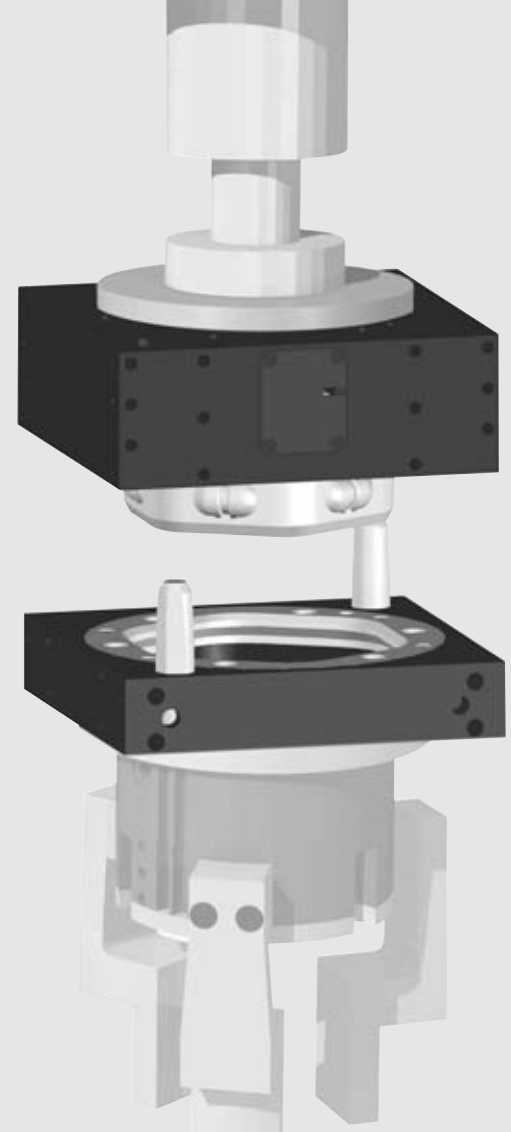


# RQC Series Modular Tool Changer- High Loads



• **Robotic applications:**

Perfect for those flexible/multiple tooling applications utilizing one Robot. This product was designed with exceptional repeatability, high rigidity & load capacity to make it ideal for any robotic application.

• **Automation applications:**

End effector tooling and interchangeable fixturing can be changed quickly and easily to accommodate many different styles of parts on the same assembly machine or machining center.

• **Highly configurable, modular design:**

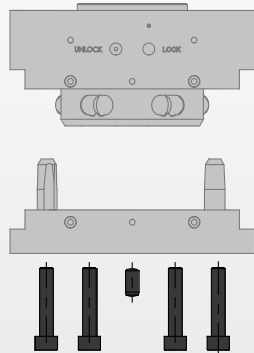
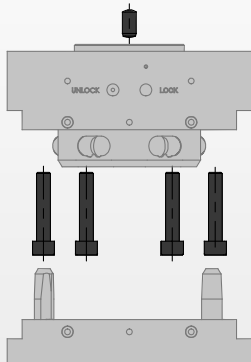
The Modular RQC series easily accommodates up to 4 optional modular interfaces offering a high level of flexibility.

MODULAR RQC  
SERIES

6.22

## Mounting Information:

Robot half has counterbored holes for mounting with a dowel pin hole, a raised boss for location, and features a ISO9409-1 mounting pattern



Tool half has tapped holes, two dowel pin holes for accurate location of payload, and features a ISO9409-1 mounting pattern

## Technical Specifications:

**Pneumatic Specifications**

Pressure Operating Range  
Cylinder Type  
Valve Required to Operate

**Imperial**

60-100 psi  
Double Acting, Spring Assist  
4-way, 2-position

**Metric**

4-7 bar

**Air Quality Requirements**

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*  
Low Moisture Content (dry)

**Temperature Operating Range**

Buna-N Seals (standard)    -30°~180° F    -35°~80° C

**Maintenance Specifications<sup>†</sup>**

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

5 million cycles  
10+ million cycles\*<sup>†</sup>  
Yes  
Yes

<sup>†</sup> See Maintenance Section.

\*Addition of lubrication will greatly increase service life

**Application Restrictions**

- Dirty or gritty environments
- Machining operations generating chips
- Environments with loose particulate

**See Maintenance Section for:**

Exploded views and spare parts list.....	6.54
Drawing Sections and assembly procedures.....	6.55
Tool Changer terminology .....	6.56

## Product Features

**Optional Weld Gun Power Module**  
Size 800 & 1200 only

**Latch/Unlatch Switch**  
RQC's are pre-equipped for latch, unlatch (all sizes) and part presence sensing (sizes 800 & 1200 only). Dry contact or inductive sensors with or w/o connectors are available.

**Optional 19 Pin I/O Module**

- Spring loaded contacts are recessed for a better protection
- V-Seal provides moisture resistance

**Other Modules Available:**

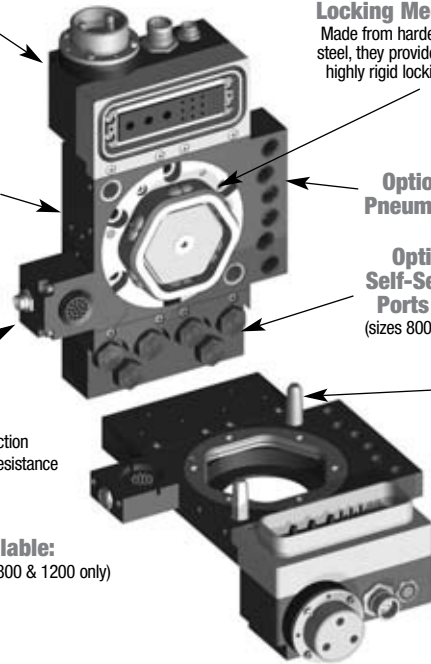
- 4 Port Fluid Module (sizes 800 & 1200 only)
- 2 Port Vacuum Module
- Servo Gun Module

**Locking Mechanisms**  
Made from hardened stainless steel, they provide a low stress, highly rigid locking capability

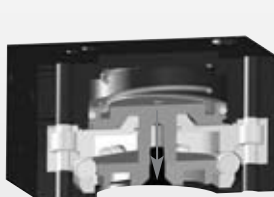
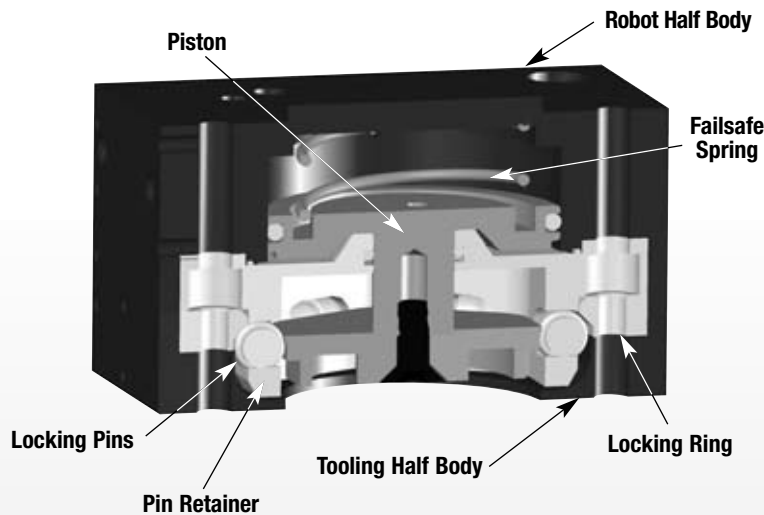
**Optional 6 Port Pneumatic Module**

**Optional 6 Self-Sealing Air Ports Module**  
(sizes 800 & 1200 only)

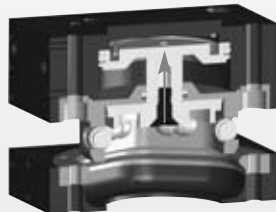
**Locating Pins**



## Operating Principle



Locked Position



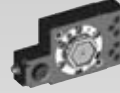
Unlocked Position

- The tool half is inserted into the robot half.
- The robot half has a spring assisted double acting piston. When the piston is actuated the locking pins are driven under the locking ring. Thus locking the halves together.
- The fail-safe spring maintains the piston position in the event of pressure loss and the connected units must receive air pressure to de-couple.

### Style-RQC Robot Half

**Size-200**

Style:	RQC-200	
Max. Payload:	200 lbs.	90 Kg
Max. Moment:	7200 in.-lbs.	810 Nm
Weight:	4.7 lbs.	2.1 Kg



See Page **6.24**

### Style-RTP Tool Half

**Size-200**

Style:	RTP-200	
Max. Payload:	200 lbs.	90 Kg
Max. Moment:	7200 in.-lbs.	810 Nm
Weight:	2 lbs.	0.9 Kg

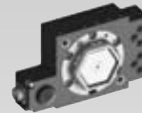


See Page **6.26**

### Style-RQC Robot Half

**Size-400**

Style:	RQC-400	
Max. Payload:	400 lbs.	180 Kg
Max. Moment:	14000 in.-lbs.	1580 Nm
Weight:	8 lbs.	3.6 Kg



See Page **6.28**

### Style-RTP Tool Half

**Size-400**

Style:	RTP-400	
Max. Payload:	400 lbs.	180 Kg
Max. Moment:	14000 in.-lbs.	1580 Nm
Weight:	2.4 lbs.	1.1 Kg

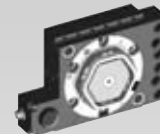


See Page **6.30**

### Style-RQC Robot Half

**Size-800**

Style:	RQC-800	
Max. Payload:	800 lbs.	360 Kg
Max. Moment:	22000 in.-lbs.	2490 Nm
Weight:	11.8 lbs.	5.3 Kg



See Page **6.32**

### Style-RTP Tool Half

**Size-800**

Style:	RTP-800	
Max. Payload:	800 lbs.	360 Kg
Max. Moment:	22000 in.-lbs.	2490 Nm
Weight:	4 lbs.	1.8 Kg

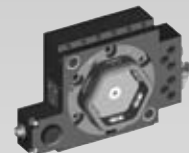


See Page **6.34**

### Style-RQC Robot Half

**Size-1200**

Style:	RQC-1200	
Max. Payload:	1200 lbs.	550 Kg
Max. Moment:	30000 in.-lbs.	3390 Nm
Weight:	14.1 lbs.	6.4 Kg

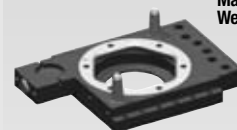


See Page **6.36**

### Style-RTP Tool Half

**Size-1200**

Style:	RTP-1200	
Max. Payload:	1200 lbs.	550 Kg
Max. Moment:	30000 in.-lbs.	3390 Nm
Weight:	4.3 lbs.	1.9 Kg



See Page **6.38**

### Options and Accessories

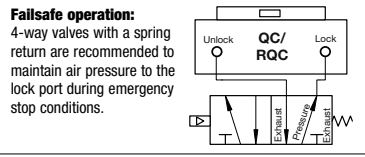
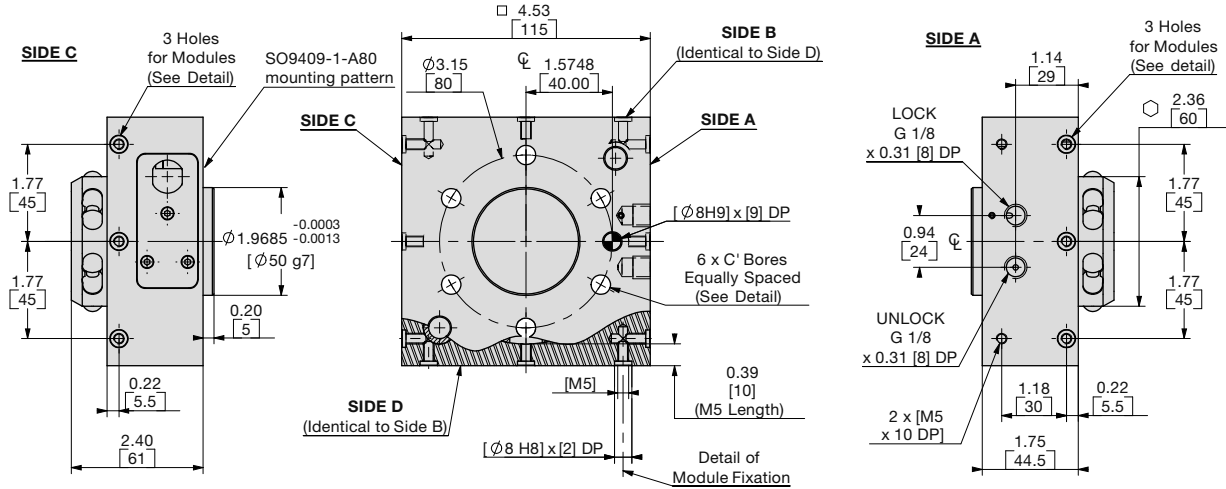
See Page **6.40**

# TOOL CHANGER RQC-200 ROBOT ADAPTER MODULE

## Specifications

## RQC-200

Maximum Payload .....	200 lbs	90 Kg
Maximum Moment .....	7,200 in.-lbs	810 Nm
Weight of RQC Unit only .....	4.7 lb	2.1 Kg
Weight of Coupled Units .....	6.7 lbs	3 Kg
Pressure Range (locked cylinder) ..	60~100 psi	4~7 bar
Bore Ø .....	2.09 in.	53 mm
Displacement .....	2.52 in <sup>3</sup>	41.3 cm <sup>3</sup>
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm
Valve required to actuate .....	4-way, 2-position	

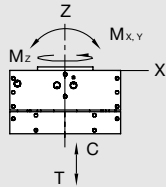


MODULAR RQC SERIES  
6.24

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



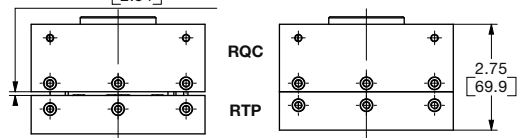
### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	300 lbs.	1330 N
Maximum Compressive <b>C</b>	400 lbs.	1780 N
Maximum Moment <b>M<sub>x</sub></b>	7200 in.-lbs.	810 Nm
Maximum Moment <b>M<sub>y</sub></b>	7200 in.-lbs.	810 Nm
Maximum Moment <b>M<sub>z</sub></b>	7200 in.-lbs.	810 Nm

### READY TO COUPLE POSITION

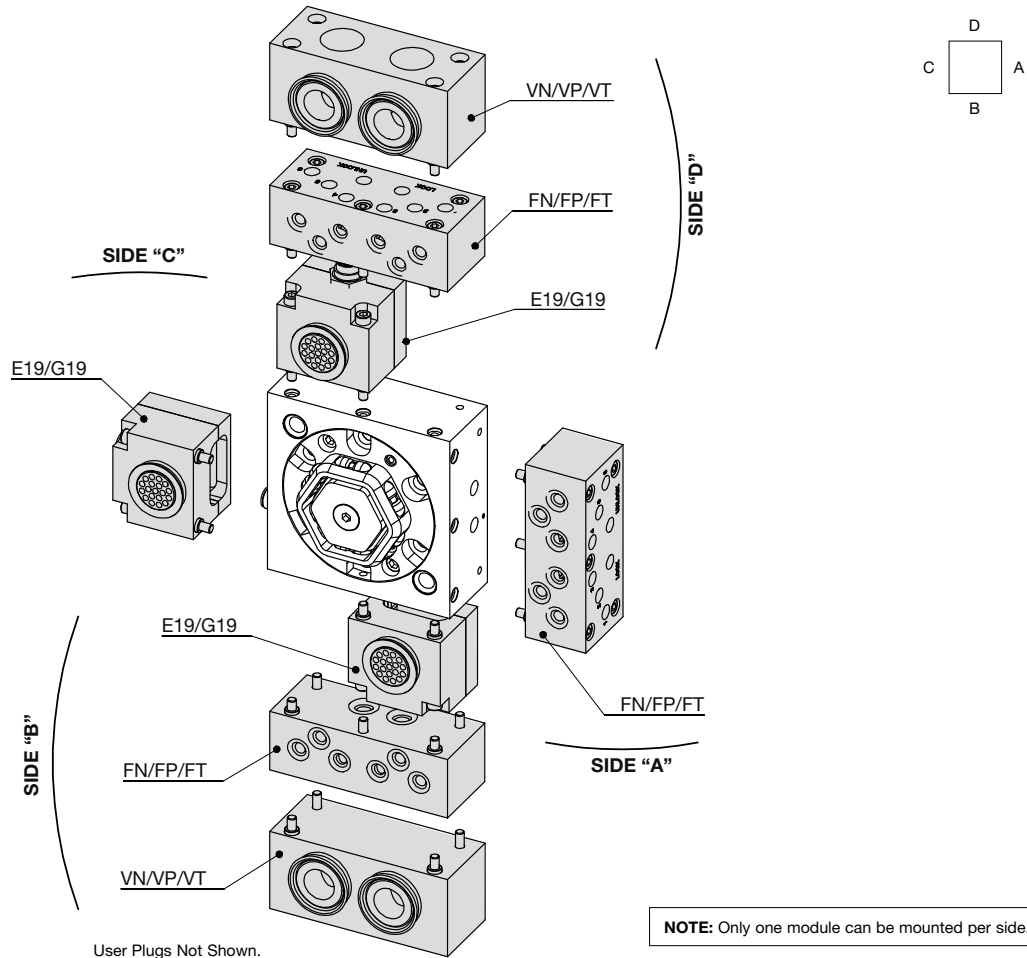
RQC can couple to RTP at up to a 0.10 gap [2.54]

### COUPLED POSITION



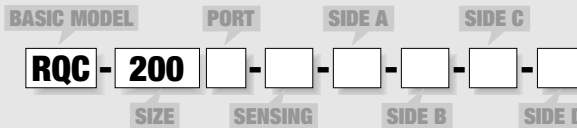


# TOOL CHANGER RQC-200 OPTIONAL MODULES FOR ROBOT ADAPTER



## How to Order: (Order Accessories separately from Basic Model)

For detailed sensing and module information see pages 8.40 - 8.51



### PORT:

- N** NPT port
- M** BSPP ports
- A** BSPT ports

### SENSING (FOR LATCH AND UNLATCH):

- LO** No sensing
- LP\*** PNP Inductive sensor
- CP\*** PNP Inductive sensor with M12 connector
- LN\*** NPN Inductive sensor
- CN\*** NPN Inductive sensor with M12 connector
- LD\*** Dry contact sensor
- CD\*** Dry contact sensor with M12 connector

\*Requires E19 module or G19 module mounted on side C. <sup>1</sup>Cables are sold separately.

### SIDE A:

- 0** No optional module
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar

### SIDE B AND/OR D:

- 0** No optional module
- E19<sup>1</sup>** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Connector, w/o Cable
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar
- VN** 2 x 3/4" NPT vacuum ports module, face seal
- VP** 2 x 3/4" BSPP vacuum ports module, face seal
- VT** 2 x 3/4" BSPT vacuum ports module, face seal

<sup>1</sup>Cordset or plug are sold separately.

### SIDE C:

- 0** No optional module
  - E19<sup>1</sup>\*\*** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
  - G19<sup>1</sup>\*\*** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Connector, w/o Cable
- <sup>1</sup>Cordset or plug are sold separately. \*\*Not compatible with CD, CP or CN sensing option.

### PNEUMATIC ACCESSORIES:

- SLKT-401** RQC-200 Standard Seal Repair Kit

### ELECTRICAL ACCESSORIES:

- ELCT-048** 90° Female Plug, w/o Cable, Solder Type, Cable Clamp for G19
- CABL-028** 90° Female M12 Cordset with 2M Cable for CP, CN, and CD
- CABL-029** 90° Female Cordset with 4M Cable for E19
- OSRK-001** PNP Inductive Sensor Repair Kit
- OSRK-002** NPN Inductive Sensor Repair Kit
- OSRK-003** Dry Contact Sensor Repair Kit

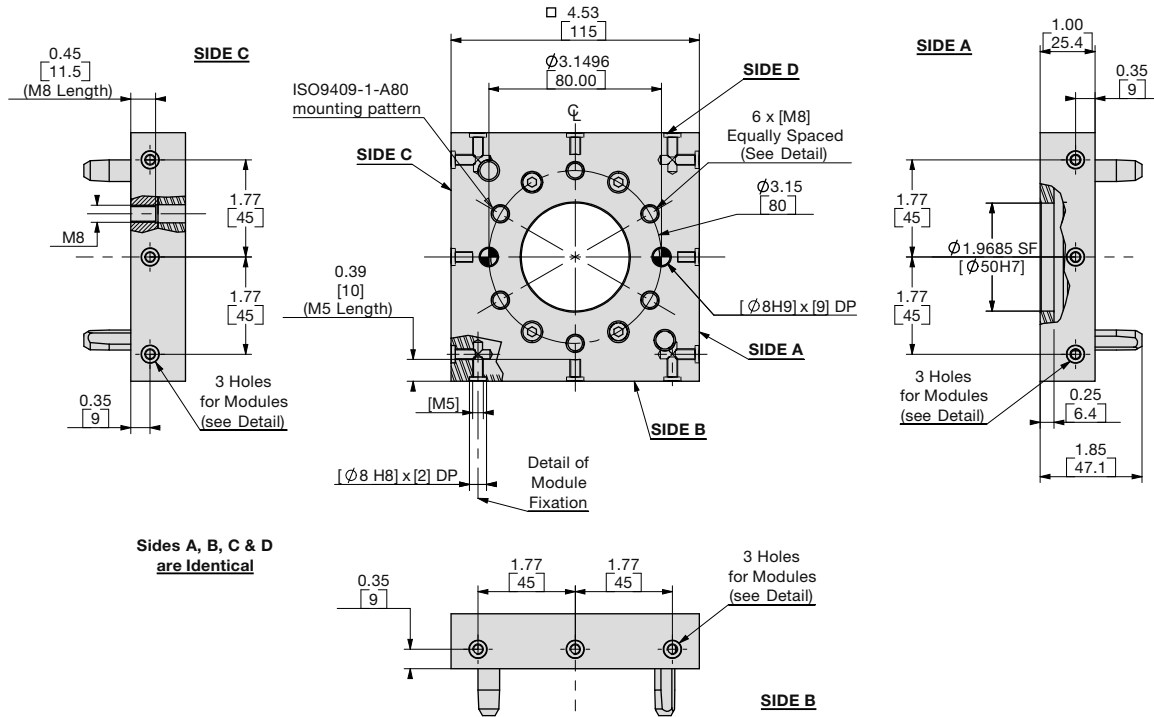
# TOOL CHANGER RTP-200 TOOL ADAPTER MODULE



