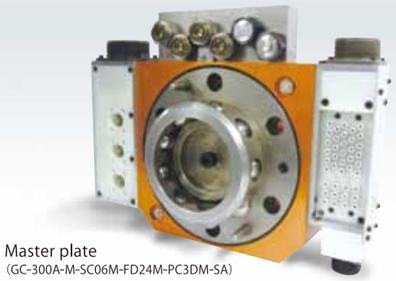
Spot-welding Gun-Changer

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.



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

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.

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 ※1		±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) ※2		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 (with all options)	Master plate	18.5kg
	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℃、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 ※4	D/MS3102A28-15P	D/MS3102A28-15S
	SC04M (T)	5A (220V) ×28 for signal ※4	D/MS3102A28-15P	D/MS3102A28-15S
		20A (500V) ×4 for servo motor ※5	D/MS3102A20-4P	D/MS3102A20-4S
	SC06M (T)	5A (220V) ×17 for signal	D/MS3102A20-29P	D/MS3102A20-29S
		20A (500V) ×5, 13A (500V) ×1 } for servo motor ※5	D/MS3102A20-17P	D/MS3102A20-17S
Fluid module	Code	Self-sealing condact 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	
	Fluid pressure, 0 ~ Max, 0.68MPa (0 ~ 7kgf/c m²)			
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
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

GC-300A -M- □□□□M – □□□□M – □□□□M – □□

(Electrical signal module) (Fluid module) (Primary current module) (Interface plate)

Tool plate

GC-300A -T- □□□□T – □□□□T – □□□□T

(Electrical signal module) (Fluid module) (Primary current module)

ESXX	No module
ES28	5A×28※4
ES10	5A×10
SC04	5A×28※4 20A×4 for servo motor ※5
SC06	5A×17 20A×6 for servo motor } ※6
ESC0	Cover (Tool plate)

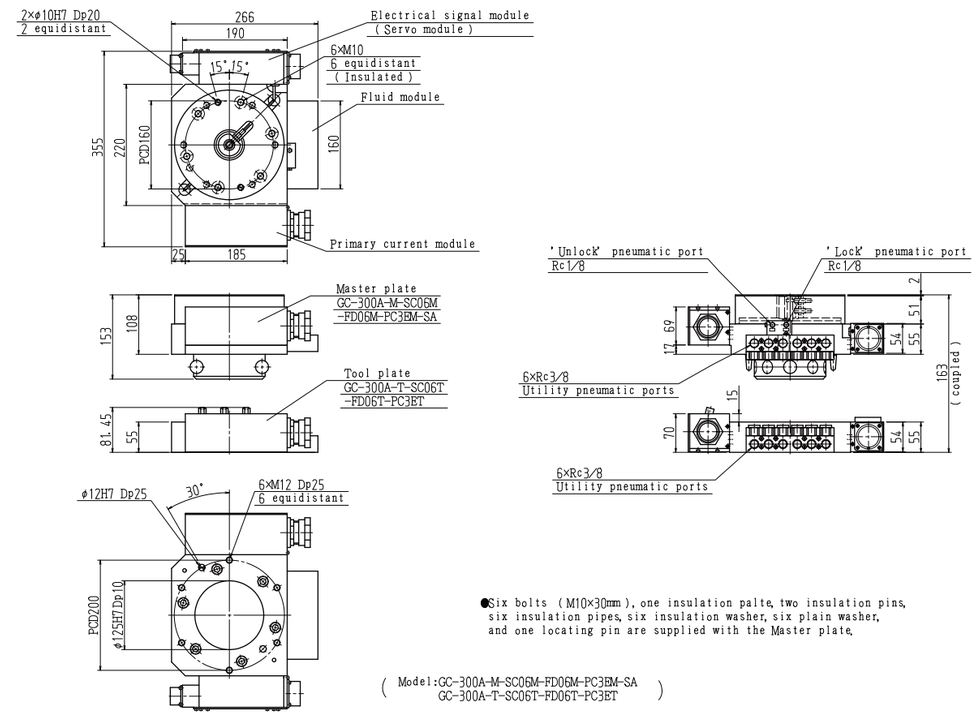
FDXX	No module
FD24	2 coolant parts, 4 pneumatic ports
FD42	4 coolant parts, 2 pneumatic ports
FD40	4 coolant parts, no pneumatic ports
FD02	No coolant part, 2 pneumatic ports
FD04	No coolant part, 4 pneumatic ports
FD06	No coolant part, 6 pneumatic ports

PCXX	No module
PC3D	3 primary current (440V81KVA)
PC3E	3 primary current (440V81KVA)
PCC0	Cover (Tool plate)

SA	For PCD160 robot flange
SB	To user requirements

※GC-300A is interchangeable with the previous GC-300.

Main Body Dimensions



Module

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SC04M. SC06M

Tool plate

SC04T. SC06T

Primary current module

Master plate

PC3DM

Tool plate

PC3DT

Primary current module

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 specitic applications.
(Note 4) Please reter to the installation & Maintenance Manual when using.

※1 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). ※2 Coupling force is the force to achieve specified repeatability. Coupling will be maintained until unlock pressure is applied or the device is damaged. ※3 Weight shown is of GC-300-ES28-FD24-PC3E-SA. ※4 Allowable current is total 113.7 A for connector. ※5 Allowable current is total 62.5A for connector. ※6 Allowable current is total 71.6A for connector.