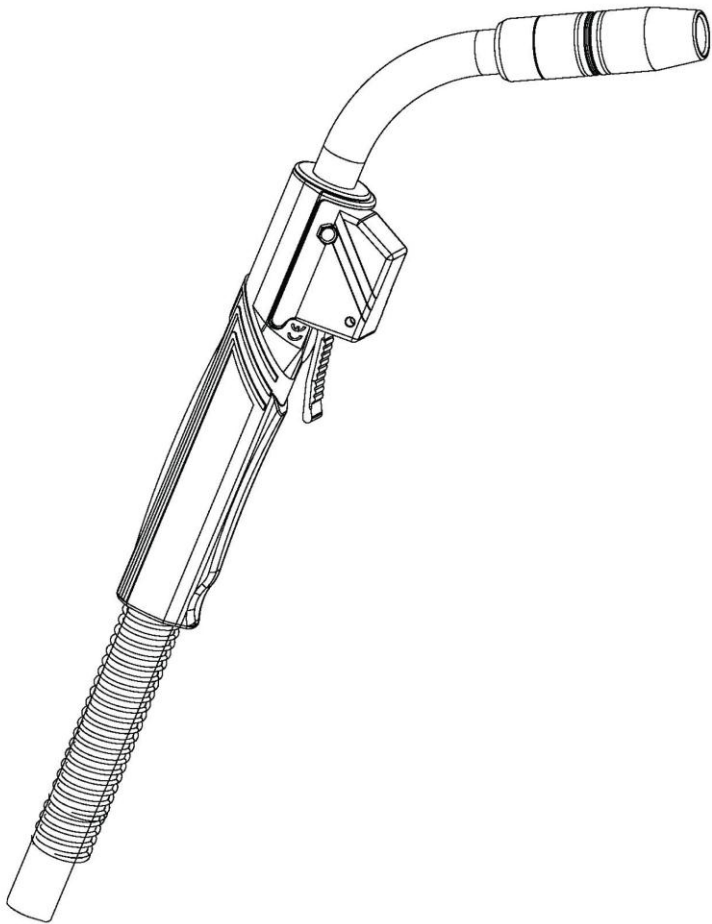




TECHNICAL GUIDE

**For T-Gun™ Semi-Automatic
Air-Cooled MIG Guns –
400 amp Euro
500 amp Euro
600 amp Euro**



- SAFETY & WARRANTY INFORMATION
- INSTALLATION
- MAINTENANCE GUIDE
- TECHNICAL DATA
- OPTIONS
- EXPLODED VIEW & PARTS LIST
- TROUBLESHOOTING
- ORDERING INFORMATION

*Please read instructions prior to use.
Save this manual for future reference.*

TABLE OF CONTENTS

THANK YOU...	2
WARRANTY	3
GENERAL SAFETY	3
SUPERIOR ERGONOMIC DESIGN	3
1.0 – INSTALLATION	4
1.1 INSTALLING GUN TO FEEDER	4
1.2 INSTALLING GUNS EQUIPPED WITH “DIRECT PLUG-INS”	4
2.0 – MAINTENANCE	5
2.1 TREGASKISS™ NOZZLE AND TOUGH LOCK™ CONSUMABLES	5
2.2 LINER REPLACEMENT	5
2.3 SWITCH REPLACEMENT	6
2.4 NECK REPLACEMENT	7
2.5 UNICABLE REPLACEMENT	8
2.6 UNICABLE REPAIR	9
3.0 – TECHNICAL DATA	10
3.1 NECK DIMENSIONS	10
3.2 GUN AMPERAGE RATINGS	10
4.0 – OPTIONS	11
4.1 SPECIALTY AND OPTIONAL ITEMS	11
4.2 FEEDER ADAPTORS	11
4.3 DIRECT PLUG-INS (Unicable repair and new handle assembly required)	11
4.4 CONNECTOR OPTIONS	12
4.5 CONTROL PLUGS	12
4.6 DUAL SCHEDULE GUN	12
5.0 – ACCESSORIES	12
6.0 – TROUBLESHOOTING	13
7.0 – DECLARATION OF CONFORMITY	13
8.0 – EXPLODED VIEW AND PARTS LIST	14
9.0 – ORDERING INFORMATION	16
9.1 GUN STANDARDS CHART	16

THANK YOU...

...for selecting a Bernard T-Gun™ MIG Gun. The T-Gun MIG Gun is made from durable materials and components engineered to perform in a rugged, welding environment. Your T-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 T-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 Customer Service Department at +1-708-946-2281 or fax +1-708-946-6726 (International) or call toll free (USA and Canada) 1-800-946-2281.**

Bernard employees are always striving to improve our products and services, and would appreciate receiving your suggestions or comments.

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
T-GUN™ MIG Guns and Components	180 days
TGX™ Chassis and TGX Ready To Weld MIG Guns	90 days

Bernard 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.

Bernard makes no other warranty of any kind, expressed or implied, including, but not limited to the warranties of merchantability or fitness for any purpose. Bernard 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 Bernard.

Genuine Bernard™ and 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 Bernard personnel.

GENERAL SAFETY

Before installation or operation of T-Gun MIG Guns, please read the safety precautions listed below:

1. Always wear a properly fitted welding helmet with the proper grade of filter plate and suitable welding gloves.
2. All exposed skin should be covered with flame resistant, protective clothing. **DO NOT WEAR CLOTHING MADE FROM FLAMMABLE SYNTHETIC FIBERS.**
3. Protective screens or barriers should be used to protect others from spatter, flash and glare while welding.
4. Prevent fires by ensuring that hot slag or sparks do not contact combustible solids, liquids or gases.
5. Ensure that operator's head is not too close to the arc and that adequate ventilation is available.
6. Constant repetitive motion may lead to cumulative trauma disorders.
7. Do not touch live electrical parts. The following should be checked to prevent electrical shock:
 - Equipment is adequate for the job, properly grounded and installed according to code.
 - Faulty or damaged equipment is repaired or replaced.
 - Operator and surroundings are not wet.
 - Cables are not wrapped around operator's body.
 - Equipment is off when not in use.
8. 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.
9. 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.)



SUPERIOR ERGONOMIC DESIGN

Ergonomics, as defined by some MIG gun manufacturers, appears to start and finish with only the shape of the gun handles. Bernard has gone far beyond this to investigate ways in which welding professional can operate more effectively with greater comfort and safety.

