

INSTRUCTION MANUAL

PCM-750i

PLASMA ARC CUTTING PACKAGE

Series A



This manual provides installation and operation instructions for the following PCM-750i (Series A) cutting packages:

P/N 33980 - 230 V, 1-Phase

P/N 33982 - 460 V, 3-Phase

Starting with Serial No. PORI509000

CAUTION

These INSTRUCTIONS are for experienced operators. If you are not fully familiar with the principles of operation and safe practices for electric welding equipment, we urge you to read our booklet, "Precautions and Safe Practices for Arc Welding, Cutting, and Gouging," Form 52-529. Do NOT permit untrained persons to install, operate, or maintain this equipment. Do NOT attempt to install or operate this equipment until you have read and fully understand these instructions. If you do not fully understand these instructions, contact your supplier for further information. Be sure to read the Safety Precautions before installing or operating this equipment.

Be sure this information reaches the operator.
You can get extra copies through your supplier.



**ESAB Welding &
Cutting Products**

USER RESPONSIBILITY

This equipment will perform in conformity with the description thereof contained in this manual and accompanying labels and/or inserts 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, worn, distorted or contaminated should be replaced immediately. Should such repair or replacement become necessary, the manufacturer recommends that a telephone or written request for service advice be made to the Authorized Distributor from whom purchased.

This equipment or any of its parts should not be altered without the prior written approval of the manufacturer. The user of this equipment shall have the sole responsibility for any malfunction which results from improper use, faulty maintenance, damage, improper repair or alteration by anyone other than the manufacturer or a service facility designated by the manufacturer.

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SAFETY PRECAUTIONS



WARNING: These Safety Precautions are for your protection. They summarize precautionary information from the references listed in Additional Safety Information section. Before performing any installation or operating procedures, be sure to read and follow the safety precautions listed below as well as all other manuals, material safety data sheets, labels, etc. Failure to observe Safety Precautions can result in injury or death.



PROTECT YOURSELF AND OTHERS -- Some welding, cutting, and gouging processes are noisy and require ear protection. The arc, like the sun, emits ultraviolet (UV) and other radiation and can injure skin and eyes. Hot metal can cause burns. Training in the proper use of the processes and equipment is essential to prevent accidents. Therefore:

1. Always wear safety glasses with side shields in any work area, even if welding helmets, face shields, and goggles are also required.
2. Use a face shield fitted with the correct filter and cover plates to protect your eyes, face, neck, and ears from sparks and rays of the arc when operating or observing operations. Warn bystanders not to watch the arc and not to expose themselves to the rays of the electric-arc or hot metal.
3. Wear flameproof gauntlet type gloves, heavy long-sleeve shirt, cuffless trousers, high-topped shoes, and a welding helmet or cap for hair protection, to protect against arc rays and hot sparks or hot metal. A flameproof apron may also be desirable as protection against radiated heat and sparks.
4. Hot sparks or metal can lodge in rolled up sleeves, trouser cuffs, or pockets. Sleeves and collars should be kept buttoned, and open pockets eliminated from the front of clothing.
5. Protect other personnel from arc rays and hot sparks with a suitable non-flammable partition or curtains.
6. Use goggles over safety glasses when chipping slag or grinding. Chipped slag may be hot and can fly far. Bystanders should also wear goggles over safety glasses.



FIRES AND EXPLOSIONS -- Heat from flames and arcs can start fires. Hot slag or sparks can also cause fires and explosions. Therefore:

1. Remove all combustible materials well away from the work area or cover the materials with a protective non-flammable covering. Combustible materials include wood, cloth, sawdust, liquid and gas fuels, solvents, paints and coatings, paper, etc.
2. Hot sparks or hot metal can fall through cracks or crevices in floors or wall openings and cause a hidden smoldering fire or fires on the floor below. Make certain that such openings are protected from hot sparks and metal.
3. Do not weld, cut or perform other hot work until the workpiece has been completely cleaned so that there are no substances on the workpiece which might produce flammable or toxic vapors. Do not do hot work on closed containers. They may explode.
4. Have fire extinguishing equipment handy for instant use, such as a garden hose, water pail, sand bucket, or portable fire extinguisher. Be sure you are trained in its use.

5. Do not use equipment beyond its ratings. For example, overloaded welding cable can overheat and create a fire hazard.
6. After completing operations, inspect the work area to make certain there are no hot sparks or hot metal which could cause a later fire. Use fire watchers when necessary.
7. For additional information, refer to NFPA Standard 51B, "Fire Prevention in Use of Cutting and Welding Processes", available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.



ELECTRICAL SHOCK -- Contact with live electrical parts and ground can cause severe injury or death. **DO NOT** use AC welding current in damp areas, if movement is confined, or if there is danger of falling.

1. Be sure the power source frame (chassis) is connected to the ground system of the input power.
2. Connect the workpiece to a good electrical ground.
3. Connect the work cable to the workpiece. A poor or missing connection can expose you or others to a fatal shock.
4. Use well-maintained equipment. Replace worn or damaged cables.
5. Keep everything dry, including clothing, work area, cables, torch/electrode holder, and power source.
6. Make sure that all parts of your body are insulated from work and from ground.
7. Do not stand directly on metal or the earth while working in tight quarters or a damp area; stand on dry boards or an insulating platform and wear rubber-soled shoes.
8. Put on dry, hole-free gloves before turning on the power.
9. Turn off the power before removing your gloves.
10. Refer to ANSI/ASC Standard Z49.1 (listed on next page) for specific grounding recommendations. Do not mistake the work lead for a ground cable.



ELECTRIC AND MAGNETIC FIELDS — May be dangerous. Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding and cutting current creates EMF around welding cables and welding machines. Therefore:

1. Welders having pacemakers should consult their physician before welding. EMF may interfere with some pacemakers.
2. Exposure to EMF may have other health effects which are unknown.
3. Welders should use the following procedures to minimize exposure to EMF:
 - A. Route the electrode and work cables together. Secure them with tape when possible.
 - B. Never coil the torch or work cable around your body.
 - C. Do not place your body between the torch and work cables. Route cables on the same side of your body.
 - D. Connect the work cable to the workpiece as close as possible to the area being welded.
 - E. Keep welding power source and cables as far away from your body as possible.



FUMES AND GASES -- Fumes and gases, can cause discomfort or harm, particularly in confined spaces. Do not breathe fumes and gases. Shielding gases can cause asphyxiation. Therefore:

1. Always provide adequate ventilation in the work area by natural or mechanical means. Do not weld, cut, or gouge on materials such as galvanized steel, stainless steel, copper, zinc, lead, beryllium, or cadmium unless positive mechanical ventilation is provided. Do not breathe fumes from these materials.
2. Do not operate near degreasing and spraying operations. The heat or arc rays can react with chlorinated hydrocarbon vapors to form phosgene, a highly toxic gas, and other irritant gases.
3. If you develop momentary eye, nose, or throat irritation while operating, this is an indication that ventilation is not adequate. Stop work and take necessary steps to improve ventilation in the work area. Do not continue to operate if physical discomfort persists.
4. Refer to ANSI/ASC Standard Z49.1 (see listing below) for specific ventilation recommendations.
5. **WARNING: This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code §25249.5 et seq.)**



CYLINDER HANDLING -- Cylinders, if mishandled, can rupture and violently release gas. Sudden rupture of cylinder, valve, or relief device can injure or kill. Therefore:

1. Use the proper gas for the process and use the proper pressure reducing regulator designed to operate from the compressed gas cylinder. Do not use adaptors. Maintain hoses and fittings in good condition. Follow manufacturer's operating instructions for mounting regulator to a compressed gas cylinder.
2. Always secure cylinders in an upright position by chain or strap to suitable hand trucks, undercarriages, benches, walls, post, or racks. Never secure cylinders to work tables or fixtures where they may become part of an electrical circuit.
3. When not in use, keep cylinder valves closed. Have valve protection cap in place if regulator is not connected. Secure and move cylinders by using suitable hand trucks. Avoid rough handling of cylinders.
4. Locate cylinders away from heat, sparks, and flames. Never strike an arc on a cylinder.
5. For additional information, refer to CGA Standard P-1, "Precautions for Safe Handling of Compressed Gases in Cylinders", which is available from Compressed Gas Association, 1235 Jefferson Davis Highway, Arlington, VA 22202.



EQUIPMENT MAINTENANCE -- Faulty or improperly maintained equipment can cause injury or death. Therefore:

1. Always have qualified personnel perform the installation, troubleshooting, and maintenance work. Do not perform any electrical work unless you are qualified to perform such work.
2. Before performing any maintenance work inside a power source, disconnect the power source from the incoming electrical power.
3. Maintain cables, grounding wire, connections, power cord, and power supply in safe working order. Do not operate any equipment in faulty condition.
4. Do not abuse any equipment or accessories. Keep equipment away from heat sources such as furnaces, wet conditions such as water puddles, oil or grease, corrosive atmospheres and inclement weather.
5. Keep all safety devices and cabinet covers in position and in good repair.
6. Use equipment only for its intended purpose. Do not modify it in any manner.



ADDITIONAL SAFETY INFORMATION -- For more information on safe practices for electric arc welding and cutting equipment, ask your supplier for a copy of "Precautions and Safe Practices for Arc Welding, Cutting and Gouging", Form 52-529.

The following publications, which are available from the American Welding Society, 550 N.W. LeJuene Road, Miami, FL 33126, are recommended to you:

1. ANSI/ASC Z49.1 - "Safety in Welding and Cutting"
2. AWS C5.1 - "Recommended Practices for Plasma Arc Welding"
3. AWS C5.2 - "Recommended Practices for Plasma Arc Cutting"
4. AWS C5.3 - "Recommended Practices for Air Carbon Arc Gouging and Cutting"
5. AWS C5.5 - "Recommended Practices for Gas Tungsten Arc Welding"
6. AWS C5.6 - "Recommended Practices for Gas Metal Arc Welding"
7. AWS SP - "Safe Practices" - Reprint, Welding Handbook.
8. ANSI/AWS F4.1, "Recommended Safe Practices for Welding and Cutting of Containers That Have Held Hazardous Substances."



MEANING OF SYMBOLS - As used throughout this manual: Means Attention! Be Alert! Your safety is involved.



DANGER

Means immediate hazards which, if not avoided, will result in immediate, serious personal injury or loss of life.



WARNING

Means potential hazards which could result in personal injury or loss of life.



CAUTION

Means hazards which could result in minor personal injury.

PRÉCAUTIONS DE SÉCURITÉ

AVERTISSEMENT: Ces règles de sécurité ont pour objet d'assurer votre protection. Veuillez à lire et à observer les précautions énoncées ci-dessous avant de monter l'équipement ou de commencer à l'utiliser. Tout défaut d'observation de ces précautions risque d'entraîner des blessures graves ou mortelles.

1. **PROTECTION INDIVIDUELLE--** Les brûlures de la peau et des yeux dues au rayonnement de l'arc électrique ou du métal incandescent, lors du soudage au plasma ou à l'électrode ou lors du gougeage à l'arc, peuvent s'avérer plus graves que celles résultant d'une exposition prolongée au soleil. Aussi convient-il d'observer les précautions suivantes:

a. Portez un écran facial adéquat muni des plaques protectrices et des verres filtrants appropriés afin de vous protéger les yeux, le visage, le cou et les oreilles des étincelles et du rayonnement de l'arc électrique lorsque vous effectuez des soudures ou des coupes ou lorsque vous en observez l'exécution.

AVERTISSEZ les personnes se trouvant à proximité de façon à ce qu'elles ne regardent pas l'arc et à ce qu'elles ne s'exposent pas à son rayonnement, ni à celui du métal incandescent.

b. Portez des gants ignifugés à crispins, une tunique épaisse à manches longues, des pantalons sans rebord, des chaussures à embout d'acier et un casque de soudage ou une calotte de protection, afin d'éviter d'exposer la peau au rayonnement de l'arc électrique ou du métal incandescent. Il est également souhaitable d'utiliser un tablier ininflammable de façon à se protéger des étincelles et du rayonnement thermique.

c. Les étincelles ou les projections de métal incandescent risquent de se loger dans des manches retroussées, des bords relevés de pantalons ou dans des poches. Aussi convient-il de garder boutonnés le col et les manches et de porter des vêtements sans poches à l'avant.

d. Protégez des étincelles et du rayonnement de l'arc électrique les autres personnes travaillant à proximité à l'aide d'un écran ininflammable adéquat.

e. Ne jamais omettre de porter des lunettes de sécurité lorsque vous vous trouvez dans un secteur où l'on effectue des opérations de soudage ou de coupage à l'arc. Utilisez des lunettes de sécurité à écrans ou verres latéraux pour piquer ou meûler le laitier. Les piquetures incandescentes de laitier peuvent être projetées à des distances considérables. Les personnes se trouvant à proximité doivent également porter des lunettes de protection.

f. Le gougeage à l'arc et le soudage à l'arc au plasma produisent un niveau de bruit extrêmement élevé (de 100 à 114 dB) et exigent par conséquent l'emploi de dispositifs appropriés de protection auditive.

2. **PRÉVENTION DES INCENDES--** Les projections de laitier incandescent ou d'étincelles peuvent provoquer de graves incendies au contact de matériaux combustibles solides, liquides ou gazeux. Aussi faut-il observer les précautions suivantes:

a. Éloigner suffisamment tous les matériaux combustibles du secteur où l'on exécute des soudures ou des coupes à l'arc, à moins de les recouvrir complètement d'une bâche non-inflammable. Ce type de matériaux comprend notamment le bois, les vêtements, la sciure, l'essence, le kérosène, les peintures, les solvants, le gaz naturel, l'acétylène, le propane et autres substances combustibles semblables.

b. Les étincelles ou les projections de métal incandescent peuvent tomber dans des fissures du plancher ou dans des ouvertures des murs et y déclencher une ignition lente cachée. Veiller à protéger ces ouvertures des étincelles et des projections de métal.

c. N'exécutez pas de soudures, de coupes, d'opérations de gougeage ou autres travaux à chaud à la surface de barils, bidons, réservoirs ou autres contenants usagés, avant de les avoir nettoyés de toute trace de substance susceptible de produire des vapeurs inflammables ou toxiques.

d. En vue d'assurer la prévention des incendies, il convient de disposer d'un matériel d'extinction prêt à servir immédiatement, tel qu'un tuyau d'arrosage, un seau à eau, un seau de sable ou un extincteur portatif.

e. Une fois le travail à l'arc terminé, inspectez le secteur de façon à vous assurer qu'aucune étincelle ou projection de métal incandescent ne risque de provoquer ultérieurement un feu.

3. **CHOC ÉLECTRIQUE--** Le gougeage à l'arc et à l'arc au plasma exige l'emploi de tensions à vide relativement importantes; or, celles-ci risquent de causer des dommages corporels graves et même mortels en cas d'utilisation inadéquate. La gravité du choc électrique reçu dépend du chemin suivi par le courant à travers le corps humain et de son intensité.

a. Ne laissez jamais de surfaces métalliques sous tension venir au contact direct de la peau ou de vêtements humides. Veuillez à porter des gants bien secs.

b. Si vous devez effectuer un travail sur une surface métallique ou dans un secteur humide, veuillez à assurer votre isolation corporelle en portant des gants secs et des chaussures à semelles de caoutchouc et en vous tenant sur une planche ou une plate-forme sèche.

c. Mettez toujours à la terre le poste de soudage/coupage en le reliant par un câble à une bonne prise de terre.

d. N'utilisez jamais de câbles usés ou endommagés. Ne surchargez jamais le câble. Utilisez toujours un équipement correctement entretenu.

e. Mettez l'équipement hors tension lorsqu'il n'est pas en service. une mise à la masse accidentelle peut en effet provoquer une surchauffe de l'équipement et un danger d'incendie. Ne pas enrouler ou passer le câble autour d'une partie quelconque du corps.

f. Vérifiez si le câble de masse est bien relié à la pièce en un point aussi proche que possible de la zone de travail. Le branchement des câbles de masse à l'ossature du bâtiment ou en un point éloigné de la zone de travail augmente en effet le risque de

pas sage d'un courant de sortie par des chaînes de levage des câbles de grue ou divers chemins électriques.

