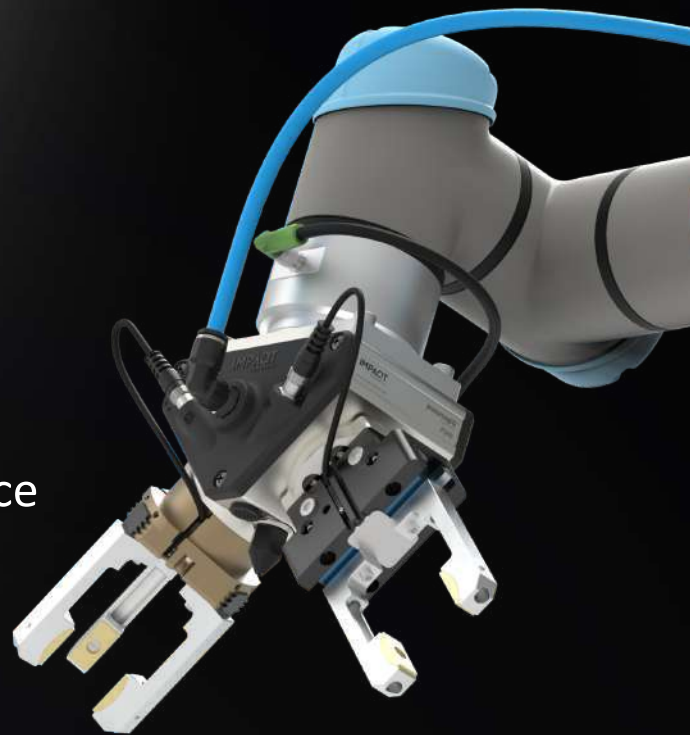


# pneumagiQ® PQ90

The World's First  
Universal Pneumatic Gripper Interface

Pneumatics.  
Plug & Play.



Any Robot | Any Gripper

**IMPACT**  
ROBOTICS



## Pneumatic Grippers

A pneumatic gripper is an actuator that uses compressed air to operate gripper jaws (fingers) to grip (pick-and-place) a work piece.

Dominating over 80% of all grippers deployed for pick-and-place applications, pneumatic grippers have certain advantages that make it a preferred choice for most applications.

Some advantages of pneumatic grippers include:

- High gripping force
- Light weight
- Cost-effective
- Ability to grip variety of work piece
- Adjustable gripping force
- Rugged
- Works in harsh environments

## Introducing pneumagiQ

pneumagiQ is an **Universal Pneumatic Gripper Interface**.

Built on the bedrock of a technology (patent pending) that controls flow, direction and pressure of pneumatic air into a single system, the minimalist design of pneumagiQ simplifies multi-tooling of pneumatic grippers.

pneumagiQ PQ90 enables an integrator to quickly install pneumatic grippers to a robot, without having to source a plethora of components or depend on skilled engineering resources.

With just one pneumatic tube, pneumagiQ simplifies the deployment of pneumatic gripper eliminating multiple tubes and wires running across the body of the robot.

## Platform Approach to Pneumatic Gripping

When a product is designed as a 'platform', it provides a foundation for others to build upon.

In a world of multiple brands of pneumatic grippers, most users have their preference of brand of pneumatic gripper for their applications.

pneumagiQ is designed as a platform for pneumatic grippers. This makes it modular & flexible, allowing integrators to install any brand / model of pneumatic gripper. Thus, enabling to deliver robotic solutions much faster.

pneumagiQ gives users the option of interchangeability of brands or grippers as per their preference, or, the changing need of the application.

**Needs only one compressed air inlet**

**Hose-free direct connection to pneumatic gripper**

**Integrated air blow-off port**

**Silencer**

**Modbus RTU communication**



**Interchangeable gripper mounting**

**Switchable gripper orientation**

**Sensor connectors**

**Status indicators**

**IP66**

**Quick response time**

**magic with pneumatics.**

# pneumagiQ®

Patent Pending

## PQ90

Built on the pneumagiQ technology, **PQ90** is a compact **Universal Pneumatic Gripper Interface** with a mechanical form factor designed to seamlessly mount two pneumatic grippers at a 90° offset from each other.

The compact design of PQ90 makes it ideal for placement of pneumatic grippers in tight-spaced applications.

The light weight design maximizes the payload of the robot for handling heavier parts.



