

***Welding the World since 1936***

***Tweco®  
Robotics***

# ***Quick Robotic Torches & Accessories***

**CATALOG**

**August 2006**

***www.tweco.com***

- ***Superior Reliability***
- ***Superior Repeatability***

## **Welcome To The Latest Innovations...**

Welcome to the expanded line up of world class Tweco Robotics Torches and Accessories. The Engineers at Tweco have been working overtime to continue the tradition of delivering best in class robotics torches and accessories that will provide the reliability and value you expect from Tweco.

This year we have developed an entirely new line of QRL Light Weight Robotics Torches and Accessories. Intended to be used where lower weight is a principle feature in your selection our use of premium materials and machined components throughout ensure the lighter weight torches do not sacrifice durability and repeatable accuracy in your most difficult light weight application. Our new selection includes a variety of torch configurations as well as a broad selection of machined light weight mount arms and brackets to provide the greatest flexibility for your application.

We also invite you to take a look at our QRWA Series of torch body and cable assembly. This series of water-cooled robotic MIG guns offer the same benefits as our conventional water-cooled MIG gun but incorporates an air-cooled power cable. No longer will the robotic water-cooled MIG gun sustain damage due to restricted water flow, resulting in costly down time to the robot weld cell.

The Patented QRC™-2000 Nozzle Cleaning Station is another example of the best-in-class products you've come to expect from Tweco Robotics. The QRC-2000 is the only reamer in the market to offer a Rotary Impact Drive (RID) System. The RID System more effectively releases buildup and matter from the nozzle that is impeding smooth operation. The RID System even reduces stress on your conductor tubes and nozzles saving you money and time. Tweco Robotics even supply's the interface cord back to the robot. Total install time is less than an hour.

And, now, our latest innovation is the combination Kevlar®/Nylon protective cover on all Tweco Robotics MIG guns. All QRA, QRW and QRWA series Tweco Robotics torches feature this improved protective outer cover. Kevlar offers superior heat control and resistance to weld spatter. The Nylon offers lighter weight reducing robotic joint fatigue. The combination of the two materials delivers superior flexibility in synch with the robotic wrist.

The highly trained and dedicated Tweco Robotics sales and customer support team is hungry to service your individual needs. We are capable of supporting the largest integrator implementing a massive conversion or a two man shop with technical assistance. Our promise to you is to bring exceptional service and support, world class products and competitive pricing to every partnership.

Thank you for your continued support of Tweco Robotics. We look forward to working with you.



## Customize Your Robotic MIG Torch to Meet Your Specific Requirements

### STEP 1: Identify your wire feeder type: \_\_\_\_\_

Are any adaptors needed? ☐ Yes ☐ No

If Yes, what type? \_\_\_\_\_

Refer to Tweco Adapter Kit Catalog (Form #TLAK-97)

### STEP 3: Air-Cooled

#### Bend Configurations (page 9)

- |                              |                               |                                |
|------------------------------|-------------------------------|--------------------------------|
| <input type="checkbox"/> 18° | <input type="checkbox"/> 60°  | <input type="checkbox"/> 45L°  |
| <input type="checkbox"/> 22° | <input type="checkbox"/> 180° | <input type="checkbox"/> 180L° |
| <input type="checkbox"/> 45° | <input type="checkbox"/> 22L° |                                |

#### Contact Tips (page 22-24)

- |                               |                                |                                  |
|-------------------------------|--------------------------------|----------------------------------|
| <input type="checkbox"/> 11RS | <input type="checkbox"/> 14RS  | <input type="checkbox"/> 16RS    |
| <input type="checkbox"/> EL11 | <input type="checkbox"/> 14RST | <input type="checkbox"/> 16RST   |
|                               | <input type="checkbox"/> 14RZ  | <input type="checkbox"/> 16RZ    |
|                               | <input type="checkbox"/> 14RZT | <input type="checkbox"/> 16RZT   |
|                               |                                | <input type="checkbox"/> EL16RS  |
|                               |                                | <input type="checkbox"/> EL16RST |

#### Nozzle (page 11)

- ☐ REL22CT  
☐ REL24CT

#### Diffuser (page 18)

- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| <input type="checkbox"/> QTR52-14 | <input type="checkbox"/> QTREL-54-SW |
| <input type="checkbox"/> QTR52-16 | <input type="checkbox"/> QTREL-54-H  |
| <input type="checkbox"/> QTR56-SW |                                      |
| <input type="checkbox"/> QTR56-H  |                                      |

#### Conduit (page 26)

- ☐ R44  
☐ R45  
☐ R44WN  
☐ R45WN

#### Jump Liner (page 26)

- ☐ AWC44-116

### STEP 4: Identify correct Deflection Mount (page 43)

- ☐ RDM-2000-S  
☐ RDM-2000-M  
☐ RDM-2000-H  
☐ RDM-2000 (Solid Mount)

### STEP 6: Identify correct Adaptor Plate (page 46-49)

ABB®	FANUC®	Miller®	Panasonic®
ASEA®	Hitachi®	Motoman®	Reis®
Cloos®	Kawasaki®	Nachi®	Staubli®
ESAB®	Kuka®	OTC Daihen®	

### STEP 2: Cable length requirements:

- |                               |                               |                             |                              |
|-------------------------------|-------------------------------|-----------------------------|------------------------------|
| <input type="checkbox"/> 3'   | <input type="checkbox"/> 4.5' | <input type="checkbox"/> 6' | <input type="checkbox"/> 10' |
| <input type="checkbox"/> 3.5' | <input type="checkbox"/> 5'   | <input type="checkbox"/> 7' | <input type="checkbox"/> 12' |
| <input type="checkbox"/> 4'   | <input type="checkbox"/> 5.5' | <input type="checkbox"/> 8' | <input type="checkbox"/> 15' |

### Water-Cooled

#### Bend Configurations (page 17, 19, 29)

- |                              |                               |                                |
|------------------------------|-------------------------------|--------------------------------|
| <input type="checkbox"/> 18° | <input type="checkbox"/> 60°  | <input type="checkbox"/> 45L°  |
| <input type="checkbox"/> 22° | <input type="checkbox"/> 180° | <input type="checkbox"/> 180L° |
| <input type="checkbox"/> 45° | <input type="checkbox"/> 22L° |                                |

#### Contact Tips (page 22-24)

- |                               |                                |                                  |
|-------------------------------|--------------------------------|----------------------------------|
| <input type="checkbox"/> 11RS | <input type="checkbox"/> 14RS  | <input type="checkbox"/> 16RS    |
| <input type="checkbox"/> EL11 | <input type="checkbox"/> 14RST | <input type="checkbox"/> 16RST   |
|                               | <input type="checkbox"/> 14RZ  | <input type="checkbox"/> 16RZ    |
|                               | <input type="checkbox"/> 14RZT | <input type="checkbox"/> 16RZT   |
|                               |                                | <input type="checkbox"/> EL16RS  |
|                               |                                | <input type="checkbox"/> EL16RST |

#### Nozzle (page 20)

- ☐ REL21  
☐ RWC24  
☐ RWC26

#### Diffuser (page 21)

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| <input type="checkbox"/> QTRW53-11 | <input type="checkbox"/> WC56-EL-SW |
| <input type="checkbox"/> QTRW54    | <input type="checkbox"/> WC56-EL-H  |
| <input type="checkbox"/> QTRW54-16 |                                     |
| <input type="checkbox"/> QTRW56-SW |                                     |
| <input type="checkbox"/> QTRW56-H  |                                     |

#### Conduit (page 26)

- ☐ R44  
☐ R45  
☐ R44WN  
☐ R45WN

#### Jump Liner (page 26)

- ☐ AWC44-116

### STEP 5: Identify correct Mount Arm (page 50)

- |                               |                                |                                |
|-------------------------------|--------------------------------|--------------------------------|
| <input type="checkbox"/> 180° | <input type="checkbox"/> 180L° |                                |
| <input type="checkbox"/> 22°  | <input type="checkbox"/> 22L°  | <input type="checkbox"/> 22LW° |
| <input type="checkbox"/> 45°  | <input type="checkbox"/> 45L°  |                                |
| <input type="checkbox"/> 60°  |                                |                                |
| <input type="checkbox"/> 90°  |                                |                                |

#### Adjustable Mount (page 51)

- ☐ 63mm  
☐ 72mm  
☐ 100mm

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## **Peripheral Accessories**

Tweco<sup>®</sup> Robotics offers additional peripheral accessories to enhance and complete your welding application requirements:

**Robotic Deflection Mount & Mounting Arms**

**Conductor Tube Alignment Fixture**

**Nozzle Cleaning Station**

**Anti-Spatter Mist Applicators**

**Wire Cutting Station**

**Wire Trim Unit**

**Water Coolers**

**Protex<sup>®</sup> Coolant & Protex Anti-Spatter Compound**

**TCP Check Tool Kit**

**Tip Changing Tool**

Contact your local welding distributor or Tweco Customer Care (1-800-426-1888)  
for more information on the products mentioned above.

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# Tweco® Robotics Air-cooled Torch Body and Cable Assembly

## QRL Series

The new Tweco Robotics Quick Robotic Light Weight Torch (QRL) offers the ideal torch for “Table Top” robots. It is designed for everyday applications that require a lighter weight and smaller profile for robotic welding torch functions.

This factor is made possible due to the combination of a notable reduction in the overall weight and size of the torch without any affect on its superior reliability and repeatability.

The Quick Robotic Light Weight Torch gives the consumer the same quality that is expected from all Tweco Robotics QRA series torches, with close to half the weight and a significant reduction in size.



### Standard Features:

Features	Benefits
<ul style="list-style-type: none"><li>• Quick conductor tube lock for easy conductor tube replacement</li><li>• 40% lighter than the QRA series torch</li><li>• E-stop cable with connections</li><li>• Smaller physical profile</li><li>• Compatible with existing mount arms, and uses current conductor tubes and consumables</li><li>• External protective sleeve</li><li>• Precision front case assembly (gives high repeatability to mount and conductor tube)</li><li>• Furnished with Tweco Robotics R45-3545 conduit</li></ul>	<ul style="list-style-type: none"><li>• Less down time</li><li>• Ideal for “Table Top” robots. Reduces the inertial effects on the torch head and whipping action on the power cable giving the torch more accuracy at arc initiation</li><li>• Safe operation</li><li>• Greater access to confined spaces</li><li>• Proven components of the QRA series</li><li>• Wear resistance</li><li>• Reliable repeatability</li><li>• Best in class conduit</li></ul>

### Specifications:

The air-cooled QRL torch body and cable assembly is rated for 400 amperes at 60% duty cycle and can weld with wire diameter from .030” to 1/16”. It comes with the standard 1-5/8” (41,28mm) Ø mounting sleeve. The torch body uses a QTR66 series conductor tube that is offered in various degrees of bend configurations to meet your robotic welding application. The QTR66 series conductor tubes are sold separately.

## QRL Series 400 Amp Robotic Mig Gun



Standard Torch Body **	Part No.	Stock No.
With 4 ft. / 1,22m Cable Assembly w/ Tweco® Rear Connector	QRL404	3041-1750
With 4 ft. / 1,22m Cable Assembly w/ Miller® Rear Connector	QRL404M	3041-1751
With 4 ft. / 1,22m Cable Assembly w/ Lincoln® Rear Connector	QRL404L	3041-1752
With 4 ft. / 1,22m Cable Assembly w/ Euro-Kwik Rear Connector	XQRL404	3041-1753
With 6 ft. / 1,83m Cable Assembly w/ Tweco Rear Connector	QRL406	3041-1754
With 6 ft. / 1,83m Cable Assembly w/ Miller Rear Connector	QRL406M	3041-1755
With 6 ft. / 1,83m Cable Assembly w/ Lincoln Rear Connector	QRL406L	3041-1756
With 6 ft. / 1,83m Cable Assembly w/ Euro-Kwik Rear Connector	XQRL406	3041-1757

**IMPORTANT:** A separate E-stop Jumper Cable must be ordered to allow the use of the E-stop feature. The assembly connects the Control Cable extending out from the rear end of the torch to the robot control.

There are five (5) different E-stop Jumper Cable Assemblies available:

Part No. QRJC-010 (Stock No. 3045-1241) - E-stop Jumper Cable Assembly w/o Connector (Generic) - 3 ft. long (91cm)

Part No. QRJC-020 (Stock No. 3045-1242) - E-stop Jumper Cable Assembly w/ Burndy Connector (ABB®) - 3 ft. long (91cm)

Part No. QRJC-030 (Stock No. 3045-1243) - E-stop Jumper Cable Assembly w/ 4-pin Amp Connector (Motoman®) - 3 ft. long (91cm)

Part No. QRJC-040 (Stock No. 3045-1244) - E-stop Jumper Cable Assembly w/ 5-pin DDK Connector (Fanuc®) - 3 ft. long (91cm)

Part No. QRJC-050 (Stock No. 3045-1245) - E-stop Jumper Cable Assembly w/ 5-pin DDK Connector (Panasonic®) - 3 ft. long (91cm)

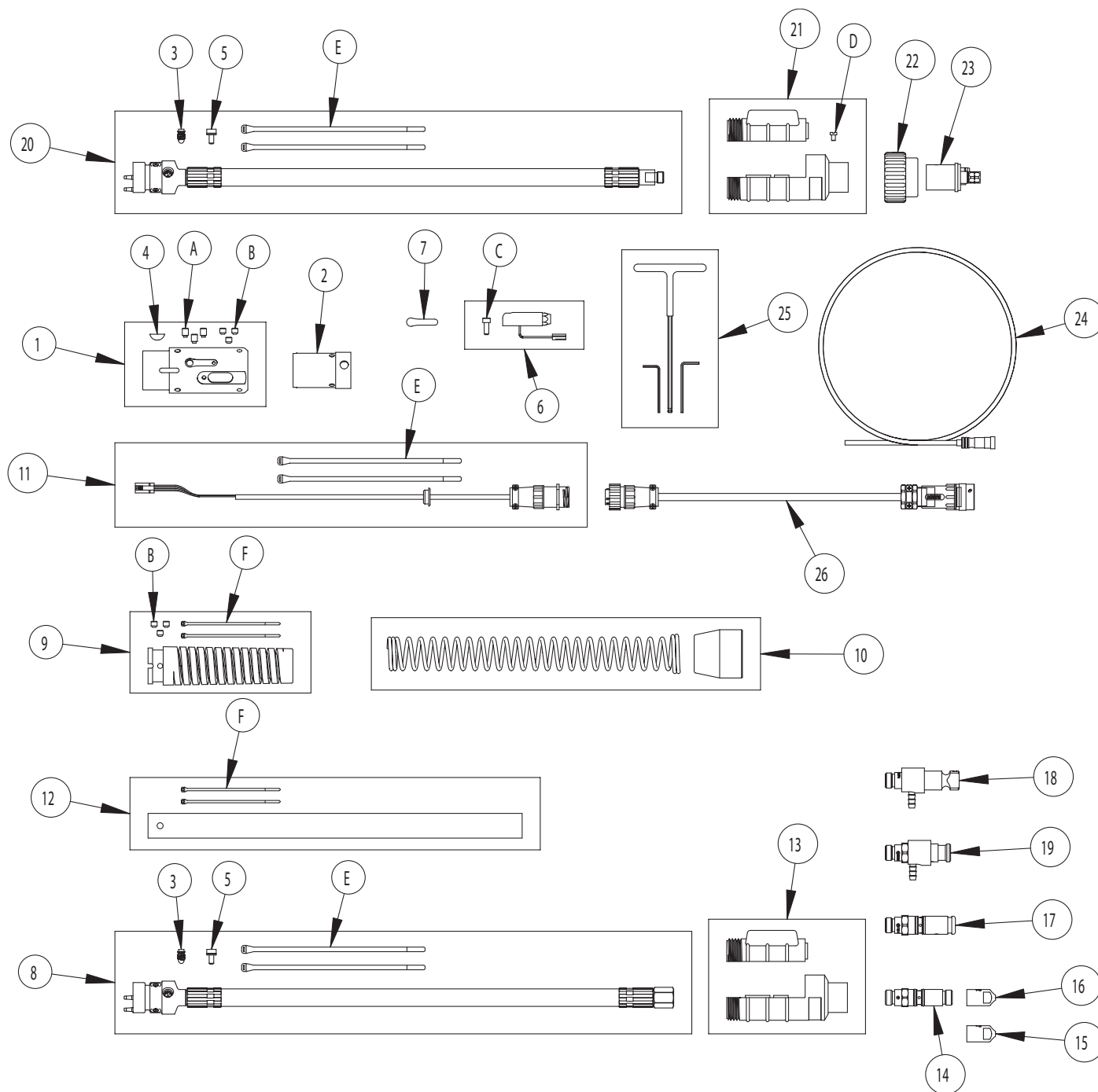
**NOTE:** An additional E-stop Cable Assembly must be purchased separately when using the QRL Series MIG gun with the RDM Series Deflection Mount. This cable connects the MIG gun to the RDM deflection mount allowing the device to detect a collision between the conductor tube and the fixture or part.

Part No. RDML-2000-JC (Stock No. 3044-1860) - E-stop Jumper Cable Assembly



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## QRL Series Replacement Parts





## QRL Series Replacement Parts

Item No.	Part No.	Stock No.	Description
1	QRLMS	3045-1709	QRL Mount Sleeve (includes 4, A & B)
2	QRLH	3045-1710	QRL Case
3	QR106-RLS	3045-1341	Conductor Tube Locking Screw (Qty. 5)
4	QTRMS-BS	3045-1156	Woodruff Keys (Qty. 5)
5	QRL106S	3045-1347	Conduit Screw
6	QRLRH	3045-1706	QRL Receptacle Housing Assembly (includes C)
7	QRLCS	3045-1700	Locking Screw Cover for QRL series
8	QRL1004PC	3045-1702	QRL Series Front Block & Cable (4 ft. long) (includes 3, E & 5)
	QRL1006PC	3045-1703	QRL Series Front Block & Cable (6 ft. long) (includes 3, E & 5)
9	QRL-SPS	3045-1199	Front Strain Relief Spring (includes B & F)
10	QRLRCS	3045-1701	QRL Strain Relief Cap & Spring
11	QRL04CC	3045-1704	QRL Control Cable Assembly (4 ft. long) (includes E)
	QRL06CC	3045-1705	QRL Control Cable Assembly (6 ft. long) (includes E)
12	QRL04J	3045-1707	QRL Cable Cover (4 ft. long) (includes F)
	QRL06J	3045-1708	QRL Cable Cover (6 ft. long) (includes F)
13	QRA-CS	3045-1239	Rear Case Assembly
14	R174MH	2035-2109	Miller® Connector Plug
	R176MH	2060-2184	Miller Connector Plug
15	R175M-N045	2050-2181	Miller Plug Nipple, 0.045" (1,0mm) Wire (Use w/R176MH)
	R174M-N045	2040-2192	Miller Plug Nipple, 0.045" (1,0mm) Wire (Use w/R174MH)
16	R175M-N116	2050-2182	Miller Plug Nipple, 0.062" (1,6mm) Wire (Use w/R176MH)
	R174M-N116	2040-2191	Miller Plug Nipple, 0.062" (1,6mm) Wire (Use w/R174MH)
17	176S-H	2060-2177	Tweco® Connector Plug
	350-174H	2035-2110	Tweco Connector Plug (Uses R44 series Conduit)
18	QTR176LH	2086-2624	Lincoln® Connector Plug (2.71" - 68,83mm OAL.)
	EL176LH	2060-2680	Lincoln Connector Plug (3.84" - 97,54mm OAL.)
19	350-174PH	2035-2172	Panasonic® Connector Plug (Uses R44 series Conduit)
20	XQRL1004PC	3045-1395	QRL Front Block & Cable (4 ft. long-Euro) (includes 3, E & 5)
	XQRL1006PC	3045-1396	QRL Front Block & Cable (6 ft. long-Euro) (includes 3, E & 5)
21	XQRA-CS	3045-1240	Rear Case Assembly (includes D)
22	174X-2S	2040-2177	Euro-Kwik Nut
23	E171-1TS	2011-2172	Euro-Kwik Adapter
24			Conduit (refer to page 26)
25	QTR-TOOLS	2062-2034	Tool Kit
26			E-stop Jumper Cable Assembly
	QRJC-010	3045-1241	Without Connector - 3 ft. (91cm) Long
	QRJC-020	3045-1242	With Burndy Connector - 3 ft. (91 cm) Long
	QRJC-030	3045-1243	With 4-pin Amp Connector - 3 ft. (91 cm) Long
	QRJC-040	3045-1244	With 5-pin DDK Connector - 3 ft. (91 cm) Long
	QRJC-050	3045-1245	With 5-pin DDK Connector - 3 ft. (91 cm) Long

## Standard Non-Sellable Parts

These standard parts are not sellable items and should be purchased at a local hardware or fastener supplier.

Item No.	Description
A	1/4 - 20 x 3/8 Half Dog Point Set Screw
B	1/4 - 20 x 1/4 Flat Point Socket Head Set Screw
C	10 - 32 x 1/2 SS Socket Head Cap Screw
D	M4 x 0.7 x 5.9 Cheese Head Screw
E	7.6L x 0.190W Cable Tie Panduit CBR2S
F	4.1L x 0.098W Cable Tie Panduit CBR1M

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# Tweco® Robotics Air-cooled Torch Body and Cable Assembly

## QRA Series

Tweco Robotics QRA series air-cooled torch body and cable assemblies provide many features that will enhance your robotic welding application. Torch body and cable assemblies are furnished with these standard features:

Features	Benefits
<ul style="list-style-type: none"><li>• Improved Quick Tube locking</li><li>• Standard 1-5/8" (41,28mm) Ø mounting cartridge sleeve</li><li>• Precision front case assembly (gives high repeatability to mount and conductor tube)</li><li>• Inch switch mounted in a molded housing on the front torch case</li><li>• E-stop cable with connections</li><li>• Both front and rear heavy cable support springs</li><li>• Kevlar®/Nylon outer protective cable cover</li><li>• Internal protective sleeve</li><li>• Internal purge hose for spraying Protex® anti-spatter compound through the conductor tube and nozzle</li><li>• Furnished with Tweco Robotics R45-116 Conduit</li><li>• Furnished with a Tweco®, Miller® and Lincoln® rear connector plug</li></ul>	<ul style="list-style-type: none"><li>• Less Down Time</li><li>• Including other diameters</li><li>• Reliable Repeatability</li><li>• Allows for manual wire adjustment</li><li>• Safe operation</li><li>• Smoother wire feed</li><li>• Spatter protection</li><li>• Wear resistance</li><li>• Allows for external mister setup</li><li>• Best in class conduit</li><li>• Compatibility with nearly any feeder</li></ul>

The air-cooled QRA torch body and cable assembly is rated for 600 amperes at 60% duty cycle and can weld with wire diameters from .030" to 1/8". The torch body uses a QTR66 series conductor tube that is offered in various degrees of bend configurations to meet your robotic welding application. The QTR66 series conductor tubes are sold separately.

The Tweco Robotics **Cablehoz®** is comprised of three primary components:

- The outer jacket is a tear-resistant, radiation cross-linked polymer extruded over the copper stranding.
- The copper is spun around a hytel center core tube, providing flexibility and support for the inner core.
- The inner core acts as the shielding gas carrier as well as support for the wire conduit assembly.

The QRA series torch body and cable assembly is furnished in four different configurations which will allow you to adapt to either the Tweco Robotics RDM series mount arms or other robotic manufacturers mount arms. Refer to the information below to determine which configuration is required for your specific robot cell. Each of the cartridge kits are assembled individually, positioned and pinned in place to ensure repeatability and accuracy of the torch body and conductor tube combination when mounted to the robot arm.

- Part No. QRA6XX contains the QRA cartridge kit for 1-5/8" (41,28mm) Ø Mount Arms (Tweco®)
- Part No. QRA6XX-2BC contains the QRA cartridge kit for 1-1/2" (38,10mm) Ø Mount Arms (Melton®)
- Part No. QRA6XX-3BC contains the QRA cartridge kit for 1-3/8" (34,93mm) Ø Mount Arms (Tregaskiss®)
- Part No. QRA6XX-4BC contains the QRA cartridge kit for 36mm Ø Mount Arms (Binzel®)



## QRA Series 600 Amp Air-Cooled Torch Body For 1-5/8" Ø Mount Arm

Standard Torch Body **	Part No.	Stock No.	Torch Body w/ Euro-Kwik Part No.	Stock No.
With 3 ft. / 91cm Cable Assembly	QRA603	3045-1000	XQRA603	3045-1025
With 3.5 ft. / 1,07m Cable Assembly	QRA6035	3045-1001	XQRA6035	3045-1026
With 4 ft. / 1,22m Cable Assembly	QRA604	3045-1002	XQRA604	3045-1027
With 4.5 ft. / 1,37m Cable Assembly	QRA6045	3045-1003	XQRA6045	3045-1028
With 5 ft. / 1,52m Cable Assembly	QRA605	3045-1004	XQRA605	3045-1029
With 5.5 ft. / 1,68m Cable Assembly	QRA6055	3045-1005	XQRA6055	3045-1030
With 6 ft. / 1,83m Cable Assembly	QRA606	3045-1006	XQRA606	3045-1031
With 7 ft. / 2,13m Cable Assembly	QRA607	3045-1007	XQRA607	3045-1032
With 8 ft. / 2,44m Cable Assembly	QRA608	3045-1008	XQRA608	3045-1033
With 10 ft. / 3m Cable Assembly	QRA610	3045-1009	XQRA610	3045-1034
With 12 ft. / 4m Cable Assembly	QRA612	3045-1010	XQRA612	3045-1035
With 15 ft. / 5m Cable Assembly	QRA615	3045-1011	XQRA615	3045-1036

**IMPORTANT: A separate E-stop Jumper Cable must be ordered to allow the use of the Inch Switch and E-Stop features. The assembly connects the Control Cable extending out from the end of the torch to the robot control. There are four (4) different E-stop Jumper Cable Assemblies available:**

**Part No. QRJC-010 (Stock No. 3045-1241) - E-stop Jumper Cable Assy. without Connector (Generic) - 3ft. long (91cm)**

**Part No. QRJC-020 (Stock No. 3045-1242) - E-stop Jumper Cable Assy. with Burndy Connector (ABB®) - 3ft. long (91cm)**

**Part No. QRJC-030 (Stock No. 3045-1243) - E-stop Jumper Cable Assy. with 4-pin Amp Connector (Motoman®) - 3ft. long (91cm)**

**Part No. QRJC-040 (Stock No. 3045-1244) - E-stop Jumper Cable Assy. with 5-pin DDK Connector (Fanuc®) - 3ft. long (91cm)**

**Part No. QRJC-050 (Stock No. 3045-1245) - E-Stop Jumper Cable Assy. with 5-pin DDK Connector (Panasonic®) - 3ft. long (91cm)**

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## QRA Series 600 Amp Air-Cooled Torch Body For 1-1/2" Ø Mount Arms

Standard Torch Body	Part No.	Stock No.	w/ Euro-Kwik Part No.	Stock No.
With 3ft. / 91cm Cable Assembly	QRA603-2BC	3045-1400	XQRA603-2BC	3045-1412
With 3.5ft / 1,07m Cable Assembly	QRA6035-2BC	3045-1401	XQRA6035-2BC	3045-1413
With 4ft. / 1,22m Cable Assembly	QRA604-2BC	3045-1402	XQRA604-2BC	3045-1414
With 4.5ft / 1,37m Cable Assembly	QRA6045-2BC	3045-1403	XQRA6045-2BC	3045-1415
With 5ft. / 1,52m Cable Assembly	QRA605-2BC	3045-1404	XQRA605-2BC	3045-1416
With 5.5ft / 1,68m Cable Assembly	QRA6055-2BC	3045-1405	XQRA6055-2BC	3045-1417
With 6ft. / 1,83m Cable Assembly	QRA606-2BC	3045-1406	XQRA606-2BC	3045-1418
With 7ft. / 2,13m Cable Assembly	QRA607-2BC	3045-1407	XQRA607-2BC	3045-1419
With 8ft. / 2,44m Cable Assembly	QRA608-2BC	3045-1408	XQRA608-2BC	3045-1420
With 10ft. / 3m Cable Assembly	QRA610-2BC	3045-1409	XQRA610-2BC	3045-1421
With 12ft. / 4m Cable Assembly	QRA612-2BC	3045-1410	XQRA612-2BC	3045-1422
With 15ft. / 5m Cable Assembly	QRA615-2BC	3045-1411	XQRA615-2BC	3045-1423

Note: Furnished with the E-stop connection on the front molded case to match Tweco® Robotics Deflection Mount.

