zero.globalzeus.com/en

ZEUS
ZERO ROBOT

Zeus is the ideal partner for your automation!

Global ZEUS

GLOBAL **ZEUS**

Global Zeus has grown alongside the development of the semicon ductor, display, robot and IT industries.

Regardless of the customer´s geographic location or their specific needs and requirements, our company provides the highest quality in available solutions and excellence in customer support.

This has been our unwavering goal and entrepreneurial spirit for over the est. 50 years and it will continue to drive our motivation and enthusiasm towards good business practices.

BE READY

- On-site Zeus engineers are ready for domestic/overseas site stabilization
- Training and development of repair & maintenance experts on site
- More than 100 engineers on site

Made In Korea

- Appraised for have a faster response than our peers
- Customization for demands
- Import replacement effect

PROFESSIONAL

- More than 25 years in robotics business
- Proprietary technology (Motor, Robotics, Control)
- Experienced robotics development engineers

HISTORY

2010 ~ 2023

2023.03	Selected by the Ministry of Trade, Industry and Energy as the Best Company
2022.08	HERACEM TECHNOLOGY INCORPORATING SUBSIDIARY (Manufacture of photosensitive materials and chemicals)
2021.11	The Ministry of Employment and Labor, Job Planet selected an excellent company in work-life balance
2021.02	Main building of new head office in Hwaseong completed
2019.06	Industrial articulated robotics (ZERO) launched
2018.04	Relocated head office to Hwaseong, Gyeonggi-do
2017.12	Paju, Gyeonggi-do business place completed
2014.05	Received the World Class 300 Company certificate of Designation from SMBA
2013.09	Designated as a leading company in HR practices, “Best HRD Company”
2013.04	Established ZEUS China
2012.12	Received the Korean World-class product award for both the laminating & tabbing systems
2011.12	Received a trophy in recognition of exporting 30 million dollars from KITA
2011.12	Received the Korean World-class product award for HP/CP

2000

2009.07	Completed construction of the 10MW, crystalline, solar cell module demo line
2009.04	Acquired JET CO., LTD (Manufacturer of wet stations for the semiconductor industry)
2007.12	Acquired 3Z Corporation
2007.10	Entered into PV Equipment market
2006.02	Listed on the KOSDAQ
2005.11	Received a trophy in recognition of exporting 10 million dollars from KITA
2005.07	Relocated Head Office to Osan
2004.12	Established Ansan Plant-2
2004.03	Won the Korean Silver Tower Industrial Medal Established an office in China
2004.01	Completed construction on new office buildings in Osan
2003.12	Established Ansan Plant-1
2003.03	Manufactured LCD glass HP/CP
2001.01	Manufactured LCD in-line transfer system, LCD bake oven, LCD inspection equipment
2000.12	Constructed office building and commenced operations in Yongin

1900

1999.10	Prepared manufacturing base for 3G LCD
1996.12	Introduced 2G LCD in-line system
1988.12	Converted to a corporation as ZEUS CO., LTD
1981.05	Entered into the semiconductor equipment business area
1970.03	Established ZEUS COMM. Corporation

EVERYTHING STARTS WITH ZERO SERIES

ZERO robots are automated robots that offer a high level of reliability
Check out our ZERO robotics for your most ideal production process system.

Controller

Wide variety of teaching methods

Desired teaching methods, depending on the purpose and method, can be used.

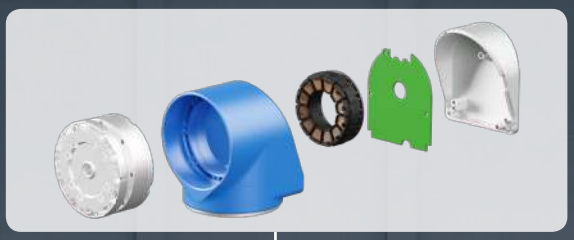
Integrated robotics control realized

Each robot is connected using EtherCAT to enable integrated control. A system is provided for the collaboration of multiple robots, and system scalability is convenient.

