

Flex-300A

The BL QUICK-CHANGE Model Flex-300A is a device for automatic tool changing, specially designed for high payload capacity robots generally used in handling and palletizing. Optional electrical contacts or pneumatic ports can be selected for the Flex-300A.

Heavy duty applications

For heavy duty applications, a special seal prevents dust from entering the locking mechanism and electrical contacts when the two plates are coupled. (Load Capacity: 300kg/Allowable static moment (Tx, Ty) :270kgf·m)

Self-sealing pneumatic ports

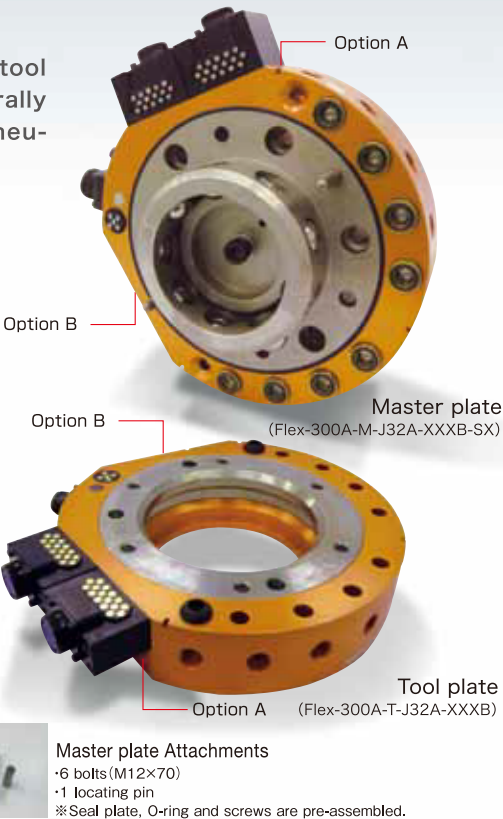
There are ten pneumatic ports in the Master plate (Rc3/8). Eight of the ten ports are self-sealing, which automatically shut off air pressure when uncoupled and allow for easier air control in the system.

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.








Specifications

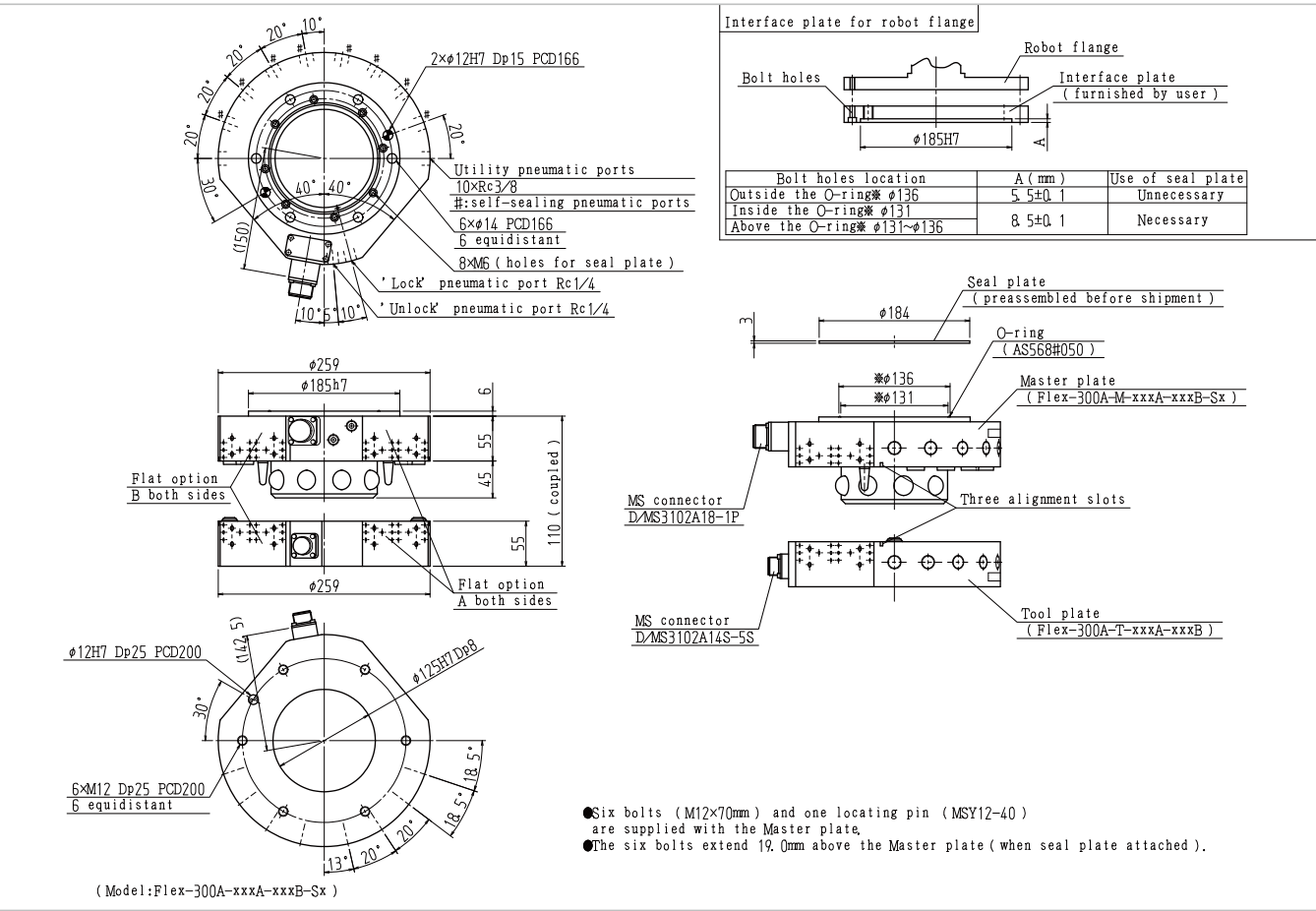
Main Body		
Load capacity (rated load)		2,940N(300kg)
Positional repeatability		±0.025mm
Allowable dynamic moment	Bending direction (Tx, Ty)	5,292N·m (540kgf·m)
	Twisting direction (Tz)	4,704N·m (480kgf·m)
Coupling force (with air pressure of 0.49MPa) ※1		31,360N (3,200kgf)
Materials	Frame	Aluminum alloy
	Lock/ unlock mechanism	Stainless steel
Overall dimension (when coupled)		φ259×H116mm
Weight (Main body)	Master plate	13.2kg
	Tool plate	7.2kg
Self-separating mechanism		Ball-locking mechanism
Required air pressure		0.39~0.68MPa (4~7kgf/cm²)
Allowable temperature and humidity ranges		0~50°C, 35~90% (Non-condensing)
Utilities	Electrical signals	5A×5 ※2
		Max. 5 DC/AC200V Probe contact
	Pneumatic ports	Rc3/8×8 (self-sealing) ※3
		Rc3/8×2
	Approach sensor	Senses Tool plate position up to 2.5mm distance

