AUTOMATION



www.tregaskiss.com

TOUGH GUN

# OVER 20 YEARS TOUGH

With over 20 years experience specializing in robotic MIG welding solutions, Tregaskiss engineers its TOUGH GUN™ welding products to ensure they are robust, resilient and repeatable in the TOUGHest automation applications of high volume production environments.

Tregaskiss set the bar with industry firsts such as built-to-order MIG guns, high-performance welding consumables, keyed alignment for robotic MIG gun systems, and other innovations that have become expected by customers and copied by the competition. More recent advances such as the front-loading QUICK LOAD™ Liner AutoLength™ System, SURE START™ Contact Tips and quick-change Low-Stress Robotic (LSR) Unicables continue to address customer needs by providing increased uptime, ease of maintenance and maximizing throughput.

Utilizing a state-of-the-art R&D facility, Tregaskiss ensures the precision and reliability of all our products. Tregaskiss has the ability to react quickly to your needs with engineering, technical support and service, and will strive to continue to be our customers' #1 choice.



## TREGASKISS.COM

For immediate access to the most up-to-date information, visit us online!

- Build your TOUGH GUN Robotic MIG Gun online at Tregaskiss.com/ConfigureMyGun
- Locate your nearest Authorized Tregaskiss Distributor
- Download product literature and technical documentation in PDF format

Have a question? Email us at info@tregaskiss.com

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NEW!! See page 17 for our expanded Consumables Reference Chart foldout!

## TOUGH GUN CA3 ROBOTIC AIR-COOLED MIG GUNS

Designed for high-volume production environments, fully configurable TOUGH GUN™ CA3 Robotic Air-Cooled MIG Guns are engineered for precision, durability, accuracy, repeatability, minimal downtime and fast and easy maintenance.

The TOUGH GUN CA3 Robotic Air-Cooled MIG Gun combines the most valuable product features of our TOUGH GUN G1 and G2 Series platforms, along with performance improvements in our unicable technology that extends service life.

### **FEATURES & BENEFITS**

- Replaceable conventional unicable design offers extended service life and ease of serviceability
- · New dual layer cable outer jacket, re-engineered cable guide and increased copper content contribute to extended service life
- · Re-engineered neck clamp improves durability and consistency of clamping force
- · Additional standard necks and mounting arms expand the tool center point options and variety of working envelopes
- · Replacement for TOUGH GUN G1 Series
- Clutch and Solid Mount models available

## THE CONSUMABLE ADVANTAGE

- Innovative TOUGH LOCK™ Consumables provide the improved performance and reliability you need to maximize production and minimize downtime (see page 17 for more information)
- Compatible with TOUGH ACCESS™ Consumables for even greater accessibility (see page 16 for more information)
- QUICK LOAD™ Liners require less than half the time and effort to replace compared to conventional liners (see page 18 for more information)



**CONFIGURE THIS PRODUCT ONLINE** at Tregaskiss.com/ConfigureMyGun or see page 4 for our hard copy configurator

 The QUICK LOAD Liner AutoLength™ System minimizes downtime, wire feeding and quality issues commonly associated with short liner length (see page 20 for more information)

#### **AVAILABLE OPTIONS**

- Air Blast
- Wire Brake
- TOUGH GUN I.C.E.™ Technology (see page 10 for more information)

#### **AMPERAGE RATINGS\***

• 100%: 385 amps with Mixed Gases

\*Gun performance unchanged. Ratings are based on tests that comply with new 2013 IEC 60974-7 standards.

#### WEBSITE QUICK LINK:

Tregaskiss.com/CA3

## TOUGH GUN ROBOTIC PERIPHERALS

### TOUGH GUN CLAMPS AND MOUNTING ARMS

TOUGH GUN™ Clamps and Mounting Arms are made of tough yet resilient aluminum. These products are engineered to provide a robust and durable connection for the TOUGH GUN CA3 Robotic Air-Cooled MIG Gun.



The TOUGH GUN Clutch Clamp triggers an emergency stop in the event of a robotic collision and its new compact design allows for a larger working envelope. The TOUGH GUN Solid Mount Clamp is available for clutchless models, offering the

same increased working envelope.

For precision and repeatability, the TOUGH GUN Mounting Arm features a positive-stop keyway that locates the key on the front housing body in the same position every time when components, or the entire MIG gun, is replaced.



#### TOUGH GUN INSULATING DISCS

TOUGH GUN Insulating Discs help protect your investment by insulating robots and their controllers from the weld currents. Discs are available with different bolt patterns for attaching TOUGH GUN Robotic MIG Guns to various brands of robots.

## **LEGACY TOUGH GUN CLUTCH**

Compatible with legacy TOUGH GUN G1 Series MIG Guns, the original TOUGH GUN Clutch is designed to e-stop your robot with a deflection of only 1° in the event of a robotic collision.



## **LEGACY TOUGH GUN SOLID ARM MOUNT**

Made of high-strength aluminum, the TOUGH GUN Solid Arm Mount can replace a clutch on legacy TOUGH GUN G1 Series systems using collision detection software.



### **TOUGH GUN NECK CHECKING FIXTURES**

For applications where verification of tooling is a requirement, the TOUGH GUN Neck Checking Fixture provides the opportunity to verify the accuracy of the neck to the intended tool center point (TCP). Further, an adjustment handle is provided to help implement minor adjustments if required.

- · Accommodates a wide variety of standard necks
- Special kits are available for customized Tregaskiss™ Necks



# TOUGH GUN CA3 ROBOTIC AIR-COOLED MIG GUN CONFIGURATOR

Fully configurable, TOUGH GUN™ CA3 Robotic Air-Cooled MIG Guns are engineered for precision, durability, accuracy and repeatability and can withstand even the harshest welding environments.

## **GUN STYLES** CABLE STYLE DIGIT Clutch Solid Mount\*

OPTIONS		
CABLE STYLE	DIGIT	
No Option	A	
Wire Brake	В	
Air Blast	C	
Wire Brake + Air Blast	E	

THE RESIDENCE OF THE PARTY OF T	CONTACT TIP	RETAINING HEAD	
DESCRIPTION	SERIES NUMBER	PART NUMBER	DIGIT
TOUGH LOCK** Standard Duty (SD)	403-14-XX	404-18	Z
TOUGH LOCK Tapered Standard Duty (SD)	403-12-XX	404-18	Y
TOUGH LOCK Heavy Duty (HD) for Slip-On Nozzles	403-20-XX	404-32	1
TOUGH LOCK Extended Life Heavy Duty (EXHD) for Slip-On Nozzles	403-27-XXX	404-32	2
TOUGH LOCK Heavy Duty (HD) for Thread-On Nozzles	403-20-XX	404-52	7
TOUGH LOCK Extended Life Heavy Duty (EXHD) for Thread-On Nozzles	403-27-XX	404-52	8
TOUGH ACCESS™	403-12-XX	404-54	3
Standard Duty (SD)	403-14-XX	404-54	4
TOUGH ACCESS	403-20-XX	404-50	9
Heavy Duty (HD)	403-27-XX	404-50	X
Heavy Duty (HD) Diffuser	403-1-XX	404-1	5
Heavy Duty (HD) Retaining Head	403-1-XX	404-3	6