- g. Empêchez l'apparition de toute humidité, notamment sur vos vêtements, à la surface de l'emplacement de travail, des câbles, du porte-électrode et du poste de soudage/coupage. Réparez immédiatement toute fuite d'eau.

4. VENTILATION-- La respiration prolongée des fumées résultant des opérations de soudage/coupage, à l'intérieur, d'un local clos, peut provoquer des malaises et des dommages corporels. Aussi convient-il d'observer les précautions suivantes:

- a. Assurez en permanence une aération adéquate de l'emplacement de travail en maintenant une ventilation naturelle ou à l'aide de moyens mécaniques. N'effectuez jamais de travaux de soudage ou de coupage sur des matériaux de zinc, de plomb, de beryllium ou de cadmium en l'absence de moyens mécaniques de ventilation capables d'empêcher l'inhalation des fumées dégagées par ces matériaux.
 - b. N'effectuez jamais de travaux de soudage ou de coupage à proximité de vapeurs d'hydrocarbure chloré résultant d'opérations voisines de dégraissage ou de pulvérisation. La chaleur dégagée ou le rayonnement de l'arc peut déclencher la formation de phosgène -- gaz particulièrement toxique -- et d'autres gaz irritants, à partir des vapeurs de solvant.
 - c. Une irritation momentanée des yeux, du nez ou de la gorge constatée au cours de l'utilisation de l'équipement dénote un défaut de ventilation. Arrêtez-vous de travailler afin de prendre les mesures nécessaires à l'amélioration de la ventilation. Ne poursuivez pas l'opération entreprise si le malaise persiste.
 - d. Certaines commandes comportent des canalisations où circule de l'hydrogène. L'armoire de commande est munie d'un ventilateur destiné à empêcher la formation de poches d'hydrogène, lesquelles présentent un danger d'explosion; ce ventilateur ne fonctionne que si l'interrupteur correspondant du panneau avant se trouve placé en position ON (Marche). Veillez à manœuvrer cette commande en vérifiant si le couvercle est bien en place, de façon à assurer l'efficacité de la ventilation ainsi réalisée. Ne jamais débrancher le ventilateur.
 - e. Les fumées produites par l'opération de soudage ou de coupage peuvent s'avérer toxiques. Aussi est-il nécessaire de disposer en permanence d'un dispositif adéquat de ventilation de type aspirant, afin d'éliminer du voisinage de l'opérateur tout dégagement de fumée visible.
 - f. Consultez les recommandations particulières en matière de ventilation indiquées à l'alinéa 6 de la norme Z49.1 de l'AWS.
5. ENTRETIEN DE L'ÉQUIPEMENT-- Un équipement entretenu de façon défectueuse ou inadéquate risque

non seulement de réaliser un travail de mauvaise qualité mais, chose plus grave encore, d'entraîner des dommages corporels graves, voire mortels en déclenchant des incendies ou des chocs électriques. Observez par conséquent les précautions suivantes:

- a. Efforcez-vous de toujours confier à un personnel qualifié l'installation, le dépannage et l'entretien du poste de soudage et de coupage. N'effectuez aucune réparation électrique sur l'équipement à moins d'être qualifié à cet effet.
- b. Ne procédez jamais à une tâche d'entretien quelconque à l'intérieur du poste de soudage/coupage, avant d'avoir débranché l'alimentation électrique.
- c. Maintenez en bon état de fonctionnement les câbles, le câble de masse, les branchements, le cordon d'alimentation et le poste de soudage/coupage. N'utilisez jamais le poste ou l'équipement s'il présente une défectuosité quelconque.
- d. Prenez soin du poste de soudage et de coupage et des équipements accessoires. Gardez-les à l'écart des sources de chaleur, notamment des fours, de l'humidité, des flaques d'eau maintenez-les à l'abri des traces d'huile ou de graisse, des atmosphères corrosives et des intempéries.
- e. Laissez en place tous les dispositifs de sécurité et tous les panneaux de l'armoire de commande en veillant à les garder en bon état.
- f. Utilisez le poste de soudage/coupage conformément à son usage prévu et n'effectuez aucune modification.

6. INFORMATIONS COMPLÉMENTAIRES RELATIVES À LA SÉCURITÉ--

Pour obtenir des informations complémentaires sur les règles de sécurité à observer pour le montage et l'utilisation d'équipements de soudage et de coupage électriques et sur les méthodes de travail recommandées, demandez un exemplaire du livret N° 52529 "Precautions and Safe Practices for Arc Welding, Cutting and Gouging" publié par ESAB. Nous conseillons également de consulter les publications suivantes, tenues à votre disposition par l'American Welding Society, 550 N.W. LeJuene Road, Miami, FL 32126:

- a. "Safety in Welding and Cutting" AWS Z49.1
- b. "Recommended Safe Practices for Gas-Shielded Arc Welding" AWS A6. 1.
- c. "Safe Practices for Welding and Cutting Containers That Have Held Combustibles" AWS-A6.0.
- d. "Recommended Safe Practices for Plasma Arc Cutting" AWS-A6. 3.
- e. "Recommended Safe Practices for Plasma Arc Welding" AWS-C5. 1.
- f. "Recommended Safe Practices for Air Carbon Arc Gouging and Cutting" AWS-C5. 3.
- g. "Code For Safety in Welding and Cutting" CSA-Standard W117. 2.

1.1 GENERAL

The PCM-750i is a compact, completely self-contained plasma cutting system. As shipped, the system is fully assembled and ready to cut after being connected to input power and a source of compressed air (90-150 psi). The PCM-750i package uses the heavy-duty PT-27 torch to deliver cutting power for materials up to 1-1/4 inch thick. Refer to the following paragraphs for descriptions of the PCM-750i packages available as well as performance specifications.



WARNING

Use only torches designed for use with this Series A console. Do NOT use or modify the PT-23, PCT-80 or any other torch for use on this console. The series A console uses a pneumatic interlock safety system. The original console used an electrical safety interlock system. Use of torches not designed for use with this console could create an electrical shock hazard.

1.2 SCOPE

The purpose of this manual is to provide the operator with all the information required to install and operate the PCM-750i plasma arc cutting package. Technical reference material is also provided to assist in troubleshooting the cutting package.

1.3 PACKAGES AVAILABLE

Table 1-1 lists PCM-750i packages available through your ESAB dealer. Package contents are indented under each complete system description.

Table 1-1. PCM-750i Cutting Packages

Description	Part Number
PCM-750i, PT-27, 230 V, 75°, 25 ft, 1-phase	33980
PCM-750i (Ser. A) Console w/ Regulator	35504
PT-27 Torch, 75°, 25 ft	21661
PT-27 Spare Parts Kit*	21623*
Work Cable, 25 ft	680560
PCM-750i, PT-27, 460 V, 75°, 25 ft, 3-phase	33982
PCM-750i (Ser. A) Console w/ Regulator	35508
PT-27 Torch, 75°, 25 ft	21661
PT-27 Spare Parts Kit*	21623*
Work Cable, 25 ft	680560
* Refer to Table 1-2 for PT-27 Spare Parts Kit contents.	

Table 1-2. PT-27 Spare Parts Kit Contents

Description	Part Number	Quantity
50 A Nozzle	33369	4
Electrode	33366	3
Swirl Baffle	33367	1
Heat Shield	21616	2
Standoff Guide	21420	1
Valve Pin	21619	1
Fuse, 15 A, 250 V, Fast Acting	951780	4

1.4 SPECIFICATIONS

Refer to Tables 1-3, 1-4, and Figures 1-1 and 1-2 for PCM-750i technical specifications.

Table 1-3. PCM-750i Specifications

Rated Output	40% Duty Cycle*		50 A @ 105 V dc
	60% Duty Cycle*		40 A @ 104 V dc
	100% Duty Cycle		30 A @ 103 V dc
Output Current Range			10 to 50 Amperes
Open Circuit Voltage			265 V dc
Rated Primary Input @ 50 Amperes Output	208/230 Volt		45/42 A, 50/60 Hz, 1-Phase
	460 Volt		12A, 50/60 Hz, 1- or 3-Phase
Power Factor @ 50 Amperes Output			70%
Efficiency @ 50 Amperes Output			88%
Current Capacity	PT-27		80 A DCSP
Air Requirements	PT-27		65 psig @ 250 cfh
Dimensions	Length		19.0 in. (483 mm)
	Height		18.0 in. (457 mm)
	Width		12.0 in. (305 mm)
	w/torch storage		9.0 in. (229 mm)
Weight (less torch, work cable, air regulator)			46 lbs (21 kg)

*Duty cycle is based on a 10-minute period; therefore, a 40% duty cycle means the machine may operate for 4 minutes with a cool down period of 6 minutes; a 60% duty cycle means the machine may operate for 6 minutes with a cool down period of 4 minutes; a 100% duty cycle means the machine may operate continuously.

Table 1-4. PT-27 Torch Specifications

Current Capacity (100% duty)	80 A DCSP
Length of Service Lines	25 ft or 50 ft
Weight	
25 ft	5.2 lbs (2.3 kg)
50 ft	9.6 lbs (4.4 kg)

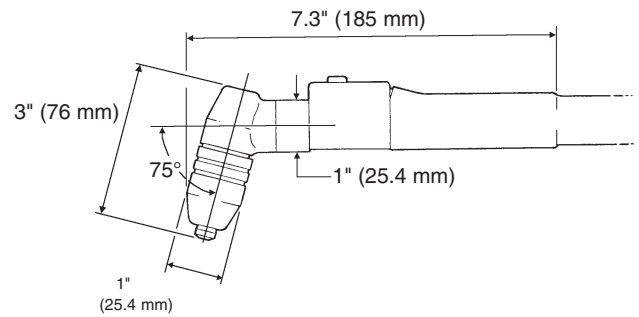


Figure 1-1. PT-27 Dimensions

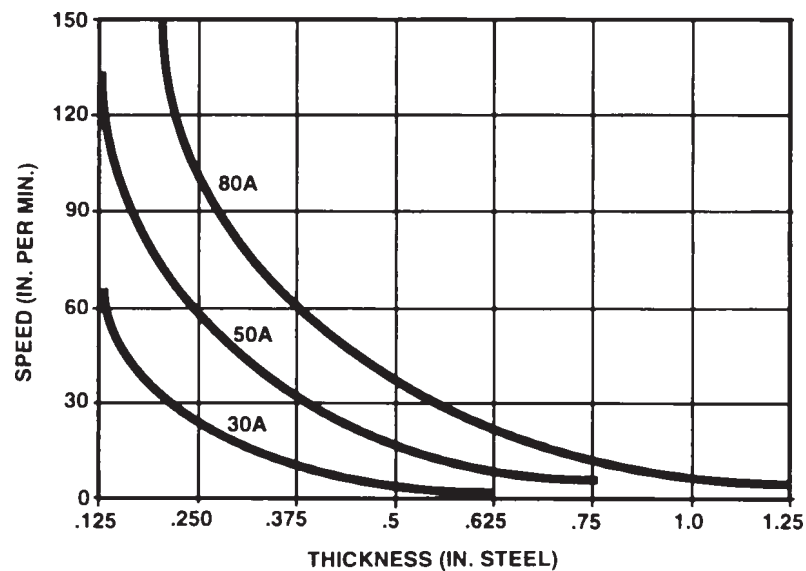


Figure 1-2. PT-27 Cutting Performance

2.1 GENERAL

Proper installation can contribute materially to the satisfactory and trouble-free operation of the PCM-750i cutting package. It is suggested that each step in this section be studied carefully and followed as closely as possible.

2.2 EQUIPMENT REQUIRED

A source of clean, dry air that supplies 250 cfh at 65-75 psig is required for the cutting operation. The air supply should not exceed 150 psig (the maximum inlet pressure rating of the air filter-regulator supplied with the package).

2.3 LOCATION

Adequate ventilation is necessary to provide proper cooling of the PCM-750i and the amount of dirt, dust, and excessive heat to which the equipment is exposed, should be minimized. There should be at least one foot of clearance between the PCM-750i power source and wall or any other obstruction to allow freedom of air movement through the power source.

Installing or placing any type of filtering device will restrict the volume of intake air, thereby subjecting the power source internal components to overheating. The warranty is void if any type of filter device is used.

2.4 INSPECTION

- A. Remove the shipping container and all packing material and inspect for evidence of concealed damage which may not have been apparent upon receipt of the PCM-750i. Notify the carrier of any defects or damage at once.
- B. Check container for any loose parts prior to disposing of shipping materials.
- C. Check air louvers and any other openings to ensure that any obstruction is removed.

2.5 PRIMARY ELECTRICAL INPUT CONNECTIONS (FIGURE 2-1)



WARNING

ELECTRIC SHOCK CAN KILL! Precautionary measures should be taken to provide maximum protection against electrical shock. Be sure that all power is off by opening the line (wall) disconnect switch and by unplugging the power cord to the unit when connections are made inside of the power source.

CAUTION

Be sure that the power source is properly configured for your input power supply. DO NOT connect a power source configured for 208/230 V to a 460 V input power supply. Damage to the machine may occur.

The PCM-750i console operating on 230 V, 1-phase input power is equipped with a 10-ft, 3-conductor cable with plug. A mating receptacle (P/N 674540) is supplied with the 230 V console. A line (wall) disconnect switch with a 60-ampere fuse or circuit breaker should be provided at the main power panel. The cable connecting the disconnect switch to the receptacle should include three (two power and one ground) No. 8 AWG insulated conductors.

The PCM-750i console operating on 460 V, 3-phase input is equipped with a 10-ft, 4-conductor input power cord with no plug. A line (wall) disconnect switch, with a 30 ampere circuit breaker, should be provided at the main power panel. The customer may connect the input power cord directly to the disconnect switch or purchase a proper plug and receptacle from a local electrical supplier. The cable connecting the disconnect switch to the receptacle should include four (three power and one ground) No. 12 AWG insulated conductors.

NOTE:

To convert the 460 V, 3-phase console to single phase, tape back the red wire on the input power cable and then connect the black, white, and green leads to a suitable 460-volt plug.

