

TECHNICAL GUIDE

For Water-Cooled
Robotic MIG Guns
600 amp

- **SAFETY & WARRANTY**
- **COMPLETE ASSEMBLY OVERVIEW**
- **EXPLODED VIEW & PARTS LIST**
- **OPTIONS**
- **AMPERAGE RATINGS**
- **ORDERING INFORMATION**

Effective September 2010 –
QUICK LOAD™ Liners Standard
on all TOUGH GUN™ Robotic MIG Guns

*Certified ISO 9001 : 2008.
Please read instructions prior to use.
Save this manual for future reference*

TABLE OF CONTENTS

THANK YOU.....	2
WARRANTY	2
GENERAL SAFETY	3
1.0 COMPLETE ASSEMBLY OVERVIEW.....	4
2.0 EXPLODED VIEW AND PARTS LIST	5
2.1 FRONT-END COMPONENTS.....	5
2.2 CABLE BUNDLE COMPONENTS	6
3.0 WIRE BRAKE OPTION	8
3.1 WIRE BRAKE REPLACEMENT	8
3.2 QUICK LOAD™ LINER INSTALLATION FOR TOUGH GUN ROBOTIC WATER-COOLED MIG GUN (600 AMP) WITH WIRE BRAKE	9
4.0 AMPERAGE RATINGS	9
5.0 ORDERING INFORMATION	10

THANK YOU....

...for selecting a Tregaskiss TOUGH GUN™ Robotic MIG Gun. Manufacturing operations demand extremely dependable robotic equipment. With this in mind, the TOUGH GUN MIG Gun was designed and engineered to be a reliable tool to support high production within a robotic cell. As the name implies, the TOUGH GUN MIG Gun is made from durable materials and components engineered to perform in a rugged welding environment. Your TOUGH GUN MIG Gun is completely assembled and ready to weld, and has undergone numerous quality checks to ensure high performance.

The instructions and illustrations in this technical guide make it easy for you to maintain your TOUGH GUN MIG Gun. **Please read, understand, and follow all safety procedures.** Keep this Technical Guide booklet as a handy reference when ordering complete guns, parts and special options. **For technical support and special applications, please call the Tregaskiss Technical Service Department at 1-877-737-3111 or fax 1-877-737-2111.** Our trained technicians are available between 8:30 AM and 4:30 PM EST, and will answer your application or repair questions.

Tregaskiss employees build TOUGH GUN MIG Guns for the world's welding professionals. We are always striving to improve our products and services, and would appreciate receiving your suggestions or comments. Please contact us immediately if you experience any safety or operating problems.

WARRANTY

Product is warranted to be free from defects in material and workmanship for the period specified below after the sale by an authorized Buyer. Should there be a defect please refer to our Return Merchandise Policy.

PRODUCT	WARRANTY PERIOD
TOUGH GUN™ MIG Guns and Components	180 days
TGX™ Chassis and TGX™ Ready To Weld MIG Guns	90 days
TOUGH GUN™ Reamer	1 year
TOUGH GARD™ Spatter Cleaner	1 year
TOUGH GUN™ Robotic Peripherals (Clutch, Sprayer, Wire Cutter, Clutch Disc, Mounting Arms)	1 year
Low-Stress Robotic Unicables (LSR Unicables)	2 years

Tregaskiss reserves the right to repair, replace or refund the purchase price of non-conforming product. Product found not defective will be returned to the Buyer after notification by Customer Service.

Tregaskiss makes no other warranty of any kind, expressed or implied, including, but not limited to the warranties of merchantability or fitness for any purpose. Tregaskiss shall not be liable under any circumstances to Buyer, or to any person who shall purchase from Buyer, for damages of any kind, including, but not limited to any, direct, indirect incidental or consequential damages or loss of production or loss of profits resulting from any cause whatsoever, including, but not limited to, any delay, act, error or omission of Tregaskiss.

Genuine Tregaskiss parts must be used for safety and performance reasons or the warranty becomes invalid. Warranty shall not apply if accident, abuse, or misuse damages a product, or if a product is modified in any way except by authorized Tregaskiss personnel.

GENERAL SAFETY

Before installation or operation of TOUGH GUN MIG Guns, please read the safety precautions listed below.

1. Do not touch live electrical parts. The following should be checked to prevent electrical shock:
 - a. Faulty or damaged equipment is repaired or replaced.
 - b. Equipment is off when not in use.
2. Ensure that all safety devices, guards, shields or barriers are properly in place and connected correctly before allowing operation of the equipment.
3. CSA Standard W117.2 CODE FOR SAFETY IN WELDING AND CUTTING obtainable from the Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3.
4. ANSI Standard Z49.1 CODE FOR SAFETY IN WELDING AND CUTTING obtainable from the American National Standards Institute, 1430 Broadway, New York, NY 10018.