NECKS				
PART NUMBER	DESCRIPTION	ANGLE	DIGIT	
405-22QC	Air-Cooled, Short Length	22	Α	
405-180QC	Air-Cooled, Short Length	180	C	
405-22QCL	Air-Cooled, Medium Length	22	D	
405-45QCL	Air-Cooled, Medium Length	45	E	
405-45QCL1	Air-Cooled, Long Length	45	F	
590-22-XXXX	TOUGH GUN I.C.E., Short Length	22	Н	
590-180-XXXX	TOUGH GUN I.C.E., Short Length	180	K	
590-22L-XXXX	TOUGH GUN I.C.E., Medium Length	22	L	
590-45L-XXXX	TOUGH GUN I.C.E., Medium Length	45	М	
590-45L1-XXXX	TOUGH GUN I.C.E., Long Length	45	N	

\*Control cable option not available for solid mount models

For use with Retaining Head/Contact Tip options 1, 2, 5, 6 and Z

PART NUMBER	TYPE	DESCRIPTION	MATERIAL	0.D.	DIGIT
401-6-62	HD	5/8" Bore, 1/8" Recess - Long Taper	Copper	1.062"	Α
401-5-62	HD	5/8" Bore, 1/4" Recess - Long Taper	Copper	1.062"	В
401-6-50	HD	1/2" Bore, 1/8" Recess - Long Taper	Copper	1.062"	C
401-81-62	HD	5/8" Bore, 1/8" Stick Out - Long Taper	Copper	1.062"	D
401-7-62	HD	5/8" Bore, 1/4" Recess	Brass	1.106"	E
401-7-75	HD	3/4" Bore, 1/4" Recess	Brass	1.106"	F
401-8-62	SD	5/8" Bore, 1/8" Stick Out - Short Taper	Copper	0.938"	G
401-42-50	Bottleneck	1/2" Bore, 1/8" Recess	Brass	0.938"	Н
401-48-50	Bottleneck	1/2" Bore, 1/8" Stick Out	Brass	0.938"	J
401-48-62	Bottleneck	5/8" Bore, Flush Tip	Copper	1.062"	K
401-44-50	Bottleneck	1/2" Bore, 1/4" Stick Out	Brass	0.938"	L
401-49-50	Bottleneck	1/2" Bore, Flush Tip	Brass	0.938"	M
401-71-62	HD	5/8" Bore, 1/8" Recess - Long Taper (Straight Bore)	Brass	1.106"	N
401-87-62	HD	5/8" Bore, 1/8" Stick Out - Long Taper	Brass	1.062"	P
401-91-62	HD	5/8" Bore, 1/8" Stick Out - Long Taper (Straight Bore)	Brass	1.106"	R
401-72-62	HD	5/8" Bore, 1/8" Recess	Brass	1.062"	S
401-51-62	Bottleneck	5/8" Bore, Flush Tip	Brass	1.062"	T

<sup>\*\*</sup>XX = wire size

<sup>\*\*\*</sup>Wire size option determines contact tip, liner type and liner size

<sup>^</sup>AutoLength™ Pin compatible only with OUICK LOAD™ Liner For wire sizes between 0.030" and 0.045", X="8" For wire sizes between 0.052" and 3/32", X="9" (See page 20 for more information about the QUICK LOAD™ Liner AutoLength™ System)

## CABLE LENGTHS

LENGTH (FT)	DIGIT
3.0	Α
3.5	В
4.0	C
4.5	D
5.0	E
5.5	F
6.0	G
6.5	Н
7.0	J
7.5	K
8.0	L
8.5	M
9.0	N
9.5	P
10	R
12	S
15	Т

CONTROL CABLES					
PART NUMBER	DESCRIPTION	DIGIT			
N/A	No Cable	0			
519-2	Bare End - 5 meter	1			
519-1	Bare End - 2 meter	2			
519-4	18" 4-Pin Amp CPC Series Connector (Motoman®/Miller®)	3			
519-6	24" 3-Pin Amphenol® 97 Series Connector	4			
519-9	18" 12-Pin Burndy® UTG Series Connector (ABB®)	5			
519-10	24" 5-Pin Mini Plug	6			

For use with Retaining Head/Contact Tip options 7 and 8

THREAD-ON NOZZLES					
PART NUMBER	TYPE	DESCRIPTION	MATERIAL	0.D.	DIGIT
401-8-62BRT	SD	5/8" Bore, 1/8" Stick Out - Short Taper	Brass	0.938"	А
401-47-51	SD	1/2" Bore, 1/8" Recess - Bottleneck	Copper	0.938"	В
401-48-50CT	SD	1/2" Bore, 1/8" Stick Out - Bottleneck	Copper	0.938"	C
401-14-62	HD	5/8" Bore, 1/8" Recess - Short Taper	Copper	1.062"	D
401-18-62	SD	5/8" Bore, 1/8" Stick Out - Short Taper	Copper	0.938"	E
401-41-62	HD	5/8" Bore, 1/8" Stick Out - Short Taper	Brass	1.062"	F
401-43-62	SD	5/8" Bore, 1/8" Recess - Short Taper	Copper	0.938"	G
401-52-62	HD	5/8" Bore, 1/4" Recess - Short Taper	Copper	1.062"	Н
401-41-75	HD	5/8" Bore, 1/8" Recess - Short Taper	Brass	1.106"	J
401-53-62	HD	5/8" Bore, 1/8" Stick Out - Bottleneck	Copper	1.062"	K
401-20-62	HD	5/8" Bore, 1/8" Stick Out - Short Taper	Copper	1.062"	L

For use with Retaining Head/Contact Tip options 3 and 4

## TOUGH ACCESS™ STANDARD DUTY (SD) NOZZLES

PART NUMBER	DESCRIPTION	MATERIAL	0.D.	DIGIT
401-54-50	1/2" Bore, 1/8" Recess - Bottleneck	Copper	0.850"	Α
401-55-50	1/2" Bore, Flush Tip - Bottleneck	Copper	0.850"	В
401-56-50	1/2" Bore, 1/8" Stick Out - Bottleneck	Copper	0.850"	С
501-57-50	1/8" Bore, 1/4" Stick Out - Bottleneck	Copper	0.850"	D

WIRE SIZES***				
WIRE SIZE	LINER TYPE	DIGIT		
0.030" (0.8 mm)	QUICK LOAD™ Liner	В		
0.035" (0.9 mm)	QUICK LOAD Liner	C		
0.040" (1.0 mm)	QUICK LOAD Liner	D		
0.045" (1.2 mm)	QUICK LOAD Liner	E		
3/64" (1.2 mm)	QUICK LOAD Liner	F		
0.052" (1.3 mm)	QUICK LOAD Liner	G		
0.055" (1.4 mm)	QUICK LOAD Liner	Н		
1/16" (1.6 mm)	QUICK LOAD Liner	J		
0.070" (1.8 mm)	Conventional	K		
0.078" (2.0 mm)	Conventional	L		
3/32" (2.4 mm)	Conventional	M		
0.035" (0.9 mm)	Aluminum	R		
3/64" (1.2 mm)	Aluminum	S		
1/16" (1.6 mm)	Aluminum	T		
0.045" (1.2 mm)	Aluminum	U		
0.055" (1.4 mm)	Aluminum	V		

