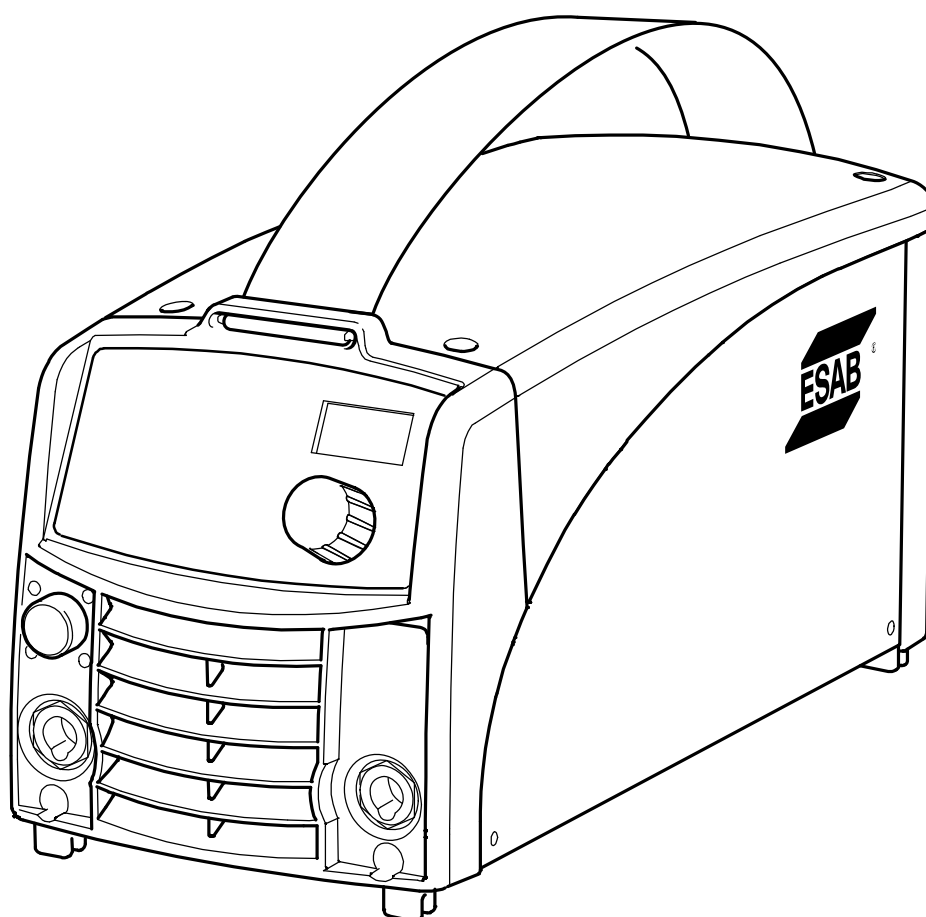


US



Caddy™

Arc 151i, Arc 201i



Instruction manual

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



CAUTION

These INSTRUCTIONS are for experienced operators. If you are not fully familiar with the principles of operation and safe practices for arc welding equipment, we urge you to read our booklet, "Precautions and Safe Practices for Arc, 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.

1 USER RESPONSIBILITY

This equipment will perform in conformity with the description thereof contained in this manual and accompanying labels and/or insert when installed, operated, maintained and repaired in accordance with the instruction provided. This equipment must be checked periodically. Malfunctioning or poorly maintained 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 it was 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.

2 SAFETY PRECAUTIONS - English



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 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 nonflammable 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 nonflammable covering. Combustible materials include wood, cloth, sawdust, liquid and gas fuels, solvents, paints and coatings, 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. Therefore:

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 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, wall, 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.
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!



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.

3 PRECAUCION DE SEGURIDAD - Spanish



ADVERTENCIA: Estas Precauciones de Seguridad son para su protección. Ellas hacen resumen de información proveniente de las referencias listadas en la sección "Información Adicional Sobre La Seguridad". Antes de hacer cualquier instalación o procedimiento de operación, asegúrese de leer y seguir las precauciones de seguridad listadas a continuación así como también todo manual, hoja de datos de seguridad del material, calcomanías, etc. El no observar las Precauciones de Seguridad puede resultar en daño a la persona o muerte.



