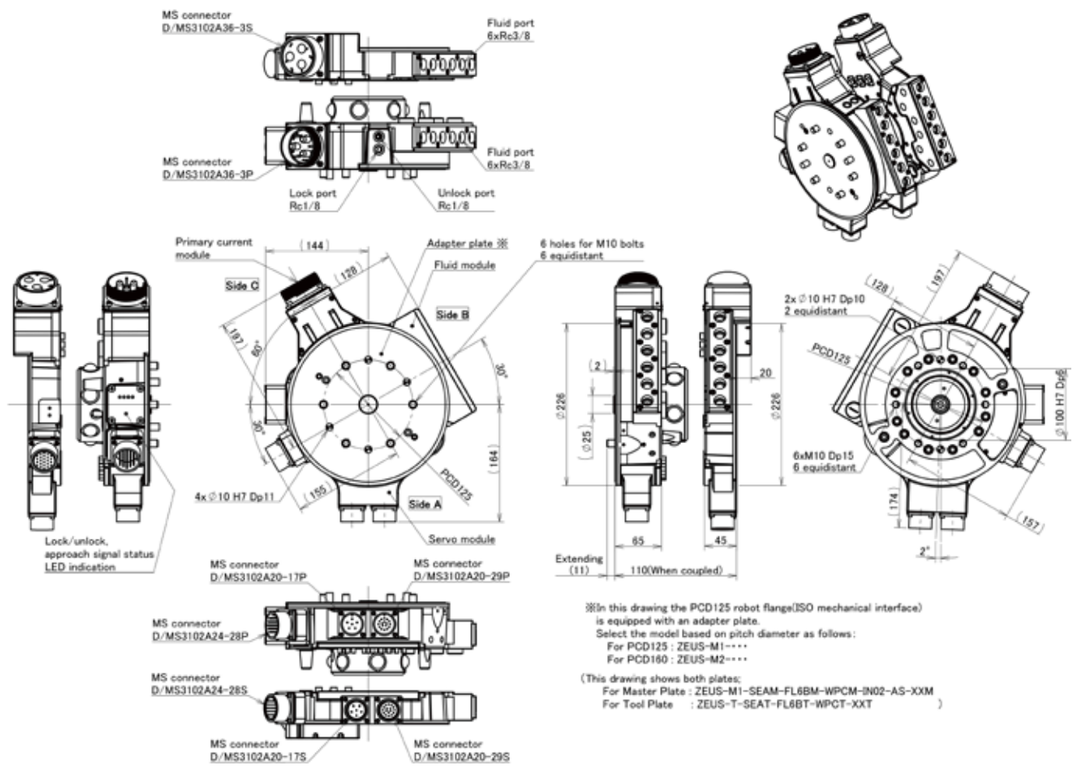
ZEUS･GIGA Main Body Dimensions

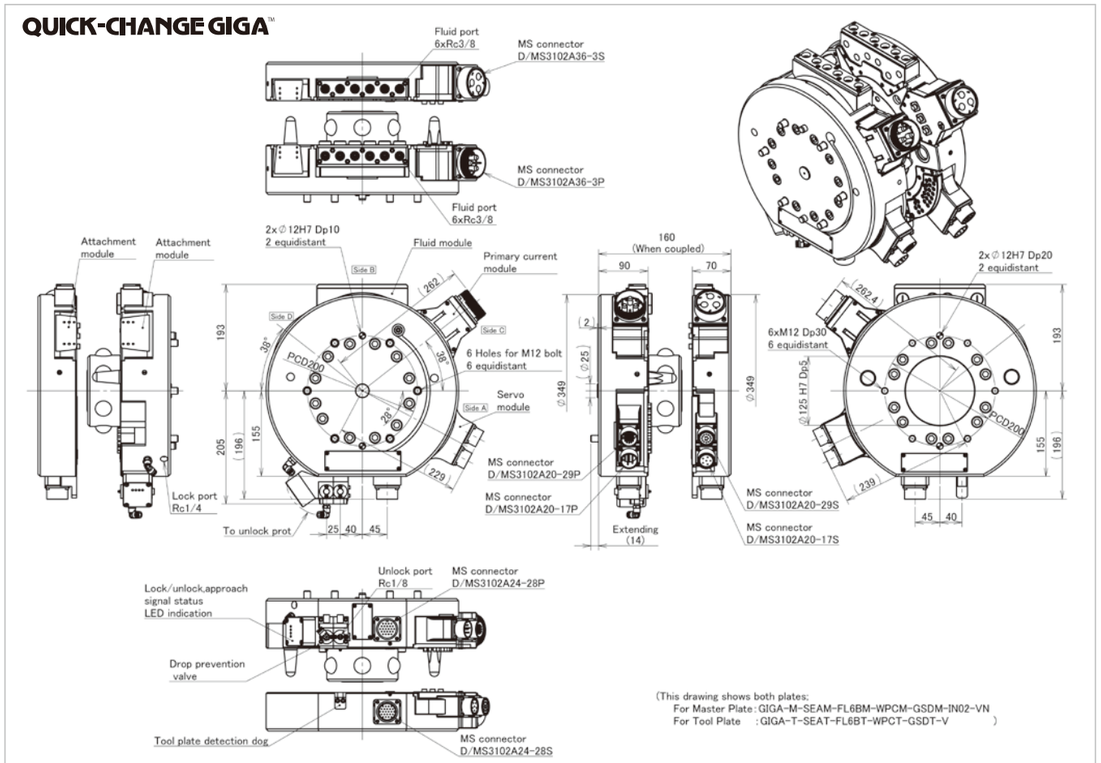
QUICK-CHANGE ZEUS™



※In this drawing the PCD125 robot flange(ISO mechanical interface) is equipped with an adapter plate.
Select the model based on pitch diameter as follows:
For PCD125 : ZEUS-M1-････
For PCD160 : ZEUS-M2-････

(This drawing shows both plates;
For Master Plate : ZEUS-M1-SEAM-FL6BM-WPCM-IN02-AS-XXM
For Tool Plate : ZEUS-T-SEAT-FL6BT-WPCT-XXT)

QUICK-CHANGE GIGA™



(This drawing shows both plates;
For Master Plate : GIGA-M-SEAM-FL6BM-WPCM-GSDM-IN02-VN
For Tool Plate : GIGA-T-SEAT-FL6BT-WPCT-GSDT-V)

BL AUTOTEC

QUICK-CHANGE ZEUS™ / GIGA™

Heavy Payload QUICK-CHANGE

BANDO GROUP

BL AUTOTEC, LTD.
3-17, Meiwa-dori, 3-chome, Hyogo-ku, Kobe, 652-0883, Japan
TEL +81-78-682-2612 FAX +81-78-682-2614

QUICK-CHANGE ZEUS™ for Next-Generation Robots

QUICK-CHANGE ZEUS™

QUICK-CHANGE ZEUS™ is available such as spot-welding gun exchange, material handling and tool changing. It can use for robot payloads of 150-230kg. ZEUS incorporates the proven locking mechanism of the BL Quick-Change. It is a new, advanced Quick-Change, and ZEUS is light weight and thinness when coupled.

Master plate
(ZEUS-M1N-SEAM-QL6BM-WPCM-IS-AS-XN)

Compact, Light, Thin!

The weight has been reduced by 50% and the outer dimension is 70% compared with our Servo Gun Changer for 220kg payloads. It is only 110mm thick when coupled, which minimizes stress on the robot. The round shape reduces interference by the wiring and hose on the robot arm.

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 bolt patterns on ZEUS match the ISO 9409 “mechanical interface” for pitches of φ125mm and φ160mm. It can be installed on almost all industrial robots with 150-230 kg capacity. We can custom-manufacture to suit other robot flanges.