## Specifications

## RTP-200

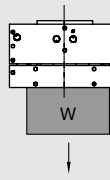
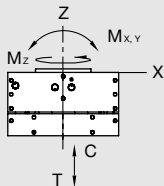
Maximum Payload .....	200 lbs	90 Kg
Maximum Moment .....	7,200 in.-lbs	810 Nm
Weight of RTP Unit only .....	2 lb	0.9 Kg
Weight of Coupled Units .....	6.7 lbs	3 Kg
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



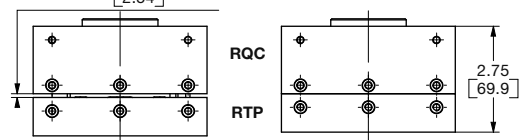
### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	300 lbs.	1330 N
Maximum Compressive <b>C</b>	400 lbs.	1780 N
Maximum Moment <b>M<sub>x</sub></b>	7200 in.-lbs.	810 Nm
Maximum Moment <b>M<sub>y</sub></b>	7200 in.-lbs.	810 Nm
Maximum Moment <b>M<sub>z</sub></b>	7200 in.-lbs.	810 Nm

### READY TO COUPLE POSITION

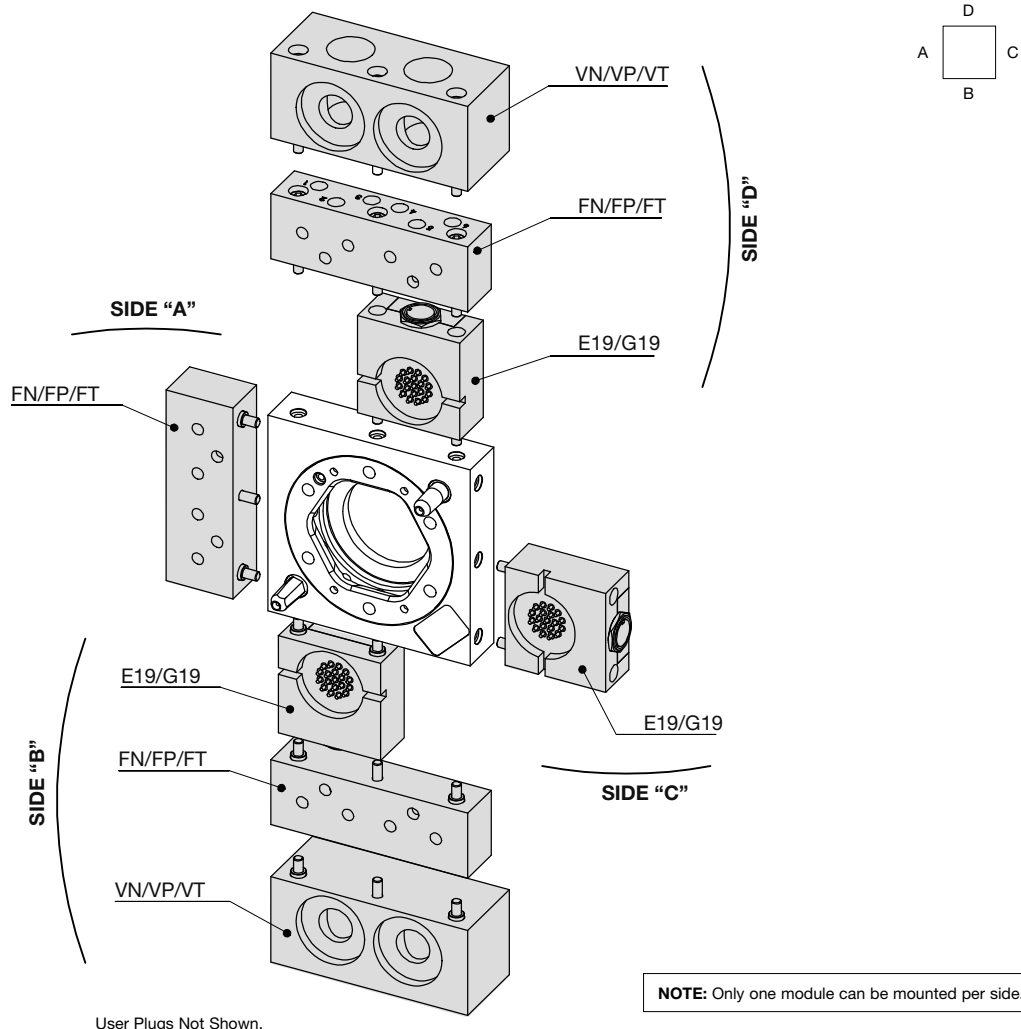
RQC can couple to RTP  
at up to a 0.10 gap  
[2.54]

### COUPLED POSITION



Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

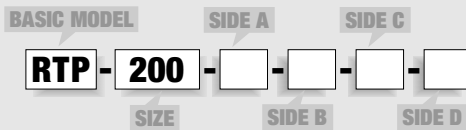
[www.comoso.com](http://www.comoso.com)



User Plugs Not Shown.

### How to Order: (Order Accessories separately from Basic Model)

For detailed sensing and module information see pages 8.40 - 8.51



#### SIDE A:

- 0** No optional module
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar

#### SIDE B AND/OR D:

- 0** No optional module
- E19<sup>†</sup>** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar
- VN** 2 x 3/4" NPT vacuum ports module, face seal
- VP** 2 x 3/4" BSPP vacuum ports module, face seal
- VT** 2 x 3/4" BSPT vacuum ports module, face seal

<sup>†</sup>Cordset or plug are sold separately.

#### SIDE C:

- 0** No optional module
- E19<sup>†</sup>** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable

<sup>†</sup>Cordset or plug are sold separately. \*\*Not compatible with CD, CP or CN sensing option.

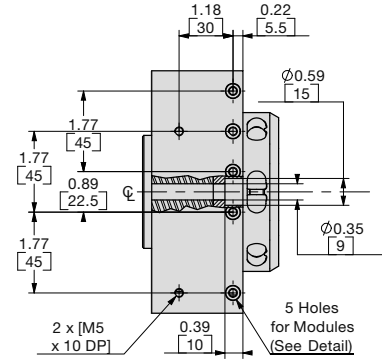
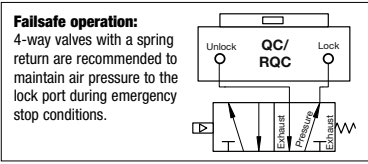
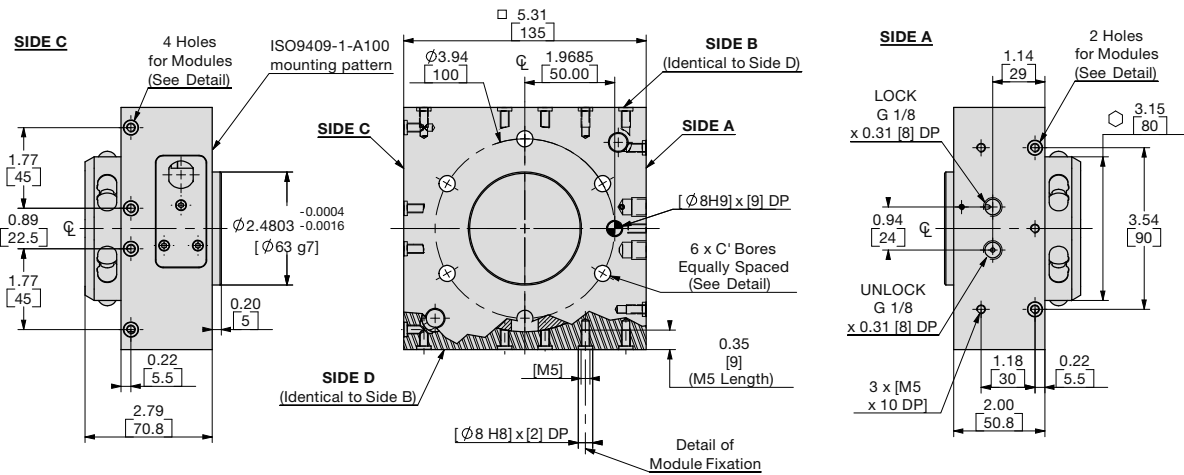
#### ELECTRICAL ACCESSORIES:

- ELCT-049** 90° Male Plug, w/o Cable, Solder Type, Cable Clamp for G19
- CABL-031** 90° Male Cordset with 2M Cable for E19

MODULAR RQC SERIES 6.27

# TOOL CHANGER RQC-400 ROBOT ADAPTER MODULE

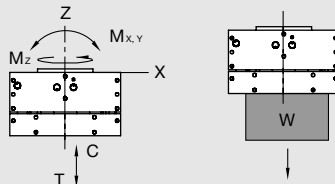
Specifications	RQC-400	
Maximum Payload .....	400 lbs	180 Kg
Maximum Moment .....	14,000 in.-lbs	1580 Nm
Weight of RQC Unit only .....	8 lb	3.6 Kg
Weight of Coupled Units .....	10.4 lbs	4.7 Kg
Pressure Range (locked cylinder) ..	60~100 psi	4~7 bar
Bore Ø .....	2.87 in.	73 mm
Displacement.....	4.93 in <sup>3</sup>	80.9 cm <sup>3</sup>
Temperature Range.....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm
Valve required to actuate.....	4-way, 2-position	



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



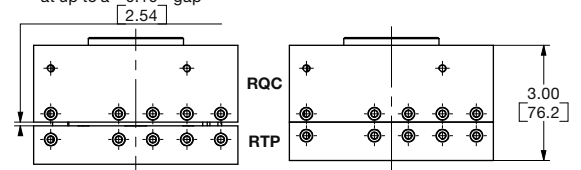
### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	600 lbs.	2670 N
Maximum Compressive <b>C</b>	800 lbs.	3560 N
Maximum Moment <b>M<sub>x</sub></b>	14000 in.-lbs.	1580 Nm
Maximum Moment <b>M<sub>y</sub></b>	14000 in.-lbs.	1580 Nm
Maximum Moment <b>M<sub>z</sub></b>	14000 in.-lbs.	1580 Nm

### READY TO COUPLE POSITION

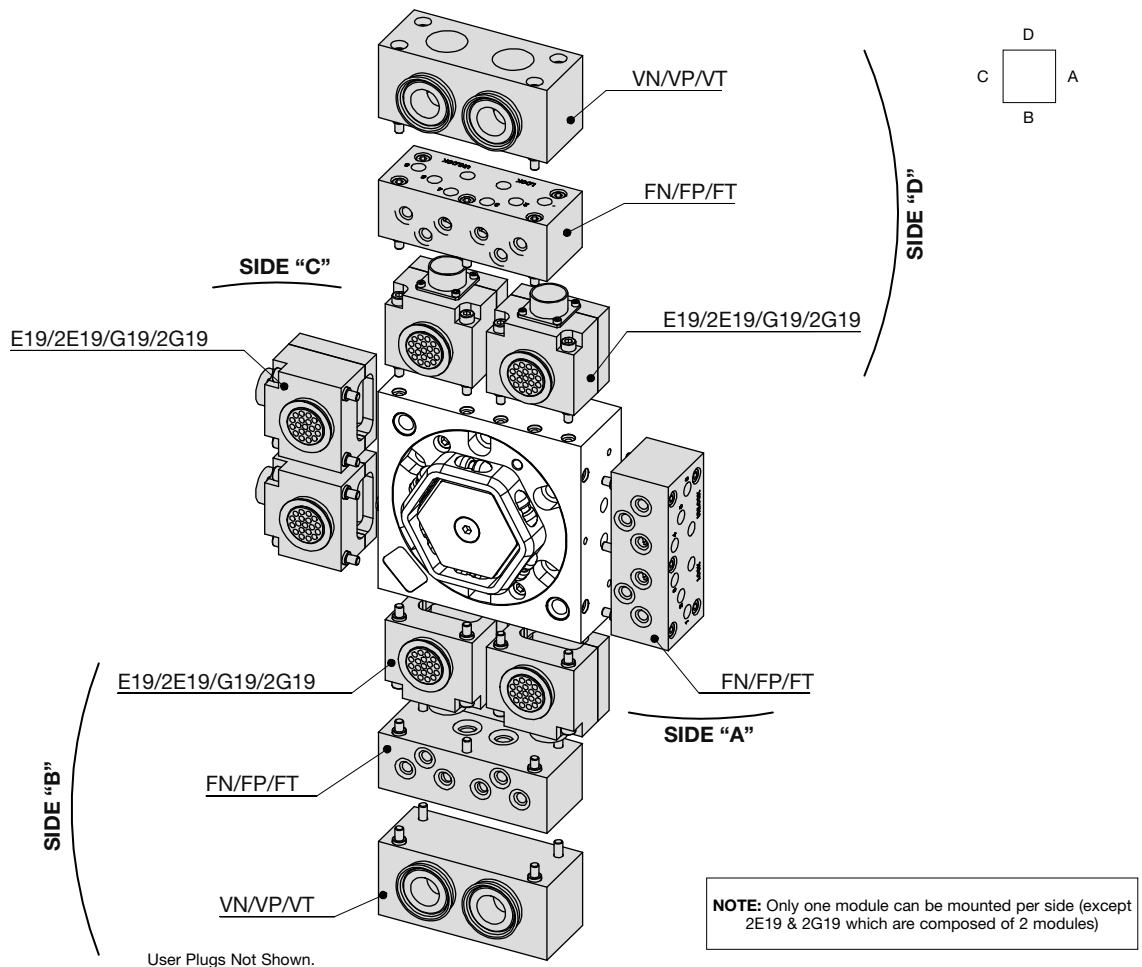
RQC can couple to RTP at up to a 0.10 gap

### COUPLED POSITION



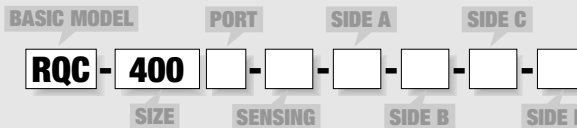


# TOOL CHANGER RQC-400 OPTIONAL MODULES FOR ROBOT ADAPTER



## How to Order: (Order Accessories separately from Basic Model)

For detailed sensing and module information see pages 8.40 - 8.51



### PORT:

- N** NPT port
- M** BSPP ports
- A** BSPT ports

### SENSING (FOR LATCH AND UNLATCH):

- LO** No sensing
- LP\*** PNP Inductive sensor
- CP\*** PNP Inductive sensor with M12 connector
- LN\*** NPN Inductive sensor
- CN\*** NPN Inductive sensor with M12 connector
- LD\*** Dry contact sensor
- CD\*** Dry contact sensor with M12 connector

\*Requires E19 module or G19 module mounted on side C. †Cordset or plug are sold separately.

### ELECTRICAL ACCESSORIES:

- ELCT-048** 90° Female Plug, w/o Cable, Solder Type, Cable Clamp for G19
- CABL-028** 90° Female M12 Cordset with 2M Cable for CP, CN, and CD
- CABL-029** 90° Female Cordset with 4M Cable for E19
- OSRK-001** PNP Inductive Sensor Repair Kit
- OSRK-002** NPN Inductive Sensor Repair Kit
- OSRK-003** Dry Contact Sensor Repair Kit

### SIDE A:

- 0** No optional module
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar

### SIDE C:

- 0** No optional module
- E19†** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- 2E19†\*\*** 2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- 2G19\*\*** 2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable

†Cordset or plug are sold separately. \*\*Not compatible with CD, CP or CN sensing option.

### SIDE B AND/OR D:

- 0** No optional module
- E19†** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- 2E19†** 2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- 2G19** 2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar
- VN** 2 x 3/4" NPT vacuum ports module, face seal
- VP** 2 x 3/4" BSPP vacuum ports module, face seal
- VT** 2 x 3/4" BSPT vacuum ports module, face seal

†Cordset or plug are sold separately.

### PNEUMATIC ACCESSORIES:

- SLKT-402** RQC-400 Standard Seal Repair Kit



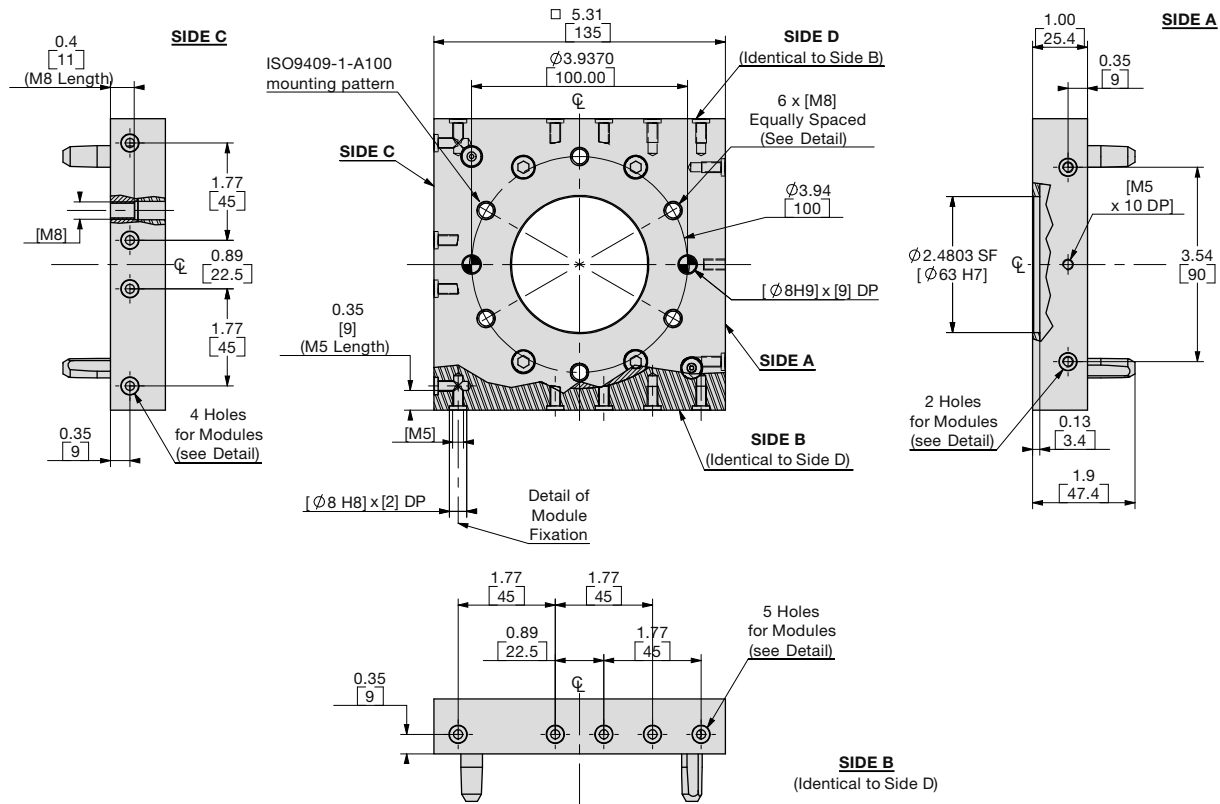
# TOOL CHANGER RTP-400 TOOL ADAPTER MODULE



## Specifications

### RTP-400

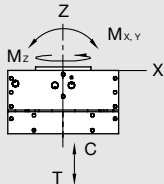
Maximum Payload .....	400 lbs	180 Kg
Maximum Moment .....	14,000 in.-lbs	1580 Nm
Weight of RTP Unit only .....	2.4 lb	1.1 Kg
Weight of Coupled Units .....	10.4 lbs	4.7 Kg
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information

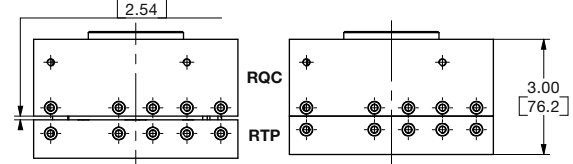


### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	600 lbs.	2670 N
Maximum Compressive <b>C</b>	800 lbs.	3560 N
Maximum Moment <b>M<sub>x</sub></b>	14000 in.-lbs.	1580 Nm
Maximum Moment <b>M<sub>y</sub></b>	14000 in.-lbs.	1580 Nm
Maximum Moment <b>M<sub>z</sub></b>	14000 in.-lbs.	1580 Nm

### READY TO COUPLE POSITION

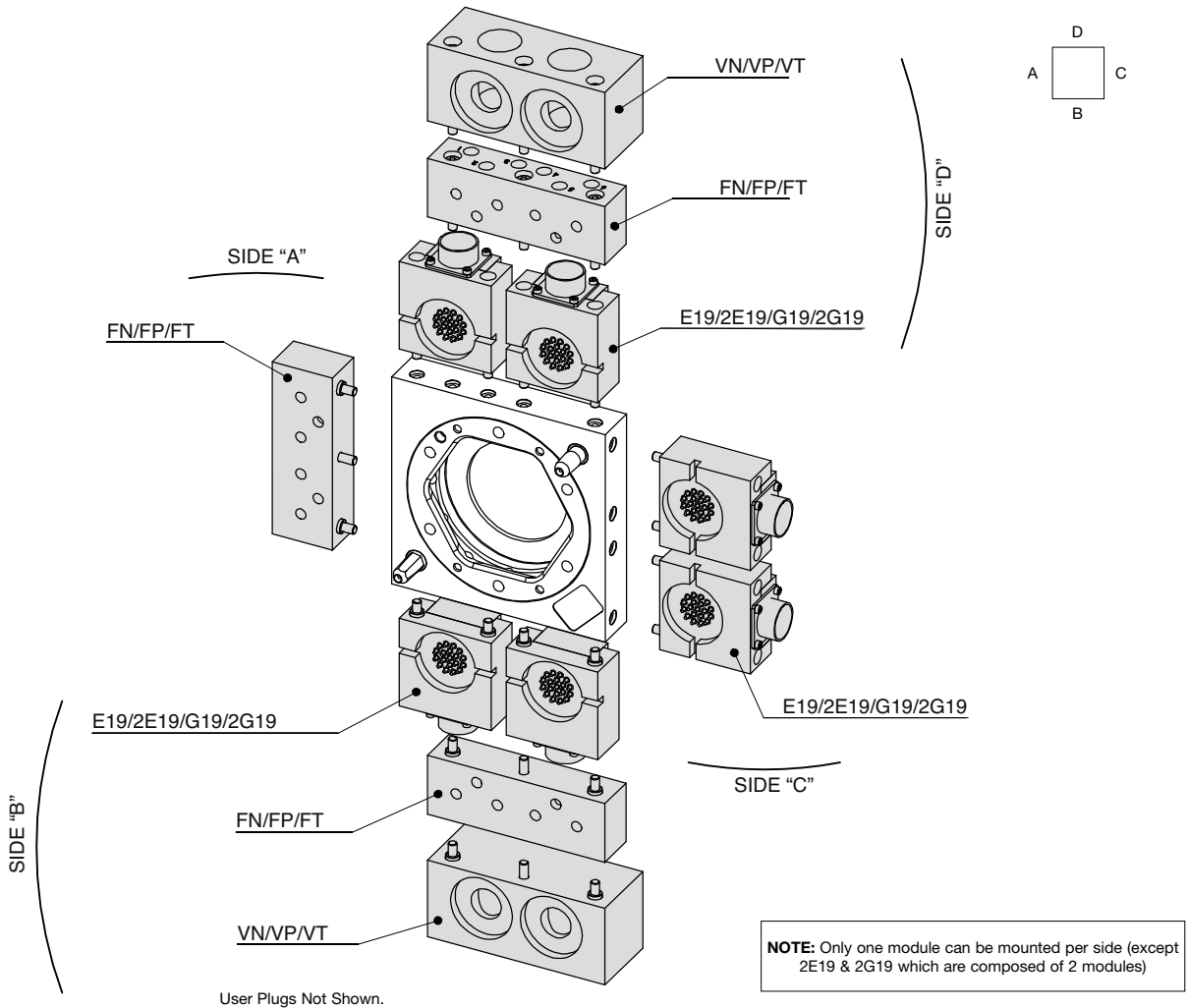
RQC can couple to RTP  
at up to a 0.10 gap



### COUPLED POSITION

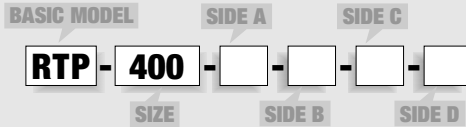
Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



### How to Order: (Order Accessories separately from Basic Model)

For detailed sensing and module information see pages 8.40 - 8.51



#### SIDE A:

- 0** No optional module
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar

#### SIDE B AND/OR D:

- 0** No optional module
- E19<sup>†</sup>** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- 2E19<sup>\*\*</sup>** 2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- 2G19<sup>\*\*</sup>** 2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar
- VN** 2 x 3/4" NPT vacuum ports module, face seal
- VP** 2 x 3/4" BSPP vacuum ports module, face seal
- VT** 2 x 3/4" BSPT vacuum ports module, face seal

<sup>†</sup>Cordset or plug are sold separately.