Options			
Utilities	J16A, J16B	Electrical signals	5A×16 ※2 ※4
	J32A, J32B	Electrical signals	5A×32 ※2 ※4
	M10A, M10B	Electrical signals	13A×10 ※2 ※5
	M20A, M20B	Electrical signals	13A×20 ※2 ※5
	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 インソーン 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 ※6		Two built-in proximity switch

Flex-300A Ordering Information

Master plate	Flex-300A-M-	(Option A)	-	(Option B)	-	(lock unlock sensor)				
										
Tool plate	Flex-300A-T-	(Option A)	-	(Option B)	-	SX	No lock/unlock sensor			
						SA	Lock/unlock sensor A-Type (Customer processes the adaptor plate)			
							SB	Lock/unlock sensor B-Type (BL Autotec processes the adaptor plate)		
		XXXA		No option		XXXB	No option			
		J16A		Electrical signals 5A×16※2 ※4		J16B	Electrical signals 5A×16※2 ※4			
		J32A		Electrical signals 5A×32※2 ※4		J32B	Electrical signals 5A×32※2 ※4			
		M10A		Electrical signals 13A×10※2 ※5		M10B	Electrical signals 13A×10※2 ※5			
		M20A		Electrical signals 13A×20※2 ※5		M20B	Electrical signals 13A×20※2 ※5			
		B15NA		Non-contact electric signal block Master side NPN output		B15NB	Non-contact electric signal block Master side NPN output			
		B15PA		Non-contact electric signal block Master side PNP output		B15PB	Non-contact electric signal block Master side PNP output			
		B15DA		Non-contact electric signal block Tool side		B15DB	Non-contact electric signal block Tool side			
		E50A		Ground 500A×1		E50B	Ground 500A×1			
		P18A		Pneumatic ports Rc1/8×4		P18B	Pneumatic ports Rc1/8×4			
		P14A		Pneumatic ports Rc1/4×2		P14B	Pneumatic ports Rc1/4×2			
		P38A		Pneumatic ports Rc3/8×4		P38B	Pneumatic ports Rc3/8×4			
		P3WA		Pneumatic ports Rc3/8×2		P3WB	Pneumatic ports Rc3/8×2			

Main Body Dimensions



Options

Electrical signal contact block

J16A,J16B
5A×16 (JM connector) ※2 ※4

J32A,J32B
5A×32 (JM connector) ※2 ※4

M10A,M10B
13A×10 (MS connector) ※2 ※5

M20A,M20B
13A×20 (MS connector) ※2 ※5

B15NA/B,B15PA/B(Master side only)
B15DA/B(Tool side only)
B15NA/B NPN output
B15PA/B PNP output

Non-contact electric signal block

Ground

E50A,E50B
Ground 500A×1

Pneumatic ports

P18A,P18B
Rc1/8×4

P14A,P14B
Rc1/4×2

P38A,P38B
Rc3/8×4

P3WA,P3WB
Rc3/8×2

Lock/unlock sensor

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.

※1 Coupling force is the force to achieve specified repeatability. Coupling will be maintained until unlock pressure is applied or the device is damaged. ※3 Plug connector is not included. Please prepare plug connector by customer. For connector, please see correspondence table on page 46. ※4 Allowable current is total 30.4A for connector. ※5 The two built-in proximity switch signals of the lock/unlock sensor can be assigned to the MS connector (D/MS3102A18-1P) of the main body. Please contact BL Autotec, Ltd. for further information.

Next-Generation Robots	ZEUS
Automatic Tool Changer	GIGA
	1kg
	5kg
	10kg
	20kg
	40kg
	60kg
	70kg
	100kg
	150kg
	220kg
	300kg
Press Handling Specification	100kg
Spot-Welding Gun-Changer	
	300kg
Options	
Wire-Saving module / Contact Block	
Non-contact electric signal block	
A mechanical safety valve prevents Tool plate drops	
List	
Option	
Product Overview	
Rotary Joint	
PN-ZERO Series	
Wrist Compliant	
ROCC DEVICE LOCK-UP ROCC DEVICE	
Couple Joint	
CJ2	