



A Novanta Company

**DISTRIBUTOR
PRODUCT CATALOG**



PRODUCT CATALOG

ATI INDUSTRIAL AUTOMATION

ATI Industrial Automation is the world's leading engineering-based developer of robotic accessories and robot arm tooling. Since 1989, we have been at the forefront of innovation in automation, delivering high-performance solutions that enhance robotic productivity and efficiency across industries.



WHY THE WORLD'S TOP MANUFACTURERS CHOOSE ATI

A world leader in Robotic End Effectors. Recognized throughout the world for quality and reliability, ATI products are improving productivity in an array of industries, including Robotics, Aerospace, Biomedical, Automotive, Electronics, Applied Research,



In 1989, ATI set out to produce the best robotic productivity tools available. Our dedication to that quest has resulted in the most reliable and flexible line of Robotic End Effectors in the industry. Today, the mission continues as we develop leading-edge products that enhance robotic productivity. To that end, every resource at our disposal is devoted to making ATI products into the ultimate productivity tools.

DRIVEN BY ENGINEERING EXCELLENCE.

The driving force behind our success is the ATI research and development team, the largest of its kind in the world for Robotic End Effectors. Our accomplished mechanical, electrical and software engineers continue to raise the bar in quality, innovation and productivity. Our dedication to engineering excellence has resulted in the most flexible and adaptable line of products on the market today for both standard and custom applications.

A WORLD LEADER IN ROBOTIC END EFFECTORS

A world leader in Robotic End Effectors. Recognized throughout the world for quality and reliability, ATI products are improving productivity in an array of industries, including Robotics, Aerospace, Biomedical, Automotive, Electronics, Applied Research, Academics,

Nuclear and Governmental. Our ISO 9001 registration assures that ATI products meet the most stringent industry standards for quality. Each product is subjected to rigorous quality assurance and inspection guidelines before it can leave the factory.

ATI SOLUTIONS. WHEN NOTHING LESS WILL DO.

If the quest for excellence in robotic productivity made us the industry leader, it is our dedication to the customer that has kept us there. Customer satisfaction is priority one at ATI, and it all begins with listening. Experienced ATI Account Managers work closely with your staff to achieve the perfect fit for your specific application. This consultative sales style, combined with our family of standard and customizable products, ensures that you always get the best product for your application. Your success is our top priority.

The following pages offer a brief look at the industry's most reliable Robotic End Effector products. But it's just the beginning. To learn more about how ATI can help you in your quest to improve robotic productivity, call 919.772.0115 to connect with an ATI Account Manager or visit ati.novanta.com.



A Novanta Company

Introducing

ROBOTIC TOOL CHANGERS

Any Robot. Many Tasks.

ROBOTIC TOOL CHANGERS

STANDARD QUICK-CHANGE TOOL CHANGERS - SQC

HEAVY DUTY TOOL CHANGERS - HDQC

UTILITY MODULES

TOOL STANDS



Equipped with
new capabilities



Ready for
diverse applications



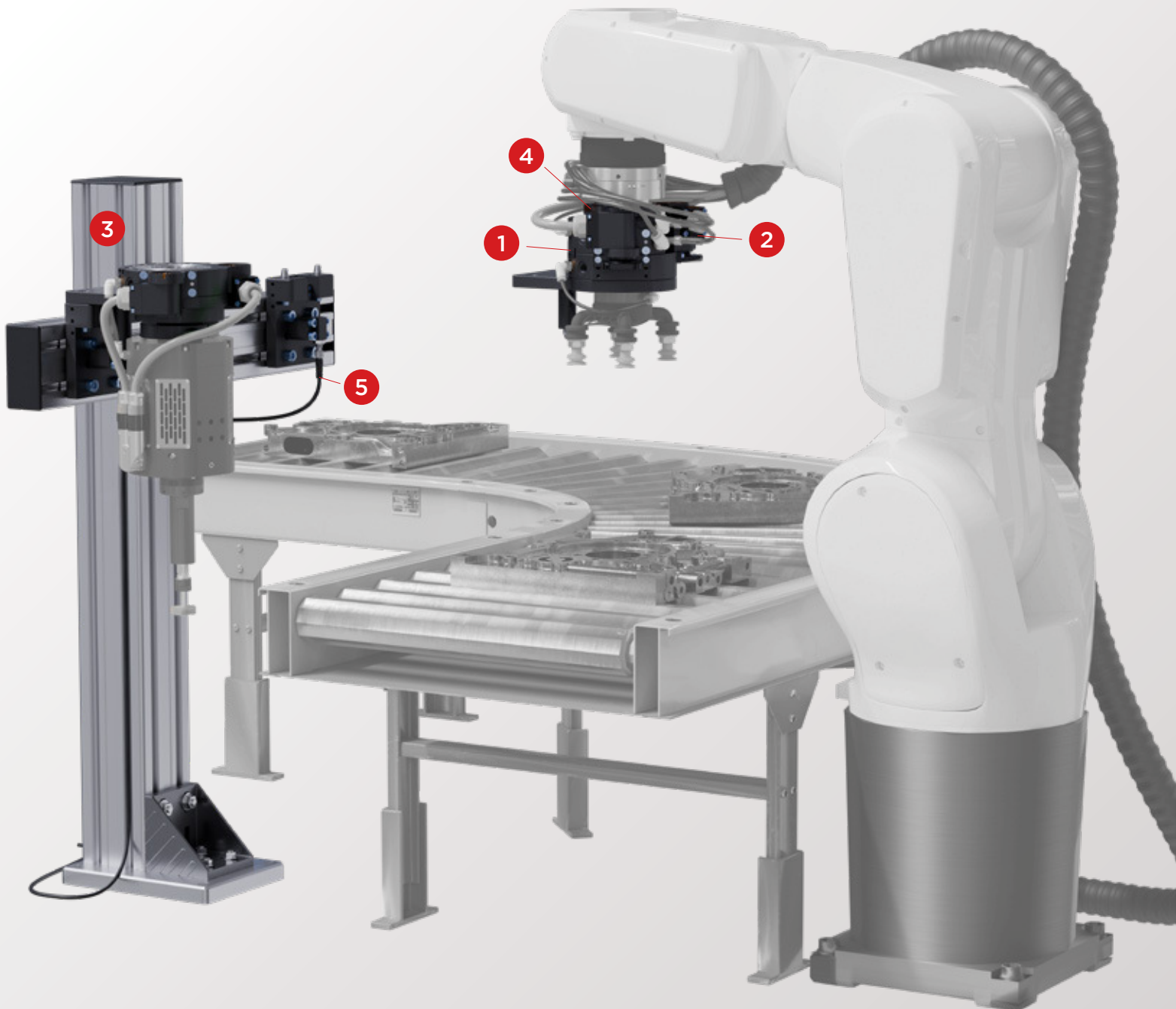
Designed for
easy integration



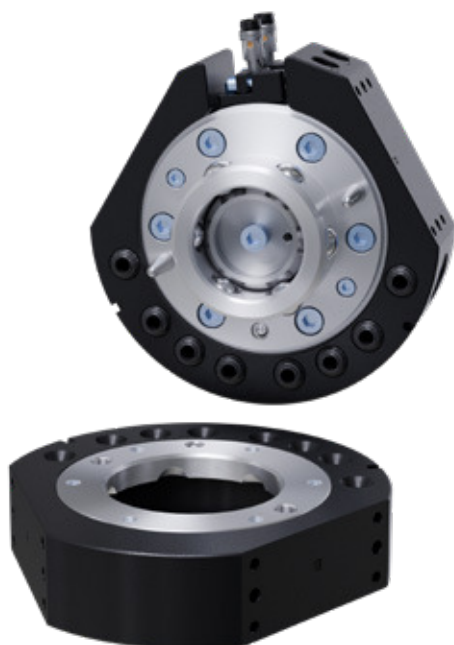
SYSTEM OVERVIEW

ATI's robot tool changer systems are engineered to deliver fast, reliable and fully automated exchange of end-of-arm tooling across a wide range of industrial applications. Designed for durability and precision, each changer provides secure mechanical coupling, robust signal and utility transfer, and seamless integration with leading robot platforms.

Whether enabling rapid changeovers, enhancing flexibility in multi-process cells, or increasing overall equipment efficiency, our tool changers help manufacturers unlock higher productivity and maximize the versatility of their robotic systems.



1 INDUSTRY-LEADING
Tool Changers



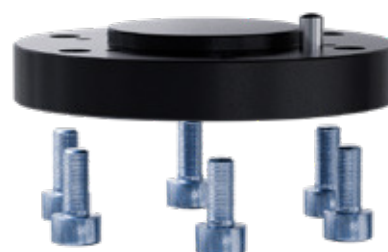
3 CUSTOMIZABLE
Tool Stands



2 THE BROADEST RANGE OF
Utility Modules



4 Adapter Plates



5 Sensors and Cables



ROBOTIC TOOL CHANGERS

ATI Tool Changers are extremely flexible changers with the ability to function in a wide variety of applications. This flexibility is due in large part to the many different models of utility modules that are available for passing air, water, power, electrical signals, and more.

Productivity and Flexibility

Maximizes uptime and allows a single robot to perform multiple operations in a production line, or enable high-mix manufacturing with safe, efficient, error-free robot tool changeover.

Right Size for Any Robot

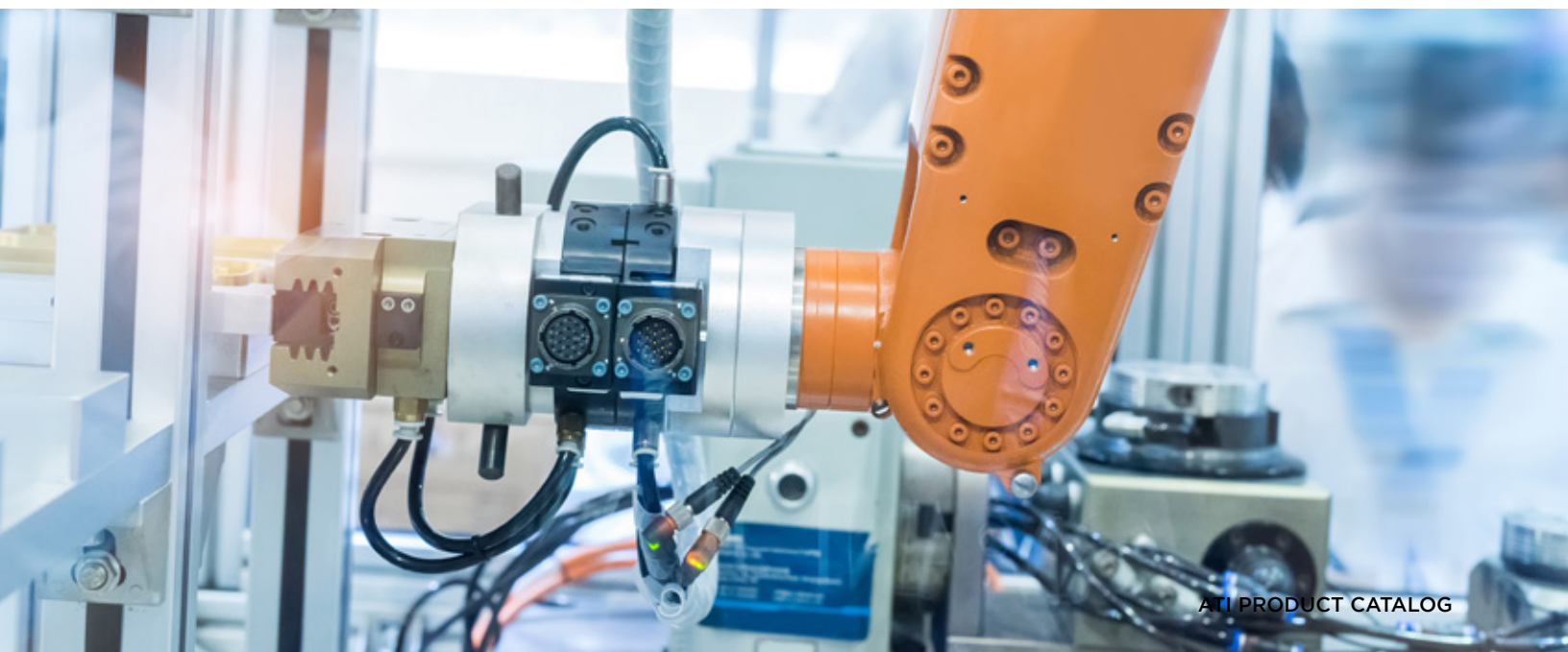
Broad range of models to optimize size selection for any robot or payload.

Flexible Media Transmission

The industry's **widest range of optional modules** for signal, pneumatic, fluid, and communication pass-through enable endless application possibilities of the tool changer.

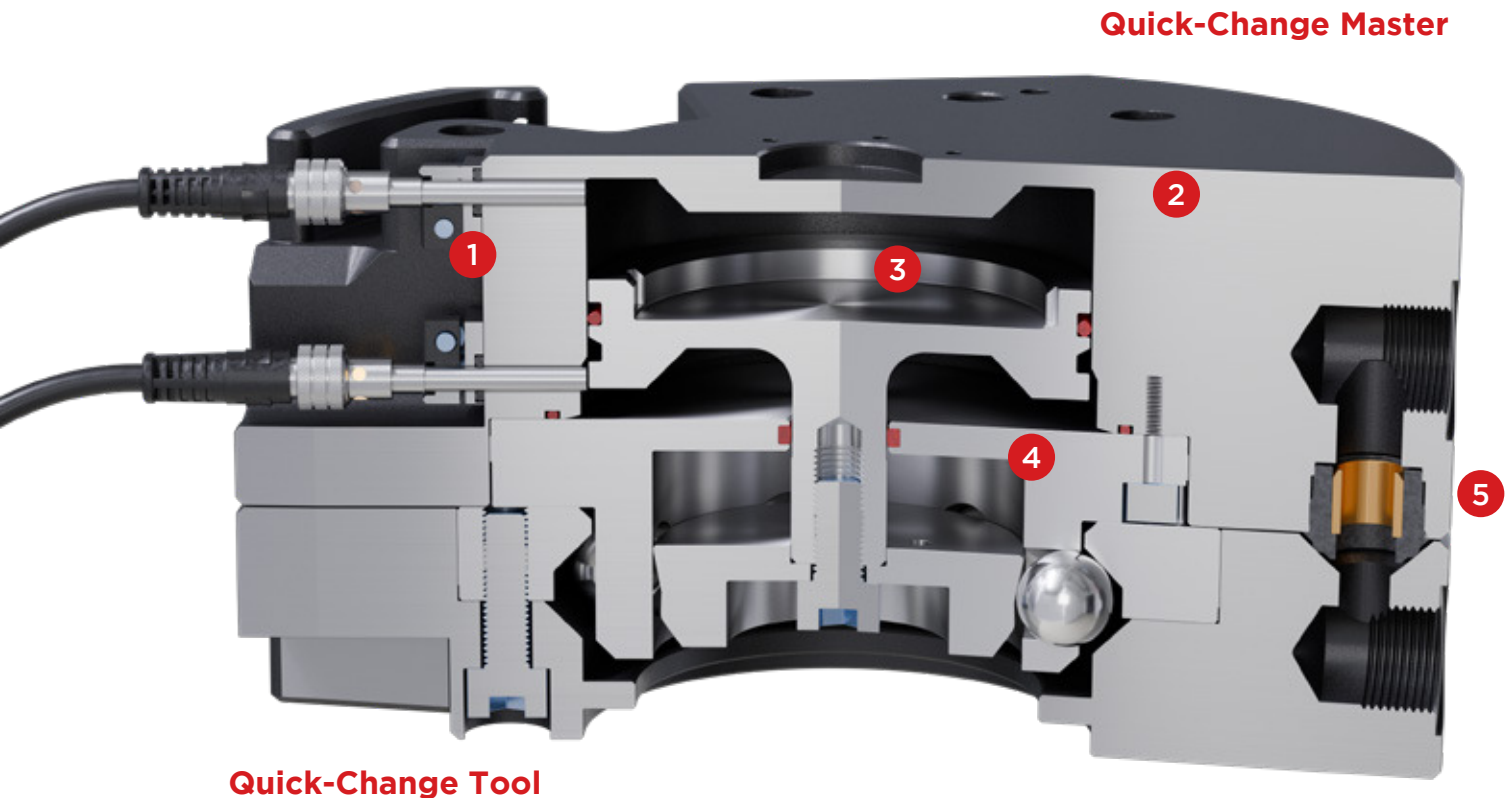
Superior Safety and Reliability

The patented Fail-Safe function retains the Tool plate in the event of an unexpected air pressure drop. The use of hardened steel in the locking mechanism extends service life.



How It Works:

The automatic tool changer consists of a Quick-Change (QC) Master attached to the robot, and a Quick-Change (QC) Tool attached to the end-effector or tool. The QC Master couples and decouples to the QC Tool using a pneumatic locking piston, and ensures the connection is secure with a patented fail-safe design. After coupling, integrated pneumatic feed-throughs and optional utility modules pass pneumatic and electric utilities to supply the end-effector.



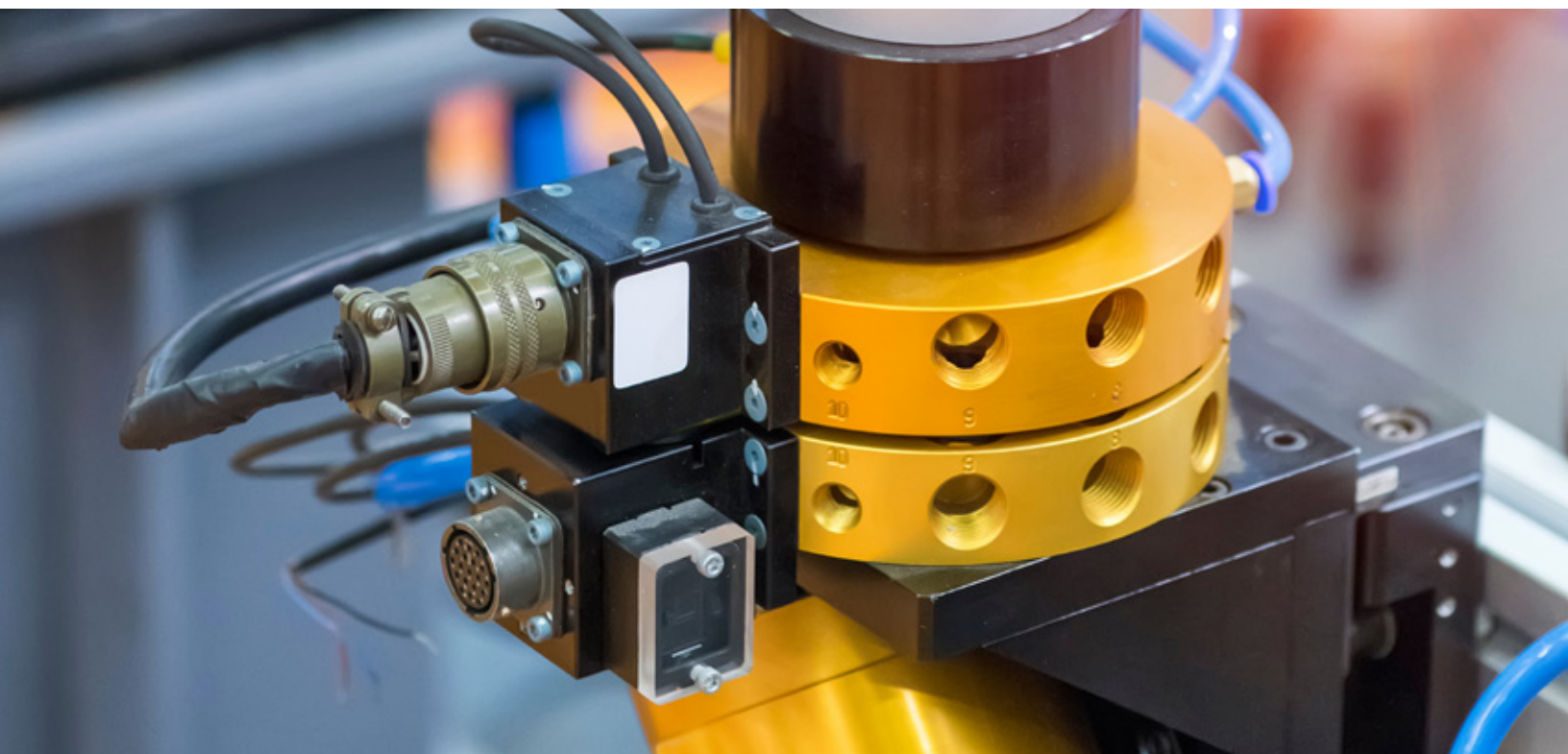
- 1 Sensor monitoring of the locking device**
Optional, for reliable process monitoring of the locking condition
- 2 Housing**
Is weight-optimized due to the use of high-strength aluminum alloy
- 3 Pneumatic actuation**
Uses double-acting pneumatic piston for fast, efficient, easy operation.

- 4 Locking mechanism**
Reliable locking and unlocking, with self-retaining fail-safe function in the event of a loss of compressed air.
- 5 Air feed-throughs**
Integrated into the housing to minimize interfering contours on the robot and pass pneumatics to end-of-arm tooling. Also suitable for vacuum.

UTILITY MODULES

Utility modules or feed-through modules are essential components in robot tool changers, enabling seamless transmission of power, signals, fluids, and other utilities between the robot arm and tooling.

- ✓ **Multi-Utility Transfer**
Supports electrical signals, pneumatics, hydraulics, and data communication, allowing robots to switch tools without manual intervention.
- ✓ **Modular & Customizable**
Available in various configurations, including high-power electrical contacts, and fluid or vacuum lines to match specific application needs.
- ✓ **Quick-Connect & High Durability**
Designed for rapid tool changes, reducing downtime while maintaining secure, wear-resistant connections.
- ✓ **Automatic Coupling & Decoupling**
Integrates with robotic tool changers for hands-free operation, ensuring high repeatability and alignment.
- ✓ **Sealed & Protected Design**
Built for harsh environments, offering protection against dust, moisture, and high temperatures to enhance system longevity.



Control Modules

Control and Valve Modules: for tool changer lock and unlock actuation with integrated pneumatic valve.

Electrical Modules

Electrical feed-through modules support:

- **Signals:** for basic I/O, sensors, and low voltage
- **Communication:** for industrial data transmission
- **Power:** for medium voltage or electrical current
- **Servo:** for servo motor power and encoder signals
- **High-Current:** for welding and grounding.

Fluid-Air Modules

Fluid-Air feed-through modules support:

- **Pneumatic:** for compressed air
- **Fluids:** self-sealing connections for water, air, and liquids
- **Vacuum:** for high-flow vacuum feed-through
- **Hydraulics:** for high-pressure hydraulic tool actuation.



TOOL CHANGER MODELS

FEATURED PRODUCTS

Latest models for general use

Model	Suggested Payload Limit	Static Moment, Mxy	Static Moment, Mz	Dynamic Moment, Mxy	Dynamic Moment, Mz	Pneumatic Feed-Throughs	Application	Page #
9120 Series – Standard Quick-Change for a broad range of general industry applications and robot payloads up to 300kg.								
QC-007	16 kg	20 Nm	12 Nm	40 Nm	50 Nm	5x M5	General	16
QC-029	35 kg	57 Nm	78 Nm	170 Nm	150 Nm	2x G1/8 ; 4x M5	General	38
QC-040	60 kg	226 Nm	226 Nm	375 Nm	350 Nm	8x G1/8	General	42
QC-076	120 kg	542 Nm	701 Nm	1,000 Nm	1,800 Nm	5x G3/8	General	68
QC-110	180 kg	784 Nm	784 Nm	1,500 Nm	2,000 Nm	8x G3/8	General	72
QC-160	300 kg	2,710 Nm	920 Nm	5,000 Nm	2,300 Nm	5x G3/8; 4x G1/2	General	76
9128 Series – Next-Generation Heavy Duty Quick-Change for higher robot payloads across industries, optimized for automotive with integrated features.								
QC-835	300 kg	2,000 Nm	1,200 Nm	5,000 Nm	3,600 Nm	1x G1/2	Heavy, Automotive	-
QC-850	700 kg	3,510 Nm	2,110 Nm	7,000 Nm	6,300 Nm	1x G1/2	Heavy, Automotive	-
9121 Series – Heavy Duty Quick-Change for demanding projects and largest robot payloads in any industry. Fully configurable, highly customizable.								
QC-210	300 kg	2,710 Nm	920 Nm	5,000 Nm	2,300 Nm	-	Complex, Automotive	-
QC-310	500 kg	3,290 Nm	3,160 Nm	7,000 Nm	6,300 Nm	-	Complex, Automotive	-
QC-510	1,000 kg	4,860 Nm	3,500 Nm	10,000 Nm	7,000 Nm	-	Complex, Automotive	-

CLASSIC PRODUCTS

Legacy models still supported for existing customers

Model	Suggested Payload Limit	Static Moment, Mxy	Static Moment, Mz	Dynamic Moment, Mxy	Dynamic Moment, Mz	Pneumatic Feed-Throughs	Application	Page #
QC-011	16 kg	20 Nm	12 Nm	40 Nm	50 Nm	6x M5	General	20
QC-020	25 kg	57 Nm	35 Nm	100 Nm	80 Nm	12x M5	General	26
QC-021	25 kg	57 Nm	35 Nm	100 Nm	80 Nm	8x G1/8	General	32
QC-060	100 kg	197 Nm	294 Nm	500 Nm	400 Nm	8x G1/8	General	56
QC-071	100 kg	395 Nm	395 Nm	750 Nm	600 Nm	8x G1/4	General	62

SPECIAL PRODUCTS

Niche models for specific applications

Model	Suggested Payload Limit	Static Moment, Mxy	Static Moment, Mz	Dynamic Moment, Mxy	Dynamic Moment, Mz	Pneumatic Feed-Throughs	Application	Page #
QC-001	1.5 kg	1 Nm	1 Nm	2 Nm	2 Nm	4x M5	Delta robots, ultra-light payloads	12
QC-041	60 kg	157 Nm	216 Nm	375 Nm	350 Nm	6x G3/8; 4x G1/8	High flow pneumatic tools	46
QC-046	70 kg	226 Nm	150 Nm	375 Nm	400 Nm	-	Extra module capacity	52

9120 Series

Standard Quick-Change



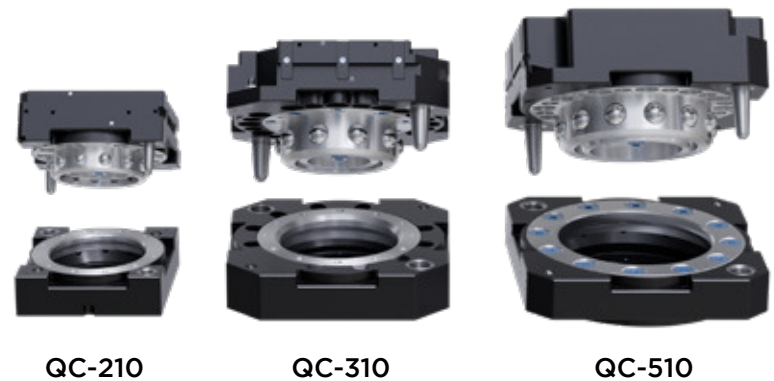
9128 Series

Next-Generation Heavy Duty Quick-Change



9121 Series

Heavy Duty Quick-Change



Classic Products



Special Products



9120 Series

STANDARD TOOL CHANGERS FOR PAYLOADS UP TO 300KG

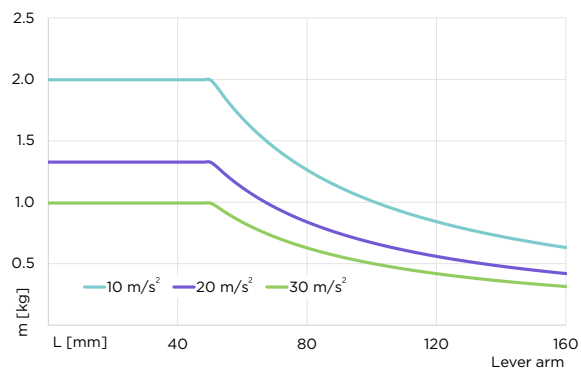


QC-001



PART NUMBERS:
9120-001M-000-000-E
9120-001T-000-000-E

Payload Capacity

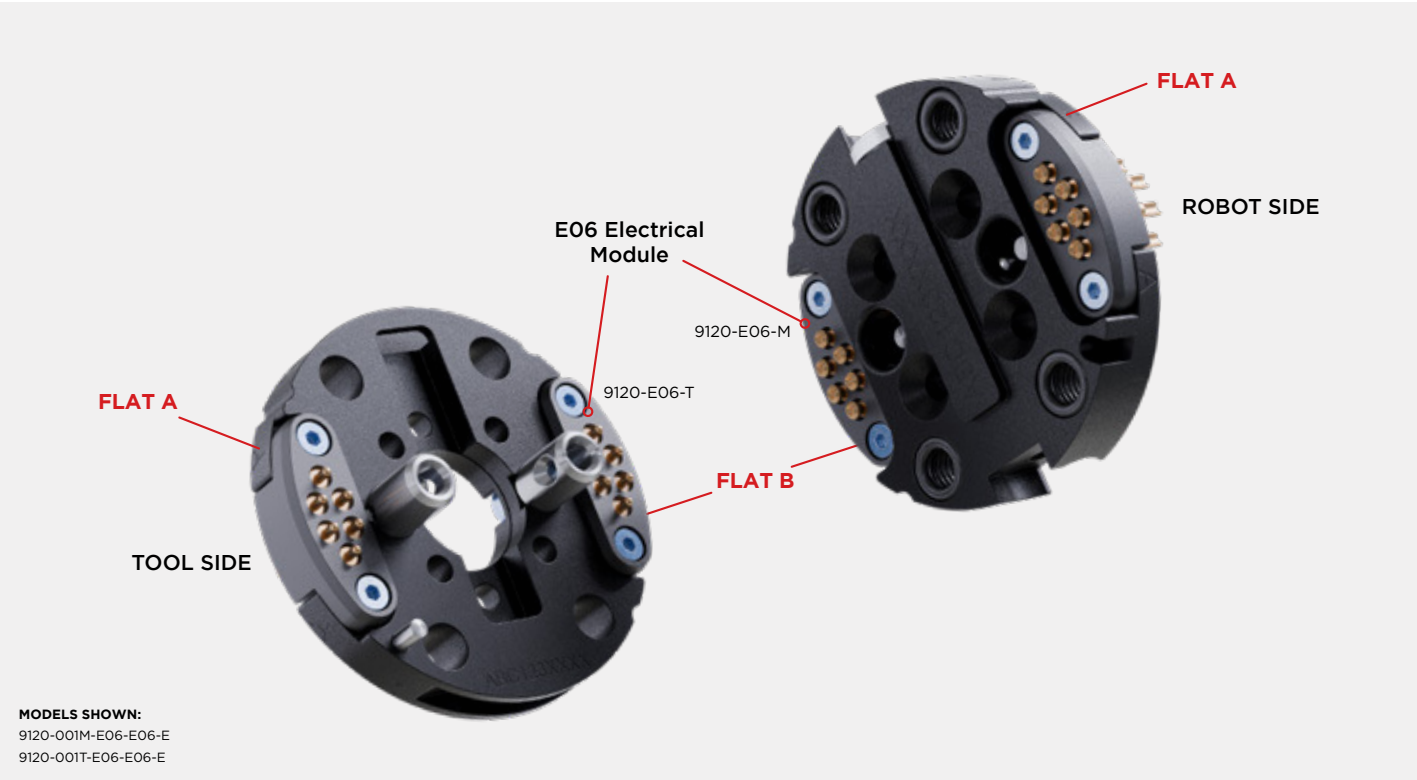


The **QC-001** Tool Changer is also available in orange.

Technical Data

Item	Units	9120-001M-000-000-E	9120-001T-000-000-E
Description		Quick-Change Master	Quick-Change Tool
Lock Sensing		not possible	
Suggested Payload Limit	kg	1.5	1.5
Locking Force	N	170	170
Repeatability	mm	0.01	0.01
Weight	kg	0.03	0.02
Robot/Tool Mounting Pattern			
Pneumatic Feed-Throughs, Type I		4x M5 at 150 l/min	4x M5 at 150 l/min
Pneumatic Feed-Throughs, Type II			
Lock/Unlock Pneumatic Connection		M3	
Static Moment Mxy	Nm	1	1
Static Moment Mz	Nm	1	1
Dynamic Moment Mxy	Nm	2	2
Dynamic Moment Mz	Nm	2	2
Max Moment Mxy	Nm	6	6
Max Moment Mz	Nm	6	6
Max Locking Offset, Z	mm	1	
Max Locking Offset, XY	mm	±2	±2
Max Locking Offset, XY Angular	°	±0.7	±0.7
Max Locking Offset, Z Angular	°	±1	±1
Min./Max. Ambient Temperature	°C	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7
Opening/Closing Time	s	0.1/0.1	
Cylinder Volume Per Double Stroke	cm³	1.2	
Module Mounting Pattern		M1	M1
Mounting for Control Module			
Special Properties			

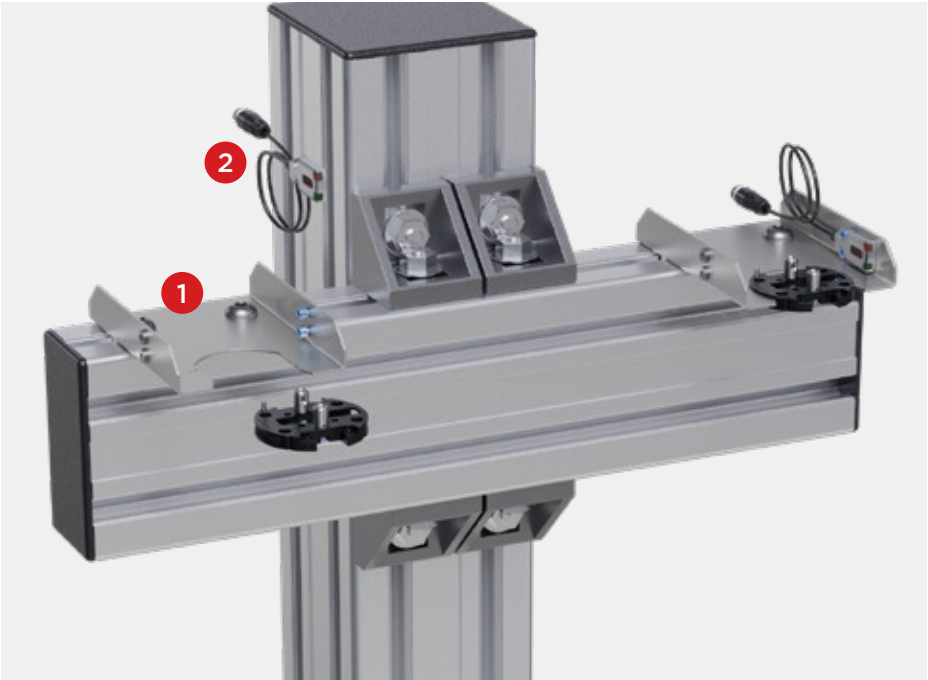
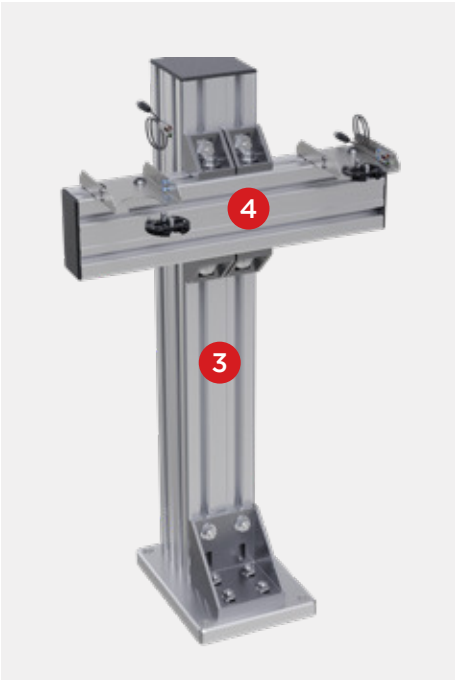
Example Configuration



Optional Utility Modules

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins	Rating	Flat A	Flat B
Electrical	Signals	E06	Robot	9120-E06-M	M1	Solder	6	3A / 50V	•	•
			Tool	9120-E06-T	M1	Solder	6	3A / 50V	•	•

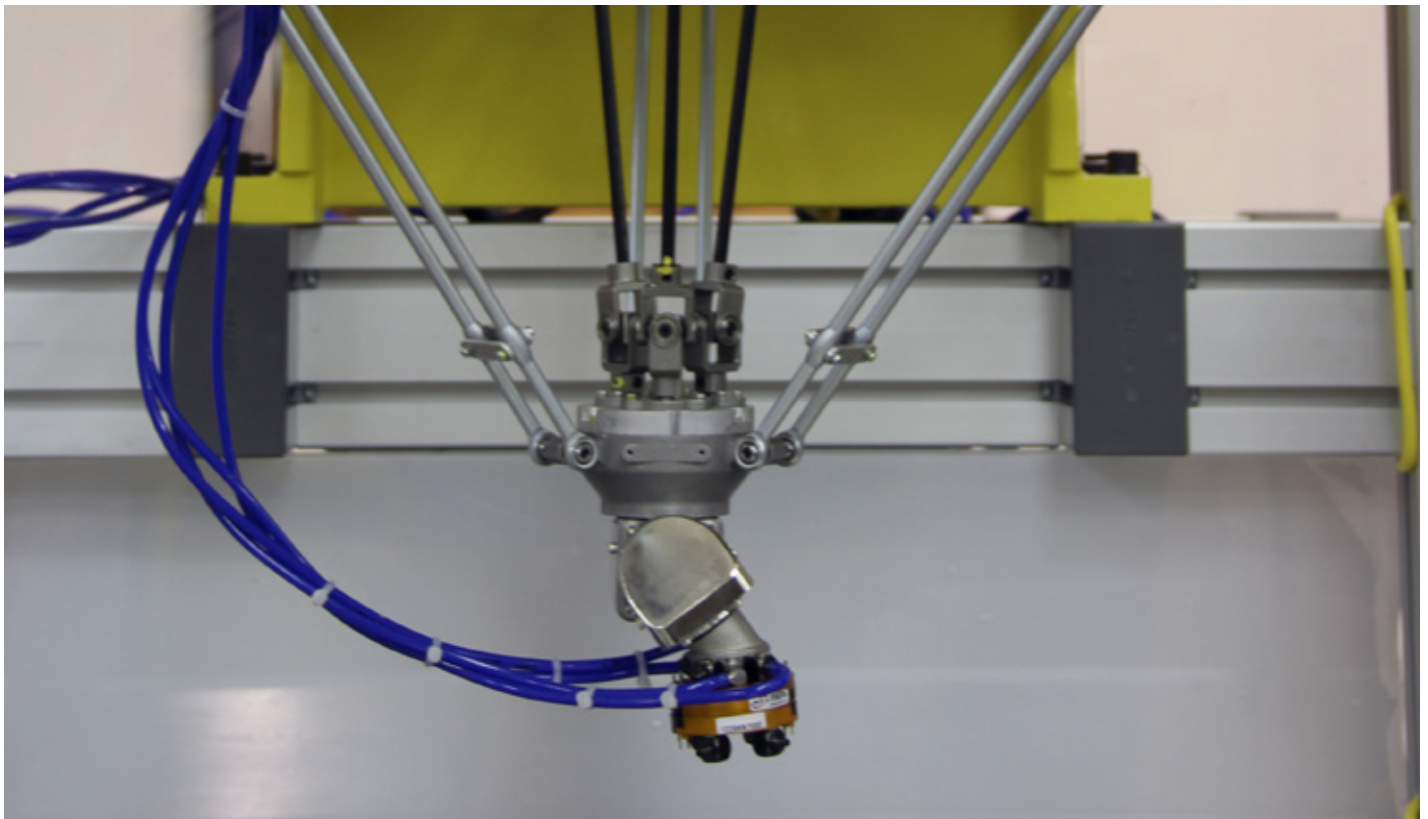
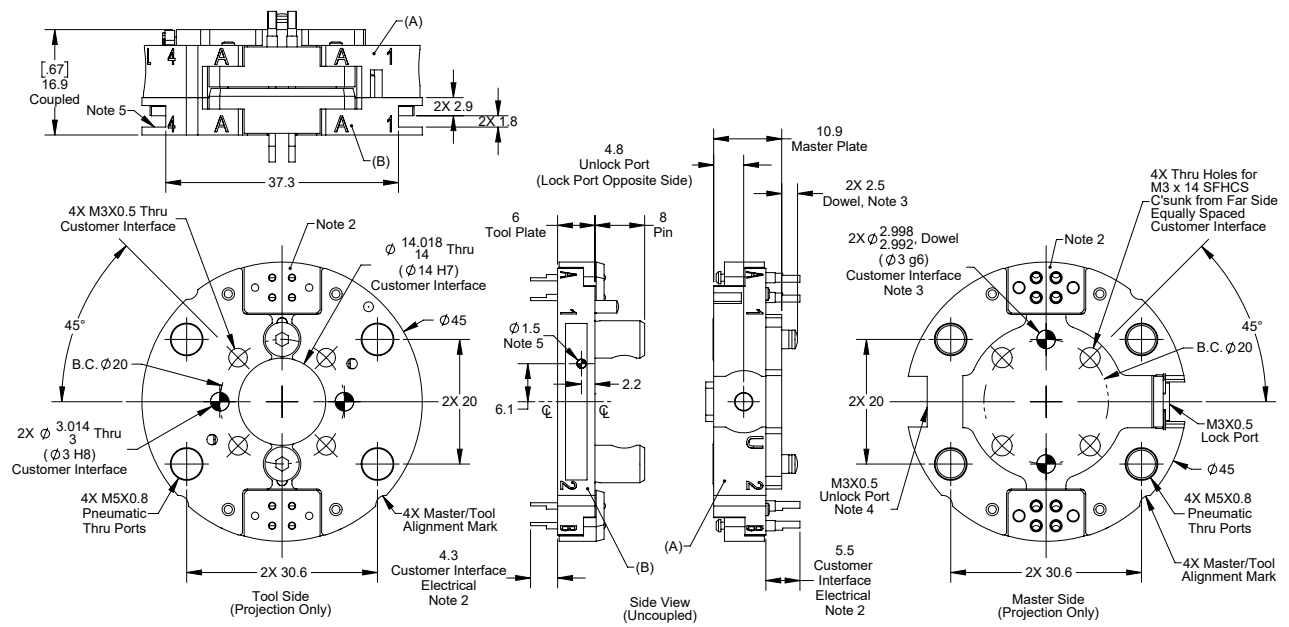
Tool Stand System



QC-001 Tool Stand system for safe tool storage. For detailed information, refer to individual drawings. The vertical and cross profiles shown in this image are not displayed to scale. The sizes vary and are for illustrative purposes only.

#	Part Number	Part	Description
1	9120-TSS-MM-7869	Storage plate	TSS Mounting Module for QC-001
2	9120-TSS-SMA-7869	Storage sensor	TSS Photoelectric Sensor Kit
3	9120-TSS-PM-3435	Storage profile, vertical	TSS Post Module, 0914mm (36") Post Height, 90 X 90 Post
4	9120-TSM-HM-3317	Storage profile, cross	TSM Horizontal Module, 0914mm (36")

Drawing

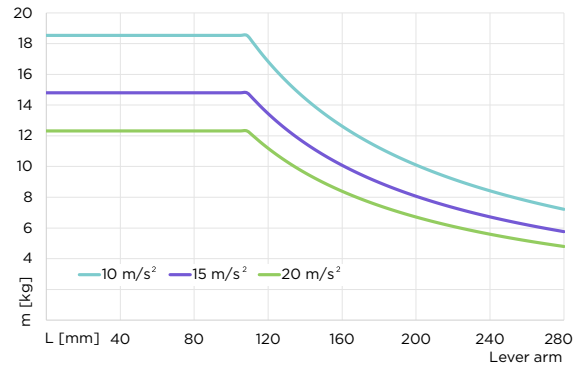


QC-007



PART NUMBERS:
9120-007CM-0-0-SM-B
9120-007DT-0-0-B

Payload Capacity

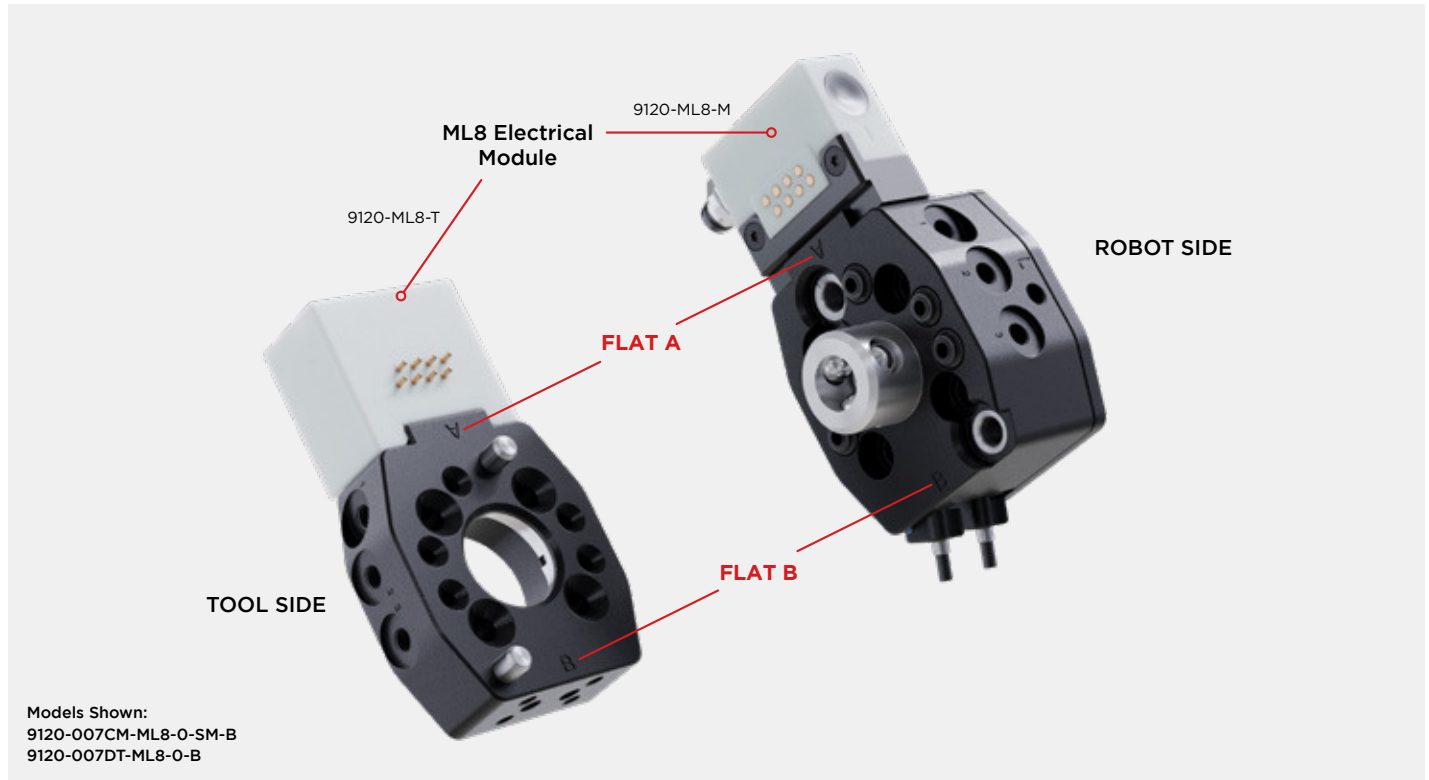


The QC-07 Tool Changer is available in orange instead of black.

