THERMAL ARC®

AUTO-DARKENING WELDING HELMET

Art # A-08587

Operating Manual

Revision: AG **Date: May 26,2009** **Manual No.:** 0-5045

CE

ANSI Z87.1

WE APPRECIATE YOUR BUSINESS!

Congratulations on your new Thermal Arc product. We are proud to have you as our customer and will strive to provide you with the best service and reliability in the industry. This product is backed by our extensive warranty and world-wide service network. To locate your nearest distributor or service agency call 1-800-752-7621, or visit us on the web at **www.Thermalarc.com.**

This Operating Manual has been designed to instruct you on the correct use and operation of your Thermal Arc product. Your satisfaction with this product and its safe operation is our ultimate concern. Therefore please take the time to read the entire manual, especially the Safety Precautions. They will help you to avoid potential hazards that may exist when working with this product.

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The Brand of Choice for Contractors and Fabricators Worldwide.

Thermal Arc is a Global Brand of Arc Welding Products for Thermadyne Industries Inc. We manufacture and supply to major welding industry sectors worldwide including; Manufacturing, Construction, Mining, Automotive, Aerospace, Engineering, Rural and DIY/Hobbyist.

We distinguish ourselves from our competition through market-leading, dependable products that have stood the test of time. We pride ourselves on technical innovation, competitive prices, excellent delivery, superior customer service and technical support, together with excellence in sales and marketing expertise.

Above all, we are committed to develop technologically advanced products to achieve a safer working environment within the welding industry.

WARNINGS

Read and understand this entire Manual and your employer's safety practices before installing, operating, or servicing the equipment.

While the information contained in this Manual represents the Manufacturer's best judgement, the Manufacturer assumes no liability for its use.

Power-Master Inverter Welding Power Supply
Instruction Manual Number 0-5045 for:

Black	Auto-Darkening Welding Helmet	Part Number W4012000
USA	Auto-Darkening Welding Helmet	Part Number W4011700
Canada	Auto-Darkening Welding Helmet	Part Number W4011800
Claret	Auto-Darkening Welding Helmet	Part Number W4011900

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Record the following information for Warranty purposes:

Where Purchased: _____

Purchase Date: _____

Equipment Serial #: _____

TABLE OF CONTENTS

TABLE OF CONTENTS

SECTION 1: SAFETY INSTRUCTIONS AND WARNINGS

WARNING

PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS KEEP AWAY UNTIL CONSULTING YOUR DOCTOR. DO NOT LOSE THESE INSTRUCTIONS. READ OPERATING/INSTRUCTION MANUAL BEFORE INSTALLING, OPERATING OR SERVICING THIS EQUIPMENT.

Welding products and welding processes can cause serious injury or death, or damage to other equipment or property, if the operator does not strictly observe all safety rules and take precautionary actions.

Safe practices have developed from past experience in the use of welding and cutting. These practices must be learned through study and training before using this equipment. Some of these practices apply to equipment connected to power lines; other practices apply to engine driven equipment. Anyone not having extensive training in welding and cutting practices should not attempt to weld.

Safe practices are outlined in the American National Standard Z49.1 entitled: SAFETY IN WELDING AND CUTTING. This publication and other guides to what you should learn before operating this equipment are listed at the end of these safety precautions. **HAVE ALL INSTALLATION, OPERATION, MAINTENANCE, AND REPAIR WORK PERFORMED ONLY BY QUALIFIED PEOPLE.**

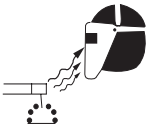
1.01 Arc Welding Hazards

WARNING

ELECTRIC SHOCK can kill.

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on. In semi-automatic or automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

1. Do not touch live electrical parts.
2. Wear dry, hole-free insulating gloves and body protection.
3. Insulate yourself from work and ground using dry insulating mats or covers.
4. Disconnect input power or stop engine before installing or servicing this equipment. Lock input power disconnect switch open, or remove line fuses so power cannot be turned on accidentally.
5. Properly install and ground this equipment according to its Owner's Manual and national, state, and local codes.
6. Turn off all equipment when not in use. Disconnect power to equipment if it will be left unattended or out of service.
7. Use fully insulated electrode holders. Never dip holder in water to cool it or lay it down on the ground or the work surface. Do not touch holders connected to two welding machines at the same time or touch other people with the holder or electrode.
8. Do not use worn, damaged, undersized, or poorly spliced cables.
9. Do not wrap cables around your body.
10. Ground the workpiece to a good electrical (earth) ground.
11. Do not touch electrode while in contact with the work (ground) circuit.
12. Use only well-maintained equipment. Repair or replace damaged parts at once.
13. In confined spaces or damp locations, do not use a welder with AC output unless it is equipped with a voltage reducer. Use equipment with DC output.
14. Wear a safety harness to prevent falling if working above floor level.
15. Keep all panels and covers securely in place.



WARNING

ARC RAYS can burn eyes and skin; NOISE can damage hearing. Arc rays from the welding process produce intense heat and strong ultraviolet rays that can burn eyes and skin. Noise from some processes can damage hearing.

1. Wear a welding helmet fitted with a proper shade of filter (see ANSI Z49.1 listed in Safety Standards) to protect your face and eyes when welding or watching.
2. Wear approved safety glasses. Side shields recommended.
3. Use protective screens or barriers to protect others from flash and glare; warn others not to watch the arc.
4. Wear protective clothing made from durable, flame-resistant material (wool and leather) and foot protection.
5. Use approved ear plugs or ear muffs if noise level is high.

WARNING

FUMES AND GASES can be hazardous to your health.

Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

1. Keep your head out of the fumes. Do not breathe the fumes.
2. If inside, ventilate the area and/or use exhaust at the arc to remove welding fumes and gases.
3. If ventilation is poor, use an approved air-supplied respirator.
4. Read the Material Safety Data Sheets (MSDSs) and the manufacturer's instruction for metals, consumables, coatings, and cleaners.
5. Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Shielding gases used for welding can displace air causing injury or death. Be sure the breathing air is safe.
6. Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
7. Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and if necessary, while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.

WARNING

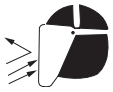
WELDING can cause fire or explosion.

Sparks and spatter fly off from the welding arc. The flying sparks and hot metal, weld spatter, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode or welding wire to metal objects can cause sparks, overheating, or fire.

1. Protect yourself and others from flying sparks and hot metal.
2. Do not weld where flying sparks can strike flammable material.
3. Remove all flammables within 35 ft (10.7 m) of the welding arc. If this is not possible, tightly cover them with approved covers.
4. Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
5. Watch for fire, and keep a fire extinguisher nearby.
6. Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
7. Do not weld on closed containers such as tanks or drums.
8. Connect work cable to the work as close to the welding area as practical to prevent welding current from traveling long, possibly unknown paths and causing electric shock and fire hazards.
9. Do not use welder to thaw frozen pipes.
10. Remove stick electrode from holder or cut off welding wire at contact tip when not in use.

Eye protection filter shade selector for welding or cutting (goggles or helmet), from AWS A6.2-73.

Welding or cutting Operation	*Electrode Size Metal Thickness*	*Filter Shade*	*Welding or cutting Operation*	*Electrode Size Metal*	*Filter Shade*
Torch soldering		2	**Gas metal-arc welding (MIG)**		
Torch brazing		3 or 4	Non-ferrous base metal	All	11
Oxygen Cutting			Non-ferrous base metal	All	12
Light	Under 1 in., 25 mm	3 or 4	Gas tungsten arc welding	All	12
Medium	1 to 6 in., 25-150 mm	4 or 5	(TIG)	All	12
Heavy	Over 6 in., 150 mm	5 or 6	Atomic hydrogen welding	All	12
Gas welding			Carbon arc welding	All	12
Light	Under 1/8 in., 3 mm	4 or 5	Plasma arc welding		
Medium	1/8 to 1/2 in., 3-12 mm	5 or 6	**Carbon arc air gouging**		
Heavy	Over 1/2 in., 12 mm	6 or 8	Light		12
Shielded metal-arc welding (stick) electrodes	Under 5/32 in., 4 mm	10	Heavy		14



WARNING

FLYING SPARKS AND HOT METAL can cause injury.

Chipping and grinding cause flying metal. As welds cool, they can throw off slag.

1. Wear approved face shield or safety goggles. Side shields recommended.
2. Wear proper body protection to protect skin.

WARNING

CYLINDERS can explode if damaged.

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

1. Protect compressed gas cylinders from excessive heat, mechanical shocks, and arcs.
2. Install and secure cylinders in an upright position by chaining them to a stationary support or equipment cylinder rack to prevent falling or tipping.
3. Keep cylinders away from any welding or other electrical circuits.
4. Never allow a welding electrode to touch any cylinder.
5. Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
6. Turn face away from valve outlet when opening cylinder valve.
7. Keep protective cap in place over valve except when cylinder is in use or connected for use.
8. Read and follow instructions on compressed gas cylinders, associated equipment, and CGA publication P-1 listed in Safety Standards.

WARNING

Engines can be dangerous.

WARNING

ENGINE EXHAUST GASES can kill.

Engines produce harmful exhaust gases.

1. Use equipment outside in open, well-ventilated areas.
2. If used in a closed area, vent engine exhaust outside and away from any building air intakes.

WARNING

ENGINE FUEL can cause fire or explosion.

Engine fuel is highly flammable.

1. Stop engine before checking or adding fuel.
2. Do not add fuel while smoking or if unit is near any sparks or open flames.
3. Allow engine to cool before fueling. If possible, check and add fuel to cold engine before beginning job.
4. Do not overfill tank — allow room for fuel to expand.
5. Do not spill fuel. If fuel is spilled, clean up before starting engine.

