



OPERATIONS MANUAL

USING PLUGIN FOR FANUC

Abstract

This manual is for operating the pneumagiQ,
casemagiQ, pneuvaQ, and vaQgrip
using Plugin for FANUC

Document number: 9 101 0007
Edition: 01.01 | 27 Jan, 2026 | En



Dear customer,

At Impaqt Robotics, we aim to deliver an impact with every robot deployed globally. This is how we enable simple & faster deployment of robots and impact our partners' bottom line in deploying Robots.

If you have any questions or need help with the product, don't hesitate to get in touch with us through support@impaqt-robotics.com.

Best Regards,
Impaqt Robotics team

Copyright:

This manual and its contents are under copyright. The author is Impaqt Robotics Private Limited. All rights reserved. Any reproduction, processing, distribution (making available to third parties), translation, or other usages – even excerpts – of the manual is especially prohibited and requires our written approval.

Technical changes:

We reserve the right to make alterations for technical and structural improvement.

Impaqt Robotics Private Limited
Operations Manual – Using the Plugin for FANUC

267 Kilpauk Garden Road,
Chennai 600 010 India
Tel: +91 44 4294 9000

support@impaqt-robotics.com
www.impaqt-robotics.com

© Impaqt Robotics Private Limited
All rights reserved.

Contents

Copyright:	1
Technical changes:	1
1 Revisions	4
1.1 Revision 7 August 2025.....	4
1.2 Revision 23 January 2026	4
2 General Inputs	5
2.1 Variants.....	5
2.2 Compatible Robots	5
2.3 Applicable Documents.....	5
2.4 Safety Considerations	5
2.4.1 Personnel Qualifications	5
2.4.2 Notes for operation.....	5
2.5 Installation of Plugin	5
2.6 Tool Center Point	6
2.7 Payload	7
2.8 Updating Plugin	7
3 pneumagiQ	8
3.1 pneumagiQ State	8
3.1.1 Status Indicator	8
3.1.2 Status Indicator: Green	8
3.1.3 Status Indicator: Red	8
3.1.4 Status Indicator: switched off.....	8
3.2 Configuration and Operating pneumagiQ	8
3.2.1 Plugins -> pneumagiQ Configuration	8
3.2.2 TCP of pneumagiQ	9
3.2.3 CoG for pneumagiQ	10
3.2.4 pneumagiQ Tools	10
4. casemagiQ.....	13
4.1 casemagiQ State	13
4.1.1 Status Indicator	13
4.1.2 Status Indicator: Green	13
4.1.3 Status Indicator: Red	13
4.1.4 Status Indicator: switched off.....	13
4.2 Configuration and Operating casemagiQ.....	13
4.2.1 Plugins -> casemagiQ Configuration	14
4.2.2 TCP of casemagiQ.....	15
4.2.3 CoG for casemagiQ.....	15

4.2.4	casemagiQ Tools.....	15
5	pneuvaQ.....	17
5.1	pneuvaQ State	17
5.1.1	Status Indicator	17
5.1.2	Status Indicator: Green	17
5.1.3	Status Indicator: Red	17
5.1.4	Status Indicator: switched off.....	17
5.2	Configuration and Operating pneuvaQ.....	17
5.2.1	Plugins > pneuvaQ Configuration.....	18
5.2.2	TCP of pneuvaQ.....	18
5.2.3	CoG for pneuvaQ.....	19
5.2.4	pneuvaQ Tools.....	19
6	vaQgrip	21
6.1	vaQgrip State	21
6.1.1	Status Indicator	21
6.1.2	Status Indicator: Green	21
6.1.3	Status Indicator: Red	21
6.1.4	Status Indicator: switched off.....	21
6.2	Configuration and Operating vaQgrip	21
6.2.1	Plugins -> vaQgrip Configuration	22
6.2.2	TCP of vaQgrip.....	23
6.2.3	CoG for vaQgrip.....	23
6.2.4	vaQgrip Tools	24

1 Revisions

1.1 Revision 7 August 2025

- pneumagiQ Beta Release

1.2 Revision 23 January 2026

- Added casemagiQ CM50 and CM100, pneuvaQ PV21, vaQgrip Click and VQ series

2 General Inputs

Download more information and documentation of the products at <https://www.impact-robotics.com>.

2.1 Variants

This operations manual applies to the following variants:

- pneumagiQ PQ90-2G2S
- pneumagiQ PQ9020-2G4S
- casemagiQ CM50
- casemagiQ CM100
- pneuvaQ PV21
- vaQgrip Click
- vaQgrip VQ10
- vaQgrip VQ20

2.2 Compatible Robots

Our products are compatible with all models of FANUC CRX robots.

2.3 Applicable Documents

- Catalog of the products
- Manuals of the products
- Manuals of the accessories

2.4 Safety Considerations

2.4.1 Personnel Qualifications

Only authorized personnel with a working knowledge of handling pneumatic and electrical circuits should operate the product. Anyone managing the product should have understood the different product manuals.

2.4.2 Notes for operation

Always switch off the products by disconnecting the I/O cable before adding or removing accessories. Before switching off, neutralize the pressure inside by shutting off the pneumatic supply and actuating the air blow-off or the air outlet ports using the Plugin.

2.5 Installation of Plugin

The Plugin of pneumagiQ, casemagiQ, pneuvaQ & vaQgrip is available on the respective [product pages](#). Download the Plugin to a USB drive and plug the USB drive to the FANUC Robot's USB port either in the teach pendant or the robot controller.

1. Navigate to:
MENU → PLUGINS → Install
2. The top half of this screen shows a list of plugin software from the USB. The lower half shows a visual description of the selected plugin.
3. Click the Install button to begin installation of the selected plugin.
4. After installation completes, restart the teach pendant.

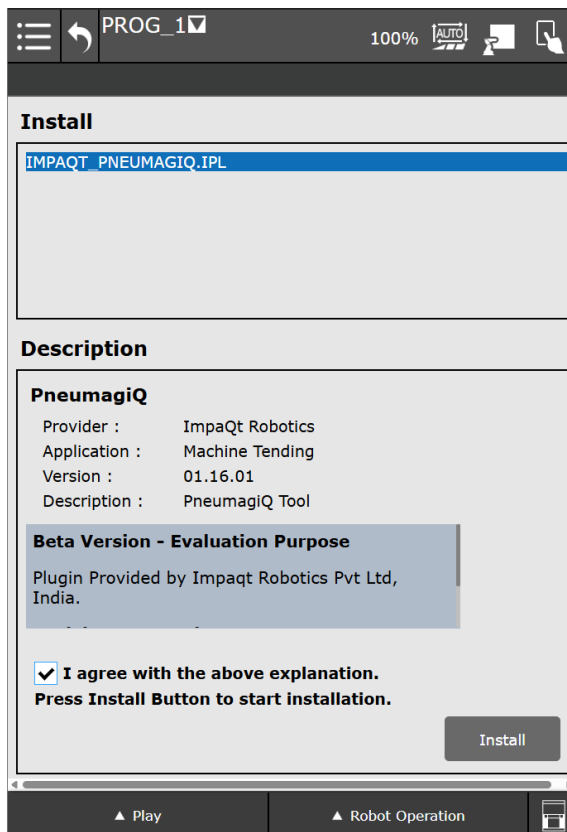


Figure 1: Install Menu

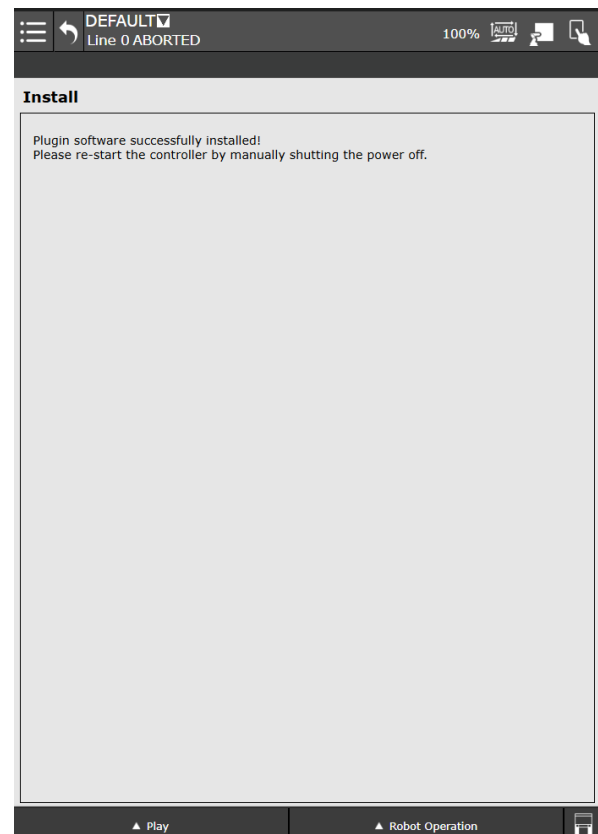


Figure 2: After Installation

2.6 Tool Center Point

The Tool Center Point is the specific point of the EOAT that the robot's control system uses to position and orient the EOAT. By default, the TCP of FANUC is set at the end of the robot arm.

