | ±0.025mm |
| Allowable dynamic moment | Bending direction (Tx, Ty) 5,292N·m (540kgf·m) Twisting direction (Tz) 4,704N·m (480kgf·m) |
| Coupling force (with air pressure of 0.49MPa) ※1 | 31,360N (3,200kgf) |
| Materials | Frame Aluminum alloy Lock/ unlock mechanism Stainless steel |
| Overall dimension (when coupled with all options) | W355×D265×H165mm |
| Weight ※2 | Master plate 18.5kg (with all options) Tool plate 9.5kg |
| Lock/ unlock mechanism | Ball-locking mechanism |
| Required air pressure | 0.39~0.68MPa (4~7kgf/cm²) |
| Allowable temperature and humidity ranges | 0~50°C, 35~90%(Non-condensing) |
| Lock/ unlock sensor | for lock status 1 built-in proximity switch E2E-X2D4 (OMRON) for unlock status 1 built-in proximity switch E2E-X2D4 (OMRON) |
| Approach sensor | for Tool plate position Two built-in switch E2E-X2D4 (OMRON) |

| Modules | | | | |
|---|---|---|--|------------------------------------|
| Electrical signal module (Servo module) | Code | Capacity | Master plate side connector | Tool plate side connector |
| | ES10M(T) | 5A (220V) ×10 | D/MS3102A28-16P | D/MS3102A28-16S |
| | ES28M(T) | 5A (220V) ×28 ※3 | D/MS3102A28-15P | D/MS3102A28-15S |
| | SC04M(T) | 5A (220V) ×28 for signal ※3 20A (500V) ×4 for servo motor ※4 | D/MS3102A28-15P D/MS3102A20-4P | D/MS3102A28-15S D/MS3102A20-4S |
| | SC06M(T) | 5A (220V) ×17 for signal 20A (500V) ×5 13A (500V) ×1 } for servo motor ※5 | D/MS3102A20-29P D/MS3102A20-17P | D/MS3102A20-29S D/MS3102A20-17S |
| Fluid module | Code | Self-sealing conduct ports (Master/Tool side) | Self-sealing pneumatic ports (Master side) | |
| | FD24M(T) | Rc3/8×2 | Rc3/8×4 | |
| | FD42M(T) | Rc3/8×4 | Rc3/8×2 | |
| | FD40M(T) | Rc3/8×4 | — | |
| | FD02M(T) | — | Rc3/8×2 | |
| | FD04M(T) | — | Rc3/8×4 | |
| | FD06M(T) | — | Rc3/8×6 | |
| Primary current module | Code | Capacity | Master plate side connector | Tool plate side connector |
| | PC3DM(T) | 200A (42% usage) 130A in continuous duty 600V ×3 | D/MS3102A36-5P | D/MS3102A36-5S |
| | PC3EM(T) | 200A (42% usage) 130A in continuous duty 600V ×3 | Seal connector | Seal connector |
| | Fluid pressure, 0 ~ Max, 0.68MPa (0 ~ 7kgf/cm²) | | | |
| Interface plate | Code | Type of pattern | Type of insulation | |
| | SA | 6 · M10 PCD160 | Insulation plate (phenol) | |
| | SB | To user requirements | Insulation washer (POM) | |

GC-300A Ordering Information

| Master plate | | (Electrical signal module) | (Fluid module) | (Primary current module) | (Interface plate) |
|--------------|--|--|--|------------------------------------|----------------------------|
| GC-300A-M- | | □□□□□ | □□□□□ | □□□□□ | □□ |
| Tool plate | | (Electrical signal module) | (Fluid module) | (Primary current module) | |
| GC-300A-T- | | □□□□□ | □□□□□ | □□□□□ | |
| | | ESXX No module | FDXX No module | PCXX No module | SA For PCD160 robot flange |
| | | ES28 5A×28※3 | FD24 2 coolant parts, 4 pneumatic ports | PC3D 3 primary current (440V81KVA) | SB To user requirements |
| | | ES10 5A×10 | FD42 4 coolant parts, 2 pneumatic ports | PC3E 3 primary current (440V81KVA) | |
| | | SC04 5A×28※3 20A×4 for servo motor ※4 | FD40 4 coolant parts, no pneumatic ports | PCC0 Cover (Tool plate) | |
| | | SC06 5A×17 20A×6 for servo motor }※5 | FD02 No coolant part, 2 pneumatic ports | | |
| | | ESC0 Cover (Tool plate) | FD04 No coolant part, 4 pneumatic ports | | |
| | | | FD06 No coolant part, 6 pneumatic ports | | |

Main Body Dimensions



Module

| Electrical signal module (Servo module) | Primary current module | Primary current module |
|--|--|--|
| Master plate SC04M. SC06M Tool plate SC04T. SC06T | Master plate PC3DM Tool plate PC3DT | Master plate PC3EM Tool plate PC3ET |

(Note 1) The connector plug is user-provided.
(Note 2) Please contact BL Autotec, Ltd. for detailed information on the modules.
(Note 3) Please contact BL Autotec, Ltd. for specific applications.
(Note 4) Please refer to the installation & Maintenance Manual when using.

※1 Coupling force is the force to achieve specified repeatability. Coupling will be maintained until unlock pressure is applied or the device is damaged. ※2 Weight shown is of GC-300-ES-28-FD24-PC3E-SA. ※3 Allowable current is total 113.7Afor connector. ※4 Allowable current is total 62.5A for connector. ※5 Allowable current is total 71.6A for connector.