

QUICK-CHANGE®

ALL LINEUP



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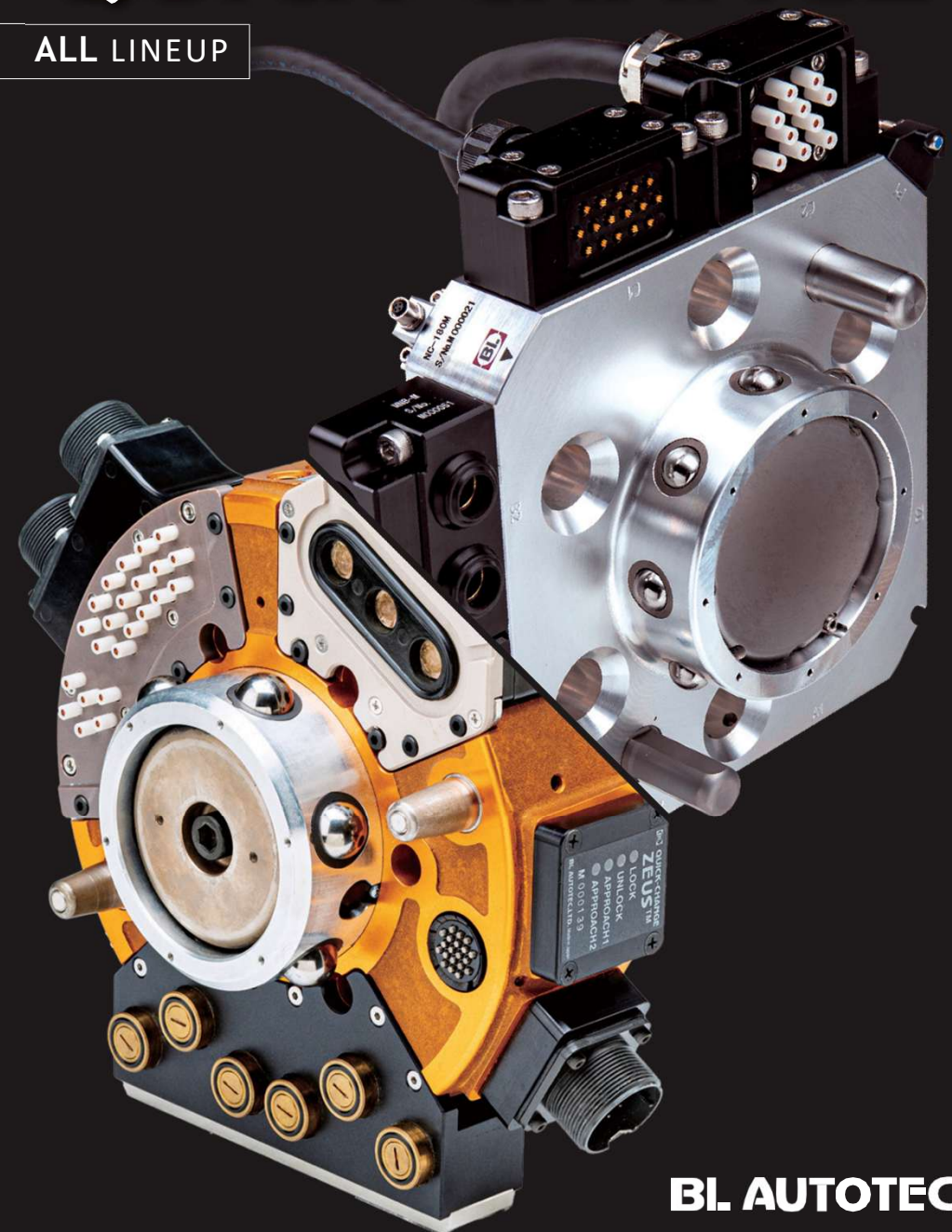
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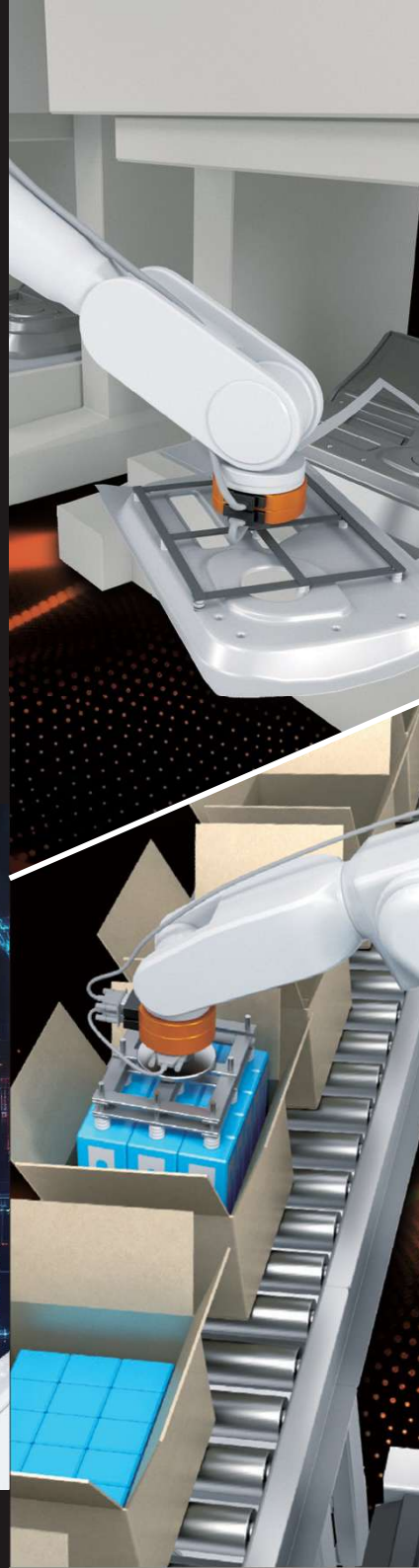
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BL AUTOTEC

BL AUTOTEC offers production line solutions that exceed expectations based on our abundant experience in the factory automation field.

With a proven track record, and as a pioneer maker of automatic tool changers, BL Autotec has been responding to customer needs and proposing solutions in this field since 1987. We offer optimum solutions to accommodate individual customer requirements, and deliver original products that exceed expectations.



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QUICK-CHANGE[®] NEO[™]

Test sample available!
Feel free to contact us.

Single-mindedly engineered with
Lightweight Design.

BL AUTOTEC, a pioneer in robot tool changers, has been pursuing a single goal for over 35 years—**weight reduction!** By bringing together expertise in customized solutions, we have finally achieved this goal with the development of the **QUICK-CHANGE NEO[™]** next-generation tool changer, which sets a new standard.

90kg payload model

NC-090

Module

Up to 6 locations
available for install

Minimized thickness for maximum slimness,
allowing direct mounting to ISO flange!

Amazing! Approximately 55% lighter!

We've applied weight reduction expertise gained during the development of the **QUICK-CHANGE ZEUS**. Without compromising fundamental performance, rigidity, or durability, we achieved a significant weight reduction of approximately 55% compared to the current model (Flex-70A).

Reduced robot load (compared to Flex-70A)

- The moment acting on the robot's wrist has been reduced by about 12% (equivalent to about 7kg).
- Reduced load means shorter task times. *When the center of gravity is located 300 mm from the tool mounting surface.



Improved workability

- A significant reduction in weight means shorter setup times and lower loads on robots and other equipment.

Lock/Unlock operation requires as little as 0.3 MPa air pressure!

The minimum lock/unlock operation air pressure has been lowered to 0.3 MPa aligning with the trend of reduced air pressure standardization in industries such as automotive manufacturing. This will also contribute to the achievement of the SDGs.