Technical Data

Item	Units	9120-007CM-0-0-SM-B	9120-007CM-0-0-SO-B	9120-007DT-0-0-B	9120-007ST-0-0-B
Description		Quick-Change Master	Quick-Change Master	Quick-Change Tool	Quick-Change Tool
Lock Sensing		integrated	not included		
Suggested Payload Limit	kg	16	16	16	16
Locking Force	N	980	980	980	980
Repeatability	mm	0.01	0.01	0.01	0.01
Weight	kg	0.2	0.2	0.1	0.1
Robot/Tool Mounting Pattern		ISO 9409-1-31.5-4-M5	ISO 9409-1-31.5-4-M5	ISO 9409-1-31.5-4-M5	ISO 9409-1-31.5-4-M5
Pneumatic Feed-Throughs, Type I		5x M5 at 150 l/min	5x M5 at 150 l/min	5x M5 at 150 l/min	5x M5 at 150 l/min
Pneumatic Feed-Throughs, Type II					
Lock/Unlock Pneumatic Connection		M5	M5		
Static Moment Mxy	Nm	20	20	20	20
Static Moment Mz	Nm	12	12	12	12
Dynamic Moment Mxy	Nm	40	40	40	40
Dynamic Moment Mz	Nm	50	50	50	50
Max Moment Mxy	Nm	90	90	90	90
Max Moment Mz	Nm	150	150	150	150
Max Locking Offset, Z	mm	1.5	1.5		
Max Locking Offset, XY	mm	±1	±1	±1	±1
Max Locking Offset, XY Angular	°	±0.8	±0.8	±0.8	±0.8
Max Locking Offset, Z Angular	°	±2	±2	±2	±2
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7	4.2/7	4.2/7
Opening/Closing Time	s	0.1/0.1	0.1/0.1		
Cylinder Volume Per Double Stroke	cm³	6	6		
Module Mounting Pattern		M7 / M7+	M7 / M7+	M7 / M7+	M7 / M7+
Mounting for Control Module					
Special Properties					Slotted design for light-duty tool storage nest 9120-TSS-MMS-11345

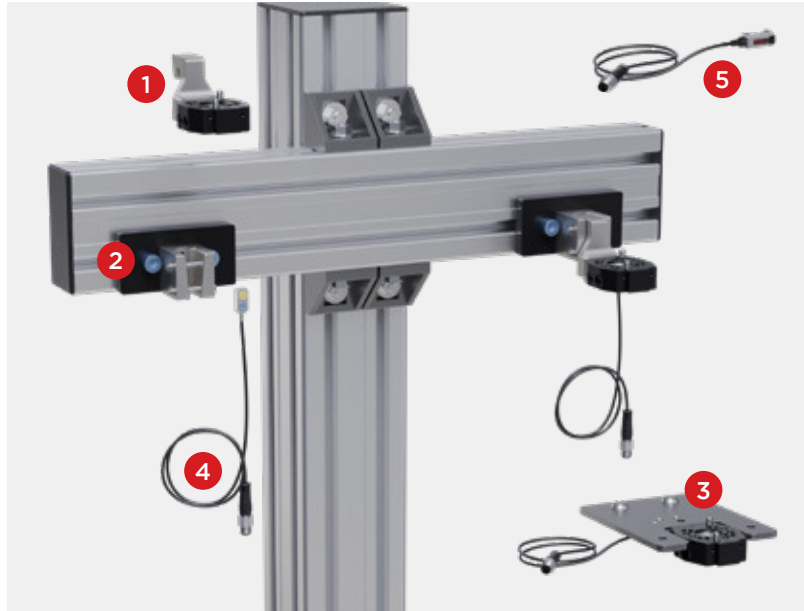
Example Configuration



Optional Utility Modules

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins / Feed-Throughs	Rating	Special Properties	Flat A	Flat B
Electrical	Signals	A15	Robot	9120-A15-M-E	M7	HD15 D-Sub	15	2.5A / 50V		•	
			Tool	9120-A15-T-E	M7	HD15 D-Sub	15	3A / 50V		•	
		E10	Robot	9120-E10M-010	M7	Solder	10	3A / 50V		•	
			Tool	9120-E10T-010	M7	Solder	10	3A / 50V		•	
		E20	Robot	9120-E20M-010	M7	Solder	20	3A / 50V		•	
			Tool	9120-E20T-010	M7	Solder	20	3A / 50V		•	
		M8	Robot	9120-M8M-011	M7	M8 8-pin Male	8	1.5A / 30V		•	
			Tool	9120-M8T-011	M7	M8 8-pin Female	8	1.5A / 30V		•	
		ML8	Robot	9120-ML8-M	M7	M8 8-pin Female 25cm Cable	8	1A / 50V	Cobots	•	
			Tool	9120-ML8-T	M7	M8 8-pin Male	8	1A / 50V		•	
			Robot	9120-ML8A-M	M7	M8 8-pin Male	8	1A / 50V		•	
			Tool	9120-ML8A-T	M7	2x M8 4-pin Female	8	1A / 50V		•	
		ML12	Tool	9120-ML6-T	M7	2x M8 3-pin Female	6	1A / 50V		•	
			Robot	9120-ML12-M	M7+	M12 12-pin Male	12	1A / 50V		•	
			Tool	9120-ML12-T	M7+	M12 12-pin Female	12	1A / 50V		•	
			Robot	9120-ML12-M	M7+	M12 12-pin Male	12	1A / 50V		•	
	Communication	ME10	Robot	9120-ME10-M	M7	M12 D-Code	8	4A / 63V	100 Mbps Ethernet + Power	•	
			Tool	9120-ME10-T	M7	M12 L-Code	8	4A / 63V		•	
			Robot	9120-ME10A-M	M7	M8 D-Code	8	3A / 60V		•	
			Tool	9120-ME10A-T	M7	M8 A-Code	8	3A / 60V		•	

Tool Stand System



QC-007 Tool Stand system for safe tool storage. The vertical and cross profiles shown are not displayed to scale and are for illustrative purposes only.

#	Part Number	Part	Description
1	9120-TSS-TH-11391	Storage plate	QC-7 Tool Hook Module
2	9120-TSS-MMH-11392	Storage module	QC-7 Tool Storage Module
3	9120-TSS-MMS-11345	Storage module, alternate	TSS Slotted Tool Nest for QC-7
4	9120-TSS-SMA-11392	Storage sensor	QC-7 Tool Storage Sensor
5	9120-TSS-SMA-11345	Storage sensor, alternate	PNP Tool Stand Sensor for QC-007 "ST" Tools
6	9120-TSS-PM-3435	Storage profile, vertical	TSS Post Module, 0914mm (36") Post Height, 90 X 90 Post
	9120-TSS-PM-3434	Storage profile, vertical	TSS Post Module, 1520mm (60") Post Height, 90 X 90 Post
7	9120-TSM-HM-3317	Storage profile, cross	TSM Horizontal Module, 0914mm (36")
	9120-TSM-HM-3353	Storage profile, cross	TSM Horizontal Module, 1520mm (60")

Accessories



Lock Sensing

Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller.

#	Part Number	Part	Description
1	8590-9909999-15	Lock sensing cable	Cable 5m, M8 Straight Threaded Connector, Flying Leads

Spare Parts

2	9005-20-8847	Lock sensor	Replacement Lock/Unlock PNP Sensor
	9120-007M-SEALS	Seal kit	Piston seals and pass-thru bushings

Robot Adapter Plates



Robot adapter plate for mounting Quick-Change Master to different robot flanges. For detailed information, refer to individual drawings.

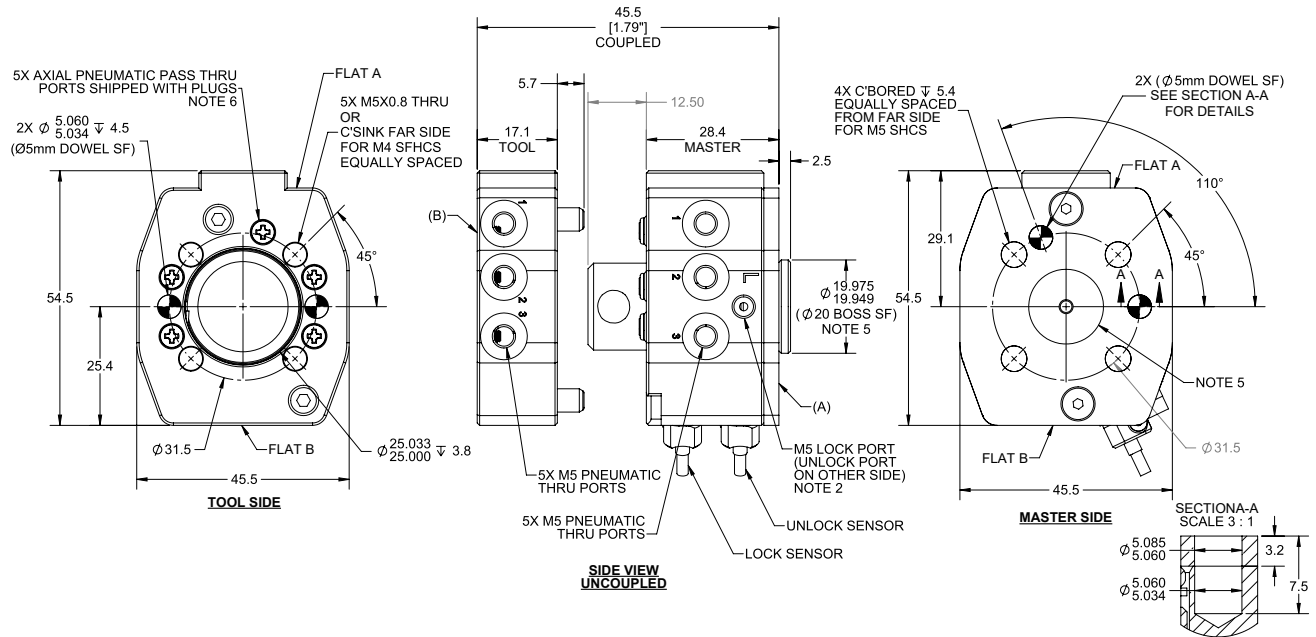
Part Number	Part	Description
9120-007M-IP-10700	Robot adapter plate	ISO 40mm
9120-007M-IP-10719	Robot adapter plate	ISO 50mm

Drawing

PART NUMBERS:

MASTER: **9120-007CM-0-0-SM-B**

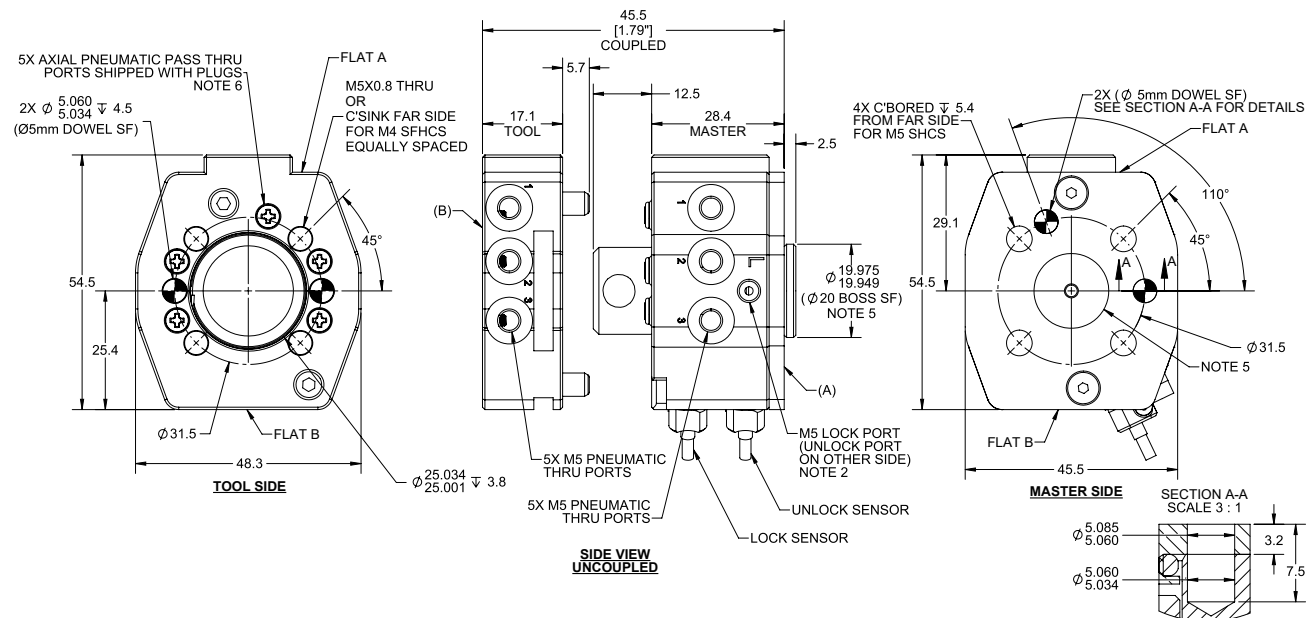
TOOL: **9120-007DT-0-0-B**



PART NUMBERS:

MASTER: **9120-007CM-0-0-SM-B**

"SLOTTED" TOOL FOR ALTERNATE STORAGE MODULE: **9120-007ST-0-0-B**

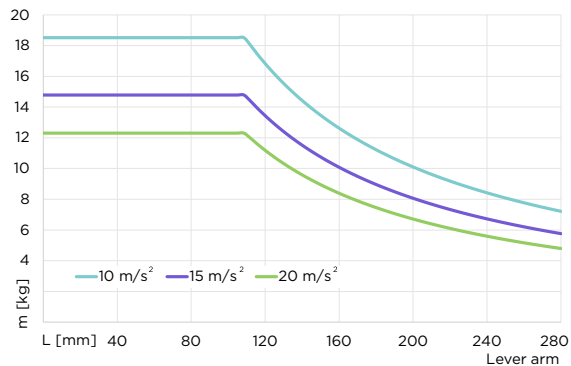


QC-011



PART NUMBERS:
9120-011M-000-000-B
9120-011T-000-000-B

Payload Capacity

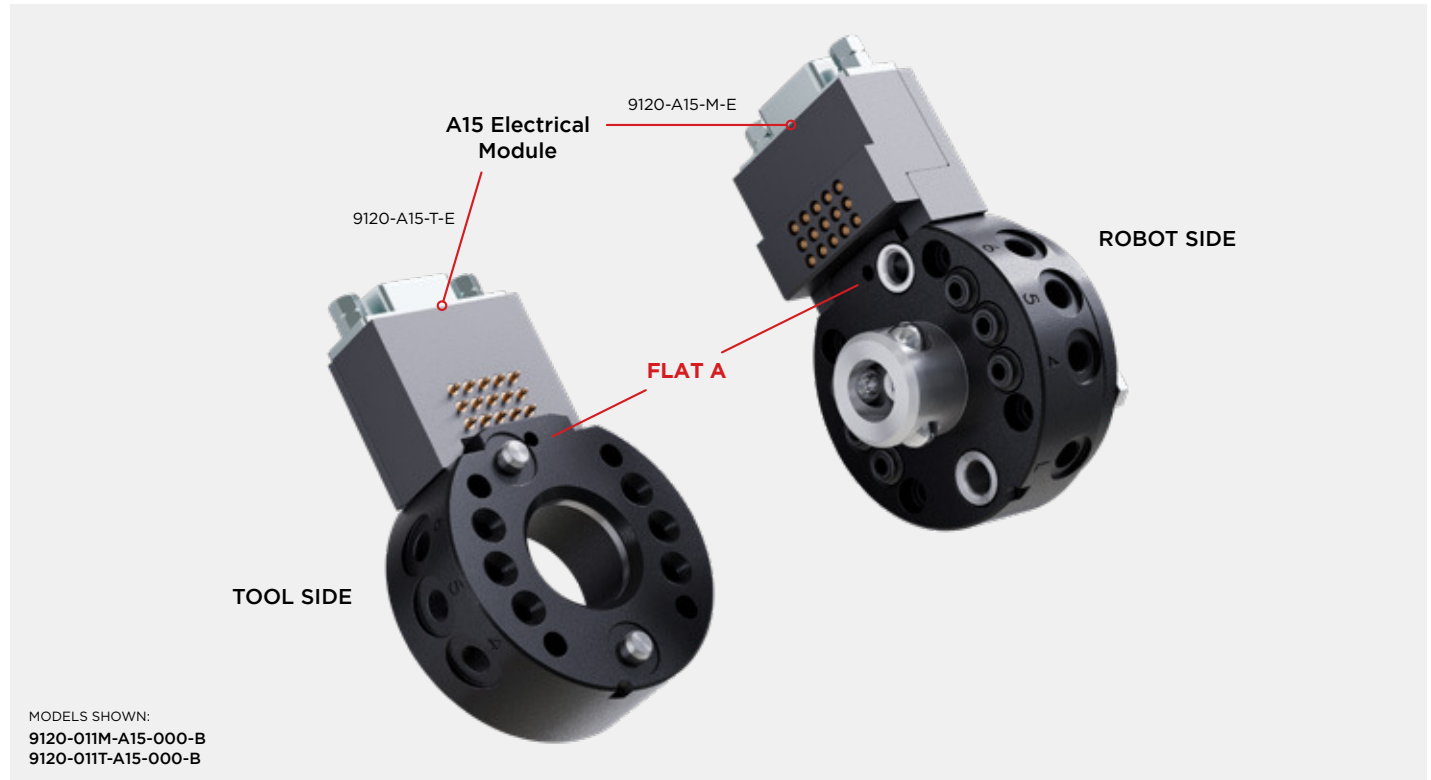


The QC-11 Tool Changer is available in orange instead of black.

Technical Data

Item	Units	9120-011M-000-000-B	9120-011T-000-000-B
Description		Quick-Change Master	Quick-Change Tool
Lock Sensing		optional	
Suggested Payload Limit	kg	16	16
Locking Force	N	1100	1100
Repeatability	mm	0.01	0.01
Weight	kg	0.15	0.1
Robot/Tool Mounting Pattern			
Pneumatic Feed-Throughs, Type I		6x M5 at 150 l/min	6x M5 at 150 l/min
Pneumatic Feed-Throughs, Type II			
Lock/Unlock Pneumatic Connection		M5	
Static Moment Mxy	Nm	20	20
Static Moment Mz	Nm	12	12
Dynamic Moment Mxy	Nm	40	40
Dynamic Moment Mz	Nm	50	50
Max Moment Mxy	Nm	105	105
Max Moment Mz	Nm	150	150
Max Locking Offset, Z	mm	1.5	
Max Locking Offset, XY	mm	±1	±1
Max Locking Offset, XY Angular	°	±0.8	±0.8
Max Locking Offset, Z Angular	°	±2	±2
Min./Max. Ambient Temperature	°C	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7
Opening/Closing Time	s	0.1/0.1	
Cylinder Volume Per Double Stroke	cm³	8.4	
Module Mounting Pattern		M7	M7
Mounting for Control Module			
Special Properties			

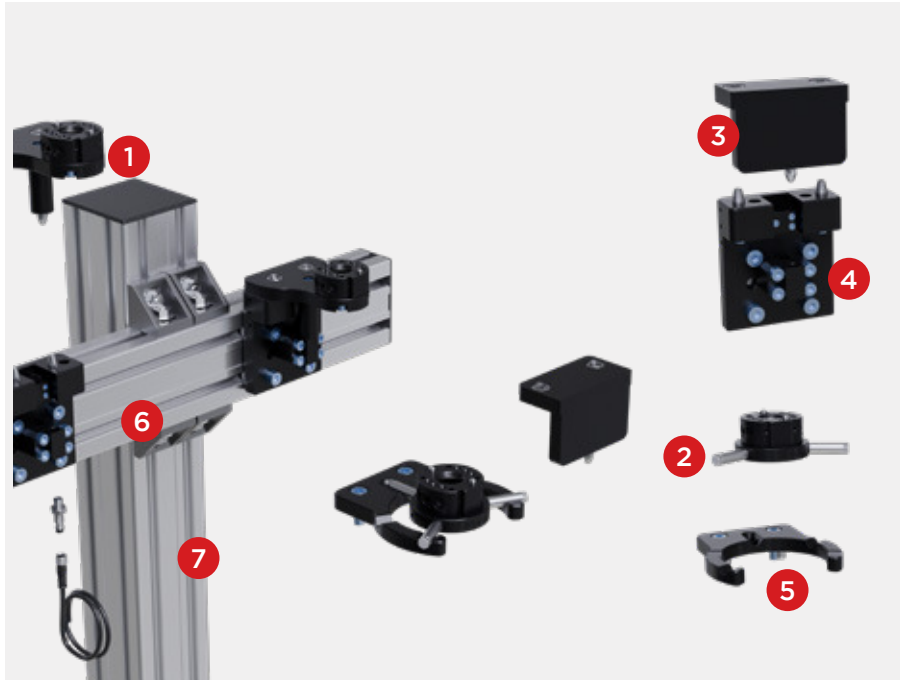
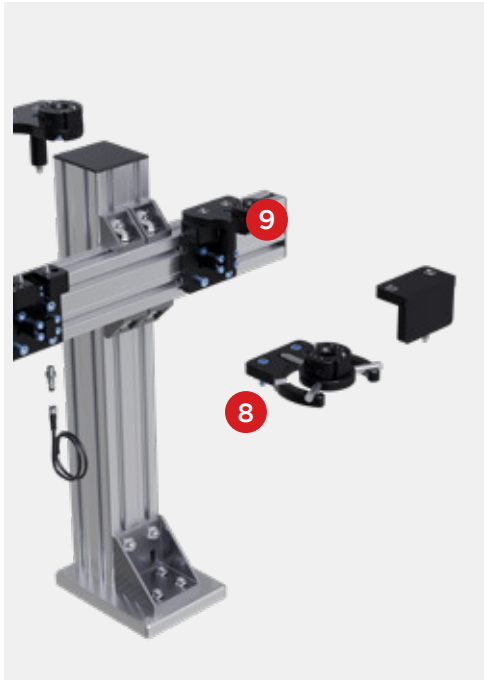
Example Configuration



Optional Utility Modules

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins / Feed-Throughs	Rating	Flat A
Electrical	Signals	A15	Robot	9120-A15-M-E	M7	D-Sub HD15	15	2.5A / 50V	•
			Tool	9120-A15-T-E	M7	D-Sub HD15	15	3A / 50V	•
		E10	Robot	9120-E10M-010	M7	Solder	10	3A / 50V	•
			Tool	9120-E10T-010	M7	Solder	10	3A / 50V	•
		E20	Robot	9120-E20M-010	M7	Solder	20	3A / 50V	•
			Tool	9120-E20T-010	M7	Solder	20	3A / 50V	•
		M8	Robot	9120-M8M-011	M7	M8 8-pin Male	8	1.5A / 30V	•
			Tool	9120-M8T-011	M7	M8 8-pin Female	8	1.5A / 30V	•

Tool Stand System



QC-011 Tool Stand system for safe tool storage. For detailed information, refer to individual drawings. The vertical and cross profiles shown in this image are not displayed to scale. The sizes vary and are for illustrative purposes only.

#	Part Number	Part	Description
1	9120-TSS-HBQ-7123	Storage plate	TSS Tooling Interface Plate for QC-11
2	9120-TSS-HVQ-3314	Storage plate, alternate	TSS Tooling Interface Plate for QC-11 - 3 pins
3	9120-TSS-VBB-7963	Storage plate, alternate	TSS Vertical Tooling Interface Plate - Blank
4	9120-TSS-MMB-7124	Storage module	TSS Mounting Module
5	9120-TSS-MMV-3310	Storage module, alternate	TSS Rack Module for QC-11
6	8590-9909999-08	Storage sensor	Proximity Sensor PNP 3 wire DC
7	8590-9909999-07	Storage sensor cable	Optional cable for Prox sensor 5 meter female
8	9120-TSS-PM-3435	Storage profile, vertical	TSS Post Module, 0914mm (36") Post Height, 90 X 90 Post
	9120-TSS-PM-3434	Storage profile, vertical	TSS Post Module, 1520mm (60") Post Height, 90 X 90 Post
9	9120-TSM-HM-3317	Storage profile, cross	TSM Horizontal Module, 0914mm (36")
	9120-TSM-HM-3353	Storage profile, cross	TSM Horizontal Module, 1520mm (60")

Accessories



Lock Sensing

#	Part Number	Part	Description
1	9120-011M-SIP-Q-0000	Lock sensing kit	Lock Sensing Kit, PNP Sensors
2	8590-9909999-07	Lock sensing cables	5m Cable, M8 Straight Snap-On Connector, Flying Leads

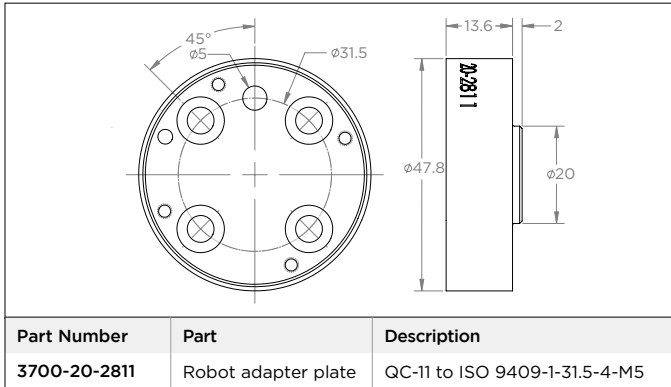
Spare Parts

3	8590-9909999-27	Lock sensor	PNP Prox Sensor, M4 Body, M8 3-pin Connector
	9120-011M-SEALS	Seal kit	QC-11 Master Seal Kit, Internal Seals, Port Seals

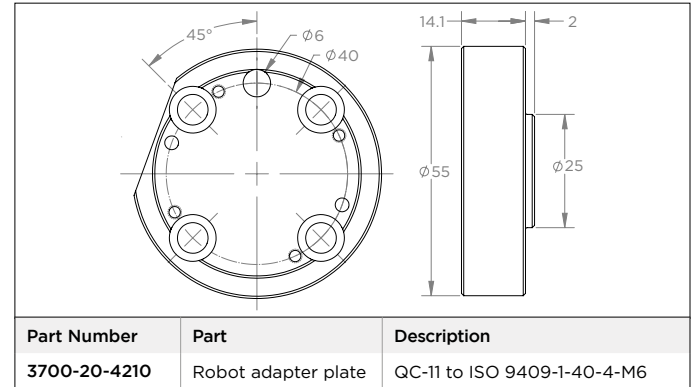
Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller.

Robot Adapter Plates

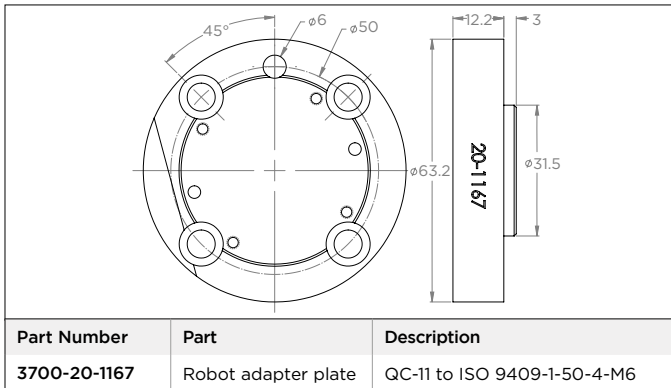
Adapter Plate ISO 31.5mm



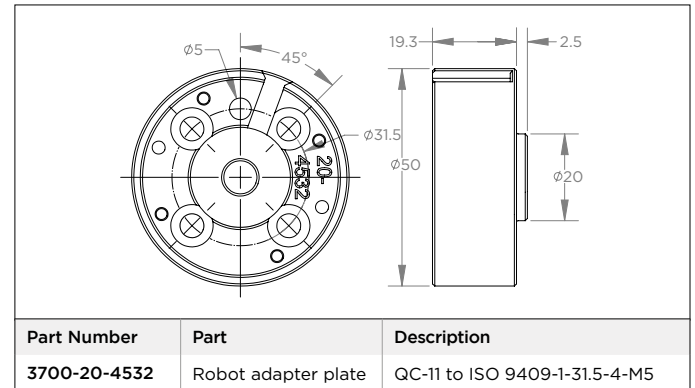
Adapter Plate ISO 40mm



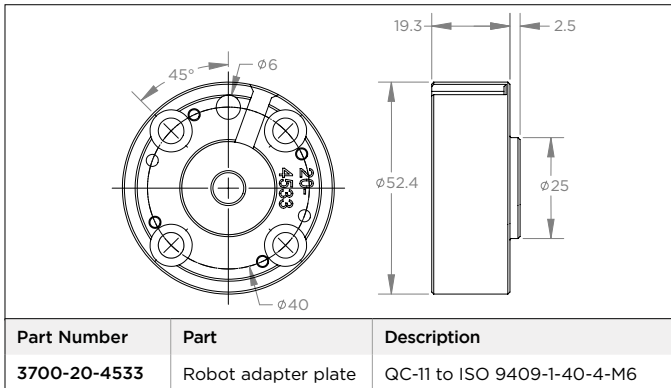
Adapter Plate ISO 50mm



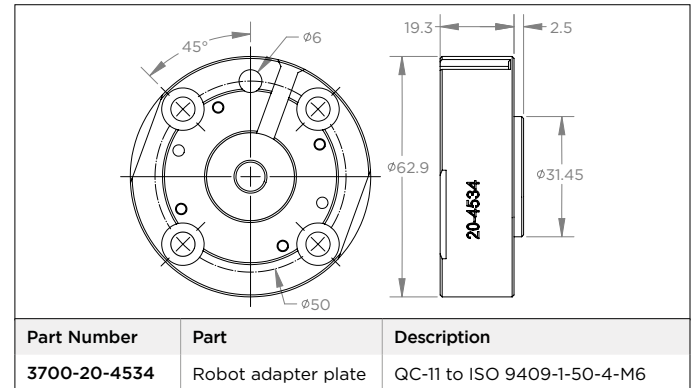
Adapter Plate ISO 31.5mm for Lock Sensing Kit



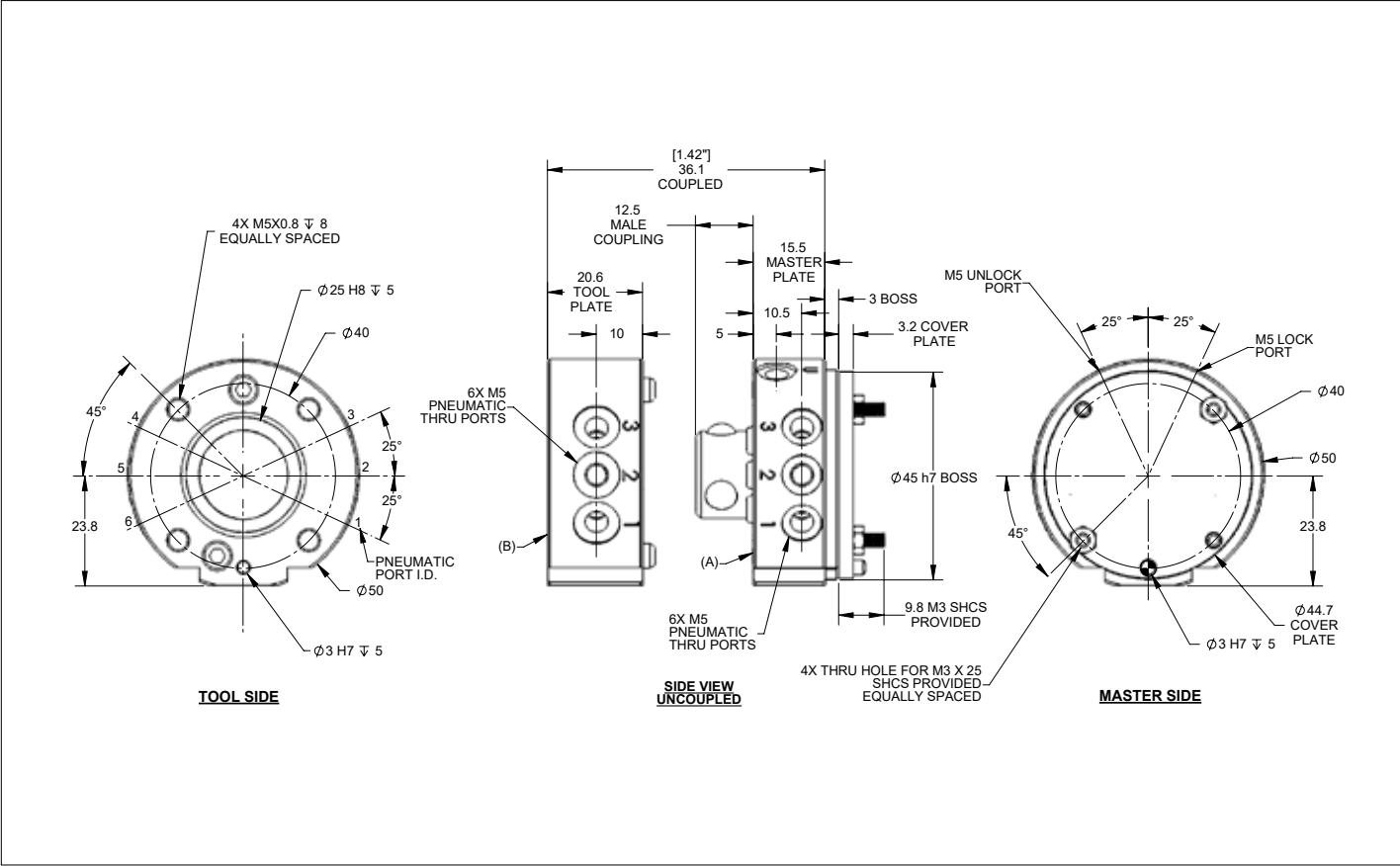
Adapter Plate ISO 40mm for Lock Sensing Kit



Adapter Plate ISO 50mm for Lock Sensing Kit

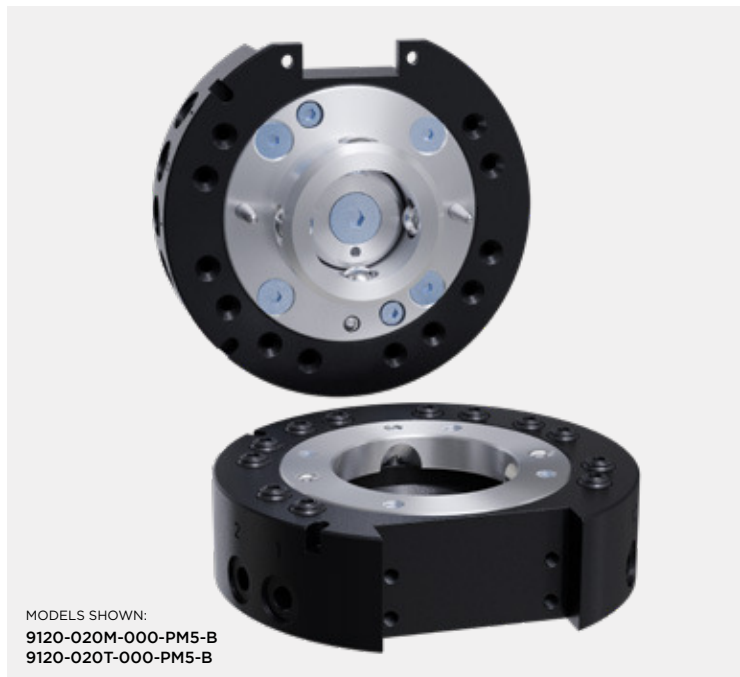


Drawing

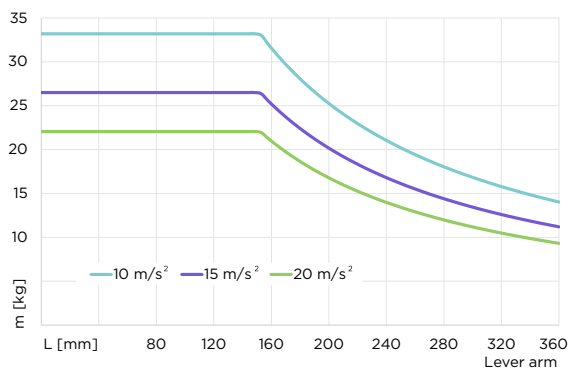




QC-020



Payload Capacity

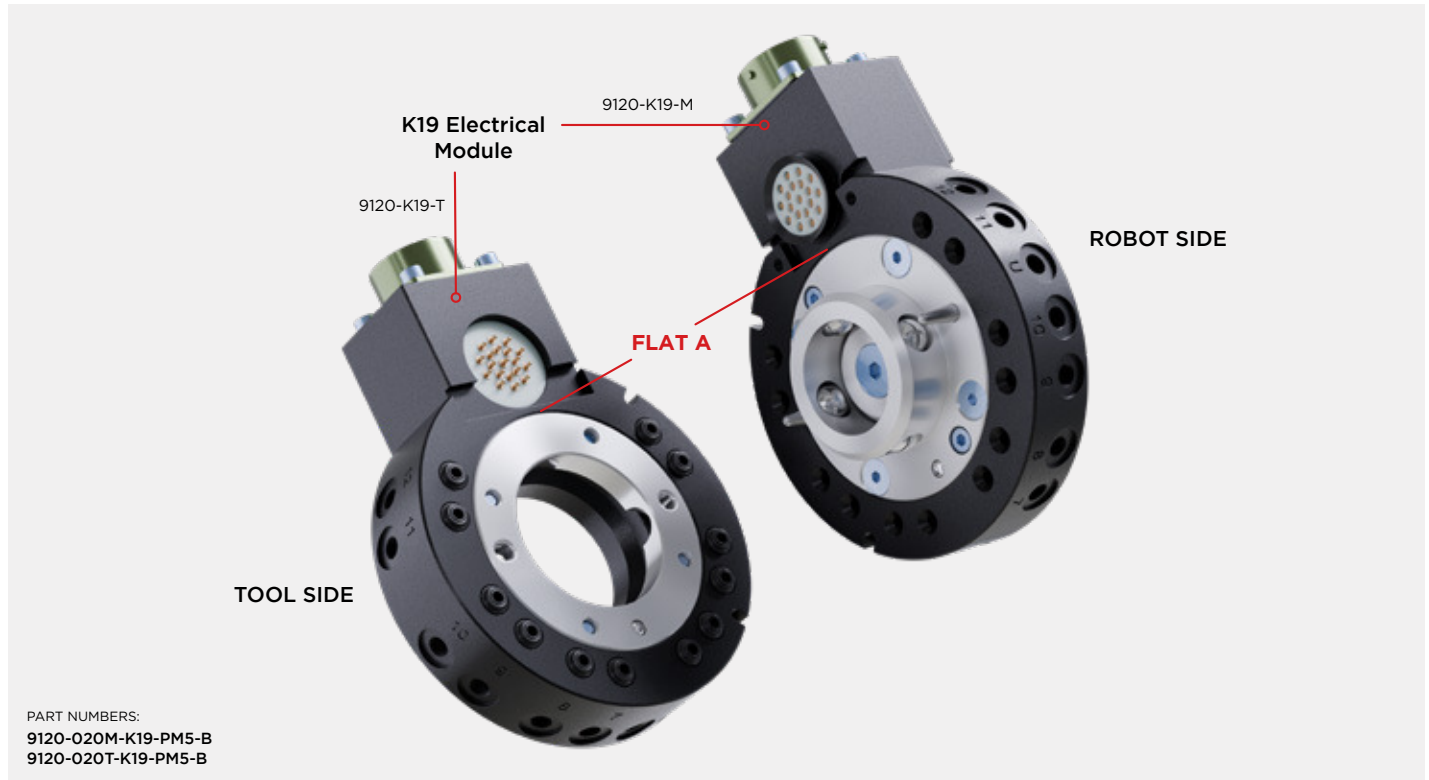


The QC-20 Tool Changer is available in orange instead of black.

Technical Data

Item	Units	9120-020M-000-PM5-B	9120-020T-000-PM5-B
Description		Quick-Change Master	Quick-Change Tool
Lock Sensing		optional	
Suggested Payload Limit	kg	25	25
Locking Force	N	2300	2300
Repeatability	mm	0.015	0.015
Weight	kg	0.5	0.35
Robot/Tool Mounting Pattern			
Pneumatic Feed-Throughs, Type I		12x M5 at 150 l/min	12x M5 at 150 l/min
Pneumatic Feed-Throughs, Type II			
Lock/Unlock Pneumatic Connection		M5	
Static Moment Mxy	Nm	57	57
Static Moment Mz	Nm	35	35
Dynamic Moment Mxy	Nm	100	100
Dynamic Moment Mz	Nm	80	80
Max Moment Mxy	Nm	300	300
Max Moment Mz	Nm	240	240
Max Locking Offset, Z	mm	2	
Max Locking Offset, XY	mm	±1	±1
Max Locking Offset, XY Angular	°	±0.8	±0.8
Max Locking Offset, Z Angular	°	±2	±2
Min./Max. Ambient Temperature	°C	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7
Opening/Closing Time	s	0.1/0.1	
Cylinder Volume Per Double Stroke	cm³	21	
Module Mounting Pattern		K	K
Mounting for Control Module			
Special Properties			

Example Configuration

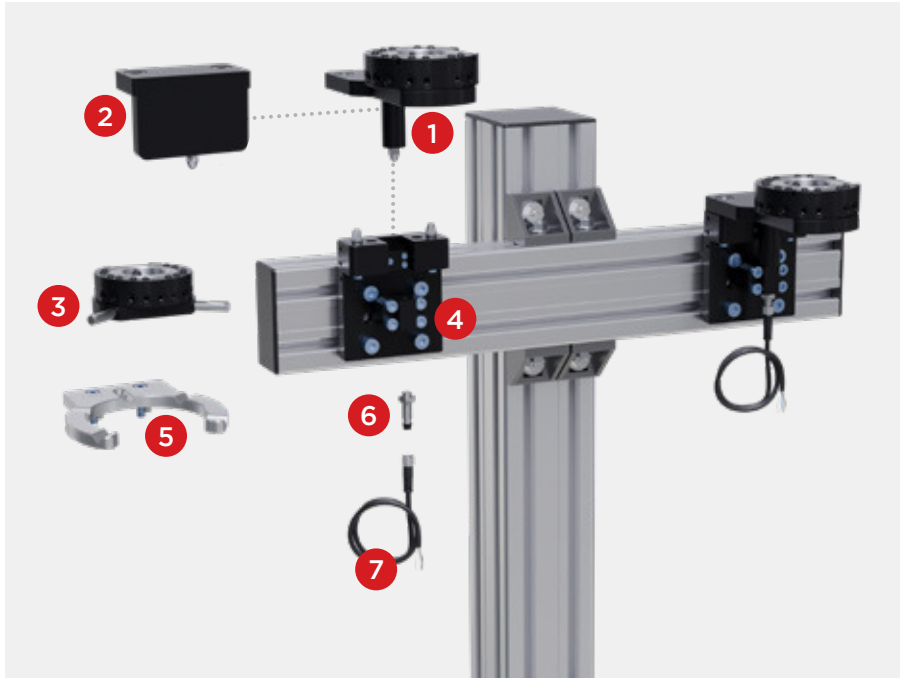
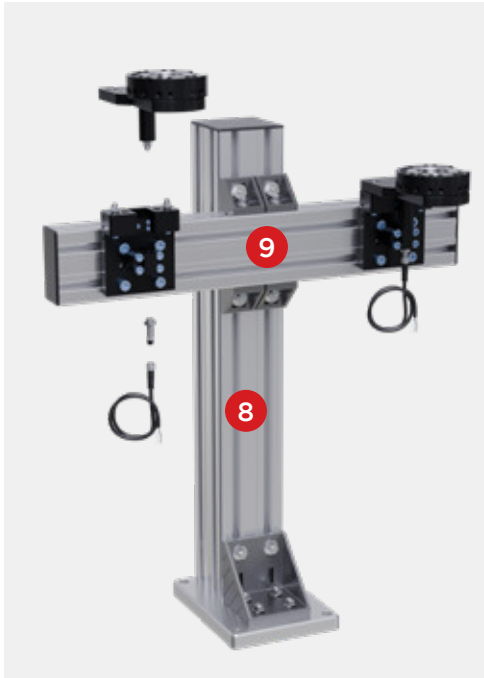


Optional Utility Modules

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins / Feed-Throughs	Rating	Special Properties	Flat A
Electrical	Signals	K12	Robot	9120-K12-M	K	M12 12-pin Male	12	2A / 50V		•
			Tool	9120-K12-T	K	M12 12-pin Female	12	2A/50V		•
		KF19	Robot	9120-KF19-M	K	M16 19-pin Male	19	3A / 50V		•
			Tool	9120-KF19-T	K	M16 19-pin Female	19	3A / 50V		•
			Tool	9120-K14-T	K	M16 19-pin Female	14 *	3A/50V	Tool ID 16x	•
			Robot	9120-KF19P-M	K	M16 19-pin Male	15 *	3A / 50V	Integrated Wiring for Lock Sensing	•
		K19	Robot	9120-K19-M	K	Mil-Spec 19-pin Male	19	3A / 50V		•
			Tool	9120-K19-T	K	Mil-Spec 19-pin Female	19	3A / 50V		•
			Tool	9120-K14-T	K	Mil-Spec 19-pin Female	14 *	3A/50V	Tool ID 16x	•
			Robot	9120-K19P-M	K	Mil-Spec 19-pin Male	15 *	3A/50V	Integrated Wiring for Lock Sensing	•
		K26	Robot	9120-K26-M	K	Mil-Spec 26-pin Male	26	3A / 50V		•
			Tool	9120-K26-T	K	Mil-Spec 26-pin Female	26	3A / 50V		•
			Tool	9120-K21-T	K	Mil-Spec 26-pin Female	21 *	3A/50V	Tool ID 16x	•
			Robot	9120-K26P-M	K	Mil-Spec 26-pin Male	22 *	3A / 50V	Integrated Wiring for Lock Sensing	•
	Communication	KE8	Robot	9120-KE8-M	K	Ethernet M12 4-Pin D-Code Female Power M8 4-Pin A-Code Male	8	4A / 125V	100Mbps Ethernet + Power	•
			Tool	9120-KE8-T	K	Ethernet M12 4-Pin D-Code Female Power M8 4-Pin A-Code Female	8	4A / 125V		•

* Available pins for pass-through signals are reduced for models with Tool ID function (-5) and Integrated Wiring for Lock Sensing (-4), or when combined (-9).

Tool Stand System



QC-020 Tool Stand system for safe tool storage. The vertical and cross profiles shown are not displayed to scale and are for illustrative purposes only.