FEEDER BRAND	PART NUMBER	DIGIT		
Bernard™	426	В		
Euro	425-20E	E		
Fronius® (North America Style)	214-17	F		
L-Tec® Euro	425E	C		
Lincoln (Short)	214-40	S		
Lincoln® (Short Swivel)	214-7	L		
Miller® (Short Robotic)	214-1	M		
OTC Daihen®	214-39	D		
Panasonic® (Short)	214-30	P		
Tweco #4	214	T		
Tweco #5	214-12	W		
Tweco® #5 (External Gas Line)	214-18	R		

AUTOLENGTH™ PINS°				
FEEDER BRAND	PART NUMBER	DIGIT		
Euro	425-X20E	5		
Fronius® (North America Style)	214-X17	7		
Lincoln® (Short)	214-X40	2		
Miller® (Short Robotic)	214-X1	4		
OTC Daihen®	214-X39	8		
Panasonic® (Short)	214-X30	6		
Tweco® #4	214-X0	1		
Tweco #5	214-X12	3		

For use with Retaining Head/Contact Tip options 3, 4, 9 and  $\it X$ 

PART NUMBER	DESCRIPTION	MATERIAL	0.D.	DIGIT
401-54-62	5/8" Bore, 1/8" Recess - Straight Bore	Copper	0.850"	E
401-55-62	5/8" Bore, Flush Tip - Straight Bore	Copper	0.850"	F
401-56-62	5/8" Bore, 1/8" Stick Out - Straight Bore	Copper	0.850"	G
401-57-62	5/8" Bore, 1/4" Stick Out - Straight Bore	Copper	0.850"	Н

## **TOUGH GUN TA3 ROBOTIC AIR-COOLED MIG GUNS**

TOUGH GUN™ TA3 Robotic Air-Cooled MIG Guns were designed with a unique and durable Low-Stress Robotic (LSR) Unicable exclusive to Tregaskiss that feeds through the arm of today's newer style through-arm robots and provides outstanding precision and reliability.

The TOUGH GUN TA3 Robotic Air-Cooled MIG Gun combines the most valuable product options of our TOUGH GUN ThruArm G1 and G2 Series platforms, along with new features that provide increased durability.

These high-performance MIG welding guns are available as a complete package – from the power pin to the contact tip – for clutch and solid mount systems, including Motoman®, FANUC®, ABB®, KUKA®, OTC Daihen®, COMAU® and Panasonic®.

### **FEATURES & BENEFITS**

- Re-engineered neck clamp improves durability and consistency of clamping force
- Additional standard necks expand the tool center point options and variety of working envelopes
- · Direct replacement for TOUGH GUN ThruArm G1 Series
- Features a precision-engineered keyway system for accurate alignment and quick replacement

## THE CONSUMABLE ADVANTAGE

- Innovative TOUGH LOCK™ Consumables provide the improved performance and reliability you need to maximize production and minimize downtime (see page 17 for more information)
- Compatible with TOUGH ACCESS<sup>™</sup> Consumables for even greater accessibility (see page 16 for more information)
- QUICK LOAD™ Liners require less than half the time and effort to replace compared to conventional liners (see page 18 for more information)



 The QUICK LOAD Liner AutoLength™ System minimizes downtime, wire feeding and quality issues commonly associated with short liner length (see page 20 for more information)

## **AVAILABLE OPTIONS**

- Air Blast
- · Wire Brake
- TOUGH GUN I.C.E. Technology (see page 10 for more information) is available for select models

### **AMPERAGE RATINGS\***

. 100%: 350 amps with Mixed Gases

\*Gun performance unchanged. Ratings are based on tests that comply with new 2013 IEC 60074-7 standards

## WEBSITE QUICK LINK:

Tregaskiss.com/TA3

# TOUGH GUN LOW-STRESS ROBOTIC (LSR) UNICABLES

TOUGH GUN Low-Stress Robotic (LSR) Unicables from Tregaskiss are the core feature of the TOUGH GUN ThruArm Series Robotic MIG Guns, including our new TOUGH GUN TA3 Robotic Air-Cooled MIG Guns.

TOUGH GUN LSR Unicables incorporate unique features to prevent production downtime. Unlike conventional-style unicables, this product allows for stress-free rotation. It includes a rotating power connection and a protective conduit to shield the unicable components from harsh welding environments.

## STRESS-RELIEVING FEATURES

- · Unique design allows for stress-free rotation
- Limits the influence of torsion and extends the usable life of the unicable

## **EXTENDED WARRANTY**

 Tregaskiss guarantees its LSR Unicables with a 2 year limited warranty

WEBSITE QUICK LINK:

Tregaskiss.com/LSR



# TOUGH GUN TAS ROBOTIC AIR-COOLED MIG GUN CONFIGURATOR

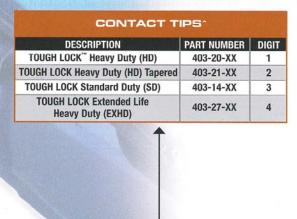
Ready to take on any challenge, TOUGH GUN™ TA3 Robotic Air-Cooled MIG Guns minimize downtime and improve welding performance on today's through-arm robotic welding systems.

DESCRIPTION	DIGIT
Clutch	1
Clutch + Air Blast	2
Solid Mount	3
Solid Mount + Air Blast	4
Clutch + Wire Brake	5
Clutch + Air Blast + Wire Brake	6
Solid Mount + Wire Brake	7
Solid Mount + Air Blast + Wire Brake	8

PART NUMBER	DESCRIPTION	ANGLE	DIGIT
405-22QC	Air-Cooled, Short Length	22	А
405-45QC	Air-Cooled, Short Length	45	C
405-22QCL	Air-Cooled, Medium Length	22	В
405-45QCL	Air-Cooled, Medium Length	45	E
405-22QCL1	Air-Cooled, Long Length	22	D
405-45QCL1	Air-Cooled, Long Length	45	G
405-45QCL2	Air-Cooled, Extended Length	45	P
590-22-XXXX***	TOUGH GUN I.C.E., Short Length	22	F
590-45-XXXX***	TOUGH GUN I.C.E., Short Length	45	Н
590-22L-XXXX***	TOUGH GUN I.C.E., Medium Length	22	J
590-45L-XXXX***	TOUGH GUN I.C.E., Medium Length	45	L
590-22L1-XXXX***	TOUGH GUN I.C.E., Long Length	22	K
590-45L1-XXXX***	TOUGH GUN I.C.E., Long Length	45	M
590-45L2-XXXX***	TOUGH GUN I.C.E., Extended Length	45	N

T A 1 M 0 1 2

MAKE	MODEL	OPTION
	EA1400N or SSA2000**	M01
	EA1900N or MA1900**	M02
	EA1400 (XRC)**	M16
Motoman®	EA1900 (XRC)**	M17
	MA3100**	M31
	MA1440	M35
	MA2010	M38
	100iC*	F05
FANUC®	120iC*	F06
	100liC-6L*	F07
	120iC-10L*	F08
ABB <sup>®</sup>	IRB1600ID*	A24
	IRB2600ID 15/1.85*	A28
12 4 5003.00	IRB2600ID 8/2.00*	A29
	AX-V4**	D03
	AX-V4L*	D22
OTC Daihen®	All B4**	D25
	All B4L**	D26
	FD B4**	D36
	KR5 HW**	K23
KUKA®	KR16 L8 HW**	K27
	KR16 HW*	K30
	TB 1800WG3	P34
Panasonic®	TM-1400	P37
	TM-1800	P39
COMAU®	Smart5 Arc6**	C35