## Integrating Pneumatic Grippers

### Complex?

#### The Traditional Way

##### Multiple Resources

Design | Controls | Pneumatics

##### Multiple Vendors

Sourcing Challenge

##### Long Install Time

Design -> Install - 3 Weeks

##### Messy Install

Restricted Robot Motion



Traditionally, installing a robot end of arm tooling with a pneumatic gripper could be overwhelming, requiring high dependency on skilled engineering resources with knowledge on mechanical, electrical and pneumatics.

Selection and procurement of multiple components from multiple vendors not only increases the burden on buyer, but also increases the project lead time significantly.

The resultant installation is a congregation of multiple tubes, valves and other components, making the installation messy and restricting the motion of the robot.

The patent pending **pneumagiQ PQ90** eliminates the engineering and sourcing complexity experienced in the traditional approach, making it a plug & play experience.

The compact body with a single tube air-inlet makes the robotic cell aesthetically appealing, maximizing the robots payload, and retaining the freedom of motion of the robotic arm.

### Simplified!

#### The pneumagiQ Way

##### Out-of-the-box

One Compact Unit

##### Single Tube Air Inlet

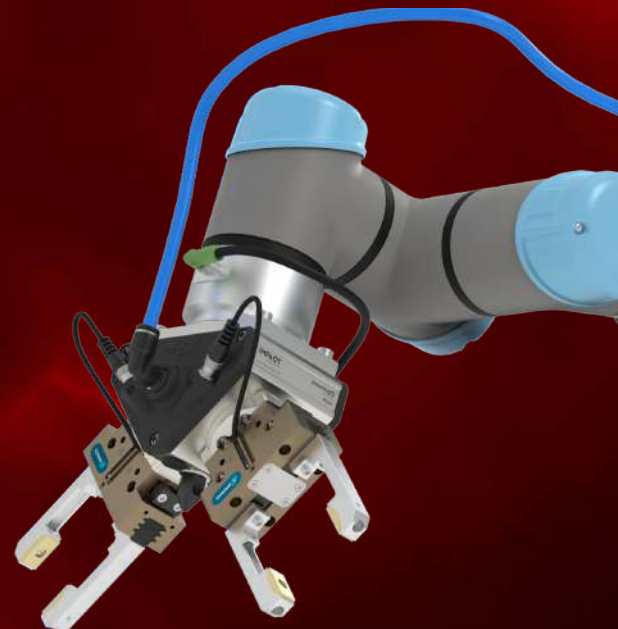
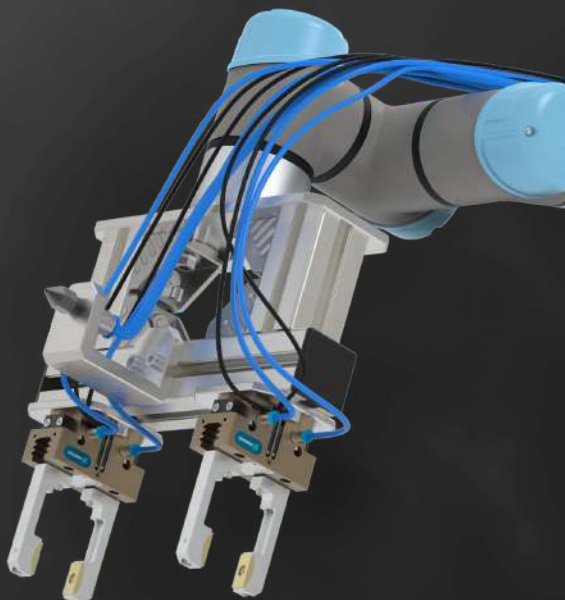
Connects over just one compressed air line

##### Bundled Features

Pneumatic Distribution | Controls  
Sensor Port | Air blow-off Port

##### Modbus RTU

Single cable communication



# The World's First Universal Pneumatic Gripper Interface Any Robot | Any Gripper

## Robot Coupler

With an offering of multiple robot couplers, pneumagiQ is compatible with all robots in the world - be it a collaborative robot, an industrial robot, a SCARA robot, a cartesian robot, custom designed gantries, or custom designed machines.



## Gripper Coupler

With an option of multiple gripper couplers designed specifically for different models of pneumatic grippers, the integrator can select the specific coupler, enabling quick coupling of the gripper to pneumagiQ.