WARNING

MOVING PARTS can cause injury.

Moving parts, such as fans, rotors, and belts can cut fingers and hands and catch loose clothing.

1. Keep all doors, panels, covers, and guards closed and securely in place.
2. Stop engine before installing or connecting unit.
3. Have only qualified people remove guards or covers for maintenance and troubleshooting as necessary.
4. To prevent accidental starting during servicing, disconnect negative (-) battery cable from battery.
5. Keep hands, hair, loose clothing, and tools away from moving parts.
6. Reinstall panels or guards and close doors when servicing is finished and before starting engine.

WARNING

SPARKS can cause BATTERY GASES TO EXPLODE; BATTERY ACID can burn eyes and skin.

Batteries contain acid and generate explosive gases.

1. Always wear a face shield when working on a battery.
2. Stop engine before disconnecting or connecting battery cables.
3. Do not allow tools to cause sparks when working on a battery.
4. Do not use welder to charge batteries or jump start vehicles.
5. Observe correct polarity (+ and –) on batteries.

WARNING

STEAM AND PRESSURIZED HOT COOLANT can burn face, eyes, and skin.

The coolant in the radiator can be very hot and under pressure.

1. Do not remove radiator cap when engine is hot. Allow engine to cool.
2. Wear gloves and put a rag over cap area when removing cap.
3. Allow pressure to escape before completely removing cap.

WARNING

This product, when used for welding or cutting, produces fumes or gases which contain chemicals know to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety code Sec. 25249.5 et seq.)

NOTE

Considerations About Welding And The Effects of Low Frequency Electric and Magnetic Fields

The following is a quotation from the General Conclusions Section of the U.S. Congress, Office of Technology Assessment, Biological Effects of Power Frequency Electric & Magnetic Fields - Background Paper, OTA-BP-E-63 (Washington, DC: U.S. Government Printing Office, May 1989): "...there is now a very large volume of scientific findings based on experiments at the cellular level and from studies with animals and people which clearly establish that low frequency magnetic fields and interact with, and produce changes in, biological systems. While most of this work is of very high quality, the results are complex. Current scientific understanding does not yet allow us to interpret the evidence in a single coherent framework. Even more frustrating, it does not yet allow us to draw definite conclusions about questions of possible risk or to offer clear science-based advice on strategies to minimize or avoid potential risks."

To reduce magnetic fields in the workplace, use the following procedures.

1. Keep cables close together by twisting or taping them.
2. Arrange cables to one side and away from the operator.
3. Do not coil or drape cable around the body.
4. Keep welding power source and cables as far away from body as practical.

ABOUT PACEMAKERS:

The above procedures are among those also normally recommended for pacemaker wearers. Consult your doctor for complete information.

1.02 Principal Safety Standards

Safety in Welding and Cutting, ANSI Standard Z49.1, from American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126.

Safety and Health Standards, OSHA 29 CFR 1910, from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Recommended Safe Practices for the Preparation for Welding and Cutting of Containers That Have Held Hazardous Substances, American Welding Society Standard AWS F4.1, from American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126.

National Electrical Code, NFPA Standard 70, from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, from Compressed Gas Association, 1235 Jefferson Davis Highway, Suite 501, Arlington, VA 22202.

Code for Safety in Welding and Cutting, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3.

1.03 Symbol Chart

Note that only some of these symbols will appear on your model.

	On
	Off
	Dangerous Voltage
	Increase/Decrease
	Circuit Breaker
	AC Auxiliary Power
	Fuse
A	Amperage
V	Voltage
Hz	Hertz (cycles/sec)
f	Frequency
	Negative
	Positive
	Direct Current (DC)
	Protective Earth (Ground)
	Line
	Line Connection
	Auxiliary Power
115V 15A	Receptacle Rating- Auxiliary Power

1 ~	Single Phase
3 ~	Three Phase
	Three Phase Static Frequency Converter-Transformer-Rectifier
	Remote
X	Duty Cycle
%	Percentage
	Panel/Local
	Shielded Metal Arc Welding (SMAW)
	Gas Metal Arc Welding (GMAW)
	Gas Tungsten Arc Welding (GTAW)
	Air Carbon Arc Cutting (CAC-A)
	Constant Current
	Constant Voltage Or Constant Potential
	High Temperature
	Fault Indication
	Arc Force
	Touch Start (GTAW)
	Variable Inductance
V	Voltage Input

	Wire Feed Function
	Wire Feed Towards Workpiece With Output Voltage Off.
	Welding Gun
	Purging Of Gas
	Continuous Weld Mode
	Spot Weld Mode
t	Spot Time
t1	Preflow Time
t2	Postflow Time
	2 Step Trigger Operation Press to initiate wirefeed and welding, release to stop.
	4 Step Trigger Operation Press and hold for preflow, release to start arc. Press to stop arc, and hold for preflow.
t	Burnback Time
IPM	Inches Per Minute
MPM	Meters Per Minute

Art # A-04130

1.04 Precautions De Securite En Soudage A L'arc

MISE EN GARDE

LE SOUDAGE A L'ARC EST DANGEREUX

PROTEGEZ-VOUS, AINSI QUE LES AUTRES, CONTRE LES BLESSURES GRAVES POSSIBLES OU LA MORT. NE LAISSEZ PAS LES ENFANTS S'APPROCHER, NI LES PORTEURS DE STIMULATEUR CARDIAQUE (A MOINS QU'ILS N'AIENT CONSULTE UN MEDECIN). CONSERVEZ CES INSTRUCTIONS. LISEZ LE MANUEL D'OPERATION OU LES INSTRUCTIONS AVANT D'INSTALLER, UTILISER OU ENTRETENIR CET EQUIPEMENT.

Les produits et procédés de soudage peuvent sauser des blessures graves ou la mort, de même que des dommages au reste du matériel et à la propriété, si l'utilisateur n'adhère pas strictement à toutes les règles de sécurité et ne prend pas les précautions nécessaires.

En soudage et coupage, des pratiques sécuritaires se sont développées suite à l'expérience passée. Ces pratiques doivent être apprises par étude ou entraînement avant d'utiliser l'equipement. Toute personne n'ayant pas suivi un entraînement intensif en soudage et coupage ne devrait pas tenter de souder. Certaines pratiques concernent les équipements raccordés aux lignes d'alimentation alors que d'autres s'adressent aux groupes électrogènes.

La norme Z49.1 de l'American National Standard, intitulée "SAFETY IN WELDING AND CUTTING" présente les pratiques sécuritaires à suivre. Ce document ainsi que d'autres guides que vous devriez connaître avant d'utiliser cet équipement sont présentés à la fin de ces instructions de sécurité.

SEULES DES PERSONNES QUALIFIEES DOIVENT FAIRE DES TRAVAUX D'INSTALLATION, DE REPARATION, D'ENTRETIEN ET D'ESSAI.

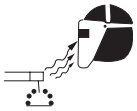
1.05 Dangers relatifs au soudage à l'arc

AVERTISSEMENT

L'ELECTROCUTION PEUT ETRE MORTELLE.

Une décharge électrique peut tuer ou brûler gravement. L'électrode et le circuit de soudage sont sous tension dès la mise en circuit. Le circuit d'alimentation et les circuits internes de l'équipement sont aussi sous tension dès la mise en marche. En soudage automatique ou semi-automatique avec fil, ce dernier, le rouleau ou la bobine de fil, le logement des galets d'entrainement et toutes les pièces métalliques en contact avec le fil de soudage sont sous tension. Un équipement inadéquatement installé ou inadéquatement mis à la terre est dangereux.

1. Ne touchez pas à des pièces sous tension.
2. Portez des gants et des vêtements isolants, secs et non troués.
3 Isolez-vous de la pièce à souder et de la mise à la terre au moyen de tapis isolants ou autres.
4. Déconnectez la prise d'alimentation de l'équipement ou arrêtez le moteur avant de l'installer ou d'en faire l'entretien. Bloquez le commutateur en circuit ouvert ou enlevez les fusibles de l'alimentation afin d'éviter une mise en marche accidentelle.
5. Veuillez à installer cet équipement et à le mettre à la terre selon le manuel d'utilisation et les codes nationaux, provinciaux et locaux applicables.
6. Arrêtez tout équipement après usage. Coupez l'alimentation de l'équipement s'il est hors d'usage ou inutilisé.
7. N'utilisez que des porte-électrodes bien isolés. Ne jamais plonger les porte-électrodes dans l'eau pour les refroidir. Ne jamais les laisser traîner par terre ou sur les pièces à souder. Ne touchez pas aux porte-électrodes raccordés à deux sources de courant en même temps. Ne jamais toucher quelqu'un d'autre avec l'électrode ou le porte-électrode.
8. N'utilisez pas de câbles électriques usés, endommagés, mal épissés ou de section trop petite.
9. N'enroulez pas de câbles électriques autour de votre corps.
10. N'utilisez qu'une bonne prise de masse pour la mise à la terre de la pièce à souder.
11. Ne touchez pas à l'électrode lorsqu'en contact avec le circuit de soudage (terre).
12. N'utilisez que des équipements en bon état. Réparez ou remplacez aussitôt les pièces endommagées.
13. Dans des espaces confinés ou mouillés, n'utilisez pas de source de courant alternatif, à moins qu'il soit muni d'un réducteur de tension. Utilisez plutôt une source de courant continu.
14. Portez un harnais de sécurité si vous travaillez en hauteur.
15. Fermez solidement tous les panneaux et les capots.



AVERTISSEMENT

LE RAYONNEMENT DE L'ARC PEUT BRÛLER LES YEUX ET LA PEAU; LE BRUIT PEUT ENDOMMAGER L'OUIE.