CALIFORNIA PROPOSITION 65 WARNING

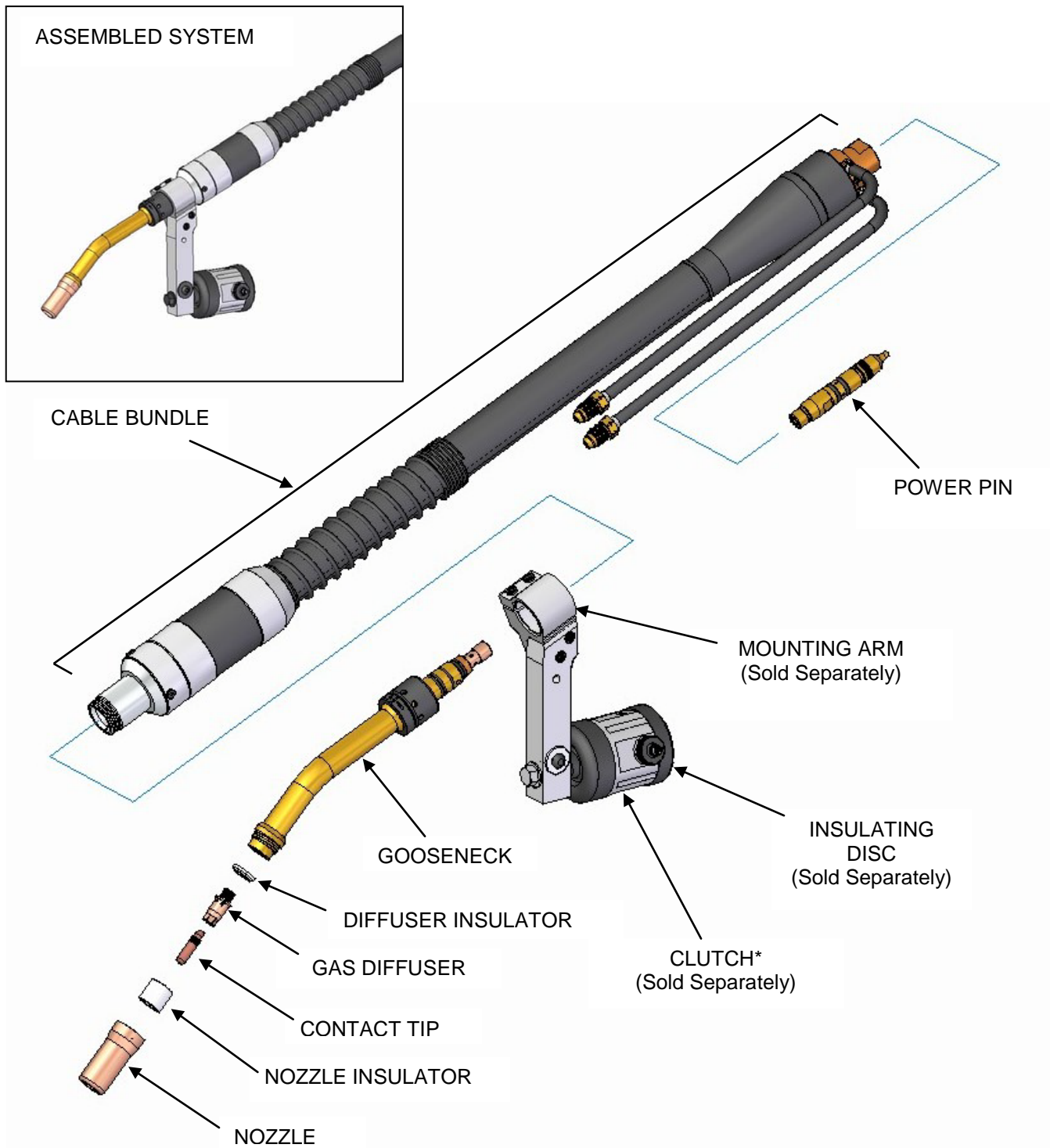
This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer.

This product contains chemicals, including lead, known to the State of California to cause cancer, and birth defects or other reproductive harm. *Wash hands after use.*

(California Health & Safety Code Section 25249.5 at seq.)