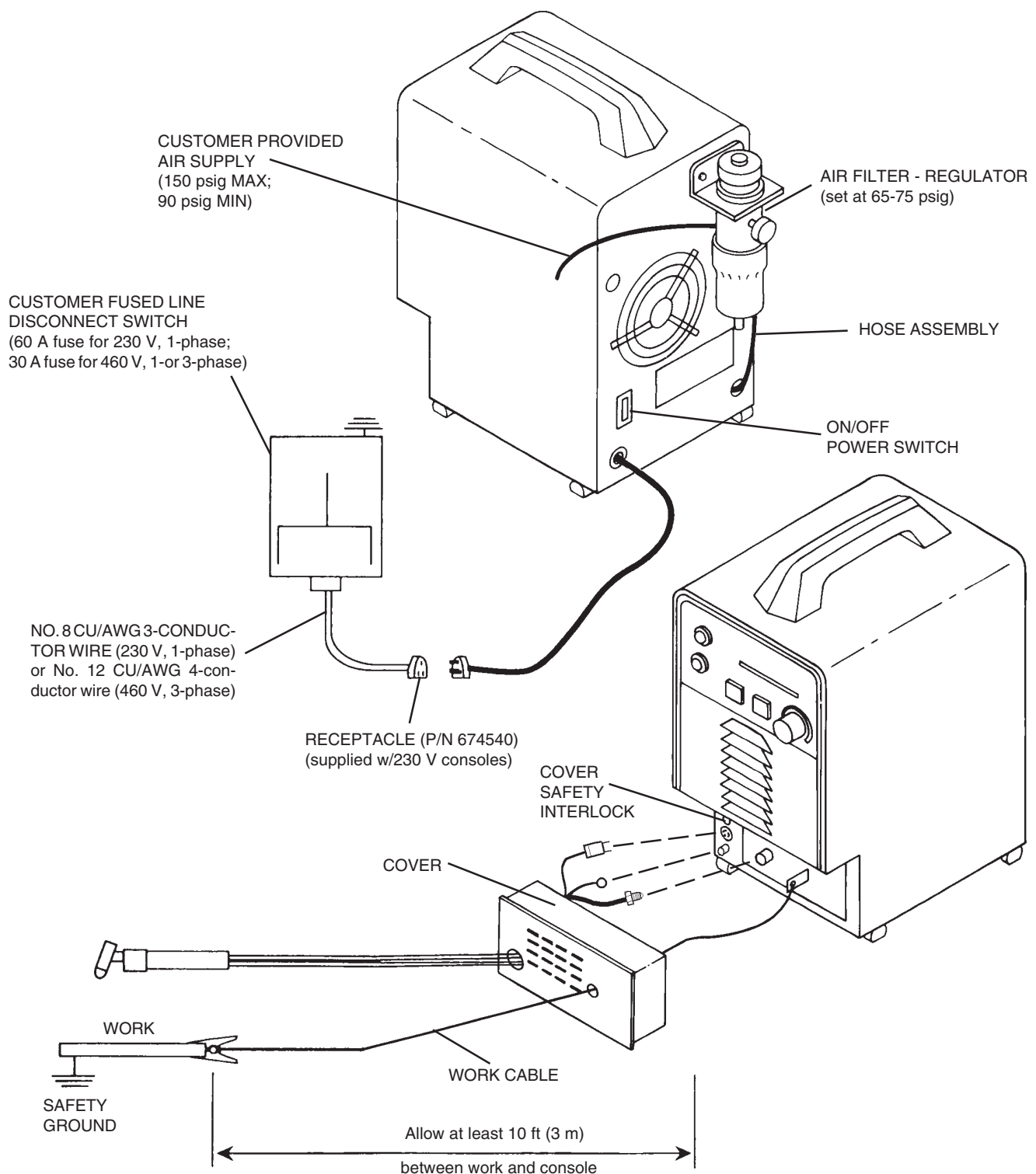


Figure 2-1. PCM-750i Interconnection Diagram

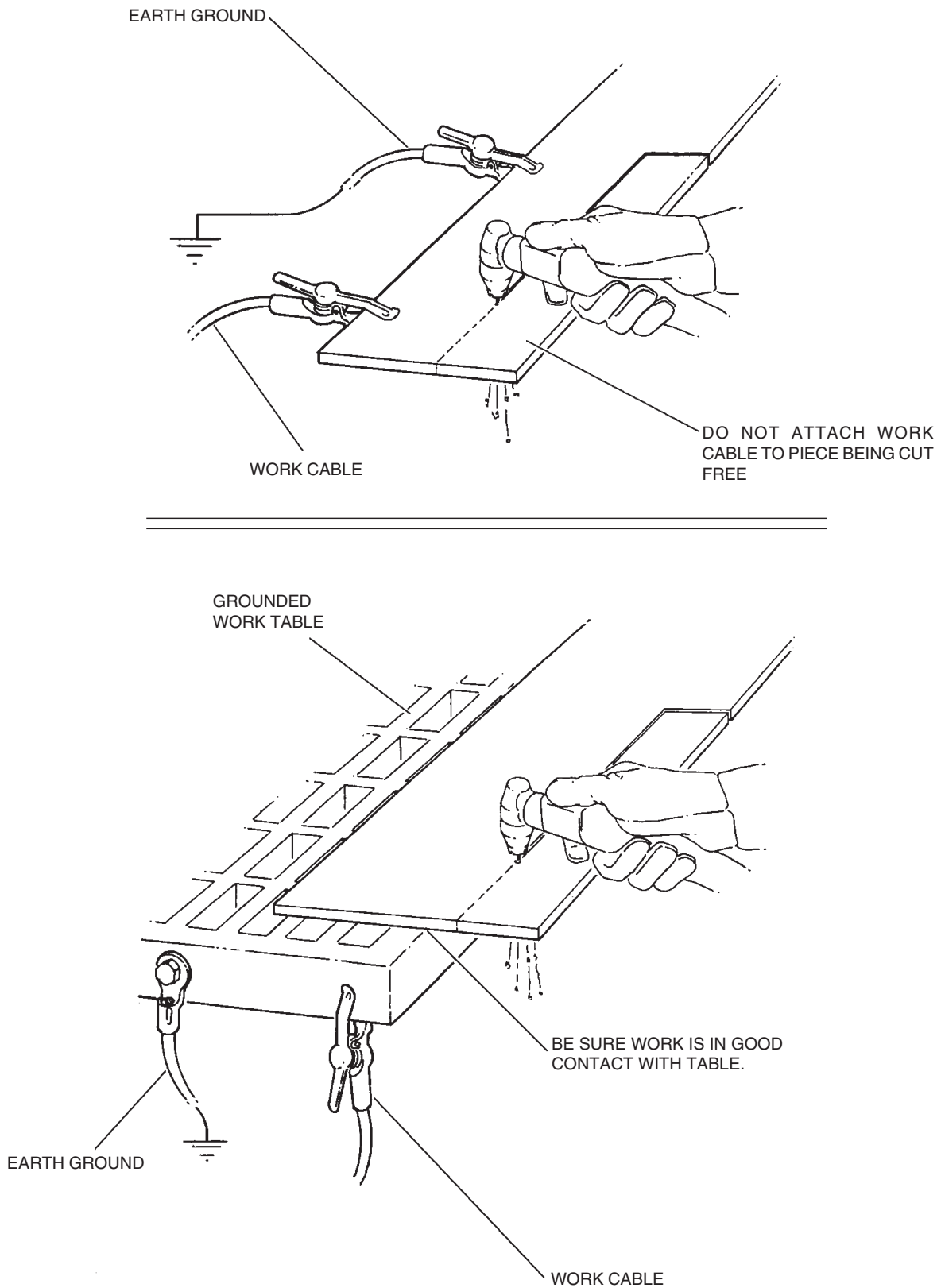


Figure 2-2. Ground and Work Cable Connections

3.1 OPERATION

**WARNING****ELECTRIC SHOCK can kill.**

- Do NOT operate the unit with the cover removed.
- Do NOT apply power to the unit while holding or carrying the unit.
- Do NOT touch any torch parts forward of the torch handle (nozzle, heat shield, electrode, etc.) with power switch on.

**WARNING**

**ARC RAYS can burn eyes and skin;
NOISE can damage hearing.**

- Wear welding helmet with No. 6 or 7 lens shade.
- Wear eye, ear, and body protection.

CAUTION

Position the PCM-750i at least 10 feet (3 meters) from the cutting area. Sparks and hot slag from the cutting operation can damage the unit.

3.2 PCM-750i CONTROLS (FIGURE 3-1)

- Power Switch (located on rear panel).** When placed in ON position, the green pilot light will glow indicating control circuit is energized and the cooling fan will run.
- Output Current Control.** Adjustable from 10 to 50 amperes to suit cutting conditions.
- Air Check Switch.** When placed in ON position, air filter-regulator can be adjusted to desired pressure (65-75 psig) before cutting operations. Allow air to flow for a few minutes. This should remove any condensation that may have accumulated during shutdown period. Be sure to place switch in OFF position before starting cutting operations.
- Lock-In Switch.** When placed in ON position, permits releasing torch switch button after cutting arc has been initiated. To extinguish arc at end of cut, press and release torch switch button again or pull torch away from work. When placed in OFF position, torch switch must be held closely by the operator during the entire cutting operation and then released at the end of cut.

- Fault Light.** Will glow red under the following conditions and operations will come to a complete stop:

- When duty cycle has been exceeded. The duty cycles of this unit are 40% at rated output current of 50 amperes, 60% at rated output current of 40 amperes, and 100% at rated output current of 30 amperes. Duty cycle is based on a 10 minute cycle; therefore, at 40% duty cycle, the unit can operate up to 4 minutes and then must be allowed to cool down for the next 6 minutes; at 60% duty cycle, the unit can operate up to 6 minutes and then must be allowed to cool down for the next 4 minutes; at 100% duty cycle, the unit can operate continuously.
- When input voltage is outside the range of 150 to 270 volts.

3.3 CUTTING WITH THE PT-27

Use the following procedures to cut with the PT-27 torch (Figure 3-4).

- Hold the torch approximately 1/8 inch above the work and tilted at about 15 - 30°. This reduces the chance of spatter entering the torch. If the PT-27's standoff tool is being used, set the standoff at 1/16 inch for materials less than 1/4-inch thick and at 3/16 inch for those over 1/4-inch thick.
- Depress the torch switch. Air should flow from the torch and the high frequency should energize.
- Two seconds after depressing the torch switch, the pilot arc should start. The main arc should immediately follow, allowing the cut to begin. (If using the LOCK-IN mode, torch switch may be released after establishing the cutting arc.)
- After starting the cut, the torch should be maintained at a 5-15° forward angle (Figure 3-2). This angle is especially useful in helping to create a "drop" cut. When not using the standoff guide, the nozzle should be held approximately 1/8 inch from the work.
- When ending a cut, the torch switch should be released (press and release if using LOCK-IN mode) and lifted off the workpiece just before the end of the cut to minimize double-arcing. This is to prevent the high frequency from reigniting after cutting arc extinguishes and causing damage to the nozzle.

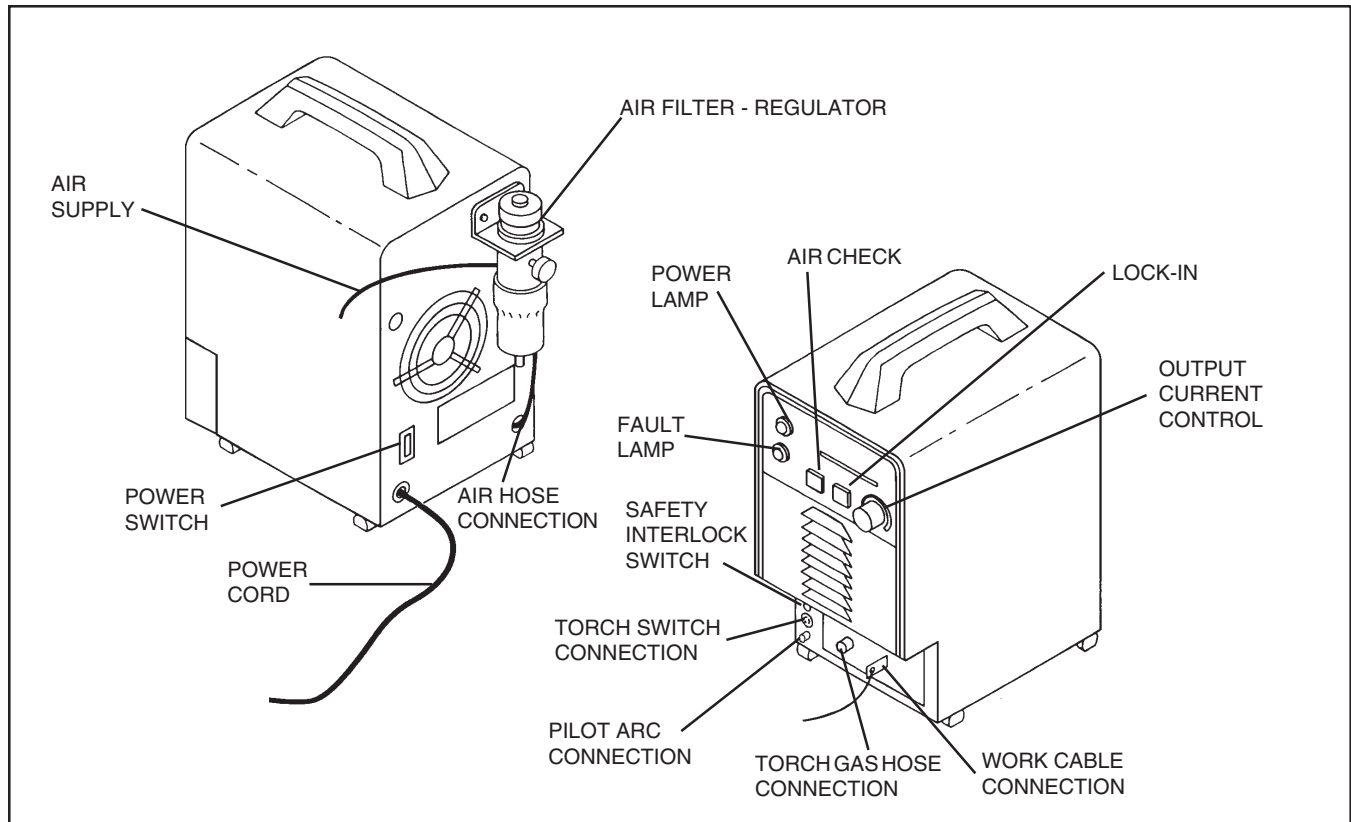


Figure 3-1. PCM-750i Controls

- F. For rapid re-starts, such as grate or heavy mesh cutting, do not release the torch switch. In the postflow mode, the arc can be re-started immediately by depressing the torch switch. This avoids the 2-second preflow portion of the cutting cycle.

NOTE

When replacing the nozzle, always inspect the electrode for wear. If less than $11/16$ " of electrode shaft is remaining, replace the electrode. If the electrode is used beyond this recommended wear limit, damage to the torch and power source may occur. Nozzle life is also greatly reduced when using the electrode below the recommended limit. Refer to Figure 3-3.

