



15C

AIRCUT™

**PLASMA CUTTING SYSTEM
WITH BUILT IN AIR COMPRESSOR**



Art # A-08746

Operating Manual

Rev. AD
Operating Features:

Date: March 24, 2011

Manual # 0-4965





WE APPRECIATE YOUR BUSINESS!

Congratulations on your new Thermal Dynamics 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 1-800-426-1888, or visit us on the web at www.thermadyne.com.

This Operating Manual has been designed to instruct you on the correct use and operation of your Thermal Dynamics 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.

YOU ARE IN GOOD COMPANY!

The Brand of Choice for Contractors and Fabricators World-wide.

Thermal Dynamics is a Global Brand of manual and automation Plasma Cutting Products for Thermadyne Industries Inc.

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 developing technologically advanced products to achieve a safer working environment within the welding industry.



WARNING

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 judgment, the Manufacturer assumes no liability for its use.

Plasma Cutting Power Supply, 15C AirCut™
PCH 10 Torch
Operating Manual No. 0-4965
Published by:
Thermadyne Corporation
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West Lebanon, New Hampshire, USA 03784
(603) 298-5711

www.thermadyne.com

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Record the following information for Warranty purposes:

Where Purchased: _____

Purchase Date: _____

Power Supply Serial #: _____

Torch Serial #: _____

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TABLE OF CONTENTS

SECTION 1:GENERAL INFORMATION.....	1-1
1.01 Notes, Cautions and Warnings	1-1
1.02 Important Safety Precautions	1-1
1.03 Publications.....	1-2
1.04 Note, Attention et Avertissement	1-3
1.05 Precautions De Securite Importantes.....	1-3
1.06 Documents De Reference.....	1-5
1.07 Declaration of Conformity	1-6
1.08 Statement of Warranty	1-7
SECTION 2:INTRODUCTION	2-1
2.01 How To Use This Manual	2-1
2.02 Equipment Identification	2-1
2.03 Receipt Of Equipment.....	2-1
2.04 Introduction	2-1
2.05 General Specification.....	2-2
2.06 Features.....	2-2
2.07 Torch Specifications	2-3
2.08 System Contents	2-3
2.09 Transporting Methods	2-3
SECTION 3:INSTALLATION.....	3-1
3.01 Site Selection.....	3-1
3.02 Electrical Input Connections	3-1
3.03 Torch	3-1
SECTION 4: OPERATION.....	4-1
4.01 Front Control Panel.....	4-1
4.02 Preparations For Operating	4-1
SECTION 5:SERVICE.....	5-1
5.01 General Maintenance	5-1
5.02 Basic Troubleshooting Guide	5-2
SECTION 6:PARTS LISTS	6-1
6.01 Introduction	6-1
6.02 Ordering Information.....	6-1
6.03 Power Supply Replacement Parts	6-1
Appendix 1: Operating Sequence, Block Diagram.....	A-1
Appendix 2: Torch Connection	A-2
Appendix 3: System Schematic 120V	A-4
GLOBAL CUSTOMER SERVICE CONTACT INFORMATION	Inside Rear Cover

TABLE OF CONTENTS

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SECTION 1: GENERAL INFORMATION

1.01 Notes, Cautions and Warnings

Throughout this manual, notes, cautions, and warnings are used to highlight important information. These highlights are categorized as follows:

NOTE

An operation, procedure, or background information which requires additional emphasis or is helpful in efficient operation of the system.



CAUTION

A procedure which, if not properly followed, may cause damage to the equipment.



WARNING

A procedure which, if not properly followed, may cause injury to the operator or others in the operating area.

1.02 Important Safety Precautions



WARNINGS

OPERATION AND MAINTENANCE OF PLASMA ARC EQUIPMENT CAN BE DANGEROUS AND HAZARDOUS TO YOUR HEALTH.

Plasma arc cutting produces intense electric and magnetic emissions that may interfere with the proper function of cardiac pacemakers, hearing aids, or other electronic health equipment. Persons who work near plasma arc cutting applications should consult their medical health professional and the manufacturer of the health equipment to determine whether a hazard exists.

To prevent possible injury, read, understand and follow all warnings, safety precautions and instructions before using the equipment. Call 1-603-298-5711 or your local distributor if you have any questions.



GASES AND FUMES

Gases and fumes produced during the plasma cutting process can be dangerous and hazardous to your health.

- Keep all fumes and gases from the breathing area. Keep your head out of the welding fume plume.
- Use an air-supplied respirator if ventilation is not adequate to remove all fumes and gases.

- The kinds of fumes and gases from the plasma arc depend on the kind of metal being used, coatings on the metal, and the different processes. You must be very careful when cutting or welding any metals which may contain one or more of the following:

Antimony	Chromium	Mercury
Arsenic	Cobalt	Nickel
Barium	Copper	Selenium
Beryllium	Lead	Silver
Cadmium	Manganese	Vanadium

- Always read the Material Safety Data Sheets (MSDS) that should be supplied with the material you are using. These MSDSs will give you the information regarding the kind and amount of fumes and gases that may be dangerous to your health.
- For information on how to test for fumes and gases in your workplace, refer to item 1 in Subsection 1.03, Publications in this manual.
- Use special equipment, such as water or down draft cutting tables, to capture fumes and gases.
- Do not use the plasma torch in an area where combustible or explosive gases or materials are located.
- Phosgene, a toxic gas, is generated from the vapors of chlorinated solvents and cleansers. Remove all sources of these vapors.
- This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Sec. 25249.5 et seq.)



ELECTRIC SHOCK

Electric Shock can injure or kill. The plasma arc process uses and produces high voltage electrical energy. This electric energy can cause severe or fatal shock to the operator or others in the workplace.

- Never touch any parts that are electrically “live” or “hot.”
- Wear dry gloves and clothing. Insulate yourself from the work piece or other parts of the welding circuit.
- Repair or replace all worn or damaged parts.
- Extra care must be taken when the workplace is moist or damp.
- Install and maintain equipment according to NEC code, refer to item 9 in Subsection 1.03, Publications.
- Disconnect power source before performing any service or repairs.
- Read and follow all the instructions in the Operating Manual.



FIRE AND EXPLOSION

Fire and explosion can be caused by hot slag, sparks, or the plasma arc.

- Be sure there is no combustible or flammable material in the workplace. Any material that cannot be removed must be protected.
- Ventilate all flammable or explosive vapors from the workplace.

AIRCUT 15C

- Do not cut or weld on containers that may have held combustibles.
- Provide a fire watch when working in an area where fire hazards may exist.
- Hydrogen gas may be formed and trapped under aluminum workpieces when they are cut underwater or while using a water table. **DO NOT** cut aluminum alloys underwater or on a water table unless the hydrogen gas can be eliminated or dissipated. Trapped hydrogen gas that is ignited will cause an explosion.



NOISE

Noise can cause permanent hearing loss. Plasma arc processes can cause noise levels to exceed safe limits. You must protect your ears from loud noise to prevent permanent loss of hearing.

- To protect your hearing from loud noise, wear protective ear plugs and/or ear muffs. Protect others in the workplace.
- Noise levels should be measured to be sure the decibels (sound) do not exceed safe levels.
- For information on how to test for noise, see item 1 in Subsection 1.03, Publications, in this manual.



PLASMA ARC RAYS

Plasma Arc Rays can injure your eyes and burn your skin. The plasma arc process produces very bright ultra violet and infra red light. These arc rays will damage your eyes and burn your skin if you are not properly protected.