1.0 - COMPLETE ASSEMBLY OVERVIEW



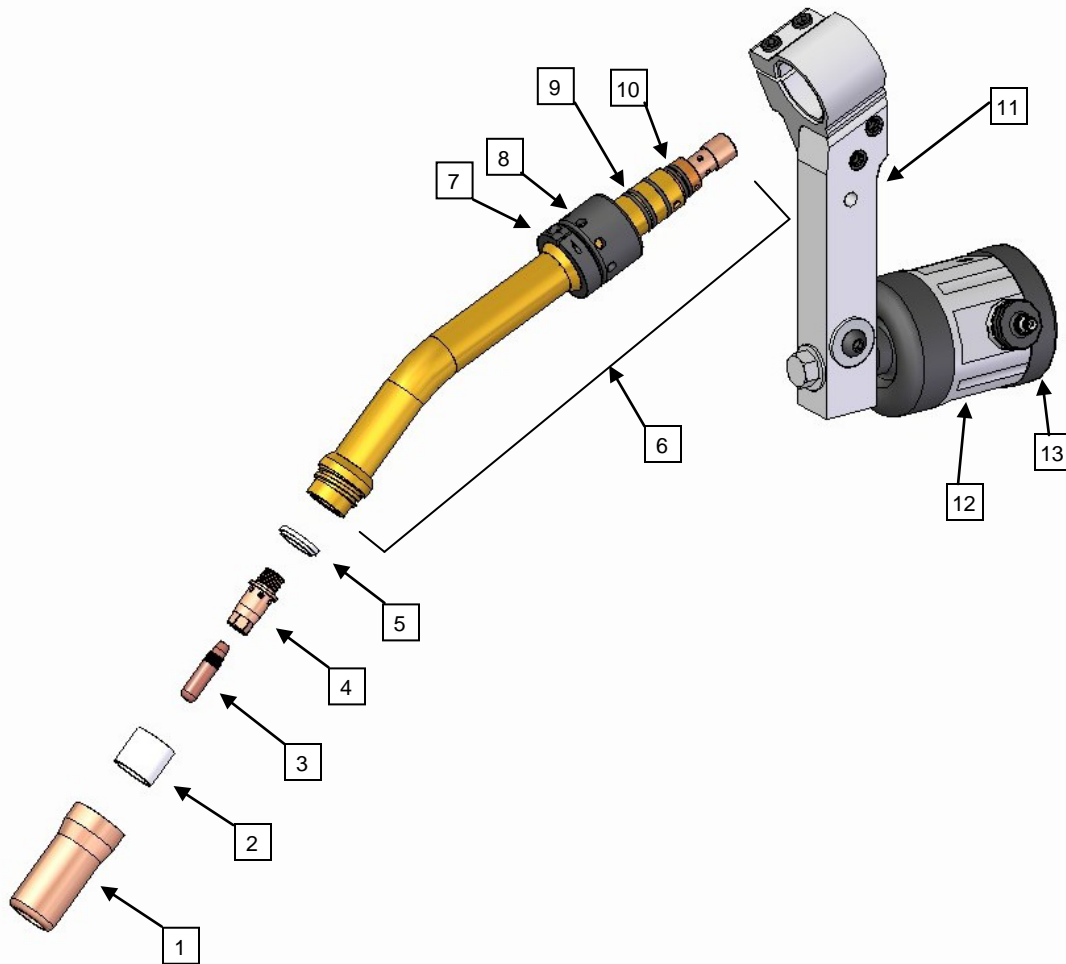
NOT SHOWN: QUICK LOAD™ Liner and QUICK LOAD Liner Retainer.

*Other mounting options are available, in addition to the Clutch, including the Solid Arm Mount and G2 Style Mounting Arm.

For a complete parts list, please proceed to **Section 2.0 EXPLODED VIEW AND PARTS LIST.**

