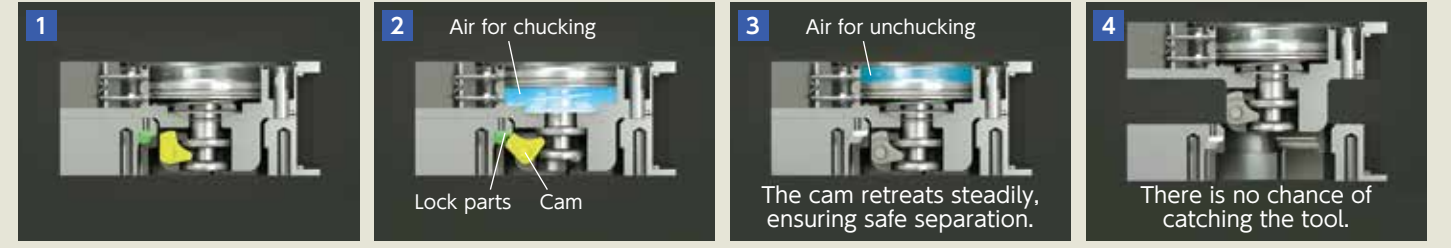


Features

- ◆ **Slim and Lightweight**
 - Slimmed down to 45~50% and weight reduced to 30~48% compared with conventional models.
 - Supports wider motion range and higher speed of robot.
 - Can be directly mounted on the robot flange (*1).
- ◆ **Safety**
 - Cam lock ensures proper control between connection and separation.
 - Wear compensation mechanism to automatically compensate for wear over extended period of time.
 - Standard feature includes status LED.
 - Cam status (Chuck/Unchuck) and close contact between the connecting faces can be checked with LED lamps.
 - Fail-safe mechanism keeps connection even if the air supply stops. (*2)

(*1) Flange requirements for direct mounting:
 type M: P.C.D. 125, type XM: P.C.D. 160, type L: P.C.D. 200
 (*2) Intended just for fall prevention

Principle of Connection/Separation by Cam Lock



The cam opens and closes interlocking with the vertical motion of the piston, thus connecting and separating the tool. The piston reliably controls the opening and closing of the cam.

◆ Durability and Maintainability

- Durability of connecting mechanism improved by 36%, allowing parts to be replaced while keeping ATC mounted on robot tool.



- ◆ **Improved Reliability in Signal Communication by Noise Reduction Measures**
 - Signal pins with self-cleaning capability
 - Aluminum case with optimized internal wiring

◆ High-current handling

- Power supply supports a current equivalent to 200 A. (Direct coupling type)

- ◆ **Hydraulic Module Function**
 - Non-spill design (Water spill in attaching/detaching reduced by 90% compared with conventional models)
 - Port can be replaced independently, offering improved maintainability
 - Improved flow characteristics
- ◆ **Incorporating and sharing CT modules**
 - Built-in modules to minimize outside diameter. 3 modules incorporated in types M and XM, and 4 modules in type L.
 - CT modules can be shared among 3 models.

Automatic Tool Changer NITTAOMEGA type Series

Optional Parts

Fall Prevention System

Features and Usage

- Valves that control the air for separating ATC.
- Prevents tools from falling or coming off due to misoperated valves, incorrectly handled solenoid valves, or residual air pressure caused by bent/clogged tubes.
- Can be added easily to existing system.

Mechanism

- Allows air to be supplied to the unchucking port only when both of the valves are ON (ATC has been connected and placed on the stand) or OFF (ATC has been separated and the robot is off the stand).

Overview of fall prevention mechanical valves

A safety device that checks the ON/OFF of the two internal valves to keep air from supplying to the unchucking port unless the ATC is connected at a safe position. In Fig. 1, two valves are ON since the tool dog and stand dog have been detected, allowing ATC to be separated. In Fig. 2, air is not supplied to the unchucking port since the stand dog has not been detected, which keeps ATC from being separated.

Consisting of two valves
▲ CAR-006-M2

Cable Support

- A jig for fixing connectors, power/signal cables, cooling tubes, etc.

