

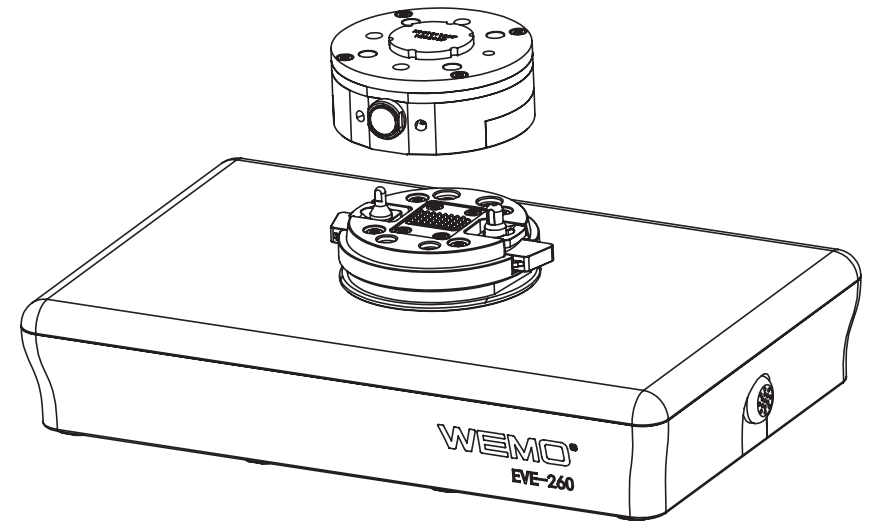
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<https://www.robotshop.com/collections/vendor-shenzhen-chengzhou-technology>

Electric adsorption User Manual

Electric adsorption user manual

EVE - 260

For the use of die



catalogue

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1 .0.

Introducti



danger

Before starting the robot action, you must read, understand and follow all safety information, robot manual and all related equipment in this manual. Failure to

1 .2. Scope of manual

21 .1. Tool version

This manual contains the following

series product	edition
EVE -260	V1.0

21 .2. This manual is

software	edition
Chengzhouvac Box	1.0.1



pay attention to

If the software / firmware version is too low, update Chengzhouvac box.

Visit the official website for technical support.

1 .3. Copyright

The information in this document is the assets of Weiming. Without the prior written permission of Weiming, the reproduction of all or part of the information is strictly prohibited. The information listed herein is subject to change at any time without notice, and the information therein shall not be regarded as a commitment made by Weiming. This manual will be reviewed and revised regularly. Vo shall not be liable for any errors or omissions in this document.

2 .0. Safety

The robot integrator is responsible for ensuring compliance with applicable safety laws and regulations in relevant countries and eliminating any significant hazards in the entire robot application. This includes, but is not limited to,:

- . Conduct a risk assessment for the complete robotic system
- . Connect other machines and other safety equipment if the risk assessment specifies
- . Set up the appropriate security settings in the robot software
- . Ensure that users do not modify any security measures
- . Verify that the entire robot system is correctly designed and installed
- .. Instructions for use
- . Mark the robot installation with the relevant logo and the contact information of the integrator
- . Integrate all documents in one technical document; including risk assessment and this manual

2 .1. Scope of use

The Chengzhou tool can be used for collaborative robots and light industrial robots with different payloads, depending on the specifications of the arm end tool. Chengzhou tools can often be used for pick-up and placement, pallet packaging, machine tool management, assembly, quality testing and inspection, and finish applications. Only available in Section 6.1 Use the Chengzhou tool under the working conditions indicated in the technical table. Any use or application that deviates from the intended use shall be deemed as unacceptable misuse. This includes, but is not limited to,:

- . Used in environments with an explosion hazard
- . Use in both medical and life-critical settings
- . Used prior to the risk assessment
- . Use when beyond the permitted working conditions and specifications.
- . Close to the human head, face, and eyes are used
- . Used as a climbing aid

2.2. Safety rules

Usually, all national regulations, legislation and laws of the country of the installation must be followed. Product integration and use must be performed in accordance with the precautions specified in this manual. Special attention must be given to the following warnings



danger

Before starting the robot action, you must read, understand, and follow all the safety, robot manuals, and all related equipment in this manual. Failure to follow the safety information may result in death or serious injury.

