

# Bernard® Clean Air™ Fume Extraction MIG Gun

## OWNER'S MANUAL

February 2022

**OM-CA-2.3**

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Semi-Automatic, Air-Cooled, MIG  
(GMAW) Welding Gun



**BERNARD®**

**Tregaskiss.com/TechnicalSupport**  
1-855-MIGWELD (644-9353) (US & Canada)  
+1-519-737-3000 (International)

# Thank You for Choosing Bernard

Thank you for selecting a Bernard product. Before installing, compare the equipment received against the invoice to verify that the shipment is complete and undamaged. It is the responsibility of the purchaser to file all claims of damage or loss that may have occurred during transit with the carrier.

The owner's manual contains general information, instructions and maintenance to help better maintain your MIG gun or peripheral. Please read, understand and follow all safety precautions.

While every precaution has been taken to assure the accuracy of this owner's manual, Bernard assumes no responsibility for errors or omissions. Bernard assumes no liability for damages resulting from the use of information contained herein. The information presented in this owner's manual is accurate to the best of our knowledge at the time of printing. Please reference [Tregaskiss.com](http://Tregaskiss.com) for updated material.

For customer support and special applications, please call the Bernard Customer Service Department at 1-855-MIGWELD (644-9353) (US & Canada) or +1-519-737-3000 (International), fax 1-708-946-6726, or email at [cs@itwmig.com](mailto:cs@itwmig.com). Our trained Customer Service Team is available between 8:00 a.m. and 5:30 p.m. EST, and will answer your product application or repair questions.

Bernard manufactures premium semi-automatic (GMAW) and FCAW (flux-cored) welding guns, consumables, accessories and manual arc products. For more information on other Bernard products, contact your local Bernard distributor or visit us on the web at [Tregaskiss.com](http://Tregaskiss.com).

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**Subject to Change** – The information presented in this manual is accurate to the best of our knowledge at the time of printing. Please visit [Tregaskiss.com](http://Tregaskiss.com) for the most up-to-date information.

**Additional Material** – For additional support materials such as spec sheets, troubleshooting information, how-to guides and videos, animations, online configurators and much more, please visit [Tregaskiss.com](http://Tregaskiss.com).

Scan this QR Code with your smart phone for immediate access to [Tregaskiss.com/TechnicalSupport](http://Tregaskiss.com/TechnicalSupport)



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# DECLARATION OF CONFORMITY

for European Community (CE marked) products



**Bernard, 449 West Corning Rd., Beecher, IL 60401 U.S.A. declares that the product(s) identified in this declaration conform to the essential requirements and provisions of the stated Council Directive(s) and Standard(s).**

Product/Apparatus Identification:

Product	Stock Number
Bernard Clean Air MIG Gun – 300A	CL30XXXXXXXX (Configurable #)
Bernard Clean Air MIG Gun – 400A	CL40XXXXXXXX (Configurable #)
Bernard Clean Air MIG Gun – 500A	CL50XXXXXXXX (Configurable #)
Bernard Clean Air MIG Gun – 600A	CL60XXXXXXXX (Configurable #)

Council Directives:

- 2006/95/EC Low Voltage
- 2011/65/EU Restriction of the use of certain hazardous substances in electrical and

Electronic equipment standards:

- IEC 60974-7:2013 Arc welding equipment – Part 7: Torches

Signatory:

May 18, 2015

**David A. Werba**  
MANAGER, PRODUCT DESIGN COMPLIANCE

\_\_\_\_\_  
Date of Declaration

# SECTION 1 — SAFETY PRECAUTIONS — READ BEFORE USING



Protect yourself and others from injury – read, follow, and save these important safety precautions and operating instructions.

## 1-1 Symbol Usage



**DANGER!** – Indicates a hazardous situation which, if not avoided, will result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.

**NOTICE** – Indicates statements not related to personal injury.

 – Indicates special instructions.



This group of symbols means Warning! Watch Out! ELECTRIC SHOCK, MOVING PARTS, and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid the hazards.

## 1-2 Arc Welding Hazards



The symbols shown below are used throughout this manual to call attention to and identify possible hazards. When you see the symbol, watch out, and follow the related instructions to avoid the hazard. The safety information given below is only a summary of the more complete safety information found in section 1-4 Principal Safety Standards on page 3, and in welding power source Owner's Manual. Read and follow all Safety Standards.



Only qualified persons should install, operate, maintain, and repair this equipment. A qualified person is defined as one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated ability to solve or resolve problems relating to the subject matter, the work, or the project and has received safety training to recognize and avoid the hazards involved.



During operation, keep everybody, especially children, away.

### ELECTRIC SHOCK can kill.

- Always wear dry insulating gloves.
- Insulate yourself from work and ground.
- Do not touch live electrode or electrical parts.



- Replace worn, damaged, or cracked guns or cables.
- Turn off welding power source before changing contact tip or gun parts.
- Keep all covers and handle securely in place.

### FUMES AND GASES can be hazardous.

- Keep your head out of the fumes.
- Ventilate area, or use breathing device. The recommended way to determine adequate ventilation is to sample for the composition and quantity of fumes and gases to which personnel are exposed.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.



### MOVING PARTS can injure.

- Keep away from moving parts.
- Keep away from pinch points such as drive rolls.



### WELDING can cause fire or explosion.

- Do not weld near flammable material.
- Do not weld on containers that have held combustibles, or on closed containers such as tanks, drums, or pipes unless they are properly prepared according to AWS F4.1 and AWS A6.0 (see Safety Standards).
- Watch for fire; keep extinguisher nearby.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.



### BUILDUP OF GAS can injure or kill.

- Shut off compressed gas supply when not in use.
- Always ventilate confined spaces or use approved air-supplied respirator.



### ARC RAYS can burn eyes and skin.

Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.



- Wear an approved welding helmet fitted with a proper shade of filter lenses to protect your face and eyes from arc rays and sparks when welding or watching (see ANSI Z49.1 and Z87.1 listed in Safety Standards).
- Wear approved safety glasses with side shields under your helmet.
- Use protective screens or barriers to protect others from flash, glare and sparks; warn others not to watch the arc.
- Wear body protection made from leather or flame-resistant clothing (FRC). Body protection includes oil-free clothing such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.

### **HOT PARTS can burn.**

- Allow gun to cool before touching.
- Do not touch hot metal.
- Protect hot metal from contact by others.



### **NOISE can damage hearing.**

Noise from some processes or equipment can damage hearing.



- Check for noise level limits exceeding those specified by OSHA.
- Use approved ear plugs or ear muffs if noise level is high.
- Warn others nearby about noise hazard.

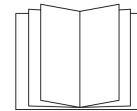
### **WELDING WIRE can injure.**

- Keep hands and body away from gun tip when trigger is pressed.



### **READ INSTRUCTIONS.**

- Read and follow all labels and the Owner's Manual carefully before installing, operating, or servicing unit. Read the safety information at the beginning of the Manual and in each section.
- Use only genuine replacement parts from the manufacturer.
- Perform installation, maintenance, and service according to the Owner's Manuals, industry standards, and national, state, and local codes.



## 1-3 California Proposition 65 Warnings



**WARNING:** This product can expose you to chemicals including lead, which are known to the state of California to cause cancer and birth defects or other reproductive harm.

For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## 1-4 Principal Safety Standards

*Safety in Welding, Cutting, and Allied Processes*, American Welding Society standard ANSI Standard Z49.1. Website: [www.aws.org](http://www.aws.org).

*Safe Practice For Occupational And Educational Eye And Face Protection*, ANSI Standard Z87.1, from American National Standards Institute. Website: [www.ansi.org](http://www.ansi.org).

*Safe Practices for the Preparation of Containers and Piping for Welding and Cutting*, American Welding Society Standard AWS F4.1. Website: [www.aws.org](http://www.aws.org).

*National Electrical Code*, NFPA Standard 70 from National Fire Protection Association. Website: [www.nfpa.org](http://www.nfpa.org).

*Safe Handling of Compressed Gases in Cylinders*, CGA Pamphlet P-1 from Compressed Gas Association. Website: [www.cganet.com](http://www.cganet.com).

*Safety in Welding, Cutting, and Allied Processes*, CSA Standard W117.2 from Canadian Standards Association. Website: [www.csagroup.org](http://www.csagroup.org).

*Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*, NFPA Standard 51B from National Fire Protection Association. Website: [www.nfpa.org](http://www.nfpa.org).

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910.177 Subpart N, Part 1910 Subpart Q, and Part 1926, Subpart J. Website: [www.osha.gov](http://www.osha.gov).

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## 1-5 EMF Information

Electric current flowing through any conductor causes localized electric and magnetic fields (EMF). The current from arc welding (and allied processes including spot welding, gouging, plasma arc cutting, and induction heating operations) creates an EMF field around the welding circuit. EMF fields may interfere with some medical implants, e.g. Pacemakers. Protective measures for persons wearing medical implants have to be taken. For example, restrict access for passersby or conduct individual risk assessment for welders. All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

1. Keep cables close together by twisting or taping them, or using a cable cover.
2. Do not place your body between welding cables. Arrange cables to one side and away from the operator.

3. Do not coil or drape cables around your body.
4. Keep head and trunk as far away from the equipment in the welding circuit as possible.
5. Connect work clamp to workpiece as close to the weld as possible.
6. Do not work next to, sit or lean on the welding power source.
7. Do not weld whilst carrying the welding power source wire feeder.

### **About Implanted Medical Devices:**

Implanted Medical Device wearers should consult their doctor and the device manufacturer before performing or going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations. If cleared by your doctor, then following the above procedures is recommended.



## SECTION 2 — CONSIGNES DE SÉCURITÉ — LIRE AVANT UTILISATION



Pour écarter les risques de blessure pour vous-même et pour autrui — lire, appliquer et ranger en lieu sûr ces consignes relatives aux précautions de sécurité et au mode opératoire.

### 2-1 Symboles utilisés



**DANGER!** – Indique une situation dangereuse qui si on l'évite pas peut donner la mort ou des blessures graves. Les dangers possibles sont montrés par les symboles joints ou sont expliqués dans le texte.



Indique une situation dangereuse qui si on l'évite pas peut donner la mort ou des blessures graves. Les dangers possibles sont montrés par les symboles joints ou sont expliqués dans le texte.

**AVIS** – Indique des déclarations pas en relation avec des blessures personnelles.

 – Indique des instructions spécifiques.



Ce groupe de symboles veut dire Avertissement! Attention! DANGER DE CHOC ELECTRIQUE, PIECES EN MOUVEMENT, et PIECES CHAUDES. Reportez-vous aux symboles et aux directives cidessous afin de connaître les mesures à prendre pour éviter tout danger.