L'arc de soudage produit une chaleur et des rayons ultraviolets intenses, susceptibles de brûler les yeux et la peau. Le bruit causé par certains procédés peut endommager l'ouïe.

1. Portez une casque de soudeur avec filtre oculaire de nuance appropriée (consultez la norme ANSI Z49 indiquée ci-après) pour vous protéger le visage et les yeux lorsque vous soudez ou que vous observez l'exécution d'une soudure.
2. Portez des lunettes de sécurité approuvées. Des écrans latéraux sont recommandés.
3. Entourez l'aire de soudage de rideaux ou de cloisons pour protéger les autres des coups d'arc ou de l'éblouissement; avertissez les observateurs de ne pas regarder l'arc.
4. Portez des vêtements en matériaux ignifuges et durables (laine et cuir) et des chaussures de sécurité.
5. Portez un casque antibruit ou des bouchons d'oreille approuvés lorsque le niveau de bruit est élevé.

AVERTISSEMENT

LES VAPEURS ET LES FUMEES SONT DANGEREUSES POUR LA SANTE.

Le soudage dégage des vapeurs et des fumées dangereuses à respirer.

1. Eloignez la tête des fumées pour éviter de les respirer.
2. A l'intérieur, assurez-vous que l'aire de soudage est bien ventilée ou que les fumées et les vapeurs sont aspirées à l'arc.
3. Si la ventilation est inadequate, portez un respirateur à adduction d'air approuvé.
4. Lisez les fiches signalétiques et les consignes du fabricant relatives aux métaux, aux produits consummables, aux revêtements et aux produits nettoyants.
5. Ne travaillez dans un espace confiné que s'il est bien ventilé; sinon, portez un respirateur à adduction d'air. Les gaz protecteurs de soudage peuvent déplacer l'oxygène de l'air et ainsi causer des malaises ou la mort. Assurez-vous que l'air est propre à la respiration.
6. Ne soudez pas à proximité d'opérations de dégraissage, de nettoyage ou de pulvérisation. La chaleur et les rayons de l'arc peuvent réagir avec des vapeurs et former des gaz hautement toxiques et irritants.
7. Ne soudez des tôles galvanisées ou plaquées au plomb ou au cadmium que si les zones à souder ont été grattées à fond, que si l'espace est bien ventilé; si nécessaire portez un respirateur à adduction d'air. Car ces revêtements et tout métal qui contient

SELECTION DES NUANCES DE FILTRES OCULAIRS POUR LA PROTECTION DES YEUX EN COUPAGE ET SOUDAGE (selon AWS á 8.2-73)

Opération de coupage ou soudage	Dimension d'électrode ou Epiasseur de métal ou Intensité de courant	Nuance de filtre oculaire	Opération de coupage ou soudage	Dimension d'électrode ou Epiasseur de métal ou Intensité de courant	Nuance de filtre oculaire
Brassage tendre au chalumeau	toutes conditions	2	Soudage á l'arc sous gaz avec fil plein (GMAW)		
Brassage fort au chalumeau	toutes conditions	3 ou 4	métaux non-ferreux	toutes conditions	11
Oxycoupage			métaux ferreux	toutes conditions	12
mince	moins de 1 po. (25 mm)	2 ou 3	Soudage á l'arc sous gaz avec électrode de tungstène (GTAW)	toutes conditions	12
moyen	de 1 á 6 po. (25 á 150 mm)	4 ou 5	Soudage á l'hydrogène atomique (AHW)	toutes conditions	12
épais	plus de 6 po. (150 mm)	5 ou 6	Soudage á l'arc avec électrode de carbone (CAW)	toutes conditions	12
Soudage aux gaz			Soudage á l'arc Plasma (PAW)	toutes dimensions	12
mince	moins de 1/8 po. (3 mm)	4 ou 5	Gougeage Air-Arc avec électrode de carbone		
moyen	de 1/8 á 1/2 po. (3 á 12 mm)	5 ou 6	mince		12
épais	plus de 1/2 po. (12 mm)	6 ou 8	épais		14

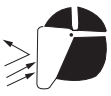
ces éléments peuvent dégager des fumées toxiques au moment du soudage.

AVERTISSEMENT

LE SOUDAGE PEUT CAUSER UN INCENDIE OU UNE EXPLOSION

L'arc produit des étincellies et des projections. Les particules volantes, le métal chaud, les projections de soudure et l'équipement surchauffé peuvent causer un incendie et des brûlures. Le contact accidentel de l'électrode ou du fil-électrode avec un objet métallique peut provoquer des étincelles, un échauffement ou un incendie.

1. Protégez-vous, ainsi que les autres, contre les étincelles et du métal chaud.
2. Ne soudez pas dans un endroit où des particules volantes ou des projections peuvent atteindre des matériaux inflammables.
3. Enlevez toutes matières inflammables dans un rayon de 10, 7 mètres autour de l'arc, ou couvrez-les soigneusement avec des bâches approuvées.
4. Méfiez-vous des projections brulantes de soudage susceptibles de pénétrer dans des aires adjacentes par de petites ouvertures ou fissures.
5. Méfiez-vous des incendies et gardez un extincteur à portée de la main.
6. N'oubliez pas qu'une soudure réalisée sur un plafond, un plancher, une cloison ou une paroi peut enflammer l'autre côté.
7. Ne soudez pas un récipient fermé, tel un réservoir ou un baril.
8. Connectez le câble de soudage le plus près possible de la zone de soudage pour empêcher le courant de suivre un long parcours inconnu, et prévenir ainsi les risques d'électrocution et d'incendie.
9. Ne dégelez pas les tuyaux avec un source de courant.
10. Otez l'électrode du porte-électrode ou coupez le fil au tube-contact lorsqu'inutilisé après le soudage.
11. Portez des vêtements protecteurs non huileux, tels des gants en cuir, une chemise épaisse, un pantalon revers, des bottines de sécurité et un casque.



AVERTISSEMENT

LES ETINCELLES ET LES PROJECTIONS BRULANTES PEUVENT CAUSER DES BLESSURES.

Le piquage et le meulage produisent des particules métalliques volantes. En refroidissant, la soudure peut projeter du éclats de laitier.

1. Portez un écran facial ou des lunettes protectrices approuvées. Des écrans latéraux sont recommandés.
2. Portez des vêtements appropriés pour protéger la peau.

AVERTISSEMENT

LES BOUTEILLES ENDOMMAGEES PEUVENT EXPLOSER

Les bouteilles contiennent des gaz protecteurs sous haute pression. Des bouteilles endommagées peuvent exploser. Comme les bouteilles font normalement partie du procédé de soudage, traitez-les avec soin.

1. Protégez les bouteilles de gaz comprimé contre les sources de chaleur intense, les chocs et les arcs de soudage.
2. Enchainez verticalement les bouteilles à un support ou à un cadre fixe pour les empêcher de tomber ou d'être renversées.
3. Eloignez les bouteilles de tout circuit électrique ou de tout soudage.
4. Empêchez tout contact entre une bouteille et une électrode de soudage.
5. N'utilisez que des bouteilles de gaz protecteur, des détendeurs, des boyauxs et des raccords conçus pour chaque application spécifique; ces équipements et les pièces connexes doivent être maintenus en bon état.
6. Ne placez pas le visage face à l'ouverture du robinet de la bouteille lors de son ouverture.
7. Laissez en place le chapeau de bouteille sauf si en utilisation ou lorsque raccordé pour utilisation.
8. Lisez et respectez les consignes relatives aux bouteilles de gaz comprimé et aux équipements connexes, ainsi que la publication P-1 de la CGA, identifiée dans la liste de documents ci-dessous.

AVERTISSEMENT

LES MOTEURS PEUVENT ETRE DANGEREUX

LES GAZ D'ECHAPPEMENT DES MOTEURS PEUVENT ETRE MORTELS.

Les moteurs produisent des gaz d'échappement nocifs.

1. Utilisez l'équipement à l'extérieur dans des aires ouvertes et bien ventilées.
2. Si vous utilisez ces équipements dans un endroit confiné, les fumées d'échappement doivent être envoyées à l'extérieur, loin des prises d'air du bâtiment.

AVERTISSEMENT

LE CARBURANT PEUR CAUSER UN INCENDIE OU UNE EXPLOSION.

Le carburant est hautement inflammable.

1. Arrêtez le moteur avant de vérifier le niveau e carburant ou de faire le plein.

2. Ne faites pas le plein en fumant ou proche d'une source d'étincelles ou d'une flamme nue.
3. Si c'est possible, laissez le moteur refroidir avant de faire le plein de carburant ou d'en vérifier le niveau au début du soudage.
4. Ne faites pas le plein de carburant à ras bord: prévoyez de l'espace pour son expansion.
5. Faites attention de ne pas renverser de carburant. Nettoyez tout carburant renversé avant de faire démarrer le moteur.

AVERTISSEMENT

DES PIECES EN MOUVEMENT PEUVENT CAUSER DES BLESSURES.

Des pièces en mouvement, tels des ventilateurs, des rotors et des courroies peuvent couper doigts et mains, ou accrocher des vêtements amples.

1. Assurez-vous que les portes, les panneaux, les capots et les protecteurs soient bien fermés.
2. Avant d'installer ou de connecter un système, arrêtez le moteur.
3. Seules des personnes qualifiées doivent démonter des protecteurs ou des capots pour faire l'entretien ou le dépannage nécessaire.
4. Pour empêcher un démarrage accidentel pendant l'entretien, débranchez le câble d'accumulateur à la borne négative.
5. N'approchez pas les mains ou les cheveux de pièces en mouvement; elles peuvent aussi accrocher des vêtements amples et des outils.
6. Réinstallez les capots ou les protecteurs et fermez les portes après des travaux d'entretien et avant de faire démarrer le moteur.