PROTEJASE USTED Y A LOS DEMAS

Algunos procesos de soldadura, corte y ranurado son ruidosos y requieren protección para los oídos. El arco, como el sol, emite rayos ultravioleta (UV) y otras radiaciones que pueden dañar la piel y los ojos. El metal caliente causa quemaduras. EL entrenamiento en el uso propio de los equipos y sus procesos es esencial para prevenir accidentes.

Por lo tanto:

1. Utilice gafas de seguridad con protección a los lados siempre que esté en el área de trabajo, aún cuando esté usando careta de soldar, protector para su cara u otro tipo de protección.
2. Use una careta que tenga el filtro correcto y lente para proteger sus ojos, cara, cuello, y oídos de las chispas y rayos del arco cuando se esté operando y observando las operaciones. Alerta a todas las personas cercanas de no mirar el arco y no exponerse a los rayos del arco eléctrico o el metal fundido.
3. Use guantes de cuero a prueba de fuego, camisa pesada de mangas largas, pantalón de ruedo liso, zapato alto al tobillo, y careta de soldar con capucha para el pelo, para proteger el cuerpo de los rayos y chispas calientes provenientes del metal fundido. En ocasiones un delantal a prueba de fuego es necesario para protegerse del calor radiado y las chispas.
4. Chispas y partículas de metal caliente puede alojarse en las mangas enrolladas de la camisa, el ruedo del pantalón o los bolsillos. Mangas y cuellos deberán mantenerse abotonados, bolsillos al frente de la camisa deberán ser cerrados o eliminados.
5. Proteja a otras personas de los rayos del arco y chispas calientes con una cortina adecuada no-flamable como división.
6. Use careta protectora además de sus gafas de seguridad cuando esté removiendo escoria o puliendo. La escoria puede estar caliente y desprenderse con velocidad. Personas cercanas deberán usar gafas de seguridad y careta protectora.



FUEGO Y EXPLOSIONES

El calor de las flamas y el arco pueden ocasionar fuegos. Escoria caliente y las chispas pueden causar fuegos y explosiones.

Por lo tanto:

1. Remueva todo material combustible lejos del área de trabajo o cubra los materiales con una cobija a prueba de fuego. Materiales combustibles incluyen madera, ropa, líquidos y gases inflamables, solventes, pinturas, papel, etc.
2. Chispas y partículas de metal pueden introducirse en las grietas y agujeros de pisos y paredes causando fuegos escondidos en otros niveles o espacios. Asegúrese de que toda grieta y agujero esté cubierto para proteger lugares adyacentes contra fuegos.
3. No corte, suelde o haga cualquier otro trabajo relacionado hasta que la pieza de trabajo esté totalmente limpia y libre de sustancias que puedan producir gases inflamables o vapores tóxicos. No trabaje dentro o fuera de contenedores o tanques cerrados. Estos pueden explotar si contienen vapores inflamables.
4. Tenga siempre a la mano equipo extintor de fuego para uso instantáneo, como por ejemplo una manguera con agua, cubeta con agua, cubeta con arena, o extintor portátil. Asegúrese que usted esta entrenado para su uso.
5. No use el equipo fuera de su rango de operación. Por ejemplo, el calor causado por cable sobrecarga en los cables de soldar pueden ocasionar un fuego.
6. Después de terminar la operación del equipo, inspeccione el área de trabajo para cerciorarse de que las chispas o metal caliente ocasionen un fuego más tarde. Tenga personal asignado para vigilar si es necesario.

7. Para información adicional , haga referencia a la publicación NFPA Standard 51B, "Fire Prevention in Use of Cutting and Welding Processes", available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.



CHOQUE ELECTRICO

El contacto con las partes eléctricas energizadas y tierra puede causar daño severo o muerte. NO use soldadura de corriente alterna (AC) en áreas húmedas, de movimiento confinado en lugares estrechos o si hay posibilidad de caer al suelo.