Note: In this manual, we are providing the TCP only from the Top Mounting Face of the product until the center point of the Tool Mounting Face (Refer to the respective product installation manuals to know more.). Hence, while calculating the TCP, one must take into consideration the Robot Coupler, Tool Coupler, tool type, tool peripherals such as fingers/jaws and the specific robot application. So, the TCP needs to be calculated by the integrator/ end user depending on the final application setup.

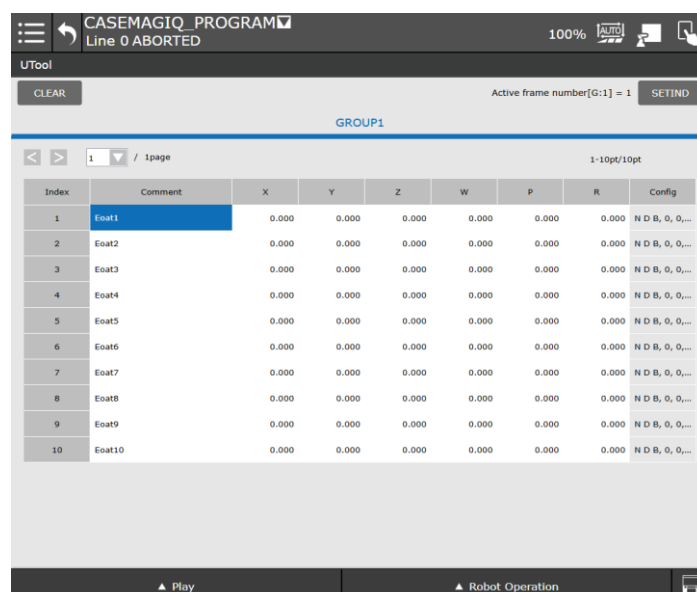
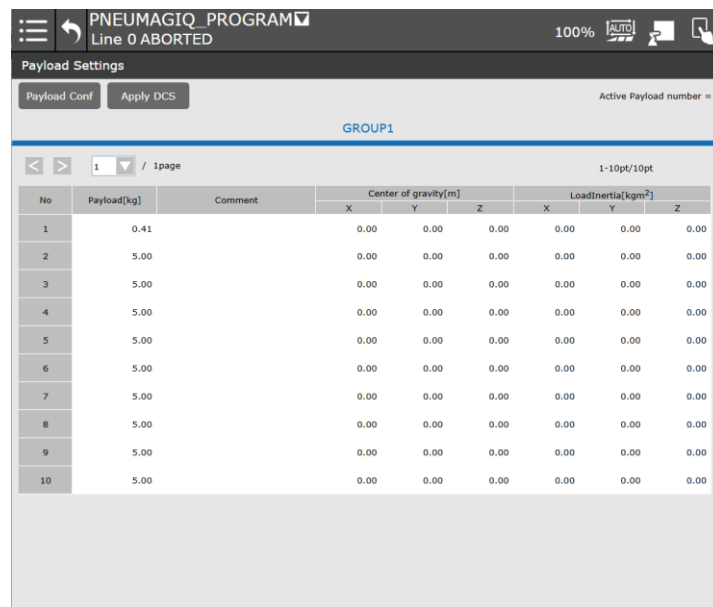


Figure 3: Setting the TCP on TP

2.7 Payload

The payload for FANUC refers to the total weight the robot must lift. By default, the payload is considered as 0kg at the end of the robot arm. In the case of pneumagiQ, there are 2 EOATs, that hold payloads further away from the end of the robot arm. Hence, the Center of Gravity (CoG) becomes a critical factor.

The Center of Gravity (CoG) refers to the point where the total weight of the robot is concentrated. This is critical for the robot control system for Balance, Stability, Motion Planning, Payload Handling and Robot Safety.



No	Payload[kg]	Comment	Center of gravity(m)			Load inertia(kgm²)		
			X	Y	Z	X	Y	Z
1	0.41		0.00	0.00	0.00	0.00	0.00	0.00
2	5.00		0.00	0.00	0.00	0.00	0.00	0.00
3	5.00		0.00	0.00	0.00	0.00	0.00	0.00
4	5.00		0.00	0.00	0.00	0.00	0.00	0.00
5	5.00		0.00	0.00	0.00	0.00	0.00	0.00
6	5.00		0.00	0.00	0.00	0.00	0.00	0.00
7	5.00		0.00	0.00	0.00	0.00	0.00	0.00
8	5.00		0.00	0.00	0.00	0.00	0.00	0.00
9	5.00		0.00	0.00	0.00	0.00	0.00	0.00
10	5.00		0.00	0.00	0.00	0.00	0.00	0.00

Figure 4: Setting the Payload on TP

Note:

The Tool Center Point (TCP) and Center of Gravity (Cog) details for each IMPAQT product are provided in the respective product sections of this manual.

For example, the TCP information for pneumagiQ is documented under:

PneumagiQ → Configuration and Operating pneumagiQ → TCP of pneumagiQ

Users must refer to the corresponding product section to obtain the correct TCP reference values and use them while defining the final TCP based on the complete EOAT configuration and application.

2.8 Updating Plugin

The plugins are continuously updated to provide seamless integration and operation of the products. Therefore, it is recommended to always install the latest version of the plugin. The plugin is available on the respective [product page](#) on the Impaqt Robotics website.

3 pneumagiQ

pneumagiQ is a compact Universal Pneumatic EOAT Interface designed to seamlessly mount two pneumatic EOATs. The compact design of pneumagiQ makes it ideal for tight-spaced material handling applications such as machine tending and material handling. The lightweight design maximizes the payload of the robot for handling heavier parts which is especially important for collaborative robots.

These are variants of pneumagiQ:

- pneumagiQ PQ90-2G2S
- pneumagiQ PQ9020-2G4S

3.1 pneumagiQ State

While pneumagiQ is in operation, the status indicators are used to communicate the current state of the product.

3.1.1 Status Indicator

The status indicator is on the front cover of pneumagiQ on both sides of the 8-pin I/O connector.

LED Color	State
Red	1. Flickering - Powering up. 2. Gripper actuation 3. Initiating Air blow-off
Green	1. Idle 2. Ready for operation

3.1.2 Status Indicator: Green

The status indicator is green when pneumagiQ is idle & ready for operation.

3.1.3 Status Indicator: Red

The status indicator is red when:

- Powering up the product.
- During power-up, the status indicator flickers in Red.
- Receiving communication from the robot through the Plugin

3.1.4 Status Indicator: switched off.

The status indicator is switched off only when:

- pneumagiQ is not powered
- The 8-pin I/O cable is disconnected or incorrectly wired
- FANUC robot is not in normal mode
- The plugin has not been loaded or installed correctly.

3.2 Configuration and Operating pneumagiQ

To control pneumagiQ from a FANUC robot, the respective plugin must be installed on the robot. With this plugin, the pneumatic EOAT functions—including Grip/Release, air blow-off —can be controlled easily and also need to set the right settings in the Configuration tab as follows.

3.2.1 Plugins -> pneumagiQ Configuration

In the Menu, open Plugins and select pneumagiQ to access the configuration screen. The gripper is configured and tested here, with External Gripping Mode selected by default. This tab allows the user to manually test the gripper using Grip, Release, Air On/Off, initialize the pneumagiQ, select Internal or External gripping modes, assign the required Digital Output (DO) for gripper control, and configure port settings for Side 1 and Side 2 if required.

This page is mainly used to verify proper gripper operation and basic setup before running robot programs.