#### SIDE C:

- 0** No optional module
- E19<sup>†</sup>** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- 2E19<sup>\*\*</sup>** 2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- 2G19<sup>\*\*</sup>** 2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable

<sup>†</sup>Cordset or plug are sold separately. <sup>\*\*</sup>Not compatible with CD, CP or CN sensing option.

#### ELECTRICAL ACCESSORIES:

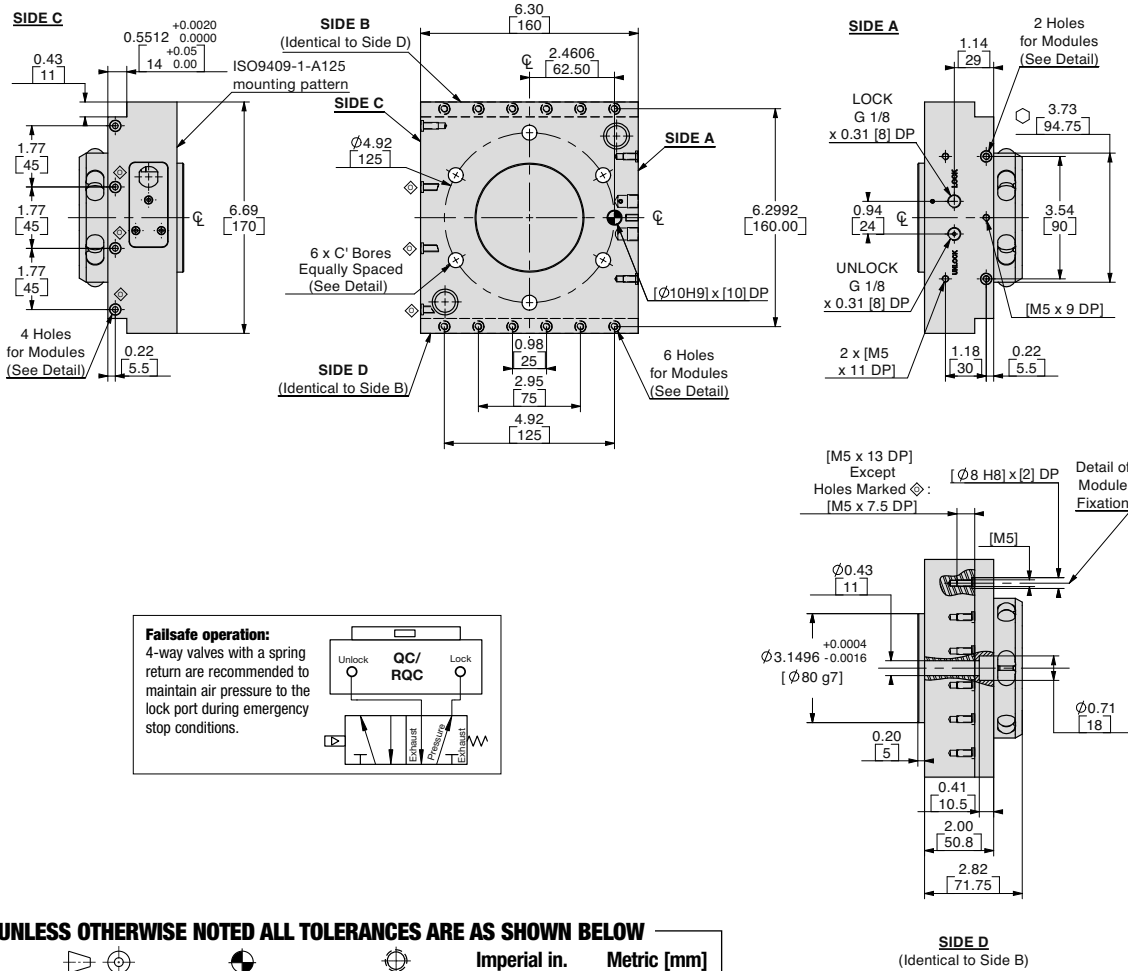
- ELCT-049** 90° Male Plug, w/o Cable, Solder Type, Cable Clamp for G19
- CABL-031** 90° Male Cordset with 2M Cable for E19

# TOOL CHANGER RQC-800 ROBOT ADAPTER MODULE

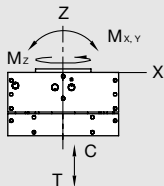
## Specifications

### RQC-800

Maximum Payload .....	800 lbs	360 Kg
Maximum Moment .....	22,000 in.-lbs	2490 Nm
Weight of RQC Unit only .....	11.8 lb	5.3 Kg
Weight of Coupled Units .....	15.8 lbs	7.1 Kg
Pressure Range (locked cylinder) ..	60~100 psi	4~7 bar
Bore Ø .....	3.15 in.	80 mm
Displacement.....	5.83 in <sup>3</sup>	95.6 cm <sup>3</sup>
Temperature Range.....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm
Valve required to actuate.....	4-way, 2-position	

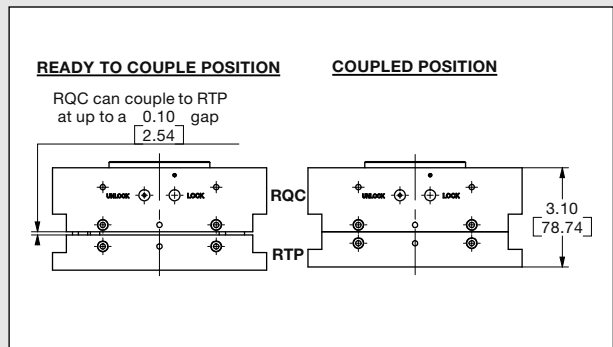


## Loading Information



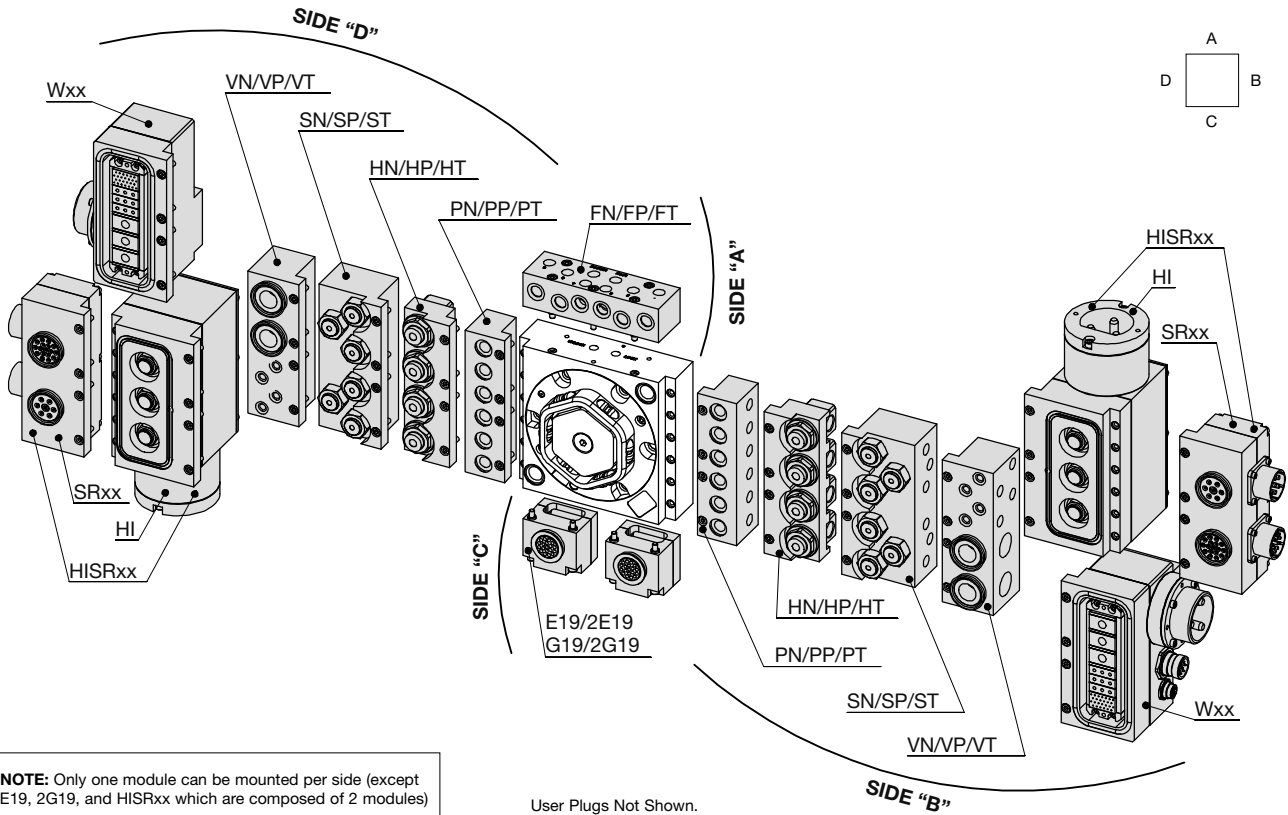
### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	1200 lbs.	5340 N
Maximum Compressive <b>C</b>	1600 lbs.	7120 N
Maximum Moment <b>M<sub>x</sub></b>	22000 in.-lbs.	2490 Nm
Maximum Moment <b>M<sub>y</sub></b>	22000 in.-lbs.	2490 Nm
Maximum Moment <b>M<sub>z</sub></b>	22000 in.-lbs.	2490 Nm





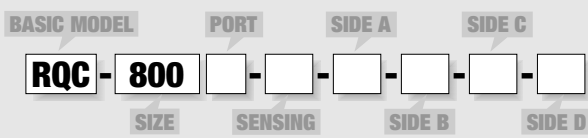
# TOOL CHANGER RQC-800 OPTIONAL MODULES FOR ROBOT ADAPTER



**NOTE:** Only one module can be mounted per side (except 2E19, 2G19, and HISRxx which are composed of 2 modules)

User Plugs Not Shown.

## How to Order: (Order Accessories separately from Basic Model) For detailed sensing and module information see pages 8.40 - 8.51



**PORT:**

<b>N</b>	NPT port
<b>M</b>	BSPP ports
<b>A</b>	BSPT ports

**SENSING (FOR LATCH, UNLATCH AND READY-TO-COUPLE):**

<b>LO</b>	No sensing
<b>LP*</b>	PNP Inductive sensor
<b>CP*</b>	PNP Inductive sensor with M12 connector
<b>LN*</b>	NPN Inductive sensor
<b>CN*</b>	NPN Inductive sensor with M12 connector
<b>LD*</b>	Dry contact sensor
<b>CD*</b>	Dry contact sensor with M12 connector

\*Requires E19 module or G19 module mounted on side C. †Cordset or plug are sold separately.

**ELECTRICAL ACCESSORIES:**

<b>ELCT-048</b>	90° Female Plug, w/o Cable, Solder Type, Cable Clamp for G19
<b>CABL-028</b>	90° Female M12 Cordset with 2M Cable for CP, CN, and CD
<b>CABL-029</b>	90° Female Cordset with 4M Cable for E19
<b>OSRK-004</b>	PNP Inductive Sensor Repair Kit
<b>OSRK-005</b>	NPN Inductive Sensor Repair Kit
<b>OSRK-006</b>	Dry Contact Sensor Repair Kit

**SIDE A:**

<b>0</b>	No optional module
<b>FN</b>	6 x 1/4" NPT air ports module, face seal, 10 bar
<b>FP</b>	6 x 1/4" BSPP air ports module, face seal, 10 bar
<b>FT</b>	6 x 1/4" BSPT air ports module, face seal, 10 bar

**SIDE B AND/OR D:**

<b>0</b>	No optional module
<b>PN</b>	6 x 1/4" NPT air ports module, face seal, 10 bar
<b>PP</b>	6 x 1/4" BSPP air ports module, face seal, 10 bar
<b>PT</b>	6 x 1/4" BSPT air ports module, face seal, 10 bar
<b>HN</b>	4 x 3/8" NPT fluid ports module, 100 bar
<b>HP</b>	4 x 3/8" BSPP fluid ports module, 100 bar
<b>HT</b>	4 x 3/8" BSPT fluid ports module, 100 bar
<b>SN</b>	6 x 1/4" NPT air ports module, self sealing, 10 bar
<b>SP</b>	6 x 1/4" BSPP air ports module, self sealing, 10 bar
<b>ST</b>	6 x 1/4" BSPT air ports module, self sealing, 10 bar
<b>VN</b>	2 x 3/4" vacuum + 4 x 1/4" air NPT ports module, face sealing
<b>VP</b>	2 x 3/4" vacuum + 4 x 1/4" air BSPP ports module, face sealing
<b>VT</b>	2 x 3/4" vacuum + 4 x 1/4" air BSPT ports module, face sealing
<b>Wxx**</b>	Servo Gun and Welding Gun Module (Pin and Socket) - Consult factory
<b>HI</b>	Welding Gun module (3 x 180 Amp spring loaded pins)
<b>SRxx**</b>	Servo Gun Module (with spring loaded pins)
<b>HISRxx****</b>	Servo Gun and Welding Gun module (with spring loaded pins)

\*\* xx are attributed according to the customer wiring diagram. Consult factory.  
\*\* SRxx module can be mounted on the HI module to use with electric welding gun.

**SIDE C:**

<b>0</b>	No optional module
<b>E19†</b>	19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
<b>2E19****</b>	2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
<b>G19</b>	19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
<b>2G19****</b>	2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable

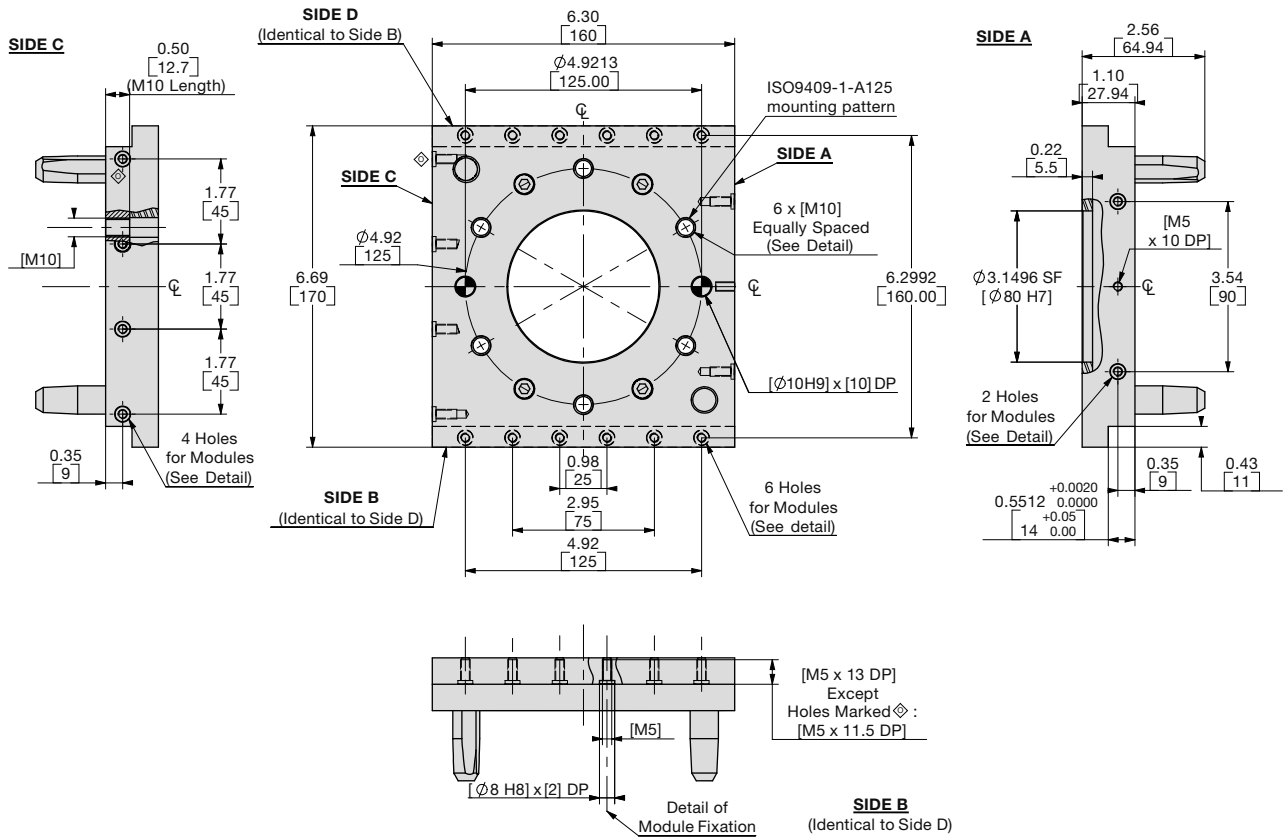
**PNEUMATIC ACCESSORIES:**

<b>SLKT-403</b>	RQC-800 Standard Seal Repair Kit
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MODULAR RQC SERIES  
6.33

# TOOL CHANGER RTP-800 TOOL ADAPTER MODULE

Specifications	RTP-800	
Maximum Payload .....	800 lbs	360 Kg
Maximum Moment .....	22,000 in.-lbs	2490 Nm
Weight of RTP Unit only .....	4 lb	1.8 Kg
Weight of Coupled Units .....	15.8 lbs	7.1 Kg
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	± 0.025 mm



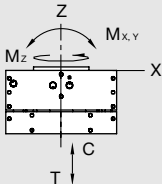
MODULAR RQC SERIES

6.34

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



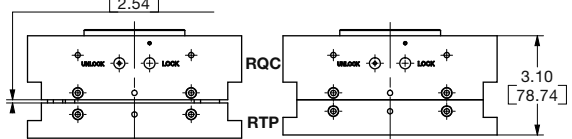
### Loading Capacity

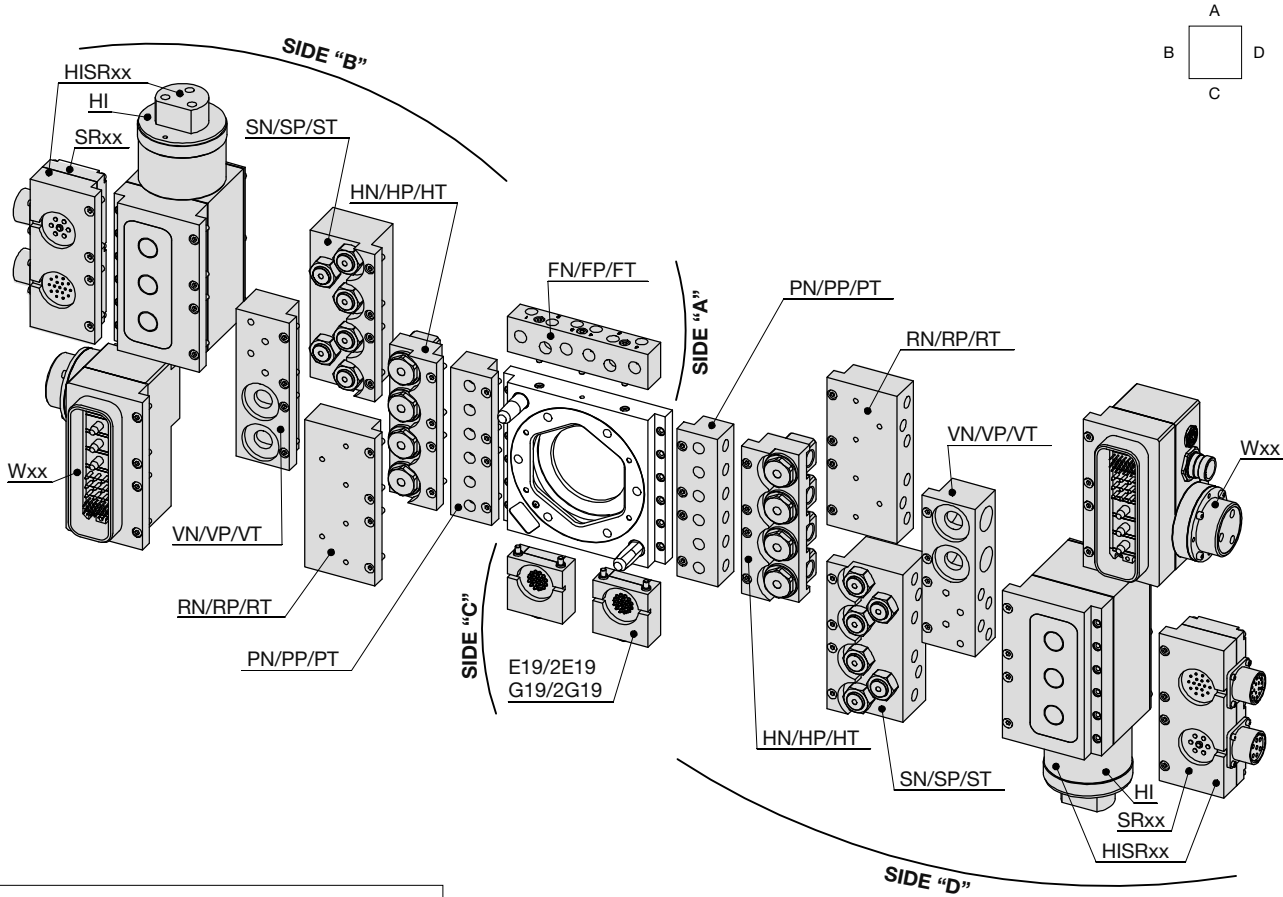
	Imperial	Metric
Maximum Tensile <b>T</b>	1200 lbs.	5340 N
Maximum Compressive <b>C</b>	1600 lbs.	7120 N
Maximum Moment <b>M<sub>x</sub></b>	22000 in.-lbs.	2490 Nm
Maximum Moment <b>M<sub>y</sub></b>	22000 in.-lbs.	2490 Nm
Maximum Moment <b>M<sub>z</sub></b>	22000 in.-lbs.	2490 Nm

### READY TO COUPLE POSITION

### COUPLED POSITION

RQC can couple to RTP at up to a 2.54 gap



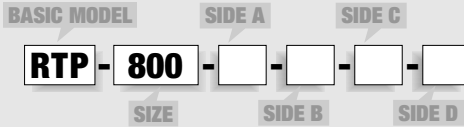


**NOTE:** Only one module can be mounted per side (except 2E19, 2G19, and HISRxx which are composed of 2 modules)

User Plugs Not Shown.