#	Part Number	Part	Description
1	9120-TSS-HBQ-9483	Storage plate	TSS Tooling Interface Plate for QC-20/21/22 - Blank
2	9120-TSS-VBB-7963	Storage plate, alternate	TSS Vertical Tooling Interface Plate - Blank
3	9120-TSS-HVQ-3319	Storage plate, alternate	TSS Tooling Interface Plate for QC-20, 21, 21E - 3 pins
4	9120-TSS-MMB-7130	Storage module	TSS and Manual Coupler Mounting Module
5	9120-TSS-MMV-3313	Storage module, alternate	TSS Rack Module for QC-21 and QC-21E
6	8590-9909999-08	Storage sensor	Proximity Sensor PNP 3 wire DC
7	8590-9909999-07	Storage sensor cable	Optional cable for Prox sensor 5 meter female
8	9120-TSS-PM-3435	Storage profile, vertical	TSS Post Module, 0914mm (36") Post Height, 90 X 90 Post
	9120-TSS-PM-3434	Storage profile, vertical	TSS Post Module, 1520mm (60") Post Height, 90 X 90 Post
9	9120-TSM-HM-3317	Storage profile, cross	TSM Horizontal Module, 0914mm (36")
	9120-TSM-HM-3353	Storage profile, cross	TSM Horizontal Module, 1520mm (60")

Accessories



Lock Sensing

#	Part Number	Part	Description
1	9120-020M-SIP-Q-0000	Lock sensing kit	Lock Sensing Kit, PNP Sensors
2	8590-9909999-07	Lock sensing cables	5m Cable, M8 Straight Snap-On Connector, Flying Leads

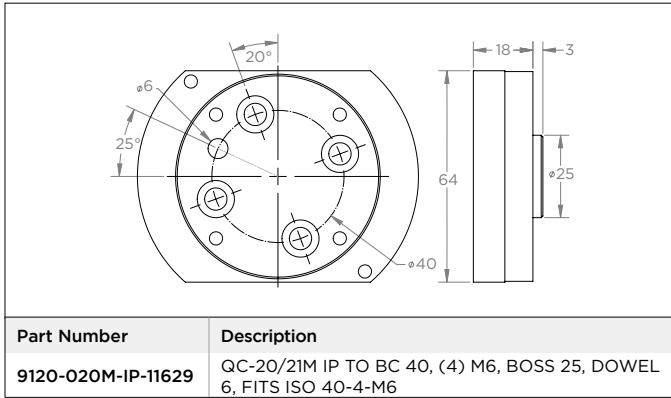
Spare Parts

3	8590-9909999-27	Lock sensor	PNP Prox Sensor, M4 Body, M8 3-pin Connector
	9120-011M-SEALS	Seal kit	QC-11 Master Seal Kit, Internal Seals, Port Seals

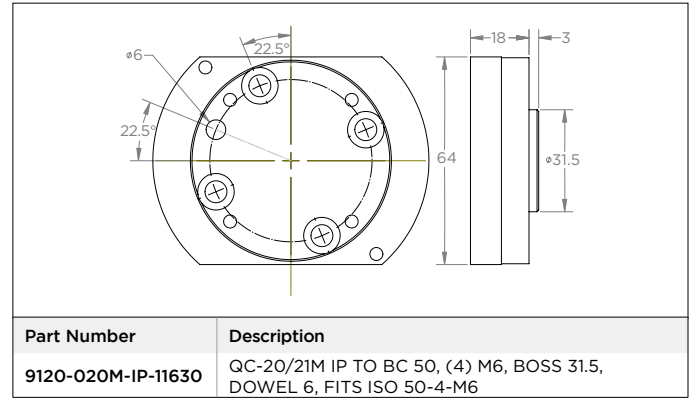
Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller

Robot Adapter Plates

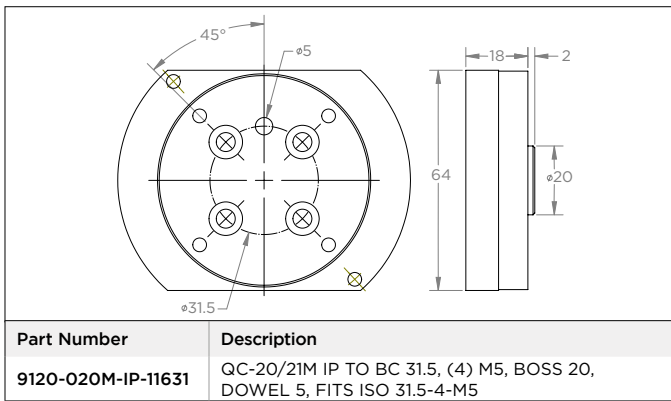
Adapter Plate ISO 40mm



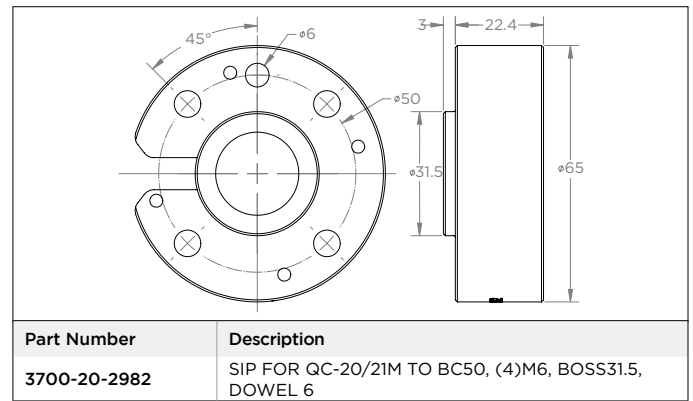
Adapter Plate ISO 50mm



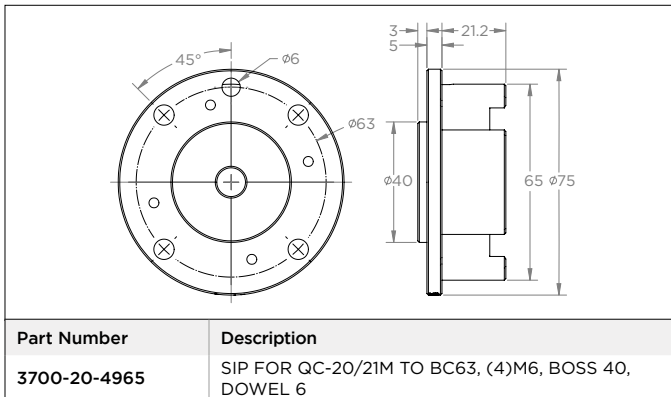
Adapter Plate ISO 31.5mm



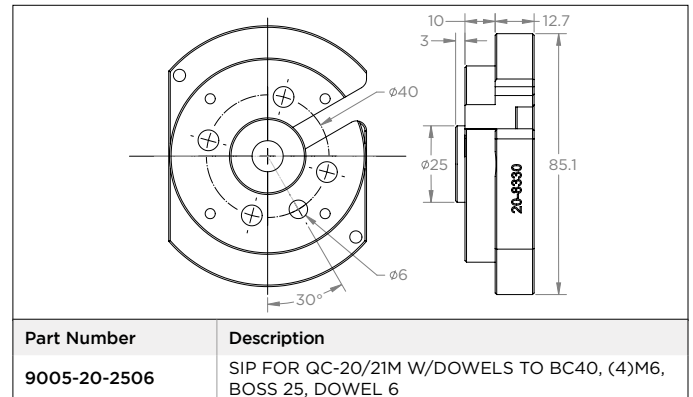
Adapter Plate ISO 50mm for Lock Sensing Kit

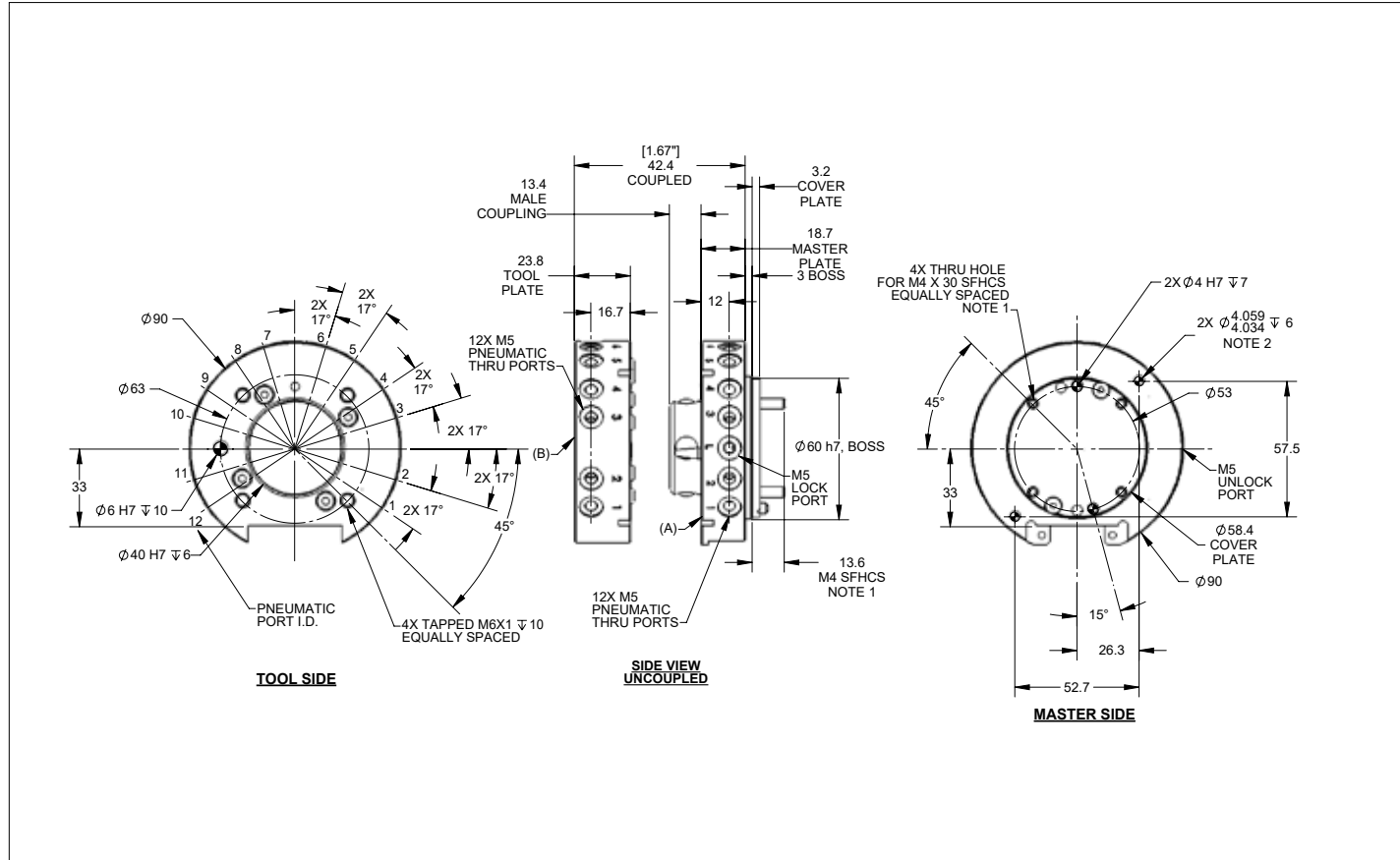


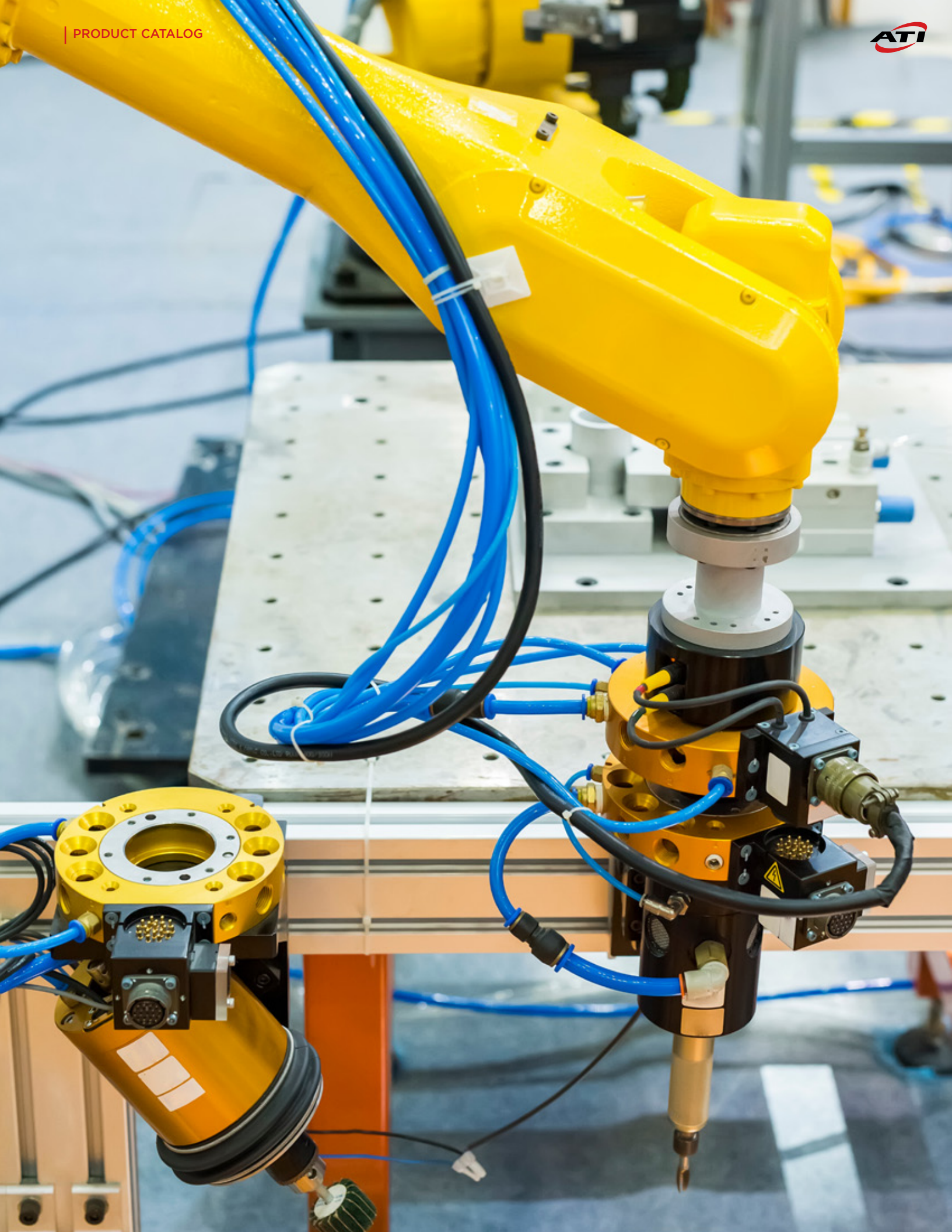
Adapter Plate ISO 63mm for Lock Sensing Kit



Adapter Plate ISO 40mm for Lock Sensing Kit



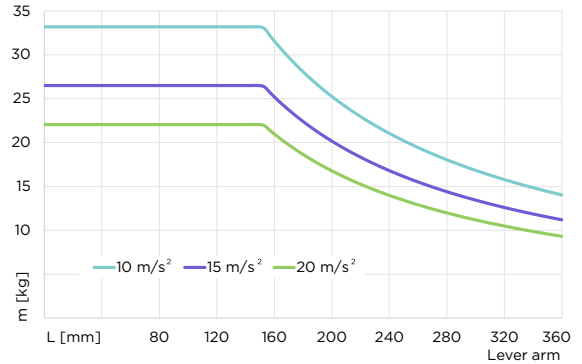




QC-021



Payload Capacity



The **QC-021** Tool Changer is available in both BSPP (G) and NPT thread options. The NPT version comes in orange instead of black. Master not interchangeable due to stack height difference.

Technical Data

Item	Units	9120-021M-000-000-E	9120-021T-000-000-E
Description		Quick-Change Master	Quick-Change Tool
Lock Sensing		optional	
Suggested Payload Limit	kg	25	25
Locking Force	N	2300	2300
Repeatability	mm	0.015	0.015
Weight	kg	0.5	0.35
Robot/Tool Mounting Pattern			
Pneumatic Feed-Throughs, Type I		8x G1/8" at 650 l/min	8x G1/8" at 650 l/min
Pneumatic Feed-Throughs, Type II			
Lock/Unlock Pneumatic Connection		M5	
Static Moment Mxy	Nm	57	57
Static Moment Mz	Nm	35	35
Dynamic Moment Mxy	Nm	100	100
Dynamic Moment Mz	Nm	80	80
Max Moment Mxy	Nm	300	300
Max Moment Mz	Nm	240	240
Max Locking Offset, Z	mm	2	
Max Locking Offset, XY	mm	±1	±1
Max Locking Offset, XY Angular	°	±0.8	±0.8
Max Locking Offset, Z Angular	°	±2	±2
Min./Max. Ambient Temperature	°C	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7
Opening/Closing Time	s	0.1/0.1	
Cylinder Volume Per Double Stroke	cm³	21	
Module Mounting Pattern		K + K/J via adapter Flat B	K + K/J via adapter Flat B
Mounting for Control Module			
Special Properties			

Example Configuration



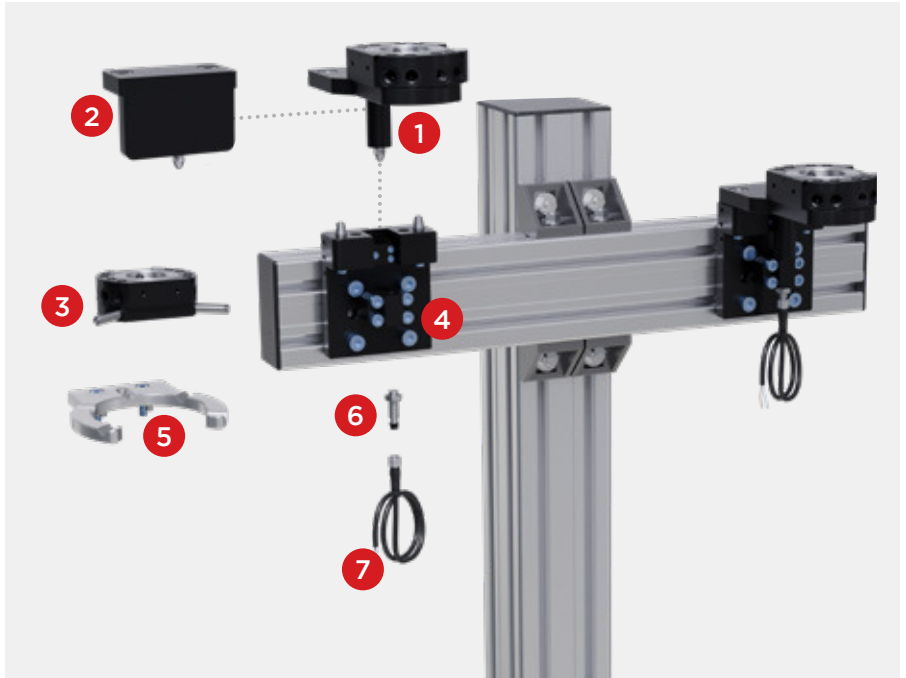
Optional Utility Modules

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins / Feed-Throughs	Rating	Special Properties	Flat A	Flat B
Electrical	Signals	K12	Robot	9120-K12-M	K	M12 12-pin Male	12	2A / 50V		•	
			Tool	9120-K12-T	K	M12 12-pin Female	12	2A/50V		•	
		KF19	Robot	9120-KF19-M	K	M16 19-pin Male	19	3A / 50V		•	
			Tool	9120-KF19-T	K	M16 19-pin Female	19	3A / 50V		•	
			Tool	9120-K14-T	K	M16 19-pin Female	14 *	3A/50V	Tool ID 16x	•	
			Robot	9120-KF19P-M	K	M16 19-pin Male	15 *	3A / 50V	Integrated Wiring for Lock Sensing	•	
		K19	Robot	9120-K19-M	K	Mil-Spec 19-pin Male	19	3A / 50V		•	
			Tool	9120-K19-T	K	Mil-Spec 19-pin Female	19	3A / 50V		•	
			Tool	9120-K14-T	K	Mil-Spec 19-pin Female	14 *	3A/50V	Tool ID 16x	•	
			Robot	9120-K19P-M	K	Mil-Spec 19-pin Male	15 *	3A/50V	Integrated Wiring for Lock Sensing	•	
		K26	Robot	9120-K26-M	K	Mil-Spec 26-pin Male	26	3A / 50V		•	
			Tool	9120-K26-T	K	Mil-Spec 26-pin Female	26	3A / 50V		•	
			Robot	9120-K21-T	K	Mil-Spec 26-pin Female	21 *	3A/50V	Tool ID 16x	•	
			Robot	9120-K26P-M	K	Mil-Spec 26-pin Male	22 *	3A / 50V	Integrated Wiring for Lock Sensing	•	
Fluid	Pneumatics	P18E	Robot	9120-KE8-M	K	Ethernet M12 4-Pin D-Code Female Power M8 4-Pin A-Code Male Ethernet M12 4-Pin D-Code Female Power M8 4-Pin A-Code Female	8	4A / 125V	100Mbps Ethernet + Power	•	
			Tool	9120-KE8-T	K		8	4A / 125V		•	
		P8M5	Robot	9120-P18-M-E	J	G1/8	4	7 bar			•**
			Tool	9120-P18-T-E	J	G1/8	4	7 bar			•**
			Robot	9120-P8M5-M	J	M5	8	7 bar			•**
			Tool	9120-P8M5-T	J	M5	8	7 bar			•**

* Available pins for pass-through signals are reduced for models with Tool ID function (-5) and Integrated Wiring for Lock Sensing (-4), or when combined (-9).

**JJ51 adapter is required to attach modules with J mounting pattern to Flat B.

Tool Stand System



QC-021 Tool Stand system for safe tool storage. For detailed information, refer to individual drawings. The vertical and cross profiles shown in this image are not displayed to scale. The sizes vary and are for illustrative purposes only

#	Part Number	Part	Description
1	9120-TSS-HBQ-9483	Storage plate	TSS Tooling Interface Plate for QC-20/21/22 - Blank
2	9120-TSS-VBB-7963	Storage plate, alternate	TSS Vertical Tooling Interface Plate - Blank
3	9120-TSS-HVQ-3319	Storage plate, alternate	TSS Tooling Interface Plate for QC-20, 21, 21E - 3 pins
4	9120-TSS-MMB-7130	Storage module	TSS and Manual Coupler Mounting Module
5	9120-TSS-MMV-3313	Storage module, alternate	TSS Rack Module for QC-21 and QC-21E
6	8590-9909999-08	Storage sensor	Proximity Sensor PNP 3 wire DC
7	8590-9909999-07	Storage sensor cable	Optional cable for Prox sensor 5 meter female
8	9120-TSS-PM-3435	Storage profile, vertical	TSS Post Module, 0914mm (36") Post Height, 90 X 90 Post
	9120-TSS-PM-3434	Storage profile, vertical	TSS Post Module, 1520mm (60") Post Height, 90 X 90 Post
9	9120-TSM-HM-3317	Storage profile, cross	TSM Horizontal Module, 0914mm (36")
	9120-TSM-HM-3353	Storage profile, cross	TSM Horizontal Module, 1520mm (60")

Accessories



Lock Sensing

#	Part Number	Part	Description
1	9120-021ME-SIP-Q-0000	Lock sensing kit	Lock Sensing Kit, PNP Sensors
2	8590-9909999-07	Lock sensing cables	5m Cable, M8 Straight Snap-On Connector, Flying Leads

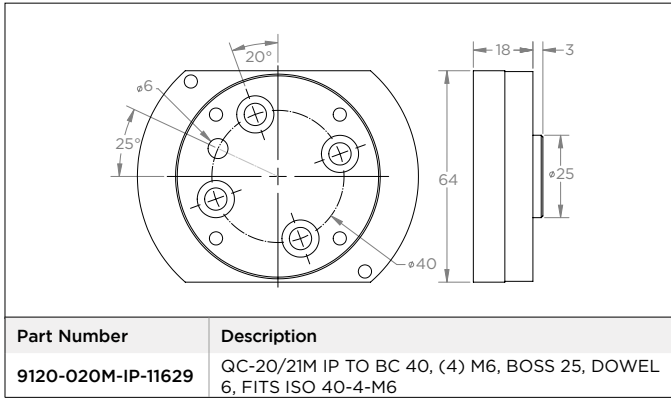
Spare Parts

3	8590-9909999-27	Lock sensor	PNP Prox Sensor, M4 Body, M8 3-pin Connector
	9120-011M-SEALS	Seal kit	QC-11 Master Seal Kit, Internal Seals, Port Seals

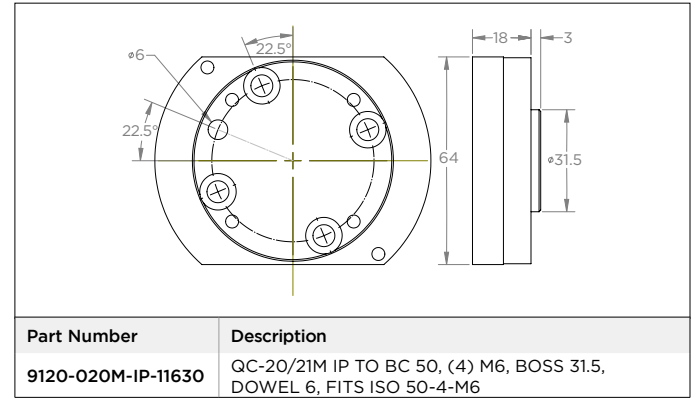
Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller.

Robot Adapter Plates

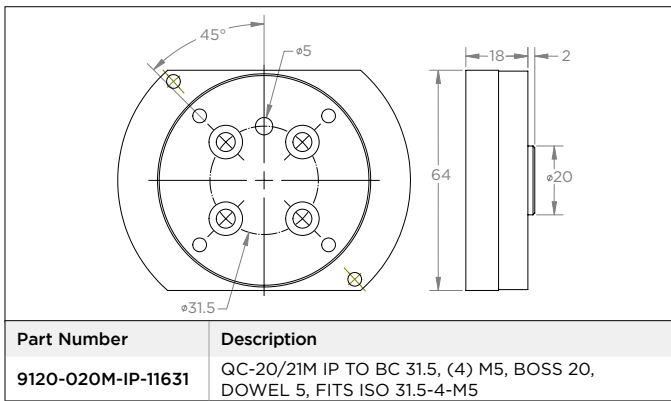
Adapter Plate ISO 40mm



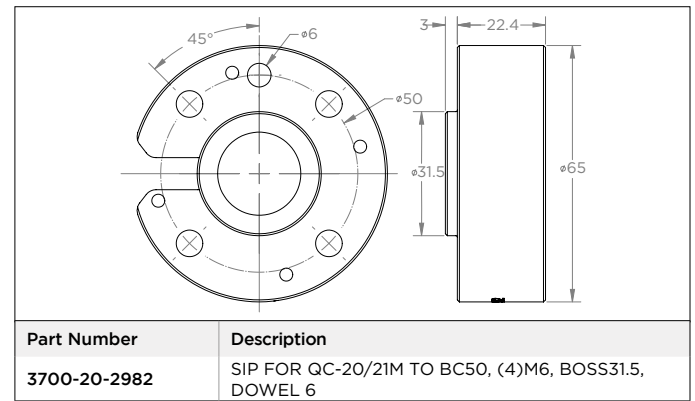
Adapter Plate ISO 50mm



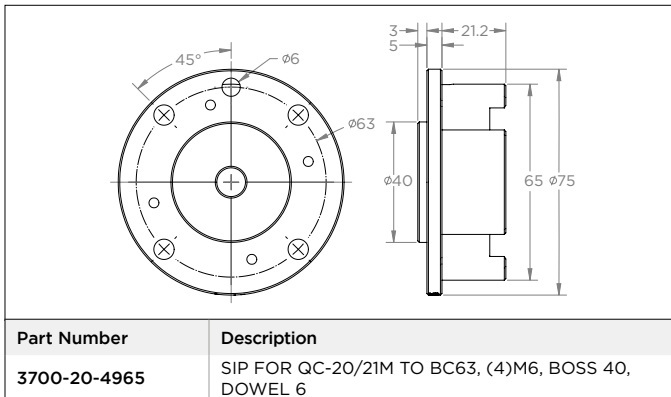
Adapter Plate ISO 31.5mm



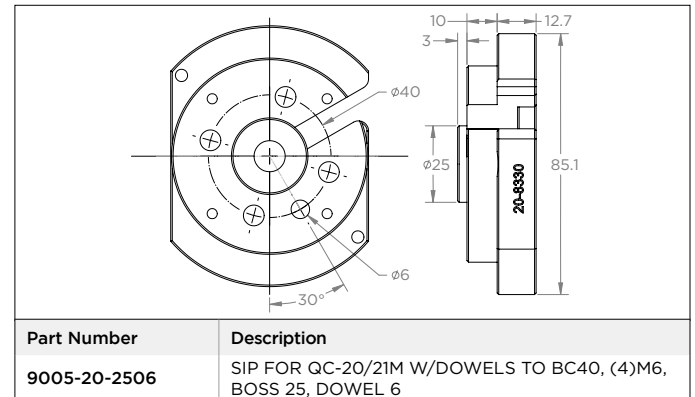
Adapter Plate ISO 50mm for Lock Sensing Kit



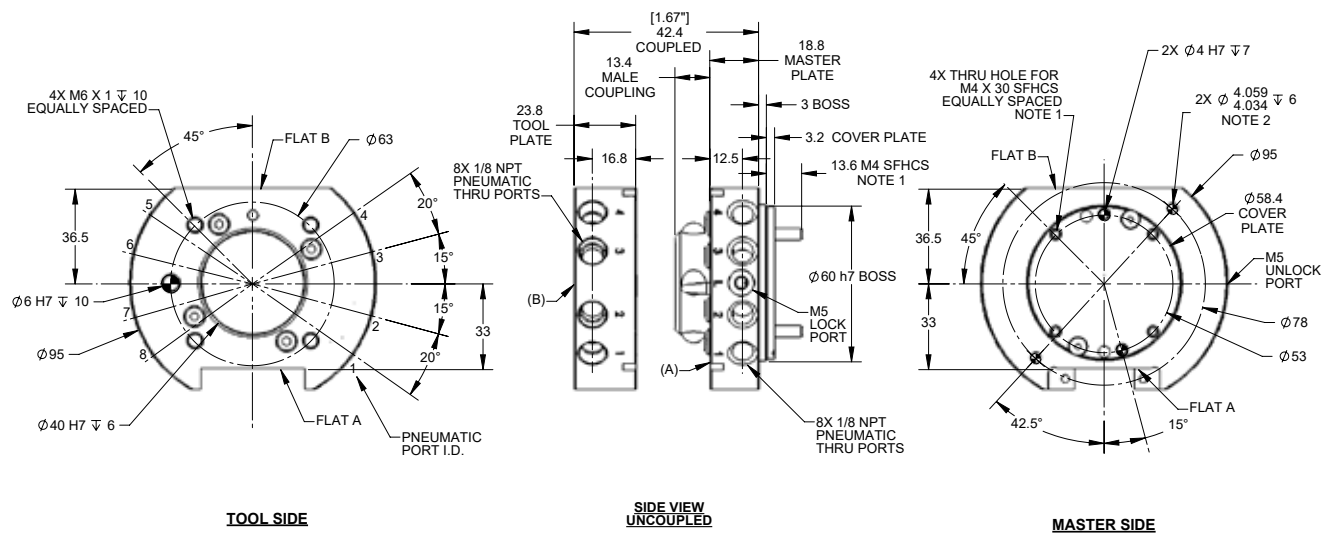
Adapter Plate ISO 63mm for Lock Sensing Kit

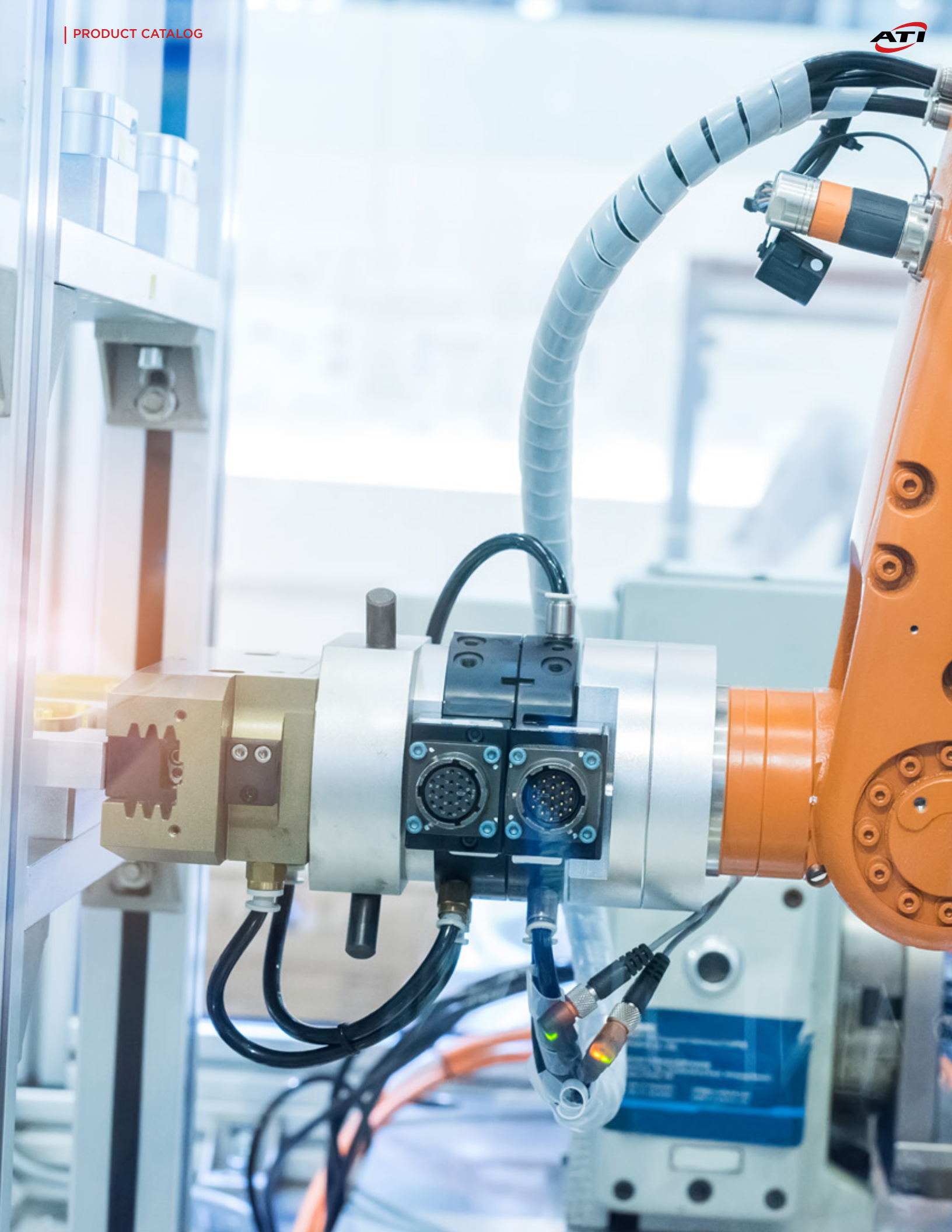


Adapter Plate ISO 40mm for Lock Sensing Kit

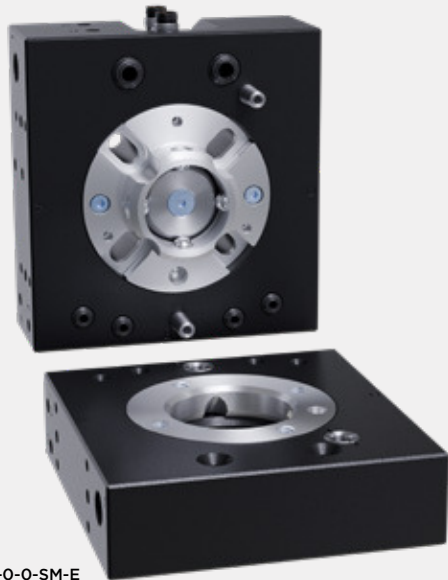


Drawing



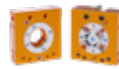
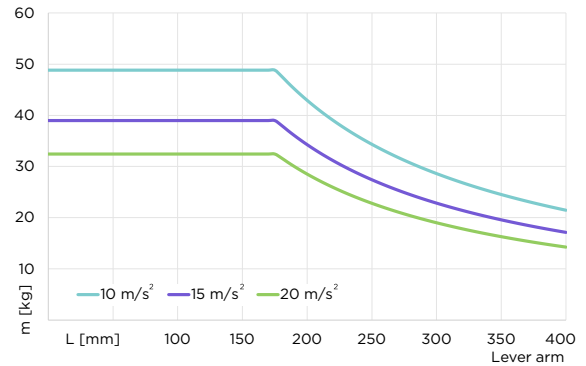


QC-029



MODELS SHOWN:
9120-029EM-0-0-0-SM-E
9120-029ET-0-0-0-E

Payload Capacity

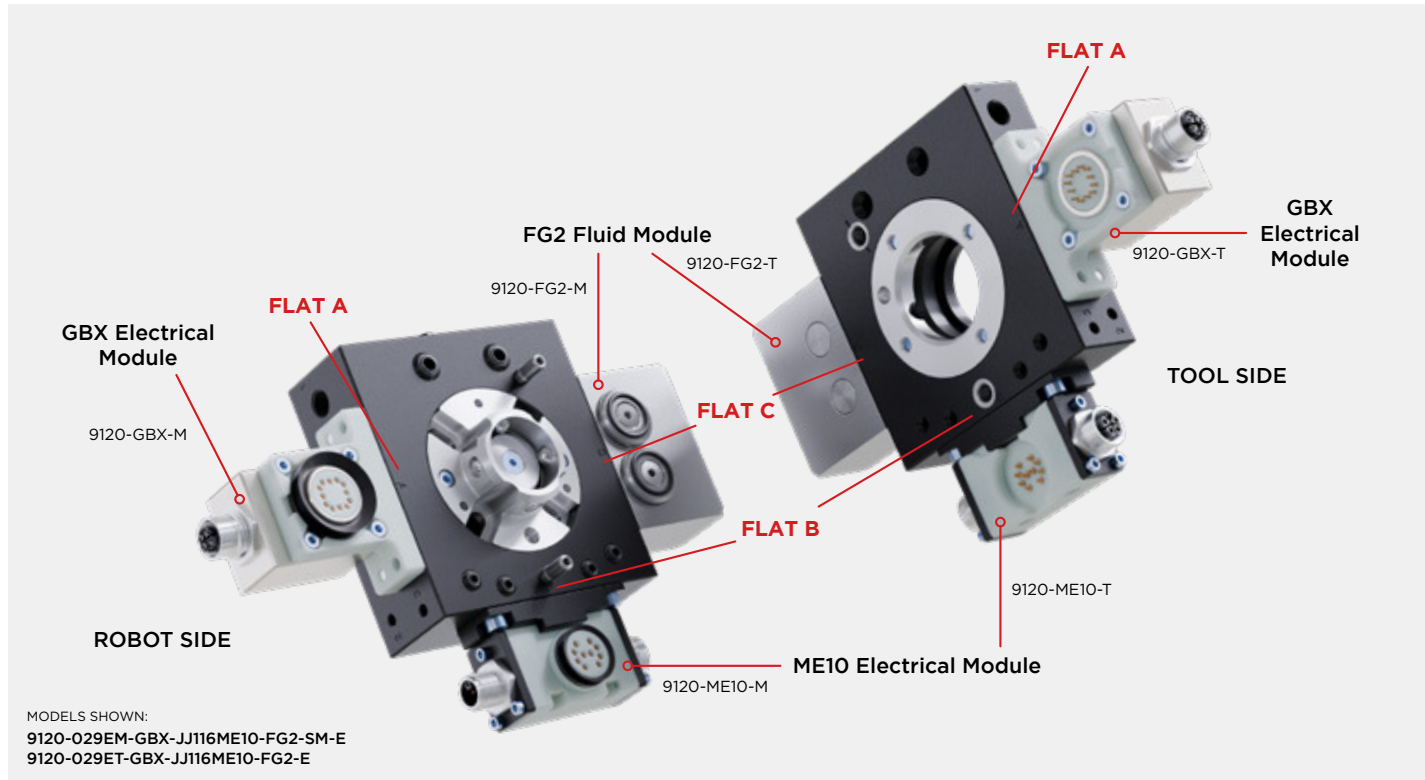


The QC-29 Tool Changer is available in both BSPP (G) and NPT thread options. The NPT version comes in orange instead of black.

Technical Data

Item	Units	9120-029EM-0-0-0-SM-E	9120-029EM-0-0-0-SO-E	9120-029ET-0-0-0-E
Description		Quick-Change Master	Quick-Change Master	Quick-Change Tool
Lock Sensing		integrated	not included	
Suggested Payload Limit	kg	35	35	35
Locking Force	N	2900	2900	2900
Repeatability	mm	0.015	0.015	0.015
Weight	kg	1	1	0.7
Robot/Tool Mounting Pattern		ISO 9409-1-50-4-M6	ISO 9409-1-50-4-M6	ISO 9409-1-50-4-M6
Pneumatic Feed-Throughs, Type I		2x G1/8" at 650 l/min	2x G1/8" at 650 l/min	2x G1/8" at 650 l/min
Pneumatic Feed-Throughs, Type II		4x M5 at 150 l/min	4x M5 at 150 l/min	4x M5 at 150 l/min
Lock/Unlock Pneumatic Connection		M5	M5	M5
Static Moment Mxy	Nm	57	57	57
Static Moment Mz	Nm	78	78	78
Dynamic Moment Mxy	Nm	170	170	170
Dynamic Moment Mz	Nm	150	150	150
Max Moment Mxy	Nm	360	360	360
Max Moment Mz	Nm	450	450	450
Max Locking Offset, Z	mm	1.5	1.5	
Max Locking Offset, XY	mm	±1	±1	±1
Max Locking Offset, XY Angular	°	±0.8	±0.8	±0.8
Max Locking Offset, Z Angular	°	±1	±1	±1
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7	4.2/7
Opening/Closing Time	s	0.1/0.1	0.1/0.1	
Cylinder Volume Per Double Stroke	cm³	15	15	
Module Mounting Pattern		3 x J	3 x J	3 x J
Mounting for Control Module		Flat C	Flat C	Flat C
Special Properties		Master also allows ISO Ø40mm robot mounting pattern 9409-1-40-4-M6	Master also allows ISO Ø40mm robot mounting pattern 9409-1-40-4-M6	

Example Configuration



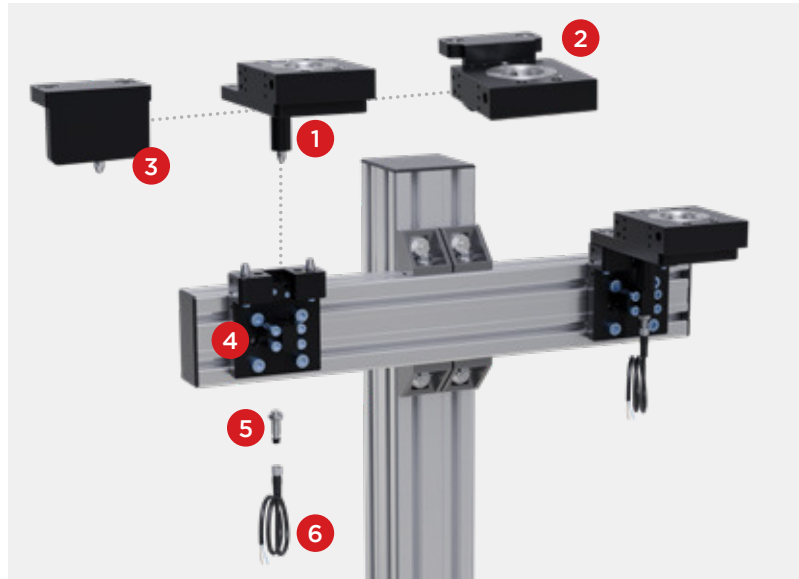
Optional Utility Modules

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins / Feed-Throughs	Rating	Special Properties	Flat A	Flat B	Flat C
Control	Discrete	CV14	Robot	9120-CV14PRE-M	J	M16 19-Pin Male	19	3A / 50V	Integrated Valve			•
			Tool	9120-CV10P-T	J	M16 19-Pin Female	10 *	3A / 50V	TSI, Tool ID 16x			•
Electrical	Signals	RF19	Robot	9120-RF19-M	J	M16 19-pin Male	19	3A / 125V		•	•	•
			Tool	9120-RF19-T	J	M16 19-pin Female	19	3A / 125V		•	•	•
			Tool	9120-RF14-T	J	M16 19-pin Female	14 *	3A / 125V	Tool ID 16x	•	•	•
			Robot	9120-RF19R-M	J	M16 19-pin Male	15 *	3A / 125V	Integrated Wiring for Lock Sensing			•
		R19	Robot	9120-R19-M	J	Mil-Spec 19-pin Male	19	5A / 250V		•	•	•
			Tool	9120-R19-T	J	Mil-Spec 19-pin Female	19	5A / 250V		•	•	•
		G19	Robot	9120-G19-M	J	Mil-Spec 19-pin Male	19	3A / 250V	Swivel Positions	•	•	•
			Tool	9120-G19-T	J	Mil-Spec 19-pin Female	19	3A / 250V		•	•	•
		R26	Robot	9120-R26-M	J	Mil-Spec 26-pin Male	26	3A / 250V		•	•	•
			Tool	9120-R26-T	J	Mil-Spec 26-pin Female	26	3A / 250V		•	•	•
	Communication	GBX	Robot	9120-GBX-M	J	M12 X-Code	8	10Gigabit / Cat6A Ethernet	PoE	•	•	•
			Tool	9120-GBX-T	J	M12 X-Code		0.6A / 60V	PoE	•	•	•
		ME10	Robot	9120-ME10-M	M7	M12 D-Code, M12 L-Code	8	10/100Mbit / Cat5e Ethernet		•**	•**	•**
			Tool	9120-ME10-T	M7	M12 D-Code, M12 L-Code	8	4A / 63V		•**	•**	•**
		RE5	Robot	9120-RE5-M	J	M12 D-Code	4	2A / 60V		•	•	•
			Tool	9120-RE5-T	J	M12 D-Code	4	2A / 60V		•	•	•
	Power	RL5	Robot	9120-RL5-M	J	M12 L-Code	5	16A / 63V		•	•	•
			Tool	9120-RL5-T	J	M12 L-Code	5	16A / 63V		•	•	•
		MT8	Robot	9120-MT8-M	J	Mil-Spec	8	20A / 500V		•	•	•
			Tool	9120-MT8-T	J	Mil-Spec	8	20A / 500V		•	•	•
	Servo	RES10B	Master	9120-RES10B-M	J	M23	12	3.5A/160V		•	•	•
			Tool	9120-RES10B-T	J	M23	12	3.5/160V		•	•	•
Fluid	Pneumatics	P8M5	Robot	9120-P8M5-M	J	M5	8	7 bar		•	•	•
			Tool	9120-P8M5-T	J	M5	8	7 bar		•	•	•
		P238-E	Robot	9120-P238-M-E	J	G3/8	2	7 bar		•	•	•
			Tool	9120-P238-T-E	J	G3/8	2	7 bar		•	•	•
	Liquids	FG2	Robot	9120-FG2-M	J	G3/8	2	7 bar	Self-Sealing	•	•	•
			Tool	9120-FG2-T	J	G3/8	2	7 bar	Self-Sealing	•	•	•

* Available pins for pass-through signals are reduced for models with Tool ID function (-5) and Integrated Wiring for Lock Sensing (-4), or when combined (-9).

**JJ116 adapter is required to attach modules with M7 mounting pattern to Flat A, B, or C.

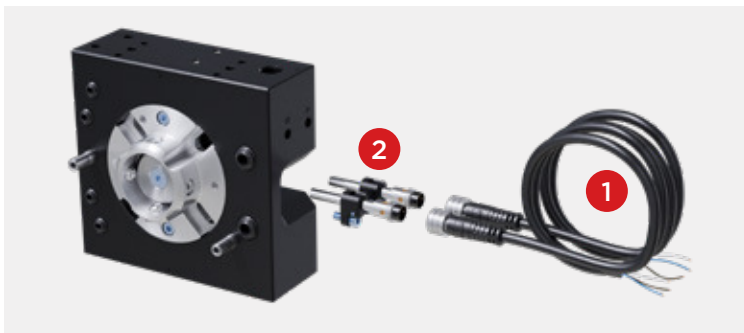
Tool Stand System



QC-029 Tool Stand system for safe tool storage. For detailed information, refer to individual drawings. The vertical and cross profiles shown in this image are not displayed to scale. The sizes vary and are for illustrative purposes

#	Part Number	Part	Description
1	9120-TSS-HBQ-11659	Storage plate	Tooling Interface Plate for QC-29
2	9120-TSS-VBQ-8206	Storage plate, alternate	TSS Vertical Tooling Interface Plate - J16 Pattern
3	9120-TSS-VBB-7963	Storage plate, alternate	TSS Vertical Tooling Interface Plate - Blank
4	9120-TSS-MMB-7130	Storage module	TSS Mounting Module
5	8590-9909999-08	Storage sensor	Proximity Sensor PNP 3 wire DC
6	8590-9909999-07	Storage sensor cable	Optional cable for Prox sensor 5 meter female
7	9120-TSS-PM-3435	Storage profile, vertical	TSS Post Module, 0914mm (36") Post Height, 90 X 90 Post
	9120-TSS-PM-3434	Storage profile, vertical	TSS Post Module, 1520mm (60") Post Height, 90 X 90 Post
8	9120-TSM-HM-3317	Storage profile, cross	TSM Horizontal Module, 0914mm (36")
	9120-TSM-HM-3353	Storage profile, cross	TSM Horizontal Module, 1520mm (60")

Accessories



Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller.

Lock Sensing

#	Part Number	Part	Description
1	8590-9909999-15	Lock sensing cables	Cable 5m, M8 Straight Threaded Connector, Flying Leads

Spare Parts

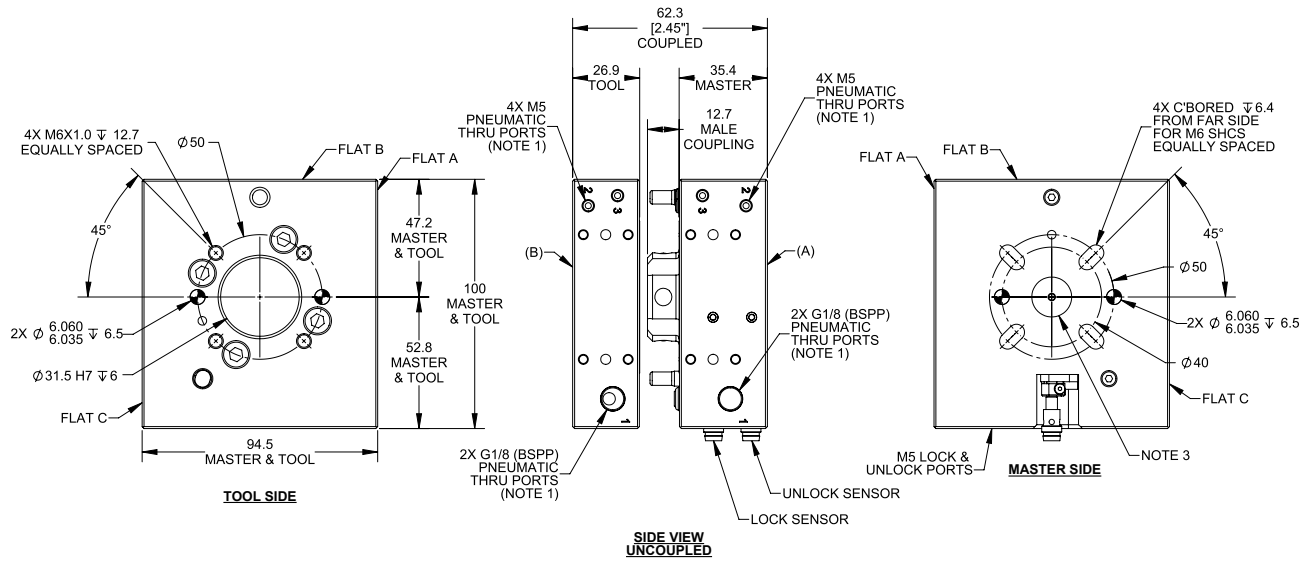
2	9005-20-2345	Lock sensor	PNP Prox Switch
	9120-029M-SEAL-02	Seal kit	QC-29 Master Seal Kit, Internal Seals, Port Seals

Robot Adapter Plates

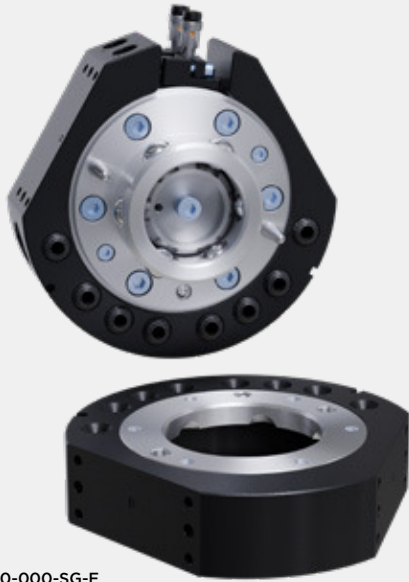


Part Number	Description
9120-029M-IPH-11764	Hollow-Wrist Interface Plate Assembly, QC-29 Master to BC64, (14) M4, (2) Dowel 4

Drawing

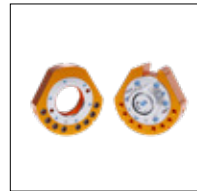
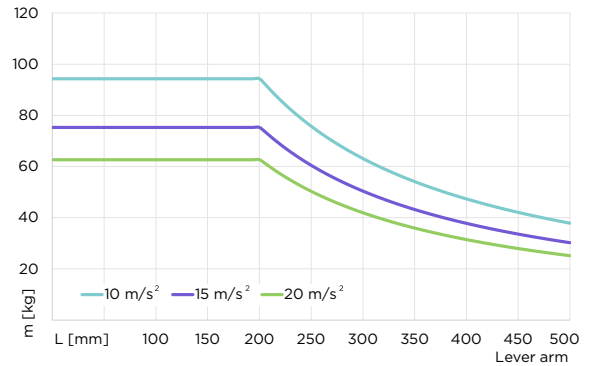


QC-040



MODELS SHOWN:
9120-040QM-000-000-SG-E
9120-040T-000-000-E

Payload Capacity

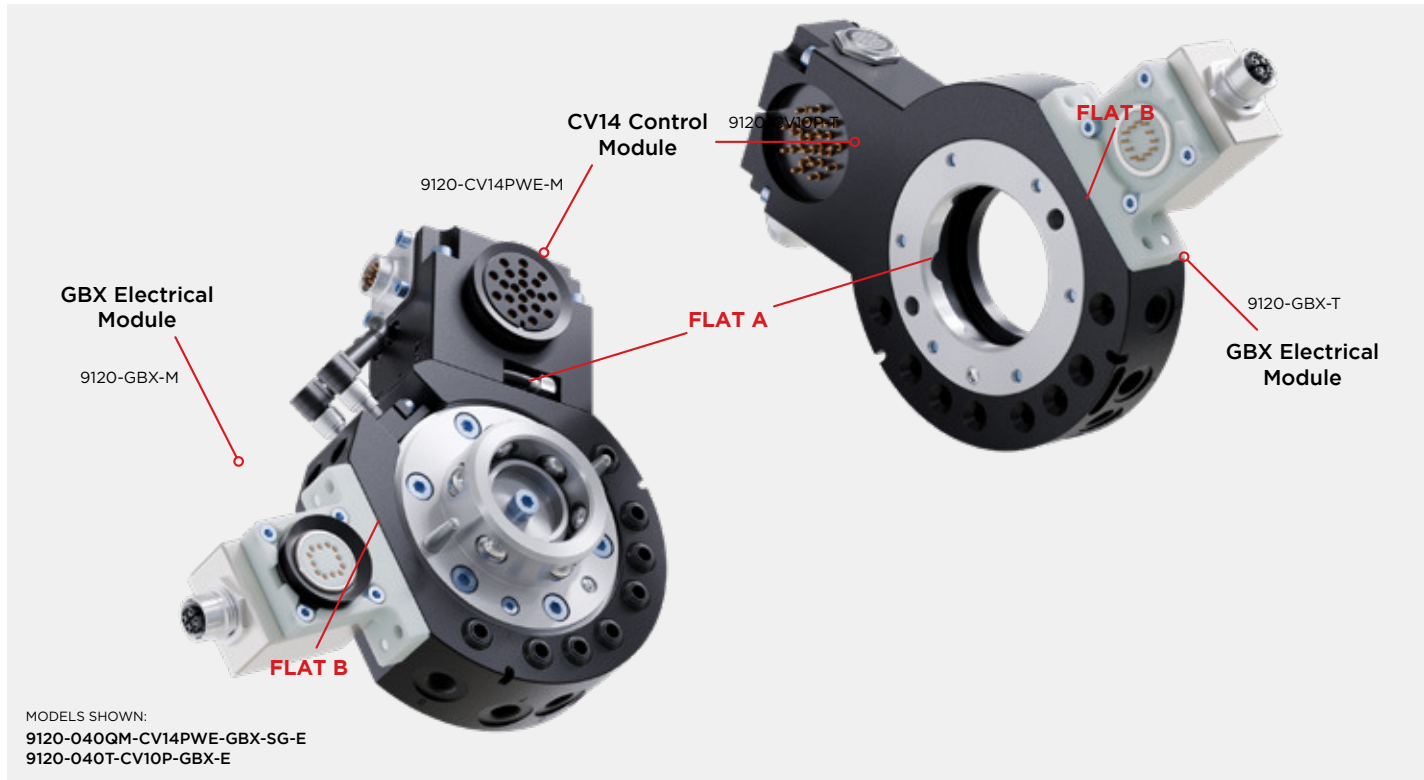


The QC-40 Tool Changer is available in both BSPP (G) and NPT thread options. The NPT version comes in orange instead of black. Not interchangeable due to reversed feed-throughs.