▲ MOAR-012-00

External Module

- Pneumatic module that can be mounted on the outside of adaptor.

	Robot side	Tool side
Model	CTRP02-000	CTTP02-000(*)
Specifications	Rc 1/4: 2 ports	
Weight	Approx. 0.8 kg	Approx. 0.4 kg
Material	Aluminum alloy	

▲ CTRP02-000
 (*) A mounting plate is required for CTTP02-000 which cannot be directly mounted on the tool adaptor.

Safety Caution Read Automatic Tool Changer instruction manuals carefully and thoroughly before using the Nitta products, and then use it correctly.

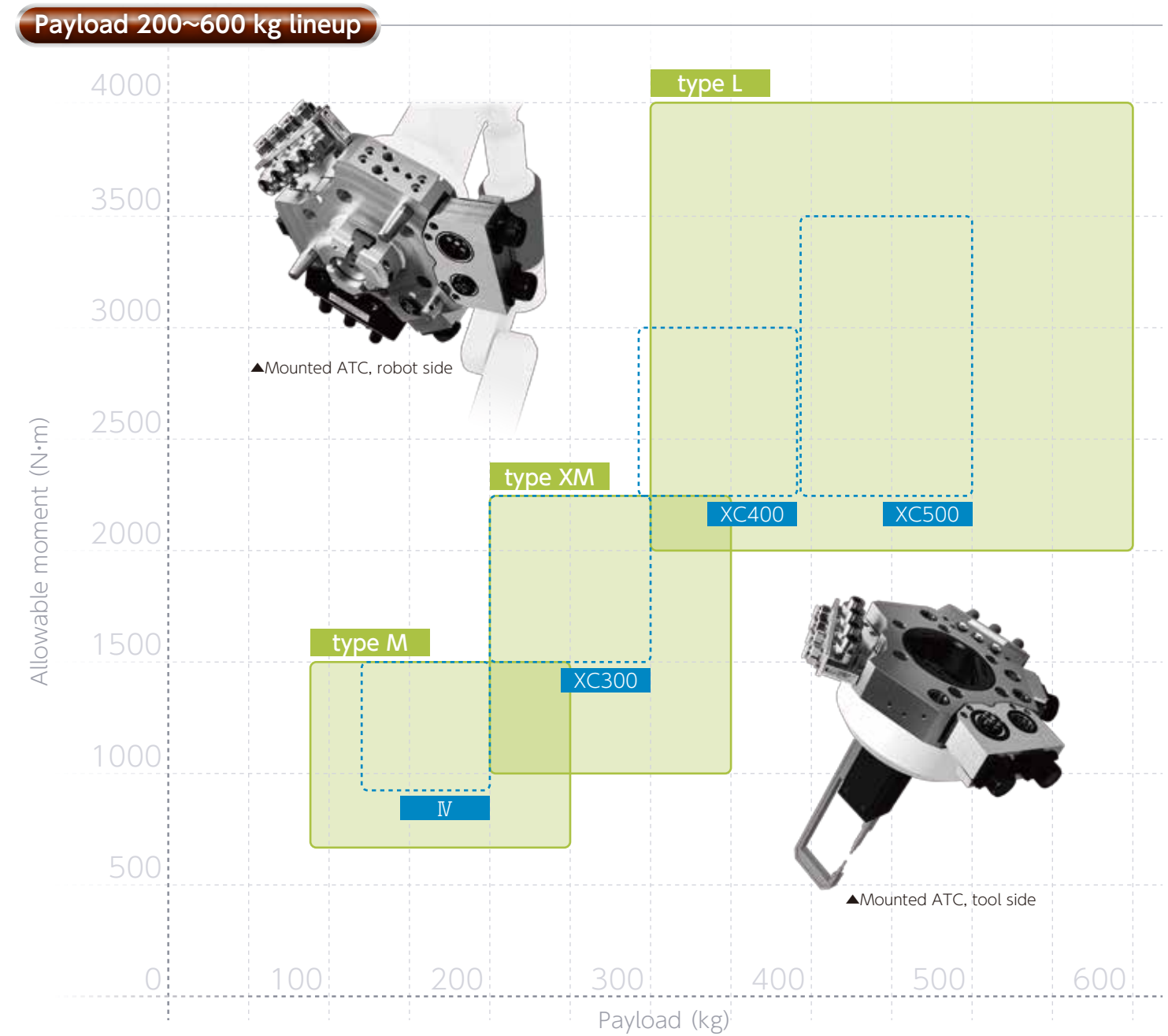
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NITTAOMEGA AUTOMATIC TOOL CHANGER type Series



