

Tregaskiss® BA1 Cobot Air-Cooled MIG Gun

OWNER'S MANUAL

January 2024

OM-BA1-1.6

Cobot, Air-Cooled, MIG Gun (GMAW)
Welding Gun



Tregaskiss.com/TechnicalSupport
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Thank You for Choosing Tregaskiss®

Thank you for selecting a Tregaskiss 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, Tregaskiss assumes no responsibility for errors or omissions. Tregaskiss 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 for updated material.

For customer support and special applications, please call the Tregaskiss Customer Service Department at 1-855-MIGWELD (644-9353) (US & Canada) or +1-519-737-3000 (International), fax 1-519-737-1530, or email at 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.

Tregaskiss manufactures premium robotic MIG (GMAW) welding guns, peripherals and consumables. For more information on other premium Tregaskiss products, contact your local Tregaskiss distributor or visit us on the web at Tregaskiss.com.

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DECLARATION OF CONFORMITY

for European Community (CE marked) products



Tregaskiss, 2570 North Talbot Rd., Oldcastle, Ontario N0R 1L0 Canada 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
Tregaskiss BA1 Series	BA1XXXXXXXX (Configurable #)

Council Directives:

- 2014/35/EU Low Voltage
- 2011/65/EU and amendment 2015/863 Restriction of the use of certain hazardous substances in electrical and electronic equipment

Standards:

- EN IEC 60974-7:2019 Arc welding equipment – Part 7: Torches
- EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Signatory:

January 11, 2024

David A. Werba
MANAGER, PRODUCT DESIGN COMPLIANCE

Date of Declaration

DECLARATION OF CONFORMITY

for United Kingdom (UKCA marked) products



Tregaskiss, 2570 North Talbot Rd., Oldcastle, Ontario N0R 1L0 Canada 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
Tregaskiss BA1 Series	BA1XXXXXXXXX (Configurable #)

Council Directives:

- S.I. 2016/1101 Electrical Equipment (Safety) Regulations 2016
- S.I. 2012/3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations

Standards:

- EN IEC 60974-7:2019 Arc welding equipment – Part 7: Torches
- EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Signatory:

January 11, 2024

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.

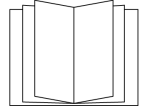
WELDING WIRE can injure.

- 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.

1-4 Principal Safety Standards

Safety in Welding, Cutting, and Allied Processes, American Welding Society standard ANSI Standard Z49.1. Website: 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.

Safe Practices for the Preparation of Containers and Piping for Welding and Cutting, American Welding Society Standard AWS F4.1. Website: www.aws.org.

National Electrical Code, NFPA Standard 70 from National Fire Protection Association. Website: www.nfpa.org.

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1 from Compressed Gas Association. Website: www.cganet.com.

Safety in Welding, Cutting, and Allied Processes, CSA Standard W117.2 from Canadian Standards Association. Website: 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.

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.

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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 nettoyeurs, 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 nettoyeurs, les consommables, les produits de refroidissement, les dégraisseurs, 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.
- Abriter 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 bouche-oreilles ou des serre-tête antibruit approuvés si le niveau de bruit est élevé.

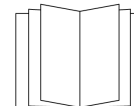
- Avertir les personnes à proximité au sujet du danger inhérent au bruit.

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.

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.

Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute. Website: 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.

National Electrical Code, NFPA Standard 70 from National Fire Protection Association. Website: www.nfpa.org.

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1 from Compressed Gas Association. Website: www.cganet.com.

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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.

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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 puedan 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.

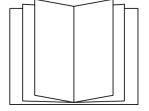
- Chequee los límites del nivel del ruido si exceden aquellos especificados por OSHA.
- Use tapas para los oídos o cubiertas para los oídos si el nivel del ruido es demasiado alto.
- Advierta a otros que estén cerca acerca del peligro del ruido.

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.

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.

Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute. Website: 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.

National Electrical Code, NFPA Standard 70 from National Fire Protection Association. Website: www.nfpa.org.

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1 from Compressed Gas Association. Website: www.cganet.com.

Safety in Welding, Cutting, and Allied Processes, CSA Standard W117.2 from Canadian Standards Association. Website: 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.

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.

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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 apártelos 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:
 - 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.