- To protect your eyes, always wear a welding helmet or shield. Also always wear safety glasses with side shields, goggles or other protective eye wear.
- Wear welding gloves and suitable clothing to protect your skin from the arc rays and sparks.
- Keep helmet and safety glasses in good condition. Replace lenses when cracked, chipped or dirty.
- Protect others in the work area from the arc rays. Use protective booths, screens or shields.
- Use the shade of lens as suggested in the following per ANSI/ASC Z49.1:

Arc Current	Minimum Protective Shade No.	Suggested Shade No.
Less Than 300*	8	9
300 - 400*	9	12
400 - 800*	10	14

* These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used when the arc is hidden by the workpiece.



LEAD WARNING

This product contains chemicals, including lead, or otherwise produces chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. **Wash hands after handling.** (California Health & Safety Code § 25249.5 et seq.).

1.03 Publications

Refer to the following standards or their latest revisions for more information:

1. OSHA, SAFETY AND HEALTH STANDARDS, 29CFR 1910, obtainable from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
2. ANSI Standard Z49.1, SAFETY IN WELDING AND CUTTING, obtainable from the American Welding Society, 550 N.W. LeJeune Rd, Miami, FL 33126
3. NIOSH, SAFETY AND HEALTH IN ARC WELDING AND GAS WELDING AND CUTTING, obtainable from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
4. ANSI Standard Z87.1, SAFE PRACTICES FOR OCCUPATION AND EDUCATIONAL EYE AND FACE PROTECTION, obtainable from American National Standards Institute, 1430 Broadway, New York, NY 10018
5. ANSI Standard Z41.1, STANDARD FOR MEN'S SAFETY-TOE FOOTWEAR, obtainable from the American National Standards Institute, 1430 Broadway, New York, NY 10018
6. ANSI Standard Z49.2, FIRE PREVENTION IN THE USE OF CUTTING AND WELDING PROCESSES, obtainable from American National Standards Institute, 1430 Broadway, New York, NY 10018
7. AWS Standard A6.0, WELDING AND CUTTING CONTAINERS WHICH HAVE HELD COMBUSTIBLES, obtainable from American Welding Society, 550 N.W. LeJeune Rd, Miami, FL 33126
8. NFPA Standard 51, OXYGEN-FUEL GAS SYSTEMS FOR WELDING, CUTTING AND ALLIED PROCESSES, obtainable from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269
9. NFPA Standard 70, NATIONAL ELECTRICAL CODE, obtainable from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269
10. NFPA Standard 51B, CUTTING AND WELDING PROCESSES, obtainable from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269
11. CGA Pamphlet P-1, SAFE HANDLING OF COMPRESSED GASES IN CYLINDERS, obtainable from the Compressed Gas Association, 1235 Jefferson Davis Highway, Suite 501, Arlington, VA 22202
12. CSA Standard W117.2, CODE FOR SAFETY IN WELDING AND CUTTING, obtainable from the Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3
13. NWSA booklet, WELDING SAFETY BIBLIOGRAPHY obtainable from the National Welding Supply Association, 1900 Arch Street, Philadelphia, PA 19103
14. American Welding Society Standard AWSF4.1, RECOMMENDED SAFE PRACTICES FOR THE PREPARATION FOR WELDING AND CUTTING OF CONTAINERS AND PIPING THAT HAVE HELD HAZARDOUS SUBSTANCES, obtainable from the American Welding Society, 550 N.W. LeJeune Rd, Miami, FL 33126
15. ANSI Standard Z88.2, PRACTICE FOR RESPIRATORY PROTECTION, obtainable from American National Standards Institute, 1430 Broadway, New York, NY 10018

1.04 Note, Attention et Avertissement

Dans ce manuel, les mots “note,” “attention,” et “avertissement” sont utilisés pour mettre en relief des informations à caractère important. Ces mises en relief sont classifiées comme suit :

NOTE

Toute opération, procédure ou renseignement général sur lequel il importe d'insister davantage ou qui contribue à l'efficacité de fonctionnement du système.



ATTENTION

Toute procédure pouvant résulter l'endommagement du matériel en cas de non-respect de la procédure en question.



AVERTISSEMENT

Toute procédure pouvant provoquer des blessures de l'opérateur ou des autres personnes se trouvant dans la zone de travail en cas de non-respect de la procédure en question.

1.05 Précautions De Sécurité Importantes



AVERTISSEMENTS

L'OPÉRATION ET LA MAINTENANCE DU MATÉRIEL DE SOUDAGE À L'ARC AU JET DE PLASMA PEUVENT PRÉSENTER DES RISQUES ET DES DANGERS DE SANTÉ.

Coupant à l'arc au jet de plasma produit de l'énergie électrique haute tension et des émissions magnétique qui peuvent interférer la fonction propre d'un "pacemaker" cardiaque, les appareils auditif, ou autre matériel de santé électronique. Ceux qui travail près d'une application à l'arc au jet de plasma devrait consulter leur membre professionnel de médication et le manufacturier de matériel de santé pour déterminer s'il existe des risques de santé.

Il faut communiquer aux opérateurs et au personnel TOUS les dangers possibles. Afin d'éviter les blessures possibles, lisez, comprenez et suivez tous les avertissements, toutes les précautions de sécurité et toutes les consignes avant d'utiliser le matériel. Composez le + 603-298-5711 ou votre distributeur local si vous avez des questions.



FUMÉE et GAZ

La fumée et les gaz produits par le procédé de jet de plasma peuvent présenter des risques et des dangers de santé.

- Eloignez toute fumée et gaz de votre zone de respiration. Gardez votre tête hors de la plume de fumée provenant du chalumeau.
- Utilisez un appareil respiratoire à alimentation en air si l'aération fournie ne permet pas d'éliminer la fumée et les gaz.

- Les sortes de gaz et de fumée provenant de l'arc de plasma dépendent du genre de métal utilisé, des revêtements se trouvant sur le métal et des différents procédés. Vous devez prendre soin lorsque vous coupez ou soudez tout métal pouvant contenir un ou plusieurs des éléments suivants:

antimoine	cadmium	mercure
argent	chrome	nickel
arsenic	cobalt	plomb
baryum	cuivre	sélénium
béryllium	manganèse	vanadium

- Lisez toujours les fiches de données sur la sécurité des matières (sigle américain "MSDS"); celles-ci devraient être fournies avec le matériel que vous utilisez. Les MSDS contiennent des renseignements quant à la quantité et la nature de la fumée et des gaz pouvant poser des dangers de santé.
- Pour des informations sur la manière de tester la fumée et les gaz de votre lieu de travail, consultez l'article 1 et les documents cités à la page 5.
- Utilisez un équipement spécial tel que des tables de coupe à débit d'eau ou à courant descendant pour capter la fumée et les gaz.
- N'utilisez pas le chalumeau au jet de plasma dans une zone où se trouvent des matières ou des gaz combustibles ou explosifs.
- Le phosgène, un gaz toxique, est généré par la fumée provenant des solvants et des produits de nettoyage chlorés. Éliminez toute source de telle fumée.
- Ce produit, dans le procédé de soudage et de coupe, produit de la fumée ou des gaz pouvant contenir des éléments reconnu dans L'état de la Californie, qui peuvent causer des défauts de naissance et le cancer. (La sécurité de santé en Californie et la code sécurité Sec. 25249.5 et seq.)



CHOC ELECTRIQUE

Les chocs électriques peuvent blesser ou même tuer. Le procédé au jet de plasma requiert et produit de l'énergie électrique haute tension. Cette énergie électrique peut produire des chocs graves, voire mortels, pour l'opérateur et les autres personnes sur le lieu de travail.