Technical Data

Item	Units	9120-040QM-000-000-SG-E	9120-040QM-000-000-SO-E	9120-040T-000-000-E
Description		Quick-Change Master	Quick-Change Master	Quick-Change Tool
Lock Sensing		integrated	not included	
Suggested Payload Limit	kg	60	60	60
Locking Force	N	5600	5600	5600
Repeatability	mm	0.015	0.015	0.015
Weight	kg	1.1	1.1	0.6
Robot/Tool Mounting Pattern				
Pneumatic Feed-Throughs, Type I		8x G1/8" at 650 l/min	8x G1/8" at 650 l/min	8x G1/8" at 650 l/min
Pneumatic Feed-Throughs, Type II				
Lock/Unlock Pneumatic Connection		G1/8"	G1/8"	
Static Moment Mxy	Nm	226	226	226
Static Moment Mz	Nm	226	226	226
Dynamic Moment Mxy	Nm	375	375	375
Dynamic Moment Mz	Nm	350	350	350
Max Moment Mxy	Nm	1050	1050	1050
Max Moment Mz	Nm	1050	1050	1050
Max Locking Offset, Z	mm	3	3	
Max Locking Offset, XY	mm	±2	±2	±2
Max Locking Offset, XY Angular	°	±1	±1	±1
Max Locking Offset, Z Angular	°	±2	±2	±2
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7	4.2/7
Opening/Closing Time	s	0.1/0.1	0.1/0.1	
Cylinder Volume Per Double Stroke	cm³	41	41	
Module Mounting Pattern		2 x J	2 x J	2 x J
Mounting for Control Module		Flat A	Flat A	Flat A
Special Properties				

Example Configuration



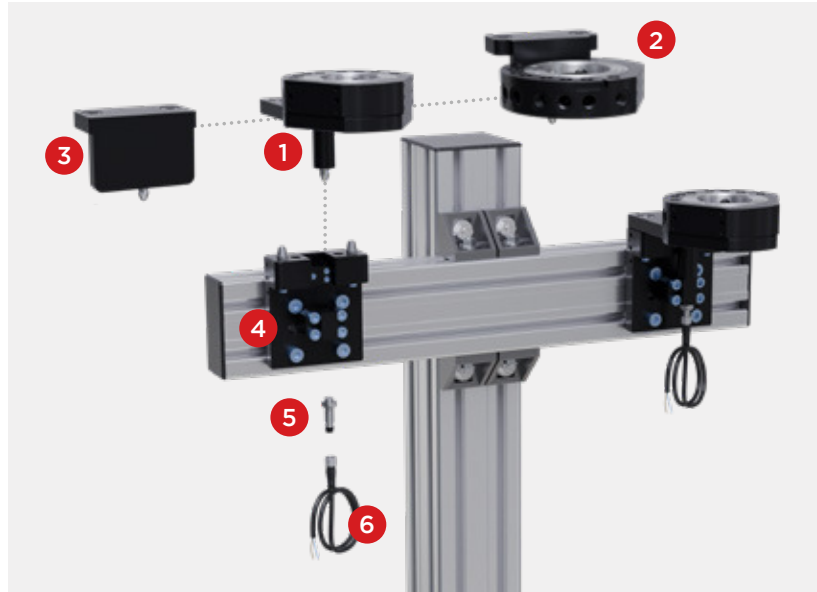
Optional Utility Modules

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins / Feed-Throughs	Rating	Special Properties	Flat A	Flat B
Control	Discrete	CV14	Robot	9120-CV14PWE-M	J	M16 19-Pin Male	19	3A / 50V	Integrated Valve	•	
			Tool	9120-CV10P-T	J	M16 19-Pin Female	10 *	3A / 50V	TSI, Tool ID 16x	•	
Electrical	Signals	RF19	Robot	9120-RF19-M	J	M16 19-pin Male	19	3A / 125V		•	•
			Tool	9120-RF19-T	J	M16 19-pin Female	19	3A / 125V		•	•
			Tool	9120-RF14-T	J	M16 19-pin Female	14 *	3A / 125V	Tool ID 16x	•	•
			Robot	9120-RF19W-M	J	M16 19-pin Male	15 *	3A / 125V	Integrated Wiring for Lock Sensing	•	
		R19	Robot	9120-R19-M	J	Mil-Spec 19-pin Male	19	5A / 250V		•	•
			Tool	9120-R19-T	J	Mil-Spec 19-pin Female	19	5A / 250V		•	•
		G19	Robot	9120-G19-M	J	Mil-Spec 19-pin Male	19	3A / 250V	Swivel Positions	•	•
			Tool	9120-G19-T	J	Mil-Spec 19-pin Female	19	3A / 250V		•	•
		R26	Robot	9120-R26-M	J	Mil-Spec 26-pin Male	26	3A / 250V		•	•
			Tool	9120-R26-T	J	Mil-Spec 26-pin Female	26	3A / 250V		•	•
	Communication	GBX	Robot	9120-GBX-M	J	M12 X-Code	8	10Gigabit / Cat6A Ethernet	PoE	•	•
			Tool	9120-GBX-T	J	M12 X-Code		0.6A / 60V	PoE	•	•
		ME10	Robot	9120-ME10-M	M7	M12 D-Code, M12 L-Code	8	10/100Mbit / Cat5e Ethernet		•**	•**
			Tool	9120-ME10-T	M7	M12 D-Code, M12 L-Code	8	4A / 63V		•**	•**
		RE5	Robot	9120-RE5-M	J	M12 D-Code	4	2A / 60V		•	•
			Tool	9120-RE5-T	J	M12 D-Code	4	2A / 60V		•	•
	Power	RL5	Robot	9120-RL5-M	J	M12 L-Code	5	16A / 63V		•	•
			Tool	9120-RL5-T	J	M12 L-Code	5	16A / 63V		•	•
		MT8	Robot	9120-MT8-M	J	Mil-Spec	8	20A / 500V		•	•
			Tool	9120-MT8-T	J	Mil-Spec	8	20A / 500V		•	•
	Servo	RES10B	Master	9120-RES10B-M	J	M23	12	3.5A/160V		•	•
			Tool	9120-RES10B-T	J	M23	12	3.5/160V		•	•
Fluid	Pneumatics	P8M5	Robot	9120-P8M5-M	J	M5	8	7 bar		•	•
			Tool	9120-P8M5-T	J	M5	8	7 bar		•	•
		P238-E	Robot	9120-P238-M-E	J	G3/8	2	7 bar		•	•
			Tool	9120-P238-T-E	J	G3/8	2	7 bar		•	•
	Liquids	FG2	Robot	9120-FG2-M	J	G3/8	2	7 bar	Self-Sealing	•	•
			Tool	9120-FG2-T	J	G3/8	2	7 bar	Self-Sealing	•	•

* Available pins for pass-through signals reduced for models with Tool ID function (-5) and Integrated Wiring for Lock Sensing (-4), or when combined (-9).

**JJ116 adapter is required to attach modules with M7 mounting pattern to Flat A or B.

Tool Stand System



QC-040 Tool Stand system for safe tool storage. The vertical and cross profiles shown are not displayed to scale and are for illustrative purposes only.

#	Part Number	Part	Description
1	9120-TSS-HBQ-9401	Storage plate	Tooling Interface Plate for QC-40 Euro
2	9120-TSS-VBQ-8206	Storage plate, alternate	TSS Vertical Tooling Interface Plate - J16 Pattern
3	9120-TSS-VBB-7963	Storage plate, alternate	TSS Vertical Tooling Interface Plate - Blank
4	9120-TSS-MMB-7130	Storage module	TSS and Manual Coupler Mounting Module
5	8590-9909999-08	Storage sensor	Optional Prox Sensor PNP 3-wire DC, normally open, 10-30 VDC
6	8590-9909999-07	Storage sensor cable	Optional cable for Prox sensor 5 meter female
7	9120-TSS-PM-3435	Storage profile, vertical	TSS Post Module, 0914mm (36") Post Height, 90 X 90 Post
	9120-TSS-PM-3434	Storage profile, vertical	TSS Post Module, 1520mm (60") Post Height, 90 X 90 Post
8	9120-TSM-HM-3317	Storage profile, cross	TSM Horizontal Module, 0914mm (36")
	9120-TSM-HM-3353	Storage profile, cross	TSM Horizontal Module, 1520mm (60")

Accessories



Lock Sensing

Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller.

#	Part Number	Part	Description
1	8590-9909999-15	Lock sensing cables	Cable 5m, M8 Straight Threaded Connector, Flying Leads

Spare Parts

2	9005-20-1628	Lock sensor	PNP Prox Switch
	9120-040QM-SEALS-E	Seal kit	Rubber bushings and piston seals

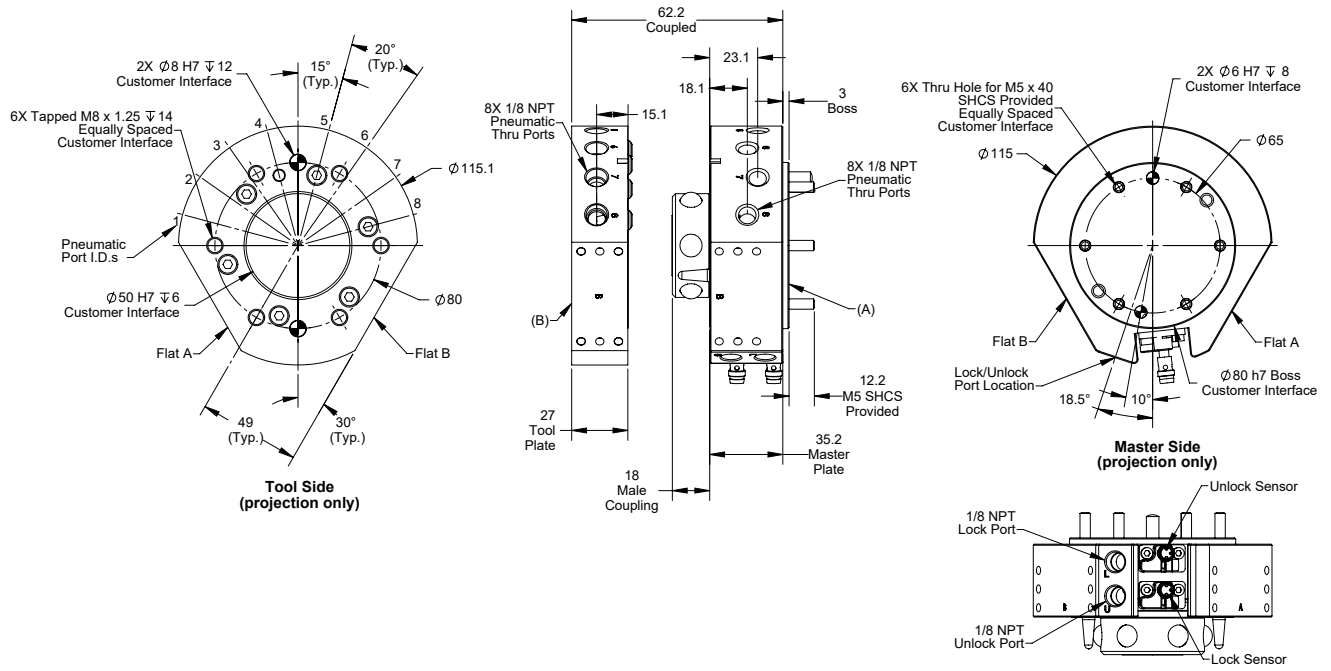
Robot Adapter Plates



Robot adapter plate for mounting Quick-Change Master to different robot flanges. For detailed information, refer to individual drawings.

Part Number	Description
3700-20-1727	IP QC40/41M to BC80, (6)M8, Boss 50, Dowel 8
3700-20-1940	IP for QC-40/41M to BC100, (6)M8, (2)Dowel 8

Drawing

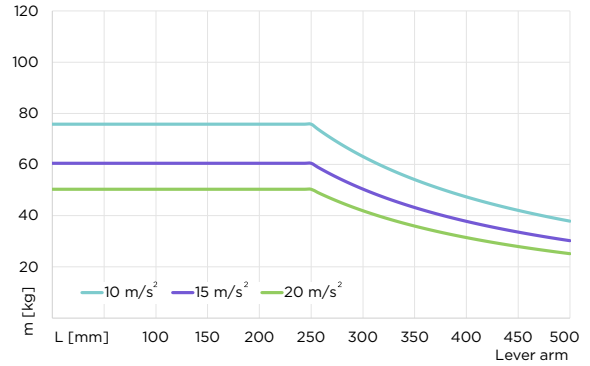


QC-041



MODELS SHOWN:
9120-041M-000-000-E
9120-041T-000-000-E

Payload Capacity

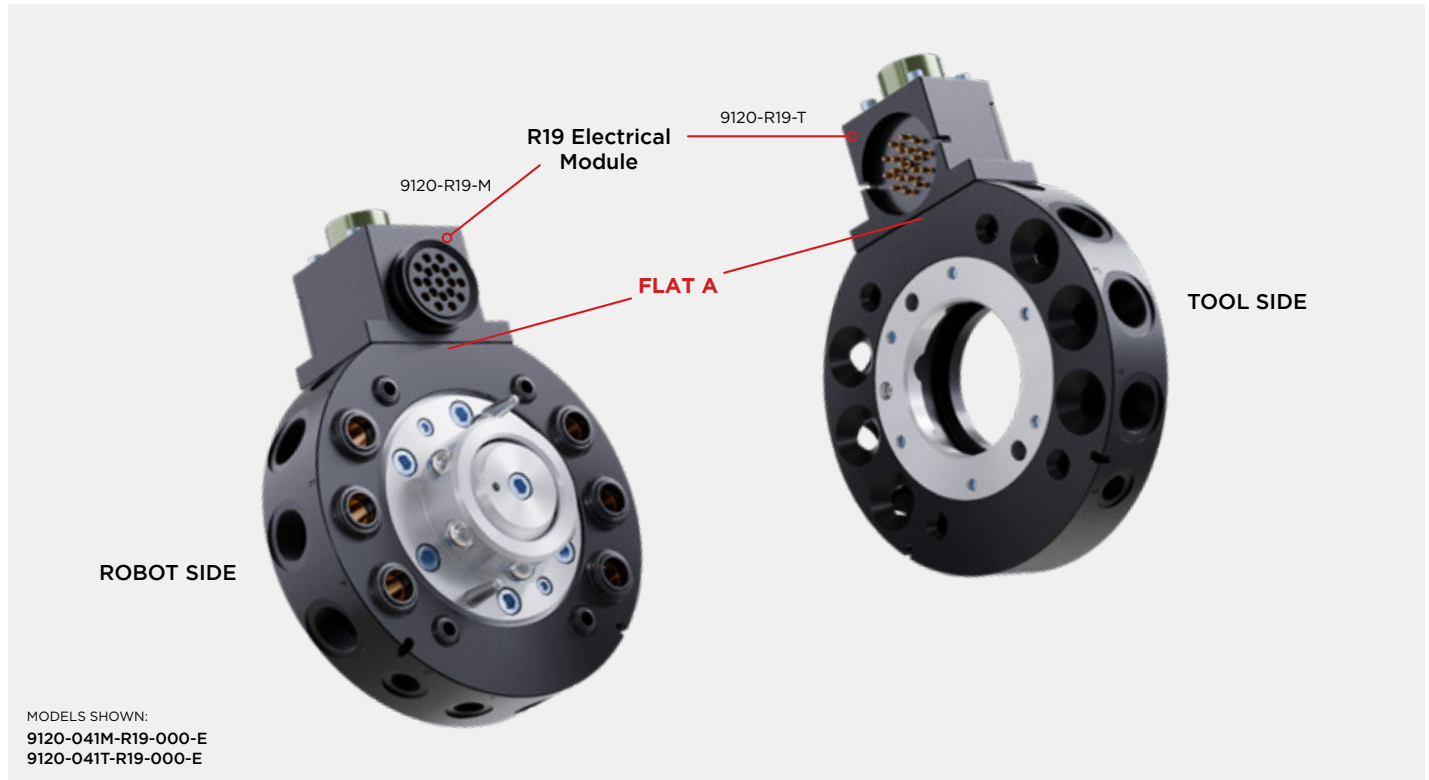


The QC-41 Tool Changer is available in both BSPP (G) and NPT thread options. The NPT version comes in orange instead of black.

Technical Data

Item	Units	9120-041M-000-000-E	9120-041T-000-000-E
Description		Quick-Change Master	Quick-Change Tool
Lock Sensing		optional	
Suggested Payload Limit	kg	60	60
Locking Force	N	4500	4500
Repeatability	mm	0.015	0.015
Weight	kg	1.4	0.8
Robot/Tool Mounting Pattern			
Pneumatic Feed-Throughs, Type I		6x G3/8" at 1,400 l/min	6x G3/8" at 1,400 l/min
Pneumatic Feed-Throughs, Type II		4x G1/8" at 650 l/min	4x G1/8" at 650 l/min
Lock/Unlock Pneumatic Connection		G1/8"	
Static Moment Mxy	Nm	157	157
Static Moment Mz	Nm	216	216
Dynamic Moment Mxy	Nm	375	375
Dynamic Moment Mz	Nm	350	350
Max Moment Mxy	Nm	1050	1050
Max Moment Mz	Nm	1050	1050
Max Locking Offset, Z	mm	3	
Max Locking Offset, XY	mm	±2	±2
Max Locking Offset, XY Angular	°	±1	±1
Max Locking Offset, Z Angular	°	±2	±2
Min./Max. Ambient Temperature	°C	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7
Opening/Closing Time	s	0.1/0.1	
Cylinder Volume Per Double Stroke	cm³	46	
Module Mounting Pattern		J	J
Mounting for Control Module		Flat A	Flat A
Special Properties			

Example Configuration



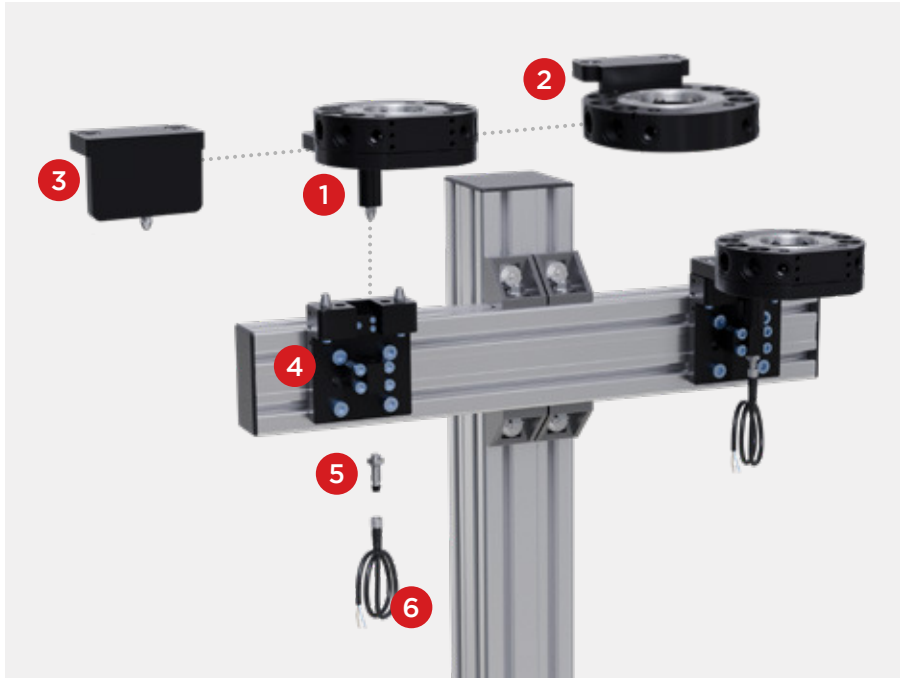
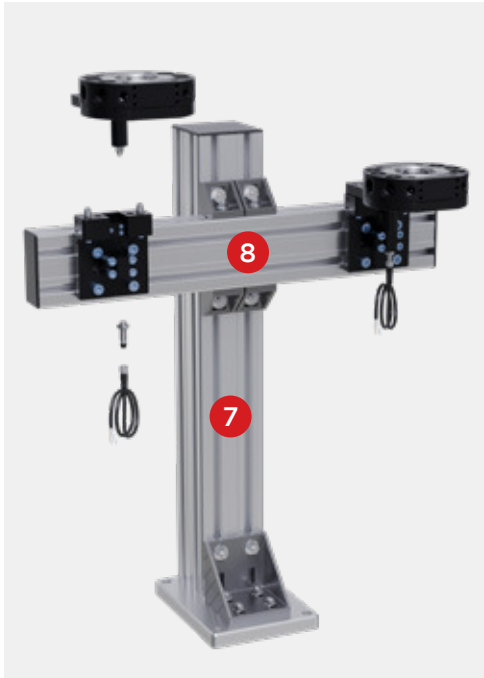
Optional Utility Modules

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins / Feed-Throughs	Rating	Special Properties	Flat A
Control	Discrete	CV14	Robot	9120-CV14PWE-M	J	M16 19-Pin Male	19	3A / 50V	Integrated Valve	•
			Tool	9120-CV10P-T	J	M16 19-Pin Female	10 *	3A / 50V	TSI, Tool ID 16x	•
Electrical	Signals	RF19	Robot	9120-RF19-M	J	M16 19-pin Male	19	3A / 125V		•
			Tool	9120-RF19-T	J	M16 19-pin Female	19	3A / 125V		•
			Tool	9120-RF14-T	J	M16 19-pin Female	14 *	3A / 125V	Tool ID 16x	•
			Robot	9120-RF19W-M	J	M16 19-pin Male	15 *	3A / 125V	Integrated Wiring for Lock Sensing	•
		R19	Robot	9120-R19-M	J	Mil-Spec 19-pin Male	19	5A / 250V		•
			Tool	9120-R19-T	J	Mil-Spec 19-pin Female	19	5A / 250V		•
		G19	Robot	9120-G19-M	J	Mil-Spec 19-pin Male	19	3A / 250V	Swivel Positions	•
			Tool	9120-G19-T	J	Mil-Spec 19-pin Female	19	3A / 250V		•
		R26	Robot	9120-R26-M	J	Mil-Spec 26-pin Male	26	3A / 250V		•
			Tool	9120-R26-T	J	Mil-Spec 26-pin Female	26	3A / 250V		•
	Communication	GBX	Robot	9120-GBX-M	J	M12 X-Code	8	10Gigabit / Cat6A Ethernet	PoE	•
			Tool	9120-GBX-T	J	M12 X-Code		0.6A / 60V	PoE	•
		ME10	Robot	9120-ME10-M	M7	M12 D-Code, M12 L-Code	8	10/100Mbit / Cat5e Ethernet		•**
			Tool	9120-ME10-T	M7	M12 D-Code, M12 L-Code	8	4A / 63V		•**
		RE5	Robot	9120-RE5-M	J	M12 D-Code	4	2A / 60V		•
			Tool	9120-RE5-T	J	M12 D-Code	4	2A / 60V		•
	Power	RL5	Robot	9120-RL5-M	J	M12 L-Code	5	16A / 63V		•
			Tool	9120-RL5-T	J	M12 L-Code	5	16A / 63V		•
		MT8	Robot	9120-MT8-M	J	Mil-Spec	8	20A / 500V		•
			Tool	9120-MT8-T	J	Mil-Spec	8	20A / 500V		•
	Servo	RES10B	Master	9120-RES10B-M	J	M23	12	3.5A/160V		•
			Tool	9120-RES10B-T	J	M23	12	3.5/160V		•
Fluid	Pneumatics	P8M5	Robot	9120-P8M5-M	J	M5	8	7 bar		•
			Tool	9120-P8M5-T	J	M5	8	7 bar		•
		P238-E	Robot	9120-P238-M-E	J	G3/8	2	7 bar		•
			Tool	9120-P238-T-E	J	G3/8	2	7 bar		•
	Liquids	FG2	Robot	9120-FG2-M	J	G3/8	2	7 bar	Self-Sealing	•
			Tool	9120-FG2-T	J	G3/8	2	7 bar	Self-Sealing	•

* Available pins for pass-through signals reduced for models with Tool ID function (-5) and Integrated Wiring for Lock Sensing (-4), or when combined (-9).

**JJ116 adapter is required to attach modules with M7 mounting pattern to Flat A.

Tool Stand System



QC-041 Tool Stand system for safe tool storage. The vertical and cross profiles shown are not displayed to scale and are for illustrative purposes only.

#	Part Number	Part	Description
1	9120-TSS-HBQ-7539	Storage plate	TSS Tooling Interface Plate for QC-41 - Blank
2	9120-TSS-VBQ-8206	Storage plate, alternate	TSS Vertical Tooling Interface Plate - J16 Pattern
3	9120-TSS-VBB-7963	Storage plate, alternate	TSS Vertical Tooling Interface Plate - Blank
4	9120-TSS-MMB-7130	Storage module	TSS and Manual Coupler Mounting Module
5	8590-9909999-08	Storage sensor	Optional Prox Sensor PNP 3-wire DC, normally open, 10-30 VDC
6	8590-9909999-07	Storage sensor cable	Optional cable for Prox sensor 5 meter female
7	9120-TSS-PM-3435	Storage profile, vertical	TSS Post Module, 0914mm (36") Post Height, 90 X 90 Post
	9120-TSS-PM-3434	Storage profile, vertical	TSS Post Module, 1520mm (60") Post Height, 90 X 90 Post
8	9120-TSM-HM-3317	Storage profile, cross	TSM Horizontal Module, 0914mm (36")
	9120-TSM-HM-3353	Storage profile, cross	TSM Horizontal Module, 1520mm (60")

Accessories



Lock Sensing

#	Part Number	Part	Description
1	9120-040M-SIP-G-0000	Lock sensing kit	QC-40/41 LOCK SENSING KIT, PNP
2	8590-9909999-07	Lock sensing cables	5m Cable, M8 Straight Snap-On Connector, Flying Leads

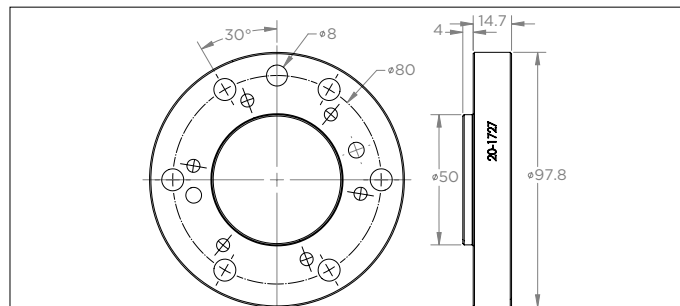
Spare Parts

3	8590-9909999-08	Lock sensor	Prox Sensor PNP 3-wire DC, normally open, 10-30 VDC
	9120-041M-SEALS	Seal kit	Seal Kit, Piston O-Rings, Pass-Thru Bushings, Brass Inserts

Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller.

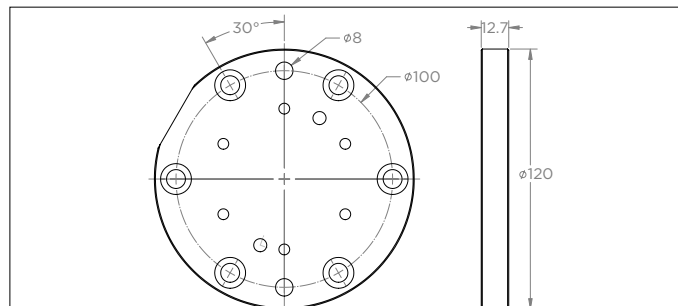
Robot Adapter Plates

Adapter Plate ISO 80mm



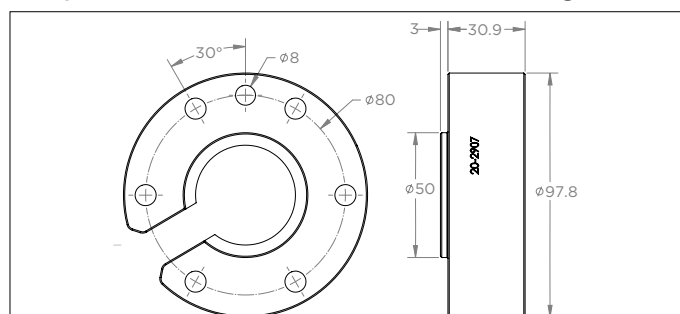
Part Number	Part	Description
3700-20-1727	Robot adapter plate	IP FOR QC-40/41M TO BC80, (6) M8, BOSS50, DOWEL 8

Adapter Plate ISO 100mm



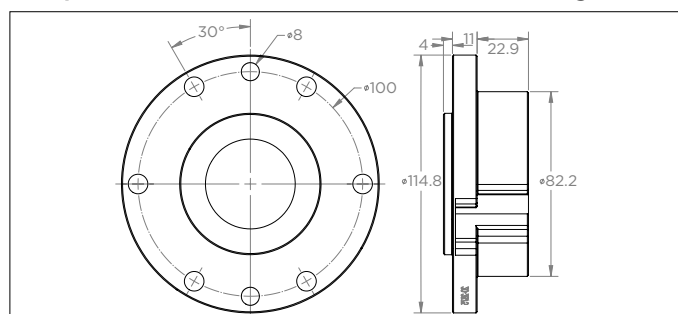
Part Number	Part	Description
3700-20-1940	Robot adapter plate	IP FOR QC-40/41M TO BC100, (6)M8, (2) DOWEL 8

Adapter Plate ISO 80mm for Lock Sensing Kit



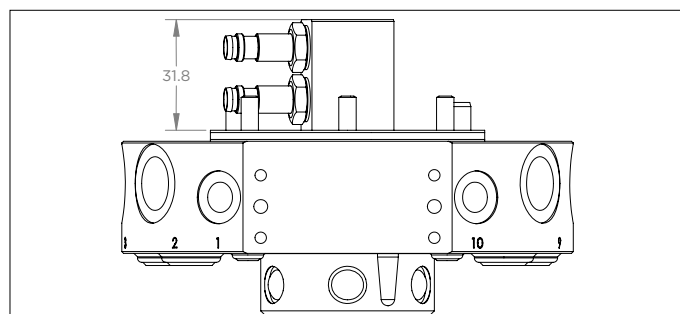
Part Number	Part	Description
3700-20-2907	Robot adapter plate	SIP FOR QC-41M TO BC80, (6) M8, BOSS50, DOWEL 8

Adapter Plate ISO 100mm for Lock Sensing Kit



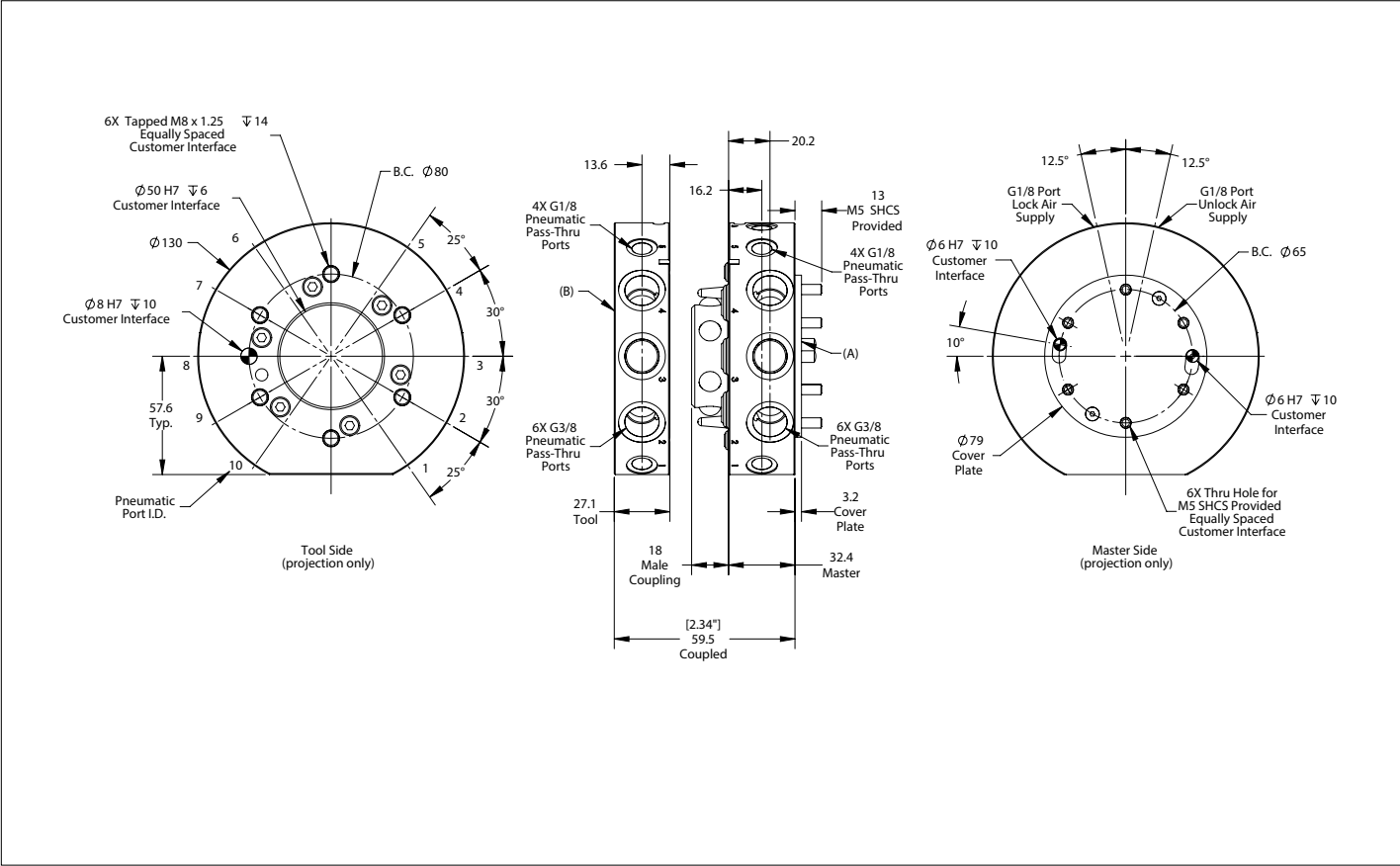
Part Number	Part	Description
3700-20-2875	Robot adapter plate	SIP FOR QC-41 MASTER TO BC100, (6)M8, BOSS63, DOWEL 8

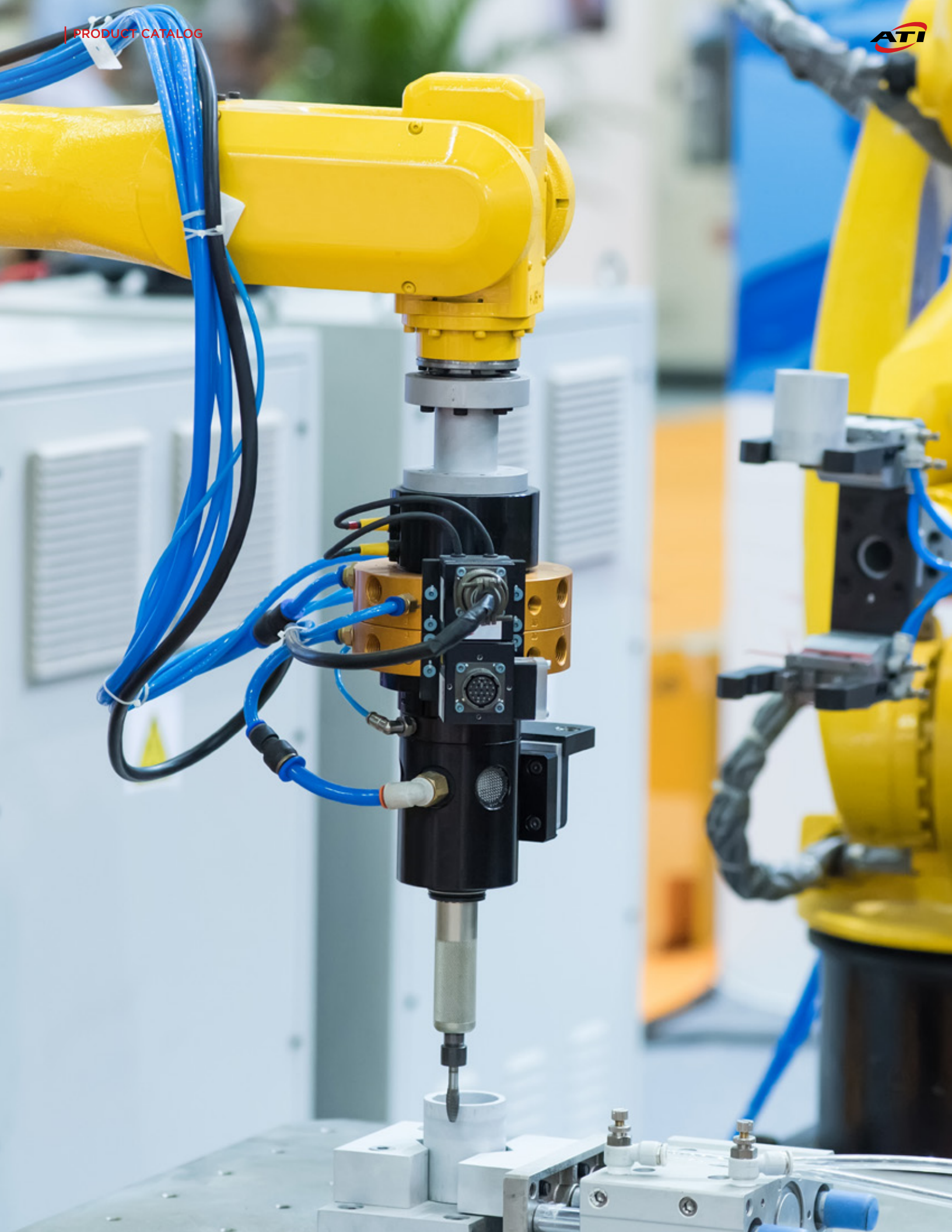
Lock Sensing Kit



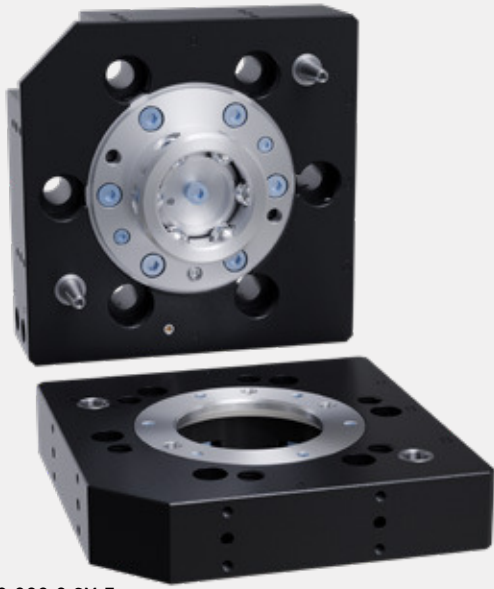
Part Number	Part	Description
9120-040M-SIP-G-0000	Robot adapter plate	QC-40/41 LOCK SENSING KIT, PNP

Drawing



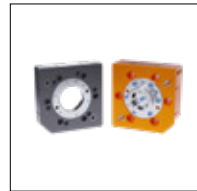
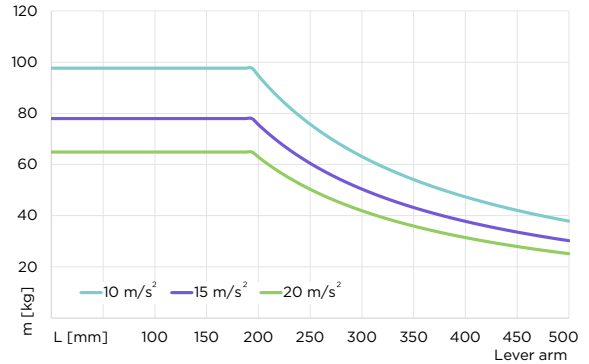


QC-046



MODELS SHOWN:
9120-046JM-0-0-000-0-SM-E
9120-046JT-0-0-000-0

Payload Capacity

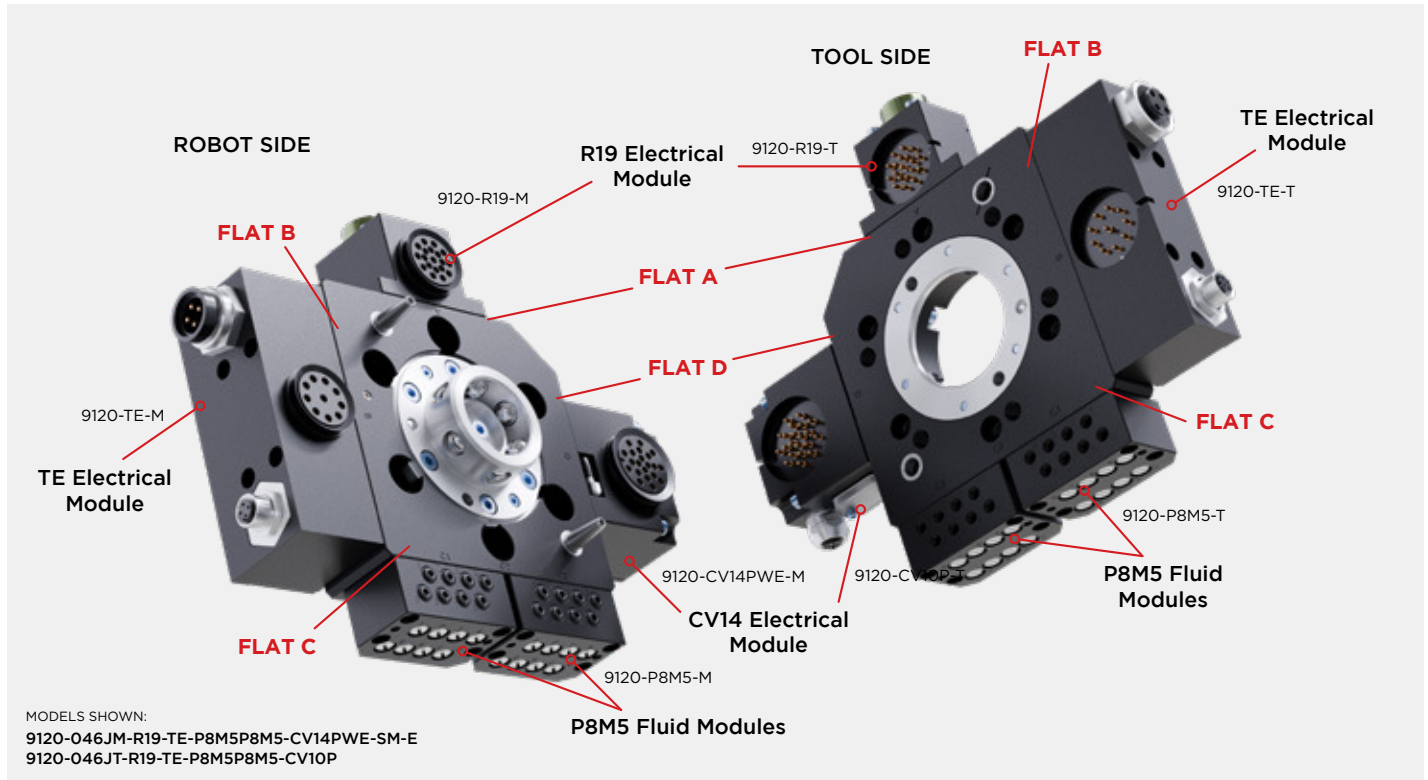


The **QC-046** Tool Changer is available in both BSPP (G) and NPT thread options. The NPT version comes in orange instead of black for Master only. Both use the same Tool, which is black.

Technical Data

Item	Units	9120-046JM-0-0-000-0-SM-E	9120-046JM-0-0-000-0-SO-E	9120-046JT-0-0-000-0
Description		Quick-Change Master	Quick-Change Master	Quick-Change Tool
Lock Sensing		integrated	not included	
Suggested Payload Limit	kg	70	70	70
Locking Force	N	5800	5800	5800
Repeatability	mm	0.015	0.015	0.015
Weight	kg	2	2	1
Robot/Tool Mounting Pattern		ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8
Pneumatic Feed-Throughs, Type I				
Pneumatic Feed-Throughs, Type II				
Lock/Unlock Pneumatic Connection		G1/8"	G1/8"	
Static Moment Mxy	Nm	226	226	226
Static Moment Mz	Nm	150	150	150
Dynamic Moment Mxy	Nm	375	375	375
Dynamic Moment Mz	Nm	400	400	400
Max Moment Mxy	Nm	1050	1050	1050
Max Moment Mz	Nm	1200	1200	1200
Max Locking Offset, Z	mm	2.5	2.5	
Max Locking Offset, XY	mm	±1.5	±1.5	±1.5
Max Locking Offset, XY Angular	°	±1	±1	±1
Max Locking Offset, Z Angular	°	±2	±2	±2
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7	4.2/7
Opening/Closing Time	s	0.1/0.1	0.1/0.1	
Cylinder Volume Per Double Stroke	cm³	48	48	
Module Mounting Pattern		5 x J	5 x J	5 x J
Mounting for Control Module		Flat D	Flat D	Flat D
Special Properties		Master accepts M8 or M10 for robot mounting. M8 requires precision washers in fastener kit 9120-046M-FK-114A15A	Master accepts M8 or M10 for robot mounting. M8 requires precision washers in fastener kit 9120-046M-FK-114A15A	

Example Configuration

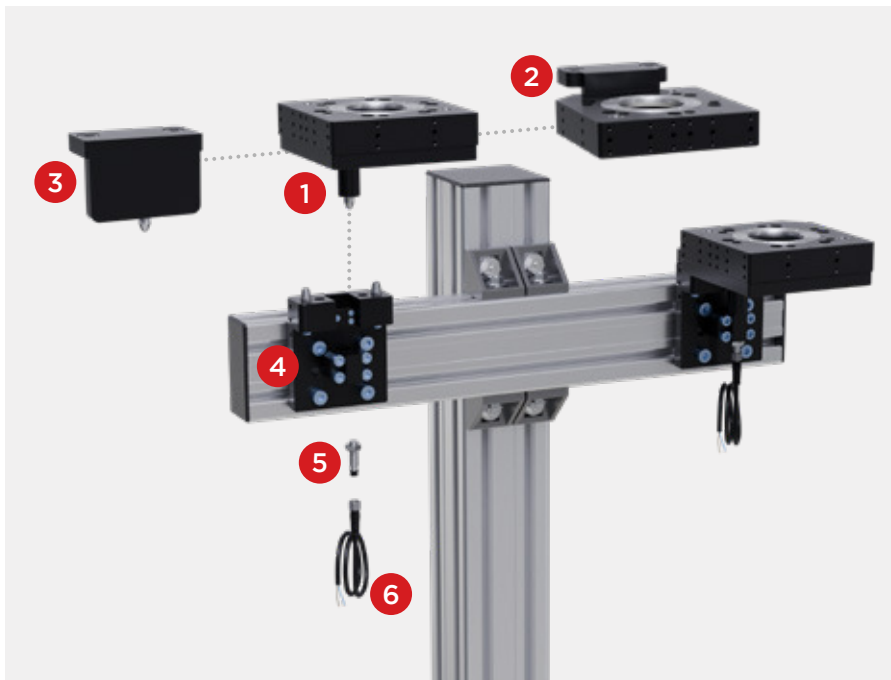


Optional Utility Modules

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins / Feed-Throughs	Rating	Special Properties	Flat A	Flat B	Flat C	Flat D
Control	Discrete	CV14	Robot	9120-CV14PWE-M	J	M16 19-Pin Male	19	3A / 50V	Integrated Valve				•
			Tool	9120-CV10P-T	J	M16 19-Pin Female	10 *	3A / 50V	TSI, Tool ID 16x				•
Electrical	Signals	RF19	Robot	9120-RF19-M	J	M16 19-pin Male	19	3A / 125V		•	•	•	•
			Tool	9120-RF19-T	J	M16 19-pin Female	19	3A / 125V		•	•	•	•
			Tool	9120-RF14-T	J	M16 19-pin Female	14 *	3A / 125V	Tool ID 16x	•	•	•	•
			Robot	9120-RF19W-M	J	M16 19-pin Male	15 *	3A / 125V	Integrated Wiring for Lock Sensing	•			•
		R19	Robot	9120-R19-M	J	Mil-Spec 19-pin Male	19	5A / 250V		•	•	•	•
			Tool	9120-R19-T	J	Mil-Spec 19-pin Female	19	5A / 250V		•	•	•	•
		G19	Robot	9120-G19-M	J	Mil-Spec 19-pin Male	19	3A / 250V	Swivel Positions	•	•	•	•
			Tool	9120-G19-T	J	Mil-Spec 19-pin Female	19	3A / 250V		•	•	•	•
		R26	Robot	9120-R26-M	J	Mil-Spec 26-pin Male	26	3A / 250V		•	•	•	•
			Tool	9120-R26-T	J	Mil-Spec 26-pin Female	26	3A / 250V		•	•	•	•
	Communication	GBX	Robot	9120-GBX-M	J	M12 X-Code	8	1-10Gbps	Cat6A Ethernet, PoE	•	•	•	•
			Tool	9120-GBX-T	J	M12 X-Code	8	0.6A / 60V		•	•	•	•
		TE	Robot	9120-TE-M	J	M12 D-Code, 7/8" Minifast 4-pin	8	100Mbps	Cat5e Ethernet		•	•	
			Tool	9120-TE-T	J	M12 D-Code, 7/8" Minifast 4-pin	8	5A / 600V			•	•	
		TP	Robot	9120-TP-M	J	M12 D-Code, 7/8" Minifast 5-pin	9	PROFINET			•	•	
			Tool	9120-TP-T	J	M12 D-Code, 7/8" Minifast 5-pin	9	5A / 600V			•	•	
		RE5	Robot	9120-RE5-M	J	M12 D-Code	4	2A / 60V		•	•	•	•
			Tool	9120-RE5-T	J	M12 D-Code	4	2A / 60V		•	•	•	•
	Power	RL5	Robot	9120-RL5-M	J	M12 L-Code	5	16A / 63V		•	•	•	•
			Tool	9120-RL5-T	J	M12 L-Code	5	16A / 63V		•	•	•	•
		MT8	Robot	9120-MT8-M	J	Mil-Spec	8	20A / 500V		•	•	•	•
			Tool	9120-MT8-T	J	Mil-Spec	8	20A / 500V		•	•	•	•
Fluid	Pneumatics	P8M5	Robot	9120-P8M5-M	J	M5	8	7 bar		•	•	•	•
			Tool	9120-P8M5-T	J	M5	8	7 bar		•	•	•	•
		P238-E	Robot	9120-P238-M-E	J	G3/8	2	7 bar		•	•	•	•
			Tool	9120-P238-T-E	J	G3/8	2	7 bar		•	•	•	•
	Liquids	FG2	Robot	9120-FG2-M	J	G3/8	2	7 bar	Self-Sealing	•	•	•	•
			Tool	9120-FG2-T	J	G3/8	2	7 bar	Self-Sealing	•	•	•	•

* Available pins for pass-through signals reduced for models with Tool ID function (-5) and Integrated Wiring for Lock Sensing (-4), or when combined (-9).