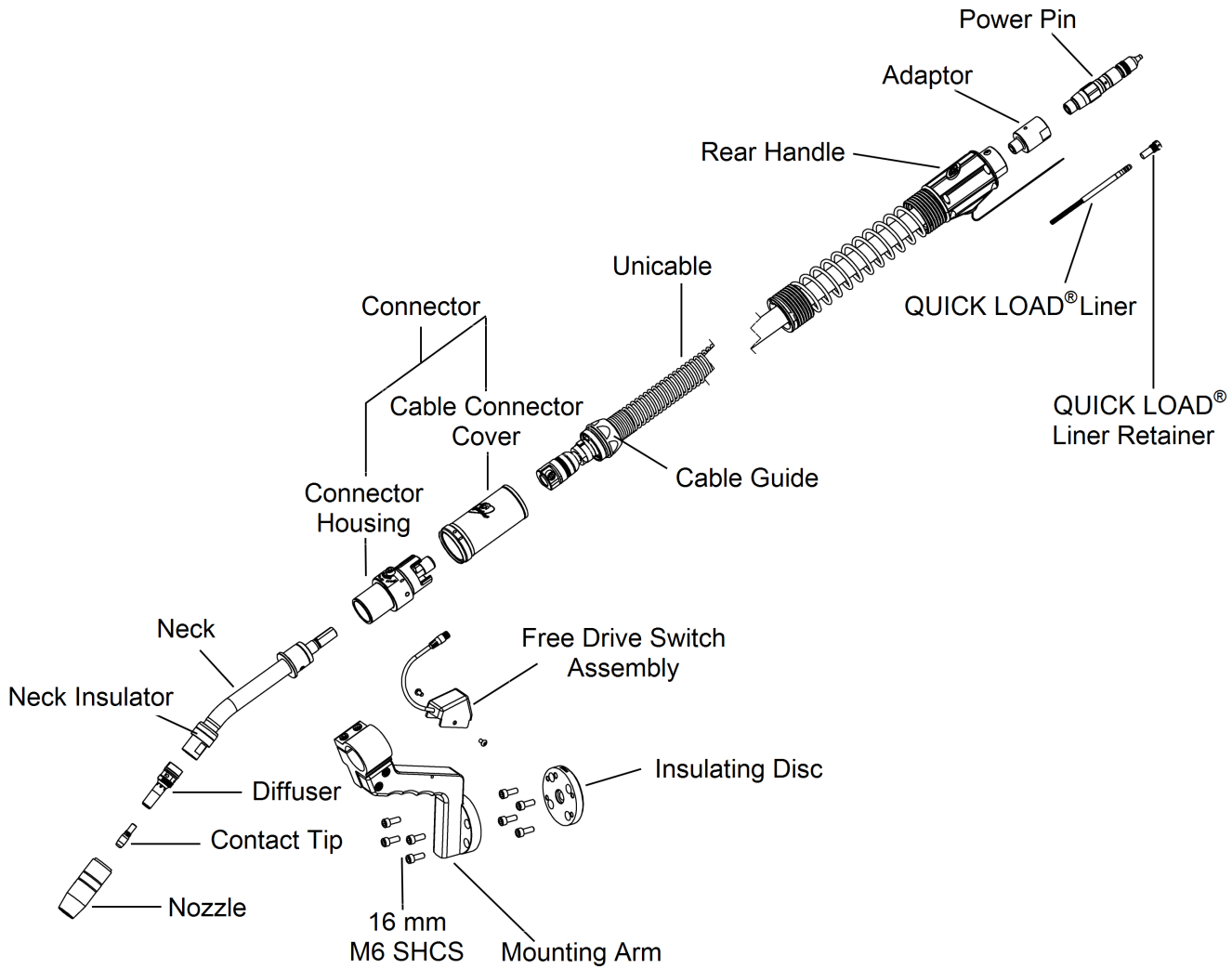
SECTION 5 — SPECIFICATIONS

5-1 System Components

Cobot MIG Gun for GMAW Welding

Duty Cycle Rating: 100%: 350 amps with Mixed Gases

For complete parts list, please see Section 9 — Parts List on page 24.



SECTION 6 — INSTALLATION

6-1 Installing Gun to Cobot



A. Installing Disc to Cobot

1. Bring cobot to service position. (see Figure 6-B)
2. Align the dowel in the wrist with the dowel hole in the insulating disc and fully seat the disc on the cobot wrist by hand. (see Figure 6-B)
NOTE: Dowel not provided.
3. Secure the disc to the cobot with fasteners using the supplied tightening pattern. (see Figure 6-A)
IMPORTANT: Do not use the fasteners to pull the face of the insulating disc to the face of the cobot wrist, as damage will occur.
NOTE: Fasteners are not provided since the size varies by cobot.
4. Torque to 45 in-lbs (5 Nm).

Figure 6-A

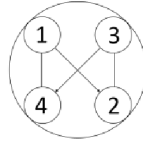


Figure 6-B

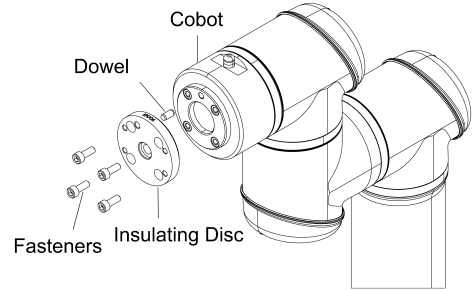
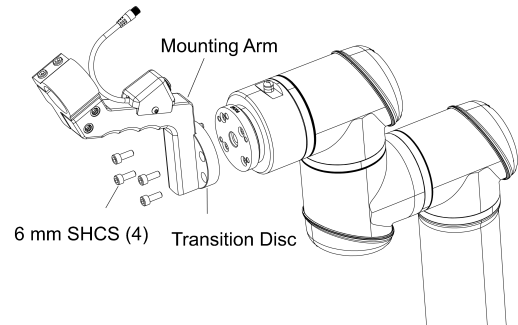


Figure 6-C

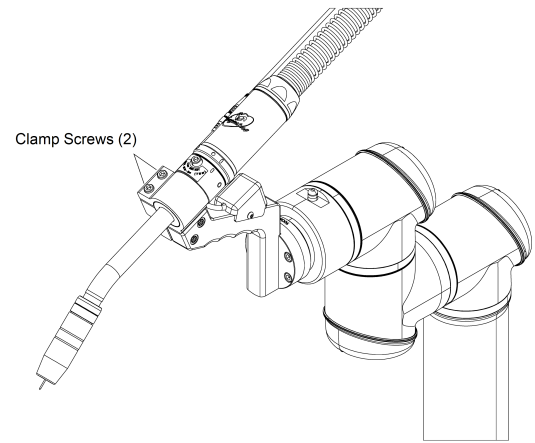
B. Installing Mounting Arm to Disc

1. Align dowel on mounting arm with the dowel hole in insulating disc and seat it by hand. (see Figure 6-C)
2. Secure the mounting arm to the disc on the cobot with 6 mm SHCS (provided) using the supplied tightening pattern (see Figure 6-A). **IMPORTANT:** Do not use fasteners to pull the mounting arm to the face of the insulating disc, as damage will occur.
3. Torque to 45 in-lbs (5 Nm).



C. Installing Gun to Gun Mount

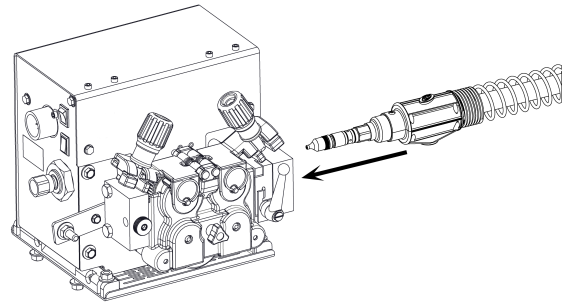
1. Loosen clamp screws (2) in mounting clamp. (see Figure 6-D)
2. Fully insert gun into the clamp until it bottoms out on the shoulder, aligning the key on the gun with the keyway on the clamp.
3. Tighten the clamp screws using a 5 mm Allen wrench to secure the gun in place.