- Ne touchez jamais une pièce "sous tension" ou "vive"; portez des gants et des vêtements secs. Isolez-vous de la pièce de travail ou des autres parties du circuit de soudage.
- Réparez ou remplacez toute pièce usée ou endommagée.
- Prenez des soins particuliers lorsque la zone de travail est humide ou moite.
- Montez et maintenez le matériel conformément au Code électrique national des Etats-Unis. (Voir la page 5, article 9.)
- Débranchez l'alimentation électrique avant tout travail d'entretien ou de réparation.
- Lisez et respectez toutes les consignes du Manuel de consignes.



INCENDIE ET EXPLOSION

Les incendies et les explosions peuvent résulter des scories chaudes, des étincelles ou de l'arc de plasma. Le procédé à l'arc de plasma

AIRCUT 15C

produit du métal, des étincelles, des scories chaudes pouvant mettre le feu aux matières combustibles ou provoquer l'explosion de fumées inflammables.

- Soyez certain qu'aucune matière combustible ou inflammable ne se trouve sur le lieu de travail. Protégez toute telle matière qu'il est impossible de retirer de la zone de travail.
- Procurez une bonne aération de toutes les fumées inflammables ou explosives.
- Ne coupez pas et ne soudez pas les conteneurs ayant pu renfermer des matières combustibles.
- Prévoyez une veille d'incendie lors de tout travail dans une zone présentant des dangers d'incendie.
- Le gas hydrogène peut se former ou s'accumuler sous les pièces de travail en aluminium lorsqu'elles sont coupées sous l'eau ou sur une table d'eau. NE PAS couper les alliages en aluminium sous l'eau ou sur une table d'eau à moins que le gas hydrogène peut s'échapper ou se dissiper. Le gas hydrogène accumulé explosera si enflammé.



RAYONS D'ARC DE PLASMA

Les rayons provenant de l'arc de plasma peuvent blesser vos yeux et brûler votre peau. Le procédé à l'arc de plasma produit une lumière infra-rouge et des rayons ultra-violetes très forts. Ces rayons d'arc nuiront à vos yeux et brûleront votre peau si vous ne vous protégez pas correctement.

- Pour protéger vos yeux, portez toujours un casque ou un écran de soudeur. Portez toujours des lunettes de sécurité munies de parois latérales ou des lunettes de protection ou une autre sorte de protection oculaire.
- Portez des gants de soudeur et un vêtement protecteur approprié pour protéger votre peau contre les étincelles et les rayons de l'arc.
- Maintenez votre casque et vos lunettes de protection en bon état. Remplacez toute lentille sale ou comportant fissure ou rognure.
- Protégez les autres personnes se trouvant sur la zone de travail contre les rayons de l'arc en fournissant des cabines ou des écrans de protection.
- Utilisez la nuance de lentille qui est suggérée dans la recommandation qui suivent ANSI/ASC Z49.1:

Courant Arc	Nuance Minimum Protective Numéro	Nuance Suggestée Numéro
Moins de 300*	8	9
300 - 400*	9	12
400 - 800*	10	14

* Ces valeurs s'appliquent ou l'arc actuel est observé clairement. L'expérience a démontré que les filtres moins foncés peuvent être utilisés quand l'arc est caché par moiceau de travail.



BRUIT

Le bruit peut provoquer une perte permanente de l'ouïe. Les procédés de soudage à l'arc de plasma peuvent provoquer des niveaux sonores supérieurs aux limites normalement acceptables. Vous devez vous protéger les oreilles contre les bruits forts afin d'éviter une perte permanente de l'ouïe.

- Pour protéger votre ouïe contre les bruits forts, portez des tampons protecteurs et/ou des protections auriculaires. Protégez également les autres personnes se trouvant sur le lieu de travail.
- Il faut mesurer les niveaux sonores afin d'assurer que les décibels (le bruit) ne dépassent pas les niveaux sûrs.
- Pour des renseignements sur la manière de tester le bruit, consultez l'article 1, page 5.



PLOMB AVERTISSEMENT

Ce produit contient des produits chimiques, comme le plomb, ou engendre des produits chimiques, reconnus par l'état de Californie comme pouvant être à l'origine de cancer, de malformations fœtales ou d'autres problèmes de reproduction. **Il faut se laver les mains après toute manipulation.** (Code de Californie de la sécurité et santé, paragraphe 25249.5 et suivants)

1.06 Documents De Reference

Consultez les normes suivantes ou les révisions les plus récentes ayant été faites à celles-ci pour de plus amples renseignements :

1. OSHA, NORMES DE SÉCURITÉ DU TRAVAIL ET DE PROTECTION DE LA SANTÉ, 29CFR 1910, disponible auprès du Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
2. Norme ANSI Z49.1, LA SÉCURITÉ DES OPÉRATIONS DE COUPE ET DE SOUDAGE, disponible auprès de la Société Américaine de Soudage (American Welding Society), 550 N.W. LeJeune Rd., Miami, FL 33126
3. NIOSH, LA SÉCURITÉ ET LA SANTÉ LORS DES OPÉRATIONS DE COUPE ET DE SOUDAGE À L'ARC ET AU GAZ, disponible auprès du Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
4. Norme ANSI Z87.1, PRATIQUES SURES POUR LA PROTECTION DES YEUX ET DU VISAGE AU TRAVAIL ET DANS LES ECOLES, disponible de l'Institut Américain des Normes Nationales (American National Standards Institute), 1430 Broadway, New York, NY 10018
5. Norme ANSI Z41.1, NORMES POUR LES CHAUSSURES PROTECTRICES, disponible auprès de l'American National Standards Institute, 1430 Broadway, New York, NY 10018
6. Norme ANSI Z49.2, PRÉVENTION DES INCENDIES LORS DE L'EMPLOI DE PROCÉDÉS DE COUPE ET DE SOUDAGE, disponible auprès de l'American National Standards Institute, 1430 Broadway, New York, NY 10018
7. Norme A6.0 de l'Association Américaine du Soudage (AWS), LE SOUDAGE ET LA COUPE DE CONTENEURS AYANT RENFERMÉ DES PRODUITS COMBUSTIBLES, disponible auprès de la American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126
8. Norme 51 de l'Association Américaine pour la Protection contre les Incendies (NFPA), LES SYSTEMES À GAZ AVEC ALIMENTATION EN OXYGENE POUR LE SOUDAGE, LA COUPE ET LES PROCÉDÉS ASSOCIÉS, disponible auprès de la National Fire Protection Association, Batterymarch Park, Quincy, MA 02269
9. Norme 70 de la NFPA, CODE ELECTRIQUE NATIONAL, disponible auprès de la National Fire Protection Association, Batterymarch Park, Quincy, MA 02269
10. Norme 51B de la NFPA, LES PROCÉDÉS DE COUPE ET DE SOUDAGE, disponible auprès de la National Fire Protection Association, Batterymarch Park, Quincy, MA 02269
11. Brochure GCA P-1, LA MANIPULATION SANS RISQUE DES GAZ COMPRIMÉS EN CYLINDRES, disponible auprès de l'Association des Gaz Comprimés (Compressed Gas Association), 1235 Jefferson Davis Highway, Suite 501, Arlington, VA 22202
12. Norme CSA W117.2, CODE DE SÉCURITÉ POUR LE SOUDAGE ET LA COUPE, disponible auprès de l'Association des Normes Canadiennes, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada, M9W 1R3
13. Livret NWSA, BIBLIOGRAPHIE SUR LA SÉCURITÉ DU SOUDAGE, disponible auprès de l'Association Nationale de Fournitures de Soudage (National Welding Supply Association), 1900 Arch Street, Philadelphia, PA 19103
14. Norme AWSF4.1 de l'Association Américaine de Soudage, RECOMMANDATIONS DE PRATIQUES SURES POUR LA PRÉPARATION À LA COUPE ET AU SOUDAGE DE CONTENEURS ET TUYAUX AYANT RENFERMÉ DES PRODUITS DANGEREUX , disponible auprès de la American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126
15. Norme ANSI Z88.2, PRATIQUES DE PROTECTION RESPIRATOIRE, disponible auprès de l'American National Standards Institute, 1430 Broadway, New York, NY 10018

AIRCUT 15C

1.07 Declaration of Conformity

Manufacturer: Thermal Dynamics Corporation
Address: 82 Benning Street
West Lebanon, New Hampshire 03784
USA


The equipment described in this manual conforms to all applicable aspects and regulations of the 'Low Voltage Directive' (European Council Directive 73/23/EEC as amended by Council Directive 93/68/EEC) and to the National legislation for the enforcement of this Directive.