Sizes and Weights of New and Existing Series Models

	New series		
	type M	type XM	type L
Side view when connected			
Payload	50~250kg	250~350kg	350~600kg
Thickness when connected	90mm	90mm	96mm
Main body weight	6.2kg	11.3kg	17.7kg
Outer size	235mm	265mm	307mm
	Existing series		
	IV	XC300	XC400 / XC500
Side view when connected			
Payload	200kg	300kg	400kg / 500kg
Thickness when connected	165mm (including plate)	165mm (including plate)	195mm (including plate)
Main body weight	11.9kg (including plate)	16.0kg (including plate)	26.2kg (including plate)
Outer size	228mm	248mm	270mm

NITTA CORPORATION

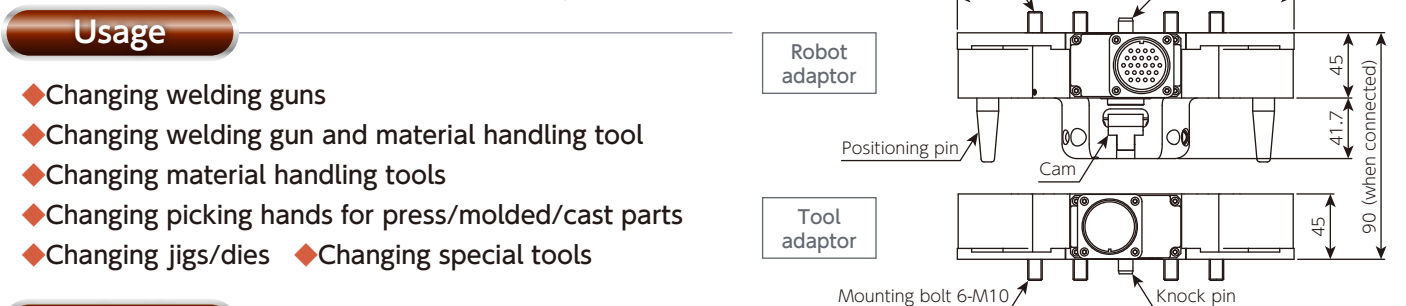
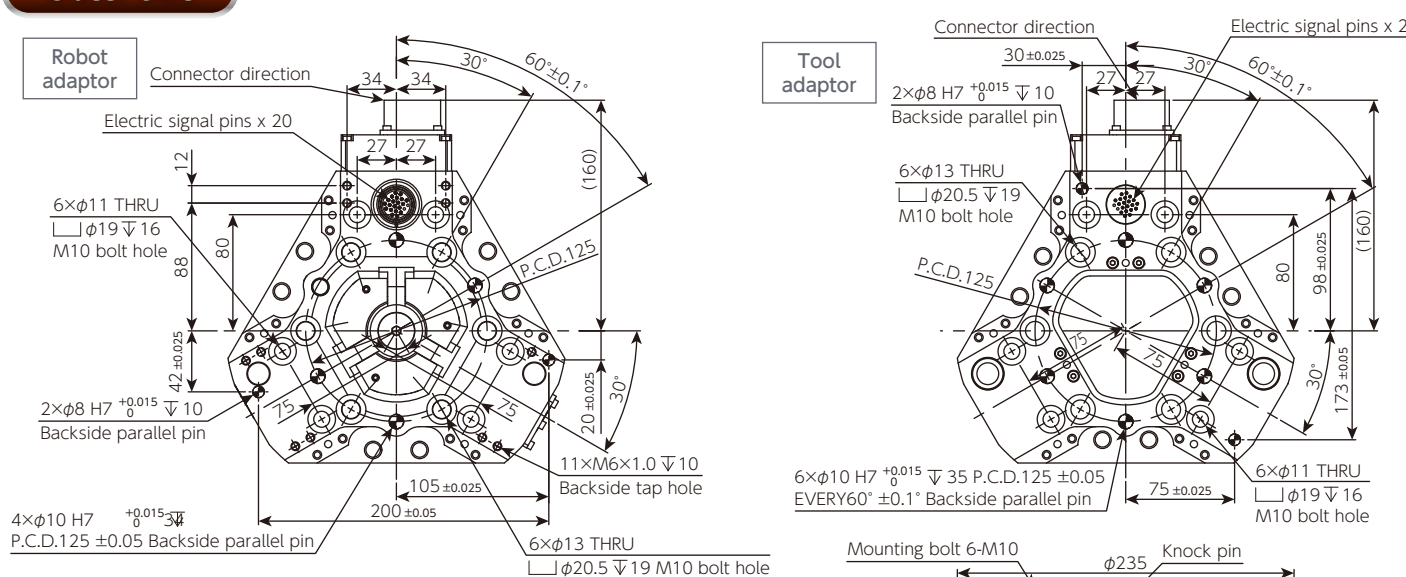
NITTAOMEGA type M