## QRA Series 600 Amp Air-Cooled Torch Body For 1-3/8" Ø Mount Arms

Standard Torch Body	Part No.	Stock No.	w/ Euro-Kwik Part No.	Stock No.
With 3ft. / 91cm Cable Assembly	QRA603-3BC	3045-1425	XQRA603-3BC	3045-1437
With 3.5ft / 1,07m Cable Assembly	QRA6035-3BC	3045-1426	XQRA6035-3BC	3045-1438
With 4ft. / 1,22m Cable Assembly	QRA604-3BC	3045-1427	XQRA604-3BC	3045-1439
With 4.5ft / 1,37m Cable Assembly	QRA6045-3BC	3045-1428	XQRA6045-3BC	3045-1440
With 5ft. / 1,52m Cable Assembly	QRA605-3BC	3045-1429	XQRA605-3BC	3045-1441
With 5.5ft / 1,68m Cable Assembly	QRA6055-3BC	3045-1430	XQRA6055-3BC	3045-1442
With 6ft. / 1,83m Cable Assembly	QRA606-3BC	3045-1431	XQRA606-3BC	3045-1443
With 7ft. / 2,13m Cable Assembly	QRA607-3BC	3045-1432	XQRA607-3BC	3045-1444
With 8ft. / 2,44m Cable Assembly	QRA608-3BC	3045-1433	XQRA608-3BC	3045-1445
With 10ft. / 3m Cable Assembly	QRA610-3BC	3045-1434	XQRA610-3BC	3045-1446
With 12ft. / 4m Cable Assembly	QRA612-3BC	3045-1435	XQRA612-3BC	3045-1447
With 15ft. / 5m Cable Assembly	QRA615-3BC	3045-1436	XQRA615-3BC	3045-1448

Note: Furnished with the E-stop connection on the front molded case to match Tregaskiss® Deflection Mount.

## QRA Series 600 Amp Air-Cooled Torch Body For 36mm Ø Mount Arms

Standard Torch Body	Part No.	Stock No.	w/ Euro-Kwik Part No.	Stock No.
With 3ft. / 91cm Cable Assembly	QRA603-4BC	3045-1450	XQRA603-4BC	3045-1462
With 3.5ft / 1,07m Cable Assembly	QRA6035-4BC	3045-1451	XQRA6035-4BC	3045-1463
With 4ft. / 1,22m Cable Assembly	QRA604-4BC	3045-1452	XQRA604-4BC	3045-1464
With 4.5ft / 1,37m Cable Assembly	QRA6045-4BC	3045-1453	XQRA6045-4BC	3045-1465
With 5ft. / 1,52m Cable Assembly	QRA605-4BC	3045-1454	XQRA605-4BC	3045-1466
With 5.5ft / 1,68m Cable Assembly	QRA6055-4BC	3045-1455	XQRA6055-4BC	3045-1467
With 6ft. / 1,83m Cable Assembly	QRA606-4BC	3045-1456	XQRA606-4BC	3045-1468
With 7ft. / 2,13m Cable Assembly	QRA607-4BC	3045-1457	XQRA607-4BC	3045-1469
With 8ft. / 2,44m Cable Assembly	QRA608-4BC	3045-1458	XQRA608-4BC	3045-1470
With 10ft. / 3m Cable Assembly	QRA610-4BC	3045-1459	XQRA610-4BC	3045-1471
With 12ft. / 4m Cable Assembly	QRA612-4BC	3045-1460	XQRA612-4BC	3045-1472
With 15ft. / 5m Cable Assembly	QRA615-4BC	3045-1461	XQRA615-4BC	3045-1473

Note: Furnished with the E-stop connection on the front molded case to match Binzel® Deflection Mount.

Binzel is a registered trademark of Abicor-Binzel Ltd. Tregaskiss is a registered trademark of Tregaskiss Ltd., Canada. The afore mentioned registered trademarks are in no way affiliated with Tweco Robotics or Thermadyne Industries, Inc. Tweco is a registered trademark of Thermadyne Industries, Inc.

**U.S. Customer Care: 800-426-1888 / FAX 800-535-0557**



## Tweco® Robotics Air-cooled Conductor Tube

The QTR series conductor tube assemblies are designed to offer rigid support and reliability. The inner tube is machined from an extruded copper tube providing excellent electrical conductivity and cool operation even under high amperage applications. The outer jacket is made from a seamless 3/4" outside diameter (OD) stainless steel tube that is insulated from the inner tube by a teflon sleeve. This forward-thinking design provides excellent di-electric properties.

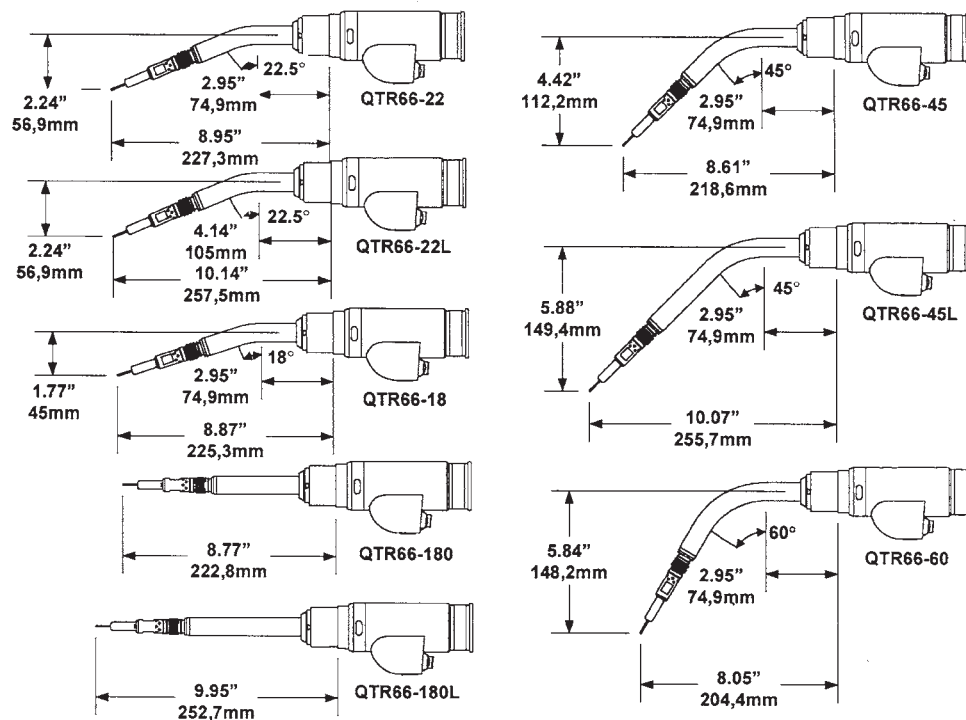
The conductor tubes are positively located into the torch body by the use of two (2) stainless steel alignment pins. These pins ensure the proper relationship with the torch body and robotic mount.

The back end of the conductor tube is made from a solid brass connection with a stainless steel alloy wear surface in the area where the tube is drawn and locked in place inside the torch block. An O-ring seal prevents the shielding gas from escaping and seals against atmospheric air contamination.

**Note: QTR66 series conductor tubes are furnished with Part No. QTR56-SW (Stock No. 1560-1125) diffuser that accepts the 16RS & 16RZ contact tip.**

### QTR Series 600 Ampere Air-cooled Robotic Conductor Tube

	18°	22°	45°	60°	180°	22°L	45°L	180°L
<b>Part No.</b>	QTR66-18	QTR66-22	QTR66-45	QTR66-60	QTR66-180	QTR66-22L	QTR66-45L	QTR66-180L
<b>Stock No.</b>	1686-1840	1686-1841	1686-1842	1686-1843	1686-1844	1686-1845	1686-1847	1686-1846



**NOTE: Wire stickout = 5/8" (15,8mm)**



**QTR54-SW**

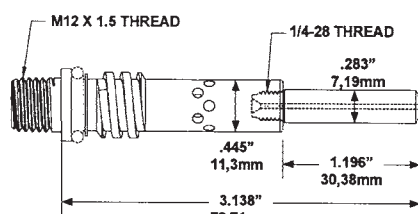


**QTR56-SW**

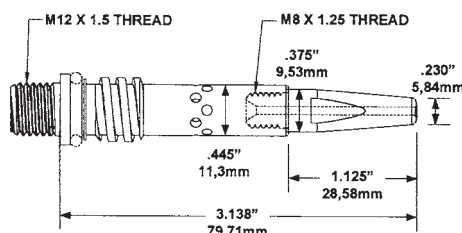
## QTR Air-cooled Diffusers

### QTR52 Series Diffusers (For use with REL22CT Nozzle Assembly)

Part No.	Stock No.	
QTR52-14	1520-1116	Use with 14RS & 14RZ & 14H Contact Tips
QTR52-16	1520-1115	Use with 16RS & 16RZ Contact Tips



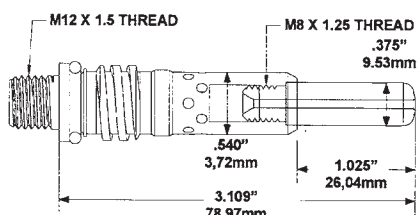
**QTR52-14 / 14RZ**



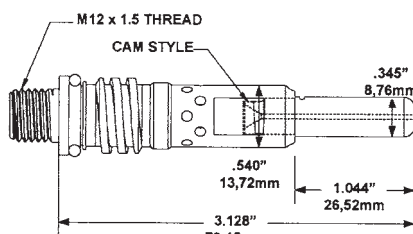
**QTR52-16 / 16RZ**

### QTR56 & QTREL54 Series Diffusers (For use with REL24CT Nozzle Assembly)

Part No.	Stock No.	
QTR56-SW	1560-1125	Use with 16RS & 16RZ tips - Max. conduit 1/16" wire
QTR56-H	1560-1126	Use with 16RS & 16RZ tips - Conduit 5/64" & larger
QTREL54-SW	1564-1130	Use with ELRS16 tips – Max. conduit 1/16" wire
QTREL54-H	1564-1131	Use with ELRS16 tips – Conduit 5/64" & larger

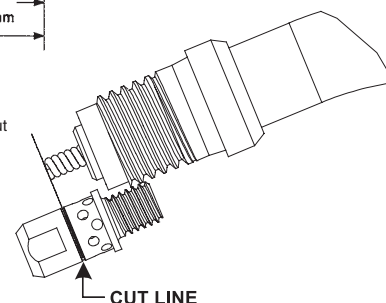


**QTR56-SW / 16RZ**



**QTREL54-SW / EL16RZ**

Note: A machined groove around the OD of the Tweco® Robotics gas diffusers should be used by the end user for determining the maximum cut length on any replacement conduit. Refer to the figure on the right.





REL24CT-75



REL24CT-62F

## QRA Air-cooled Nozzles

### REL22CT Nozzle – Standard Tip Recess – .125" to .156" (3,18mm to 3,96mm)

Bore Size	Part No.	Stock No.	A	B	C	D
.375"- 9,5mm	REL22CT-37	1220-1250	.395"/10,03mm	.545"/13.84mm	.943"/23.96mm	.875"/22,23mm
.500"-12,7mm	REL22CT-50	1220-1255	.520"/13,21mm	.670"/17,02mm	1.05"/26,71mm	.875"/22,23mm
.625"-15,9mm	REL22CT-62	1220-1260	.645"/16,38mm	.795"/20,19mm	1.16"/29,46mm	.875"/22,23mm

### REL22CT Nozzle – Flush Tip Recess – Flush to .062" (1,57mm)

Bore Size	Part No.	Stock No.	A	B	C	D
.375"- 9,5mm	REL22CT-37F	1220-1251	.395"/10,03mm	.545"/13.84mm	.834"/10,03mm	.875"/22,23mm
.500"-12,7mm	REL22CT-50F	1220-1256	.520"/13,21mm	.670"/17,02mm	.942"/23,94mm	.875"/22,23mm
.625"-15,9mm	REL22CT-62F	1220-1261	.645"/16,38mm	.795"/20,19mm	1.05"/26,71mm	.875"/22,23mm

### REL22CT Nozzle – Protruding Tip – .125" to .187" (3,18mm to 4,75mm)

Bore Size	Part No.	Stock No.	A	B	C	D
.375"- 9,5mm	REL22CT-37P	1220-1252	.395"/10,03mm	.545"/13.84mm	.647"/16,44mm	.875"/22,23mm
.500"-12,7mm	REL22CT-50P	1220-1257	.520"/13,21mm	.670"/17,02mm	.755"/19,19mm	.875"/22,23mm
.625"-15,9mm	REL22CT-62P	1220-1262	.645"/16,38mm	.795"/20,19mm	.864"/21,94mm	.875"/22,23mm

### REL24CT Nozzle – Standard Tip Recess – .125" to .156" (3,18mm to 3,96mm)

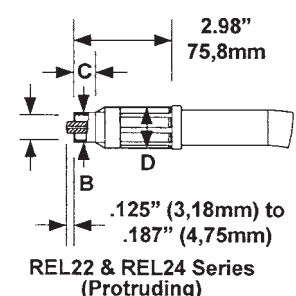
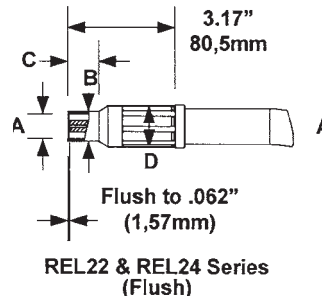
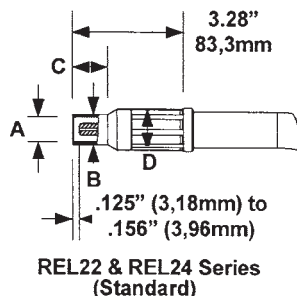
Bore Size	Part No.	Stock No.	A	B	C	D
.500"-12,7mm	REL24CT-50	1240-1305	.520"/13,21mm	.670"/17,02mm	.882"/22,4mm	1.00"/25,4mm
.625"-15,9mm	REL24CT-62	1240-1306	.645"/16,38mm	.790"/20,1mm	.952"/24,19mm	1.00"/25,4mm
.750"-19,1mm	REL24CT-75	1240-1307	.770"/19,56mm	.920"/23,2mm	1.03"/26,16mm	1.00"/25,4mm

### REL24CT Nozzle – Flush Tip Recess – Flush to .062" (1,57mm)

Bore Size	Part No.	Stock No.	A	B	C	D
.500"-12,7mm	REL24CT-50F	1240-1315	.520"/13,21mm	.670"/17,02mm	.772"/19,61mm	1.00"/25,4mm
.625"-15,9mm	REL24CT-62F	1240-1316	.645"/16,38mm	.790"/20,1mm	.842"/21,4mm	1.00"/25,4mm
.625"-15,9mm	REL24CT-62FL	1240-1318	.645"/16,38mm	.790"/20,1mm	1.55"/39,48mm	1.00"/25,4mm
.750"-19,1mm	REL24CT-75F	1240-1317	.770"/19,56mm	.920"/23,2mm	.916"/23,7mm	1.00"/25,4mm

### REL24CT Nozzle – Protruding Tip – .125" to .187" (3,18mm to 4,75mm)

Bore Size	Part No.	Stock No.	A	B	C	D
.500"-12,7mm	REL24CT-50P	1240-1310	.520"/13,21mm	.670"/17,02mm	.585"/14,86mm	1.00"/25,4mm
.625"-15,9mm	REL24CT-62P	1240-1311	.645"/16,38mm	.790"/20,1mm	.655"/16,65mm	1.00"/25,4mm
.750"-19,1mm	REL24CT-75P	1240-1312	.770"/19,56mm	.920"/23,2mm	.729"/18,52mm	1.00"/25,4mm



# Tweco® Robotics Water-cooled Torch Body and Cable Assembly

Tweco Robotics water-cooled torch body and cable assemblies are offered in two (2) configurations. The QRW series features a water-cooled cable assembly while the QRWA series features an air-cooled cable assembly. Both accept the QTRW series water-cooled conductor tube. The QRWA series provides maximum cooling at the conductor tube end with a rugged, trouble-free cable assembly.

- Water shut-off valves located in the torch body assembly
- Color coded "water-in" and "water-out" hoses for easier hook-up
- Water hose quick connections
- High flow rate – QRWA series - for improved conductor tube cooling
- Larger water lines – QRW - for improved conductor tube cooling

The water-cooled QRW torch body and cable assemblies are rated for 600 amperes at 100% duty cycle and can weld with wire diameters from .030" to 1/16". The water/air-cooled QRWA series is rated for 600 amps at 80% duty cycle and can weld with wire diameters from .030" to 1/16". The torch body uses QTRW63, 64, and 66 series conductor tubes that are offered in a variety of bend configurations to meet your robotic welding application requirements. The QTRW series conductor tubes are sold separately.

The water shut-off valves located in the torch body allow the removal of the conductor tube without shutting off the water supply. This reduces the chance of introducing moisture into the conductor tube and conduit.

The QRW & QRWA series torch body and cable assembly is furnished in four different configurations which will allow you to adapt to either the Tweco Robotics RDM series mount arms or other robotic manufacturers mount arms. Refer to the information below to determine which configuration is required for your specific robot cell. Each of the cartridge kits are assembled individually, positioned and pinned in place to ensure repeatability and accuracy of the torch body and conductor tube combination when mounted to the robot arm.

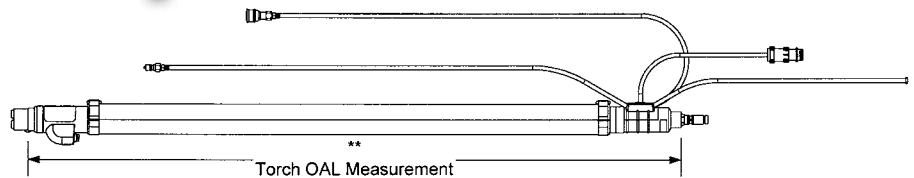
### QRW series torch body and cable assembly

- Part No. QRW6XX contains the QRA cartridge kit for 1-5/8" (41,28mm) Ø Mount Arms (Tweco®)
- Part No. QRW6XX-2BC contains the QRA cartridge kit for 1-1/2" (38,10mm) Ø Mount Arms (Melton®)
- Part No. QRW6XX-3BC contains the QRA cartridge kit for 1-3/8" (34,93mm) Ø Mount Arms (Tregaskiss®)
- Part No. QRW6XX-4BC contains the QRA cartridge kit for 36mm Ø Mount Arms (Binzel®)

### QRWA series torch body and cable assembly

- Part No. QRWA6XX contains the QRA cartridge kit for 1-5/8" (41,28mm) Ø Mount Arms (Tweco)
- Part No. QRWA6XX-2BC contains the QRA cartridge kit for 1-1/2" (38,10mm) Ø Mount Arms (Melton)
- Part No. QRWA6XX-3BC contains the QRA cartridge kit for 1-3/8" (34,93mm) Ø Mount Arms (Tregaskiss)
- Part No. QRWA6XX-4BC contains the QRA cartridge kit for 36mm Ø Mount Arms (Binzel)





## QRW Series 600 Amp Water-cooled Torch Body

Standard Torch Body **	Part No.	Stock No.	Torch Body w/ Euro-Kwik Part No.	Stock No.
With 3 ft. / 91cm Cable Assembly	QRW603	3045-1050	XQRW603	3045-1075
With 3.5 ft. / 1,07m Cable Assembly	QRW6035	3045-1051	XQRW6035	3045-1076
With 4 ft. / 1,22m Cable Assembly	QRW604	3045-1052	XQRW604	3045-1077
With 4.5 ft. / 1,37m Cable Assembly	QRW6045	3045-1053	XQRW6045	3045-1078
With 5 ft. / 1,52m Cable Assembly	QRW605	3045-1054	XQRW605	3045-1079
With 5.5 ft. / 1,68m Cable Assembly	QRW6055	3045-1055	XQRW6055	3045-1080
With 6 ft. / 1,83m Cable Assembly	QRW606	3045-1056	XQRW606	3045-1081
With 7 ft. / 2,13m Cable Assembly	QRW607	3045-1057	XQRW607	3045-1082
With 8 ft. / 2,44m Cable Assembly	QRW608	3045-1058	XQRW608	3045-1083
With 10 ft. / 3m Cable Assembly	QRW610	3045-1059	XQRW610	3045-1084
With 12 ft. / 4m Cable Assembly	QRW612	3045-1060	XQRW612	3045-1085
With 15 ft. / 5m Cable Assembly	QRW615	3045-1061	XQRW615	3045-1086

**IMPORTANT: A separate E-stop Jumper Cable must be ordered to allow the use of the Inch Switch and E-Stop features. The assembly connects the Control Cable extending out from the end of the torch to the robot control. There are four (4) different E-stop Jumper Cable Assemblies available:**

**Part No. QRJC-010 (Stock No. 3045-1241) – E-stop Jumper Cable Assy. without Connector (Generic) – 3 ft. long (91cm)**

**Part No. QRJC-020 (Stock No. 3045-1242) – E-stop Jumper Cable Assy. with Burndy Connector (ABB®) – 3 ft. long (91cm)**

**Part No. QRJC-030 (Stock No. 3045-1243) – E-stop Jumper Cable Assy. with 4-pin Amp Connector (Motoman®) – 3ft. long (91cm)**

**Part No. QRJC-040 (Stock No. 3045-1244) – E-stop Jumper Cable Assy. with 5-pin DDK Connector (Fanuc®) – 3ft. long (91cm)**

**Part No. QRJC-050 (Stock No. 3045-1245) - E-Stop Jumper Cable Assy. with 5-pin DDK Connector (Panasonic®) - 3ft. long (91cm)**

ABB is a registered trademark of ABB Automation Products GmbH. FANUC is a registered trademark of FANUC Robotics America, Inc. Motoman is a registered trademark of Motoman Inc. Panasonic is a registered trademark of Matsushita Electric Industrial Co., Ltd. The afore mentioned registered trademarks are in no way affiliated with Tweco Robotics or Thermadyne Industries, Inc. Tweco is a registered trademark of Thermadyne Industries, Inc.

## QRW Series 600 Amp Water-Cooled Torch Body For 1-1/2" Ø Mount Arms

Standard Torch Body	Part No.	Stock No.	w/ Euro-Kwik Part No.	Stock No.
With 3ft. / 91cm Cable Assembly	QRW603-2BC	3045-1500	XQRW603-2BC	3045-1512
With 3.5ft / 1,07m Cable Assembly	QRW6035-2BC	3045-1501	XQRW6035-2BC	3045-1513
With 4ft. / 1,22m Cable Assembly	QRW604-2BC	3045-1502	XQRW604-2BC	3045-1514
With 4.5ft / 1,37m Cable Assembly	QRW6045-2BC	3045-1503	XQRW6045-2BC	3045-1515
With 5ft. / 1,52m Cable Assembly	QRW605-2BC	3045-1504	XQRW605-2BC	3045-1516
With 5.5ft / 1,68m Cable Assembly	QRW6055-2BC	3045-1505	XQRW6055-2BC	3045-1517
With 6ft. / 1,83m Cable Assembly	QRW606-2BC	3045-1506	XQRW606-2BC	3045-1518
With 7ft. / 2,13m Cable Assembly	QRW607-2BC	3045-1507	XQRW607-2BC	3045-1519
With 8ft. / 2,44m Cable Assembly	QRW608-2BC	3045-1508	XQRW608-2BC	3045-1520
With 10ft. / 3m Cable Assembly	QRW610-2BC	3045-1509	XQRW610-2BC	3045-1521
With 12ft. / 4m Cable Assembly	QRW612-2BC	3045-1510	XQRW612-2BC	3045-1522
With 15ft. / 5m Cable Assembly	QRW615-2BC	3045-1511	XQRW615-2BC	3045-1523

Note: Furnished with the E-stop connection on the front molded case to match Tweco® Robotics Deflection Mount.

## QRW Series 600 Amp Water-Cooled Torch Body For 1-3/8" Ø Mount Arms

Standard Torch Body	Part No.	Stock No.	w/ Euro-Kwik Part No.	Stock No.
With 3ft. / 91cm Cable Assembly	QRW603-3BC	3045-1525	XQRW603-3BC	3045-1537
With 3.5ft / 1,07m Cable Assembly	QRW6035-3BC	3045-1526	XQRW6035-3BC	3045-1538
With 4ft. / 1,22m Cable Assembly	QRW604-3BC	3045-1527	XQRW604-3BC	3045-1539
With 4.5ft / 1,37m Cable Assembly	QRW6045-3BC	3045-1528	XQRW6045-3BC	3045-1540
With 5ft. / 1,52m Cable Assembly	QRW605-3BC	3045-1529	XQRW605-3BC	3045-1541
With 5.5ft / 1,68m Cable Assembly	QRW6055-3BC	3045-1530	XQRW6055-3BC	3045-1542
With 6ft. / 1,83m Cable Assembly	QRW606-3BC	3045-1531	XQRW606-3BC	3045-1543
With 7ft. / 2,13m Cable Assembly	QRW607-3BC	3045-1532	XQRW607-3BC	3045-1544
With 8ft. / 2,44m Cable Assembly	QRW608-3BC	3045-1533	XQRW608-3BC	3045-1545
With 10ft. / 3m Cable Assembly	QRW610-3BC	3045-1534	XQRW610-3BC	3045-1546
With 12ft. / 4m Cable Assembly	QRW612-3BC	3045-1535	XQRW612-3BC	3045-1547
With 15ft. / 5m Cable Assembly	QRW615-3BC	3045-1536	XQRW615-3BC	3045-1548

Note: Furnished with the E-stop connection on the front molded case to match Tregaskiss® Deflection Mount.

## QRW Series 600 Amp Water-Cooled Torch Body For 36mm Ø Mount Arms

Standard Torch Body	Part No.	Stock No.	w/ Euro-Kwik Part No.	Stock No.
With 3ft. / 91cm Cable Assembly	QRW603-4BC	3045-1550	XQRW603-4BC	3045-1562
With 3.5ft / 1,07m Cable Assembly	QRW6035-4BC	3045-1551	XQRW6035-4BC	3045-1563
With 4ft. / 1,22m Cable Assembly	QRW604-4BC	3045-1552	XQRW604-4BC	3045-1564
With 4.5ft / 1,37m Cable Assembly	QRW6045-4BC	3045-1553	XQRW6045-4BC	3045-1565
With 5ft. / 1,52m Cable Assembly	QRW605-4BC	3045-1554	XQRW605-4BC	3045-1566
With 5.5ft / 1,68m Cable Assembly	QRW6055-4BC	3045-1555	XQRW6055-4BC	3045-1567
With 6ft. / 1,83m Cable Assembly	QRW606-4BC	3045-1556	XQRW606-4BC	3045-1568
With 7ft. / 2,13m Cable Assembly	QRW607-4BC	3045-1557	XQRW607-4BC	3045-1569
With 8ft. / 2,44m Cable Assembly	QRW608-4BC	3045-1558	XQRW608-4BC	3045-1570
With 10ft. / 3m Cable Assembly	QRW610-4BC	3045-1559	XQRW610-4BC	3045-1571
With 12ft. / 4m Cable Assembly	QRW612-4BC	3045-1560	XQRW612-4BC	3045-1572
With 15ft. / 5m Cable Assembly	QRW615-4BC	3045-1561	XQRW615-4BC	3045-1573

Note: Furnished with the E-stop connection on the front molded case to match Binzel® Deflection Mount.