### How to Order: (Order Accessories separately from Basic Model)

For detailed sensing and module information see pages 8.40 - 8.51



#### SIDE A:

<b>0</b>	No optional module
<b>FN</b>	6 x 1/4" NPT air ports module, face seal, 10 bar
<b>FP</b>	6 x 1/4" BSPP air ports module, face seal, 10 bar
<b>FT</b>	6 x 1/4" BSPT air ports module, face seal, 10 bar

#### SIDE C:

<b>0</b>	No optional module
<b>E19<sup>†</sup></b>	19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
<b>2E19<sup>***</sup></b>	2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
<b>G19</b>	19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
<b>2G19<sup>***</sup></b>	2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable

<sup>†</sup>Cordset or plug are sold separately. <sup>\*\*\*</sup>Not compatible with CD, CP or CN sensing option.

#### ELECTRICAL ACCESSORIES:

<b>ELCT-049</b>	90° Male Plug, w/o Cable, Solder Type, Cable Clamp for G19
<b>CABL-031</b>	90° Male Cordset with 2M Cable for E19

#### SIDE B AND/OR D:

<b>0</b>	No optional module
<b>PN</b>	6 x 1/4" NPT air ports module, face seal, 10 bar
<b>PP</b>	6 x 1/4" BSPP air ports module, face seal, 10 bar
<b>PT</b>	6 x 1/4" BSPT air ports module, face seal, 10 bar
<b>HN</b>	4 x 3/8" NPT fluid ports module, 100 bar
<b>HP</b>	4 x 3/8" BSPP fluid ports module, 100 bar
<b>HT</b>	4 x 3/8" BSPT fluid ports module, 100 bar
<b>RN*</b>	6 x 1/4" NPT air ports module, single shut-off flat face, 10 bar
<b>RP*</b>	6 x 1/4" BSPP air ports module, single shut-off flat face, 10 bar
<b>RT*</b>	6 x 1/4" BSPT air ports module, single shut-off flat face, 10 bar
<b>SN</b>	6 x 1/4" NPT air ports module, double shut-off flat face, 10 bar
<b>SP</b>	6 x 1/4" BSPP air ports module, double shut-off flat face, 10 bar
<b>ST</b>	6 x 1/4" BSPT air ports module, double shut-off flat face, 10 bar
<b>VN</b>	2 x 3/4" vacuum + 4 x 1/4" air NPT ports module, face sealing
<b>VP</b>	2 x 3/4" vacuum + 4 x 1/4" air BSPP ports module, face sealing
<b>VT</b>	2 x 3/4" vacuum + 4 x 1/4" air BSPT ports module, face sealing
<b>Wxx**</b>	Servo Gun and Welding Gun Module (Pin and Socket) - Consult factory
<b>HI</b>	Welding Gun module (3 x 180 Amp spring loaded pins)
<b>SRxx**</b>	Servo Gun Module (with spring loaded pins)
<b>HISRxx<sup>***††</sup></b>	Servo Gun and Welding Gun module (with spring loaded pins)

\* Used with SN, SP, or ST modules on robot half.

\*\* xx are attributed according to the customer wiring diagram. Consult factory.

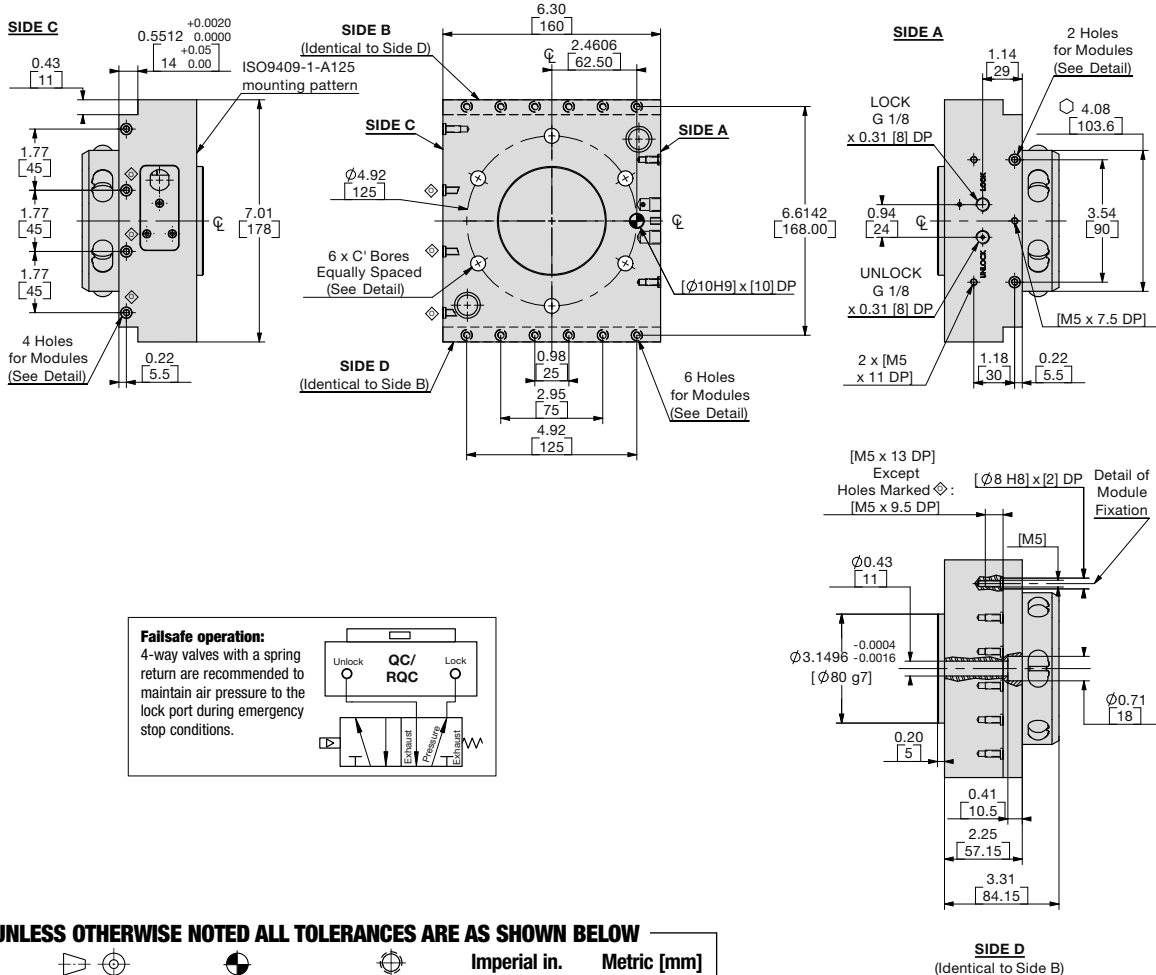
†† SRxx module can be mounted on the HI module to use with electric welding gun.

# TOOL CHANGER RQC-1200 ROBOT ADAPTER MODULE

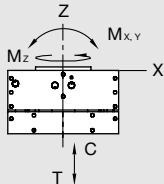
## Specifications

### RQC-1200

Maximum Payload .....	1200 lbs	550 Kg
Maximum Moment .....	30,000 in.-lbs	3390 Nm
Weight of RQC Unit only .....	14.1 lb	6.4 Kg
Weight of Coupled Units .....	18.4 lbs	8.3 Kg
Pressure Range (locked cylinder) ..	60~100 psi	4~7 bar
Bore Ø .....	3.74 in.	95 mm
Displacement.....	9.38 in <sup>3</sup>	153.7 cm <sup>3</sup>
Temperature Range.....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm
Valve required to actuate.....	4-way, 2-position	



## Loading Information

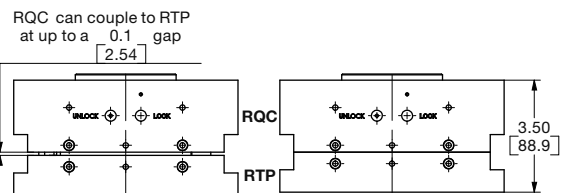


### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	1800 lbs.	8000 N
Maximum Compressive <b>C</b>	2400 lbs.	10700 N
Maximum Moment <b>M<sub>x</sub></b>	30000 in.-lbs.	3390 Nm
Maximum Moment <b>M<sub>y</sub></b>	30000 in.-lbs.	3390 Nm
Maximum Moment <b>M<sub>z</sub></b>	30000 in.-lbs.	3390 Nm

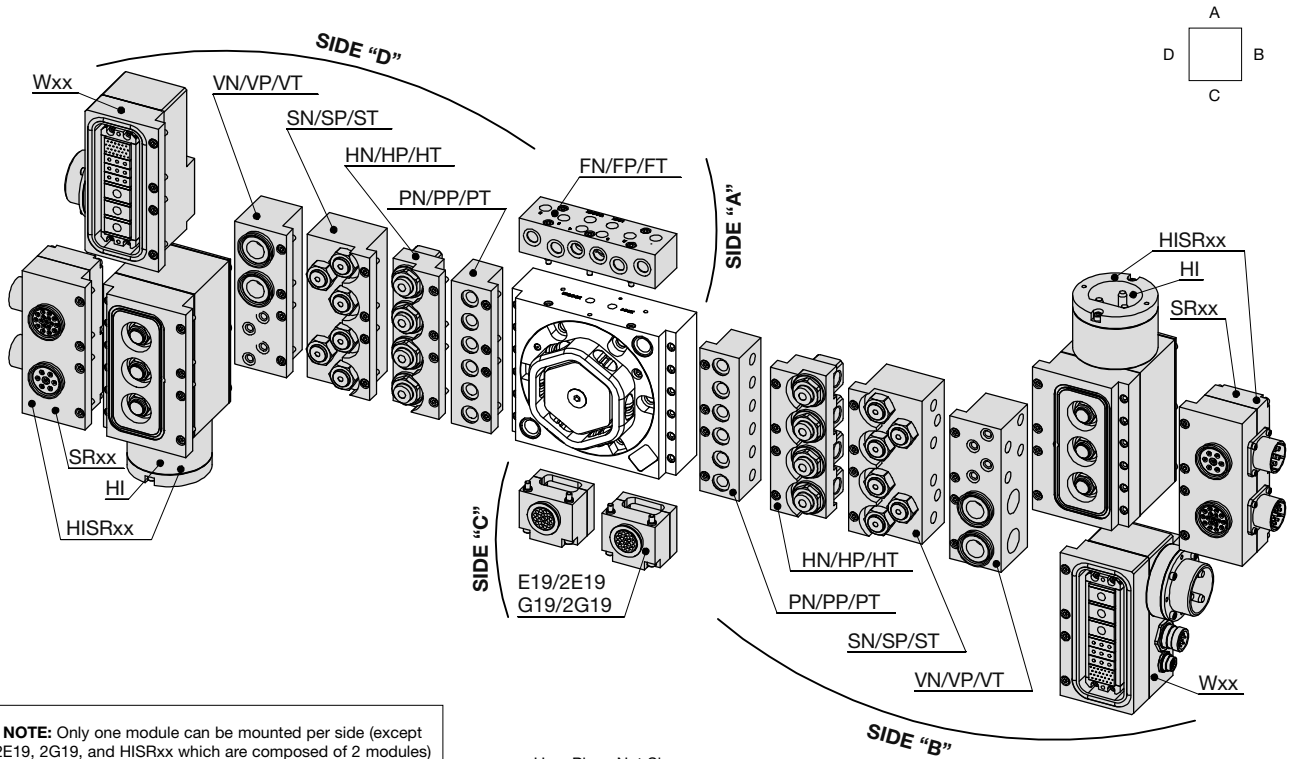
### READY TO COUPLE POSITION

### COUPLED POSITION





# TOOL CHANGER RQC-1200 OPTIONAL MODULES FOR ROBOT ADAPTER

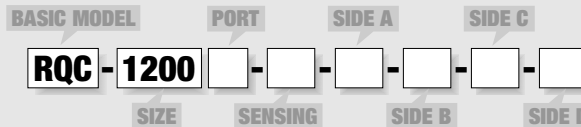


**NOTE:** Only one module can be mounted per side (except 2E19, 2G19, and HISRxx which are composed of 2 modules)

User Plugs Not Shown.

## How to Order: (Order Accessories separately from Basic Model)

For detailed sensing and module information see pages 8.40 - 8.51



### PORT:

- N** NPT port
- M** BSPP ports
- A** BSPT ports

### SENSING (FOR LATCH, UNLATCH AND READY-TO-COUPLE):

- LO** No sensing
- LP\*** PNP Inductive sensor
- CP\*** PNP Inductive sensor with M12 connector
- LN\*** NPN Inductive sensor
- CN\*** NPN Inductive sensor with M12 connector
- LD\*** Dry contact sensor
- CD\*** Dry contact sensor with M12 connector

\*Requires E19 module or G19 module mounted on side C. †Cordset or plug are sold separately.

### ELECTRICAL ACCESSORIES:

- ELCT-048** 90° Female Plug, w/o Cable, Solder Type, Cable Clamp for G19
- CABL-028** 90° Female M12 Cordset with 2M Cable for CP, CN, and CD
- CABL-029** 90° Female Cordset with 4M Cable for E19
- OSRK-004** PNP Inductive Sensor Repair Kit
- OSRK-005** NPN Inductive Sensor Repair Kit
- OSRK-006** Dry Contact Sensor Repair Kit

### SIDE A:

- 0** No optional module
- FN** 6 x 1/4" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/4" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/4" BSPT air ports module, face seal, 10 bar

### SIDE B AND/OR D:

- 0** No optional module
- PN** 6 x 1/4" NPT air ports module, face seal, 10 bar
- PP** 6 x 1/4" BSPP air ports module, face seal, 10 bar
- PT** 6 x 1/4" BSPT air ports module, face seal, 10 bar
- HN** 4 x 3/8" NPT fluid ports module, 100 bar
- HP** 4 x 3/8" BSPP fluid ports module, 100 bar
- HT** 4 x 3/8" BSPT fluid ports module, 100 bar
- SN** 6 x 1/4" NPT air ports module, self sealing, 10 bar
- SP** 6 x 1/4" BSPP air ports module, self sealing, 10 bar
- ST** 6 x 1/4" BSPT air ports module, self sealing, 10 bar
- VN** 2 x 3/4" vacuum + 4 x 1/4" air NPT ports module, face sealing
- VP** 2 x 3/4" vacuum + 4 x 1/4" air BSPP ports module, face sealing
- VT** 2 x 3/4" vacuum + 4 x 1/4" air BSPT ports module, face sealing
- Wxx\*\*** Servo Gun and Welding Gun Module (Pin and Socket) - Consult factory
- HI** Welding Gun module (3 x 180 Amp spring loaded pins)
- SRxx\*\*** Servo Gun Module (with spring loaded pins)
- HISRxx\*\*\*** Servo Gun and Welding Gun module (with spring loaded pins)

\*\* xx are attributed according to the customer wiring diagram. Consult us.

†† SRxx module can be mounted on the HI module to use with electric welding gun.

### SIDE C:

- 0** No optional module
- E19†** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- 2E19†††** 2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- 2G19†††** 2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable

†Cordset or plug are sold separately. \*\*\*Not compatible with CD, CP or CN sensing option.

### PNEUMATIC ACCESSORIES:

- SLKT-404** RQC-1200 Standard Seal Repair Kit

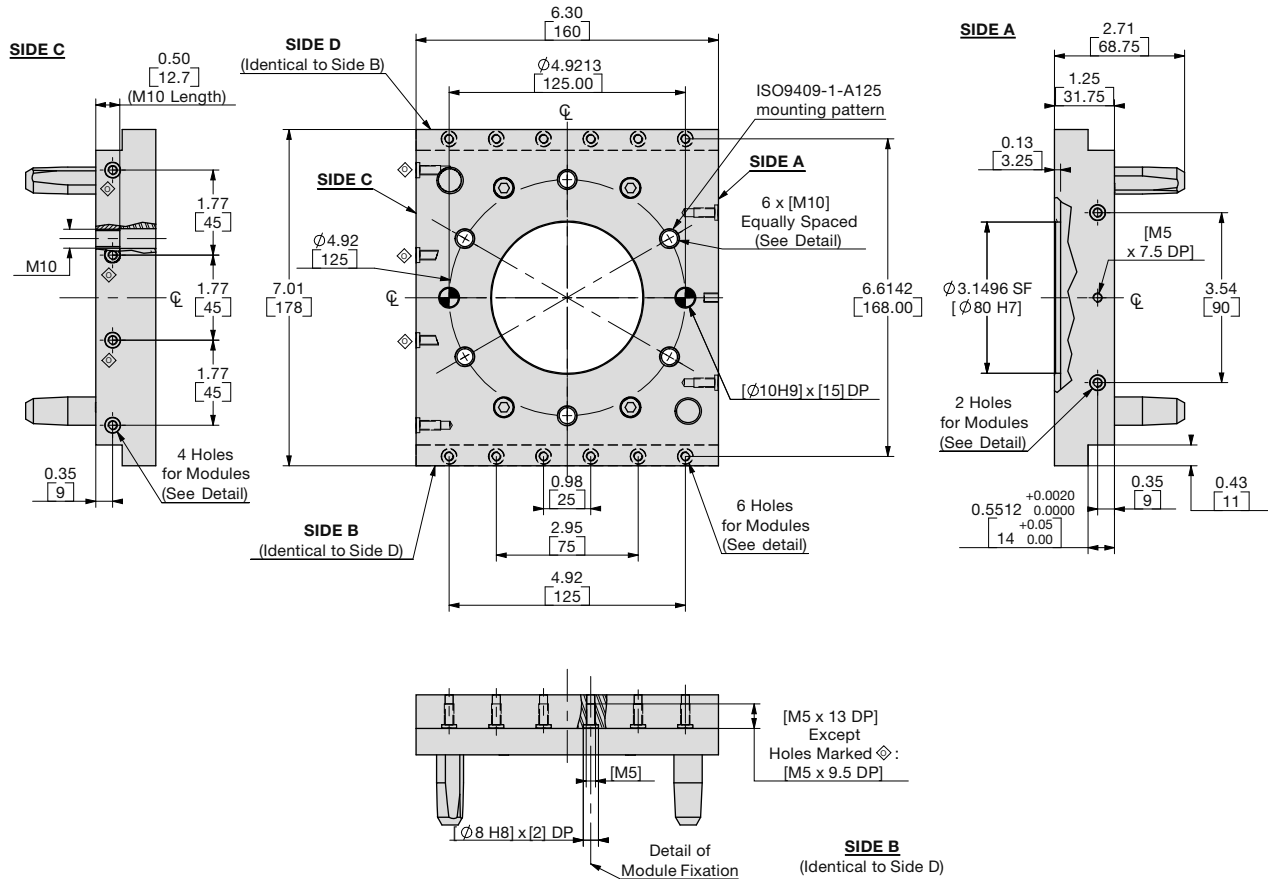


# TOOL CHANGER RTP-1200 TOOL ADAPTER MODULE

## Specifications

### RTP-1200

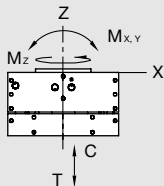
Maximum Payload .....	1200 lbs	550 Kg
Maximum Moment .....	30,000 in.-lbs	3390 Nm
Weight of RTP Unit only .....	4.3 lb	1.9 Kg
Weight of Coupled Units .....	18.4 lbs	8.3 Kg
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



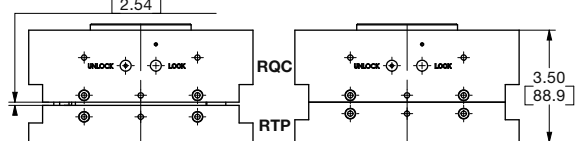
### Loading Capacity

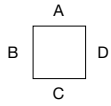
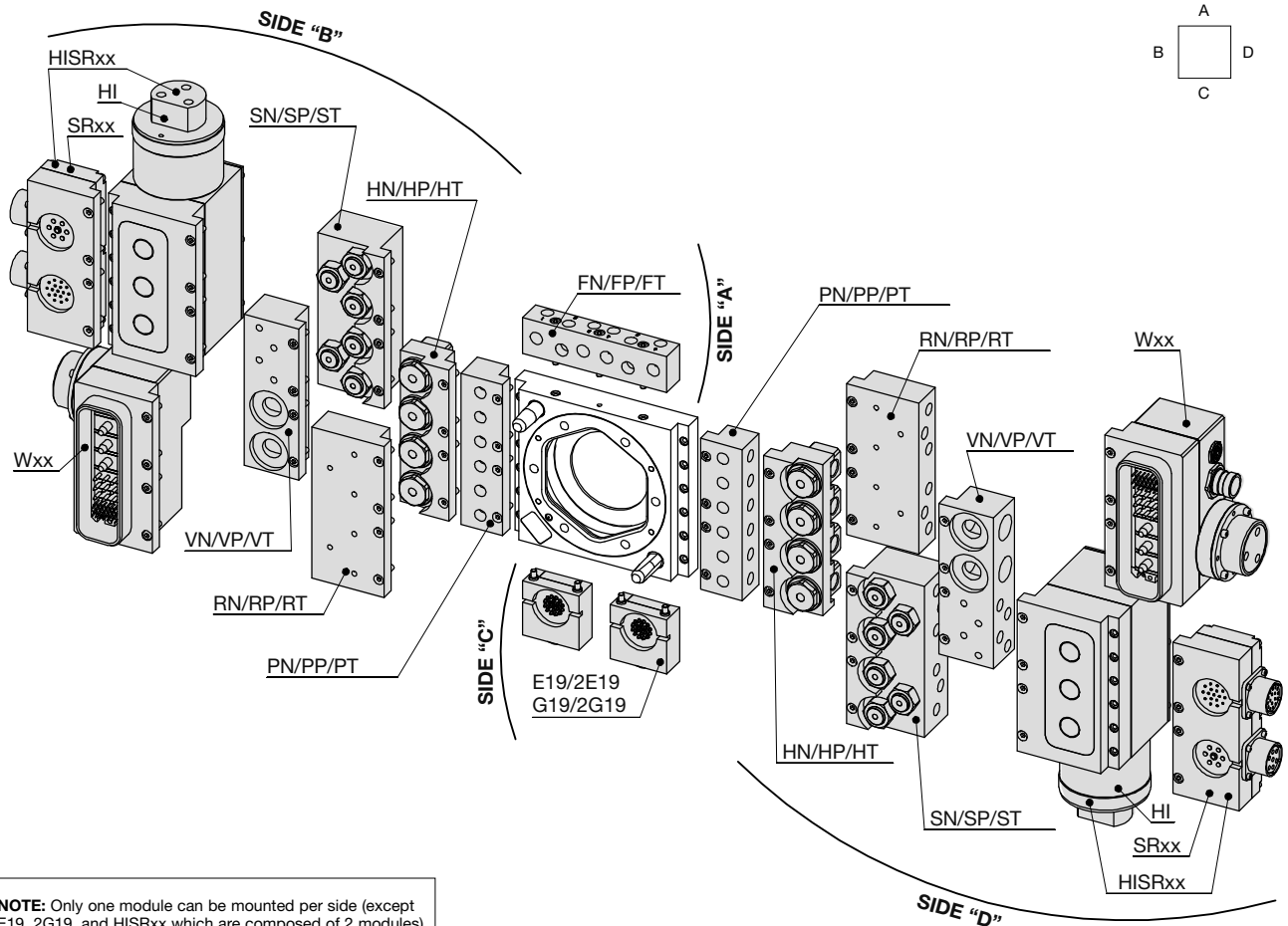
	Imperial	Metric
Maximum Tensile <b>T</b>	1800 lbs.	8000 N
Maximum Compressive <b>C</b>	2400 lbs.	10700 N
Maximum Moment <b>M<sub>x</sub></b>	30000 in.-lbs.	3390 Nm
Maximum Moment <b>M<sub>y</sub></b>	30000 in.-lbs.	3390 Nm
Maximum Moment <b>M<sub>z</sub></b>	30000 in.-lbs.	3390 Nm

### READY TO COUPLE POSITION

### COUPLED POSITION

RQC can couple to RTP at up to a .01 gap [2.54]

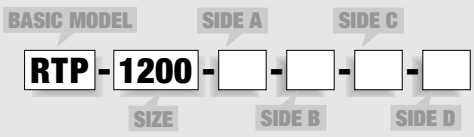




**NOTE:** Only one module can be mounted per side (except 2E19, 2G19, and HISRxx which are composed of 2 modules)

User Plugs Not Shown.