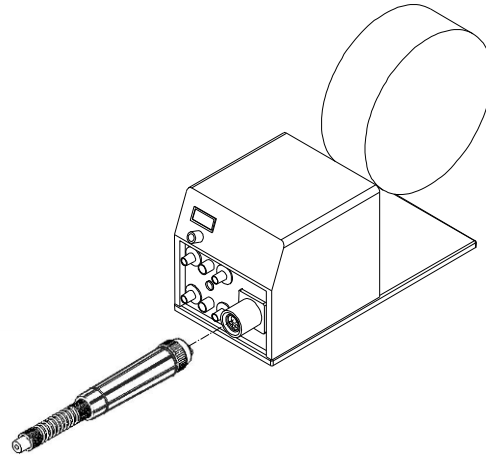
To approach the ergonomic concerns of the MIG welding industry in an effective and responsible manner, our engineering design team considered factors such as hand/arm positioning, vibration absorption and static muscle loading (tool weight, shape and balance, rotational torque, switch configuration, actuation pressure, and gripping force). We built in extra comfort features to encourage proper hand placement. These features include a light-touch, lever-style switch that can be positioned for multi-finger or thumb actuation, and a smaller diameter, one-piece handle, for optimum fit in a gloved hand.

Consultants with ergonomics professionals and medical doctors, and ongoing research studies indicate that the T-Gun MIG Gun design can help mitigate possible occupational health hazards such as Carpal Tunnel Syndrome.

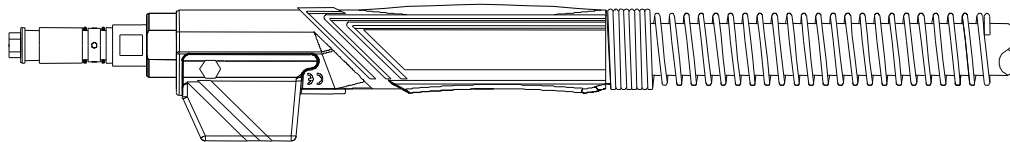
1.0 – INSTALLATION

1.1 INSTALLING GUN TO FEEDER

- Connect T-Gun MIG Gun to feeder.
- Tighten Euro hand nut.



1.2 INSTALLING GUNS EQUIPPED WITH “DIRECT PLUG-INS”



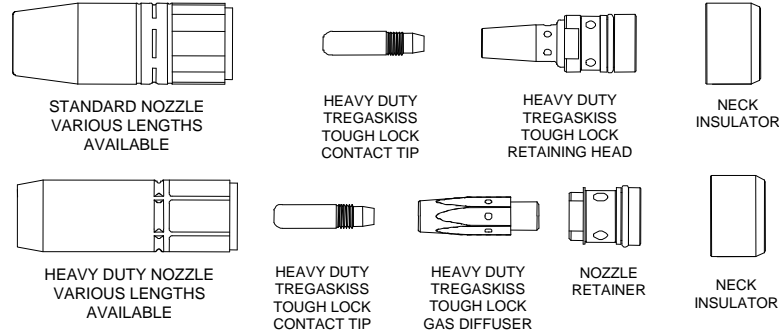
IMPORTANT: The thread-in two-piece power pin incorporates a taper to seat and lock in the power pin to the rear handle block. Make sure power pin is tightened in the block with a wrench to insure pin is secure and will not come loose.

NOTE: The rear handle and screws do not have to be removed when installing the two-piece power pins. A unicable repair is needed when changing from 425 Euro assembly to a non-Euro power pin (See **Section 2.5 UNICABLE REPLACEMENT**).

- Thread power pin into the rear handle block.
- Tighten the power pin into the rear block using a wrench on the rear block and on the power pin.
- Install liner (See **Section 2.2 LINER REPLACEMENT**).
- Install gun to feeder (See below).
- **Miller® Power Pin and Lincoln® Power Pin**
 - Insert power pin to shoulder and secure.
 - Insert control plug to control housing of gun.
 - Insert control plug into feeder.
 - Feed welding wire into power pin by hand and tighten drive rolls.
 - On Lincoln it is necessary to connect gas hose to barbed fitting on power pin.
- **ESAB® Power Pin (Non-Euro Style)**
 - Insert power pin to shoulder and secure.
 - Feed welding wire into power pin by hand and tighten.
- **Bernard Style and Euro-Connector**
 - Feed welding wire through female adaptor by hand and tighten drive rolls.
 - Guide welding wire into connector on gun, carefully insert connector into female adaptor and tighten Euro handnut or Bernard® style locking collar.
- **Tweco® #5 Power Pin**
 - Reference pg. 4 “Installing Gun to Quick Connect Block”.
- **Hobart®**
 - Reference “Tweco #5 Power Pin”.

2.0 – MAINTENANCE

2.1 TREGASKISS™ NOZZLE AND TOUGH LOCK™ CONSUMABLES



IMPORTANT:

- Neck insulator **MUST** be in place before welding to properly insulate neck armor.
- Check all parts to ensure that connections are tight before welding.
- The retaining head **MUST** be tightened with a 5/8" (16 mm) wrench to prevent the contact tip from overheating.
- **DO NOT** use pliers to remove or tighten the retaining head or scoring may result.

Removal and Replacement

Nozzle

- Pull slip-on nozzles off with a twisting motion.
- When installing the nozzle, ensure that it is fully seated.

Contact Tip

- Thread the contact tip into the retaining head.
- Torque to 30 in.-lbs. (3.5 Nm).
- The Tregaskiss Tip Tool (Part # 450-18 – for heavy-duty tips) or a pair of weld pliers are the optimal tools for contact tip installation.

Retaining Head

- Thread retaining head onto gooseneck with a 5/8" (16 mm) wrench.
- Torque to 80 in.-lbs. (9 Nm).
- **DO NOT** use pliers to remove or tighten the heavy duty retaining head or scoring may result.

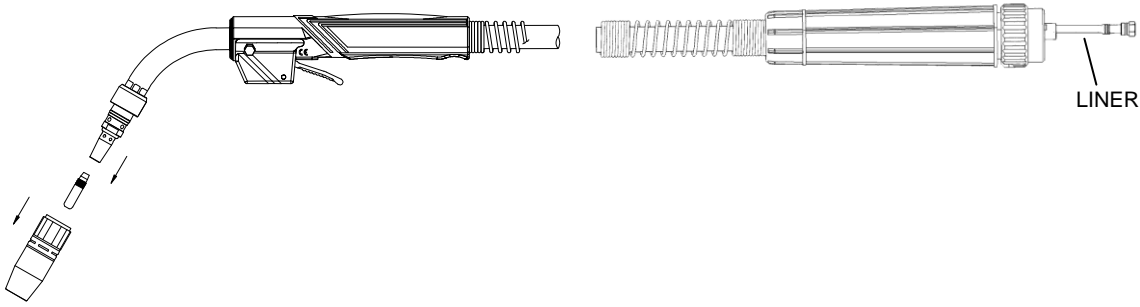
Neck Insulator

- The neck insulator is pressed onto the neck by hand.

2.2 LINER REPLACEMENT

NOTE: For guns equipped with "Direct Plug-Ins", Bernard, or Euro-connector, the procedure is the same. On Miller style guns, liner is held captive by a guide cap which must be removed and replaced when changing liner.

STEP #1



NOTE: Ensure power supply is off and gun is removed from feeder before proceeding.