6-2 Installing Gun to Wire Feeder

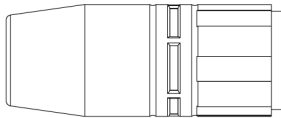
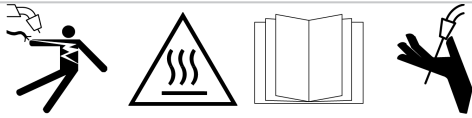


1. Plug gun into feeder and lock power pin into place (see your feeder manual for details). Connect external gas if required.
 2. **OPTIONAL:** Connect voltage sense lead (see your feeder manual for details) on the replaceable unicable with the male connector on the power jumper cable.
- NOTE:** Be sure to align any features to allow for proper installation.

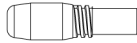


SECTION 7 — REPLACEMENT

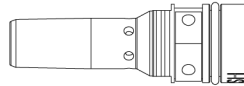
7-1 Changing Consumables



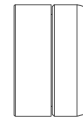
Nozzle



Contact Tip



Retaining Head / Diffuser



Neck Insulator

IMPORTANT NOTES:

- Contact tip must be properly tightened before welding to prevent overheating or premature failure.
- Neck insulator **MUST** be in place before welding to properly insulate gun.
- Check all parts to ensure that connections are tight before welding.
- The retaining head / diffuser **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 / diffuser or scoring may result.

A. Changing the Nozzle

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

B. Changing the Contact Tip

1. Remove the worn contact tip with welpers and discard.
2. Thread the contact tip into the retaining head / diffuser.
3. Torque to 30 in-lbs (3.5 Nm).

NOTE: The Tregaskiss® Tip Tool (part # T-ALTOOL for AccuLock™ contact tips) or a pair of welpers are the optimal tools for AccuLock contact tip installation.

C. Changing the Retaining Head / Diffuser

1. Remove the worn retaining head / diffuser and discard.
2. Thread the retaining head / diffuser onto neck by hand. Tighten with a 5/8" (16 mm) wrench.
3. Torque to 80 in-lbs (9 Nm).

IMPORTANT: DO NOT use pliers to remove or tighten the retaining head / diffuser or scoring may result.

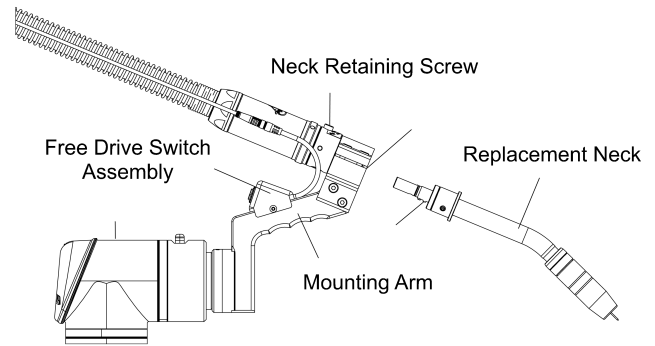
D. Changing the Neck Insulator

1. Remove front-end consumables.
2. The neck insulator is pressed onto the neck by hand with the aluminum side towards the neck and the black insulation towards the nozzle.
3. Reinstall front-end consumables.

7-2 Changing the Neck



1. Remove front-end consumables (see section 7-1 Changing Consumables on page 14).
2. Remove liner (see section 7-4 Changing the Liner on page 18).
3. Using a 5 mm Allen wrench, loosen neck retaining screw 1/4 turn to remove the neck.
4. Pull neck directly out of the connector housing.
5. Insert replacement neck into the connector housing, ensuring the dowel on the neck is lined up with the keyway in the gun until it bottoms out.
6. Tighten neck retaining screw to 60 in-lbs (7 Nm) using a 5 mm Allen wrench.
7. Install and trim liner if required.
8. Reinstall consumables.



7-3 Changing the Free Drive Switch



For controller I/O connection switch assembly

(Part# BAS2201B-1):

1. Disconnect the free drive main cable from the free drive switch assembly cable. (Figure 7-B)
2. Using a 2.5mm Allen wrench, loosen the 4mm BSHCS (2) on each side of switch assembly. (Figure 7-B)
3. Remove the existing free drive switch assembly.
4. Install the new free drive switch assembly and secure in place using the (2) 4mm BSHCS (provided).
5. Reconnect the free drive main cable.

Figure 7-A

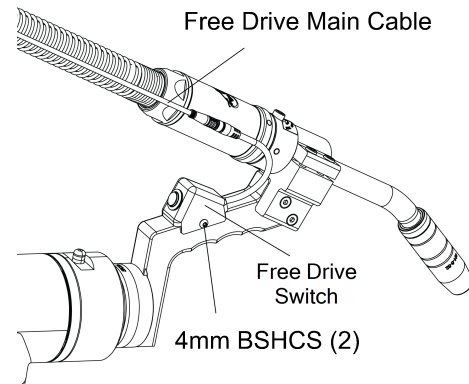
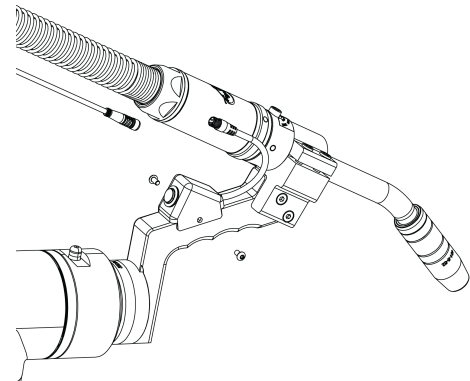


Figure 7-B



For Universal Robot (UR) 8-pin wrist I/O connection switch assembly

(Part# BAS2201C-1):

1. Disconnect the free drive switch assembly cable from the 8-pin UR wrist connector. (Figure 7-C)
2. Using a 2.5mm Allen wrench, loosen the 4mm BSHCS (2) and remove the cable cover. (Figure 7-D)
3. Using a 2.5mm Allen wrench, loosen the 4mm BSHCS (2) from each side of switch assembly. (Figure 7-E)
4. Remove the existing free drive switch assembly.
5. Install the new free drive switch assembly and secure in place using 4mm BSHCS (2) (provided).
6. Route the new cable through the cable guide channel machined into the mounting arm.
7. Reinstall the cable cover using the 4mm BSHCS (2) (provided) to secure in place.
8. Wrap remaining cable around cobot wrist (Figure 7-F) and reconnect to the 8-pin UR wrist connector.