Standard equipped lock/unlock sensor & LED indication!

A lock/unlock sensor and LED indications for “lock” or “unlock” are standard equipped on ZEUS, and an approach sensor (with LED indication) useful for teaching is available as an option.

Resolves communication errors!

Resolves servo signal communication errors with a plug-in module.

Various options available!

Options, such as fool-proof valves for drop prevention in predefined positions, solenoid valves and field bus systems are available. Please contact us for details.

Tool plate
(ZEUS-T-SEAT-QL6BT-WPCT-X)

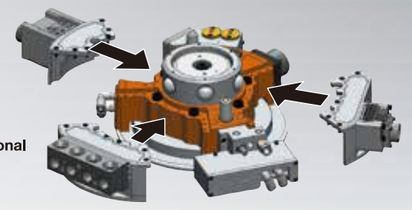
Specifications

Main body

Weight capacity (Rated load)		1,470~2,254N(150~230kg)	
Positioning repeatability ※1		±0.025mm	
Allowable dynamic moment	Bending direction (Tx.Ty)	3,332N・m(340kgf・m)	
	Torsional direction (Tz)	3,332N・m(340kgf・m)	
Coupling force (at 0.49MPa air pressure) ※2		27,444N(2,800kgf)	
Material	Frame	Aluminum alloy	
	Lock/unlock mechanism	stainless steel	
Outer dimension (When coupled)		φ226×H110 ㎜	
Product weight (Main body)	Master Plate	5.4kg	
	Tool Plate	2.3kg	
Electric signal connection (Built-in)	Connector(Master side)	5A×20	D/MS3102A24-28P
	Connector(Tool side)	※3	D/MS3102A24-28S
Lock/unlock mechanism		Ball-locking mechanism	
Lock/unlock operation required air pressure		0.39 ～0.68MPa (4 ～7kgf/cm²)	
Allowable temperature and humidity range		0～50℃,35 ～90% (Non-condensing)	
Lock/unlock sensor	Lock status	1 built-in proximity switch	
	Unlock status	1 built-in proximity switch	
Insulation plate set	Model	With/without insulation plate	
	IS	Insulation plate (Fiber-reinforced Bakelite)	
	IN	Without insulation plate	

Over 1 million combinations available to meet your needs with flexible options!