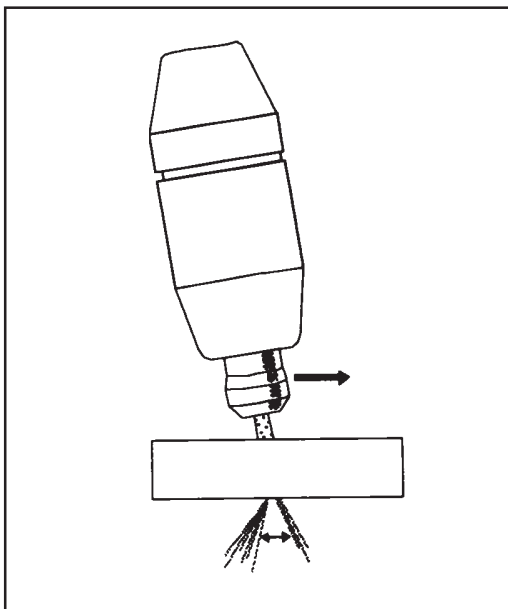


Figure 3-2. Recommended Torch Angle of 5° to 15°

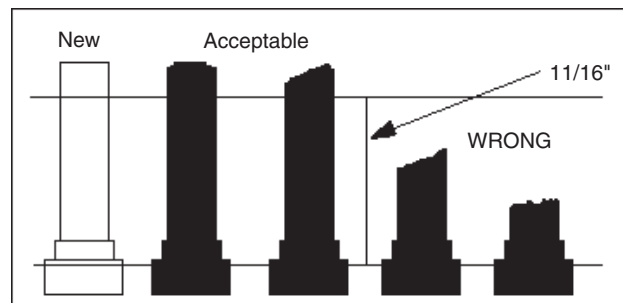


Figure 3-3. Electrode Wear Limit

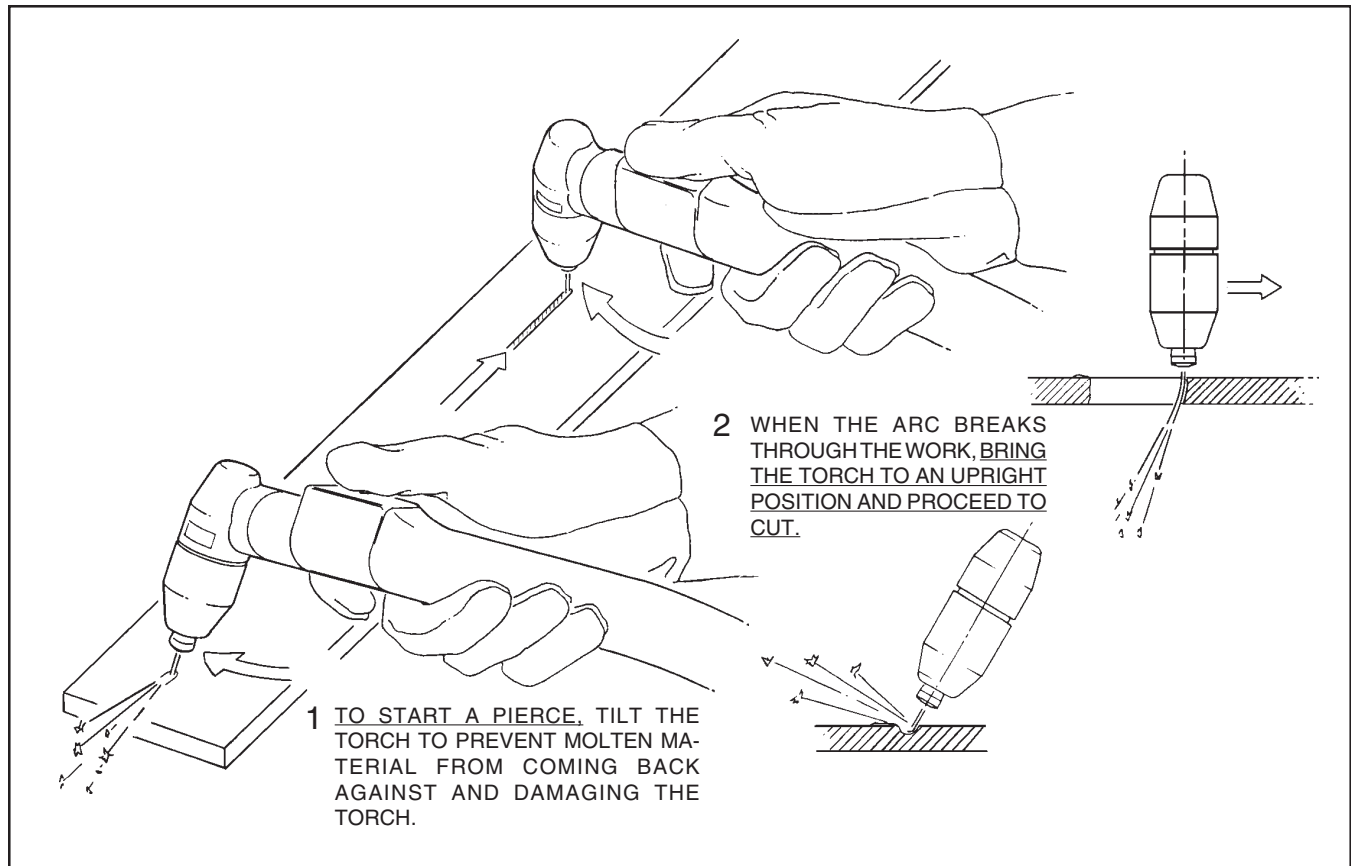


Figure 3-4. Piercing Technique using the PT-27

3.4 COMMON CUTTING PROBLEMS

Listed below are common cutting problems followed by the probable cause of each. If problems are determined to be caused by the PCM-750i, refer to the maintenance section of this manual. If the problem is not corrected after referring to the maintenance section, contact your ESAB representative.

A. Insufficient Penetration.

1. Cutting speed too fast.
2. Damaged cutting nozzle.
3. Improper air pressure.

B. Main Arc Extinguishes.

Cutting speed too slow.

C. Dross Formation. (In some materials and thicknesses, it may be impossible to get dross-free cuts.)

1. Cutting speed too fast or too slow.
2. Improper air pressure.
3. Faulty nozzle or electrode.

D. Double Arcing. (Damaged Nozzle Orifice.)

1. Low air pressure.
2. Damaged cutting nozzle.
3. Loose cutting nozzle.
4. Heavy spatter.

E. Uneven Arc.

Damaged cutting nozzle or worn electrode.

F. Unstable Cutting Conditions.

1. Incorrect cutting speed.
2. Loose cable or hose connections.
3. Electrode and/or cutting nozzle in poor condition.

G. Main Arc Does Not Strike.

Loose connections.

H. Poor Consumable Life.

1. Improper gas pressure.
2. Contaminated air supply.

4.1 GENERAL

If this equipment does not operate properly, stop work immediately and investigate the cause of the malfunction. Maintenance work must be performed by an experienced person, and electrical work by a trained electrician. Do not permit untrained persons to inspect, clean, or repair this equipment. Use only recommended replacement parts.



WARNING

Be sure that the wall disconnect switch or wall circuit breaker is open before attempting any inspection or work inside of the PCM-750i.

4.2 INSPECTION AND CLEANING

Frequent inspection and cleaning of the PCM-750i is recommended for safety and proper operation. Some suggestions for inspecting and cleaning are as follows:

- A. Check work cable to workpiece connection.
- B. Check safety earth ground at workpiece and at power source chassis.
- C. Check heat shield on torch. It should be replaced if damaged.
- D. Check the torch electrode and cutting nozzle for wear on a daily basis. Remove spatter, sharpen point, or replace if necessary.
- E. Make sure cable and hoses are not damaged or kinked.
- F. Make sure all plugs, fittings, and ground connections are tight.
- G. Remove or replace carrying strap annually, sooner if weekly check shows wear or damage.



CAUTION

Water or oil occasionally accumulates in compressed air lines. Be sure to direct the first blast of air away from the equipment to avoid damage to the PCM-750i.

- H. With all input power disconnected, and wearing proper eye and face protection, blow out the inside of the PCM-750i using low-pressure dry compressed air.
- I. Occasionally, bleed all water from the filter beneath the air filter-regulator.

4.3 PT-27 TORCH CONSUMABLE PARTS



WARNING

Make sure power switch on PCM-750i is in OFF position before working on the torch.



WARNING

The PT-27 torch head contains a gas flow check valve that acts in conjunction with the flow switch and circuitry within the power source. This system prevents the torch from being energized with high voltage if the torch switch is accidentally closed when the shield is removed.

To assemble standard consumable parts, refer to Figure 4-1.

- A. Place nozzle, swirl baffle, electrode, and valve pin into the shield.
- B. Thread assembly to the torch body and hand tighten. **Always make sure the shield is tight before cutting.**

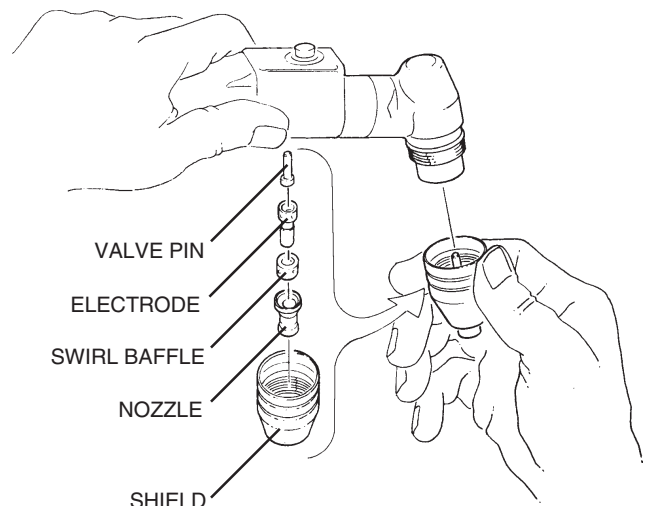
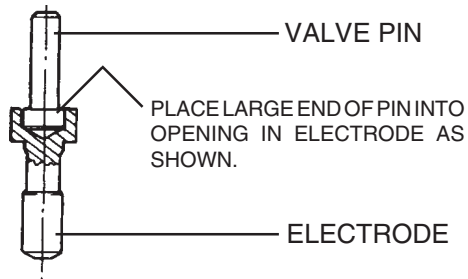


Figure 4-1. Assembly of PT-27 Torch Front End Parts

The valve pin is a crucial member of the system. Its function is to open the gas flow check valve that is permanently assembled within the torch head. If the pin is not correctly placed in the electrode, the valve will not open and the system will not function.



CAUTION

DO NOT REVERSE. Inserting the pin upside down will restrict air flow.

4.4 FLOW SWITCH (FIGURE 4-2)

When excessive contamination is found in the air, the flow switch (FS-4 or FS-5) should be disassembled and cleaned as follows:

NOTE

It is not necessary to remove the flow switch from the system for cleaning.

- A. Ensure the system is shut down and there is no trapped air under pressure in the piping.
- B. Remove the piston plug.
- C. Remove the spring (FS-4 only). Use care when handling spring to prevent distortion.
- D. Remove the piston.
- E. Clean all parts with cleaning agent.

NOTE

Ensure cleaning agent does not contain solvents which can degrade polysulfone.

Reassemble the flow switch in reverse order.

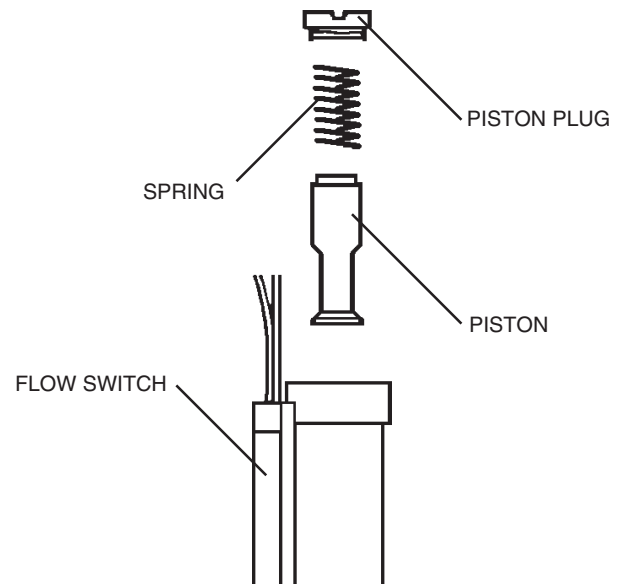


Figure 4-2. Disassembly / Assembly of Flow Switch

5.1 TROUBLESHOOTING



WARNING

ELECTRIC SHOCK CAN KILL! Be sure that all primary power to the machine has been externally disconnected. Open the line (wall) disconnect switch or circuit breaker before attempting inspection or work inside of the power source.

Check the problem against the symptoms in the following troubleshooting guide. The remedy may be quite simple. If the cause cannot be quickly located, shut off the input power, open up the unit, and perform a simple visual inspection of all the components and wiring. Check for secure terminal connections, loose or burned wiring or components, bulged or leaking capacitors, or any other sign of damage or discoloration.

The cause of control malfunctions can be found by referring to the sequence of operations and electrical schematic diagram (Figure 5-1) and checking the various components. A volt-ohmmeter will be necessary for some of these checks.



WARNING

Voltages in plasma cutting equipment are high enough to cause serious injury or possibly death. Be particularly careful around equipment when the covers are removed.

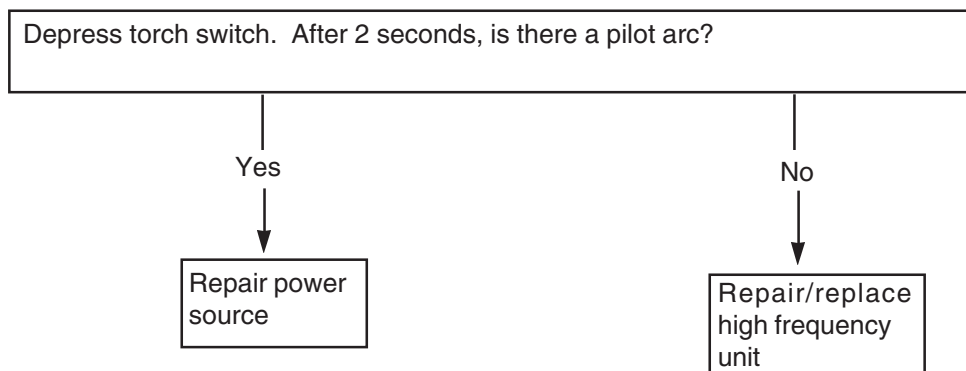
NOTE

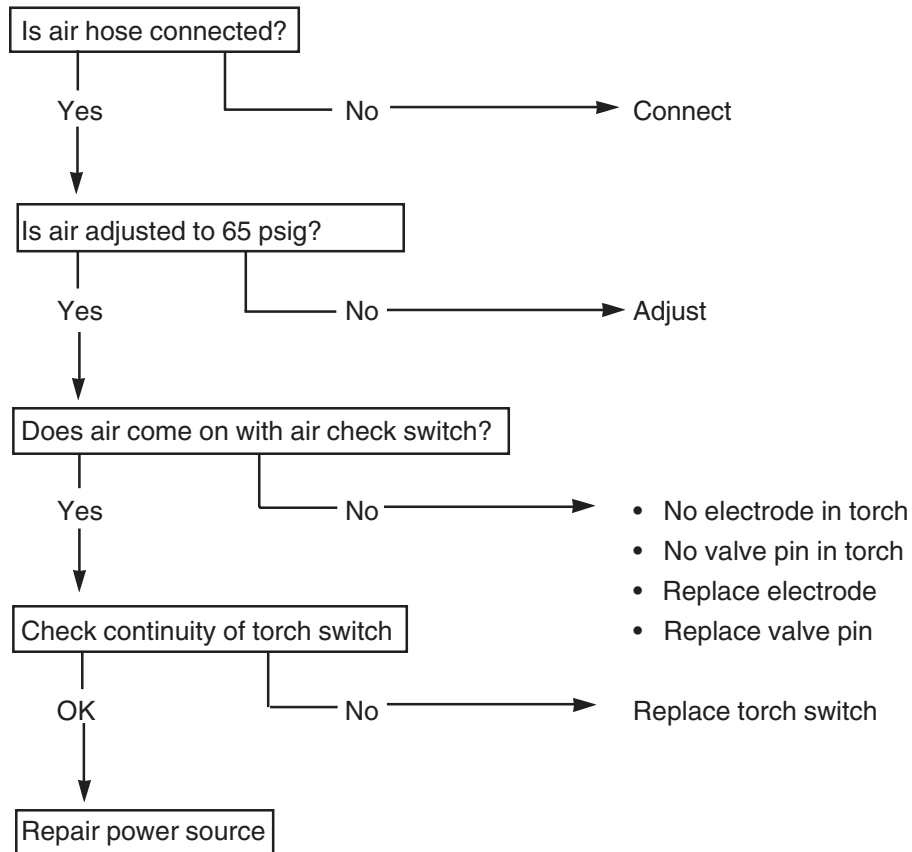
Before checking voltages in the circuit, disconnect the power from the high frequency generator to avoid damaging your voltmeter.