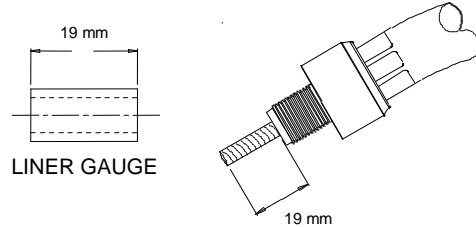
- Remove nozzle, tip and gas diffuser.
- If power pin uses a liner set screw, loosen the set screw using a 5/64" Allen wrench.
- If power pin is thread-in liner type, using a 10 mm wrench, turn thread-in liner retainer counter-clockwise until liner is free from power pin.
- With gun straightened, grip conduit liner with pliers and remove.

STEP #2



- Feed replacement liner through gun using short strokes to avoid kinking. Twist liner clockwise if necessary.
- Seat liner retainer with o-ring to shoulder inside bore of power pin.
- If using a liner set screw, secure by tightening liner set screw. Do not over-tighten.
- If using a thread-in liner type, using a 10 mm wrench, thread-in clockwise and tighten in power pin to 3.5 Nm.

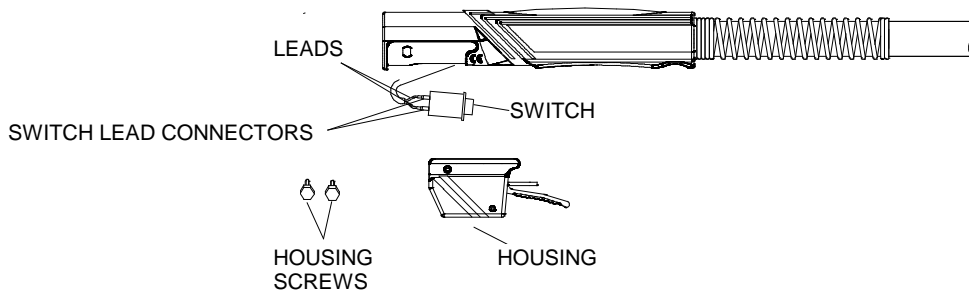
STEP #3



- Firmly push liner into gun and trim liner with 19 mm stick out.
- Remove any burr that may obstruct wire feed, especially on flat wire type conduit liner.
- Replace nozzle, tip and gas diffuser onto the neck.

2.3 SWITCH REPLACEMENT

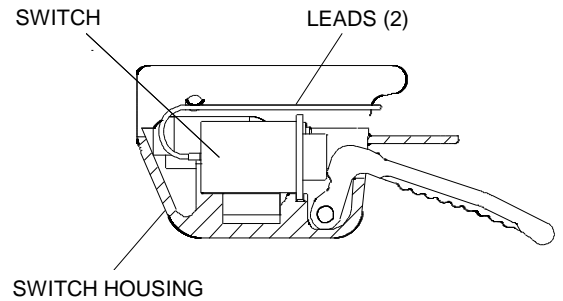
STEP #1



- Remove both housing screws with an 8 mm nut driver.
- Ease switch out of switch housing with needle nose pliers to grip switch.
- Remove switch from switch lead connectors with needle nose pliers.

STEP #2

- Push switch lead connectors firmly onto switch terminals with needle nose pliers.
- Depress switch plunger and nest back into housing.
- Fit switch housing into nest on handle (switch leads must lie parallel).
- Align housing holes with threaded holes in body and insert mounting screws.
- Start both screws first before tightening with 8 mm nut driver to even alignment.



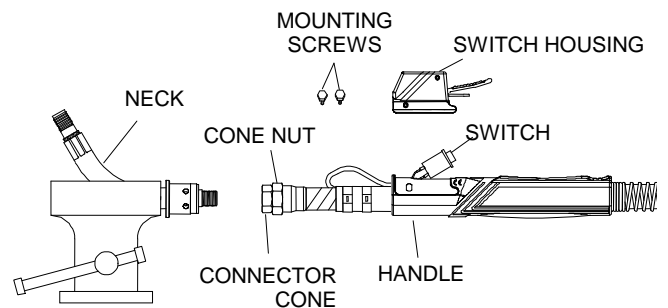
IMPORTANT:

Use manufacturer's screws (part # 411-3 or 411-3M) to ensure proper length, hardness and tolerance.

2.4 NECK REPLACEMENT

STEP #1

- Place neck in vise.
- Remove both switch housing mounting screws.
- Slide handle back exposing the cable connection.
- Loosen the cable / neck connection using a 7/8" (17 mm) wrench.
- Remove from vise and unthread neck by hand.

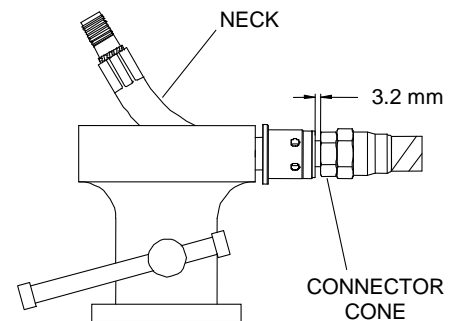


NOTE: The body is now an integral part of the neck and the handle mounting holes are metric (M5). Use the screws supplied with the new neck to avoid stripping of threads. Old style 407 bodies used Imperial (U.S.) threads.

WARNING! Failure to disconnect power cable before servicing can lead to dangerous electrical shock.

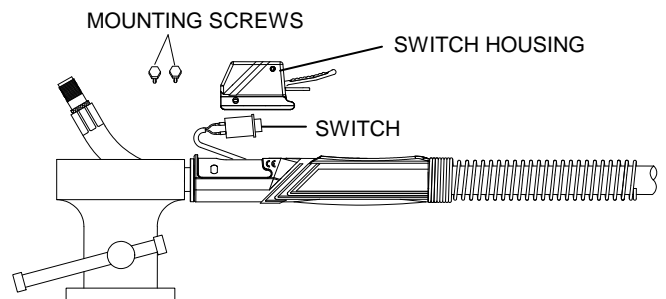
STEP #2

- Thread the neck into the cable connection (hand tighten).
- Place neck in vise and tighten with a wrench to within 1/8" (3.2 mm) spacing between the cable connection and neck body.