### How to Order: (Order Accessories separately from Basic Model) For detailed sensing and module information see pages 8.40 - 8.51



- SIDE A:**
- 0** No optional module
  - FN** 6 x 1/4" NPT air ports module, face seal, 10 bar
  - FP** 6 x 1/4" BSPP air ports module, face seal, 10 bar
  - FT** 6 x 1/4" BSPT air ports module, face seal, 10 bar

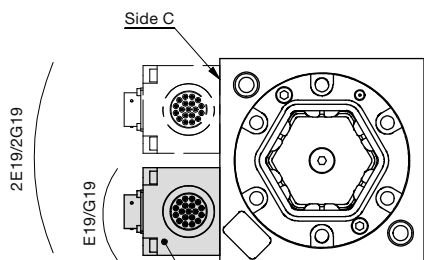
- SIDE C:**
- 0** No optional module
  - E19<sup>†</sup>** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
  - 2E19<sup>\*\*\*</sup>** 2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
  - G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
  - 2G19<sup>\*\*\*</sup>** 2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- <sup>†</sup>Cordset or plug are sold separately. <sup>\*\*\*</sup>Not compatible with CD, CP or CN sensing option.

- ELECTRICAL ACCESSORIES:**
- ELCT-049** 90° Male Plug, w/o Cable, Solder Type, Cable Clamp for G19
  - CABL-031** 90° Male Cordset with 2M Cable for E19

- SIDE B AND/OR D:**
- 0** No optional module
  - PN** 6 x 1/4" NPT air ports module, face seal, 10 bar
  - PP** 6 x 1/4" BSPP air ports module, face seal, 10 bar
  - PT** 6 x 1/4" BSPT air ports module, face seal, 10 bar
  - HN** 4 x 3/8" NPT fluid ports module, 100 bar
  - HP** 4 x 3/8" BSPP fluid ports module, 100 bar
  - HT** 4 x 3/8" BSPT fluid ports module, 100 bar
  - RN\*** 6 x 1/4" NPT air ports module, single shut-off flat face, 10 bar
  - RP\*** 6 x 1/4" BSPP air ports module, single shut-off flat face, 10 bar
  - RT\*** 6 x 1/4" BSPT air ports module, single shut-off flat face, 10 bar
  - SN** 6 x 1/4" NPT air ports module, double shut-off flat face, 10 bar
  - SP** 6 x 1/4" BSPP air ports module, double shut-off flat face, 10 bar
  - ST** 6 x 1/4" BSPT air ports module, double shut-off flat face, 10 bar
  - VN** 2 x 3/4" vacuum + 4 x 1/4" air NPT ports module, face sealing
  - VP** 2 x 3/4" vacuum + 4 x 1/4" air BSPP ports module, face sealing
  - VT** 2 x 3/4" vacuum + 4 x 1/4" air BSPT ports module, face sealing
  - Wxx\*\*** Servo Gun and Welding Gun Module (Pin and Socket) - Consult factory
  - HI** Welding Gun module (3 x 180 Amp spring loaded pins)
  - SRxx\*\*** Servo Gun Module (with spring loaded pins)
  - HISRxx<sup>\*\*\*††</sup>** Servo Gun and Welding Gun module (with spring loaded pins)

\* Used with SN, SP, or ST modules on robot half.  
 \*\* xx are attributed according to the customer wiring diagram. Consult factory.  
 †† SRxx module can be mounted on the HI module to use with electric welding gun.

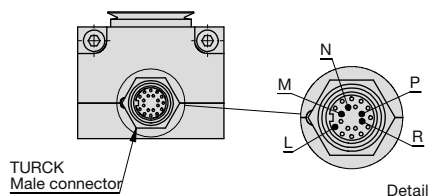
## E19/G19 Modules connecting with latch/unlatch sensors



When LP, LN, or LD option is ordered, 3, 4 or 5 wires are reserved on the E19 or G19 module. See chart

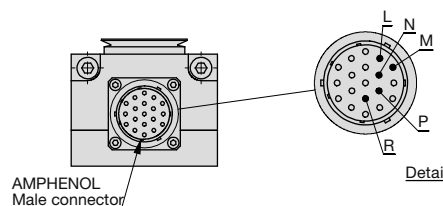
RESERVED PINS NUMBERS ON E19 / G19		
	RQC 200 & 400	RQC 800 & 1200
<b>LP or LN (Inductive)</b>	R: + 10-30 VDC L: Common M: Lock N: Unlock	R: + 10-30 VDC L: Common M: Lock N: Unlock P: Ready to Couple
<b>LD (Dry contact)</b>	L: Common M: Lock N: Unlock	L: Common M: Lock N: Unlock P: Ready to Couple

### E19 Pins numbering



Wire color on CABL-029 cordset	
Contact #	Wire Color
R	Red
L	Brown
M	Orange
N	Grey / Brown
P	White

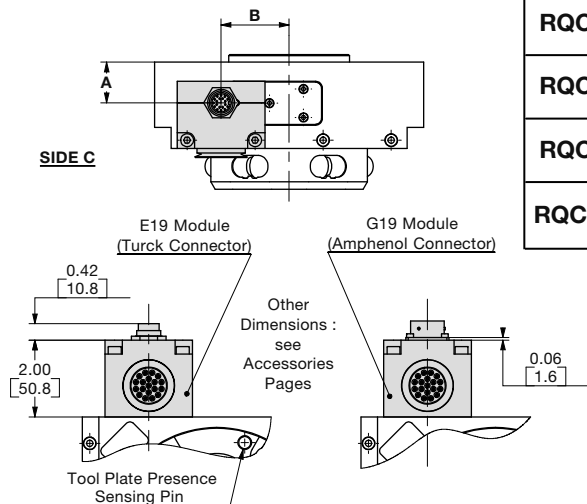
### G19 Pins numbering



## LOCK / UNLOCK & TOOL PLATE PRESENCE SENSING OPTIONS

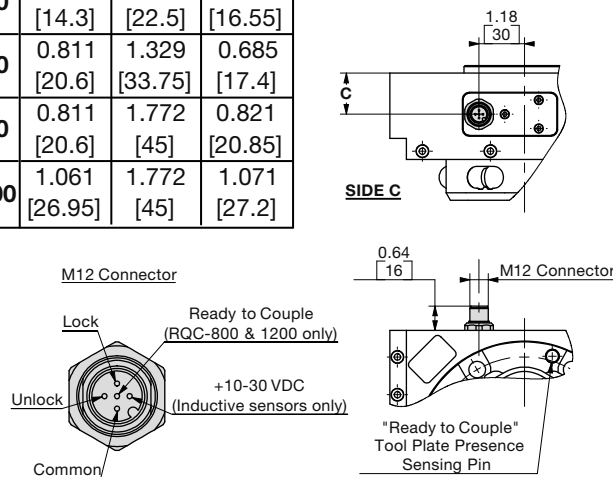
(with Inductive Sensors or Dry Contact Switches)

Sensing Accessories LP, LN or LD using 19 Pins Module E19 or G19  
(Require 3, 4 or 5 of the 19 Pins : see on this page)

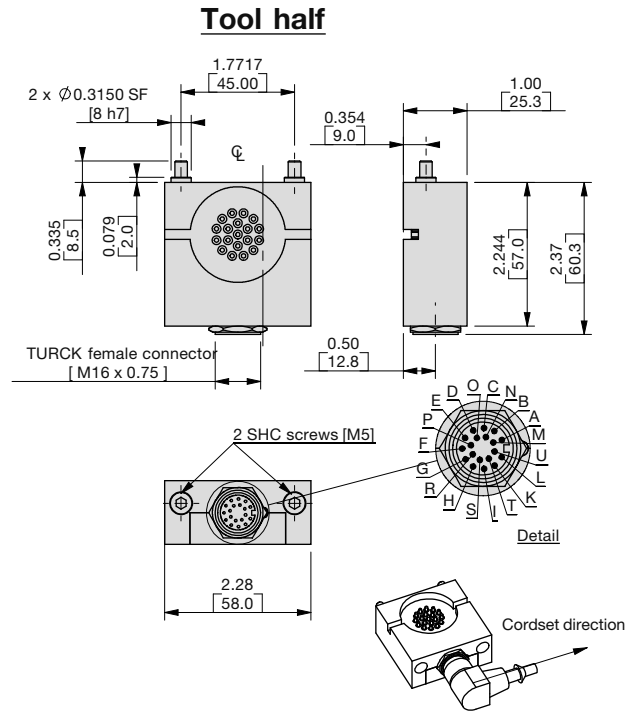
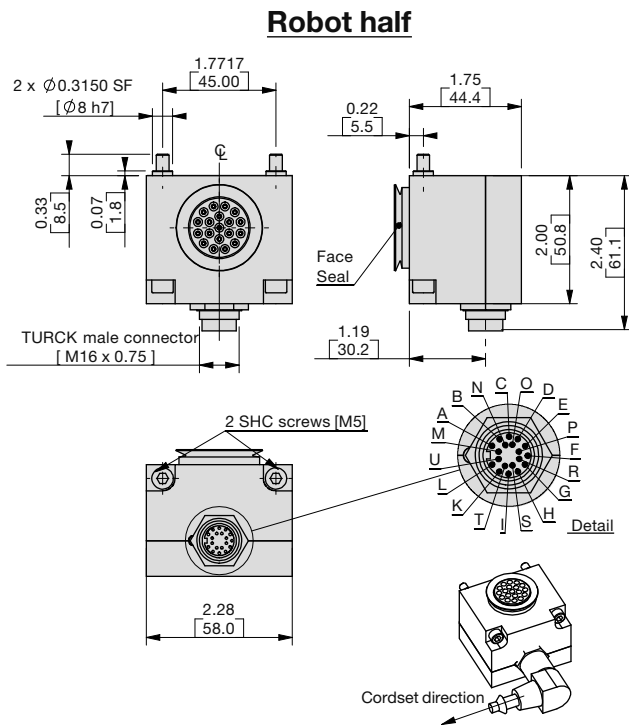


	A	B	C
RQC-200	0.563 [14.3]	0.886 [22.5]	0.652 [16.55]
RQC-400	0.811 [20.6]	1.329 [33.75]	0.685 [17.4]
RQC-800	0.811 [20.6]	1.772 [45]	0.821 [20.85]
RQC-1200	1.061 [26.95]	1.772 [45]	1.071 [27.2]

Sensing Accessories CP, CN or CD by M12 Connector  
(3, 4 or 5 Pins : see below)

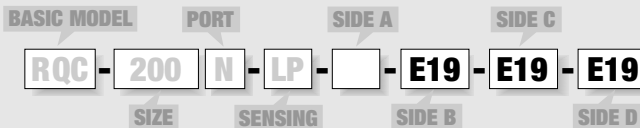


**19 Pin Module 3 Amp - 48 VDC (E19)**  
For RQC/RTP- 200/400/800/1200



**ROBOT HALF MODULES:**

**How to Order Modules: RQC-200/400**

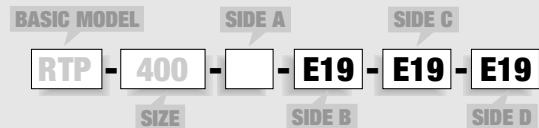


**PREMOUNTED SEPARATE**  
**E19\* KE19-RQC\*** 19 Pin Module 3 Amp @ 48 VDC, Turck Conn.

**ACCESSORIES:**  
**CABL-029** 90° Female Cordset with 4 Met Cable for E19

**TOOL HALF MODULES:**

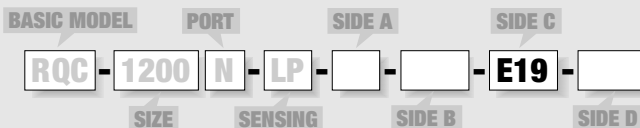
**How to Order Modules: RTP-200/400**



**PREMOUNTED SEPARATE**  
**E19\* KE19-RTP\*** 19 Pin Module 3 Amp @ 48 VDC, Turck Conn.

**ACCESSORIES:**  
**CABL-031** 90° Male Cordset with 2 Meter Cable for E19

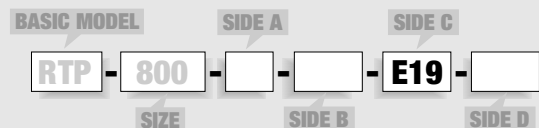
**How to Order Modules: RQC-800/1200**



**PREMOUNTED SEPARATE**  
**E19\* KE19-RQC\*** 19 Pin Module 3 Amp @ 48 VDC, Turck Conn.

**ACCESSORIES:**  
**CABL-029** 90° Female Cordset with 4 Met Cable for E19

**How to Order Modules: RTP-800/1200**



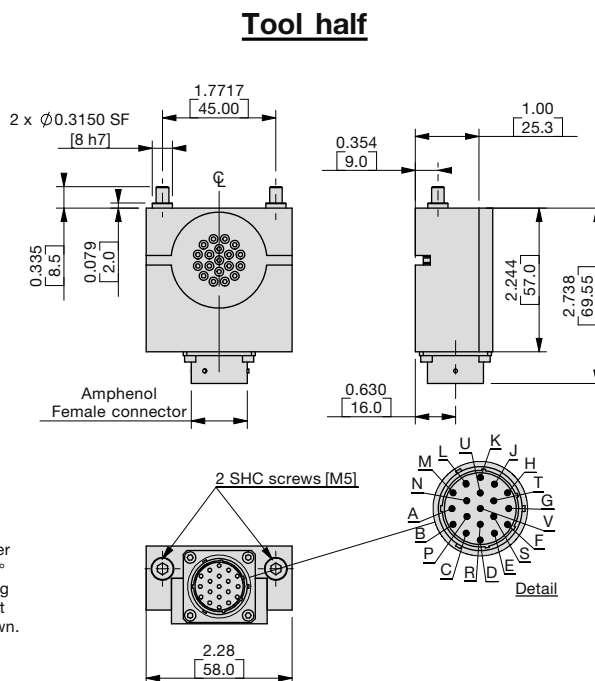
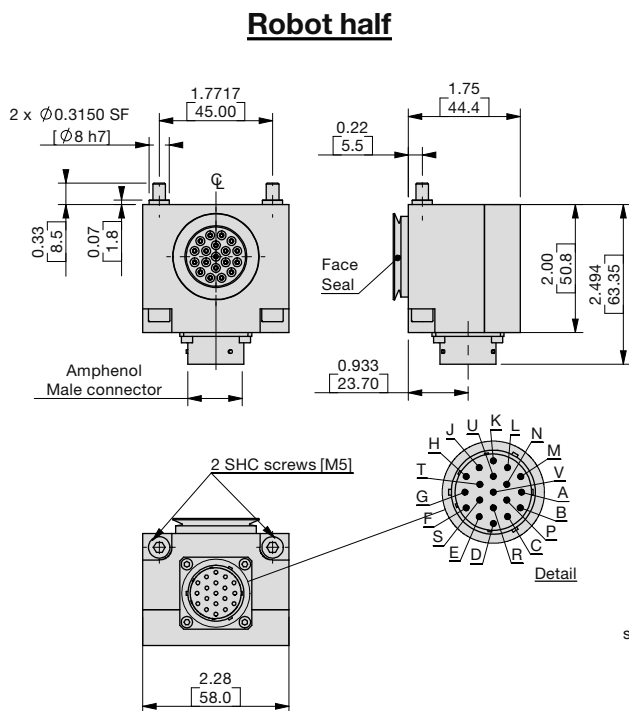
**PREMOUNTED SEPARATE**  
**E19\* KE19-RTP\*** 19 Pin Module 3 Amp @ 48 VDC, Turck Conn.

**ACCESSORIES:**  
**CABL-031** 90° Male Cordset with 2 Meter Cable for E19

**Module kits above include:** Indexing sleeves and hardware. \* Cordset sold separately.

# OPTIONAL ELECTRIC MODULES

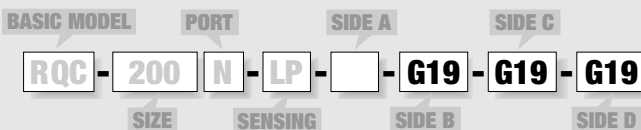
## 19 Pin Module 5 Amp - 120 VDC (G19) For RQC/RTP- 200/400/800/1200



User 90° plug not shown.

#### ROBOT HALF MODULES:

### How to Order Modules: RQC-200/400



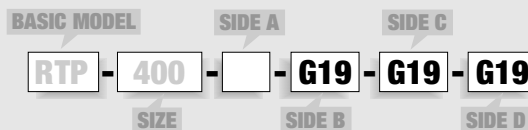
PREMOUNTED	SEPARATE	
G19	KG19-RQC	19 Pin, 5 Amp Module with Industrial User Connector, without Cable

**ACCESSORIES:**

ELCT-048	90° Female Plug, without Cable, Solder Type, Cable Clamp
----------	--

#### TOOL HALF MODULES:

### How to Order Modules: RTP-200/400

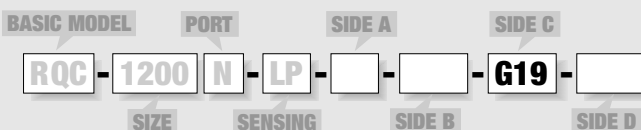


PREMOUNTED	SEPARATE	
G19	KG19-RTP	19 Pin, 5 Amp Module with Industrial User Connector, without Cable

**ACCESSORIES:**

ELCT-049	90° Male Plug, without Cable, Solder Type, Cable Clamp
----------	--

### How to Order Modules: RQC-800/1200

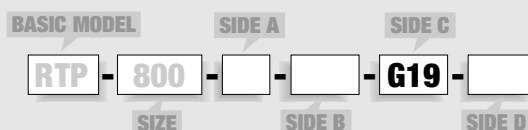


PREMOUNTED	SEPARATE	
G19	KG19-RQC	19 Pin, 5 Amp Module with Industrial User Connector, without Cable

**ACCESSORIES:**

ELCT-048	90° Female Plug, without Cable, Solder Type, Cable Clamp
----------	--

### How to Order Modules: RTP-800/1200



PREMOUNTED	SEPARATE	
G19	KG19-RTP	19 Pin, 5 Amp Module with Industrial User Connector, without Cable

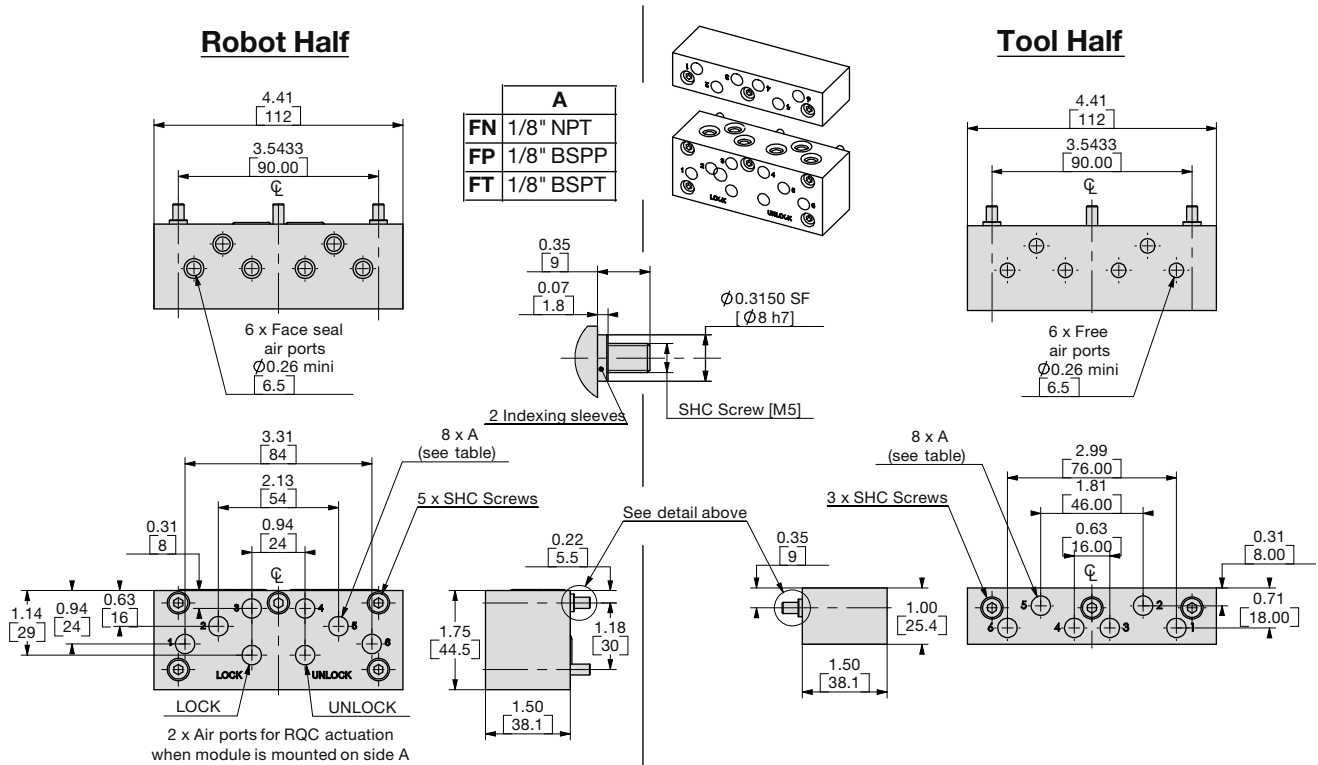
**ACCESSORIES:**

ELCT-049	90° Male Plug, without Cable, Solder Type, Cable Clamp
----------	--

Module kits above include: 90° plug (without cable), indexing sleeves and hardware.

