

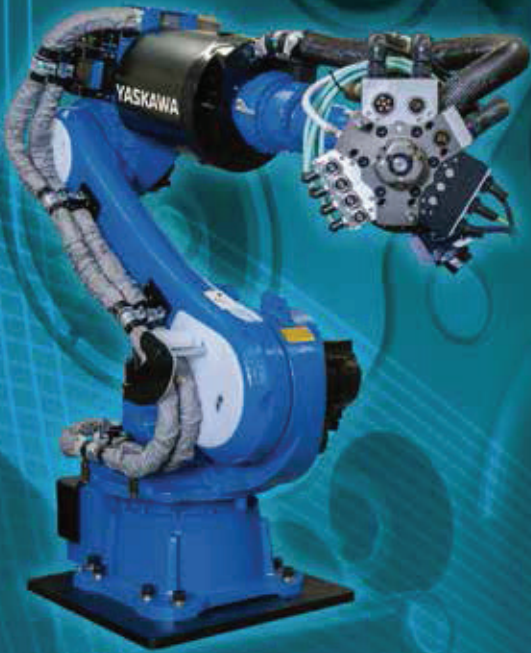


Invention & Innovation

NITTA

Automatic Tool Changer

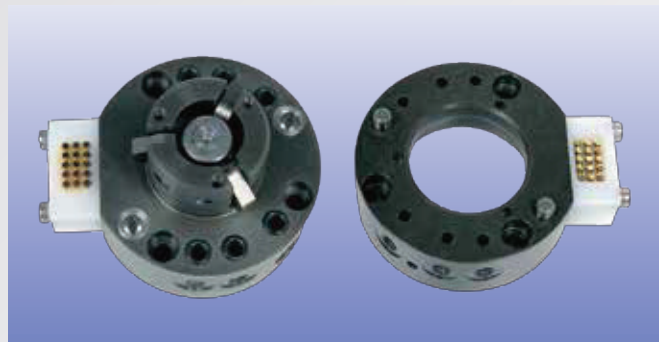
Catalogue



NITTA CORPORATION

XC10

• Payload Capacity 10kg



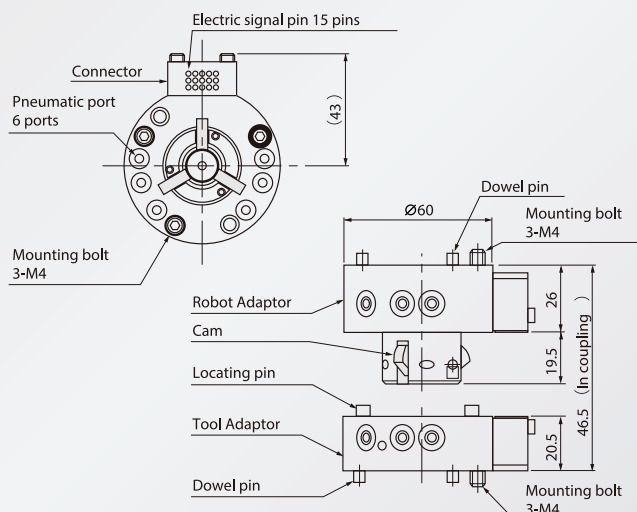
Features

- ◆ Payload Capacity 10kg
- ◆ Light weight & low price
- ◆ Fail-safe latching
- ◆ Large bore cylinder and cam lock system
- ◆ Compulsory separation mechanism

Application

- ◆ Electric / small size component handling
- ◆ Take-out for formed products
- ◆ Sealing gun change
- ◆ Attachment change for inspection robot