WIRE SIZE	DIGIT
0.030" (0.8 mm)	В
0.035" (0.9 mm)	C
0.040" (1.0 mm)	D
0.045" (1.2 mm)	E
3/64" (1.2 mm)	F
0.052" (1.3 mm)	G
5/64" (2.0 mm)	Н
1/16" (1.6 mm)	J

POWER PINS				
FEEDER BRAND	PART NUMBER	DIGIT		
Euro	425-10E	E		
Fronius®	214-41	F		
Lincoln®	214-40	L		
Miller®	214-1	M		
OTC Daihen®	214-39	D		
Panasonic®	214-30	P		
Tweco® #4	214	T		
Tweco #5	214-12	W		

FEEDER BRAND	PART NUMBER	DIGIT	
Fronius®	214-X17	7	
Lincoln® (Short)	214-X40	2	
Miller® (Short Robotic)	214-X1	4	
OTC Daihen®	214-X39	8	
Panasonic® (Short)	214-X30	6	
Tweco® #4	214-X0	1	
Tweco #5	214-X12	3	

NOZZLES					
PART NUMBER	TYPE	DESCRIPTION	MATERIAL	0.D.	DIGIT
401-6-62	HD	5/8" Bore, 1/8" Recess - Long Taper	Copper	1.062"	Α
401-81-62	HD	5/8" Bore, 1/8" Stick Out - Long Taper	Copper	1.062"	В
401-4-62	SD	5/8" Bore, 1/8" Recess - Short Taper	Copper	0.938"	C
401-8-62	SD	5/8" Bore, 1/8" Stick Out - Short Taper	Copper	0.938"	D
401-42-50	Bottleneck	1/2" Bore, 1/4" Stick Out	Brass	0.938"	E
401-48-50	Bottleneck	1/2" Bore, 1/8" Stick Out	Brass	0.938"	F
401-48-62	Bottleneck	5/8" Bore, Flush Tip	Copper	0.938"	G
401-44-50	Bottleneck	1/2" Bore, 1/4" Stick Out	Brass	0.938"	Н
401-49-50	Bottleneck	1/2" Bore, Flush Tip	Brass	0.938"	J
401-71-62	HD	5/8" Bore, 1/8" Recess - Long Taper (Straight Bore)	Brass	1.062"	K
401-87-62	HD	5/8" Bore, 1/8" Stick Out - Long Taper	Brass	1.062"	M
401-44-62	SD	5/8" Bore, 1/4" Stick Out - Short Taper	Copper	0.938"	N
401-91-62	HD	5/8" Bore, 1/8" Stick Out - Long Taper (Straight Bore)	Brass	0.938"	P
401-56-62	HD	5/8" Bore, 1/8" Stick Out - TOUGH ACCESS™	Copper	0.850"	Q
401-54-50	SD	1/2" Bore, 1/8" Recess - TOUGH ACCESS	Copper	0.850"	R
401-42-50C	Bottleneck	1/2" Bore, 1/8" Recess	Copper	0.938"	S
401-51-62	HD	5/8" Bore, Flush Tip - Bottleneck	Brass	1.062"	Т
401-14-62	HD	5/8" Bore, 1/8" Recess - Short Taper (Thread-On)	Copper	1.062"	U
401-41-62	HD	5/8" Bore, 1/8" Stick Out - Short Taper (Thread-On)	Brass	1.062"	٧
401-52-62	HD	5/8" Bore, 1/4" Recess - Short Taper (Thread-On)	Copper	1.062"	W
401-41-75	HD	3/4" Bore, 1/8" Recess - Short Taper (Thread-On)	Brass	1.106"	Х
401-53-62	HD	5/8" Bore, 1/8" Stick Out - Bottleneck (Thread-On)	Copper	1.062"	Υ
401-20-62	HD	5/8" Bore, 1/8" Stick Out - Short Taper (Thread-On)	Copper	1.062"	Z
THE PARTY OF THE PARTY OF	THE RESERVE AND PERSONS ASSESSED.		-	Name and Address of the Owner, where	

\*Solid Mount models only

\*\*Clutch Mount models only

\*\*\*Available for FANUC® and ABB®; Not compatible with TOUGH ACCESS™ Consumables; XXX represents nozzle O.D.

 $^{\wedge}XX = wire \ size$ 

^^Wire size option determines contact tip, liner type and liner size

^^For wire sizes between 0.030" and 0.045", X="8";
For wire sizes between 0.052" and 3/32", X="9" (See
page 20 for more information about the QUICK LOAD™
Liner AutoLength™ System)

## TOUGH GUN I.C.E. TECHNOLOGY

TOUGH GUN I.C.E.™ Technology boosts the duty cycle of our already highly robust air-cooled TOUGH GUN™ MIG Guns by providing water-cooled benefits through our I.C.E. (Integrated Cooling Enhancer) component. This component circulates water at the nozzle, keeping front-end consumables running cooler and lasting longer.

TOUGH GUN I.C.E. Technology is an option for TOUGH GUN Robotic and Automatic Air-Cooled MIG Guns, resulting in a hybrid air- and water-cooled MIG gun solution.

#### MAINTENANCE MADE EASY

- · Air-cooled unicable runs independently of water lines
- · All water-cooling components are external
- · Shut-off valves are located at the I.C.E. connections

#### COOLING

- Existing TOUGH GUN Robotic and Automatic Air-Cooled MIG Guns can be upgraded with TOUGH GUN I.C.E. Technology
- TOUGH GUN I.C.E. Technology boosts gun rating by 50 amps
- If water-cooling capability is lost, the original air-cooled product remains operational
- Cooler running front-end parts extend the life of consumables

#### **COMPATIBILITY & CONVENIENCE**

- Compatible with the TOUGH GUN TT3 Reamer (see page 12 for more information)
- Compatible with TOUGH LOCK™ Consumables (see page 17 for more information)

### WEBSITE QUICK LINK:

Tregaskiss.com/ICE



## TOUGH GUN AUTOMATIC MIG GUNS

Designed for fixed tooling applications, all models of our TOUGH GUN™ Automatic MIG Guns (also known as TOUGH GUN Machine Torches) feature a strong, lightweight housing and a spring-guard strain relief to prevent kinking and abrasion. TOUGH GUN Automatic MIG Guns are available in several air- and water-cooled models, and air-cooled models are compatible with TOUGH GUN I.C.E.™ Technology which boosts the duty cycle by 50 amps (see page 10 for more information).

### THE CONSUMABLE ADVANTAGE

 Innovative TOUGH LOCK™ Consumables provide the improved performance and reliability you need to maximize production and minimize costly downtime (see page 17 for more information).

## **AMPERAGE RATINGS\***

- 500 amp Air-Cooled 100%: 300 amps with Mixed Gases
- 600 amp Air-Cooled 100%: 385 amps with Mixed Gases
- 450 amp Water-Cooled 100%: 450 amps with Mixed Gases
- 600 amp Water-Cooled 100%: 600 amps with Mixed Gases

\*Gun performance unchanged. Ratings are based on tests that comply with new 2013 IEC 60974-7 standards.

### WEBSITE QUICK LINK:

Tregaskiss.com/Automatic



## TOUGH GUN AUTO HEADS

The TOUGH GUN Auto Head is designed for direct connection to a wire feeder in automatic applications, and incorporates the same robust features as our popular TOUGH GUN Automatic MIG Guns. TOUGH GUN Auto Heads are available in air-cooled models and models enhanced with TOUGH GUN I.C.E. Technology.