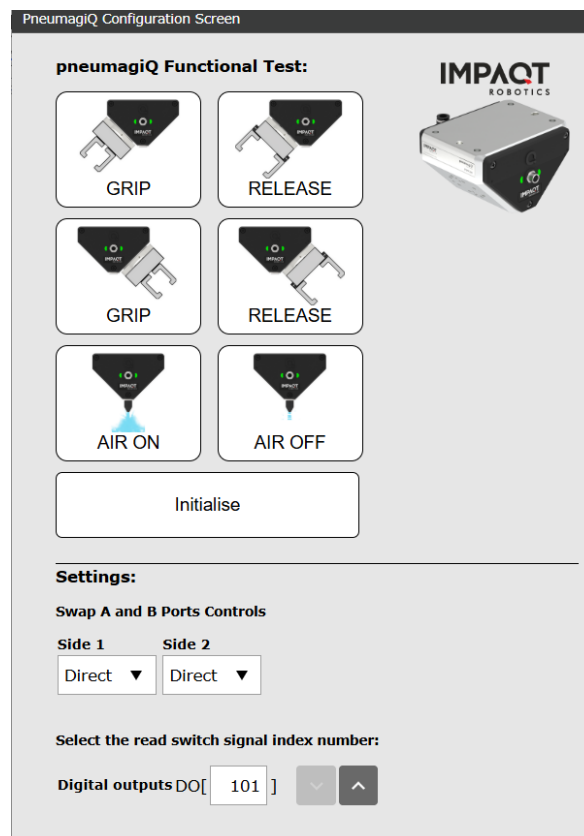


Figure 5: pneumagiQ Configuration Screen

The Grip and Release icons update based on the Direct/Swap selection of Port Control on the configure page. The Initialise button is used to reset the pneumagiQ functions and initialise the communication.

The port swap selection for tool ports is added for swapping the valve control to select for the following scenario depending on the gripper manufacturer.

Internal Grip Scenarios	External Grip Scenarios
For circular components that require internal gripping, gripper fingers must.	For non-circular components that require external gripping, gripper fingers must.
Move outward to hold the component from the inside.	Move inward to hold the component from the outside.
Apply outward pressure for secure internal contact.	Apply inward pressure for secure external contact.

3.2.2 TCP of pneumagiQ

In pneumagiQ, as there are two EOATs, we need to set two different TCPs for each of the EOATs. The TCP value also changes for each of the pneumagiQ variants. Hence, use the data from the

CoG for pneumagiQ

As there are 2 separate EOATs coupled through pneumagiQ, 4 different Payloads must be created along with respective unique CoG as follows:

1. pneumagiQ No-Load Payload includes:
 - pneumagiQ variant
 - all peripherals

- I/O Cable
 - 8mm pneumatic tube
 - Robot Couplers
 - Tool Couplers
 - EOATs
 - EOAT peripherals such as fingers/jaws, sensors, etc.
2. Tool 1 Payload includes:
 - pneumagiQ No-Load Payload
 - Part handled by Tool 1
 3. Tool 2 Payload includes:
 - pneumagiQ No-Load Payload
 - Part handled by Tool 2
 4. pneumagiQ Full Payload includes:
 - pneumagiQ No-Load Payload
 - Part handled by Tool 1
 - Part handled by Tool 2

Refer to Table 2 for the Payload of all the variants of pneumagiQ and it can be added to the FANUC Robot. This is only for this product. As mentioned at the top, all the payloads mentioned above need to be calculated by the integrator/ end user depending on the final application setup.

Product	PQ0	PQ90	PQ180	PQ9020
Weight	0.41 Kg	0.58 Kg	0.87 Kg	1.1 Kg
Cx	0	0	0	0
Cy	0	-0.92	-1.2	-4.0
Cz	16.5	32.12	30.3	30.2

3.2.3 pneumagiQ Tools

3.2.3.1 pneumagiQ Grip/Release

In the robot program tab, to actuate the EOATs, need to use the pneumagiQ tool node. For example, if the Tool Type is selected as Pneumatic Grippers in the pneumagiQ Settings in Installation tab, then choose either Gripper 1 or Gripper 2 tab. Then, set the gripper action as either Grip or Release. The action Grip denotes the fingers/ jaws of the grippers moving towards each other for External Gripping while for Internal Gripping, it denotes the fingers/ jaws of the gripper moving away from each other.

3.2.4.2 pneumagiQ Air blow-off

In the Air blow-off node can do 2 different actions: Active and Inactive.

- Activate: the activate node inserted will activate the Air blow-off, thereby blowing compressed air through the Air blow-off port.
- deactivate: the inactive node inserted will deactivate the Air blow-off, thereby stopping the flow of compressed air through the Air blow-off port.

to create a TCP for each of the Tool Mounting Faces 1 & 2.

Product	PQ0	PQ90		PQ180		PQ9020	
Tool Mounting Face	1	1	2	1	2	1	2
X	0	0	0	0	0	0	0
Y	0	-33.65	33.65	-200.00	200.00	-38.89	38.89
Z	34.00	48.64	48.64	37.5	37.5	53.89	53.89
P	0	0	0	0	0	0	0
W	0	45	-45	0	0	45	-45
Z	0	0	0	0	180	0	0

Table 1: Tool Center Point up to the Tool Mounting Face of pneumagiQ

3.2.4 CoG for pneumagiQ

As there are 2 separate EOATs coupled through pneumagiQ, 4 different Payloads must be created along with respective unique CoG as follows:

5. pneumagiQ No-Load Payload includes:
 - pneumagiQ variant
 - all peripherals
 - I/O Cable
 - 8mm pneumatic tube
 - Robot Couplers
 - Tool Couplers
 - EOATs
 - EOAT peripherals such as fingers/jaws, sensors, etc.
6. Tool 1 Payload includes:
 - pneumagiQ No-Load Payload
 - Part handled by Tool 1
7. Tool 2 Payload includes:
 - pneumagiQ No-Load Payload
 - Part handled by Tool 2
8. pneumagiQ Full Payload includes:
 - pneumagiQ No-Load Payload
 - Part handled by Tool 1
 - Part handled by Tool 2

Refer to Table 2 for the Payload of all the variants of pneumagiQ and it can be added to the FANUC Robot. This is only for this product. As mentioned at the top, all the payloads mentioned above need to be calculated by the integrator/ end user depending on the final application setup.

Product	PQ0	PQ90	PQ180	PQ9020
Weight	0.41 Kg	0.58 Kg	0.87 Kg	1.1 Kg
Cx	0	0	0	0
Cy	0	-0.92	-1.2	-4.0
Cz	16.5	32.12	30.3	30.2

Table 2: pneumagiQ CoG until the Tool Mounting Face

3.2.5 pneumagiQ Tools

3.2.5.1 pneumagiQ Grip/Release

In the robot program tab, to actuate the EOATs, need to use the pneumagiQ tool node. For example, if the Tool Type is selected as Pneumatic Grippers in the pneumagiQ Settings in Installation tab, then choose either Gripper 1 or Gripper 2 tab. Then, set the gripper action as either Grip or Release. The action Grip denotes the fingers/ jaws of the grippers moving towards each other for External Gripping while for Internal Gripping, it denotes the fingers/ jaws of the gripper moving away from each other.

