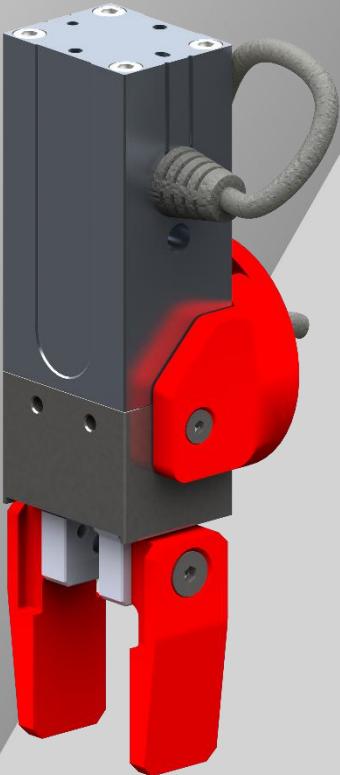


ASTORINO

Electric Gripper Operation Manual



INTRODUCTION

This manual describes the operation of an electric gripper for the "Kawasaki Robotics Astorino" educational robot.

ASTORINO is an educational robot that has been specially developed for training establishments and institutions. Pupils and students can use ASTORINO to learn the automation and robotization of industrial processes in practice.

If you have any further questions, please contact local Kawasaki Support.

1. The "astorino" software included with the ASTORINO is licensed for use with this robot only and may not be used, copied or distributed in any other environment.
2. Kawasaki shall not be liable for any accidents, damages, and/or problems caused by improper use of the ASTORINO robot.
3. Kawasaki reserves the right to change, revise, or update this manual without prior notice.
4. This manual may not be reprinted or copied in whole or in part without prior written permission from Kawasaki.
5. Keep this manual in a safe place and within easy reach so that it can be used at any time. If the manual is lost or seriously damaged, contact Kawasaki.

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SYMBOLS

Items that require special attention in this manual are marked with the following symbols.

Ensure proper operation of the robot and prevent injury or property damage by following the safety instructions in the boxes with these symbols.

 **WARNING**

Failure to observe the specified contents could possibly result in injury or, in the worst case, death.

[ATTENTION]

Identifies precautions regarding robot specifications, handling, teaching, operation,

 **WARNING**

- 1. The accuracy and effectiveness of the diagrams, procedures and explanations in this manual cannot be confirmed with absolute certainty. Should any unexplained problems occur, contact Kawasaki Robotics GmbH at the above address.**
- 2. To ensure that all work is performed safely, read and understand this manual. In addition, refer to all applicable laws, regulations, and related materials, as well as the safety statements described in each chapter.**

PARAPHRASES

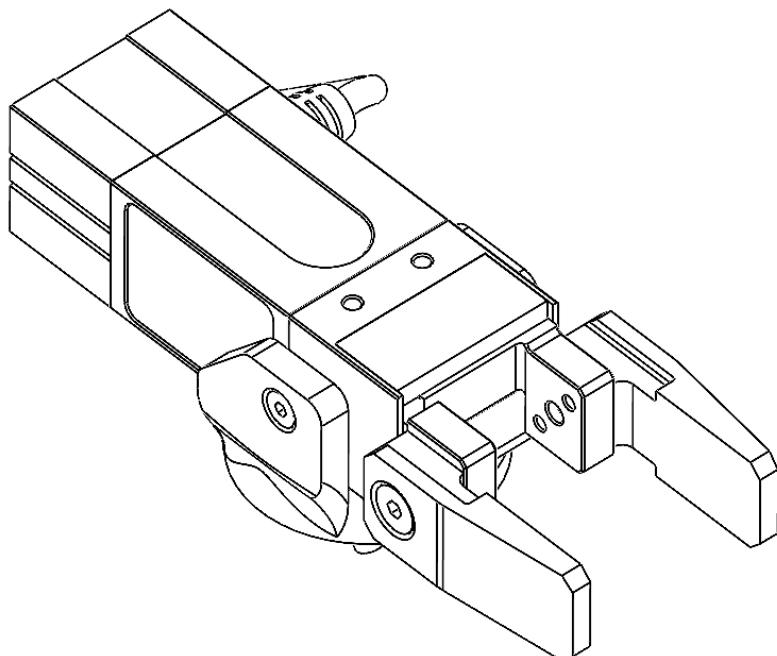
The following formatting rules are used in this manual:

- For a particular keystroke, the respective key is enclosed in angle brackets, e.g. <F1> or <Enter>.
- For the button of a dialog box or the toolbar, the button name is enclosed in square brackets, e.g. [Ok] or [Reset].
- Selectable fields are marked with a square box . If selected a check mark is shown inside the symbol .