AVERTISSEMENT

DES ETINCELLES PEUVENT FAIRE EXPLOSER UN ACCUMULATEUR; L'ELECTROLYTE D'UN ACCUMU-LATEUR PEUT BRULER LA PEAU ET LES YEUX.

Les accumulateurs contiennent de l'électrolyte acide et dégagent des vapeurs explosives.

1. Portez toujours un écran facial en travaillant sur un accumu-lateur.
2. Arrêtez le moteur avant de connecter ou de déconnecter des câbles d'accumulateur.
3. N'utilisez que des outils anti-étincelles pour travailler sur un accumulateur.
4. N'utilisez pas une source de courant de soudage pour charger un accumulateur ou survolter momentanément un véhicule.
5. Utilisez la polarité correcte (+ et –) de l'accumulateur.

AVERTISSEMENT

LA VAPEUR ET LE LIQUIDE DE REFROIDISSEMENT BRULANT SOUS PRESSION PEUVENT BRULER LA PEAU ET LES YEUX.

Le liquide de refroidissement d'un radiateur peut être brûlant et sous pression.

1. N'ôtez pas le bouchon de radiateur tant que le moteur n'est pas refroidi.
2. Mettez des gants et posez un torchon sur le bouchon pour l'ôter.
3. Laissez la pression s'échapper avant d'ôter complètement le bouchon.

1.06 Principales Normes De Securite

Safety in Welding and Cutting, norme ANSI Z49.1, American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33128.

Safety and Health Standards, OSHA 29 CFR 1910, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Recommended Safe Practices for the Preparation for Welding and Cutting of Containers That Have Held Hazardous Substances, norme AWS F4.1, American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33128.

National Electrical Code, norme 70 NFPA, National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

Safe Handling of Compressed Gases in Cylinders, document P-1, Compressed Gas Association, 1235 Jefferson Davis Highway, Suite 501, Arlington, VA 22202.

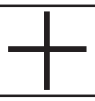
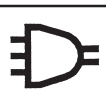
Code for Safety in Welding and Cutting, norme CSA W117.2 Association canadienne de normalisation, Standards Sales, 276 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3.

Safe Practices for Occupation and Educational Eye and Face Protection, norme ANSI Z87.1, American National Standards Institute, 1430 Broadway, New York, NY 10018.

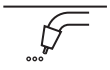
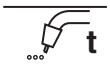
Cutting and Welding Processes, norme 51B NFPA, National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

1.07 Graphique de Symbole

Seulement certains de ces symboles apparaîtront sur votre modèle.

	Sous Tension
	Hors Tension
	Tension dangereuse
	Augmentez/Diminuer
	Disjoncteur
	Source AC Auxiliaire
	Fusible
	Intensité de Courant
	Tension
	Hertz (cycles/sec)
	Fréquence
	Négatif
	Positif
	Courant Continue (DC)
	Terre de Protection
	Ligne
	Connexion de la Ligne
	Source Auxiliaire
115V 15A	Classement de Prise-Source Auxiliaire

1 	Mono Phasé
3 	Trois Phasé
	Tri-Phase Statique Fréquence Convertisseur Transformateur-Redresseur
	Distant
X	Facteur de Marche
%	Pourcentage
	Panneau/Local
	Soudage Arc Electrique Avec Electrode Enrobé (SMAW)
	Soudage á L'arc Avec Fil Electrodes Fusible (GMAW)
	Soudage á L'arc Avec Electrode Non Fusible (GTAW)
	Decoupe Arc Carbone (CAC-A)
	Courant Constant
	Tension Constante Ou Potentiel Constant
	Haute Température
	Force d'Arc
	Amorçage de L'arc au Contact (GTAW)
	Inductance Variable
	Tension

	Déroulement du Fil
	Alimentation du Fil Vers la Pièce de Fabrication Hors Tension
	Torch de Soudage
	Purge Du Gaz
	Mode Continu de Soudure
	Soudure Par Point
	Duréc du Pulse
	Durée de Pré-Dèbit
	Durée de Post-Dèbit
 Détente à 2-Temps Appuyez pour dèruarer l'alimentation du fils et la soudure, le relâcher pour arrêter.	
 Détente à 4-Temps Maintenez appuyez pour pré-dèbit, relailez pour initier l'arc. Appuyez pour arrêter l'arc, et mainteuir pour pré-dèbit.	
	Probléme de Terre
IPM	Pouces Par Minute
MPM	Mètres Par Minute
	Art # A-07639

SECTION 2: INTRODUCTION

2.01 How To Use This Manual

This Owner's Manual applies to just specification or part numbers listed on page i.

To ensure safe operation, read the entire manual, including the chapter on safety instructions and warnings.

Throughout this manual, the words **WARNING, CAUTION**, and **NOTE** may appear. Pay particular attention to the information provided under these headings. These special annotations are easily recognized as follows:

WARNING

A WARNING gives information regarding possible personal injury.

CAUTION

A CAUTION refers to possible equipment damage.

NOTE

A NOTE offers helpful information concerning certain operating procedures.

Additional copies of this manual may be purchased by contacting Thermal Arc at the address and phone number in your area listed in the inside back cover of this manual. Include the Owner's Manual number and equipment identification numbers.

Electronic copies of this manual can also be downloaded at no charge in Acrobat PDF format by going to the Thermal Arc web site listed below and clicking on the Literature Library link:

http://www.thermalarc.com

2.02 Equipment Identification

The product identification number is printed on the outer shipping carton. Record this number on page i for future reference.

2.03 Receipt Of Equipment

When you receive the equipment, check it against the invoice to make sure it is complete and inspect the equipment for possible damage due to shipping. If there is any damage, notify the carrier immediately to file a claim. Furnish complete information concerning damage claims or shipping errors to the location in your area listed in the inside back cover of this manual.

Include all equipment identification numbers as described above along with a full description of the parts in error.

2.04 Description: Auto-Darkening Welding Helmet

The Thermal Arc Auto-Darkening Welding Helmet is an ultra modern product manufactured specifically for welding comfort, versatility, performance and fume deflection. To ensure your complete satisfaction with your new Auto-Darkening Welding Helmet and to realise a safer work environment, we ask that you read the following Operating Manual thoroughly before use.

2.05 User Responsibility

This product will perform as per the information contained herein when installed, operated, maintained and repaired in accordance with the instructions provided. This equipment must be checked periodically. Defective equipment should not be used. Parts that are broken, missing, plainly worn, distorted or contaminated, should be replaced immediately. Should such repairs or replacements become necessary, it is recommended that such repairs be carried out by appropriately qualified persons approved by Thermal Arc. Advice in this regard can be obtained by contacting an accredited Thermal Arc Distributor.

This product or any of its parts should not be altered from standard specification without prior written approval of Thermal Arc. The user of this product shall have the sole responsibility for any malfunction which results from improper use or unauthorised modification from standard specification, faulty maintenance, damage or improper repair by anyone other than appropriately qualified persons approved by Thermal Arc.

2.06 Personal Protection

WARNING

Prior to welding check operation of the filter lens, if the lens does not darken DO NOT COMMENCE WELDING. If during welding the filter does not darken IMMEDIATELY STOP WELDING.

The radiation from an electric arc during the welding process can seriously harm eyes and skin. It is essential that the following precautions be taken:

When electric arc welding, it is a requirement to use a welding helmet or welding handshield that complies to a relevant standard. Protective filter lenses are provided to reduce the intensity of radiation entering the eye thus filtering out harmful infra-red, ultra-violet radiation and a percentage of the visible light. Such filter lenses are incorporated into this Welding Helmet. To prevent damage to the filter lenses from molten or hard particles an additional hard clear glass or special plastic external cover lens is provided. This cover lens should always be kept in place and replaced before the damage impairs your vision while welding.

It is important to ensure that the helmet is adjusted to the correct shade level prior to the commencement of welding. The table below can be used as a guide to select the filter lens shade level for differing applications.

Welding Process	Arc Current in Amps	Recommended Shade
Manual Metal Arc Welding (Stick)	60 – 100	#9
	100 – 150	#10
	150 – 200	#11
	200 – 300	#12
	300 – 450	#13
Gas Metal Arc Welding (Mig) with Heavy Metals	Less than 125	#9
	125 – 175	#10
	175 – 250	#10
	250 – 350	#12
	350 – 450	#13
Gas Metal Arc Welding (Mig) with Light Alloys	Less than 175	#10
	175 – 225	#11
	225 – 300	#12
	300 – 400	#13
Gas Tungsten Arc Welding (Tig)	30 – 70	#9
	70 – 125	#10
	125 – 200	#11
	200 – 300	v#12
	300 – 350	#13
Air – Arc Gouging	Less than 175	#10
	175 – 200	#11
	200 – 250	#12
	250 – 350	#13
Plasma Arc Cutting	Less than 125	#9
	125 – 150	#10
	150 – 175	#11
	175 – 250	#12
	250 – 400	#13
Plasma Arc Welding	100 – 125	#9
	125 – 175	#10
	175 – 225	#11

Note: The term “Heavy Metals” applies to steels, alloy steels, copper and its alloys, etc.

Refer to standard EN 379:2003 for comprehensive information regarding Table 1.

WARNING

For machine disc cutting, scaling, grinding and machining of metals and the like, additional eyeshields or faceshields with appropriate impact rating should be used. Refer to AS/NZS1336 and EN 175 for full details of the appropriate protection for industrial applications.

WARNING

The indicated filter lens shade numbers are minimum. If any discomfort is felt, higher shade numbers should be selected.