Dimensional outline

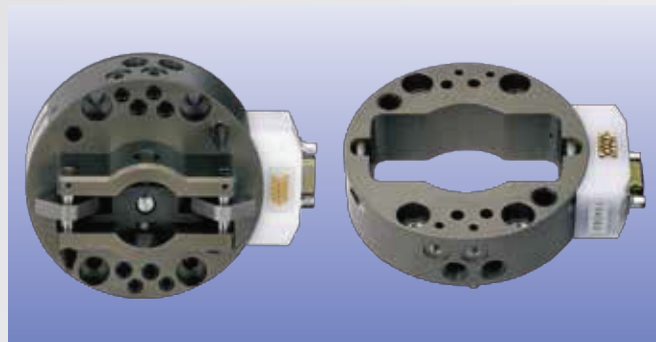


Specifications

Payload capacity		10kg
Allowable moment		29.4Nm （300kgf・cm）
Allowable torque		34.3Nm （350kgf・cm）
Housing Diameter		Ø60mm
Combined profile		46.5mm
Main body material		Aluminum Alloy
Position repeatability		0.020mm
Air pressure for working		0.39～0.85MPa （4～8.7kg/cm ² ）
Weight	Robot side	0.24kg
	Tool side	0.12kg
Electrical signal	Current	3A
	Quantity	None or 15pins
Pneumatic port	Quantity	6ports
	Effective cross section	4mm ²
	CV value	0.23/port
	Max pressure	0.855MPa (8.75kg/cm ²)
Surrounding condition	Temperature	0～60℃（No Freeze）
	Humidity	0～95％RH（No Condensation）

XC30

• Payload Capacity 30kg



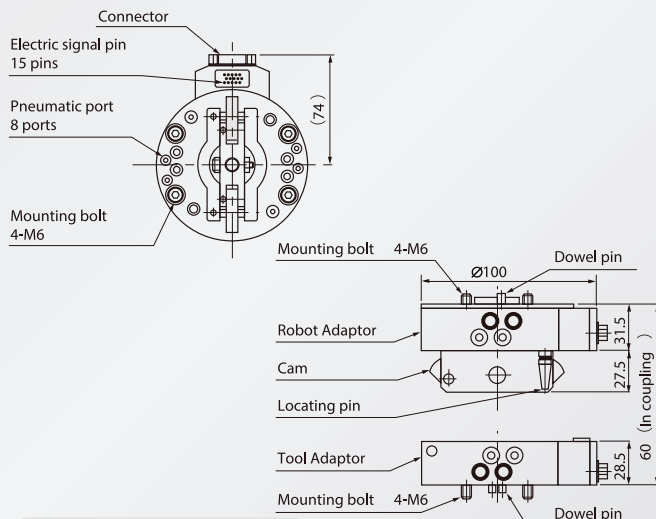
Features

- ◆ Payload capacity 30kg
- ◆ Large bore cylinder and cam lock system
- ◆ Built-in chuck / unchuck sensor
- ◆ Abundant variety of applications

Application

- ◆ Tool change for stripping pressed or formed products
- ◆ Material handling tool change for arc / spot welding
- ◆ Tool change for polishing, deburring and assembly
- ◆ Diversified material handling tool changes

Dimensional outline

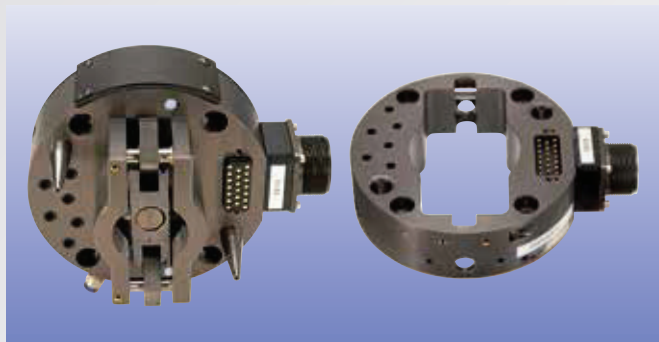


Specifications

Payload capacity		30kg	
Allowable moment		147Nm （1500kgf・cm）	
Allowable torque		147Nm （1500kgf・cm）	
Housing Diameter		Ø100mm	
Combined profile		60mm	
Main body material		Aluminum Alloy	
Position repeatability		0.025mm	
Air pressure for working		0.39 ～0.59MPa (4～6kg/cm ²)	
Weight	Robot side	1.0kg	
	Tool side	0.5kg	
Electrical signal	Current	3A	
	Quantity	None or 15pins	
Pneumatic port	Quantity	4ports Rc1/8	4ports (M5)
	Effective cross section	11mm ²	4mm ²
	CV value	0.63/ port	0.23/ port
	Max pressure	0.855MPa (8.75kg/cm ²)	
Output signals		Chuck	
		Unchuck	
		Face	
Surrounding condition	Temperature	0～60℃(No Freeze)	
	Humidity	0～95 %RH (No Condensation)	