Tool Stand System



QC-046 Tool Stand system for safe tool storage. For detailed information, refer to individual drawings. The vertical and cross profiles shown in this image are not displayed to scale. The sizes vary and are for illustrative purposes only.

#	Part Number	Part	Description
1	9120-TSS-HBQ-9957	Storage plate	TSS tooling interface plate for QC-46 - Blank
2	9120-TSS-VBQ-8206	Storage plate, alternate	TSS Vertical Tooling Interface Plate - J16 Pattern
3	9120-TSS-VBB-7963	Storage plate, alternate	TSS Vertical Tooling Interface Plate - Blank
4	9120-TSS-MMB-7130	Storage module	TSS and Manual Coupler Mounting Module
5	8590-9909999-08	Storage sensor	Proximity Sensor PNP 3 wire DC
6	8590-9909999-07	Storage sensor cable	Optional cable for Prox sensor 5 meter female
7	9120-TSS-PM-3435	Storage profile, vertical	TSS Post Module, 0914mm (36") Post Height, 90 X 90 Post
	9120-TSS-PM-3434	Storage profile, vertical	TSS Post Module, 1520mm (60") Post Height, 90 X 90 Post
8	9120-TSM-HM-3317	Storage profile, cross	TSM Horizontal Module, 0914mm (36")
	9120-TSM-HM-3353	Storage profile, cross	TSM Horizontal Module, 1520mm (60")

Accessories



Lock Sensing

#	Part Number	Part	Description
1	8590-9909999-07	Lock sensing cables	5m Cable, M8 Straight Snap-On Connector, Flying Leads

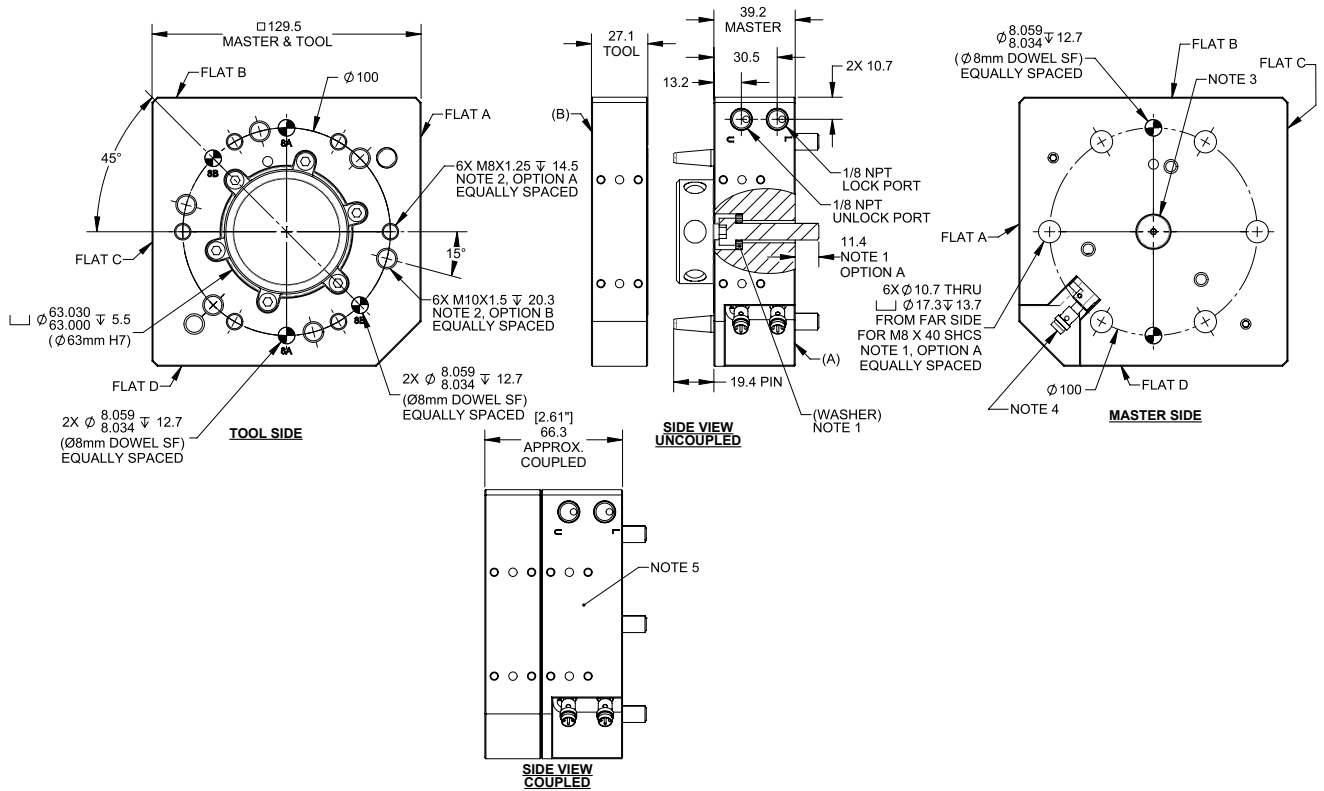
Spare Parts

2	9005-20-8523	Lock sensor	PNP Lock/Unlock Sensor Subassembly
	9120-046M-SEALS-E	Seal kit	Seal Kit, Piston O-rings

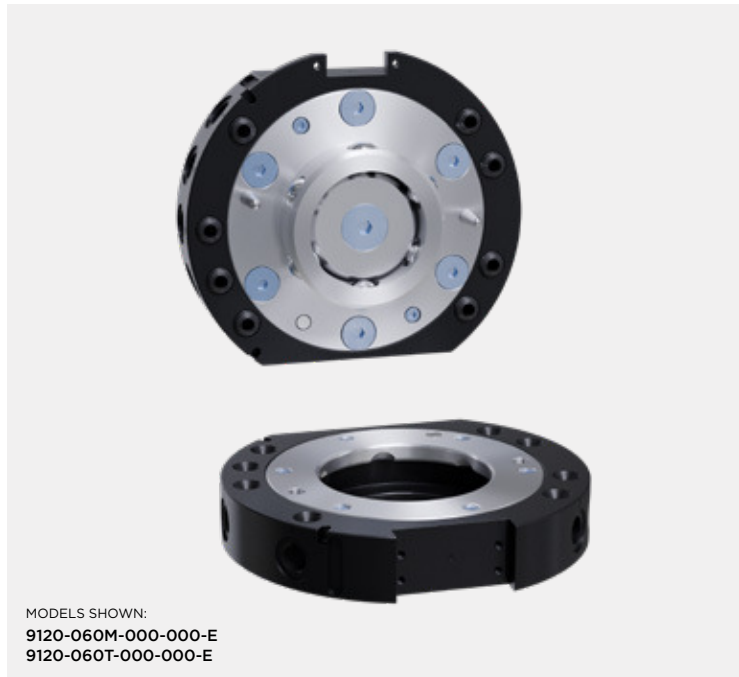
Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller.

Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller.

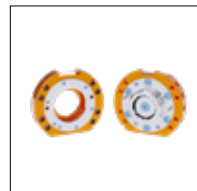
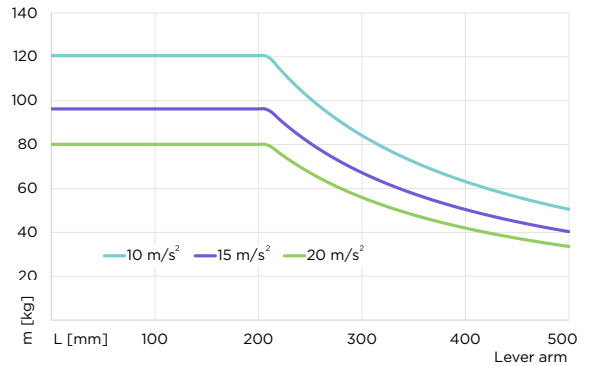
Drawing



QC-060



Payload Capacity



The **QC-060** Tool Changer is available in both BSPP (G) and NPT thread options. The NPT version comes in orange instead of black. Not interchangeable due to reversed feed-throughs.

Technical Data

Item	Units	9120-060M-000-000-E	9120-060T-000-000-E
Description		Quick-Change Master	Quick-Change Tool
Lock Sensing		optional	
Suggested Payload Limit	kg	100	100
Locking Force	N	7400	7400
Repeatability	mm	0.015	0.015
Weight	kg	1.3	0.7
Robot/Tool Mounting Pattern			
Pneumatic Feed-Throughs, Type I		8x G1/8" at 650 l/min	8x G1/8" at 650 l/min
Pneumatic Feed-Throughs, Type II			
Lock/Unlock Pneumatic Connection		G1/8"	
Static Moment Mxy	Nm	197	197
Static Moment Mz	Nm	294	294
Dynamic Moment Mxy	Nm	500	500
Dynamic Moment Mz	Nm	400	400
Max Moment Mxy	Nm	1500	1500
Max Moment Mz	Nm	1200	1200
Max Locking Offset, Z	mm	3	
Max Locking Offset, XY	mm	±2	±2
Max Locking Offset, XY Angular	°	±0.6	±0.6
Max Locking Offset, Z Angular	°	±1	±1
Min./Max. Ambient Temperature	°C	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7
Opening/Closing Time	s	0.3/0.1	
Cylinder Volume Per Double Stroke	cm³	82	
Module Mounting Pattern		K + J via adapter Flat B	K + J via adapter Flat B
Mounting for Control Module			
Special Properties			

ROBOT SIDE

TOOL SIDE

K19 Electrical Module

9120-K19-M

9120-K19-T

FLAT A

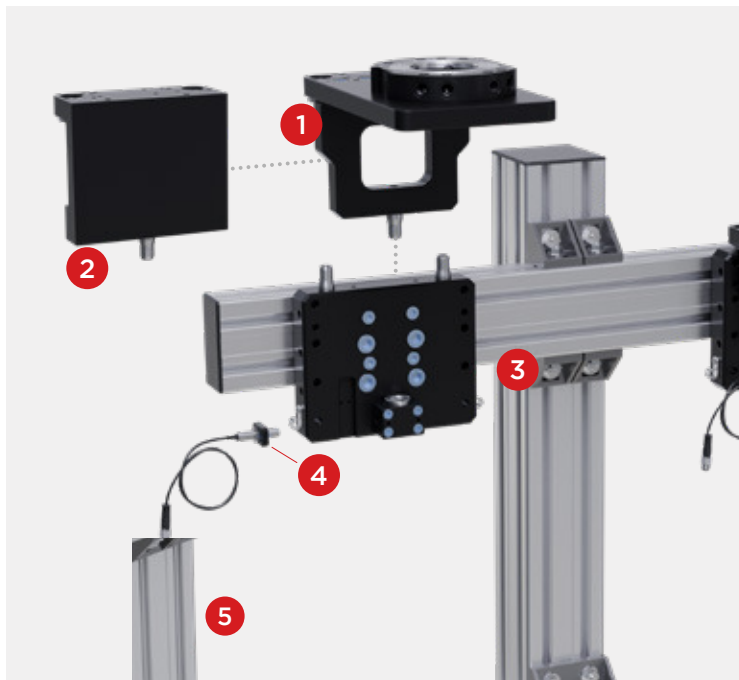
FLAT B

MODELS SHOWN:
9120-060M-K19-000-E
9120-060T-K19-000-E

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins / Feed-Throughs	Rating	Special Properties	Flat A	Flat B	
Electrical	Signals	K12	Robot	9120-K12-M	K	M12 12-pin Male	12	2A / 50V		●		
			Tool	9120-K12-T	K	M12 12-pin Female	12	2A/50V		●		
		KF19	Robot	9120-KF19-M	K	M16 19-pin Male	19	3A / 50V		●		
			Tool	9120-KF19-T	K	M16 19-pin Female	19	3A / 50V		●		
			Tool	9120-K14-T	K	M16 19-pin Female	14 *	3A/50V	Tool ID 16x	●		
			Robot	9120-KF19P-M	K	M16 19-pin Male	15 *	3A / 50V	Integrated Wiring for Lock Sensing	●		
		K19	Robot	9120-K19-M	K	Mil-Spec 19-pin Male	19	3A / 50V		●		
			Tool	9120-K19-T	K	Mil-Spec 19-pin Female	19	3A / 50V		●		
		K26	Robot	9120-K26-M	K	Mil-Spec 26-pin Male	26	3A / 50V		●		
			Tool	9120-K26-T	K	Mil-Spec 26-pin Female	26	3A / 50V		●		
		G19	Robot	9120-G19-M	J	Mil-Spec 19-pin Male	19	3A / 250V	Swivel Positions		●**	
			Tool	9120-G19-T	J	Mil-Spec 19-pin Female	19	3A / 250V			●**	
	Communication	GBX	Robot	9120-GBX-M	J	M12 X-Code	8	10Gigabit / Cat6A Ethernet 0.6A / 60V	PoE		●**	
			Tool	9120-GBX-T	J	M12 X-Code	8				●**	
			Robot	9120-KE8-M	K	Ethernet M12 4-Pin D-Code Female Power M8 4-Pin A-Code Male	8	4A / 125V	100Mbps Ethernet	●		
			Tool	9120-KE8-T	K	Ethernet M12 4-Pin D-Code Female Power M8 4-Pin A-Code Female	8	4A / 125V	100Mbps Ethernet	●		
		RE5	Robot	9120-RE5-M	J	M12 D-Code	4	2A / 60V			●**	
			Tool	9120-RE5-T	J	M12 D-Code	4	2A / 60V			●**	
		Power	RL5	Robot	9120-RL5-M	J	M12 L-Code	5	16A / 63V			●**
				Tool	9120-RL5-T	J	M12 L-Code	5	16A / 63V			●**
MT8			Robot	9120-MT8-M	J	Mil-Spec	8	20A / 500V			●**	
		Tool	9120-MT8-T	J	Mil-Spec	8	20A / 500V			●**		
Servo	RES10B	Master	9120-RES10B-M	J	M23	12	3.5A/160V			●**		
		Tool	9120-RES10B-T	J	M23	12	3.5/160V			●**		
Fluid	Pneumatics	P8M5	Robot	9120-P8M5-M	J	M5	8	7 bar			●**	
			Tool	9120-P8M5-T	J	M5	8	7 bar			●**	
		P238-E	Robot	9120-P238-M-E	J	G3/8	2	7 bar			●**	
			Tool	9120-P238-T-E	J	G3/8	2	7 bar			●**	
	Liquids	FG2	Robot	9120-FG2-M	J	G3/8	2	7 bar	Self-Sealing		●**	
			Tool	9120-FG2-T	J	G3/8	2	7 bar	Self-Sealing		●**	

** JJ97 adapter is required to attach modules with J mounting pattern to Flat B.

Tool Stand System



QC-060 Tool Stand system for safe tool storage. For detailed information, refer to individual drawings. The vertical and cross profiles shown in this image are not displayed to scale. The sizes vary and are for illustrative purposes

#	Part Number	Part	Description
1	9120-TSM-HBB-9223	Storage plate	TSM Horizontal Tooling Interface Plate - Blank
2	9120-TSM-VBB-8441	Storage plate, alternate	TSM Vertical Tooling Interface Plate - Blank
3	9120-TSM-MMB-8432	Storage module	TSM Pin & Bushing Mounting Module - Rigid
4	9120-TSM-SMA-8439	Storage sensor	Prox Sensor PNP, 8mm Barrel
5	8590-9909999-07	Storage sensor cable	Optional cable for Prox sensor 5 meter female
6	9120-TSM-PM-3317	Storage profile, vertical	TSM Post Module, 0914mm (36") Post Height - Kit
	9120-TSM-PM-3353	Storage profile, vertical	TSM Post Module, 1520mm (60") Post Height - Kit
7	9120-TSM-HM-3317	Storage profile, cross	TSM Horizontal Module, 0914mm (36")
	9120-TSM-HM-3353	Storage profile, cross	TSM Horizontal Module, 1520mm (60")

Accessories



Lock Sensing

#	Part Number	Part	Description
1	9120-060M-SIP-G-0000	Lock sensing kit	QC-060 Sensor Interface Plate, PNP
2	8590-9909999-07	Lock sensing cables	5m Cable, M8 Straight Snap-On Connector, Flying Leads

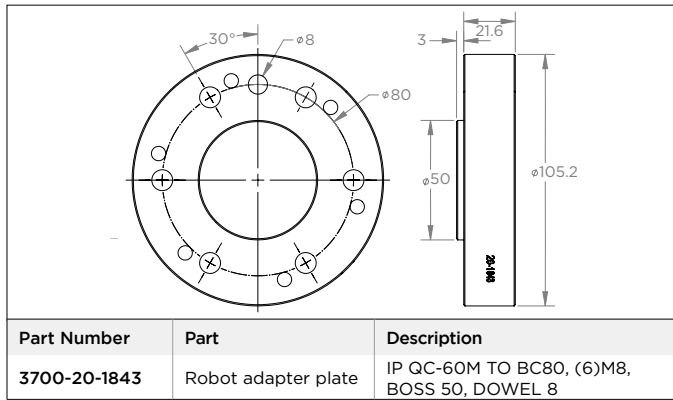
Spare Parts

3	8590-9909999-08	Lock sensor	Prox Sensor PNP 3-wire DC, normally open, 10-30 VDC
	9120-060M-SEALS-E	Seal kit	Seal Kit, Piston O-rings and Pass-Thru Bushings
	8590-9909999-216	Storage sensor	PNP Prox M8 Body, 0.2m Cable with M8 3-Pin Connector

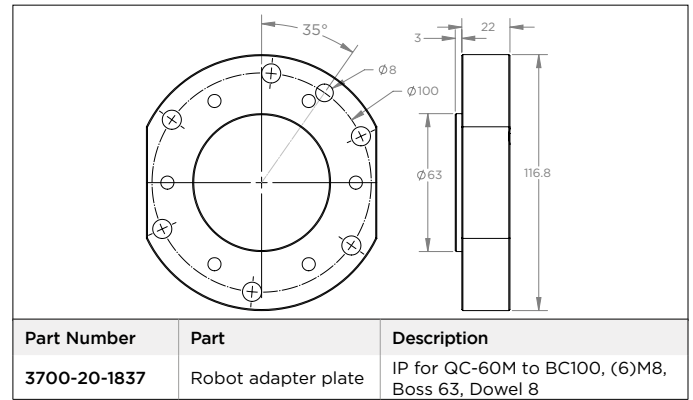
Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller.

Robot Adapter Plates

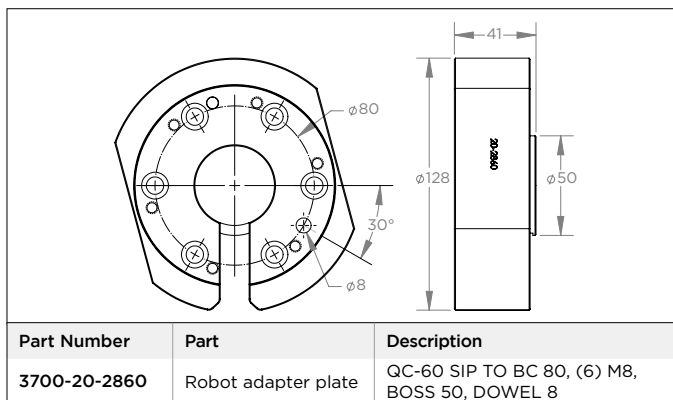
Adapter Plate ISO 80mm



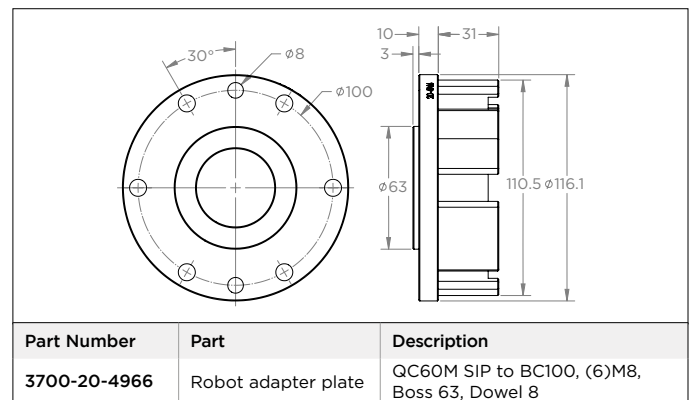
Adapter Plate ISO 100mm



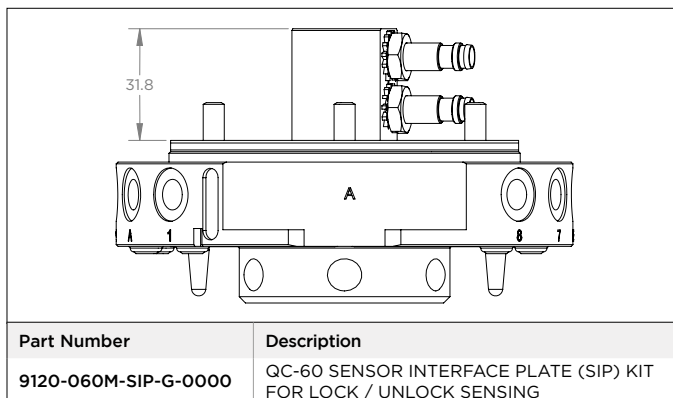
Adapter Plate ISO 80mm for Lock Sensing Kit

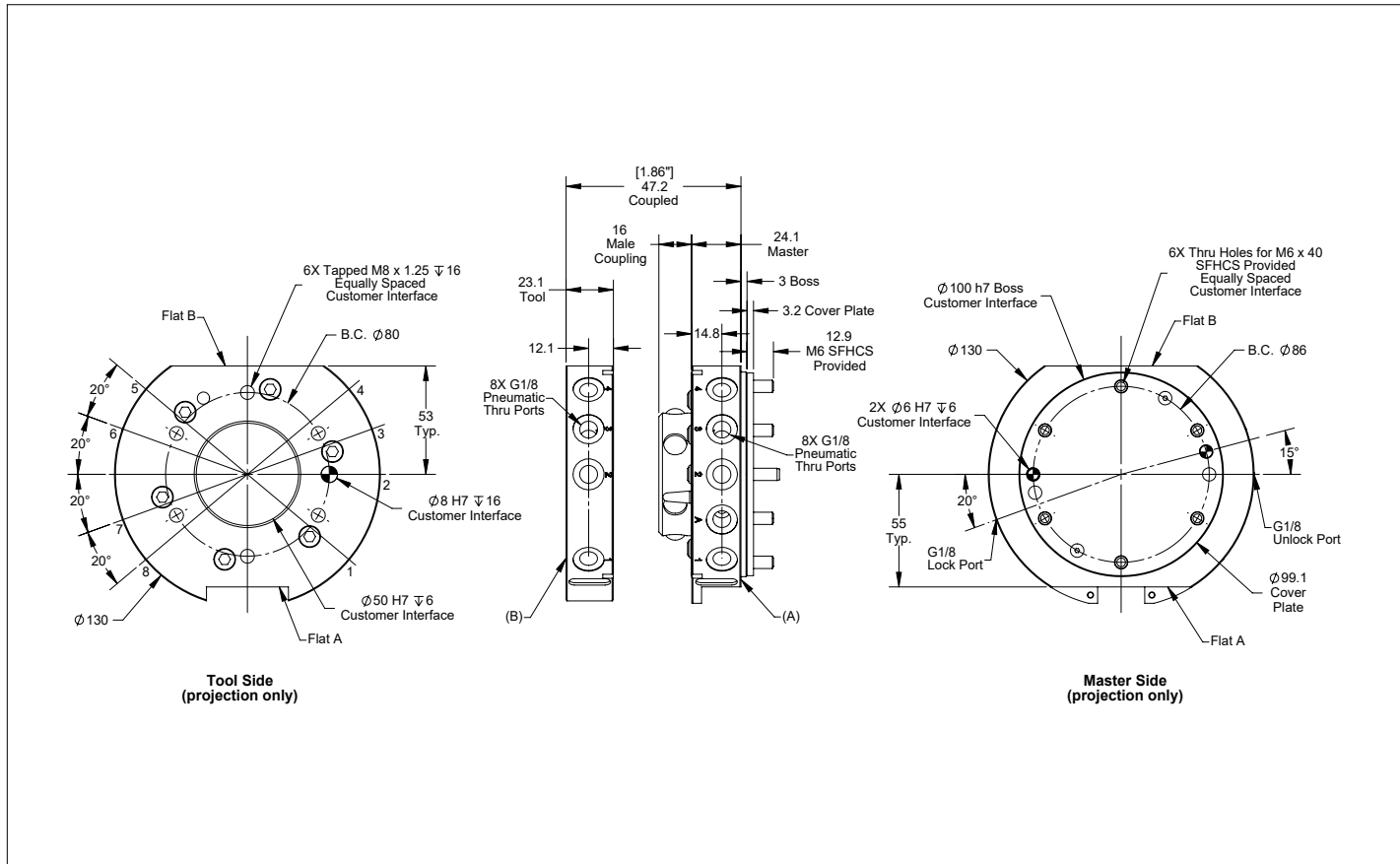


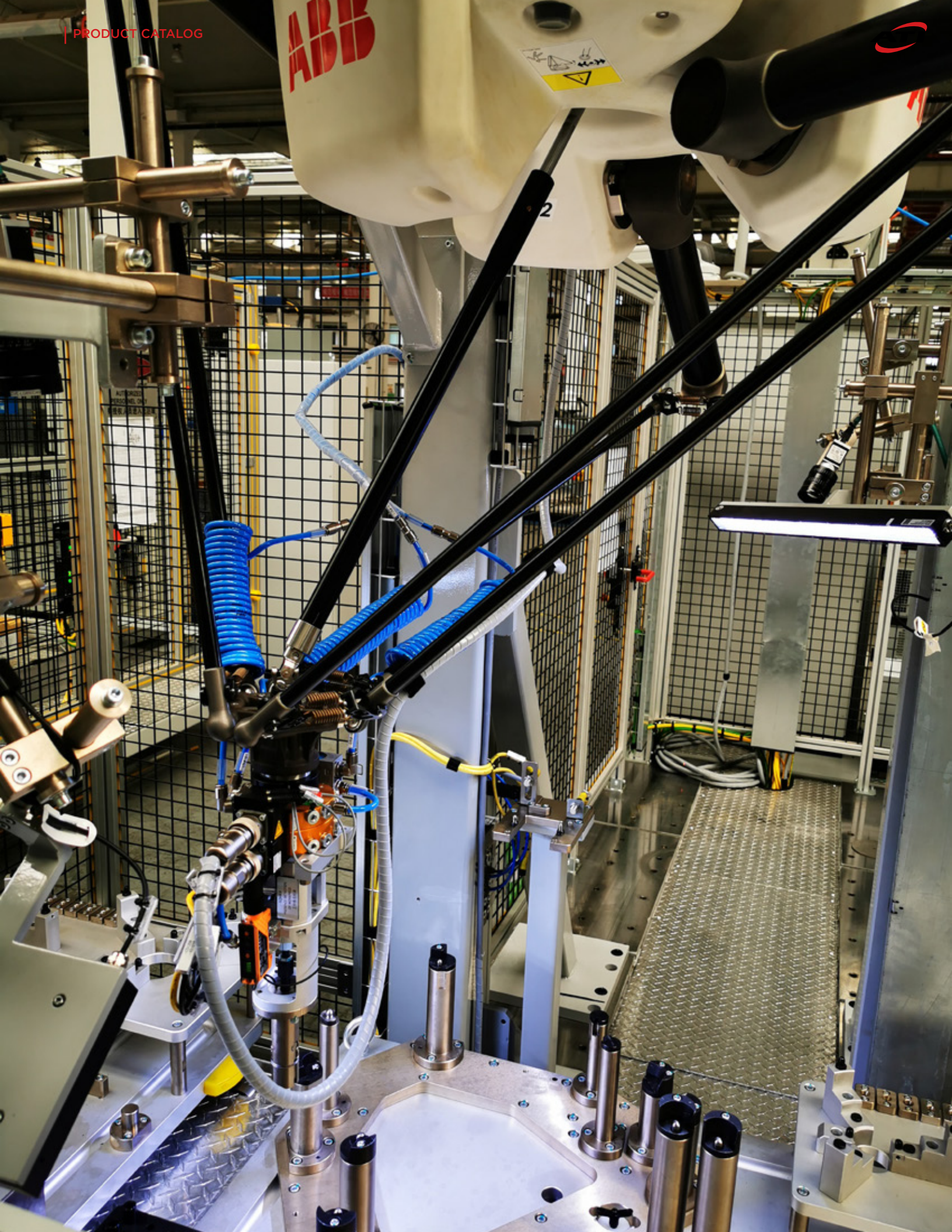
Adapter Plate ISO 100mm for Lock Sensing Kit



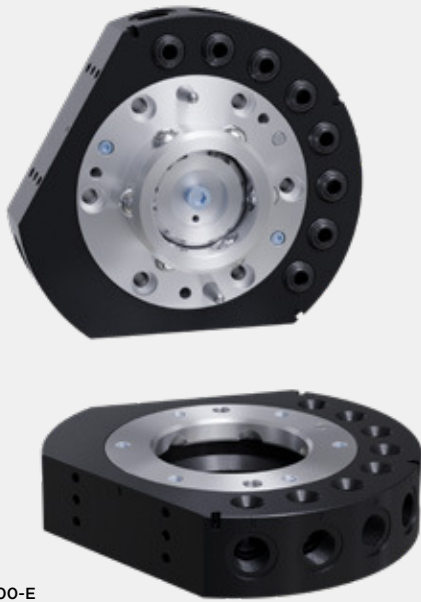
Lock Sensing Kit





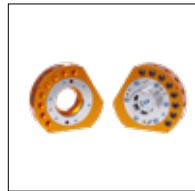
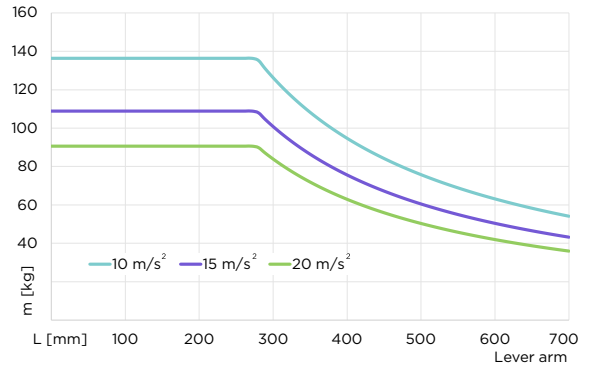


QC-071



MODELS SHOWN:
9120-071M-000-000-E
9120-071T-000-000-E

Payload Capacity

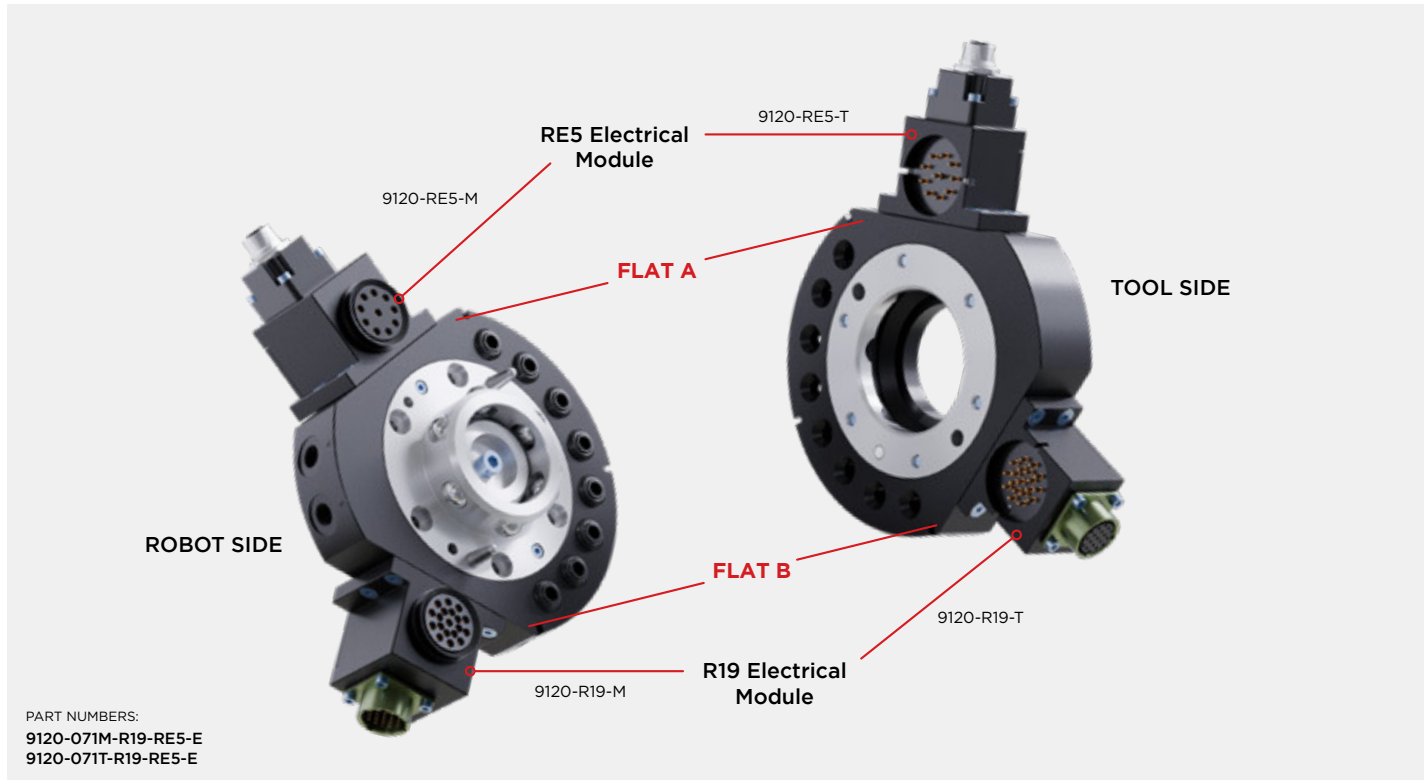


The QC-71 Tool Changer is available in both BSPP (G) and NPT thread options. The NPT version comes in orange instead of black.

Technical Data

Item	Units	9120-071M-000-000-E	9120-071T-000-000-E
Description		Quick-Change Master	Quick-Change Tool
Lock Sensing		optional	
Suggested Payload Limit	kg	100	100
Locking Force	N	8100	8100
Repeatability	mm	0.015	0.015
Weight	kg	1.8	1
Robot/Tool Mounting Pattern			
Pneumatic Feed-Throughs, Type I		8x G1/4" at 900 l/min	8x G1/4" at 900 l/min
Pneumatic Feed-Throughs, Type II			
Lock/Unlock Pneumatic Connection		G1/8"	
Static Moment Mxy	Nm	395	395
Static Moment Mz	Nm	395	395
Dynamic Moment Mxy	Nm	750	750
Dynamic Moment Mz	Nm	600	600
Max Moment Mxy	Nm	1800	1800
Max Moment Mz	Nm	1800	1800
Max Locking Offset, Z	mm	3	
Max Locking Offset, XY	mm	±2	±2
Max Locking Offset, XY Angular	°	±0.6	±0.6
Max Locking Offset, Z Angular	°	±1	±1
Min./Max. Ambient Temperature	°C	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7
Opening/Closing Time	s	0.3/0.1	
Cylinder Volume Per Double Stroke	cm³	81	
Module Mounting Pattern		2 x J	2 x J
Mounting for Control Module		Flat B	Flat B
Special Properties			

Example Configuration



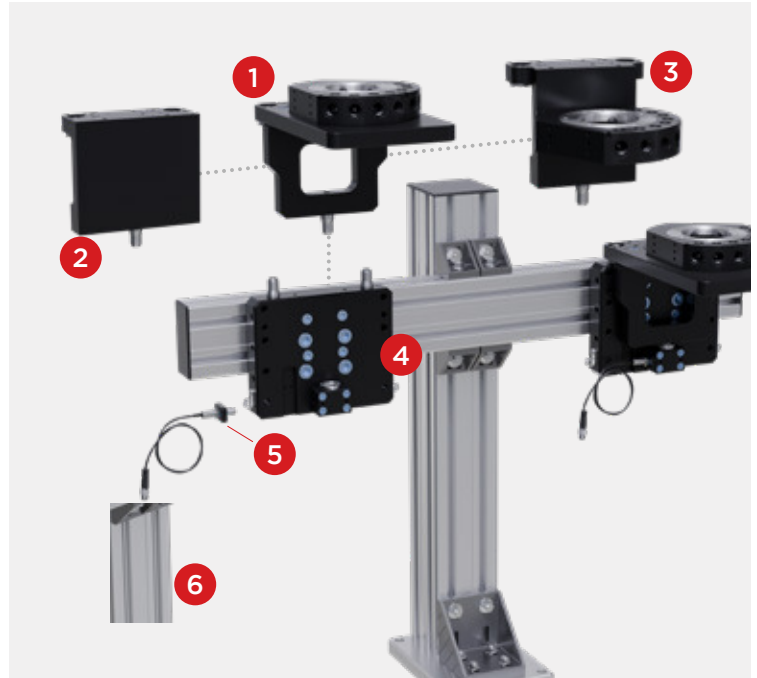
Optional Utility Modules

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins / Feed-Throughs	Rating	Special Properties	Flat A	Flat B
Control	Discrete	CV14	Robot	9120-CV14PWE-M	J	M16 19-Pin Male	19	3A / 50V	Integrated Valve		•
			Tool	9120-CV10P-T	J	M16 19-Pin Female	10 *	3A / 50V	TSI, Tool ID 16x		•
Electrical	Signals	RF19	Robot	9120-RF19-M	J	M16 19-pin Male	19	3A / 125V		•	•
			Tool	9120-RF19-T	J	M16 19-pin Female	19	3A / 125V		•	•
			Tool	9120-RF14-T	J	M16 19-pin Female	14 *	3A / 125V	Tool ID 16x	•	•
			Robot	9120-RF19W-M	J	M16 19-pin Male	15 *	3A / 125V	Integrated Wiring for Lock Sensing	•	•
		R19	Robot	9120-R19-M	J	Mil-Spec 19-pin Male	19	5A / 250V		•	•
			Tool	9120-R19-T	J	Mil-Spec 19-pin Female	19	5A / 250V		•	•
		G19	Robot	9120-G19-M	J	Mil-Spec 19-pin Male	19	3A / 250V	Swivel Positions	•	•
			Tool	9120-G19-T	J	Mil-Spec 19-pin Female	19	3A / 250V		•	•
		R26	Robot	9120-R26-M	J	Mil-Spec 26-pin Male	26	3A / 250V		•	•
			Tool	9120-R26-T	J	Mil-Spec 26-pin Female	26	3A / 250V		•	•
	Communication	GBX	Robot	9120-GBX-M	J	M12 X-Code	8	10Gigabit / Cat6A Ethernet	PoE	•	•
			Tool	9120-GBX-T	J	M12 X-Code	8	0.6A / 60V	PoE	•	•
		ME10	Robot	9120-ME10-M	M7	M12 D-Code, M12 L-Code	8	10/100Mbit / Cat5e Ethernet		•**	•**
			Tool	9120-ME10-T	M7	M12 D-Code, M12 L-Code	8	4A / 63V		•**	•**
	Power	RE5	Robot	9120-RE5-M	J	M12 D-Code	4	2A / 60V		•	•
			Tool	9120-RE5-T	J	M12 D-Code	4	2A / 60V		•	•
		RL5	Robot	9120-RL5-M	J	M12 L-Code	5	16A / 63V		•	•
			Tool	9120-RL5-T	J	M12 L-Code	5	16A / 63V		•	•
	Servo	MT8	Robot	9120-MT8-M	J	Mil-Spec	8	20A / 500V		•	•
			Tool	9120-MT8-T	J	Mil-Spec	8	20A / 500V		•	•
		RES10B	Master	9120-RES10B-M	J	M23	12	3.5A/160V		•	•
			Tool	9120-RES10B-T	J	M23	12	3.5/160V		•	•
Fluid	Pneumatics	P8M5	Robot	9120-P8M5-M	J	M5	8	7 bar		•	•
			Tool	9120-P8M5-T	J	M5	8	7 bar		•	•
		P238-E	Robot	9120-P238-M-E	J	G3/8	2	7 bar		•	•
			Tool	9120-P238-T-E	J	G3/8	2	7 bar		•	•
	Liquids	FG2	Robot	9120-FG2-M	J	G3/8	2	7 bar	Self-Sealing	•	•
			Tool	9120-FG2-T	J	G3/8	2	7 bar	Self-Sealing	•	•

* Available pins for pass-through signals reduced for models with Tool ID function (-5) and Integrated Wiring for Lock Sensing (-4), or when combined (-9).

**JJ116 adapter is required to attach modules with M7 mounting pattern to Flat A or B.

Tool Stand System



QC-070 Tool Stand system for safe tool storage. For detailed information, refer to individual drawings. The vertical and cross profiles shown in this image are not displayed to scale. The sizes vary and are for illustrative purposes only.

#	Part Number	Part	Description
1	9120-TSM-HBB-9223	Storage plate	TSM Horizontal Tooling Interface Plate - Blank
2	9120-TSM-VBB-8441	Storage plate, alternate	TSM Vertical Tooling Interface Plate - Blank
3	9120-TSM-VBQ-8442	Storage plate, alternate	TSM Storage Plate - Side Mount (Storage Limited to <10kg)
4	9120-TSM-MMB-8432	Storage module	TSM Pin & Bushing Mounting Module - Rigid
5	9120-TSM-SMA-8439	Storage sensor	Prox Sensor PNP, 8mm Barrel
6	8590-9909999-07	Storage sensor cable	Optional cable for Prox sensor 5 meter female
7	9120-TSM-PM-3317	Storage profile, vertical	TSM Post Module, 0914mm (36") Post Height - Kit
	9120-TSM-PM-3353	Storage profile, vertical	TSM Post Module, 1520mm (60") Post Height - Kit
8	9120-TSM-HM-3317	Storage profile, cross	TSM Horizontal Module, 0914mm (36")
	9120-TSM-HM-3353	Storage profile, cross	TSM Horizontal Module, 1520mm (60")

Accessories



Lock Sensing

#	Part Number	Part	Description
1	9120-071M-SIP-G-0000	Lock sensing kit	QC-071 Sensor Interface Plate, PNP
2	8590-9909999-07	Lock sensing cables	5m Cable, M8 Straight Snap-On Connector, Flying Leads

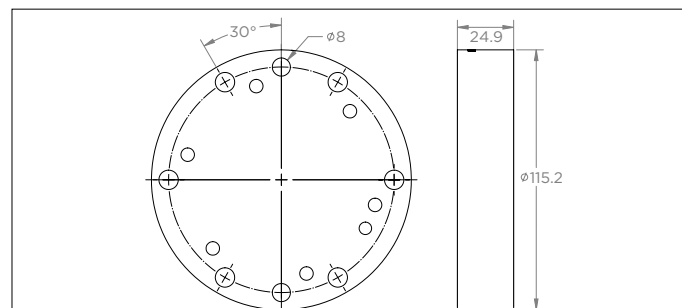
Spare Parts

3	8590-9909999-08	Lock sensor	Prox Sensor PNP 3-wire DC, normally open, 10-30 VDC
	8590-9909999-216	Storage sensor	PNP Prox M8 Body, 0.2m Cable with M8 3-Pin Connector
	9120-071M-SEALS	Seal kit	Seal Kit, Piston O-rings and Pass-Thru Bushings

Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller.