Controller

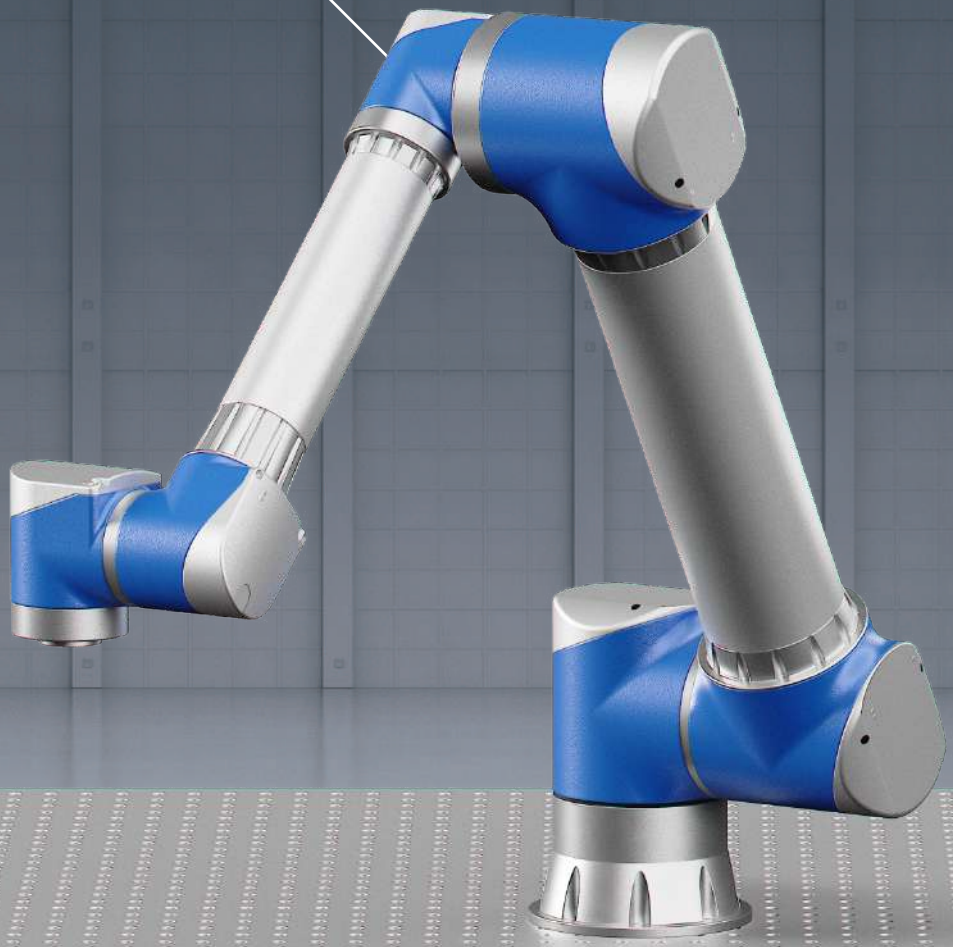
Provided by default

All-in-one Joint Module



Modular actuators

Motors, reducers, encoders, and motor drives, among other parts needed for robot joint operation have been modularized into one actuator. This cuts manufacturing costs through parts standardization.



Laptop / Tablet

Prepared separately by the client

Teaching Pendant

Optional

Jog Stick

Optional

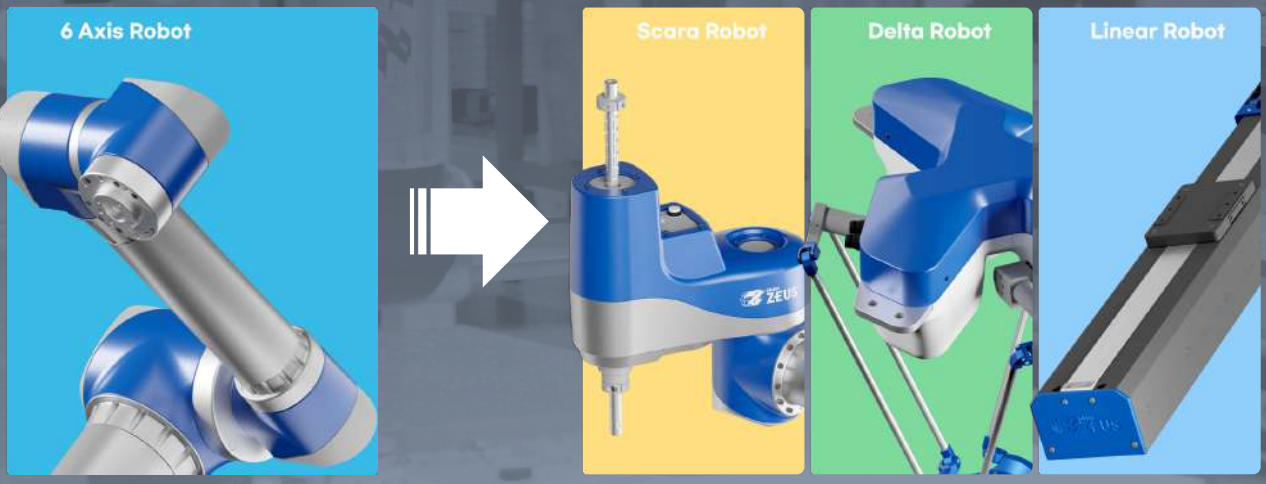
RESEARCH & DEVELOPMENT
CUSTOM ROBOT

Can develop customized robots for customers' work environment, requests and target product specifications.