The equipment described in this manual conforms to all applicable aspects and regulations of the "EMC Directive" (European Council Directive 89/336/EEC) and to the National legislation for the enforcement of this Directive.

Serial numbers are unique with each individual piece of equipment and details description, parts used to manufacture a unit and date of manufacture.

National Standard and Technical Specifications

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

- * UL (Underwriters Laboratory) rating 94VO flammability testing for all printed-circuit boards used.
- * For environments with increased hazard of electrical shock, Power Supplies bearing the  mark conform to EN50192 when used in conjunction with hand torches with exposed cutting tips, if equipped with properly installed standoff guides.
- * Extensive product design verification is conducted at the manufacturing facility as part of the routine design and manufacturing process. This is to ensure the product is safe, when used according to instructions in this manual and related industry standards, and performs as specified. Rigorous testing is incorporated into the manufacturing process to ensure the manufactured product meets or exceeds all design specifications.

Thermal Dynamics 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
Chorley, Lancashire ,
England PR6 7BX

1.08 Statement of Warranty

LIMITED WARRANTY: Subject to the terms and conditions established below, Thermal Dynamics® Corporation warrants to the original retail purchaser that new Thermal Dynamics CUTMASTER™ plasma cutting systems sold after the effective date of this warranty are free of defects in material and workmanship. Should any failure to conform to this warranty appear within the applicable period stated below, Thermal Dynamics Corporation shall, upon notification thereof and substantiation that the product has been stored operated and maintained in accordance with Thermal Dynamics' specifications, instructions, recommendations and recognized industry practice, correct such defects by suitable repair or replacement.

This warranty is exclusive and in lieu of any warranty of merchantability or fitness for a particular purpose.

Thermal Dynamics will repair or replace, at its discretion, any warranted parts or components that fail due to defects in material or workmanship within the time periods set out below. Thermal Dynamics Corporation must be notified within 30 days of any failure, at which time Thermal Dynamics Corporation will provide instructions on the warranty procedures to be implemented.

Thermal Dynamics Corporation will honor warranty claims submitted within the warranty periods listed below. All warranty periods begin on the date of sale of the product to the original retail customer or 1 year after sale to an authorized Thermal Dynamics Distributor.

LIMITED WARRANTY PERIOD

Product	Power Supply Components (Parts and Labor)	Torch and Leads (Parts and Labor)
AirCut™	1 Year	180 days

This warranty does not apply to:

1. Consumable Parts, such as tips, electrodes, shield cups, o - rings, starter cartridges, gas distributors, fuses, filters.
2. Equipment that has been modified by an unauthorized party, improperly installed, improperly operated or misused based upon industry standards.

In the event of a claim under this warranty, the remedies shall be, at the discretion of Thermal Dynamics Corporation:

1. Repair of the defective product.
2. Replacement of the defective product.
3. Reimbursement of reasonable costs of repair when authorized in advance by Thermal Dynamics.
4. Payment of credit up to the purchase price less reasonable depreciation based on actual use.

These remedies may be authorized by Thermal Dynamics and are FOB West Lebanon, NH or an authorized Thermadyne service station. Product returned for service is at the owner's expense and no reimbursement of travel or transportation is authorized.

LIMITATION OF LIABILITY: Thermal Dynamics Corporation shall not under any circumstances be liable for special or consequential damages such as, but not limited to, damage or loss of purchased or replacement goods or claims of customer or distributors (hereinafter "Purchaser") for service interruption. The remedies of the Purchaser set forth herein are exclusive and the liability of Thermal Dynamics 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 the goods covered by or furnished by Thermal Dynamics whether arising out of contract, negligence, strict tort, or under any warranty, or otherwise, shall not, except as expressly provided herein, exceed the price of the goods upon which liability is based.

This warranty becomes invalid if replacement parts or accessories are used which may impair the safety or performance of any Thermal Dynamics product.

This warranty is invalid if the Thermal Dynamics product is sold by non - authorized persons.

Effective September 4, 2007

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 Dynamics 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

Thermadyne web site listed below, clicking on the Thermal Dynamics brand logo and then on the Literature link:

<http://www.thermadyne.com>

2.02 Equipment Identification

The unit's identification number (specification or part number), model, and serial number usually appear on a data tag attached to the rear panel. Equipment which does not have a data tag such as torch and cable assemblies are identified only by the specification or part number printed on loosely attached card or the shipping container. Record these numbers on the bottom of 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 Introduction

Plasma is a gas which has been heated to an extremely high temperature and ionized so that it becomes electrically conductive. The plasma arc cutting process uses this plasma to transfer an electrical arc to the workpiece. The metal to be cut is melted by the heat of the arc and then blown away.

AIRCUT 15C

2.05 General Specification

Model Description	15C AirCut™
Maximum output	15 Amps
Input Voltage & Phase	120V, Single Phase
Frequency	60Hz
Input power	2.2 kVA
Current Input fuse	U.S. / Canada 20 Amps
No Load Voltage	330V
Load Voltage	86V
Output Current	15 Amps
Post flow time	12 Seconds
Duty cycle @ 104°F / 40° C Ambient	30% @ 15A, 86vdc
Recommended Cutting Capacity	1/8" (3.2 mm)
Maximum Cutting Capacity	1/4" (6.5 mm)
Dimension (W * D * H)	6.5"x18"x9.5" (165 mm x 457 mm x 241 mm)
Gross Weight	30 lbs. (11.2 kg)

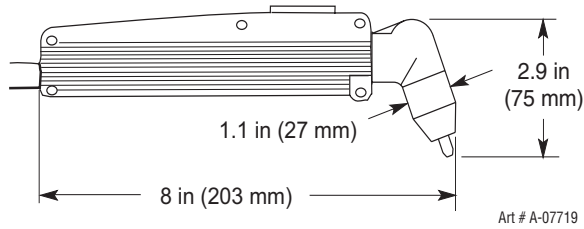
NOTE:

Refer to Local and National Codes or local authority having jurisdiction for proper wiring requirements.

2.06 Features

- **COMPACT and LIGHT** - Designed for easy transportation.
- **ENERGY EFFICIENCY** - Advanced technology reduces power consumption.
- **HIGH SPEED RECOMMENDED CUTTING** - The constricted plasma arc provides high speed cutting as well as a good quality genuine, narrow cut.
- **LOW COST WITH COMPRESSED AIR** - The AirCut™ operates on its own compressed air.
- **ALL KINDS OF METALS** - Useful for most metals such as stainless steel, aluminum, mild steel, copper and their alloys.
- **PILOT ARC IGNITION FROM TORCH** - The Pilot Arc ignites the cutting arc.
- **POWERFUL CUTTING PERFORMANCE** - Recommended cutting capacity is 1/8" (3.2 mm).
- **ABLE TO CUT PAINTED MATERIALS** - Pilot Arc ignition allows the AirCut™ to cut painted materials.
- **EXTENDED PARTS LIFE** - Consumable parts life is longer.