The information in this manual does not include complete robotic applications designed, installed and operated, or other external equipment that may affect the safety of the entire system. A complete system must be designed and installed according to the safety requirements specified in the standards and regulations of the country where the robot is installed. Any safety information provided in this manual shall not be guaranteed as Chengzhou that the robot application will not cause injury or damage, even if the machine The application meets all safety instructions.



Chengzhou shall not be liable for any Chengzhou tool damaged by any form of modification or modification. Chengzhou is not liable due to programming errors or to Chengzhou.

Liability for damage to the Chengzhou tool, robot or other equipment.

warn

The Chengzhou tool is not exposed to condensation when the power is on or connected to the robot. If condensation occurs during transportation or storage, the product must be placed at 20 to 40 degrees Celsius for 24 hours before the power on or before connecting to the robot. Chengzhou tools recommends following the following guidelines and standards:

- . ISO 10218-2
- . ISO 12100
- . ISO /TR 20218-1
- . ISO /TS 15066

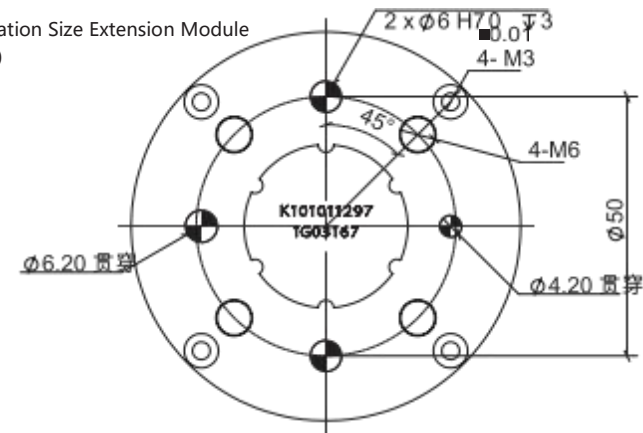
3.0. Hardware installation

3.1. Product size and hardware installation

3.1.1. Installation mode with the robot side
(Includes EVE-260)

3.1.2. EVE -260
Installation size and expansion module

●Note: Installation Size Extension Module
(customizable)



2.3. Risk assessment

The robot integrator must conduct a risk assessment for the entire robot application. The Chengzhou tool is only a component in robot applications, so the Chengzhou tool can only operate safely if the integrator fully considers the safety factors of the entire application. The Chengzhou tool uses a relatively smooth design and corners in the design, including a limited number of sharp edges and clips.

In collaborative applications, the trajectory of robots can play an important safety role. The integrator must consider the angle of contact with the human body, such as positioning the Chengzhou tools and artifacts, to make the contact surface as large as possible in the direction of movement. It is recommended that the tool connector point in the opposite direction as the movement. Chengzhou has identified the following potential hazards as significant hazards that the integrator must consider:

- . Objects flying out of the Chengzhou tools due to the loss of grip
- . Objects falling from the Chengzhou tool due to loss of grip
- . Injuries caused to collisions between personnel and workpieces, Chengzhou tools, robots or other obstacles
- . Consequences due to loose bolts
- . Chengzhou tool cable stuck on something
- . The workpiece itself is dangerous