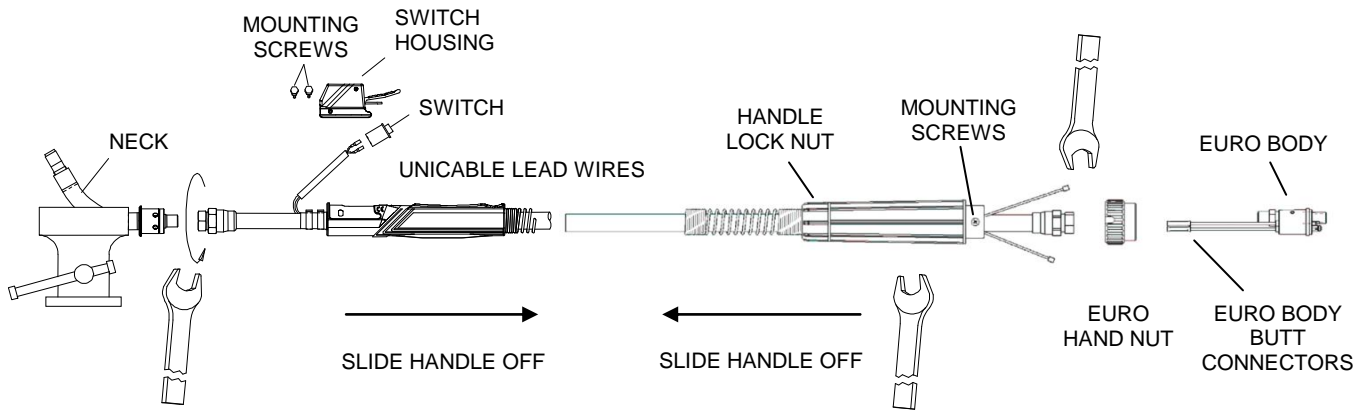


STEP #3

- Install the switch and reposition handle and switch housing.
- Reinstall switch housing screws.



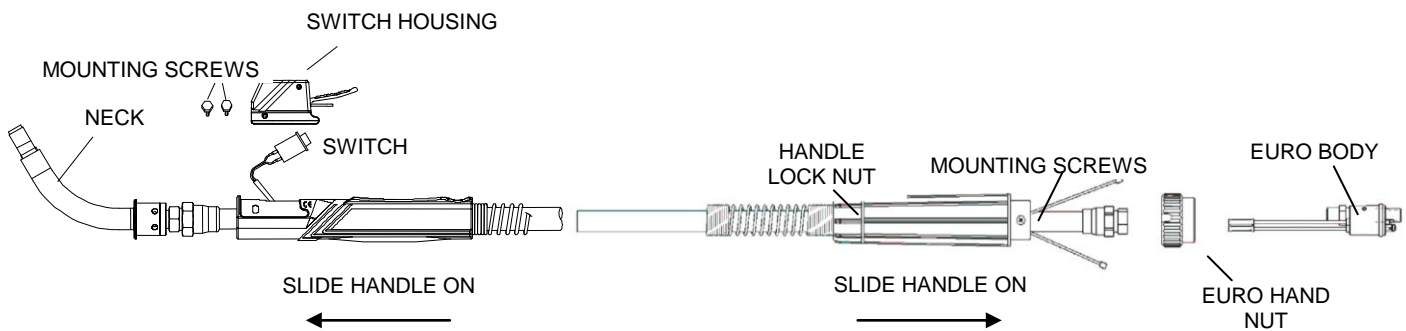
2.5 UNICABLE REPLACEMENT



STEP #1

- Remove liner from gun (See **Section 2.2 LINER REPLACEMENT**).
- Remove front and rear handle screws, switch housing and trigger switch. Slide front handle back.
- Unlock rear handle lock nut and separate handles.
- Cut unicable lead wires from euro body butt connectors.
- Unthread euro body from unicable and remove hand nut.

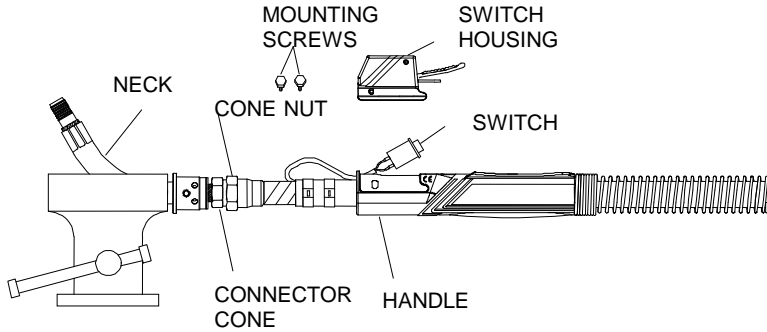
STEP #2



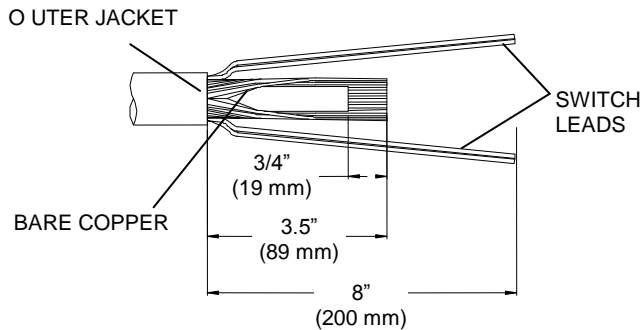
- Install neck (See **Section 2.4 NECK REPLACEMENT**).
- Slide front handle into position and carefully feed trigger leads through access hole.
- Install the switch into switch housing and fasten the two handle screws.
- Place Euro hand nut over unicable with internal threads facing away from gun.
- Thread Euro body into unicable and slide butt connectors through hand nut.
- Insert stripped lead wires into butt connectors and crimp.
- Pull Euro hand nut to front of euro block.
- Insert front of handle half into hand nut.
- Repeat with second half without damaging lead wires.
- Secure lock nut by turning clockwise (at base of handle).
- Insert the two mounting screws through handle into euro body using a Phillips screwdriver.
- Re-install liner (See **Section 2.2 LINER REPLACEMENT**).

2.6 UNICABLE REPAIR

- Remove consumables (Nozzle, Retaining Head, Contact Tip).
- Remove the liner from the gun.
- Mount neck in the vise.
- Remove switch housing and switch from leads.
- Move the handle back.



- Bend uncable behind connector cone, cut uncable at bend.
- Slide two large "Oetiker" clamps 1.5ft down the uncable (required for crimping later).



From your cut (end of cable), measure 8" back, and cut away the outer jacket of the cable. ****Be careful not to cut the copper wiring and leads!****

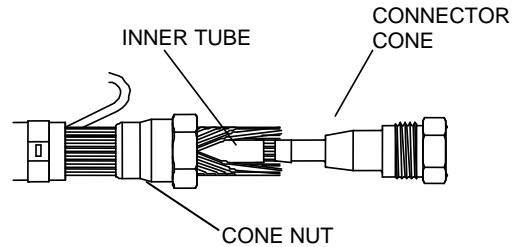
Slide outer jacket forward to expose the copper wiring and leads.

- Pull out the lead wires.
- From the 8 cut, measure 3 1/2 towards the front of the torch, and cut off the excess cable.
- Fan back copper, and remove 3/4" of the inner gas tube.
- Take the old liner you just removed, and cut it to approximately 2 ft. long.
- Thread cone onto vise mounted gooseneck.
- Insert the 2ft. of old liner into the neck from the front end of the neck, then slide on the support tube.
- Slide small Oetiker clamp over top of inner gas tube (Hytrel).
- Using the 2' old liner as a guide, slide the inner gas tube over the support tube and up to the cone shoulder.