2.07 Torch Specifications



PCH-10 Torch Ratings	
Torch Configuration	Torch Head at 70° to Torch Handle
Torch Leads Length	20 feet / 6.1 m
Duty Cycle	100% @ 10 Amps
Maximum Current	15 Amps, DC, Straight Polarity
Type of Cooling	Ambient air and gas stream through torch
Parts-in-Place:	Built-in Switch in Torch Head
Gas Requirement:	Single Gas, Internal Compressed Air Only
Plasma Power Supply Used With:	AirCut™

2.08 System Contents

Description	ITEMS	Q'ty
Power source	Model AirCut™	1
Torch Set	PCH-10, with 20' (6.1 m) leads	1
Accessories & Consumables	Work Cable	1
	Manual	1
	Torch Electrodes	2
	Torch Tips	3
Input Power Cable U.S.	16/3 with molded plug	1

2.09 Transporting Methods

Lift unit with handle on top of case. Use hand-cart or similar device of adequate capacity for transporting over long distances.



WARNINGS

ELECTRIC SHOCK can kill. DO NOT TOUCH live electrical parts. Disconnect input power from supply before moving the power source.

FALLING EQUIPMENT can cause serious personal injury and equipment damage.

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SECTION 3: INSTALLATION

3.01 Site Selection

- Place in a clean and dry area.
- Provide adequate ventilation and fresh air supply.
- Ideal ambient temperature should not exceed 40°C / 104°F. Temperatures exceeding that may diminish cutting capacity or quality.
- The cutting machine must be placed on an even, firm surface.

3.02 Electrical Input Connections

- Input voltage is 120V \pm 10%, 50/60 Hz single phase.



CAUTION

Check your power source for correct voltage before plugging in or connecting the unit. The primary power source, fuse/breaker, and any extension cords used must conform to local electrical code and the recommended circuit protection and wiring requirements as specified in Section 2.

3.03 Torch

- Make sure that the torch cable and torch switch terminals are connected to front panel.
- Make sure the Work Cable is secured properly to front panel.
- Before activating, turn torch away from yourself and others.



DANGER

Do not cut in humid or wet surroundings.

- Before you maintain or replace torch parts, wait for the post flow air cycle to stop, then turn the machine off and disconnect from input power.
- Always use original manufacturers parts. The use of aftermarket parts could result in lower parts life and in unsatisfactory cutting results. Any warranty claims would be waived.
- Recycle worn parts according to local requirements.

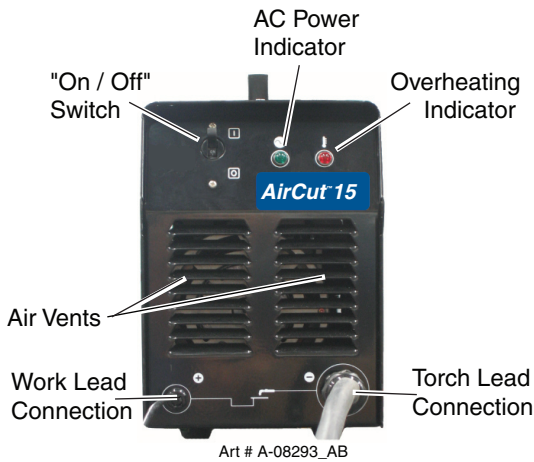
NOTE

Repairs must be done by skilled and qualified personnel only.



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SECTION 4: OPERATION

4.01 Front Control Panel



INDICATOR LAMP

- Power Indicator  - Lights when primary power switch is turned on.
- TEMPERATURE Indicator  - Indicator is normally OFF. Indicator is ON when internal temperature exceeds normal limits. Shut unit OFF; let the unit cool before continuing operation.

PRIMARY POWER SWITCH, ON / OFF

The power switch is located on the front panel. Placing the primary power switch to the "ON" position energizes the power source.



When the power source is overloaded, the switch turns to the OFF or neutral position automatically. Return completely to the OFF position before attempting to turn ON again.

4.02 Preparations For Operating

At the start of each operating session:

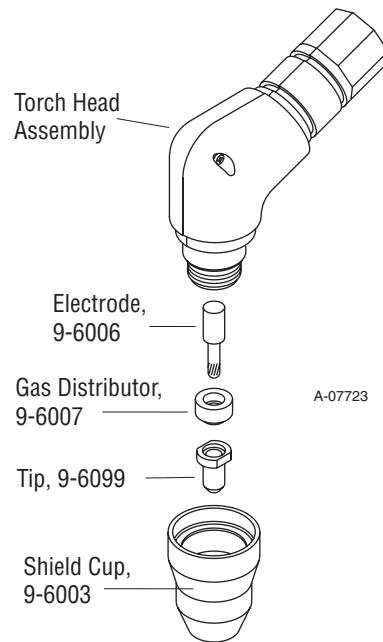


WARNING

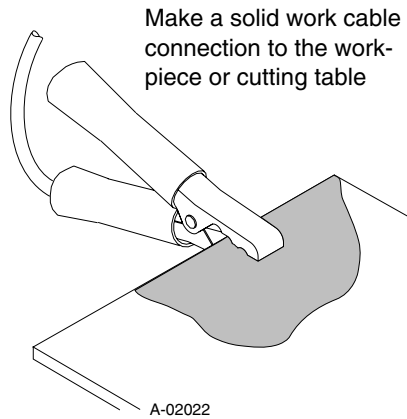
Disconnect primary power at the source before assembling or disassembling power supply, torch parts, or torch and leads assemblies.

Torch Parts Selection

Check the torch for proper assembly and appropriate torch parts. The torch parts must correspond with the type of operation, and with the amperage output of this Power Supply (15 amps maximum). Use only genuine manufacturer's parts with this torch.

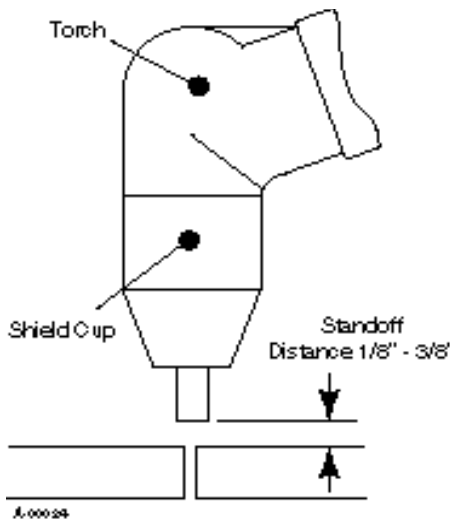


Connect Work Cable



Torch Operation

- Wear gloves and protective goggles.
 - Do not place bare hand on work piece.
1. For **drag cutting**, keep the torch in contact with the work piece.
 2. For **standoff cutting**, hold the torch 1/8 - 3/8 in (3-9 mm) from the work piece as shown below.



3. With the torch in starting position, press and hold the Torch Trigger. The pilot arc will come on and remain on until the cutting arc starts.
4. Once on, the cutting arc remains on as long as the Torch Trigger is held down.

5. To shut off the torch simply release the Torch Trigger. When the trigger is released a gas post-flow will occur. If the Torch Trigger is pushed during the post-flow, the pilot arc will restart immediately and the cutting arc will restart when the torch is brought within range of the work piece.

Typical Cutting Speeds

Cutting speeds vary according to torch output, the type of material being cut, and operator skill. Speeds shown are typical for this cutting system using air plasma to cut materials shown.

Material	Material Thickness	Inches Per Minute
Mild Steel	1/8"	25.0
	3/16"	16.0
	1/4"	slow speeds

SECTION 5: SERVICE

5.01 General Maintenance

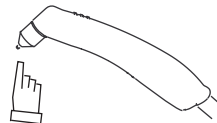


Warning!
Disconnect input power before maintaining.