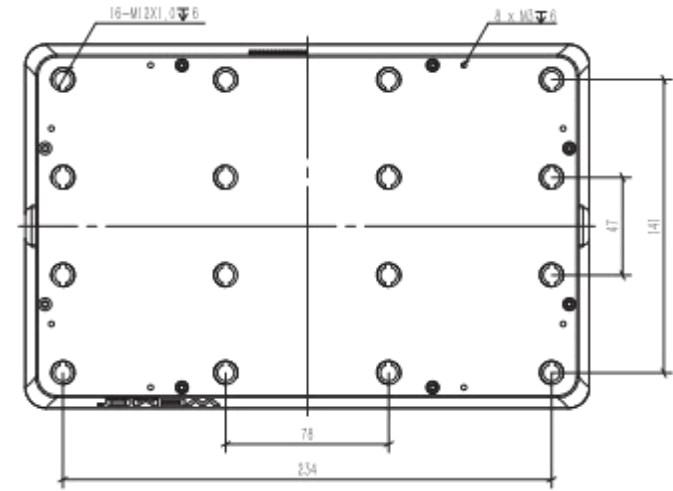
2.4. Environmental safety

Chengzhou products must be processed in accordance with applicable national laws, regulations and standards.

The product is manufactured against the use of hazardous substances to protect the environment; as defined by the EU restrictions on the Use of certain Hazardous Substances (RoHS) Directive 2011 / 65 / EU. These include mercury, cadmium, lead, hexavalent chromium, polybromated biphenyls and polybromated biphenyl ethers. EU scrapped Electronic and Electrical Equipment (WEEE) Directive 2012 / 19 / EU

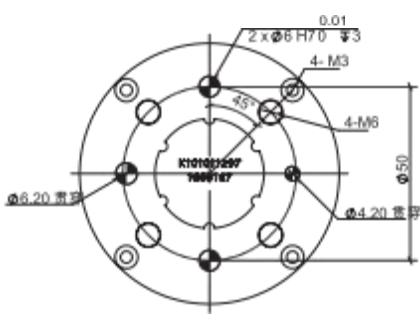


3.1.3.3.EVE-260 installation size



04

3.1.3.4. Installation mode with the robot side (EVE-260)



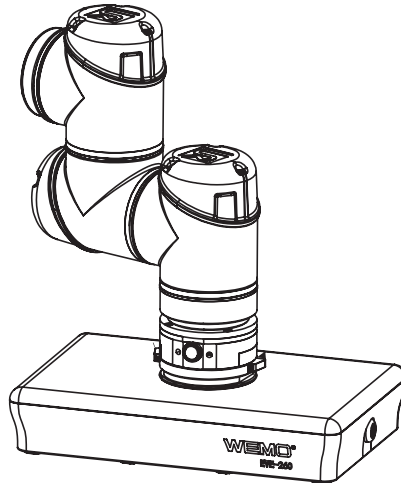
First Steps:

Connect the robot end through Figure 1 [the second step:](#)

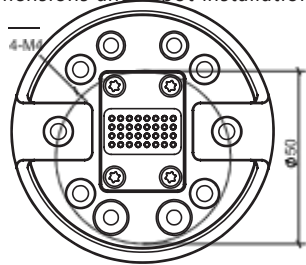
The Chengzhou tool end is aligned with the robot end

[the third step:](#)

Use the fastening rings on both ends and then lock the screws



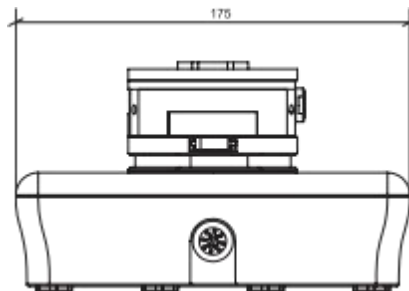
3.1.3.5. Machine side installation dimensions and robot installation (EVE-260)



First Steps:

Connect the robot end through Figure 1 [the second step:](#)

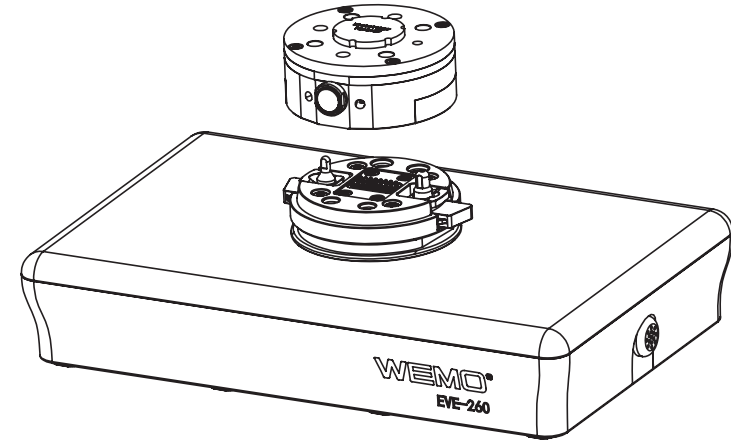
Use the M6 fastening screws to tighten with the robot