● Payload 50~250 kg

Servo gun specification example



Outer size



Specifications		Robot side	Tool side
Payload	50~250kg	Not required (Can be directly mounted on the flange of P.C.D.125)	
Allowable moment	1,471Nm		
Allowable torque	1,471Nm	3A	
Outer size	φ235mm	Electric signal	No. of cores: None or 20
Thickness when connected	90mm	Output signals	Chuck signal, Unchuck signal, Face signal
Main body material	Aluminum alloy	Environment	Ambient temperature: 0~60°C (No freezing) Ambient humidity: 0~95%RH (No freezing)
Repeatability	±0.025mm	Connector type	Robot side: MS3102A24-28P Tool side: MS3102A24-28S
Driving pressure	0.39~0.85MPa		
Main body weight	Robot side: 4.0kg Tool side: 2.2kg		

Standard model

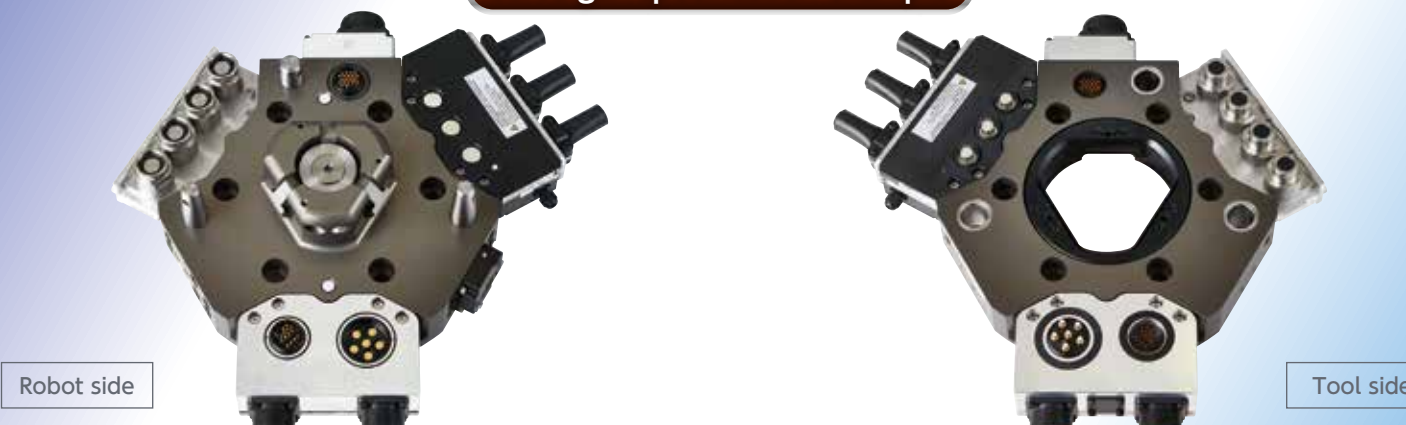
NPN type (0V common)	Robot adaptor	MOR20-0PS00	PNP type (24V common)	Robot adaptor	MOR20-0PS01
	Tool adaptor	MOT20-0PC01		Tool adaptor	MOT20-0PC01

* Adaptor Bolt Assy (MOAC-011-45; without insulator, MOAC-002-45; with insulator) are sold separately.