May be used wiht conventional Quick Change modules.



Drop-prevention valve [Mechanical fool-proof system]

Optional safety system In case of lock/unlock solenoid valve malfunction. The Tool plate will not release from the Master plate except when it is located above the tool stand.

Lock/unlock Solenoid valve

A lock/unlock solenoid valve attached to the Master plate is available as an option.

Accessories for master plate (in case of Master plate is IN02)

※Select necessaryplates and options based on an application or a robot flange.

In case of type of Master plate is M1 (PCD125)
(M1) ...Stepped Parallel Pin (φ10×25) ×2pcs, Hexagon socket bolt (custom) (M10×65) ×6pcsWasher (φ14) ×6pcs

In case of type of Master plate is M2 (PCD160)
(M2) ...Stepped Parallel Pin (φ10×25) ×2pcs, Hexagon socket bolt (custom) (M10×50) ×6pcsHexagon socket bolt (custom) (M10×20) ×6pcs, Washer (φ14) ×12pcs,
(M3) ...Stepped Parallel Pin (φ10×25) ×2pcs, Hexagon socket bolt (custom) (M10×50) ×6pcsHexagon socket bolt (custom) (M10×20) ×6pcs, Washer (φ14) ×6pcs, Washer (for M12) ×6pcs

(※1) Postional repeatablity is defined as the repeability of a Tool Plate(A) mated with a Master Plate after repeated couplings and uncouplings, not the repeatabity of a Tool Plate(A) and a Tool Plate(B).
(※2) Coupling force means force which assure repeatability, coupling of Quick changeis kept until supplying air for uncoupling or destroyed by crush. (※3) 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 ※4		D/MS3102A20-17P	D/MS3102A20-17S
		Electric signals 5A (220V) ×17 ※5		D/MS3102A20-29P	D/MS3102A20-29S
	SEYAM (T) SEYBM (T)	Servo powers 20A (500V) ×6 ※6		D/MS3102A20-15P	D/MS3102A20-15S
		Electric signals 5A (220V) ×17 ※5		D/MS3102A20-29P	D/MS3102A20-29S
	SEPAM (T) SEPBM(T)	Servo powers 20A (500V) ×6 ※4		D/MS3102A20-17P	D/MS3102A20-17S
		Electric signals 5A (220V) ×17 ※5		D/MS3102A20-29P	D/MS3102A20-29S
		Electric signals 5A (220V) ×37 ※7		D/MS3102A28-21P	D/MS3102A28-21S
Fluid module ※9	FL4AM/FL4BM	4 ports	Master Plate side	4 ports Rc3/8 (self-sealing) for both of coolant and pneumatic	
	FL4AT/FL4BT		Tool Plate side		
	FP4AT/FP4BT		Tool Plate side	4 ports Rc3/8 (pass-through) for pneumatic	
	QL4AM/QL4BM		Master Plate side	4 ports Rc3/8 (self-sealing) for both of coolant and pneumatic	
	QL4AT/QL4BT		Tool Plate side		
	QP4AT/QP4BT		Tool Plate side	4 ports Rc3/8 (pass-through)	
	FL6AM/FL6BM	6 ports	Master Plate side	6 ports Rc3/8 (self-sealing) for both of coolant and pneumatic	
	FL6AT/FL6BT		Tool Plate side		
	FP6AT/FP6BT		Tool Plate side	6 ports Rc3/8 (pass-through) for pneumatic	
	QL6AM/QL6BM		Master Plate side	6 ports Rc3/8 (self-sealing) for both of coolant and pneumatic	
	QL6AT/QL6BT		Tool Plate side		
	QP6AT/QP6BT		Tool Plate side	6 ports Rc3/8 (pass-through)	
Pneumatic port	P38AM (T) * P38BM (T) *	4 ports		4 ports Rc3/8 (pass-through)	
Electric signal module	JXAM(T)* JXBM(T)*	5A×16 ※10		JMR-2116M-D	JMR-211 6 F-D
	RXAT* RXBT*	5A×16 (without connector) ※11			terminal for solder
	MWXAM(T) MWXBM(T)	13A×10 Resistance to dust and wator		D/MS3102A18-1P	D/MS3102A18-1S
	BNXAM (BDXAT) * BNXBM (BDXBT) *	non-contact electric signal 15 NPN output		WEBR2119MS-D	WEBR2116FS-D
	BPXAM (BDXAT) * BPXBM (BDXBT) *	non-contact electric signal 15 PNP output		WEBR2119MS-D	WEBR2116FS-D
Ground contact module	E51AM (T) * E51BM (T) *	500A×1 (usage：50%)			
Attachment module	GLAM (T) GLBM (T)	Attachment module for A or B side. (For adding conventional Quick change options)			
Cover	LCAM (T) LCBM (T)	Cover for A side or B side ※13			