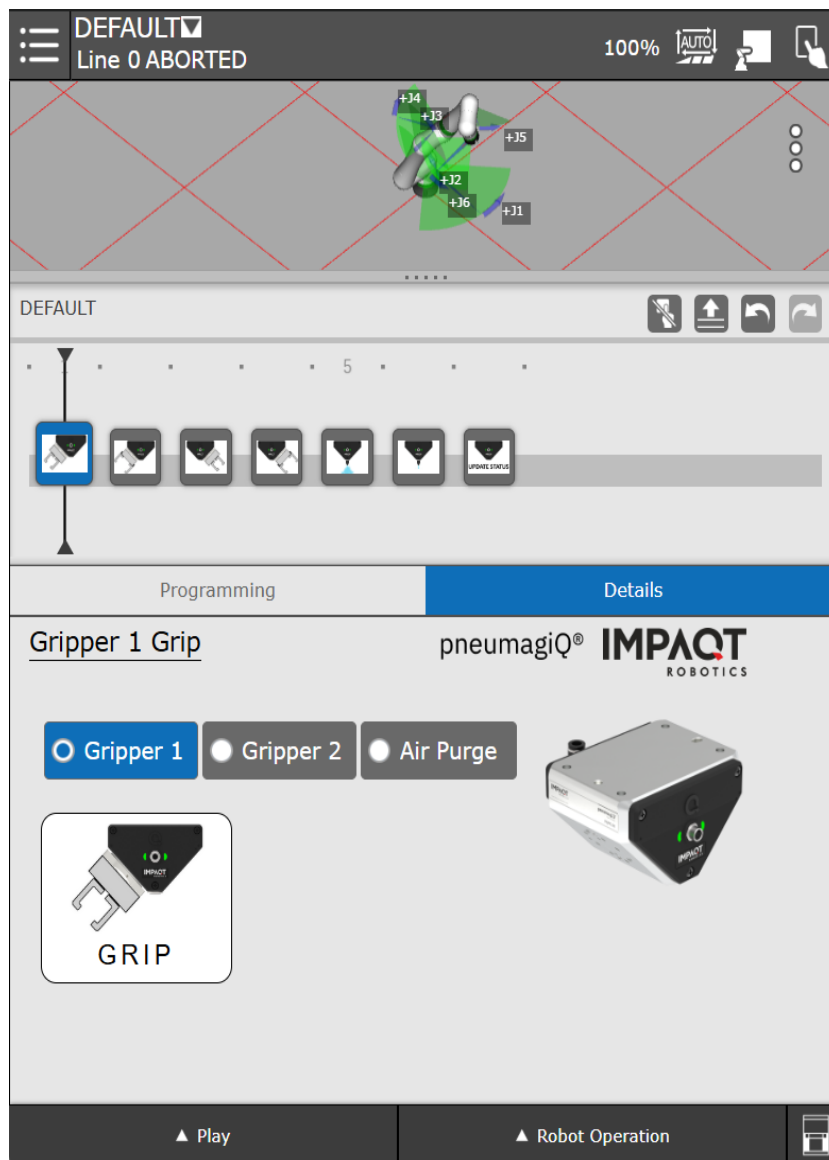


Figure 6: PneumagiQ program editor

3.2.4.3 pneumagiQ Air blow-off

In the Air blow-off node can do 2 different actions: Active and Inactive.

- Activate: the activate node inserted will activate the Air blow-off, thereby blowing compressed air through the Air blow-off port.
- deactivate: the deactivate node inserted will deactivate the Air blow-off, thereby stopping the flow of compressed air through the Air blow-off port.

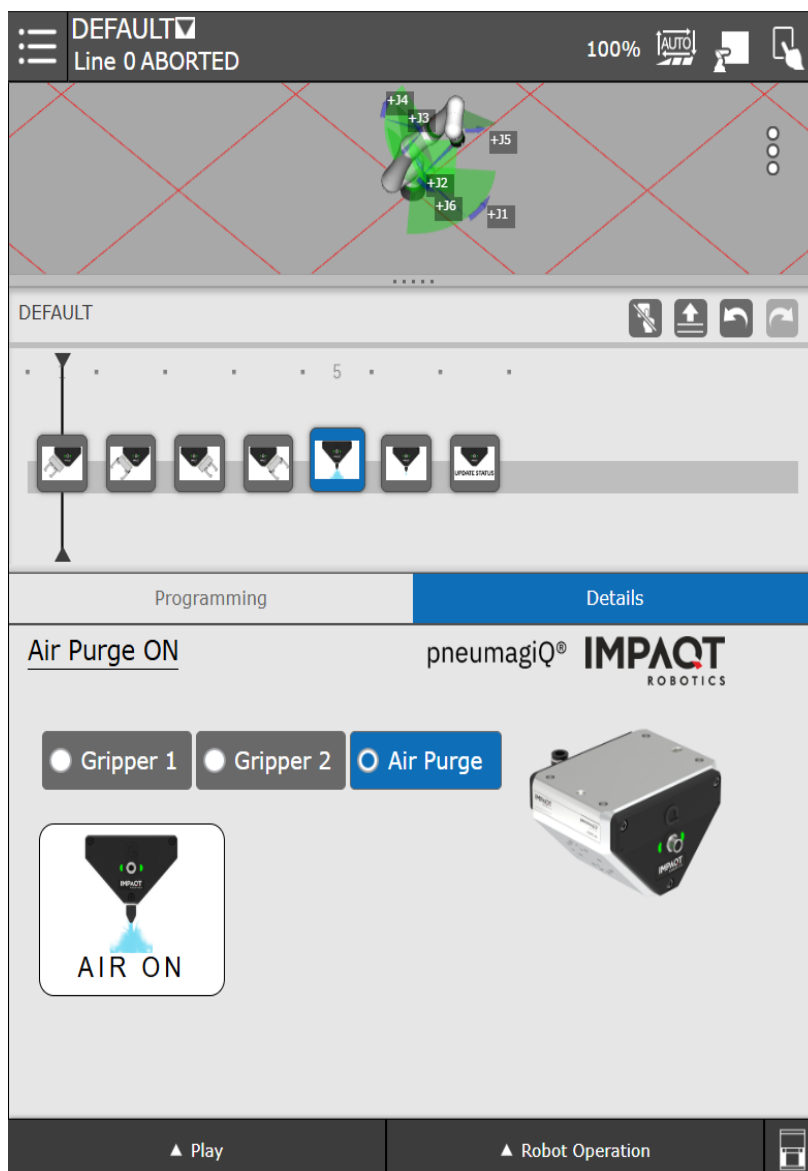


Figure 7: PneumagiQ program editor

4. casemagiQ

casemagiQ is a compact Universal Case Forming EOAT designed to seamlessly form cases of a wide range of dimensions. The compact design of casemagiQ is ideal for case forming / carton erection applications with minimal footprint.

These are variants of casemagiQ:

- casemagiQ CM50
- casemagiQ CM100

4.1 casemagiQ State

While casemagiQ is in operation, the status indicators are used to communicate the current state of the product.

4.1.1 Status Indicator

The status indicator is on the front cover of casemagiQ on both sides of the 8-pin I/O connector.

LED Color	State
Red	1. Flickering - Powering up. 2. Vacuum Actuation 3. Cylinder Actuation
Green	1. Idle 2. Ready for operation

4.1.2 Status Indicator: Green

The status indicator is green when casemagiQ is idle & ready for operation.

4.1.3 Status Indicator: Red

The status indicator is red when:

- Powering up the product
- During power-up the status indicator flickers in Red
- Receiving communication from the robot through the Plugin

4.1.4 Status Indicator: switched off.

The status indicator is switched off only when:

- No power supply is provided to casemagiQ
- The I/O cable is not connected properly
- FANUC robot is not in 'Normal mode'
- The plugin has not been loaded or installed correctly

4.2 Configuration and Operating casemagiQ

To control casemagiQ from a FANUC robot, the respective plugin must be installed on the robot. With this plugin, the pneumatic EOAT functions—including vacuum outlets, Laser and flap position—can be controlled easily.

4.2.1 Plugins -> casemagiQ Configuration

In the Menu, open Plugins and select casemagiQ to access the configuration screen. The gripper is configured and tested here, with External Gripping Mode selected by default. This page allows you to manually test the gripper using Flap On/Off, Laser On/Off, Main and Sub Vacuum On/Off, initialize the device, set the required Digital Output (DO), and adjust basic port settings. It is mainly used to check gripper operation before running robot programs.