Recognized standards for recommended practices for occupational eye protection include AS/NZS 1336 and EN 175.

Gloves should be flameproof gauntlet type to protect hands and wrists from heat burns and harmful radiations. They should be kept dry and in good repair.

Protective clothing must protect the operator from burns, spatter and harmful radiation. Wool clothing is preferable to cotton because of its greater flame resistance. Clothing should be free from oil or grease. Wear leggings and spats to protect the lower portion of the legs and to prevent slag and molten metal from falling into boots or shoes.

2.07 Specifications

Description (Refer Note 1)	**Auto-Darkening Filter Lens**
Auto-Darkening Lens Part Number Note: Auto-Darkening Lens Part Number 454320 is fitted to the Thermal Arc Auto-Darkening Welding Helmet Product Part Numbers: W4012000, W4011700, W4011800 & W4011900.	454320
Filter Lens Dimensions	110mm x 90mm x 10mm
Viewing Area Dimensions	98mm x 46mm
Reaction Time	1/20,000 second
Sensors	2 Optical Sensors
Power Supply	3V Battery plus Solar Cell
Inactivated Shade and Grinding Level	3.5
Variable Shade Level	9 - 13
Operating Temperature	-10C – 600C
Storing Temperature	-200C – 700C
Sensitivity Range (Light to Dark)	Low - High
Delay (Dark to Light)	Min (0.1 sec) – Max (1 sec)
On/Off Control	Automatic
Low Battery Indicator	Flashing LED
Weight	110g

NOTE 1

Due to variations that can occur in manufactured products, claimed performance, voltages, ratings, all capacities, measurements, dimensions and weights quoted are approximate only. Achievable capacities and ratings in use and operation will depend upon correct installation, use, applications, maintenance and service.

2.08 Contents

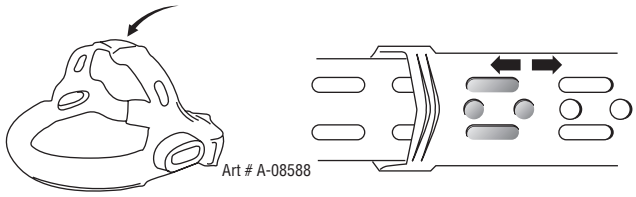
CONTENTS	
Description	**Quantity**
Auto-Darkening Welding Helmet	1
Draw String Product Bag	1
Front Cover Lens	2
Rear Cover Lens	2
Operating Manual	1

SECTION 3: OPERATION

3.01 Harness Adjustment

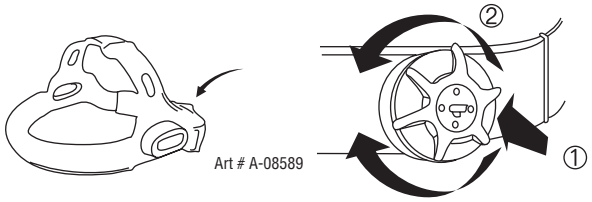
Prior to use, the Welding Helmet must be adjusted for maximum comfort and protection. The Helmet should be adjusted such that it is effectively positioned over the eyes and face to ensure adequate protection and comfort whilst welding. Please refer to the Harness adjustment instructions below.

1. Top Head Band



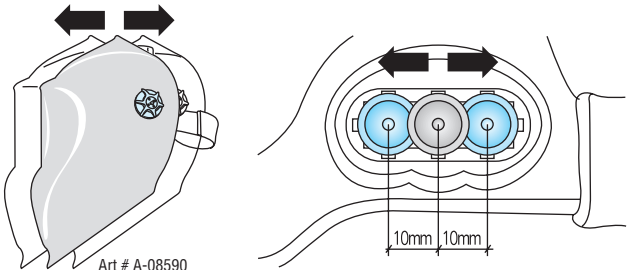
To adjust the top of Head Band move the Head Band in the direction of either arrow (as pictured) to align the centre of the harness with centre of the Filter Lens viewing window.

2. Back of Head Band



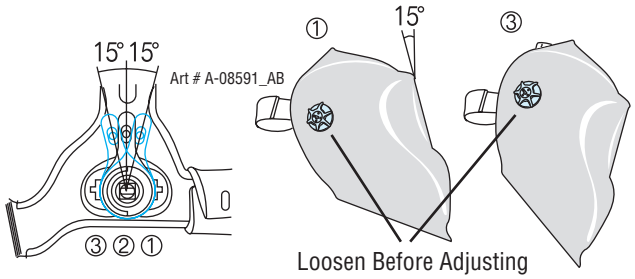
To adjust the back of Head Band push down the Knob and turn to the left or right to adjust to desired size.

3. Distance of Harness from Filter Lens



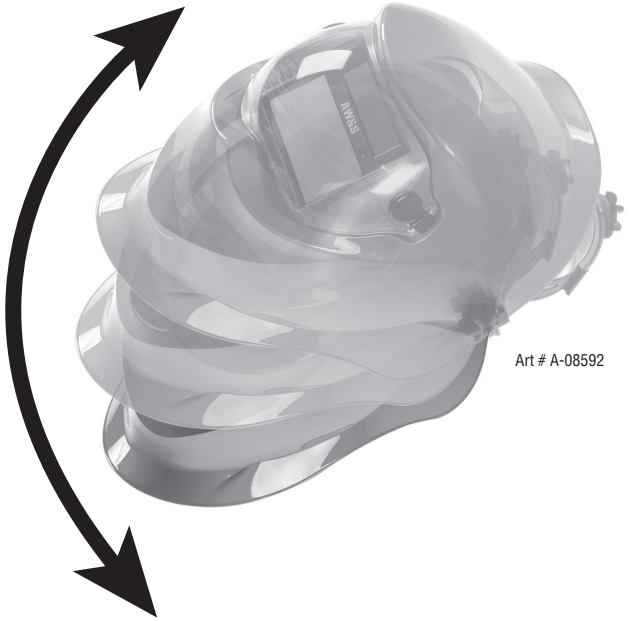
There are 3 positions possible that the Harness can be set upon to achieve the desired distance between the welders eyes and the Filter Lens.

4. Stop Angle Adjustment



There are 3 stop positions available (as pictured) to adjust the angle from the welders eyes to the Filter lens.

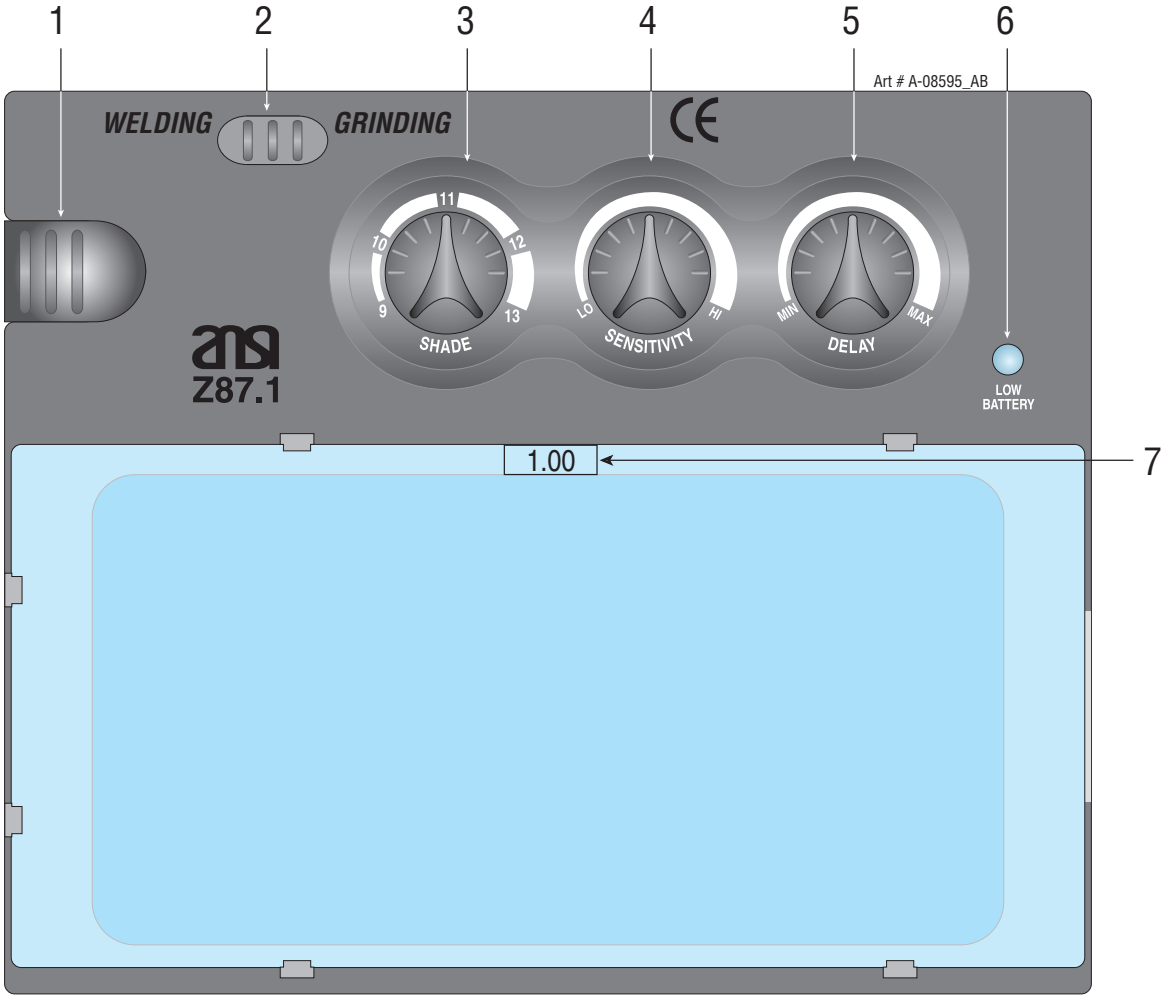
5. Helmet Tilt Position



The Helmet is designed to be tilted and fixed into position whilst not welding. Loosen the adjustment knobs located on either side of the helmet, once in desired position tighten adjustment knobs to fix into place.