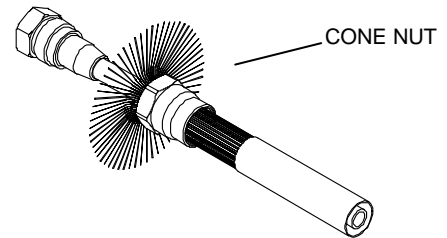
Crimp the support tube clamp. Crimp between the black and white switch leads.

Position copper wires between roll marked numbers on cone and first step before threads. Crimp the large Oetiker clamps 1/4" and 1" behind the outer jacket at the front of the torch.

Remove the inner gas tube (Hytrel) from the cone.

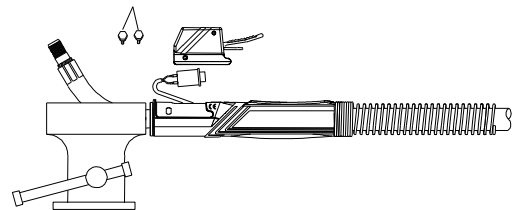


Fan out the copper and bring the copper around the inner gas tube (Hytrel) evenly.



- Slide the inner gas tube on the Cone up to the shoulder.
- Fan the copper evenly around the inner gas tube, up to the shoulder of the Cone Connector. Thread on the Cone Nut onto Connector Cone. Torque the Cone Nut to 30 ft.-lbs. (there should be about a 1/8" gap between the cone and cone nut).
- Using 3/4" Teflon electrical tape, wrap up the copper and spare switch leads neatly. Loop the 2 switch leads that will be used, this is to ensure that there is enough slack in the wire for gun articulation.
- Pull up the handle, and feed switch leads through handle.
- Strip leads about 1/8" back and crimp switch terminals to open leads.
- Connect the leads to the switch, and lay the switch back into the housing.

Screw the switch housing back onto the handle.



If assistance is required, please contact your authorized Bernard Distributor or the Customer Service Department at Bernard at 1-800-946-2281 (USA and Canada) or +1-708-946-2281 (International).

UNICABLE CLAMP KIT

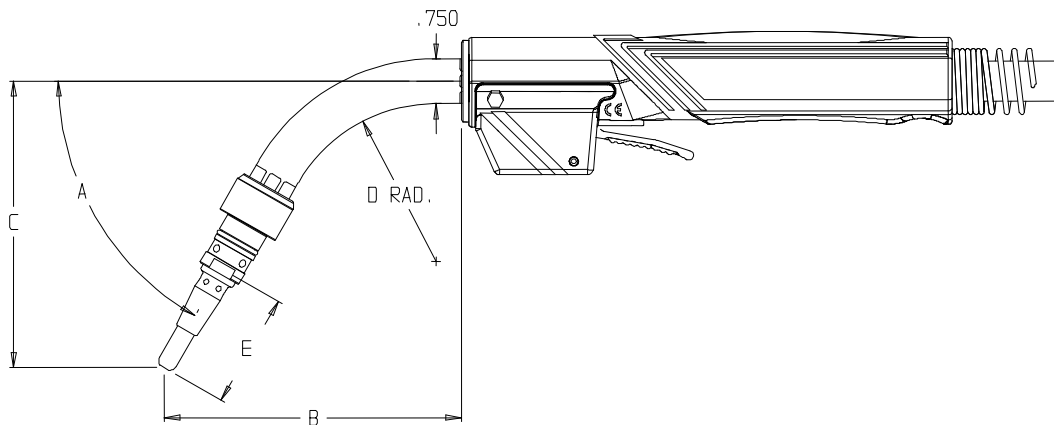
PART #			DESCRIPTION
400 amp	500 amp	600 amp	
E413-7	E513-7	E613-7	UNICABLE CLAMP KIT (COMPLETE)
INDIVIDUAL PARTS			
308	408	408	CONNECTOR CONE
409	409	509	CONE NUT
313-1	513-1	523-1	OUTER JACKET CLAMPS (2) – OLD STYLE CABLE
313-3	---	---	CRIMPED CABLE REPAIR OUTER JACKET CLAMP (1)
413-4	413-4	413-4	SUPPORT TUBE
412-1	412-1	412-1	SWITCH LEAD CONNECTORS (2)
412-3	412-3	412-3	CONTROL WIRE SHEATH (FRONT ONLY)

REPAIR TOOL KIT

PART #	DESCRIPTION
450	REPAIR TOOL KIT (COMPLETE)
INDIVIDUAL TOOLS	
450-1	CABLE CUTTER
450-2	CLAMP PLIERS - FOR CRIMPING OF OUTER JACKET AND INNER TUBE CLAMPS
450-3	CONNECTOR CRIMPING TOOL - FOR SWITCH LEAD TERMINALS
450-4	8 MM NUT DRIVER - FOR REMOVAL OF SWITCH HOUSING
450-5	KNIFE - FOR TRIMMING OF OUTER JACKET
450-6	5/64" ALLEN KEY - FOR LINER REMOVAL
450-13-2	SUPPORT TUB INSTALLATION PIN - 300/400 AMP
450-13-3	SUPPORT TUB INSTALLATION PIN - 500 AMP

3.0 – TECHNICAL DATA

3.1 NECK DIMENSIONS



NECK	ANGLE	B	C	D	E
		mm	mm	mm	mm
305-60	60°	105	103	51	48
405-45	45°	122	86	76	48
405-60	60°	116	116	76	48
405-180	180°	187	---	---	48
505-45	45°	186	93	102	48
505-60	60°	153	129	102	48

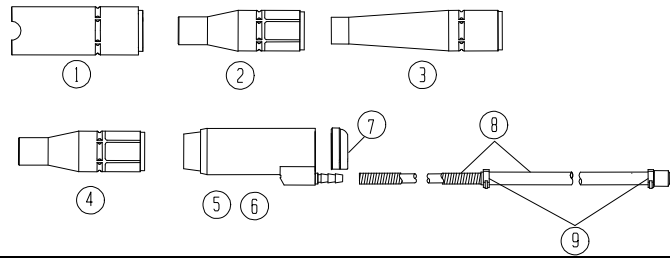
3.2 GUN AMPERAGE RATINGS

MODEL	60% DUTY CYCLE	
	100% CO ₂	80%Ar 20%CO ₂
400 amp EURO	400	300
500 amp EURO	525	400
600 amp EURO	650	500

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

4.0 – OPTIONS

4.1 SPECIALTY AND OPTIONAL ITEMS



ITEM	PART #	DESCRIPTION
1	401-10-87	SPOT NOZZLE (BRASS)
2	401-21	FLUX CORE NOZZLE (GASLESS)
3	401-41-50	EXTENDED REACH NOZZLE - 3.5" (88.9 mm)
4	401-42-50	HIGH ACCESS NOZZLE (BOTTLENECK)
5	401-26-62	WATER-COOLED NOZZLE - FIXED HOSE SYSTEM 5/8" (15.9 mm) FOR 5/16" (7.9 mm) TIP RECESS
6	401-26-75	WATER-COOLED NOZZLE - FIXED HOSE SYSTEM 3/4" (19 mm) FOR 5/16" (7.9 mm) TIP RECESS
7	402-26	NECK INSULATOR USED WITH 401-26-62 & 401-26-75
8	430-3	WATER HOSE ONLY - 15' (4.6 m)
9	656-1	HOSE CLAMP