1 TECHNICAL SPECIFICATIONS

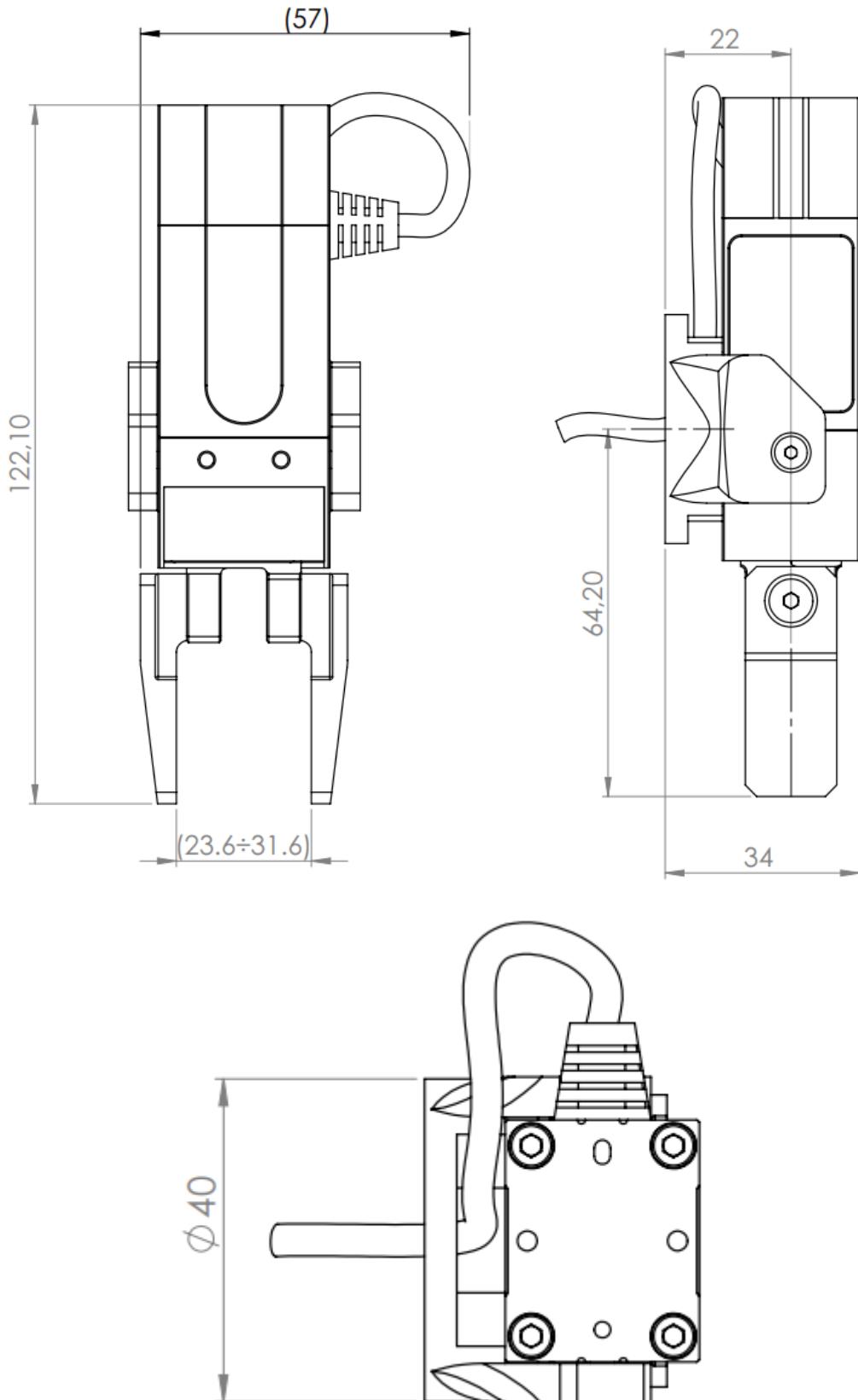
Characteristics	Astorino Electric gripper
Working environment	Temperature 15–35°C
	Humidity 35–60%
Max. power	14 W
Nominal power	4.8 W
One-way stroke motion time	0.1s
Max. hold force	8-20 N (Adjustable)
Size	57x34x122mm
Power supply	24V
Total stroke	8 mm
Weight	300 g
Recommended gripping weight	100 g
Material	Aluminium, PET-G, Steel
Colour	Silver/Red/Black