**6 x 1/8" Air Ports Module, Face Seal (FN, FP or FT)**

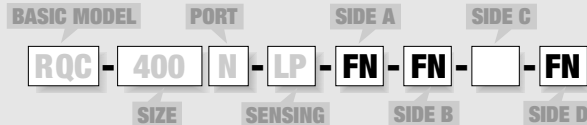
For RQC/RTP-200 & RQC/RTP-400



Maximum working pressure: 10 bar

**TOOL HALF MODULES:**

**How to Order Modules: RQC-200/400**



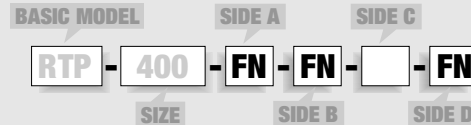
**MODULES FOR RQC-200/400**  
**PREMOUNTED SEPARATE**

<b>FN</b>	<b>KFN-RQC200</b>	6 x 1/8" NPT Air Ports, Face Sealing, 10 bar
<b>FP</b>	<b>KFP-RQC200</b>	6 x 1/8" BSPP Air Ports, Face Sealing, 10 bar
<b>FT</b>	<b>KFT-RQC200</b>	6 x 1/8" BSPT Air Ports, Face Sealing, 10 bar

**ACCESSORIES:**

<b>SLKT-406</b>	6 x 1/8" Air Module Seal Repair Kit
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**How to Order Modules: RTP-200/400**



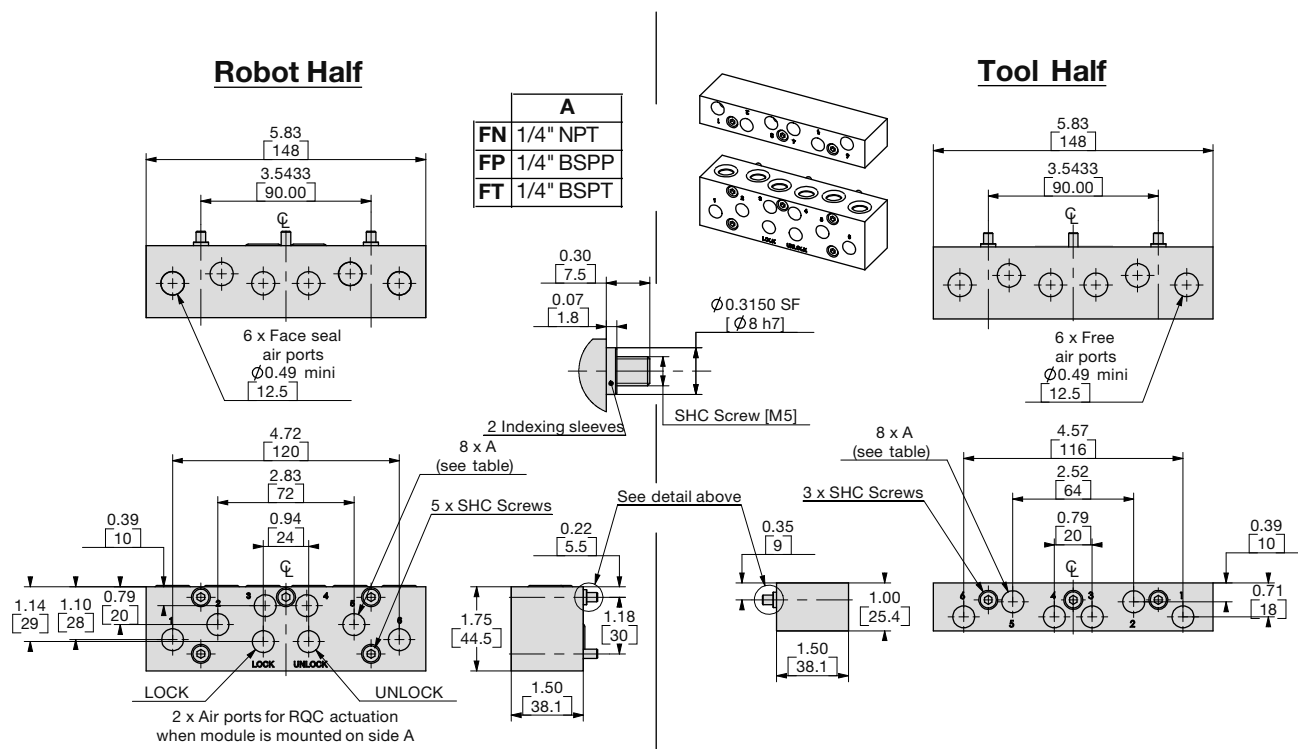
**MODULE FOR RTP-200/400**  
**PREMOUNTED SEPARATE**

<b>FN</b>	<b>KFN-RTP200</b>	6 x 1/8" NPT Air Ports, Face Sealing, 10 bar
<b>FP</b>	<b>KFP-RTP200</b>	6 x 1/8" BSPP Air Ports, Face Sealing, 10 bar
<b>FT</b>	<b>KFT-RTP200</b>	6 x 1/8" BSPT Air Ports, Face Sealing, 10 bar

Module kits above include: Seals, indexing sleeves and hardware.

# OPTIONAL AIR MODULES

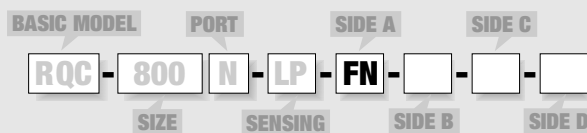
## 6 x 1/4" Air Ports Module, Face Seal (FN, FP or FT) For RQC/RTP-800 & RQC/RTP-1200



Maximum working pressure: 10 bar

### ROBOT HALF MODULES:

#### How to Order Modules: RQC-800/1200



#### PREMOUNTED SEPARATE

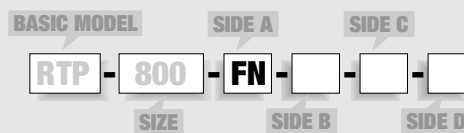
<b>FN</b>	<b>KFN-RQC800</b>	6 x 1/4" NPT Air Ports, Face Sealing, 10 bar
<b>FP</b>	<b>KFP-RQC800</b>	6 x 1/4" BSPP Air Ports, Face Sealing, 10 bar
<b>FT</b>	<b>KFT-RQC800</b>	6 x 1/4" BSPT Air Ports, Face Sealing, 10 bar

#### ACCESSORIES:

<b>SLKT-410</b>	6 x 1/4" Air Module Seal Repair Kit
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### TOOL HALF MODULES:

#### How to Order Modules: RTP-800/1200



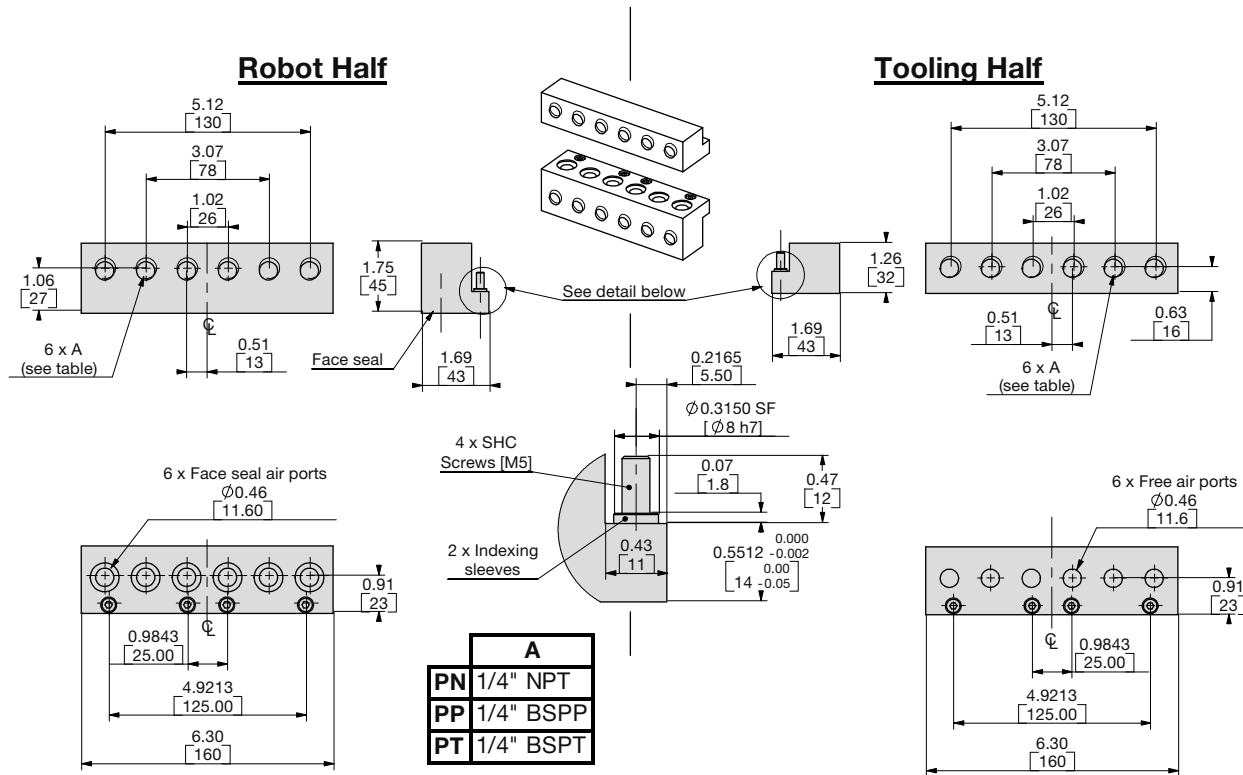
#### PREMOUNTED SEPARATE

<b>FN</b>	<b>KFN-RTP800</b>	6 x 1/4" NPT Air Ports, Face Sealing, 10 bar
<b>FP</b>	<b>KFP-RTP800</b>	6 x 1/4" BSPP Air Ports, Face Sealing, 10 bar
<b>FT</b>	<b>KFT-RTP800</b>	6 x 1/4" BSPT Air Ports, Face Sealing, 10 bar

Module kits above include: Seals, indexing sleeves and hardware.

**6 x 1/4" Air Ports Module, Face Seal ( PN, PP or PT )**

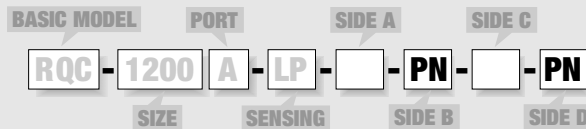
For RQC/RTP-800 & RQC/RTP-1200



Maximum working pressure: 10 bar

**ROBOT HALF MODULES:**

**How to Order Modules: RQC-800/1200**



**PREMOUNTED SEPARATE**

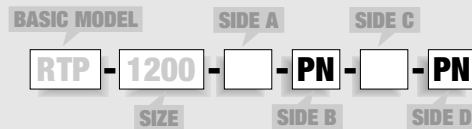
<b>PN</b>	<b>KPN-RQC800</b>	6 x 1/4" NPT Air Ports, Self Sealing, 10 bar
<b>PP</b>	<b>KPP-RQC800</b>	6 x 1/4" BSPP Air Ports, Self Sealing, 10 bar
<b>PT</b>	<b>KPT-RQC800</b>	6 x 1/4" BSPT Air Ports, Self Sealing, 10 bar

**ACCESSORIES:**

<b>SLKT-410</b>	6 x 1/4" Air Module Module Seal Repair Kit
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**TOOL HALF MODULES:**

**How to Order Modules: RTP-800/1200**



**PREMOUNTED SEPARATE**

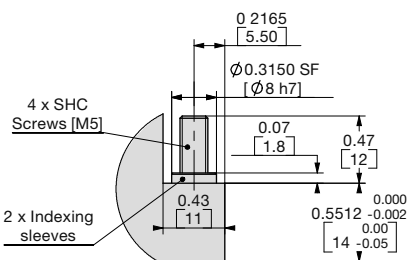
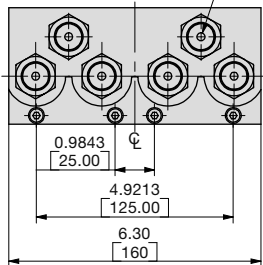
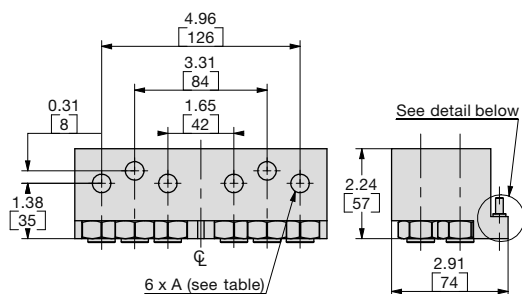
<b>PN</b>	<b>KPN-RTP800</b>	6 x 1/4" NPT Air Ports, Self Sealing, 10 bar
<b>PP</b>	<b>KPP-RTP800</b>	6 x 1/4" BSPP Air Ports, Self Sealing, 10 bar
<b>PT</b>	<b>KPT-RTP800</b>	6 x 1/4" BSPT Air Ports, Self Sealing, 10 bar



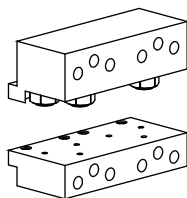
# OPTIONAL AIR MODULES

## 6 x 1/4" Air Ports Module, Single Shut-Off Flat Face (RN, RP or RT) or Double Shut-Off Flat Face (SN, SP or ST) For RQC/RTP-800 & RQC/RTP-1200

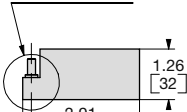
### Robot Half



### Single Shut-off



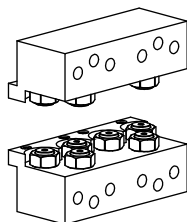
See detail below



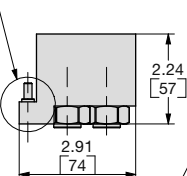
A	
RN*	SN 1/4" NPT
RP*	SP 1/4" BSPP
RT*	ST 1/4" BSPT

\* Tooling half only

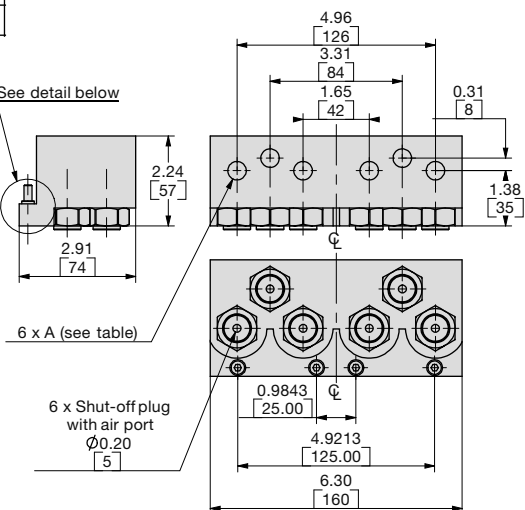
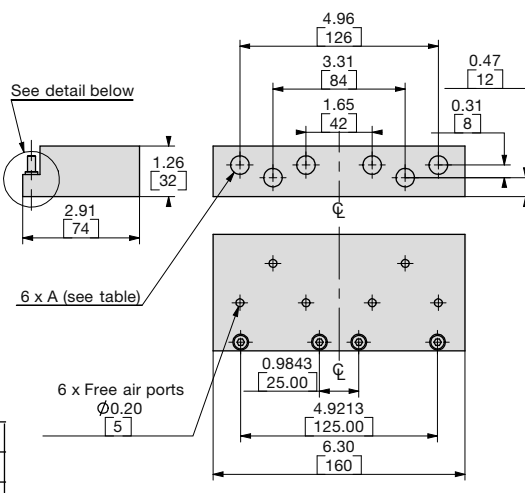
### Double Shut-off



See detail below



### Tooling Half



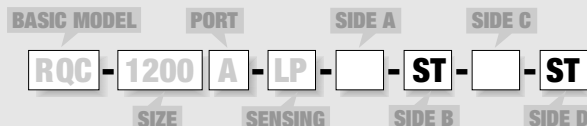
MODULAR RQC SERIES

6.46

Maximum working pressure: 10 bar

#### ROBOT HALF MODULES:

#### How to Order Modules: RQC-800/1200

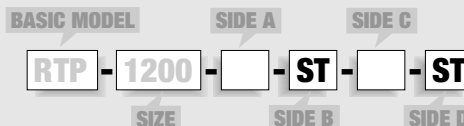


#### PREMOUNTED SEPARATE

SN	KSN-RQC800	6 x 1/4" NPT Air Ports, Self Sealing, 10 bar
SP	KSP-RQC800	6 x 1/4" BSPP Air Ports, Self Sealing, 10 bar
ST	KST-RQC800	6 x 1/4" BSPT Air Ports, Self Sealing, 10 bar

#### TOOL HALF MODULES:

#### How to Order Modules: RTP-800/1200



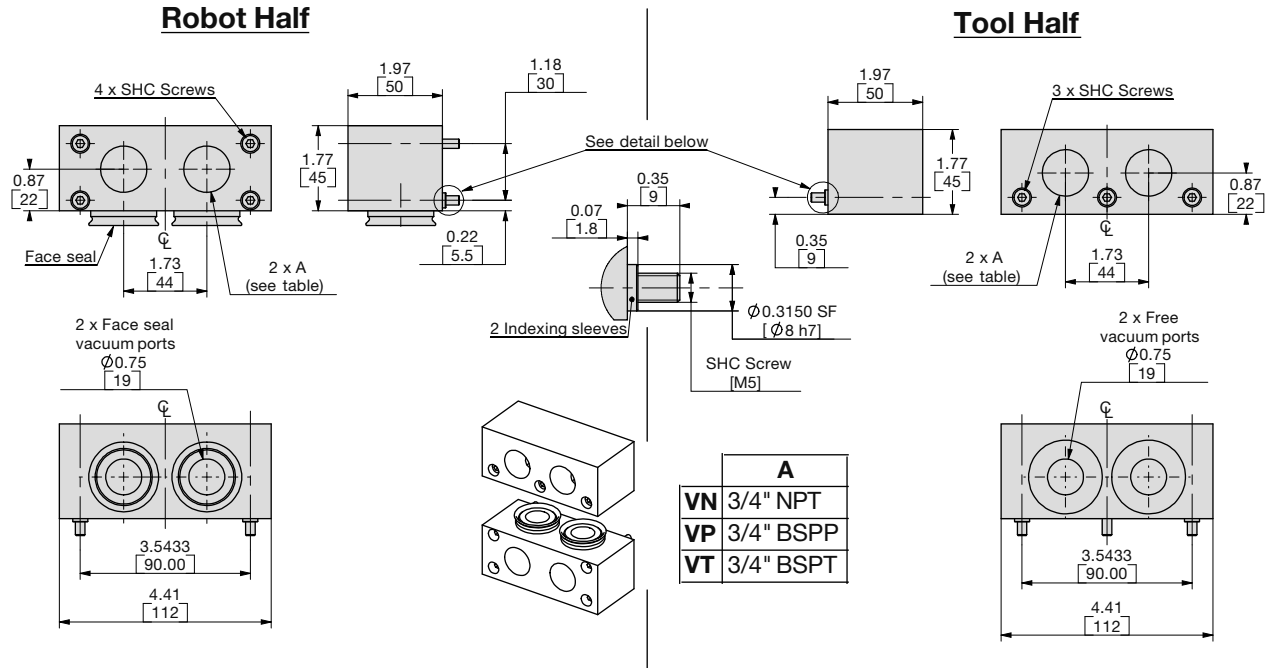
#### PREMOUNTED SEPARATE

SN	KSN-RTP800	6 x 1/4" NPT Air Ports, Self Sealing, 10 bar
SP	KSP-RTP800	6 x 1/4" BSPP Air Ports, Self Sealing, 10 bar
ST	KST-RTP800	6 x 1/4" BSPT Air Ports, Self Sealing, 10 bar
RN	KRN-RTP800	6 x 1/4" NPT Air Ports, w/o Self Sealing, 10 bar
RP	KRP-RTP800	6 x 1/4" BSPP Air Ports, w/o Self Sealing, 10 bar
RT	KRT-RTP800	6 x 1/4" BSPT Air Ports, w/o Self Sealing, 10 bar

Module kits above include: Couplings, indexing sleeves and hardware.