Figure 7-C

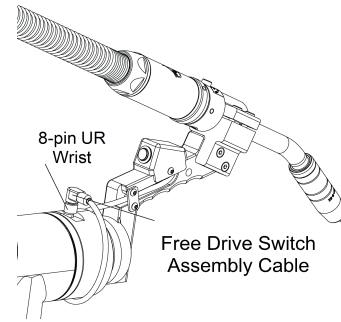


Figure 7-D

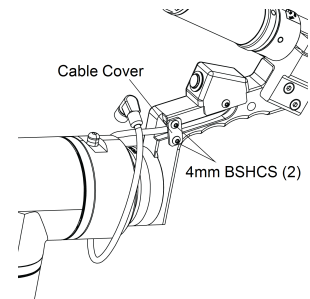


Figure 7-E

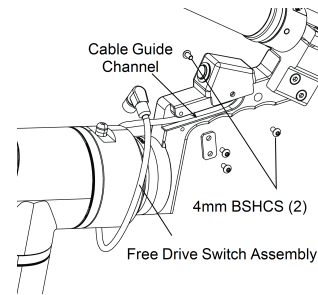
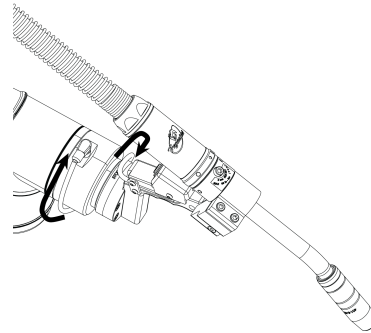
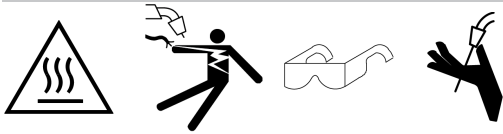


Figure 7-F



7-4 Changing the Liner

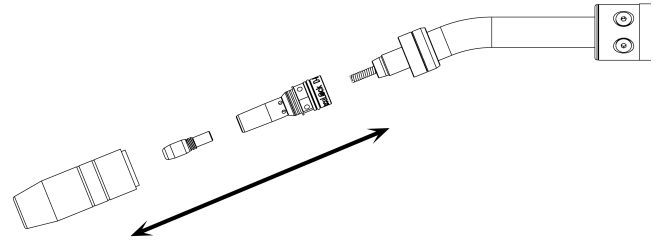


A. Changing QUICK LOAD® Liner

Figure 7-G

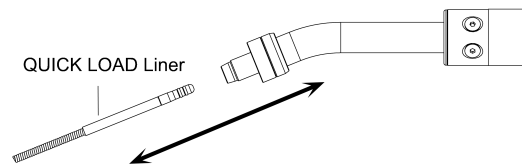
NOTE: Ensure power supply is off before proceeding.

1. Remove consumables (nozzle, contact tip and retaining head / diffuser) (see section 7-1 Changing Consumables on page 14).



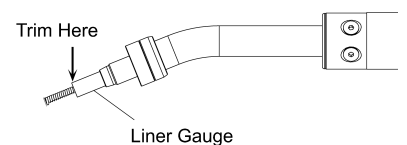
2. Remove existing QUICK LOAD Liner by pulling it out from the neck.
3. Ensure the o-rings on the new QUICK LOAD Liner are adequately lubed, using a silicone based lube, then insert through the neck using the welding wire as a guide (short strokes will prevent kinking).
4. Once liner stops feeding, give it an extra push until it bottoms out in the liner retainer in the power pin to ensure it is inserted completely.

Figure 7-H



5. Push liner back into gun and hold in place. Using liner gauge, trim liner to a 1/2" stick-out for gun lengths 6 feet and shorter, or 3/4" stick-out for gun lengths longer than 6 feet.
HELPFUL HINT: Before cutting the liner with wire inside, mark the liner using the gauge and then pull the liner out beyond the end of the welding wire; then cut the liner and push it back into place securely. This will help with feeding the wire through the contact tip afterward.
6. Remove any burrs that may obstruct wire feed.
7. Reinstall consumables onto neck.

Figure 7-I



B. Changing QUICK LOAD Liner in the AutoLength™ System

NOTE: Ensure power supply is off before proceeding.

1. Remove consumables (nozzle, contact tip and retaining head / diffuser) (see section 7-1 Changing Consumables on page 14).
2. Remove existing QUICK LOAD Liner by pulling it out from the neck.
3. Insert the new QUICK LOAD Liner through the neck using the welding wire as a guide (short strokes will prevent kinking).
4. Feed liner into the gun until it engages with the retainer inside the AutoLength Pin. Place the liner gauge onto the end of the QUICK LOAD Liner and press flush with the end of the neck.
5. Push the QUICK LOAD Liner into the gun until the liner will not go forward any further. **NOTE:** Liner will be pushed in by approximately an additional 1".
6. Using the liner gauge, trim the liner with a 1/2" stick-out for gun lengths 6 feet and shorter, or a 3/4" stick out for gun lengths longer than 6 feet. **NOTE:** After trimming, the liner will stick out of the neck by approximately 1-3/4". This is normal, as the liner will be pushed back into the neck when the consumables are installed.
7. Feed wire through the MIG gun.
8. Reinstall consumables.

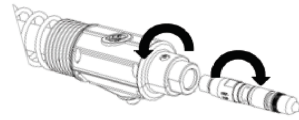
7-5 Changing the Power Pin or AutoLength™ Pin



IMPORTANT: The thread-in two-piece power pin incorporates a taper to seat and lock the power pin into the rear handle block. Make sure power pin is tightened in the block with a wrench to ensure 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.