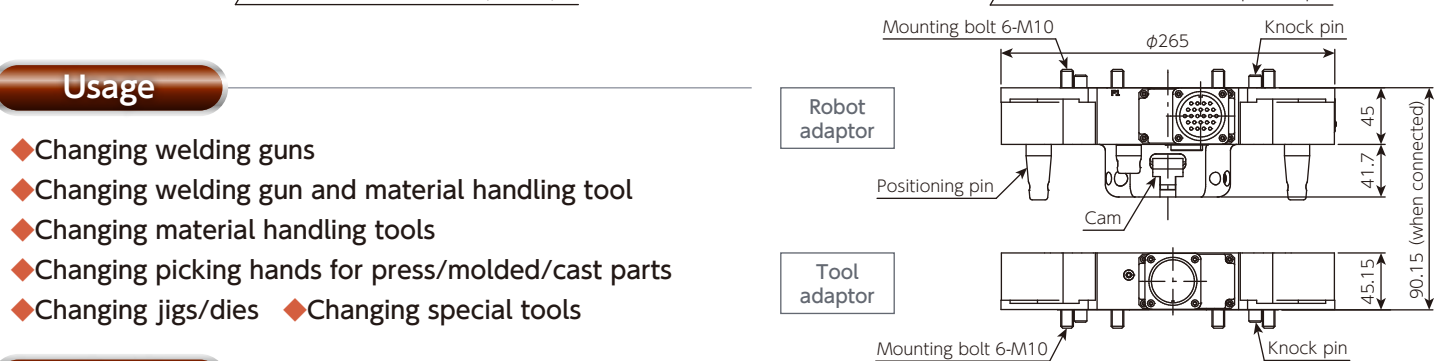
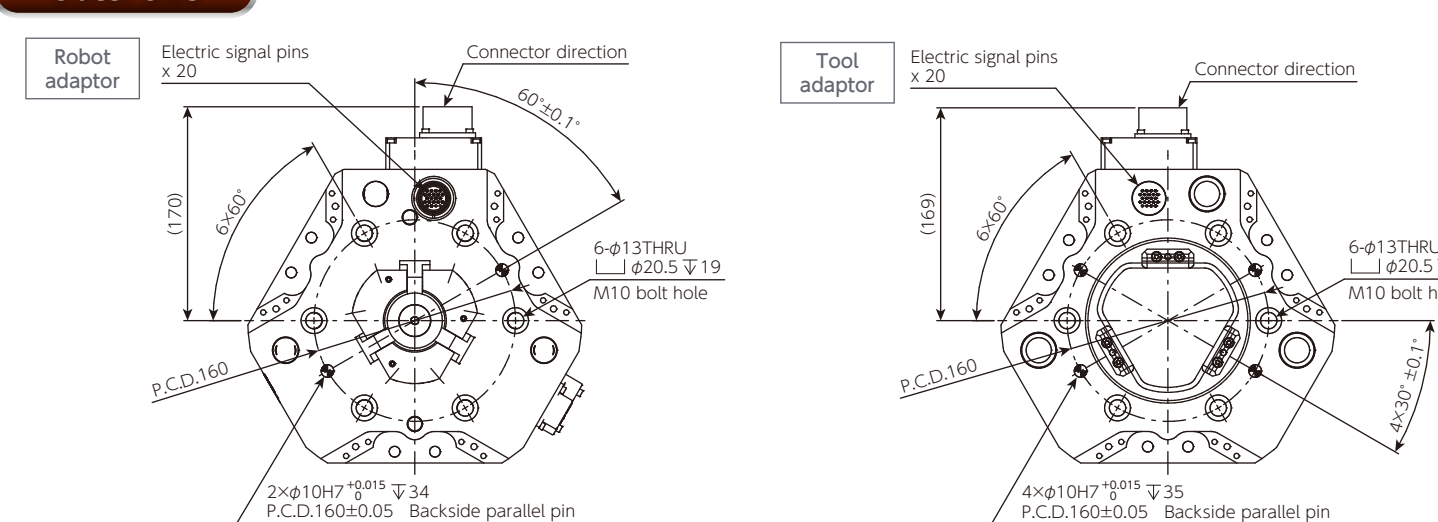
NITTAOMEGA type XM