Maintain more often
if used under severe
conditions

Each Use

Visual check of
torch tip and electrode

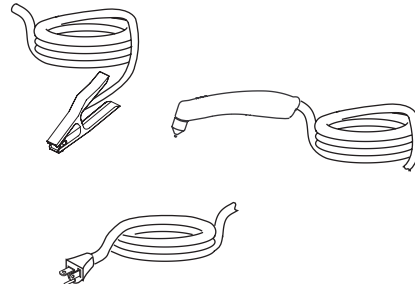


Weekly

Visually inspect the torch body
tip, electrode and shield cup

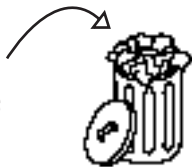


Visually inspect the
cables and leads.
Replace as needed

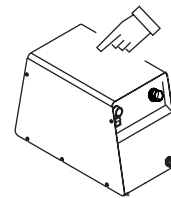


3 Months

Replace all
broken parts

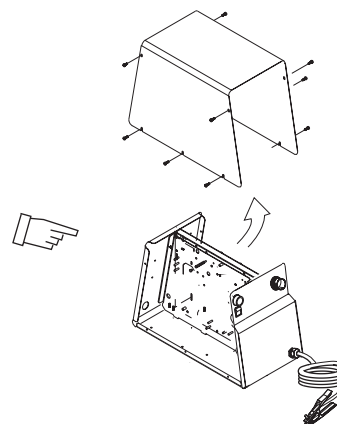


Clean
exterior
of power supply



6 Months

Visually check and
Carefully clean the
interior



5.02 Basic Troubleshooting Guide



WARNING

There are extremely dangerous voltage and power levels present inside this unit. Do not attempt to diagnose or repair unless you have had training in power electronics measurement and troubleshooting techniques.

Basic Troubleshooting, Overview

This guide covers basic troubleshooting. It is helpful for solving many of the common problems that can arise with this system. If major complex subassemblies are faulty, the unit must be returned to an authorized service center for repair.

Follow all instructions as listed and complete each section in the order presented.

Common Symptoms

Problem - Symptom	Possible Cause	Recommended Action
Power Switch is on but the A/C Indicator does not light	<ol style="list-style-type: none"> 1. Improper electrical connection. 2. System was overloaded. 3. Switch may be faulty 	<ol style="list-style-type: none"> 1. Check input power source and circuit breaker or fuse. Check input cable and connections. 2. Turn Primary Power Switch Off and then On again. 3. Return to authorized service center for repair or replacement
Primary power switch is on, but the cooling fan does not work.	<ol style="list-style-type: none"> 1. No power or incorrect power to fan. 2. Faulty fan. 	<ol style="list-style-type: none"> 1. Check electrical connections to fan. 2. Return to authorized service center for repair or replacement
No air flow at torch when torch switch is activated.	<ol style="list-style-type: none"> 1. Internal connection is loose or disconnected. 2. Internal air supply / compressor not working. 3. Control PCB faulty 	<ol style="list-style-type: none"> 1. Check all air line connections and fittings. 2. Return to an authorized service center for repair. 3. Return to an authorized service center for repair.
Torch will not pilot when torch switch is activated.	<ol style="list-style-type: none"> 1. Air pressure too high or too low. 2. Torch consumables missing. 3. Worn or faulty torch parts 4. Thermal Switch activated 	<ol style="list-style-type: none"> 1. There is no adjustment, return to an authorized service center for repair. 2. Turn off power supply. Remove shield cup. Install missing parts. 3. Inspect torch consumable parts. *Replace if necessary. 4. Allow the cooling fan to run for 2 minutes or longer until it will resume operation.
Cut performance is diminished.	<ol style="list-style-type: none"> 1. Worn torch parts. 2. Poor Work Lead connection. 3. Current sensor or PWM PCB faulty. 	<ol style="list-style-type: none"> 1. Check current setting. *Check the Electrode and Tip for excess wear. 2. *Check the connection of the Work Lead to the work piece. 3. Return to an authorized service center for repair or replacement.

* See following illustrations for parts wear and work lead connection

Examples of parts wear.

New Electrode



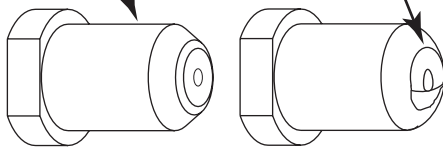
Worn Electrode



A-01270

Good Tip

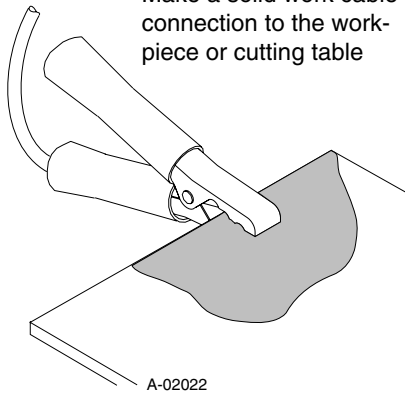
Worn Tip



Art# A-07727

Example of Work Lead connection.

Make a solid work cable connection to the work-piece or cutting table



A-02022

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SECTION 6: PARTS LISTS

6.01 Introduction

A. Parts List Breakdown

The parts list provides a breakdown of all replaceable components.

B. Returns

If a product must be returned for service, contact your distributor. Materials returned without proper authorization will not be accepted.