Many of the gripper couplers allow for a 'hose free direct connection' eliminating the need for any last mile pneumatic tubing.

The 'universal gripper coupler' allows one to couple non listed grippers or special designed grippers.

## Pneumatic Grippers



pneumagiQ has been built as a 'platform' enabling to simplify the implementation of any gripper in universe of pneumatics.

This truly makes pneumagiQ a single point source for any pneumatic gripper installation. The plug & play approach emphasizes the underlying vision of accelerating the deployment of robots.



## Plug & Play Approach

The 'design to install' phase of a traditional pneumatic gripper setup could take up to 3 weeks. The pneumagiQ Plug & Play approach now brings down the time to just 10 minutes.

## Optimized Mechanical Form Factor

The 90° mechanical offset, compact size and light weight makes pneumagiQ a preferred option for all pneumatic gripper installation such as machine tending.

## Rugged Design

The sturdy design with an IP66 rating makes pneumagiQ well suited for robotic installations in harsh environments including machine tending, pick & place etc.

## Smart Robot Installation

The single tube air inlet and the smartly designed couplers for robots & grippers enables a smarter robot installation.

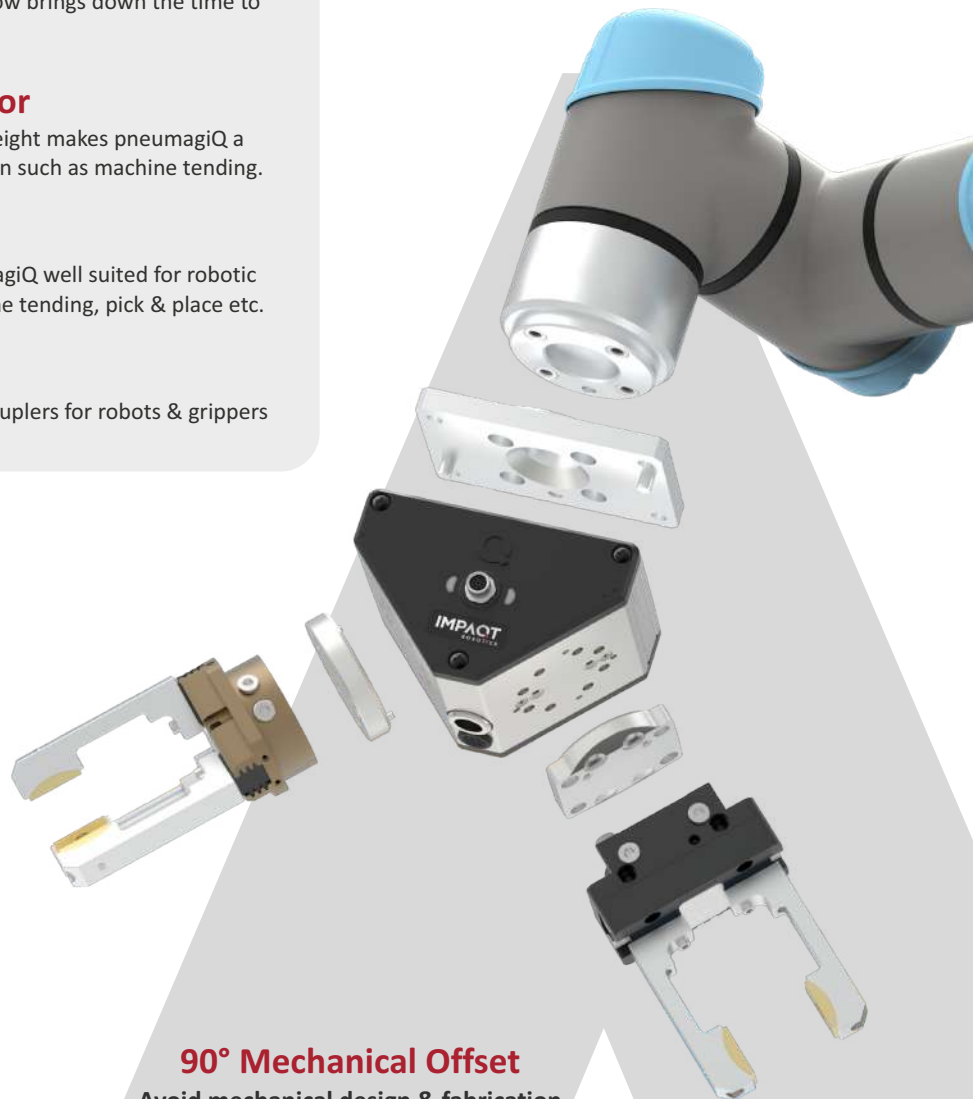
Install in just 10 minutes

## Benefits - Integrator

- pneumagiQ enables installing pneumatic grippers Plug & Play.
- No dependency on skilled design & engineering resources.
- Save time and efforts coordinating sourcing of components from multiple vendors.
- Reduce installation time to just a few minutes.
- Increase turnaround of projects - more projects in the same time.
- Aesthetic implementation of the robotic cell.
- Enhance reach and degree of freedom of the robot.

## Benefits - End User

- Aesthetic robotic cell.
- Zero maintenance.
- Minimize requirement of spares.
- Quicker deployment of projects.