■Module for C-side

	Model	Capacity and number of contacts	Connector for Master Plate side	Connector for Tool Plate side
Primary current module	WPCM (T)	200A (usage: 25%) 600V Sequence 100A (600V) ×3 ※8 Thermo signal: 5A (200V) ×3	D/MS3102A36-3P	D/MS3102A36-3S
	WSCM (T)		Seal connector ABS-3632	
Pneumatic port	P18CM (T) *	4 ports	Rc1/8×4 (pass-through)	
	P3WCM (T) *	2 ports	Rc3/8×2 (pass-through)	
Electric signal module	JCM (T) *	5A×16 ※10	JMR-2116M-D	JMR-2116F-D
	RCT*	5A×16 (without connector) ※11		terminal for solder
	MCM(T)*	13A×10 ※12	D/MS3102A18-1P	D/MS3102A18-1S
	MWCM(T)	13A×10 Resistance to dust and wator	D/MS3102A18-1P	D/MS3102A18-1S
	BNCM (BDCT) *	non-contact electric signal 15 NPN output	WEBR2119MS-D	WEBR2116FS-D
	BPCM (BDCT) *	non-contact electric signal 15 NPN output	WEBR2119MS-D	WEBR2116FS-D
Ground contact module	E51CM (T) *	500A×1 (usage：50%)		
Attachment module	GSCM (T)	Attachment module for C-side (For fitting conventional Quick change options onto C-side)		
Cover	SCCM (T)	Cover for C side ※13		

＊include attachment module (Will interfere with Large Cover (SC) on Tool Plate if cover is attached)

■Miscellaneous accessories

Approach sensor	AS	With approach sensors : 2 Proximity switches for sensing tool plate (AC 2 cords)
	AN	Without approach sensor
Drop-prevention valve (Fool proof) Lock/unlock Solenoid valve	VE VN XE XN	V : With valve for prevent releasing tool plate In case malfunction of solenoid valve for lock/unlock or operation mistake, tool plate is never released places except tool stand. X : Without valve for prevent releasing tool plate E : With solenoid valve for lock/unlock N : Without solenoid valve for lock/unlock

(※4) Allowable current is Max.20A for pin(13A for pin No.F) and total allowable current is 71.6A for connector. (※5) Allowable current is total 81.7A for connector. (※6) Allowable current is total 83.7A for connector. Connector has 7 pins. (※7) Allowable current is total 120.2A for connector. (※8) Allowable current is total 290.6A for connector. (※9) Maximum allowable working pressure is 0.7MPa. Port with self-sealing of Fluid module cannot be used for vacuum. (※10) Allowable current is total 30.4A for connector. (※11) Type of connector for master side is JXM. (※12) Allowable current is total 57.2A for connector.
(※13) Cover must be used for Master Plate.If QL or QP module is fitted onto Master Plate, Covers for Tool Plate cannot be used.

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

ZEUS −M1N− / −M2N− / −M3N− / −M1P− / −M2P− / −M3P− → (PCD mounting robot (type of sensors PNP or NPN (for lock/unlock and approach)) M1=PCD125mm,M10 / M2=PCD160mm,M10 / M3=PCD160mm,M12 / N =Sensor output NPN / P =Sensor output PNP)

Module for A-side □□□AM − Module for B-side □□□BM − Module for C-side □□□CM − Insulation plate (Adaptor plate with boss) □□□□ − Approach sensor □□ − Drop-prevention valve Lock/unlock Solenoid valve □□

Insulation plate (Adaptor plate with boss)	
IS	With insulation plate
IN02	Without insulation plate, knock pin x 2
IN50	Without insulation plate, inlay φ50 n7
IN63	Without insulation plate, inlay φ63 n7
IN80	Without insulation plate, inlay φ80 n7
IN10	Without insulation plate, inlay φ100 n7
INAB	For ABB robot (Boss φ100) n7

(Master Plate side only)
※Insulation adheres to article 58 of Electrical Equipment Technical Standard

Approach sensor	
AS	With approach sensors
AN	Without approach sensor

(Master Plate side only)
When selecting M3, Only INAB is available and IS is also excluded from option.
When selecting M1 or M2, INAB is unavailable.