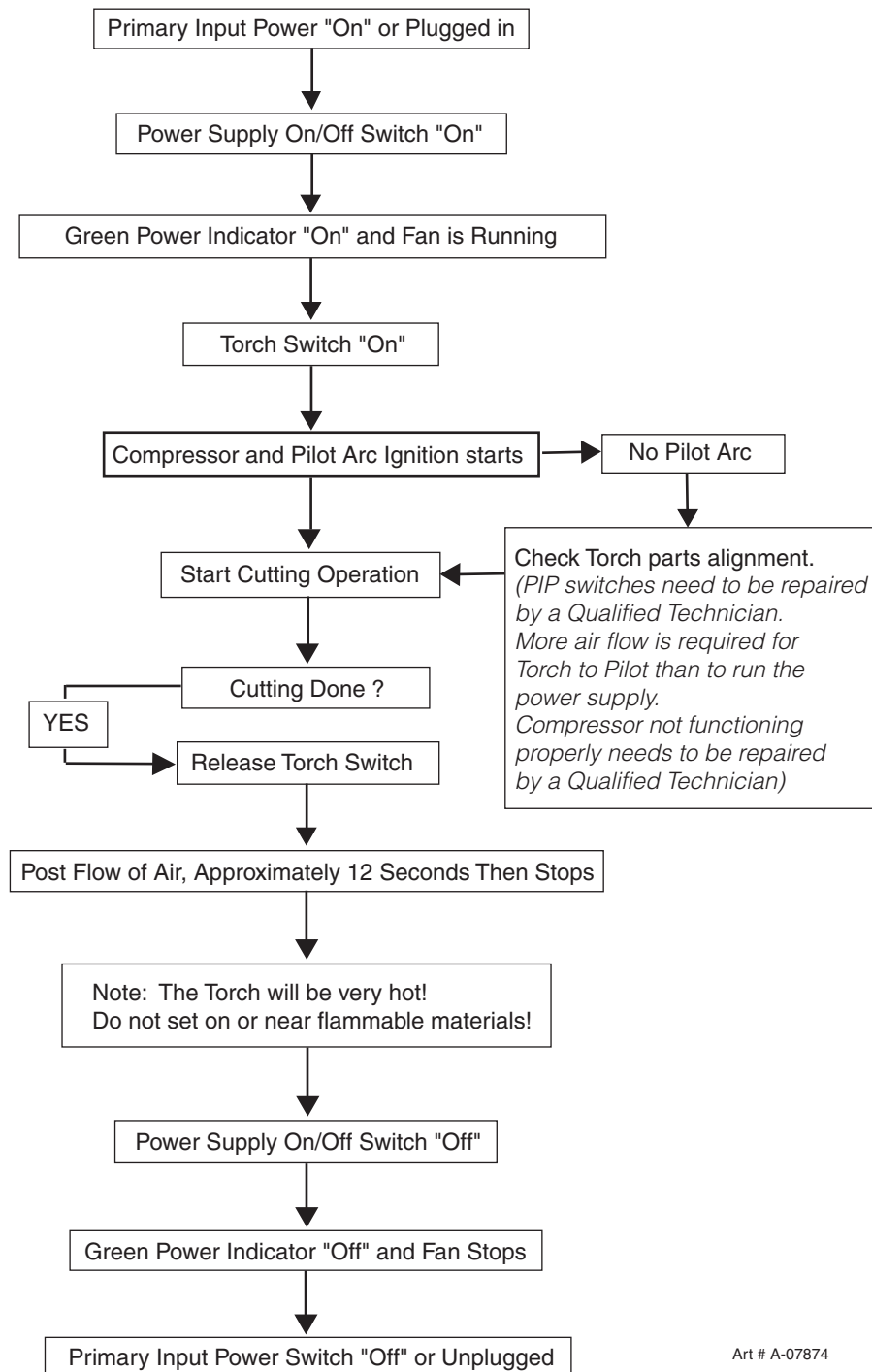
6.02 Ordering Information

Order replacement parts by catalog number and complete description of the part or assembly, as listed in the parts list for each type item. Also include the model and serial number of the torch. Address all inquiries to your authorized distributor.

6.03 Power Supply Replacement Parts

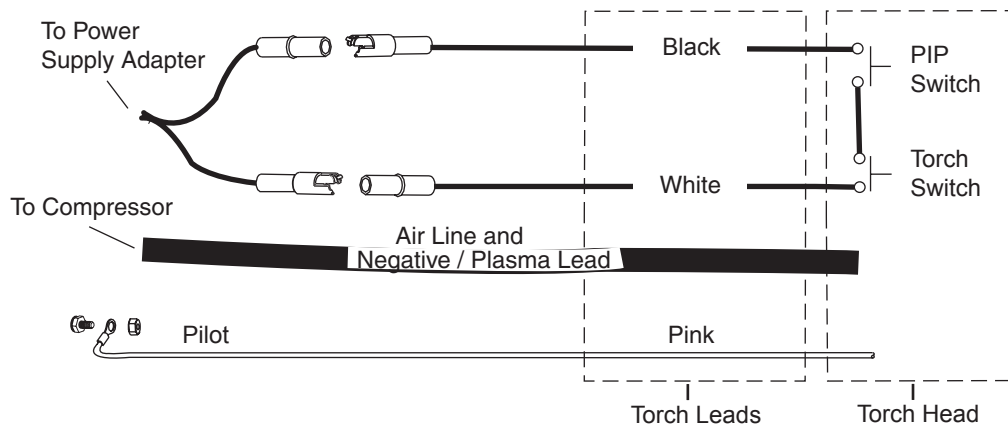
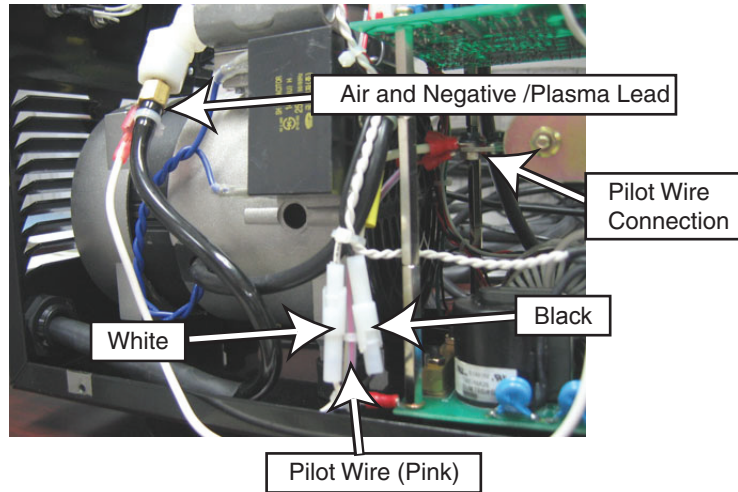
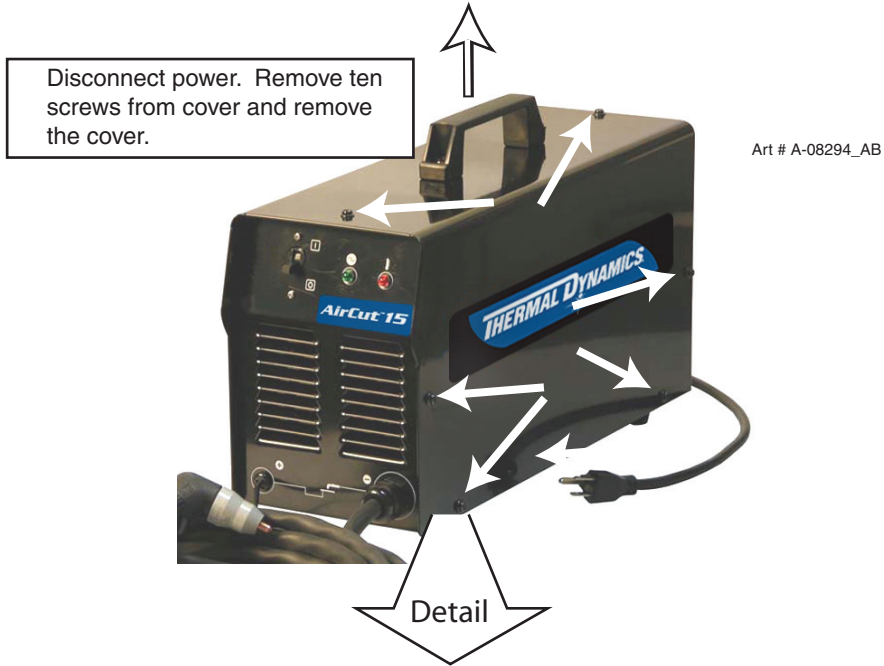
Qty	Description	Catalog #
1	SYSTEM, AIRCUT 15C, DEMO	1-1110-1D
1	COMPRESSOR, AIRCUT 15C	9-0385
1	COVER ASSEMBLY, AIRCUT 15C	9-0386
1	CIRCUIT BREAKER, AIRCUT 15C	9-0387
1	CONTROL TRANSFORMER, AIRCUT 15C	9-0388
1	CABLE GROUND PG16	9-0389
1	CASE, BOTTOM, AIRCUT 15C	9-0390