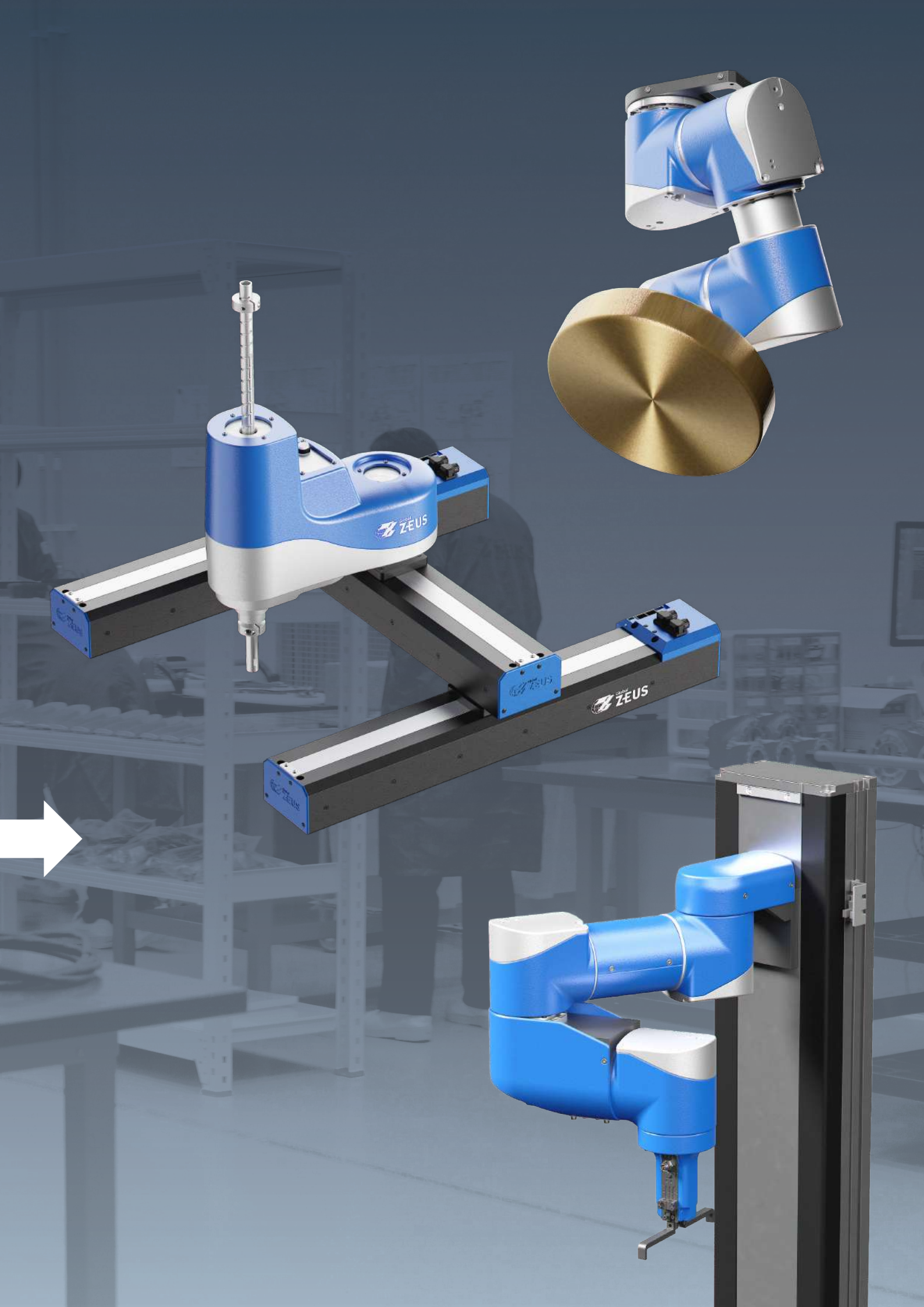
Joint module technology and custom robot development

Secured motor self-production technology

We have secured motor self-production technology with overseas collaborators. Motor drives can be manufactured in Korea, which enables cost reduction and optimized design. We also possess control algorithm core technologies for motors.



Using joint modules, we developed new robots.


ZEUS
ZEUS

6 AXIS

6 Axis Articulated Robot 'ZRA'

ZERO 6 axis robot requires small space for installation.
And by having high degree of freedom,
it can be applied to various applications.