2 MAGNETIC GRIPPER PACKAGE CONTENTS



Part	Qt
Gripper	1
Installation screws	8

3 DIMENSIONS



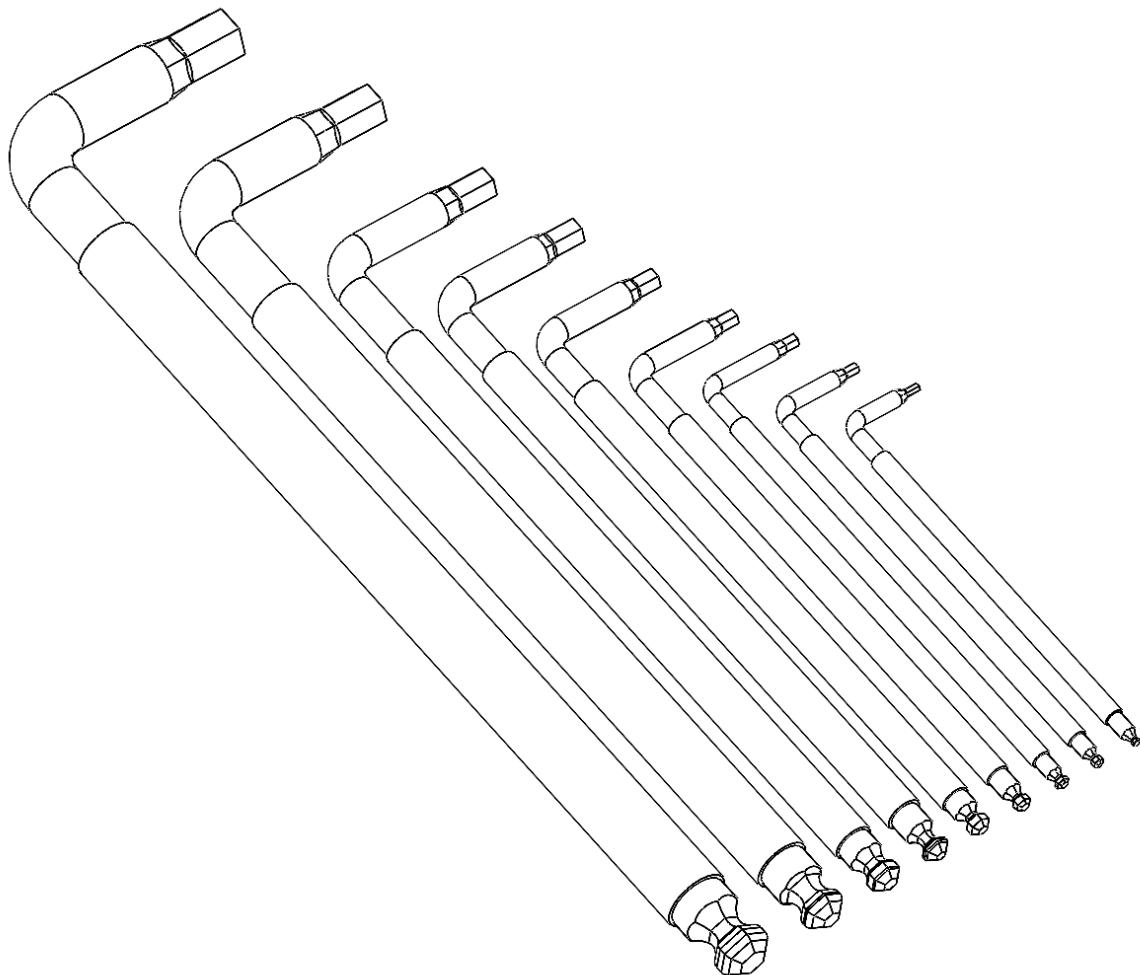
4 INSTALLATION

 **WARNING**

Before installation make sure that the robot is TURNED OFF and is installed on the firm surface to avoid any injury!

4.1 TOOLS REQUIRED

Allen wrenches



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4.2 GRIPPER ASSEMBLY



The fastener must be screwed to the robot flange using M3x8 cap screws.