1. Thread power pin into rear handle block.
 2. Tighten the power pin into the rear block using a wrench on the rear block and a wrench on the power pin.
- Standard Power Pins
 - 5/8" wrench: Lincoln® (214-7), Lincoln Short (214-40), Panasonic® (214-30)
 - 3/4" wrench: Fronius® (214-17), Miller® (214-1), Tweco® #4 (214), Tweco #5 (214-12)
 - AutoLength Power Pins
 - 5/8" wrench: Miller Short (214-81), Tweco #4 (214-80), Lincoln (214-840), Panasonic Short (214-830)
 - 3/4" wrench: Tweco #5 (214-812)
3. Install liner (see section 7-1 Changing Consumables on page 14).
 4. 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 (as required).
- Insert control plug into feeder (as required).
- Feed welding wire into power pin by hand and tighten drive rolls.
- On Lincoln, it is necessary to connect gas hose to gas fitting on power pin.

Euro-Connector

- Feed welding wire through female adaptor by hand and tighten drive rolls.
- Guide welding wire into connector on the gun, carefully insert connector into female adaptor and tighten Euro hand nut.

ESAB® Power Pin (Non-Euro Style)

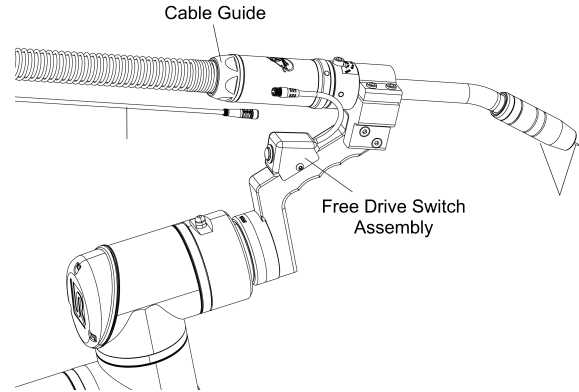
- Insert power pin into shoulder and secure.
- Feed welding wire into power pin by hand and tighten.

7-6 Changing the Replaceable Unicable



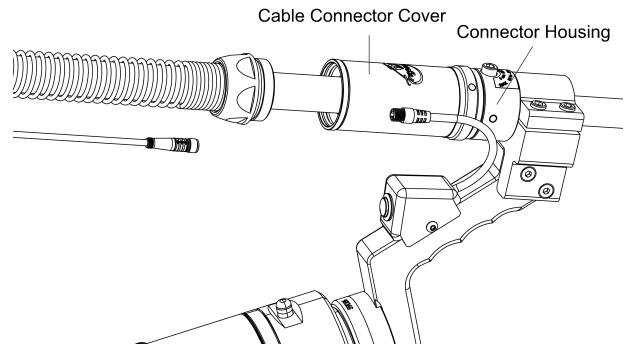
1. For mounting arm assemblies with free drive switch for controller I/O connection (Part # BAS2201B and BAS4501B), disconnect free drive main cable from the switch assembly cable.
2. Remove the consumables (nozzle, diffuser & contact tip).
3. Loosen cable guide (see Figure 7-J for steps 1-3).

Figure 7-J



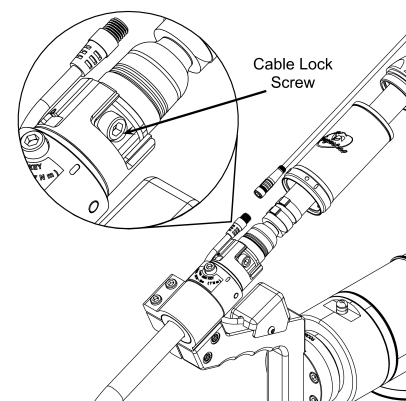
4. Turn cable connector cover counterclockwise to unlock and slide away from the connector housing (see Figure 7-K) to expose cable lock screw (see Figure 7-L).

Figure 7-K



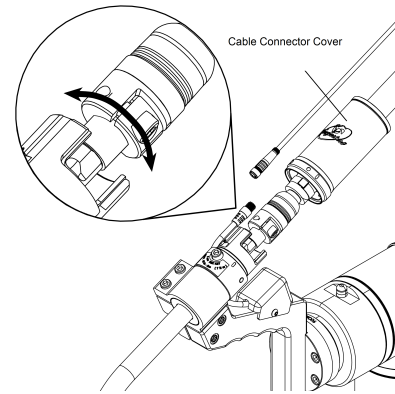
6. Unlock power connection between the cable and connector housing, use a 5 mm Allen wrench to loosen the cable lock screw (see Figure 7-L).

Figure 7-L



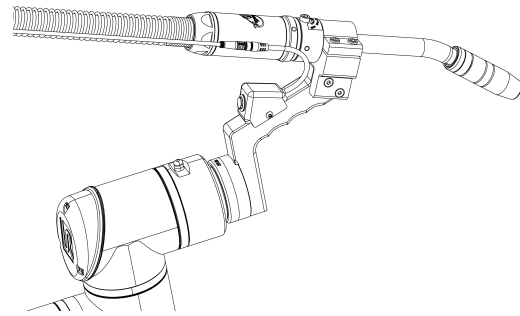
7. Release cable assembly by making a 1/4 turn.
(see Figure 7-M)
8. Remove unicable.
9. Remove cable connector cover from cable assembly.
Connector cover should be kept for the replacement unicable.
10. Remove power pin from unicable.
11. Discard old unicable and liner. **NOTE:** You will need to install a new liner to avoid discrepancies between the new unicable length and the length of the liner.
12. Reinstall power pin onto new cable.
13. Slide the connector cover that was removed from the old unicable over the connector housing of the new unicable assembly.

Figure 7-M



14. Slide the unicable assembly onto the connector stud (on the back of the connector) and 1/4 turn to fit together. Use a 5 mm Allen wrench to fasten the cable lock screw and lock the unicable into place.
15. Slide the connector into place and turn a 1/4 turn to lock it into place.
16. Install new liner (see section 7-4 Changing the Liner on page 18).
17. Install consumables (see section 7-1 Changing Consumables on page 14).
18. **For mounting arm assemblies with free drive switch for controller I/O connection** (Part # BAS2201B and BAS4501B), reconnect free drive main cable to switch assembly cable.