- Quick redeployment for other applications.



### 90° Mechanical Offset

Avoid mechanical design & fabrication

### 15x Quicker

Turnaround projects faster

### Lighter - 580 g

Maximize robot payload

### Smaller

Access tight spaces

### IP66

Use in harsh environment

### Quick Response Time

Increase machine utilization



### Robot Mounting Face

Mount the suitable Robot Coupler to interface pneumagiQ with the specific robot.



### I/O Connector

Connect directly to the Tool I/O Port of Universal Robots (eSeries & CB3). For other robots, connect directly to the controllers and communicate over Modbus RTU.



### Status Indicator

To indicate the functioning of pneumagiQ and communication between pneumagiQ and the robot.



### Gripper Mounting Face

Select & install the Gripper Couplers suitable for the pneumatic grippers being coupled to pneumagiQ.

Each of the two Gripper Mounting Face can have a different brand / model of pneumatic gripper installed, as suited for the application.

Make use of the in-line air ports for 'hose free direct connection' to connect with specific pneumatic grippers.



### Sensor Connectors

Sensors installed on the pneumatic grippers to know its state (open/close) can be connected directly to pneumagiQ, avoiding need for lengthy wiring to the robot controller.



### Compressed Air Inlet

Connect just one pneumatic tube and operate two pneumatic grippers & one air-blow off port. Eliminate the need for multiple pneumatic tubes and wire packages running across the body of the robot.



### Exhaust Port

Exhaust port with built in silencers allows pneumagiQ to be both silent and efficient.

### Air Blow-off Port

An integrated air blow-off port to clean the work piece and/or the work piece holder before unloading / loading the new part. Ideal for most machine tending applications.

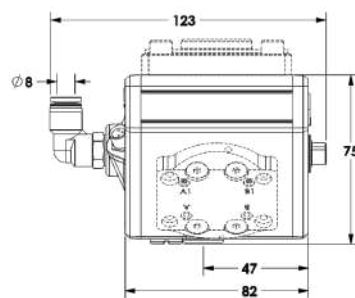
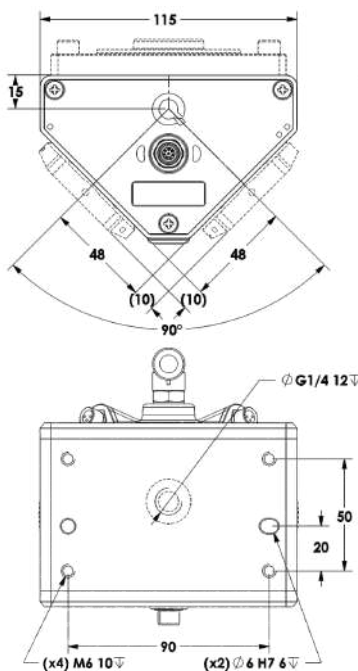