Appendix 1: Operating Sequence, Block Diagram



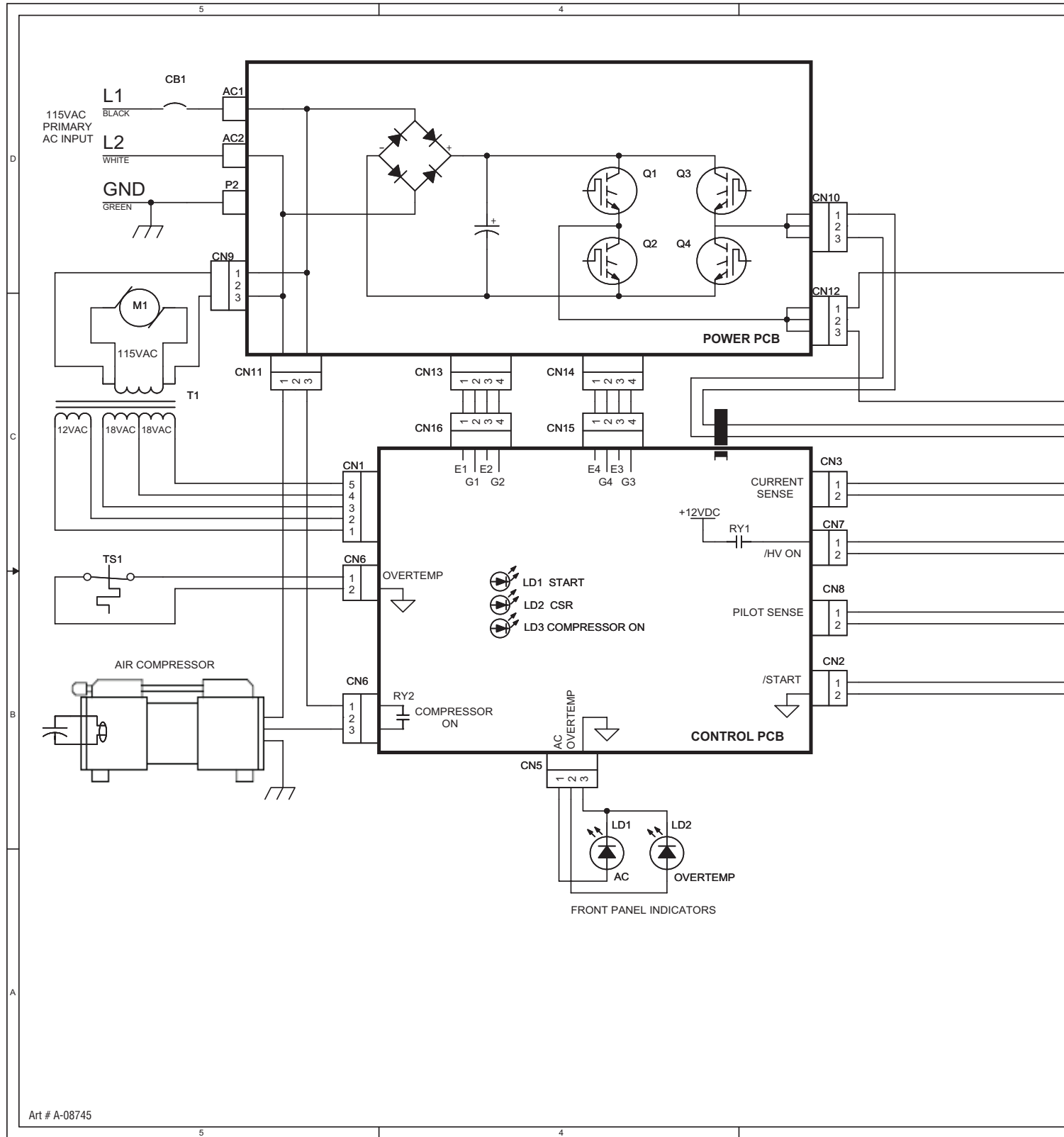
Art # A-07874

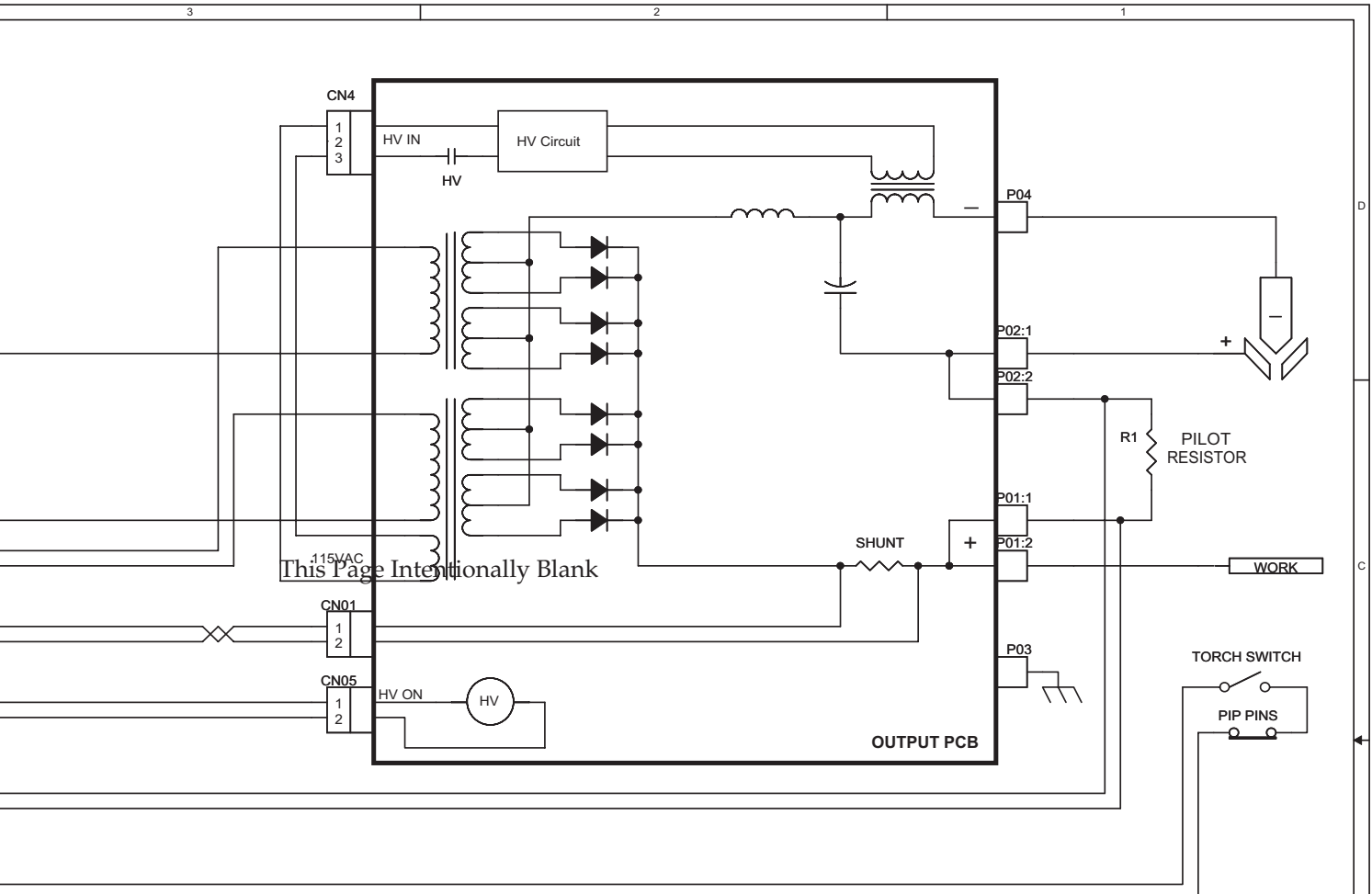
Appendix 2: Torch Connection



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Appendix 3: System Schematic 120V





Rev	Revisions	By	Date
AA	INTRO ECO	MNC	
Last Modified: Wednesday, September 24, 2008 09:31:12			

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 1. RESISTOR VALUES ARE EXPRESSED IN OHMS, 1/4W 5%.
 2. CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS (uF).

TITLE: **SCHEMATIC,
 AIRCUT 15 SYSTEM SCHEMATIC**

Art # A-08745

PCB No:	
Assy No:	
References	
Scale	Supersedes
Drawn:	Monday, January 21, 2008
Date:	
Chk:	App:
Sheet	1 of 1
Size	DWG No:
	42X1295



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