Drop-prevention valve Lock/unlock Solenoid valve	
VE	With valve for prevent releasing tool plate With solenoid valve for lock/unlock ※
VN	With valve Without solenoid valve
XE	Without valve With solenoid valve ※
XN	Without valve Without solenoid valve

※When you add solenoid valve, usable electric singnal(Built-in) are limited upto 18.

Tool plate

ZEUS −T− Module for A-side □□□AT − Module for B-side □□□BT − Module for C-side □□□CT − Drop-prevention valve □

【Servo module】

SE	Servo power 20A×6 ※4 Electric signal 5A×17 ※5
SEY	Servo power 20A×6 ※6 Electric signal 5A×17 ※5 Connector for motor has 7pins
SEP	Servo power 20A×6 ※4 Electric signal 5A×17 ※5 Electric signal 5A×37 ※7 37prove contacts is added in serve module
LC	Covers for A and B ※13

【Fluid module】※9

FL4	4 cooling water ports or pneumatic port
FP4	4 pneumatic ports for Tool Plate
QL4	4 cooling water ports or pneumatic port
QP4	4 pneumatic ports for Tool Plate
FL6	6 cooling water ports or pneumatic port
FP6	6 pneumatic ports for Tool Plate
QL6	6 cooling water ports or pneumatic port
QP6	6 pneumatic ports for Tool Plate
LC	Covers for A and B ※13

【Pneumatic port】

P38	Pneumatic Rc3/8×4
LC	Covers for A and B ※13

【Electric signal module】

JX	J16A module 5A×16
RX	5A×16 for Tool Plate ※11
MX	without connector
MWX	13A×10 Resistance to dust and wator
BNX	non-contact electric signal15 NPN output for Master Plate
BPX	non-contact electric signal15 PNP output for Master Plate
BDX	non-contact electric signal 15 Sensor input for Tool Plate
LC	Covers for A and B ※13

【Other】

E51	500A×1
GL	Attachment module
LC	Covers for A and B ※13

【Primary current module】

WP	200A(usage: 25%) 600V Sequence 100A(600V)×3 ※8 Thermo signal: 5A(200V)×3 (WP : receptacle type WS : seal connector type)
WS	
SC	Cover for C side ※13

【Pneumatic port】

P18	Pneumatic Rc1/8×4
P3W	Pneumatic Rc3/8×2
SC	Cover for C side ※13

【Electric signal module】

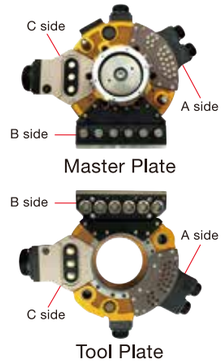
J	J16A module 5A×16
R	5A×16 (without connector) for Tool Plate ※11
M	13A×10 (insertion contact) ※12
MW	13A×10 Resistance to dust and wator
BN	non-contact electric signal15 NPN output (available for master plate only)
BP	non-contact electric signal15 PNP output (available for master plate only)
BD	non-contact electric signal15 Sensor input (available for tool plate only)
SC	Cover for C side ※13

【Other】

E51	500A×1
GS	Attachment module
SC	Cover for C side ※13

Drop-prevention valve	
V	With valve prevent releasing tool plate
X	Without valve for prevent releasing tool plate

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 contents of this catalog are subject to change without notice. Check with BL Autotec for updated catalog content if your catalog was issued more than one year ago. ・This catalog is note be reproduced, in whole or in part, without the express permission of BL Autotec.

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

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.

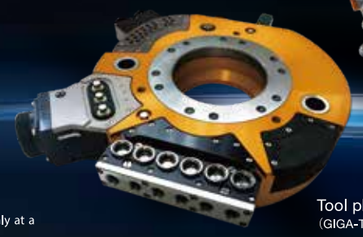
Conforms to ISO standards for robot flanges!

The GIGA bolt pattern is compatible with heavy payload robot flanges.
Bolt pattern: PCD 200, M12×6 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-M1N-SEAM-QL6BM-WPCM-SCDM-VE)



Tool plate
(GIGA-T-SEAT-QL6BT-WPCT-SCDT-V)

Specifications

Main body

Load capacity (Rated load)		6,860N(700kg)
Positional repeatability ※1		±0.025mm
Allowable dynamic moment	Bending direction (Tx.Ty)	7,840N・m(800kgf・m)
	Twisting direction (Tz)	5,880N・m(600kgf・m)
Coupling force (at 0.49MPa air pressure) ※2		63,239N(6,453kgf)
Material	Frame	Aluminum alloy
	Lock/unlock mechanism	stainless steel
Overall dimension (When coupled)		φ350×H160mm
Product weight (Main body)	Master Plate	25kg
	Tool Plate	15kg