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## QRWA Series 600 Amp Water/Air-cooled Torch Body

Standard Torch Body **	Part No.	Stock No.	Torch Body w/ Euro-Kwik Part No.	Stock No.
With 3 ft. / 91cm Cable Assembly	QRWA603	3045-1100	XQRWA603	3045-1125
With 3.5 ft. / 1,07m Cable Assembly	QRWA6035	3045-1101	XQRWA6035	3045-1126
With 4 ft. / 1,22m Cable Assembly	QRWA604	3045-1102	XQRWA604	3045-1127
With 4.5 ft. / 1,37m Cable Assembly	QRWA6045	3045-1103	XQRWA6045	3045-1128
With 5 ft. / 1,52m Cable Assembly	QRWA605	3045-1104	XQRWA605	3045-1129
With 5.5 ft. / 1,68m Cable Assembly	QRWA6055	3045-1105	XQRWA6055	3045-1130
With 6 ft. / 1,83m Cable Assembly	QRWA606	3045-1106	XQRWA606	3045-1131
With 7 ft. / 2,13m Cable Assembly	QRWA607	3045-1107	XQRWA607	3045-1132
With 8 ft. / 2,44m Cable Assembly	QRWA608	3045-1108	XQRWA608	3045-1133
With 10 ft. / 3m Cable Assembly	QRWA610	3045-1109	XQRWA610	3045-1134
With 12 ft. / 4m Cable Assembly	QRWA612	3045-1110	XQRWA612	3045-1135
With 15 ft. / 5m Cable Assembly	QRWA615	3045-1111	XQRWA615	3045-1136

**IMPORTANT: A separate E-stop Jumper Cable must be ordered to allow the use of the Inch Switch and E-Stop features. The assembly connects the Control Cable extending out from the end of the torch to the robot control. There are four (4) different E-stop Jumper Cable Assemblies available:**

**Part No. QRJC-010 (Stock No. 3045-1241) – E-stop Jumper Cable Assy. without Connector (Generic) – 3ft. long (91cm)**

**Part No. QRJC-020 (Stock No. 3045-1242) – E-stop Jumper Cable Assy. with Burndy Connector (ABB®) – 3ft. long (91cm)**

**Part No. QRJC-030 (Stock No. 3045-1243) – E-stop Jumper Cable Assy. with 4-pin Amp Connector (Motoman®) – 3ft. long (91cm)**

**Part No. QRJC-040 (Stock No. 3045-1244) – E-stop Jumper Cable Assy. with 5-pin DDK Connector (Fanuc®) – 3ft. long (91cm)**

**Part No. QRJC-050 (Stock No. 3045-1245) – E-Stop Jumper Cable Assy. with 5-pin DDK Connector (Panasonic®) – 3ft. long (91cm)**

ABB is a registered trademark of ABB Automation Products GmbH. FANUC is a registered trademark of FANUC Robotics America, Inc. Motoman is a registered trademark of Motoman Inc. Panasonic is a registered trademark of Matsushita Electric Industrial Co., Ltd. The afore mentioned registered trademarks are in no way affiliated with Tweco Robotics or Thermadyne Industries, Inc. Tweco is a registered trademark of Thermadyne Industries, Inc.

## QRWA Series 600 Amp Water-Cooled Torch Body For 1-1/2" Ø Mount Arms

Standard Torch Body	Part No.	Stock No.	w/ Euro-Kwik Part No.	Stock No.
With 3ft. / 91cm Cable Assembly	QRWA603-2BC	3045-1600	XQRWA603-2BC	3045-1612
With 3.5ft / 1,07m Cable Assembly	QRWA6035-2BC	3045-1601	XQRWA6035-2BC	3045-1613
With 4ft. / 1,22m Cable Assembly	QRWA604-2BC	3045-1602	XQRWA604-2BC	3045-1614
With 4.5ft / 1,37m Cable Assembly	QRWA6045-2BC	3045-1603	XQRWA6045-2BC	3045-1615
With 5ft. / 1,52m Cable Assembly	QRWA605-2BC	3045-1604	XQRWA605-2BC	3045-1616
With 5.5ft / 1,68m Cable Assembly	QRWA6055-2BC	3045-1605	XQRWA6055-2BC	3045-1617
With 6ft. / 1,83m Cable Assembly	QRWA606-2BC	3045-1606	XQRWA606-2BC	3045-1618
With 7ft. / 2,13m Cable Assembly	QRWA607-2BC	3045-1607	XQRWA607-2BC	3045-1619
With 8ft. / 2,44m Cable Assembly	QRWA608-2BC	3045-1608	XQRWA608-2BC	3045-1620
With 10ft. / 3m Cable Assembly	QRWA610-2BC	3045-1609	XQRWA610-2BC	3045-1621
With 12ft. / 4m Cable Assembly	QRWA612-2BC	3045-1610	XQRWA612-2BC	3045-1622
With 15ft. / 5m Cable Assembly	QRWA615-2BC	3045-1611	XQRWA615-2BC	3045-1623

Note: Furnished with the E-stop connection on the front molded case to match Tweco® Robotics Deflection Mount.

## QRWA Series 600 Amp Water/Air-Cooled Torch Body For 1-3/8" Ø Mount Arms

Standard Torch Body	Part No.	Stock No.	w/ Euro-Kwik Part No.	Stock No.
With 3ft. / 91cm Cable Assembly	QRWA603-3BC	3045-1625	XQRWA603-3BC	3045-1637
With 3.5ft / 1,07m Cable Assembly	QRWA6035-3BC	3045-1626	XQRWA6035-3BC	3045-1638
With 4ft. / 1,22m Cable Assembly	QRWA604-3BC	3045-1627	XQRWA604-3BC	3045-1639
With 4.5ft / 1,37m Cable Assembly	QRWA6045-3BC	3045-1628	XQRWA6045-3BC	3045-1640
With 5ft. / 1,52m Cable Assembly	QRWA605-3BC	3045-1629	XQRWA605-3BC	3045-1641
With 5.5ft / 1,68m Cable Assembly	QRWA6055-3BC	3045-1630	XQRWA6055-3BC	3045-1642
With 6ft. / 1,83m Cable Assembly	QRWA606-3BC	3045-1631	XQRWA606-3BC	3045-1643
With 7ft. / 2,13m Cable Assembly	QRWA607-3BC	3045-1632	XQRWA607-3BC	3045-1644
With 8ft. / 2,44m Cable Assembly	QRWA608-3BC	3045-1633	XQRWA608-3BC	3045-1645
With 10ft. / 3m Cable Assembly	QRWA610-3BC	3045-1634	XQRWA610-3BC	3045-1646
With 12ft. / 4m Cable Assembly	QRWA612-3BC	3045-1635	XQRWA612-3BC	3045-1647
With 15ft. / 5m Cable Assembly	QRWA615-3BC	3045-1636	XQRWA615-3BC	3045-1648

Note: Furnished with the E-stop connection on the front molded case to match Tregaskiss® Deflection Mount.

## QRWA Series 600 Amp Water/Air-Cooled Torch Body For 36mm Ø Mount Arms

Standard Torch Body	Part No.	Stock No.	w/ Euro-Kwik Part No.	Stock No.
With 3ft. / 91cm Cable Assembly	QRWA603-4BC	3045-1650	XQRWA603-4BC	3045-1662
With 3.5ft / 1,07m Cable Assembly	QRWA6035-4BC	3045-1651	XQRWA6035-4BC	3045-1663
With 4ft. / 1,22m Cable Assembly	QRWA604-4BC	3045-1652	XQRWA604-4BC	3045-1664
With 4.5ft / 1,37m Cable Assembly	QRWA6045-4BC	3045-1653	XQRWA6045-4BC	3045-1665
With 5ft. / 1,52m Cable Assembly	QRWA605-4BC	3045-1654	XQRWA605-4BC	3045-1666
With 5.5ft / 1,68m Cable Assembly	QRWA6055-4BC	3045-1655	XQRWA6055-4BC	3045-1667
With 6ft. / 1,83m Cable Assembly	QRWA606-4BC	3045-1656	XQRWA606-4BC	3045-1668
With 7ft. / 2,13m Cable Assembly	QRWA607-4BC	3045-1657	XQRWA607-4BC	3045-1669
With 8ft. / 2,44m Cable Assembly	QRWA608-4BC	3045-1658	XQRWA608-4BC	3045-1670
With 10ft. / 3m Cable Assembly	QRWA610-4BC	3045-1659	XQRWA610-4BC	3045-1671
With 12ft. / 4m Cable Assembly	QRWA612-4BC	3045-1660	XQRWA612-4BC	3045-1672
With 15ft. / 5m Cable Assembly	QRWA615-4BC	3045-1661	XQRWA615-4BC	3045-1673

Note: Furnished with the E-stop connection on the front molded case to match Binzel® Deflection Mount.

Binzel is a registered trademark of Abicor-Binzel Ltd. Tregaskiss is a registered trademark of Tregaskiss Ltd., Canada. The afore mentioned registered trademarks are in no way affiliated with Tweco Robotics or Thermadyne Industries, Inc. Tweco is a registered trademark of Thermadyne Industries, Inc.



## Tweco® Robotics Water-cooled Conductor Tube

The QTRW series conductor tube is a rugged and fully insulated design. The outer jacket contains the nozzle housing with a thermally conductive insulator to efficiently draw the heat from the nozzle. A teflon sleeve insulates the outer jacket from the inner tube assembly. The strength of the outer jacket comes from the use of a 3/4" OD stainless steel seamless tube brazed between the copper nozzle housing and the brass crimp ring.

The inner tube is constructed from a brass and copper duplex style extruded tube. The front end of the brazed inner tube is tapered to fit between itself and the nozzle housing. This provides a solid heat transfer path between the inner tube and jacket assembly. The back end of the conductor tube is made from a stainless steel alloy that increases the strength of the conductor tube.

The conductor tube is positively secured in the torch body by the use of two (2) stainless steel alignment pins. These pins ensure the proper relationship with the torch body and robotic mount arm. The conductor tube is drawn into the torch body by the use of a stainless steel locking screw.

The water-cooled feature of the torch allows the water to flow through the torch body into the conductor tube. The chilled water flows to the front of the conductor tube where it circulates around the nozzle area of the torch drawing heat out of the gas diffuser, contact tip and nozzle. The water then returns to the water circulator.

The QTRW series conductor tubes are available in three (3) different amperage ranges and various degrees of bend configurations.

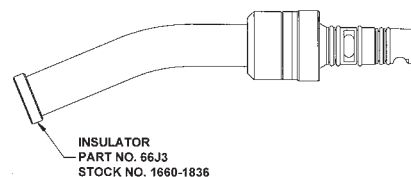
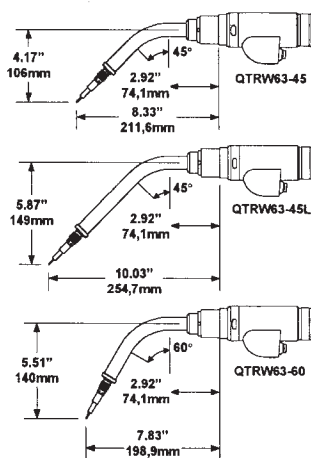
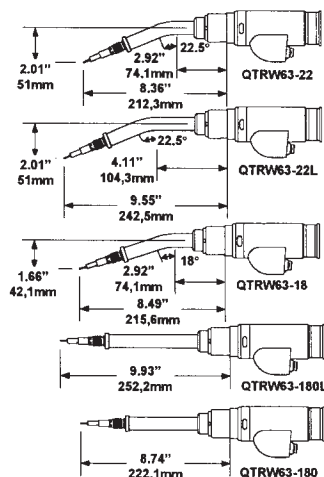
- QTRW63 Series – Robotic welding applications up to 300 amperes
- QTRW64 Series – Robotic welding applications up to 400 amperes
- QTRW66 Series – Robotic welding applications up to 600 amperes

**Note: QTRW series conductor tubes are furnished with diffusers that accept the 11RS series contact tip for QTRW63 series and 16RS & 16RZ series contact tip for QTRW64 and QTRW66 series.**



### QTRW Series QTRW63 Series (300 amp) Conductor Tube

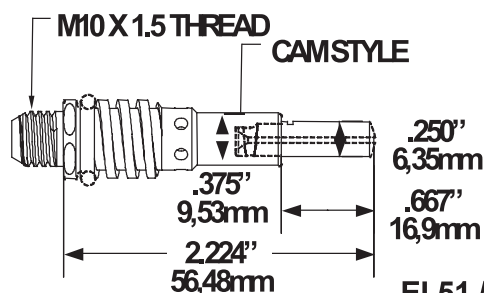
	18°	22°	45°	60°	180°	22°L	45°L	180°L
<b>Part No.</b>	QTRW63-18	QTRW63-22	QTRW63-45	QTRW63-60	QTRW63-180	QTRW63-22L	QTRW63-45L	QTRW63-180L
<b>Stock No.</b>	1636-1125	1636-1126	1636-1128	1636-1130	1636-1131	1636-1127	1636-1129	1636-1132



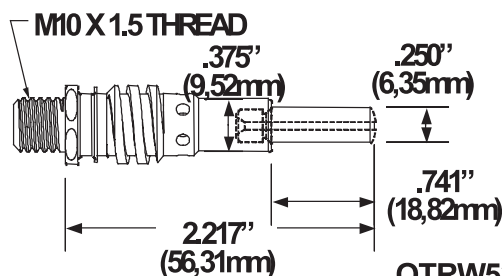
Wire stickout = 5/8" (15,8 mm)

## 300 Amp Diffuser

Part No.	Stock No.	
EL51	1510-1105	Use with EL11 Tips
QTRW53-11	1525-1141	Use with 11RS Tips



EL51 / EL11



QTRW53-11 / 11RS-35

## REL21 Nozzle Standard Tip Recess – .125" to .156" (3,17mm to 3,96mm)

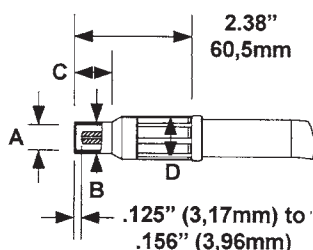
Bore Size	Part No.	Stock No.	A	B	C	D
.500"/12,7mm	REL21-50	1210-1311	.520"/13,21mm	.633"/16,08mm	.766"/19,46mm	.875"/22,23mm

## REL21 Nozzle Flush Tip Recess – Flush to .062" (1,57mm)

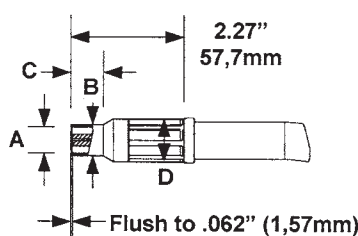
Bore Size	Part No.	Stock No.	A	B	C	D
.500"/12,7mm	REL21-50F	1210-1316	.520"/13,21mm	.633"/16,08mm	.656"/16,66mm	.875"/22,23mm

## REL21 Nozzle Protruding Tip – .125" to .187" (3,17mm to 4,75mm)

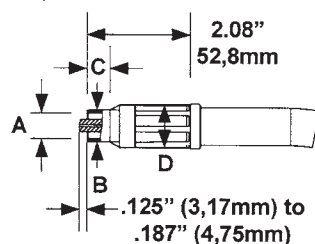
Bore Size	Part No.	Stock No.	A	B	C	D
.500"/12,7mm	REL21-50P	1210-1321	.520"/13,21mm	.633"/16,08mm	.466"/11,84mm	.875"/22,23mm



REL21 (Standard)



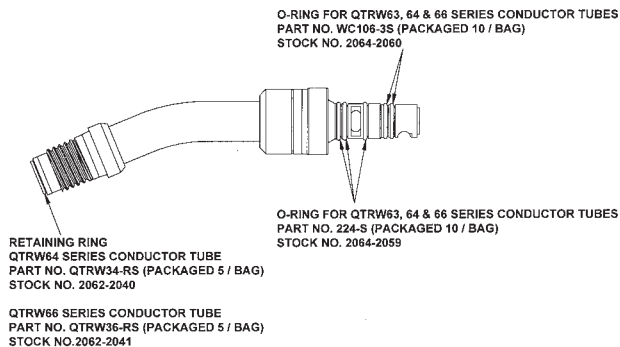
REL21 (Flush)



REL21 (Protruding)

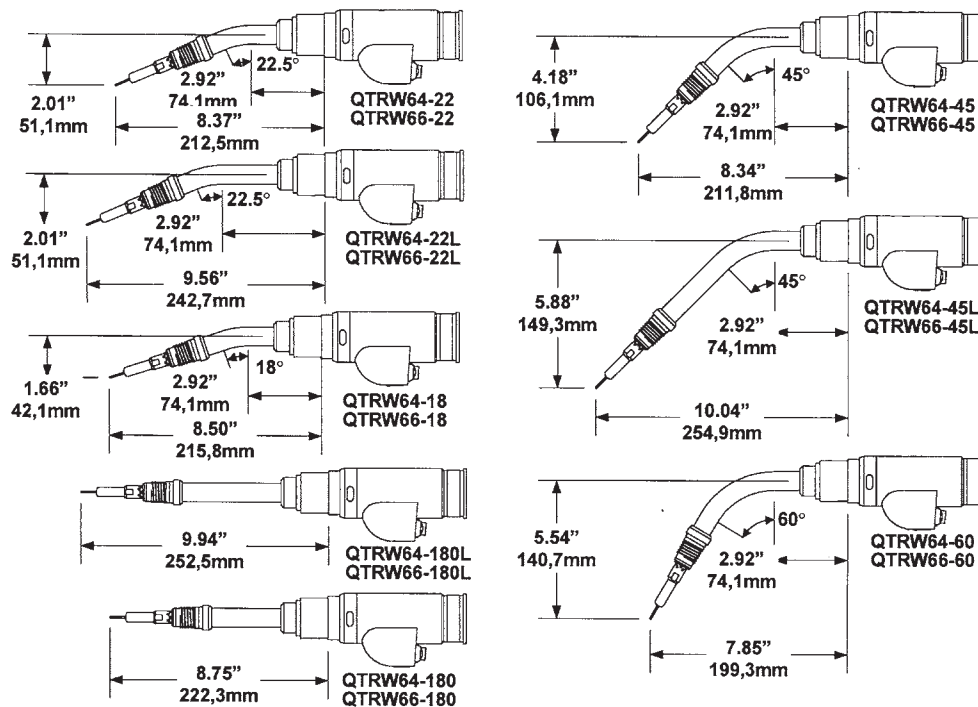
## QTRW Series 400 & 600 amp Water-cooled Robotic Conductor Tube QTRW64 Series (400 amp) Conductor Tube

	18°	22°	45°	60°	180°	22°L	45°L	180°L
<b>Part No.</b>	QTRW64-18	QTRW64-22	QTRW64-45	QTRW64-60	QTRW64-180	QTRW64-22L	QTRW64-45L	QTRW64-180L
<b>Stock No.</b>	1646-1700	1646-1701	1646-1702	1646-1703	1646-1704	1646-1705	1646-1707	1646-1706



## QTRW66 Series (600 amp) Conductor Tube

	18°	22°	45°	60°	180°	22°L	45°L	180°L
<b>Part No.</b>	QTRW66-18	QTRW66-22	QTRW66-45	QTRW66-60	QTRW66-180	QTRW66-22L	QTRW66-45L	QTRW66-180L
<b>Stock No.</b>	1663-1700	1663-1701	1663-1702	1663-1703	1663-1704	1663-1705	1663-1707	1663-1706



NOTE: Wire stick-out equals 5/8" (15,88mm)

## RWC Nozzle

The RWC series nozzles are machined from solid copper bars. This assures consistent dimensional stability and an efficient dissipation of heat. The nozzles house a fiberglass spatter shield and are also nickel-plated to offer further prevention of spatter bridging between the nozzle and gas diffuser.

The RWC24 series nozzles will fit the QTRW64 robotic conductor tube assemblies and the RWC26 series nozzles will fit the QTRW66 series robotic conductor tube assemblies. See below for the different nozzle options that are offered.



**RWC24-50**



**RWC26-75**

### RWC24 & RWC26 Nozzle Standard Tip Recess - .125" to .156" (3,17mm to 3,96mm)

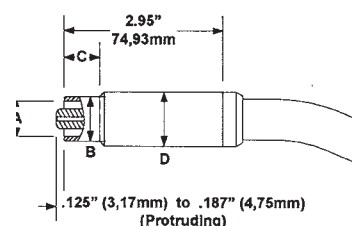
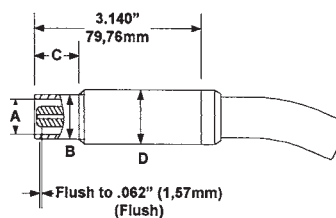
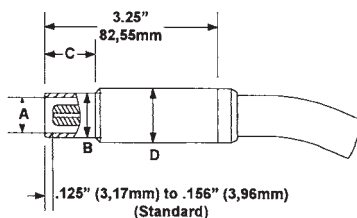
Bore Size	Part No.	Stock No.	A	B	C	D
.375"- 9,5mm	RWC24-37	1240-1330	.40"/10,2mm	.51"/13,0mm	.87"/22,1mm	1.00"/25,4mm
.500"-12,7mm	RWC24-50	1240-1331	.52"/13,2mm	.63"/16,1mm	.94"/23,8mm	1.00"/25,4mm
.625"-15,9mm	RWC24-62	1240-1332	.65"/16,4mm	.82"/20,8mm	.97"/24,3mm	1.00"/25,4mm
.750"-19,1mm	RWC24-75	1240-1333	.77"/19,6mm	.95"/24,1mm	1.23"/31,3mm	1.00"/25,4mm
.500"-12,7mm	RWC26-50	1264-1430	.52"/13,2mm	.63"/16,1mm	.80"/20,3mm	1.06"/27,0mm
.625"-15,9mm	RWC26-62	1264-1431	.65"/16,4mm	.82"/20,8mm	.89"/22,7mm	1.06"/27,0mm
.750"-19,1mm	RWC26-75	1264-1432	.77"/19,6mm	.94"/23,8mm	.95"/24,6mm	1.06"/27,0mm

### RWC24 & RWC26 Nozzle Flush Recess – Flush to .062" (1,57mm)

Bore Size	Part No.	Stock No.	A	B	C	D
.375"- 9,5mm	RWC24-37F	1240-1340	.40"/10,2mm	.51"/13,0mm	.76"/19,3mm	1.00"/25,4mm
.500"-12,7mm	RWC24-50F	1240-1341	.52"/13,2mm	.63"/16,1mm	.83"/21,0mm	1.00"/25,4mm
.625"-15,9mm	RWC24-62F	1240-1342	.65"/16,4mm	.82"/20,8mm	.85"/21,5mm	1.00"/25,4mm
.750"-19,1mm	RWC24-75F	1240-1343	.77"/19,6mm	.95"/24,1mm	1.12"/28,5mm	1.00"/25,4mm
.500"-12,7mm	RWC26-50F	1264-1440	.52"/13,2mm	.63"/16,1mm	.69"/17,5mm	1.06"/27,0mm
.625"-15,9mm	RWC26-62F	1264-1441	.65"/16,4mm	.82"/20,8mm	.78"/19,9mm	1.06"/27,0mm
.750"-19,1mm	RWC26-75F	1264-1442	.77"/19,6mm	.94"/23,8mm	.84"/21,4mm	1.06"/27,0mm

### RWC24 & RWC26 Nozzle Protruding - .125" to .187" (3,17mm to 4,75mm)

Bore Size	Part No.	Stock No.	A	B	C	D
.375"- 9,5mm	RWC24-37P	1240-1335	.40"/10,2mm	.51"/13,0mm	.57"/14,5mm	1.00"/25,4mm
.500"-12,7mm	RWC24-50P	1240-1336	.52"/13,2mm	.63"/16,1mm	.64"/16,3mm	1.00"/25,4mm
.625"-15,9mm	RWC24-62P	1240-1337	.65"/16,4mm	.82"/20,8mm	.66"/16,7mm	1.00"/25,4mm
.750"-19,1mm	RWC24-75P	1240-1338	.77"/19,6mm	.95"/24,1mm	.93"/23,7mm	1.00"/25,4mm
.500"-12,7mm	RWC26-50P	1264-1435	.52"/13,2mm	.63"/16,1mm	.51"/12,8mm	1.06"/27,0mm
.625"-15,9mm	RWC26-62P	1264-1436	.65"/16,4mm	.82"/20,8mm	.60"/15,2mm	1.06"/27,0mm
.750"-19,1mm	RWC26-75P	1264-1437	.77"/19,6mm	.94"/23,8mm	.66"/16,7mm	1.06"/27,0mm





## 400 amp Diffusers

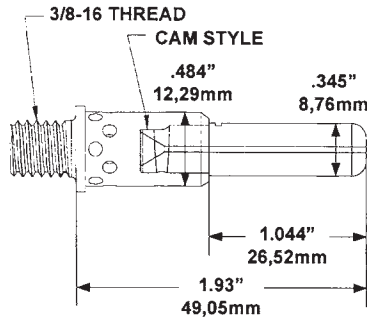
Part No.	Stock No.	
WC53-EL	1525-1140	Use with EL16RS tips
QTRW54	1544-1125	Use with 14RS & 14RZ tips
QTRW54-16	1544-1126	Use with 16RS & 16RZ tips



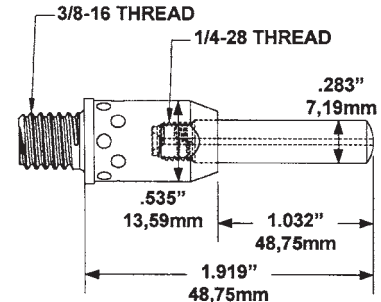
WC53-EL



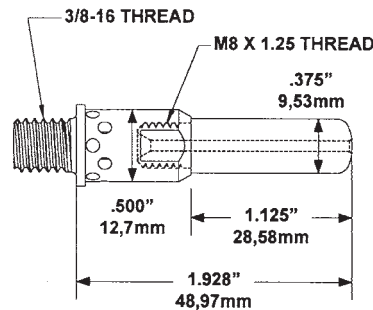
QTRW54



WC53-EL / EL16RZ



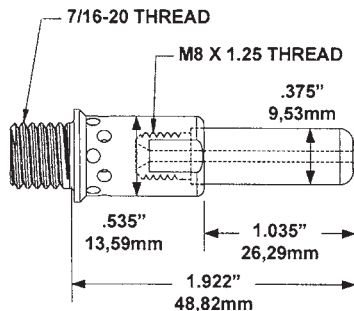
QTRW54 / 14RZ



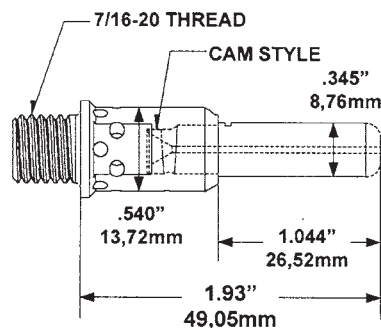
QTRW54-16 / 16RZ

## 600 amp Diffusers

Part No.	Stock No.	
WC56-EL-SW	1560-1146	Use with EL16RS tips – Conduit 1/16" wire - Max
WC56-EL-H	1560-1147	Use with EL16RS tips – Conduit 5/64" & larger
QTRW56-SW	1564-1125	Use with 16RS & 16RZ tips – Conduit 1/16" wire - Max
QTRW56-H	1564-1126	Use with 16RS & 16RZ tips – Conduit 5/64" & larger



QTRW56-SW / 16RZ



WC56-EL-SW / EL16RZ



WC56-EL-SW



QTRW56-SW

## The premium quality Copper-Silver material used in the Tweco® Robotics “RS” series tips:

- Delivers better conductivity – resistance properties
- Reduces micro arcing on the inside diameter surface
- Offers increased tip life
- Delivers significant performance advantage over conventional contact tips.