### 2-2 Dangers relatifs au soudage à l'arc



Les symboles donnés ci-après sont utilisés dans tout le manuel pour attirer l'attention sur les dangers possibles et pour indiquer le type de danger dont il s'agit. Quand on voit le symbole, prendre garde et suivre les directives correspondantes pour éviter le danger. Les consignes de sécurité présentées ci-après ne font que résumer l'information contenue dans les Normes de sécurité principales, et dans le Guide d'utilisation de la source de courant de soudage. Lire et suivre toutes les Normes de sécurité.



L'installation, l'utilisation, l'entretien et les réparations ne doivent être confiés qu'à des personnes qualifiées. Une personne qualifiée est définie comme celle qui, par la possession d'un diplôme reconnu, d'un certificat ou d'un statut professionnel, ou qui, par une connaissance, une formation et une expérience approfondies, a démontré avec succès sa capacité à résoudre les problèmes liés à la tâche, le travail ou le projet et a reçu une formation en sécurité afin de reconnaître et d'éviter les risques inhérents.



Au cours de l'utilisation, tenir toute personne à l'écart et plus particulièrement les enfants.

### UN CHOC ÉLECTRIQUE peut tuer.



- Porter toujours des gants secs et isolants.
- S'isoler de la pièce et de la terre.
- Ne jamais toucher une électrode ou des pièces électriques sous tension.
- Remplacer les pistolets ou câbles de soudage qui sont endommagés, usés ou craquelés.
- Mettre la soudeuse hors tension avant de remplacer un bec contact ou des pièces de pistolet.
- S'assurer que tous les couvercles et poignées sont fermement assujettis.

### LES FUMÉES ET LES GAZ peuvent être dangereux.



- Garder la tête hors des fumées.
- Aérer la zone de travail ou porter un appareil respiratoire. Pour déterminer la bonne ventilation, il est recommandé de procéder à un prélèvement pour la composition et la quantité de fumées et de gaz auxquels est exposé le personnel.
- Lire et comprendre les fiches de données de sécurité et les instructions du fabricant concernant les adhésifs, les revêtements, les nettoyants, les consommables, les produits de refroidissement, les dégraissants, les flux et les métaux.

### Les PIÈCES MOBILES peuvent causer des blessures.



- Ne pas s'approcher des organes mobiles.
- Ne pas s'approcher des points de coincement tels que des rouleaux de commande.

### Le SOUDAGE peut provoquer un incendie ou une explosion.



- Ne pas souder à proximité de matériaux inflammables
- Ne pas effectuer le soudage sur des conteneurs fermés tels que des réservoirs, tambours, ou conduites, à moins qu'ils n'aient été préparés correctement conformément à AWS F4.1 et AWS A6.0 (voir les Normes de Sécurité).
- Prendre garde aux incendies et toujours avoir un extincteur à proximité.

- Lire et comprendre les fiches de données de sécurité et les instructions du fabricant concernant les adhésifs, les revêtements, les nettoyants, les consommables, les produits de refroidissement, les dégraissateurs, les flux et les métaux.

### L'ACCUMULATION DE GAZ risquent de provoquer des blessures ou même la mort.



- Fermer l'alimentation du gaz comprimé en cas de non utilisation.
- Veiller toujours à bien aérer les espaces confinés ou se servir d'un respirateur d'adduction d'air homologué.

### LE RAYONNEMENT DE L'ARC peut brûler les yeux et la peau.



Le rayonnement de l'arc du procédé de soudage génère des rayons visibles et invisibles intenses (ultraviolets et infrarouges) susceptibles de provoquer des brûlures dans les yeux et sur la peau. Des étincelles sont projetées pendant le soudage.

- Porter un casque de soudage approuvé muni de verres filtrants approprié pour protéger visage et yeux pendant le soudage (voir ANSI Z49.1 et Z87.1 énuméré dans les normes de sécurité).
- Porter des lunettes de sécurité avec écrans latéraux même sous votre casque.
- Avoir recours à des écrans protecteurs ou à des rideaux pour protéger les autres contre les rayonnements les éblouissements et les étincelles ; prévenir toute personne sur les lieux de ne pas regarder l'arc.
- Porter une protection corporelle en cuir ou des vêtements ignifuges (FRC). La protection du corps comporte des vêtements sans huile, comme des gants de cuir, une chemise solide, des pantalons sans revers, des chaussures hautes et une casquette.

### LES PIÈCES CHAUDES peuvent provoquer des brûlures.



- Laisser refroidir le pistolet avant de le toucher.
- Ne pas toucher d'objets métalliques chauds.
- Abrisser les objets métalliques contre tout contact par les personnes à proximité.

### Le BRUIT peut endommager l'ouïe.

Le bruit des processus et des équipements peut affecter l'ouïe.



- Vérifier si les niveaux de bruit excèdent les limites spécifiées par l'OSHA.
- Utiliser des bouches-oreilles ou des serre-tête antibruit approuvés si le niveau de bruit est élevé.

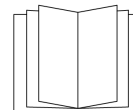
- Avertir les personnes à proximité au sujet du danger inhérent au bruit.

### LES FILS DE SOUDAGE peuvent provoquer des blessures.



- Éloigner les mains et le corps de la buse du pistolet après avoir appuyé sur la gâchette.

### LIRE LES INSTRUCTIONS.



- Lire et appliquer les instructions sur les étiquettes et le Mode d'emploi avant l'installation, l'utilisation ou l'entretien de l'appareil. Lire les informations de sécurité au début du manuel et dans chaque section.
- N'utiliser que les pièces de remplacement provenant du fabricant.
- Effectuer l'installation, l'entretien et toute intervention selon les manuels d'utilisateurs, les normes nationales, provinciales et de l'industrie, ainsi que les codes municipaux.

## 2-3 Proposition californienne 65 avertissements



**AVERTISSEMENT** – Ce produit peut vous exposer à des produits chimiques tels que le plomb, reconnus par l'État de Californie comme cancérigènes et sources de malformations ou d'autres troubles de la reproduction

Pour plus d'informations, consulter [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## 2-4 Principales normes de sécurité

*Safety in Welding, Cutting, and Allied Processes*, American Welding Society standard ANSI Standard Z49.1. Website: [www.aws.org](http://www.aws.org).

*Safe Practice For Occupational And Educational Eye And Face Protection*, ANSI Standard Z87.1, from American National Standards Institute. Website: [www.ansi.org](http://www.ansi.org).

*Safe Practices for the Preparation of Containers and Piping for Welding and Cutting*, American Welding Society Standard AWS F4.1 from Global Engineering Documents. Website: [www.aws.org](http://www.aws.org).

*National Electrical Code*, NFPA Standard 70 from National Fire Protection Association. Website: [www.nfpa.org](http://www.nfpa.org).

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## 2-5 Informations relatives aux CEM

Le courant électrique qui traverse tout conducteur génère des champs électromagnétiques (CEM) à certains endroits. Le courant issu d'un soudage à l'arc (et de procédés connexes, y compris le soudage par points, le gougeage, le découpage plasma et les opérations de chauffage par induction) crée un champ électromagnétique (CEM) autour du circuit de soudage. Les champs électromagnétiques produits peuvent causer interférence à certains implants médicaux, p. ex. les stimulateurs cardiaques. Des mesures de protection pour les porteurs d'implants médicaux doivent être prises: par exemple, des restrictions d'accès pour les passants ou une évaluation individuelle des risques pour les soudeurs. Tous les soudeurs doivent appliquer les procédures suivantes pour minimiser l'exposition aux CEM provenant du circuit de soudage:


1. Rassembler les câbles en les torsadant ou en les attachant avec du ruban adhésif ou avec une housse.
2. Ne pas se tenir au milieu des câbles de soudage. Disposer les câbles d'un côté et à distance de l'opérateur.

3. Ne pas courber et ne pas entourer les câbles autour de votre corps.
4. Maintenir la tête et le torse aussi loin que possible du matériel du circuit de soudage.
5. Connecter la pince sur la pièce aussi près que possible de la soudure.
6. Ne pas travailler à proximité d'une source de soudage, ni s'asseoir ou se pencher dessus.
7. Ne pas souder tout en portant la source de soudage ou le dévidoir.


### En ce qui concerne les implants médicaux :


Les porteurs d'implants doivent d'abord consulter leur médecin avant de s'approcher des opérations de soudage à l'arc, de soudage par points, de gougeage, du coupage plasma ou de chauffage par induction. Si le médecin approuve, il est recommandé de suivre les procédures précédentes.

## SECTION 3 — PRECAUCIONES DE SEGURIDAD — LEA ANTES DE USAR

 **Protéjase usted mismo y a otros contra lesiones — lea, cumpla y conserve estas importantes precauciones de seguridad e instrucciones de utilización.**

### 3-1 Uso de símbolos

 **PELIGRO!** – Indica una situación peligrosa que, si no se la evita, resultará en muerte o lesión grave. Los peligros posibles se muestran en los símbolos adjuntos o se explican en el texto.

 Indica una situación peligrosa que, si no se la evita, podría resultar en muerte o lesión grave. Los peligros posibles se muestran en los símbolos adjuntos, o se explican en el texto.


**AVISO** – Indica precauciones no relacionadas a lesiones personales.


 – Indica instrucciones especiales.




Este grupo de símbolos significa ¡Advertencia!, ¡Cuidado! CHOQUE O DESCARGA ELÉCTRICA, PIEZAS QUE SE MUEVEN, y peligros de PARTES CALIENTES. Consulte los símbolos y las instrucciones relacionadas que aparecen a continuación para ver las acciones necesarias para evitar estos peligros.

### 3-2 Peligros en soldadura de arco

 Los símbolos mostrados abajo se usan en todo este manual para llamar la atención a e identificar los posibles peligros. Cuando vea el símbolo, preste atención y siga las instrucciones relacionadas para evitar el peligro. La información de seguridad dada abajo es solamente un resumen de la información más completa de seguridad que se encuentra en los estándares de seguridad, y la fuente de alimentación para soldadura del Manual del usuario. Lea y siga todas las normas de seguridad.

 Solamente personal cualificado debe instalar, utilizar, mantener y reparar este equipo. La definición de personal cualificado es cualquier persona que, debido a que posee un título, un certificado o una posición profesional reconocida, o gracias a su gran conocimiento, capacitación y experiencia, haya demostrado con éxito la capacidad para solucionar o resolver problemas relacionados con el trabajo, el proyecto o el tema en cuestión, además de haber asistido a una capacitación en seguridad para reconocer y evitar los peligros que implica el proceso.

 Durante su operación mantenga lejos a todos, especialmente a los niños.

**UNA DESCARGA ELÉCTRICA puede matarlo.**



- Siempre use guantes aislantes secos.
- Aíslese usted mismo del trabajo y la tierra.
- No toque electrodo eléctricamente vivo o partes eléctricamente vivas.
- Reemplace antorchas o cables desgastados, dañados o rotos.
- Repare o reemplace aislamiento de la pistola o del cable que esté desgastado, dañado o agrietado.
- Apague la máquina de soldar antes de cambiar los tubos de contacto o piezas de la antorcha.
- Mantenga todas las tapas y asa bien seguras en sitio.