2.0 – EXPLODED VIEW AND PARTS LIST

2.1 FRONT-END COMPONENTS

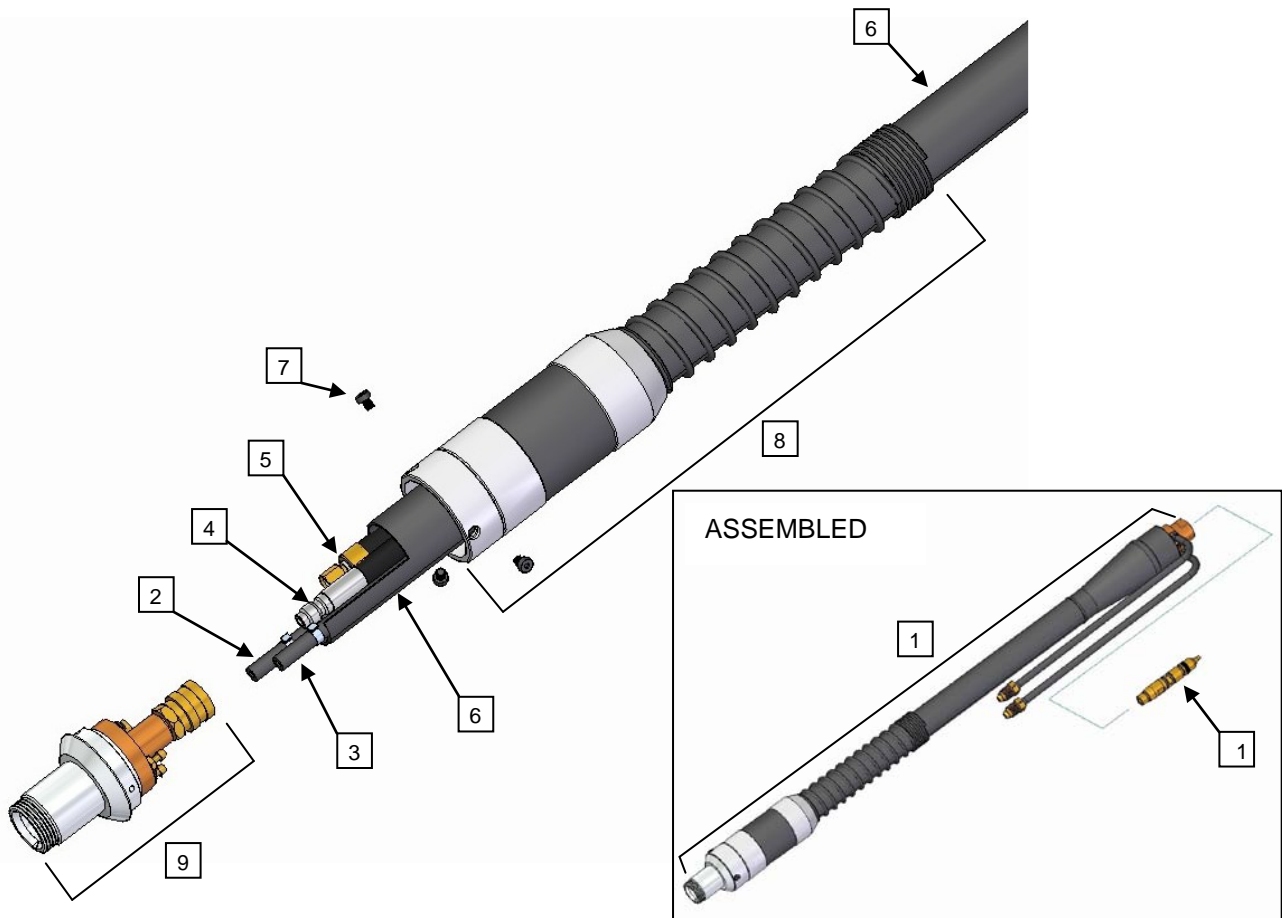


PART #	DESCRIPTION	PART #	DESCRIPTION
1	671-6-75 NOZZLE (3/4" BORE, 1/8" RECESS)	7	N/A GOOSENECK COLLAR
2	671-6-75-2 NOZZLE INSULATOR	8	N/A GOOSENECK NUT
3	403-20-XXX CONTACT TIP, TOUGH LOCK™ HD	9	N/A ORING - LARGE
	403-27-XXX CONTACT TIP, TOUGH LOCK EXHD	10	N/A ORING - SMALL
4	404-71 GAS DIFFUSER	11	AS-71-000-22 MOUNTING ARM (22 DEG)
5	404-71-2 DIFFUSER INSULATOR		AS-71-000-45 MOUNTING ARM (45 DEG)
6	RW1-1000-22 GOOSENECK, 22 DEGREE		AS-72-000-22 G2 STYLE MOUNTING ARM (22 DEG)*
	RW1-1000-45 GOOSENECK, 45 DEGREE		AS-72-000-45 G2 STYLE MOUNTING ARM (45 DEG)*
N/A	415-35-6Q QUICK LOAD™ LINER (0.035" TO 0.045") 6'	12	AS-708 SAFETY CLUTCH
N/A	415-35-10Q QUICK LOAD LINER (0.035" TO 0.045") 10'		AS-730 SOLID ARM MOUNT
N/A	415-35-15Q QUICK LOAD LINER (0.035" TO 0.045") 15'	13	AS-XXX-XX INSULATING DISC (VARIOUS)
N/A	415-116-6Q QUICK LOAD LINER (0.045" TO 1/16") 6'		59DXX G2 STYLE INSULATING DISC (VARIOUS)*
N/A	415-116-10Q QUICK LOAD LINER (0.045" TO 1/16") 10'		
N/A	415-116-15Q QUICK LOAD LINER (0.045" TO 1/16") 15'		
N/A	415-26 QUICK LOAD LINER RETAINER		
N/A	415-564-6 CONVENTIONAL LINER (1/16" TO 5/64") 6'		
N/A	415-564-10 CONVENTIONAL LINER (1/16" TO 5/64") 10'		
N/A	415-564-15 CONVENTIONAL LINER (1/16" TO 5/64") 15'		
N/A	415-332-158 CONVENTIONAL LINER (0.078" TO 3/32") 15'		

*G2 Style Mounting Arms (AS-72-XXX-XX) require the G2 Style Insulating Disc (59DXX).