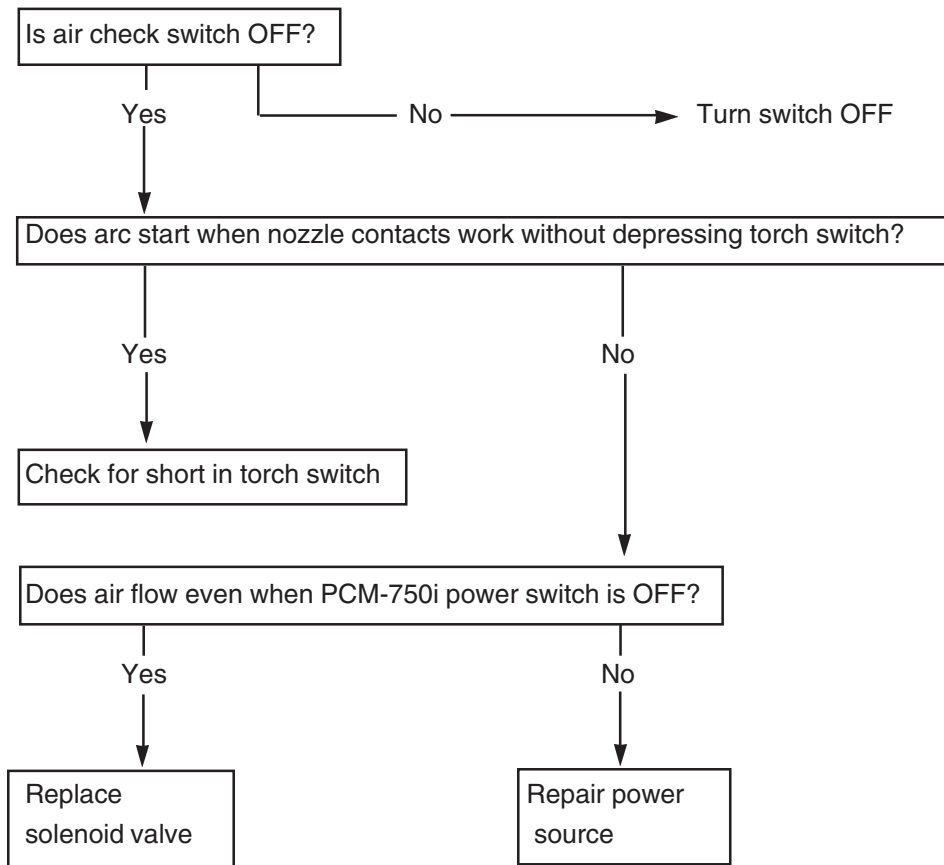
5.2 TROUBLESHOOTING GUIDE

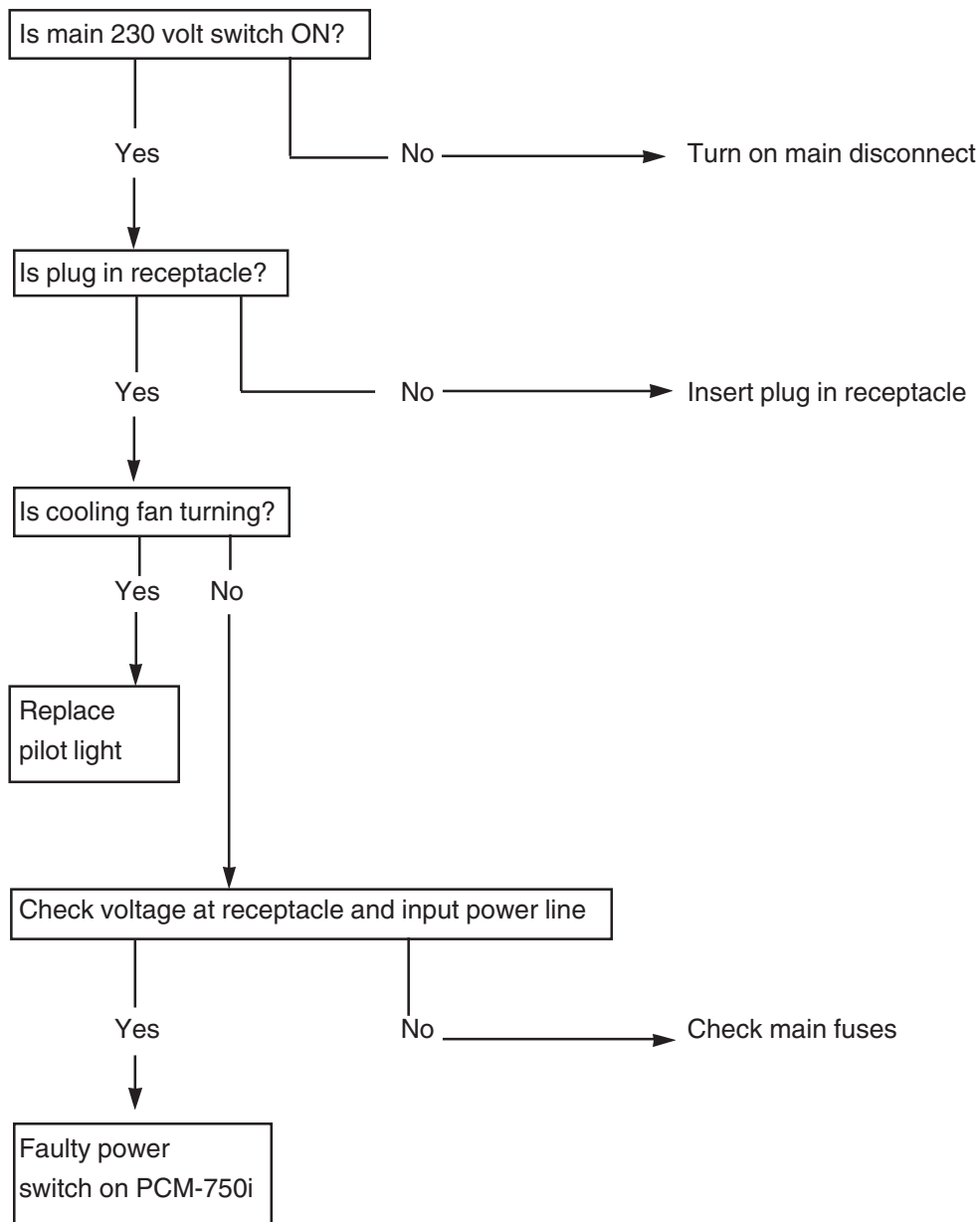
A. Difficult Starting.

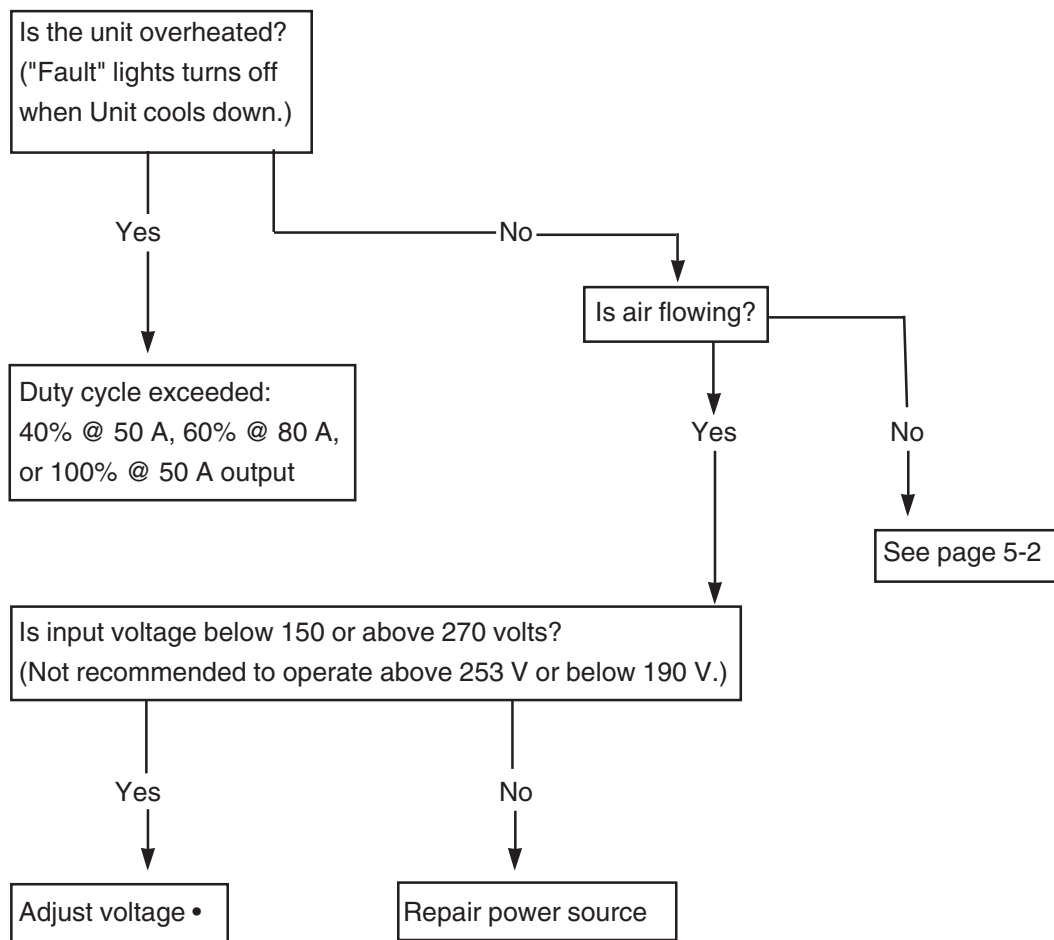
- Change electrode
- Change nozzle
- Check for good, clean connection of work lead to workpiece
- Check air pressure (65-75 psig)
- Check torch power cable for continuity



B. No Air

C. Air does not shut off

D. Green "Power" light not energized.

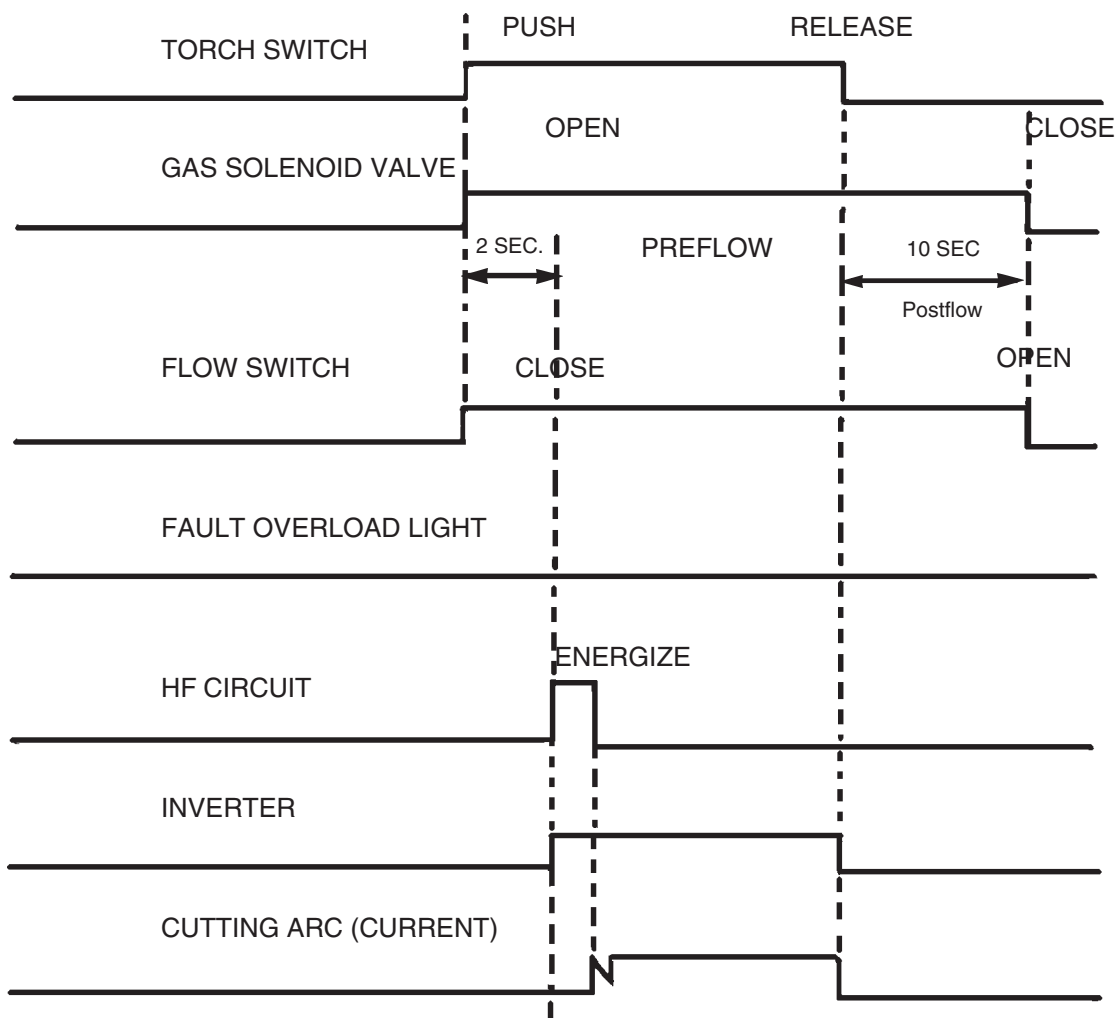
E. Red "FAULT" light ON.

- Fault light will energize if voltage falls below 175 volts for 0.3 seconds or exceeds 260 volts even for an instant. The light will not turn OFF even when correct voltage is restored. Reset by placing PCM-750i power switch OFF and then ON again.

NOTE: When in LOCK-IN mode, the FAULT light will turn on during second "trigger". This does not affect performance. Turn off.

5.3 Sequence of Operation

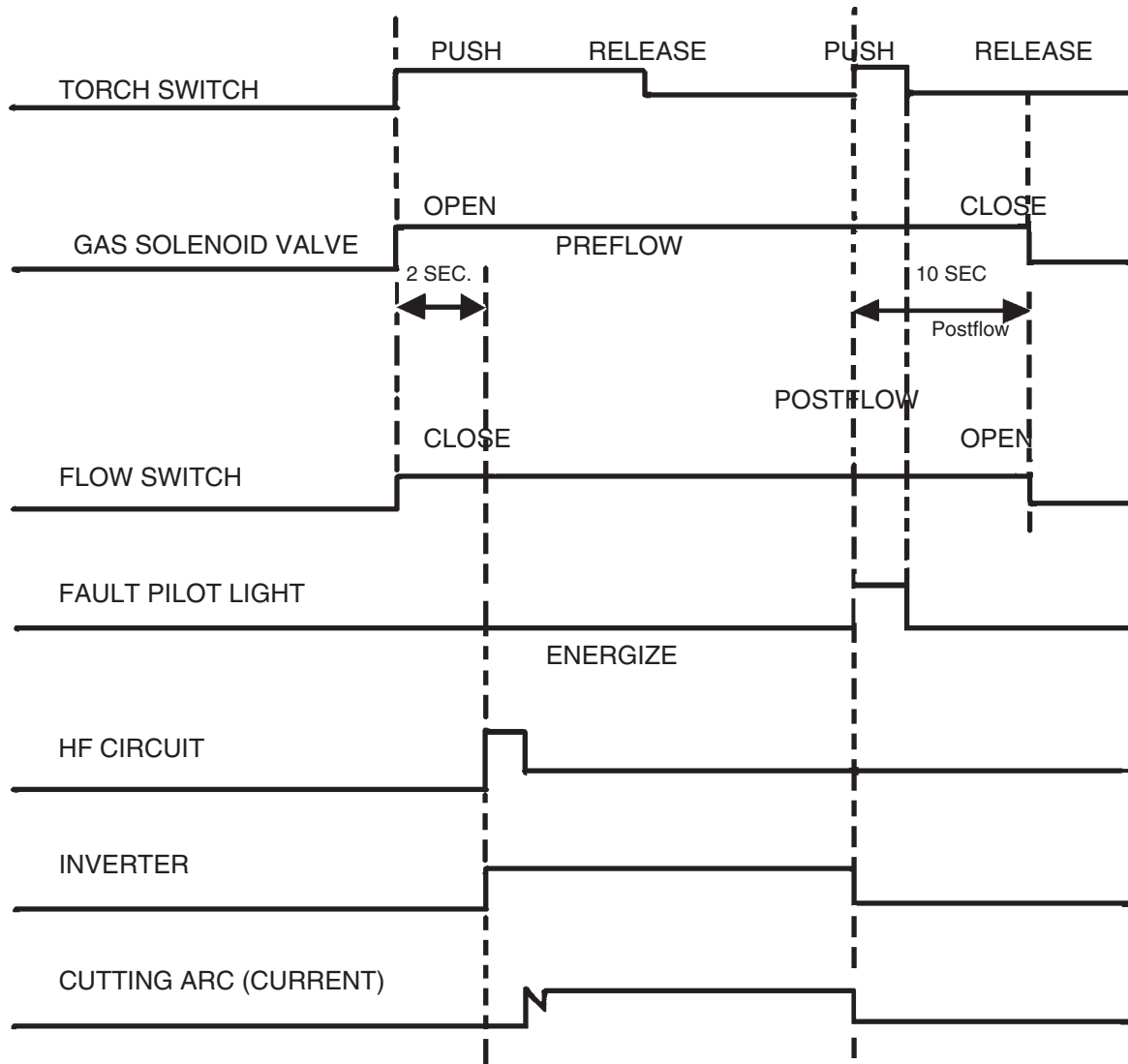
A. LOCK-IN "OFF" position



NOTES:

1. When the torch switch is pushed during postflow period, the postflow and preflow times are canceled, and the HF is energized immediately.
2. When the red fault pilot light comes on, cutting operation should be stopped. The postflow time starts from the moment the torch switch is released.