**HUMO y GASES pueden ser peligrosos.**



- Mantenga su cabeza fuera del humo.
- Ventile el lugar o use un aparato para respirar. El método recomendado para determinar la ventilación adecuada es tomar muestras de la composición y cantidad de humos y gases a los que está expuesto el personal.
- Lea y entienda las Hojas de datos del material (SDS) y las instrucciones del fabricante relacionadas con los adhesivos, metales, consumibles, recubrimientos, limpiadores, refrigerantes, desengrasadores, fundentes y metales.

**Las PIEZAS MÓVILES pueden provocar lesiones.**



- Aléjese de toda parte en movimiento.
- Aléjese de todo punto que pellizque, tal como rodillos impulsados.

**EL SOLDAR puede causar fuego o explosión.**



- No suelde cerca de material inflamable
- No suelde en recipientes que han contenido combustibles, ni en recipientes cerrados como tanques, tambores o tuberías, a menos que estén preparados correctamente de acuerdo con la norma AWS F4.1 y AWS A6.0 (vea las normas de seguridad).
- Siempre mire que no haya fuego y mantenga un extinguidor de fuego cerca.
- Lea y entienda las Hojas de datos del material (SDS) y las instrucciones del fabricante relacionadas con los adhesivos, metales, consumibles, recubrimientos, limpiadores, refrigerantes, desengrasadores, fundentes y metales.

## EL AMONTONAMIENTO DE GAS puede enfermarle o matarle.



- Cierre el suministro de gas comprimido cuando no lo use.
- Siempre dé ventilación a espacios cerrados o use un respirador aprobado que reemplaza el aire.

## LOS RAYOS DEL ARCO pueden quemar sus ojos y piel.

Los rayos del arco de un proceso de suelda producen un calor intenso y rayos ultravioletas fuertes que pueden quemar los ojos y la piel. Las chispas se escapan de la soldadura.



- Use una careta para soldar aprobada equipada con un filtro de protección apropiado para proteger su cara y ojos de los rayos del arco y de las chispas mientras esté soldando o mirando. (véase los estándares de seguridad ANSI Z49.1 y Z87.1).
- Use anteojos de seguridad aprobados que tengan protección lateral.
- Use pantallas de protección o barreras para proteger a otros del destello, reflejos y chispas, alerte a otros que no miren el arco.
- Use protección para el cuerpo hecha de cuero o de prendas resistentes a las llamas (FRC). Entre la protección para el cuerpo se incluye la ropa sin aceite, como guantes de cuero, una camisa gruesa, pantalones sin vuelta, calzado alto y una gorra.

## PARTES CALIENTES pueden causar quemaduras severas.



- Permita que la antorcha se enfríe antes de tocarla.
- No toque metal caliente.
- Proteja a otros del contacto con el metal caliente.

## EL RUIDO puede trastornar su oído.

Ruido proveniente de algunos procesos o equipo puede dañar el oído.



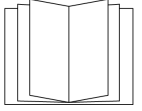
- Chequee los límites del nivel del ruido si exceden aquellos especificados por OSHA.
- Use tapas para los oídos o cubiertas para los oídos si el nivel del ruido es demasiado alto.
- Advierta a otros que estén cerca acerca del peligro del ruido.

## El ALAMBRE de SOLDAR puede causarle heridas.



- Mantenga las manos y el cuerpo lejos del tubo de contacto de la antorcha cuando se haya presionado el gatillo.

## LEER INSTRUCCIONES.



- Lea y siga cuidadosamente las instrucciones contenidas en todas las etiquetas y en el Manual del usuario antes de instalar, utilizar o realizar tareas de mantenimiento en la unidad. Lea la información de seguridad incluida en la primera parte del manual y en cada sección.
- Utilice únicamente piezas de reemplazo legítimas del fabricante.
- Los trabajos de instalación y mantenimiento deben ser ejecutados de acuerdo con las instrucciones del manual del usuario, las normas del sector y los códigos nacionales, estatales y locales.

### 3-3 Advertencias de la Proposición 65 del estado de California



**ADVERTENCIA:** Este producto puede exponerlo a químicos, incluso plomo, que el estado de California conoce como causantes de cáncer, defectos de nacimiento u otros daños reproductivos.

Para obtener más información, acceda a [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### 3-4 Estándares principales de seguridad

*Safety in Welding, Cutting, and Allied Processes*, American Welding Society standard ANSI Standard Z49.1. Website: [www.aws.org](http://www.aws.org).

*Safe Practice For Occupational And Educational Eye And Face Protection*, ANSI Standard Z87.1, from American National Standards Institute. Website: [www.ansi.org](http://www.ansi.org).

*Safe Practices for the Preparation of Containers and Piping for Welding and Cutting*, American Welding Society Standard AWS F4.1 from Global Engineering Documents. Website: [www.aws.org](http://www.aws.org).

*National Electrical Code*, NFPA Standard 70 from National Fire Protection Association. Website: [www.nfpa.org](http://www.nfpa.org).

*Safe Handling of Compressed Gases in Cylinders*, CGA Pamphlet P-1 from Compressed Gas Association. Website: [www.cganet.com](http://www.cganet.com).

*Safety in Welding, Cutting, and Allied Processes*, CSA Standard W117.2 from Canadian Standards Association. Website: [www.csagroup.org](http://www.csagroup.org).

*Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*, NFPA Standard 51B from National Fire Protection Association. Website: [www.nfpa.org](http://www.nfpa.org).

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910.177 Subpart N, Part 1910 Subpart Q, and Part 1926, Subpart J. Website: [www.osha.gov](http://www.osha.gov).

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### 3-5 Información sobre los campos electromagnéticos (EMF)

La corriente que fluye a través de un conductor genera campos eléctricos y magnéticos (EMF) localizados. La corriente del arco de soldadura (y otras técnicas afines como la soldadura por puntos, el ranurado, el corte por plasma y el calentamiento por inducción) genera un campo EMF alrededor del circuito de soldadura. Los campos EMF pueden interferir con algunos dispositivos médicos implantados como, por ejemplo, los marcapasos. Por lo tanto, se deben tomar medidas de protección para las personas que utilizan estos implantes médicos. Por ejemplo, aplique restricciones al acceso de personas que pasan por las cercanías o realice evaluaciones de riesgo individuales para los soldadores. Todos los soldadores deben seguir los procedimientos que se indican a continuación con el objeto de minimizar la exposición a los campos EMF generados por el circuito de soldadura:

1. Mantenga los cables juntos retorciéndolos entre sí o uniéndolos mediante cintas o una cubierta para cables.
2. No ubique su cuerpo entre los cables de soldadura. Disponga los cables a un lado y apartelos del operario.

3. No enrolle ni cuelgue los cables sobre su cuerpo.
4. Mantenga la cabeza y el tronco tan apartados del equipo del circuito de soldadura como le sea posible.
5. Conecte la pinza de masa en la pieza lo más cerca posible de la soldadura.
6. No trabaje cerca de la fuente de alimentación para soldadura, ni se siente o recueste sobre ella.
7. No suelde mientras transporta la fuente de alimentación o el alimentador de alambre.

#### **Acerca de los aparatos médicos implantados:**

Las personas que usen aparatos médico implantados deben consultar con su médico y el fabricante del aparato antes de llevar a cabo o acercarse a soldadura de arco, soldadura de punto, ranurar, hacer corte por plasma, u operaciones de calentamiento por inducción. Si su doctor lo permite, entonces siga los procedimientos de arriba.



# SECTION 4 — PRODUCT WARRANTY

## 4-1 Product Warranty

### Limited Warranty

Tregaskiss' Products shall, from the date of original purchase (or, solely with respect to Low Stress Robotic Unicables packaged with any Tregaskiss® Robotic MIG Gun, from the date the product goes into production for its intended use) and for the period set forth below, be free from defects in material and workmanship. To obtain repair or replacement of any Product, the covered Product must be delivered, transportation pre-paid by Purchaser, to the address specified by Tregaskiss on its Returned Materials Authorization, with: (i) written proof of warranty coverage (e.g., Purchaser dated purchase order); (ii) serial number on product (if any); (iii) the Product's installed location within Purchaser's facility and usage of the Product; and (iv) written specification of any alleged defect(s). In the event the foregoing materials are not timely provided to Tregaskiss by claimant, warranty coverage will be determined by Tregaskiss, in its sole discretion. For the avoidance of doubt, the warranty period for any Product or part/component of any Product that is replaced or repaired by Tregaskiss under the foregoing warranty is not extended or renewed at the time of such replacement or repair. **The Warranty against defects does not apply to: (1) consumable components or ordinary wear items; (2) products which are improperly altered, modified, stored, installed, operated, handled, used or neglected or use of the Products with equipment, components or parts not specified or supplied by Tregaskiss or contemplated under the Product documentation; or (3) Products which have not been operated, maintained, and repaired pursuant to Product documentation provided by Tregaskiss. Purchaser shall pay Tregaskiss for all warranty claim costs incurred by Tregaskiss (including inspection, labor, parts, testing, scrap and freight) due to warranty claims submitted by Purchaser which are not covered by Tregaskiss' warranty.**

- Bernard® BTB Semi-Automatic Air-Cooled MIG Guns: **1 year**; *Lifetime warranty on straight handles, straight handle switches, and rear strain relief*
- Bernard® W-Gun™ and T-Gun™ Semi-Automatic Water-Cooled MIG Guns: **180 days**
- Bernard® TGX® Chassis and Bernard TGX Ready To Weld MIG Guns: **90 days**
- Tregaskiss® Robotic MIG Guns and Components: **1 year**
- Tregaskiss® Automatic MIG Guns: **1 year**
- Tregaskiss® TOUGH GUN® Reamer: **1 year**
  - When factory-equipped with lubricator: **2 years** when factory-equipped with lubricator
  - When (i) factory-equipped with lubricator and (ii) used exclusively with Tregaskiss® TOUGH GARD® Anti-Spatter Liquid: **3 years** when both (i) and (ii)
- Tregaskiss® TOUGH GUN® Robotic Peripheral (Clutch, Sprayer, Wire Cutter, Arms): **1 year**
- Tregaskiss® Low-Stress Robotic Unicables (LSR Unicables): **6 months**

### Service Warranty

Tregaskiss warrants the Services shall conform to any mutually agreed upon specifications or statements of work. Purchaser's sole remedy, and Tregaskiss's sole liability, for a breach of the foregoing warranty is for Tregaskiss, at its option, to re-perform the Services or credit Purchaser's account for such Services.