3.02 Auto-Darkening Filter Lens Controls

For your protection and maximum efficiency of your product, please study this information carefully before use.



Pro Auto-Darkening Filter Lens Controls

1. Battery Compartment: In order to remove the Auto-Darkening Filter Lens Battery the lens must be removed from the Welding Helmet Shell. Refer to section 3.04. Once the Lens is removed, slide the Battery cover to the left and replace with Battery type CR-2032.
2. Welding / Grinding Switch: This switch is used to select either welding or grinding mode.
3. Variable Shade Control: The shade control is used to adjust the shade level between 9-13. Manually adjust shade to desired level as required for application. Please refer to SECTION 4: of this manual for recommended shade levels for your application.
4. Sensitivity Control: The Sensitivity Control is designed to make the filter lens more responsive to different light levels. Welding applications and processes produce differing light levels which in turn necessitate varying filter lens sensitivity adjustments. Manually adjust the sensitivity level as required for application.
5. Delay Control: The delay control is used to adjust the hold time of the Filter Lens after welding is completed (i.e. it is used to adjust the time taken for the Filter Lens to transition from dark to light state after the completion of welding). Manually adjust delay time to desired level as required by application.
6. Low Battery Indicator: LED will flash when the Battery requires replacement. It is recommended that batteries be replaced immediately when the low battery indicator is flashing. Refer to point 1 for battery replacement details.
7. Magnification Amount: This number indicates the magnification power provided by the Rear Cover Lens.

3.03 Changing the Front Cover Lens

WARNING

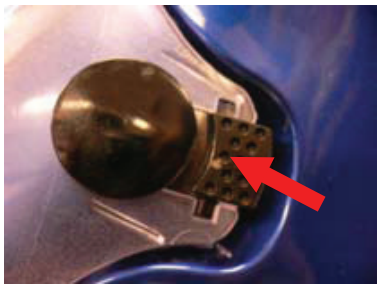
Do Not Use the Welding Helmet without the Front Cover Lens installed correctly in place.

If the Front Cover Lens is broken, plainly worn, distorted or contaminated it should be replaced immediately with a genuine Thermal Arc replacement part.

1. Removing the Front Cover Lens

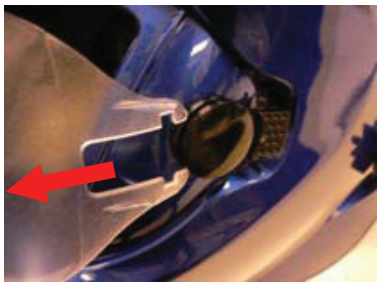
Push and Hold down the Front Cover Lens holder button one side at a time (as shown in Removal Step 1) and pull out the Front Cover Lens toward the front (as shown in Removal Step 2).

Repeat this step for the other side.



Removal Step 1

Art # A-08593



Removal Step 2

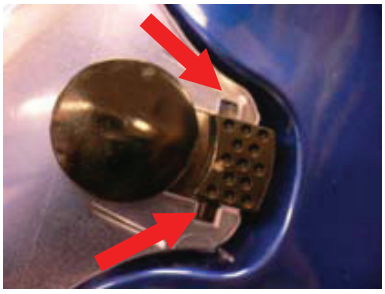
2. Installing the Front Cover Lens

Align the Front Cover Lens within the slot of the Front Cover Lens holder (as shown in Installation Step 1) one side at a time. Then slide in the Front Cover Lens until it firmly locks into place (as shown in picture D).

Repeat this step for the other side.

Installation Step 1

Art # A-08594



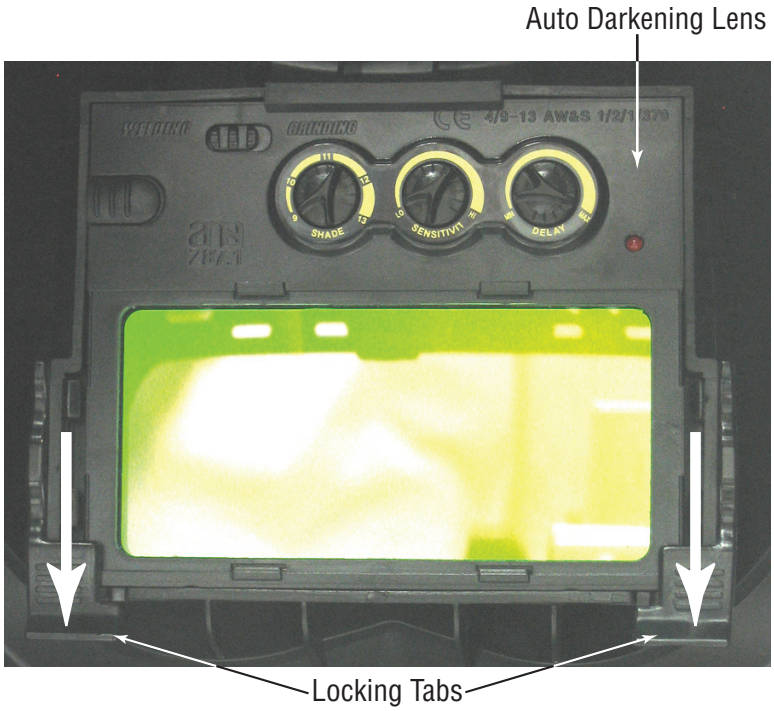
Installation Step 2

Ensure that the Front Cover Lens is securely in place before use.

3.04 Removing the Auto-Darkening Filter Lens

The Auto-Darkening Filter Lens can be removed for service, adjustments, replacement and to change the battery.

1. Remove the Front Cover Lens. Refer to Section 3.03.
2. Locate the two locking tabs inside the helmet that secure the Auto-Darkening Filter Lens and push them firmly downward until they clear the bottom corners of the lens. Refer to the image below (Rear Cover Lens removed for clarity).



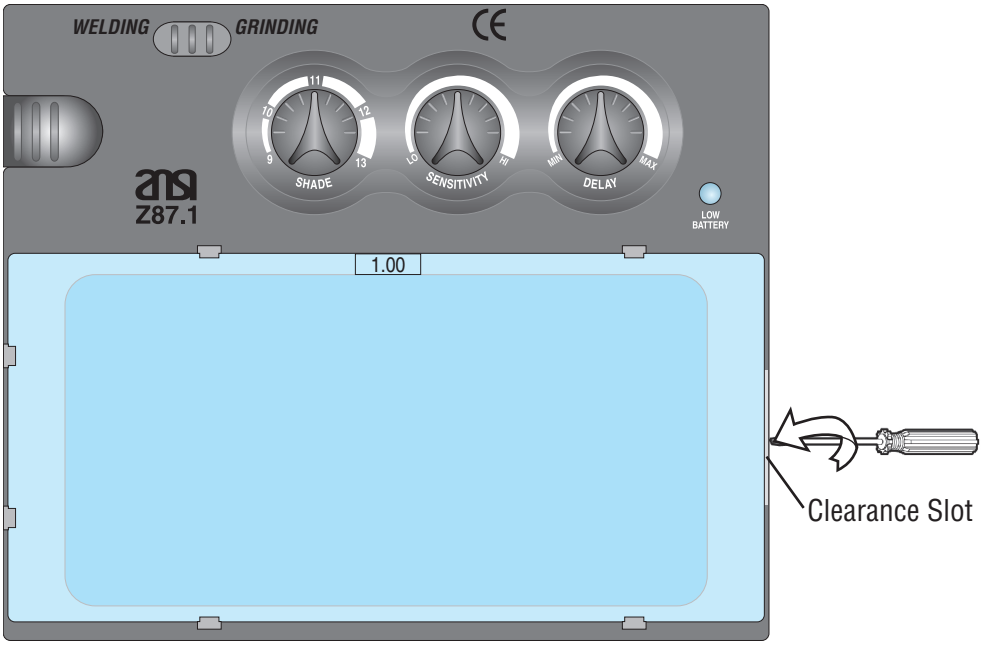
3. Gently push the bottom of the Auto-Darkening Filter Lens inward from the outside of the helmet taking care not to scratch or mar the front lens surface. Pull the lens out of its mounting slot from within the helmet and handle it carefully. Refer to the image below (Rear Cover Lens removed for clarity).