Payload	Weight	Working Area
5~7kg	17kg	Ø1320~1720

1 Pass-through motion saves time and space

Pass-Through function

- Unique manipulator motion while the 1st Arm is longer than the 2nd Arm
- Transfer items without turning manipulator to the opposite side
- Apply pass-through when implementing motion
- Save operating space and takt time for the entire process

Optimal space utilization

- Having no turning motion makes space utilization maximized
- Have excellent efficiency when mounted in cases such as machine tools, vending machines, and unmanned stores


Turn-Around


Pass-Through

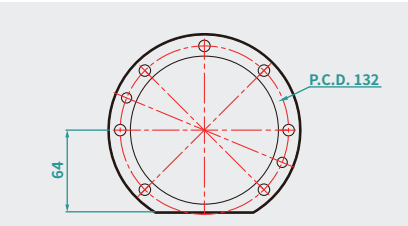
2 Easily applicable small footprint

Small size that can be installed alone

- Has a small footprint and can be installed in small spaces
- Diameter of base flange: 149mm
- Mounting: M8 screw x 7 (P.C.D. 132mm)

Anywhere applicable light weight

- Lighter than other products with similar payload
- Minimize footprints by installing on the ceiling



Bottom Flange

SCARA

Horizontal Articulated Robot 'ZRB'

ZERO SCARA robot has high rigidity to allow precise posture control by its minimal belt use.
Clean room option ready

Payload	Weight	Working Area
0.5~4kg	14~15kg	Ø800~1300

1 Modular SCARA Robot

Easy parts replacement and repair by using joint modules

- Scara robots share some of the ZRA model parts

2 Rigid Design

Z / Roll Axis module with minimal belt use

- Do not use the belt by designing the screws and motors on the Z axis module in a directly connected structure
- High rigidity allows precise posture control when moving quickly with high payload

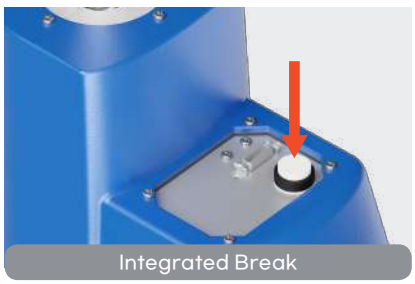
Repeatability	XY (mm)	± 0.01
	Z (mm)	± 0.01
	Roll (deg)	± 0.01

*Based on the 400mm model

3 Integrated Break

Z / Roll Axis brake release button

- Two brakes (Z-Axis and R-Axis) can be released and operated simultaneously with one button


Integrated Break

DELTA Medium

Parallel Robot 'ZRC'

one-hand teaching

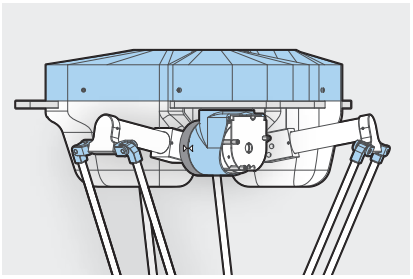
Precise control

ZERO Delta robot has more light weight than other product with similar payload. Top-notch level repeatability.

Payload	Weight	Working Area
3kg	16~17kg	Ø 400

1 Modular Delta robot

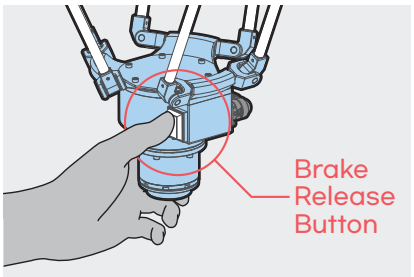
Easy parts replacement and repair by using joint modules



2 Easy one-hand teaching without power

Integrated brake release button in three joints

- The brake release button is installed on the end effector for simple manual operation with servo power off