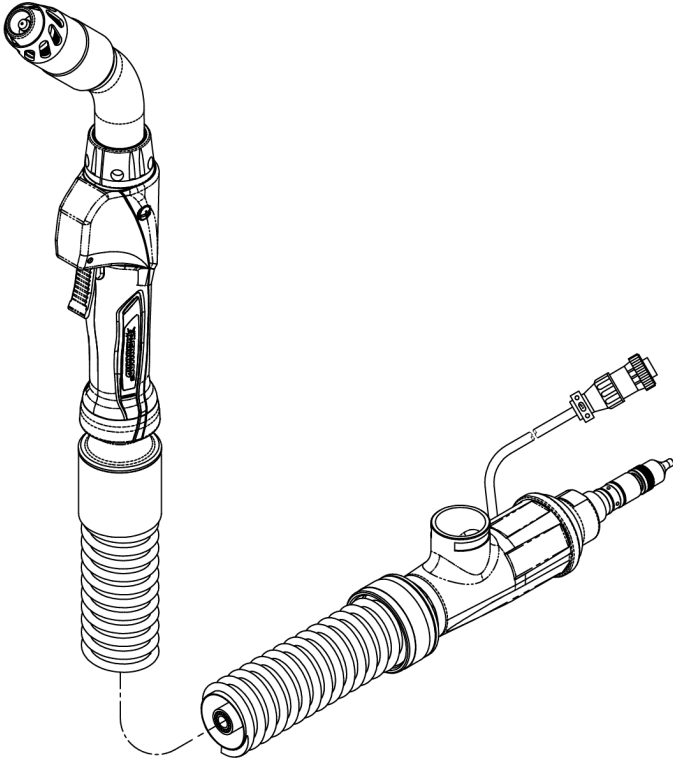
### Limitation of Liability and Remedies

TREGASKISS WILL NOT BE LIABLE, AND PURCHASER WAIVES ALL CLAIMS AGAINST TREGASKISS FOR INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, DOWN TIME, LOST PROFITS OR COMMERCIAL LOSSES, WHETHER OR NOT BASED UPON TREGASKISS' NEGLIGENCE OR BREACH OF WARRANTY OR STRICT LIABILITY IN TORT OR ANY OTHER CAUSE OF ACTION. IN NO EVENT WILL TREGASKISS' LIABILITY IN CONNECTION WITH THE AGREEMENT OR SALE OF TREGASKISS' PRODUCTS OR SERVICES EXCEED THE PURCHASE PRICE OF THE SPECIFIC PRODUCTS OR SERVICES AS TO WHICH THE CLAIM IS MADE.

# SECTION 5 — SPECIFICATIONS

## 5-1 Specifications

### Fume Extraction MIG (GMAW) Welding Gun



300 amp gun feeds maximum wire size of 5/64" (2.0 mm)

**Duty Cycle Rating:**

100%: 300 amp with CO<sub>2</sub> Shielding Gas  
60%: 300 amp with Mixed Gases

400 amp gun feeds maximum wire size of 5/64" (2.0 mm)

**Duty Cycle Rating:**

100%: 400 amp with CO<sub>2</sub> Shielding Gas  
60%: 400 amp with Mixed Gases

500 amp gun feeds maximum wire size of 3/32" (2.4 mm)

**Duty Cycle Rating:**

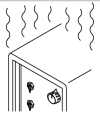
100%: 500 amp with CO<sub>2</sub> Shielding Gas  
60%: 500 amp with Mixed Gases

600 amp gun feeds maximum wire size of 1/8" (3.2 mm)

**Duty Cycle Rating:**

100%: 600 amp with CO<sub>2</sub> Shielding Gas  
60%: 600 amp with Mixed Gases

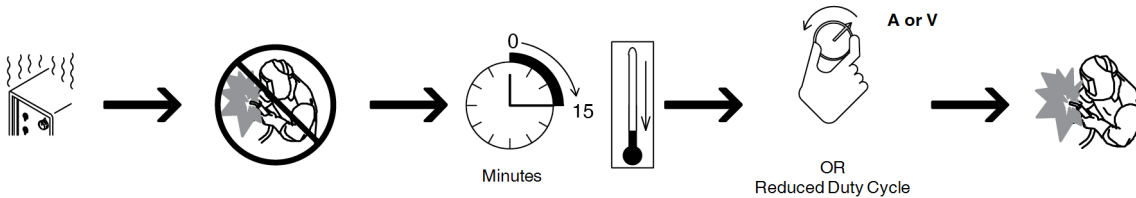
## 5-2 Duty Cycle and Overheating



Duty Cycle is percentage of 10 minutes that unit can weld at rated load without overheating.

Using mixed gases other than CO<sub>2</sub> reduces duty cycle ratings 10-50% depending on gas mixture and welding parameters.

Please reference Section 5 — Specifications on page 11 for duty cycle ratings by amperage.





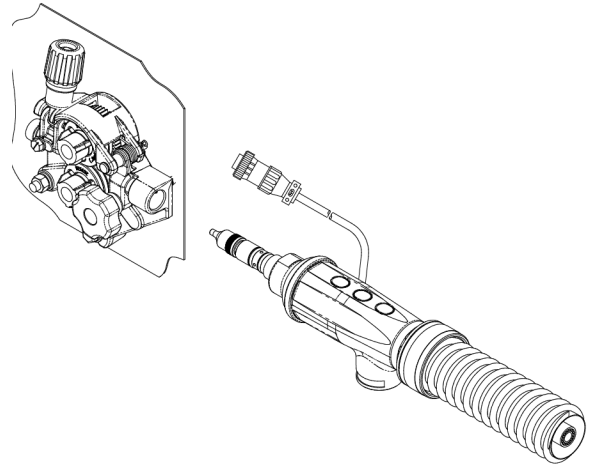
## SECTION 6 — INSTALLATION

### 6-1 Installing to a Feeder with a Power Pin



1. Insert power pin to shoulder and secure tightly.
2. Insert control plug into feeder.
3. Feed welding wire into power pin by hand and tighten drive rolls.

Figure 6-A



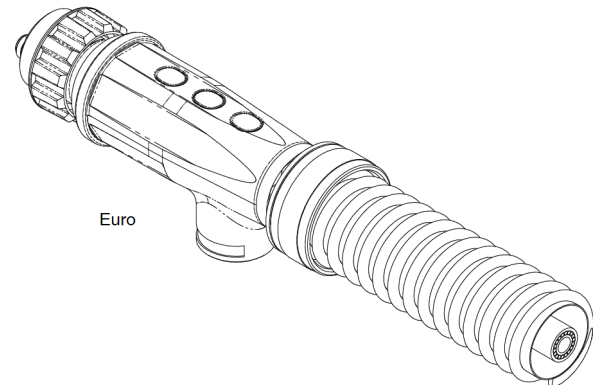
### 6-2 Installing to a Feeder with a Euro or a Bernard® Power Pin



#### A. Euro Power Pin

1. Insert the Euro power pin to face of receptacle.
2. Thread Euro hand nut clockwise to tighten.

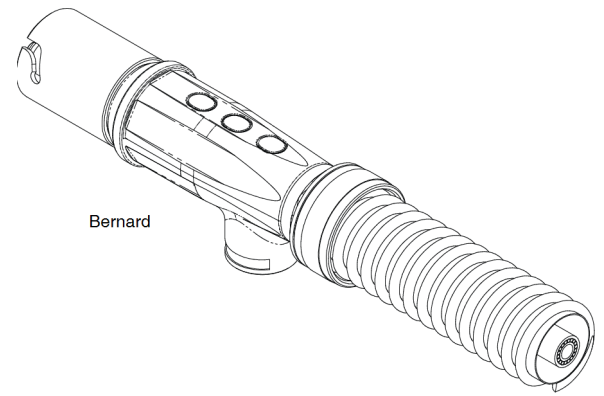
Figure 6-B



## B. Bernard Power Pin

Figure 6-C

1. Insert the Bernard power pin to face of receptacle.
2. Engage and rotate locking sleeve to tighten.

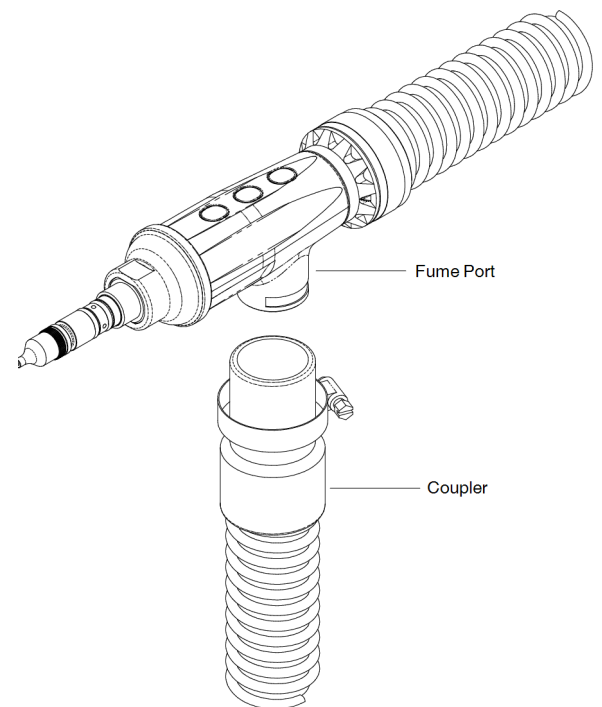


### 6-3 Installing to a Fume Extraction Unit



1. Thread coupler into hose connected to fume extraction unit.
2. Slide coupler onto fume port on rear strain relief and secure by tightening clamp.

Figure 6-D



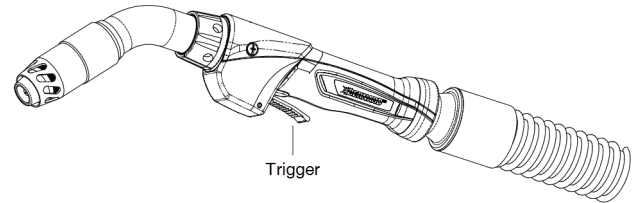
## SECTION 7 — OPERATION

### 7-1 Pulling the Trigger



1. Trigger - When pressed, energized wire feeds and shielding gas flows.

Figure 7-A

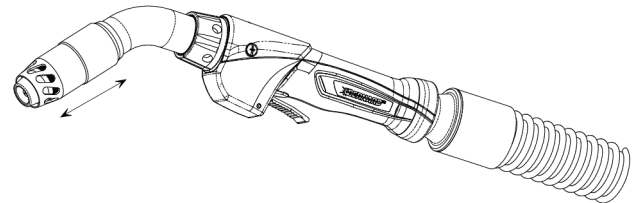


### 7-2 Adjusting the Vacuum Chamber



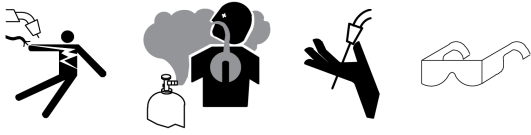
1. Vacuum chamber - The vacuum chamber can be adjusted to any of four set positions.
2. Adjust the vacuum chamber by pulling it back or pushing it forward until it locks into the desired position.