The “RS” series contact tips are offered in both threaded and cam styles - refer to selection listed below.

### RS Series Copper / Silver Contact Tips

11 Series Tips Wire Size	Tip I.D. +/- .002"	Part No. Stock No
.035" / 0,9mm	.041" / 1,04mm	11RS-35 1110-1225
.045" / 1,2mm	.051" / 1,29mm	11RS-45 1110-1226



14 Series Tips Wire Size	Tip I.D. +/- .002"	Part No. Stock No	14 Series Tips Wire Size	Tip I.D. +/- .002"	Part No. Stock No
.035" / 0,9mm	.041" / 1,04mm	14RS-35 1140-1475	.035" / 0,9mm	.041" / 1,04mm	14RST-35 1140-1482
.040" / 1,0mm	.046" / 1,16mm	14RS-40 1140-1476	.040" / 1,0mm	.046" / 1,16mm	14RST-40 1140-1483
.045" / 1,2mm	.051" / 1,29mm	14RS-45 1140-1477	.045" / 1,2mm	.051" / 1,29mm	14RST-45 1140-1484
.045" / 1,2mm	.054" / 1,37mm	14RS-45C 1140-1480	.045" / 1,2mm	.054" / 1,37mm	14RST-45C 1140-1487
.052" / 1,3mm	.058" / 1,47mm	14RS-52 1140-1478	.052" / 1,3mm	.058" / 1,47mm	14RST-52 1140-1485
1/16" / 1,6mm	.073" / 1,85mm	14RS-116 1140-1479	1/16" / 1,6mm	.073" / 1,85mm	14RST-116 1140-1486
1/16" / 1,6mm	.068" / 1,72mm	14RS-116-68 1140-1481	1/16" / 1,6mm	.068" / 1,72mm	14RST-116-68 1140-1488

16 Series Tips Wire Size	Tip I.D. +/- .002"	Part No. Stock No	16 Series Tips Wire Size	Tip I.D. +/- .002"	Part No. Stock No
.035" / 0,9mm	.041" / 1,04mm	16RS-35 1160-1468	.035" / 0,9mm	.041" / 1,04mm	16RST-35 1160-1475
.040" / 1,0mm	.046" / 1,16mm	16RS-40 1160-1469	.040" / 1,0mm	.046" / 1,16mm	16RST-40 1160-1476
.045" / 1,2mm	.051" / 1,29mm	16RS-45 1160-1470	.045" / 1,2mm	.051" / 1,29mm	16RST-45 1160-1477
.045" / 1,2mm	.054" / 1,37mm	16RS-45C 1160-1473	.045" / 1,2mm	.054" / 1,37mm	16RST-45C 1160-1480
.052" / 1,3mm	.058" / 1,47mm	16RS-52 1160-1471	.052" / 1,3mm	.058" / 1,47mm	16RST-52 1160-1478
1/16" / 1,6mm	.073" / 1,85mm	16RS-116 1160-1472	1/16" / 1,6mm	.073" / 1,85mm	16RST-116 1160-1479
1/16" / 1,6mm	.068" / 1,72mm	16RS-116-68 1160-1474	1/16" / 1,6mm	.068" / 1,72mm	16RST-116-68 1160-1481

## Eliminator® Style Contact Tips

EL11 Series Standard Tips Wire Size	Tip I.D. +/- .002"	Part No. Stock No
.023" / 0,6mm	.031" / 0,79mm	EL11-23 1140-1175
.035" / 0,9mm	.041" / 1,04mm	EL11-30 1140-1176
.040" / 1,0mm	.046" / 1,16mm	EL11-35 1140-1177
.045" / 1,2mm	.051" / 1,29mm	EL11-40 1140-1178
.045" / 1,2mm	.054" / 1,37mm	EL11-45 1140-1179



**EL16RS-45**

## RS Series Copper / Silver Eliminator Contact Tips

EL16 Series Tips Wire Size	Tip I.D. +/- .002"	Part No. Stock No	EL16 Series Tips Wire Size	Tip I.D. +/- .002"	Part No. Stock No
.035" / 0,9mm	.041" / 1,04mm	EL16RS-35 1160-1740	.035" / 0,9mm	.041" / 1,04mm	EL16RST-35 1160-1712
.040" / 1,0mm	.046" / 1,16mm	EL16RS-40 1160-1741	.040" / 1,0mm	.046" / 1,16mm	EL16RST-40 1160-1713
.045" / 1,2mm	.051" / 1,29mm	EL16RS-45 1160-1742	.045" / 1,2mm	.051" / 1,29mm	EL16RST-45 1160-1714
.045" / 1,2mm	.054" / 1,37mm	EL16RS-45C 1160-1745	.045" / 1,2mm	.054" / 1,37mm	EL16RST-45C 1160-1717
.052" / 1,3mm	.058" / 1,47mm	EL16RS-52 1160-1743	.052" / 1,3mm	.058" / 1,47mm	EL16RST-52 1160-1715
1/16" / 1,6mm	.073" / 1,85mm	EL16RS-116 1160-1744	1/16" / 1,6mm	.073" / 1,85mm	EL16RST-116 1160-1716
1/16" / 1,6mm	.068" / 1,72mm	EL16RS-116-68 1160-1746	1/16" / 1,6mm	.068" / 1,72mm	EL16RST-116-68 1160-1718

## Chrome Zirconium - Copper “RZ” Contact Tips

The chrome-zirconium copper material used in the “RZ” series contact tips is harder than the pure copper material which increases the wear resistance properties. The “RZ” series contact tips are offered in the threaded style only.



**16RZT-45**



**14RZ-45**

### RZ Series Chrome Zirconium Contact Tips

14 Series Tips Wire Size	Tip I.D. +/- .002"	Part No. Stock No.	14 Series Tips Wire Size	Tip I.D. +/- .002"	Part No. Stock No.
.035" / 0,9mm	.041" / 1,04mm	14RZ-35 1140-1430	.035" / 0,9mm	.041" / 1,04mm	14RZT-35 1140-1440
.045" / 1,2mm	.051" / 1,29mm	14RZ-45 1140-1432	.045" / 1,2mm	.051" / 1,29mm	14RZT-45 1140-1442
.052" / 1,3mm	.058" / 1,47mm	14RZ-52 1140-1433	.052" / 1,3mm	.058" / 1,47mm	14RZT-52 1140-1443

16 Series Tips Wire Size	Tip I.D. +/- .002"	Part No. Stock No.	16 Series Tips Wire Size	Tip I.D. +/- .002"	Part No. Stock No.
.035" / 0,9mm	.041" / 1,04mm	16RZ-35 1160-1180	.035" / 0,9mm	.041" / 1,04mm	16RZT-35 1160-1190
.045" / 1,2mm	.051" / 1,29mm	16RZ-45 1160-1182	.045" / 1,2mm	.051" / 1,29mm	16RZT-45 1160-1192
.052" / 1,3mm	.058" / 1,47mm	16RZ-52 1160-1183	.052" / 1,3mm	.058" / 1,47mm	16RZT-52 1160-1193

## This image shows a single page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, leaving small margins at the top and bottom. There is no handwriting or other markings on the paper.



## Robotic Conduit Liners Standard Features:

- Tapered lead in angle on the machined conduit stop making the transition of the welding wire into the MIG gun smoother.
- Tin/zinc plated wire.

### R44 Series Conduit

### R45 Series Conduit

#### Steel Welding Wire

Wire Size	Part No. Stock No.	Wire Size	Part No. Stock No.
.035" / .045"	R44-3545-1	.035" / .045"	R45-3545-1
0,9mm / 1,2mm	1440-1223	0,9mm / 1,2mm	1450-1023
.035" / .045"	R44-3545-4	.035" / .045"	R45-3545-4
0,9mm / 1,2mm	1440-1224	0,9mm / 1,2mm	1450-1024
.035" / .045"	R44-3545-8	.035" / .045"	R45-3545-8
0,9mm / 1,2mm	1440-1225	0,9mm / 1,2mm	1450-1025
.035" / .045"	R44-3545-15	.035" / .045"	R45-3545-15
0,9mm / 1,2mm	1440-1226	0,9mm / 1,2mm	1450-1026
.052" / 1/16"	R44-116-1	.052" / 1/16"	R45-116-1
1,53mm / 1,6mm	1440-1228	1,53mm / 1,6mm	1450-1028
.052" / 1/16"	R44-116-4	.052" / 1/16"	R45-116-4
1,53mm / 1,6mm	1440-1229	1,53mm / 1,6mm	1450-1029
.052" / 1/16"	R44-116-8	.052" / 1/16"	R45-116-8
1,53mm / 1,6mm	1440-1230	1,53mm / 1,6mm	1450-1030
.052" / 1/16"	R44-116-15	.052" / 1/16"	R45-116-15
1,53mm / 1,6mm	1440-1231	1,53mm / 1,6mm	1450-1031

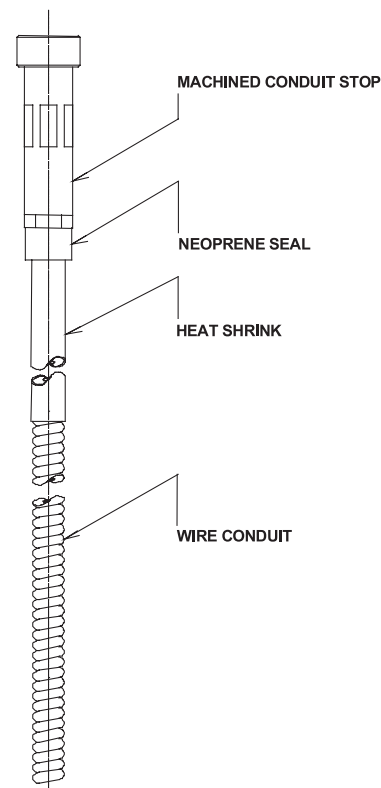
#### Aluminum Welding Wire

Wire Size	Part No. Stock No.	Wire Size	Part No. Stock No.
.035" / .045"	R44WN-3545-4	.035" / .045"	R45WN-3545-4
0,9mm / 1,2mm	1440-1040	0,9mm / 1,2mm	1450-1041
.035" / .045"	R44WN-3545-8	.035" / .045"	R45WN-3545-8
0,9mm / 1,2mm	1440-1041	0,9mm / 1,2mm	1450-1042
.035" / .045"	R44WN-3545-15	.035" / .045"	R45WN-3545-15
0,9mm / 1,2mm	1440-1042	0,9mm / 1,2mm	1450-1043
1/16"	R44WN-116-8	1/16"	R45WN-116-8
1,6mm	1440-1046	1,6mm	1450-1044
1/16"	R44WN-116-15	1/16"	R45WN-116-15
1,6mm	1440-1047	1,6mm	1450-1045

**Note:** R44 series conduits are shipped with all Euro-Kwik Torch and Cable Assemblies  
"WN" = Wire Nylon Wrapped

### Bronze Jump Liner Part No. AWC44-116 (Stock No. 1644-1085)

The use of a jump liner improves arc starts and provides an improved current transfer between the contact tip and aluminum wire. The jump liner can also be used for wear issues found with the liner inside the conductor tube area when using stainless steel wires.



# Tweco® Robotics Nozzle-Sensing Torch Body and Cable Assembly

Tweco Robotics nozzle-sensing torch body and cable assembly (series QRAS, QRWS and QRWAS) incorporates all of the features of our other "standard" assemblies (series QRA, QRW, and QRWA) while adding low-voltage (DC) sensing capabilities for locating the weld joint position.

An insulated, spring-loaded switch assembly - incorporated into the torch block - is used to carry a low (DC) voltage charge. This charge is transferred from the welding robot control system to the conductor tube and nozzle via the torch and cable assembly. A insulated sensing tip extends from the conductor tube outer jacket assembly into the stainless steel rear plug. When the conductor tube is inserted into the torch body, the sensing tip presses against the spring loaded switch pin and activates the nozzle sensing circuit.

The QRA-S, QRW-S, and QRWA-S torch body and cable assemblies are furnished with the standard 1-5/8" (41,28mm) Ø cartridge - Part No. QRAS-1BC, (Stock No. 3045-1195), QRWS-1BC, (Stock No. 3045-1342) and QRWAS-1BC, (Stock No. 3045-1295) - to fit the Tweco Robotics RDM series mount arms. The torch block and sleeve combination - referred to as the "cartridge kit" - is available in three (3) additional sleeve diameters to fit other robotic manufacturers mounting arms. The component parts making up the QRAS, QRWS and QRWAS cartridges are assembled individually, positioned and pinned in place to ensure repeatability and accuracy of torch body/conductor tube combination when mounted to the robot arm.

### QRAS series cartridge kits

- Part No. QRAS-2BC (Stock No. 3045-1196) QRAS cartridge kit for 1-1/2" (38,10mm) Ø Mount (Melton®)
- Part No. QRAS-3BC (Stock No. 3045-1197) QRAS cartridge kit for 1-3/8" (34,93mm) Ø Mount (Tregaskiss®)
- Part No. QRAS-4BC (Stock No. 3045-1198) QRAS cartridge kit for 36mm Ø Mount (Binzel®)

### QRWS series cartridge kits

- Part No. QRWS-2BC (Stock No. 3045-1343) QRWS cartridge kit for 1-1/2" (38,10mm) Ø Mount (Melton)
- Part No. QRWS-3BC (Stock No. 3045-1344) QRWS cartridge kit for 1-3/8" (34,93mm) Ø Mount (Tregaskiss)
- Part No. QRWS-4BC (Stock No. 3045-1345) QRWS cartridge kit for 36mm Ø Mount (Binzel)

### QRWAS series cartridge kits

- Part No. QRWAS-2BC (Stock No. 3045-1296) QRWAS cartridge kit for 1-1/2" (38,10mm) Ø Mount (Melton)
- Part No. QRWAS-3BC (Stock No. 3045-1297) QRWAS cartridge kit for 1-3/8" (34,93mm) Ø Mount (Tregaskiss)
- Part No. QRWAS-4BC (Stock No. 3045-1298) QRWAS cartridge kit for 36mm Ø Mount (Binzel)

**(Note: The above cartridge kits are sold separately)**

**IMPORTANT: A separate E-stop Jumper Cable must be ordered to allow the use of the Inch Switch and E-Stop features. The assembly connects the Control Cable extending out from the end of the torch to the robot control. There are four (4) different E-stop Jumper Cable Assemblies available:**

**Part No. QRJC-010 (Stock No. 3045-1241) - E-stop Jumper Cable Assy. without Connector (Generic) - 3ft. long (91cm)**

**Part No. QRJC-020 (Stock No. 3045-1242) - E-stop Jumper Cable Assy. with Burndy Connector (ABB®) - 3ft. long (91cm)**

**Part No. QRJC-030 (Stock No. 3045-1243) - E-stop Jumper Cable Assy. with 4-pin Amp Connector (Motoman®) - 3ft. long (91cm)**

**Part No. QRJC-040 (Stock No. 3045-1244) - E-stop Jumper Cable Assy. with 5-pin DDK Connector (Fanuc®) - 3ft. long (91cm)**

**Part No. QRJC-050 (Stock No. 3045-1245) - E-Stop Jumper Cable Assy. with 5-pin DDK Connector (Panasonic®) - 3ft. long (91cm)**

ABB is a registered trademark of ABB Automation Products GmbH. Binzel is a registered trademark of Abicor-Binzel Ltd. FANUC is a registered trademark of FANUC Robotics America, Inc. Melton is a registered trademark of Melton, Inc. Motoman is a registered trademark of Motoman Inc. Panasonic is a registered trademark of Matsushita Electric Industrial Co., Ltd. Tregaskiss is a registered trademark of Tregaskiss Ltd., Canada. The afore mentioned registered trademarks are in no way affiliated with Tweco Robotics or Thermadyne Industries, Inc. Tweco is a registered trademark of Thermadyne Industries, Inc.

## QRAS Series 600 Amp Air-cooled Nozzle Sensing Torch Body and Cable Assembly

Standard Torch Body	Part No.	Stock No.	w/ Euro-Kwik Part No.	Stock No.
With 3 ft. / 91cm Cable Assembly	QRA603S	3045-1013	XQRA603S	3045-1038
With 3.5 ft. / 1,07m Cable Assembly	QRA6035S	3045-1014	XQRA6035S	3045-1039
With 4 ft. / 1,22m Cable Assembly	QRA604S	3045-1015	XQRA604S	3045-1040
With 4.5 ft. / 1,37m Cable Assembly	QRA6045S	3045-1016	XQRA6045S	3045-1041
With 5 ft. / 1,52m Cable Assembly	QRA605S	3045-1017	XQRA605S	3045-1042
With 5.5 ft. / 1,68m Cable Assembly	QRA6055S	3045-1018	XQRA6055S	3045-1043
With 6 ft. / 1,83m Cable Assembly	QRA606S	3045-1019	XQRA606S	3045-1044
With 7 ft. / 2,13m Cable Assembly	QRA607S	3045-1020	XQRA607S	3045-1045
With 8 ft. / 2,44m Cable Assembly	QRA608S	3045-1021	XQRA608S	3045-1046
With 10 ft. / 3m Cable Assembly	QRA610S	3045-1022	XQRA610S	3045-1047
With 12 ft. / 4m Cable Assembly	QRA612S	3045-1023	XQRA612S	3045-1048
With 15 ft. / 5m Cable Assembly	QRA615S	3045-1024	XQRA615S	3045-1049

## QRWS Series 600 Amp Water-cooled Nozzle Sensing Torch Body and Cable Assembly

Standard Torch Body	Part No.	Stock No.	w/ Euro-Kwik Part No.	Stock No.
With 3 ft. / 91cm Cable Assembly	QRW603S	3045-1063	XQRW603S	3045-1088
With 3.5 ft. / 1,07m Cable Assembly	QRW6035S	3045-1064	XQRW6035S	3045-1089
With 4 ft. / 1,22m Cable Assembly	QRW604S	3045-1065	XQRW604S	3045-1090
With 4.5 ft. / 1,37m Cable Assembly	QRW6045S	3045-1066	XQRW6045S	3045-1091
With 5 ft. / 1,52m Cable Assembly	QRW605S	3045-1067	XQRW605S	3045-1092
With 5.5 ft. / 1,68m Cable Assembly	QRW6055S	3045-1068	XQRW6055S	3045-1093
With 6 ft. / 1,83m Cable Assembly	QRW606S	3045-1069	XQRW606S	3045-1094
With 7 ft. / 2,13m Cable Assembly	QRW607S	3045-1070	XQRW607S	3045-1095
With 8 ft. / 2,44m Cable Assembly	QRW608S	3045-1071	XQRW608S	3045-1096
With 10 ft. / 3m Cable Assembly	QRW610S	3045-1072	XQRW610S	3045-1097
With 12 ft. / 4m Cable Assembly	QRW612S	3045-1073	XQRW612S	3045-1098
With 15 ft. / 5m Cable Assembly	QRW615S	3045-1074	XQRW615S	3045-1099

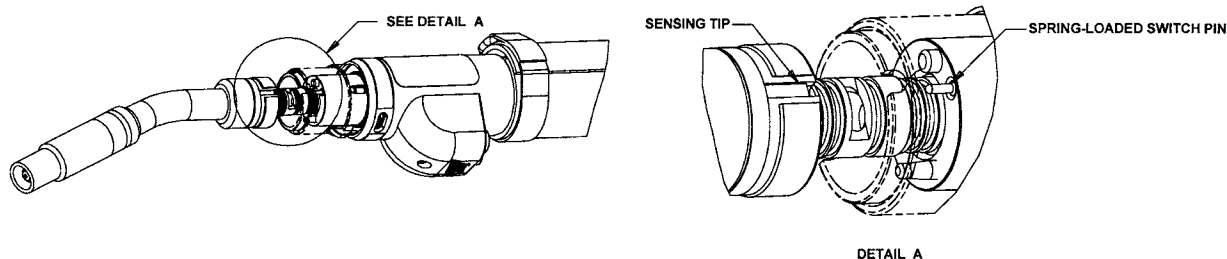
## QRWAS Series 600 Amp Water/Air-cooled Nozzle Sensing Torch Body and Cable Assembly

Standard Torch Body	Part No.	Stock No.	w/ Euro-Kwik Part No.	Stock No.
With 3 ft. / 91cm Cable Assembly	QRWA603S	3045-1113	XQRWA603S	3045-1138
With 3.5 ft. / 1,07m Cable Assembly	QRWA6035S	3045-1114	XQRWA6035S	3045-1139
With 4 ft. / 1,22m Cable Assembly	QRWA604S	3045-1115	XQRWA604S	3045-1140
With 4.5 ft. / 1,37m Cable Assembly	QRWA6045S	3045-1116	XQRWA6045S	3045-1141
With 5 ft. / 1,52m Cable Assembly	QRWA605S	3045-1117	XQRWA605S	3045-1142
With 5.5 ft. / 1,68m Cable Assembly	QRWA6055S	3045-1118	XQRWA6055S	3045-1143
With 6 ft. / 1,83m Cable Assembly	QRWA606S	3045-1119	XQRWA606S	3045-1144
With 7 ft. / 2,13m Cable Assembly	QRWA607S	3045-1120	XQRWA607S	3045-1145
With 8 ft. / 2,44m Cable Assembly	QRWA608S	3045-1121	XQRWA608S	3045-1146
With 10 ft. / 3m Cable Assembly	QRWA610S	3045-1122	XQRWA610S	3045-1147
With 12 ft. / 4m Cable Assembly	QRWA612S	3045-1123	XQRWA612S	3045-1148
With 15 ft. / 5m Cable Assembly	QRWA615S	3045-1124	XQRWA615S	3045-1149

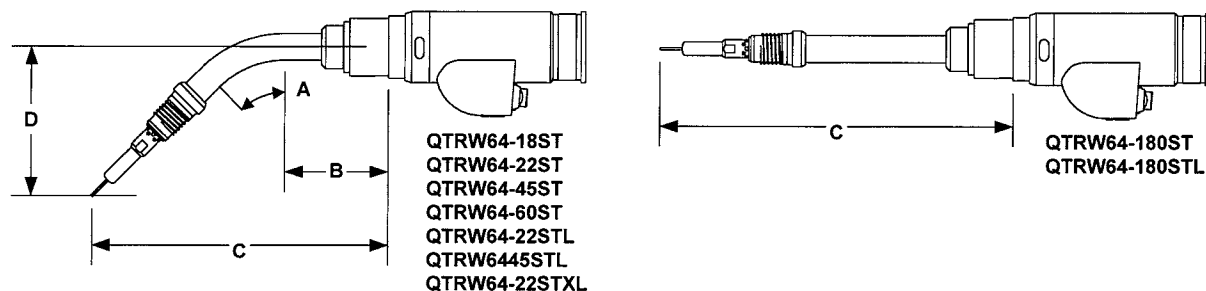
## Tweco® Robotics Nozzle-Sensing Water-cooled Conductor Tube

The nozzle-sensing conductor tube (QTRW-ST) incorporates the same rugged and fully insulated design features of the QTRW series tubes. The QTRW-ST, however, adds the capability to run a low-voltage (DC) charge to the nozzle using a specially designed outer jacket assembly on the conductor tube.

1. A low-voltage (DC) charge is generated and sent from the robot control system to the conductor tube outer jacket and nozzle assembly via the torch and cable assembly.
2. A spring-loaded switch pin in the torch block contacts the sensing tip.
3. When the conductor tube is inserted into the torch body, a spring-loaded switch pin found on the torch block comes into contact with the sensing tip completing the nozzle-sensing circuit path. (Refer to figure below)

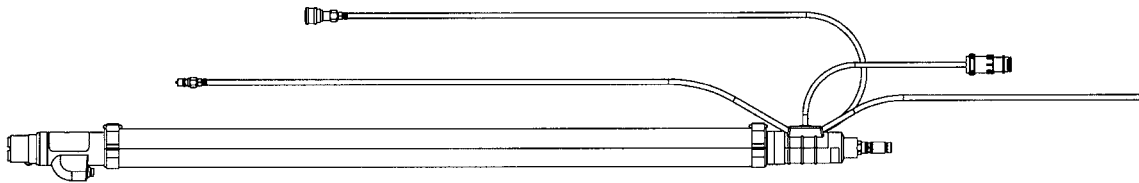


Part No.	Stock No.	A	B	C	D
QTRW64-18ST	1646-1709	18°	2.92"/74,1mm	8.50"/215,8mm	1.66"/42,1mm
QTRW64-22ST	1646-1710	22°	2.92"/74,1mm	8.37"/212,5mm	2.01"/51,1mm
QTRW64-45ST	1646-1711	45°	2.92"/74,1mm	8.34"/211,8mm	4.18"/106,1mm
QTRW64-60ST	1646-1712	60°	2.92"/74,1mm	7.85"/199,3mm	5.54"/149,3mm
QTRW64-180ST	1646-1713	180°	---	8.75"/222,3mm	---
QTRW64-22STL	1646-1714	22°	4.11"/104,3mm	9.56"/242,7mm	2.01"/51,1mm
QTRW64-45STL	1646-1716	45°	2.92"/74,1mm	10.04"/254,9mm	5.88"/149,3mm
QTRW64-180STL	1646-1715	180°	---	9.94"/252,5mm	---
QTRW64-22STXL	1646-1717	22°	2.92"/74,1mm	13.88"/352,6mm	4.29"/109,1mm



**NOTE:** Wire stick-out equals 5/8" (15,88mm)

## **Torch Body & Cable Assembly Replacement Parts List**



## **Factory Repair Center**

Tweco Robotics Factory Repair Center (FRC) offers a repair service for our customers on the various cable assemblies and peripheral products. Most of our distributors and/or customers do not want to spend time involved with repairs and generally do not have the necessary equipment and tools to perform repairs.

Other key benefits in considering the "FRC" service repairs on your product:

- All products will be rebuilt and tested following the established test procedures and specifications for the specific product.
- All repairs are done using original Tweco Robotics parts to ensure maximum product performance.
- Our FRC has highly-trained employees utilizing the appropriate tools and test equipment.
- 30-day warranty on the newly installed parts and labor on all cable assemblies.
- 30-day warranty on QRM-100, QRM-3 and RDM-2000 peripherals.
- 60-day warranty on QRC<sup>™</sup>-2000 and QWT-120 peripherals.