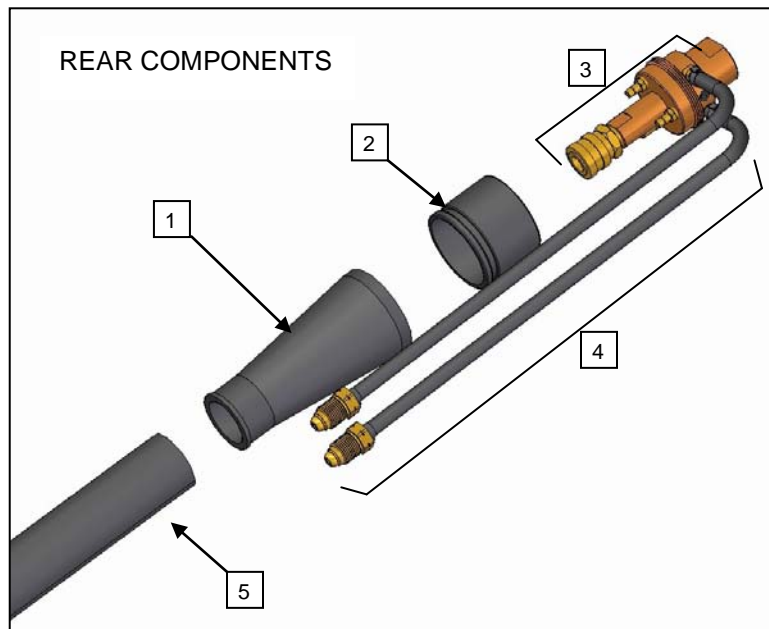
2.2 CABLE BUNDLE COMPONENTS

2.2.1 CABLE BUNDLE COMPONENTS - FRONT



PART #	DESCRIPTION
1	VARIOUS CABLE BUNDLES (SEE CHART BELOW)
2	RW1-2200 GAS LINE KIT, 15' LONG (2 CLAMPS INCLUDED)
3	RW1-2300 WATER LINE KIT, 15' LONG (2 CLAMPS INCLUDED)
4	VARIOUS CONDUIT ASSEMBLY (SEE CHART BELOW)
5	VARIOUS POWER CABLE ASSEMBLY (SEE CHART BELOW)
6	RW1-2400-G CABLE JACKET, LEATHER, 6' LONG
	RW1-2400-R CABLE JACKET, LEATHER, 10' LONG
	RW1-2400-Y CABLE JACKET, LEATHER, 15' LONG
7	N/A HOUSING SCREW (3 REQ.) M5x.8x6mm LOW-HEAD SHCS
8	RW1-2140 HOUSING ASSEMBLY (INCLUDES SPRING)
9	RW1-2100 DOCKING BODY ASSEMBLY
10	214-1 POWER PIN - MILLER
	214-7 POWER PIN - LINCOLN
	214 POWER PIN - TWEKO #4
	214-12 POWER PIN - TWEKO #5
	214-17 POWER PIN - FRONIUS
	214-30 POWER PIN - PANASONIC
WIRE BRAKE	
	450-17 WIRE BRAKE INSTALLATION TOOL
	495-19-35 WIRE BRAKE JUMP LINER (0.035" TO 0.045") WC
	495-19-116 WIRE BRAKE JUMP LINER (0.045" TO 1/16") WC
	RW1-599 WIRE BRAKE - WC
	598 WIRE BRAKE WIRE GUIDE (0.035" TO 0.045") WC
	598-116 WIRE BRAKE WIRE GUIDE (0.045" TO 1/16") WC
	499-9-15 WIRE BRAKE HOSE (15')

2.2.2 CABLE BUNDLE COMPONENTS - REAR



PART #		DESCRIPTION
1	N/A	RUBBER BOOT
2	N/A	CUFF
3	RW1-2700	POWER BLOCK ASSEMBLY (#30 HOSES NOT INCLUDED)
4	RW1-2810-G	WATER IN/OUT HOSE KIT, 6' LONG (INCLUDES 2 HOSES, 2 CLAMPS, THREADED WATER FITTINGS)
5	RW1-2400-G	CABLE JACKET, LEATHER, 6' LONG
	RW1-2400-R	CABLE JACKET, LEATHER, 10' LONG
	RW1-2400-Y	CABLE JACKET, LEATHER, 15' LONG