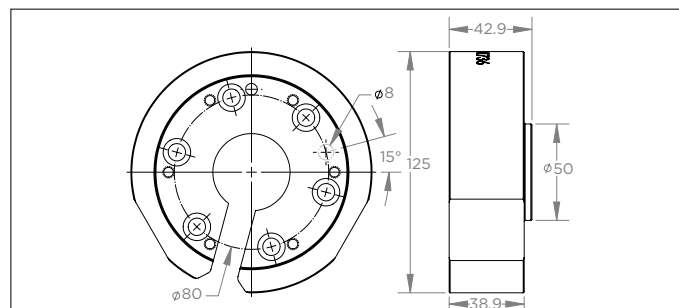
Robot Adapter Plates

Adapter Plate ISO 100mm



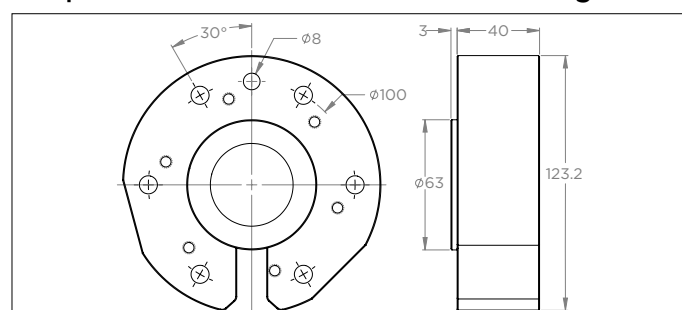
Part Number	Part	Description
3700-20-2884	Robot adapter plate	IP FOR QC-71 MASTER TO BC100, (6)M8, (2)DOWEL 8

Adapter Plate ISO 80mm for Lock Sensing Kit



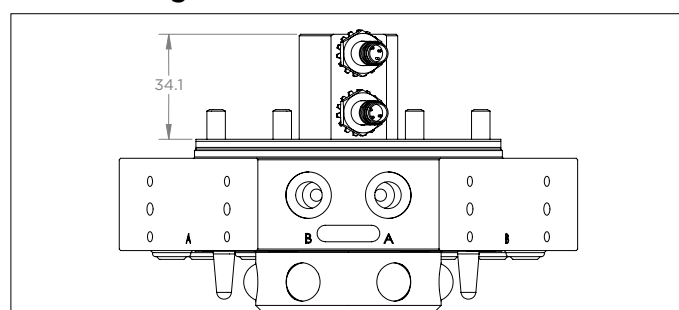
Part Number	Part	Description
3700-20-1736	Robot adapter plate	SIP for QC-71 Master to BC80, (6)M8, Boss 50, Dowel 8

Adapter Plate ISO 100mm for Lock Sensing Kit



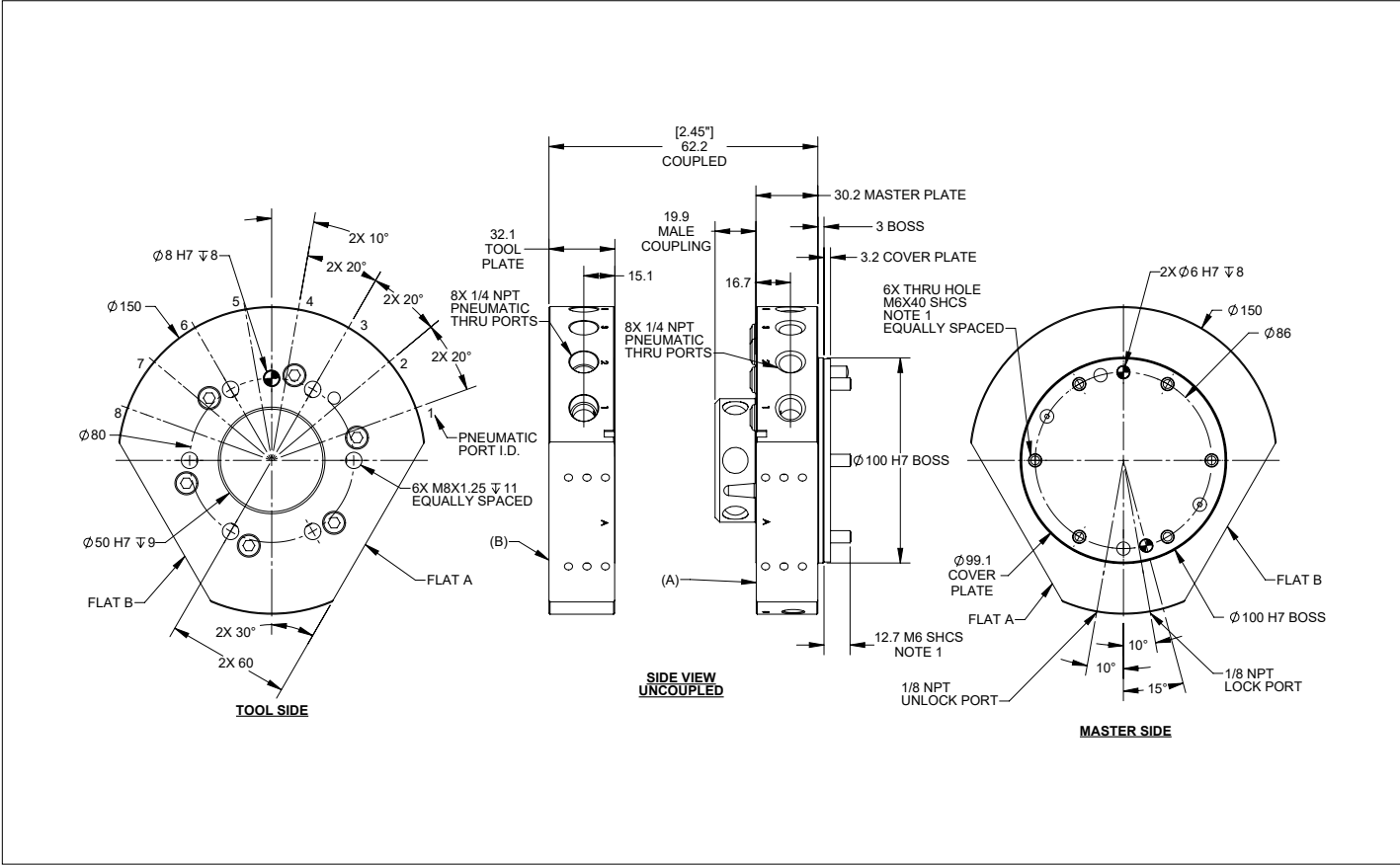
Part Number	Part	Description
3700-20-4967	Robot adapter plate	SIP FOR QC-71M TO BC100, (6) M8, BOSS 63, DOWEL 8

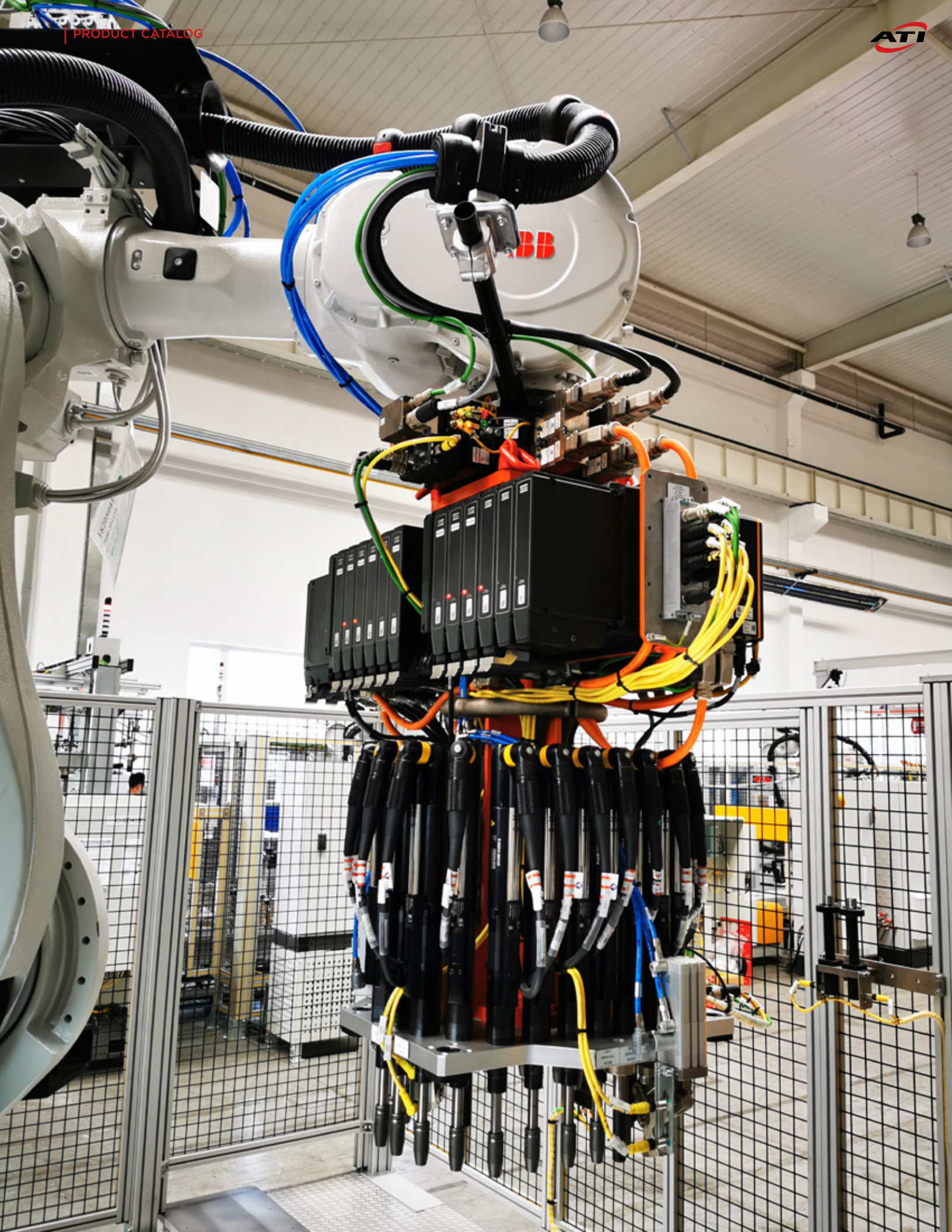
Lock Sensing Kit



Part Number	Part	Description
9120-071M-SIP-G-0000	Lock sensing kit	QC-71M PNP Sensor Interface Plate System, no plate, no cables

Drawing



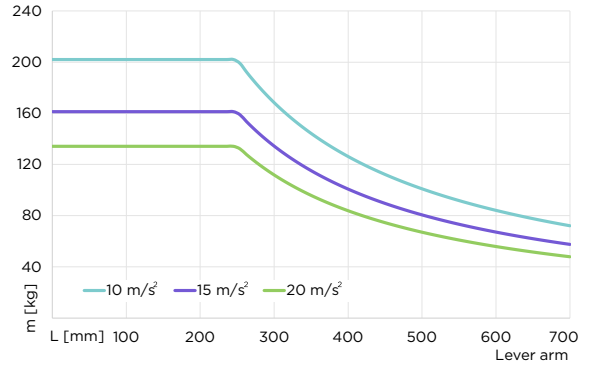


QC-076



MODELS SHOWN:
9120-076FM-000-000-SG-E
9120-076FT-000-000-E

Payload Capacity

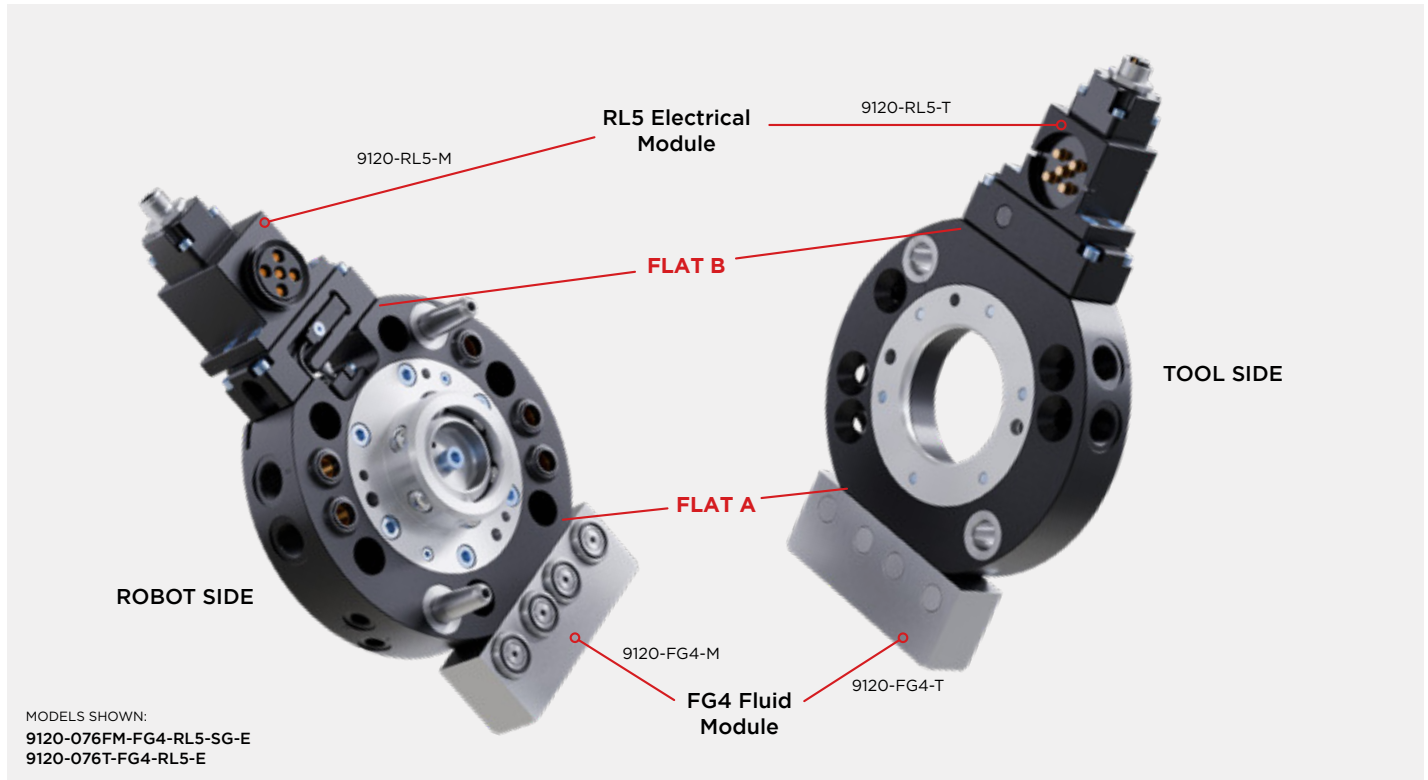


The **QC-076** Tool Changer is available in both BSPP and NPT thread options. The NPT version comes in orange instead of black.

Technical Data

Item	Units	9120-076FM-000-000-SG-E	9120-076FM-000-000-S0-E	9120-076FT-000-000-E
Description		Quick-Change Master	Quick-Change Master	Quick-Change Tool
Lock Sensing		integrated	not included	
Suggested Payload Limit	kg	120	120	120
Locking Force	N	12000	12000	12000
Repeatability	mm	0.015	0.015	0.015
Weight	kg	2.3	2.3	1.4
Robot/Tool Mounting Pattern		ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10
Pneumatic Feed-Throughs, Type I		5x G3/8" at 1,400 l/min	5x G3/8" at 1,400 l/min	5x G3/8" at 1,400 l/min
Pneumatic Feed-Throughs, Type II				
Lock/Unlock Pneumatic Connection		G1/8"	G1/8"	
Static Moment Mxy	Nm	542	542	542
Static Moment Mz	Nm	701	701	701
Dynamic Moment Mxy	Nm	1000	1000	1000
Dynamic Moment Mz	Nm	1800	1800	1800
Max Moment Mxy	Nm	2400	2400	2400
Max Moment Mz	Nm	5400	5400	5400
Max Locking Offset, Z	mm	2	2	
Max Locking Offset, XY	mm	±1	±1	±1
Max Locking Offset, XY Angular	°	±0.7	±0.7	±0.7
Max Locking Offset, Z Angular	°	±1	±1	±1
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7	4.2/7
Opening/Closing Time	s	0.3/0.1	0.3/0.1	
Cylinder Volume Per Double Stroke	cm³	91	91	
Module Mounting Pattern		2 x J	2 x J	2 x J
Mounting for Control Module		Flat B	Flat B	Flat B
Special Properties				

Example Configuration

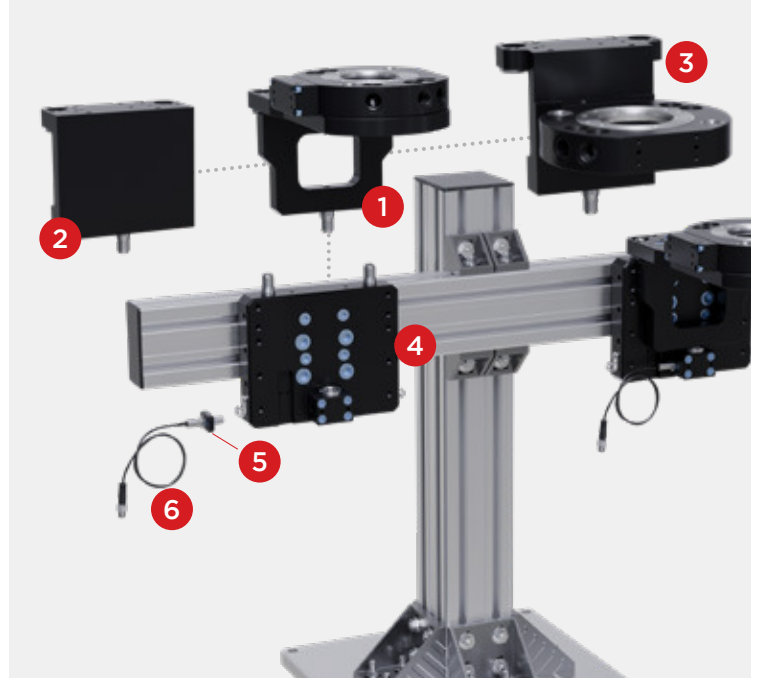


Optional Utility Modules

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins / Feed-Throughs	Rating	Special Properties	Flat A	Flat B
Control	Discrete	CV14	Robot	9120-CV14PRE-M	J	M16 19-Pin Male	19	3A / 50V	Integrated Valve		•
			Tool	9120-CV10P-T	J	M16 19-Pin Female	10 *	3A / 50V	TSI, Tool ID 16x		•
Electrical	Signals	RF19	Robot	9120-RF19-M	J	M16 19-pin Male	19	3A / 125V		•	•
			Tool	9120-RF19-T	J	M16 19-pin Female	19	3A / 125V		•	•
			Tool	9120-RF14-T	J	M16 19-pin Female	14 *	3A / 125V	Tool ID 16x	•	•
			Robot	9120-RF19R-M	J	M16 19-pin Male	15 *	3A / 125V	Integrated Wiring for Lock Sensing	•	
			Tool	9120-RF19R-T	J	M16 19-pin Female	15 *	3A / 125V			
		R19	Robot	9120-R19-M	J	Mil-Spec 19-pin Male	19	5A / 250V		•	•
			Tool	9120-R19-T	J	Mil-Spec 19-pin Female	19	5A / 250V		•	•
		G19	Robot	9120-G19-M	J	Mil-Spec 19-pin Male	19	3A / 250V	Swivel Positions	•	•
			Tool	9120-G19-T	J	Mil-Spec 19-pin Female	19	3A / 250V		•	•
		R26	Robot	9120-R26-M	J	Mil-Spec 26-pin Male	26	3A / 250V		•	•
			Tool	9120-R26-T	J	Mil-Spec 26-pin Female	26	3A / 250V		•	•
	Communication	GBX	Robot	9120-GBX-M	J	M12 X-Code	8	10Gigabit / Cat6A Ethernet 0.6A / 60V	PoE	•	•
			Tool	9120-GBX-T	J	M12 X-Code	8	10Gigabit / Cat6A Ethernet 0.6A / 60V	PoE	•	•
		TE	Robot	9120-TE-M	J	M12 D-Code, 7/8" Minifast 4-pin	8	10/100Mbit / Cat5e Ethernet 5A / 600V		•	•
			Tool	9120-TE-T	J	M12 D-Code, 7/8" Minifast 4-pin	8	10/100Mbit / Cat5e Ethernet 5A / 600V		•	•
		TP	Robot	9120-TP-M	J	M12 D-Code, 7/8" Minifast 5-pin	9	PROFINET 5A / 600V		•	•
			Tool	9120-TP-T	J	M12 D-Code, 7/8" Minifast 5-pin	9	PROFINET 5A / 600V		•	•
		RE5	Robot	9120-RE5-M	J	M12 D-Code	4	2A / 60V		•	•
			Tool	9120-RE5-T	J	M12 D-Code	4	2A / 60V		•	•
		RL5	Robot	9120-RL5-M	J	M12 L-Code	5	16A / 63V		•	•
			Tool	9120-RL5-T	J	M12 L-Code	5	16A / 63V		•	•
	Power	MT8	Robot	9120-MT8-M	J	Mil-Spec	8	20A / 500V		•	•
			Tool	9120-MT8-T	J	Mil-Spec	8	20A / 500V		•	•
		RES10B	Master	9120-RES10B-M	J	M23	12	3.5A/160V		•	•
			Tool	9120-RES10B-T	J	M23	12	3.5/160V		•	•
Fluid	Pneumatics	P186-E	Robot	9120-P186-M-E	J	G1/8	6	7 bar		•	
			Tool	9120-P186-T-E	J	G1/8	6	7 bar		•	
	Liquids	FG4	Robot	9120-FG4-M	J	G3/8	4	7 bar	Self-Sealing	•	
			Tool	9120-FG4-T	J	G3/8	4	7 bar	Self-Sealing	•	

* Available pins for pass-through signals are reduced for models with Tool ID function (-5) and Integrated Wiring for Lock Sensing (-4), or when combined (-9).

Tool Stand System



QC-076 Tool Stand system for safe tool storage. The vertical and cross profiles shown are not displayed to scale and are for illustrative purposes only.

#	Part Number	Part	Description
1	9120-TSM-HBQ-9224	Storage plate	TSM Tooling Interface Plate for QC-76
2	9120-TSM-VBB-8441	Storage plate, alternate	Intermediate plate lateral blank
3	9120-TSM-VBQ-8442	Storage plate, alternate	TSM Storage Plate - Side Mount (Storage Limited to <10kg)
4	9120-TSM-MMB-8432	Storage module	TSM Mounting Module
5	9120-TSM-SMA-8439	Storage sensor	PNP Prox
6	8590-9909999-07	Storage sensor cable	Optional cable for Prox sensor 5 meter female
7	9120-TSM-PM-3317	Storage profile, vertical	TSM Post Module, 0914mm (36") Post Height - Kit
	9120-TSM-PM-3353	Storage profile, vertical	TSM Post Module, 1520mm (60") Post Height - Kit
8	9120-TSM-HM-3317	Storage profile, cross	TSM Horizontal Module, 0914mm (36")
	9120-TSM-HM-3353	Storage profile, cross	TSM Horizontal Module, 1520mm (60")

Accessories



Lock Sensing

#	Part Number	Part	Description
1	8590-9909999-63	Lock sensing cables	Cable, right angle snap connector, 5M (flying leads)

Spare Parts

2	9005-20-1628	Lock sensor	PNP Prox Switch
3	8590-9909999-216	Storage sensor	PNP Prox M8 Body, 0.2m Cable with M8 3-Pin Connector
	9120-076M-SEALS	Seal kit	Seal Kit, Pass-Thru Bushings + Brass Inserts

Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller.

Tool Present Sensor



Part Number	Description
9120-076M-IP-4492	QC-76 IP to BC100, (6)M8, Boss 63, Dowel 8
9120-076M-IP-7625	QC-76 IP to BC100, (6) M10, Recess 63, Dowel 8
9120-076M-IP-8622	QC-76 IP to BC80, (6)M8, Boss 50, Dowel 8

Part Number	Part	Description
9005-20-8666	Tool sensor	Optional proximity switch for tool presence monitoring

Tool Side (projection only)

- Flat A
- B.C. $\varnothing 125$
- $\varnothing 160$
- 2X $\varnothing 10$ H7 $\nabla 10$ Customer Interface Equally Spaced
- 6X Tapped M10X1.5 $\nabla 20$ Equally Spaced Customer Interface
- 5X G 3/8 Pneumatic Thru Ports
- 140 Typ.
- 24.8 Typ.
- 60°
- 78.2 Typ.
- Adapter Assembly
- Flat B
- $\varnothing 80$ H7 $\nabla 4$ Customer Interface

Master Side (projection only)

- Flat A
- B.C. $\varnothing 125$
- Optional Bosses Available
- 2X $\varnothing 10$ H7 $\nabla 10$ Customer Interface Equally Spaced
- 6X Thru Holes For M10 SHCS C'Bored 12.6 Dp. From Far Side Equally Spaced Customer Interface
- 5X G 3/8 Pneumatic Thru Ports
- 140 Typ.
- 24.8 Typ.
- 60°
- 78.2 Typ.
- Adapter Assembly
- Flat B
- $\varnothing 80$ H7 $\nabla 4$ Customer Interface

Side View Dimensions:

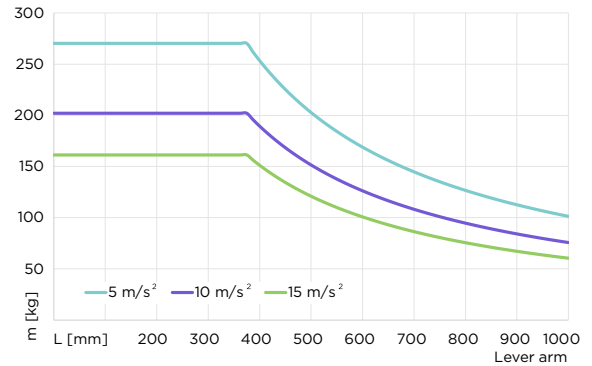
- 30.9 Tool
- 19.9 Male Coupling
- 30 Pin
- 37.3 Master
- 68.2 Coupled (2.69")

QC-110



MODELS SHOWN:
9120-110FM-000-000-SM-E
9120-110FT-000-000-E

Payload Capacity

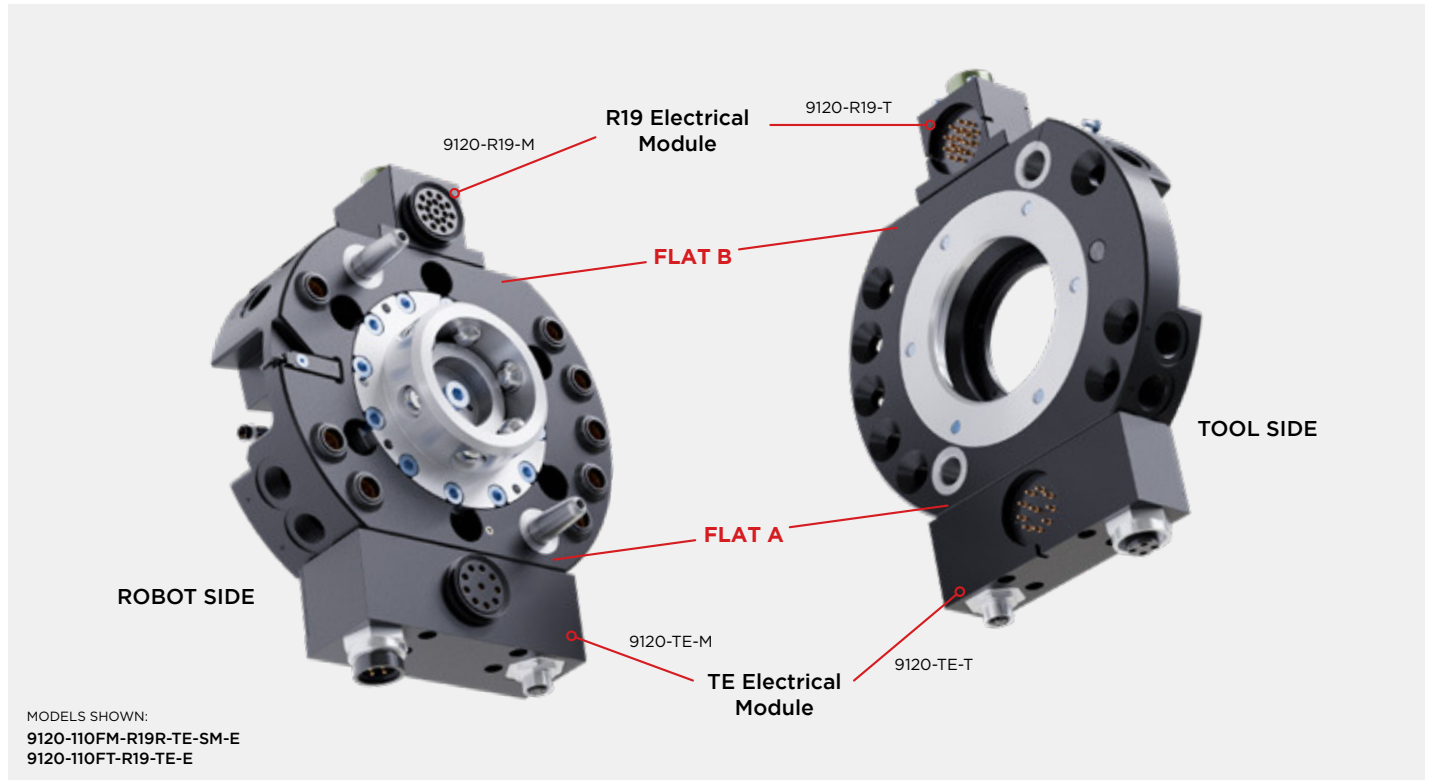


The **QC-110** Tool Changer is available in both BSPP (G) and NPT thread options. The NPT version comes in orange instead of black.

Technical Data

Item	Units	9120-11FM-000-000-SM-E	9129-110FM-000-000-SO-E	9120-110FT-000-000-E
Description		Quick-Change Master	Quick-Change Master	Quick-Change Tool
Lock Sensing		integrated	not included	
Suggested Payload Limit	kg	180	180	180
Locking Force	N	12000	12000	12000
Repeatability	mm	0.015	0.015	0.015
Weight	kg	4.5	4.5	2.3
Robot/Tool Mounting Pattern		ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10
Pneumatic Feed-Throughs, Type I		8x G3/8" at 1,400 l/min	8x G3/8" at 1,400 l/min	8x G3/8" at 1,400 l/min
Pneumatic Feed-Throughs, Type II				
Lock/Unlock Pneumatic Connection		G1/8"	G1/8"	
Static Moment Mxy	Nm	784	784	784
Static Moment Mz	Nm	784	784	784
Dynamic Moment Mxy	Nm	1500	1500	1500
Dynamic Moment Mz	Nm	2000	2000	2000
Max Moment Mxy	Nm	3000	3000	3000
Max Moment Mz	Nm	5400	5400	5400
Max Locking Offset, Z	mm	3	3	
Max Locking Offset, XY	mm	±1	±1	±1
Max Locking Offset, XY Angular	°	±0.7	±0.7	±0.7
Max Locking Offset, Z Angular	°	±1	±1	±1
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7	4.2/7
Opening/Closing Time	s	0.3/0.1	0.3/0.1	
Cylinder Volume Per Double Stroke	cm³	193	193	
Module Mounting Pattern		2 x J	2 x J	2 x J
Mounting for Control Module		Flat B	Flat B	Flat B
Special Properties				

Example Configuration



Optional Utility Modules

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins / Feed-Throughs	Rating	Special Properties	Flat A	Flat B
Control	Discrete	CV14	Robot	9120-CV14PWE-M	J	M16 19-Pin Male	19	3A / 50V	Integrated Valve		•
			Tool	9120-CV10P-T	J	M16 19-Pin Female	10 *	3A / 50V	TSI, Tool ID 16x		•
Electrical	Signals	RF19	Robot	9120-RF19-M	J	M16 19-pin Male	19	3A / 125V		•	•
			Tool	9120-RF19-T	J	M16 19-pin Female	19	3A / 125V		•	•
			Tool	9120-RF14-T	J	M16 19-pin Female	14 *	3A / 125V	Tool ID 16x	•	•
			Robot	9120-RF19R-M	J	M16 19-pin Male	15 *	3A / 125V	Integrated Wiring for Lock Sensing	•	
		R19	Robot	9120-R19-M	J	Mil-Spec 19-pin Male	19	5A / 250V		•	•
			Tool	9120-R19-T	J	Mil-Spec 19-pin Female	19	5A / 250V		•	•
		G19	Robot	9120-G19-M	J	Mil-Spec 19-pin Male	19	3A / 250V	Swivel Positions	•	•
			Tool	9120-G19-T	J	Mil-Spec 19-pin Female	19	3A / 250V		•	•
		R26	Robot	9120-R26-M	J	Mil-Spec 26-pin Male	26	3A / 250V		•	•
			Tool	9120-R26-T	J	Mil-Spec 26-pin Female	26	3A / 250V		•	•
	Communication	GBX	Robot	9120-GBX-M	J	M12 X-Code	8	10Gigabit / Cat6A Ethernet	PoE	•	•
			Tool	9120-GBX-T	J	M12 X-Code		0.6A / 60V	PoE	•	•
		TE	Robot	9120-TE-M	J	M12 D-Code, 7/8" Minifast 4-pin	8	10/100Mbit / Cat5e Ethernet		•	•
			Tool	9120-TE-T	J	M12 D-Code, 7/8" Minifast 4-pin		5A / 600V		•	•
		TP	Robot	9120-TP-M	J	M12 D-Code, 7/8" Minifast 5-pin	9	PROFINET		•	•
			Tool	9120-TP-T	J	M12 D-Code, 7/8" Minifast 5-pin	9	5A / 600V		•	•
		RE5	Robot	9120-RE5-M	J	M12 D-Code	4	2A / 60V		•	•
			Tool	9120-RE5-T	J	M12 D-Code	4	2A / 60V		•	•
	Power	RL5	Robot	9120-RL5-M	J	M12 L-Code	5	16A / 63V		•	•
			Tool	9120-RL5-T	J	M12 L-Code	5	16A / 63V		•	•
		MT8	Robot	9120-MT8-M	J	Mil-Spec	8	20A / 500V		•	•
			Tool	9120-MT8-T	J	Mil-Spec	8	20A / 500V		•	•
	Servo	RES10B	Master	9120-RES10B-M	J	M23	12	3.5A/160V		•	•
			Tool	9120-RES10B-T	J	M23	12	3.5/160V		•	•
Fluid	Pneumatics	P186-E	Robot	9120-P186-M-E	J	G1/8	6	7 bar		•	•
			Tool	9120-P186-T-E	J	G1/8	6	7 bar		•	•
	Liquids	FG4	Robot	9120-FG4-M	J	G3/8	4	7 bar	Self-Sealing	•	•
			Tool	9120-FG4-T	J	G3/8	4	7 bar	Self-Sealing	•	•

* Available pins for pass-through signals are reduced for models with Tool ID function (-5) and Integrated Wiring for Lock Sensing (-4), or when combined (-9).

Tool Stand System



QC-110 Tool Stand system for safe tool storage. The vertical and cross profiles shown are not displayed to scale and are for illustrative purposes only.

#	Part Number	Part	Description
1	9120-TSM-HBQ-8439	Storage plate	TSM Tooling Interface Plate for QC-110
2	9120-TSM-VBB-8441	Storage plate, alternate	Intermediate plate lateral blank
3	9120-TSM-VBQ-8442	Storage plate, alternate	TSM Storage Plate - Side Mount (Storage Limited to <10kg)
4	9120-TSM-MMB-8432	Storage module	TSM Mounting Module
5	9120-TSM-SMA-8439	Storage sensor	PNP Prox
6	8590-9909999-07	Storage sensor cable	Optional cable for Prox sensor 5 meter female
7	9120-TSM-PM-3317	Storage profile, vertical	TSM Post Module, 0914mm (36") Post Height - Kit
	9120-TSM-PM-3353	Storage profile, vertical	TSM Post Module, 1520mm (60") Post Height - Kit
8	9120-TSM-HM-3317	Storage profile, cross	TSM Horizontal Module, 0914mm (36")
	9120-TSM-HM-3353	Storage profile, cross	TSM Horizontal Module, 1520mm (60")

Accessories



Lock Sensing

#	Part Number	Part	Description
1	8590-9909999-63	Lock sensing cables	Cable, right angle snap connector, 5M (flying leads)

Spare Parts

2	9005-20-1917	Lock sensor	PNP Lock/Unlock Sensor Subassembly
3	8590-9909999-216	Storage sensor	PNP Prox M8 Body, 0.2m Cable with M8 3-Pin Connector
	9120-110M-SEALS	Seal kit	Seal Kit, Pass-Thru Bushings + Brass Inserts

Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller.

An exploded view of a 3D printed assembly. The assembly consists of three main black plastic components: a top cylindrical piece, a middle circular flange, and a larger bottom base with multiple mounting holes. There are two sets of blue screws, each containing six screws, positioned to be inserted into the top and bottom of the assembly.

Part Number	Description
9120-160M-IP-4333	BC160, (6) or (10)M10, Boss 100, (2) D10
9120-110M-IP-4492	BC100, (6) or (6)M8, Boss 63, D8

Part Number	Part	Description
9005-20-8666	Tool sensor	Optional proximity switch for tool presence monitoring

Technical drawings of the 188 Series Master and Tool, showing dimensions and features.

Top View (Coupled): Shows the combined length of the Master and Tool, labeled as 93.1 Coupled. The Tool side is labeled (A) and the Master side is labeled (B).

Tool Side (projection only): Shows the circular face of the Tool. Key features include:

- Flat A
- Flat B
- 8X G3/8 Pneumatic Thru Ports
- Lock Sensor
- Unlock Sensor
- G1/8 Unlock Port
- G1/8 Lock Port
- 6X M10X1.5 ∇ 20 Equally Spaced Customer Interface
- 2X ϕ 10 H7 ∇ 6 Equally Spaced Customer Interface
- ϕ 80 H7 ∇ 4 Customer Interface Note 4
- B.C. ϕ 125
- 20° Typ.
- 76.2 Typ.
- 5
- 4
- 3
- 2
- 1
- 15°
- 30°
- 30°
- 30°
- 8
- 7
- 6

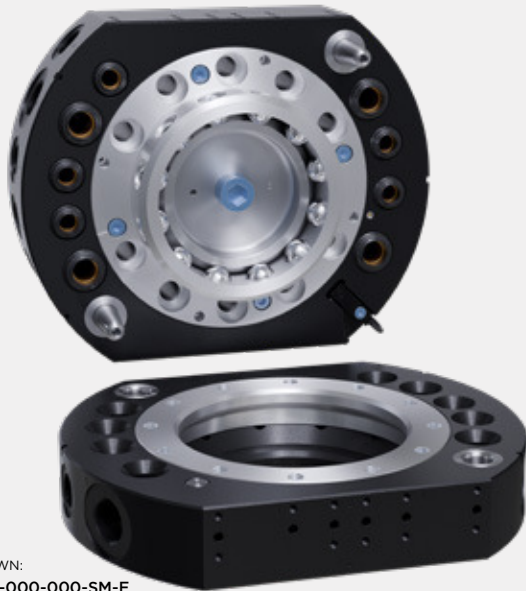
Master Side (projection only): Shows the circular face of the Master. Key features include:

- Flat A
- Flat B
- 8X G3/8 Pneumatic Thru Ports
- Lock Sensor
- Unlock Sensor
- G1/8 Unlock Port
- G1/8 Lock Port
- 6X Thru Holes for M10 SHCS ∇ 15.5 from Far Side Equally Spaced Customer Interface
- 2X ϕ 10 (Slip Fit) ∇ 12 Equally Spaced Customer Interface
- B.C. ϕ 125
- ϕ 188 Master & Tool
- Note 3
- 30°

Side Views:

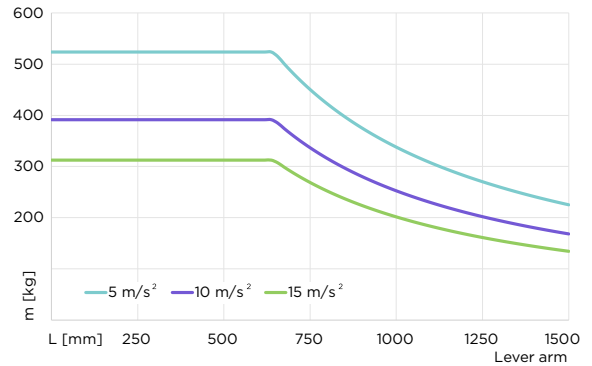
- Tool Side:** Shows dimensions: 37.7 Tool, 18.9, 17.8, 27.7, 46.6.
- Master Side:** Shows dimensions: 55.4 Master, 30 Pin, 46.6.

QC-160



MODELS SHOWN:
9120-160FM-000-000-SM-E
9120-160FT-000-000-E

Payload Capacity

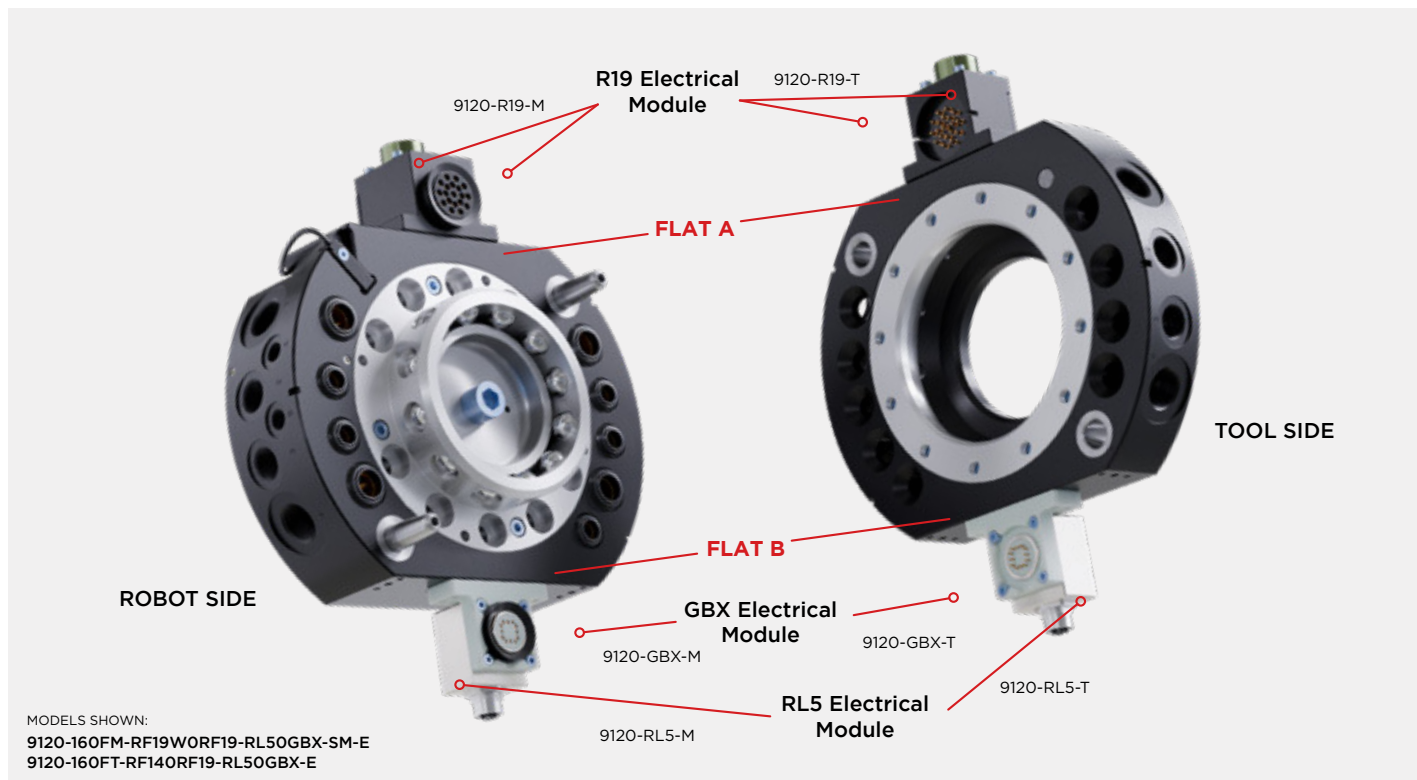


The **QC-160** Tool Changer is available in both BSPP (G) and NPT thread options. The NPT version comes in orange instead of black.

Technical Data

Item	Units	9120-160FM-000-000-SM-E	9120-160FM-000-000-S0-E	9120-160FT-000-000-E
Description		Quick-Change Master	Quick-Change Master	Quick-Change Tool
Lock Sensing		integrated	not included	
Suggested Payload Limit	kg	300	300	300
Locking Force	N	31000	31000	31000
Repeatability	mm	0.015	0.015	0.015
Weight	kg	6.5	6.5	2.9
Robot/Tool Mounting Pattern		ISO 9409-1-125-10-M10	ISO 9409-1-125-10-M10	ISO 9409-1-125-10-M10
Pneumatic Feed-Throughs, Type I		5x G3/8"at 1,400 l/min	5x G3/8"at 1,400 l/min	5x G3/8"at 1,400 l/min
Pneumatic Feed-Throughs, Type II		4x G1/2"at 1,600 l/min	4x G1/2"at 1,600 l/min	4x G1/2"at 1,600 l/min
Lock/Unlock Pneumatic Connection		G1/8"	G1/8"	
Static Moment Mxy	Nm	2710	2710	2710
Static Moment Mz	Nm	920	920	920
Dynamic Moment Mxy	Nm	5000	5000	5000
Dynamic Moment Mz	Nm	2300	2300	2300
Max Moment Mxy	Nm	10500	10500	10500
Max Moment Mz	Nm	5400	5400	5400
Max Locking Offset, Z	mm	2.5	2.5	
Max Locking Offset, XY	mm	±2	±2	±2
Max Locking Offset, XY Angular	°	±0.7	±0.7	±0.7
Max Locking Offset, Z Angular	°	±1	±1	±1
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60
Min./Max. Operating Pressure	bar	4.2/7	4.2/7	4.2/7
Opening/Closing Time	s	0.3/0.1	0.3/0.1	
Cylinder Volume Per Double Stroke	cm³	279	279	
Module Mounting Pattern		4 x J	4 x J	4 x J
Mounting for Control Module				
Special Properties				

Example Configuration

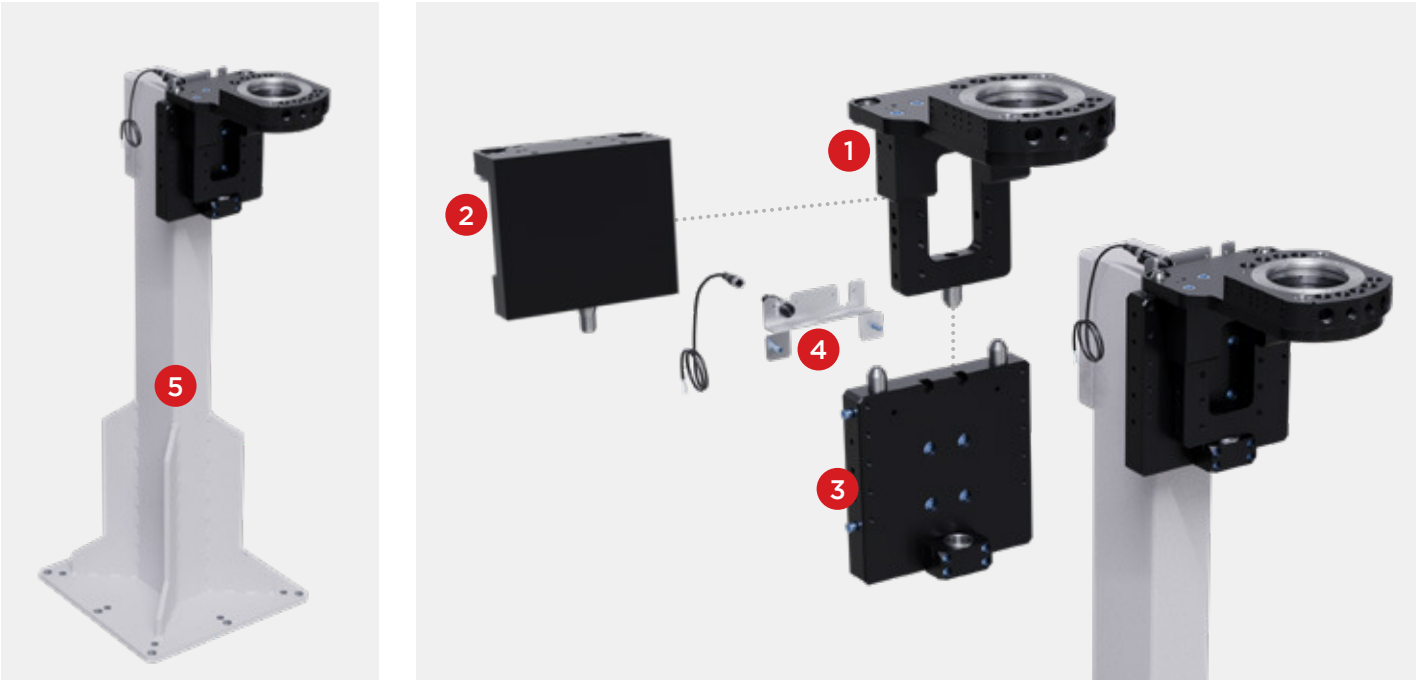


Optional Utility Modules

Category	Subcategory	Model	Type	Part Number	Mount Pattern	Connection	# Pins / Feed-Throughs	Rating	Special Properties	Flat A	Flat B
Control	It is recommended to use a QC-210 instead of QC-160 when applications require control modules with integrated valve adapters. See QC-210 instead.										
Electrical	Signals	RF19	Robot	9120-RF19-M	J	M16 19-pin Male	19	3A / 125V		•	•
			Tool	9120-RF19-T	J	M16 19-pin Female	19	3A / 125V		•	•
			Tool	9120-RF14-T	J	M16 19-pin Female	14 *	3A / 125V	Tool ID 16x Integrated Wiring for Lock Sensing	•	•
			Robot	9120-RF19R-M	J	M16 19-pin Male	15 *	3A / 125V		•	•
		R19	Robot	9120-R19-M	J	Mil-Spec 19-pin Male	19	5A / 250V		•	•
			Tool	9120-R19-T	J	Mil-Spec 19-pin Female	19	5A / 250V		•	•
		G19	Robot	9120-G19-M	J	Mil-Spec 19-pin Male	19	3A / 250V	Swivel Positions	•	•
			Tool	9120-G19-T	J	Mil-Spec 19-pin Female	19	3A / 250V		•	•
	Communication	GBX	Robot	9120-GBX-M	J	M12 X-Code	8	10Gigabit / Cat6A Ethernet 0.6A / 60V	PoE	•	•
			Tool	9120-GBX-T	J	M12 X-Code			PoE	•	•
		TE	Robot	9120-TE-M	J	M12 D-Code, 7/8" Minifast 4-pin	8	10/100Mbit / Cat5e Ethernet 5A / 600V		•	•
			Tool	9120-TE-T	J	M12 D-Code, 7/8" Minifast 4-pin				•	•
		TP	Robot	9120-TP-M	J	M12 D-Code, 7/8" Minifast 5-pin	9	PROFINET		•	•
			Tool	9120-TP-T	J	M12 D-Code, 7/8" Minifast 5-pin	9	5A / 600V		•	•
		RE5	Robot	9120-RE5-M	J	M12 D-Code	4	2A / 60V		•	•
			Tool	9120-RE5-T	J	M12 D-Code	4	2A / 60V		•	•
	Power	RL5	Robot	9120-RL5-M	J	M12 L-Code	5	16A / 63V		•	•
			Tool	9120-RL5-T	J	M12 L-Code	5	16A / 63V		•	•
		MT8	Robot	9120-MT8-M	J	Mil-Spec	8	20A / 500V		•	•
			Tool	9120-MT8-T	J	Mil-Spec	8	20A / 500V		•	•
	Servo	RES10B	Master	9120-RES10B-M	J	M23	12	3.5A/160V		•	•
			Tool	9120-RES10B-T	J	M23	12	3.5/160V		•	•
Fluid	Pneumatics	P186-E	Robot	9120-P186-M-E	J	G1/8	6	7 bar		•	•
			Tool	9120-P186-T-E	J	G1/8	6	7 bar		•	•
	Liquids	FG4	Robot	9120-FG4-M	J	G3/8	4	7 bar	Self-Sealing	•	•
			Tool	9120-FG4-T	J	G3/8	4	7 bar	Self-Sealing	•	•

* Available pins for pass-through signals are reduced for models with Tool ID function (-5) and Integrated Wiring for Lock Sensing (-4), or when combined (-9).

Tool Stand System



#	Part Number	Part	Description
1	9120-TSL-HBQ-8389	Storage plate	TSL Tooling Interface Plate for QC-160
2	9120-TSL-VBB-3328	Storage plate, alternate	TSL Vertical Tooling Interface Plate - Blank
3	9120-TSL-RMB-R000	Storage module	TSL Pin & Bushing Mounting Module
4	9120-TSL-SMA-8090	Storage sensor	Storage sensor with bracket
5	3700-20-7569	Storage profile, vertical	TSL Post Weldment, 1220mm (48") Tall

Accessories



Lock Sensing

#	Part Number	Part	Description
1	8590-9909999-15	Lock sensing cables	5m Cable, M8 Straight Threaded Connector, Flying Leads

Spare Parts

2	9005-20-1917	Lock sensing	PNP Lock/Unlock Sensor Subassembly
3	8590-9909999-92	Storage sensor	PNP Prox 18mm Barrel 12mm Range, Shielded
	9120-160M-SEALS	Seal kit	Seal Kit, Piston Seals and Pass-Thru Bushings

Lock / Unlock sensors monitor the piston stroke position. Two are required and can come integrated (optional) with each tool changer or lock sensing kit, depending on model. For single replacement sensors (including mounting hardware) see below. Optional cables can connect the sensors to the robot controller.