The NC-090 is designed to maintain sufficient damping force and moment resistance at 0.3 MPa, an improvement that also serves to reduce air consumption by over 15%.

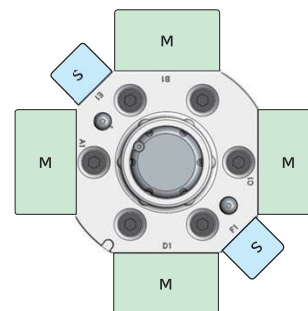
Principal specifications(Main body)

Payload capacity (kg)	40 ~ 90	
Positioning repeatability (mm)	±0.015	
Dynamic allowable bending moment (N·m)	830	
Dynamic allowable torsional moment (N·m)	830	
Lock/Unlock sensor (x: No, ○: Yes)	x	○
Outside diameter (mm)	□102	□102
Thickness (mm)	Master plate	28
	Tool plate	25
	Total	53
	Compared to Flex-70A	85.5%
		64.6%

Product weight (kg)	Master plate	0.95	1.15
	Tool plate	0.45	0.45
	Total	1.4	1.6
	Compared to Flex-70A	45.2%	40.5%
Lock/Unlock operation air pressure (MPa)		0.3 ~ 0.7	
Allowable temperature (°C)		0 ~ 55	
Humidity range (%)		35 ~ 90 (non-condensing)	
Direct mounting to ISO flange		○ (Interface No. 6: PCD80) *Choose your desired center fitting diameter.	

Flexible expandability

Modules can be chosen freely and installed to meet your specific needs!

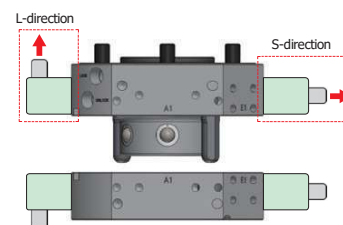


Modules can be installed at **up to 6 locations**

- M-size modules: Up to 4 locations (electrical and pneumatic)
- S-size modules: Up to 2 locations (approach sensor)

Please note that the **QUICK-CHANGE NEO[™]** tool changer and modules are sold separately. No modules are pre-installed at the time of factory shipment, so customers are requested to install them as desired.

Electrical module



Product model (Master plate)

Model	-	Payload (kg)	Master/Tool	-	Lock/Unlock sensor	Boss Diameter
NC		090	M		X	A
					N	
					P	

Product model (Tool plate)

Model	-	Payload (kg)	Master/Tool
NC		090	T

X: No A: φ50H7

N: Yes (NPN)

P: Yes (PNP)

*Lock/Unlock sensor (M5 connector, 4-pin, A-coding, male)

Electrical module *Module size:M

Module specifications (Cable length: 300 mm)	Connector	Master side		Tool side	
		Model number	Receptacle connector	Model number	Receptacle connector
2A×15wires (S-direction)	JM connector	MAA-M	JMCR-2116M-D	MAA-T	JMCR-2116F-D
2A×15wires (L-direction)	JM connector	MAB-M	JMCR-2116M-D	MAB-T	JMCR-2116F-D
2A×32wires (L-direction)	JM connector	MAC-M	JMCR-2116M-D JMCR-2116MX-D	MAC-T	JMCR-2116FX-D
13A×10wires (S-direction)	MSconnector	MAD-M	D/MS-3101A18-1P	MAD-T	D/MS-3101A18-1S
13A×10wires (L-direction)	MSconnector	MAE-M	D/MS-3101A18-1P	MAE-T	D/MS3101A18-1S
2A×15wires (S-direction)	-	MAF-M	-	MAF-T	-
2A×15wires (L-direction)	-	MAG-M	-	MAG-T	-
2A×32wires (L-direction)	-	MAH-M	-	MAH-T	-
13A×10wires (S-direction)	-	MAJ-M	-	MAJ-T	-
13A×10wires (L-direction)	-	MAK-M	-	MAK-T	-

*S-direction modules can be combined with L-direction modules.

Pneumatic module



Pneumatic module *Module size:M

Module specifications	Master side	Tool side
R1/8 × 4 ports (S-direction)	MNA-M	MNA-T
R3/8 × 2 ports (S-direction)	MNB-M	MNB-T

Approach sensor



Approach sensor *Module size:S

Module specifications	Master side	Tool side
Approach sensor (NPN, M8 connector, 3-pin, A-coding, male)	SVA-M	SVA-T
Approach sensor (PNP, M8 connector, 3-pin, A-coding, male)	SVB-M	

180kg payload model

NC-180

Module

Up to **10** locations
available for install



Minimized thickness for maximum slimness,
allowing direct mounting to ISO flange!

Amazing! Approximately 50% lighter!

We've applied weight reduction expertise gained during the development of the **QUICK-CHANGE[®] ZEUS**. Without compromising fundamental performance, rigidity, or durability, we achieved a significant weight reduction of approximately 50% compared to the current model (**QC-150C**).

Reduced robot load (compared to QC-150C)

- The moment acting on the robot's wrist has been reduced by about 15% (equivalent to about 20 kg).
- Reduced load means shorter tact times. *When the center of gravity is located 300 mm from the tool mounting surface.



Improved workability

- Significant reduction in weight means shorter setup times and lower loads on robots and other equipment.

Lock/Unlock operation requires as little as 0.3 MPa air pressure!

The minimum lock/unlock operation air pressure has been lowered to 0.3 MPa, aligning with the trend of reduced air pressure standardization in industries such as automotive manufacturing. This will also contribute to the achievement of the SDGs.
The NC-180 is designed to maintain sufficient clamping force and moment resistance at 0.3 MPa, an improvement that also serves to reduce air consumption by over 30%.

Principal specifications(Main body)

Payload capacity (kg)	90~180	
Positioning repeatability (mm)	±0.020	
Dynamic allowable bending moment (N·m)	2352	
Dynamic allowable torsional moment (N·m)	2352	
Lock/Unlock sensor (×: No ○: Yes)	×	○
Outside diameter (mm)	□162	□162
Thickness (mm)	Master plate	33
	Tool plate	31
	Total	64
	Compared to QC-150C	73.6%

Product weight (kg)	Master plate	2.8	3.2
	Tool plate	1.6	1.6
	Total	4.4	4.8
	Compared to QC-150C	50.7%	45.0%
Lock/Unlock operation air pressure (MPa)		0.3~0.7	
Allowable temperature (°C)		0~55	
Humidity range (%)		35~90(non-condensing)	
Direct mounting to ISO flange		○ (Interface No. 8: PCD125) *Choose your desired center fitting diameter.	

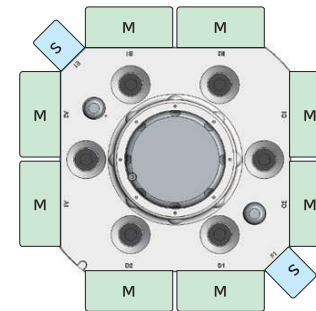
Flexible expandability

Modules can be chosen freely and installed to meet your specific needs!

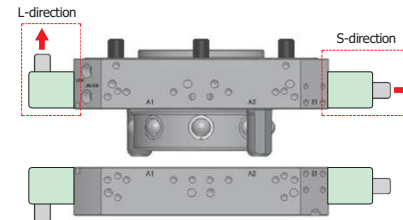
Modules can be installed at up to 10 locations

- M-size modules: Up to 8 locations (electrical and pneumatic)
- S-size modules: Up to 2 locations (approach sensor)

Please note that the **QUICK-CHANGE NEO[™]** tool changer and modules are sold separately. No modules are pre-installed at the time of factory shipment, so customers are requested to install them as desired.