**For more information about our Factory Repair Center (FRC), please call:**

### **Customer Care:**

Domestic Toll Free Phone Number: 1-800-426-1888

Domestic Fax Number: 1-800-535-0557

International Phone Number: 1-905-827-9777

International Fax Number: 1-905-827-9797

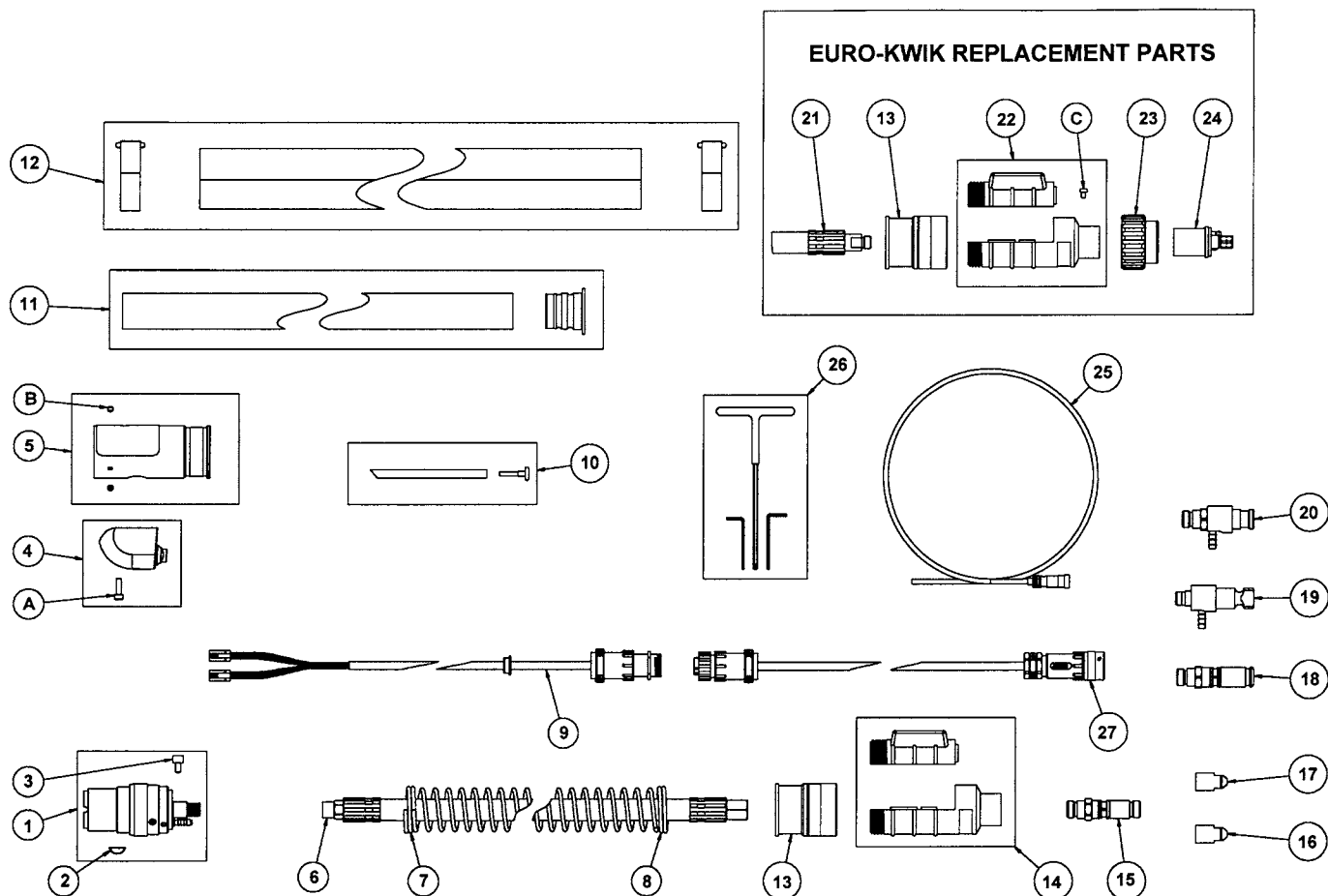
### **Factory Repair Center:**

Phone Number: 1-800-426-1888

Fax Number: 620-229-9926



## QRA & QRAS Series Replacement Parts



## QRA & QRAS Series Replacement Parts

Item No.	Part No.	Stock No.	Description
1	---	---	Cartridge Kit - (Includes Item #2, #3 and Hose Clamps)
	QRA-1BC	3045-1150	For use with 1-5/8" (41,28mm) Ø Mount – QRA Series***
	QRA-2BC	3045-1151	For use with 1-1/2" (38,10mm) Ø Mount – QRA Series
	QRA-3BC	3045-1155	For use with 1-3/8" (34,93mm) Ø Mount – QRA Series
	QRA-4BC	3045-1153	For use with 36mm Ø Mount – QRA Series
	QRAS-1BC	3045-1195	For use with 1-5/8" (41,28mm) Ø Mount – QRAS Series***
	QRAS-2BC	3045-1196	For use with 1-1/2" (38,10mm) Ø Mount – QRAS Series
	QRAS-3BC	3045-1197	For use with 1-3/8" (34,93mm) Ø Mount – QRAS Series
	QRAS-4BC	3045-1198	For use with 36mm Ø Mount – QRAS Series
NS	QR106RLS	3045-1341	Replacement Locking Set Screw F/Torch Block (Pkg. of 5 ea.)
2	---	---	Key
	QTRMS-BS	3045-1156	For use with QRA-1BC Cartridge Kit (Pkg. of 5 ea.)
	QR3MS-BS	3045-1157	For use with QRA-2BC & QRA-3BC Cartridge Kits (Pkg. of 5ea.)
3	QR106-S	3045-1158	Conduit Screw (Pkg. of 5 ea.)
4	---	---	Inch Switch & E-Stop Housing Assembly (Includes Item "A")
	QR-SH	3045-1159	For use with 1-5/8" Diameter Cartridge Kit
	QR-SH3	3045-1476	For use with 1-3/8" Diameter Cartridge Kit
	QR-SH4	3045-1477	For use with 36mm Diameter Cartridge Kit
5	QR-FCS	3045-1160	Front Case (Includes Item "B")
6	---	---	QRA Power Cable Assy (Includes Hose Clamps)
	QR603-CH	3045-1164	For use with 3 ft. (91cm) torch
	QR6035-CH	3045-1165	For use with 3.5 ft. (1,07m) torch
	QR604-CH	3045-1166	For use with 4 ft. ( 1,22m) torch
	QR6045-CH	3045-1167	For use with 4.5 ft. (1,37m) torch
	QR605-CH	3045-1168	For use with 5 ft. (1,52m) torch
	QR6055-CH	3045-1169	For use with 5.5 ft. (1,68m) torch
	QR606-CH	3045-1170	For use with 6 ft. (1,83m) torch
	QR607-CH	3045-1171	For use with 7 ft. (2,13m) torch
	QR608-CH	3045-1172	For use with 8 ft. (2,44m) torch
	QR610-CH	3045-1173	For use with 10 ft. (3m) torch
	QR612-CH	3045-1174	For use with 12 ft. (4m) torch
	QR615-CH	3045-1175	For use with 15 ft. (5m) torch
7	---	---	Front Spring
	QR-SP	3045-1176	For use with 3 ft. (91cm) & 3.5 ft. (1,07m) torches
	QR-SPR	3045-1177	For use with 4 ft. (1,22m) through 7 ft. (2,13m) torches
	QR-SPHD	3045-1178	For use with 8 ft. (2,44m) through 15 ft. (5m) torches
8	---	---	Rear Spring
	QR-SP	3045-1176	For use with 3 ft. (91cm) & 3.5 ft. (1,07m) torches
	QR-SPHD	3045-1178	For use with 4 ft. (1,22m) through 15 ft. (5m) torches
9	---	---	Control Cable Assembly (includes Hose Clamp)
	QR03-CC	3045-1181	For use with 3 ft. (91cm) torch
	QR035-CC	3045-1182	For use with 3.5 ft. (1,07m) torch
	QR04-CC	3045-1183	For use with 4 ft. ( 1,22m) torch
	QR045-CC	3045-1184	For use with 4.5 ft. (1,37m) torch
	QR05-CC	3045-1185	For use with 5 ft. (1,52m) torch
	QR055-CC	3045-1186	For use with 5.5 ft. (1,68m) torch
	QR06-CC	3045-1187	For use with 6 ft. (1,83m) torch
	QR07-CC	3045-1188	For use with 7 ft. (2,13m) torch
	QR08-CC	3045-1189	For use with 8 ft. (2,44m) torch
	QR10-CC	3045-1190	For use with 10 ft. (3m) torch
	QR12-CC	3045-1191	For use with 12 ft. (4m) torch
	QR15-CC	3045-1192	For use with 15 ft. (5m) torch
10	---	---	Purge Hose Assembly (Includes Hose Plug Nipple & Clamp)
	QR03-PH	3045-1200	For use with 3 ft. (91cm) torch
	QR035-PH	3045-1201	For use with 3.5 ft. (1,07m) torch
	QR04-PH	3045-1202	For use with 4 ft. ( 1,22m) torch
	QR045-PH	3045-1203	For use with 4.5 ft. (1,37m) torch
	QR05-PH	3045-1204	For use with 5 ft. (1,52m) torch
	QR055-PH	3045-1205	For use with 5.5 ft. (1,68m) torch
	QR06-PH	3045-1206	For use with 6 ft. (1,83m) torch

\*\*\* Standard On All QRA & QRAS Torch Body and Cable Assemblies

## QRA & QRAS Series Replacement Parts (cont.)

Item No.	Part No.	Stock No.	Description
	QR07-PH	3045-1207	For use with 7 ft. (2,13m) torch
	QR08-PH	3045-1208	For use with 8 ft. (2,44m) torch
	QR10-PH	3045-1209	For use with 10 ft. (3m) torch
	QR12-PH	3045-1210	For use with 12 ft. (4m) torch
	QR15-PH	3045-1211	For use with 15 ft. (5m) torch
11	---	---	Cable Cover Kit
	QR03-CV	3045-1213	For use with 3 ft. (91cm) torch
	QR035-CV	3045-1214	For use with 3.5 ft. (1,07m) torch
	QR04-CV	3045-1215	For use with 4 ft. ( 1,22m) torch
	QR045-CV	3045-1216	For use with 4.5 ft. (1,37m) torch
	QR05-CV	3045-1217	For use with 5 ft. (1,52m) torch
	QR055-CV	3045-1218	For use with 5.5 ft. (1,68m) torch
	QR06-CV	3045-1219	For use with 6 ft. (1,83m) torch
	QR07-CV	3045-1220	For use with 7 ft. (2,13m) torch
	QR08-CV	3045-1221	For use with 8 ft. (2,44m) torch
	QR10-CV	3045-1222	For use with 10 ft. (3m) torch
	QR12-CV	3045-1223	For use with 12 ft. (4m) torch
	QR15-CV	3045-1224	For use with 15 ft. (5m) torch
12	---	---	Outer Cover Assembly (Includes Nylon Cable Tie – 2 ea.)
	QR03-LC	3045-1226	For use with 3 ft. (91cm) torch
	QR035-LC	3045-1227	For use with 3.5 ft. (1,07m) torch
	QR04-LC	3045-1228	For use with 4 ft. ( 1,22m) torch
	QR045-LC	3045-1229	For use with 4.5 ft. (1,37m) torch
	QR05-LC	3045-1230	For use with 5 ft. (1,52m) torch
	QR055-LC	3045-1231	For use with 5.5 ft. (1,68m) torch
	QR06-LC	3045-1232	For use with 6 ft. (1,83m) torch
	QR07-LC	3045-1233	For use with 7 ft. (2,13m) torch
	QR08-LC	3045-1234	For use with 8 ft. (2,44m) torch
	QR10-LC	3045-1235	For use with 10 ft. (3m) torch
	QR12-LC	3045-1236	For use with 12 ft. (4m) torch
	QR15-LC	3045-1237	For use with 15 ft. (5m) torch
13	QR-RC	3045-1238	Rear Spring Cap
14	QRA-CS	3045-1239	Rear Case Assembly
15	R176MH	2060-2184	Miller® Connector Plug (Includes Items #16 & 17)***
	R174MH	2035-2109	Miller Connector Plug (Includes Items #16 & #17)
16	R175M-N045	2050-2181	Miller Plug Nipple, .045" (1,0mm) Wire (Use w/R176MH)***
	R174M-N045	2040-2192	Miller Plug Nipple, .045" (1,0mm) Wire (Use w/R174MH)
17	R175M-N116	2050-2182	Miller Plug Nipple, .062" (1,6mm) Wire (Use w/R176MH)***
	R174M-N116	2040-2191	Miller Plug Nipple, .062" (1,6mm) Wire (Use w/R174MH)
18	176S-H	2060-2177	Tweco® Connector Plug***
	350-174H	2035-2110	Tweco Connector Plug (Uses R44 series Conduit)
19	350-174PH	2035-2172	Panasonic® Connector Plug (Uses R44 series Conduit)
20	QTR176LH	2086-2624	Lincoln® Connector Plug (2.71" – 68,83mm OAL.)***
	EL176LH	2060-2680	Lincoln Connector Plug (3.84" – 97,54mm OAL)
	QTR174LH	2086-2623	Lincoln Connector Plug (Uses R44 series Conduit)
21	---	---	XQRA Power Cable Assy (Includes Hose Clamps)
	XQR603-CH	3045-1375	For use with 3 ft. (91cm) torch
	XQR6035-CH	3045-1376	For use with 3.5 ft. (1,07m) torch
	XQR604-CH	3045-1377	For use with 4 ft. ( 1,22m) torch
	XQR6045-CH	3045-1378	For use with 4.5 ft. (1,37m) torch
	XQR605-CH	3045-1379	For use with 5 ft. (1,52m) torch
	XQR6055-CH	3045-1380	For use with 5.5 ft. (1,68m) torch
	XQR606-CH	3045-1381	For use with 6 ft. (1,83m) torch
	XQR607-CH	3045-1382	For use with 7 ft. (2,13m) torch
	XQR608-CH	3045-1383	For use with 8 ft. (2,44m) torch
	XQR610-CH	3045-1384	For use with 10 ft. (3m) torch
	XQR612-CH	3045-1385	For use with 12 ft. (4m) torch
	XQR615-CH	3045-1386	For use with 15 ft. (5m) torch
22	XQRA-CS	3045-1240	Euro-Kwik Rear Case Assembly (Includes Item "C")
23	174X-2S	2040-2193	Euro-Kwik Nut
24	E171-1TS	2011-2172	Euro-Kwik Adapter

\*\*\* Standard On All QRA & QRAS Torch Body and Cable Assemblies

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### QRA & QRAS Series Replacement Parts (cont.)

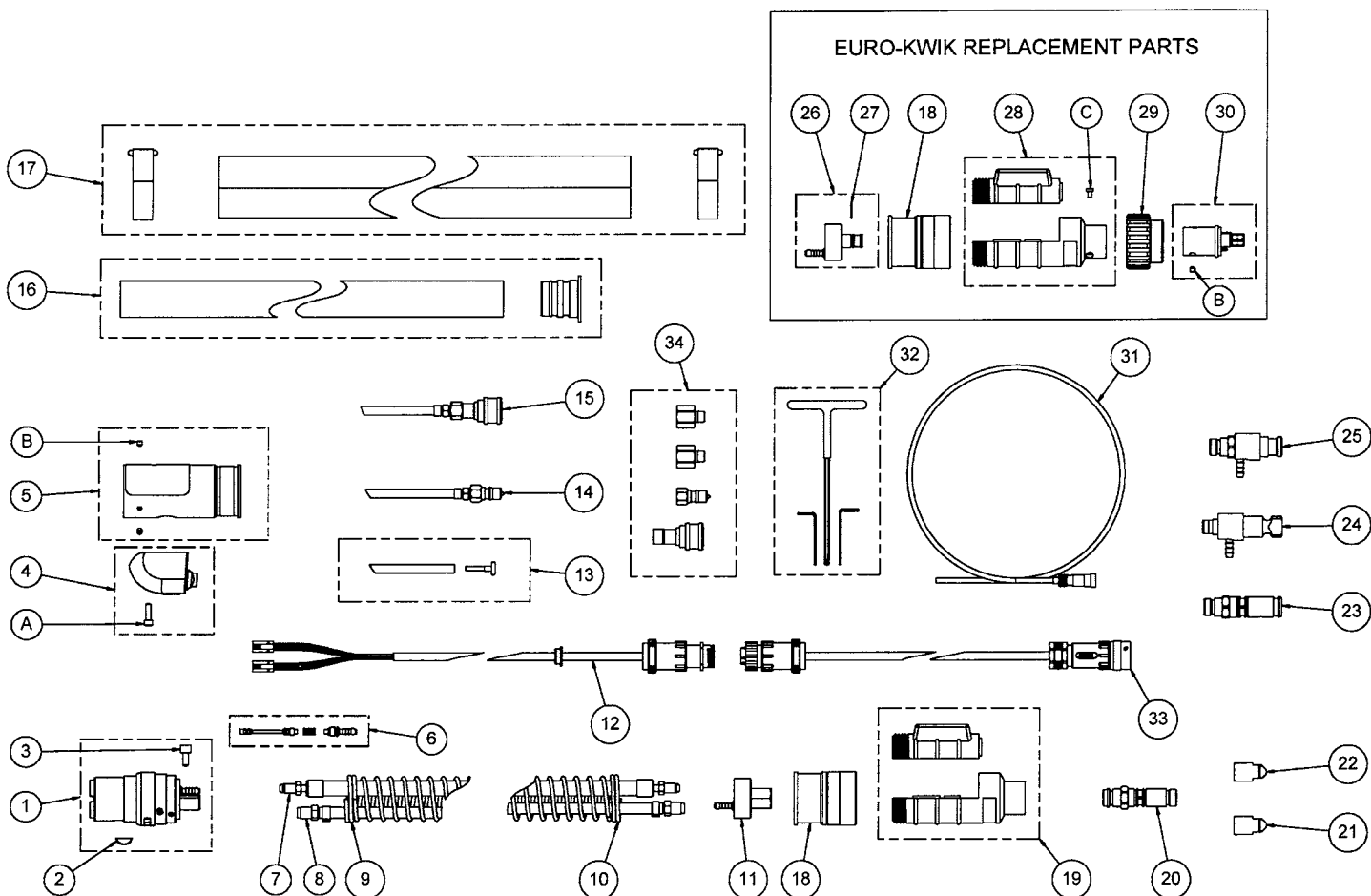
Item No.	Part No.	Stock No.	Description
25	---	---	Conduit (Refer to Page 26)
26	QTR-TOOLS	2062-2034	Tool Kit
27	---	---	E-stop Jumper Cable Assembly
	QRJC-010	3045-1241	Without Connector – 3 ft. (91cm) Long
	QRJC-020	3045-1242	With Burndy Connector – 3 ft. (91cm) Long
	QRJC-030	3045-1243	With 4-pin Amp Connector – 3 ft. (91cm) Long
	QRJC-040	3045-1244	With 5-pin DDK Connector - 3ft. (91cm) Long
	QRJC-050	3045-1245	With 5-pin DDK Connector (Panasonic®) - 3ft. long (91cm)

## Standard Fasteners

These standard fasteners are not sellable items and must be purchased at a local hardware or fastener supply house.

Item No.	Description
<b>A</b>	#10-32 x 5/8" Socket Head Cap Screw
<b>B</b>	#10-32 x 3/16" Stainless Cup Point Set Screw
<b>C</b>	M4 x .07 Head Screw

## QRW & QRWS Series Replacement Parts





## QRW & QRWS Series Replacement Parts

Item No.	Part No.	Stock No.	Description
1	---	---	Cartridge Kit - (Includes Item #2 , #3, and Hose Clamps)
	QRW-1BC	3045-1300	For use with 1-5/8" (41,28mm) Ø Mount – QRW Series***
	QRW-2BC	3045-1301	For use with 1-1/2" (38,10mm) Ø Mount – QRW Series
	QRW-3BC	3045-1302	For use with 1-3/8" (34,93mm) Ø Mount – QRW Series
	QRW-4BC	3045-1303	For use with 36mm Ø Mount – QRW Series
	QRWS-1BC	3045-1342	For use with 1-5/8" (41,28mm) Ø Mount – QRWS Series***
	QRWS-2BC	3045-1343	For use with 1-1/2" (38,10mm) Ø Mount – QRWS Series
	QRWS-3BC	3045-1344	For use with 1-3/8" (34,93mm) Ø Mount – QRWS Series
	QRWS-4BC	3045-1345	For use with 36mm Ø Mount – QRWS Series
NS	QR106RLS	3045-1341	Replacement Locking Set Screw F/Torch Block (Pkg. of 5 ea.)
2	---	---	Key
	QTRMS-BS	3045-1156	For use with QRA-1BC Cartridge Kit (Pkg. of 5 ea.)
	QR3MS-BS	3045-1157	For use with QRA-2BC & QRA-3BC Cartridge Kits (Pkg. of 5ea.)
3	QRW106-S	3045-1340	Conduit Screw (Pkg. Of 5 ea.)
4	---	---	Inch Switch & E-Stop Housing Assembly (Includes Item "A")
	QR-SH	3045-1159	For use with 1-5/8" Diameter Cartridge Kit
	QR-SH3	3045-1476	For use with 1-3/8" Diameter Cartridge Kit
	QR-SH4	3045-1477	For use with 36mm Diameter Cartridge Kit
5	QR-FCS	3045-1160	Front Case (Includes Item "B")
6	QRW-CV	3045-1304	Check Valve Assembly (Includes O-rings)
7	---	---	Conduit/Gas Hose Assy (Includes Hose Clamps)
	QRW603-CGH	3045-1310	For use with 3 ft. (91cm) torch
	QRW6035-CGH	3045-1311	For use with 3.5 ft. (1,07m) torch
	QRW604-CGH	3045-1312	For use with 4 ft. ( 1,22m) torch
	QRW6045-CGH	3045-1313	For use with 4.5 ft. (1,37m) torch
	QRW605-CGH	3045-1314	For use with 5 ft. (1,52m) torch
	QRW6055-CGH	3045-1315	For use with 5.5 ft. (1,68m) torch
	QRW606-CGH	3045-1316	For use with 6 ft. (1,83m) torch
	QRW607-CGH	3045-1317	For use with 7 ft. (2,13m) torch
	QRW608-CGH	3045-1318	For use with 8 ft. (2,44m) torch
	QRW610-CGH	3045-1319	For use with 10 ft. (3m) torch
	QRW612-CGH	3045-1320	For use with 12 ft. (4m) torch
	QRW615-CGH	3045-1321	For use with 15 ft. (5m) torch
8	---	---	QRW Power Cable Assy (Includes Hose Clamp)
	QRW603-PC	3045-1325	For use with 3 ft. (91cm) torch
	QRW6035-PC	3045-1326	For use with 3.5 ft. (1,07m) torch
	QRW604-PC	3045-1327	For use with 4 ft. ( 1,22m) torch
	QRW6045-PC	3045-1328	For use with 4.5 ft. (1,37m) torch
	QRW605-PC	3045-1329	For use with 5 ft. (1,52m) torch
	QRW6055-PC	3045-1330	For use with 5.5 ft. (1,68m) torch
	QRW606-PC	3045-1331	For use with 6 ft. (1,83m) torch
	QRW607-PC	3045-1332	For use with 7 ft. (2,13m) torch
	QRW608-PC	3045-1333	For use with 8 ft. (2,44m) torch
	QRW610-PC	3045-1334	For use with 10 ft. (3m) torch
	QRW612-PC	3045-1335	For use with 12 ft. (4m) torch
	QRW615-PC	3045-1336	For use with 15 ft. (5m) torch
9	---	---	Front Spring
	QR-SP	3045-1176	For use with 3 ft. (91cm) & 3.5 (1,07m) torches
	QR-SPR	3045-1177	For use with 4 ft. (1,22m) through 7 ft. (2,13m) torches
	QR-SPHD	3045-1178	For use with 8 ft. (2,44m) through 15 ft. (5m) torches
10	---	---	Rear Spring
	QR-SP	3045-1176	For use with 3 ft. (91cm) & 3.5 ft. (1,07m) torches
	QR-SPHD	3045-1178	For use with 4 ft. (1,22m) through 15 ft. (5m) torches
11	QRW174	3045-1306	Rear Block Assembly (Includes Hose Clamps)
12	---	---	Control Cable Assembly (Includes Hose Clamp)
	QR03-CC	3045-1181	For use with 3 ft. (91cm) torch
	QR035-CC	3045-1182	For use with 3.5 ft. (1,07m) torch
	QR04-CC	3045-1183	For use with 4 ft. ( 1,22m) torch
	QR045-CC	3045-1184	For use with 4.5 ft. (1,37m) torch
	QR05-CC	3045-1185	For use with 5 ft. (1,52m) torch
	QR055-CC	3045-1186	For use with 5.5 ft. (1,68m) torch

\*\*\* Standard On All QRW & QRWS Torch Body and Cable Assemblies

## QRW & QRWS Series Replacement Parts (cont.)

Item No.	Part No.	Stock No.	Description
	QR06-CC	3045-1187	For use with 6 ft. (1,83m) torch
	QR07-CC	3045-1188	For use with 7 ft. (2,13m) torch
	QR08-CC	3045-1189	For use with 8 ft. (2,44m) torch
	QR10-CC	3045-1190	For use with 10 ft. (3m) torch
	QR12-CC	3045-1191	For use with 12 ft. (4m) torch
	QR15-CC	3045-1192	For use with 15 ft. (5m) torch
13	---	---	Purge Hose Assembly (Includes Hose Plug Nipple & Hose Clamp)
	QR03-PH	3045-1200	For use with 3 ft. (91cm) torch
	QR035-PH	3045-1201	For use with 3.5 ft. (1,07m) torch
	QR04-PH	3045-1202	For use with 4 ft. ( 1,22m) torch
	QR045-PH	3045-1203	For use with 4.5 ft. (1,37m) torch
	QR05-PH	3045-1204	For use with 5 ft. (1,52m) torch
	QR055-PH	3045-1205	For use with 5.5 ft. (1,68m) torch
	QR06-PH	3045-1206	For use with 6 ft. (1,83m) torch
	QR07-PH	3045-1207	For use with 7 ft. (2,13m) torch
	QR08-PH	3045-1208	For use with 8 ft. (2,44m) torch
	QR10-PH	3045-1209	For use with 10 ft. (3m) torch
	QR12-PH	3045-1210	For use with 12 ft. (4m) torch
	QR15-PH	3045-1211	For use with 15 ft. (5m) torch
14	QRW00-WO	3045-1262	Water-Out Hose Assy - (Includes Hose Clamp) – For All Torches
15	---	---	Water-In Hose Assembly (Includes Hose Clamp)
	QRW03-WI	3045-1275	For use with 3 ft. (91cm) torch
	QRW035-WI	3045-1276	For use with 3.5 ft. (1,07m) torch
	QRW04-WI	3045-1277	For use with 4 ft. ( 1,22m) torch
	QRW045-WI	3045-1278	For use with 4.5 ft. (1,37m) torch
	QRW05-WI	3045-1279	For use with 5 ft. (1,52m) torch
	QRW055-WI	3045-1280	For use with 5.5 ft. (1,68m) torch
	QRW06-WI	3045-1281	For use with 6 ft. (1,83m) torch
	QRW07-WI	3045-1282	For use with 7 ft. (2,13m) torch
	QRW08-WI	3045-1283	For use with 8 ft. (2,44m) torch
	QRW10-WI	3045-1284	For use with 10 ft. (3m) torch
	QRW12-WI	3045-1285	For use with 12 ft. (4m) torch
	QRW15-WI	3045-1286	For use with 15 ft. (5m) torch
16	---	---	Cable Cover Kit
	QR03-CV	3045-1213	For use with 3 ft. (91cm) torch
	QR035-CV	3045-1214	For use with 3.5 ft. (1,07m) torch
	QR04-CV	3045-1215	For use with 4 ft. ( 1,22m) torch
	QR045-CV	3045-1216	For use with 4.5 ft. (1,37m) torch
	QR05-CV	3045-1217	For use with 5 ft. (1,52m) torch
	QR055-CV	3045-1218	For use with 5.5 ft. (1,68m) torch
	QR06-CV	3045-1219	For use with 6 ft. (1,83m) torch
	QR07-CV	3045-1220	For use with 7 ft. (2,13m) torch
	QR08-CV	3045-1221	For use with 8 ft. (2,44m) torch
	QR10-CV	3045-1222	For use with 10 ft. (3m) torch
	QR12-CV	3045-1223	For use with 12 ft. (4m) torch
	QR15-CV	3045-1224	For use with 15 ft. (5m) torch
17	---	---	Outer Cover Assembly (Includes Nylon Cable Tie - 2 ea.)
	QR03-LC	3045-1226	For use with 3 ft. (91cm) torch
	QR035-LC	3045-1227	For use with 3.5 ft. (1,07m) torch
	QR04-LC	3045-1228	For use with 4 ft. ( 1,22m) torch
	QR045-LC	3045-1229	For use with 4.5 ft. (1,37m) torch
	QR05-LC	3045-1230	For use with 5 ft. (1,52m) torch
	QR055-LC	3045-1231	For use with 5.5 ft. (1,68m) torch
	QR06-LC	3045-1232	For use with 6 ft. (1,83m) torch
	QR07-LC	3045-1233	For use with 7 ft. (2,13m) torch
	QR08-LC	3045-1234	For use with 8 ft. (2,44m) torch
	QR10-LC	3045-1235	For use with 10 ft. (3m) torch
	QR12-LC	3045-1236	For use with 12 ft. (4m) torch
	QR15-LC	3045-1237	For use with 15 ft. (5m) torch
18	QR-RC	3045-1238	Rear Spring Cap
19	QRW-CS	3045-1307	Water-cooled Rear Case Assembly