## 2 x 3/4" Vacuum Ports Module, Face Seal (VN, VP or VT)

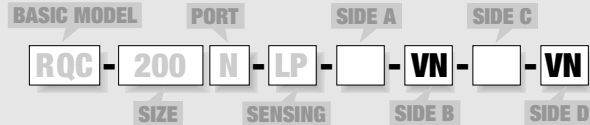
For RQC/RTP-200 & RQC/RTP-400



### ROBOT HALF MODULES:

### TOOL HALF MODULES:

### How to Order Modules: RQC-200/400

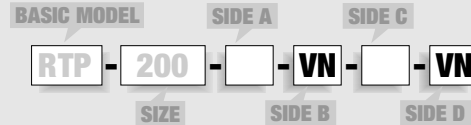


PREMOUNTED	SEPARATE	
VN	KVN-RQC200	2 x 3/4" NPT Vacuum Ports, Face Sealing
VP	KVP-RQC200	2 x 3/4" BSPP Vacuum Ports, Face Sealing
VT	KVT-RQC200	2 x 3/4" BSPT Vacuum Ports, Face Sealing

#### ACCESSORIES:

SLKT-405 2 x 3/4" Vacuum Module Seal Repair Kit

### How to Order Modules: RTP-200/400



PREMOUNTED	SEPARATE	
VN	KVN-RTP200	2 x 3/4" NPT Vacuum Ports, Face Sealing
VP	KVP-RTP200	2 x 3/4" BSPP Vacuum Ports, Face Sealing
VT	KVT-RTP200	2 x 3/4" BSPT Vacuum Ports, Face Sealing

Module kits above include: Seals, indexing sleeves and hardware.

# OPTIONAL AIR MODULES

## ARV Robot Half/Tool Half 4-Port Vacuum Module for RQC/RTP- 800



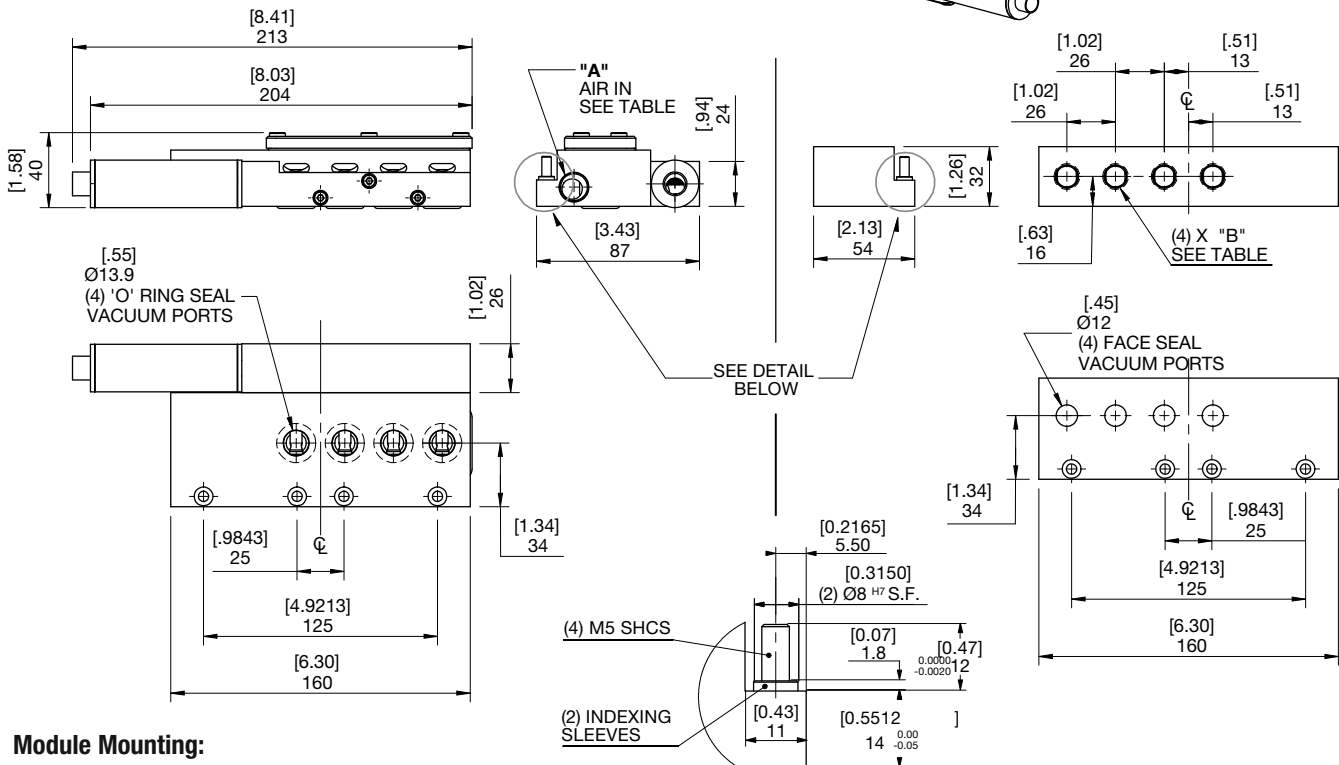
See page 6.53 for ARV  
Features and Benefits



"A"		"B"	
AN	3/8" NPT	AN	1/4" NPT
AP	3/8" BSPP	AP	1/4" BSPP
AT	3/8" BSPT	AT	1/4" BSPT

ROBOT HALF

TOOL HALF



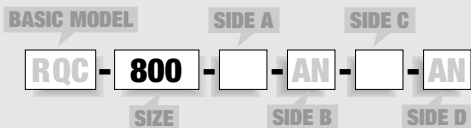
Module Mounting:  
SIDE "B" ■ and/or SIDE "D" ■

MODULAR RQC  
SERIES

6.48

### ROBOT HALF MODULES:

#### How to Order Modules: RQC-800

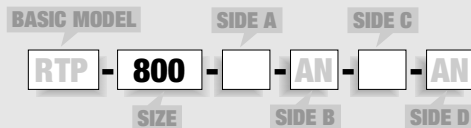


#### PREMOUNTED SEPARATE

AN	KAN-RQC800	4 x 3/8" NPT Air Ports, Self Sealing
AP	KAP-RQC800	4 x 3/8" BSPP Air Ports, Self Sealing
AT	KAT-RQC800	4 x 3/8" BSPT Air Ports, Self Sealing

### TOOL HALF MODULES:

#### How to Order Modules: RTP-800



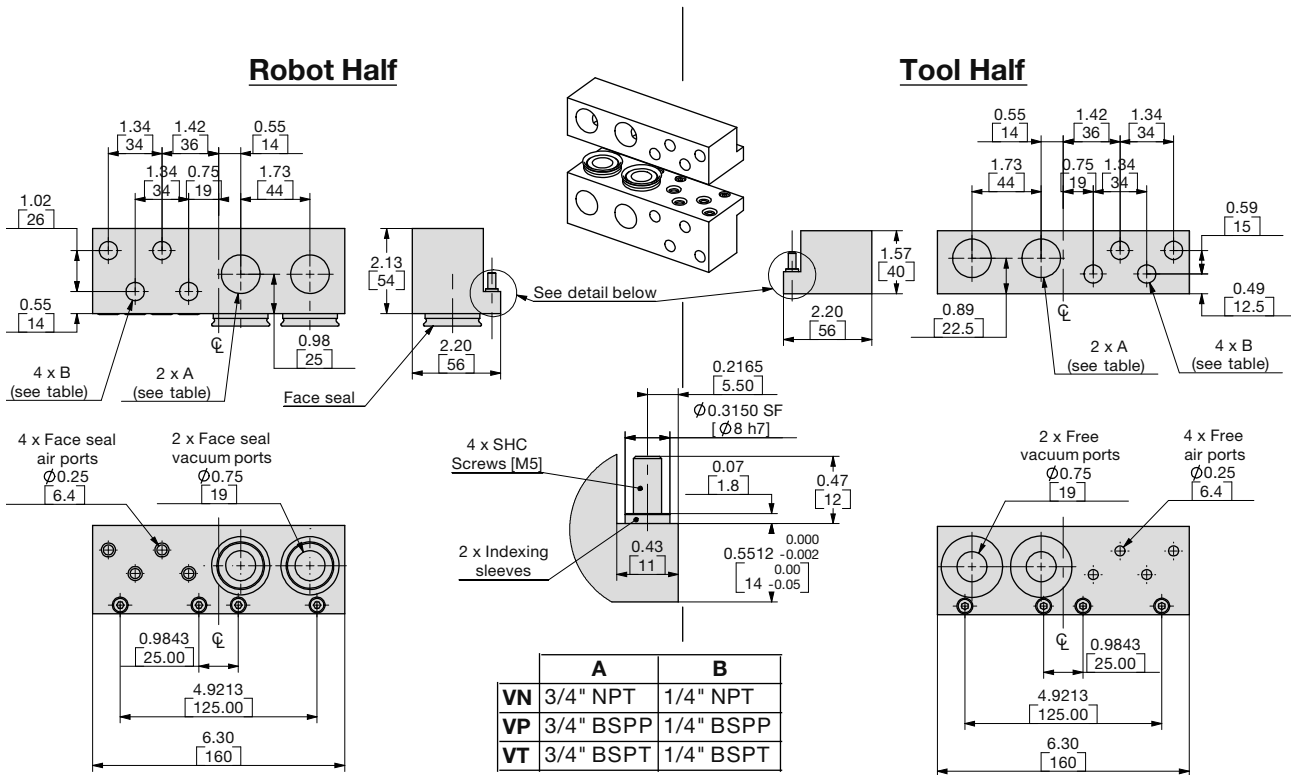
#### PREMOUNTED SEPARATE

AN	KAN-RTP800	4 x 1/4" NPT Air Ports, Self Sealing
AP	KAP-RTP800	4 x 1/4" BSPP Air Ports, Self Sealing
AT	KAT-RTP800	4 x 1/4" BSPT Air Ports, Self Sealing

Module kits above include: Couplings, indexing sleeves and hardware.

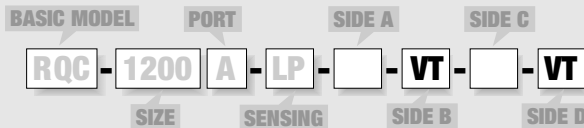
## 2 x 3/4" Vacuum Ports Module, Face Seal (VN, VP or VT)

For RQC/RTP-800 & RQC/RTP-1200



### ROBOT HALF MODULES:

#### How to Order Modules: RQC-800/1200



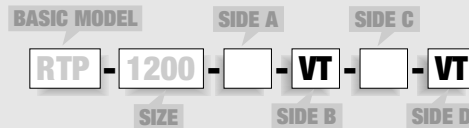
PREMOUNTED	SEPARATE	
<b>VN</b>	<b>KVN-RQC800</b>	2 x 3/4" Vacuum and 4 x 1/4" Air NPT Ports, Face Sealing
<b>VP</b>	<b>KVP-RQC800</b>	2 x 3/4" Vacuum and 4 x 1/4" Air BSPP Ports, Face Sealing
<b>VT</b>	<b>KVT-RQC800</b>	2 x 3/4" Vacuum and 4 x 1/4" Air BSPT Ports, Face Sealing

#### ACCESSORIES:

<b>SLKT-409</b>	2 x 3/4" Vacuum and 4 x 1/4" Air Module Seal Repair Kit
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### TOOL HALF MODULES:

#### How to Order Modules: RTP-800/1200



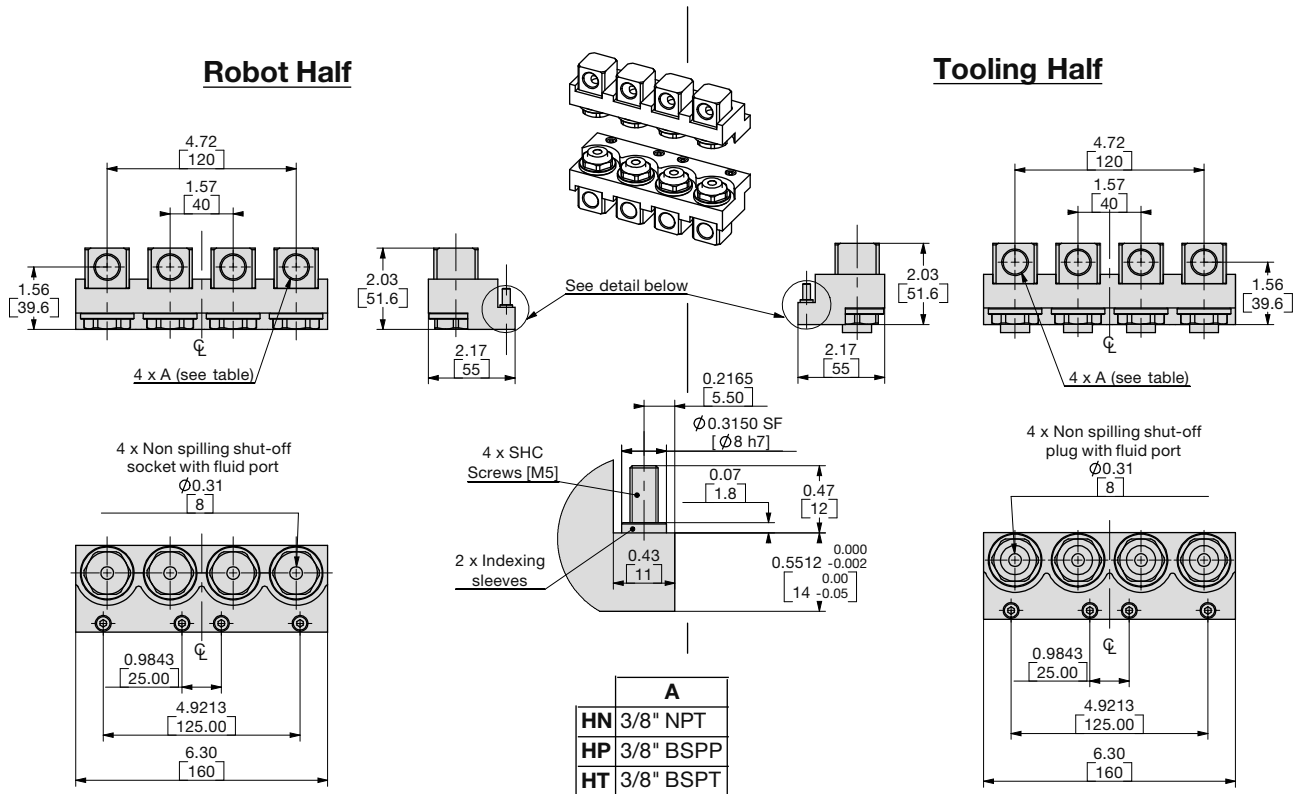
PREMOUNTED	SEPARATE	
<b>VN</b>	<b>KVN-RTP800</b>	2 x 3/4" Vacuum and 4 x 1/4" Air NPT Ports, Face Sealing
<b>VP</b>	<b>KVP-RTP800</b>	2 x 3/4" Vacuum and 4 x 1/4" Air BSPP Ports, Face Sealing
<b>VT</b>	<b>KVT-RTP800</b>	2 x 3/4" Vacuum and 4 x 1/4" Air BSPT Ports, Face Sealing

Module kits above include: Seals, indexing sleeves and hardware.

# OPTIONAL AIR MODULES

## 4 x 3/8" Fluid Ports Module, Non Spilling Double Shut-Off (HN, HP or HT)

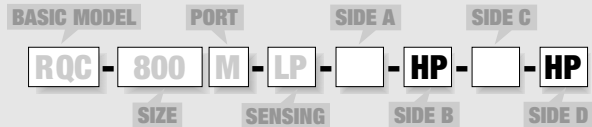
For RQC/RTP-800 & RQC/RTP-1200



Maximum working pressure: 100 bar

### ROBOT HALF MODULES:

#### How to Order Modules: RQC-800/1200

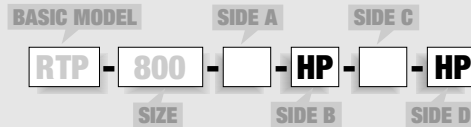


#### PREMOUNTED SEPARATE

HN	KHN-RQC800	4 x 3/8" NPT Fluid Ports, 100 bar
HP	KHP-RQC800	4 x 3/8" BSPP Fluid Ports, 100 bar
HT	KHT-RQC800	4 x 3/8" BSPT Fluid Ports, 100 bar

### TOOL HALF MODULES:

#### How to Order Modules: RTP-800/1200

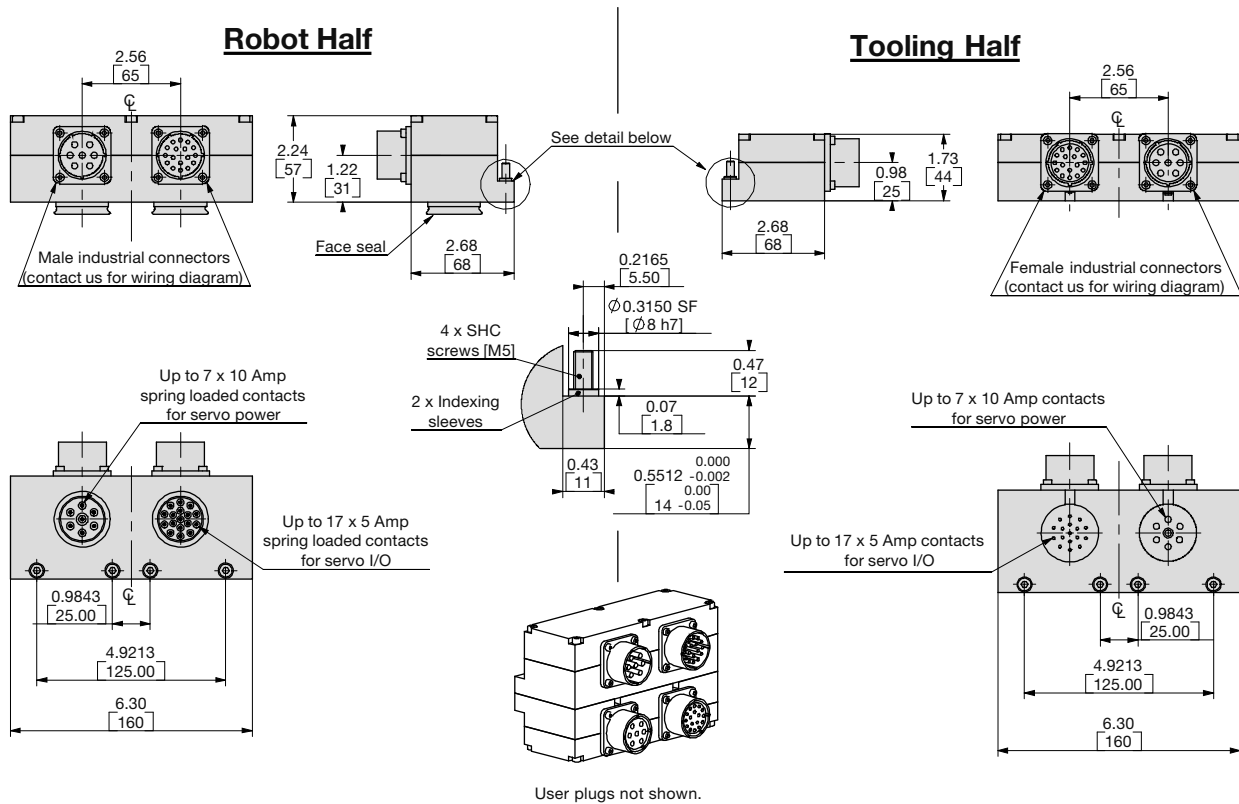


#### PREMOUNTED SEPARATE

HN	KHN-RTP800	4 x 3/8" NPT Fluid Ports, 100 bar
HP	KHP-RTP800	4 x 3/8" BSPP Fluid Ports, 100 bar
HT	KHT-RTP800	4 x 3/8" BSPT Fluid Ports, 100 bar

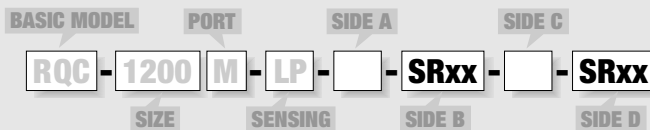
Module kits above include: Couplings, indexing sleeves and hardware.

## Servo Module (SRxx) For RQC/RTP-800 & RQC/RTP-1200



### ROBOT HALF MODULES:

#### How to Order Modules: RQC-800/1200



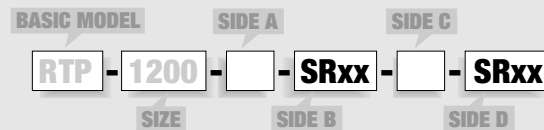
**SRxx<sup>†</sup>\* KSRxx-RQC800<sup>†</sup>\*** Servo Gun Module (with spring loaded pins)

<sup>†</sup>The xx is replaced by two digits depending on wiring request. Wiring may depend on robot and welding gun specifications. Please consult factory

\*SRxx module can be mounted on the HI module to use with electric welding gun. Order HISRxx.

### TOOL HALF MODULES:

#### How to Order Modules: RTP-800/1200



**PREMOUNTED SEPARATE**

**SRxx<sup>†</sup>\* KSRxx-RTP800<sup>†</sup>\*** Servo Gun Module (with spring loaded pins)

<sup>†</sup>The xx is replaced by two digits depending on wiring request. Wiring may depend on robot and welding gun specifications. Please consult factory

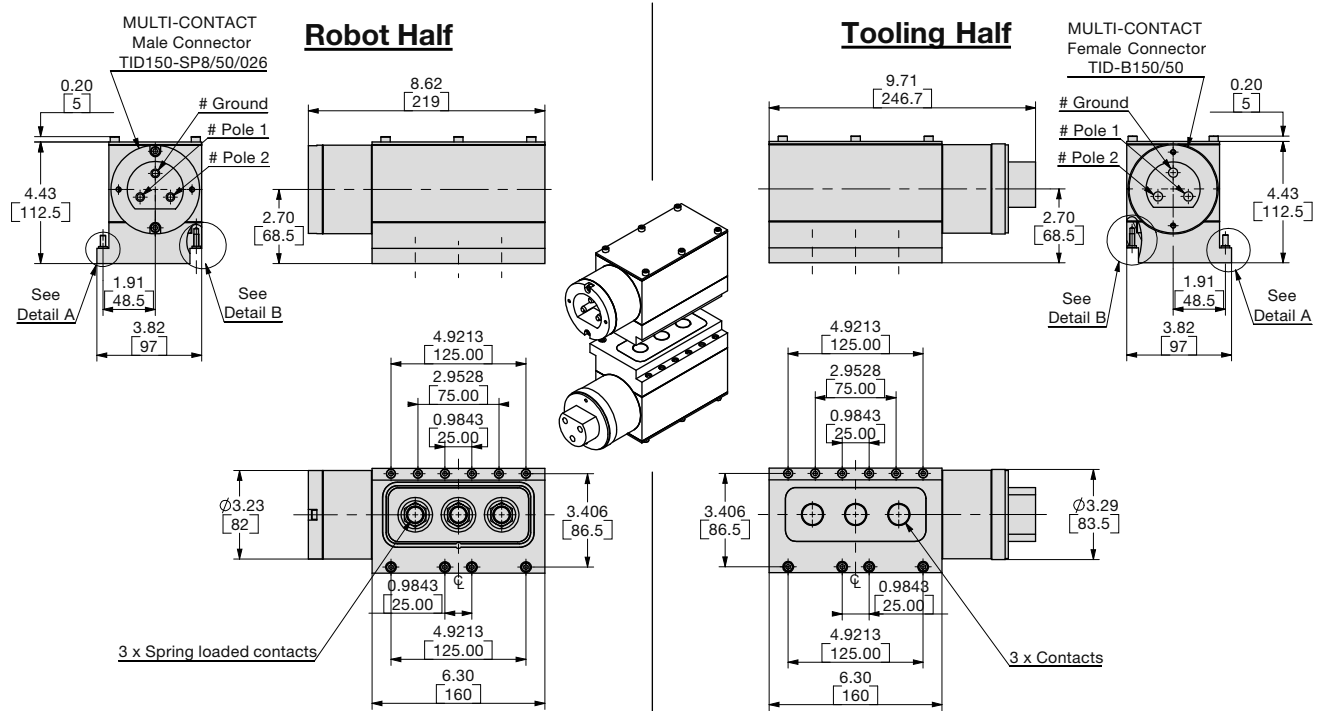
\*SRxx module can be mounted on the HI module to use with electric welding gun. Order HISRxx.