Electric signal connection (Built-in)	Connector(Master side)	5A×20 ※3	D/MS3102A24-28P
	Connector(Tool side)		D/MS3102A24-28S
Lock/unlock mechanism		Ball-locking mechanism	
Lock/unlock operation required air pressure		0.39～0.68MPa (4～7kgf/cm²)	
Allowable temperature and humidity range		0～50°C,35～90% (Non-condensing)	
Lock/unlock sensor	Lock status	1 built-in proximity switch	
	Unlock status	1 built-in proximity switch	
Drop prevention valve		Mechanical Valve	

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

(※1) Postional repeatability is defined as the repeability of a Tool Plate(A) mated with a Master Plate after repeated couplings and uncouplings, not the repeatabity of a Tool Plate(A) and a 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) 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 ※4		D/MS3102A20-17P	D/MS3102A20-17S
		Electric signals 5A (220V) ×17 ※5		D/MS3102A20-29P	D/MS3102A20-29S
	SEYAM (T) SEYBM (T)	Servo powers 20A (500V) ×6 ※6		D/MS3102A20-15P	D/MS3102A20-15S
		Electric signals 5A (220V) ×17 ※5		D/MS3102A20-29P	D/MS3102A20-29S
	SEPAM (T) SEPBM(T)	Servo powers 20A (500V) ×6 ※4		D/MS3102A20-17P	D/MS3102A20-17S
		Electric signals 5A (220V) ×17 ※5		D/MS3102A20-29P	D/MS3102A20-29S
		Electric signals 5A (220V) ×37 ※7		D/MS3102A28-21P	D/MS3102A28-21S
Fluid module ※9	FL4AM/FL4BM	4 ports	Master Plate side	4 ports Rc3/8 (self-sealing) for both of coolant and pneumatic	
	FL4AT/FL4BT		Tool Plate side		
	FP4AT/FP4BT		Tool Plate side	4 ports Rc3/8 (pass-through) for pneumatic	
	QL4AM/QL4BM		Master Plate side	4 ports Rc3/8 (self-sealing) for both of coolant and pneumatic	
	QL4AT/QL4BT		Tool Plate side		
	QP4AT/QP4BT		Tool Plate side	4 ports Rc3/8 (pass-through)	
	FL6AM/FL6BM	6 ports	Master Plate side	6 ports Rc3/8 (self-sealing) for both of coolant and pneumatic	
	FL6AT/FL6BT		Tool Plate side		
	FP6AT/FP6BT		Tool Plate side	6 ports Rc3/8 (pass-through) for pneumatic	
	QL6AM/QL6BM		Master Plate side	6 ports Rc3/8 (self-sealing) for both of coolant and pneumatic	
	QL6AT/QL6BT		Tool Plate side		
	QP6AT/QP6BT		Tool Plate side	6 ports Rc3/8 (pass-through)	
Pneumatic port	P38AM (T) ＊ P38BM (T) ＊	4 ports		4 ports Rc3/8 (pass-through)	
Electric signal module	JXAM(T)＊ JXBM(T)＊	5A×16 ※10		JMR-2116M-D	JMR-211 6 F-D
	RXAT＊ RXBT＊	5A×16 (without connector) ※11			terminal for solder
	MWXAM(T) MWXBM(T)	13A×10 Resistance to dust and wator		D/MS3102A18-1P	D/MS3102A18-1S
	BNXAM (BDXAT) ＊ BNXBM (BDXBT) ＊	non-contact electric signal 15 NPN output		WEBR2119MS-D	WEBR2116FS-D
	BPXAM (BDXAT) ＊ BPXBM (BDXBT) ＊	non-contact electric signal 15 PNP output		WEBR2119MS-D	WEBR2116FS-D
Ground contact module	E51AM (T) ＊ E51BM (T) ＊	500A×1 (usage：50%)			
Attachment module	GLAM (T) GLBM (T)	Attachment module for A or B side. (For adding conventional Quick change options)			
Cover	LCAM (T) LCBM (T)	Cover for A side or B side ※13			

■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 Sequence 100A (600V)×3 ※8 Thermo signal: 5A (200V)×3	D/MS3102A36-3P	D/MS3102A36-3S
	WSCM (T) WSDM (T)		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 ※10	JMR-2116M-D	JMR-2116F-D
	RCT/RDT ＊	5A×16 (without connector) ※11		terminal for solder
	MCM(T) ＊ MDM(T) ＊	13A×10 ※12	D/MS3102A18-1P	D/MS3102A18-1S
	MWCM(T) MWDM(T)	Resistance to dust and wator 13A×10	D/MS3102A 18-1P	D/MS3102A 18-1S
	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
Ground contact module	E51CM (T) ＊ E51DM (T) ＊	500A×1 (usage：50%)		
Attachment module	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 side ※13		