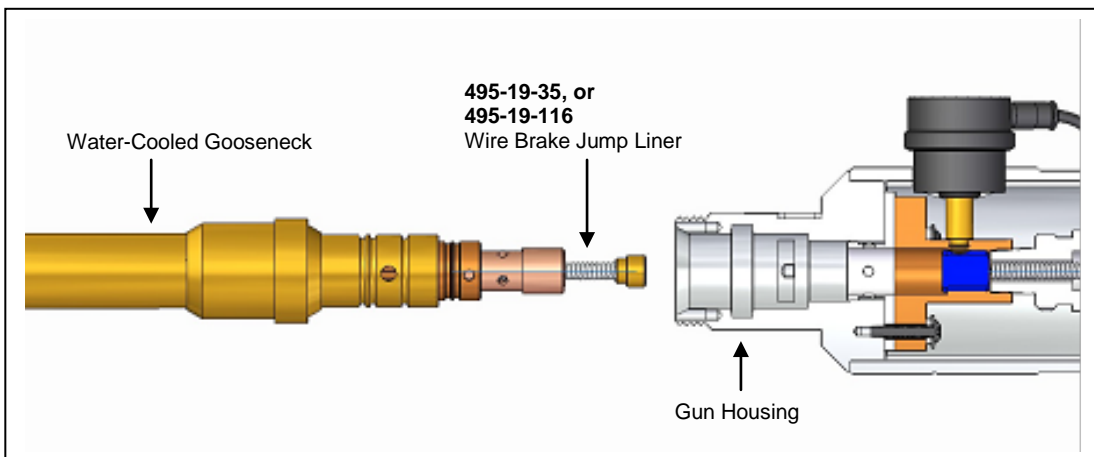
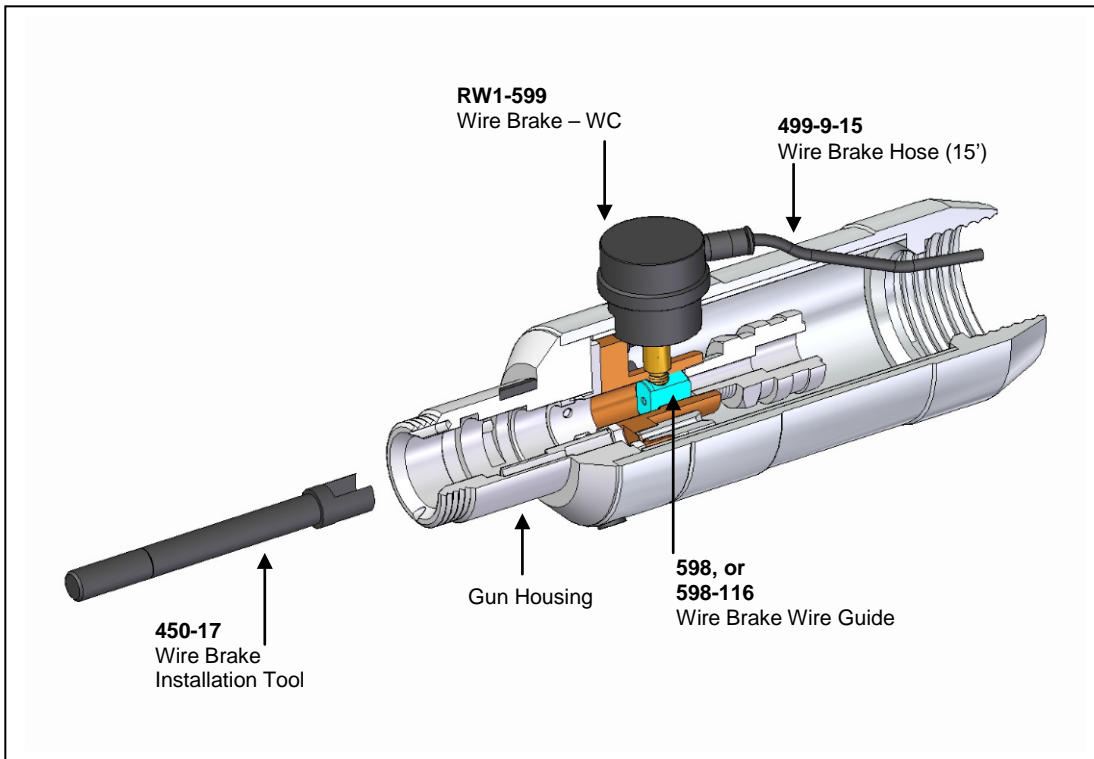
2.2.3 CABLE BUNDLES