Electrical module



Product model (Master plate)

Model	-	Payload (kg)	Master/Tool	-	Lock/Unlock sensor	Boss Diameter
NC		180	M		X	A
					N	B
					P	C

Product model (Tool plate)

Model	-	Payload (kg)	Master/Tool
NC		180	T

X: No A: φ50h7
N: Yes (NPN) B: φ63h7
P: Yes (PNP) C: φ80h7

*Lock/Unlock sensor (M5 connector, 4-pin, A-coding, male)

Electrical module *Module size:M

Module specifications (Cable length: 300 mm)	Connector	Master side		Tool side	
		Model number	Receptacle connector	Model number	Receptacle connector
2x15wires (S-direction)	JM connector	MAA-M	JMCR-2116M-D	MAA-T	JMCR-2116F-D
2x15wires (L-direction)	JM connector	MAB-M	JMCR-2116M-D	MAB-T	JMCR-2116F-D
2x32wires (L-direction)	JM connector	MAC-M	JMCR-2116M-D	MAC-T	JMCR-2116FX-D
3x12wires (S-direction)	MS connector	MAD-M	D/MS-3101A18-1P	MAD-T	D/MS-3101A18-1S
3x12wires (L-direction)	MS connector	MAE-M	D/MS-3101A18-1P	MAE-T	D/MS3101A18-1S
2x15wires (S-direction)	-	MAF-M	-	MAF-T	-
2x15wires (L-direction)	-	MAG-M	-	MAG-T	-
2x32wires (L-direction)	-	MAH-M	-	MAH-T	-
3x12wires (S-direction)	-	MAJ-M	-	MAJ-T	-
3x12wires (L-direction)	-	MAK-M	-	MAK-T	-

*S-direction modules can be combined with L-direction modules.

Pneumatic module



Pneumatic module *Module size:M

Module specifications	Master side	Tool side
Rc1/8 x 4 ports (S-direction)	MNA-M	MNA-T
Rc3/8 x 2 ports (S-direction)	MNB-M	MNB-T

Approach sensor



Approach sensor *Module size:S

Module specifications	Master side	Tool side
Approach sensor (NPN, M8 connector, 3-pin, A-coding, male)	SVA-M	SVA-T
Approach sensor (PNP, M8 connector, 3-pin, A-coding, male)	SVB-M	

ATOM

QUICK-CHANGE for collaborative robots, 5 kg load capacity

Main body

Applicable robot flange diameter: 60 9409-1 *1	PCD50
Load capacity (Rated load)	49N (5kg)
Positional repeatability (including Z-axis) *2	±0.05mm
Allowable dynamic moment	Bending direction (Tx,Ty) 15N·m (1.5kgf·cm) Twisting direction (Tz) 20N·m (2.0kgf·cm)
Product weight (Main body part)	Master plate 330g Tool plate 260g
Outer dimensions (when fastened, excluding leaf spring and connector)	φ75xH35mm
Electrical signal	1.5 A x 8 (30 VDC)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)

※ Can be attached directly on collaborative robots such as CRX (FANUC), Universal Robots and Techman.



QC-1

Quick-Change, 1 kg load capacity

Main body

Load capacity (Rated load)	9.8N (1kg)
Positional repeatability*1	±0.015mm
Allowable dynamic moment	Bending direction (Tx,Ty) 4N·m (40.8kgf·cm) Twisting direction (Tz) 16.6N·m (169.4kgf·cm)
Fastening force (when air pressure is 0.49 MPa)*2	185N (18.9kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ32xH29mm
Product weight (Main body part)	Master plate Approx. 60 g Tool plate Approx. 30 g
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39 to 0.68 MPa (4 to 7 kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)



Master plate
(QC-1-M-DA1-XA2-VB1-XB2)



Tool plate
(QC-1-T-DA1-XA2-VB1-XB2)

Light-5A

Quick-Change, 5 kg load capacity

Main body

Load capacity (Rated load)	49N (5kg)
Positional repeatability*1	±0.01mm
Allowable dynamic moment	Bending direction (Tx,Ty) 254N·m (260kgf·cm) Twisting direction (Tz) 332N·m (340kgf·cm)
Fastening force (when air pressure is 0.49 MPa)*2	612.5N (62.5kgf)
Material	Master plate Stainless steel Tool plate Aluminum alloy (coupling/uncoupling part is stainless steel)
Outer dimensions (when fastened)	φ49xH43.5mm
Product weight (Main body part)	Master plate Approx. 260 g Tool plate Approx. 100 g
Coupling/uncoupling mechanism	Ball-lock system (self-separating mechanism)
Coupling/uncoupling working air pressure	0.39 to 0.68 MPa (4 to 7 kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)
Utilities	Pneumatic port M5x6



Master plate
(Light-5A-M-H20A)



Tool plate
(Light-5A-T-H20A)

QC-10C

Quick-Change, 10 kg load capacity

Main body

Load capacity (Rated load)	98N (10kg)
Positional repeatability*1	±0.01mm
Allowable dynamic moment	Bending direction (Tx,Ty) 48N·m (500kgf·cm) Twisting direction (Tz) 666N·m (700kgf·cm)
Fastening force (when air pressure is 0.49 MPa)*2	970.8N (99kgf)
Material	Master plate Stainless steel Tool plate Aluminum alloy (coupling/uncoupling part is stainless steel)
Outer dimensions (when fastened)	φ50xH35.5mm
Product weight (Main body part)	Master plate Approx. 245 g Tool plate Approx. 85 g
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39 to 0.68 MPa (4 to 7 kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)
Utilities	Pneumatic port M5x6



Master plate
(QC-10C-M-K20A)



Tool plate
(QC-10C-T-K20A)

CT8/CT16

Connector-type contact block

Connector type for easy connection!

Easy connection with M8 connector cables

Organized cable routing makes it less susceptible to disconnection!

No soldering work is required, so it can be handled safely even by inexperienced users.

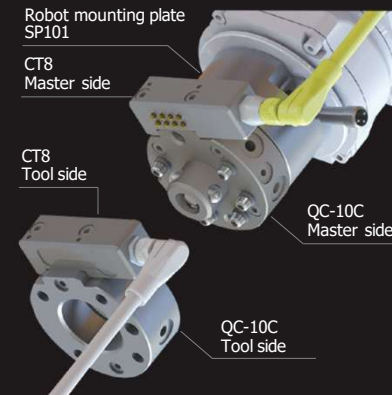
Rounded shape for safe handling!

Chamfered edges improved safety and workability.

Electrical signal contact block CT8

Number of electrodes	8
Maximum current	1.5A
Maximum voltage	30V
Connection method	Spring probe
Terminal	M8connector
Weight	Master side: 21g Tool side: 21g
Mating plug (Model example)*	Master side: CONEC SAL-8-RS8-2/A1(42-1123Q) PVC 2 m Tool side: CONEC SAL-8-RS8-2/A1(42-1122Q) PVC 2 m

*Use M8connector pins of A-coding.



Robot mounting plate
SP101

CT8
Master side

CT8
Tool side

QC-10C
Master side

QC-10C
Tool side

Compatible robot manufacturers and models	YASKAWA MOTOMAN GP7 / GP8	FUJIKOSHI MZ07	FANUC M-10iA	Kawasaki RS007(N)(L) UR MATE200iC(D)	Mitsubishi RV-7FR DENSO VS-068/087	Compatible with ho llow wrist robots	
	AP101	AP102	AP103	AP104 *	AP105	AP106	
Robot mounting plate type							
Robot mounting plate type with Lock /Unlock sensor	SP101	SP102	SP103	SP104 *	Installation example of robot mounting plate with sensor		

*Can also be used for the dual-armed SCARA robot duRo manufactured by Kawasaki. For more information, please contact us.