4.2 FEEDER ADAPTORS

(To be used with 417-50 Quick Connect Block)

PART #	USE ON FEEDERS
418-3	ESAB® (NON EURO STYLE) AND HOBART BETA MIG
418-4	HOBART® 27
418-5	LINCOLN® LN4, LN5, LINDE SWM 31, 3A & 32A
418-6	LINCOLN LN7, 8 & 9, LN 25 SUITCASE, LN22
418-7	LINDE® SWM-14
418-8	LINDE 35 SWM-23
418-9	MILLER® 10A, 30A (MILLERMATIC 35S FEEDER)
418-10	MILLER 52E, 54E, S21, S22 SERIES AND MILLERMATIC 200 & 250, 60 SERIES
418-14	OTC DAIHEN®
418-21	GILLILAND®
418-27	PANASONIC®
418-29	#5 PIN
418-35	KOBELCO®

4.3 DIRECT PLUG-INS (Unicable repair and new handle assembly required)

PART #	DESCRIPTION	USE ON FEEDERS
214	TREGASKISS™ CONVENTIONAL POWER PIN	TREGASKISS QUICK CONNECT BLOCK, HOBART 2000 SERIES FEEDERS, TWECO #4 RECEPTACLE BODY PART #TAK-1
414-11-2	O-RING - FOR MILLER® POWER PINS	MILLERMATIC 200 & 250, S21E & S22 SERIES, 52 & 54 SERIES, 60 SERIES
214-6-116	MILLER POWER PIN - FOR 0.9 - 1.6 mm WIRE	MILLERMATIC 200 & 250, S21E & S22 SERIES, 52 & 54 SERIES, 60 SERIES
214-6-332	MILLER POWER PIN - FOR 2.0 - 2.4 mm WIRE	MILLERMATIC 200 & 250, S21E & S22 SERIES, 52 & 54 SERIES, 60 SERIES
214-116	GUIDE CAP ONLY - (NEW STYLE)	
214-332	GUIDE CAP ONLY - (NEW STYLE)	
214-9	GUIDE CAP ONLY - ALUMINUM (NEW STYLE)	
414-116	GUIDE CAP ONLY - FOR 414-11-116 (OLD STYLE)	
414-332	GUIDE CAP ONLY - FOR 414-11-332 (OLD STYLE)	
414-9	GUIDE CAP ONLY - ALUMINUM WIRE (OLD STYLE)	
214-12	TWECO® #5 STYLE POWER PIN	ALL FEEDERS SET UP WITH TWECO® #5
414-12-2	O-RING - FOR TWECO #5 STYLE POWER PIN	RECEPTACLE BODY PART #6TAK-1
214-2	LINCOLN® POWER PIN	LINCOLN LN7, 8 & 9, LN25 SUITCASE, LN22, NA2
414-21	ESAB® (NON EURO)	A-10
214-13	PANASONIC®	

4.4 CONNECTOR OPTIONS

Bernard Style Connector Option - for Quick Connect feeder adaptors for T-Gun Euro 400 amp, 500 amp & 600 amp MIG guns.
***Must purchase 426 Assembly and Uncable Repair Kit, when changing from new Euro Assembly.**

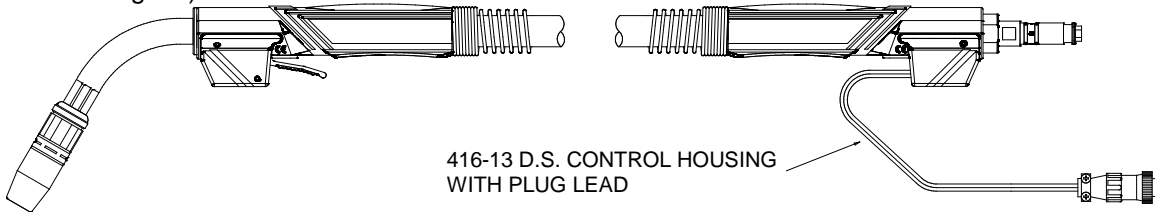
PART #	DESCRIPTION
426	BERNARD STYLE CONNECTOR ASSY.
426-1	CONNECTOR BODY
426-2	LOCKING COLLAR
426-3	LOCK SPRING
426-4	CONNECTOR HOUSING
426-5	CONTROL PINS
426-6	O-RINGS
425-5	MOUNTING SCREW

4.5 CONTROL PLUGS

PART #	DESCRIPTION
419-2	HOBART
419-3	LINDE (SWM-14,25)
419-4	MILLER (52E, 54E)
419-6	LINCOLN (LN7, 8, 9), NA2
419-7	MILLER (10E, 30E) & LINDE (SWM-35)
419-10	DUAL SCHEDULE MILLER

4.6 DUAL SCHEDULE GUN

(Used only on non-Euro guns)



NOTE:

- Dual Schedule T-Gun MIG Guns are offered in two styles:
 - D - TOGGLE STYLE** - A separate thumb switch is mounted on the housing to change schedules (lock-on optional).
 - 2D - TWO POSITION STYLE** - Depress lever halfway for first schedule and fully for second schedule.

TWO POSITION SWITCH STYLE

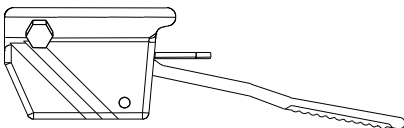
PART #	DESCRIPTION
411-11	D.S. TWO POSITION SWITCH HOUSING ONLY

TOGGLE SWITCH STYLE

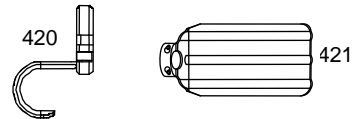
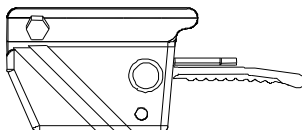
PART #	DESCRIPTION
411-12	D.S. SWITCH HOUSING - COMPLETE W/ROCKER SWITCH
411-12-6	SWITCH ONLY

5.0 - ACCESSORIES

411-20 SWITCH HOUSING WITH EXTENDED LEVER



411-4 SWITCH HOUSING WITH LOCK ON TRIGGER



- 420 GUN HANGER
- 421 HEAT SHIELD
- 421-1 SHIELD MOUNTING SCREW (NOT SHOWN)