XC60

•Payload Capacity 60kg



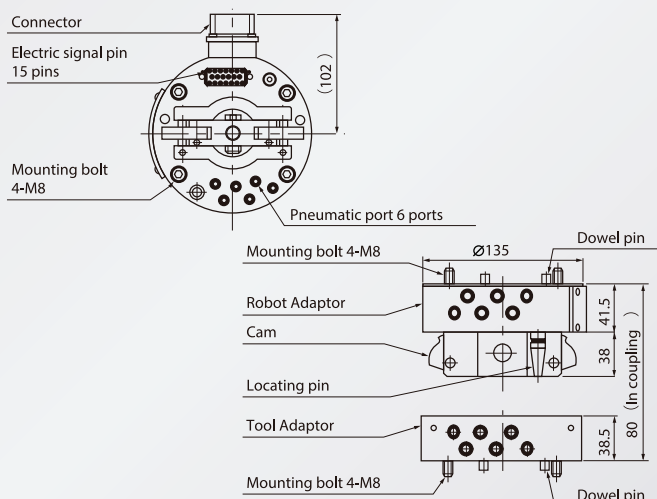
Features

- ◆ Payload capacity 60kg
- ◆ Large bore cylinder and cam lock system
- ◆ Built-in chuck / unchuck sensor
- ◆ Abundant variety of application

Application

- ◆ Tool change for stripping pressed, formed products, polishing, deburring, and assembly
- ◆ Material handling tool change for arc / spot welding
- ◆ Arc torch change and painting / sealing gun change
- ◆ Diversified material handling tool changes

Dimensional outline

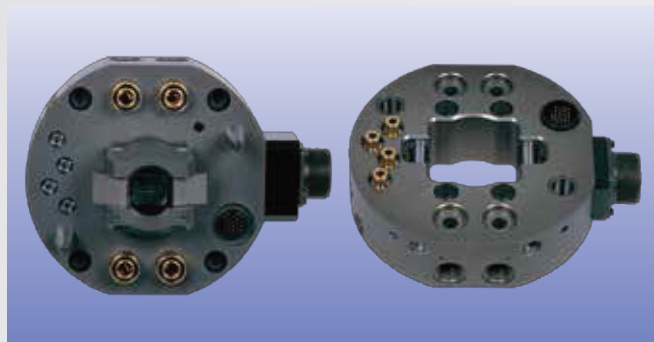


Specifications

Payload capacity	60kg
Allowable moment	441Nm (4500kgf·cm)
Allowable torque	441Nm (4500kgf·cm)
Housing Diameter	Ø135mm
Combined profile	80mm
Main body material	Aluminum Alloy
Position repeatability	0.025mm
Air pressure for working	0.39 ~0.59MPa (4~6kg/cm ²)
Weight	Robot side 1.9kg Tool side 1.0kg
Electrical signal	Current 3A Quantity None or 15pins or 20 pins
Pneumatic port	Quantity 6ports Rc1/8 Effective cross section 11mm ² CV value 0.63/ port Max pressure 0.855MPa (8.75kg/cm ²)
Output signals	Chuck Unchuck Face
Surrounding condition	Temperature 0~60℃ (No Freeze) Humidity 0~95 %RH (No Condensation)

XC120

•Payload Capacity 120kg



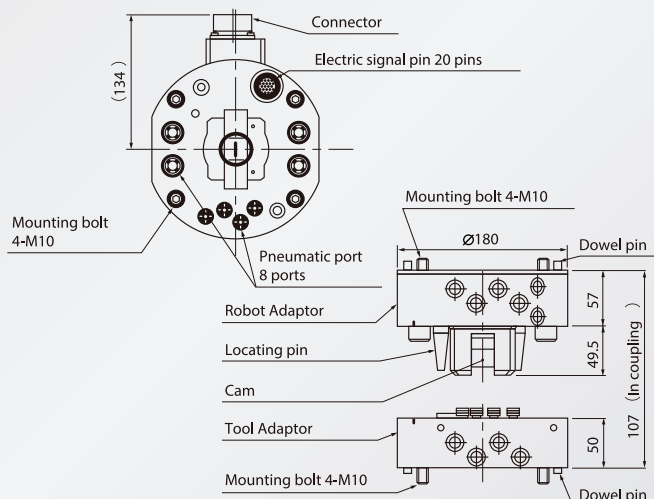
Features

- ◆ Payload capacity 120kg
- ◆ Large bore cylinder and cam lock system
- ◆ Built-in chuck / unchuck sensor

Application

- ◆ Tool change for stripping pressed, formed products, polishing, deburring, and assembly
- ◆ Change of arc torches and painting / sealing guns
- ◆ Tool change for various purposes