B. LOCK-IN "ON" position



NOTES:

1. When the torch switch is pushed during postflow period, the postflow and preflow times are canceled, and the HF is energized immediately.
2. When the red fault pilot light comes on, cutting operation should be stopped. The postflow time starts from the moment the torch switch is released.
3. FAULT pilot light is on during second "turn-off" trigger only. This does not affect performance in any way.

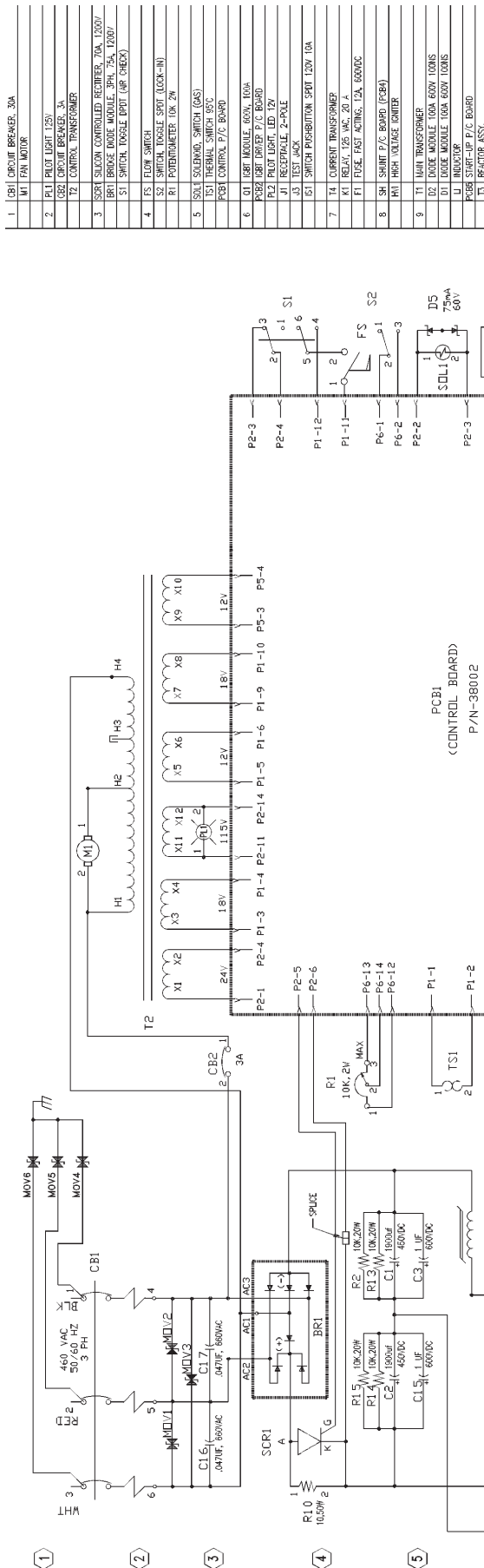
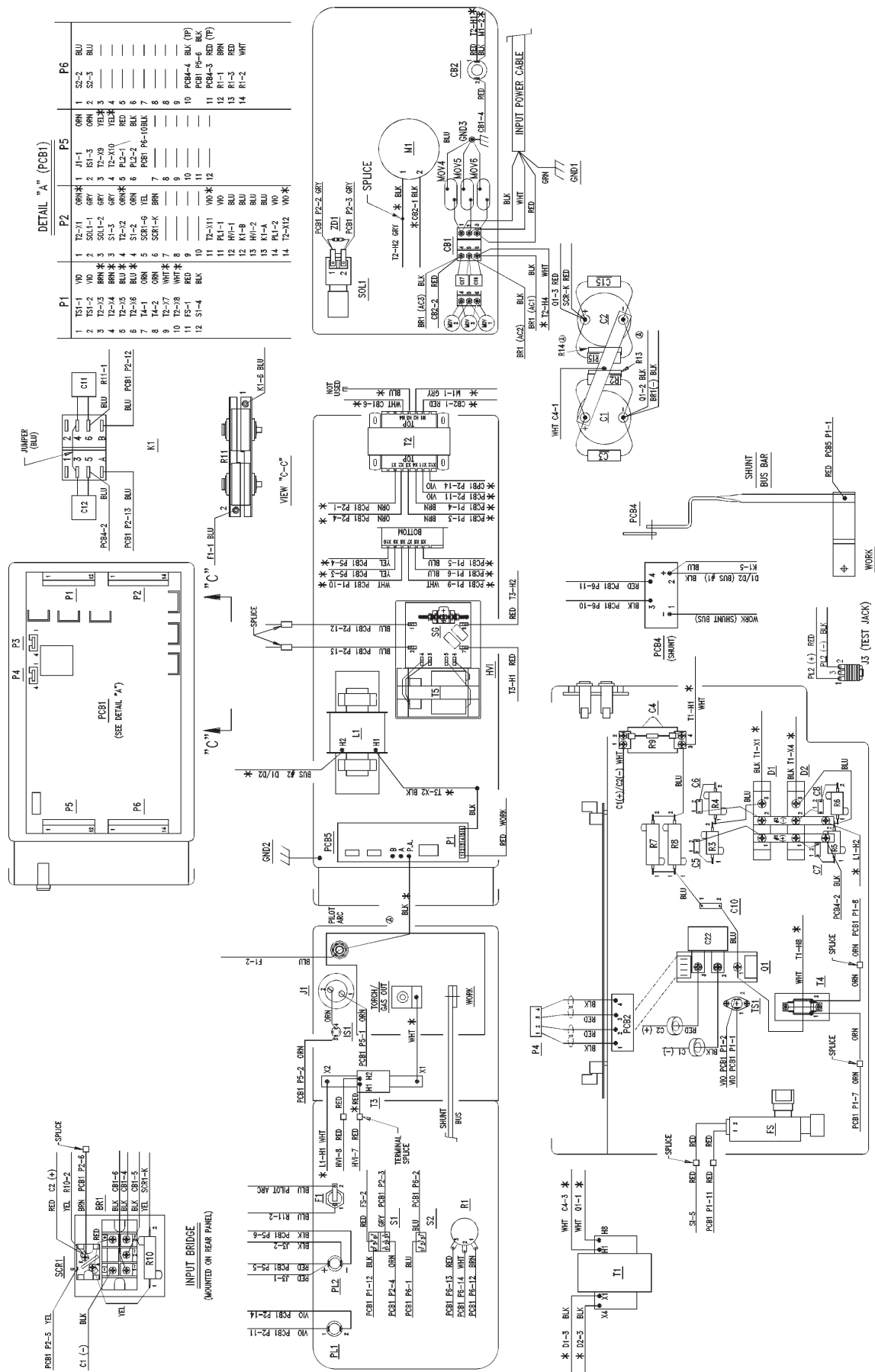
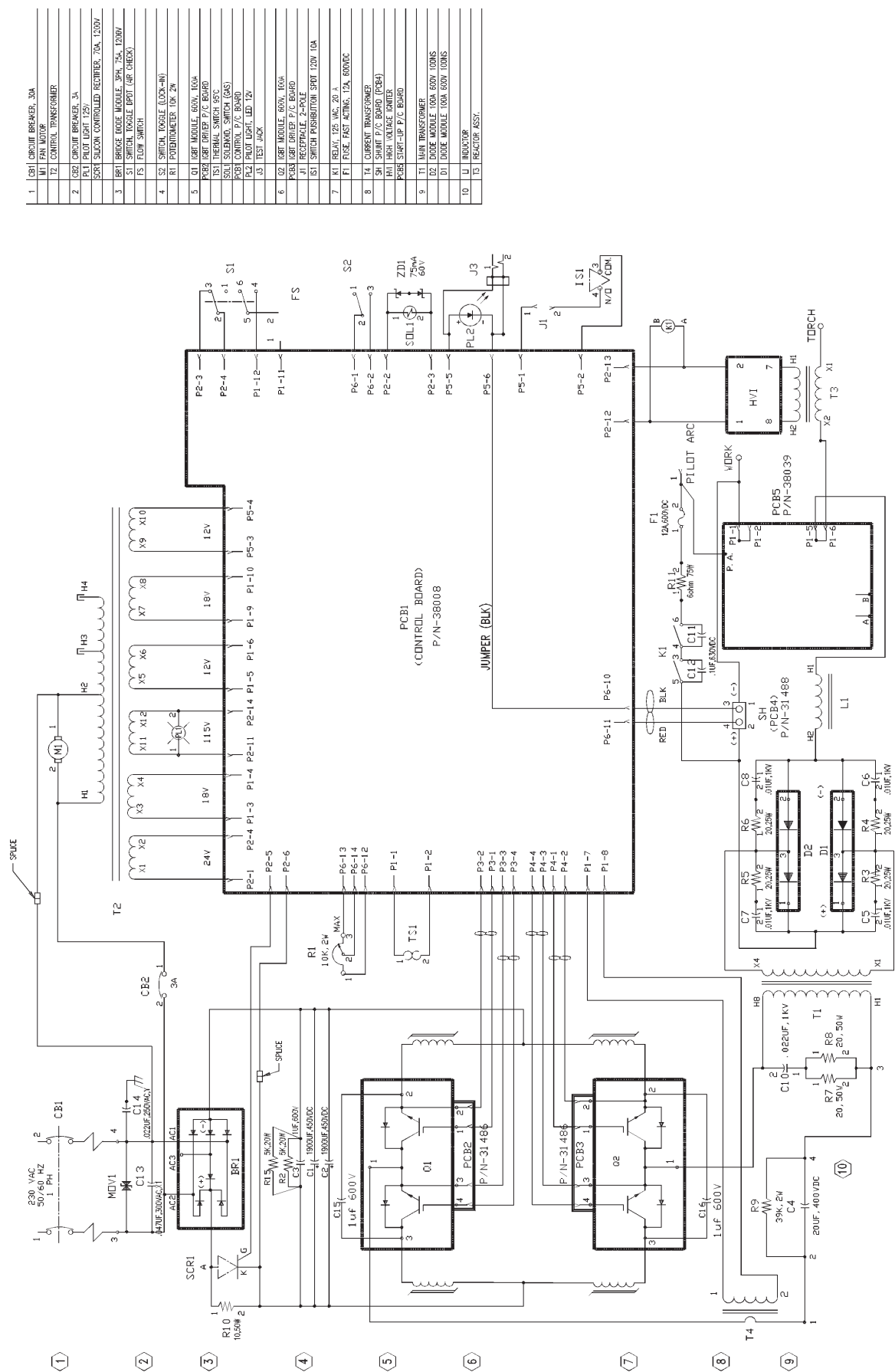


Figure 5-1. PCM-750i (Series A) Schematic Diagram (460 V, 3-Phase Input)





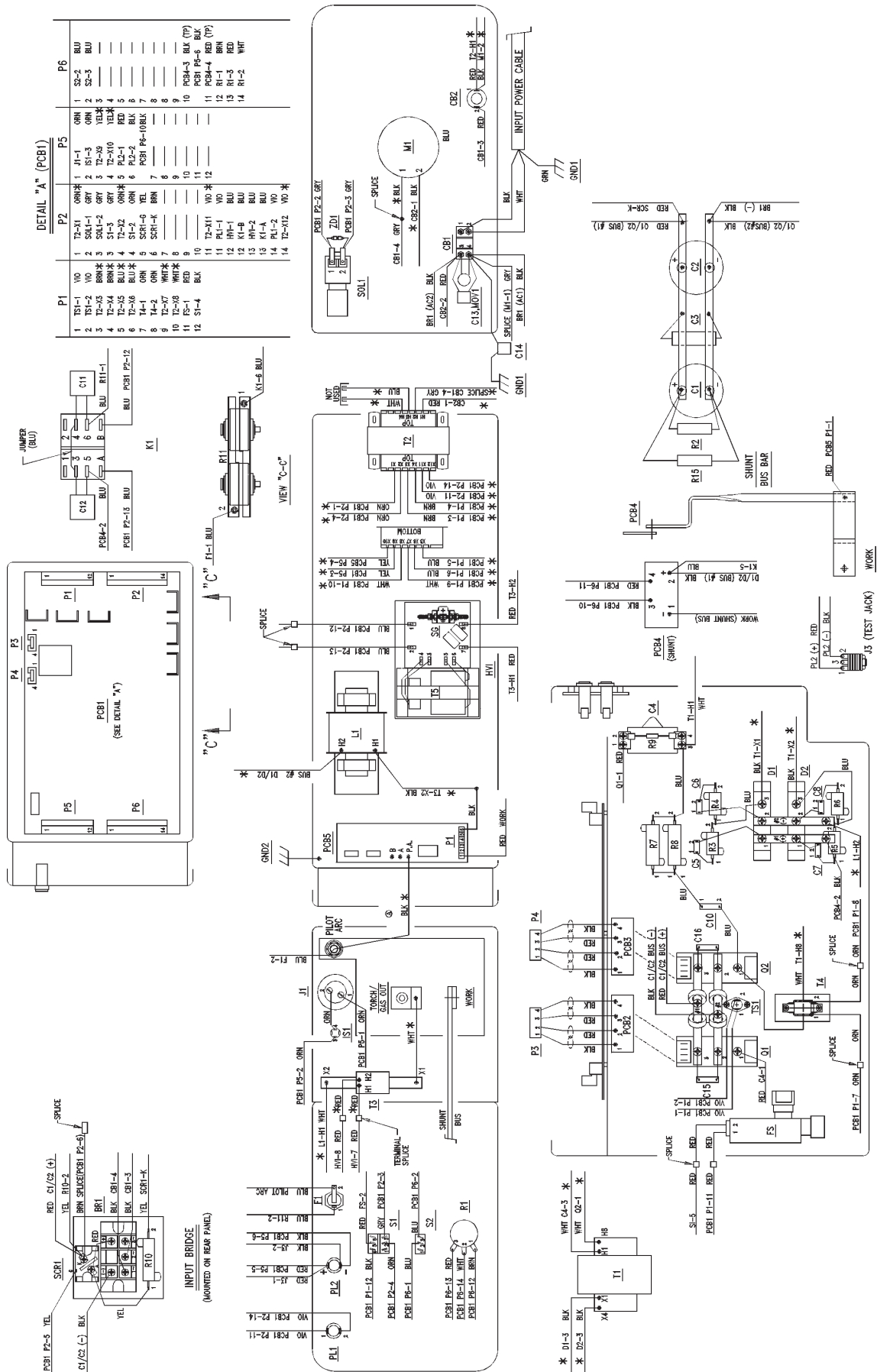


Figure 5-4. PCM-750i (Series A) Wiring Diagram (230 V, 1-Phase Input)

6.1 GENERAL

Replacement Parts are illustrated on the following figures. When ordering replacement parts, order by part number and part name, as illustrated on the figure. DO NOT ORDER BY PART NUMBER ALONE.