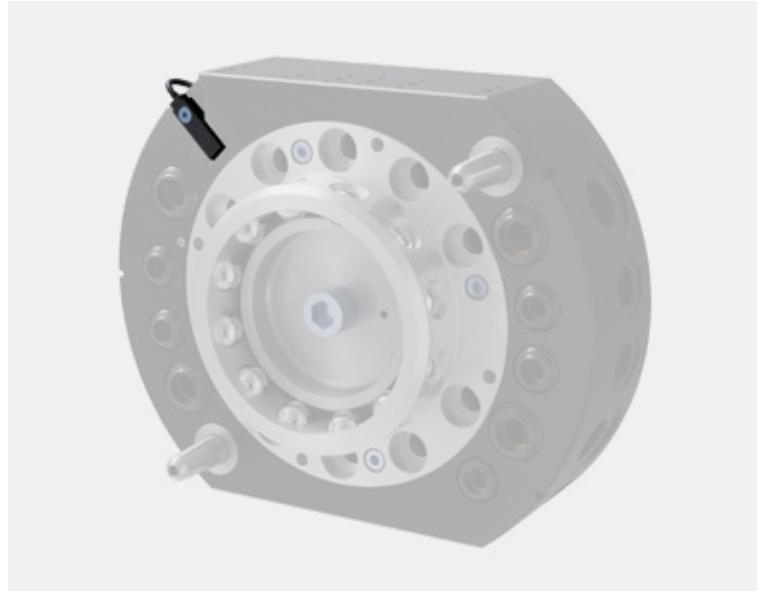
Robot Adapter Plates



Robot adapter plate for mounting Quick-Change Master to different robot flanges. For detailed information, refer to individual drawings.

Part Number	Description
9120-160M-IP-4333	BC160, (6) or (10) M10, Boss 100, (2) Dowel 10
9120-160M-IP-4492	100 BC, (6) M8, Boss 63, (1) Dowel 8

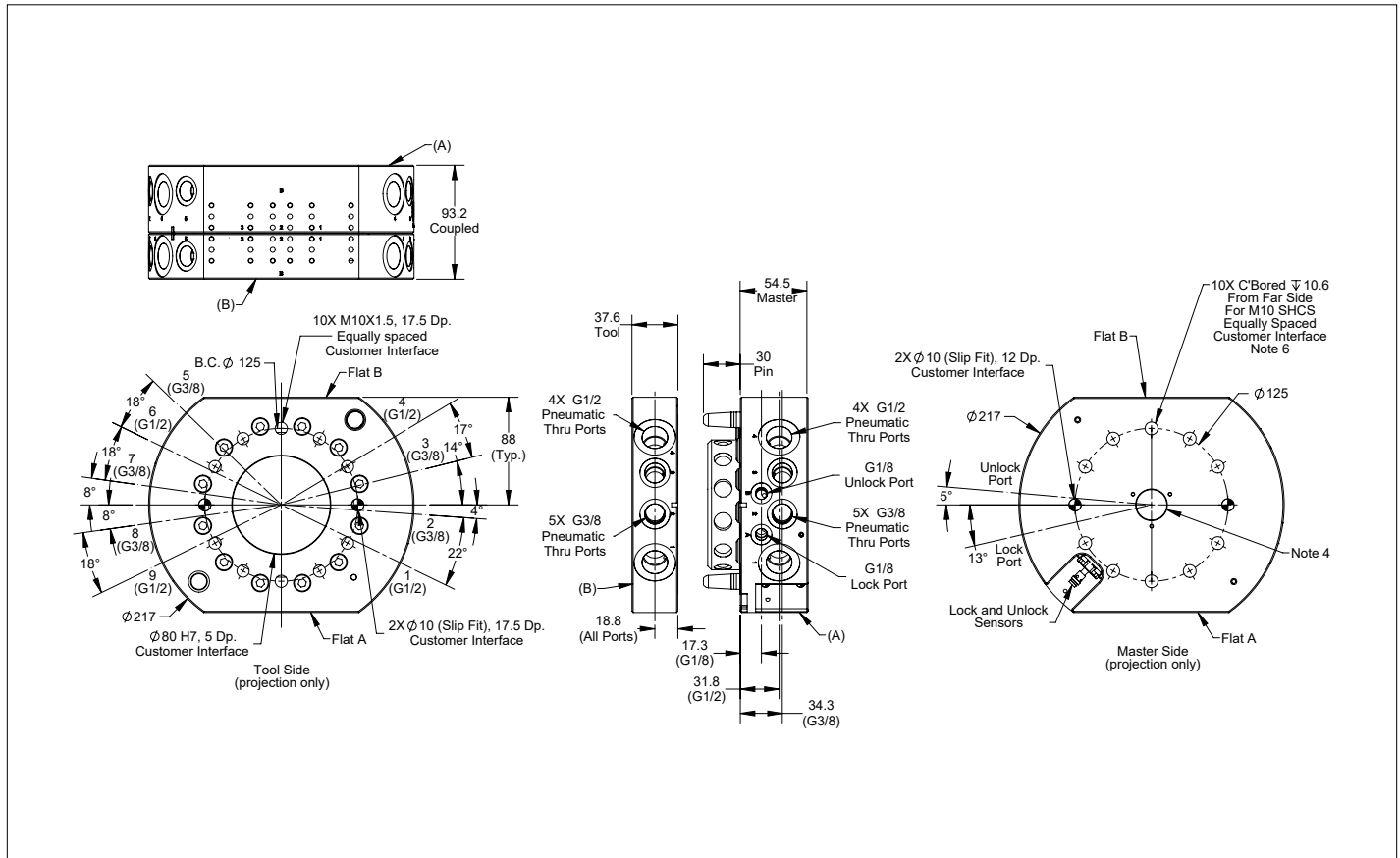
Tool Present Sensor



Optional proximity sensor can be installed on the QC Master to indicate when the QC Tool is positioned within the max locking offset, indicating a Ready-to-Lock ("RTL") condition. When used in combination with the lock sensor, a "Tool Present" condition can be continuously monitored by the robot.

Part Number	Part	Description
9005-20-8666	Tool sensor	Optional proximity switch for tool presence monitoring

Drawing

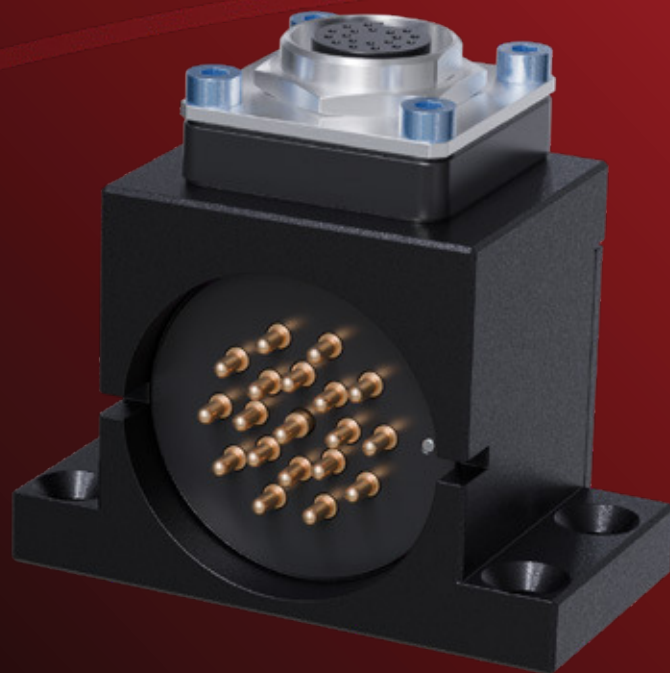




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A15



MODELS SHOWN:
9120-A15-M-E
9120-A15-T-E

Technical Data

Item	Units	9120-A15-M-E	9120-A15-T-E	9120-A15-M	9120-A15-T
Suitable on		Quick-Change Master	Quick-Change Tool	Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		M7	M7	M7	M7
Transmission Type		Signals	Signals	Signals	Signals
Weight	kg	0.02	0.02	0.02	0.02
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60
Number of pin contacts		15	15	15	15
Nominal current	A	2	2	2	2
Alternating voltage	V AC	50	50	50	50
Direct voltage	V DC	50	50	50	50
Electrical Connection		D-Sub, High Density	D-Sub, High Density	D-Sub, High Density	D-Sub, High Density
Connection Type		Pin (Male)	Socket (Female)	Pin (Male)	Socket (Female)
Connection Outlet		Radial	Radial	Radial	Radial
Special Properties		M3 metric threads for D-Sub screw locks	M3 metric threads for D-Sub screw locks	4-40 UNC threads for D-Sub screw locks	4-40 UNC threads for D-Sub screw locks

E06

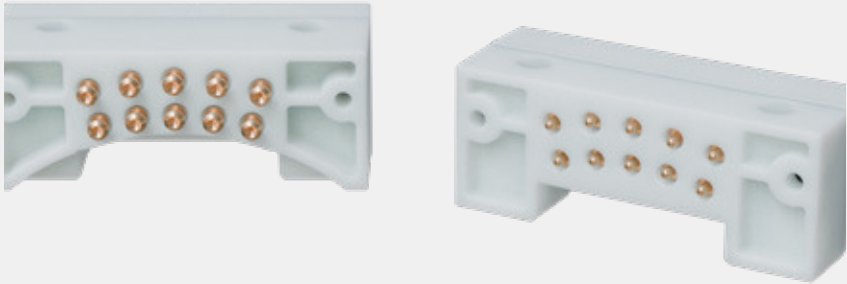


MODELS SHOWN:
9120-E06-M
9120-E06-T

Technical Data

Item	Units	9120-E06-M	9120-E06-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		M1	M1
Transmission Type		Signals	Signals
Weight	kg	0.005	0.005
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		6	6
Nominal current	A	3	3
Alternating voltage	V AC	50	50
Direct voltage	V DC	50	50
Electrical Connection		Solder contacts	Solder contacts
Connection Outlet		Axial	Axial
Special Properties		Customer provides cable, solders cable stands directly to contacts, and provides strain relief.	Customer provides cable, solders cable stands directly to contacts, and provides strain relief.

E10

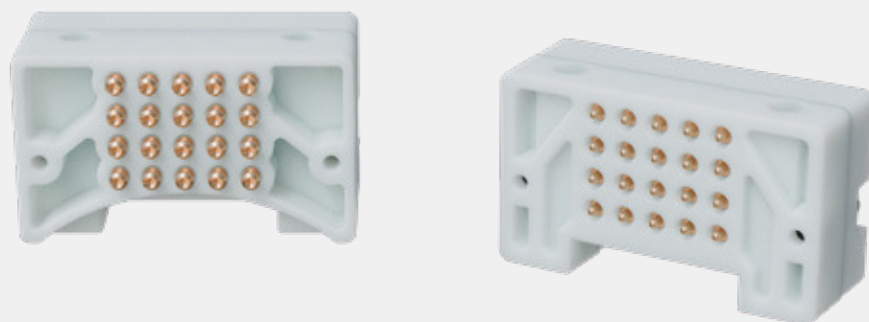


MODELS SHOWN:
9120-E10M-010
9120-E10T-010

Technical Data

Item	Units	9120-E10M-010	9120-E10T-010
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		M7	M7
Transmission Type		Signals	Signals
Weight	kg	0.009	0.008
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		10	10
Nominal current	A	3	3
Alternating voltage	V AC	50	50
Direct voltage	V DC	50	50
Electrical Connection		Solder contacts	Solder contacts
Connection Outlet		Axial	Axial
Special Properties		Customer provides cable, solders cable stands directly to contacts, and provides strain relief.	Customer provides cable, solders cable stands directly to contacts, and provides strain relief.

E20



MODELS SHOWN:
9120-E10M-010
9120-E10T-010

Technical Data

Item	Units	9120-E20M-010	9120-E20T-010
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		M7	M7
Transmission Type		Signals	Signals
Weight	kg	0.015	0.017
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		20	20
Nominal current	A	3	3
Alternating voltage	V AC	50	50
Direct voltage	V DC	50	50
Electrical Connection		Solder contacts	Solder contacts
Connection Outlet		Axial	Axial
Special Properties		Customer provides cable, solders cable stands directly to contacts, and provides strain relief.	Customer provides cable, solders cable stands directly to contacts, and provides strain relief.

G19



MODELS SHOWN:
9210-G19-M
9120-G19-T

Technical Data

Item	Units	9120-G19-M	9120-G19R-M	9120-G19W-M	9120-G19-T	9120-G14-T
Suitable on		Quick-Change Master	Quick-Change Master	Quick-Change Master	Quick-Change Tool	Quick-Change Tool
Module Mounting Pattern		J	J	J	J	J
Transmission Type		Signals	Signals	Signals	Signals	Signals
Weight	kg	0.13	0.17	0.17	0.11	0.15
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60	5/60
Number of pin contacts		19	15	15	19	14
Nominal current	A	3	3	3	3	3
Alternating voltage	V AC	250	250	250	250	250
Direct voltage	V DC	250	250	250	250	250
Electrical Connection		Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts
Connection Type		Pin (Male)	Pin (Male)	Pin (Male)	Socket (Female)	Socket (Female)
Connection Outlet		Radial, adjustable position	Radial, adjustable position	Radial, adjustable position	Radial, adjustable position	Radial, adjustable position
Special Properties		Customer provides cable, solders cable strands directly to contacts, and provides strain relief.	Ship in center position, customer can swivel to five positions. Two integrated cable with right-angle M8 socket (A-code, 3-pin), for connection of lock and unlock sensors.	Ship in center position, customer can swivel to five positions. Two integrated cable with straight M8 socket (A-code, 3-pin), for connection of lock and unlock sensors.	Ship in center position, customer can swivel to five positions.	Ship in center position, customer can swivel to five positions. Equipped with Tool ID rotary switching for customer coding of 0-15 tools, designed for 0.15 and 24 V max.

G26



MODELS SHOWN:
9120-G26-M
9120-G26-T

Technical Data

Item	Units	9120-G26-M	9120-G26R-M	9120-G26W-M	9120-G26-T	9120-G21-T
Suitable on		Quick-Change Master	Quick-Change Master	Quick-Change Master	Quick-Change Tool	Quick-Change Tool
Module Mounting Pattern		J	J	J	J	J
Transmission Type		Signals	Signals	Signals	Signals	Signals
Weight	kg	0.14	0.2	0.2	0.12	0.16
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60	5/60
Number of pin contacts		26	22	22	26	21
Nominal current	A	3	3	3	3	3
Alternating voltage	V AC	250	250	250	250	250
Direct voltage	V DC	250	250	250	250	250
Electrical Connection		Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts
Connection Type		Pin (Male)	Pin (Male)	Pin (Male)	Socket (Female)	Socket (Female)
Connection Outlet		Radial, adjustable position	Radial, adjustable position	Radial, adjustable position	Radial, adjustable position	Radial, adjustable position
Special Properties		Ship in center position, customer can swivel to five positions.	Ship in center position, customer can swivel to five positions. Two integrated cable with riht-angle M8 socket (A-code, 3-pin), for connection of lock and unlock sensors.	Ship in center position, customer can swivel to five positions. Two integrated cable with straight M8 socket (A-code, 3-pin), for connection of lock and unlock sensors.	Ship in center position, customer can swivel to five positions.	Ship in center position, customer can swivel to five positions. Equipped with Tool ID rotary switch for customer coding of 0-15 tools, designed for 0.15 and 24 V max.

GD4



MODELS SHOWN:
9120-GD4-M
9120-GD4-T

Technical Data

Item	Units	9120-GD4-M	9120-GD4-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Signals	Signals
Weight	kg	0.15	0.12
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		4	4
Nominal current	A	4	4
Alternating voltage	V AC	250	250
Direct voltage	V DC	250	250
Electrical Connection		M12 threaded connector, A-coded, 4-pin	M12 connector, A-coded, 4-pin
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Radial, adjustable positions	Radial, adjustable positions
Special Properties		Ship in center position, customer can swivel to five positions.	Ship in center position, customer can swivel to five positions.

GF19



MODELS SHOWN:
9120-GF19-M
9120-GF19-T

Technical Data

Item	Units	9120-GF19-M	9120-GF19W-M	9120-GF19-T	9120-GF14-T
Suitable on		Quick-Change Master	Quick-Change Master	Quick-Change Tool	Quick-Change Tool
Module Mounting Pattern		J	J	J	J
Transmission Type		Signals	Signals	Signals	Signals
Weight	kg	0.14	0.17	0.12	0.14
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60
Number of pin contacts		19	15	19	14
Nominal current	A	3	3	3	3
Alternating voltage	V AC	125	125	125	125
Direct voltage	V DC	125	125	125	125
Electrical Connection		M16 connector, 19-pin	M16 connector, 19-pin	M16 connector, 19-pin	M16 connector, 19-pin
Connection Type		Pin (Male)	Pin (Male)	Socket (Female)	Socket (Female)
Connection Outlet		Radial, adjustable positions	Radial, adjustable positions	Radial, adjustable positions	Radial, adjustable positions
Special Properties		Ship in center position, customer can swivel to five positions.	Ship in center position, customer can swivel to five positions. Two integrated cable with straight M8 socket (A-code, 3-pin), for connection of lock and unlock sensors.	Ship in center position, customer can swivel to five positions.	Ship in center position, customer can swivel to five positions. Equipped with Tool ID rotary switch for customer coding of 0-15 tools, designed for 0.15 and 24 V max.

K12

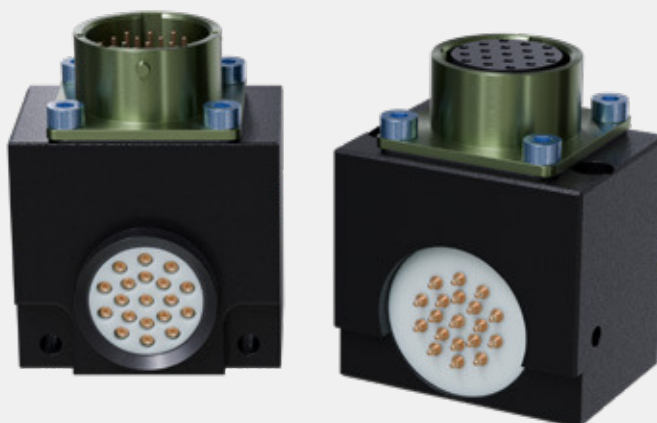


MODELS SHOWN:
9120-K12-M
9120-K12-T

Technical Data

Item	Units	9120-K12-M	9120-K12-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		K	K
Transmission Type		Signals	Signals
Weight	kg	0.07	0.07
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		12	12
Nominal current	A	2	2
Alternating voltage	V AC	50	50
Direct voltage	V DC	50	50
Electrical Connection		M12 connector, A-coded, 12-pin	M12 connector, A-coded, 12-pin
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Radial	Radial

K19

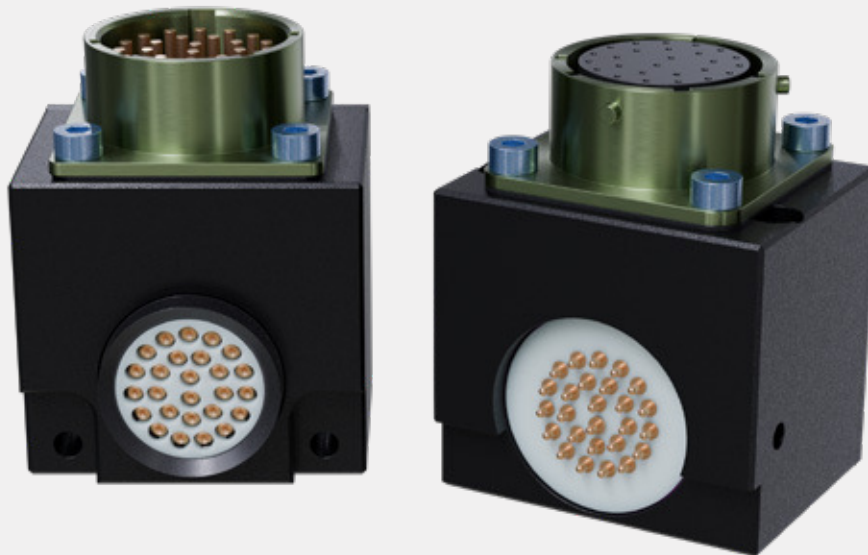


MODELS SHOWN:
9120-K19-M
9120-K19-T

Technical Data

Item	Units	9120-K19-M	9120-K19P-M	9120-K19W-K	9120-K19A-M-S1	9120-K19-T	9120-K14-T	9120-K19A-T-S1
Suitable on		Quick-Change Master	Quick-Change Master	Quick-Change Master	Quick-Change Master	Quick-Change Tool	Quick-Change Tool	Quick-Change Tool
Module Mounting Pattern		K	K	K	K	K	K	K
Transmission Type		Signals	Signals	Signals	Signals	Signals	Signals	Signals
Weight	kg	0.14	0.12	0.11	0.1	0.13	0.11	0.11
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60	5/60	5/60	5/60
Number of pin contacts		19	15	15	19	19	14	19
Nominal current	A	3	3	3	3	3	3	3
Alternating voltage	V AC	50	50	50	250	50	50	250
Direct voltage	V DC	50	50	50	250	50	50	250
Electrical Connection		Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Solder contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Solder contacts
Connection Type		Pin (Male)	Pin (Male)	Pin (Male)		Socket (Female)	Socket (Female)	
Connection Outlet		Radial	Radial	Radial	User-Configurable	Radial	Radial	User-Configurable
Electrical Connection (Other)					M16 cable gland for Ø 5 - 10mm			M16 cable gland for Ø 5 - 10mm
Special Properties			For use with QC-20/21 only . Two integrated sockets (A-coded, 3-pin) in the module housing for connection of lock and unlock sensors.	For use with QC-60 only . Two integrated cables with straight M8 socket (A-coded, 3-pin), for connection of lock and unlock sensors.	The KIT includes additional attachment with various outlet options. Customer provides cable, configures outlet direction, and solders cable strands directly to contacts.	Customer to provide housing cover plate and cable gland with this module. Customer to solder the cable strands to the pin block.	Equipped with Tool ID rotary switch for customer coding of 0-15 tools, designed for 0.15 A and 24 V max.	The KIT includes additional attachment with various outlet options. Customer provides cable, configures outlet direction, and solders cable strands directly to contacts.

K26



MODELS SHOWN:
9120-K26-M
9120-K26-T

Technical Data

Item	Units	9120-K26-M	9120-K26P-M	9120-K26-T	9120-K21-T
Suitable on		Quick-Change Master	Quick-Change Master	Quick-Change Tool	Quick-Change Tool
Module Mounting Pattern		K	K	K	K
Transmission Type		Signals	Signals	Signals	Signals
Weight	kg	0.1	0.14	0.08	0.11
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60
Number of pin contacts		26	22	26	21
Nominal current	A	3	3	3	3
Alternating voltage	V AC	50	50	50	50
Direct voltage	V DC	50	50	50	50
Electrical Connection		Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts	Amphenol Pt Series(MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts
Connection Type		Pin (Male)	Pin (Male)	Socket (Female)	Socket (Female)
Connection Outlet		Radial	Radial	Radial	Radial
Special Properties			For use with QC-20/21 only . Two integrate sockets (A-code, 3 pin) in the module housing for connection of lock and unlock sensors.		Equipped with tool ID rotary switch for customer coding of 0-15 tools, designed for 0.15 A and 24 V max.

KF19



MODELS SHOWN:
9120-KF19-M
9120-KF19-T

Technical Data

Item	Units	9120-KF19-M	9120-KF19P-M	9120-KF19-T	9120-KF14-T
Suitable on		Quick-Change Master	Quick-Change Master	Quick-Change Tool	Quick-Change Tool
Module Mounting Pattern		K	K	K	K
Transmission Type		Signals	Signals	Signals	Signals
Weight	kg	0.11	0.12	0.11	0.1
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60
Number of pin contacts		19	15	19	14
Nominal current	A	3	3	5/60	3
Alternating voltage	V AC	50	50	50	50
Direct voltage	V DC	50	50	50	50
Electrical Connection		M16 connector, 19-pin	M16 connector, 19-pin	M16 connector, 19-pin	M16 connector, 19-pin
Connection Type		Pin (Male)	Pin (Male)	Socket (Female)	Socket (Female)
Connection Outlet		Radial	Radial	Radial	Radial
Special Properties			For use with QC-20/21 only . Two integrated sockets (A-coded, 3-pin) in the module housing for connection of lock and unlock sensors.		Equipped with Tool ID rotary switch for customer coding of 0-15 tools, designed for 0.15 A and 24 V max.

M8



MODELS SHOWN:
9120-M8M-011
9120-M8T-011

Technical Data

Item	Units	9120-M8M-011	9120-M8T-011
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		M7	M7
Transmission Type		Signals	Signals
Weight	kg	0.034	0.034
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		8	8
Nominal current	A	1.5	1.5
Alternating voltage	V AC	30	30
Direct voltage	V DC	30	30
Electrical Connection		M8 connector, 8-pin	M8 connector, 8-pin
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Radial	Radial
Special Properties		The optional module and the adapter plate for assembly on the quick-change system are included in the scope of delivery.	The optional module and the adapter plate for assembly on the quick-change system are included in the scope of delivery.

ML8



MODELS SHOWN:
9120-ML8-M
9120-ML8-T

Technical Data

Item	Units	9120-ML8-M	9120-ML8-T	9120-ML8A-M	9120-ML8A-T	9120-ML6-T
Suitable on		Quick-Change Master	Quick-Change Tool	Quick-Change Master	Quick-Change Tool	Quick-Change Tool
Module Mounting Pattern		M7	M7	M7	M7	M7
Transmission Type		Signals	Signals	Signals	Signals	Signals
Weight	kg	0.04	0.03	0.03	0.03	0.03
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60	5/60
Number of pin contacts		8	8	8	8	8
Nominal current	A	1	1	1	1	1
Alternating voltage	V AC	60	60	60	60	60
Direct voltage	V DC	30	30	30	30	30
Electrical Connection		Integrated 0.25m cable with right-angle M8 connector, A-Coded 8-pin	M8 connector, A-Coded 8-pin	M8 connector, A-Coded 8-pin	2x M8 connector, A-coded, 4-pin	2x M8 connector, A-coded, 3-pin
Connection Type		Socket (Female)	Pin (Male)	Pin (Male)	Socket (Female)	Socket (Female)
Connection Outlet		Side	Side	Side	Side	Side
Special Properties		Reverse gender compatible with COBOT wrist standard.	Reverse gender compatible with COBOT wrist standard.			

ML12



MODELS SHOWN:
9120-ML12-M
9120-ML12-T

Technical Data

Item	Units	9120-ML12-M	9120-ML12-T	9120-ML12R-M	9120-ML12R-T
Suitable on		Quick-Change Master	Quick-Change Tool	Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		M7+	M7+	M7+	M7+
Transmission Type		Signals	Signals	Signals	Signals
Weight	kg	0.045	0.045	0.045	0.045
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60
Number of pin contacts		12	12	12	12
Nominal current	A	1	1	1	1
Alternating voltage	V AC	50	50	50	50
Direct voltage	V DC	50	50	50	50
Electrical Connection		M12 connector, A-coded, 12-pin	M12 connector, A-coded, 12-pin	M12 connector, A-coded, 12-pin	M12 connector, A-coded, 12-pin
Connection Type		Pin (Male)	Socket (Female)	Pin (Male)	Socket (Female)
Connection Outlet		Side (right)	Side (right)	Side (right)	Side (right)
Special Properties		The optional module and the adapter plate for assembly on the quick-change system are included in the scope of delivery.	The optional module and the adapter plate for assembly on the quick-change system are included in the scope of delivery.	The optional module and the adapter plate for assembly on the quick-change system are included in the scope of delivery.	The optional module and the adapter plate for assembly on the quick-change system are included in the scope of delivery.

R12



MODELS SHOWN:
9120-R12-M
9120-R12-T

Technical Data

Item	Units	9120-R12-M	9120-R12-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Signals	Signals
Weight	kg	0.2	0.14
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		12	12
Nominal current	A	2	2
Alternating voltage	V AC	60	60
Direct voltage	V DC	75	75
Electrical Connection		M12 connector, A-coded, 12-pin	M12 connector, A-coded, 12-pin
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Radial	Radial

R19



MODELS SHOWN:
9120-R19-M
9120-R19-T

Technical Data

Item	Units	9120-R19-M	9120-R19R-M	9120-R19W-M	9120-R19B-M-S1	9120-R19-T	9120-R14-T	9120-RW10-T	9120-R19B-T-S1
Suitable on		Quick-Change Master	Quick-Change Master	Quick-Change Master	Quick-Change Master	Quick-Change Tool	Quick-Change Tool	Quick-Change Tool	Quick-Change Tool
Module Mounting Pattern		J	J	J	J	J	J	J	J
Transmission Type		Signals	Signals	Signals	Signals	Signals	Signals	Signals	
Weight	kg	0.2	0.16	0.19	0.2	0.14	0.14	0.14	0.14
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60	5/60	5/60	5/60	5/60
Number of pin contacts		19	15	15	19	19	14	10	19
Nominal current	A	5	5	5	5	5	5	5	5
Alternating voltage	V AC	50	250	250	250	250	250	250	250
Direct voltage	V DC	50	250	250	250	250	250	250	250
Electrical Connection		Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Solder contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Solder contacts
Connection Type		Pin (Male)	Pin (Male)	Pin (Male)		Socket (Female)	Socket (Female)	Socket (Female)	
Connection Outlet		Radial	Radial	Radial	User-Configurable	Radial	Radial	Radial	User-Configurable
Electrical Connection (Other)					M16 cable gland for Ø 5 - 10 mm				M16 cable gland for Ø 5 - 10 mm
Special Properties			Two integrated cables with right-angle M8 socket (A-coded, 3-pin), for connection of lock and unlock sensors.	Two integrated cables with straight M8 socket (A-coded, 3-pin), for connection of lock and unlock sensors.	The KIT includes additional attachment with various outlet options. Customer provides cable, configures outlet direction, and solders cable strands directly to contacts.		Equipped with Tool ID push-button switch for customer coding of 0-15 tools , designed for 0.15 A and 24 V max.	Equipped with Tool ID push-button switch for customer coding of 0-99 tools , designed for 0.15 A and 24 V max.	The KIT includes additional attachment with various outlet options. Customer provides cable, configures outlet direction, and solders cable strands directly to contacts.

R26



MODELS SHOWN:
9120-R26-M
9120-R26-T

Technical Data

Item	Units	9120-R26-M	9120-R26R-M	9120-R26W-M	9120-R26-T	9120-R21-T	9120-R17-T
Suitable on		Quick-Change Master	Quick-Change Master	Quick-Change Master	Quick-Change Tool	Quick-Change Tool	Quick-Change Tool
Module Mounting Pattern		J	J	J	J	J	J
Transmission Type		Signals	Signals	Signals	Signals	Signals	Signals
Weight	kg	0.2	0.16	0.22	0.19	0.28	0.43
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60	5/60	5/60
Number of pin contacts		26	22	22	26	21	17
Nominal current	A	3	3	3	3	3	3
Alternating voltage	V AC	250	250	250	250	250	250
Direct voltage	V DC	250	250	250	250	250	250
Electrical Connection		Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts
Connection Type		Pin (Male)	Pin (Male)	Pin (Male)	Socket (Female)	Socket (Female)	Socket (Female)
Connection Outlet		Radial	Radial	Radial	Radial	Radial	Radial
Special Properties			Two integrated cables with right-angle M8 socket (A-coded, 3-pin), for connection of lock and unlock sensors.	Two integrated cables with straight M8 socket (A-coded, 3-pin), for connection of lock and unlock sensors.		Equipped with Tool ID push-button switch for customer coding of 0-15 tools , designed for 0.15 A and 24 V max.	Equipped with Tool ID push-button switch for customer coding of 0-99 tools , designed for 0.15 A and 24 V max.

R32



MODELS SHOWN:
9120-R32-M
9120-R32-T

Technical Data

Item	Units	9120-R32-M	9120-R32R-M	9120-R32W-M	9120-R32-T
Suitable on		Quick-Change Master	Quick-Change Master	Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J	J	J
Transmission Type		Signals	Signals	Signals	Signals
Weight	kg	0.33	0.29	0.29	0.25
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60
Number of pin contacts		32	32	32	32
Nominal current	A	3	3	3	3
Alternating voltage	V AC	250	250	250	250
Direct voltage	V DC	250	250	250	250
Electrical Connection		Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 32 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 32 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 32 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 32 Contacts
Connection Type		Pin (Male)	Pin (Male)	Pin (Male)	Socket (Female)
Connection Outlet		Radial	Radial	Radial	Radial
Special Properties			Two integrated cables with right-angle M8 socket (A-coded, 3-pin), for connection of lock and unlock sensors.	Two integrated cables with straight M8 socket (A-coded, 3-pin), for connection of lock and unlock sensors.	

RF19



MODELS SHOWN:
9120-RF19-M
9120-RF19-T

Technical Data

Item	Units	9120-RF19-M	9120-RF19R-M	9120-RF19W-M	9120-RF19-T	9120-RF14-T	9120-RF10-T
Suitable on		Quick-Change Master	Quick-Change Master	Quick-Change Master	Quick-Change Tool	Quick-Change Tool	Quick-Change Tool
Module Mounting Pattern		J	J	J	J	J	J
Transmission Type		Signals	Signals	Signals	Signals	Signals	Signals
Weight	kg	0.2	0.21	0.21	0.13	0.28	0.28
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60	5/60	5/60
Number of pin contacts		19	15	15	19	14	10
Nominal current	A	3	3	3	3	3	3
Alternating voltage	V AC	150	150	150	150	150	150
Direct voltage	V DC	150	150	150	150	150	150
Electrical Connection		M16 connector, 19-pin	M16 connector, 19-pin	M16 connector, 19-pin	M16 connector, 19-pin	M16 connector, 19-pin	M16 connector, 19-pin
Connection Type		Pin (Male)	Pin (Male)	Pin (Male)	Socket (Female)	Socket (Female)	Socket (Female)
Connection Outlet		Radial	Radial	Radial	Radial	Radial	Radial
Special Properties			Two integrated cables with right-angle M8 socket (A-coded, 3-pin), for connection of lock and unlock sensors.	Two integrated cables with straight M8 socket (A-coded, 3-pin), for connection of lock and unlock sensors.		Equipped with Tool ID push-button switch for customer coding of 0-15 tools , designed for 0.15 A and 24 V max.	Equipped with Tool ID push-button switch for customer coding of 0-99 tools , designed for 0.15 A and 24 V max.

RK19



MODELS SHOWN:
9120-RK19-M
9120-RK19-T

Technical Data

Item	Units	9120-RK19-M	9120-RK19-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Signals	Signals
Weight	kg	0.25	0.19
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		19	19
Nominal current	A	3	3
Alternating voltage	V AC	150	150
Direct voltage	V DC	150	150
Electrical Connection		Intercontec M23 threaded connector	Intercontec M23 threaded connector
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Radial	Radial

S19



MODELS SHOWN:
9120-S19-M
9120-S19-T

Technical Data

Item	Units	9120-S19-M	9120-S19-T	9120-S14-T
Suitable on		Quick-Change Master	Quick-Change Tool	Quick-Change Tool
Module Mounting Pattern		J	J	J
Transmission Type		Signals	Signals	Signals
Weight	kg	0.215	0.15	0.2
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60
Number of pin contacts		19	19	14
Nominal current	A	5	5	5
Alternating voltage	V AC	250	250	250
Direct voltage	V DC	250	250	250
Electrical Connection		Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	M16 connector, 19-pin Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 19 Contacts
Connection Type		Pin (Male)	Socket (Female)	Socket (Female)
Connection Outlet		Axial	Axial	Axial
Special Properties				Equipped with Tool ID rotary switch for customer coding of 0-15 tools, designed for 0.15 A and 24 V max.

S26



MODELS SHOWN:
9120-S26-M
9120-S26-T

Technical Data

Item	Units	9120-S26-M	9120-S26-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Signals	Signals
Weight	kg	0.22	0.16
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		26	26
Nominal current	A	3	3
Alternating voltage	V AC	250	250
Direct voltage	V DC	250	250
Electrical Connection		Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts	Amphenol PT Series (MIL-DTL-26482) Circular Connector, Bayonet Lock, 26 Contacts
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Axial	Axial

SF19

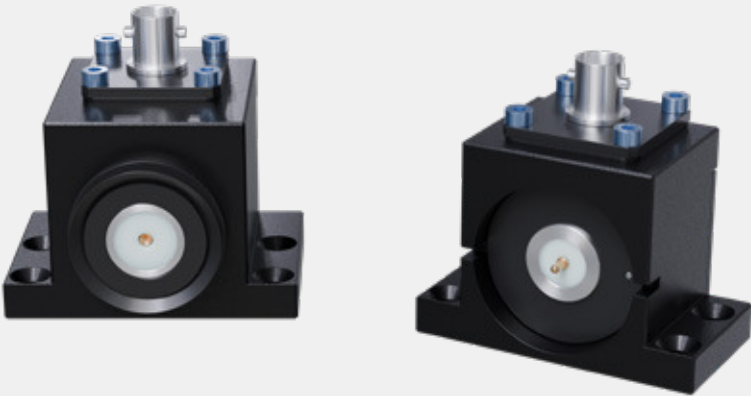


MODELS SHOWN:
9120-SF19-M
9120-SF19-T

Technical Data

Item	Units	9120-SF19-M	9120-SF19-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Signals	Signals
Weight	kg	0.2	0.15
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		19	19
Nominal current	A	3	3
Alternating voltage	V AC	150	150
Direct voltage	V DC	150	150
Electrical Connection		M16 connector, 19-pin	M16 connector, 19-pin
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Axial	Axial

X7B



MODELS SHOWN:
9120-X7B-M
9120-X7B-T

Technical Data

Item	Units	9120-X7B-M	9120-X7B-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Signals	Signals
Weight	kg	0.16	0.12
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		1	1
Nominal current	A	4	4
Alternating voltage	V AC	500	500
Direct voltage	V DC	500	500
Electrical Connection		BNC Bulkhead Jack, RF Coax, Bayonet Lock	BNC Bulkhead Jack, RF Coax, Bayonet Lock
Connection Type		Socket (Female)	Socket (Female)
Connection Outlet		Radial	Radial
Frequency	kHz	1000	1000
Impedence	Ohm	50	50
Special Properties		Coaxial cable feed-through for high-frequency signals applications like sensor feedback, RF, data, and lab testing (e.g., antennas, oscilloscopes). Shielding insulated from module housing to minimize EMI.	Coaxial cable feed-through for high-frequency signals applications like sensor feedback, RF, data, and lab testing (e.g., antennas, oscilloscopes). Shielding insulated from module housing to minimize EMI.

X7G



MODELS SHOWN:
9120-X7G-M
9120-X7G-T

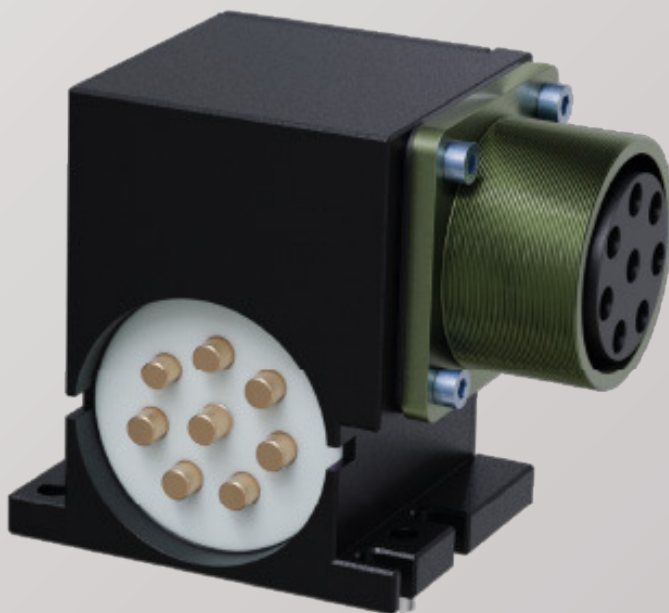
Technical Data

Item	Units	9120-X7G-M	9120-X7G-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Ultrasonic	Ultrasonic
Weight	kg	0.175	0.135
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		1	1
Nominal current	A	3	3
Alternating voltage	V AC	2000	2000
Direct voltage	V DC	2000	2000
Electrical Connection		SHV Bulkhead Jack, RF Coax, Bayonet Lock	SHV Bulkhead Jack, RF Coax, Bayonet Lock
Connection Type		Socket (Female)	Socket (Female)
Connection Outlet		Radial	Radial
Frequency	kHz	30	30
Special Properties		Coaxial cable feed-through for high voltage/power applications like ultrasound welding and cutting. Shielding insulated from module housing to minimize EMI.	Coaxial cable feed-through for high voltage/power applications like ultrasound welding and cutting. Shielding insulated from module housing to minimize EMI.

ELECTRICAL MODULES

POWER





MT8



MODELS SHOWN:
9120-MT8-M
9120-MT8-T

Technical Data

Item	Units	9120-MT8-M	9120-MT8L-M	9120-MT8-T	9120-MT8L-T
Suitable on		Quick-Change Master	Quick-Change Master	Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J	J	J
Transmission Type		Power	Power	Power	Power
Weight	kg	0.48	0.48	0.33	0.33
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60
Number of pin contacts		8	8	32	8
Nominal current	A	20	20	20	20
Alternating voltage	V AC	500	500	500	500
Direct voltage	V DC	700	700	700	700
Electrical Connection		Amphenol MS Series (MIL-DTL-5015) Circular Connector, Threaded, 8 Contacts	Amphenol MS Series (MIL-DTL-5015) Circular Connector, Threaded, 8 Contacts	Amphenol MS Series (MIL-DTL-5015) Circular Connector, Threaded, 8 Contacts	Amphenol MS Series (MIL-DTL-5015) Circular Connector, Threaded, 8 Contacts
Connection Type		Pin (Male)	Pin (Male)	Socket (Female)	Socket (Female)
Connection Outlet		Side (left)	Side (right)	Side (left)	Side (right)

MT14



MODELS SHOWN:
9120-MT14A-M
9120-MT14-T

Technical Data

Item	Units	9120-MT14A-M	9120-MT14-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Power	Power
Weight	kg	0.34	0.34
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		14	14
Nominal current	A	13	13
Alternating voltage	V AC	500	500
Direct voltage	V DC	700	700
Electrical Connection		Amphenol MS Series (MIL-DTL-5015) Circular Connector, Threaded, 19 Contacts	Amphenol MS Series (MIL-DTL-5015) Circular Connector, Threaded, 19 Contacts
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Side (left)	Side (left)

RL5



MODELS SHOWN:
 9120-RL5-M
 9120-RL5-T

Technical Data

Item	Units	9120-RL5-M	9120-RL5-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Power	Power
Weight	kg	0.18	0.16
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		5	5
Nominal current	A	16	16
Alternating voltage	V AC	63	63
Direct voltage	V DC	63	63
Electrical Connection		M12 connector, L-coded, 5-pin (4+FE)	M12 connector, L-coded, 5-pin (4+FE)
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Radial	Radial
Special Properties		Functional Earth (FE) ground is via pinblock.	Functional Earth (FE) ground is via pinblock.



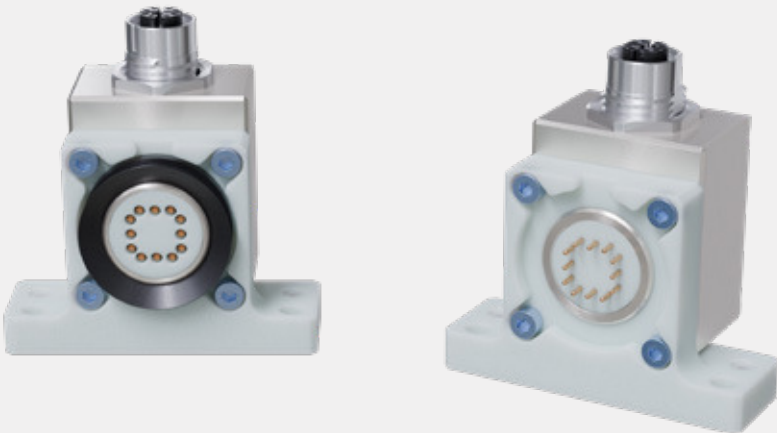
ELECTRICAL MODULES

COMMUNI- CATIONS





GBX



MODELS SHOWN:
9120-GBX-M
9120-GBX-T

Technical Data

Item	Units	9120-GBX-M	9120-GBX-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Communication	Communication
Weight	kg	0.11	0.11
Min./Max. Ambient Temperature	°C	5/60	5/60
Protection Class		IP65 (only when coupled)	IP65 (only when coupled)
Bus System		Ethernet	Ethernet
Tranmission Speed	Mbps	10000	10000
Number of pin contacts		8	8
Nominal current	A	0.6	0.6
Alternating voltage	V AC	60	60
Direct voltage	V DC	60	60
Electrical Connection		M12 connector, X-coded, 8-pin	M12 connector, X-coded, 8-pin
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Radial, adjustable positions	Radial, adjustable positions
Special Properties		10 Gbps CAT6A, supports Power over Ethernet (PoE), Class III.	10 Gbps CAT6A, supports Power over Ethernet (PoE), Class III.



KE7



MODELS SHOWN:
9120-KE7-M
9120-KE7-T

Technical Data

Item	Units	9120-KE7-M	9120-KE7-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		K	K
Transmission Type		Communication	Communication
Weight	kg	0.16	0.16
Min./Max. Ambient Temperature	°C	5/60	5/60
Bus System		Ethernet	Ethernet
Transmission Speed	Mbps	100	100
Number of pin contacts		4	4
Nominal current	A	4	4
Alternating voltage	V AC	125	125
Direct voltage	V DC	125	125
Electrical Connection		M12 connector, D-coded, 4-pin	M12 connector, D-coded, 4-pin
Connection Type		Socket (Female)	Socket (Female)
Connection Outlet		Side (left)	Side (left)
Number of pin contacts (Other)		7	7
Nominal current (Other)	A	4	4
Alternating voltage (Other)	V AC	125	125
Direct voltage (Other)	V DC	125	125
Electrical Connection (Other)		M8 connector, A-coded, 3-pin	M8 connector, A-coded, 3-pin
Connection Type (Other)		Pin (Male)	Socket (Female)
Connection Outlet (Other)		Side (left)	Side (left)
Special Properties		Supports Power-over-Ethernet (PoE). Two twisted wire pairs, connector shield passed via pinblock.	Supports Power-over-Ethernet (PoE). Two twisted wire pairs, connector shield passed via pinblock.

KE8

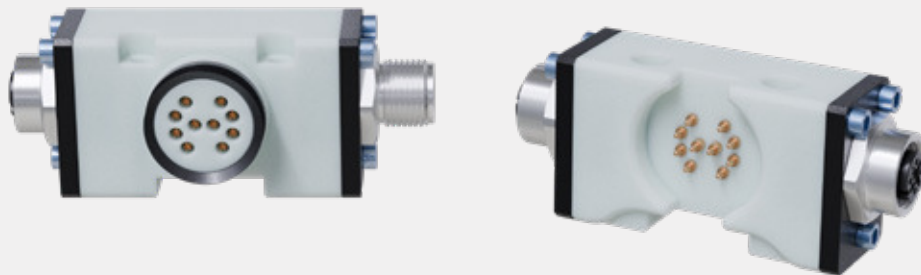


MODELS SHOWN:
9120-KE8-M
9120-KE8-T

Technical Data

Item	Units	9120-KE8-M	9120-KE8-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		K	K
Transmission Type		Communication	Communication
Weight	kg	0.17	0.14
Min./Max. Ambient Temperature	°C	5/60	5/60
Bus System		Ethernet	Ethernet
Transmission Speed	Mbps	100	100
Number of pin contacts		4	4
Nominal current	A	4	4
Alternating voltage	V AC	125	125
Direct voltage	V DC	125	125
Electrical Connection		M12 connector, D-coded, 4-pin	M12 connector, D-coded, 4-pin
Connection Type		Socket (Female)	Socket (Female)
Connection Outlet		Side (left)	Side (left)
Number of pin contacts (Other)		4	4
Nominal current (Other)	A	4	4
Alternating voltage (Other)	V AC	125	125
Direct voltage (Other)	V DC	125	125
Electrical Connection (Other)		M8 connector, A-coded, 3-pin	M8 connector, A-coded, 3-pin
Connection Type (Other)		Pin (Male)	Socket (Female)
Connection Outlet (Other)		Side (left)	Side (left)
Special Properties		Supports Power-over-Ethernet (PoE). Two twisted wire pairs, connector shield passed via pinblock.	Supports Power-over-Ethernet (PoE). Two twisted wire pairs, connector shield passed via pinblock.

ME10



MODELS SHOWN:

9120-ME10-M

9120-ME10-T

Technical Data

Item	Units	9120-ME10-M	9120-ME10-T	9120-ME10A-M	9120-ME10A-T
Suitable on		Quick-Change Master	Quick-Change Tool	Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		M1	M1	M1	M1
Transmission Type		Communication	Communication	Communication	Communication
Weight	kg	0.07	0.06	0.06	0.05
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60
Bus System		Ethernet	Ethernet	Ethernet	Ethernet
Transmission Speed	Mbps	100	100	100	100
Number of pin contacts		4	4	4	4
Nominal current	A	0.6	0.6	0.6	0.6
Alternating voltage	V AC	60	60	60	60
Direct voltage	V DC	60	60	60	60
Electrical Connection		M12 connector, D-coded, 4-pin	M12 connector, D-coded, 4-pin	M12 connector, D-coded, 4-pin	M12 connector, D-coded, 4-pin
Connection Type		Socket (Female)	Socket (Female)	Socket (Female)	Socket (Female)
Connection Outlet		Side	Side	Side	Side
Number of pin contacts (Other)		5	5	4	4
Nominal current (Other)	A	4	4	3	3
Alternating voltage (Other)	V AC	63	63	60	60
Direct voltage (Other)	V DC	63	63	60	60
Electrical Connection (Other)		M12 connector, L-coded, 5-pin (4+FE)	M12 connector, L-coded, 5-pin (4+FE)	M8 connector, A-coded, 4-pin	M8 connector, A-coded, 4-pin
Connection Type (Other)		Pin (Male)	Socket (Female)	Pin (Male)	Socket (Female)
Connection Outlet (Other)		Side	Side	Side	Side
Special Properties		Simultaneous feed-through of Ethernet/PROFINET and 5-pin (4+FE) auxiliary power supply. Supports CAT5e requirements. Communication connector shield passed via pinblock.	Simultaneous feed-through of Ethernet/PROFINET and 5-pin (4+FE) auxiliary power supply. Supports CAT5e requirements. Communication connector shield passed via pinblock.	Simultaneous feed-through of Ethernet/PROFINET and 4-pin auxiliary power supply. Supports CAT5e requirements. Communication connector shield passed via pinblock.	Simultaneous feed-through of Ethernet/PROFINET and 4-pin auxiliary power supply. Supports CAT5e requirements. Communication connector shield passed via pinblock.