*1 Positional repeatability refers to the repeatability achieved when repeatedly locking and unlocking tool plate (A) to specific master plate.

It does not indicate the repeatability between tool plate (A) and tool plate (B) when locking and unlocking different tool plates.

*2 Coupling force means force which assures repeatability. Coupling itself is kept by unlocking with air supply or it's broken.

■ QC-20D

Quick-Change, 20 kg load capacity

Main body

Load capacity (Rated load)	190N (20kg)
Positional repeatability*1	±0.015mm
Allowable dynamic moment	Bending direction (Tx,Ty) 1136N·m (160 kgf·cm) Twisting direction (Tz) 1568N·m (160 kgf·cm)
Fastening force (when air pressure is 0.49 MPa)*2	2,059N (210kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ90xH42.4mm
Product weight (Main body part)	Master plate Approx. 515 g Tool plate Approx. 355 g
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39 to 0.68 MPa (4 to 7 kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)

Master plate
(QC-20D-M-DAPA)

Tool plate
(QC-20D-T-DAPA)

■ FlexR-25

Quick-Change, 25 kg load capacity

Main body

Load capacity (Rated load)	245N (25kg)
Positional repeatability*1	±0.015mm
Allowable dynamic moment	Bending direction (Tx,Ty) 113.6N·m (1,160kgf·cm) Twisting direction (Tz) 156.8N·m (1,600kgf·cm)
Fastening force (when air pressure is 0.49 MPa)*2	2,381N (243kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ98xH58mm
Product weight (Main body part)	Master plate Approx. 660 g Tool plate Approx. 470 g
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39 to 0.68 MPa (4 to 7 kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)
Utilities	Pneumatic port Rc1/8 × 8

Master plate

Tool plate

Standard optional contact blocks can be mounted on two sides

Signal contact blocks and wiring-saving modules, which previously could only be installed on models with 40 kg or more load capacity, can be installed on both the A and B sides. This greatly expanded the range of applications.

Increased protection class of main body

The coupling/uncoupling part conforms to protection classes IP66 and IP67*, offering excellent environmental resistance. All rubber materials such as packings are made of fluorine, which exhibits excellent environmental resistance.

*IP protection class represents the rating of protection against water. Therefore, the sealing performance may be degraded depending on the type or brand of coolant, cleaning fluid, or other liquids. If rubber degradation (swelling, ozone degradation, etc.) is found due to the usage environment and conditions, please contact us for consultation.

[Environmentally resistant specification]

Master plate

Tool plate

※Product image with non-contact electrical block

■ Flex-40B

Quick-Change, 40 kg load capacity

Main body

Load capacity (Rated load)	392N (40kg)
Positional repeatability*1	±0.015mm
Allowable dynamic moment	Bending direction (Tx,Ty) 314N·m (32 kgf·cm) Twisting direction (Tz) 480N·m (44 kgf·cm)
Fastening force (when air pressure is 0.49 MPa)*2	4,000N (408kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ115xH54mm
Product weight (Main body part)	Master plate Approx. 1,140 g Tool plate Approx. 610 g
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39 to 0.68 MPa (4 to 7 kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)
Utilities	Pneumatic port Rc1/8 × 8

Master plate
(Flex-40B-M-116A-M10B-SX)

Tool plate
(Flex-40B-T-116A-M10B)

■ QC-60D

Quick-Change, 60 kg load capacity

Main body

Load capacity (Rated load)	589N (60kg)
Positional repeatability*1	±0.015mm
Allowable dynamic moment	Bending direction (Tx,Ty) 324N·m (40 kgf·cm) Twisting direction (Tz) 589N·m (60 kgf·cm)
Fastening force (when air pressure is 0.49 MPa)*2	6,570N (670kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ130xH47mm
Product weight (Main body part)	Master plate Approx. 1,340 g Tool plate Approx. 720 g
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39 to 0.68 MPa (4 to 7 kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)
Utilities	Pneumatic port Rc1/8 × 8

Master plate
(QC-60D-M-D15N-XXXX-SX)

Tool plate
(QC-60D-T-D15N-XXXX)

■ Flex-70A

Quick-Change, 70 kg load capacity

Main body

Load capacity (Rated load)	689N (70kg)
Positional repeatability*1	±0.015mm
Allowable dynamic moment	Bending direction (Tx,Ty) 689N·m (70 kgf·cm) Twisting direction (Tz) 784N·m (80 kgf·cm)
Fastening force (when air pressure is 0.49 MPa)*2	7,056N (720kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ139xH62mm
Product weight (Main body part)	Master plate Approx. 1,900 g Tool plate Approx. 1,200 g
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39 to 0.68 MPa (4 to 7 kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)
Utilities	Pneumatic port Rc1/8 × 8

Master plate
(Flex-70A-M-M10A-M10B-SX)

Tool plate
(Flex-70A-T-M10A-M10B)

*1 Positional repeatability refers to the repeatability achieved when repeatedly locking and unlocking tool plate (A) to specific master plate.

It does not indicate the repeatability between tool plate (A) and tool plate (B) when locking and unlocking different tool plates.

*2 Coupling force means force which assures repeatability. Coupling itself is kept by unlocking with air supply or it's broken.

■ QCP-100A

Quick-Change, 100 kg load capacity

Main body

Load capacity (Rated load)	980N (100kg)
Positional repeatability*1	±0.015mm
Allowable dynamic moment	Bending direction (Tx,Ty) 1,372N·m (140kgf·cm) Twisting direction (Tz) 1,372N·m (140kgf·cm)
Fastening force (when air pressure is 0.49 MPa)*2	10,290N (1,050kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ179×H76.5mm
Product weight (Main body part)	Master plate Approx. 3.7kg Tool plate Approx. 2.0kg
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39 to 0.68 MPa (4 to 7 kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)
Utilities	Pneumatic port Rc3/8 × 8

Master plate

(QCP-100A-M-J16A-XXXB-SX)

Tool plate

(QCP-100A-T-J16A-XXXB)

■ Flex-100B

Quick-Change, 100 kg load capacity

Main body

Load capacity (Rated load)	980N (100kg)
Positional repeatability*1	±0.015mm
Allowable dynamic moment	Bending direction (Tx,Ty) 1,372N·m (140kgf·cm) Twisting direction (Tz) 1,372N·m (140kgf·cm)
Fastening force (when air pressure is 0.49 MPa)*2	10,290N (1,050kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ179×H76.5mm
Product weight (Main body part)	Master plate Approx. 3,900g Tool plate Approx. 2,250g
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39 to 0.68 MPa (4 to 7 kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)
Utilities	Electrical signals Max. 5 DC/AC200V Probe contact Pneumatic port Rc3/8×4 (self-sealing) *4 Approach sensor Rc3/8×2 Senses Tool plate position up to 15mm distance

*1 Repeatability is rated under the specified conditions. *2 Fastening force is based on the specified conditions.