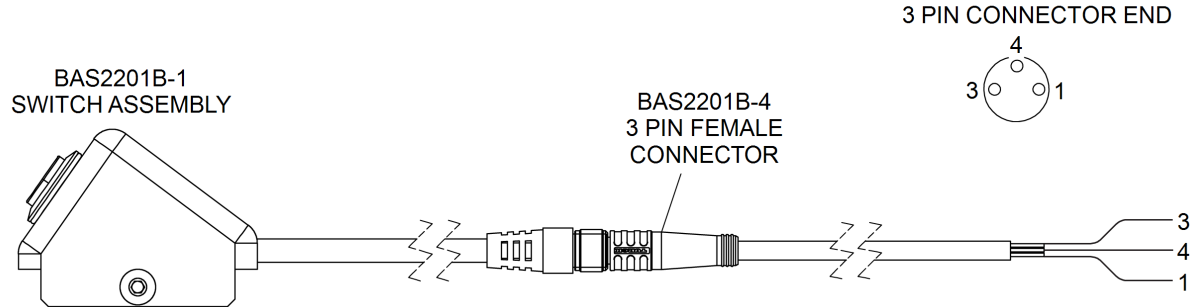
Figure 7-N



SECTION 8 — TECHNICAL DATA

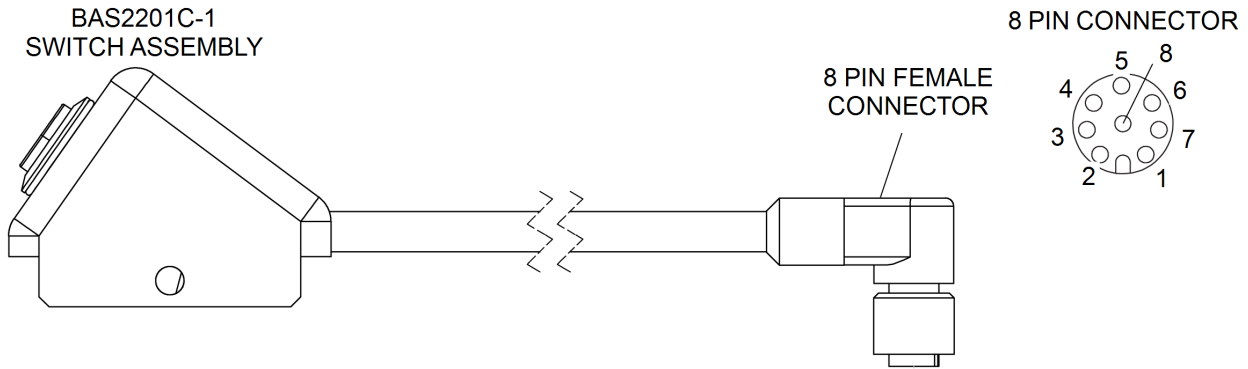
8-1 Wiring Diagrams

Free Drive Switch Controller I/O Connection



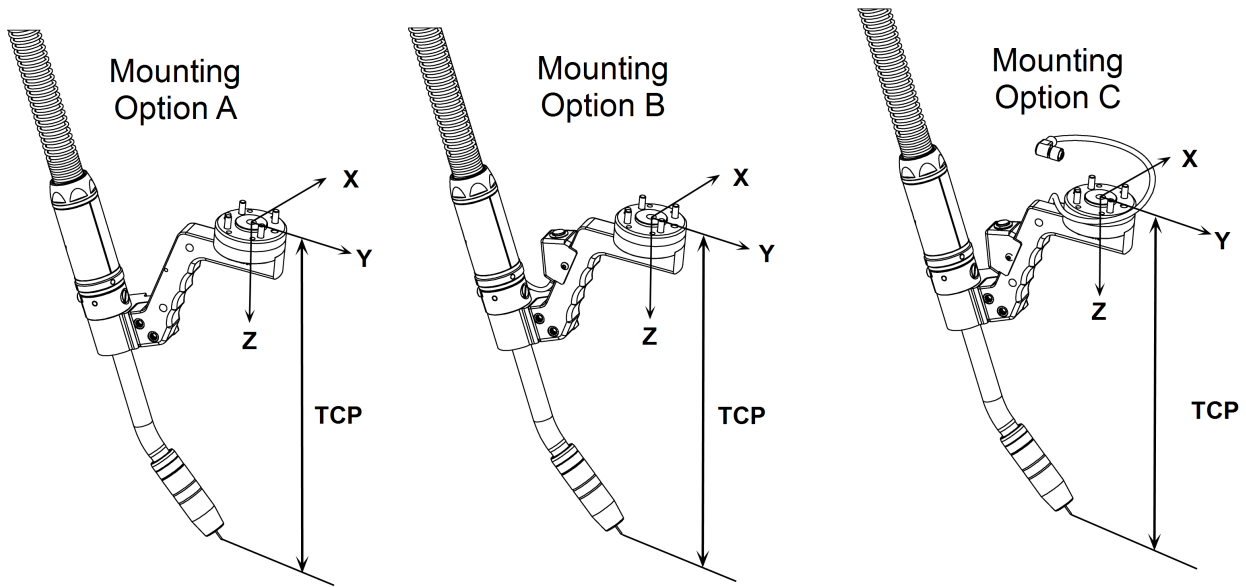
- 1. Brown (Not Used)
- 3. Blue (To cobot input)
- 4. Black (+24 VDC)