3.1.4 Installation of tools

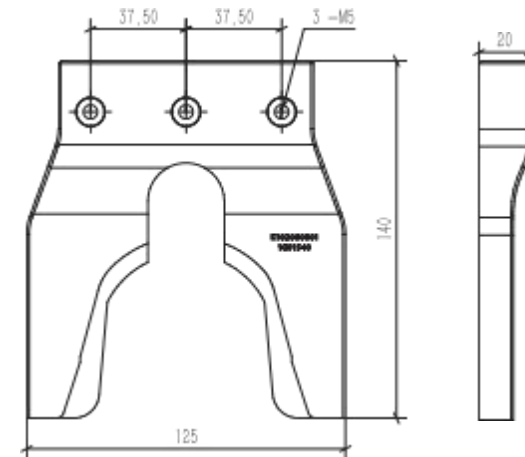
Step 1: Close the tool to the robot side as shown. After installation, the hook mechanism (rod and hook tongue) will keep the lower parts in a locked state.

Step 2: Flip the tool until it fully completely and hear a click. To remove the tool, press the aluminum button on the tool side and repeat the installation step in the reverse order.



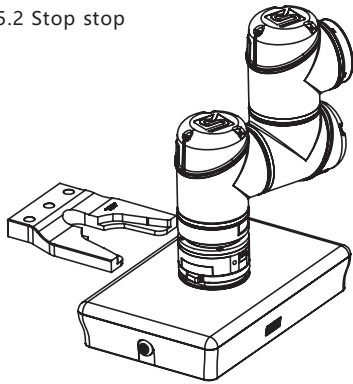
3.1.5 Installation and use of docking stations

3.1.5.1 Station size



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3.1.5.2 Stop stop



First Steps:

The robot docks the tool stop as shown.

the second step:

Enter to the starting point and hear a click. The tool side is separated from the robot side, and the tool side is docked on the dock.

the third step:

The robot enters to the starting point and hears a click. The tool side is combined with the machine and the human side, and the robot takes out the tool and continues to work.

3.1.5.3. Chengzhou tool (EVE-260)



take care

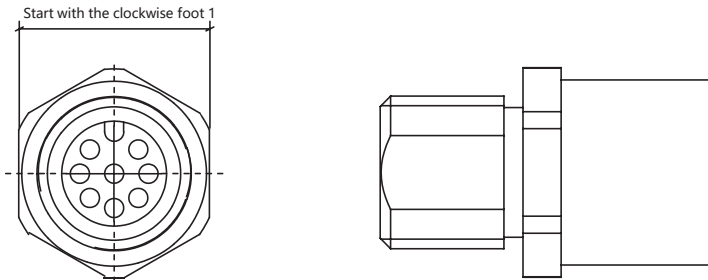
The stop must be mounted on a horizontal, solid stand.

3.2. Power supply and communication connection

3.2.1 Tool data line specification

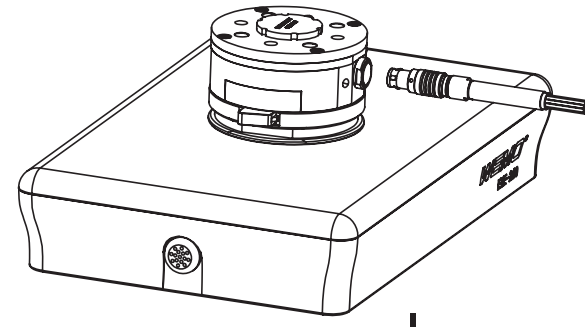
Factory is equipped with a 0.5 square M8,8-core 5M high soft band shielding line integrated power supply and communication connection, a 2MTypec to USB, signal line.