## **TOUGH GUN TT3 REAMER**

# MORE RELIABLE & EASIER TO MAINTAIN THAN EVER BEFORE!

Introducing the next evolution of the TOUGH GUN™ Reamer from Tregaskiss. Improvements to the sprayer system, new plug and play replacement parts, and simplified internal wiring make this new reamer more reliable and faster and easier to maintain than ever before!

The TOUGH GUN TT3 Reamer is TOUGH on spatter and operates reliably in even the harshest welding environments. Automating spatter removal will help to extend the life of your robotic MIG guns and consumables, benefitting both your bottom line and your production uptime and throughput.

## SAFE AND ACCURATE SETUP

- External setup switches allow independent operation of the sprayer, clamp and spindle during manual setup
- Cutter blade lifts into place but does not spin when activated by the spindle setup switch

## **ENHANCED RELIABILITY**

- · All pneumatic valves are internally mounted
- · External setup switches are protected and seals protect points of entry

## WHAT'S NEW?

- Sprayer reservoir is located on opposite side of the unit as an additional safeguard against overfilling / leakage onto internal electronics
- Plug and play replacement parts with smart-keyed connections for ease of assembly and quick in-cell troubleshooting
- Simplification of internal wiring via a centralized terminal strip
- · Sprayer comes standard

### WEBSITE QUICK LINK:

Tregaskiss.com/ReamerTT3

Please see the TOUGH GUN TT3 Reamer Technical Guide (M086) at Tregaskiss.com/manuals for a complete list of parts and ordering information.



Rated Voltage	24 VDC		
Operating Voltage	±10% of rated voltage		
Power Consumption	Max. wattage in operation 5.3 W		
Air Requirements (minimum)	80 to 100 PSI (5.0 to 7.0 bar) at 16 CFM (7.5 L/s)		
Air Motor (at min. air requirement)	Stall Torque at 80 psi (5.5 bar) = 83 inlbs. (9.4Nm		
Weight	≃ 50 lbs. (23 kg)*		
Product Dimensions (L x W x H)	13.5" x 11.25" x 21" (343 x 286 x 534 mm)*		
<b>Dedicated Motor Lubricator</b>	Optional*		
Wire Cutter	Optional*		
Nozzle Detection Plate	Optional*		
Lower Shroud Covers	Optional*		
Filter / Regulator	Optional*		
TOUGH GUN Reamer Adjustable Stand	Optional*		
Spray Containment	Optional*		
Compatible With	TOUGH GARD™ Multi-Feed System (see page 15 for more information)		

<sup>\*</sup>The optional features are sold separately or added as options when ordering, and can change the weight and physical dimensions of the product.

## LUBRICATOR

This dedicated motor lubricator maximizes performance and protects your TOUGH GUN™ Reamer investment by extending the life of the motor, and is highly recommended for use in damp and moisture rich environments. Factory set for optimal pneumatic oil lubrication, the lubricator is available as an option when configuring your new unit\* or is retrofittable to your existing TOUGH GUN TT3 Reamer.

\*NEW! Ordering your new TOUGH GUN Reamer with the lubricator option increases your warranty from 1 year to 3 years.



## FILTER / REGULATOR



The Filter/Regulator unit from Tregaskiss is another recommended accessory that helps extend the life of your TOUGH GUN Reamer. The Filter cleans the air supply to the reamer and restricts debris from reaching the motor, keeping it uncontaminated and ensuring maximum performance and longer life, while the regulator works to ensure optimal air pressure is achieved at the unit.

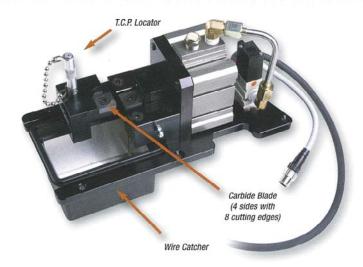
## SPRAY CONTAINMENT

The innovative Spray Containment unit from Tregaskiss helps prevent air contamination by catching anti-spatter overspray in its sealed basin, improving the air quality of the working environment and maintaining the cleanliness of the weld cell. The collected anti-spatter is then channeled away from the Spray Containment unit to a convenient point of disposal which can be shared among several Spray Containment units via an optional manifold.



## TOUGH GUN TT3 REAMER

## **TOUGH GUN WIRE CUTTER**



The TOUGH GUN™ Wire Cutter removes the ball-end of the welding wire to provide smooth arc starts and consistent wire stick-out. The TOUGH GUN Wire Cutter easily cuts a variety of wire types from stainless steel to aluminum to flux-core in wire sizes up to 1/16".

Our unique carbide cutter blade design provides eight indexable cutting surfaces that ensure low cost operation over the long haul and are precision-ground to outlast other wire cutters.

The TOUGH GUN Wire Cutter is the perfect complement to your TOUGH GUN TT3 Reamer and mounts directly atop the unit. It can also be easily mounted in a remote location which allows it to be used with virtually any robotic welding equipment.

## REPLACEMENT TREGASKISS CUTTER BLADES

## IMPROVED PERFORMANCE. COMPETITIVE NEW PRICING.

Tregaskiss is pleased to announce improvements to the design of our cutter blades for use with the TOUGH GUN TT3 Reamer Robotic Nozzle Cleaning Stations.

These new cutter blades are engineered from harder, stronger material for enhanced performance and durability.

### **FEATURES & BENEFITS**

- Twin flute design for improved cutting and cleaning performance
- · Harder material with stronger cutting edge
- · Increased resistance against breaking, snapping, chipping or cracking
- Improved dimensional accuracy
- · New extremely competitive pricing
- Designed to be the perfect fit for TOUGH LOCK™ Consumables

## WEBSITE QUICK LINK:

Tregaskiss.com/CutterBlades

## TREGASKISS V-BLOCKS



Compatible with Tregaskiss™ and most competitive consumables, these 4-sided V-Blocks ensure your cutter is concentric with your consumables and your nozzle bore to guarantee the most effective ream. Choose from five available V-Block options when configuring your new TOUGH GUN TT3 Reamer.



## TOUGH GARD ANTI-SPATTER LIQUID

TOUGH GARD™ Anti-Spatter Liquid was developed to address the performance requirements of metal fabricators. TOUGH GARD Anti-Spatter Liquid won't harm machinery, it cleans up easily with no residue, it's safe to use and it's safe for the environment. Helping prevent spatter adhesion and extending the life of consumables, TOUGH GARD Anti-Spatter Liquid reduces downtime thus lowering operating and maintenance costs.

## SUPERIOR PERFORMANCE

Tregaskiss R&D studies\* show that **TOUGH GARD Anti-Spatter Liquid outperforms** other brands on the market (see Figure 1).

\*Results based on continuous GMAW - 6 minutes, 0.045" wire, E480S-6, 300A, Ar-CO2 gas mix

## WEBSITE QUICK LINK:

Tregaskiss.com/TOUGHGARD





PART #	PACKAGE SIZES		
TG-101-05	5 U.S. Gal. / 18.92 L		
TG-101-55	55 U.S. Gal. / 208.3 L		
TG-101-01	1 U.S. Gal. / 3.78 L		
TG-101-32SP (Spray Bottle)	25.36 fl. oz. / 750 mL		
TG-101-14S	14 fl. oz. / 414 mL		

## TOUGH GARD MULTI-FEED SYSTEM

are eliminated

The TOUGH GARD Multi-Feed System for antispatter solution can connect up to ten TOUGH GUN TT3 Reamer stations. This system eliminates the need to refill anti-spatter reservoirs on a frequent basis, resulting in lower operating costs, reduced downtime and increased safety.