Dimensional outline

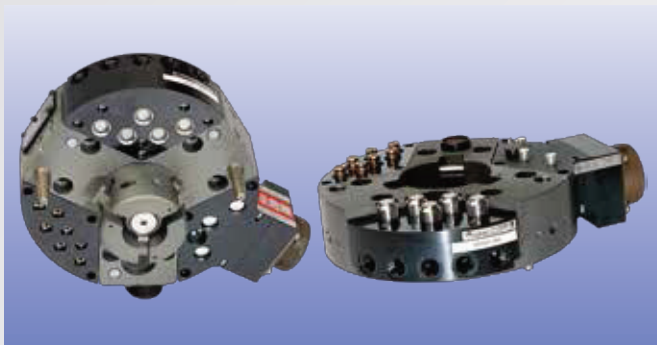


Specifications

Payload capacity	120kg
Allowable moment	1079Nm (11000kgf·cm)
Allowable torque	1079Nm (11000kgf·cm)
Housing Diameter	Ø180mm
Combined profile	107mm
Main body material	Aluminum Alloy
Position repeatability	0.050mm
Air pressure for working	0.39 ~0.85MPa (4~8.7kg/cm ²)
Weight	Robot side 4.6kg Tool side 2.7kg
Electrical signal	Current 3A Quantity None or 20pins
Pneumatic port	Quantity 4ports Rc1/2 4ports Rc1/4 Effective cross section 64mm ² 13mm ² CV value 3.6/ port 0.72/ port Max pressure 0.855MPa (8.75kg/cm ²)
Output signals	Chuck Unchuck Face
Surrounding condition	Temperature 0~60℃ (No Freeze) Humidity 0~95 %RH (No Condensation)

OMEGA IV

• Payload Capacity 200kg



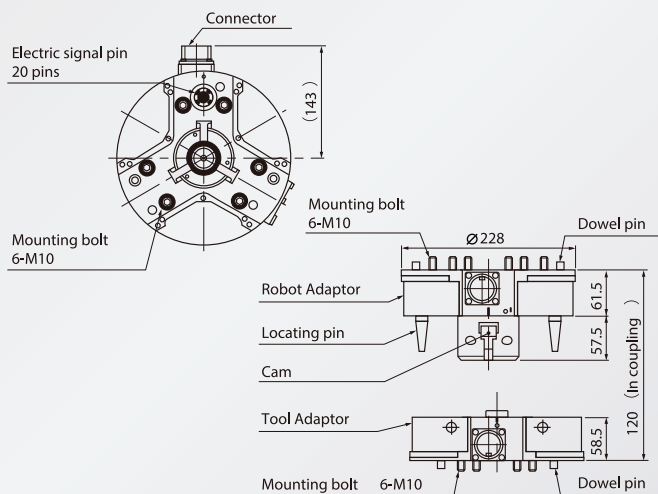
Features

- ◆ 3-module system
- ◆ High rigid body
- ◆ Easy and secure coupling / uncoupling with cam lock system
- ◆ Directly mounted solenoid valve as option
- ◆ LED equipped as standard
- ◆ Module compatible with former Omega Series

Application

- ◆ Gun changer for spot welding
- ◆ Converting from spot welding to material handling
- ◆ Assembly material handling tool changer
- ◆ Changing stripping hand for press-formed works
- ◆ Attachment change

Dimensional outline

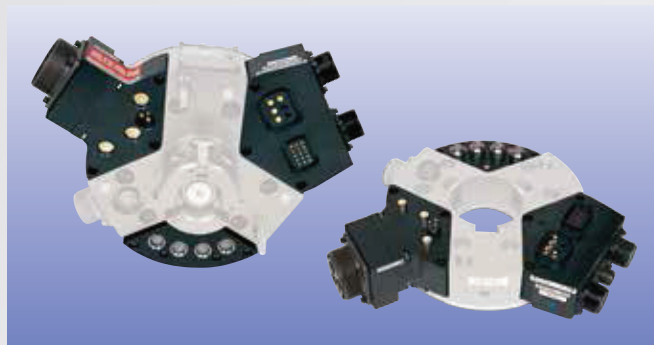


Specifications

Payload capacity	200kg
Allowable moment	1471Nm (15000kgf·cm)
Allowable torque	1471Nm (15000kgf·cm)
Housing Diameter	Ø228mm
Combined profile	120mm
Main body material	Aluminum Alloy
Position repeatability	0.050mm
Air pressure for working	0.39 ~ 0.85MPa (4 ~ 8.7kg/cm ²)
Weight	Robot side 4.2kg Tool side 2.8kg
Electrical signal	Current 3A Quantity None or 20pins
Output signals	Chuck Unchuck Face
Surrounding condition	Temperature 0 ~ 60℃ (No Freeze) Humidity 0 ~ 95 %RH (No Condensation)