● Payload 250~350 kg

Servo gun specification example



Outer size



Specifications		Robot side	Tool side
Payload	250~350kg	Not required (Can be directly mounted on the flange of P.C.D.160)	
Allowable moment	2,205Nm		
Allowable torque	2,205Nm	3A	
Outer size	φ265mm	Electric signal	No. of cores: None or 20
Thickness when connected	90mm	Output signals	Chuck signal, Unchuck signal, Face signal
Main body material	Aluminum alloy	Environment	Ambient temperature: 0~60°C (No freezing) Ambient humidity: 0~95%RH (No freezing)
Repeatability	±0.025mm	Connector type	Robot side: MS3102A24-28P Tool side: MS3102A24-28S
Driving pressure	0.39~0.85MPa		
Main body weight	Robot side: 6.1kg Tool side: 5.2kg		

Standard model

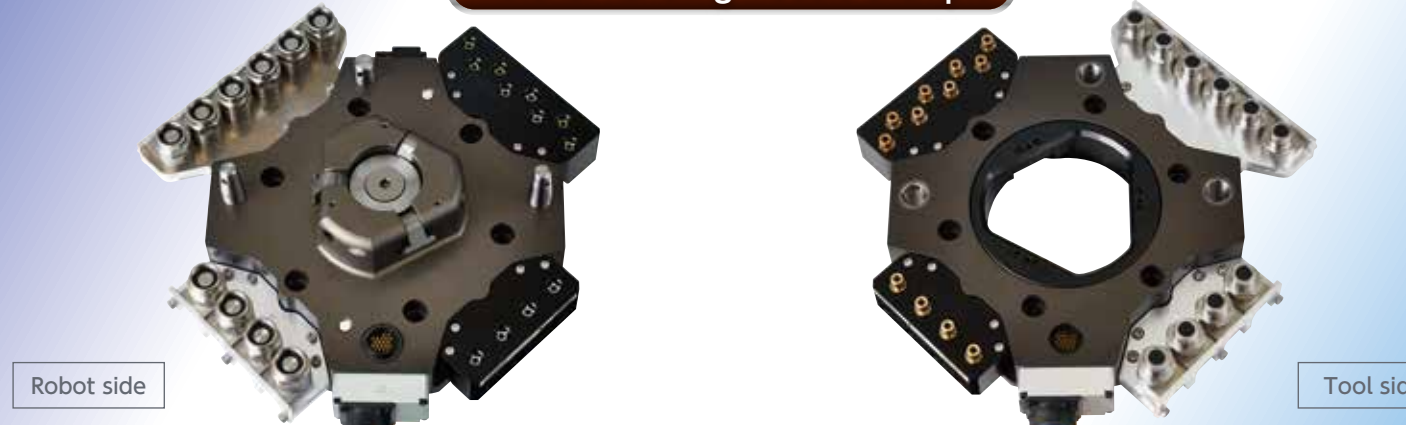
NPN type (0V common)	Robot adaptor	XMR20-0PS00	PNP type (24V common)	Robot adaptor	XMR20-0PS01
	Tool adaptor	XMT20-0PC01		Tool adaptor	XMT20-0PC01

* Adaptor Bolt Assy (MOAC-011-45; without insulator, MOAC-002-45; with insulator) are sold separately.

