

Flex-100B

The BL QUICK-CHANGE Model Flex-100B is a device for quick and accurate automatic changing of multiple end-effectors, such as material handling, palletizing and deburring. Pneumatic blocks and electrical connector blocks can be selected for the Flex-100B.

Heavy duty applications

For heavy duty applications, such as deburring, a special seal prevents dust from entering the locking mechanism and electrical contacts when the plates are coupled.

Self-sealing pneumatic ports

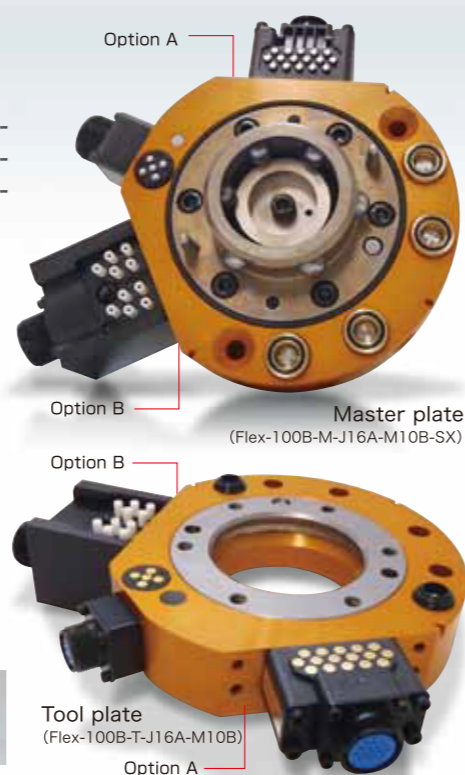
There are six pneumatic ports in the Master plate (Rc3/8). Four of the six ports are self-sealing, which automatically shut off air pressure when uncoupled and allow for easier air control in the system.

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.

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 Attachments
 • 6 bolts (M8x55)
 • Stepped parallel pin x1
 ※ Seal plate, O-ring and screws are pre-assembled.

Specifications

Main Body		
Load capacity (rated load)	980N(100kg)	
Positional repeatability	±0.015mm	
Allowable dynamic moment	Bending direction (Tx, Ty)	1,372N·m(140kgf·m)
	Twisting direction (Tz)	1,372N·m(140kgf·m)
Coupling force (with air pressure of 0.49MPa) ※1	10,290N(1,050kgf)	
Materials	Frame	Aluminum alloy
	Lock/ unlock mechanism	Stainless steel
Overall dimension (when coupled)	φ178xH81.5mm	
Weight (Main body)	Master plate	3,900g
	Tool plate	2,250g
Self-separating mechanism	Ball-locking mechanism	
Required air pressure	0.39~0.68MPa(4~7kgf/cm ²)	
Allowable temperature and humidity ranges	0~50°C, 35~90% (Non-condensing)	
Utilities	Electrical signals Max. 5 DC/AC200V Probe contact	5A×5 ※2
	Pneumatic ports	Rc3/8×4 (self-sealing) ※3 Rc3/8×2
	Approach sensor	Senses Tool plate position up to 1.5mm distance

Option	Utility	Electrical signals	Ground
D15A, D15B		Electrical signals	3A×15 ※4
J16A, J16B		Electrical signals	5A×16 ※2 ※5
M10A, M10B		Electrical signals	13A×10 ※2 ※6
B15NA, B15NB, B15PA, B15PB		Electric signals Max.50mA DC24V Non-contact system (Please refer to page 41 for details.)	50mA×15 WEB series connector ※2 In Zone 1 IP67
B15DA, B15DB		Electric signals Max.5mA DC12V Non-contact system (Please refer to page 41 for details.)	5mA×15 WEB series connector ※2 IP67
E50A, E50B		Ground	500A (50% usage) ×1
P18A, P18B		Pneumatic ports	Rc1/8×4
P14A, P14B		Pneumatic ports	Rc1/4×2
P38A, P38B		Pneumatic ports	Rc3/8×4
P3WA, P3WB		Pneumatic ports	Rc3/8×2
Lock/unlock sensor ※7			Two built-in proximity switches

Flex-100B Ordering Informatio

Master plate **Flex-100B -M-** (Option A) (Option B) (Lock/unlock sensor)