Functional module

• Modules for OMEGA IV / XC300 / XC400 / XC500



Features and Function

- ◆ All modules can be used with OMEGA IV, XC300, XC400 and XC500. They are flexible to diverse applications.
- ◆ Many kinds of modules can transfer air, water, electric current and signal inside.
- ◆ Every module has the same setting pattern to adaptors so that you can choose the module position as you like.
- ◆ Modules out of our standard can be designed by your request. Modules for other type of tool changers also can be realized.

	Spot welding module		Hydraulic module		Servo motor module	
Module						
Product code	Robot side OMRW03-※	Tool side OMTW03-※	Robot side OMRH04-004	Tool side OMTW04-006	Robot side OMRX21-※	Tool side OMTX21-※
interface	Connector type 3 - 100A pin		4 - Rc 1/2 Port CV value 3.4/port		6 - 20A pin 15 - 3A pin	
Weight	1.0kg		1.0kg	0.8kg	0.8kg	
Material	Withstand voltage resin		Main body: Aluminum Alloy Fitting: Stainless		Withstand voltage resin	

Fall Prevention System

• Automatic Tool Changer



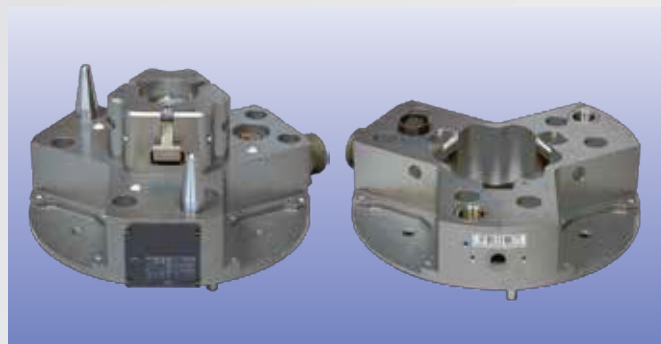
Features and Function

- ◆ Prevent tool falling by operational error, hand-operation mistake of solenoid valve, and residual air pressure by hose bent or choked.
- ◆ Easy mount on existing ATC system

Product Code	CAR-006-※※
Dimensional outline (without fitting)	64×70×73 (mm)
Main body material	Aluminum alloy
Weight	0.98kg (9.6N)
Working fluid	Air
Air pressure of working	0 ~ 0.99MPa (0 ~ 9.9kgf/mm ²)
Port diameter (nominal diameter)	Rc (PT) 1/8 (6A)
Product component	Fall prevention mechanical valve ASSY Bracket for mechanical valve Adaptor plate Dog to check the unchucking position

XC300

• Payload Capacity 300kg



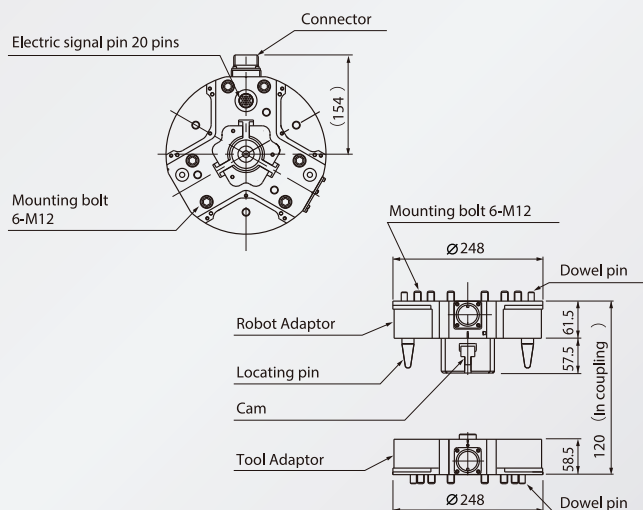
Features

- ◆ 3-module system compatible with OMEGA IV
- ◆ High rigid body
- ◆ Secure chuck / unchuck with cam lock system
- ◆ LED and chuck / unchuck sensor equipped as standard
- ◆ Directly mounted solenoid valve as option