Free Drive Switch for UR 8 Pin Wrist I/O Connection



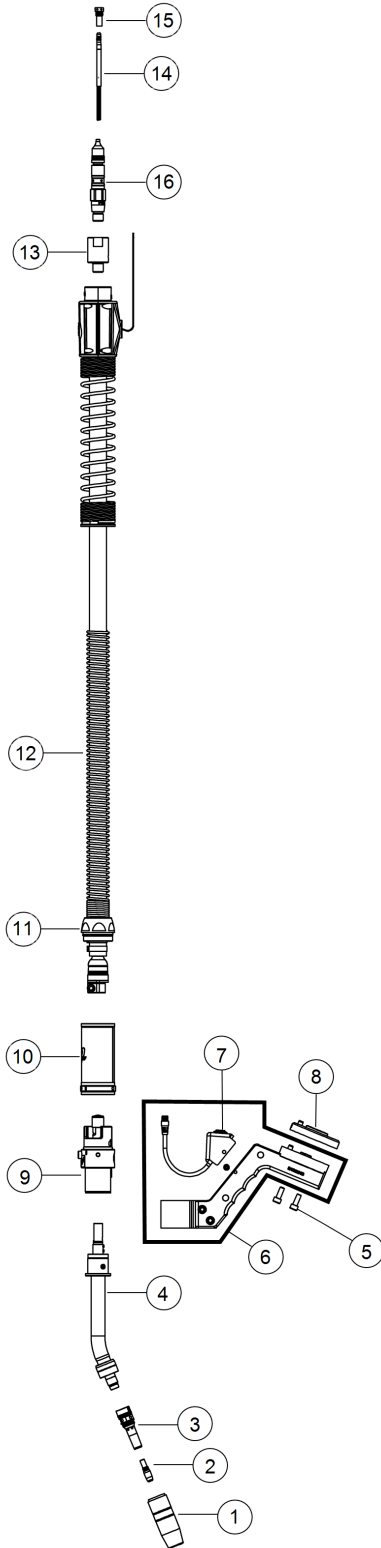
- | | |
|----------------------------|--------------------|
| 1. White (Not Used) | 5. Grey (+24 VDC) |
| 2. Brown (Not Used) | 6. Pink (Not Used) |
| 3. Green (Not Used) | 7. Blue (Not Used) |
| 4. Yellow (To cobot input) | 8. Red (Not Used) |

8-2 Center of Mass Coordinates



Standard Configurations	Tool Center Point (TCP)	Center of Mass			
		X	Y	Z	Weight
22 Degree Neck (405-22QC)					
Mounting option A: BAS2201A (Standard)	350 mm	0.67 mm	-147.90 mm	35.65 mm	2.76 kg
Mounting option B: BAS2201B (Free drive for controller I/O connection)	350 mm	1.16 mm	-147.24 mm	35.95 mm	2.80 kg
Mounting option C: BAS2201C (Free drive for UR wrist I/O connection)	350 mm	1.13 mm	-146.89 mm	35.78 mm	2.80 kg
45 Degree Neck (405-45QC)		X	Y	Z	Weight
Mounting option A: BAS4501A (Standard)	350 mm	1.15 mm	-74.81 mm	35.15 mm	2.74 kg
Mounting option B: BAS4501B (Free drive for controller I/O connection)	350 mm	1.20 mm	-74.61 mm	35.81 mm	2.78 kg
Mounting option C: BAS4501C (Free drive for UR wrist I/O connection)	350 mm	1.15 mm	-74.41 mm	35.21 mm	2.78 kg

SECTION 9 — PARTS LIST



ITEM	PART #	DESCRIPTION
1	See SP-BA1	Nozzle
2	See SP-BA1	Contact Tip
3	D-ATTH	Gas Diffuser, thread-on, AccuLock R
	D-ATSH	Gas Diffuser, slip-on, AccuLock R
4	405-22QC	Neck, 22 degree
	405-45QC	Neck, 45 degree
5	N/A	16 mm M6 SHCS
6	BAS2201A	Mounting arm assembly for 22 degree neck, standard, for all cobot models
	BAS2201B	Mounting arm assembly for 22 degree neck, with free drive switch for controller I/O connection (3-pin, 5 meter cable, not terminated), for all cobot models
	BAS2201C	Mounting arm assembly for 22 degree neck, free drive switch for UR wrist I/O connection (8-pin connector), for UR only
	BAS4501A	Mounting arm assembly for 45 degree neck, standard, for all cobot models
	BAS4501B	Mounting arm assembly for 45 degree neck, with free drive switch for controller I/O connection (3-pin, 5 meter cable, not terminated), for all cobot models
	BAS4501C	Mounting arm assembly for 45 degree neck, free drive switch for UR wrist I/O connection (8-pin connector), for UR only
7	BAS2201B-1	Free drive switch assembly, for controller I/O connection (for use with BAS2201B and BAS4501B)
	BAS2201C-1	Free drive switch assembly, for UR 8-pin wrist I/O connection (for use with BAS2201C and BAS4501C)
8	59D06	Insulating disc for Universal Robot (UR) cobot models: UR5, UR5e, UR10, UR10e, UR16, UR16e and Fanuc® cobot models: CRX-10iA, CRX-10iA/L
	59DT-010	Insulating disc for Fanuc® cobot models: CR-4iA, CR-7iA, CR-7iA/L, CR-14iA/L, CR-15iA, CR-35iA (kit includes transition disc and 59D01 insulating disc)
	59DT-013	Insulating disc for Yaskawa Motoman cobot model: HC10DT-XP (kit includes transition disc and 59D02 insulating disc)
9	508-400	Connector Housing
10	610-400B	Cable Connector Cover, Solid Mount
11	See SP-BA1	Replaceable Unicable
12	N/A	Cable Guide (included with ITEM 11)
13	N/A	Adaptor (included with ITEM 11)
14	See SP-BA1	Liner
15	See SP-BA1	Liner Retainer (for use with QUICK LOAD® LINER)
16	See SP-BA1	Power Pin or AutoLength™ Pin
NS	AS-707-40	Velcro® strap kit (for use with BAS2201B-1 – free drive switch assembly, for controller I/O connection)
NS	BAS2201B-4	Free drive main cable, 3-pin, 5 M, (for use with BAS2201B-1 free drive assembly)
NS	415-25	Jump Liner for 0.030"-1/16" wire; 8" (for use with polymer liner)
NS	415-25-13	Jump Liner for 0.030"-1/16" wire; 13" (for use with polymer liner)