## QRW & QRWS Series Replacement Parts (cont.)

Item No.	Part No.	Stock No.	Description
20	R176MH	2060-2184	Miller® Connector Plug (Includes Items #22 & #23)***
	R174MH	2035-2109	Miller Connector Plug (Includes Items #22 & #23)
21	R175M-N045	2050-2181	Miller Plug Nipple, .045" (1,0mm) Wire (Use w/R176MH)***
	R174M-N045	2040-2192	Miller Plug Nipple, .045" (1,0mm) Wire (Use w/R174MH)
22	R175M-N116	2050-2182	Miller Plug Nipple, .062" (1,6mm) Wire (Use w/R176MH)***
	R174M-N116	2040-2191	Miller Plug Nipple, .062" (1,6mm) Wire (Use w/R174MH)
23	176S-H	2060-2177	Tweco® Connector Plug***
	350-174H	2035-2110	Tweco Connector Plug (Uses R44 series Conduit)
24	350-174PH	2035-2172	Panasonic® Connector Plug (Uses R44 series Conduit)
25	QTR176LH	2086-2624	Lincoln® Connector Plug (2.71" – 68,83mm OAL)***
	EL176LH	2060-2680	Lincoln Connector Plug (3.84" – 97,54mm OAL)
	QTR174LH	2086-2623	Lincoln Connector Plug (Uses R44 series Conduit)
26	XQRW174	3045-1308	Water-cooled Euro-Kwik Rear Block Assy (Includes Hose Clamp)
27	WC174X-B2S	2044-2185	O-ring (Pkg. of 5 ea.)
28	XQRW-CS	3045-1309	Euro-Kwik Rear Case Assembly (Includes Item "C")
29	174X-2S	2040-2193	Euro-Kwik Nut
30	WC174X-IS	3045-1339	Euro-Kwik Adapter
31	---	---	Conduit (Refer to Page 26)
32	QTR-TOOLS	2062-2034	Tool Kit
33	---	---	E-Stop Jumper Cable Assembly
	QRJC-010	3045-1241	Without Connector – 3 ft. (91cm) Long
	QRJC-020	3045-1242	With Burndy Connector – 3 ft. (91cm) Long
	QRJC-030	3045-1243	With 4-pin Amp Connector – 3 ft. (91cm) Long
	QRJC-040	3045-1244	With 5-pin DDK Connector - 3ft. (91cm) Long
	QRJC-050	3045-1245	With 5-pin DDK Connector (Panasonic®) - 3ft. long (91cm)
34	400LK-QC	2044-2000	Quick Connector Male & Female

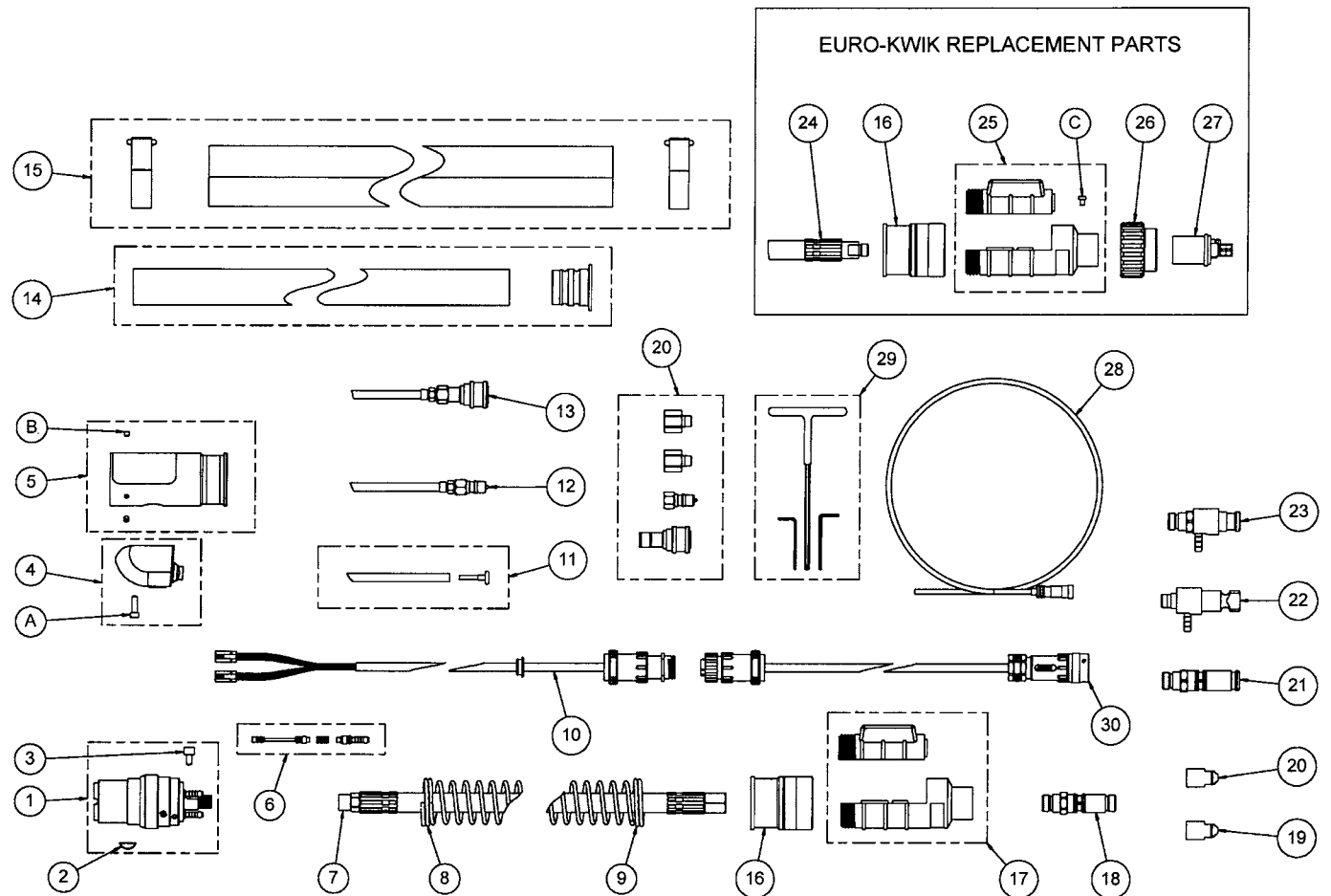
\*\*\* Standard On All QRW & QRWS Torch Body and Cable Assemblies

## Standard Fasteners

These standard fasteners are not sellable items and should be purchased at a local hardware or fastener supply house.

Item No.	Description
<b>A</b>	#10-32 x 5/8" Socket Head Cap Screw
<b>B</b>	#10-32 x 3/16" Stainless Cup Point Set Screw
<b>C</b>	M4 x .07 Head Screw

## QRWA & QRWAS Series Replacement Parts



## QRWA & QRWAS Series Replacement Parts

Item No.	Part No.	Stock No.	Description
1	---	---	Cartridge Kit - (Includes Item #2, #3 and Hose Clamps)
	QRWA-1BC	3045-1288	For use with 1-5/8" (41,28mm) Ø Mount – QRWA Series***
	QRWA-2BC	3045-1289	For use with 1-1/2" (38,10mm) Ø Mount – QRWA Series
	QRWA-3BC	3045-1290	For use with 1-3/8" (34,93mm) Ø Mount – QRWA Series
	QRWA-4BC	3045-1291	For use with 36mm Ø Mount – QRWA Series
	QRWAS-1BC	3045-1295	For use with 1-5/8" (41,28mm) Ø Mount – QRWAS Series***
	QRWAS-2BC	3045-1296	For use with 1-1/2" (38,10mm) Ø Mount – QRWAS Series
	QRWAS-3BC	3045-1297	For use with 1-3/8" (34,93mm) Ø Mount – QRWAS Series
	QRWAS-4BC	3045-1298	For use with 36mm Ø Mount – QRWAS Series
NS	QR106RLS	3045-1341	Replacement Locking Set Screw F/Torch Block (Pkg. of 5 ea.)
2	---	---	Key
	QTRMS-BS	3045-1156	For use with QRA-1BC (Pkg. Of 5 ea.)
	QR3MS-BS	3045-1157	For use with QRA-2BC & QRA-3BC cartridge kits (Pkg. Of 5ea.)
3	QR106-S	3045-1158	Conduit Screw (Pkg. Of 5 ea.)
4	---	---	Inch Switch & E-Stop Housing Assembly (Includes Item "A")
	QR-SH	3045-1159	For use with 1-5/8" Diameter Cartridge Kit
	QR-SH3	3045-1476	For use with 1-3/8" Diameter Cartridge Kit
	QR-SH4	3045-1477	For use with 36mm Diameter Cartridge Kit
5	QR-FCS	3045-1160	Front case (Includes Item "B")
6	QRW-CV	3045-1304	Check Valve Assembly (Includes O-rings)
7	---	---	QRWA Power Cable Assy (Includes Hose Clamp)
	QR403-CH	3045-1250	For use with 3 ft. (91cm) torch
	QR4035-CH	3045-1251	For use with 3.5 ft. (1,07m) torch
	QR404-CH	3045-1252	For use with 4 ft. ( 1,22m) torch
	QR4045-CH	3045-1253	For use with 4.5 ft. (1,37m) torch
	QR405-CH	3045-1254	For use with 5 ft. (1,52m) torch
	QR4055-CH	3045-1255	For use with 5.5 ft. (1,68m) torch
	QR406-CH	3045-1256	For use with 6 ft. (1,83m) torch
	QR407-CH	3045-1257	For use with 7 ft. (2,13m) torch
	QR408-CH	3045-1258	For use with 8 ft. (2,44m) torch
	QR410-CH	3045-1259	For use with 10 ft. (3m) torch
	QR412-CH	3045-1260	For use with 12 ft. (4m) torch
	QR415-CH	3045-1261	For use with 15 ft. (5m) torch
8	---	---	Front Spring
	QR-SP	3045-1176	For use with 3 ft. (91cm) & 3.5 ft. (1,07m) torches
	QR-SPR	3045-1177	For use with 4 ft. (1,22m) through 7 ft. (2,13m) torches
	QR-SPHD	3045-1178	For use with 8 ft. (2,44m) through 15 ft. (5m) torches
9	---	---	Rear Spring
	QR-SP	3045-1176	For use with 3 ft. (91cm) & 3.5 ft. (1,07m) torches
	QR-SPHD	3045-1178	For use with 4 ft. (1,22m) through 15 ft. (5m) torches
10	---	---	Control Cable Assembly (Includes Hose Clamp)
	QR03-CC	3045-1181	For use with 3 ft. (91cm) torch
	QR035-CC	3045-1182	For use with 3.5 ft. (1,07m) torch
	QR04-CC	3045-1183	For use with 4 ft. ( 1,22m) torch
	QR045-CC	3045-1184	For use with 4.5 ft. (1,37m) torch
	QR05-CC	3045-1185	For use with 5 ft. (1,52m) torch
	QR055-CC	3045-1186	For use with 5.5 ft. (1,68m) torch
	QR06-CC	3045-1187	For use with 6 ft. (1,83m) torch
	QR07-CC	3045-1188	For use with 7 ft. (2,13m) torch
	QR08-CC	3045-1189	For use with 8 ft. (2,44m) torch
	QR10-CC	3045-1190	For use with 10 ft. (3m) torch
	QR12-CC	3045-1191	For use with 12 ft. (4m) torch
	QR15-CC	3045-1192	For use with 15 ft. (5m) torch
11	---	---	Purge Hose Assembly (Includes Hose Nipple Plug & Hose Clamp)
	QR03-PH	3045-1200	For use with 3 ft. (91cm) torch
	QR035-PH	3045-1201	For use with 3.5 ft. (1,07m) torch
	QR04-PH	3045-1202	For use with 4 ft. ( 1,22m) torch
	QR045-PH	3045-1203	For use with 4.5 ft. (1,37m) torch
	QR05-PH	3045-1204	For use with 5 ft. (1,52m) torch
	QR055-PH	3045-1205	For use with 5.5 ft. (1,68m) torch
	QR06-PH	3045-1206	For use with 6 ft. (1,83m) torch
	QR07-PH	3045-1207	For use with 7 ft. (2,13m) torch



## QRWA & QRWAS Series Replacement Parts (cont.)

Item No.	Part No.	Stock No.	Description
	QR08-PH	3045-1208	For use with 8 ft. (2,44m) torch
	QR10-PH	3045-1209	For use with 10 ft. (3m) torch
	QR12-PH	3045-1210	For use with 12 ft. (4m) torch
	QR15-PH	3045-1211	For use with 15 ft. (5m) torch
12	---	---	Water-Out Hose Assembly (Includes Hose Clamp)
	QRW03-WO	3045-1263	For use with 3 ft. (91cm) torch
	QRW035-WO	3045-1264	For use with 3.5 ft. (1,07m) torch
	QRW04-WO	3045-1265	For use with 4 ft. ( 1,22m) torch
	QRW045-WO	3045-1266	For use with 4.5 ft. (1,37m) torch
	QRW05-WO	3045-1267	For use with 5 ft. (1,52m) torch
	QRW055-WO	3045-1268	For use with 5.5 ft. (1,68m) torch
	QRW06-WO	3045-1269	For use with 6 ft. (1,83m) torch
	QRW07-WO	3045-1270	For use with 7 ft. (2,13m) torch
	QRW08-WO	3045-1271	For use with 8 ft. (2,44m) torch
	QRW10-WO	3045-1272	For use with 10 ft. (3m) torch
	QRW12-WO	3045-1273	For use with 12 ft. (4m) torch
	QRW15-WO	3045-1274	For use with 15 ft. (5m) torch
13	---	---	Water-In Hose Assembly (Includes Hose Clamps)
	QRW03-WI	3045-1275	For use with 3 ft. (91cm) torch
	QRW035-WI	3045-1276	For use with 3.5 ft. (1,07m) torch
	QRW04-WI	3045-1277	For use with 4 ft. ( 1,22m) torch
	QRW045-WI	3045-1278	For use with 4.5 ft. (1,37m) torch
	QRW05-WI	3045-1279	For use with 5 ft. (1,52m) torch
	QRW055-WI	3045-1280	For use with 5.5 ft. (1,68m) torch
	QRW06-WI	3045-1281	For use with 6 ft. (1,83m) torch
	QRW07-WI	3045-1282	For use with 7 ft. (2,13m) torch
	QRW08-WI	3045-1283	For use with 8 ft. (2,44m) torch
	QRW10-WI	3045-1284	For use with 10 ft. (3m) torch
	QRW12-WI	3045-1285	For use with 12 ft. (4m) torch
	QRW15-WI	3045-1286	For use with 15 ft. (5m) torch
14	---	---	Cable Cover Kit
	QR03-CV	3045-1213	For use with 3 ft. (91cm) torch
	QR035-CV	3045-1214	For use with 3.5 ft. (1,07m) torch
	QR04-CV	3045-1215	For use with 4 ft. ( 1,22m) torch
	QR045-CV	3045-1216	For use with 4.5 ft. (1,37m) torch
	QR05-CV	3045-1217	For use with 5 ft. (1,52m) torch
	QR055-CV	3045-1218	For use with 5.5 ft. (1,68m) torch
	QR06-CV	3045-1219	For use with 6 ft. (1,83m) torch
	QR07-CV	3045-1220	For use with 7 ft. (2,13m) torch
	QR08-CV	3045-1221	For use with 8 ft. (2,44m) torch
	QR10-CV	3045-1222	For use with 10 ft. (3m) torch
	QR12-CV	3045-1223	For use with 12 ft. (4m) torch
	QR15-CV	3045-1224	For use with 15 ft. (5m) torch
15	---	---	Outer Cover Assembly (Includes Nylon Cable Tie – 2 ea.)
	QR03-LC	3045-1226	For use with 3 ft. (91cm) torch
	QR035-LC	3045-1227	For use with 3.5 ft. (1,07m) torch
	QR04-LC	3045-1228	For use with 4 ft. ( 1,22m) torch
	QR045-LC	3045-1229	For use with 4.5 ft. (1,37m) torch
	QR05-LC	3045-1230	For use with 5 ft. (1,52m) torch
	QR055-LC	3045-1231	For use with 5.5 ft. (1,68m) torch
	QR06-LC	3045-1232	For use with 6 ft. (1,83m) torch
	QR07-LC	3045-1233	For use with 7 ft. (2,13m) torch
	QR08-LC	3045-1234	For use with 8 ft. (2,44m) torch
	QR010-LC	3045-1235	For use with 10 ft. (3m) torch
	QR012-LC	3045-1236	For use with 12 ft. (4m) torch
	QR015-LC	3045-1237	For use with 15 ft. (5m) torch
16	QR-RC	3045-1238	Rear Spring Cap
17	QRWA-CS	3045-1293	QRWA Rear Case Assembly
18	R176MH	2060-2184	Miller® Connector Plug (Includes Items #19 & #20)
	R174MH	2035-2109	Miller Connector Plug (Includes Items #19 & 20)

\*\*\* Standard On All QRWA & QRWAS Torch Body and Cable Assemblies

Miller is a registered trademark of Illinois Tool Works, Inc. The afore mentioned registered trademark is in no way affiliated with Tweco Robotics or Thermadyne Industries, Inc. Tweco is a registered trademark of Thermadyne Industries, Inc.

## QRWA & QRWAS Series Replacement Parts (cont.)

Item No.	Part No.	Stock No.	Description
19	R175M-N045	2050-2181	Miller® Plug Nipple, .045" (1,0mm) Wire (Use w/R176MH)***
	R174M-N045	2040-2192	Miller Plug Nipple, .045" (1,0mm) Wire (Use w/R174MH)
20	R175M-N116	2050-2182	Miller Plug Nipple, .062" (1,6mm) Wire (Use w/R176MH)***
	R174M-N116	2040-2191	Miller Plug Nipple, .062" (1,6mm) Wire (Use w/R174MH)
21	176S-H	2060-2177	Tweco® Connector Plug***
	350-174H	2035-2110	Tweco Connector Plug (Uses R44 series Conduit)
22	350-174PH	2035-2172	Panasonic® Connector Plug (Uses R44 series Conduit )
23	QTR176LH	2086-2624	Lincoln® Connector Plug (2.71" – 68,83mm OAL.)***
	EL176LH	2060-2680	Lincoln Connector Plug (3.84" – 97,54mm OAL)
	QTR174LH	2086-2623	Lincoln Connector Plug (Uses R44 series Conduit)
24	---	---	XQRWA Power Cable Assy (Includes Hose Clamp)
	XQR403-CH	3045-1350	For use with 3 ft. (91cm) torch
	XQR4035-CH	3045-1351	For use with 3.5 ft. (1,07mm) torch
	XQR404-CH	3045-1352	For use with 4 ft. ( 1,22m) torch
	XQR4045-CH	3045-1353	For use with 4.5 ft. (1,37m) torch
	XQR405-CH	3045-1354	For use with 5 ft. (1,52m) torch
	XQR4055-CH	3045-1355	For use with 5.5 ft. (1,68m) torch
	XQR406-CH	3045-1356	For use with 6 ft. (1,83m) torch
	XQR407-CH	3045-1357	For use with 7 ft. (2,13m) torch
	XQR408-CH	3045-1358	For use with 8 ft. (2,44m) torch
	XQR410-CH	3045-1359	For use with 10 ft. (3m) torch
	XQR412-CH	3045-1360	For use with 12 ft. (4m) torch
	XQR415-CH	3045-1361	For use with 15 ft. (5m) torch
	XQRWA-CS	3045-1294	Euro-Kwik Rear Case Assembly (Includes Item "C")
	174X-2S	2040-2193	Euro-Kwik nut
25	E171-1TS	2011-2172	Euro-Kwik adapter
26	---	---	Conduit (Refer to Page 26)
27	QTR-TOOLS	2062-2034	Tool kit
28	---	---	E-stop Jumper Assembly
	QRJC-010	3045-1241	Without Connector – 3 ft. (91cm) Long
	QRJC-020	3045-1242	With Burndy Connector – 3 ft. (91cm) Long
	QRJC-030	3045-1243	With 4-pin Amp Connector – 3 ft. (91cm) Long
	QRJC-040	3045-1244	With 5-pin DDK Connector - 3ft. (91cm) Long
	QRJC-050	3045-1245	With 5-pin DDK Connector (Panasonic®) - 3ft. long (91cm)
29	400LK-QC	2044-2000	Quick Connector Male & Female

\*\*\* Standard On All QRWA & QRWAS Torch Body and Cable Assemblies

## Standard Fasteners

These standard fasteners are not sellable items and should be purchased at a local hardware or fastener supply house.

Item No.	Description
<b>A</b>	#10-32 x 5/8" Socket Head Cap Screw
<b>B</b>	#10-32 x 3/16" Stainless Cup Point Set Screw
<b>C</b>	M4 x .07 Head Screw

Lincoln is a registered trademark of Lincoln Electric Co. Miller is a registered trademark of Illinois Tool Works, Inc. Panasonic is a registered trademark of Matsushita Electric Industrial Co., Ltd. The afore mentioned registered trademarks are in no way affiliated with Tweco Robotics or Thermadyne Industries, Inc. Tweco is a registered trademark of Thermadyne Industries, Inc.

### RDM Series Deflection Mount

Tweco® Robotics RDM-2000 series — is a safety device designed to act as a switch between the conductor tube and the robot.

- Available in three (3) models:
  - Part No. RDM-2000-S (Stock No.3500-1155) – light duty applications.
  - Part No. RDM-2000-M (Stock No.3500-1156) – medium duty applications.
  - Part No. RDM-2000-H (Stock No.3500-1157) – heavy duty applications.
- Units come standard with an air assist feature allowing the robot technician to increase the break-away pressure when required.
- E-Stop Cable Assembly- 18" long - Part No. RDM2000-JC (Stock No. 3044-1842) comes standard with the unit.



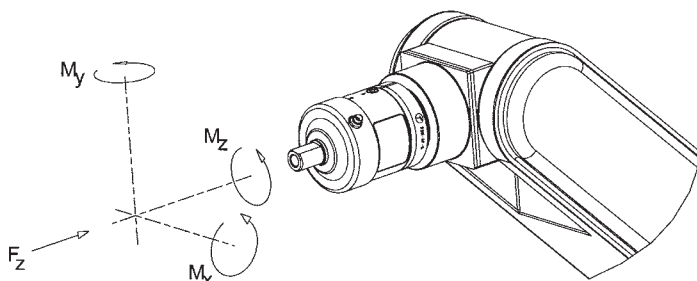
### How It Works:

When there is a collision between the conductor tube and fixture/part, the conductor tube will move in the direction with the deflection mount shaft. When this happens, one or more of the three switches located inside of the mount assembly will be activated. This in turn will activate the E-stop circuit, which is in the normally closed position, thus stopping the travel of the robot arm.

The deflection mount detects motion in any direction, whether it is in the Z-axis (head on), a side load, or a torsional load.

## RDM Series Deflection Mount

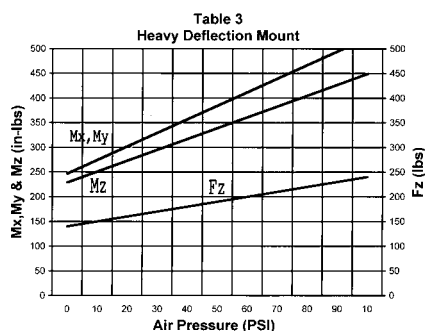
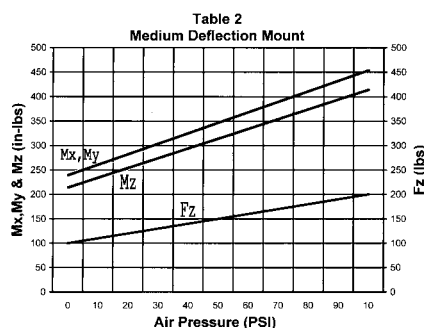
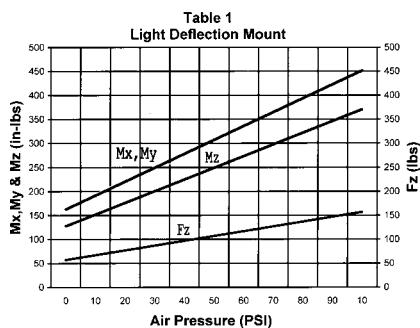
Part No.	Fz	Mx / My	Mz
RDM-2000-S	267 N (60#)	18 Nm (160 In-lbs.)	Ca. 15Nm (130 In-lbs.)
RDM-2000-M	444 N (100#)	27 Nm (245 In-lbs.)	Ca. 25 Nm (220 In-lbs.)
RDM-2000-H	662 N (140#)	28 Nm (250 In-lbs.)	Ca. 26 Nm (230 In-lbs.)

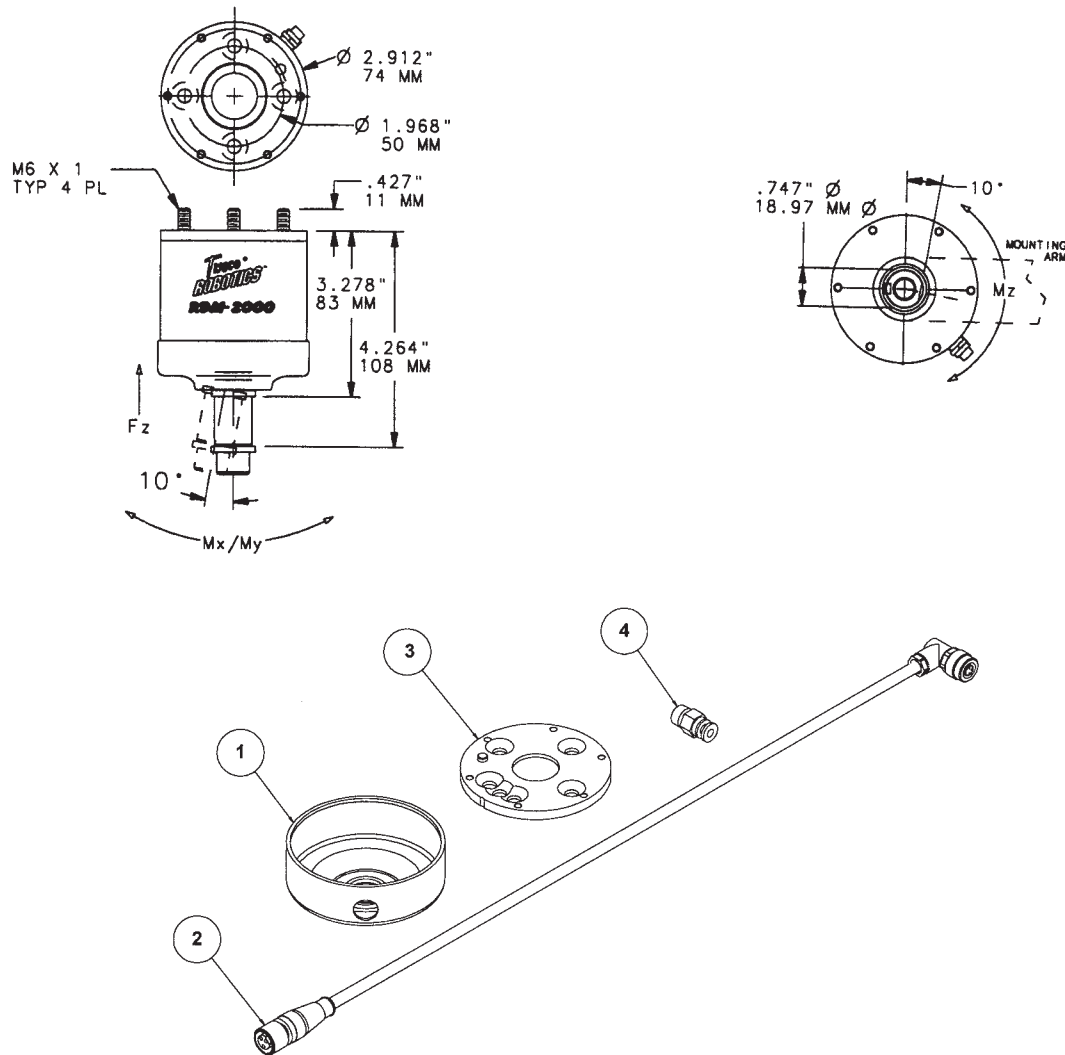


## Air Assist Feature

The addition of air pressure to the RDM mount during operation will increase the force that would be required to activate the switches within the mount causing the robot arm to stop.