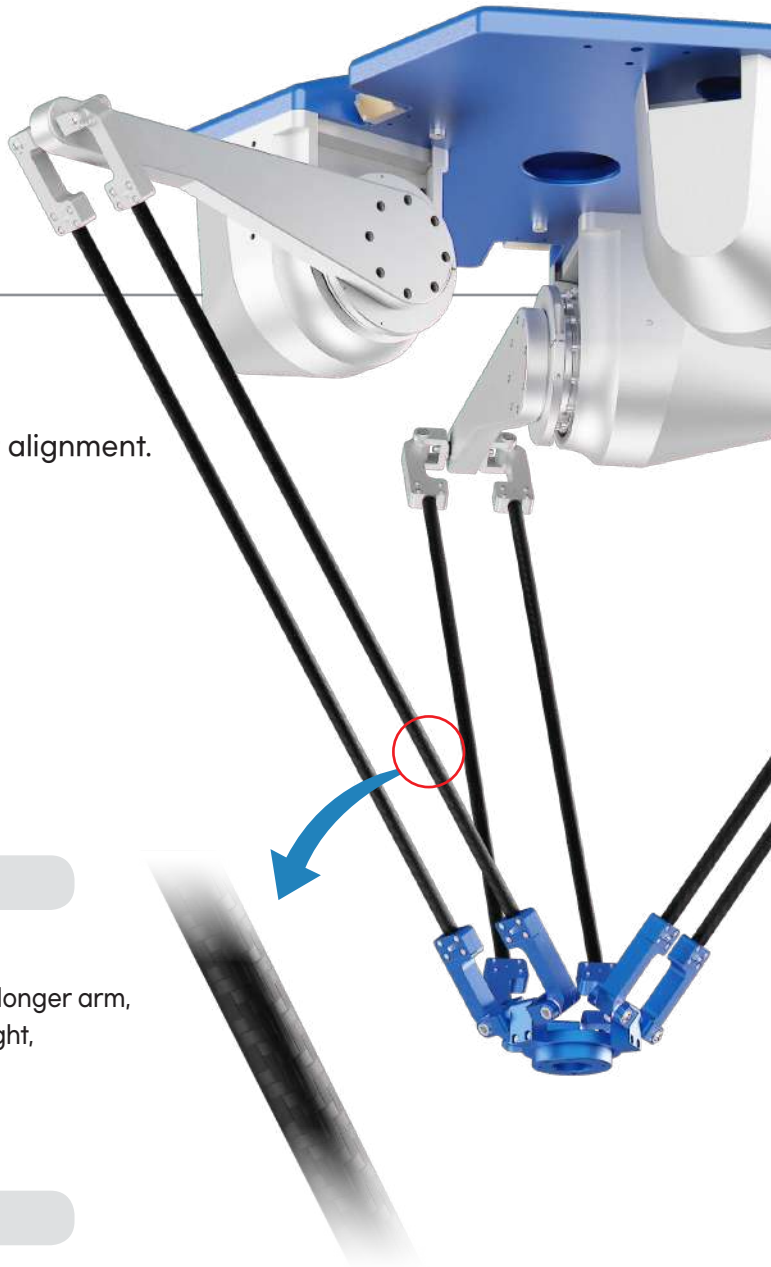
3 Frame designed for conveyor use

Example of a conveyor system layout

- The frame is highly stable and space-utilized, so robot can be used without attaching robot in the ceiling
- Open structure for easy installation and utilization

DELTA Large

Parallel Robot 'ZRC'



Significantly expanded working area of the existing Delta robot, with Ø1600mm H 300mm. Additional rotation shaft option allows product alignment.

Payload	Standard Cycle Time	Working Area
3kg	0.4s	Ø 1300,1600

1 High-rigidity, lightweight design

Improved payload and repeatability

- To improve payload and repeatability while using longer arm, 1st arm is designed with high rigidity and light weight, and carbon FRP material is applied to 2nd arm

2 Enhanced delta robot

Automatic encoder reset

- Can return to its home position if the encoder information is lost, using a magnet sensor and a sensor dog at the origin of the drive

Easy-to-replaceable end effector

Preparing for Kcs, UL certification

3 High power motor

- 1kW high power motor per each axis for fast speed while using longer arm

TEACHING PENDANT

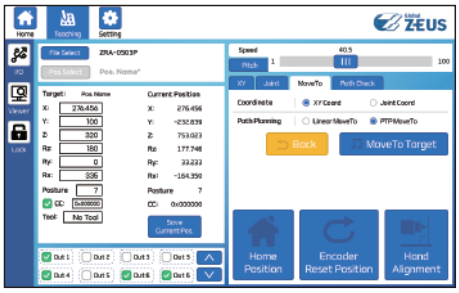
Touch UI Teaching Pendant 'ZP'

Touch-based pendant which controls and commands ZERO robots without PC.
Easy-to-carry stationary structure and back strap.

1 ZERO series tailored software

Operate all ZERO series robot with multiple motors

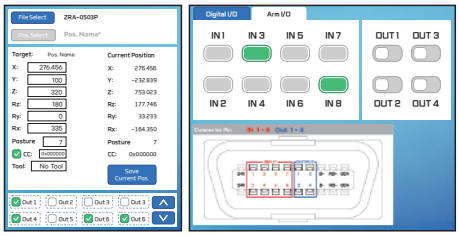
- Software updates when developing additional robots
- Pendant checks the information on the robot stored in the controller to recognize the connected robot



2 Live monitoring

Check robot / controller information and data

- Controller I/O signals can be turned on and off for real-time monitoring and control



3 Improved response speed

Jog commands can be sent in 0.2 seconds

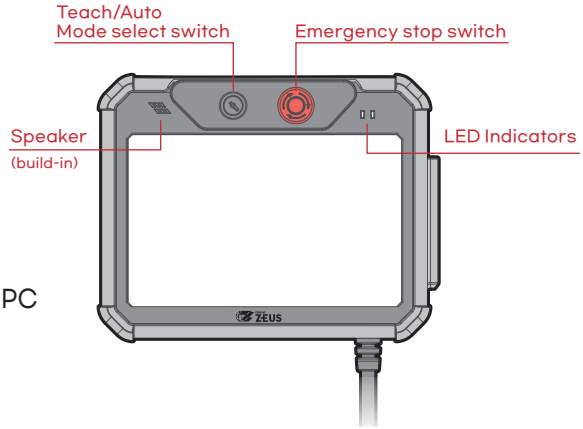
- Traditional web app methods result in delays
- Python QT has been employed to reduce resource occupancy and optimize speed