Por lo tanto:

1. Asegúrese de que el chasis de la fuente de poder esté conectado a tierra através del sistema de electricidad primario.
2. Conecte la pieza de trabajo a un buen sistema de tierra física.
3. Conecte el cable de retorno a la pieza de trabajo. Cables y conductores expuestos o con malas conexiones pueden exponer al operador u otras personas a un choque eléctrico fatal.
4. Use el equipo solamente si está en buenas condiciones. Reemplaze cables rotos, dañados o con conductores expuestos.
5. Mantenga todo seco, incluyendo su ropa, el área de trabajo, los cables, antorchas, pinza del electrodo, y la fuente de poder.
6. Asegúrese que todas las partes de su cuerpo están insuladas de ambos, la pieza de trabajo y tierra.
7. No se pare directamente sobre metal o tierra mientras trabaja en lugares estrechos o áreas húmedas; trabaje sobre un pedazo de madera seco o una plataforma insulada y use zapatos con suela de goma.
8. Use guantes secos y sin agujeros antes de energizar el equipo.
9. Apague el equipo antes de quitarse sus guantes.
10. Use como referencia la publicación ANSI/ASC Standard Z49.1 (listado en la próxima página) para recomendaciones específicas de como conectar el equipo a tierra. No confunda el cable de soldar a la pieza de trabajo con el cable a tierra.



CAMPOS ELECTRICOS Y MAGNETICOS

Son peligrosos. La corriente eléctrica fluye através de cualquier conductor causando a nivel local Campos Eléctricos y Magnéticos (EMF). Las corrientes en el área de corte y soldadura, crean EMF alrededor de los cables de soldar y las maquinas.

Por lo tanto:

1. Soldadores u Operadores que use marca-pasos para el corazón deberán consultar a su médico antes de soldar. El Campo Electromagnético (EMF) puede interferir con algunos marcapasos.
2. Exponerse a campos electromagnéticos (EMF) puede causar otros efectos de salud aún desconocidos.
3. Los soldadores deberán usar los siguientes procedimientos para minimizar exponerse al EMF:
 - a. Mantenga el electrodo y el cable a la pieza de trabajo juntos, hasta llegar a la pieza que usted quiere soldar. Asegúrelos uno junto al otro con cinta adhesiva cuando sea posible.
 - b. Nunca envuelva los cables de soldar alrededor de su cuerpo.
 - c. Nunca ubique su cuerpo entre la antorcha y el cable, a la pieza de trabajo. Mantenga los cables a un sólo lado de su cuerpo.
 - d. Conecte el cable de trabajo a la pieza de trabajo lo más cercano posible al área de la soldadura.
 - e. Mantenga la fuente de poder y los cables de soldar lo más lejos posible de su cuerpo.



HUMO Y GASES

El humo y los gases, pueden causar malestar o daño, particularmente en espacios sin ventilación. No inhale el humo o gases. El gas de protección puede causar falta de oxígeno.

Por lo tanto:

1. Siempre provea ventilación adecuada en el área de trabajo por medio natural o mecánico. No solde, corte, o trabaje por medio natural o mecánico. No solde, corte, o ranure materiales con hierro galvanizado, acero inoxidable, cobre, zinc, plomo, berilio, o cadmio a menos que provea ventilación mecánica positiva. No respire los gases producidos por estos materiales.
2. No opere cerca de lugares donde se aplique sustancias químicas en aerosol. El calor de los rayos del arco pueden reaccionar con los vapores de hidrocarburo clorinado para formar un fosfógeno, o gas tóxico, y otros irritantes.
3. Si momentáneamente desarrolla irritación de ojos, nariz o garganta mientras está operando, es indicación de que la ventilación no es apropiada. Pare de trabajar y tome las medidas necesarias para mejorar la ventilación en el área de trabajo. No continúe operando si el malestar físico persiste.
4. Haga referencia a la publicación ANSI/ASC Standard Z49.1 (Vea la lista a continuación) para recomendaciones específicas en la ventilación.
5. **ADVERTENCIA**-Este producto cuando se utiliza para soldaduras o cortes, produce humos o gases, los cuales contienen químicos conocidos por el Estado de California de causar defectos en el nacimiento, o en algunos casos, Cáncer. (California Health & Safety Code §25249.5 et seq.)



MANEJO DE CILINDROS

Los cilindros, si no son manejados correctamente, pueden romperse y liberar violentamente gases. Rotura repentina del cilindro, válvula, o válvula de escape puede causar daño o muerte.