Always provide the series or serial number of the unit on which the parts will be used. The serial number is stamped on the unit nameplate.

6.2 ORDERING

To assure proper operation, it is recommended that only genuine ESAB parts and products be used with this equipment. The use of non-ESAB parts may void your warranty.

Replacement parts may be ordered from your ESAB distributor or from:

ESAB Welding & Cutting Products
Attn: Customer Service Dept.
PO Box 100545, Ebenezer Road
Florence, SC, 29501-0545

Be sure to indicate any special shipping instructions when ordering replacement parts.

To order parts by phone, contact ESAB at 1-803-664-5540 or 4460. Orders may also be faxed to 1-800-634-7548. Be sure to indicate any special shipping instructions when ordering replacement parts.

Refer to the Communication Guide located on the last page of this manual for a list of customer service phone numbers.

MANUAL CHANGES:

The "A" edition of this Instruction Manual covers the following changes or upcoming changes:

1. PCB5 PC board assembly P/N 38037 was changed to 38039 on the 460V and 400V units starting with Serial No. PD-I532171 in August, 1995. This change eliminated the red and blue wires from PCB5 to J1 receptacle. This change will also be implemented on the 230V models soon.
2. 15A, 250V Fuse (F1) P/N 951780 will be replaced by a 12A, 600V fuse P/N 952159. This requires a different fuse holder (P/N 951797 to 952136) which is not interchangeable. Therefore, if replacing fuse, be sure to use the same rated fuse.
3. PC board assembly P/N 38014 (PCB2 and PCB3) now includes two 1/2 amps fuses P/N 952014.
4. R2 and R15 resistor 5K ohm, 20W, N.I. P/N 17313500 was changed to 10K ohm, 20W, N.I., P/N 17290210 resistor plus two more 10K resistors (R13 and R14) were added to the 460V power sources.
5. Regulator Housing P/N 33955GY was changed to 35903GY.

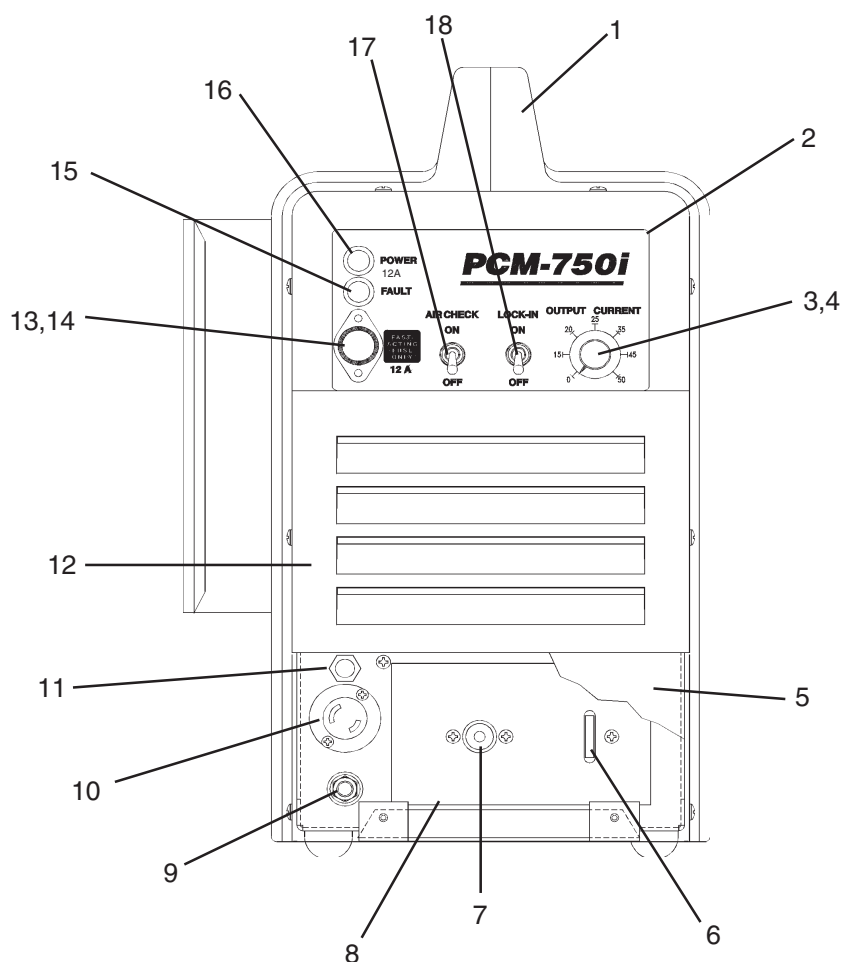


Figure 6-1. PCM-750i (Series A) Power Source (Front View)

ITEM NO.	QTY REQ.	PART NO.	DESCRIPTION	CIRCUIT SYMBOL
1	1	33953GY	HOUSING, HANDLE & STRAP (LEFT)	R1
	1	34556GY	HOUSING, HANDLE & STRAP (RIGHT)	
	1	951496	STRAP (HOOK 2-REQ'D: 951536)	
	1	32055GY	CABINET, SILKSCREENED	
2	1	2062018	POTENTIOMETER, 10K, 2 W	J1
3	1	13730611	KNOB, ALUM., .250 SHAFT, 1.25 O.D.	
4	1	33954GY	DOOR, LOCKOUT	
5	1	32947	TERMINAL, WORK	
6	1	58V75	ADAPTOR, BULKHEAD	IS1
7	1	35571	BOARD, OUTPUT TERMINAL W/STUD	
8	1	COMM'L	NUT, HEX, BRASS, #3/8-16	
9	1	182W64	CONNECTOR, TWIST-LOCK, 2-POLE, 2-WIRE	
10	1	98W66	SWITCH, PUSHBUTTON, SPDT, 120 V, 10 A	F1
11	1	33949GY	HOUSING, FRONT	
12	1	952159	FUSE, 12 A, 600 V, FAST ACTING	
13	1	952136	FUSEHOLDER	
14	1	951754	LAMP, LED, YELLOW, 12 V	PL2
15	1	951526	LAMP, NEON, WHITE, 125 V	PL1
16	1	634518	SWITCH, TOGGLE, DPDT	S1
17	1	673213	SWITCH, TOGGLE, SPST	S2

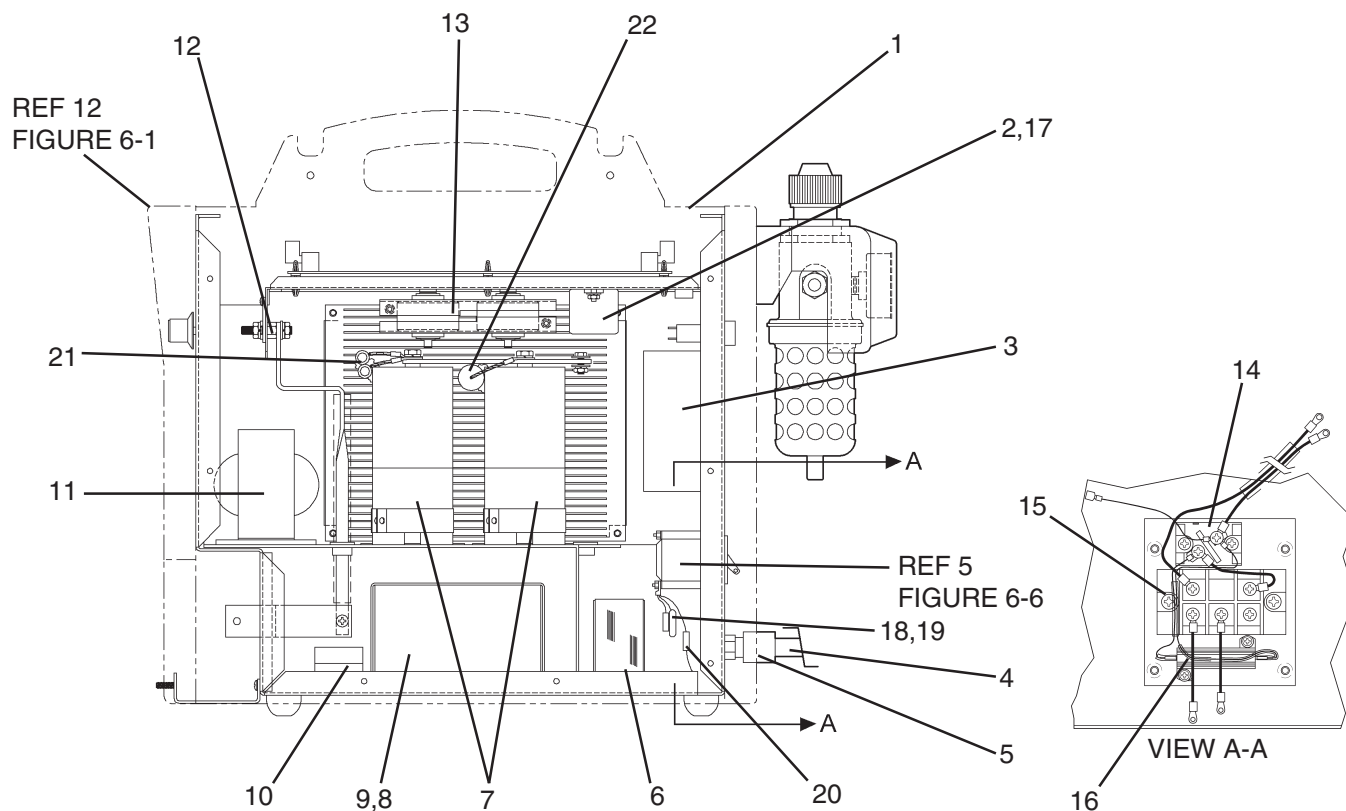


Figure 6-2. PCM-750i (Series A) Power Source (Right Side View)
P/N 33980 - 230 V, 1-Phase

ITEM NO.	QTY REQ.	PART NO.	DESCRIPTION	CIRCUIT SYMBOL
1	1	32949YL	COVER	
2	1	13735308	RELAY, 120 V AC, 20 A	K1
3	1	951182	MOTOR, FAN	M1
4	1	34574	CABLE, INPUT POWER, 10 FT LG W/PLUG	
5	1	13734727	STRAIN RELIEF, POWER CABLE	
6	1	32914	TRANSFORMER ASSY., CONTROL	T2
7	2	951635	CAPACITOR, 1900 μ F, 450 V DC	C1,2
8	1	31490	PC BOARD ASSY., HF/HV IGNITION	HV1
9	1	951179	TRANSFORMER, HIGH VOLTAGE	T5
10	1	38039	P/C BOARD ASSY., START-UP	PCB5
11	1	32908	TRANSFORMER ASSY., MAIN)	T1
12	1	31488	P/C BOARD ASSY., SHUNT	PCB4
13	1	951962	RESISTOR ASSY, 6 OHM, 75 W	R11
14	1	951023	RECTIFIER, SILICON CONT., 70 A, 1200 V (PAD-951196)	SCR1
15	1	951207	BRIDGE, INPUT, 3-PHASE, 75 A, 1200 V (PAD-951192)	BR1
16	1	17750010	RESISTOR, 10, 50 W, N.I. (PAD-951194)	R10
17	2	951493	CAPACITOR, 0.068 μ F, 630 V DC	C11,12
18	1	951321	VARIATOR, METAL OXIDE	MOV1
19	1	951470	CAPACITOR, 0.047 μ F, 300 V AC	C13
20	1	951469	CAPACITOR, 0.022 μ F, 250 V AC	C14
21	2	17313500	RESISTOR, 5 KOHM, 20 W	R2,15
22	1	993716	CAPACITOR, 1 μ F, 600 V DC	C3
23	1	674540	RECEPTACLE, 50 A/250 V (SUPPLIED-NOT ILLUSTRATED)	

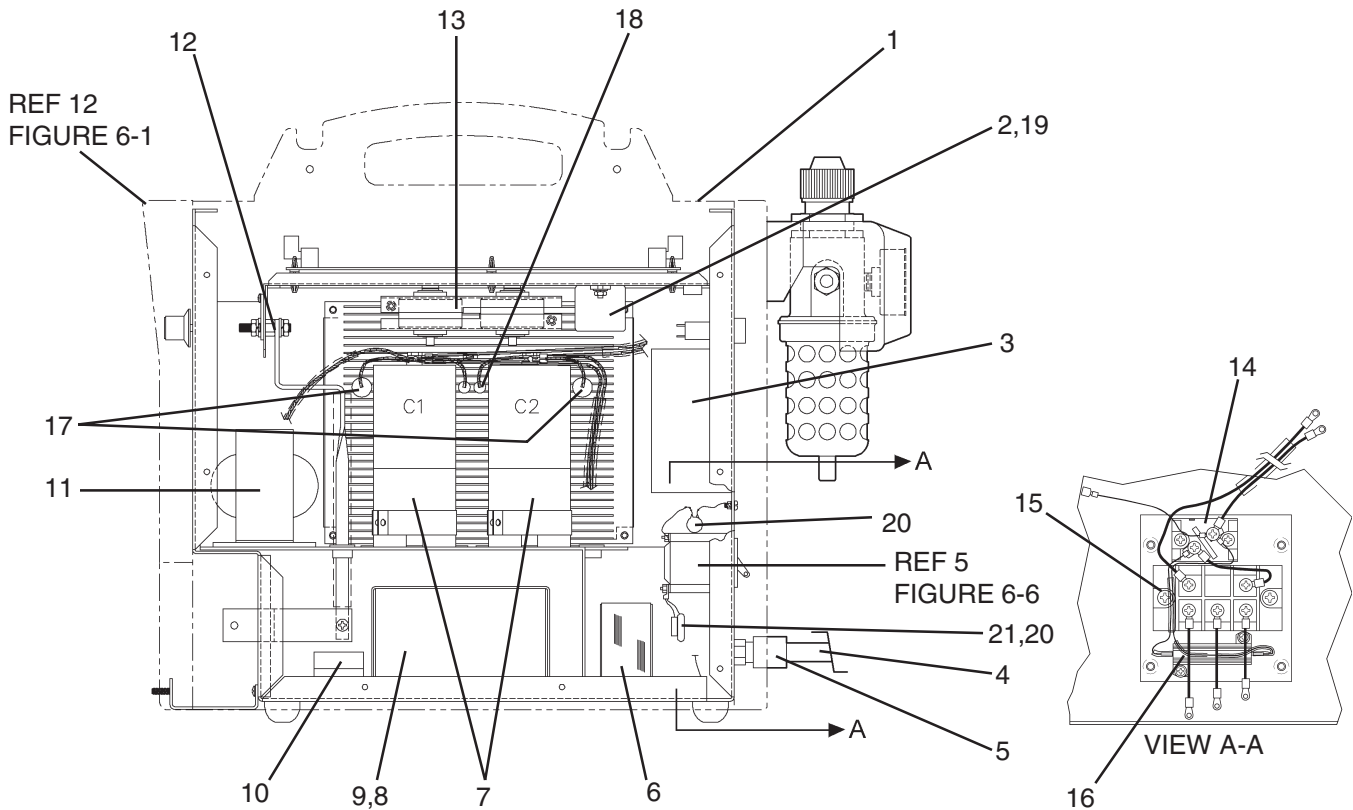


Figure 6-3. PCM-750i (Series A) Power Source (Right Side View)
P/N 33982 - 460 V, 3-Phase