Master plate

(Flex-100B-M-J16A-M10B-SX)

Tool plate

(Flex-100B-T-J16A-M10B)

■ QC-150C

Quick-Change, 150 kg load capacity

Main body

Load capacity (Rated load)	1,470N (150kg)
Positional repeatability*1	±0.015mm
Allowable dynamic moment	Bending direction (Tx,Ty) 1,960N·m (200kgf·cm) Twisting direction (Tz) 1,960N·m (200kgf·cm)
Fastening force (when air pressure is 0.49 MPa)*2	14,317N (1,460kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ200×H87mm
Product weight (Main body part)	Master plate Approx. 5,810g Tool plate Approx. 2,860g
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39 to 0.68 MPa (4 to 7 kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)
Utilities	Pneumatic port Rc3/8 × 10

Master plate

(QC-150C-M-D37N-XXXZ-SX)

Tool plate

(QC-150C-T-D37N-XXXZ)

■ QC-166

Quick-Change, 166 kg load capacity

Main body

Load capacity (Rated load)	1,626N (166kg)
Positional repeatability*1	±0.015mm
Allowable dynamic moment	Bending direction (Tx,Ty) 2,000N·m (204kgf·cm) Twisting direction (Tz) 2,000N·m (204kgf·cm)
Fastening force (when air pressure is 0.49 MPa)*2	15,738N (1,606kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ203×H97mm
Product weight (Main body part)	Master plate Approx. 6.3kg Tool plate Approx. 2.7kg
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39 to 0.68 MPa (4 to 7 kgf/cm ²)
Allowable temperature and humidity range	0 to 50°C, 35 to 90% (no condensation allowed)
Safety mechanism	Piston lock (manual)
Utilities	Pneumatic port Rc3/8 × 10

Master plate

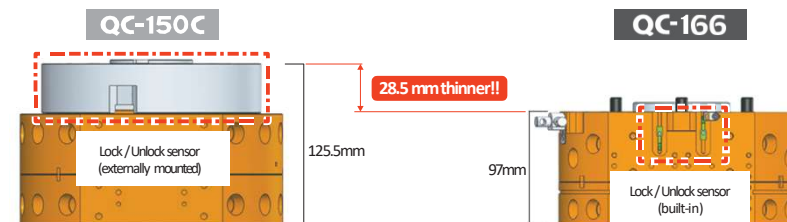
(QC-166-M-L16A-XXXB)

Tool plate

(QC-166-T-L16A-XXXB)

Thin and lightweight design achieved by built-in Lock / Unlock sensor

Compared to our current product (150 kg load capacity model), it achieved a 23% thinner and 15% lighter structure.

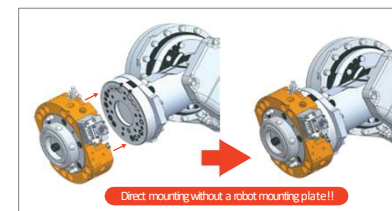


Can be installed directly to a robot

This model can be directly mounted to major Japanese robot without a robot mounting plate.

(Boss diameter varies depending on the robot, so please select an appropriate plate)

Robot manufacturer	Compatible models	Inlay plate
YASKAWA	SP16S	Select IN63
Kawasaki	ZX16SU	Select IN80
FANUC	R-2000ID/16SFH	Select IN80 *In the case of bracket flange version
FUJIKOSHI	SRA166	Select IN50



*Installation view

Additional safety measure with ATC equipped with a piston lock mechanism as standard.

A manual locking mechanism is provided to the master plate body to prevent accidental operation during teaching or falling of the tool during long vacation. When the piston lock mechanism is engaged, the tool does not fall even if air for uncoupling is mistakenly supplied.

(Please release the piston lock during normal operation)



When piston lock is released (during normal operation)

When piston lock is engaged

Piston lock mechanism operates and does not allow the tool plate to fall even if air for uncoupling is mistakenly supplied. (There will be a 1 to 2 mm gap)

*1 Positional repeatability refers to the repeatability achieved when repeatedly locking and unlocking tool plate (A) to specific master plate.

It does not indicate the repeatability between tool plate (A) and tool plate (B) when locking and unlocking different tool plates.

*2 Coupling force means force which assures repeatability. Coupling itself is kept by uncoupling with air supply or it's broken.

■ QCP-220

Quick-Change, 220 kg load capacity

Main body

Load capacity (Rated load)	2,150N (220kg)
Positional repeatability*1	±0.025mm
Allowable dynamic moment	Bending direction (Tx,Ty) 3,332N·m (340kgf·m) Twisting direction (Tz) 3,332N·m (340kgf·m)
Fastening force (when air pressure is 0.49 MPa)*2	27,444N (2,800kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ229×H110mm
Product weight (Main body part)	Master plate Approx. 8.4kg Tool plate Approx. 3.6kg
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39~0.68MPa (4~7kgf/cm ²)
Lock/unlock sensor	Lock status 1 built-in proximity switch E2E-X2D1N (OMRON) (w/ie diet current) Unlock status 1 built-in proximity switch E2E-X2D1N (OMRON) (w/ie diet current)
Allowable temperature and humidity range	0 to 50°C, 35 to 90% (no condensation allowed)
Utilities	Pneumatic port Rc1/2-8 (can use vacuum pressure)

Utilities specifically for press applications

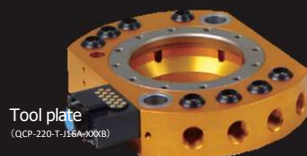
Pneumatic ports (Rc1/2) can be used for vacuum pressure and electrical signals can be used for ID confirmation.

Built-in Lock/Unlock sensor

Due to built-in design, QCP-220 is 12.4% thinner than QC-150C with the lock/unlock sensor.



Master plate
(QCP-220-M-L16A-XXXB-SA)



Tool plate
(QCP-220-T-J16A-XXXB)

■ USP-100A

Slimline Press Handling Specification, 100 kg load capacity

Main body

Load capacity (Rated load)	980N (100kg)
Positional repeatability*1	±0.025mm
Allowable dynamic moment	Bending direction (Tx,Ty) 980N·m (100kgf·m) Twisting direction (Tz) 980N·m (100kgf·m)
Fastening force (when air pressure is 0.49 MPa)*2	12,740N (1,300kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ189×H50mm
Product weight (Main body part)	Master plate Approx. 3.0kg Tool plate Approx. 1.7kg
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39~0.68MPa (4~7kgf/cm ²)
Position-confirming sensor	1 built-in proximity switch E2E-X2D1N (OMRON) (w/ie diet current) 1 built-in proximity switch E2E-X2D1N (OMRON) (w/ie diet current)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)
Utilities	Pneumatic ports Rc1/4-9 (can use vacuum pressure)

Slimline design

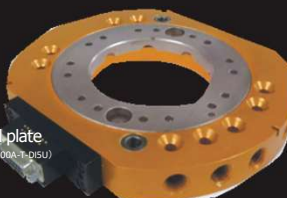
BL's unique lock/unlock mechanism was newly designed to this specification, with a thickness of only 50mm when coupled, so it can handle narrow press openings.

Built-in position confirmation sensor

The built-in position confirmation sensor is equipped with a proximity switch.



Master plate
(USP-100A-M-D15U)



Tool plate
(USP-100A-T-D15U)

■ Flex-300A

Quick-Change, 300 kg load capacity

Main body

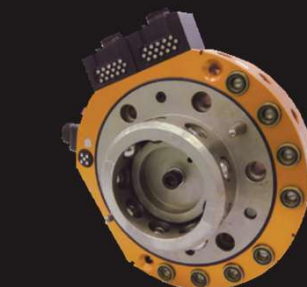
Load capacity (Rated load)	2,940N (300kg)
Positional repeatability*1	±0.025mm
Allowable dynamic moment	Bending direction (Tx,Ty) 5,292N·m (540kgf·m) Twisting direction (Tz) 4,704N·m (480kgf·m)
Fastening force (when air pressure is 0.49 MPa)*2	31,360N (3,200kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ259×H110mm
Product weight (Main body part)	Master plate Approx. 13.2kg Tool plate Approx. 7.2kg
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39 to 0.68 MPa (4 to 7 kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)
Utilities	Electrical signals Max. 5 DC/AC200V Probe contact Pneumatic port Rc3/8-4 (self-sealing) *4 Approach sensor Rc3/8-2 Senses Tool plate position up to 25mm distance

*3 Plug connector is not included. Please prepare plug connector by customer.