RD5



MODELS SHOWN:
9120-RD5-M
9120-RD5-T

Technical Data

Item	Units	9120-RD5-M	9120-RD5-M
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Communication	Communication
Weight	kg	0.19	0.14
Min./Max. Ambient Temperature	°C	5/60	5/60
Bus System		DeviceNet, IO-Link Class B	DeviceNet, IO-Link Class B
Transmission Speed	Mbps	0.5	0.5
Number of pin contacts		5	5
Nominal current	A	4	4
Alternating voltage	V AC	250	250
Direct voltage	V DC	250	250
Electrical Connection		M12 connector, A-coded, 5-pin	M12 connector, A-coded, 5-pin
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Radial	Radial

RE10



MODELS SHOWN:
 9120-RE10-M
 9120-RE10-T

Technical Data

Item	Units	9120-RE10-M	9120-RE10-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Communication	Communication
Weight	kg	0.25	0.25
Min./Max. Ambient Temperature	°C	5/60	5/60
Bus System		Ethernet	Ethernet
Tranmission Speed	Mbps	100	100
Number of pin contacts		8	8
Nominal current	A	1	1
Alternating voltage	V AC	48	48
Direct voltage	V DC	48	48
Electrical Connection		AIDA PushPull-RJ45	AIDA PushPull-RJ45
Connection Type		Socket (Female)	Socket (Female)
Connection Outlet		Radial	Radial
Special Properties		Supports Power-over-Ethernet (PoE) and CAT5e requirements. Four twisted wire pairs, connector shield passed via pinblock. NOT FOR USE with standard RJ45 cables - connector will not lock.	Supports Power-over-Ethernet (PoE) and CAT5e requirements. Four twisted wire pairs, connector shield passed via pinblock. NOT FOR USE with standard RJ45 cables - connector will not lock.

RE5



MODELS SHOWN:
9120-RE5-M
9120-RE5-T

Technical Data

Item	Units	9120-RE5-M	9120-RE5-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Communication	Communication
Weight	kg	0.18	0.14
Min./Max. Ambient Temperature	°C	5/60	5/60
Bus System		Ethernet	Ethernet
Transmission Speed	Mbps	100	100
Number of pin contacts		4	4
Nominal current	A	2	2
Alternating voltage	V AC	60	60
Direct voltage	V DC	60	60
Electrical Connection		M12 connector, D-coded, 4-pin	M12 connector, D-coded, 4-pin
Connection Type		Socket (Female)	Socket (Female)
Connection Outlet		Radial	Radial
Special Properties		Supports Power-over-Ethernet (PoE) and CAT5e requirements. Two twisted wire pairs, connector shield passed via pinblock.	Supports Power-over-Ethernet (PoE) and CAT5e requirements. Two twisted wire pairs, connector shield passed via pinblock.

RE8

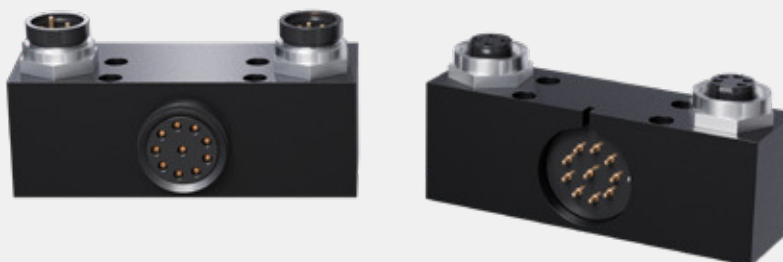


MODELS SHOWN:
9120-RE8-M
9120-RE8-T

Technical Data

Item	Units	9120-RE8-M	9120-RE8-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Communication	Communication
Weight	kg	0.24	0.18
Min./Max. Ambient Temperature	°C	5/60	5/60
Bus System		Ethernet	Ethernet
Tranmission Speed	Mbps	1000	1000
Number of pin contacts		8	8
Nominal current	A	0.5	0.5
Alternating voltage	V AC	48	48
Direct voltage	V DC	48	48
Electrical Connection		Integrated 0.4m cable with M12 connector, X-coded, 8-pin	Integrated 0.4m cable with M12 connector, X-coded, 8-pin
Connection Type		Socket (Female)	Socket (Female)
Connection Outlet		Radial	Radial
Special Properties		Supports Power-over-Ethernet (PoE) and CAT5e requirements. Four shielded twisted wire pairs, connector shield passed via pinblock.	Supports Power-over-Ethernet (PoE) and CAT5e requirements. Four shielded twisted wire pairs, connector shield passed via pinblock.

TD



MODELS SHOWN:
9120-TD-M
9120-TD-T

Technical Data

Item	Units	9120-TD-M	9120-TD-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Communication	Communication
Weight	kg	0.63	0.45
Min./Max. Ambient Temperature	°C	5/60	5/60
Bus System		DeviceNet	DeviceNet
Transmission Speed	Mbps	0.5	0.5
Number of pin contacts		5	5
Nominal current	A	5	5
Alternating voltage	V AC	24	24
Direct voltage	V DC	24	24
Electrical Connection		7/8" connector, A-coded, 5-pin	17/8" connector, A-coded, 5-pin
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Radial	Radial
Number of pin contacts (Other)		4	4
Nominal current (Other)	A	5	5
Alternating voltage (Other)	V AC	24	24
Direct voltage (Other)	V DC	24	24
Electrical Connection (Other)		7/8" connector, A-coded, 4-pin	7/8" connector, A-coded, 4-pin
Connection Type (Other)		Pin (Male)	Socket (Female)
Connection Outlet (Other)		Radial	Radial
Special Properties		Simultaneous feed-through of DeviceNet and 4-pin auxiliary power supply. For mounting on QC-40 and QC-41, and additional spacer (9005-20-1925) is required.	Simultaneous feed-through of DeviceNet and 4-pin auxiliary power supply. For mounting on QC-40 and QC-41, and additional spacer (9005-20-1925) is required.

TE

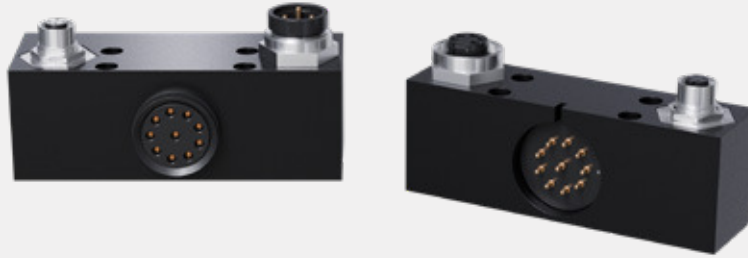


MODELS SHOWN:
9120-TE-M
9120-TE-T

Technical Data

Item	Units	9120-TE-M	9120-TE-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Communication	Communication
Weight	kg	0.49	0.37
Min./Max. Ambient Temperature	°C	5/60	5/60
Bus System		Ethernet	Ethernet
Tranmission Speed	Mbps	100	100
Number of pin contacts		4	4
Nominal current	A	2	2
Alternating voltage	V AC	60	60
Direct voltage	V DC	60	60
Electrical Connection		M12 connector, D-Coded, 4-pin	M12 connector, D-Coded, 4-pin
Connection Type		Socket (Female)	Socket (Female)
Connection Outlet		Radial	Radial
Number of pin contacts (Other)		4	4
Nominal current (Other)	A	5	5
Alternating voltage (Other)	V AC	600	600
Direct voltage (Other)	V DC	600	600
Electrical Connection (Other)		7/8" connector, A-coded, 4-pin	7/8" connector, A-coded, 4-pin
Connection Type (Other)		Pin (Male)	Socket (Female)
Connection Outlet (Other)		Radial	Radial
Special Properties		Simultaneous feed-through of Ethernet/PROFINET and 4-pin auxiliary power supply. Supports CAT5e requirements. Two twisted wire pairs, connector shield passed via pinblock. For mounting on QC-40 and QC-41, and additional spacer (9005-20-1925) is required.	Simultaneous feed-through of Ethernet/PROFINET and 4-pin auxiliary power supply. Supports CAT5e requirements. Two twisted wire pairs, connector shield passed via pinblock. For mounting on QC-40 and QC-41, and additional spacer (9005-20-1925) is required.

TP



MODELS SHOWN:
9120-TP-M
9120-TP-T

Technical Data

Item	Units	9120-TP-M	9120-TP-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Communication	Communication
Weight	kg	0.5	0.38
Min./Max. Ambient Temperature	°C	5/60	5/60
Bus System		Ethernet	Ethernet
Transmission Speed	Mbps	100	100
Number of pin contacts		4	4
Nominal current	A	2	2
Alternating voltage	V AC	60	60
Direct voltage	V DC	60	60
Electrical Connection		M12 connector, D-Coded, 4-pin	M12 connector, D-Coded, 4-pin
Connection Type		Socket (Female)	Socket (Female)
Connection Outlet		Radial	Radial
Number of pin contacts (Other)		5	5
Nominal current (Other)	A	5	5
Alternating voltage (Other)	V AC	600	600
Direct voltage (Other)	V DC	600	600
Electrical Connection (Other)		7/8" connector, A-coded, 4-pin	7/8" connector, A-coded, 4-pin
Connection Type (Other)		Pin (Male)	Socket (Female)
Connection Outlet (Other)		Radial	Radial
Special Properties		Simultaneous feed-through of Ethernet/PROFINET and 5-pin auxiliary power supply. Supports CAT5e requirements. Two twisted wire pairs, connector shield passed via pinblock. For mounting on QC-40 and QC-41, and additional spacer (9005-20-1925) is required.	Simultaneous feed-through of Ethernet/PROFINET and 5-pin auxiliary power supply. Supports CAT5e requirements. Two twisted wire pairs, connector shield passed via pinblock. For mounting on QC-40 and QC-41, and additional spacer (9005-20-1925) is required.

ELECTRICAL MODULES

SERVO





REP6



MODELS SHOWN:
9120-REP6-M
9120-REP6-T

Technical Data

Item	Units	9120-REP6-M	9120-REP6-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Servo	Servo
Weight	kg	0.2	0.19
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		6	6
Nominal current	A	10	10
Alternating voltage	V AC	630	630
Direct voltage	V DC	630	630
Electrical Connection		M23 connector, A-coded, 6-pin (5+FE)	M23 connector, A-coded, 6-pin (5+FE)
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Radial	Radial
Special Properties		Supports motor power and brake signals. Functional Earth (FE) ground and shielding of connector housing is via pinblock.	Supports motor power and brake signals. Functional Earth (FE) ground and shielding of connector housing is via pinblock.

REP10



MODELS SHOWN:
9120-REP10-M
9120-REP10-T

Technical Data

Item	Units	9120-REP10-M	9120-REP10-M-S1	9120-REP10-T	9120-REP10-T-S1
Suitable on		Quick-Change Master	Quick-Change Master	Quick-Change Tool	Quick-Change Tool
Module Mounting Pattern		J	J	J	J
Transmission Type		Servo	Servo	Servo	Servo
Weight	kg	0.2	0.2	0.18	0.18
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60
Number of pin contacts		6	6	6	6
Nominal current	A	5	5	5	5
Alternating voltage	V AC	150	150	150	150
Direct voltage	V DC	150	150	150	150
Electrical Connection		M23 connector, N-coded, 9-pin (6+3)	Solder contacts	M23 connector, N-coded, 9-pin (6+3)	Solder contacts
Connection Type		Pin (Male)		Socket (Female)	
Connection Outlet		Radial	User-Configurable	Radial	User-Configurable
Number of pin contacts (Other)		3	3	3	3
Nominal current (Other)	A	15	15	15	15
Alternating voltage (Other)	V AC	150	150	150	150
Direct voltage (Other)	V DC	150	150	150	150
Special Properties		Shielding of connector housing is via pinblock, signal and power circuits are electrically isolated.	Shielding of connector housing is via pinblock, signal and power circuits are electrically isolated. Customer provides cable, cable gland + machined adapter, configures outlet direction, and solders cable strands directly to contacts.	Shielding of connector housing is via pinblock, signal and power circuits are electrically isolated.	Shielding of connector housing is via pinblock, signal and power circuits are electrically isolated. Customer provides cable, cable gland + machined adapter, configures outlet direction, and solders cable strands directly to contacts.

RES10B



MODELS SHOWN:
9120-RES10B-M
9120-RES10B-T

Technical Data

Item	Units	9120-RES10B-M	9120-RES10B-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Servo	Servo
Weight	kg	0.23	0.18
Min./Max. Ambient Temperature	°C	5/60	5/60
Number of pin contacts		9	9
Nominal current	A	3.5	3.5
Alternating voltage	V AC	160	160
Direct voltage	V DC	160	160
Electrical Connection		M23 Signal (623 Series) connector, SpeedTec-Ready, 12-pin	M23 Signal (623 Series) connector, SpeedTec-Ready, 12-pin
Connection Type		Pin (Male)	Socket (Female)
Connection Outlet		Radial	Radial
Special Properties		Four twisted wire pairs, shielding of connector housing is via pinblock.	Four twisted wire pairs, shielding of connector housing is via pinblock.

PG3



MODELS SHOWN:
9120-PG3-M
9120-PG3-T

Technical Data

Item	Units	9120-PG3-M	9120-PG3-T
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Welding	Welding
Weight	kg	0.18	0.2
Min./Max. Ambient Temperature	°C	5/60	5/60
Protection Class		IP40 (only when coupled)	IP40 (only when coupled)
Number of pin contacts		1	1
Nominal current	A	200	200
Alternating voltage	V AC	600	600
Direct voltage	V DC	600	600
Electrical Connection		M8 ring lug for cable up to 35 mm ² /AWG 2	M8 ring lug for cable up to 35 mm ² /AWG 2
Connection Type		-	-
Connection Outlet		Radial, adjustable positions	Radial, adjustable positions
Special Properties		For grounding in welding applications. Use only high flex, fine strand cable. Crimp-style ring lug provided for #2 AWG. Other ring lug sizes available, #1 AWG max cable size.	For grounding in welding applications. Use only high flex, fine strand cable. Crimp-style ring lug provided for #2 AWG. Other ring lug sizes available, #1 AWG max cable size.

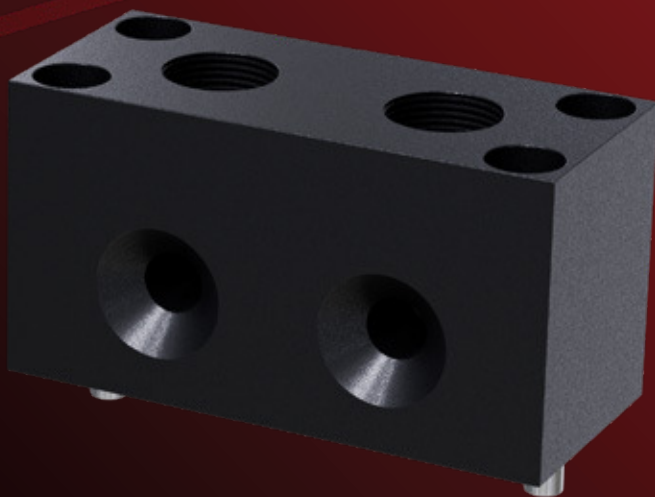


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FLUID/AIR MODULES

PNEUMATIC





P05



MODELS SHOWN:
9120-P05-M
9120-P05-T

Technical Data

Item	Units	9120-P05-M	9120-P05-T
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Pneumatics	Pneumatics
Weight	kg	0.2	0.21
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Radial	Radial
Feed-Throughs		10x M5	10x M5
Medium Type		Air, vacuum	Air, vacuum
Volumetric Flow Per Feed-Through	l/min	3.6	3.6
Max Operating Pressure	bar	7	7

P12A



MODELS SHOWN:
9120-P12A-M-E
9120-P12A-T-E

Technical Data

Item	Units	9120-P12A-M-E	9120-P12A-T-E
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Pneumatics	Pneumatics
Weight	kg	0.26	0.19
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Axial	Axial
Feed-Throughs		2x G1/2	2x G1/2
Medium Type		Air, vacuum	Air, vacuum
Volumetric Flow Per Feed-Through	l/min	108.1	108.1
Max Operating Pressure	bar	7	7

P14



MODELS SHOWN:
9120-P14-M-E
9120-P14-T-E

Technical Data

Item	Units	9120-P14-M-E	9120-P14-T-E
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Pneumatics	Pneumatics
Weight	kg	0.14	0.13
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Radial	Radial
Feed-Throughs		2x G1/4	2x G1/4
Medium Type		Air, vacuum	Air, vacuum
Volumetric Flow Per Feed-Through	l/min	14.8	14.8
Max Operating Pressure	bar	7	7

P186



MODELS SHOWN:
9120-P186A-M-E
9120-P186A-T-E

Technical Data

Item	Units	9120-P186-M-E	9120-P186A-M-E	9120-P186-T-E	9120-P186A-T-E
ID		-	-	-	-
Suitable on		Quick-Change Master	Quick-Change Master	Quick-Change Tool	Quick-Change Tool
Module Mounting Pattern		J	J	J	J
Transmission Type		Pneumatics	Pneumatics	Pneumatics	Pneumatics
Weight	kg	0.14	0.14	0.16	0.16
Min./Max. Ambient Temperature	°C	5/60	5/60	5/60	5/60
Connection Outlet		Radial	Axial	Radial	Axial
Feed-Throughs		6x G1/8	6x G1/8	6x G1/8	6x G1/8
Medium Type		Air, vacuum	Air, vacuum	Air, vacuum	Air, vacuum
Volumetric Flow Per Feed-Through	l/min	9.4	9.4	9.4	9.4
Max Operating Pressure	bar	7	7	7	7
Special Properties		Radial and axial types are compatible.	Radial and axial types are compatible.	Radial and axial types are compatible.	Radial and axial types are compatible.

P188



MODELS SHOWN:
9120-P188-M-E
9120-P188-T-E

Technical Data

Item	Units	9120-P188-M-E	9120-P188-T-E
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Pneumatics	Pneumatics
Weight	kg	0.24	0.24
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Radial	Radial
Feed-Throughs		8x G1/8	8x G1/8
Medium Type		Air, vacuum	Air, vacuum
Volumetric Flow Per Feed-Through	l/min	9.4	9.4
Max Operating Pressure	bar	7	7

P18



MODELS SHOWN:
9120-P18-M-E
9120-P18-T-E

Technical Data

Item	Units	9120-P18-M-E	9120-P18-T-E
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Pneumatics	Pneumatics
Weight	kg	0.15	0.15
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Radial	Radial
Feed-Throughs		4x G1/8	4x G1/8
Medium Type		Air, vacuum	Air, vacuum
Volumetric Flow Per Feed-Through	l/min	9.4	9.4
Max Operating Pressure	bar	7	7

P238



MODELS SHOWN:
9120-P238-M-E
9120-P238-T-E

Technical Data

Item	Units	9120-P238-M-E	9120-P238-T-E
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Pneumatics	Pneumatics
Weight	kg	0.15	0.14
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Radial	Radial
Feed-Throughs		2x G3/8	2x G3/8
Medium Type		Air, vacuum	Air, vacuum
Volumetric Flow Per Feed-Through	l/min	35.3	35.3
Max Operating Pressure	bar	7	7

P38A



MODELS SHOWN:
9120-P38A-M-E
9120-P38A-T-E

Technical Data

Item	Units	9120-P38A-M-E	9120-P38A-T-E
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Pneumatics	Pneumatics
Weight	kg	0.21	0.21
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Axial	Axial
Feed-Throughs		4x G3/8	4x G3/8
Medium Type		Air, vacuum	Air, vacuum
Volumetric Flow Per Feed-Through	l/min	35.3	35.3
Max Operating Pressure	bar	7	7
Special Properties		For mounting on QC-040 and QC-041, and additional spacer (9005-20-1925) is required.	For mounting on QC-040 and QC-041, and additional spacer (9005-20-1925) is required.

P48



MODELS SHOWN:
9120-P48-M-E
9120-P48-T-E

Technical Data

Item	Units	9120-P48-M-E	9120-P48-T-E
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Pneumatics	Pneumatics
Weight	kg	0.24	0.21
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Radial	Radial
Feed-Throughs		4x G3/8	4x G3/8
Medium Type		Air, vacuum	Air, vacuum
Volumetric Flow Per Feed-Through	l/min	35.3	35.3
Max Operating Pressure	bar	7	7
Special Properties		For mounting on QC-040 and QC-041, and additional spacer (9005-20-1925) is required.	For mounting on QC-040 and QC-041, and additional spacer (9005-20-1925) is required.

P8M5



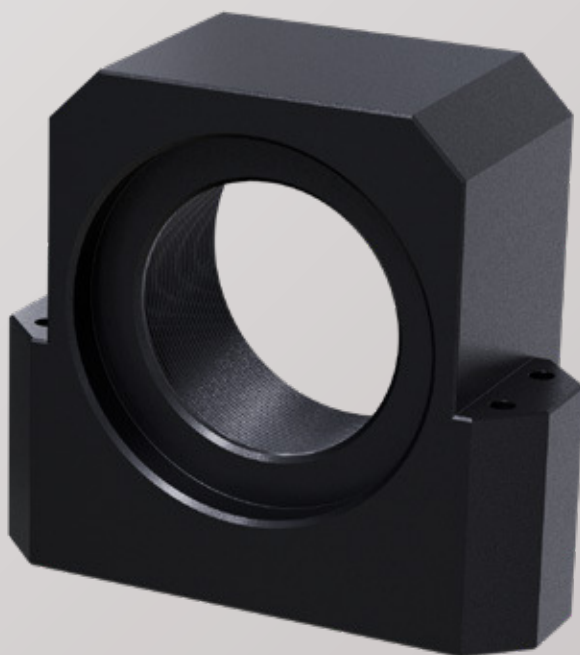
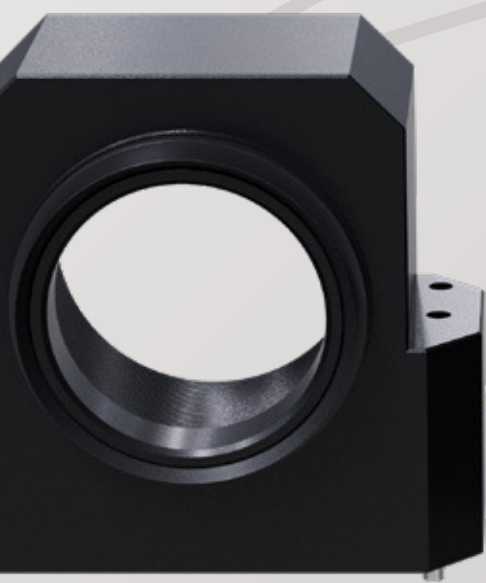
MODELS SHOWN:
9120-P8M5-M
9120-P8M5-T

Technical Data

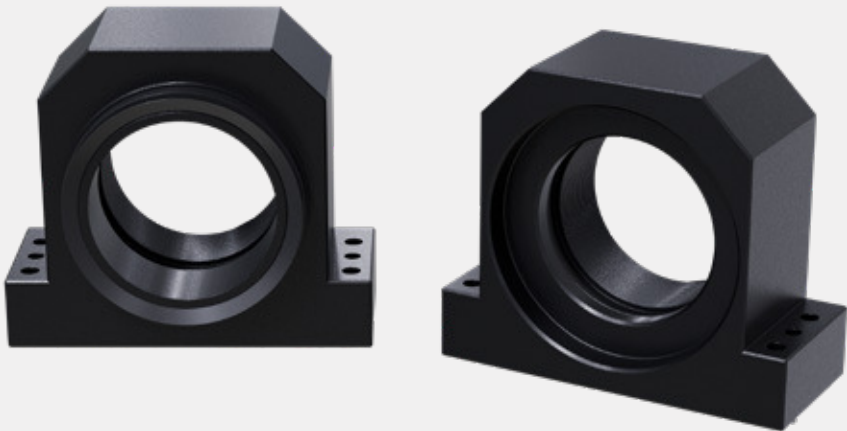
Item	Units	9120-P8M5-M	9120-P8M5-T
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Pneumatics	Pneumatics
Weight	kg	0.16	0.17
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Axial or Radial (User-Configurable)	Axial or Radial (User-Configurable)
Feed-Throughs		8x M5	8x M5
Medium Type		Air, vacuum	Air, vacuum
Volumetric Flow Per Feed-Through	l/min	1	1
Max Operating Pressure	bar	7	7
Special Properties		If required, another optional module with mounting pattern J can be radially attached in a second row. Requires axial outlet connection on the first row.	If required, another optional module with mounting pattern J can be radially attached in a second row. Requires axial outlet connection on the first row.

FLUID/AIR MODULES

VACCUM



V112A

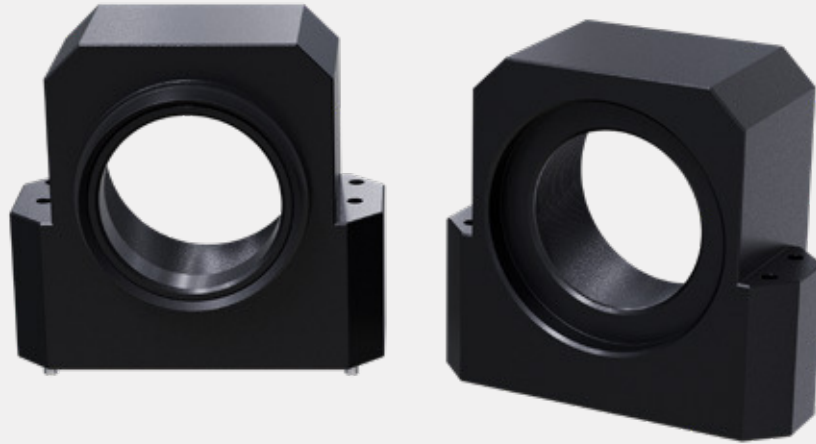


MODELS SHOWN:
9120-V112A-M-E
9120-V112A-T-E

Technical Data

Item	Units	9120-V112A-M-E	9120-V112A-T-E
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J (requires adapter)	J (requires adapter)
Transmission Type		Vacuum	Vacuum
Weight	kg	0.39	0.36
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Axial	Axial
Feed-Throughs		1x G3/2	1x G3/2
Medium Type		Vacuum	Vacuum
Special Properties		An adapter plate (9120-JJ59) is required for attaching the optional module to mounting pattern J.	An adapter plate (9120-JJ59) is required for attaching the optional module to mounting pattern J.

V200A



MODELS SHOWN:
9120-V200A-M-E
9120-V200A-T-E

Technical Data

Item	Units	9120-V200A-M-E	9120-V200A-T-E
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J (requires adapter)	J (requires adapter)
Transmission Type		Vacuum	Vacuum
Weight	kg	0.68	0.63
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Axial	Axial
Feed-Throughs		1x G2	1x G2
Medium Type		Vacuum	Vacuum
Special Properties		An adapter plate (9120-JJ58) is required for attaching the optional module to mounting pattern J.	An adapter plate (9120-JJ58) is required for attaching the optional module to mounting pattern J.

V34



MODELS SHOWN:
9120-V34-M
9120-V34-T

Technical Data

Item	Units	9120-V34-M	9120-V34-T
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Vacuum	Vacuum
Weight	kg	0.21	0.2
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Radial	Radial
Feed-Throughs		1x G3/4	1x G3/4
Medium Type		Vacuum	Vacuum



FLUID/AIR MODULES

**LIQUIDS,
PNEUMATICS,
HYDRAULICS.**



FG2



MODELS SHOWN:
9120-FG2-M
9120-FG2-T

Technical Data

Item	Units	9120-FG2-M	9120-FG2-T
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Liquids	Liquids
Weight	kg	0.41	0.33
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Radial	Radial
Feed-Throughs		2x G3/8	2x G3/8
Medium Type		Air, water	Air, water
Volumetric Flow Per Feed-Through	l/min	20.2	20.2
Max Operating Pressure	bar	7	7
Special Properties		Self-sealing ports, stainless steel construction.	Self-sealing ports, stainless steel construction.



FG4

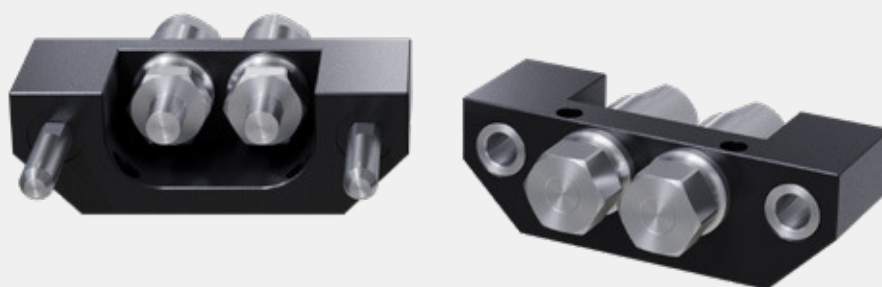


MODELS SHOWN:
9120-FG4-M
9120-FG4-T

Technical Data

Item	Units	9120-FG4-M	9120-FG4-T
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Liquids	Liquids
Weight	kg	0.72	0.58
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Radial	Radial
Feed-Throughs		4x G3/8	4x G3/8
Medium Type		Air, water	Air, water
Volumetric Flow Per Feed-Through	l/min	20.2	20.2
Max Operating Pressure	bar	7	7
Special Properties		Self-sealing ports, stainless steel construction.	Self-sealing ports, stainless steel construction.

F2HG14



MODELS SHOWN:
9121-AM2-M
9121-AM2-T

Technical Data

Item	Units	9120-F2HG14A-M	9120-F2HG14A-T
ID		-	-
Suitable on		Quick-Change Master	Quick-Change Tool
Module Mounting Pattern		J	J
Transmission Type		Liquids	Liquids
Weight	kg	0.71	0.61
Min./Max. Ambient Temperature	°C	5/60	5/60
Connection Outlet		Axial	Axial
Feed-Throughs		2x G1/4	2x G1/4
Medium Type		Hydraulic, water	Hydraulic, water
Volumetric Flow Per Feed-Through	l/min	6.6	6.6
Max Operating Pressure	bar	160	160
Special Properties		The pressure may only be applied to one port at any time. The high pressure creates separation forces, which greatly reduces the additional loads the tool changer can support. The ports are self-sealing. A small amount of liquid residue may remain on the surface of the ports when they are uncoupled. The amount of liquid depends on the type of fluid processed.	The pressure may only be applied to one port at any time. The high pressure creates separation forces, which greatly reduces the additional loads the tool changer can support. The ports are self-sealing. A small amount of liquid residue may remain on the surface of the ports when they are uncoupled. The amount of liquid depends on the type of fluid processed.

FORCE/TORQUE SENSORS TO FIT EVERY APPLICATION

AXIA SERIES

NANO & MINI SERIES

GAMMA, DELTA & OMEGA SERIES



FORCE/TORQUE SENSORS TO FIT EVERY APPLICATION

- Our extensive range of transducers integrate seamlessly into any application.
- ATI offers a variety of footprints, options for embedded or external electronics, and various performance levels.
- Each force/torque sensor is customizable through multiple interface, mounting, and calibration options.



Axia

High Performance
Embedded Electronics
Rated Measurement Range
of +150-4000N



Nano & Mini

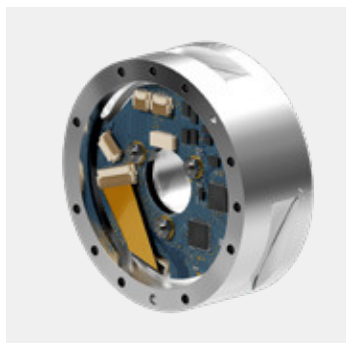
Premium Performance
Small Form Factor
Rated Measurement Range
of +32-2800N



Gamma, Delta & Omega

Premium Performance
Embedded Electronics
Rated Measurement Range
of +130-40000N

OEM Solutions



Sano

Ultra High Performance
Advanced Electronics
Rated Measurement Range of +130N

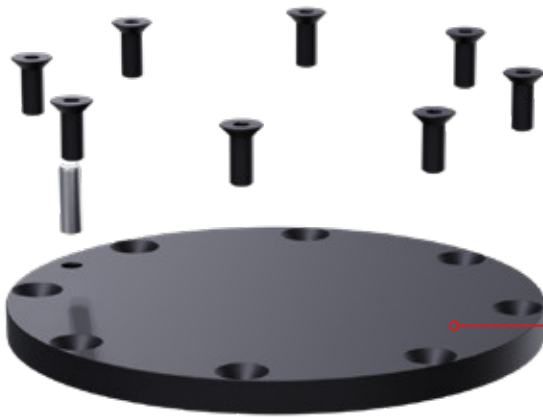


Varo

High Performance
Digital Electronics
Rated Measurement Range of +1200-3000N

Anatomy of Force/Torque Sensor

Force/Torque Sensors (FTS) go between the end of the robot arm, typically called the wrist, and the End-or-Arm tool. It provides 6-axes of data, 3 Force axes and 3 Torque axes. With this data the robot is able adapt its motion based on the forces



Mounting Adapter Plate (MAP)

Plate that customer mounts to robot, connected to the outer ring of the Transducer Body



Electronics Board

Interprets the signals generated by the sensor's internal strain gages and converts them into digital data that can be read by external systems (like a robot controller or data acquisition system).

Connector Block

Customer connector and connector block, varies based on communications interface

Transducer Body

Primary component, the sensing element where strain gages are attached

Tool Adapter Plate (TAP)

Plate where customer mounts tooling, connected to the center hub of Transducer Body



A Novanta Company

Introducing

AXIA FORCE/TORQUE SENSORS

The Axia series consists of high-performance, cost-effective six-axis force/torque sensors.

OUTSTANDING RELIABILITY: Provides precise and repeatable measurements in demanding applications.

OVERLOAD PROTECTION: Extremely rugged and durable, all transducer models can withstand high overload.

HIGH SIGNAL-TO-NOISE RATIO: Provides high resolution with low noise.

HIGH ACCURACY: Better than 2% full scale across all axes and calibrations.

DUAL CALIBRATIONS: Comes with two programmed calibration ranges with the ability to switch dynamically.



Axia80



Sensors

#	Model Number	Measurement Range Fx,Fy	Measurement Range Fz	Measurement Range Tx, Ty, Tz	Minimum Force Resolution Fx, Fy, Fz	Minimum Torque Resolution Tx, Ty, Tz	Diameter*	Height*
1	Axia80-M8	3150 N	3470 N	38 Nm	0.0400 N	0.0020 Nm	82 mm	25.4 mm
	Axia80-M20	3500 N	3900 N	320 Nm	0.1000 N	0.0050 Nm	82 mm	25.4 mm
	Axia80-M50	31200 N	32000 N	350 Nm	0.4000 N	0.0100 Nm	82 mm	25.4 mm

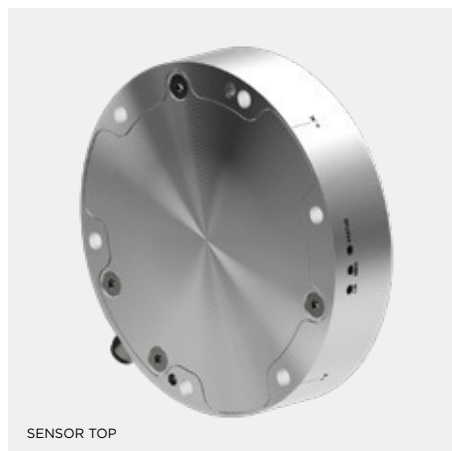
Cables

#	Part Number	Description
2	9105-CKIT-ZC22-ZC28-4	Axia80 Ethernet and EtherCAT Sensor Cable
	9105-CKIT-ZC27-ZC28-4	Axia80 RS422 Sensor Cable
	9105-CKIT-ZC28-ZC28-5	Axia Extension Cable
3	9105-C-ZC28-MS-RJ45S-4	M12 to Power and RJ45
	9105-C-ZC28-MS-ZC51-4	M12 to Power and FANUC Force Control

Robot Interface Plates

#	Part Number	Description
4	9105-IP-2126	ISO BC50
	9105-IP-2175	ISO BC31.5 (large flange)
	9105-IP-2118	ISO BC31.5 (small flange)

Axia90



Sensors

#	Model Number	Measurement Range Fx,Fy	Measurement Range Fz	Measurement Range Tx, Ty, Tz	Minimum Force Resolution Fx, Fy, Fz	Minimum Torque Resolution Tx, Ty, Tz	Diameter*	Height*
1	Axia90-M50	31000 N	32000 N	350 Nm	0.4000 N	0.0100 Nm	89.9 mm	26.9 mm

Cables

#	Part Number	Description
2	9105-CKIT-ZC27-ZC28-4	Axia90 Sensor Cable
3	9105-C-ZC28-MS-RJ45S-4	M12 to Power and RJ45
3	9105-C-ZC28-MS-ZC51-4	M12 to Power and FANUC Force Control

Robot Interface Plates

#	Part Number	Description
4	9105-IP-2359	ISO BC50
4	9105-IP-2382	ISO BC40
4	9105-IP-2428	ISO BC31.5

Axia130



Sensors

#	Model Number	Measurement Range Fx,Fy	Measurement Range Fz	Measurement Range Tx, Ty, Tz	Minimum Force Resolution Fx, Fy, Fz	Minimum Torque Resolution Tx, Ty, Tz	Diameter*	Height*
1	Axia130-M125	32000 N	34000 N	3125 Nm	0.6250 N	0.0250 Nm	130 mm	39.2 mm
	Axia130-M300	34000 N	36000 N	3300 Nm	1.6666 N	0.0699 Nm	130 mm	39.2 mm

Cables

#	Part Number	Description
2	9105-CKIT-ZC28-ZC28-5	Axia130 Sensor Cable
3	9105-C-ZC28-MS-RJ45S-4	M12 to Power and RJ45
	9105-C-ZC28-MS-ZC51-4	M12 to Power and FANUC Force Control

Robot Interface Plates

#	Part Number	Description
4	9105-IP-2352	ISO BC100
	9105-IP-2435	ISO BC125
	9105-IP-2283	ISO BC160

Tool Interface Plates

#	Part Number	Description
5	9105-IP-2273	ISO BC100
	9105-IP-2280	ISO BC125
	9105-IP-2282	ISO BC160



Next Generation

Force/Torque Sensors

ATI FORCE/TORQUE SENSORS HAVE BEEN RECENTLY AND SERIOUSLY UPGRADED, REDEFINING PRECISION AND PERFORMANCE FOR TOMORROW'S AUTOMATION CHALLENGES



Smarter Electronics

Integrated IMU data provides advanced motion tracking capabilities for greater precision and control.

Up to **5X higher resolution** for improved accuracy and performance.

Real-time data at 8kHz via Ethernet, EtherCAT, or serial interfaces, ensuring fast, reliable data transmission.



Streamlined Integrations

A **broad range of form factors** and calibrations minimize design compromises and expand possibilities.

Support for multiple communication protocols, enabling easy integration with diverse control platforms.

Choose non - or integrated electronics, and optional passthrough holes for cable, space and configuration needs.



More Possibilities

Weigh-in-motion capabilities are enabled by integrated IMU data, allowing for real-time force measurements without interrupting operation.

Industry-leading production capacity for faster lead times and the ability to design and manufacture customized solutions at scale.

INDUSTRY TRUSTED SENSORS

5X Overload Protection to ensure durability and reliability

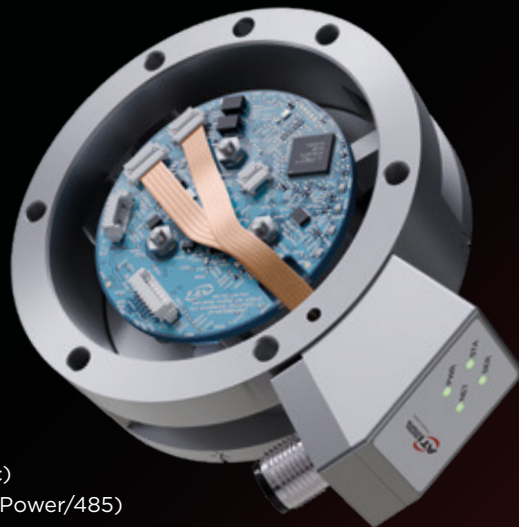
MORE PRECISE DATA, FASTER

- Real-time 8kHz data
- EtherCAT daisy chaining
- Simultaneous Ethernet or EtherCAT & Serial for dual processing

SIMPLIFIED CABLE ROUTING

Single 12-pin M12 for:

- NETRS (Ethernet, RS422, Power/Sync)
- ECAT3 (EtherCAT IN, EtherCAT OUT, Power/485)



PLUG & PLAY COMPATIBILITY

Easy programming with FANUC®, ABB®, KUKA®, YASKAWA®, UR™ and other robots.

MAKE SMARTER DECISION

- 6-Axis Acceleration Data
- Integrated IMU
- Gravity & Inertial Compensation
- Weigh-in-motion

KNOW YOUR STATUS

Industry-standard LED status easily visible on the connector block

TWO NEXT-GEN FORCE/TORQUE SENSOR FAMILIES:

Nano & Mini

Force/Torque Sensors

External electronics for low to medium payloads across diverse applications: research, aerospace, product testing, surgical robotics, and warehouse automation.

11 sensor models with ranges from 8N to 3,800N and resolution down to 0.001 N.

Highly configurable for small to medium high-performance applications and customizable for OEM needs.

See page X for ordering instructions.

- Sizes from 17mm to 85mm with Titanium options
- IP20, IP60, IP65 and IP68 Ingress Protections
- Use with Ethernet, EtherCAT, Serial (RS422 or 485), CAN interfaces or Analog (mV/V or +/-10V)
- Various connector options and customizations



Gamma, Delta & Omega

Force/Torque Sensors

Industrial-grade sensors with internal electronics, compatible with any industrial platform in automotive, general industry, and surgical robotics.

6 core models covering ranges from 130 N to 88,000 N, with configurable size, IP rating, calibration, and communication options.

On-board IMU for gravity and inertial compensation, enabling Weigh-in-Motion for advanced warehouse automation.

See page X for ordering instructions.

- Sizes from 74mm to 330mm with embedded electronics
- Use with Ethernet, EtherCAT, Serial (RS422 or 485), CAN interfaces or Analog
- 10M cycle life at rated range and 5x overload protection



HOW TO ORDER A NANO OR MINI

1. Select a Sensor

Sensors

Model Number	Measurement Range Fx,Fy	Measurement Range Fz	Measurement Range Tx, Ty	Minimum Force Resolution Fx, Fy, Fz	Minimum Torque Resolution Tx, Ty, Tz	Diameter*	Height*
Nano17	±50 N	±70 N	±0.5 Nm	0.00313 N	0.01563 Nm	17 mm	14.5 mm
Nano17 Titanium	±32 N	±56.4 N	±0.2 Nm	0.00200 N	0.00700 Nm	17 mm	14.5 mm
Nano25	±250 N	±1000 N	±6 Nm	0.01000 N	0.00020 Nm	28 mm	27.5 mm
Mini27 Titanium	±80 N	±160 N	±4 Nm	0.00800 N	0.00010 Nm	27 mm	18.2 mm
Mini40	±80 N	±240 N	±4 Nm	0.00500 N	0.00013 Nm	40 mm	12.2 mm
Mini43LP	±250 N	±250 N	±3 Nm	0.01575 N	0.00025 Nm	43 mm	7.9 mm
Mini45	±580 N	±1160 N	±20 Nm	0.06250 N	0.00075 Nm	45 mm	15.7 mm
Mini45 Titanium	±240 N	±480 N	±12 Nm	0.01700 N	0.00030 Nm	45 mm	15.7 mm
Mini58	±2800 N	±6800 N	±120 Nm	0.18750 N	0.00313 Nm	58 mm	30 mm

Cable Exit

Not all cable exit options are available for all models.



Right Angle Strain Relieved



Axial Strain Relieved



Radial Strain Relieved



Radial

Cable Length

Sensor cables available in **1.8m**, **5m** or customizable lengths.

IP Ratings

Not all IP ratings are available for all models.

IP Rating	Description
IP20	Provides basic protection against solid objects.
IP60	Completely sealed against dust ingress.
IP65	Resistant to dust and low-pressure water jets.
IP68	Fully sealed against dust and water ingress.

Connectors

Connector is dictated by electronics:

- 12-pin round Amphenol
- 8-pin Molex PicoBlade

2. Select Conditioning Electronics & Accessories



PART NUMBER:
9105-ECAT3-CEB-001

Conditioning Electronics Box (CEB)

Sensor Connector: 12-pin round Amphenol

Interface Connectors:

- (1) M12 D-Code M12 for EtherCAT (Port 0)
- (1) M12 D-Code M12 for EtherCAT (Port 1)
- (1) M12 A-Code for Power and RS-485
- Compact rugged enclosure with Status LEDs

Cables

Part Number	Part
9105-C-R08F1-MD04M1-01-0.2	M12 D-Coded to RJ45 Adapter Cable
9105-CBL-S-G1-Q5F-WWPS1-1.5	Power Supply



PART NUMBER:
9105-NETRS-CEB-001

Conditioning Electronics Box (CEB)

Sensor Connector: 12-pin round Amphenol

Interface Connectors:

- (1) M12 D-Code M12 for Ethernet
- (1) M12 D-Code M12 for RS-422/RS485
- (1) M12 A-Code for Power and CLK SYNC signal
- Compact rugged enclosure with Status LEDs

Cables

Part Number	Part
9105-C-R08F1-MD04M1-01-0.2	M12 D-Coded to RJ45 Adapter Cable
9105-C-D09F1-MD04M1-01-5.0	RS422 Cable
9105-CBL-S-G1-Q5F-WWPS1-1.5	Power Supply



PART NUMBER:
9105-ECAT3-CBA-001
9105-NETRS-CBA-001

Conditioning Board Assembly (CBA)

Sensor Connector: 8-pin Molex PicoBlade.

Interface Connectors:

- (1) 8-pin Flat Flex Connector (FFC) for Ethernet or EtherCAT.
- (1) 6-pin Flat Flex Connector (FFC) for Serial and Power(1) 4-pin Flat Flex Connector (FFC) for LED.

Designed for embedded solutions. All NETRS and ECAT3 functionality available over locking FFC connectors.

Evaluation Breakout Board (BOB)



PART NUMBERS:
9105-GEN3-BOB-001



PART NUMBER:
9105-IFPS-1

Analog Conditioning Electronics

Sensor Connector: 12-pin round Amphenol.

Interface Connectors:

- (1) 26-pin D-Sub Connector for connection to customer DAQ.

Designed for high-speed data collection when paired with customer DAQ device.

Cables

Part Number	Part
9105-C-PS-U-2	26-pin D-Sub to flying leads cable

HOW TO ORDER A GAMMA, DELTA OR OMEGA

1. Select a Sensor

Sensors

Model Number	Measurement Range Fx,Fy	Measurement Range Fz	Measurement Range Tx, Ty, Tz	Minimum Force Resolution Fx, Fy, Fz	Minimum Torque Resolution Tx, Ty, Tz	Diameter*	Height*
Gamma	±130 N	±400 N	±10 Nm	0.00625 N	0.00033 Nm	75.4 mm	33.3 mm
Delta	±660 N	±1980 N	±60 Nm	0.03125 N	0.00200 Nm	94.5 mm	33.3 mm
Omega160	±2500 N	±6250 N	±400 Nm	0.12500 N	0.01250 Nm	160 mm	55.9 mm
Omega191	±7200 N	±18000 N	±1400 Nm	0.37500 N	0.03500 Nm	190 mm	64 mm
Omega250	±16000 N	±32000 N	±2000 Nm	1.00000 N	0.12500 Nm	295 mm	94.9 mm
Omega331	±40000 N	±88000 N	±6000 Nm	1.56250 N	0.18750 Nm	330 mm	107 mm

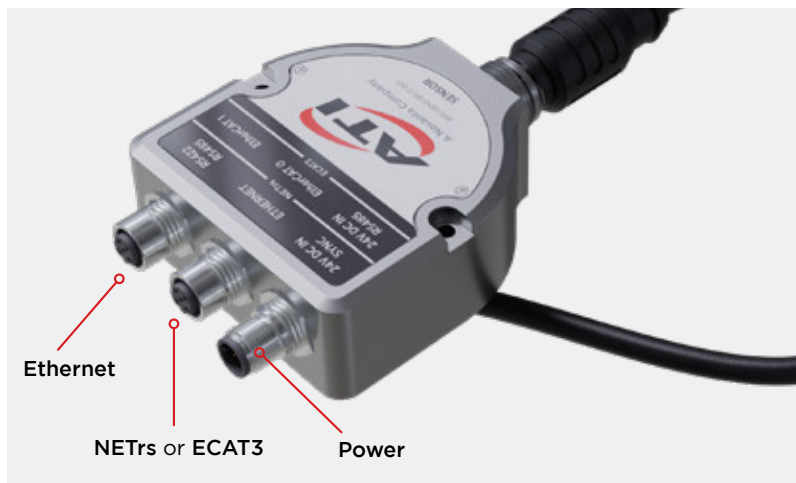
IP Ratings

Not all IP ratings are available for all models.

Part Number	Description
IP20	Provides basic protection against solid objects.
IP60	Completely sealed against dust ingress.
IP65	Resistant to dust and low-pressure water jets.
IP68	Fully sealed against dust and water ingress.

2. Select Conditioning Electronics & Accessories

Splitter Box



Sensor Cables

Part Number	Length
9105-C-MA12F1-MA12M1-01-1.0	1m
9105-C-MA12F1-MA12M1-01-5.0	5m
9105-C-MA12F1-MA12M1-01-10.0	10m

Cables

Part Number	Part
5-CBL-S-G1-Q5F-WWPS1-1.5	Power Supply
9105-C-D09F1-MD04M1-01-5.0	RS422 Cable
9105-C-R08F1-MD04M1-01-0.2	M12 D-Coded to RJ45 Adapter Cable

Analog Conditioning Electronics



Cables

IP Rated	Connector	Cable Options
Yes	20-pin Lemo	9105-C-L-PS-10
		9105-C-PS-U-2
No	20-pin Hirose	9105-C-H-PS-10
		9105-C-PS-U-2