Application

- ◆ Change of spot welding guns
- ◆ Change of material handling tools
- ◆ Change of tools extracting assembled, stripping pressed or molded products

Dimensional outline

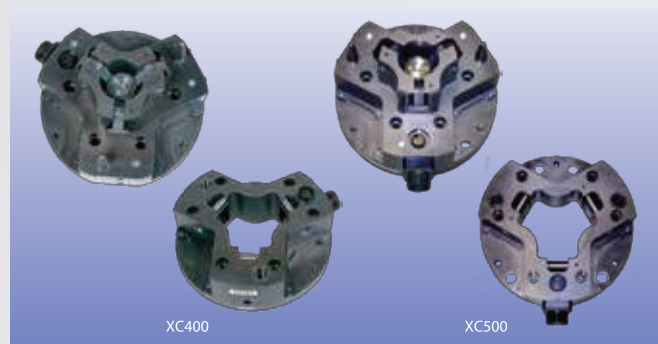


Specifications

Payload capacity		300kg
Allowable moment		2205Nm （22500kgf・cm）
Allowable torque		2205Nm （22500kgf・cm）
Housing Diameter		Ø248mm
Combined profile		120mm
Main body material		Aluminum Alloy
Position repeatability		0.050mm
Air pressure for working		0.39 ～0.85MPa（4～8.7kg/cm ² ）
Weight	Robot side	7kg
	Tool side	3.5kg
Electrical signal	Current	3A
	Quantity	None or 20pins
Output signals		Chuck
		Unchuck
		Face
Surrounding condition	Temperature	0～60℃（No Freeze）
	Humidity	0～95 %RH（No Condensation）

XC400 / XC500

• Payload Capacity 400kg / 500kg



Features

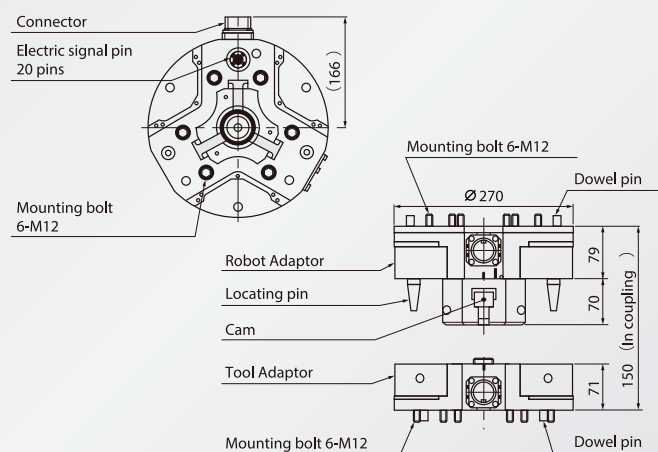
- ◆ Large bore cylinder and high rigid body
- ◆ Secure chuck / unchuck with cam lock system
- ◆ Reliable component configuration and low price
- ◆ Module compatible with OMEGA IV

Application

- ◆ Change of large-sized material handling tools
- ◆ Change of large-sized welding guns
- ◆ Change of various tools with heavy load

Dimensional outline

• XC400



Specifications

Payload capacity	400kg	500kg
Allowable moment	2942Nm (30000kgf·cm)	3500Nm (35700kgf·cm)
Allowable torque	2942Nm (30000kgf·cm)	3500Nm (35700kgf·cm)
Housing Diameter	Ø270mm	
Combined profile	150mm	
Main body material	Aluminum Alloy	
Position repeatability	0.050mm	
Air pressure for working	0.39 ~ 0.85MPa (4 ~ 8.7kg/cm ²)	
Weight	Robot side	12.0kg
	Tool side	8.0kg
Electrical signal	Current	3A
	Quantity	None or 20pins
Output signals	Chuck	
	Unchuck	
	Face	
Surrounding condition	Temperature	0 ~ 60℃ (No Freeze)
	Humidity	0 ~ 95 %RH (No Condensation)