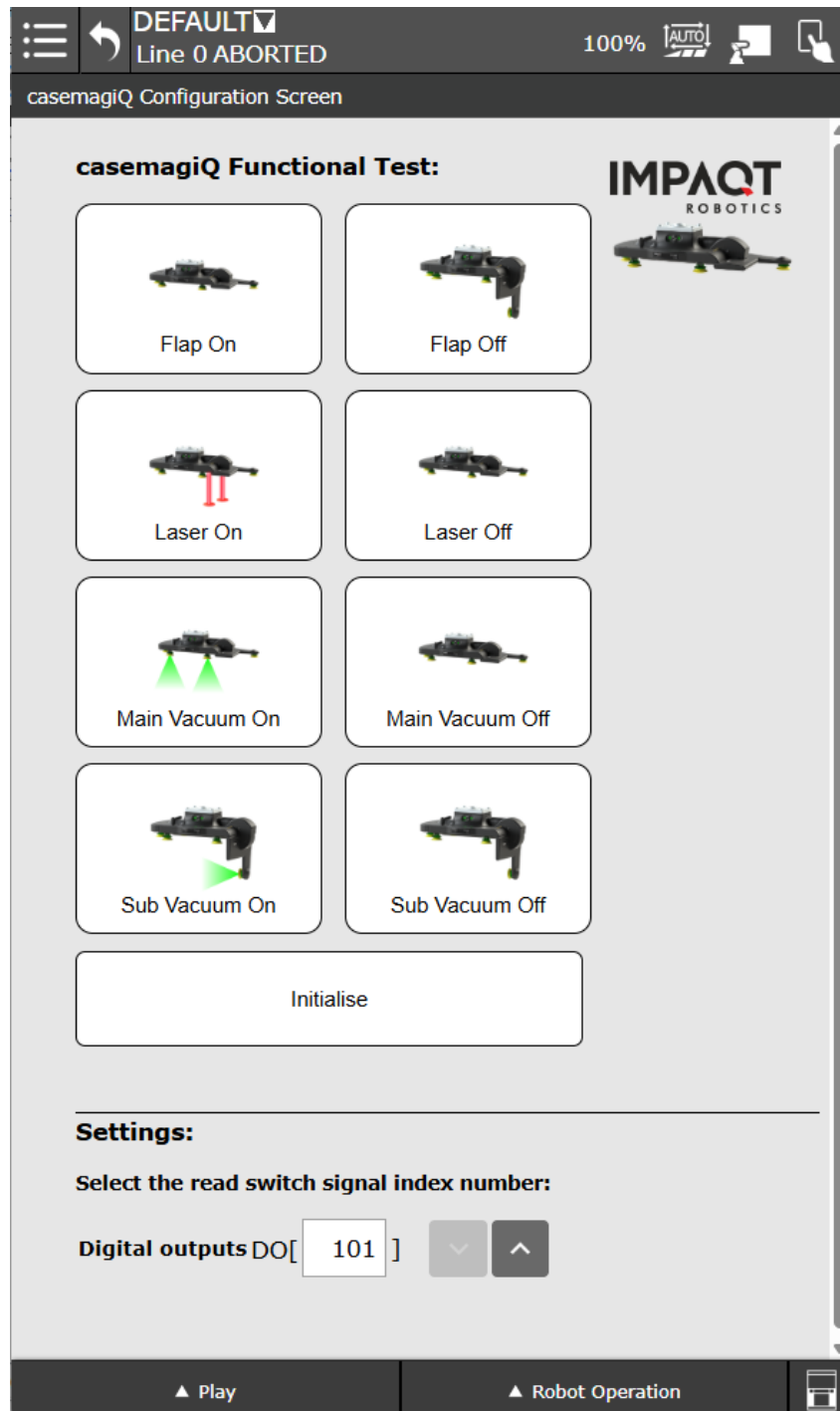


Figure 8: casemagiQ Configuration Screen

4.2.2 TCP of casemagiQ

In the case of casemagiQ, there is only one face for the case/carton to be picked. Hence, it is much more straightforward.

Product	CM50	CM100
X	0	0
Y	0	0
Z	93.6	93.7
P	0	0
W	0	0
Z	0	0

Table 3: Tool Center Point up to the suction cups of casemagiQ

4.2.3 CoG for casemagiQ

The CoG for casemagiQ is a bit different. As CM100 can extend up to 100mm and the case forming flap can be turned on or off. Hence, the CoG will change depending on the configuration of the casemagiQ.

Product	Flap off	Flap on
Weight	0.915 Kg	0.915 Kg
Cx	36.97	29.86
Cy	-3.84	-3.84
Cz	54.73	61.98

Table 4: casemagiQ CM50 CoG until the suction cups

Product	Not Extended		Extended – 100 mm	
	Flap off	Flap on	Flap off	Flap on
Weight	1.352 Kg	1.352 Kg	1.352 Kg	1.352 Kg
Cx	14.4	-15.2	4.2	5.0
Cy	-2.6	-2.6	-2.6	-2.6
Cz	53.0	58.3	53.0	58.3

Table 5: casemagiQ CM100 CoG until the suction cups

4.2.4 casemagiQ Tools

4.2.4.1 casemagiQ Flap / Laser node

The casemagiQ Flap / Laser node is used to control the case forming flap and the laser aligner. The case forming flap can be switched on or off using this node. This is used to bend and shape the flat cases / cartons into an open cuboid ready for taping.

The laser node can be used to switch on / off the laser aligner. The laser aligner becomes an easy guide for the robot programmer to align the casemagiQ right at the fold of the case / carton when positioning the pickup point. This way, the case forming flap is positioned perfectly to bend the flat case / carton at the fold into a cuboid.



Figure 9: casemagiQ program editor

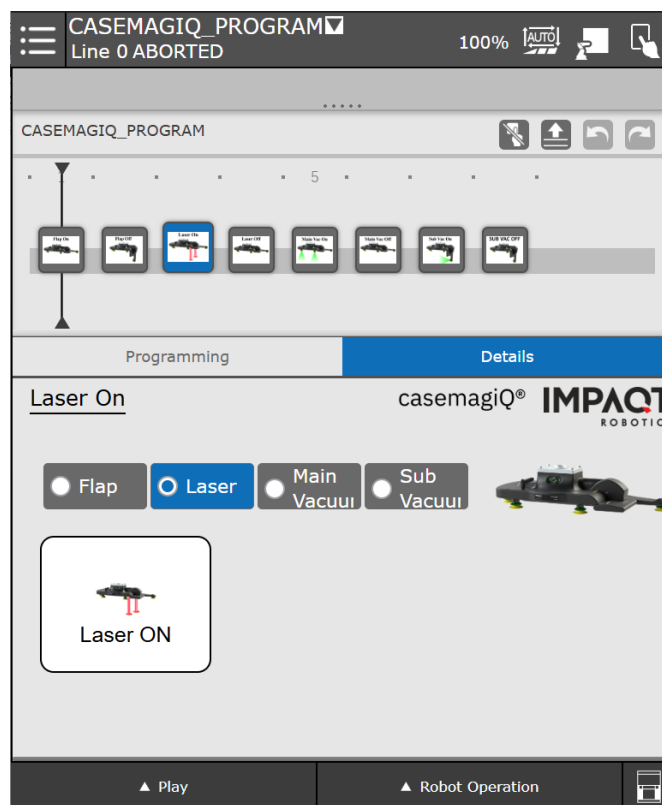


Figure 10: casemagiQ program editor

4.2.4.2 casemagiQ Vacuum

The casemagiQ Vacuum node is used to control both the main vacuum used to hold the case / carton and the sub vacuum used to hold the side face of the case / carton.