＊include attachment module (Will interfere with Large Cover (SC) on Tool Plate if cover is attached)

■Miscellaneous accessories

Lock/unlock Solenoid valve	VE VN	In case malfunction of solenoid valve for lock/unlock or operation mistake, tool plate is never released places except tool stand. VE : With solenoid valve for lock/unlock VN : Without solenoid valve for lock/unlock

(※4) Allowable current is Max.20A for pin(13A for pin No.F) and total allowable current is 71.6A for connector. (※5) Allowable current is total 81.7A for connector. (※6) Allowable current is total 83.7A for connector. Connector has 7 pins. (※7) Allowable current is total 120.2A for connector. (※8) Allowable current is total 290.6A for connector. (※9) Maximum allowable working pressure is 0.7MPa. Port with self-sealing of Fluid module cannot be used for vacuum. (※10) Allowable current is total 30.4A for connector. (※11) Type of connector for master side is JXM. (※12) Allowable current is total 57.2A for connector.
(※13) Cover must be used for Master Plate.If QL or QP module is fitted onto Master Plate, Covers for Tool Plate cannot be userd.

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

GIGA –MN–
–MP–

Module for A-side □□□AM – Module for B-side □□□BM – Module for C-side □□□CM – Module for D-side □□□DM – Insulation plate (Adaptor plate with boss) □□□□ – Lock/unlock Solenoid valve □□

(MN＝Sensor output NPN
MP＝Sensor output PNP)

※Bolt pattern of interface to robot flange is PCD 200mm, M12

Insulation plate (Adaptor plate with boss)	
IS	With insulation plate
IN02	Without insulation plate, knock pin x 2
IN12	Without insulation plate, inlay φ125
IN16	Without insulation plate, inlay φ160

(Master Plate side only)
※Insulation adheres to article 58 of Electrical Equipment Technical Standard

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

※When you add solenoid valve, usable electric singnal(Built-in) are limited upto 18.

Tool plate

GIGA – T –

Module for A-side □□□AT – Module for B-side □□□BT – Module for C-side □□□CT – Module for D-side □□□DT – V

【Servo module】

SE	Servo power 20A×6 ※4 Electric signal 5A×17 ※5
SEY	Servo power 20A×6 ※6 Electric signal 5A×17 ※5 Connector for motor has 7pins
SEP	Servo power 20A×6 ※4 Electric signal 5A×17 ※5 Electric signal 5A×37 ※7 37prove contacts is added in serve module
LC	Covers for A and B ※13

【Fluid module】

FL4	4 cooling water ports or pneumatic port
FP4	4 pneumatic ports for Tool Plate
QL4	4 cooling water ports or pneumatic port
QP4	4 pneumatic ports for Tool Plate
FL6	6 cooling water ports or pneumatic port
FP6	6 pneumatic ports for Tool Plate
QL6	6 cooling water ports or pneumatic port
QP6	6 pneumatic ports for Tool Plate
LC	Covers for A and B ※13

【Pneumatic port】

P38	Pneumatic Rc3/8×4
LC	Covers for A and B ※13

【Electric signal module】

JX	J16A module 5A×16
RX	5A×16 for Tool Plate ※11
MX	without connector
MWX	13A×10 Resistance to dust and wator
BNX	non-contact electric signal 15 NPN output for Master Plate
BPX	non-contact electric signa l15 PNP output for Master Plate
BDX	non-contact electric signal 15 Sensor input for Tool Plate
LC	Covers for A and B ※13

【Other】

E51	500A×1
GL	Attachment module
LC	Covers for A and B ※13

【Primary current module】

WP	200A(usage: 25%) 600V Sequence 100A(600V)×3 ※8 Thermo signal: 5A(200V)×3
WS	(WP : receptacle type WS : seal connector type)
SC	Cover for C and D side ※13

【Pneumatic port】

P18	Pneumatic Rc1/8×4
P3W	Pneumatic Rc3/8×2
SC	Cover for C and D side ※13

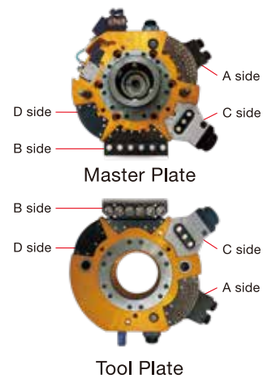
【Electric signal module】

J	J16A module 5A×16
R	5A×16 (without connector) for Tool Plate ※11
M	13A×10 (insertion contact) ※12
MW	13A×10 Resistance to dust and wator
BN	Remote sensor 15 NPN output (available for master plate only)
BP	Remote sensor 15 PNP output (available for master plate only)
BD	Remote sensor 15 Sensor input (available for tool plate only)
SC	Cover for C and D side ※13

【Other】

E51	500A×1
GS	Attachment module
SC	Cover for C and D side ※13

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.