Por lo tanto:

1. Utilice el gas apropiado para el proceso y utilice un regulador diseñado para operar y reducir la presión del cilindro de gas. No utilice adaptadores. Mantenga las mangueras y las conexiones en buenas condiciones. Observe las instrucciones de operación del fabricante para montar el regulador en el cilindro de gas comprimido.
2. Asegure siempre los cilindros en posición vertical y amárrelos con una correa o cadena adecuada para asegurar el cilindro al carro, transportes, tablleros, paredes, postes, o almacén. Nunca asegure los cilindros a la mesa de trabajo o las piezas que son parte del circuito de soldadura. Este puede ser parte del circuito eléctrico.
3. Cuando el cilindro no está en uso, mantenga la válvula del cilindro cerrada. Ponga el capote de protección sobre la válvula si el regulador no está conectado. Asegure y mueva los cilindros utilizando un carro o transporte adecuado. Evite el manejo brusco de los
4. Localice los cilindros lejos del calor, chispas, y flamas. Nunca establezca un arco en el cilindro.
5. Para información adicional, haga referencia a la publicación CGA Standard P-1, "Precautions for Safe Handling of Compressed Gases in Cylinders", disponible a través del Compressed Gas Association, 1235 Jefferson Davis Highway, Arlington, VA 22202.



MANTENIMIENTO DEL EQUIPO

Equipo defectuoso o mal mantenido puede causar daño o muerte.

Por lo tanto:

1. Siempre tenga personal cualificado para efectuar la instalación, diagnóstico, y mantenimiento del equipo. No ejecute ningún trabajo eléctrico a menos que usted esté cualificado para hacer el trabajo.
2. Antes de dar mantenimiento en el interior de la fuente de poder, desconecte la fuente de poder del suministro de electricidad primaria.
3. Mantenga los cables, cable a tierra, conexiones, cable primario, y cualquier otra fuente de poder en buen estado operacional. No opere ningún equipo en malas condiciones.
4. No abuse del equipo y sus accesorios. Mantenga el equipo lejos de cosas que generen calor como hornos, también lugares húmedos como charcos de agua, aceite o grasa, atmósferas corrosivas y las inclemencias del tiempo.
5. Mantenga todos los artículos de seguridad y coberturas del equipo en su posición y en buenas condiciones.



6. Use el equipo sólo para el propósito que fue diseñado. No modifique el equipo en ninguna manera.



INFORMACION ADICIONAL DE SEGURIDAD

Para más información sobre las prácticas de seguridad de los equipos de arco eléctrico para soldar y cortar, pregunte a su suplidor por una copia de "Precautions and Safe Practices for Arc Welding, Cutting and Gouging", Form 52-529.

Las siguientes publicaciones, disponibles através de la American Welding Society, 550 N.W. LeJuene Road, Miami, FL 33126, son recomendadas para usted:

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"



SIGNIFICADO DE LOS SIMBOLOS

Según usted avanza en la lectura de este folleto: Los Símbolos Significan ¡Atención! ¡Esté Alerta! Se trata de su seguridad.



PELIGRO

Significa riesgo inmediato que, de no ser evadido, puede resultar inmediatamente en serio daño personal o la muerte.



ADVERTENCIA

Significa el riesgo de un peligro potencial que puede resultar en serio daño personal o la muerte.



CUIDADO

Significa el posible riesgo que puede resultar en menores daños a la persona.

4 MESURES DE SECURITE - French



ATTENTION : ces règles de sécurité ont pour objet d'assurer votre protection. Elles constituent une synthèse des mesures de sécurité contenues dans les ouvrages de référence repris au chapitre Informations complémentaires relatives à la Sécurité. Avant toute installation ou utilisation du matériel, veillez à lire et à respecter les règles de sécurité énoncées ci-dessous ainsi que dans les divers manuels, fiches de sécurité du matériel, étiquettes, etc. Le non-respect de ces précautions risque d'entraîner des blessures graves ou mortelles.



PROTECTION INDIVIDUELLE ET DE L'ENTOURAGE

Certains procédés de soudage, découpage et gougeage sont bruyants et requièrent le port de protections auditives. L'arc, tout comme le soleil, émet des ultraviolets (UV) et d'autres rayonnements susceptibles de provoquer des lésions oculaires et dermatologiques. Le métal chaud peut être à l'origine de brûlures. Une formation à l'utilisation correcte des procédés et équipements est essentielle pour prévenir les accidents. En conséquence :