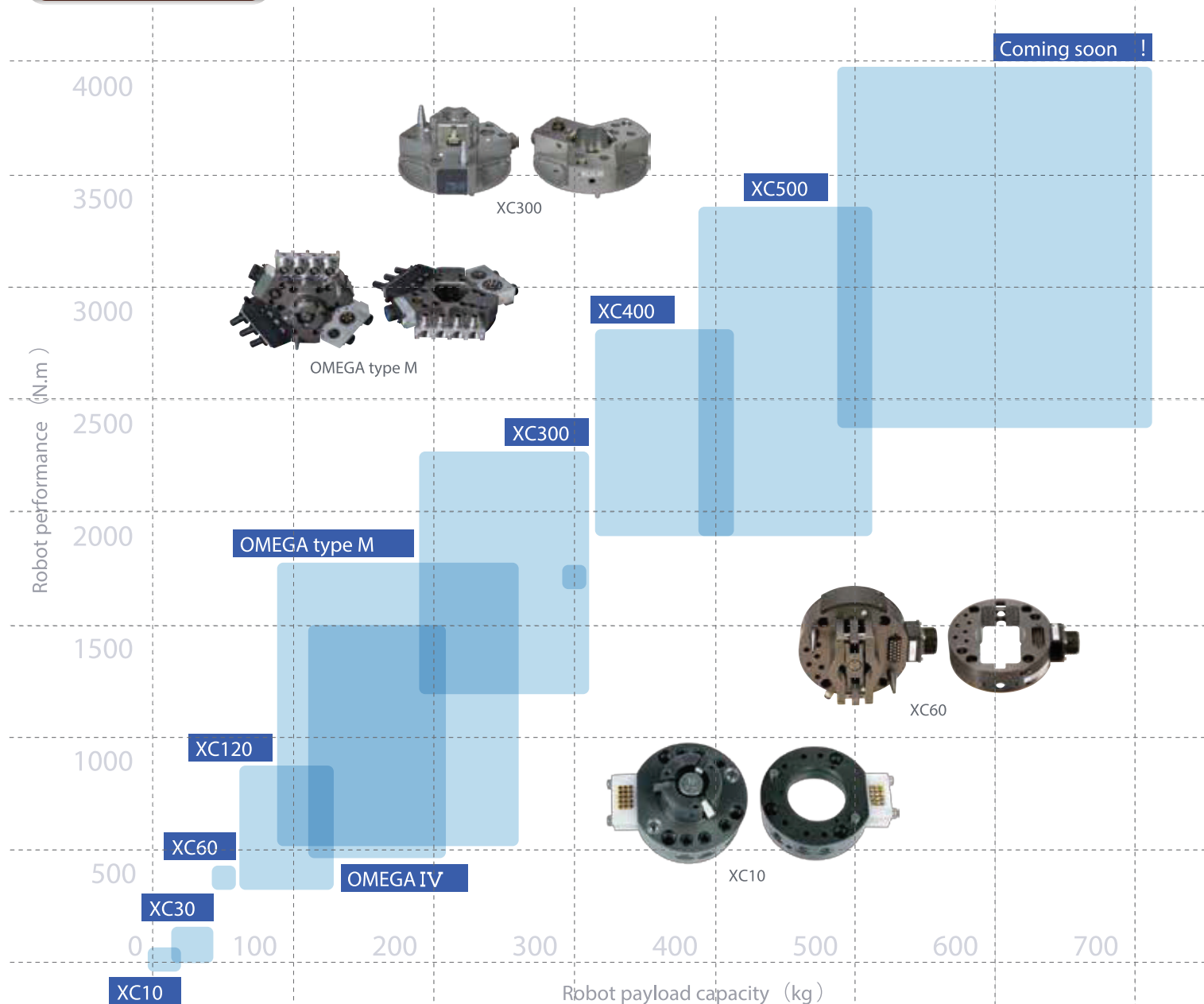
Automatic Tool Changer

Features and Application

- ◆ Safe structure held by the large-bore cylinder and cam lock system.
- ◆ More than 200,000 units used in 28 countries.
- ◆ Tool change for stripping pressed, formed products or assembly works.
- ◆ Changing spot welding guns and many kinds of material handlings.



Products line up



OMEGA type M

• Payload Capacity 50 ~ 250kg

Features and Application

The solution for new generation robots and welding process demands

◆ **50kg to 250kg payload capacity**

Adapted to 45 different kinds of robots in the world and suitable for versatility.

◆ **Thin, light, but extremely high load capacity**

Directly installed to robots. Thin and light body for fast acceleration of small high speed robots.