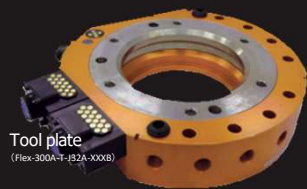
*4 Port with self-sealing of pneumatic ports cannot be used for vacuum.

Large misalignment correction capability

The unique design corrects misalignment when the Master and Tool plates couple. An approach sensor system, built into the plates, verifies coupling capability.



Master plate
(Flex-300A-M-J32A-XXXB-SX)



Tool plate
(Flex-300A-T-J32A-XXXB)

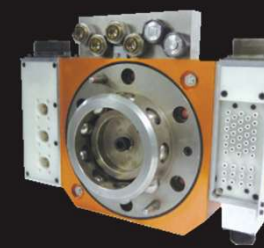
■ GC-300A

Spot-welding Gun-Changer

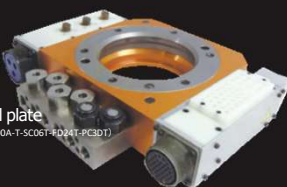
Main body

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)
Fastening force (when air pressure is 0.49 MPa)*2	31,360N (3,200kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when coupled with all options)	W355×D265×H163mm
Product weight (with all options)*3	Master plate Approx. 18.5kg Tool plate Approx. 9.5kg
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.39~0.68MPa (4~7kgf/cm ²)
Allowable temperature and humidity ranges	0~50°C, 35~90% (Non-condensing)
Lock/unlock sensor	Lock status 1 built-in proximity switch E2E-X2D1N (OMRON) (w/ie diet current) Unlock status 1 built-in proximity switch E2E-X2D1N (OMRON) (w/ie diet current)
Approach sensor	for Tool plate position Two built-in switch E2E-X2D1 (OMRON)

*3 Weight shown is of GC-300-ES-28-FD24-PC3E-SA.



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



Tool plate
(GC-300A-T-SC06M-FD24M-PC3DM)

*1 Positional repeatability refers to the repeatability achieved when repeatedly locking and unlocking tool plate (A) to specific master plate.

It does not indicate the repeatability between tool plate (A) and tool plate (B) when locking and unlocking different tool plates.

*2 Coupling force means force which assures repeatability. Coupling itself is kept by unlatching with air supply or it's broken.

ZEUS™

New Generation Heavy Payload Auto Tool Changer, 150 - 230kg load capacity

Main body

Load 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) Twisting direction (Tz) 3,332N·m(340kgf·m)
Fastening force (when air pressure is 0.6 MPa)*2	27,444N(2,800kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ226×H110mm
Product weight (Main body part)	Master plate Approx. 5.4kg Tool plate Approx. 2.3kg
Electric signal connection (Built-in)	Connector(Master side) 5A×20 D/M53102A2428P Connector(Tool side) D/M53102A2428S
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.3~0.6MPa (4~7kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)
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

Master plate

(ZEUS-M1N-SEAM-QL68M-WP CM-IS-AS-XN)



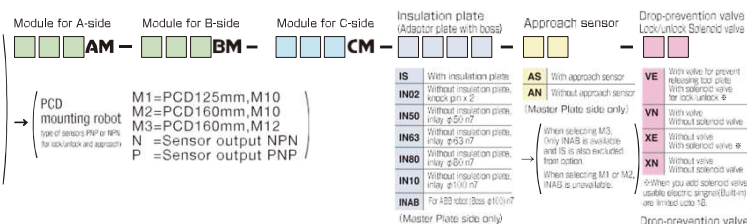
Tool plate

(ZEUS-T-SEAT-QL68T-WPCT-X)

Ordering Information

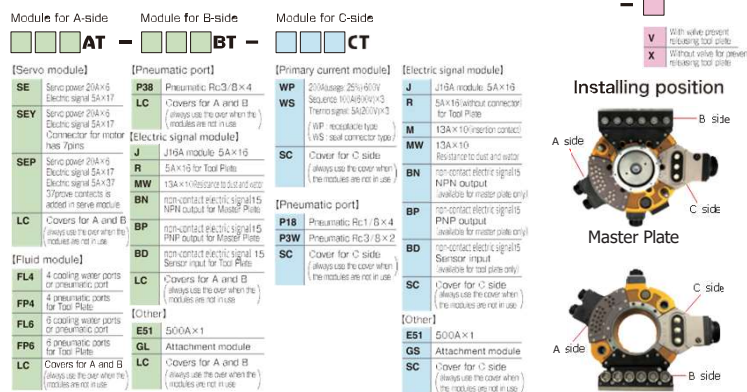
Master plate

ZEUS -M1N-
-M2N-
-M3N-
-M1P-
-M2P-
-M3P-

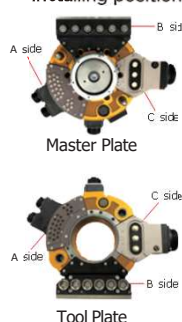


Tool plate

ZEUS -T-



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

GIGA™

New Generation Heavy Payload Auto Tool Changer, 350 - 700kg load capacity

本体

Load capacity (Rated load)	6,860N(700kg)
Positioning repeatability *1	±0.025mm
Allowable dynamic moment	Bending direction (Tx,Ty) 7,840N·m(800kgf·m) Twisting direction (Tz) 5,880N·m(600kgf·m)
Fastening force (when air pressure is 0.6 MPa)*2	63,239N(6,453kgf)
Material	Frame Aluminum alloy Coupling/uncoupling part Stainless steel
Outer dimensions (when fastened)	φ350×H160mm
Product weight (Main body part)	Master plate Approx. 25kg Tool plate Approx. 15kg
Electric signal connection (Built-in)	Connector(Master side) 5A×20 D/M53102A2428P Connector(Tool side) D/M53102A2428S
Coupling/uncoupling mechanism	Ball-lock system
Coupling/uncoupling working air pressure	0.3~0.6MPa (4~7kgf/cm ²)
Allowable temperature and humidity ranges	0 to 50°C, 35 to 90% (no condensation allowed)
Lock/unlock sensor	Lock status 1 built-in proximity switch Unlock status 1 built-in proximity switch
Approach sensor	For Tool plate position
Drop prevention valve	Mechanical Valve

Master plate

(GIGA-M1N-SEAM-QL68M-WPCM-SCDM-VE)



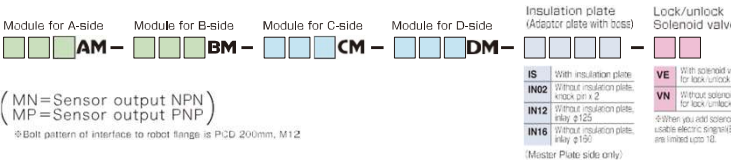
Tool plate

(GIGA-T-SEAT-QL68T-WPCT-SCDT-V)

Ordering Information

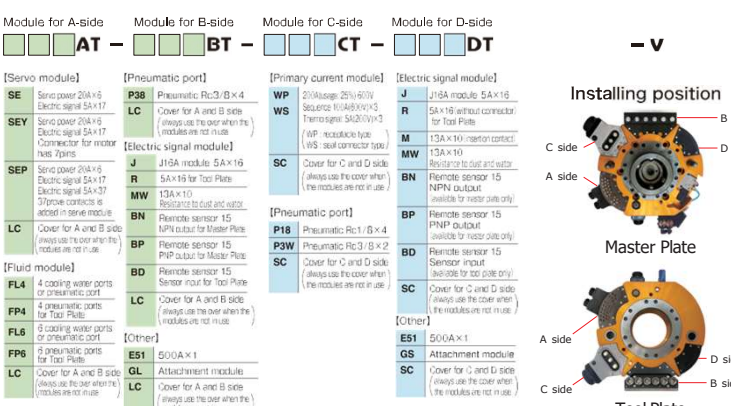
Master plate

GIGA -MN-
-MP-

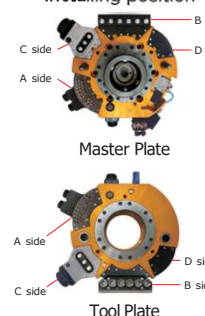


Tool plate

GIGA -T-



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.