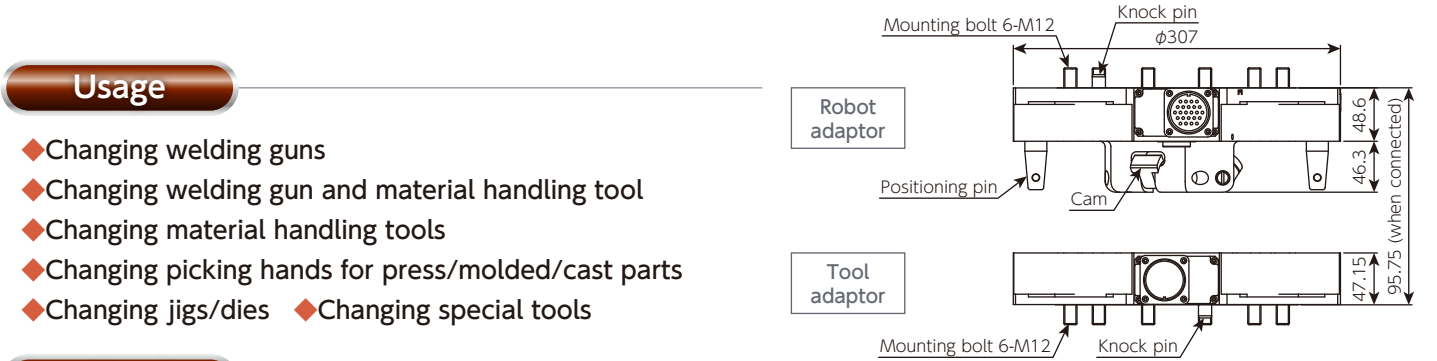
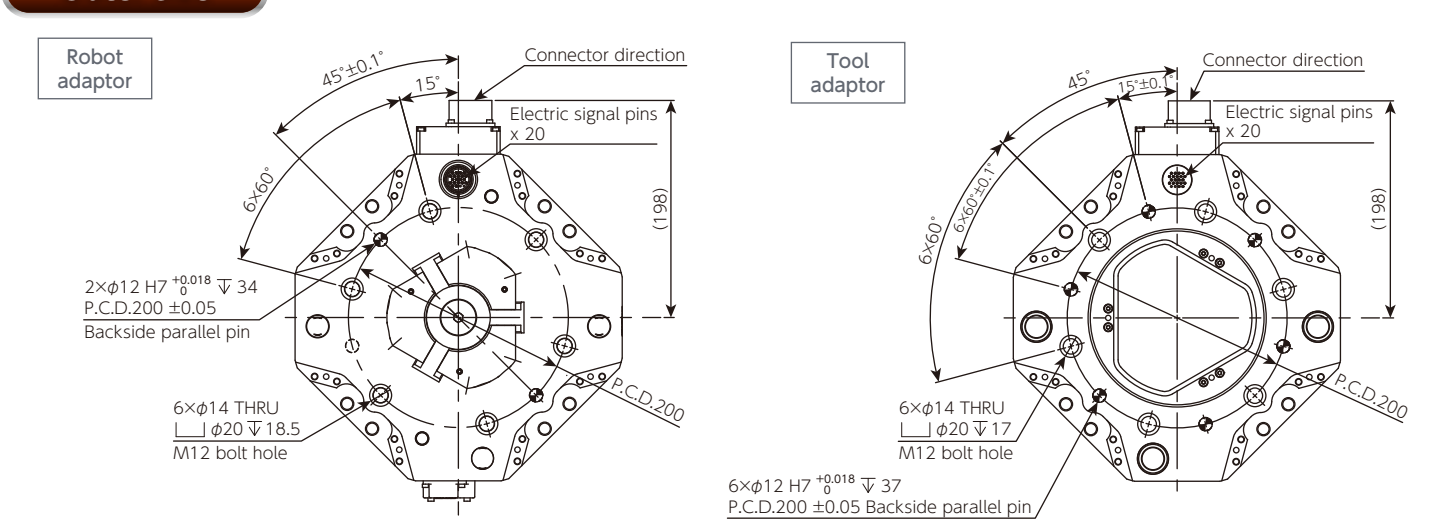
NITTAOMEGA type L