3.2.2.M8 Definition of aviation pin



1	2	3	4	5	6	7	8
DC 24+	GND	485A	485B	X 1	X 2	01	02

3.2.3 Port connection



explanatory note

Port power connector, always pull the connector housing (as indicated by the arrow) instead than the cable.



take care

The Chengzhou original cable is available only.



explanatory note

This step assumes that if the installation is complete. If this is not complete, first complete the installation steps described in the previous section.

4.0 Control mode

.14 . IO control model

IO control can be achieved by connecting the M8,8-core cable attached with the Chengzhou

X1	Universal input X1; input type: NPN / PNP (software configurable);
X2	Universal input X2; input type: NPN / PNP (software configurable);
O1	Universal output O1; output type: open drain (NPN);
O2	Universal output O1; output type: open drain (NPN);

--	--

2.4 . RS 485modbus Communication protocol control

RS 485 Default configuration
 Sver Address: 1 (configurable)
 Paud rate: 115200 (configurable)
 Data bit: 8
 Stop position: 1
 Check position: no
 Instructions

Control cards used the standard Modbus-RTU protocol. The specific control instruction consists of five parts: address code (1 byte), function code (1 byte), starting address (2 bytes), data (2 bytes) and check code (2 bytes). As shown in Table 2.2.1.

Take the read command register 010310000180CA (hexadecimal) as an example:

address code	FC	Register address	Register data	CRC, check code
0x01	0x03	0x1000	0x01	0x80CA

Table 2.2.1

Address code: indicates the ID number of the control card. Can be modified in the device ID, the default is 1.01 The Representative Modbus ID for the control card is 01.

Function code: describe the read and write operation of the control card, whether to read data to the control card or write data to the data to the control card. Common function codes include 0x03 (read hold register), 0x06 (write hold register), 0x10 (write multiple hold sender). Initialized instruction function code of 0x03 represents ready write.

Register address: control card function corresponding address. The command register address is 0x1000.

Register data: the number of registers required to be read, 0x01 means to read 1 register.

CRC verification code: to ensure that the terminal equipment does not respond to the data that changes during the transmission process, to ensure the security and efficiency of the system. The CRC check adopts the 16-bit cycle hyperactivity method and transforms according to the previous data, so that the CRC check code of the read command register is 0x80CA.

2.4 .1 Common address

type	address	quantity	read-write	functional description
Digital output	57344(E000h)	2	Read / write	Command, control the suction cup action; Executive function; 00: Close; 01: absorb; 10: Release; 11: Rapid release;
Digital input	57364(E014h)	1	read only	Whether the absorption / release is completed; 1: absorption completion; 0: release completion;
Simulation input	4608(1200h)	1	read only	Vacuum pump 1 real-time current in mA

5 .0 Hardware technical specifications

5 .1 Technical Table (EVE-260)

technical data	least value	standard figures	crest value	unit
Allowed force *			400*	[N]
Allowed Torque *			50*	[Nm]
rated payload *	10 22.04		20* 44.09	[kg] [lbs]
repeatability			±0.02	[mm]
IP grade	54			
Service life (tool replacement)		5000		[recurrence]
Service life (robot operation)	10			[Million cycles]

technical data	least value	standard figures	crest value	unit
vacuum degree	5% -0.05 1.5	- - -	60% -0.607 17.95	[vacuum] [Bar] [inHg]
air current	0	-	48	[L/min]
actual load	-	-	20 44.09	[Kg] [1b]
		10 20.04		[Kg] [1b]
vacuum chuck	1	16	16 (extensible)	[piece]
Catch time	-	0.25	-	[s]
release time	-	0.4	-	[s]
vacuum pump	Integrated type, electric BLDC			
Dust filter	Integrated form, 50 μ m,			
IP grade	IP54			

.34 . The PC-side software control mode

Download the Chengzhou Vac To ol version driver from the U disk attached with the product or from the Chengzhou website technical support and install it to the PC.