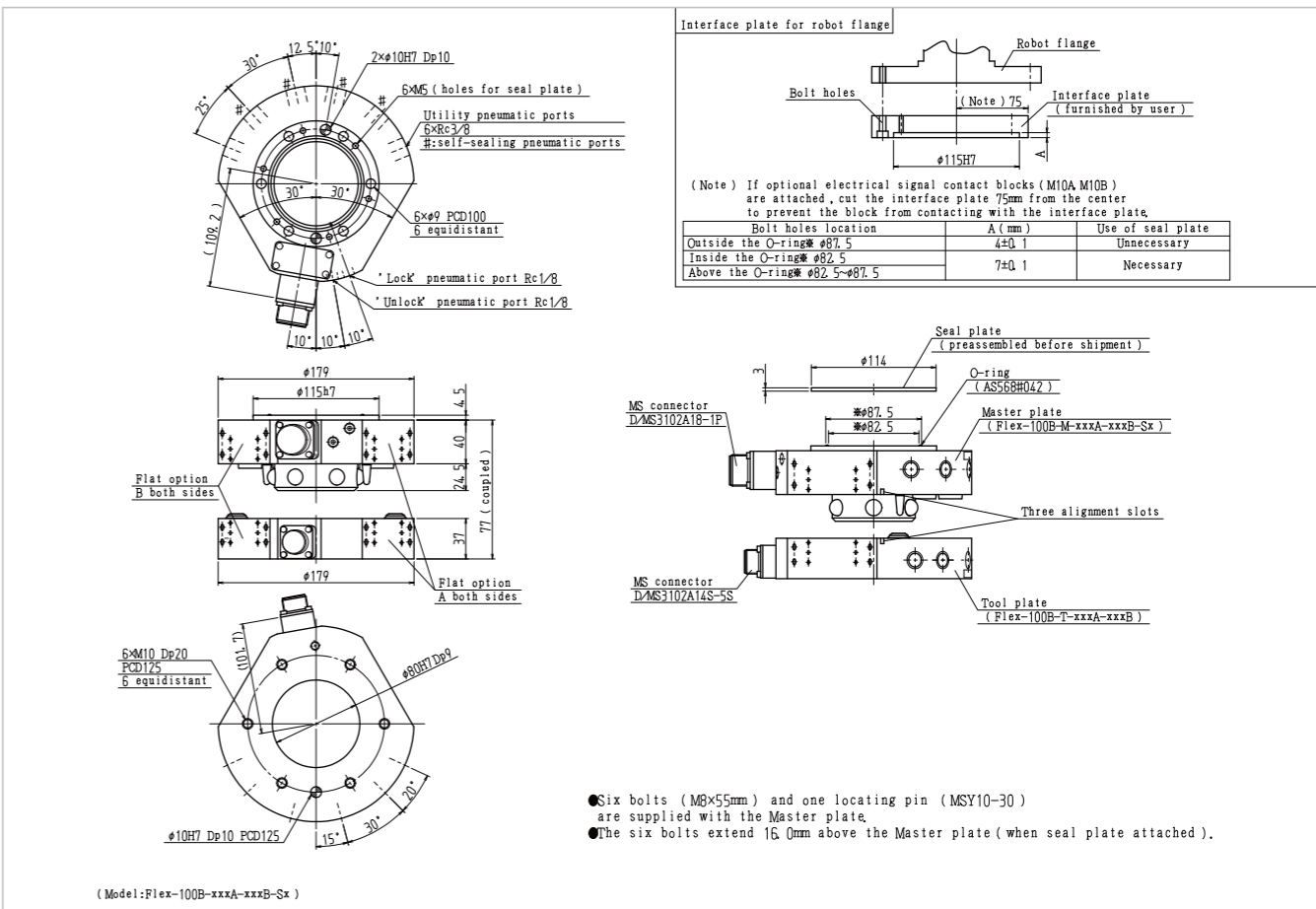
Tool plate **Flex-100B -T-** (Option A) (Option B)