1. Porter impérativement des lunettes avec écrans latéraux dans les zones de travail, même lorsque le port du casque de soudage, de l'écran facial et des lunettes de protection est obligatoire
2. Tant pour exécuter les travaux que pour y assister, porter un écran facial muni de plaques protectrices et de verres filtrants appropriés pour protéger les yeux, le visage, le cou et les oreilles des étincelles et du rayonnement de l'arc. Avertir les personnes se trouvant à proximité qu'elles ne doivent pas regarder l'arc, ni s'exposer à son rayonnement ou à celui du métal incandescent.
3. Porter des gants ignifuges à crispins, une tunique épaisse à longues manches, des pantalons sans rebord, des chaussures à embout d'acier et un casque de soudage ou une casquette pour se protéger du rayonnement de l'arc, des étincelles et du métal incandescent. Le port d'un tablier ininflammable est également recommandé afin de se protéger des étincelles et du rayonnement thermique.
4. Les étincelles ou projections de métal en fusion risquent de se loger dans les manches retroussées, les bords relevés de pantalons ou dans les poches. Il convient donc de boutonner complètement les manches et le col, et de porter des vêtements sans poches à l'avant.
5. Protéger du rayonnement de l'arc et des étincelles les personnes se trouvant à proximité à l'aide d'un écran ou d'un rideau ininflammable approprié.
6. Porter des oculaires et des lunettes de protection pendant le meulage du laitier. Les particules meulées, souvent brûlantes, peuvent être projetées à des distances importantes, de sorte que les personnes se trouvant à proximité doivent également porter des lunettes de protection.



INCENDIES ET EXPLOSIONS

La chaleur dégagée par les flammes et les arcs peuvent être à l'origine d'incendies. Le laitier incandescent et les étincelles peuvent également provoquer incendies et explosions. En conséquence :

1. Éloigner suffisamment tous les matériaux combustibles de la zone de travail ou les recouvrir complètement d'une bâche ignifuge. Ce type de matériaux comprend le bois, les vêtements, la sciure, les carburants sous forme liquide et gazeuse, les peintures, les enduits, le papier, etc.
2. Les étincelles ou projections de métal en fusion peuvent tomber dans les fissures du sol ou des murs et déclencher une combustion lente dans les planchers ou à l'étage inférieur. Veiller à protéger ces ouvertures pour que les étincelles et projections n'y pénètrent pas.
3. Ne pas procéder à des travaux de soudage, de découpage et autres travaux à chaud tant que la surface n'est pas complètement nettoyée et débarrassée des substances susceptibles de produire des vapeurs inflammables ou toxiques. Ne pas effectuer de travaux à chaud sur des conteneurs fermés pour éviter tout risque d'explosion.
4. Conserver à portée de main un équipement d'extinction – tuyau d'arrosage, seau d'eau ou de sable, extincteur portatif, etc. et s'assurer d'en connaître l'utilisation.
5. Ne pas utiliser l'équipement au-delà de ses spécifications. Par exemple, un câble de soudage surchargé est susceptible de surchauffer et d'être à l'origine d'un incendie.

6. Une fois le travail terminé, inspecter la zone de travail pour s'assurer qu'aucune étincelle ou projection de métal ne risque de déclencher un incendie. Le cas échéant, utiliser des systèmes de détection d'incendie.
7. Pour toute information supplémentaire, voir la norme NFPA 51B relative à la prévention des incendies lors de travaux de découpage et de soudage, disponible auprès de la National Fire Protection Association, Batterymarch Park, Quincy, MA 02269 – USA.



CHOC ELECTRIQUE

Tout contact avec des éléments sous tension et la masse peut provoquer des blessures graves ou mortelles. NE PAS utiliser de courant de soudage CA dans des zones humides, des lieux exigus ou lorsqu'il existe un risque de chute. En conséquence :

1. Vérifier que le châssis du générateur est bien relié au dispositif de mise à la masse de l'alimentation.
2. Assurer une mise à la masse correcte de la pièce à souder.
3. Connecter le câble de soudage à la pièce à souder. Un raccordement médiocre ou inexistant constitue un risque mortel pour l'utilisateur et son entourage.
4. Utiliser du matériel correctement entretenu. Remplacer les câbles usés ou endommagés.
5. Empêcher l'apparition de toute humidité, notamment sur les vêtements, dans la zone de travail, sur les câbles, la torche de soudage, le porte-électrode et le générateur.
6. S'assurer que le corps est totalement isolé de la pièce à souder et de la masse.
7. Éviter tout contact direct avec du métal ou la masse lors de travaux dans des endroits exigus et en zone humide ; se tenir sur des panneaux ou sur une plate-forme isolante et porter des chaussures à semelles en caoutchouc.
8. Enfiler des gants secs et sans trous avant de mettre l'équipement sous tension.
9. Mettre l'équipement hors tension avant de retirer les gants.
10. Voir la norme ANSI/ASC Z49.1 (voir page suivante) pour les recommandations de mise à la masse. Ne pas confondre le câble de soudage et le câble de masse.