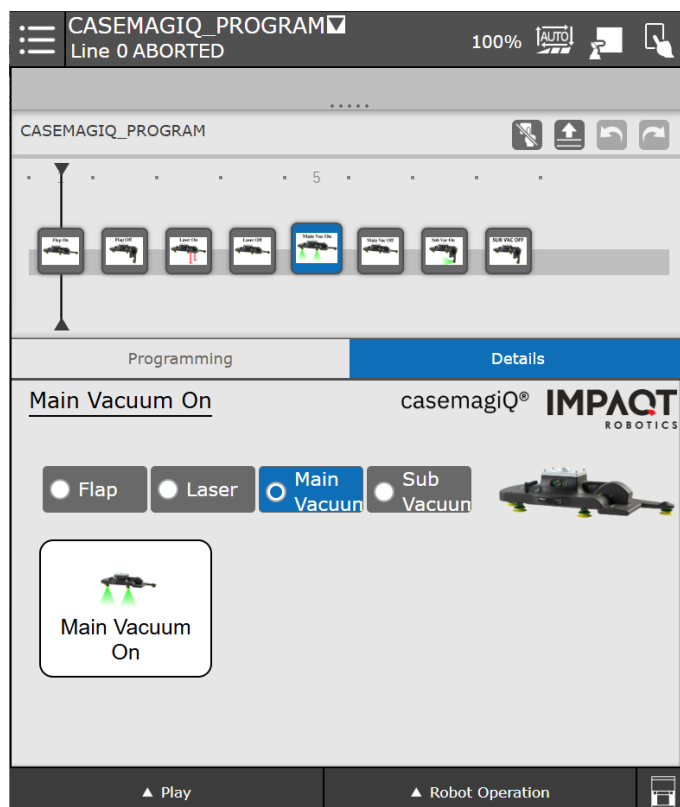


Figure 11: casemagiQ program editor

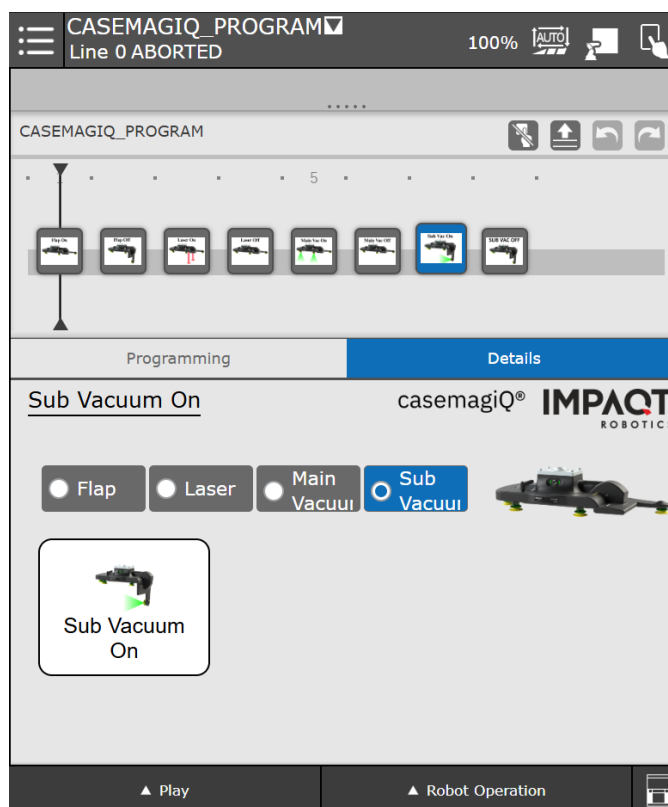


Figure 12: casemagiQ program editor

5 pneuvaQ

pneuvaQ is a compact Integrated Pneumatic & Vacuum Interface designed to simplify building custom EOATs for applications such as machine tending for injection molding and press brake. The compact design of pneuvaQ is ideal for adding to custom EOATs to enable quick control of pneumatics and vacuum outlets.

The variant name PV21 has a specific nomenclature. P is for pneumatics, denoting the number of compressed air outlets and V is for vacuum, denoting the number of vacuum outlets. Hence, in this case, PV21 has two compressed air outlets and one vacuum outlet. These are variants of pneuvaQ:

- pneuvaQ PV21

5.1 pneuvaQ State

While pneuvaQ is in operation, the status indicators are used to communicate the current state of the product.

5.1.1 Status Indicator

The status indicator is on the front cover of pneuvaQ on both sides of the 8-pin I/O connector.

LED Color	State
Red	1. Flickering - Powering up. 2. Compressed Air actuation 3. Vacuum actuation
Green	1. Idle 2. Ready for operation

5.1.2 Status Indicator: Green

The status indicator is green when pneuvaQ is idle & ready for operation.

5.1.3 Status Indicator: Red

The status indicator is red when:

- Powering up the product
- During power-up the status indicator flickers in Red
- Receiving communication from the robot through the Plugin

5.1.4 Status Indicator: switched off.

The status indicator is switched off only when:

- No power supply is provided to pneuvaQ
- The I/O cable is not connected properly
- FANUC robot is not in 'Normal mode'
- The plugin has not been loaded or installed correctly

5.2 Configuration and Operating pneuvaQ

To control pneuvaQ from a FANUC robot, the respective plugin must be installed on the robot. With this plugin, the pneumatic EOAT functions—including compressed air, vacuum outlets—can be controlled easily.

5.2.1 Plugins > pneuvaQ Configuration

In the Menu, open Plugins and select pneuvaQ to access the configuration screen. This page allows the user to manually test the pneuvaQ unit by turning Compressed Air 1, Compressed Air 2, and Vacuum ON or OFF, initialize the device, and set the required Digital Output (DO) signal index for operation. It is mainly used to verify proper pneumatic and vacuum functionality before running robot programs.

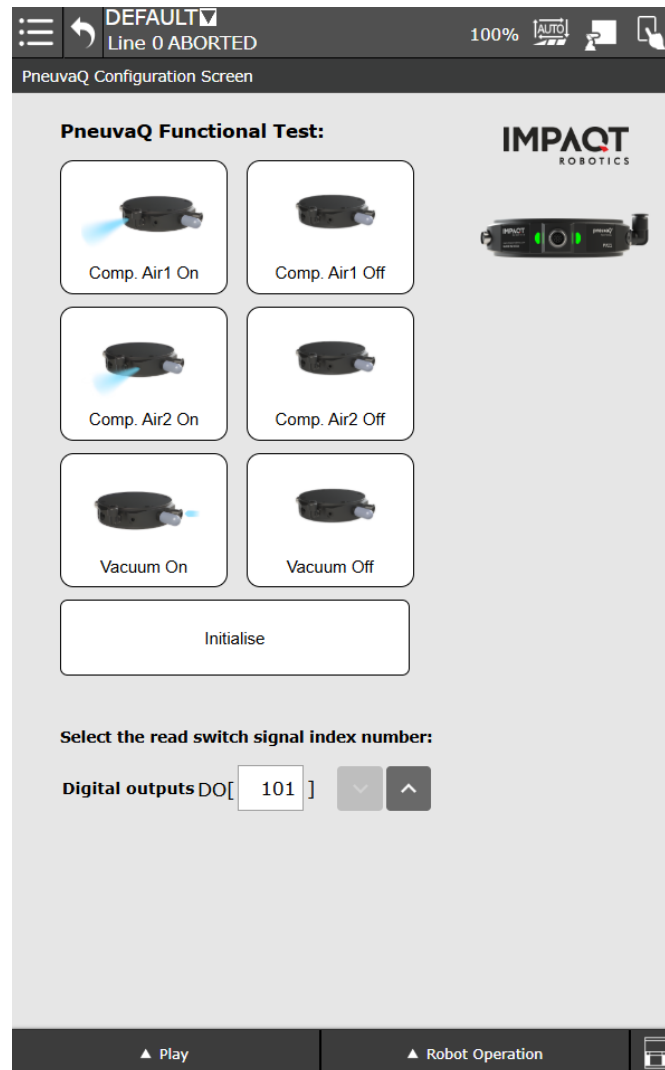


Figure 13: pneuvaQ Configuration Screen

5.2.2 TCP of pneuvaQ

In the case of pneuvaQ, there is only one face for the case/carton to be picked. Hence, it is much more straightforward.

Product	PV21
X	0
Y	0
Z	25
P	0
W	0
Z	0

Table 6: Tool Center Point up to the Bottom Mounting Face of pneuvaQ

5.2.3 CoG for pneuvaQ

The CoG for pneuvaQ from the robot mounting face

Product	PV21
Weight	0.3 Kg
Cx	7.3
Cy	0.4
Cz	11.5

Table 7: pneumagiQ CoG until the Tool Mounting Face

5.2.4 pneuvaQ Tools

5.2.4.1 pneuvaQ Compressed Air

The pneuvaQ Compressed Air node is used to control both the compressed air outlets. They can be individually switched on and off using the Compressed Air buttons in the programming node.