Figure 7-B



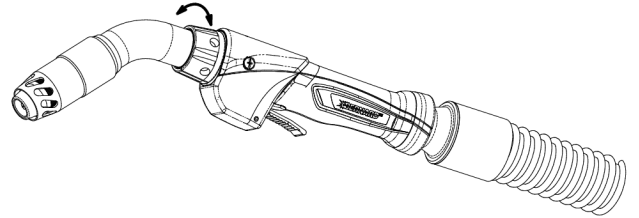
## 7-3 Adjusting the Vacuum Control Knob

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1. Vacuum control knob - The vacuum control knob can be used to adjust the amount of vacuum at the front of the gun.
2. Rotate clockwise to increase vacuum and counterclockwise to decrease vacuum.

Figure 7-C

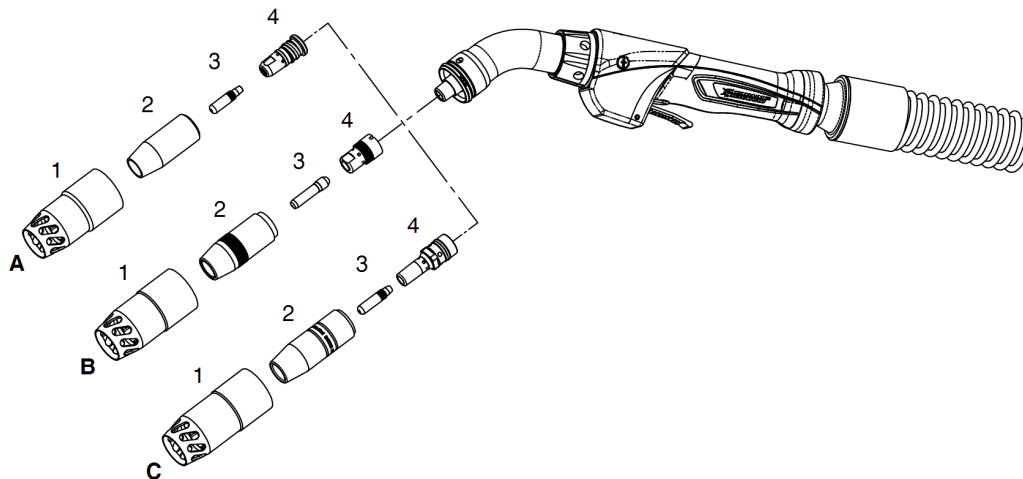


## SECTION 8 — REPLACEMENT

### 8-1 Changing Consumables



Figure 8-A



#### A. Changing Quik Tip™ Consumables

1. Remove vacuum chamber.
2. Remove threaded nozzle by turning in a counterclockwise direction.
3. Cut electrode and remove all burrs before removing the contact tip. Remove Quik Tip contact tip from the gas diffuser with a counterclockwise turn. To replace, slide the contact tip over electrode into gas diffuser and lock with a turn in clockwise rotation.
4. Gas diffuser may be removed with an appropriate wrench in a counterclockwise rotation. To install, firmly secure gas diffuser with an appropriate wrench in a clockwise rotation and torque to 144 in-lbs.

#### B. Changing Centerfire™ Consumables

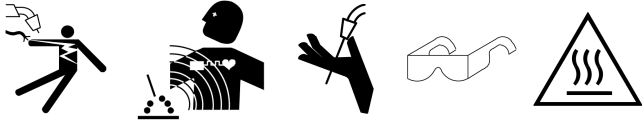
1. Remove vacuum chamber.
2. Remove threaded nozzle by turning in a counterclockwise direction.
3. Cut electrode and remove all burrs before removing the contact tip.

4. Pull the Centerfire contact tip from the gas diffuser. To replace, slide the contact tip over electrode into gas diffuser and lock by installing nozzle onto gas diffuser. Nozzle is used to secure contact tip.
5. Gas diffuser may be removed with an appropriate wrench in a counterclockwise rotation. To install, firmly secure gas diffuser with an appropriate wrench in a counterclockwise rotation. Torque to 144 in-lbs.

#### C. Changing TOUGH LOCK® Consumables

1. Remove the vacuum chamber.
2. Remove the slip-on nozzle with a twisting and pulling motion.
3. Cut electrode and remove all burrs before removing the contact tip. Remove the TOUGH LOCK contact tip from the retaining head with a counterclockwise turn. To replace, slide the contact tip over electrode into retaining head and lock with a clockwise rotation.
4. Retaining head may be removed with an appropriate wrench in a counterclockwise rotation. To install, firmly secure retaining head with an appropriate wrench in a clockwise rotation. Torque to 144 in-lbs.

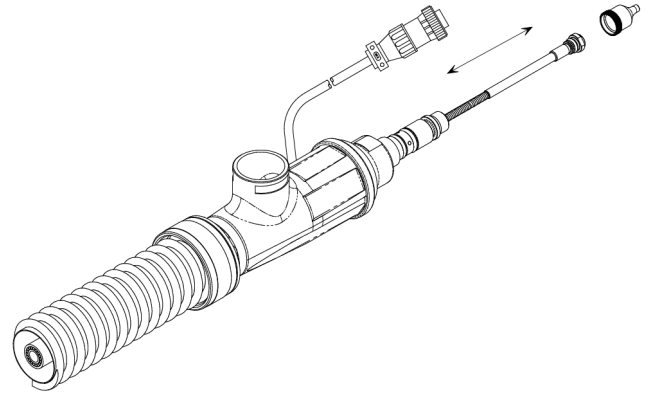
## 8-2 Changing the Liner



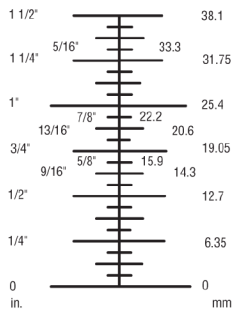
### A. Changing Conventional Liner

1. Remove front-end consumables and lay cable straight.
2. Using a 10 mm wrench, turn liner counterclockwise until it is free from the power pin. Remove liner from gun assembly.
3. With cable laying straight, insert new liner into power pin and feed through gun using short strokes to prevent kinking. Twist liner clockwise if necessary.
4. Use a 10 mm wrench to turn liner lock clockwise to tighten into power pin.
5. Push liner through front of gun and trim to dimensions shown in the **New Liner Trim Lengths** chart shown below.
6. Remove all burrs from end of liner and replace front-end consumables.

Figure 8-B

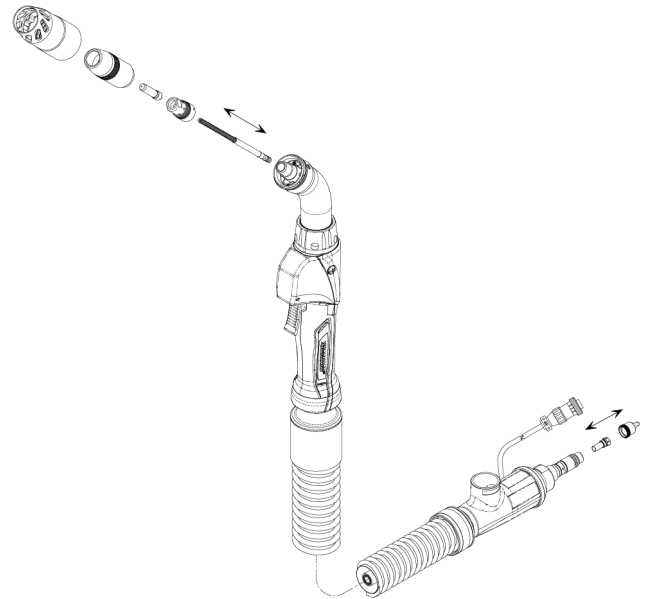


New Liner Trim Lengths		
Centerfire Diffuser Part Number	Liner Trim Length	
D-1	9/16"	14.3 mm
DS-1	9/16"	14.3 mm
Quik Tip Diffuser Part Number	Liner Trim Length	
D114Q	9/16"	14.3 mm
D118Q	3/4"	19.1 mm
TOUGH LOCK Retaining Head Part Number	Liner Trim Length	
404-44	3/4"	19.1 mm

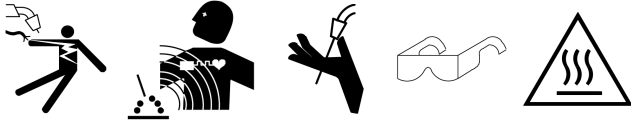


## B. Changing QUICK LOAD® Liner

1. Remove the front-end consumables and lay the cable straight.
2. Pull the QUICK LOAD Liner from the end of the neck using pliers.
3. Remove the protective cap from the new QUICK LOAD Liner and insert it through the neck using the wire as a guide.
4. With cable laying straight, feed the liner through the gun using short strokes to prevent kinking.
5. Once the liner stops feeding, give it an extra push to ensure it is seated correctly.
6. Push liner into gun. You should feel the o-rings click into the retainer. Trim to dimensions shown in **New Liner Trim Lengths** chart above.
7. Remove all burrs from end of liner and replace front-end consumables.



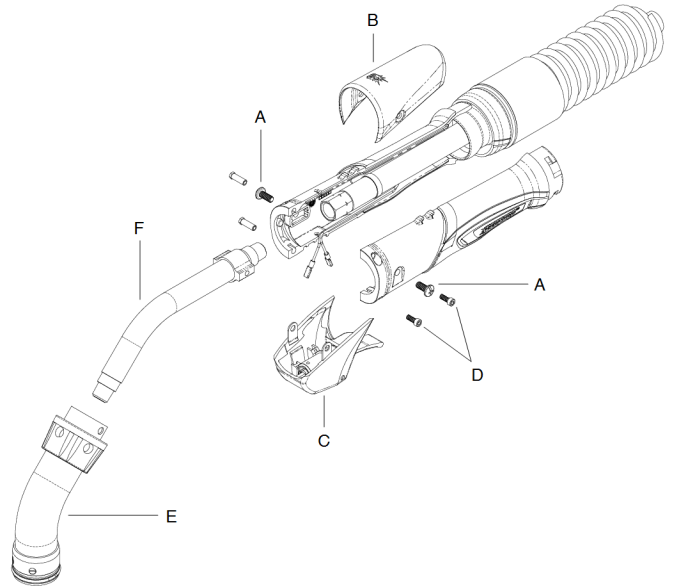
## 8-3 Changing the Neck and Switch



### A. Changing the Neck - Straight Handle Model

1. Remove the two top pods screws (see 'A' in Figure 8-D) on the side of the gun.
2. Slide the top pod (see 'B' in Figure 8-D) up and back toward the rear of the handle and pull the trigger (see 'C' in Figure 8-D) down.
3. Remove the two handle screws (see 'D' in Figure 8-D) and rotate the handle locking cap 1/4 turn counterclockwise to open the handle.
4. After removing the vacuum chamber and front-end consumables, the vacuum tube (see 'E' in Figure 8-D) will slide forward.
5. Hold the neck (see 'F' in Figure 8-D) snug in a vise (be careful not to damage the neck by over tightening) and loosen cable/neck connection using a wrench.
6. Remove from vise and unthread neck by hand.
7. Thread new neck into cable end fitting and tighten by hand.
8. Hold neck in vise and secure cable/neck connection using a wrench. Torque to 13 ft-lbs (17.6 Nm).
9. Position neck, vacuum tube, and handle swivel into handle. Make sure trigger wires are located in cutout at the bottom of the handle.
10. Close handle halves and secure by rotating the handle locking cap clockwise 1/4 turn. Secure handle halves with the two handle screws and post fasteners.