4.3 GRIPPER ASSEMBLY



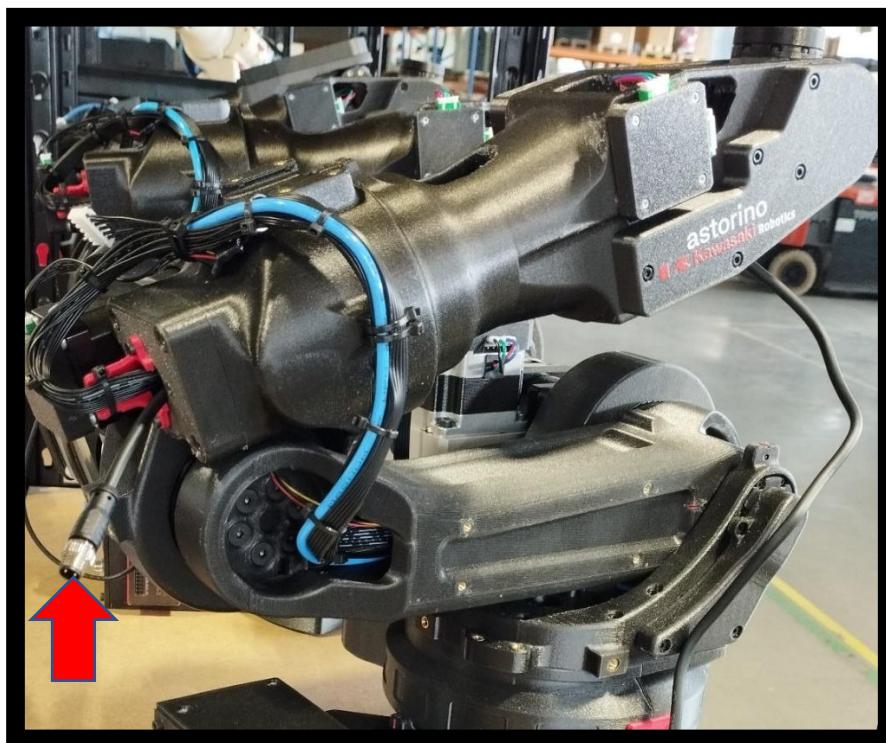
The jaws must be attached to the electric gripper using M4x12 taper screws.

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4.4 CABLE ROUTING

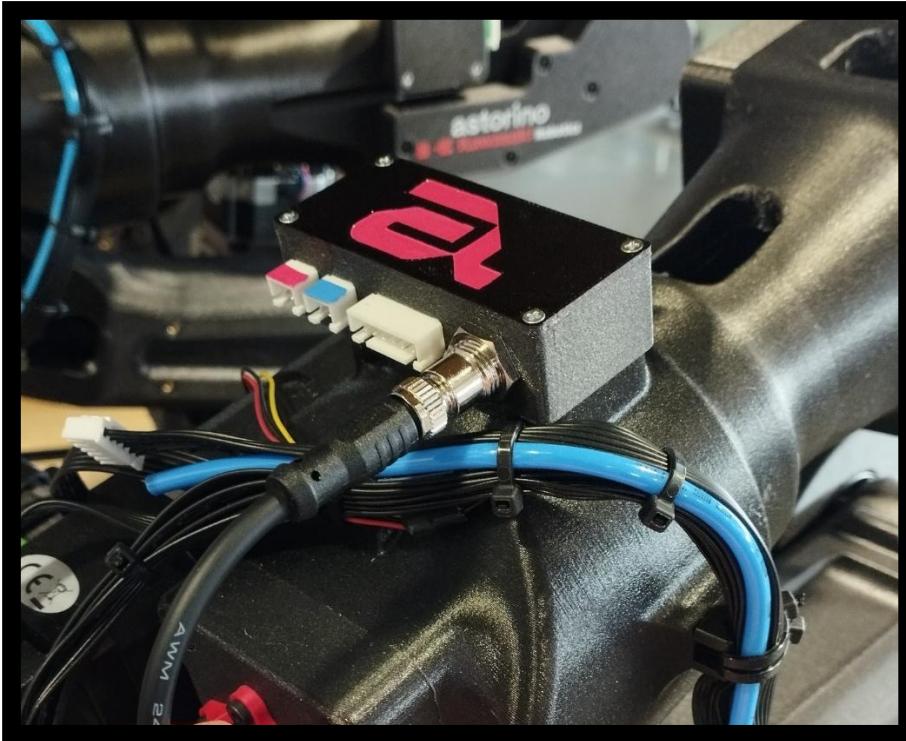


The cable from the gripper should be routed through the 6th axis and the 4th axis arm.