4 Easy and intuitive use

Mode change switch by turning a key

Easy and intuitive use

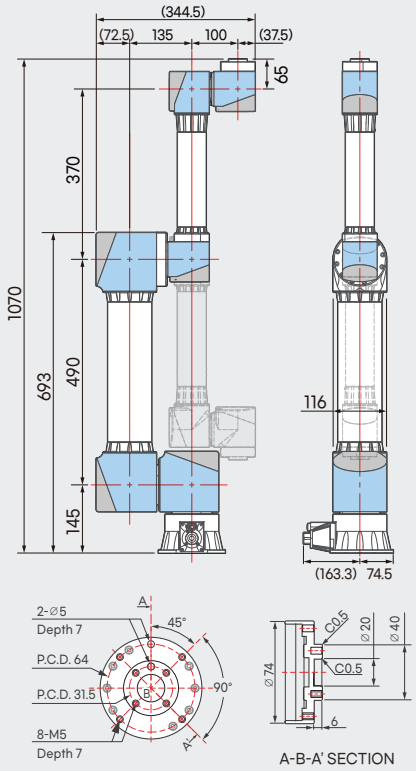
- Convenient touch panel is applied, and can be used without PC
- The layout compatibility is high in the form of a desk holder, and enable switch, EMS switch adds safety



6 AXIS

6 axis articulated robot ZRA

* ZRA-0515P model example



A-B-A' SECTION

Item		Unit	ZRA-0503P	ZRA-0515P	ZRA-0502N	ZRA-0514N
Structure		-	Articulated robot			
Degrees of motion freedom		-	6			
Mount direction		-	Floor, ceiling			
Drive system		-	BLDC motor			
Position detection method		-	Multi-turn Absolute Encoder (Battery Backup)			
Position control method		-	Servo control			
Break		-	J1, J2, J3: Holding brake (Disc brake) J4, J5, J6: Holding brake (Mechanical stopper)			
Payload	Standard	kg	5			
	Maximum		7	5	7	5
Arm length (1st Arm + 2nd Arm)		mm	660 (390 + 270)	860 (490 + 370)	660 (320 + 340)	860 (420 + 440)
Work area		mm	1320	1720	1320	1720
Motion range	J1	deg	480 (±240)	480 (±240)	480 (±240)	480 (±240)
	J2		480 (±240)	480 (±240)	480 (±240)	480 (±240)
	J3		480 (±240)	480 (±240)	300 (±150)	300 (±150)
	J4		480 (±240)	480 (±240)	480 (±240)	480 (±240)
	J5		480 (±240)	480 (±240)	480 (±240)	480 (±240)
	J6		720 (±360)	720 (±360)	720 (±360)	720 (±360)
Resultant velocity		mm/s	4420	5540	4570	5700
Repeatablity		mm	±0.02			
Permissible load inertia	J4	x10 $^{-4}$ kg·m^2	0.15	0.15	0.15	0.15
	J5		0.27	0.27	0.27	0.27
	J6		0.33	0.33	0.33	0.33
Dimensions		-	149 x 331 x 873	149 x 331 x 1073	149 x 331 x 873	149 x 331 x 1073
Weight		kg	17.2	17.5	17.2	17.5
Compatible controller		-	ZC100*			
Arm I/O (for tool)		-	8 input ports, 4 output ports / DC 24V power output			
Manipulator cable length		m	3			
Manipulator mount		-	M8 screws at 7 spots (refer the dimension drawing)			
End-effector mount		-	M5 screws at 4 spots (refer the dimension drawing)			
Noise		dB	Under 70 (Based on our test)			

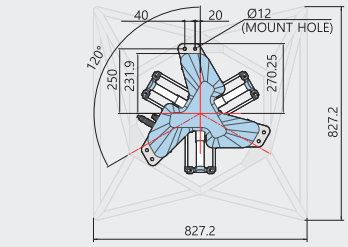
In addition to the four main models above, there are various Arm length options.