.34 .1. Installation steps

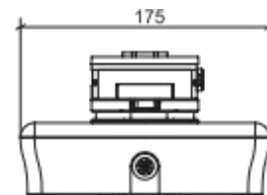
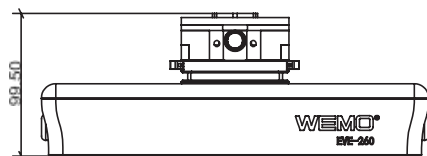
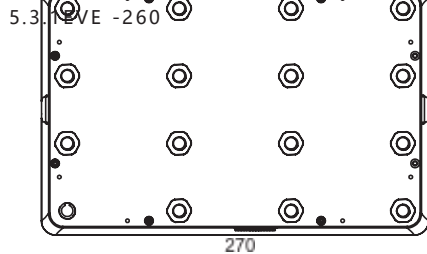
Open the U disk...(Wait for the software carrier to be assembled before adding)

5.2 Hardware specifications

Tool model	size	weight	unit
EVE -260		2.6	Kg

operational condition	least value	standard value	crest value	unit
source	20.4	24	28.8	[V]
current consumption	50	600	2000	[mA]
service temperature	0	-	50	[°C]
Relative humidity (no condensation)	32	-	122	[°F]
	0	-	95	[%]
Calculated working life	30000	-	-	[hour]

5.3 Mechanical size



6.0 Maintenance



warn

Chengzhou the arm end tools must be fully examined regularly, at least every 6 months. This inspection must include, but is not limited to, inspect the defective material and grip surface for cleanliness.

Use Chengzhou's arm end tool and the robot's original kit and original repair instructions. Failure to follow this precaution may create an unexpected risk and thus serious injury.

7.0 Troubleshooting

7.1 Error during the operation

If an error occurs during the operation, try the following operation:

1. Restart the robot and check for normal function.
2. If the error persists, please contact the dealer who sells the product to you.

8.0 Guarantee

8.1 Patent

Chengzhou's products are protected by multiple patents; some patents are still in the global process (patent application). All manufacturers in violation of any copy of the patent claim and similar products will be sued.

Without prejudice to any claim that the User (Customer) may have in relation to the distributor or retailer, the Customer shall receive the manufacturer's warranty if:

If the new equipment and its components are defective and / or have defects due to material failure within 12 months (up to 15 months from shipment), Chengzhou shall provide necessary spare parts and provide replacement spare parts or replacement parts reflecting the current technical level, or repair the working hours of the said parts. This warranty is invalid if the equipment defect is due to improper handling and / or failure to comply with the information contained in the User Guide. This warranty does not apply to or does not extend to services performed by authorized dealers or customers themselves (e. g. installation, configuration or software download). The purchase receipt and the date of purchase shall be evidence of the call warranty. A claim within the warranty period must be filed within two months before the warranty breach becomes a fact. Ownership of the equipment or components replaced by Chengzhou and returned to Chengzhou belongs to Chengzhou. Any other claim arising from or in connection with the Equipment is excluded from this warranty. Nothing in this warranty shall attempt to limit or exclude the legal rights or rights of customers

Liability for death or personal injury caused. Services provided under the warranty terms shall not extend the warranty period. In the absence of a default warranty, Chengzhou reserves the right to charge customers for replacement or repairs. The above provisions do not mean to change the burden of proof and harm the interests of customers. In case of equipment defects, Chengzhou shall not be liable for any indirect, incidental, special or subordinate damage, including but not limited to loss of profit, loss of use, loss of production or other damage to production equipment. In case of equipment defects, Chengzhou is not liable for any consequential damage or loss, such as production loss or other production equipment damage.

8 .2 Disclaimer

Chengzhou continuously improves the reliability and performance of its products, and thus reserves the right to upgrade its products without prior warning. Chengzhou ensures that the contents of this manual are accurate, but assumes no responsibility for any errors or omissions of information.