TG-103-05-2 For 5-Gallon pail (up to 2 nozzle cleaning station	
TG-103-05-10	For 5-Gallon pail (up to 10 nozzle cleaning stations)
TG-103-55-10	For 55-Gallon drum (up to 10 nozzle cleaning stations
HOSE (S	OLD SEPARATELY)
TG-103-50	50' Multi-Feed Hose (UV Rated)
TG-103-100	100' Multi-Feed Hose (UV Rated)
10-100-100	

For replacement parts, see M055 Tech Guide for more information (available online at Tregaskiss.com/manuals).

#### WEBSITE QUICK LINK:

Tregaskiss.com/Multi-Feed



## **TOUGH ACCESS CONSUMABLES**

## **WORRIED ABOUT FITTING IN?**

TOUGH ACCESS™ Consumables from Tregaskiss are our sleekest line of consumables. They allow entry into those hard-to-reach places that would otherwise be inaccessible due to complex fixture or weldment design.

Available in straight bore (5/8") and bottleneck (1/2") style nozzles, these unique consumables are compatible with our TOUGH LOCK™ Contact Tips and existing aluminum armored necks.

#### COMPATIBILITY & CONVENIENCE

- Compatible with existing TOUGH GUN™ Necks and TOUGH LOCK Contact Tips
- Compatible with the TOUGH GUN TT3 Reamer when using the appropriate cutter blade
- Sleek profile nozzles with 0.850" (21.59 mm) outside diameter, available in straight bore and bottleneck styles

## WEBSITE QUICK LINK:

Tregaskiss.com/TOUGHACCESS

Please see the TOUGH ACCESS Consumables Spec Sheet (SPEC TRG-TAC) at Tregaskiss.com/spec for a complete list of part numbers.

## SURESTART CONTACT TIPS

## **REDUCE ARC START FAILURES BY UP TO 50%\***

SURE START™ Contact Tips are designed to reduce arc start failures that can lead to costly downtime and expensive rework in robotic welding applications. According to field trials and R&D lab tests, SURE START Contact Tips reduce arc start failures by up to 50% and help prevent early, unexpected burn backs, and are especially beneficial for applications with a high volume of tacking and short welds using solid wire in Constant Voltage (CV) welding modes.

#### **IMPROVED PERFORMANCE**

- Reduce arc start failures by up to 50%\*
- · Prevent early, unexpected burn backs
- Ideal for applications with a high volume of tacking and short welds using solid wire in CV mode
- · Available for 0.030- to 0.052-inch wire sizes
- Compatible with TOUGH LOCK™ Retaining Heads (see page 17 for more information

## **UNIQUE BLISTER PACKAGING**

- · Offers protection from harmful welding environments
- · Can be easily stocked in facility vending machines
- · Available in packages of 20

## WEBSITE QUICK LINK:

Tregaskiss.com/SURESTART



## TOUGH LOCK CONSUMABLES

NEW!! SEE INSIDE FOR OUR EXPANDED CONSUMABLES REFERENCE CHART

Achieve lower operating costs and increased uptime with TOUGH LOCK™ Consumables from Tregaskiss. This system features our innovative TOUGH LOCK Contact Tips and Retaining Heads.

TOUGH LOCK Contact Tips are precision-machined using a process that tightly controls tip tolerances. TOUGH LOCK Retaining Heads are manufactured with a tapered design at both ends that keep the consumables locked from tip to neck for improved weld consistency and to maximize heat dissipation.

Greater surface area contact between tip, head and neck ensures better

heat dissipation.

Cooler tip temperature

reduces wear and extends tip life.

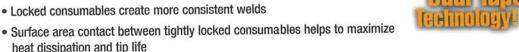
Dual-lead thread design allows for 180° rotation of tip to new wear point for extended tip life.

**Dual Taper Technology creates** a more secure seat, preventing the tip and retaining head from loosening due to vibration.

TOUGH LOCK Consumables with Dual Taper Technology keep consumables running cooler for longer tip life and maximum performance.

## IMPROVED PERFORMANCE

- Locks your gun from contact tip to the neck to prevent loosening due to vibration
- heat dissipation and tip life
- · Easier contact tip removal and replacement when retaining head remains locked to the neck



## **WEBSITE QUICK LINK:**

Tregaskiss.com/TOUGHLOCK

Please see the TOUGH LOCK Consumables and Conversion Series Spec Sheet (SPEC TRG-TLC) at Tregaskiss.com/spec for a complete list of part numbers.

## TOUGH LOCK CONVERSION SERIES

## REDUCE YOUR INVENTORY AND MINIMIZE DOWNTIME TODAY!

Streamline your inventory by standardizing on a single brand of high performance MIG welding consumables. Stocking as few as two new Tregaskiss parts may allow you to remove an entire brand of consumables from your inventory.

## **FEATURES & BENEFITS**

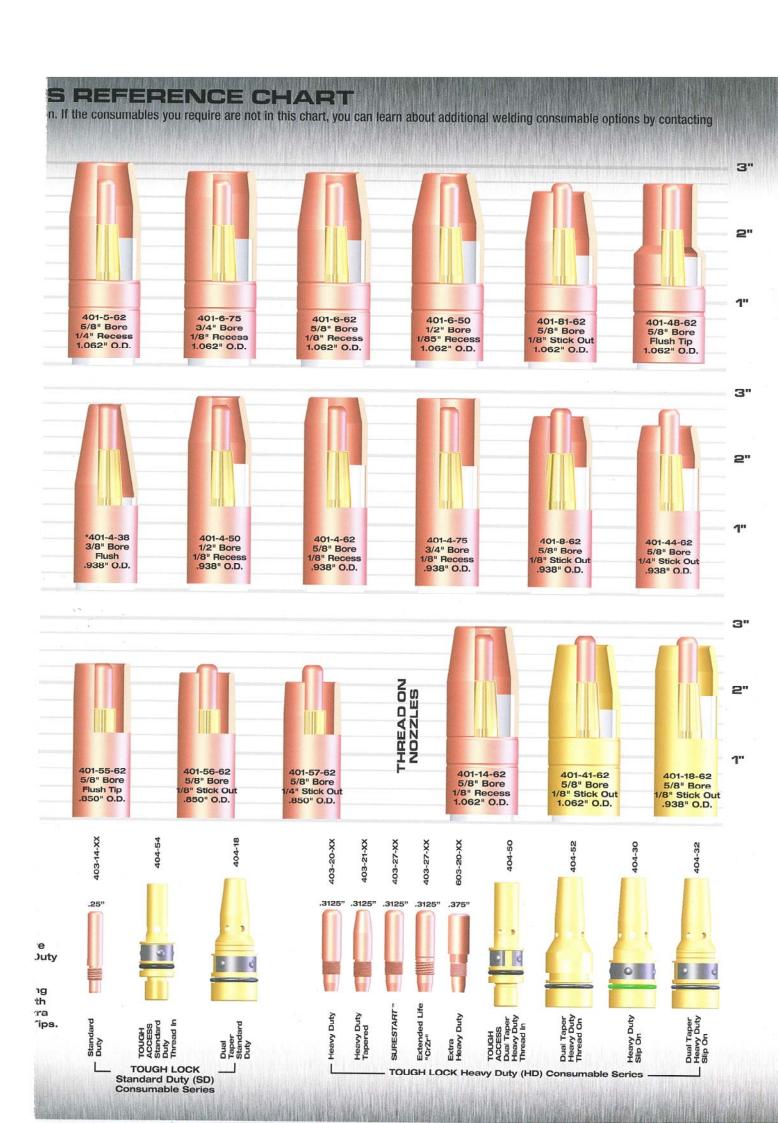
- Use one consumables line on all your MIG guns regardless of brand
- Reduce your inventory
- Enjoy all the features and benefits of the TOUGH LOCK™ Consumable Series
- Available for Bernard<sup>™</sup>, Binzel<sup>®</sup>, Lincoln<sup>®</sup>, and Tweco<sup>®</sup> style MIG guns