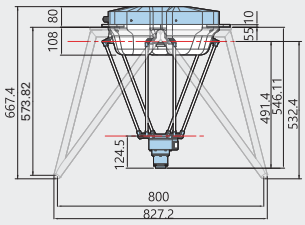
No.	Arm length (mm)	1st Arm length (mm)	2nd Arm length (mm)	Model number
1	590	320	270	ZRA-0501N
2	660	320	340	ZRA-0502N
3	660	390	270	ZRA-0503P
4	690	320	370	ZRA-0504N
5	690	420	270	ZRA-0505P
6	730	390	340	ZRA-0506N
7	760	320	440	ZRA-0507N
8	760	390	370	ZRA-0508N
9	760	420	340	ZRA-0509N
10	760	490	270	ZRA-0510P
11	790	420	370	ZRA-0511N
12	830	390	440	ZRA-0512N
13	830	490	340	ZRA-0513P
14	860	420	440	ZRA-0514N
15	860	490	370	ZRA-0515P

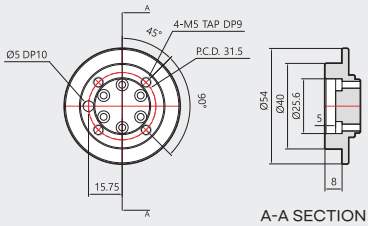
DELTA Medium

Parallel robot ZRC

* ZRC-0306R model example







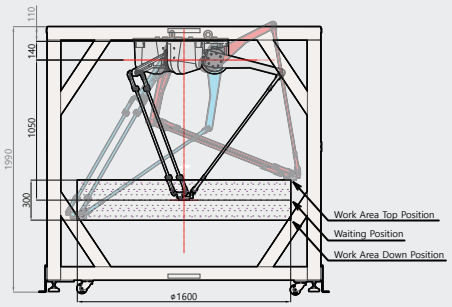
A-A SECTION

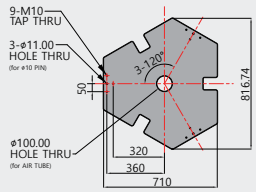
Item		Unit	ZR C-0306N	ZRC-0306R
Structure		-	Parallel robot	
Degrees of motion freedom		-	3	4
Mount direction		-	Floor (frame option), Ceiling	
Drive system		-	BLDC motor	
Position detection method		-	Multi-turn Absolute Encoder (Battery Backup)	
Position control method		-	Servo control	
Break		-	Electromagnetic Brake	
Payload	Standard	kg	1	
	Maximum		3	
Work area		-	ø 400 x H120	
Motion range	J1	deg	160 (-60 ~ +100)	
	J2		160 (-60 ~ +100)	
	J3		160 (-60 ~ +100)	
	Roll		-	720 (±360)
Resultant velocity	XYZ	mm/s	1800	
	Roll	deg/s	-	1000
Repeatablity	XYZ	mm	±0.1	
	Roll	deg	-	±0.02
Permissible load inertia	Standard	$kg \cdot m^2$	0.025	
	Maximum		0.05	
Dimensions		-	827 x 827 x 667	
Weight		kg	16(body only), 26(include frame)	17(body only), 27(include frame)
Power consumption		W	600	
Compatible controller		-	ZC100*	
Manipulator cable length		m	3	
Manipulator mount		-	M12 screws at 12 spots (refer the dimension drawing)	
End-effector mount		-	(refer the dimension drawing)	