ITEM NO.	QTY REQ.	PART NO.	DESCRIPTION	CIRCUIT SYMBOL
1	1	32949YL	COVER	
2	1	13735308	RELAY, 120 V AC, 20 A	K1
3	1	951182	MOTOR, FAN	M1
4	1	35387	CABLE, INPUT POWER, 10 FT LG, 4-COND.	
5	1	13734727	STRAIN RELIEF, POWER CABLE	
6	1	32914	TRANSFORMER ASSY., CONTROL	T2
7	2	951635	CAPACITOR, 1300 μ F, 450 V DC	C1,2
8	1	31490	PC BOARD ASSY., HF/HV IGNITION	HV1
9	1	951179	TRANSFORMER, HIGH VOLTAGE	T5
10	1	38039	P/C BOARD ASSY., START-UP	PCB5
11	1	32908	TRANSFORMER ASSY., MAIN	T1
12	1	31488	P/C BOARD ASSY., SHUNT	PCB4
13	1	951962	RESISTOR ASSY, 6 OHM, 75 W	R11
14	1	951023	RECTIFIER, SILICON CONT., 70 A, 1200 V (PAD-951196)	SCR1
15	1	951915	BRIDGE, INPUT, 3-PHASE, 75 A, 1600 V (PAD-951192)	BR1
16	1	17750010	RESISTOR, 10, 50 W, N.I. (PAD-951194)	R10
17	2	993716	CAPACITOR, 1 μ F, 600 V DC	C3,15
18	2	17290210	RESISTOR, 10 KOHM, 20 W	R2,15,13,14
19	2	951493	CAPACITOR, 0.068 μ F, 630 V DC	C11,12
20	6	950591	VARISTOR, METAL OXIDE	MOV1-6
21	2	951515	CAPACITOR, 0.047 μ F, 660 V DC	C16,17

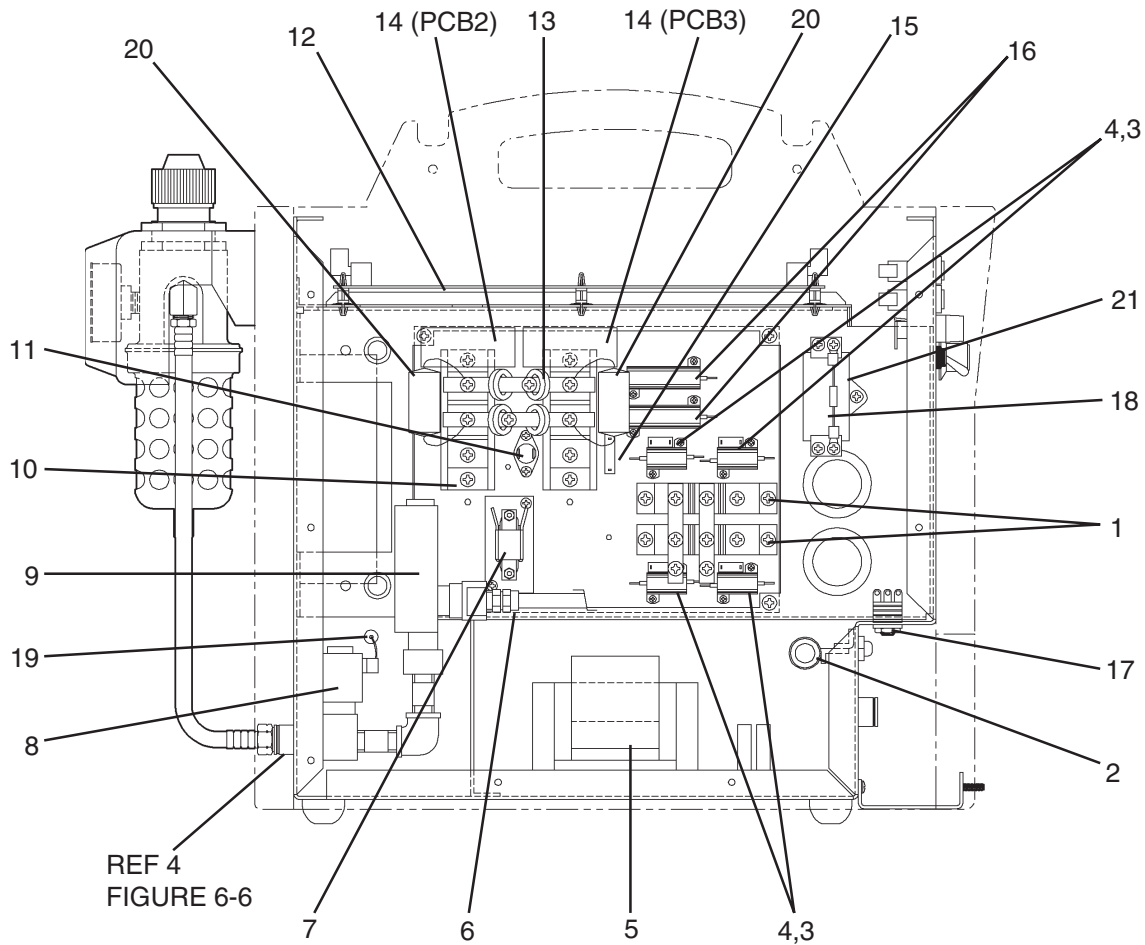


Figure 6-4. PCM-750i (Series A) Power Source (Left Side View)
P/N 33980 - 230 V, 1-Phase

ITEM NO.	QTY REQ.	PART NO.	DESCRIPTION	CIRCUIT SYMBOL
1	2	951185	MODULE, DIODE, 100 A, 600 V, 100 NS (PAD-951518)	D1,D2
2	1	32969	REACTOR ASSY., HIGH FREQUENCY	T3
3	4	17721020	RESISTOR, 20, 25 W, N.I. (PAD-951193)	R3,4,5,6
4	4	951313	CAPACITOR, .01 μ F, 1 KV	C5,6,7,8
5	1	32909	INDUCTOR ASSY.	L1
6	1	951632	ASSEMBLY, HOSE	
7	1	32958	TRANSFORMER ASSY., CURRENT	T4
8	1	950249	VALVE, SOLENOID, GAS	SOL1
9	1	951202	SWITCH, FLOW	FS
10	2	951205	IGBT, 600 V (PAD-951190)	Q1
11	1	950711	SWITCH, THERMAL, 95 °C	TS1
12	1	38008	P/C BOARD ASSY., CONTROL	PCB1
13	4	951199	CORE, SATURABLE	
14	2	31486	P/C BOARD ASSY., IGBT DRIVER includes (2) 952014 Fuse, 1/2 Amp	PCB2,3
15	1	951314	CAPACITOR, .022 μ F, 1 KV	C10
16	2	17750020	RESISTOR, 20, 50 W, N.I. (PAD-951194)	R7,8
17	1	951483	JACK, PHONE	J3
18	1	17145339	RESISTOR, 39 KOHM, 2 W	R9
19	1	951471	ZENER, 60 V, 75 mA	ZD1
20	1	951940	CAPACITOR, 1.0 μ F, 600 V DC	C15,16
21	1	951161	CAPACITOR, 20 μ F, 120 WVDC	C4

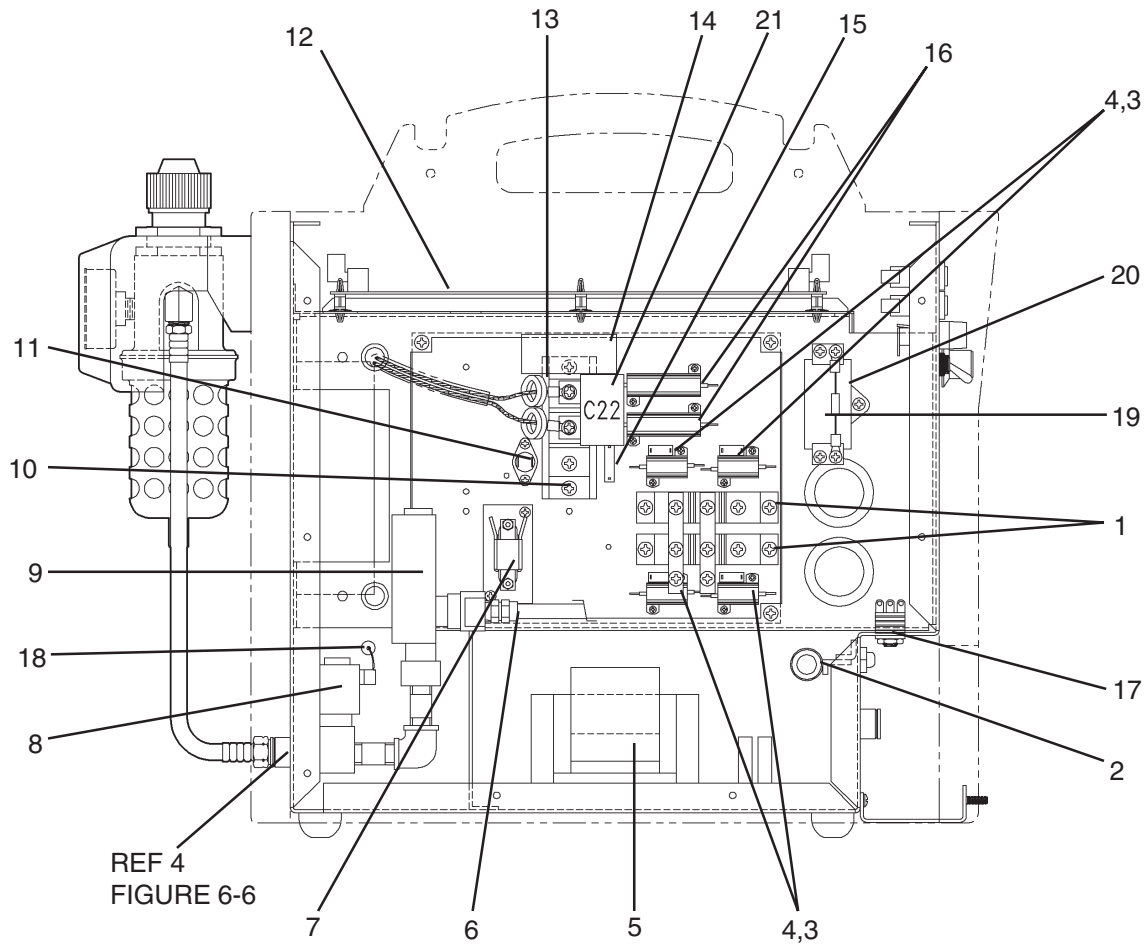


Figure 6-5. PCM-750i (Series A) Power Source (Left Side View)
P/N 33982 - 460 V, 3-Phase

ITEM NO.	QTY REQ.	PART NO.	DESCRIPTION	CIRCUIT SYMBOL
1	2	951185	MODULE, DIODE, 100 A, 600 V, 100 NS (PAD-951518)	D1,D2
2	1	32969	REACTOR ASSY., HIGH FREQUENCY	T3
3	4	17721020	RESISTOR, 20, 25 W, N.I. (PAD-951193)	R3,4,5,6
4	4	951313	CAPACITOR, .01 μ F, 1 KV	C5,6,7,8
5	1	32909	INDUCTOR ASSY.	L1
6	1	951632	ASSEMBLY, HOSE	
7	1	32958	TRANSFORMER ASSY., CURRENT	T4
8	1	950249	VALVE, SOLENOID, GAS	SOL1
9	1	951202	SWITCH, FLOW	FS
10	1	951206	IGBT, 1200 V (PAD-951191)	Q1,Q2
11	1	950711	SWITCH, THERMAL, 95 °C	TS1
12	1	38002	P/C BOARD ASSY., CONTROL	PCB1
13	2	951199	CORE, SATURABLE	
14	1	31486	P/C BOARD ASSY., IGBT DRIVER includes (2) 952014 Fuse 1/2 Amp	PCB2
15	1	951314	CAPACITOR, .022 μ F, 1 KV	C10
16	2	17750020	RESISTOR, 20, 50 W, N.I. (PAD-951194)	R7,8
17	1	951483	JACK, PHONE	J3
18	1	951471	ZENER, 60 V, 75 mA	ZD1
19	1	17145339	RESISTOR, 39 KOHM, 2 W	R9
20	1	951161	CAPACITOR, 20 μ F, 120 WVDC	C4
21	1	951917	CAPACITOR, 0.50 μ F, 1200 V DC	C22

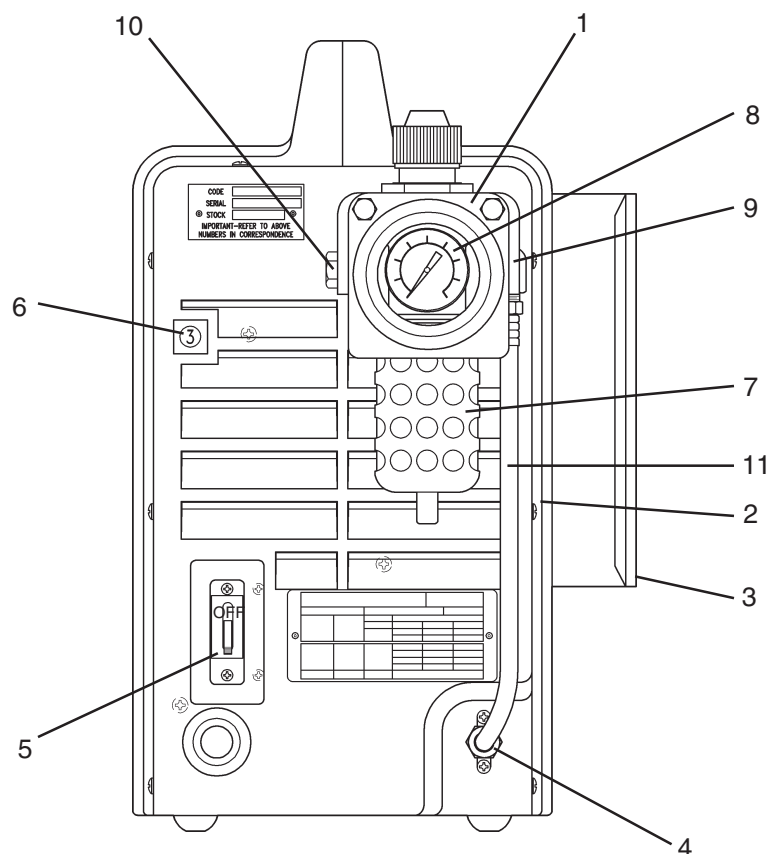


Figure 6-6. PCM-750i (Series A) Power Source (Rear View)

ITEM NO.	QTY REQ.	PART NO.	DESCRIPTION	CIRCUIT SYMBOL
1	1	35903GY	HOUSING, REGULATOR	CB1 CB1 CB2
2	1	33950GY	HOUSING, REAR	
3	1	33952GY	HOUSING, WIRE WRAP/UTILITY BOX	
4	1	58V75	ADAPTOR, BULKHEAD	
5	1	951180	ON/OFF SWITCH, CIRC, BRKR., 50 A (230 V)	
	1	951181	ON/OFF SWITCH, CIRC. BRKR., 50 A (460 V)	
6	1	950829	CIRCUIT BREAKER, 3 A	
7	1	950923	FILTER-REGULATOR	
8	1	950744	GAUGE, AIR, 0-160 PSIG	
9	1	182W82	ELBOW, STREET, 90°, 1/4 NPT	
10	1	34381	ADAPTOR, REG., 1/4 NPT	
11	1	34741	HOSE ASSY., AIR, 11.5" LG	

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