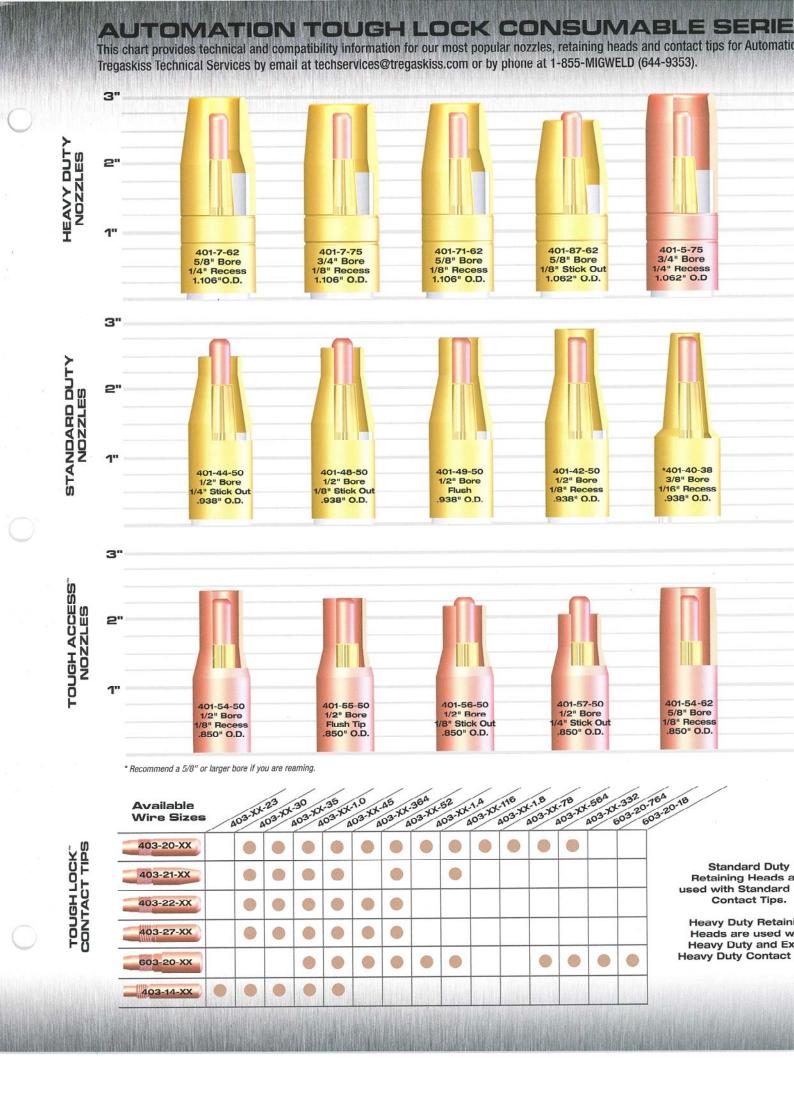
#### WEBSITE QUICK LINK:

Tregaskiss.com/Conversion



Please see the TOUGH LOCK Consumables and Conversion Series Spec Sheet (SPEC TRG-TLC) at Tregaskiss.com/spec for a complete list of part numbers.





## **QUICK LOAD LINERS**

## SAVE MONEY BY REPLACING YOUR LINERS IN HALF THE TIME!

The QUICK LOAD™ Liner System from Tregaskiss loads from the front of the MIG gun and is available in lengths of up to 15 feet for robotic applications. It requires less than half the time and effort for replacement when compared with conventional liners.

## CONVERTING FROM CONVENTIONAL LINERS COULDN'T BE EASIER!

QUICK LOAD Liners include wire sizes from 0.023" to 3/32". Find a complete list of QUICK LOAD Liners below, along with their equivalent Tregaskiss Conventional Liner for easy conversion.

WIRE SIZE	QUICK LOAD LINER	REPLACES CONVENTIONAL LINER	LENGTH (FT)	DESCRIPTION
0.023"	415-23-15Q	415-23-15	15	High Carbon Steel – Round Wound
0.030"	415-30-6Q	415-30-6	6	High Carbon Steel – Round Wound
0.030"	415-30-15Q	415-30-15	15	High Carbon Steel – Round Wound
0.035"-0.045"	415-35-6Q	415-35-6	6	High Carbon Steel – Round Wound
0.035"-0.045"	415-35-10Q	415-35-10	10	High Carbon Steel – Round Wound
0.035"-0.045"	415-35-150	415-35-15	15	High Carbon Steel - Round Wound
0.045"-1/16"	415-116-6Q	415-116-6	6	High Carbon Steel – Round Wound
0.045"-1/16"	415-116-10Q	415-116-10	10	High Carbon Steel – Round Wound
0.045"-1/16"	415-116-15Q	415-116-15	15	High Carbon Steel – Round Wound
1/16"-5/64"	415-564-6Q	415-564-6	6	High Carbon Steel - Round Wound
1/16"-5/64"	415-564-10Q	415-564-10	10	High Carbon Steel – Round Wound
1/16"-5/64"	415-564-15Q	415-564-15	15	High Carbon Steel – Round Wound
0.078"-3/32"	415-332-6Q	415-332-6	6	High Carbon Steel – Flat Wound
0.078"-3/32"	415-332-15Q	415-332-15	15	High Carbon Steel – Flat Wound
	QUICK LOAD L	iner Retainers – Required for Initial In	stallation Only (So	ld Separately)
0.078"-3/32"	415-24	N/A	N/A	QUICK LOAD Liner Retainer*
0.030"-5/64"	415-26	N/A	N/A	QUICK LOAD Liner Retainer*
0.030"-5/64"	415-37	N/A	N/A	QUICK LOAD Liner Retainer**

<sup>\*</sup>Compatible with Tregaskiss TOUGH GUN Robotic and Automatic MIG Guns and Bernard Best of the Best (BTB) Platform Semi-Automatic MIG Guns

<sup>\*\*</sup>Compatible with most Tweco® MIG Guns

### **QUICK INSTALLATION**

• Two-piece system allows replacement to occur through the neck of the MIG gun while it remains attached to the feeder

#### **MAINTENANCE MADE EASY**

- Remove front-end consumables and slide liner over the wire, using it as a guide
- · Ease of installation simplifies routine maintenance
- . No need to cut and waste wire!