◆ **New generation specs**

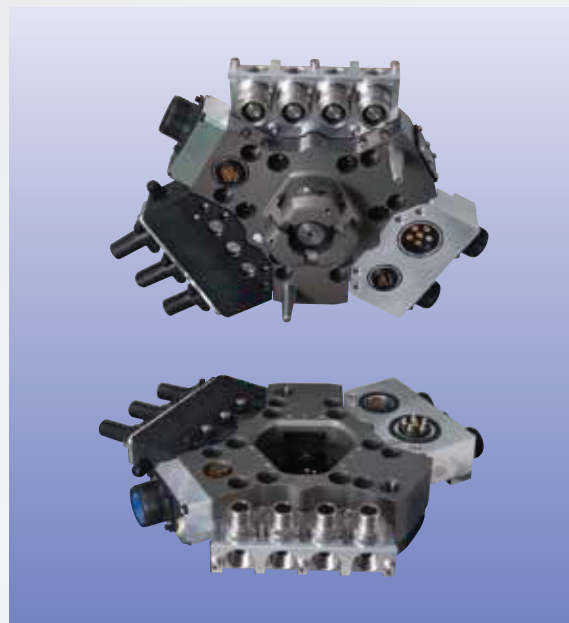
High welding current capacity, improved coolant ability, improved signal communication against noise and no water spill module.

◆ **Succession of versatility**

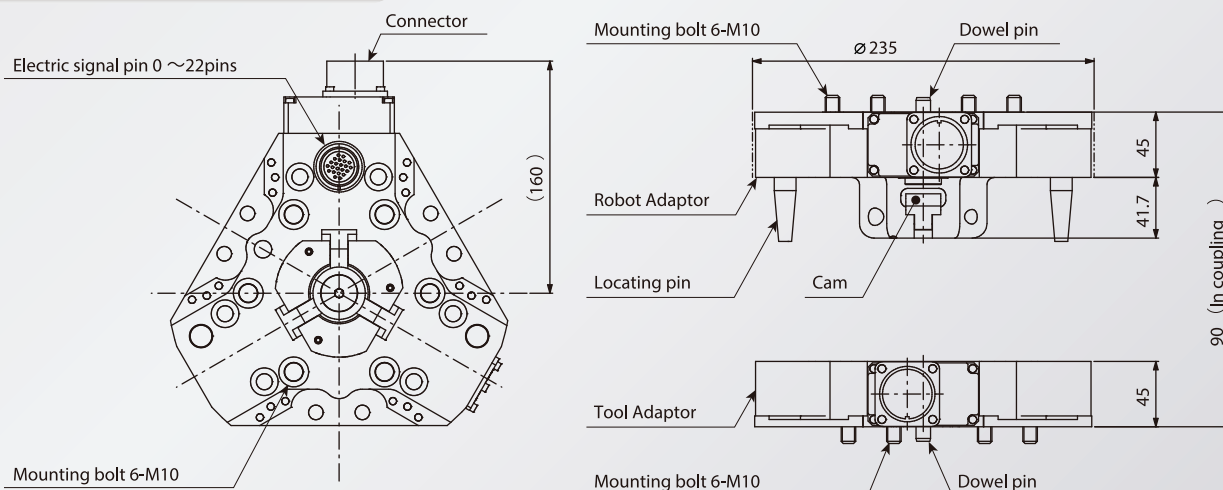
Succession of versatility such as functional modules and L / R symmetry transformation.

◆ **Preventive (predictable) maintenance function**

Maintenance work reduction by preventive maintenance. (Option)



Dimensional outline



Specifications

Payload capacity	50 ~ 250kg	Weight	Robot side	4.0kg	Output signals	Chuck
Housing Diameter	Ø 235mm		Tool side	2.2kg		Unchuck
Combined profile	90mm	Adaptor plate	Robot side	No need (Directly installed with P.C.D. 125 robot flange pattern.)	Surrounding condition	Face
Main body material	Aluminum Alloy		Tool side			
Position repeatability	0.050mm	Electrical signal	Current	3A	Temperature	0 ~ 60 °C (No Freeze)
Air pressure for working	0.39 ~ 0.85MPa (4 ~ 8.7kg/cm ²)		Quantity	0 ~ 22pins	Humidity	0 ~ 95 %RH (No Condensation)

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'Automatic Tool Changer'

Automatic Tool Changer provides function of changing tools and jigs for robots, and it can properly connect/disconnect electric current, air and water required for tools. As a single robot can use different kinds of tools, it can contribute to multi-function and versatility of production line.