*1 Positional repeatability refers to the repeatability achieved when repeatedly locking and unlocking tool plate (A) to specific master plate.

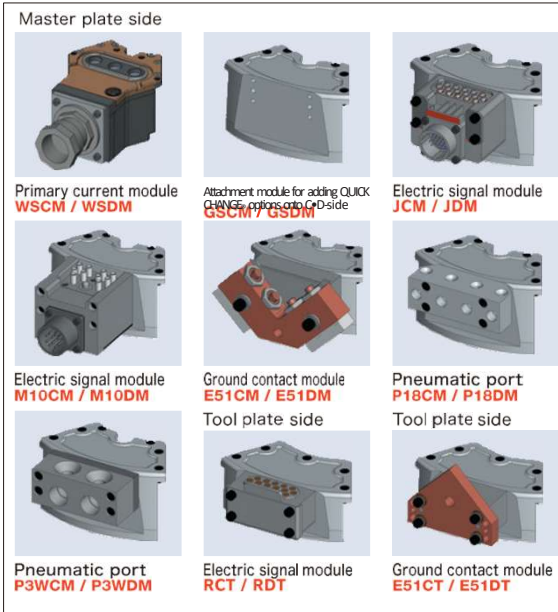
*2 Coupling force means force which assures repeatability. Coupling itself is kept by unlatching with air supply or it's broken.

ZEUS•GIGA Module

■ Examples of optional modules (A or B side)

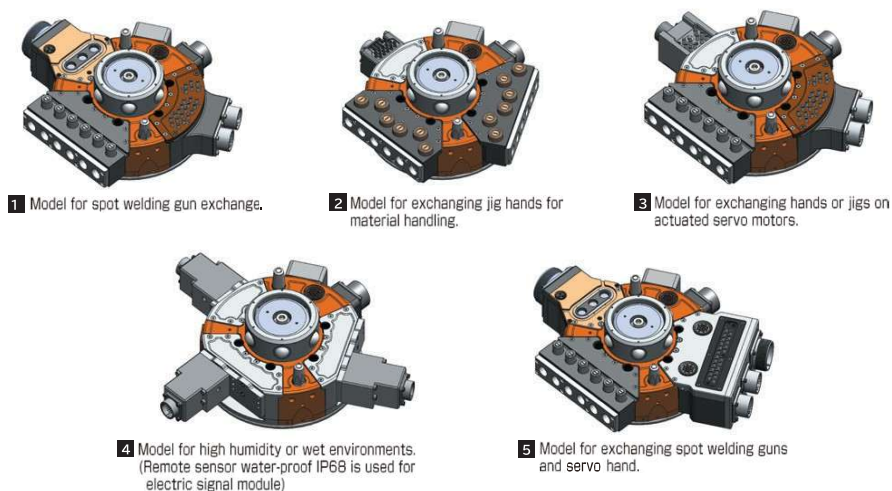


■ Examples of optional module (C or D side)



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

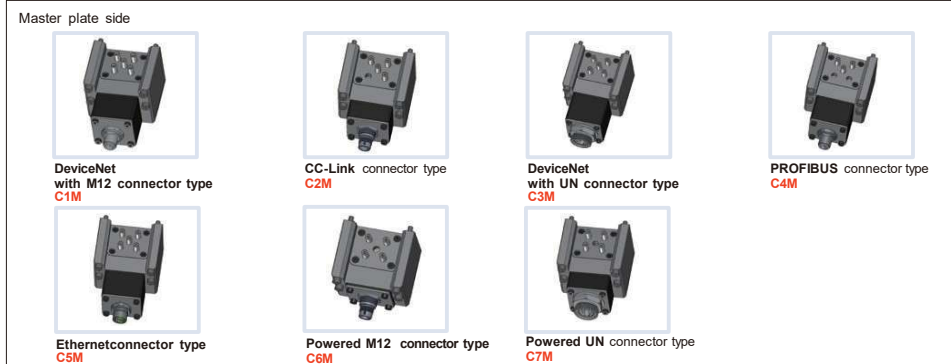
ZEUS Application Lineup



At the site of FA, it is becoming popular to adapt various network systems in order to reduce wiring. Networks at factories are hierarchically (configurationally) classified by place and information transmission in the network. Our Wire-Saving Module / Contact Block is compliant with networks of several standardized serial data communications and, thus, effective for reducing wiring at factories. We have prepared connectors conforming to several standardized serial data communications.

Contact Blocks for QUICK-CHANGE®/QUICK-CHANGE ZEUS®/QUICK-CHANGE GIGA®

■ Examples of optional modules



Contact Blocks for QUICK-CHANGE®/QUICK-CHANGE ZEUS®/QUICK-CHANGE GIGA®

■ Examples of optional modules (A or B side)

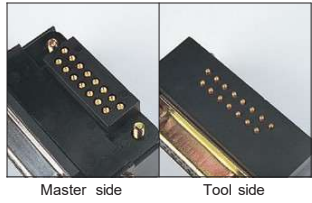


Conforming to several standardized serial data communications

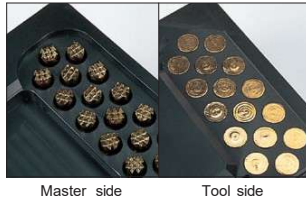
DeviceNet	Using dedicated thin cable conforming to DeviceNet standard. We have mini-connectors and micro-connectors available.
CC-Link	Using a dedicated Ver. 1.10 compatible CC-Link cable that is a twisted three-core cable with shield. We have M12 Micro type four-contact A-coding connectors available.
PROFIBUS	Using PROFIBUS DP type-A cable that is twisted wiring with shield. We have M12 Micro type four-contact B-coding connectors available.
Industrial Ethernet	We have category 5e equivalent cable with two pairs of shield is used and M12 Micro type four-contact D-coding connectors available. These connectors conform to EtherNet/IP, EtherCAT, PROFINET.