**Module kits above include:** Plugs, seals, indexing sleeves and hardware.

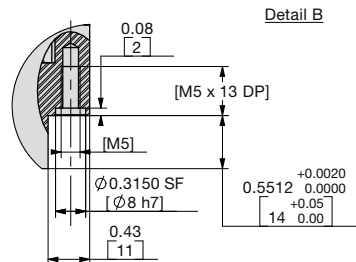
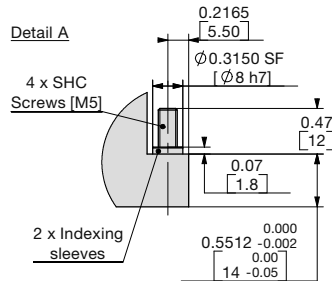
# OPTIONAL WELD GUN MODULE

## 3 Contacts Module 180 Amp - 630 VAC (HI)

For RQC/RTP-800 & RQC/RTP-1200

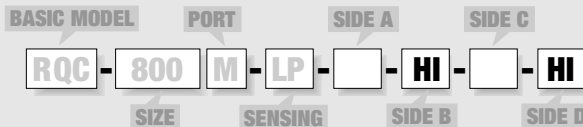


User straight plug not shown.



### ROBOT HALF MODULES:

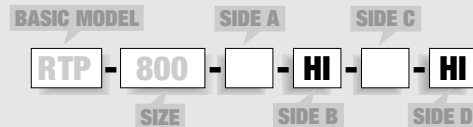
#### How to Order Modules: RQC-800/1200



PREMOUNTED HI	SEPARATE KHI-RQC800	Welding Gun module (3 x 180 Amp spring loaded pin)

### TOOL HALF MODULES:

#### How to Order Modules: RTP-800/1200



PREMOUNTED HI	SEPARATE KHI-RTP800	Welding Gun module (3 x 180 Amp spring loaded pin)

Module kits above include: Straight plug (without cable, crimp contacts), seals, indexing sleeves and hardware.

# ARV-Auto Release Venturi Vacuum Module

- **Providing a quick change in vacuum technology**

The ARV vacuum module generates vacuum at the tool changer level, which is distributed across (4) ports, then piped independently to end effector vacuum cups.

- **Key Features**

Single "line-in" air connection

Standard Built-in Silencer (Decibel Level: 72 dBA @ 3 feet)

Eliminates the need for individual venturis on each vacuum port

Multiple tools can be supplied vacuum by one ARV vacuum module

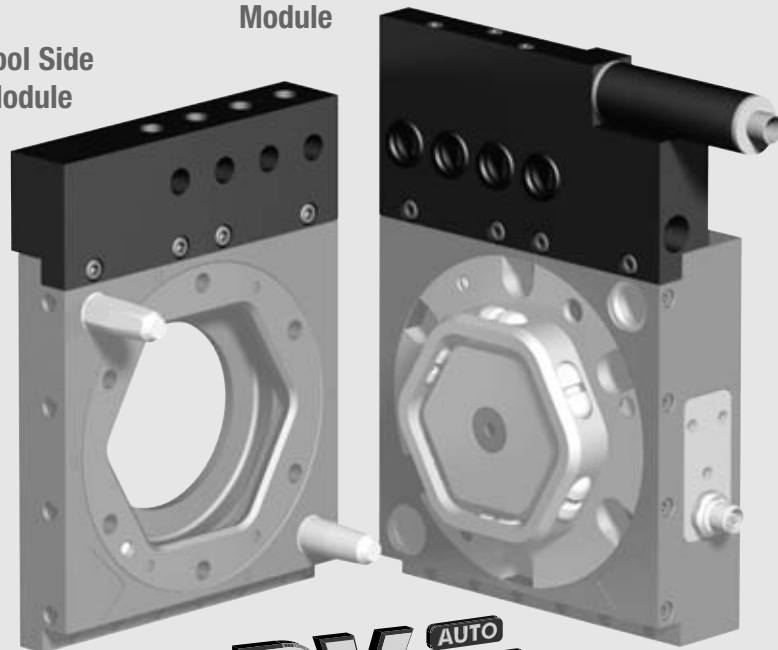
Will supply vacuum for up to 5 cups per vacuum channel

- **Lifetime warranty on venturis**

See page 6.48 for dimensions and ordering information

Tool Side Module

Robot Side Module



**ARV** AUTO RELEASE VENTURI

US PAT #: 7,540,309  
7,681,603

## Also Available for Clean Room Applications:



**ARV Stainless Steel Class 10 Clean Room Approved**

1-2 particles per cubic meter of air (M3)

Autoblow-off does not allow contamination

60% less air consumption

Faster production speeds

150 plus cycles per minute

**ARV** AUTO RELEASE VENTURI  
STAINLESS STEEL



RPE Electric Gripper



Med-Redi Indexers



Parts Handlers

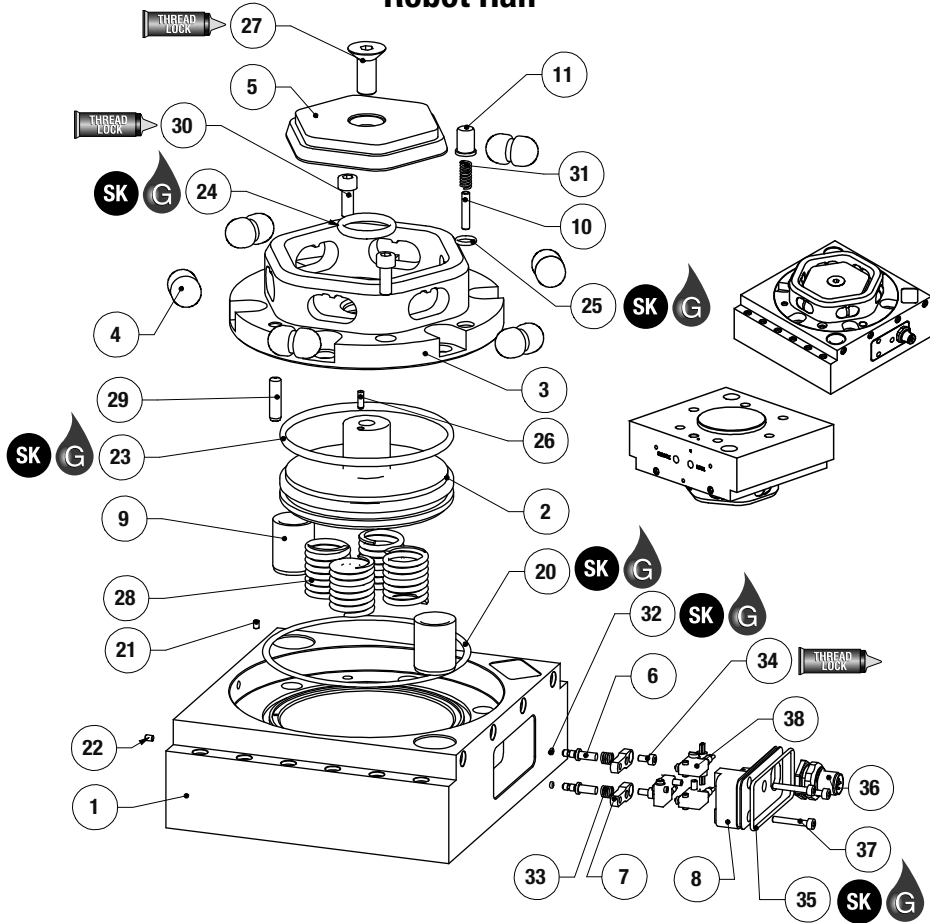


Med-Redi Conveyors



# RQC Series Exploded View

## Robot Half



Item	Qty	Name
------	-----	------

### Robot Half

01	1	Body
02	1	Piston
03	1	Pin Retainer
04	6	Pin
05	1	Ram
06	2	Sensing Pin
07	2	Stop
08	1	Bracket
09	2	Bushing
10	1	Pin
11	1	Target
20	1	Body, O-Ring
21	1	Body, Plug
22	1	Body, Plug
23	1	Piston, O-Ring
24	1	Retainer, O-Ring
25	1	Retainer, O-Ring
26	1	Piston, Pin
27	1	Piston, Screw
28	2 to 5	Body, Spring
29	1	Body, Pin
30	2	Retainer, SHC Screw
31	1	Target, Spring
32	2	Pin, O-Ring
33	2	Stop, Spring
34	2	Stop, SHC Screw
35	1	Bracket, O-Ring
36	1	Bracket, M12 Plug (optional)
37	3	Bracket, SHC Screw
38	1	Sensor Kit (optional)

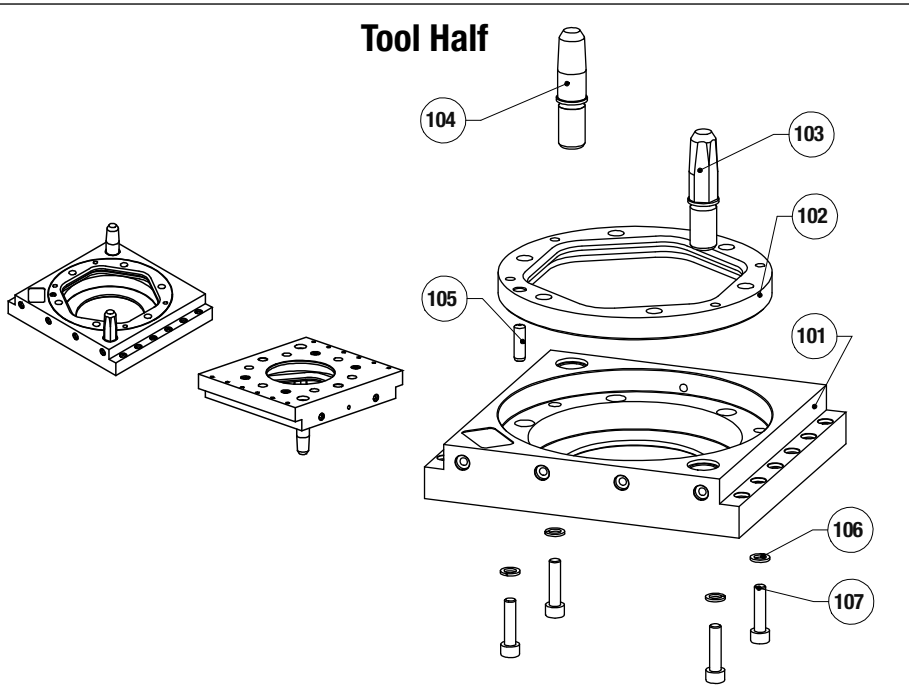
### Tool Half

101	1	Body
102	1	Ring
103	1	Diamond Pin
104	1	Centering Pin
105	1	Pin
106	4	Lock Washer
107	4	SHC Screw

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**SK Seal Repair Kit Order #'s See Product Data Sheets**

## Tool Half



Seal Kit Items



Thread Locker



Krytox™ Lubricant



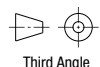
Lightweight Machine Oil



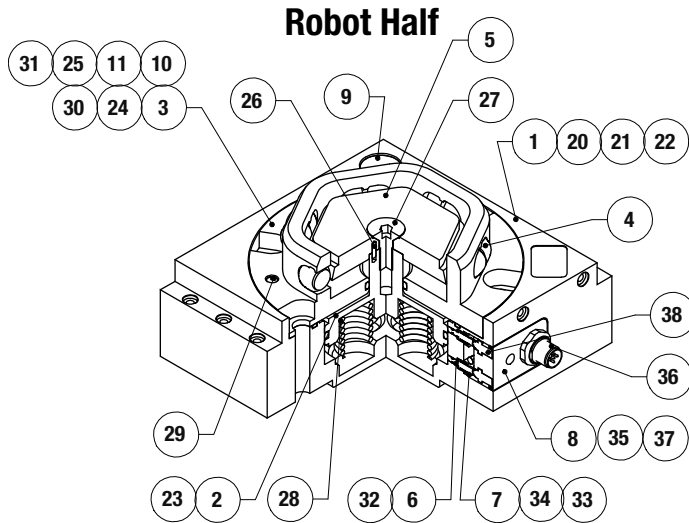
Teflon® Based Grease



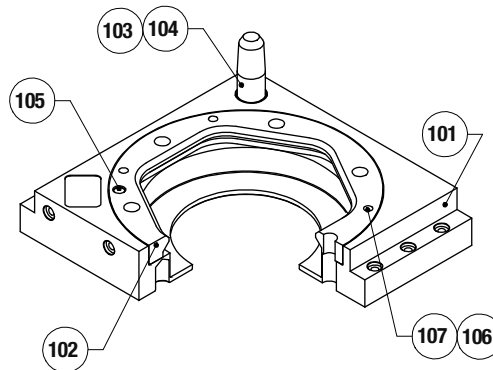
Super Bonder



Third Angle Projection



## Tool Half



Item	Qty	Name
------	-----	------

### Robot Half

01	1	Body
02	1	Piston
03	1	Pin Retainer
04	6	Pin
05	1	Ram
06	2	Sensing Pin
07	2	Stop
08	1	Bracket
09	2	Bushing
10	1	Pin
11	1	Target
20	1	Body, O-Ring
21	1	Body, Plug
22	1	Body, Plug
23	1	Piston, O-Ring
24	1	Retainer, O-Ring
25	1	Retainer, O-Ring
26	1	Piston, Pin
27	1	Piston, Screw
28	2 to 5	Body, Spring
29	1	Body, Pin
30	2	Retainer, SHC Screw
31	1	Target, Spring
32	2	Pin, O-Ring
33	2	Stop, Spring
34	2	Stop, SHC Screw
35	1	Bracket, O-Ring
36	1	Bracket, M12 Plug (optional)
37	3	Bracket, SHC Screw
38	1	Sensor Kit (optional)

### Tool Half

101	1	Body
102	1	Ring
103	1	Diamond Pin
104	1	Centering Pin
105	1	Pin
106	4	Lock Washer
107	4	SHC Screw

### Assembly Procedure - Robot Half

- Lubricate and install seal (#20) into the body #1
- Install the air port plugs (#21) and (#22) with thread-locker into the body (#1)
- Press in the bushings (#9) into the body
- Lubricate and install seals (#24) and (#25) - sizes 800 and 1200 only into the pin retainer (#3)
- Insert the pins (#4) into the pin retainer (#3)
- Lubricate and install seal (#23) onto the piston #2
- Press in the pin (#26) into the piston
- Completely insert the piston (#2) into the pin retainer (#3)
- Sizes 800 and 1200 only: press in the pin (#10) into target (#11) and install the spring (#31) and insert this sub assembly into the pin retainer
- Locate and insert the ram (#5) into the piston and fasten with screw (#27) with thread-locker
- Insert the springs (#28) into the body
- Press in the pin (#29) into the body
- Locate and insert the pin, pin retainer and piston sub-assembly into the body and fasten with screws (#30) with thread-locker
- Lubricate and install seals (#32) into the sensing pins (#6)
- Insert the sensing pins into the body
- Install the springs (#33) on the sensing pins
- Mount stops (#7) with screws (#34) with thread-locker
- Lubricate and install seal (#35) onto the bracket (#8)
- Mount the optional sensor kit (#38) to the bracket
- Mount the optional M12 plug (#36) to the bracket (#8) and connect its connector to the sensor kit connector (#38)
- Insert the sensor, plug and bracket sub assembly into the body and fasten with screws (#37)

### Assembly Procedure - Tool Half

- Insert the ring (#102) with pressed-in pin #105 into the body (#101) and fasten with lock washer (#106) and screws (#107) with thread-locker
- Press in the diamond pin (#103) into the body
- Press in the pin (#104) into the body

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices

## TOOL CHANGER TERMINOLOGY

**Accuracy** – The actual positional differential of the locating dowels between two different Robot Halves or Tool Halves.

**Air Module** – Also called pneumatic ports. It refers to the component of the Tool Changer system that passes air through the QuickChange and Tool Plate to the End Effector. The air module is available in face-seal ports and is available with self-sealing or checked valves so that when the QuickChange uncouples, air does not leak and no extra valve is required to shut the air off.

**Alignment Pins** - Pins located on the tool plate that are used to align the Tool Changer to the Tool Plate during the coupling process. DE-STA-CO uses 2 alignment pins – one diamond shaped and one round. Alignment pins also limit moment about the Z axis.

**Checked Valves** – Valves designed for either fluid or pneumatic medium that have a self-sealing mechanism that automatically check the fluid when uncoupled. When a checked valve is used an additional valve is not required to shut-off the fluid or air upon disconnection.

**Deflection** – Defines the amount of movement (slop) expected under a given moment load. This measurement indicates the rigidity of the coupling mechanism.

**DeviceNet** – A communication protocol common to the North American automotive industry. A DeviceNet system communicates over a serial link (daisy chain) to each component on the system. A component can be anything from a proximity switch to a water saver to a robot controller. Each component has a specific address and can be polled for status by the system. A “communication bus” system like this eliminates the need for thousands of I/O wiring points because all the communication is done over a 5-wire (CAN HIGH, CAN LOW, V+, V-, and DRAIN) cable.

**Electrical Module** – Also called an I/O Block or I/O Module, it is a component within the QuickChange system. Electrical I/O (Input/Output) communication is done through this module. Also, internal switches for Couple/Uncouple/Ready-to-Couple may be wired to this module.

**Face-Seal Ports** – Refers to ports used to pass air or vacuum through the Tool Changer such as air for operating the retract feature of a spot weld gun or air to operate a venture vacuum pump on a material handling End Effector. The face-seal ports do not stop air or vacuum flow when the Tool Changer uncouples. They require an additional air valve to shut the air or vacuum off before uncoupling. Face-seal ports only have an O-ring to prevent air or vacuum loss when the Tool Changer is coupled.

**Locking Mechanism** – The mechanism that locks the Tool Changer to the Tool Plate. It consists of a piston, ram and rollers (rolling pins).

**Manual Tool Changer** – A Tool Changer that requires manual intervention to couple or uncouple.

**Maximum Compression** – Refers to the maximum force that can be applied to the Tool Changer in a –Z direction. Not very important for most applications.

**Maximum Moment (Mx, My, Mz)** – A very important sizing rating because it takes into account the dynamic loads created by the motion of the robot. Mx, My and Mz are the moment created when rotating about the X, Y and Z axis respectively.

**Maximum Payload** – The maximum amount of weight the Tool Changer can handle. A payload rating is used to give the design engineer a general reference for the size of Tool Changer that should be used for an application.

**Maximum Tensile** – The maximum amount of pull away (something in tension) that the QuickChange can tolerate before failure.

**Moment Rating (N-M, In-Lbs)** – The rating given to a QuickChange to describe the maximum amount of moment that the unit can handle and still maintain the published repeatability and performance specifications.

**Offset** – Refers to total Coupled Height of the Tool Changer and Tool Plate. It is important in calculation of moment as a function of Robot Acceleration. The more offset you have, the more moment that will be created as the Robot accelerates. Offset may limit maximum Payload allowed.

**Payload** – Refers to the weight of the Tool Changer and/or End Effector and part to be handled by the robot.

**Payload Rating (Lbs, Kg)** – Refers to the maximum weight that the robot or Tool Changer can carry safely. Maximum Payload Rating is limited by and needs to consider Offset, weight and envelope size of the End Effector and part to be handled as well as robot acceleration in order to calculate proper moment load.

**Ready-To-Couple** – A switch that indicates the QuickChange is in the proper orientation to couple with the Tool Plate. It indicates that the Tool Changer is close enough to the Tool Plate to activate the Locking Mechanism. It is important for the robot controller to make decisions such as drop-off End Effector, Couple tool, Uncouple tool. Also refers to a switch that reads if the Tool Changer is in a Ready-to-couple position, that is, in close proximity to the Tool Plate (0.100 inch).

**Repeatability** – The ability to go back to a pre-programmed point. In the context of a Tool Changer this indicates the ability to couple with precision so that additional misalignment is not introduced into the tooling.

**Robot Acceleration** – Refers to the rate of increase in speed at which the robot will operate. Important for calculating maximum moment rating or maximum payload rating when considering offset, envelope size, weight of end effector and weight of part.

**Self-Sealing** – A port that seals itself when it uncouples from its mating half. Conversely, the port automatically opens when it couples with its mating half.

**Servo Module** – Refers to a component within the QuickChange system for special applications using a servo-powered spot weld gun or servo-powered slide/cylinder. Electrical I/O (Input/Output) communication is also done through this module. Bolts on to the tool changer where the Electrical Module would normally mount.

**Water Module** – Refers to the component of the Gun Changer system that passes cooling water through the QuickChange and Tool Plate to and from the spot weld gun, transformer, kickless cables and shunts. The water module has self-sealing or checked ports so that when the QuickChange uncouples, water does not leak and no extra valve is required to shut the water off.

**Weld Module** – Also called a 200 Amp Module, it is a component within the Gun Changer system. Weld Current is passed from the Weld Controller to the transformer for use by the spot weld gun. The DE-STA-CO Weld Module is rated for the maximum current rating of 200 Amps at 100% duty cycle (constant power on).

**Vacuum Module** – Refers to the component of the Tool Changer system that passes vacuum and air through the QuickChange and Tool Plate to the End Effector. The vacuum module comes standard with face-seal ports. An extra valve is required to shut the vacuum and air off.