Figure 8-D



### B. Changing the Switch - Straight Handle Model

1. If replacing the trigger, disconnect the two terminals from the switch and then connect the new trigger.
2. Position trigger onto bottom of handle, slide top pod down over the top of the handle and lock into place.
3. Secure with two screws and reassemble front-end consumables and vacuum chamber.



## C. Changing the Neck - Curved Handle Model

1. Remove the vacuum chamber and front-end consumables (see 'A' in Figure 8-E).
2. Remove the screws (see 'B' in Figure 8-E) to remove the vacuum tube (see 'C' in Figure 8-E).
3. Remove screws and nuts (see 'F' in Figure 8-E) and gently spread the handle (see 'E' in Figure 8-E) apart, keeping hold of the trigger (see 'G' in Figure 8-E).
4. Remove the trigger and left side of handle, then gently pry the wire ends off of the right side handle (see Figure 8-F) and remove.
5. Place the neck (see 'D' in Figure 8-E) snug in a vise (be careful not to damage the neck by over tightening) and use a wrench to loosen the cable connection to the neck. Remove from vise and unthread by hand.
6. To replace the neck, thread into the cable end fitting and tighten by hand. Secure the neck in a vise, then torque cable/neck connection to 13 ft-lbs (17.6 Nm).
7. Position the neck, vacuum tube and handle swivel (see 'H' in Figure 8-E) into the handle. Make sure the trigger wires are located at the bottom cutouts in the handle, then push the wire ends into the right side handle (see Figure 8-F).
8. Place the trigger between handle halves with the pivot posts inserted into the cavities, and reassemble with screws and nuts (see 'F' in Figure 8-E). Torque to 10 in-lbs (1.1 Nm).
9. Reassemble the vacuum tube with screws (see 'B' in Figure 8-E), and reinstall the front-end consumables and vacuum chamber.

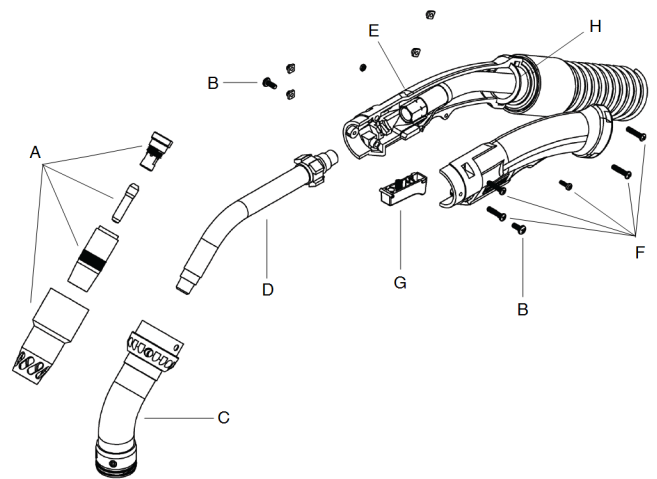
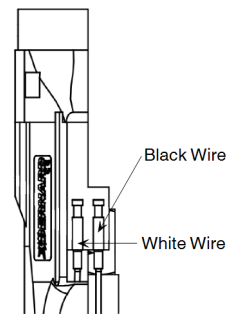


Figure 8-E

## D. Changing the Switch - Curved Handle Model

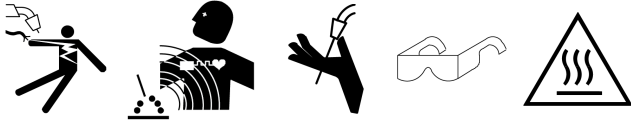
1. If replacing the trigger, loosen the screws but do not fully remove.
2. Pry open the bottom side of the handle halves and remove the trigger.
3. Install new trigger into the handle halves with the pivot posts inserted into the handle cavities so movement is not impaired, then tighten screws and torque to 10 in-lbs (1.1 Nm).

Figure 8-F



Trigger Wire View

## 8-4 Changing the Vacuum Hose



### A. Vacuum Hose on Straight Handle Model

1. Open the handle and remove the neck and trigger by following the steps listed in steps A. and B. in section 8-3 Changing the Neck and Switch on page 19
2. With a 1/4 counterclockwise rotation, remove the vacuum hose rear cap from the rear strain relief.
3. Slide the old vacuum hose forward and remove from cable.
4. Slide the new vacuum hose over the cable and secure the vacuum hose rear cap to the rear strain relief with a 1/4 clockwise rotation.
5. Reassemble the handle and front-end components by following the steps listed in steps A. and B. in section 8-3 Changing the Neck and Switch on page 19.

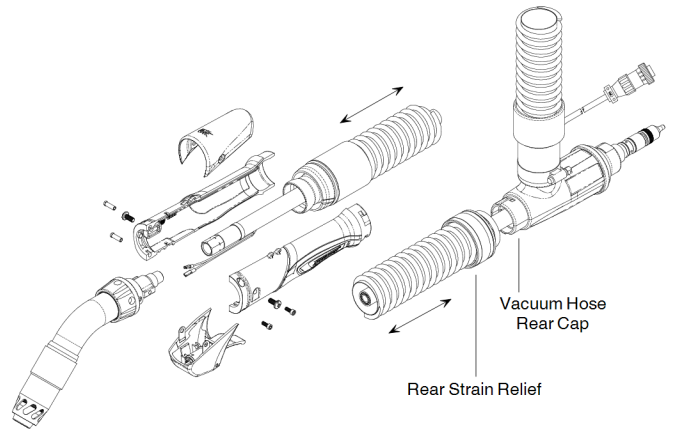


Figure 8-G

### B. Vacuum Hose on Curved Handle Model

1. Open the handle and remove the neck. Follow the steps listed in C. and D. in section 8-3 Changing the Neck and Switch on page 19.
2. With 1/4 counterclockwise rotation, remove the vacuum hose rear cap from the rear strain relief.
3. Slide the old vacuum hose forward and remove from the cable.
4. Slide the new vacuum hose over the cable. Secure vacuum hose to the rear strain relief with a 1/4 turn clockwise.
5. Reassemble the handle and front-end components by following the steps listed in C. and D. in section 8-3 Changing the Neck and Switch on page 19.

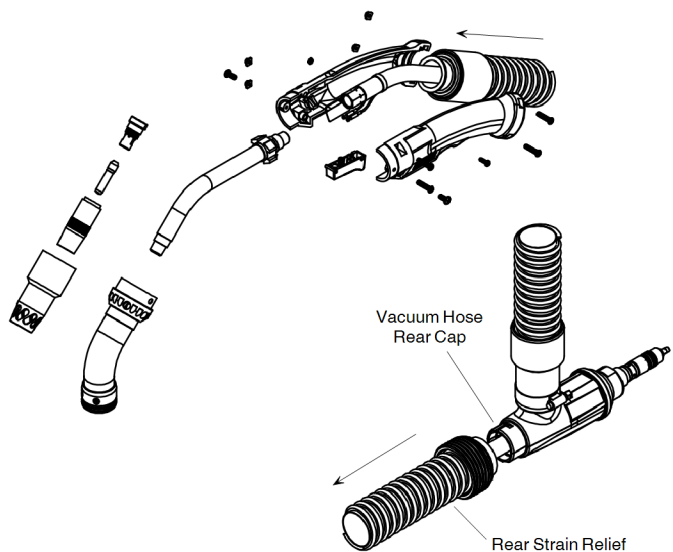
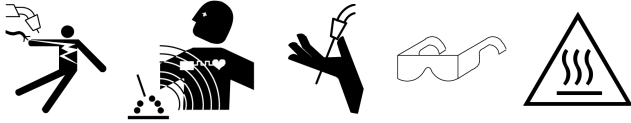


Figure 8-H

## 8-5 Changing the Power Pin



### A. Universal Power Pin

1. Remove the liner by following the steps listed in section 8-2 Changing the Liner on page 17.
2. Remove the screw and vacuum hose from rear strain relief and slide rear strain relief back over power pin. Position control lead wires as necessary as not to damage them.
3. Use wrenches and rotate power pin in a counterclockwise direction to remove it from the adaptor block.
4. Thread new power pin into adaptor block and use wrenches in a clockwise direction to thread power pin into adaptor block. Torque to 18 ft-lbs (24 Nm).
5. Slide rear strain relief over power pin and locate onto adaptor block, aligning flats and screw hole.
6. Secure with screw.
7. position control lead wires in cutout on side of strain relief.
8. Close strain relief top and secure with vacuum hose by rotating clockwise 1/4 turn.
9. Reinstall liner by following the steps listed in section 8-2 Changing the Liner on page 17.

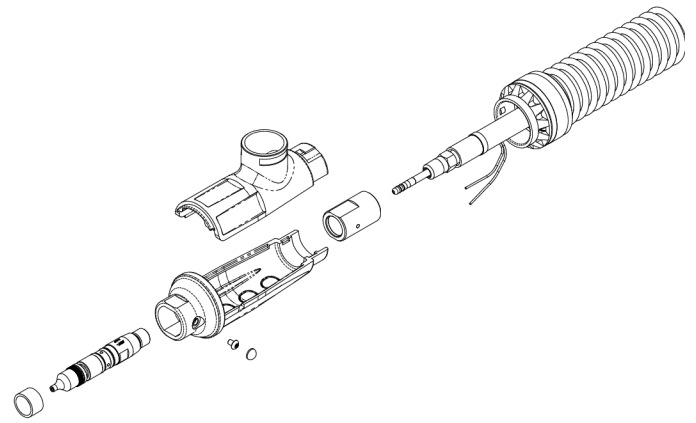


Figure 8-I

### B. Euro Power Pin

1. Remove the liner by following the steps listed in section 8-2 Changing the Liner on page 17. Remove the screw and vacuum hose from rear strain relief.
2. Disconnect Euro block leads from gun by cutting as close as possible on both sides of the butt connectors in order to preserve wire for later re-termination.
3. Slide adaptor nut toward cable, thus exposing the Euro block.
4. Remove Euro block from end fitting using appropriate wrenches in a counterclockwise rotation.
5. Test lead wires for continuity when trigger is engaged.
6. Slide adaptor nut over cable with internal threads facing toward rear of the gun.
7. Assemble Euro block into adaptor block in a clockwise rotation using appropriate wrenches. Torque to 18 ft-lbs (24 Nm).
8. Seat adaptor nut on Euro block. Adaptor nut should rotate freely.
9. Strip the control leads 1/4" (6.5 mm) and re-terminate with appropriate butt connectors.
10. Install strain relief and vacuum hose.
11. Reinstall liner by following the steps listed in section 8-2 Changing the Liner on page 17.