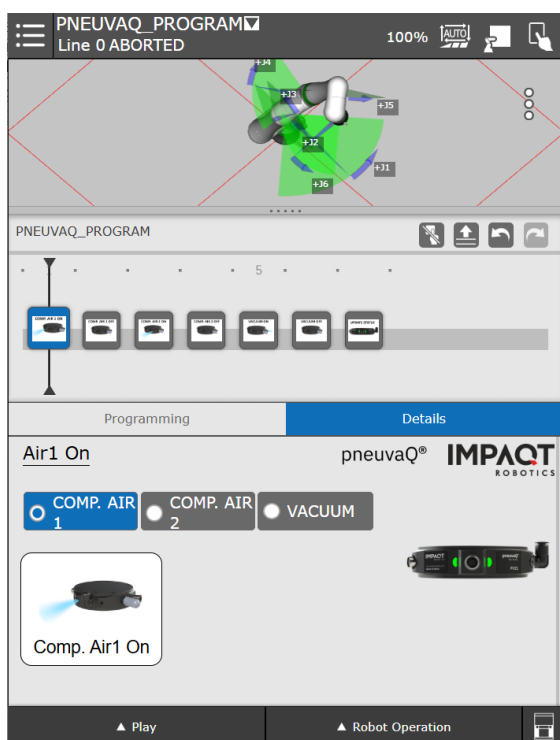


Figure 14: pneuvaQ program editor

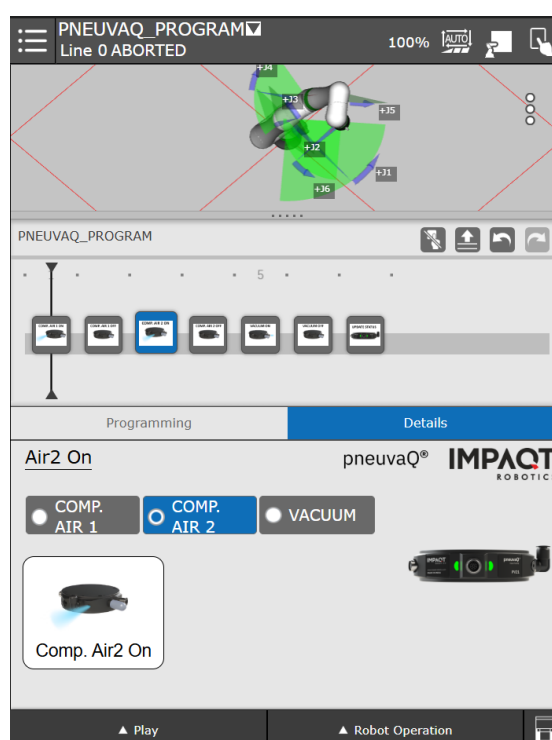


Figure 15: pneuvaQ program editor

5.2.4.2 pneuvaQ Vacuum

The pneuvaQ Vacuum node is used to control the vacuum outlet. The vacuum can be switched on and off using the vacuum On/Off buttons in the programming node.

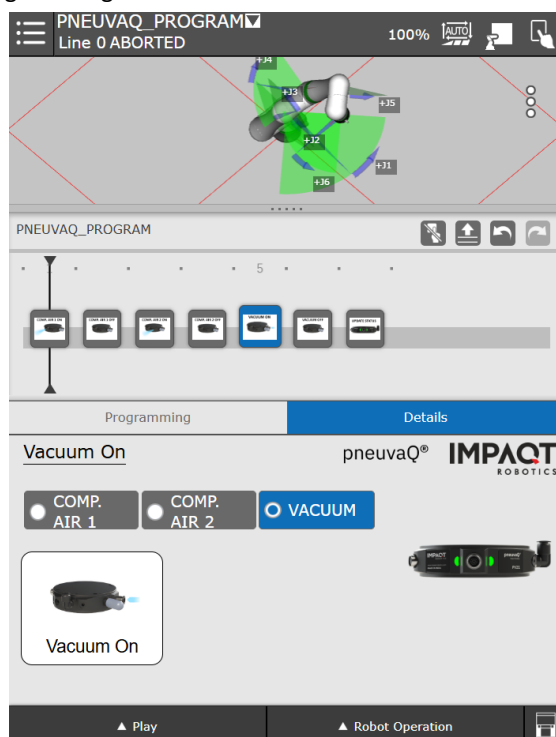


Figure 16: pneuvaQ program editor

6 vaQgrip

vaQgrip is a family of Plug & Play vacuum grippers designed for palletizing and material handling. Its lightweight and compact form eliminates external tubing, reduces clutter, and allows installation in just minutes. The series combines pre-engineered grippers and a modular platform under one system, making vacuum automation practical and scalable. All vaQgrip products follow the same design principles: clean integration, safe operation, and reliable vacuum gripping for industrial use.

These are variants of vaQgrip:

- vaQgrip Click
- vaQgrip VQ10
- vaQgrip VQ20

6.1 vaQgrip State

While vaQgrip is in operation, the status indicators are used to communicate the current state of the product.

6.1.1 Status Indicator

The status indicator is on the front side of the vaQgrip on both sides of the 8-pin I/O connector.

LED Color	State
Red	1. Flickering - Powering up. 2. Vacuum actuation
Green	1. Idle 2. Ready for operation

6.1.2 Status Indicator: Green

The status indicator is green when vaQgrip is idle & ready for operation.

6.1.3 Status Indicator: Red

The status indicator is red when:

- Powering up the product.
- During power-up the status indicator flickers in Red.
- Receiving communication from the robot through the Plugin.

6.1.4 Status Indicator: switched off.

The status indicator is switched off only when:

- No power supply is provided to vaQgrip
- The I/O cable is not connected properly
- FANUC is not in 'Normal mode'
- The plugin has not been loaded or installed correctly

6.2 Configuration and Operating vaQgrip

To control vaQgrip from a FANUC robot, the respective plugin must be installed on the robot. With this plugin, the pneumatic EOAT functions—including vacuum and LED Indicators—can be controlled easily.

6.2.1 Plugins -> vaQgrip Configuration

In the Menu, open Plugins and select vaQgrip to access the configuration screen. This page allows the user to manually test the vaQgrip unit by turning the Vacuum On and Off and by checking the Red and Green indicator status using the respective controls. It also allows the user to assign the required Digital Output (DO) for the VQ Series to actuate the vacuum valve operation. This screen is mainly used to verify vacuum functionality, indicator response, and correct digital output mapping before running robot programs.

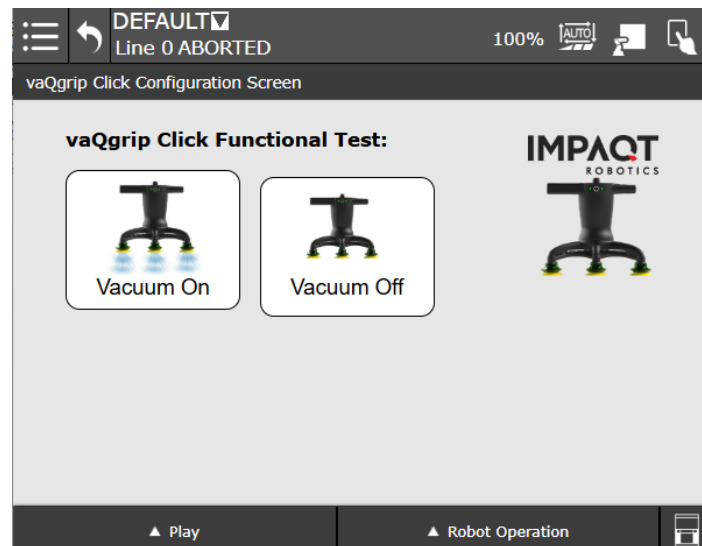


Figure 17: vaQgrip Click Configuration Screen

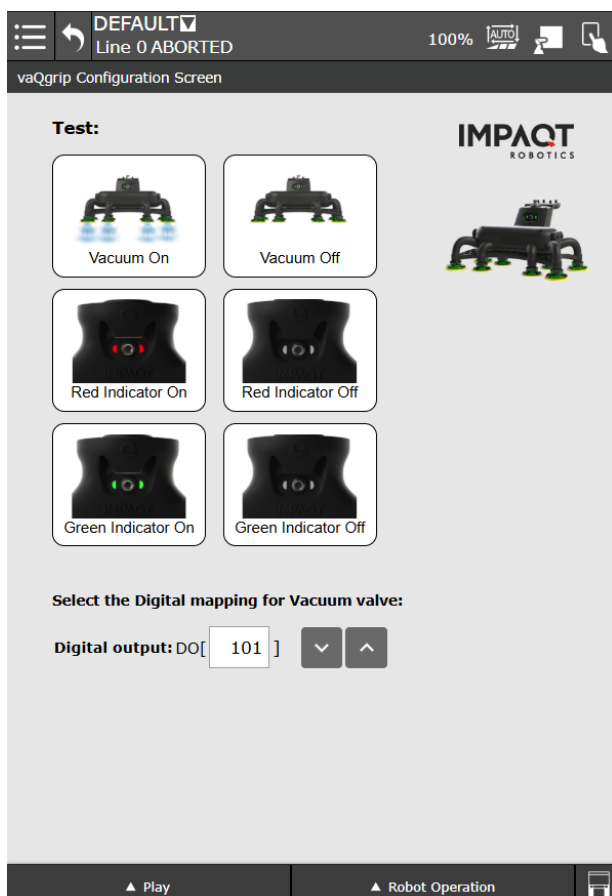


Figure 18: vaQgrip VQ10 Configuration Screen



Figure 19: vaQgrip VQ20 Configuration Screen

6.2.2 TCP of vaQgrip

The TCP of the vaQgrip Click varies depending on the selected configuration. Since vaQgrip Click is a modular vacuum gripper, the TCP changes based on the pod, dock, hub, reducer, offset, and vacuum cups used in the setup.