6.0 – TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE
POOR WIRE FEED	<ul style="list-style-type: none"> • CONDUIT LINER CLOGGED OR KINKED • INCORRECT LINER SIZE OR CONTACT TIP • LINER CUT TOO SHORT AND NOT SEATING PROPERLY IN GAS DIFFUSER • DRIVE ROLLS TOO TIGHT, RESULTING IN SCORING OF WELDING WIRE • WELDING WIRE DIRTY, RUSTY OR TOO MUCH CAST
SHORT TIP LIFE	<ul style="list-style-type: none"> • DRIVE ROLLS TOO TIGHT, RESULTING IN SCORING OF WELDING WIRE • WELDING WIRE DIRTY, RUSTY OR TOO MUCH CAST • UNCOATED WIRE BEING USED, INCREASING USAGE • WRONG TIP SIZE • OVER TORCH-RATED DUTY CYCLE
GUN OVERHEATING	<ul style="list-style-type: none"> • LOOSE RETAINING SCREW ON QUICK CONNECT BLOCK • INSUFFICIENT GAUGE POWER CABLE AND/OR GROUND CABLE • LOOSE CONNECTOR CONE AND/OR CONE NUTS • GUN BEING RUN BEYOND ITS AMPERAGE RANGE • ELECTRICAL MALFUNCTION IN POWER SOURCE
SWITCH MALFUNCTIONING	<ul style="list-style-type: none"> • BAD CONNECTION OF LEADS TO SWITCH TERMINALS • SPATTER BUILT UP BETWEEN LEVER AND SWITCH HOUSING • CONTACTS DIRTY IN SWITCH • SWITCH HOUSING SCREWS LOOSE • BROKEN OR WORN SWITCH LEAD
WELD POROSITY	<ul style="list-style-type: none"> • SPATTER BUILT UP IN NOZZLE, BLOCKING GAS • LEAKS IN GAS HOSE OR IMPROPER CONNECTION • O-RINGS ON POWER PIN ARE CUT OR DAMAGED • INNER TUBE LOOSE FROM CONNECTOR CONE • POOR WIRE FEED (SEE ABOVE) • IMPROPER SHIELDING GAS OR WELDING WIRE • RUSTY OR POOR QUALITY WELDING WIRE • PARENT METAL RUSTY OR CONTAMINATED OR HIGH IN SULPHUR CONTENT • FLOW IMPROPERLY SET

7.0 – DECLARATION OF CONFORMITY

DECLARATION OF CONFORMITY

Manufacturer's Name: Bernard
Manufacturer's Address: 449 W. Corning Rd, Beecher, IL 60401

The manufacturer hereby declares that the product

Product Name: T-Gun™ EURO MIG Air-Cooled Welding Guns
Model Numbers: 150 amp, 200 amp, 300 amp, 350 amp, 400 amp, 500 amp, 600 amp
Product Options: All conforms to the following standards or other normative documents:
Safety: EN 50078:1993, for Class L
 (by Council Directive 89/392/EEC)

When and Where Issued
 July 9, 1999
 Oldcastle, Ontario, Canada

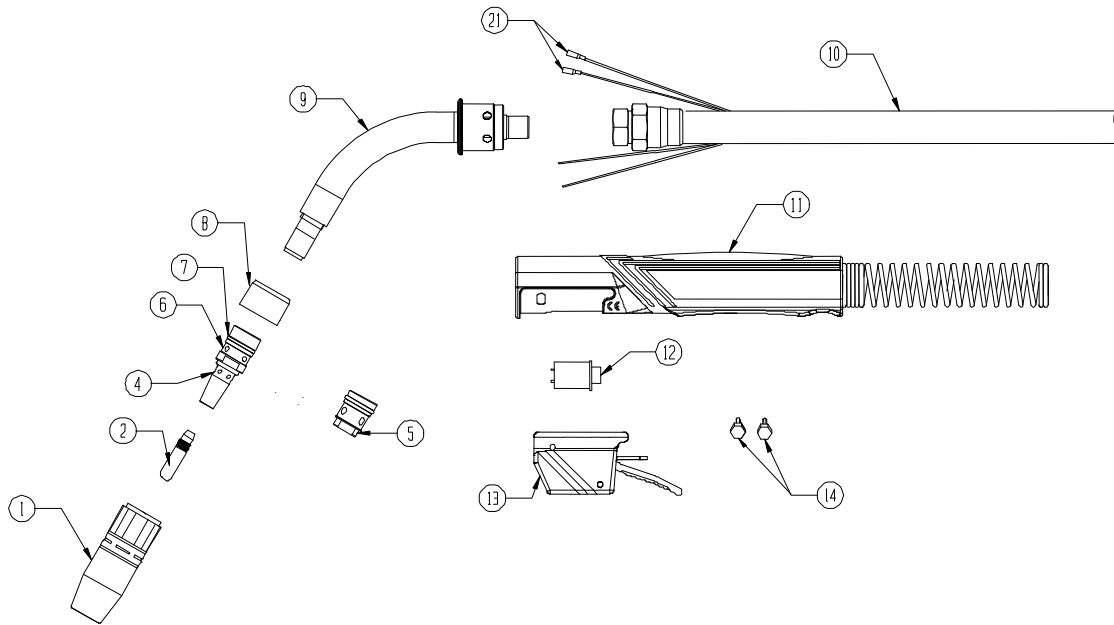
Julio Villafuerte
 R & D Coordinator

Marks of Compliance



European Contact
 Tregaskiss International Sales Inc.
 1556 Third Avenue
 Suite 203
 New York, NY 10128

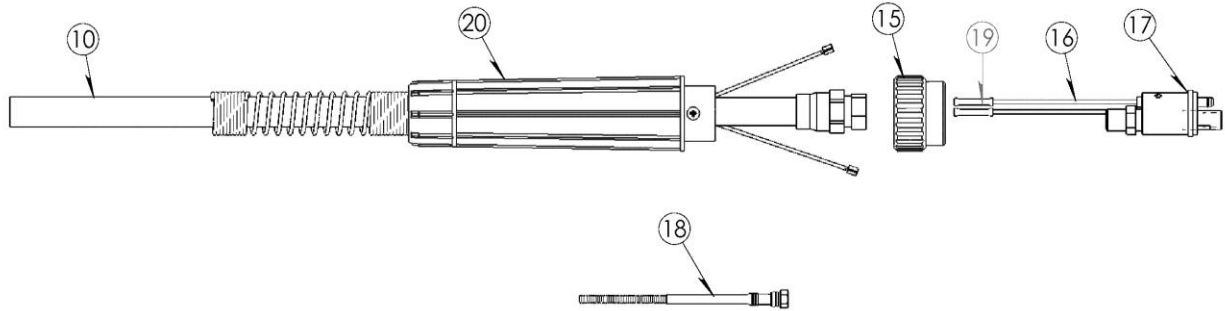
8.0 – EXPLODED VIEW AND PARTS LIST



Numbers in this column correspond to the exploded view images above.