CABLE BUNDLE LENGTH	CABLE BUNDLE (POWER PIN NOT INCLUDED)	CABLE BUNDLE FOR WIRE BRAKE (POWER PIN NOT INCLUDED)	CONDUIT ASSEMBLY	POWER CABLE ASSEMBLY
4'	RW1-2000-C	RW1-2000WB-C	RW1-2600-C	RW1-2500-C
4.5'	RW1-2000-D	RW1-2000WB-D	RW1-2600-D	RW1-2500-D
5'	RW1-2000-E	RW1-2000WB-E	RW1-2600-E	RW1-2500-E
5.5'	RW1-2000-F	RW1-2000WB-F	RW1-2600-F	RW1-2500-F
6'	RW1-2000-G	RW1-2000WB-G	RW1-2600-G	RW1-2500-G
6.5'	RW1-2000-H	RW1-2000WB-H	RW1-2600-H	RW1-2500-H
7'	RW1-2000-J	RW1-2000WB-J	RW1-2600-J	RW1-2500-J
7.5'	RW1-2000-K	RW1-2000WB-K	RW1-2600-K	RW1-2500-K
8'	RW1-2000-M	RW1-2000WB-M	RW1-2600-M	RW1-2500-M
8.5'	RW1-2000-N	RW1-2000WB-N	RW1-2600-N	RW1-2500-N
9'	RW1-2000-P	RW1-2000WB-P	RW1-2600-P	RW1-2500-P
9.5'	RW1-2000-Q	RW1-2000WB-Q	RW1-2600-Q	RW1-2500-Q
10'	RW1-2000-R	RW1-2000WB-R	RW1-2600-R	RW1-2500-R
10.5'	RW1-2000-S	RW1-2000WB-S	RW1-2600-S	RW1-2500-S
11'	RW1-2000-T	RW1-2000WB-T	RW1-2600-T	RW1-2500-T
12'	RW1-2000-U	RW1-2000WB-U	RW1-2600-U	RW1-2500-U
13'	RW1-2000-V	RW1-2000WB-V	RW1-2600-V	RW1-2500-V
14'	RW1-2000-W	RW1-2000WB-W	RW1-2600-W	RW1-2500-W
15'	RW1-2000-Y	RW1-2000WB-Y	RW1-2600-Y	RW1-2500-Y

3.0 – WIRE BRAKE OPTION

3.1 WIRE BRAKE REPLACEMENT

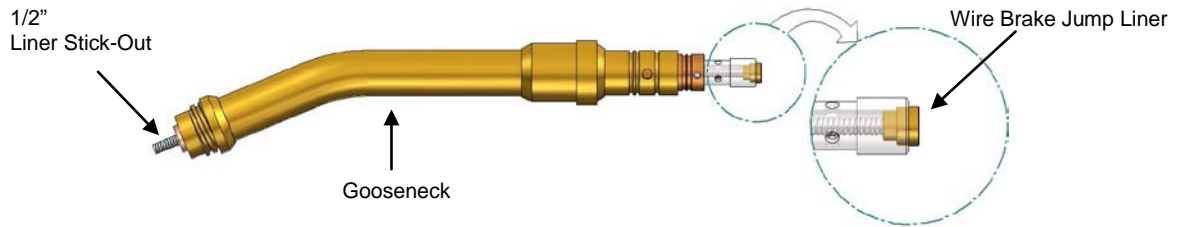
- Remove the gooseneck, liner and consumables.
- Inspect the jump liner for damage and replace if required.
- Remove air line connected to the wire brake.
- Unthread the existing wire brake from the gun housing.
- Remove the wire guide and replace if necessary.
- Using the 450-17 wire brake installation tool, replace the wire guide into the housing of the gun.
- While holding the wire guide into position, thread the wire brake into the housing until hand-tight.
- Reposition the air fitting and replace the hose.
- Add the gooseneck, jump liner and consumables to the gun housing and be sure to install to the proper torque specifications.



3.2 QUICK LOAD™ LINER INSTALLATION FOR TOUGH GUN ROBOTIC WATER-COOLED MIG GUN (600 AMP) WITH WIRE BRAKE

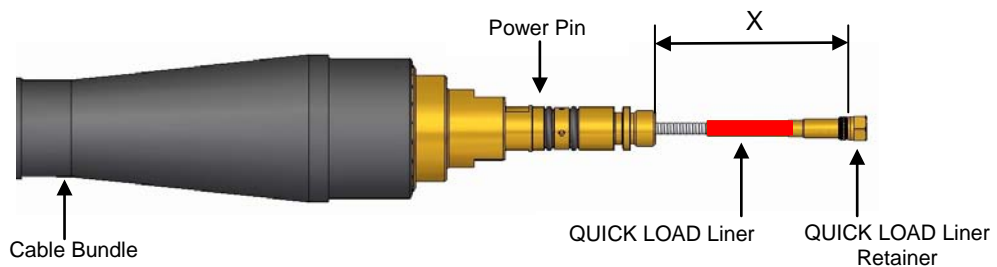
STEP #1

- Remove the consumables from the gooseneck.
- At the rear of the gooseneck, insert wire brake jump liner (495-19-XXX).
- Push the jump liner forward until it mates with the back end of the gooseneck – at the front, cut to a 0.5" (12 to 13 mm) stick-out.



STEP #2

- Install the QUICK LOAD Liner Retainer (415-26) onto the rear of the liner.
- Insert the QUICK LOAD Liner through the rear of the power pin until it stops.
- Measure from end of power pin to liner retainer – record the measurement "X".
- Remove the QUICK LOAD Liner from the gun.



STEP #3

- At the front of the liner, use the recorded measurement "X" and cut the liner to size.
- Now the liner is ready for installation.
- Insert liner through the rear of the power pin and thread the retainer into the power pin, or add the liner cap (depending on type of power pin).