CHAMPS ELECTRIQUES ET MAGNETIQUES

Danger. Le courant électrique parcourant les conducteurs génère localement des champs électriques et magnétiques (EMF). Le courant de soudage et de découpe crée des EMF autour des câbles de soudage et des postes à souder.

En conséquence :

1. Les porteurs de stimulateurs cardiaques consulteront leur médecin avant d'effectuer des travaux de soudage. Les EMF peuvent en effet provoquer des interférences.
2. L'exposition aux EMF peut également avoir des effets méconnus sur la santé.
3. Les soudeurs respecteront les procédures suivantes pour réduire l'exposition aux EMF :
 - a. Rassembler en faisceau les câbles de soudage et d'électrode. Si possible, les attacher avec du ruban adhésif.
 - b. Ne jamais enrouler le câble de la torche ou le câble de soudage autour du corps.
 - c. L'utilisateur ne doit jamais se trouver entre le câble de la torche et le câble de soudage. Faire passer tous les câbles du même côté du corps.
 - d. Connecter le câble de soudage à la pièce à souder, au plus près de l'endroit du soudage.
 - e. S'éloigner au maximum du générateur et des câbles.



FUMÉES ET GAZ

L'inhalation des fumées et gaz peut provoquer des malaises et des dommages corporels, surtout lors de travaux dans les espaces confinés. Ne pas les respirer. Les gaz inertes peuvent causer l'asphyxie.

En conséquence :

1. Assurer une aération adéquate de la zone de travail par une ventilation naturelle ou mécanique. Ne pas effectuer de travaux de soudage, découpage ou gougeage sur des matériaux tels que l'acier galvanisé, le cuivre, le zinc, le plomb, le béryllium et le cadmium en l'absence d'une ventilation mécanique adéquate. Ne pas inhaler les fumées dégagées par ces matériaux.
2. Ne pas travailler à proximité d'opérations de dégraissage et de pulvérisation étant donné que la chaleur dégagée et l'arc peut réagir avec les hydrocarbures chlorés pour former du phosgène – un gaz particulièrement toxique – et d'autres gaz irritants.
3. Une irritation momentanée des yeux, du nez ou de la gorge provoquée par les travaux est le signe d'une ventilation inappropriée. Dans ce cas, il convient d'arrêter le travail et de prendre les mesures nécessaires pour améliorer l'aération. Ne pas poursuivre le travail si le malaise persiste.
4. Voir la norme ANSI/ASC Z49.1 (voir ci-dessous) pour les recommandations de ventilation.
5. ATTENTION : utilisé dans des opérations de soudage et de découpage, ce produit dégage des fumées et gaz qui contiennent des substances chimiques reconnues par l'État de Californie comme pouvant être à l'origine de malformations congénitales et de cancers (California Health & Safety Code §25249.5 et seq.).



MANIPULATION DES BOUTEILLES DE GAZ

Une erreur de manutention des bouteilles de gaz peut les endommager et entraîner une libération violente du gaz. La rupture soudaine de la soupape ou du détendeur peut provoquer des blessures graves ou mortelles.

En conséquence :

1. Utiliser le gaz approprié à la pression adéquate, celle-ci étant réglée par un détendeur adapté au type de bouteille utilisée. Ne pas utiliser d'adaptateurs. Garder les tuyaux et accessoires en bon état. Pour le montage du détendeur sur une bouteille de gaz comprimé, suivre les instructions du fabricant.
2. Fixer les bouteilles verticalement – au moyen d'une chaîne ou d'une sangle – à un chariot à bras, un châssis de roulement, un banc, un mur, un piquet ou un rack. Ne jamais attacher les bouteilles aux établis et éléments susceptibles de les intégrer à un circuit électrique.
3. Conserver les bouteilles fermées lorsqu'elles ne sont pas utilisées. Les fermer par un bouchon lorsqu'elles ne sont pas raccordées. Attacher et déplacer les bouteilles à l'aide de chariots adéquats.
4. Éloigner les bouteilles des sources de chaleur, d'étincelles et de flammes nues. Ne jamais déclencher d'arc sur une bouteille de gaz.
5. Pour plus d'informations sur les précautions d'utilisation des bouteilles de gaz comprimé, voir la norme CGA P-1, disponible auprès de la Compressed Gas Association, 1235 Jefferson Davis Highway, Arlington, VA 22202 – USA.