ITEM	PART #	DESCRIPTION
1		STANDARD NOZZLES (SELF-INSULATED)
	401-40-38	SUPER TAPERED NOZZLE - 3/8" BORE (BRASS)
	401-4-38	10 mm BORE - FLUSH TIP
	401-4-50	13 mm BORE - 3 mm TIP RECESS
	401-4-62	16 mm BORE - 3 mm TIP RECESS
	401-4-75	19 mm BORE - 3 mm TIP RECESS
	401-8-62	3 mm TIP STICKOUT
		HEAVY DUTY NOZZLES (SELF INSULATED)
	401-5-62	16 mm BORE - 6 mm TIP RECESS
	401-5-75	19 mm BORE - 6 mm TIP RECESS
	401-6-50	13 mm BORE - 3 mm TIP RECESS
	401-6-62	16 mm BORE - 3 mm TIP RECESS
	401-6-75	19 mm BORE - 3 mm TIP RECESS
401-7-62	16 mm BORE - 6 mm TIP RECESS (BRASS)	
401-7-87	22 mm BORE - 6 mm TIP RECESS (BRASS)	
2		TREGASKISS™ TOUGH LOCK™ CONTACT TIP
	403-20-30	FOR 0.8 mm WIRE
	403-20-35	FOR 0.9 mm WIRE
	403-20-1.0	FOR 1 mm WIRE
	403-20-45	FOR 1.2 mm WIRE
	403-20-364	FOR 1.2 mm WIRE
	403-20-1.4	FOR 1.4 mm WIRE
	403-20-52	FOR 1.3 mm WIRE
	403-20-116	FOR 1.6 mm WIRE
	403-20-564	FOR 2.0 mm WIRE
	403-20-332	FOR 2.4 mm WIRE

ITEM	PART #	DESCRIPTION
		TREGASKISS™ TOUGH LOCK™ TAPERED
	403-21-30	FOR 0.8 mm WIRE
	403-21-35	FOR 0.9 mm WIRE
	403-21-1.0	FOR 1 mm WIRE
	403-21-45	FOR 1.2 mm WIRE
	403-21-52	FOR 1.3 mm WIRE
	403-21-116	FOR 1.6 mm WIRE
4	404-26	TREGASKISS TOUGH LOCK RETAINING HEAD
5	402-3	NOZZLE RETAINER
6	454-1-2	RETAINING RING ONLY
7	402-16	O-RING ONLY



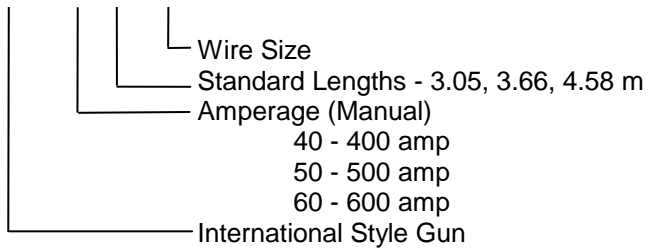
ITEM	PART #	DESCRIPTION
8	402-11	NECK INSULATOR - HEAVY DUTY (USE WITH ALL NOZZLES)
9		NECKS (INTERCHANGEABLE BETWEEN ALL 3 AMPERAGES)
	505-45	45 DEGREE 500 AND 600 AMP
	405-60	60 DEGREE 400 AMP
	505-60	60 DEGREE 500 AND 600 AMP
	405-180	STRAIGHT - 400, 500 & 600 AMP
	406-1	SPRING THERMO GUARD - 45° (NOT SHOWN)
	406-2	SPRING THERMO GUARD - 60° (NOT SHOWN)
10		UNICABLE ASSEMBLY
	E413-10	3 m SERVICE - 400 AMP
	E513-10	3 m SERVICE - 500 AMP
	E613-10	4 m SERVICE - 600 AMP
	E413-12	4 m SERVICE - 400 AMP
	E513-12	4 m SERVICE - 500 AMP
	E613-12	4 m SERVICE - 600 AMP
	E413-15	5 m SERVICE - 400 AMP
	E513-15	5 m SERVICE - 500 AMP
	E613-15	5 m SERVICE - 600 AMP
11	410	HANDLE / SPRING GUARD ASSEMBLY - FRONT
12	411-1	SWITCH ONLY
13	411-2	SWITCH HOUSING WITH SCREWS
14	411-3	MOUNTING SCREW (10-24)
	411-3M	MOUNTING SCREW (METRIC M5)

ITEM	PART #	DESCRIPTION
15	425-11	EURO HAND NUT
16	425-8	EURO CONTROL PINS
17	425-20	EURO CONNECTOR BODY ASSEMBLY
	425-9	O-RING FOR EURO BODY ASSEMBLY
18		CONDUIT LINERS
	415-23-15	FOR 0.6 mm WIRE - 5 m
	415-30-15	FOR 0.8 mm WIRE - 5 m
	415-35-10	FOR 0.9 mm - 1.2 mm WIRE - 3 m
	415-35-15	FOR 0.9 mm - 1.2 mm WIRE - 5 m
	415-35-25	FOR 0.9 mm - 1.2 mm WIRE - 8 m
	415-35-2	FOR 0.9 mm ALUMINUM WIRE - 5 m
	415-116-10	FOR 1.2 mm - 1.6 mm WIRE - 3 m
	415-116-15	FOR 1.2 mm - 1.6 mm WIRE - 5 m
	415-116-25	FOR 1.2 mm - 1.6 mm WIRE - 8 m
	415-116-2	FOR 1.2 mm - 1.6 mm ALUM. WIRE - 5 m
	415-332-15	FOR 2 mm - 2.4 mm WIRE - 5 m flat wound
	415-332-153	FOR 2 mm - 2.4 mm WIRE-5 m round wound
	415-332-251	FOR 2 mm - 2.4 mm WIRE-5 m round wound
	415-332-25	FOR 2 mm - 2.4 mm WIRE - 8 m flat wound
	415-332-15	FOR all 2 mm WIRE & 1.6 mm FLUX CORE WIRE LINER O-RING (NOT SHOWN)
19	412-2	BUTT CONNECTORS
20	425	EURO ASSEMBLY WITH HANDLES
21	412-1	SWITCH LEAD CONNECTOR
	412-3	CONTROL WIRE SHEATH (NOT SHOWN)

9.0 – ORDERING INFORMATION

EXAMPLE OF STANDARD MODEL NO.

SGB 4012-45



9.1 GUN STANDARDS CHART

Standard models are shipped with the following components:

GUN MODEL	NECK	NOZZLE	HEAVY DUTY HEAD	SHOCKWASHER	CONTACT TIPS
400 amp EURO	405-60	401-4-62	404-26	402-11	403-20-xx
500 amp EURO	505-60	401-6-62	404-26	402-11	403-20-xx
600 amp EURO	505-60	401-6-62	404-26	402-11	403-20-xx



For Customer Support:

U.S.A 800-946-2281
 International 708-946-2281
 BernardWelds.com

Distributed by:

09/12 REV E

TG019