Tables 1 through 3 for further detail on air pressure versus force ( $M_x$ ,  $M_y$ , &  $M_z$  in-lbs.) and ( $F_z$  – lbs.)





## Replacement Parts

ITEM NO.	PART NO.	STOCK NO.	DESCRIPTION
1	RDM-2000-B	3500-1197	Protective Dust Boot
2	RDM-2000-JC	3044-1842	E-Stop Cable Assembly - 18" (457.2mm)***
	RDM-2000-EC	3500-1172	E-Stop Cable Assembly – 20' (6,10m)*
3	RDM-2000-AP	3500-1174	Rear Adapter Plate (Aluminum)
4	AF532-18NPT-S	3500-1385	Air Fitting (Accepts 5/32" tubing)

\*\*\* Standard on all RDM Deflection Mounts

\* E-Stop Cable Assembly, Part No. RDM-2000-EC (Stock No. 3044-1172) is furnished with only one connector which will thread to the RDM deflection mount.

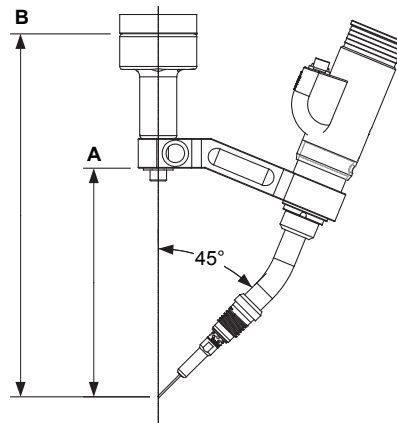
## RSM-2000 Stationary Mount (Stock No. 3500-1450)

Tweco® Robotics Stationary Mount was designed for use with robots that do not require the RDM series deflection mounts to act as a safety device.

- Machined from a solid aluminum alloy to provide precision and accuracy.
- Furnished with an adapter plate, Part No. RSM-AP-8 (Stock No. 3500-1475)
- Furnished with the necessary hardware to fasten the mount to the robot.



## Fixed Mounting Arms

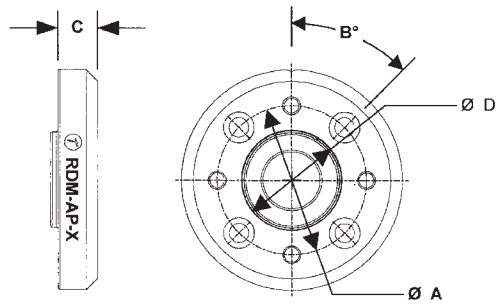


Part No.	Stock No.	Conductor Tube	"A"	"B"
RDM-A-180	3500-1132	QTR, QTRW64/66-45	7.388" (196,38mm)	11.877" (301,67mm)
RDM-A-180L	3500-1135	QTR, QTRW64/66-45L	9.037" (229,54mm)	13.576" (344,83mm)
RDM-A-22	3500-1130	QTR, QTRW64/66-22	7.735" (196,47mm)	12.274" (311,77mm)
RDM-A-22L	3500-1129	QTR66-22L	8.974" (227,95mm)	13.513" (343,24mm)
RDM-A-22LW	3500-1122	QTRW64/66-22L	8.545" (217,05mm)	13.084" (332,34mm)
RDM-A-45	3500-1131	QTR, QTRW64/66-180	7.993" (203,02mm)	12.532" (318,31mm)
RDM-A-45L	3500-1134	QTR, QTRW64/66-180L	8.833" (224,36mm)	13.372" (339,65mm)

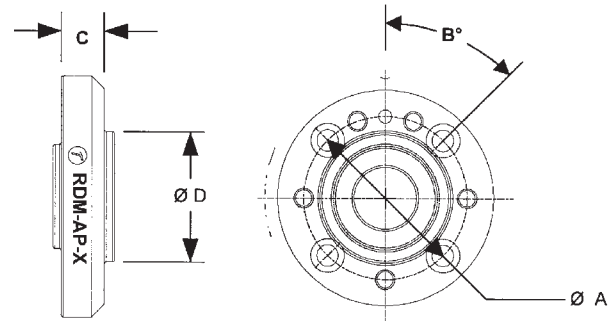


## Adapter Plates

Tweco® Robotics offers many different adapter plates to use with the RDM-2000 Series deflection mount. The adapter plate acts as an additional insulator to protect the robot arm as well as a mechanical breakaway in the event the switching does not stop the robot or peripheral motion.



**TYPE A**



**TYPE B**

The following table will aid in determining the proper adapter plate required to install the deflection mount to your robot arm.

Robot Type	Robot Model No.	Adapter Part No.	Adapter Stock No.	Type	Ø A	B°	C	Ø D
ABB®	IRB-6	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	IRB 1500	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	IRB 2000	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	IRB 1400	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	IRB 2400	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	IRB 240L	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	ASEA®	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	ESAB®	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm

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## Quick Robotic Torches & Accessories



Robot Type	Robot Model No.	Adapter Part No.	Adapter Stock No.	Type	Ø A	B°	C	Ø D
ESAB®	2000	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
FANUC®	ARC MATE 100/S6	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	ARC MATE 120	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	ARC MATE 120/S/12	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	ARC MATE 100/I	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	ARC MATE JR SR.S-10	RDM-AP-4	3500-1143	A	1.968" 49,99mm	45°	.525" 13,34mm	1.263" 32,08mm
		RDM-AP-4	3500-1143	A	1.968" 49,99mm	45°	.525" 13,34mm	1.263" 32,08mm
	LR MATE 100 1	RDM-AP-16	3500-1123	A	1.240" 31,50MM	45°	.650" 16,51mm	1.973" 49,20mm
		RDM-AP-24	3500-1181	B	1.240" 31,50mm	45°	.550" 13,97mm	.787" 19,99mm
	ARC MATE 100iB, M-6iB, 100ib/6\$	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-4	3500-1143	A	1.968" 49,99mm	45°	.525" 13,34mm	1.263" 32,08mm
HITACHI®	5430	RDM-AP-6	3500-1145	B	1.575" 40,01mm	45°	.525" 13,34mm	.981" 24,92mm
		RDM-AP-6	3500-1145	B	1.575" 40,01mm	45°	.525" 13,34mm	.981" 24,92mm
	MR 6060	RDM-AP-6	3500-1145	B	1.575" 40,01mm	45°	.525" 13,34mm	.981" 24,92mm
		RDM-AP-6	3500-1145	B	1.575" 40,01mm	45°	.525" 13,34mm	.981" 24,92mm
KAWASAKI®	FS010	RDM-AP-25	3500-1118	B	2.480" 62,99mm	45°	.525" 13,34mm	1.571" 39,90mm
		RDM-AP-25	3500-1118	B	2.480" 62,99mm	45°	.525" 13,34mm	1.571" 39,90mm
	JS6	RDM-AP-6	3500-1145	B	1.575" 40,01mm	45°	.525" 13,34mm	.981" 24,92mm
		RDM-AP-6	3500-1145	B	1.575" 40,01mm	45°	.525" 13,34mm	.981" 24,92mm
	KR6	RDM-AP-17	3500-1124	B	1.968" 49,99mm	45°	.650" 16,51mm	1.236" 31,39mm
		RDM-AP-17	3500-1124	B	1.968" 49,99mm	45°	.650" 16,51mm	1.236" 31,39mm
	KR150	RDM-AP-17	3500-1124	B	1.968" 49,99mm	45°	.650" 16,51mm	1.236" 31,39mm
		RDM-AP-17	3500-1124	B	1.968" 49,99mm	45°	.650" 16,51mm	1.236" 31,39mm
	KR3015	RDM-AP-17	3500-1124	B	1.968" 49,99mm	45°	.650" 16,51mm	1.236" 31,39mm
		RDM-AP-17	3500-1124	B	1.968" 49,99mm	45°	.650" 16,51mm	1.236" 31,39mm
MILLER®	MRV-6	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	MRV-2000	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	MRV-2300	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	MR-5	RDM-AP-7	3500-1146	A	1.265" 32,13mm	45°	.650" 16,51mm	1.579" 40,11mm
		RDM-AP-7	3500-1146	A	1.265" 32,13mm	45°	.650" 16,51mm	1.579" 40,11mm

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**U.S. Customer Care: 800-426-1888 / FAX 800-535-0557**

Robot Type	Robot Model No.	Adapter Part No.	Adapter Stock No.	Type	Ø A	B°	C	Ø D
MILLER®	MR-1000	RDM-AP-7	3500-1146	A	1.265" 32,13mm	45°	.650" 16,51mm	1.579" 40,11mm
	MRH	RDM-AP-7	3500-1146	A	1.265" 32,13mm	45°	.650" 16,51mm	1.579" 40,11mm
	MRK5	RDM-AP-7	3500-1146	A	1.265" 32,13mm	45°	.650" 16,51mm	1.579" 40,11mm
MOTOMAN®	SV-3	RDM-AP-24	3500-1181	B	1.240" 31,50mm	45°	.550" 13,97mm	.787" 19,99mm
	K5	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
		RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
	K6	RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
		RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	K10	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
		RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
	SK SERIES	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
		RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
	SUPER K	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
		RDM-AP-27	3500-1191	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
	UP6, UP20, UP20-6 & UP20M L SERIES	RDM-AP-9	3500-1148	B	2.047" 51,99mm	22.5°	.525" 13,34mm	1.569" 39,85mm
		RDM-AP-11	3500-1115	A	1.890" 48,01mm	25°	.525" 13,34mm	.949" 24,10mm
NACHI®	7603	RDM-AP-10	3500-1149	A	2.047" 51,99mm	22.5°	.525" 13,34mm	1.697" 43,10mm
	SC06	RDM-AP-26	3500-1114	B	1.890" 48,01mm	30°	.525" 13,34mm	.561" 14,25mm
	DR 4000	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
OTC DAIHEN®	DR 500	RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
		RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
	DR 4200	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm
		RDM-AP-7	3500-1146	A	1.265" 32,13mm	45°	.650" 16,51mm	1.579" 40,11mm
	DR 3000	RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
		RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
		RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
	AW5A	RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
		RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
		RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
PANASONIC®	AW6A	RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
	AW10A	RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
	AW5C	RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
	AW6AL	RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
					49,99mm		13,34mm	39,90mm

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Robot Type	Robot Model No.	Adapter Part No.	Adapter Stock No.	Type	Ø A	B°	C	Ø D
PANASONIC®	VR 005	RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
	VR 006	RDM-AP-12	3500-1116 49,99mm	B	1.968" 13,34mm	45° 39,90mm	.525"	1.571"
	VR 006L	RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
	VR 008	RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
	VR 16	RDM-AP-12	3500-1116	B	1.968" 49,99mm	45°	.525" 13,34mm	1.571" 39,90mm
	RV6	RDM-AP-17	3500-1124	B	1.968" 49,99mm	45°	.650" 16,51mm	1.236" 31,39mm
REIS®	RV6L	RDM-AP-17	3500-1124	B	1.968" 49,99mm	45°	.650" 16,51mm	1.236" 31,39mm
	RV-16	RDM-AP-20	3500-1177	B	2.480" 62,99mm	45°	.650" 16,51mm	1.888" 47,96mm
	RH-30-16	RDM-AP20	3500-1177	B	2.480" 62,99mm	45°	.650" 16,51mm	1.888" 47,96mm
STAUBLI®	RX90	RDM-AP-8	3500-1147	A	1.575" 40,01mm	45°	.650" 16,51mm	1.937" 49,20mm
		RDM-AP-2	3500-1141	A	1.575" 40,01mm	22.5°	.525" 13,34mm	1.937" 49,20mm

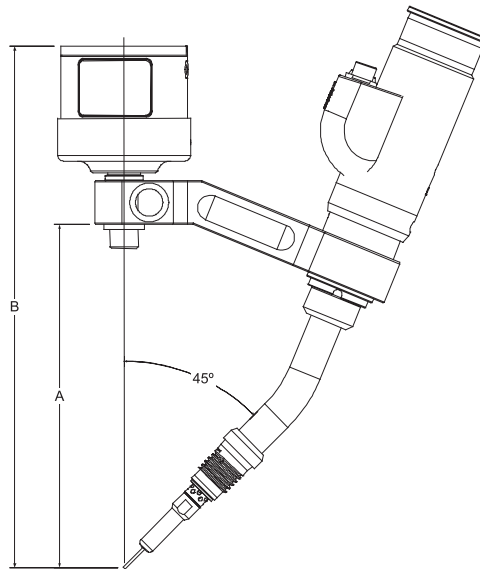
**NOTE:** Blank and adjustable RDM adapter plates are available which gives the Robot Technician the ability of machining to their specific robot wrist dimensions.

**Part No. RDM-AP-1 (Stock No. 3500-1140) - Blank Adapter Plate**

**Part No. RDM-AP-ADJ (Stock No. 3500-1183) - Adjustable Adapter Plate**

## RDM Mount Arms

- RDM mount arms are machined from solid aluminum alloy to provide precision and accuracy.
- RDM mount arms are offered in either fixed and adjustable configurations.
- Nine "fixed" configurations to choose from:  
180° - 180L° - 22° - 22L° - 22LW°  
45° - 45L° - 60° - 90°
- Three "adjustable" length link arms to choose from:  
63mm – 72mm – 100mm



**NOTE:** Wire stick-out equals 5/8" (15,88mm)

## Fixed Mounting Arms

Part No.	Stock No.	Conductor Tube	"A"	"B"
RDM-A-180	3500-1132	QTR, QTRW64/66-45	7.593" (193mm)	11.673" (296mm)
RDM-A-180L	3500-1135	QTR, QTRW64/66-45L	9.055" (258mm)	13.135" (334mm)
RDM-A-22	3500-1130	QTR, QTRW64/66-22	7.877" (200mm)	11.957" (304mm)
RDM-A-22L	3500-1129	QTR66-22L	8.974" (228mm)	13.054" (332mm)
RDM-A-22LW	3500-1122	QTRW64/66-22L	8.545" (217mm)	12.625" (321mm)
RDM-A-45	3500-1131	QTR, QTRW64/66-180	7.995" (203mm)	12.075" (307mm)
RDM-A-45L	3500-1134	QTR, QTRW64/66-180L	8.828" (224mm)	12.908" (328mm)

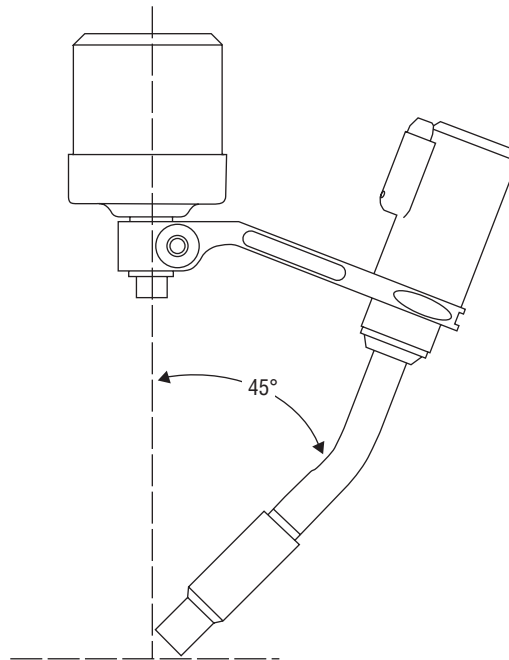
## Arm For 5 Axis Robot

RDM-A-90	3500-1182	RDM Mount to connect to 5 axis Miller® robot
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## RDM Light Weight Mount Arms

- Fixed light weight mount arm, designed for the Quick Robotic Light Weight Torch.
- RDM mount arms are machined from solid aluminum alloy to provide precision and accuracy.
- Four “fixed” configurations to choose from: RDML-A-180, RDML-A-180L, RDML-A-22, RDML-A-22L.



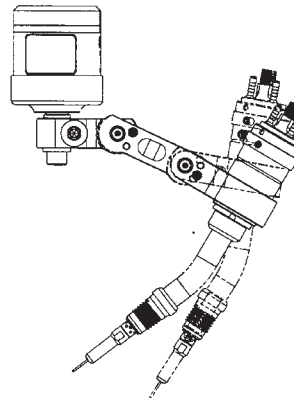
### Light Weight Mount Arms

Part No.	Stock No.	Description
RDML-A-180	3500-1460	180° RDM Light Weight Mount Arm
RDML-A-180L	3500-1461	180° (Long) RDM Light Weight Mount Arm
RDML-A-22	3500-1462	22° RDM Light Weight Mount Arm
RDML-A-22L	3500-1463	22° (Long) RDM Light Weight Mount Arm



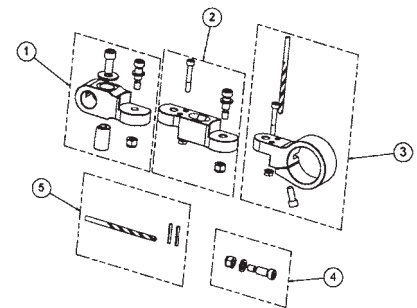
## Adjustable Mounting Arms

Part No.	Stock No.	Conductor Tube
RDM-AL-63R	3500-1494	QTRW64/66-180
		QTRW64/66-22
		QTRW64/66-45
RDM-AL-72R	3500-1495	QTRW64/66-180
		QTRW64/66-22
		QTRW64/66-45
RDM-AL-100R	3500-1496	QTRW64/66-180
		QTRW64/66-22
		QTRW64/66-45



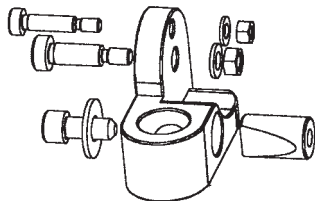
## Replacement Parts

Item No.	Part No.	Stock No.	Description
1	RDM-XL-1R	3500-1185	RDM Shaft Mount
2	RDM-L-63R	3500-1187	RDM Pivot Arm Assy. 63mm
	RDM-L-72R	3500-1188	RDM Pivot Arm Assy. 72mm
	RDM-L-100R	3500-1189	RDM Pivot Arm Assy. 100mm
3	RDM-L-2R	3500-1186	RDM Torch Mount Assy.
4	RDM-L-ACC-1	3500-1142	Adjustable Torch Mount Bolt Assy.
5	RDM-L-ACC-2	3500-1141	Pivot Arm Accessories

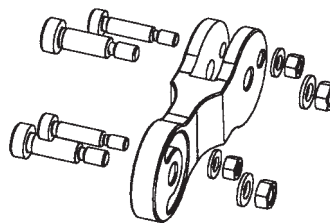


## European Adjustable Mounting Arms

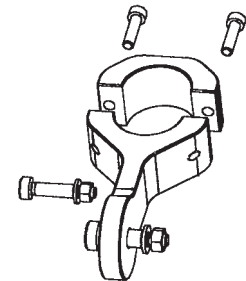
Item No.	Part No.	Stock No.	Description
1	RDM-L-Z	3500-1117	RDM Euro Shaft Bracket
2	RDM-2000-63Z	3500-1499	RDM Euro Mounting Arm Assy. - 63mm
	RDM-2000-72Z	3500-1498	RDM Euro mounting Arm Assy. - 72mm
	RDM-2000-100Z	3500-1497	RDM Euro mounting Arm Assy. - 100mm
3	RDM-2000-SB	3500-1159	RDM Euro Mounting Clamp



Item No. 1



Item No. 2



Item No. 3

### QRC™-2000 Nozzle Cleaning Station (Stock No. 3500-1201)

#### Reduce downtime and Improve the quality of your Welds!

The QRC-2000 Nozzle Cleaning Station removes spatter buildup from the robotic welding torch. Include a QRC-2000 in your robotic cell to avoid poor quality welds and reduce downtime.

The QRC Nozzle Cleaning Station has an advanced Rotary Impact Drive (RID) system which removes the spatter, allowing the cleaned torch nozzle to continue the welding process. It also has a unique self-exhaust PDE cleaning system that keeps debris from the reamer blade area. The revolutionary clamp mechanism on the QRC-2000 system provides precise clamping on the nozzle.

#### Features

- Rotary Impact Drive (RID) System.
- Dual stage pneumatic clamping device ensures positive, secure clamping on the nozzle.
- Easy to program.
- Two-Stage Cam Plate (2.5" cylinder) is a solid block with universal arm.
- Pneumatic Drive Exhaust (PDE) system blows air through vent holes on the incline housing which helps prevent slag buildup in shaft area.
- Uses only half the air consumption of other cleaning stations.
- Total stroke inside nozzle 2" (50,8mm).
- Reamer blade (QRC-100), five clamp blocks and programming tools included with the unit.

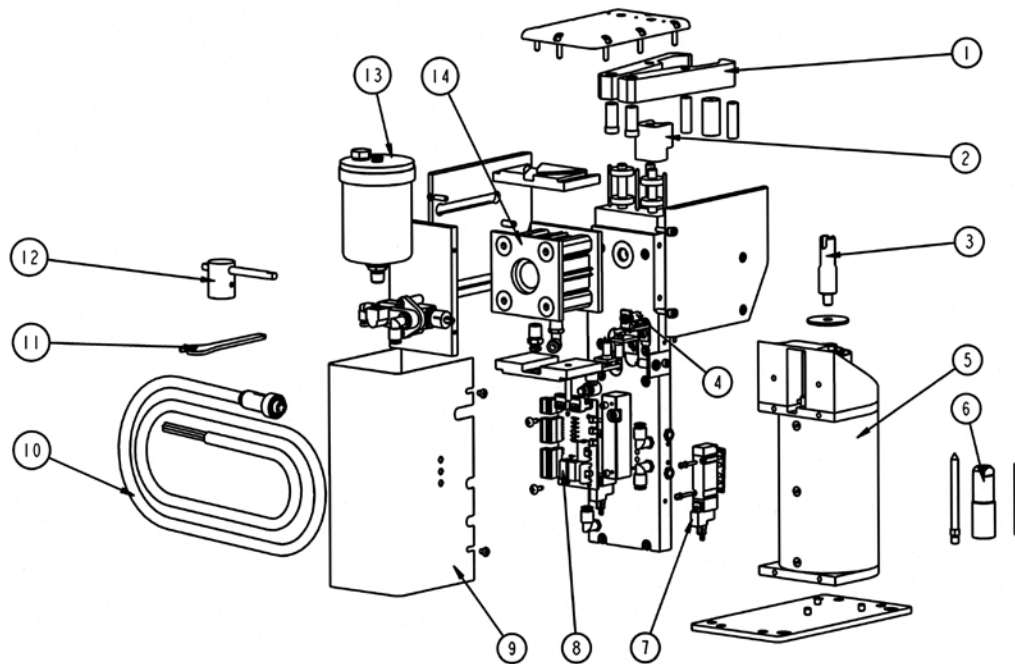


### QRC-2000B Basic Nozzle Cleaning Station (Stock No. 3500-1425)

The QRC-2000B is the basic unit described in the above but without the accessories. The following items must be ordered separately as needed:

- |                        |                                 |
|------------------------|---------------------------------|
| • Clamp Block          | • Programming Sleeves and Gages |
| • Reamer Blade         | • Miscellaneous Wrenches        |
| • Interface Power Cord |                                 |

Refer to page 53 for QRC-2000 Replacement Parts List for information on these items.