Electrical signal contact type

Electrical signal contact probe type

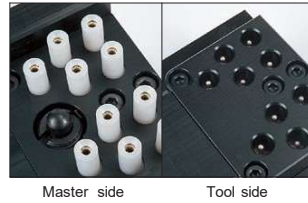


Master side Tool side



Master side Tool side

Electrical signal insertion contact type



Master side Tool side

Electrical signal contact blocks

Contact block for Light-5A



H10A
3 A x 10 (solder terminal)



H20A
3 A x 20 (solder terminal)



H30A
3 A x 30 (solder terminal)



H10L
3 A x 10 (with 1m lead wire)



H20L
3 A x 20 (with 1m lead wire)

Contact block for QC-10C



K10A
3 A x 10 (solder terminal)



K20A
3 A x 20 (solder terminal)



K10L
3 A x 10 (with 1m lead wire)



K20L
3 A x 20 (with 1m lead wire)

Contact block for QC-10C



CT8
1.5 A x 10

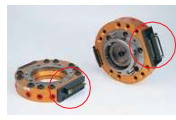


CT16
1.5 A x 16

Contact block for Flex R-25 to Flex-300A



D15
3 A x 15
<D-sub connector (female)>



D37
3 A x 37
D-sub connector with
37 contact (female receptacle)



J16
5 A x 16 (JM connector)



L16 (for Master only)
5 A x 16
(JM connector)



A16
With approach sensor
5 A x 16 (JM connector)

Electrical signal contact blocks

Contact block for Flex R-25 to Flex-300A



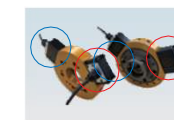
M10
13 A x 10 (MS connector)



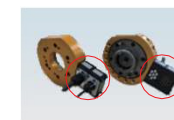
M19
13 A x 19
(MS connector)



MC06L
MC06S
Electrical signal
13 A x 6, with
500 mm shielded cable



JC14L
JC14S
Electrical signal
2 A x 14, with
500 mm shielded cable



MC06JC14L
Electrical signal
13 A x 6 and 2 A x 14, with
500 mm shielded cable

Non-contact electrical signal block



B15NB, B15PB (for Master only)
B15DB (for Tool only)
B15NB NPN output
B15PB PNP output
For B15NB and B15PB,
WEBR-2119MS-D is used.
For B15DB, WEBR-2116FS-D is used.



R12NB, R12PB (for Master only)
R12DB (for Tool only)
B12NB NPN output
B12PB PNP output
R12NB NPN output (RS12E-422N-PU-02 manufactured by B&PLUS)
R12PB PNP output (RS12E-422P-PU-02 manufactured by B&PLUS)
R12DB (RS12T-422-PU-01 manufactured by B & PLUS)

Ground



E50
Ground 500 A x 1

Pneumatic port



P18
Rc1/8 x 4



P14
Rc1/4 x 2



P38
Rc3/8 x 4



P3W
Rc3/8 x 2

Lock / Unlock sensor



SA, SB

SA Type.....
Customers can perform additional machining on it to use it also as a robot mounting plate.

SB Type.....
This is a type processed to allow mounting on a robot. *Please provide us with the robot flange shape drawing when ordering.

Two proximity sensors are built in to check the position of the piston to confirm coupling/uncoupling.

For more information on options, please contact us.

Tool Change on Servo Equipment?
It's Simpler Than You Think!!

Designed to reduce the unique noise issues found in servo equipment.

Smaller electrical contact block for power and resolver.

NEW

MC06 Electrical contact block for power (motor)
(13A×6 contacts with 1 shield wire)

JC14 Electrical contact block for signal
(2A×14 contacts with 1 shield wire)

Yes, servo nut runners are changeable!

Of course, for Spindle & Deburring tools available!

Interested?
Contact BL Autotec & ESTIC
- we're here to help!

Introducing a Compact Electrical Contact Block from BL Autotec
- Perfect for Servo Equipment Tool Changes!

Can also replace servo nut runner!

Definitely worth checking for those who want to change servo equipment tools!!

BL Autotec has released a small-size contact block that supports uncoupling (tool change) of servo devices. This is a new offering for customers who are considering automation of assembly process.

Small-size contact block for motor and encoder

- ◆MC06 for motor power◆
Capable of conducting power signals of rated current 13A×6 (one shielded line)
- ◆JC14 for various signal transmission◆
Supports real-time communication of encoder and other signals of 2A×14 (one shielded line)

Can also be used for replacing deburring and spindle devices!!

**Measures have been taken to reduce noise specific to servo equipment*

Please contact BL Autotec or DAI-ICHI DENTSU LTD. for inquiries!

Replacement of high-precision deburring tools is possible!!

Contributes to adding multifunctionality to deburring robots!

Servo motor spindles, etc.

Also supports tool change for Nakanishi motor spindles!!

E4000 **E3000**

Installation example

Contact block for motor power and signals

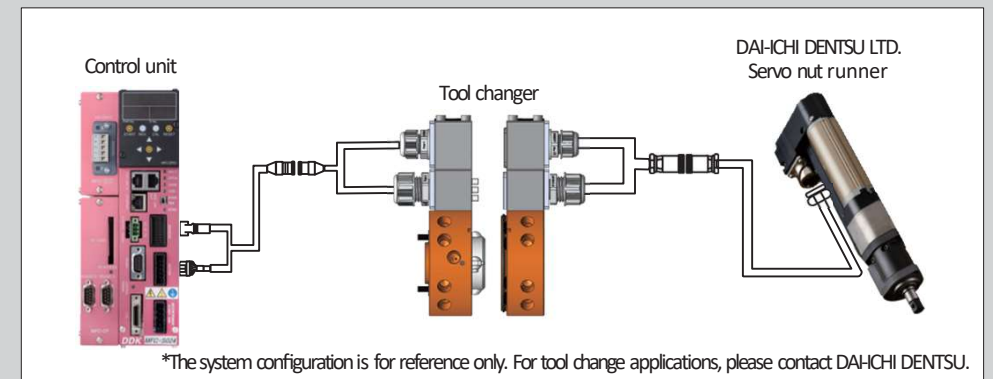
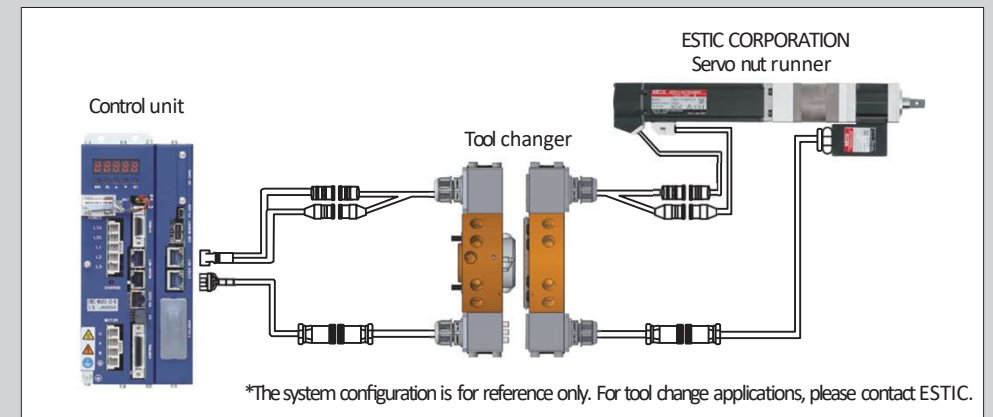
BL Autotec has released a small-size contact block that supports uncoupling (tool change) of servo devices. This is a new offering for customers who are considering automation and multifunctional operation of deburring process by robots.

- ◆ Custom specification :
For NAKANISHI E4000 spindle◆
Capable of conducting motor power of rated current 13A×5
- ◆ Custom specification :
For NAKANISHI E4000 spindle◆
Capable of conducting motor signal of rated current 2A×8

*Measures have been taken to reduce noise specific to servo equipment.

Custom products

Please contact BL Autotec or NAKANISHI INC. for inquiries!



Model: E4000 **Example of application with motor spindle** **Model: E3000** **Custom products**

Deburring of die-cast aluminum /stainless steel/cast products

Burr height
Less than 0.5 mm ⇒ E3000
0.5 mm or more ⇒ E4000

Trimming of CFRP or resin products by endmill

Thickness
Less than 3 ⇒ E3000
4 mm or more ⇒ E4000

Drilling

Hole diameter
φ3 or smaller ⇒ E3000
φ6 ⇒ E4000

SUS
φ1.5 or smaller ⇒ E3000
φ3 ⇒ E4000

For more information, please contact Nakanishi.

*The system configuration is for reference only. For tool change applications, please contact BL Autotec.

Lined area for notes on page 26.

Lined area for notes on page 27.