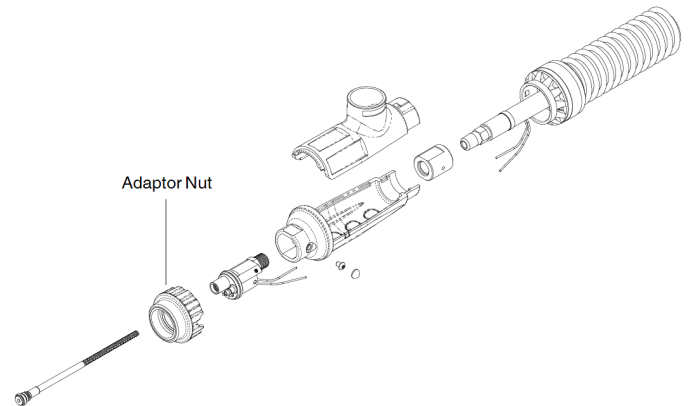
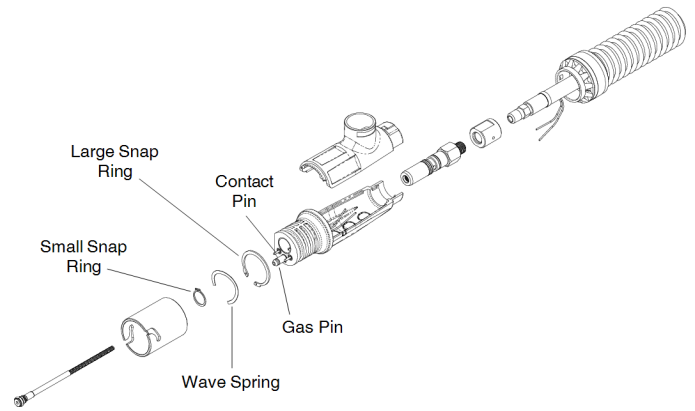


Figure 8-J

## C. Bernard Quick Disconnect

Figure 8-K

1. Remove the liner by following the steps listed in section 8-2 Changing the Liner on page 17.
2. Remove vacuum hose.
3. Viewing quick disconnect from cable end, align wave spring and large snap ring with opening access slot.
4. Compress large snap ring with internal snap ring pliers and remove locking sleeve.
5. Remove small external snap ring from power pin with external snap ring pliers.
6. Remove the control leads from the rigid strain relief by compressing the locking tabs on the contact pins with needle nose pliers and pulling the lead wire to unseat cap and sleeve assembly.
7. Unthread power pin from end fitting with appropriate wrenches in a counterclockwise rotation. The gas pin may be disassembled by removing the small retaining ring and pulling the pin from the rigid strain relief.
8. Test contact pins for continuity when trigger is engaged.
9. Inspect all components for cracks, debris, excessive wear and breakage. Replace with new components if safety or performance of product is compromised.
10. Thread power pin into adaptor block and torque to 18 ft-lbs (24 Nm).
11. Install locking sleeve components and vacuum hose.
12. Reinstall liner by following the steps listed in section 8-2 Changing the Liner on page 17.

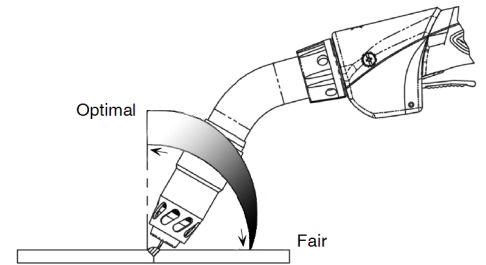


# SECTION 9 — OPTIMIZING FUME CAPTURE

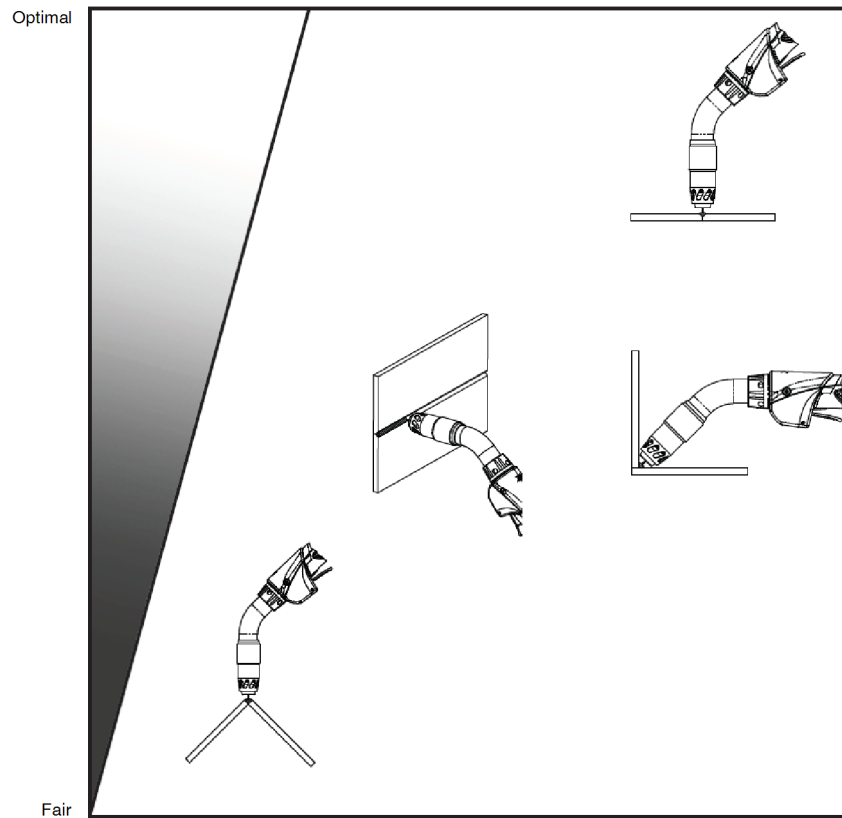
## 9-1 Optimizing Fume Capture

Follow the diagram below for optimizing the efficiency of fume capture from your fume extraction MIG gun. The joints and positions of welds will affect the efficiency of fume capture.

Figure 9-A

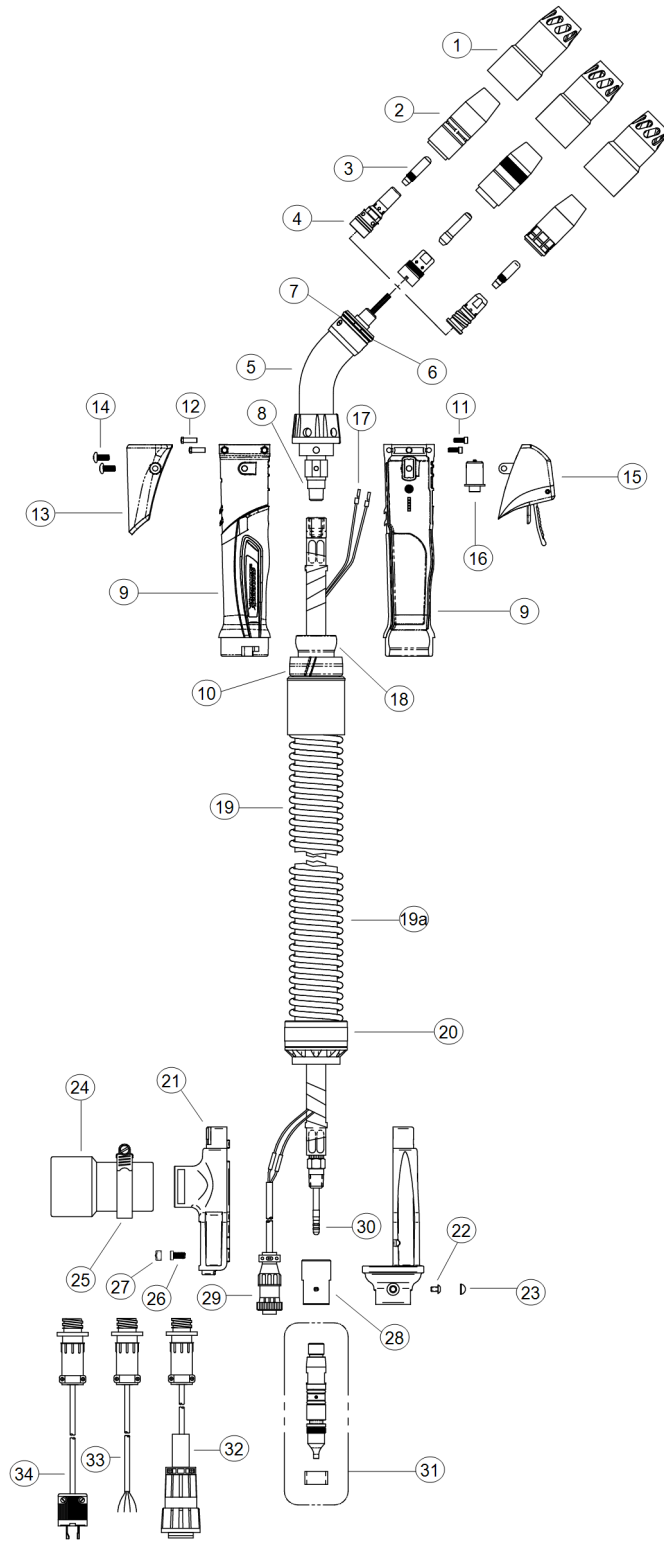


Optimal capture efficiency is achieved when fume gun is positioned directly above the weld puddle.