4.0 – AMPERAGE RATINGS

MODEL	60% DUTY CYCLE - MIXED GASES OR 100% DUTY CYCLE - CO ₂
600 amp	600 amp

NOTE: Ratings are based on tests that comply with IEC 60974-7 standards.

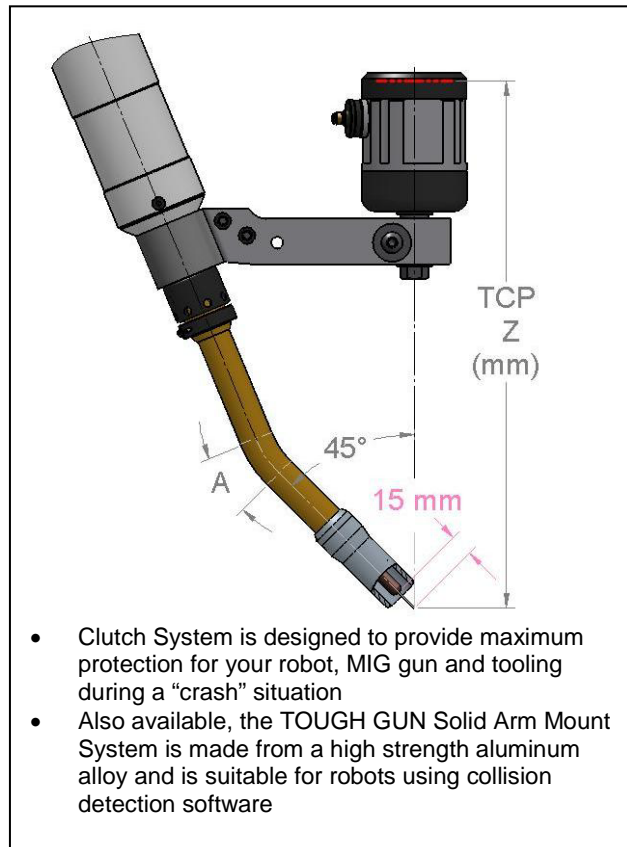
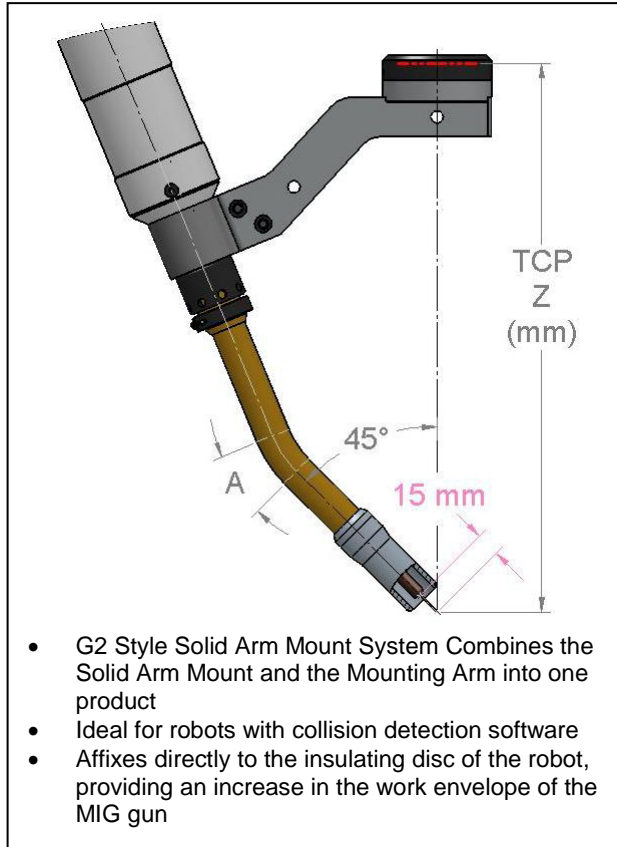
5.0 – ORDERING INFORMATION

STEP A: Build your custom TOUGH GUN™ Water-Cooled Robotic MIG Gun using this chart:

WC Robotic (600 amp)	1	2	3	4	5	6	7	8	9	10	11	12
	Class	Type	Gen	Amps	Neck	Opt 1	Opt 2	Cable Length	Nozzle	Tip Type	Wire Size	Power Pin
	R	W	1	6								

Contact Tregaskiss Customer Service or visit www.tregaskiss.com/600RWC for a complete list of available options to fill in the 12 digit part number above.

STEP B: Choose Mounting System (sold separately).



STEP C: Choose Insulating Disc (sold separately).

For STEPS B and C, contact Tregaskiss Customer Service or visit www.tregaskiss.com/600RWC for a complete list of available options.



For Technical Support:

Canada & U.S.A. Phone: 1-877-737-3111

International Phone: +1-519-737-3000

Email: techservices@tregaskiss.com

www.tregaskiss.com

Distributed by:

05/11 REV C

M081