High-grade Fluid module for QUICK-CHANGE ZEUS/GIGA models　New Product

New module added to existing fluid modules, FL4M/T, FL6M/T, FP4T, and FP6T.
Designed to withstand users' various environments such as water quality, and to increase maintainability/performance.

Decreased coolant drip by 90% compared with exsisting fluid modules.

Adopting stainless steel and resin in pipeline to prevent corrosion.

Floating function maitains sealability when coupled.

Adopting seal structure, strong to pinching debris.


QL4M


QL4T/QP4T


QL6M


QL6T/QP6T

Specifications

Model		QL4M/QL4T	QL6M/QL6T	QP4T ※1	QP6T ※1
Number of ports		4	6	4	6
Nominal diameter of port		Rc3/8			
Port specification		Self-seals on both Master and Tool side		Pass-through	
Usable fluid		For both of coolant and pneumatic		For pneumatic	
Product wight	Master side	approx.1.0kg	approx.1.1kg	–	
	Tool side	approx.0.9kg	approx.1.0kg	approx.0.9kg	approx.0.9kg
Pressure capability		Max.0.68Mpa(7kgf/cm²)			
CV value		0.95 ※2			
Coolant		Under and including 30℃ at water supply port ※3			

(※1) QP4T and QP6T are pneumatic only modules
(※2) Measured with running water
(※3) Citation from JIS C 9305 resistance welding machine

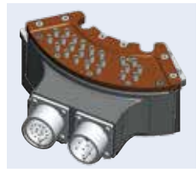
※The existing modules, FL4M/T, FL6M/T, FP4T, and FP6T are NOT compatible with the modules. Please contact and discuss with BL Autotec if you have any doubts in selection.

⚠【Caution on Tool side】
In case of attaching a fluid module on the Master side, please do NOT attach an Attachment Module (GL), or a cover to the Tool side (LC). The fluid module on the Master side will interfere with the covers and may damage the modules.

ZEUS･GIGA Modules

■Examples of optional modules (A or B side)

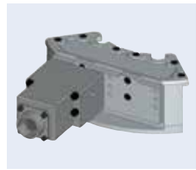
Master plate side


Servo module
SEAM / SEBM


Fluid module
FL6AM / FL6BM


Attachment module for adding Quick change options onto A･B-side
GLAM / GLBM


Pneumatic port
P38AM / P38BM


Electric signal module
BPAM / BPBM
BNAM / BNBM

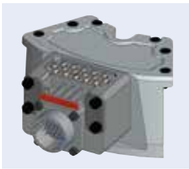

Servo module
SEPAM / SEPBM

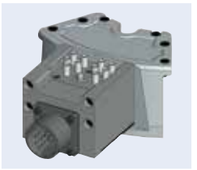
■Examples of optional module (C or D side)

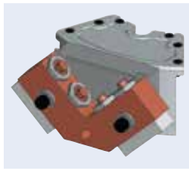
Master plate side


Primary current module
WSCM / WSDM

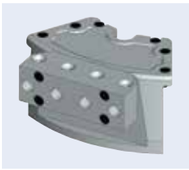

Attachment module for adding Quick change options onto C･D-side
GSCM / GSDM


Electric signal module
JCM / JDM

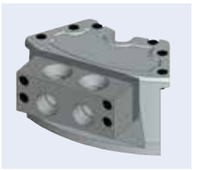

Electric signal module
M10CM / M10DM

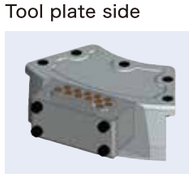

Ground contact module
E51CM / E51DM

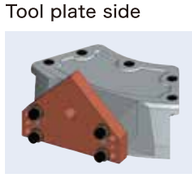
Tool plate side


Pneumatic port
P18CM / P18DM

Tool plate side


Pneumatic port
P3WCM / P3WDM


Electric signal module
RCT / RDT


Ground contact module
E51CT / E51DT

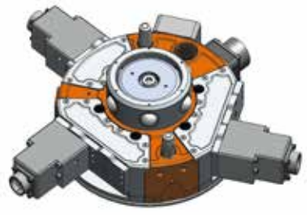
*Please refer to the below table below for details of optional modules.

ZEUS Application Lineup


1 Model for spot welding gun exchange.


2 Model for exchanging jig hands for material handling.


3 Model for exchanging hands or jigs on actuated servo motors.


4 Model for high humidity or wet environments. (Remote sensor water-proof IP68 is used for electric signal module)


5 Model for exchanging spot welding guns and for handring hands or jigs.