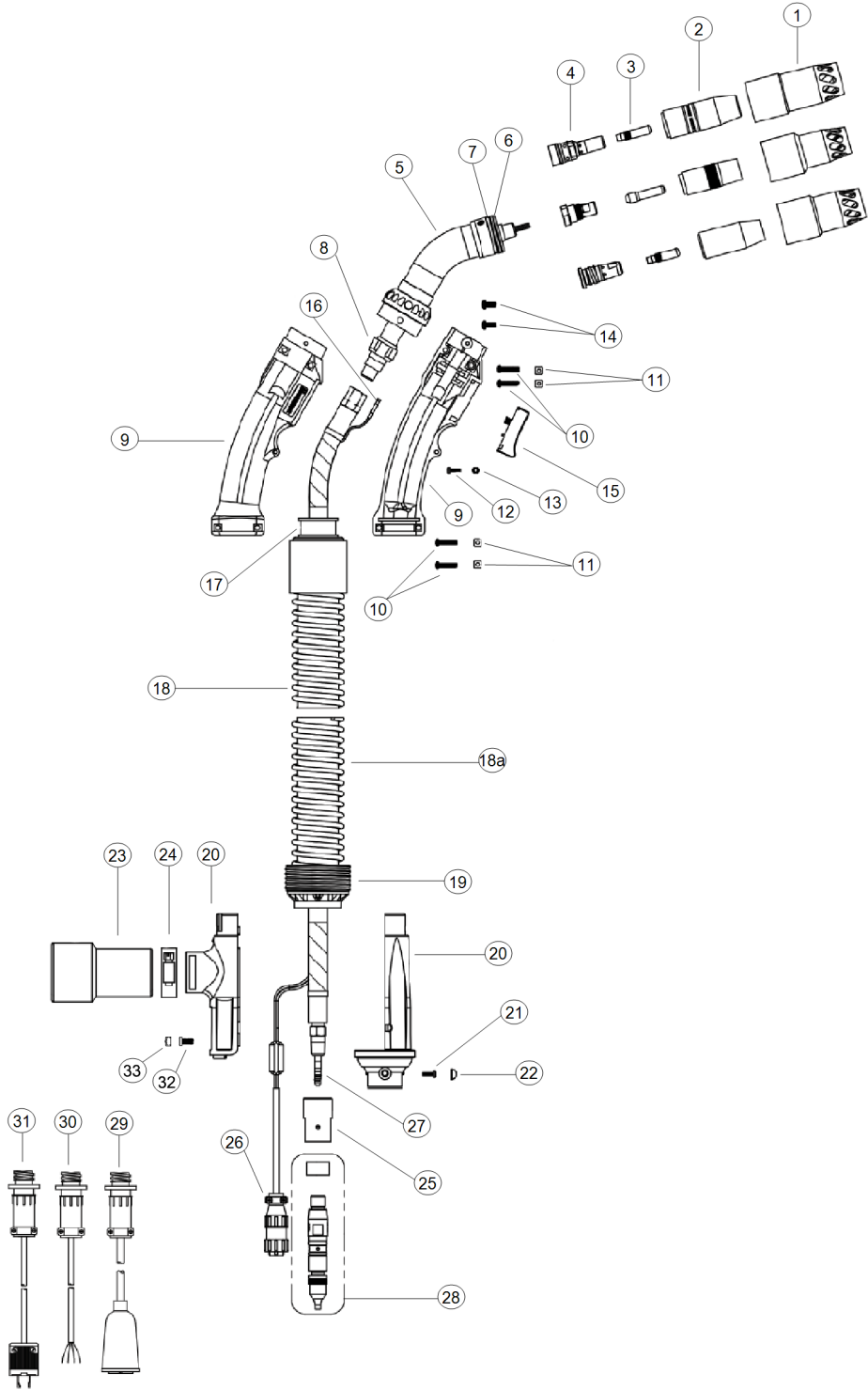
# SECTION 10 — PARTS LIST

## 10-1 Straight Handle Model - 300, 400, 500, 600 amp



ITEM	PART #				DESCRIPTION
	CL30	CL40	CL50	CL60	
1	1390135				Nozzle shroud (long), TOUGH LOCK®
	1390132	1390134			Nozzle shroud (long), Centerfire™
	1390133				Nozzle shroud (long), Quik Tip™
	1390142				Nozzle shroud (short), TOUGH LOCK, Centerfire, Quik Tip ( <i>not configurable; must be purchased separately</i> )
2	401-6-62		401-5-75		Nozzle, TOUGH LOCK Heavy Duty (HD)
	NS-5818C	N-5818C	N-5814C	N-3414C	Nozzle, Centerfire
	N1C58Q		N1C34Q		Nozzle, Quik Tip
3	See SP-CLA Spec Sheet				Contact tip
4	404-44				Retaining head, TOUGH LOCK
	DS-1	D-1			Gas diffuser, Centerfire
	D118Q		D114Q		Gas diffuser, Quik Tip
5	2390029				Vacuum tube assembly, 45 degree ( <i>includes Items 6 and 7</i> )
	2390030				Vacuum tube assembly, 60 degree ( <i>includes Items 6 and 7</i> )
6	2250020				Retaining ring
7	2040024				O-ring
8	1040084				Neck, 45 degree, 2-inch radius (medium length)
	1040085				Neck, 60 degree, 2-inch radius (medium length)
9	1880260				Handle kit ( <i>includes Items 10 (x1), 11 (x2) and 12 (x2)</i> )
10	1780089				Cap, locking
11	2280065				Screw, handle ( <i>2 req'd</i> )
12	2030034				Post fastener, handle ( <i>2 req'd</i> )
13	1810049				Top pod, standard
14	2280066				Screw, top pod ( <i>2 req'd</i> )
15	2690084				Trigger ( <i>includes Item 16</i> )
16	411-1				Switch
17	412-1				Switch connector ( <i>2 req'd</i> )
18	2520091	2520090			Handle swivel
19	1800050	1800049			Vacuum hose ( <i>NOTE: Order 1' less than gun length; Example: order 9' for a 10-ft gun</i> )
19a	1080044A	1080045A			Replacement hose, 8' ( <i>includes Items 18 and 20</i> )
	1080044B	1080045B			Replacement hose, 10' ( <i>includes Items 18 and 20</i> )
	1080044C	1080045C			Replacement hose, 12' ( <i>includes Items 18 and 20</i> )
	1080044D	1080045D			Replacement hose, 15' ( <i>includes Items 18 and 20</i> )
	1080044E	1080045E			Replacement hose, 20' ( <i>includes Items 18 and 20</i> )
	1080044F	1080045F			Replacement hose, 25' ( <i>includes Items 18 and 20</i> )
20	2520089	2520088			Rear cap
21	2520093				Strain relief ( <i>Miller®, Lincoln®, Tweco® power pins</i> )
	2520094				Strain relief ( <i>Bernard®</i> )
	2520080				Strain relief ( <i>Euro</i> )
22	2280056				Screw, strain relief
	510-200-2-6				Screw, Euro w/AutoLength™
23	1620003				Screw cover
24	1880245				Vacuum hose adaptor kit ( <i>includes 2-1/8" to 1-1/2" threaded hose fitting (x1) and Item 25 (x1)</i> )
25	833				Clamp
26	2280069				Screw
27	2950012				Screw cover
28	1010039				Adaptor block ( <i>Miller, Lincoln, Tweco</i> )
	1010027				Adaptor block ( <i>Bernard, Euro</i> )
29	GN2021				Electrical plug, non-D/S ( <i>Miller, Lincoln, Tweco power pins</i> )
30	See SP-CLA spec sheet				Liner
31	Se SP-CLA spec sheet				Power pin components
32	SCL1N				Trigger cable adaptor, Lincoln lead ( <i>configurator power pin options L, S</i> )
33	SCT1N				Trigger cable adaptor, spade terminals ( <i>configurator power pin options T, W</i> )
34	SCX1N				Trigger cable adaptor, 2-prong twist lock ( <i>configurator power pin option U</i> )

10-2 Curved Handle Model - 300, 400 amp





ITEM	PART #		DESCRIPTION
	CL30	CL40	
1	1390135		Nozzle shroud (long), TOUGH LOCK®
	1390132	1390134	Nozzle shroud (long), Centerfire™
	1390133		Nozzle shroud (long), Quik Tip™
	1390142		Nozzle shroud (short), TOUGH LOCK, Centerfire, Quik Tip (not configurable; must be purchased separately)
2	401-6-62		Nozzle, TOUGH LOCK Heavy Duty (HD)
	NS-5818C	N-5818C	Nozzle, Centerfire
	N1C58Q		Nozzle, Quik Tip
3	See SP-CLA Spec Sheet		Contact tip
4	404-44		Retaining head, TOUGH LOCK
	DS-1	D-1	Gas diffuser, Centerfire
	D118Q		Gas diffuser, Quik Tip
5	2390026		Vacuum tube assembly, 30 degree (includes Items 6 and 7)
	2390027		Vacuum tube assembly, 45 degree (includes Items 6 and 7)
	2390028		Vacuum tube assembly, 60 degree (includes Items 6 and 7)
6	2250020		Retaining ring
7	2040024		O-ring
8	1040081		Neck, 30 degree, 2-inch radius (medium length)
	1040082		Neck, 45 degree, 2-inch radius (medium length)
	1040083		Neck, 60 degree, 2-inch radius (medium length)
9	1880257		Handle kit (includes Items 10 (x4), 11 (x4), 12 (x1) and 13 (x1))
10	203296-005		Screw, handle (2 req'd)
11	177272		Square nut, handle (4 req'd)
12	2280044		Screw, handle
13	2030029		Machine nut, handle (2 req'd)
14	2280063		Screw, vacuum tube
15	177488		Trigger
16	177271		Switch connector (2 req'd)

			DESCRIPTION
	CL30	CL40	
17	2810010	2810011	Handle swivel
18	1800050	1800049	Vacuum hose (NOTE: Order 1' less than gun length; Example: order 9' for a 10-ft gun)
	1080046A	1080047A	Replacement hose, 8' (includes Items 17 and 19)
18a	1080046B	1080047B	Replacement hose, 10' (includes Items 17 and 19)
	1080046C	1080047C	Replacement hose, 12' (includes Items 17 and 19)
	1080046D	1080047D	Replacement hose, 15' (includes Items 17 and 19)
	1080046E	1080047E	Replacement hose, 20' (includes Items 17 and 19)
	1080046F	1080047F	Replacement hose, 25' (includes Items 17 and 19)
19	2520089	2520088	Rear cap
20	2520093		Strain relief (Miller®, Lincoln®, Tweco® power pins)
	2520094		Strain relief (Bernard®)
	2520080		Strain relief (Euro)
21	2280056		Screw, strain relief
	510-200-2-6		Screw, Euro w/AutoLength™
22	1620003		Screw cover
23	1880245		Vacuum hose adaptor kit (includes 2-1/8" to 1-1/2" threaded hose fitting (x1) and Item 24 (x1))
24	833		Clamp
	1010039		Adaptor block (Miller, Lincoln, Tweco)
25	1010027		Adaptor block (Bernard, Euro)
26	GN2021		Electrical plug, non-D/S (Miller, Lincoln, Tweco power pins)
27	See SP-CLA spec sheet		Liner
28	See SP-CLA spec sheet		Power pin components
29	SCL1N		Trigger cable adaptor, Lincoln lead (configurator power pin options L, S)
30	SCT1N		Trigger cable adaptor, spade terminals (configurator power pin options T, W)
31	SCX1N		Trigger cable adaptor, 2-prong twist lock (configurator power pin option U)
32	2280069		Screw
33	2950012		Screw cover

# ADDITIONAL SUPPORT MATERIALS

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For additional support materials such as Spec Sheets, troubleshooting information, how-to guides and videos, animations, online configurators and much more, please visit Bernard. Scan the QR Code with your smart phone for immediate access to [Tregaskiss.com/TechnicalSupport](http://Tregaskiss.com/TechnicalSupport).



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Scan to view the Clean Air Fume Extraction MIG Gun Spec Sheet



Scan to view the Centerfire™ Consumables Spec Sheet



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Scan to view the TOUGH LOCK® Consumables Spec Sheet



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