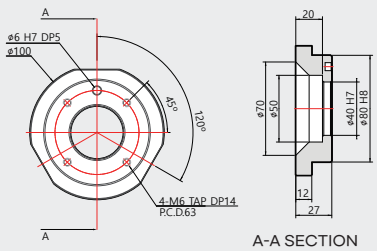
DELTA Large

Parallel robot ZRC

* ZRC-0316N model example







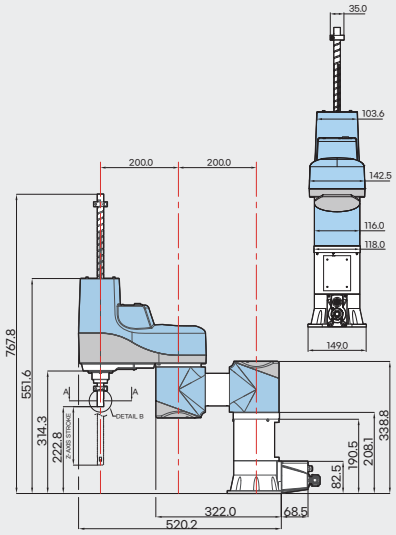
A-A SECTION

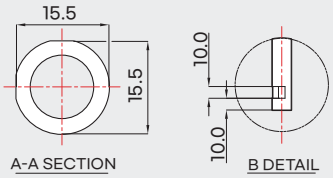
Item		Unit	ZRC-0313N	ZRC-0313R	ZRC-0316N	ZRC-0316R
Structure		-	Parallel robot			
Degrees of motion freedom		-	3	4	3	4
Mount direction		-	Floor (frame option)			
Drive system		-	AC servo motor			
Position detection method		-	Multi-turn Absolute Encoder (Battery Backup)			
Position control method		-	Servo control			
Break		-	Electromagnetic Brake			
Payload		kg	3	2	3	2
Work area		-	ø 1300 x H300		ø 1600 x H300	
Motion range	J1	deg	135 (-90 ~ +45)			
	J2		135 (-90 ~ +45)			
	J3		135 (-90 ~ +45)			
	Roll		-	720 (±360)	-	720 (±360)
Resultant velocity	XYZ	mm/s	4800			
	Roll	deg/s	-	1000	-	1000
Repeatablity	XYZ	mm	±0.1			
	Roll	deg	-	±0.02	-	±0.02
Dimensions		-	2050 x 2050 x 1900			
Weight		kg	80	81	80	81
Power consumption		W	3000			
Compatible controller		-	ZC200*			
Manipulator cable length		m	5			
Manipulator mount		-	(refer the dimension drawing)			
End-effector mount		-	(refer the dimension drawing)			

SCARA

Horizontal articulated robot ZRB

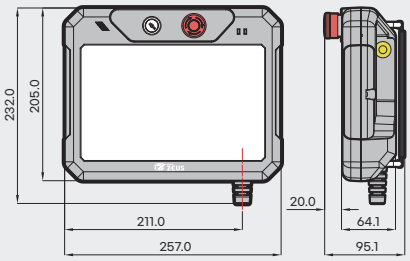
* ZRB-0440N-15A model example





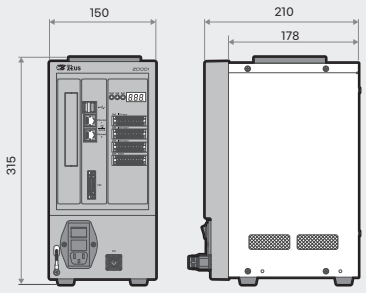
Item		Unit	ZRB-0440N-15A	ZRB-0452N-15A	ZRB-0465N-15A
Structure		-	Horizontal articulated robot		
Degrees of motion freedom		-	4		
Mount direction		-	Floor		
Drive system		-	BLDC motor		
Position detection method		-	Multi-turn Absolute Encoder (Battery Backup)		
Position control method		-	Servo control		
Break		-	J1,J2(Dynamic Brake) Z(Disk Brake) Roll(Pin Brake)		
Payload	Standard	kg	2	1	0.5
	Maximum		4		
Arm length (1st Arm + 2nd Arm)		mm	400 (200 + 200)	525 (200 + 325)	650 (200 + 450)
Work area		mm	ø 800 x H150	ø 1050 x H150	ø 1300 x H150
Motion range	J1	deg	290 (±145)		
	J2		290 (±145)		
	Z	mm	150		
	J4	deg	720 (±360)		
Resultant velocity	J1+J2	mm /s	5100	5990	6880
	Z		1013		
	Roll	deg/s	1018		
Repeatablity	XY	mm	±0.01	±0.015	±0.02
	Z		±0.01		
	Roll	deg	±0.01		
Permissible load inertia	Standard	$kg \cdot m^2$	0.03		
	Maximum		0.05		
Dimensions		-	(refer the dimension drawing)		
Weight		kg	13.8	14.2	14.6
Power consumption		W	550		
Compatible controller		-	ZC100*		
Arm I/O (for Tool)		-	8 input ports, 4 output ports / DC 24V power output		
Pneumatic piping		mm	ø 4 3 pipes		
Manipulator cable length		m	3		
Manipulator mount		-	M8 screws at 7 spots (refer the dimension drawing)		
End-effector mount		-	Hollow axle outer radius Φ16, inner radius Φ11 (refer the dimension drawing)		
Noise		dB	Under 77 (Based on our test)		

TEACHING PENDANT



Item	단위	ZP1000
Name	-	Teaching pendant
Dimensions	mm	257 x 205 x 95.1
Weight	kg	Under about 1.2
Voltage	V	DC 24
Maximum current	A	DC 1.0
Power consumption	W	Under 12
Screen	-	10.1-inch TFT LCD
Screen resolution	-	1280 x 800
Enable switch	-	3 steps, 2 channel
Emergency stop switch	-	2 channel
Mode select switch	-	2 steps, 2 channel

CONTROLLER



Item	단위	ZC1001
Compatible robot	-	all ZERO series
Dimensions	mm	315 x 210 x 150 (HxDxW)
Weight	kg	5
Maximum number of controllable axes	-	8
Programming language	-	Python
Teaching method	-	PC, JOG Stick, Teaching Pendant
I/O	-	1 Safety connector, 2 Ethernet ports, 2 USB ports, 1 Controller ports, 16 Input ports, 16 Output ports

Global ZEUS

ZERO Series Inquires

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