## QRC™-2000 REPLACEMENT PARTS

Item No.	Part No.	Stock No.	Description
1	QRC-2103	3500-1268	Jaw Assembly
2	QRC-2102-A	3500-1205	Clamp Block - .938" (23,8mm) O.D. Nozzles***
	QRC-2102-B	3500-1206	Clamp Block - 1.000" (25,4mm) O.D. Nozzles***
	QRC-2102-C	3500-1207	Clamp Block - 1.062" (27mm) O.D. Nozzles***
	QRC-2102-D	3500-1208	Clamp Block - 1.125" (28,6mm) O.D. Nozzles***
	QRC-2102-E	3500-1209	Clamp Block - .875" (22,2mm) O.D. Nozzles***
	QRC-2102-F	3500-1349	Clamp Block - .787" (20mm) O.D. Nozzles
3	See Page 54	See Page 54	Reamer Blades
4	QRC-2205	3500-1266	Limit Switch Kit (Kit Includes 4 Limit Switches)
5	QRC-2300	3500-1269	Drive Lift Assembly
6	QRC-PG2	3500-1272	Programming Sleeves and Gauges
7	QRC-2213	3500-1263	Solenoid Valve Assembly
8	QRC-2204	3500-1249	Circuit Board
9	QRC-2222	3500-1270	Shroud & Screws
10	QRC-2225	3500-1264	Interface Power Cord
11	QRC-440	3500-1242	9/16" (14mm) Flat Wrench
12	QRC-441	3500-1243	"T" Wrench
13	QRC-417	3500-1226	10 fl. Oz. (292ml) Lubricator Reservoir
14	QRC-2118	3500-1271	Clamp Cylinder

\*\*\* Supplied with QRC™-2000 Unit

## QRC™-2000 REAMER BLADES

Part No.	Stock No.	Reamer O.D.	Reamer I.D.	Reamer Length	Nozzle Bore	Contact Tip
QRC-100	3500-1275	.620" (15,7mm)	.422" (10,7mm)	1.25" (31,7mm)	.625" (15,9mm)	A, B, C & D
QRC-101	3500-1276	.494" (12,5mm)	.344" (8,7mm)	1.25" (31,7mm)	.500" (12,7mm)	A & B
QRC-102	3500-1277	.485" (12,3mm)	.344" (8,7mm)	1.12" (28,4mm)	.500" (12,7mm)	A & B
QRC-103	3500-1278	.368" (9,3mm)	.281" (7,1mm)	.94" (23,8mm)	.375" (9,5mm)	A
QRC-104	3500-1279	.734" (18,6mm)	.530" (13,5mm)	2.08" (52,8mm)	.750" (15,9mm)	A, B, C & D
QRC-105	3500-1280	.620" (15,7mm)	.344" (8,7mm)	1.25" (31,7mm)	.625" (15,9mm)	A & B
QRC-106	3500-1290	.370" (9,4mm)	.270" (6,9mm)	.94" (23,8mm)	.375" (9,5mm)	A
QRC-107	3500-1281	.604" (15,3mm)	.438" (11,1mm)	1.25" (31,7mm)	.625" (15,9mm)	A, B, C & D
QRC-108	3500-1282	.505" (12,8mm)	.344" (8,7mm)	1.27" (32,2mm)	.625" (15,9mm)	A & B
QRC-109	3500-1283	.620" (15,7mm)	.340" (8,6mm)	1.25" (31,7mm)	.625" (15,9mm)	A & B
QRC-110	3500-1284	.620" (15,7mm)	.296" (7,5mm)	1.25" (31,7mm)	.625" (15,9mm)	A & B
QRC-111	3500-1285	.734" (18,6mm)	.296" (7,5mm)	1.84" (46,7mm)	.750" (19,1mm)	A & B
QRC-112	3500-1286	.620" (15,7mm)	.360" (9,1mm)	1.00" (25,4mm)	.625" (15,9mm)	A, B & C
QRC-113	3500-1287	.734" (18,6mm)	.360" (9,1mm)	1.84" (46,7mm)	.750" (19,1mm)	A, B & C
QRC-114	3500-1288	.620" (15,7mm)	.390" (9,9mm)	1.25" (31,7mm)	.625" (15,9mm)	A, B, C & D
QRC-115	3500-1289	.734" (18,6mm)	.390" (9,9mm)	1.84" (46,7mm)	.750" (19,1mm)	A, B, C & D
QRC-116	3500-1291	.494" (12,5mm)	.359" (9,12mm)	1.08" (27,4mm)	.500" (12,7mm)	A, B & C
QRC-119	3500-1297	.620" (15,7mm)	.312" (7,9mm)	1.053" (26,7mm)	.625" (15,9mm)	A & B
QRC-120	3500-1298	.620" (15,7mm)	.312" (7,9mm)	1.128" (28,6mm)	.625" (15,9mm)	A & B
QRC-121	3500-1299	.485" (12,3mm)	.312" (7,9mm)	.73" (18,5mm)	.500" (12,7mm)	A & B
QRC-121S	3500-1274	.485" (12,3mm)	.374" (9,5mm)	.68" (17,3mm)	.500" (12,7mm)	A, B & C
QRC-122	3500-1260	.620" (15,7mm)	.390" (9,9mm)	1.25" (31,7mm)	.625" (15,9mm)	A, B, C & D
QRC-123	3500-1261	.605" (15,4mm)	.390" (9,9mm)	2.26" (57,4mm)	.625" (15,9mm)	A, B, C & D
QRC-124	3500-1262	.485" (12,3mm)	.344" (8,7mm)	.84" (21,3mm)	.500" (12,7mm)	A & B
QRC-125	3500-1259	.485" (12,3mm)	.390" (9,9mm)	1.25" (31,7mm)	.500" (12,7mm)	A, B, C & D
QRC-126	3500-1258	.485" (12,3mm)	.344" (8,7mm)	1.08" (27,4mm)	.500" (12,7mm)	A & B
QRC-127	3500-1253	.528" (13,4mm)	.344" (8,7mm)	1.08" (27,4mm)	.531" (13,4mm)	A & B
		Stepped To				
		.485" (12,3mm)				
QRC-ABZ	3500-1273	.620" (15,7mm)	Adapter for Binzel® Cleaning Station will allow use of Tweco Robotics Reamer Blades			

CONTACT TIPS: A = 11, 14, 14T, E11 & AL (O.D. = .250" / 6,3mm)  
 B = 11H, 14H, 14RS, 14RST, 14RZ, 14RZT & AL (O.D. = .283" / 7,1mm)  
 C = EL16, EL16T, EL16RS, EL16RST & AL (O.D. = .354" / 8,7mm)  
 D = 16S, 16ST, 16RS, 16RST, 16RZ, 16RZT & AL (O.D. = .375" / 9,5mm)

In the high-volume product welding environment, Tweco® Robotics Torches and Accessories are proven performers for quality welds, less downtime and longer consumable parts life!

## **Complete Your Robot Cell By Adding An Anti-Spatter Mist Applicator & Wire Trim Unit On The QRC™-2000 Cleaning Station....**

The cleaning station can be used to hold the QRM-3, (Stock No. 3500-1347) Anti-Spatter Mist Applicator. The QRM-3 features an adjustable nozzle cap, which allows the adjustment on the amount of anti-spatter compound applied.

The cleaning station can also provide the force used to trim the welding wire for the QWT-3, (Stock No. 3500-1321) Quick Wire Trim Unit. The unit mounts to the side of the cleaning station - the pivot pin on the wire trim unit connects to the clamp arm of the cleaning station arm.



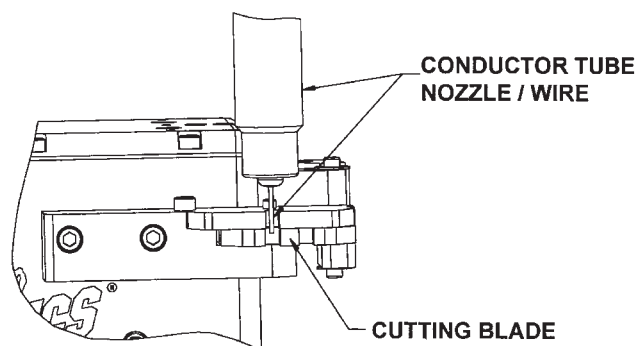
### QWT-3 Wire Trim Unit (Stock No. 3500-1321)

- Engineered to operate along side the QRC™-2000 Nozzle Cleaning Station (Stock No. 3500-1201).
- Unit mounts to the side of the nozzle cleaning station — the pivot pin on the wire trim unit connects to the clamp arm of the cleaning station arm.

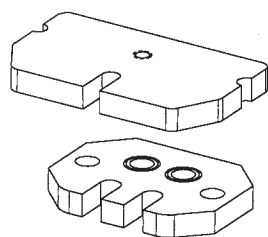
### How It Works:

The robot arm with the conductor tube assembly is positioned directly above the wire trim unit. Welding wire is then fed out of the contact tip, and the conductor tube is lowered to the necessary height as determined by the robot technician.

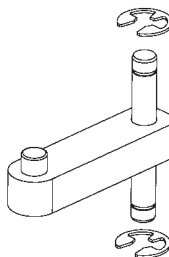
The QRC-2000 Nozzle Cleaning Station is activated to enable the clamping arm to move into the clamped position and unclamped position. While the arm is in the clamped position, the blade on the wire trim unit moves and trims the welding wire.



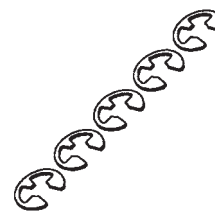
### Replacement Parts



**Part No.: QWT-3-BS**  
**(Stock No. 3500-1322)**



**Part No.: QWT-3-DS**  
**(Stock No. 3500-1323)**



**Part No.: QWT-3-RC**  
**(Stock No. 3500-1328)**



### QRM-3 Anti-Spatter Mist Applicator (Stock No. 3500-1347)

- Only one moving part making it a simple and maintenance free unit.
- Used to spray Protex® anti-spatter compound to coat nozzle, tip, and gas diffuser reducing the amount of weld spatter that accumulates during the weld cycle.
- Designed to be mounted on the Tweco® Robotics QRC™-2000 Cleaning Station (Stock No. 3500-1201).
- Features an adjustable nozzle cap, which allows the adjustment on the amount of anti-spatter compound applied.
- Supplied with 24-volt DC solenoid valve.
- Supplied with a 1-pint (10 fluid oz.) reservoir — optional 1-quart reservoir available — Part No. QRM-R (Stock No. 3500-1338).

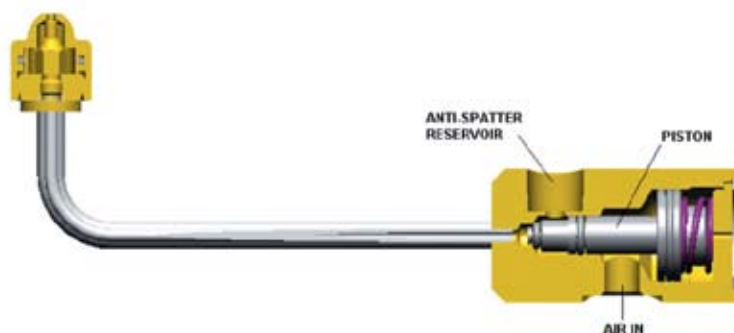


### How It Works:

When the air solenoid is opened — the piston is pushed back against the spring opening both the air and anti-spatter ports to the nozzle.

The anti-spatter pools in the nozzle area and the air picks it up causing a mist as it exits the nozzle housing.

When the air pressure is shut off, the piston moves back into place stopping flow to the nozzle.

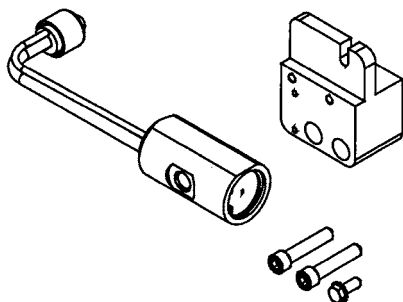


### Protex Select Anti-Spatter

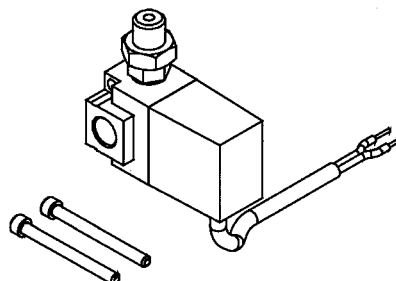
Recommend the use of Tweco Robotics Protex Select Anti-Spatter with the QRM-3 Anti-Spatter Mist Applicator. Protex Select contains no flouorocarbons or chlorinated solvents. The water based Protex Select is non-toxic, nonflammable and environmentally safe.

Container Size	Part No.	Stock No.
1 Gallon/3.8L (Pkg. 4)	RPS1G-4	3044-1900
55 gallon/208L (Drum)	RPS55G	3044-1901

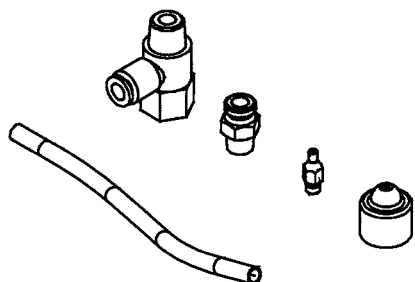
## Replacement Parts



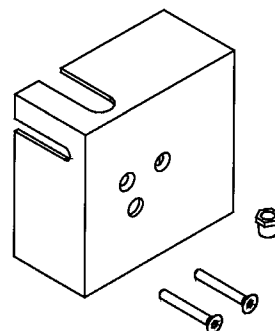
**QRM-3-MS Sprayer/Mounting Kit**  
(Stock No. 3500-1376)



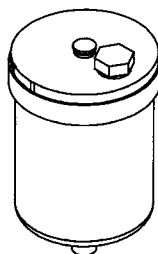
**QRM-3-KS Solenoid Valve Assembly**  
(Stock No. 3500-1377)



**QRM-3-FS Nozzle/Air Kit**  
(Stock No. 3500-1375)



**QRM-3-PS Cover Kit**  
(Stock No. 3500-1378)



**QRC-417 Reservoir-10 fl. Oz. (292ml)**  
(Stock No. 3500-1226)

**Reduce spatter build up in your MIG nozzle!**  
**Removal of spatter made easier!**  
**Provide better gas flow and improved weld quality!**

### **QRM-100 Anti-Spatter Mist Applicator (Stock No. 3500-1405)**

Reduce spatter build-up inside the MIG nozzle and see less downtime, better gas flow and improved weld quality. The anti-spatter compound is dispensed from the QRM-100 to the conductor tube and through the diffuser, applying a light film of anti-spatter compound on the nozzle surface to make spatter adherence more difficult.



Tweco® Robotics QRM-100 Anti-Spatter Mist Applicator replaces the “old” style anti-spatter mist applicator Part Number QRM-1. The pump mechanism is totally enclosed in a metal shroud to decrease the chance of foreign material damaging the unit that could result in down production time.

The unit will deliver a metered amount of Protex® anti-spatter compound to the conductor tube assembly on demand at any available time in the weld cycle, during part changes, or during the cleaning cycle. It uses a 24-volt D.C. solenoid valve that can be readily interfaced to a robot controller or other D.C. type power source.

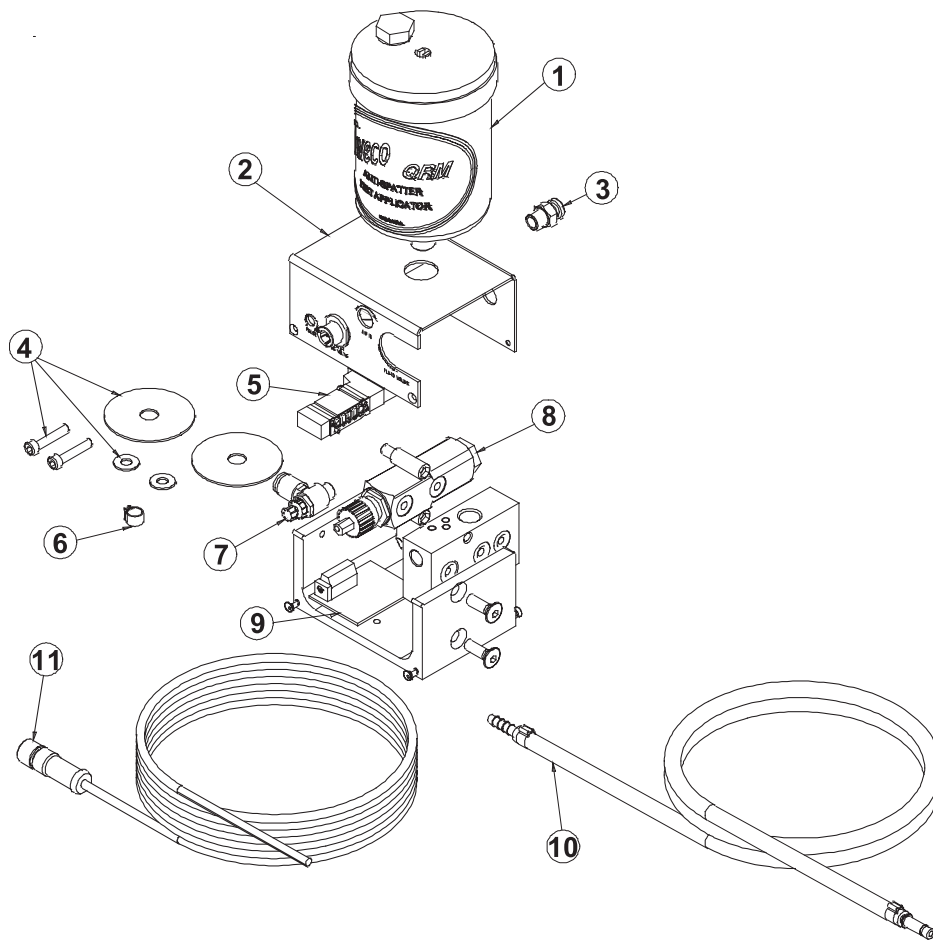
Other features include:

- Frequency adjustments from up to 200 pulses per minute.
- Metering device that delivers a set amount of anti-spatter compound with every pulse.
- Easy to install into a weld cell. Two surfaces to choose from when mounting the unit.
- Each adjustment is clearly identified on the metal enclosure.
- Furnished with 10ft. (3m) of purge hose to run between the unit and torch cable assembly.
- Mounting hardware supplied.
- 1-pint reservoir (optional 1-quart size - sold separately).
- Furnished with a keyed 3-conductor cable with a molded straight female connection to connect from the unit to a robot control panel or equivalent device.

Protex® Select Anti-Spatter

Recommend the use of Tweco Robotics Protex Select Anti-Spatter with the QRM-3 Anti-Spatter Mist Applicator. Protex Select contains no fluorocarbons or chlorinated solvents. The water based Protex Select is non-toxic, nonflammable and environmentally safe.

Container Size	Part No.	Stock No.
1 Gallon/3.8L (Pkg. 4)	RPS1G-4	3044-1900
55 gallon/208L (Drum)	RPS55G	3044-1901



## QRM-100 Anti-Spatter Mist Applicator Replacement Parts

Ref. No.	Part No.	Stock No.	Description
1	QRC-417	3500-1226	One Pint Reservoir (Standard)
	QRM-R	3500-1338	1 Quart (Reservoir Optional)
2	QRM-122	3500-1413	Cover Assembly with Screws (4 each)
3	QRM-3Q	3500-1415	Air Fitting - 1/8" NPT - Tube Straight Fitting
4	QRM-100MK	3500-1407	Mounting Hardware
5	QRM-142	3500-1409	Solenoid Valve
6	QRM-109	3500-1414	Hose Clamp ( 5 each)
7	QRM-101	3500-1410	Air Flow Control
8	QRM-112	3500-1406	Servo Meter with Standoffs & O-rings
9	QRM-141	3500-1412	Circuit Board
10	QRM-108	3500-1408	Purge Hose
11	QRM-143	3500-1411	Control Cable

## **QWT-120 Wire Cutting Station (Stock No. 3500-1300)**

Tweco® Robotics QWT-120 "ON-THE-FLY" Wire Cutting Station will reduce cycle time.

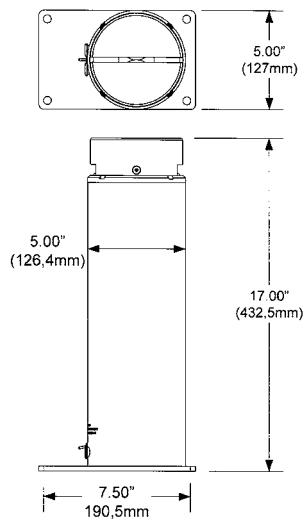
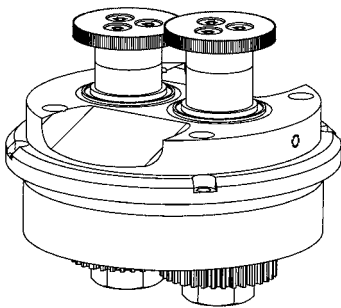
- Robotic controlled operation with one output signal.
- Cutters are reversible for twice the life and can be replaced easily.
- Unit is powered by a 120-volt AC motor with relay interference for controlling the start and stop cycle.
- Unit is enclosed in a heavy-gauge aluminum tube, with the head assembly machined from solid aluminum.
- Unit is able to cut wire sizes:

Steel Wire: .023" (0,6mm) to 5/64" (2mm)

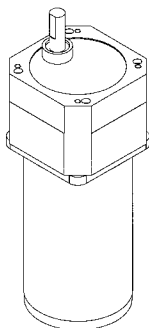
Aluminum Wire: .030" (0,8mm) to 3/32" (3,2mm)

Flux Core Wire: .030" (0,8mm) to 3/32" (3,2mm)

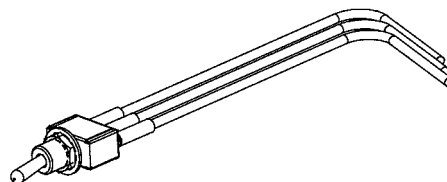
Metal Core Wire: .030" (0,8mm) to 3/32" (3,2mm)



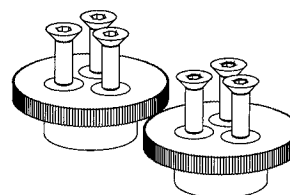
## Replacement Parts



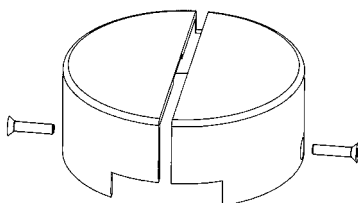
**Part No. QWT-120-9**  
**(Stock No. 3500-1309)**



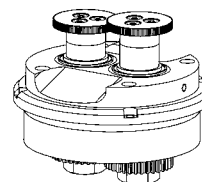
**Part No. QWT-120-20**  
**(Stock No. 3500-1320)**



**Part No. QWT-120-4**  
**(Stock No. 3500-1304)**



**Part No. QWT-120-6**  
**(Stock No. 3500-1306)**



**Part No. QWT-120-2**  
**(Stock No. 3500-1302)**



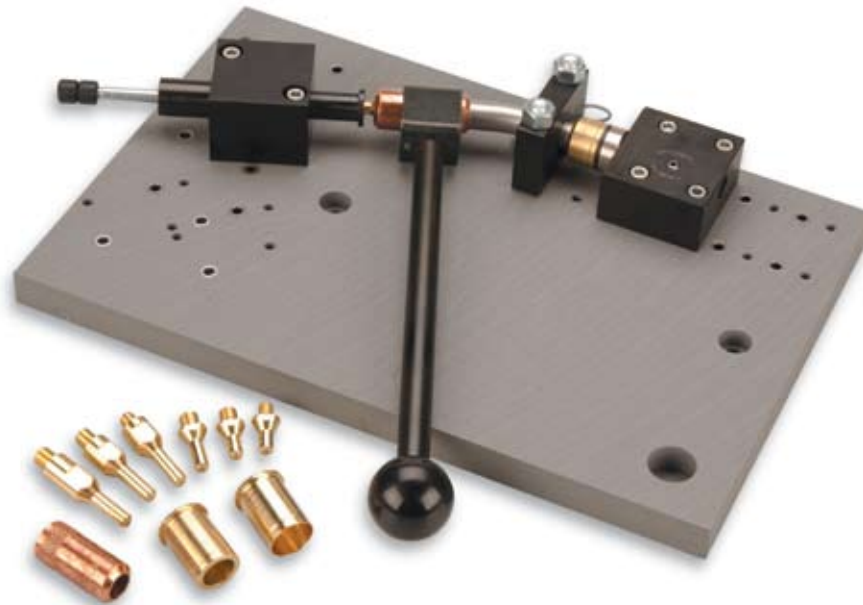
**Part No. QWT-120-19**  
**(Stock No. 3500-1319)**



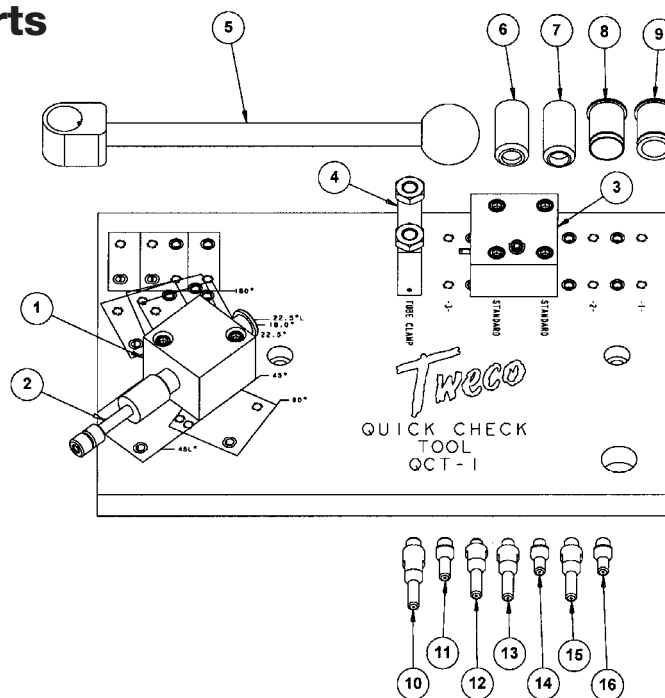
## **QCT-1 Conductor Tube Alignment Fixture (Stock No. 3500-1325)**

Tweco® Robotics QCT-1 Conductor Tube Alignment Fixture gives you the ability to verify the alignment of a conductor tube before placing it in operation. It provides you with the capability to check a variety of conductor tube bend angles and tube length.

- Minimize downtime by verifying conductor tube alignments.
- Capable of checking alignment of eight (8) conductor tube bend angles.
- Adjustable alignment block to accommodate a variety of conductor tube lengths.



## Replacement Parts



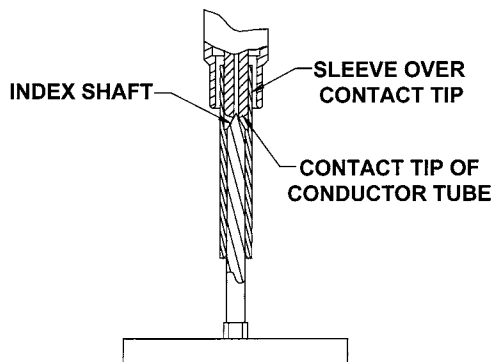
### QCT-1 Conductor Tube Alignment Fixture

Item No.	Part No.	Stock No.	Description
1	QCT-2	3500-1350	Front Alignment Block Assembly
2	QCT-P	3500-1358	Front Alignment Pin and Sleeve Assembly
3	QCT-3	3500-1351	Rear Alignment Block Assembly
4	QCT-5	3500-1352	Block Clamp Assembly
5	QCT-8	3500-1354	Adjustment Bar Assembly (Includes Item #8 and #9)
6	QCT-26	3500-1361	Nozzle Spacer for QTRW66 Series Conductor Tubes
7	QCT-24	3500-1360	Nozzle Spacer for QTRW64 Series Conductor Tubes
8	QCT-8S1	3500-1355	Adjustment Bar Head Spacer – 1.020" (25,91mm) ID
9	QCT-8S2	3500-1356	Adjustment Bar Head Spacer – .790" (20,07mm) ID
10	QCT-QTR	3500-1363	Alignment Pin F/ QTR66 Series Conductor Tube Assembly
11	QCT-QTRL	3500-1364	Alignment Pin F/ QTR66 Series Conductor Tube Assembly
12	QCT-QTRW63	3500-1365	Alignment Pin F/ QTRW63 Series Conductor Tube Assembly
13	QCT-QTRW64	3500-1366	Alignment Pin F/ QTRW64 Series Conductor Tube Assembly
14	QCT-QTRW64L	3500-1367	Alignment Pin F/ QTRW64 Series Conductor Tube Assembly
15	QCT-QTRW66	3500-1368	Alignment Pin F/ QTRW66 Series Conductor Tube Assembly
16	QCT-QTRW66L	3500-1369	Alignment Pin F/ QTRW66 Series Conductor Tube Assembly

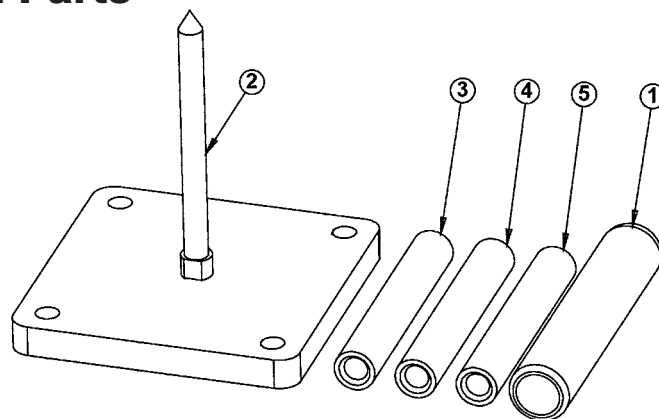
## QRP-IN TCP Check Tool Kit (Stock No. 3500-1340)

Tweco® Robotics TCP Check Tool Kit allows you to quickly check TCP. This will ensure torch alignment so you can avoid poor quality welds and lost production time. The kit includes alignment sleeves for all Tweco contact tips.

- Ensures torch alignment.
- Reduces downtime by quickly checking TCP.
- Kit includes three (3) sleeves to accommodate all Tweco contact tips and a protective cover for the shaft.



## Replacement Parts



## QRP-IN TCP Check Tool

Item No.	Part No.	Stock No.	Description
1	QRP-1	3500-1344	Protective Cover for Index Shaft
2	QRP-2	3500-1345	Index Shaft
3	QRP-EL16	3500-1342	Alignment Sleeve for EL16 Series Contact Tips
4	QRP-14H	3500-1343	Alignment Sleeve for 14H Series Contact Tips
5	QRP-16S	3500-1341	Alignment Sleeve for 16S Series Contact Tips

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