<p>XXXXA No electrical signal</p> <p>D15A Electrical signals 3A×15※4</p> <p>J16A Electrical signals 5A×16※2 ※5</p> <p>M10A Electrical signals 13A×10※2 ※6</p> <p>B15NA Non-contact electric signal block Master side NPN output</p> <p>B15PA Non-contact electric signal block Master side PNP output</p> <p>B15DA Non-contact electric signal block Tool side</p> <p>E50A Ground 500A×1</p> <p>P18A Pneumatic ports Rc1/8×4</p> <p>P14A Pneumatic ports Rc1/4×2</p> <p>P38A Pneumatic ports Rc3/8×4</p> <p>P3WA Pneumatic ports Rc3/8×2</p>	<p>XXXXB No option</p> <p>D15B Electrical signals 3A×15※4</p> <p>J16B Electrical signals 5A×16※2 ※5</p> <p>M10B Electrical signals 13A×10※2 ※6</p> <p>B15NB Non-contact electric signal block Master side NPN output</p> <p>B15PB Non-contact electric signal block Master side PNP output</p> <p>B15DB Non-contact electric signal block Tool side</p> <p>E50B Ground 500A×1</p> <p>P18B Pneumatic ports Rc1/8×4</p> <p>P14B Pneumatic ports Rc1/4×2</p> <p>P38B Pneumatic ports Rc3/8×4</p> <p>P3WB Pneumatic ports Rc3/8×2</p>	<p>SX No lock/unlock sensor</p> <p>SA Lock/unlock sensor A-Type (Customer processes the adaptor plate)</p> <p>SB Lock/unlock sensor B-Type (BL Autotec processes the adaptor plate)</p>
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Note: ※Combination of E50A & E50B, cannot be used on the same Flex-100B.

We have Model: QCP-100A for material handling between presses. Please contact BL Autotec, Ltd. for further information.

Main Body Dimensions



Options

■ Electrical signal contact block

■ Non-contact electric signal block

■ Ground

■ Pneumatic ports

■ Lock/unlock sensor

D15A, D15B

3A×15 D-sub 15 contacts (female receptacles)※4

※ Plug side is DDK, 17JE-23150-02(D8A) -CG or its equivalent.

J16A, J16B

5A×16 (JM connector)※2 ※5

Use JMR2116M-D for the J16A Master side
Use JMR2116F-D for the J16A Tool side
Use JMR2116MX-D for the J16B Master side
Use JMR2116FX-D for the J16B Tool side

M10A, M10B

13A×10 (MS connector)※2 ※6

Use D/MS3102A18-1P for the M10A Master side
Use D/MS3102A18-1S for the M10A Tool side
Use D/MS3102A18-19P for the M10B Master side
Use D/MS3102A18-19S for the M10B Tool side

B15NA/B, B15PA/B (Master side only)

B15DA/B (Tool side only)

B15NA/B NPN output
B15PA/B PNP output

Receptacle connector: WESPR-2119S-D for B15NA/B and B15PA/B
Receptacle connector: WESPR-2119FS-D for B15DA/B

E50A, E50B

Ground 500A×1

P18A, P18B

Rc1/8×4

P14A, P14B

Rc1/4×2

P38A, P38B

Rc3/8×4

P3WA, P3WB

Rc3/8×2

SA, SB

Two built-in proximity switches verify piston position, thus reliably checking the lock and unlock status.

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

SA Type---The sensor plate can be used in place of an interface plate with modifications by the user.
 SB Type---The sensor plate can be used in place of an interface plate with modifications by BL Autotec, Ltd.
 ※When you order the lock/unlock sensor please provide us with a drawing of the robot flange.

※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 Plug connector is not included. Please prepare plug connector by customer. For connector, please see correspondence table on page 51. ※3 Port with self-sealing of pneumatic ports cannot be used for vacuum. ※4 Plug connector is not included. Please prepare plug connector type 17JE-23150-02(D8A)-CG or compatible type. ※5 Allowable current is total 30.4A for connector. ※6 Allowable current is total 57.2A for connector. ※7 An option is available on the electric signal contact block (D/MS3102A18-1P) to connect the Lock/unlock proximity switch signal. Please contact us for additional information.

Next-Generation Robots
 ZEUS
 GIGA
 Automatic Tool Changer
 1kg
 5kg
 10kg
 20kg
 40kg
 60kg
 70kg
 100kg
 150kg
 220kg
 300kg
 Press Handling Specification
 100kg
 Spool-Winding Gun-Changer
 300kg
 Options
 Wire-Saving module / Contact Block
 Non-contact electric signal block
 A mechanical safety valve prevents Tool plate drops
 Option List
 Product Overview
 Rotary Joint
 PN-ZERO Series
 Wrist Compliance
 RCC DEVICE LOCK/RCC DEVICE
 Couple Joint
 C/J2