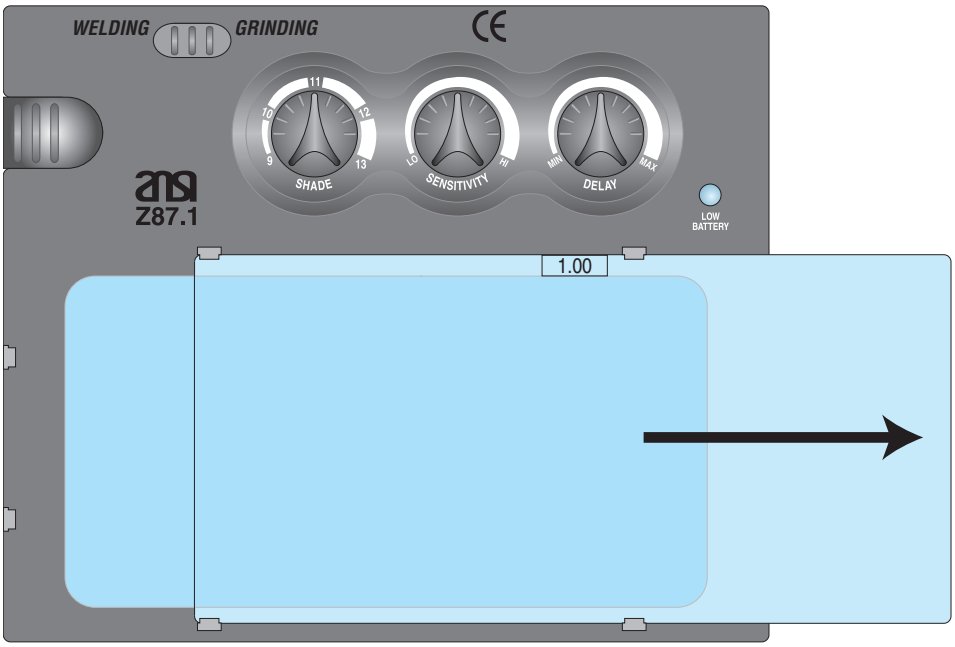
3.05 Changing the Rear Cover Lens

The Rear Cover Lens can be replaced if damaged or to change it to a different magnification level. The Auto-Darkening Welding Helmet comes with three different Rear Cover Lenses to accommodate various welding applications and user's eyesight. Refer to the Spare Parts List in Section 4.04 for more details.

Rear Cover Lens Removal

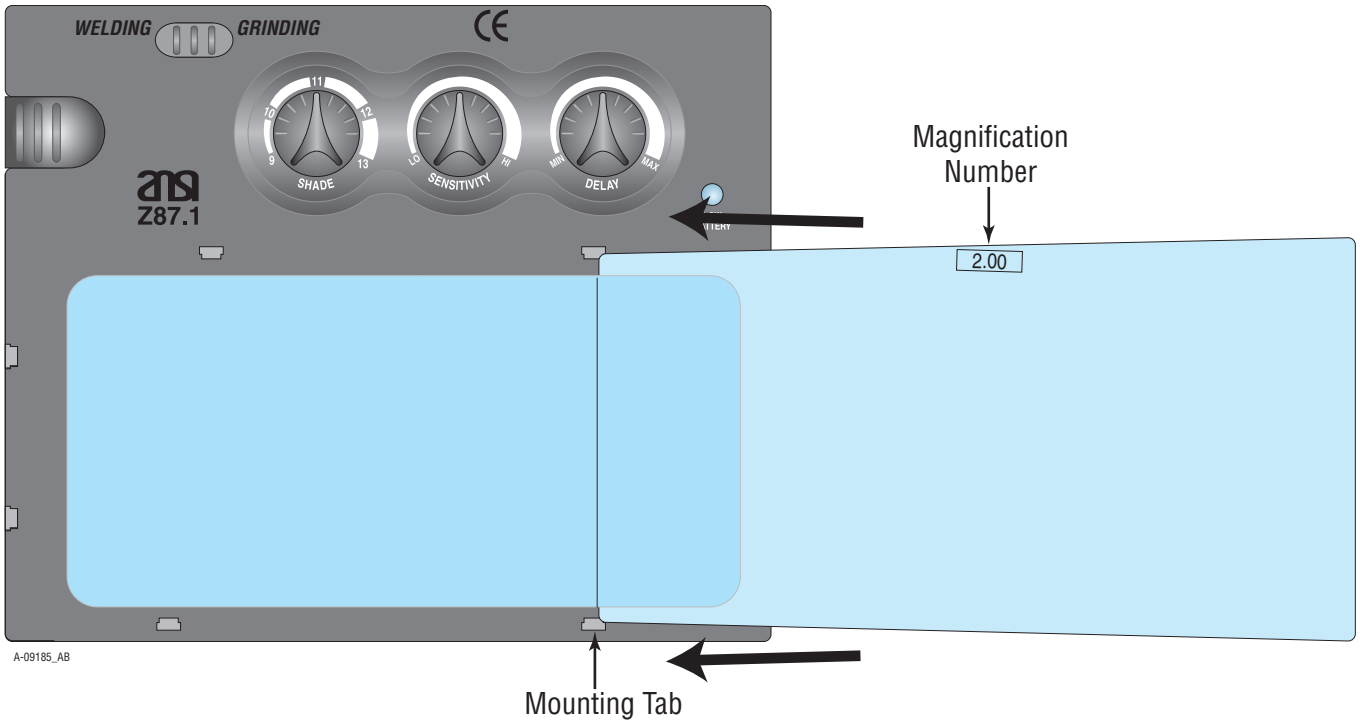
1. Remove the Auto-Darkening Filter Lens from the helmet. Refer to Section 3.04.
2. Insert a thumbnail or a small flat-blade screwdriver into either clearance slot and gently pry the Rear Cover Lens up very slightly to clear the retaining frame. At the same time, push the lens from the other side to slide it out of the retaining frame. Refer to the image below.





Rear Cover Lens Replacement

1. Position the replacement Rear Cover Lens with its magnification number up and facing out.
2. Tilt the lens downward to clear the retaining frame and engage its end into the start of the two mounting tabs at either end of the frame.
3. Slide the lens all the way over until if goes under the other pair of mounting tabs and snaps into position. Refer to the image below.



SECTION 4:
SERVICE

4.01 Routine Maintenance & Inspection

This equipment must be checked periodically. Defective equipment should not be used. Parts that are broken, missing, plainly worn, distorted or contaminated, should be replaced immediately. Should such repairs or replacements become necessary, it is recommended that such repairs be carried out by appropriately qualified persons approved by Thermal Arc. Advice in this regard can be obtained by contacting an accredited Thermal Arc Distributor.

Notes:

• Inspect lenses frequently. Immediately replace any scratched, cracked, or pitted lenses as they may impair visibility and reduce protection.

• Inspect Helmet Shell and Harness Assembly frequently. Immediately replace any damaged or worn components.

4.02 Cleaning the Auto-Darkening Welding Helmet

WARNING

When cleaning the Welding Helmet or Filter Lens do not use solvents or abrasive cleaning agents.

In order to ensure the continued safe and reliable operation of your Auto-Darkening Welding Helmet it should be cleaned with a soft cloth after use.

Note:

• Keep the Sensors and the Solar Cell clean at all times.

4.03 Basic Troubleshooting

FAULT	CAUSE	REMEDY
1. The Filter Lens does not operate.	A. The Battery is discharged. B The Battery is not contacting properly with battery contacts points.	A. Replace Battery with Type CR2032. B. Adjust Battery contact points.
2. The Filter Lens flickers or does not darken.	A. Front Cover Lens is dirty or damaged. B. Sensors are obstructed.	A. Clean Cover Lens a soft cloth. Replace if necessary. B. Clean the Sensors with a soft cloth.
3. Filter Lens stays dark after the weld is extinguished or the Filter Lens is dark when no arc is present.	A. Sensors are obstructed. B. Sensitivity Control not adjusted correctly. C. Ambient light level is too bright.	A. Clean the Sensors with a soft B. cloth. Adjust the Sensitivity Control accordingly. C. Reduce the ambient light level in the area.
4. The center of the Filter Lens viewing area appears darker than the sides of the Filter Lens viewing area.	A. This is a normal characteristic of the LCD Lens.	A. Keep the viewing angle from the object being welded as close as possible to 90 degrees.

WARNING

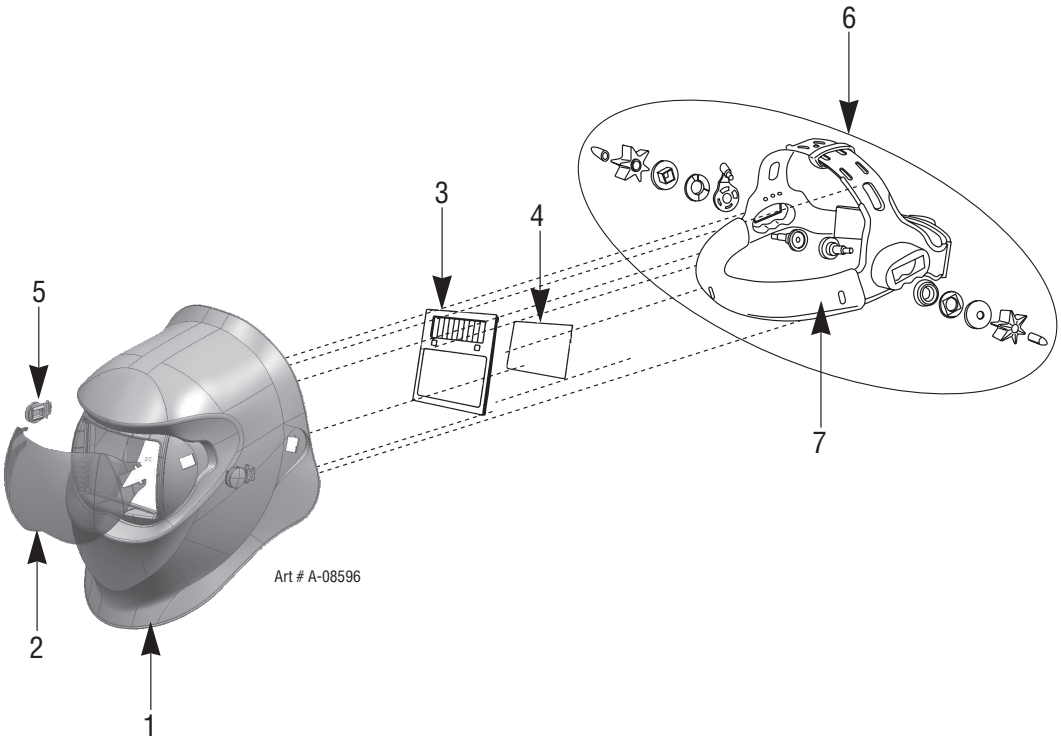
If the above troubleshooting recommendations do not resolve the problem, do not use the Auto-Darkening Welding Helmet. Contact Thermal Arc for further information.