## Specifications

### pneumagiQ PQ90

Model	PQ90
Part Number	6 102 0101
<b>General</b>	
Mountable pneumatic grippers	2
Angle between grippers	90°
Air Blow-off Ports	1
Sensor Connectors	2
Communication	Modbus RTU
Response time	< 30 ms (Modbus RTU)
Operating medium	Pneumatic air
Weight	580 g / 1.28 lbs
<b>Payload</b>	
Payload per Gripper Mounting Face	2.5 kg / 5.5 lbs
Overall payload	5 kg / 11 lbs
<b>Pneumatics</b>	
Airflow rate for grippers	85 slpm / 3 scfm
Airflow rate at Air blow-off port	230 slpm / 8.1 scfm
Operating pressure	6 bar / 87 psi
<b>Connectors</b>	
I/O Connector	M8 8pin female connector
Air inlet	Ø 8 tube quick connector
Sensor port	M8 3pin female connector
Air blow-off	G 1/4 female thread
<b>Interface - Robot / Gripper</b>	
Robot mounting	pneumagiQ Robot Coupler
Gripper mounting	pneumagiQ Gripper Coupler
<b>Power</b>	
Operating voltage	24V DC
Operating current	450 mA
<b>Environment</b>	
Ambient temperature range	+5°C to 40°C / 41°F to 140°F
Noise level	< 50 dB
Ingress Protection	IP66

## Dimensions:



All dimensions are in mm



## Selection of Accessories

### Robot Coupler

ISO Mounting Type	Part No
ISO 31.5	6 102 5011
ISO 40	6 102 5012
ISO 50	6 102 5013
ISO 56	6 102 5014

All Robot Couplers ship with suitable fasteners.

### Gripper Coupler

The list of Gripper Couplers is constantly being updated. For other brands or models not listed below, you may either use the 'Universal Gripper Coupler', or, contact us.

Brand	Model	Type	Part No
Destaco	DPDL-047M	2 Jaw	6 102 6013
	RDH-1M-L	2 Jaw	6 102 6014
	RDH-2M-L	2 Jaw	6 102 6015
	RTH-2M	3 Jaw	6 102 6002
Festo	HGDT-35-A	3 Jaw	6 102 6004
	HGDT-40-A	3 Jaw	6 102 6002
	HGPT-25-A-B	2 Jaw	6 102 6005
	HGPT-35-A-B	2 Jaw	6 102 6006
Gimatic	DH27	2 Jaw	6 102 6001
	DH35	2 Jaw	6 102 6003
	TH33	3 Jaw	6 102 6004
	TH45	3 Jaw	6 102 6002
Schunk	JGP 64	2 Jaw	6 102 6001
	JGP 80	2 Jaw	6 102 6003
	PGN 64	2 Jaw	6 102 6001
	PGN 80	2 Jaw	6 102 6003
	PZN 50	3 Jaw	6 102 6004
	PZN 64	3 Jaw	6 102 6002
SMC	MHS2-32D_X56	2 Jaw	6 102 6009
	MHS2-40D_X56	2 Jaw	6 102 6010
	MHS3-32D_X56	3 Jaw	6 102 6011
	MHS3-40D_X56	3 Jaw	6 102 6012
	MHS4-32D_X56	4 Jaw	6 102 6009
	MHS4-40D_X56	4 Jaw	6 102 6010
	MHSL3-32D_X56	3 Jaw	6 102 6011
	MHSL3-40D_X56	3 Jaw	6 102 6012
Zimmer	GPD5004	3 Jaw	6 102 6004
	GPD5006	3 Jaw	6 102 6002
	GPP5006	2 Jaw	6 102 6001
	GPP5008	2 Jaw	6 102 6003

Above couplers allow for 'hose-free direct connection'

Other select brands / models

Universal Gripper Coupler (UGC) **	6 102 6007
Gripper Mounting Blank for UGC	6 102 6008

\*\* With push-in fitting for last mile connection to gripper.

All Gripper Couplers ship with suitable fasteners & O-rings.

### I/O Cable

Type	Compatibility	Part No
I/O Cable (0.2 m)	Connects to UR eSeries & CB3 Tool I/O Port	6 102 5501
I/O Cable (5 m)	Connects to any controller on Modbus RTU	6 102 5502

### How to order:

Order suitable accessories dependent on the specific Robot / Grippers pneumagiQ is being coupled to.

1. pneumagiQ PQ90 Part No: 6 102 0101
2. Accessories:
  - a. Robot Coupler Part No: \_\_\_\_\_
  - b. Gripper Coupler - Side 1 Part No: \_\_\_\_\_
  - c. Gripper Coupler - Side 2 Part No: \_\_\_\_\_
  - d. I/O Cable Part No: \_\_\_\_\_