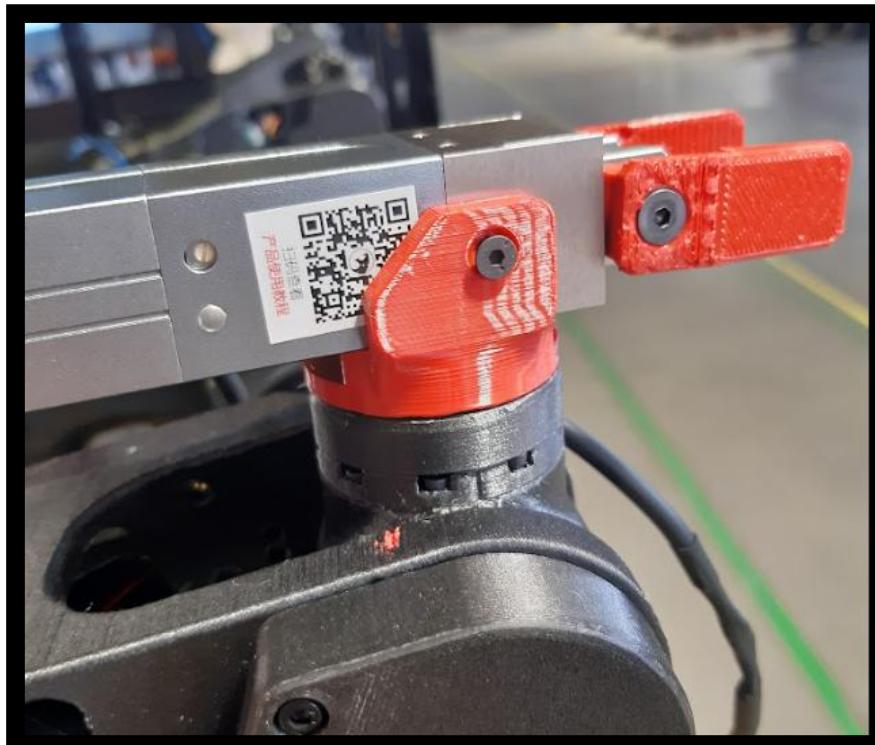
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4.5 ARM ID CONNECTION



The gripper cable has to be plugged into the arm id.

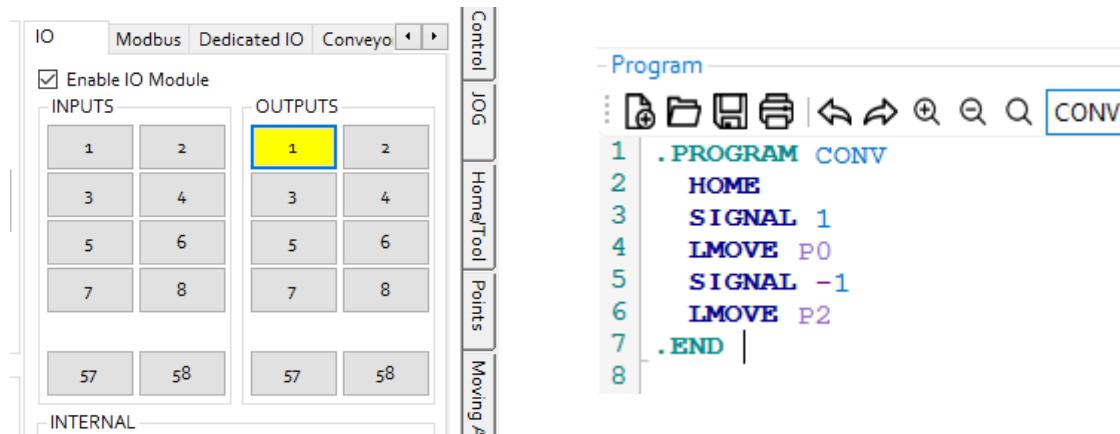
4.6 GRIPPER MOUNTING



The electric gripper must be screwed to the flange-mounted component using M3x8 tapered screws.

5 CONTROLLING GRIPPER VIA OUTPUTS

To control gripper use astorino software or Teach Pendant to turn ON or OFF OUTPUTS that are connected to the gripper, or use SIGNAL command in your program.



[ATTENTION]

B – version of the robot uses ARM IO for controlling grippers. Use 57 or 58 signal to switch gripper ON or OFF.

6 CLAMPING FORCE ADJUSTMENT

To change the clamping force adjust the knob according to the required force.



Gear	LED Colour	Clamping force
4	Yellow	20 N
3	Green	16 N
2	Blue	12 N
1	Light Blue	8 N
Invalid area	Red	Invalid

7 MANUFACTURER DATA

Kawasaki Robotics Astorino
Electric Gripper Operation Manual

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