4.04 Spare Parts

WARNING

Thermal Arc cannot be held responsible for the continuing performance of this Welding Helmet if non-genuine spare parts are used.

SPARE PARTS			
Item No	**Part Number**	**Description**	**Qty**
1A	454332	Helmet Shell, USA	1
1B	454333	Helmet Shell, Canada	1
1C	454334	Helmet Shell, Claret	1
1D	454335	Helmet Shell, Black	1
2	454298TA	Front Cover Lens	1
3	454320	Auto-Darkening Filter Lens	1
4	454299	Rear Cover Lens	1
5	454330	Cover Lens Holder Button	2
6	454300	Harness Assembly Complete (Available as assembly only	1
7	454301	Sweat Band	1
-	454302TA	Product Bag - Welding Helmet (not pictured)	1
-	454321	Magnifying Lens - 1.00 (not pictured)	-
-	454322	Magnifying Lens - 1.50 (not pictured)	-
-	454323	Magnifying Lens - 2.00 (not pictured)	-
-	454331	Battery - Type CR2032 (not pictured)	1



LIMITED WARRANTY

This information applies to Thermal Arc products that were purchased in the USA and Canada.

November 2007

LIMITED WARRANTY: Thermal Arc®, Inc., A Thermadyne Company ("Thermal Arc"), warrants to customers of authorized distributors ("Purchaser") that its products will be free of defects in workmanship or material. Should any failure to conform to this warranty appear within the warranty period stated below, Thermal Arc shall, upon notification thereof and substantiation that the product has been stored, installed, operated, and maintained in accordance with Thermal Arc's specifications, instructions, recommendations and recognized standard industry practice, and not subject to misuse, repair, neglect, alteration, or damage, correct such defects by suitable repair or replacement, at Thermal Arc's sole option, of any components or parts of the product determined by Thermal Arc to be defective.

This warranty is exclusive and in lieu of any warranty of merchantability, fitness for any particular purpose, or other warranty of quality, whether express, implied, or statutory.

Limitation of liability: Thermal Arc shall not under any circumstances be liable for special, indirect, incidental, or consequential damages, including but not limited to lost profits and business interruption. The remedies of the purchaser set forth herein are exclusive, and the liability of Thermal Arc with respect to any contract, or anything done in connection therewith such as the performance or breach thereof, or from the manufacture, sale, delivery, resale, or use of any goods covered by or furnished by Thermal Arc, whether arising out of contract, tort, including negligence or strict liability, or under any warranty, or otherwise, shall not exceed the price of the goods upon which such liability is based.

No employee, agent, or representative of Thermal Arc is authorized to change this warranty in any way or grant any other warranty, and Thermal Arc shall not be bound by any such attempt. Correction of non-conformities, in the manner and time provided herein, constitutes fulfillment of thermal's obligations to purchaser with respect to the product.

This warranty is void, and seller bears no liability hereunder, if purchaser used replacement parts or accessories which, in Thermal Arc's sole judgment, impaired the safety or performance of any Thermal Arc product. Purchaser's rights under this warranty are void if the product is sold to purchaser by unauthorized persons.

The warranty is effective for the time stated below beginning on the date that the authorized distributor delivers the products to the Purchaser. Notwithstanding the foregoing, in no event shall the warranty period extend more than the time stated plus one year from the date Thermal Arc delivered the product to the authorized distributor.

Warranty repairs or replacement claims under this limited warranty must be submitted to Thermal Arc via an authorized Thermal Arc repair facility within thirty (30) days of purchaser's discovery of any defect. Thermal Arc shall pay no transportation costs of any kind under this warranty. Transportation charges to send products to an authorized warranty repair facility shall be the responsibility of the Purchaser. All returned goods shall be at the Purchaser's risk and expense. This warranty dated July 1st 2007 supersedes all previous Thermal Arc warranties. Thermal Arc® is a Registered Trademark of Thermal Arc, Inc.

WARRANTY SCHEDULE

This information applies to Thermal Arc products that were purchased in the USA and Canada.

November 2007

SAFETY EQUIPMENT	Warranty Period	Labor
Auto-Darkening Welding Helmet (Electronic Lens)	2 year	2 year
Harness Assembly	1 month	1 month
ENGINE DRIVEN WELDERS	**Warranty Period**	**Labor**
Scout, Raider, Explorer		
Original Main Power Stators and Inductors	3 years	3 years
Original Main Power Rectifiers, Control P.C. Boards	3 years	3 years
All other original circuits and components including, but not limited to, relays, switches, contactors, solenoids, fans, power switch semi-conductors	1 year	1 year
Engines and associated components are NOT warranted by Thermal Arc, although most are warranted by the engine manufacturer	See the Engine Manufactures' Warranty for Details	
GMAW/FCAW (MIG) WELDING EQUIPMENT	**Warranty Period**	**Labor**
Fabricator 131, 181; 140; 180; 190, 210, 251, 281; Fabstar 4030; PowerMaster 350, 350P, 500, 500P; 320SP; 400SP; 500SP; Excelarc 6045. Wire Feeders; Ultrafeed, Portafeed		
Original Main Power Transformer and Inductor	5 years	3 years
Original Main Power Rectifiers, Control PC Boards, power switch semi-conductors	3 years	3 years
All other original circuits and components including, but not limited to, relays, switches, contactors, solenoids, fans, electric motors.	1 year	1 year
GTAW (TIG) & MULTI-PROCESS INVERTER WELDING EQUIPMENT	**Warranty Period**	**Labor**
160TS, 300TS, 400TS, 185AC/DC, 200AC/DC, 300AC/DC, 400GTSW, 400MST, 300MST, 400MSTP		
Original Main Power Magnetics	5 years	3 years
Original Main Power Rectifiers, Control P.C. Boards, power switch semi-conductors	3 years	3 years
All other original circuits and components including, but not limited to, relays, switches, contactors, solenoids, fans, electric motors.	1 year	1 year
PLASMA WELDING EQUIPMENT	**Warranty Period**	**Labor**
Ultima 150		
Original Main Power Magnetics	5 years	3 years
Original Main Power Rectifiers, Control P.C. Boards, power switch semi-conductors	3 years	3 years
Welding Console, Weld Controller, Weld Timer	3 years	3 years
All other original circuits and components including, but not limited to, relays, switches, contactors, solenoids, fans, electric motors, Coolant Recirculator.	1 year	1 year
SMAW (Stick) WELDING EQUIPMENT	**Warranty Period**	**Labor**
Dragster 85		
Original Main Power Magnetics	1 year	1 year
Original Main Power Rectifiers, Control P.C. Boards	1 year	1 year
All other original circuits and components including, but not limited to, relays, switches, contactors, solenoids, fans, power switch semi-conductors	1 year	1 year
160S, 300S, 400S		
Original Main Power Magnetics	5 years	3 years
Original Main Power Rectifiers, Control P.C. Boards	3 years	3 years
All other original circuits and components including, but not limited to, relays, switches, contactors, solenoids, fans, power switch semi-conductors	1 year	1 year
GENERAL ARC EQUIPMENT	**Warranty Period**	**Labor**
Water Recirculators	1 year	1 year
Plasma Welding Torches	180 days	180 days
Gas Regulators (Supplied with power sources)	180 days	Nil
MIG and TIG Torches (Supplied with power sources)	90 days	Nil
Replacement repair parts	90 days	Nil
MIG, TIG and Plasma welding torch consumable items	Nil	Nil

DECLARATION OF CONFORMITY

Manufacturer and Merchandiser of Quality Consumables and Equipment: Thermal Arc

Address: Thermadyne Europe
Europa Building
Chorley N Industrial Park
Chorley, Lancashire,
England PR6 7BX

CE

ANSI Z87.1

This model certified by: CERTOTTICA Scarl, Zona industriale Villnova
32013 Longaraone (BL), Italy – Notified Body Number: 0530

Description of equipment: Thermal Arc Auto-Darkening Welding Helmet and associated accessories.

National Standard and Technical Specifications

The product is designed and manufactured to a number of standards and technical requirements. Among them are:

- EN 175: 1997 applicable to Personal Protection Equipment for eye and face protection during welding and allied processes
- EN379: 2003 applicable to Specification for welding filters with switchable luminous transmittance and welding filters with dual luminous transmittance (variable shade)
- IEC/EN 60974-1 (EN50192) (EN50078) Arc Welding Equipment Part 1: Welding Power Supplies
- CSA Z94.3 applicable to Eye and Face Protectors
- ANSI Z87.1 applicable to Practice for Occupational and Educational Eye and Face Protection – Section 10 Welding Helmets

- Extensive product design verification is conducted at the manufacturing facility as part of the routine design and manufacturing process, to ensure the product is safe and performs as specified. Rigorous testing is incorporated into the manufacturing process to ensure the manufactured product meets or exceeds all design specifications.

Thermal Arc has been manufacturing and merchandising an extensive equipment range with superior performance, ultra safe operation and world class quality for more than 30 years and will continue to achieve excellence.

Thermadyne has been manufacturing products for more than 30 years, and will continue to achieve excellence in our area of manufacture.

Manufacturers responsible representative:

Steve Ward
Operations Director
Thermadyne Europe
Europa Building
Chorley N Industrial Park

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