SECTION 10 — TROUBLESHOOTING

10-1 Troubleshooting Table

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. Free drive button does not work.	<ol style="list-style-type: none"> 1. Faulty push button. 2. Faulty wiring. 	<ol style="list-style-type: none"> 1. a. Verify function using multimeter or pendant. b. Replace free drive assembly. 2. a. Verify function using multimeter or pendant. b. Check for loose wires, connections or damage. Ensure that connectors are tightened securely. c. Replace free drive assembly/cable.
2. Electrode does not feed.	<ol style="list-style-type: none"> 1. Feeder relay. 2. Broken control lead. 3. Poor adaptor connection. 4. Improper / worn drive roll. 5. Drive roll tension misadjusted. 6. Burn back to contact tip. 7. Wrong size liner. 8. Buildup inside of liner. 	<ol style="list-style-type: none"> 1. Consult feeder manufacturer. 2. a. Test and connect spare control lead. b. Install new cable. 3. Test and replace leads and/or contact pins. 4. Replace drive roll. 5. Adjust tension at feeder. 6. See 'Contact tip burn back'. 7. Replace with correct size. 8. Replace liner or clean out with compressed air, check condition of electrode.
3. Contact tip burn back.	<ol style="list-style-type: none"> 1. Improper voltage and/or wire feed speed. 2. Erratic wire feeding. 3. Improper tip stickout. 4. Improper electrode stickout. 5. Faulty ground. 	<ol style="list-style-type: none"> 1. Adjust parameters. 2. See 'Erratic wire feeding'. 3. Adjust nozzle / tip relationship. 4. Adjust wire stickout. 5. Replace cables and/or connections.
4. Tip disengages from the gas diffuser.	<ol style="list-style-type: none"> 1. Worn retaining head / diffuser. 2. Improper tip installation. 3. Extreme heat or duty cycle. 	<ol style="list-style-type: none"> 1. Replace tip and/or gas diffuser / retaining head / diffuser. 2. Install as per section 7-1 Changing Consumables on page 14. Replace with heavy duty consumables. See appropriate Spec Sheet for details.
5. Short contact tip life.	<ol style="list-style-type: none"> 1. Contact tip size 2. Electrode eroding contact tip. 3. Exceeding duty cycle. 	<ol style="list-style-type: none"> 1. Replace with proper size. 2. Inspect and/or change drive rolls. 3. Replace with properly rated Tregaskiss MIG gun.
6. Erratic arc.	<ol style="list-style-type: none"> 1. Worn contact tip. 2. Buildup inside of liner. 3. Wrong tip size. 4. Not enough bend in neck. 	<ol style="list-style-type: none"> 1. Replace contact tip. 2. Replace liner, check condition of electrode. 3. Replace with correct tip size. 4. Replace with 45° neck.
7. Erratic wire feeding.	<ol style="list-style-type: none"> 1. Buildup inside of liner. 2. Wrong size liner. 3. Improper drive roll size. 4. Worn drive roll. 5. Improper guide tube relationship. 6. Improper wire guide diameter. 7. Gaps at liner junctions. 8. Feeder malfunction. 9. Worn contact tip. 	<ol style="list-style-type: none"> 1. Replace liner, check condition of electrode. 2. Replace with new liner of proper size. 3. Replace with proper size drive roll. 4. a. Replace with new drive roll. b. Repair worn drive roll. 5. a. Adjust / replace guide as close to drive rolls as possible. b. Eliminate all gaps in electrode path. 6. Replace with proper guide diameter. 7. a. Replace with new liner trimmed as per Section 7-4 Changing the Liner on page 18. b. Replace guide tube / liner trimming as close to mating component as possible. 8. Consult feeder manufacturer. 9. Inspect and replace.*

8. Extreme spatter.	<ol style="list-style-type: none"> 1. Improper machine parameters. 2. Improper tip installation. 3. Improper shielding gas coverage. 4. Contaminated wire or workpiece. 	<ol style="list-style-type: none"> 1. Adjust parameters. 2. Adjust nozzle / tip relationship. 3. a. Verify shielding gas coverage. b. Verify gas mixture. 4. Clean wire and workpiece.
9. Porosity in weld.	<ol style="list-style-type: none"> 1. Insulator worn. 2. Gas diffuser damaged 3. Extreme heat or duty cycle. 4. Solenoid faulty. 5. No gas. 6. Flow improperly set. 7. Gas ports plugged. 8. Ruptured gas hose. 9. Control circuit loss. 10. Worn, cut or missing o-rings. 11. Loose fittings. 	<ol style="list-style-type: none"> 1. Replace nozzle / insulator. 2. Replace gas diffuser or o-rings. 3. Replace with heavy duty consumables. 4. Replace solenoid. 5. a. Install full tanks. b. Check supply. c. Check for hose leaks. 6. Adjust flow. 7. a. Clean or replace gas diffuser. b. Clean nozzle. 8. Repair or replace cable or line. 9. See 'Electrode does not feed'. 10. Replace o-rings. 11. Tighten gun and cable connections to specified torque. See section Section 7 — Replacement on page 14.
10. Gun running hot.	<ol style="list-style-type: none"> 1. Exceeding duty cycle. 2. Loose or poor power connection. 	<ol style="list-style-type: none"> 1. a. Replace with properly rated Tregaskiss MIG gun. b. Decrease parameters to within gun rating. 2. a. Clean, tighten or replace cable grounding connection. b. Tighten gun and cable connections to specified torque. See Section 7 — Replacement on page 14.
11. Liner is discolored.	<ol style="list-style-type: none"> 1. Short circuit to electrode. 2. Broken copper stranding in power cable. 	<ol style="list-style-type: none"> 1. Isolate electrode reel from feeder and drive block. Consult feeder manufacturer's manual. 2. Replace unicable.
12. Sporadic feeding of aluminum electrode.	<ol style="list-style-type: none"> 1. Tip galling. 2. Synthetic liner melting. 3. Wire deformed by feeder rolls. 	<ol style="list-style-type: none"> 1. Inspect and replace the contact tip.* 2. a. Replace liner. b. Replace with composite liner. c. Replace the neck and jump liner. 3. Adjust drive rolls as per feeder manufacturer's manual.

**In some cases with aluminum and mild steels, it may be necessary to use a contact tip with either a larger or smaller bore size.*

ADDITIONAL SUPPORT MATERIALS

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



Scan to view the Tregaskiss® BA1 MIG Gun Owner's Manual



Scan to view the Tregaskiss® BA1 MIG Gun Spec Sheet



Scan to view the AccuLock™ R (Robotic) Consumables Spec Sheet



Scan to view the QUICK LOAD® Liners & AutoLength™ Pins Spec Sheet



Scan to view Tregaskiss® Owner's Manuals and Spec Sheets



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