● Payload 350~600 kg

Material handling module example



Outer size



Specifications		Robot side	Tool side
Payload	350~600kg	Not required (Can be directly mounted on the flange of P.C.D.200)	
Allowable moment	4,000Nm		
Allowable torque	4,000Nm	3A	
Outer size	φ307mm	Electric signal	No. of cores: None or 20
Thickness when connected	96mm	Output signals	Chuck signal, Unchuck signal, Face signal
Main body material	Aluminum alloy	Environment	Ambient temperature: 0~60°C (No freezing) Ambient humidity: 0~95%RH (No freezing)
Repeatability	±0.025mm	Connector type	Robot side: MS3102A24-28P Tool side: MS3102A24-28S
Driving pressure	0.39~0.85MPa		
Main body weight	Robot side: 9.8kg Tool side: 7.9kg		

Standard model

NPN type (0V common)	Robot adaptor	LOR20-0PS00	PNP type (24V common)	Robot adaptor	LOR20-0PS01
	Tool adaptor	LOT20-0PC01		Tool adaptor	LOT20-0PC01

* Adaptor Bolt Assy (LOAC-001-50; without insulator) is sold separately.

CT Modules

● Applicable to type M / type XM / type L

Spot welding module

	Robot side	Tool side
Standard model	CTRW04-003	CTTW04-003
Specifications	Direct coupling: 200 A, 3-pole	
Connector type	-	
Weight	Approx. 1.0 kg	Approx. 1.0 kg
Material	Voltage-proof resin	
Standard model	CTRW04-001	CTTW04-001
Specifications	Connector type: 130 A, 3-pole	
Connector type	MS3101A36-3P	MS3101A36-3S
Weight	Approx. 1.0 kg	Approx. 1.0 kg
Material	Voltage-proof resin	



Servo motor module

	Robot side	Tool side
Standard model	CTRX21-001	CTTX21-001
Specifications	3 A: 15 pcs., 20 A: 6 pcs.	
Connector type	Signal connector: MS3102A20-29P Motor power connector: MS3102A20-17P	Signal connector: MS3102A20-29S Motor power connector: MS3102A20-17S
Weight	Approx. 0.8 kg	Approx. 0.8 kg
Material	Aluminum alloy	
Standard model	CTRX42-001	CTTX42-001
Specifications	3 A: 30 pcs., 20 A: 12 pcs.	
Connector type	Signal connector: MS3102A20-29P Motor power connector: MS3102A20-17P	Signal connector: MS3102A20-29S Motor power connector: MS3102A20-17S
Weight	Approx. 1.5 kg	Approx. 1.5 kg
Material	Voltage-proof resin	



Hydraulic module

	Robot side	Tool side
Standard model	CTRH04-N00	CTTH04-N00
Specifications	Rc 1/2: 4 ports	
Weight	Approx. 0.9 kg	Approx. 0.8 kg
Material	Housing plate: Aluminum alloy, Port: Stainless steel	
Standard model	CTRH06-N00	CTTH06-N00
Specifications	Rc 1/2: 6 ports	
Weight	Approx. 1.5 kg	Approx. 1.3 kg
Material	Housing plate: Aluminum alloy, Port: Stainless steel	



Pneumatic module

	Robot side	Tool side
Standard model	CTRP04-000	CTTP04-000
Specifications	Rc 1/4: 4 ports	
Weight	Approx. 0.6 kg	Approx. 0.6 kg
Material	Aluminum alloy	
Standard model	CTRP08-000	CTTP08-000
Specifications	Rc 1/4: 8 ports	
Weight	Approx. 1.1 kg	Approx. 1.1 kg
Material	Aluminum alloy	



Signal module

	Robot side	Tool side
Standard model	CTRS35-000	CTTS35-000
Specifications	3 A: 35 pcs.	
Connector type	MS3102A28-21P	MS3102A28-21S
Weight	Approx. 0.9 kg	Approx. 0.9 kg
Material	Voltage-proof resin	



* Contact us for specifications of modules other than the CT modules listed in this catalog.