### **INCREASED SAFETY**

- · Avoid climbing over tooling or transfer systems to remove MIG gun from wire feeder
- · Change liner from a safe-zone within the robotic work cell during routine pauses in production

#### COMPATIBILITY

- · Available in lengths of up to 15 feet for robotic applications
- Available for TOUGH GUN Robotic and Automatic Air- and Water-Cooled MIG Guns\*
- Compatible with new AutoLength™ Technology (see page 20 for more information)

\*Not recommended for guns equipped with wire brake; Not compatible with the 600 amp TOUGH GUN Robotic Water-Cooled MIG Gun.

## WEBSITE QUICK LINK:

Tregaskiss.com/QUICKLOAD

Please see the QUICK LOAD Liners and AutoLength Pins Spec Sheet (SPEC TRG-QLL) at Tregaskiss.com/spec for a complete list of part numbers.

# CONVENTIONAL LINERS

Tregaskiss™ Conventional Liners for MIG welding guns are made of high carbon music wire for smooth wire feed and long life and are available in lengths of up to 25 feet (7.6 m) for various wire sizes. Liners thread in from the rear of the gun with no need for set screws.

Please see the Tregaskiss Conventional Liners Spec Sheet (SPEC TRG-CVL) at Tregaskiss.com/spec for a complete list of part numbers.





## **QUICK LOAD LINER AUTOLENGTH SYSTEM**

## **NEW TECHNOLOGY!**

The QUICK LOAD™ Liner AutoLength™ System is designed to minimize downtime, wire feeding and quality issues commonly associated with short liner length. This new system is designed specifically for use with QUICK LOAD Liners.

Short liners are a common root cause of poor wire feeding. A short liner does not have a chance of properly seating in the retaining head – often resulting in "bird-nesting" of the welding wire, or premature contact tip failure and wear.

### **HOW IT WORKS**

- Housed inside the power pin, this spring-loaded module applies constant forward pressure on the liner, keeping it seated properly in the retaining head
- · Allows for up to one-inch forgiveness if the liner is too short
- · Accommodates liner movement during welding

### **INCREASED PRODUCTIVITY**

- · Reduces issues caused by incorrect liner length
- . Decreases burn-backs caused by misalignment between the liner and the contact tip
- . Improves wire feedability by enhancing wire alignment with the contact tip

## DESIGNED SPECIFICALLY FOR USE WITH QUICK LOAD LINERS

- Requires less than half the time and effort to replace compared to conventional liners (see page 18 for more information)
- Liner portion feeds from the front No need to cut and waste wire!

## **AUTOLENGTH PIN PART NUMBERS FOR ROBOTIC APPLICATIONS**

WIRE SIZE	FEEDER BRAND	AUTOLENGTH PIN	INTERCHANGEABLE WITH STANDARD POWER PIN
0.030"-0.045"	Tweco® #4	214-80	214
	Lincoln® (Short)	214-840	214-40
	Tweco #5	214-812	214-12
	Miller® (Short Robotic)	214-81	214-1
	Euro	425-820	214-20
	Panasonic® (Short)	214-830	214-30
	Fronius® (North America Style)	214-817	214-17
	Fronius®	214-841	214-41
	OTC Daihen® (Direct Plug)	214-839	214-39
0.052"-3/32"	Tweco #4	214-90	214
	Lincoln® (Short)	214-940	214-40
	Tweco #5	214-912	214-12
	Miller® (Short Robotic)	214-91	214-1
	Euro	425-920	214-20
	Panasonic® (Short)	214-930	214-30
	Fronius® (North America Style)	214-917	214-17
	Fronius®	214-941	214-41
	OTC Daihen® (Direct Plug)	214-939	214-39



Watch this product demonstration at YouTube.com/TregaskissWelds



## WEBSITE QUICK LINK:

Tregaskiss.com/AutoLength

Please see the QUICK LOAD Liners and AutoLength Pins Spec Sheet (SPEC TRG-QLL) at Tregaskiss.com/spec for a complete list of part numbers.

## **ADDITIONAL RESOURCES**

## TREGASKISS.COM

For immediate access to the most up-to-date information, visit us online!

- Locate your nearest Tregaskiss Authorized Distributor
- · Find product literature, technical documentation and troubleshooting information
- Access online CAD Model Request information

#### BERNARDWELDS.COM

Visit BernardWelds.com for semi-automatic MIG welding product information and other valuable semi-automatic welding resources

#### **TECHNICAL SUPPORT RESOURCES**

Tregaskiss.com is always the most reliable source for up-to-date and accurate support materials including:

- Technical Guides and Manuals
- · Spec Sheets and Technical Inserts
- How-To Guides and Videos
- Product Updates
- · Troubleshooting Information
- · Recommended Operating Tips

#### **NEW! GET SOCIAL WITH TREGASKISS**

Check us out on YouTube at YouTube.com/TregaskissWelds, find us on Facebook at Facebook.com/TregaskissWelds, and follow us on LinkedIn at Linkedin.com/company/Tregaskiss and join our online community today!

## AMPERAGE (JOINT eNEWSLETTER WITH BERNARD)

This electronic publication features an assortment of valuable welding and business management information, along with fun, interactive trivia, contests and more! Sign up for your FREE subscription at Tregaskiss.com/Amperage today!

## **TECH CONNECTION PRODUCT NEWS**

Your connection to valuable Tregaskiss product improvements and new product information is published online at Tregaskiss.com/TechConnection

#### ROBOTIC MIG GUN ONLINE CONFIGURATORS

Build your TOUGH GUN™ Robotic MIG Gun online today at Tregaskiss.com/ConfigureMyGun

## HAVE A QUESTION?

Email us at info@tregaskiss.com













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Tregaskiss is an industry leader in the development and manufacture of quality robotic MIG guns, peripherals and welding consumables for high-volume production facilities.

Vision, commitment, and collaboration are pivotal to the success that Tregaskiss has enjoyed with its lineup of durable MIG welding products including TOUGH GUN<sup>TO</sup>

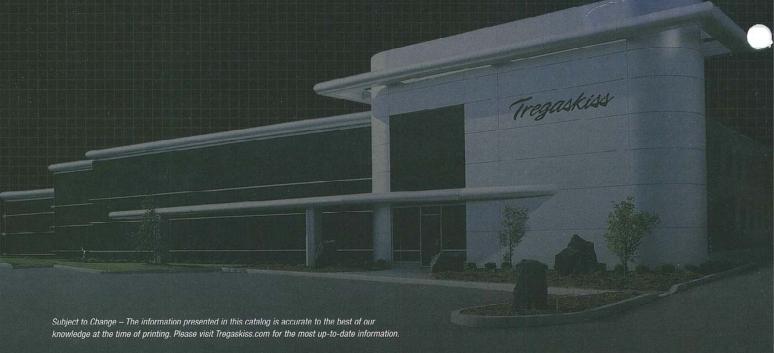
Robotic MIG Guns and Peripherals, TOUGH LOCK<sup>TO</sup>

Consumables, QUICK LOAD<sup>TO</sup> Liners and TOUGH GARD<sup>TO</sup>

Anti-Spatter. Built-to-order with precision and durability in mind, Tregaskiss<sup>TO</sup> products are the TOUGHest available.

Tregaskiss

Through the strength of its people and their dedication to the highest level of products and service, Tregaskiss strives to remain its customers' #1 choice.



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