Users must calculate and update the TCP values in the robot controller after configuring or modifying the gripper assembly to ensure accurate motion, stable handling, and safe operation.

In the case of vaQgrip VQ Series, there is only one face for the case/carton to be picked. Hence, it is much more straightforward.

Product	VQ 10	VQ 20
X	175	0
Y	0	0
Z	161	172
P	0	0
W	0	0
Z	0	0

Table 8: Tool Center Point of vaQgrip VQ Series

6.2.3 CoG for vaQgrip

The CoG of the vaQgrip Click varies depending on the selected configuration. Since vaQgrip Click is a modular vacuum gripper, the overall CoG changes based on the pod, dock, hub, reducer, offset, and vacuum cups used in the setup. Users must calculate and update the CoG values in the robot controller after configuring or modifying the gripper assembly to ensure accurate motion, stable handling, and safe operation.

The CoG values for vaQgrip VQ10 and VQ20 are provided in the below table,

Product	VQ10	VQ20
Weight	1.01kg	1.04kg
CX	-2.73	2.3
CY	-143.1	-0.9
CZ	80.1	92.7

Table 9: casemagiQ CoG until the suction cups

6.2.4 vaQgrip Tools

6.2.4.1 vaQgrip Vacuum

The vaQgrip Vacuum node is used to control the vacuum outlet. The vacuum can be switched on and off using the vacuum On/Off buttons in the programming node.

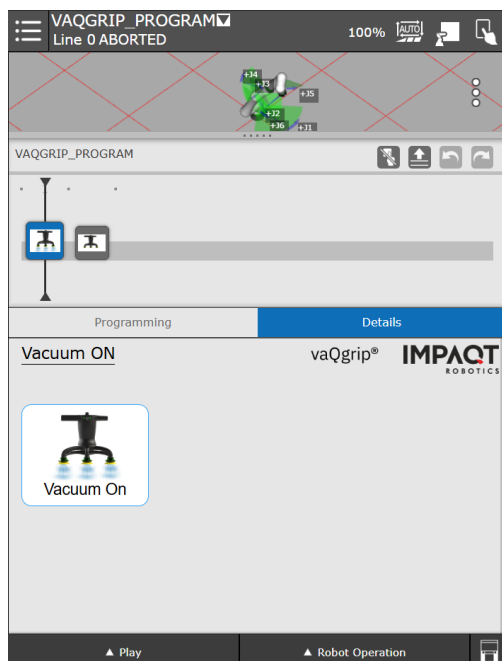


Figure 20: vaQgrip Click program editor

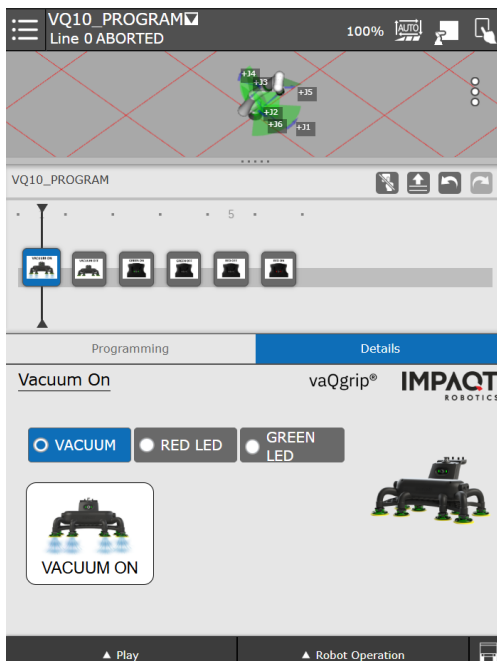


Figure 21: vaQgrip VQ10 program editor

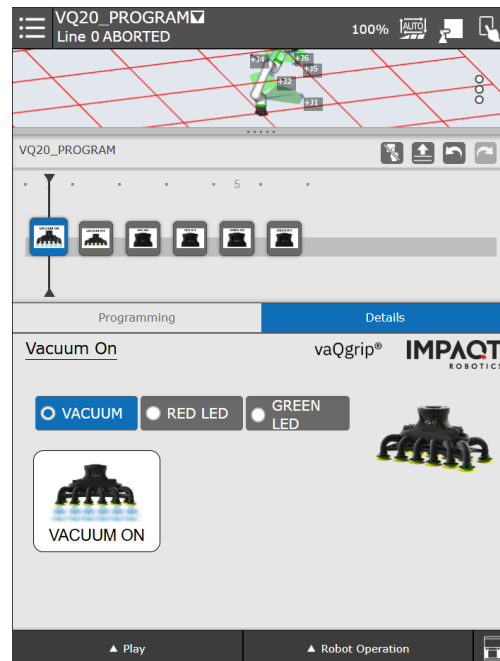


Figure 22: vaQgrip VQ20 program editor

6.2.4.2 vaQgrip Indicator

The vaQgrip Red/Green Indicator node is used to show the gripper status during operation. The indicators are mapped to the robot RO (Robot Output) signals to provide a clear visual indication. The Red indicator can be turn ON when the gripper is holding a box or carton, while the Green indicator turns ON when the gripper is not holding a box or carton.

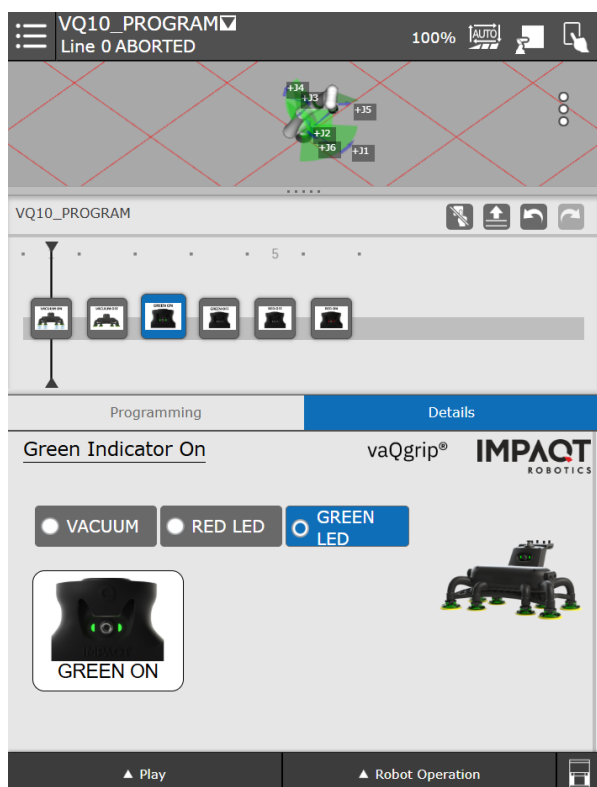


Figure 23: vaQgrip VQ10 program editor

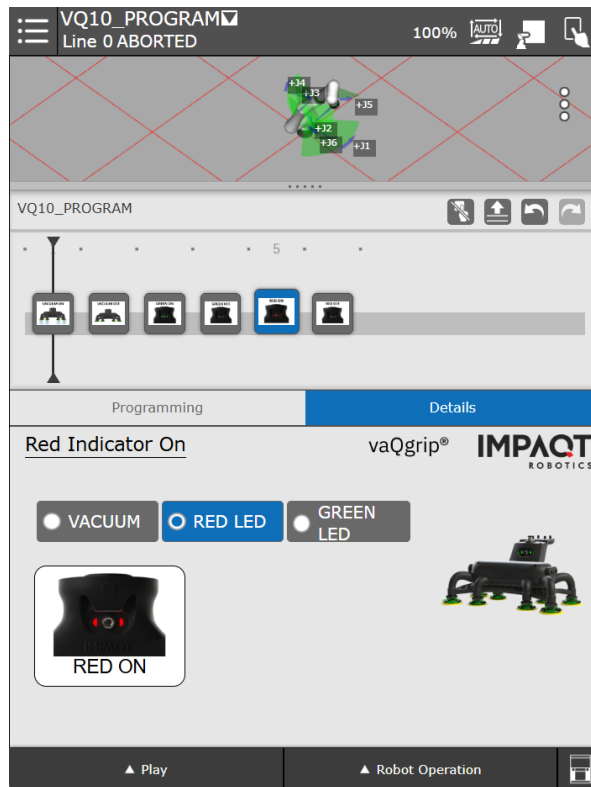


Figure 24: vaQgrip VQ10 program editor