ENTRETIEN DE L'EQUIPEMENT

Un équipement mal entretenu peut provoquer des blessures graves ou mortelles. En conséquence :

1. Confier l'installation, les dépannages et l'entretien à du personnel qualifié. Ne pas effectuer de travaux électriques si vous ne possédez pas les compétences requises.
2. Mettre l'équipement hors tension avant toute intervention d'entretien sur le générateur.
3. Maintenir en bon état de fonctionnement les câbles, câbles de masse, connexions, cordons d'alimentation et générateurs. Ne jamais utiliser d'équipements défectueux.
4. Ne jamais surcharger les équipements et accessoires. Conserver les équipements à l'écart des sources de chaleur – notamment des fours –, des flaques d'eau, des traces d'huile ou de graisse, des atmosphères corrosives et des intempéries.
5. Laisser en place tous les dispositifs de sécurité et tous les panneaux du tableau de commande en veillant à les garder en bon état.
6. Utiliser l'équipement conformément à l'usage prévu ; n'y apporter aucune modification quelconque.

 **INFORMATIONS COMPLEMENTAIRES RELATIVES A LA SECURITE** Pour plus d'informations relatives aux règles de sécurité pour les travaux de gougeage, de découpage et de soudage à l'arc électrique, demander au fournisseur une copie du formulaire 52/529.

L'American Welding Society, 550 N.W. LeJuene Road, Miami, FL 33126 – USA, publie les documents suivants dont la lecture est également recommandée :

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" - Réédition, Manuel de soudage
8. ANSI/AWS F4.1 - "Recommended Safe Practices for Welding and Cutting of Containers That Have Held Hazardous Substances"

 **SYMBOLES**
Signification des symboles utilisés dans ce manuel : = Attention ! Rester prudent !

 **DANGER** = danger immédiat ; risque de blessures graves ou mortelles.

 **ADVERTISSEMENT** = danger potentiel ; risque de blessures graves ou mortelles.

 **ATTENTION** = danger ; risque de blessures légères.

1 DIRECTIVE

DECLARATION OF CONFORMITY

ESAB AB, Welding Equipment, SE-695 81 Laxå, Sweden, gives its unreserved guarantee that welding power source Arc 151i, Arc 201i from serial number 803 are constructed and tested in compliance with the standard EN 60974-1 and EN 60974-10 (Class A) in accordance with the requirements of directive (2006/95/EC) and (2004/108/EEC).

Laxå 2008-01-25



Kent Eimbrodt
Global Director
Equipment and Automation

2 SAFETY

Users of ESAB welding equipment have the ultimate responsibility for ensuring that anyone who works on or near the equipment observes all the relevant safety precautions. Safety precautions must meet the requirements that apply to this type of welding equipment. The following recommendations should be observed in addition to the standard regulations that apply to the workplace.

All work must be carried out by trained personnel well-acquainted with the operation of the welding equipment. Incorrect operation of the equipment may lead to hazardous situations which can result in injury to the operator and damage to the equipment.

1. Anyone who uses the welding equipment must be familiar with:
 - its operation
 - location of emergency stops
 - its function
 - relevant safety precautions
 - welding
2. The operator must ensure that:
 - no unauthorized person is stationed within the working area of the equipment when it is started up.
 - no-one is unprotected when the arc is struck
3. The workplace must:
 - be suitable for the purpose
 - be free from drafts
4. Personal safety equipment
 - Always wear recommended personal safety equipment, such as safety glasses, flame-proof clothing, safety gloves. **Note!** *Do not use safety gloves when replacing wire.*
 - Do not wear loose-fitting items, such as scarves, bracelets, rings, etc., which could become trapped or cause burns.
5. General precautions
 - Make sure the ground cable is connected securely.
 - Work on high voltage equipment **may only be carried out by a qualified electrician.**
 - Appropriate fire extinguishing equipment must be clearly marked and close at hand.
 - Lubrication and maintenance must **not** be carried out on the equipment during operation.



WARNING

DO NOT USE THE POWER SOURCE FOR THAWING FROZEN PIPES.



WARNING



ARC WELDING AND CUTTING CAN BE INJURIOUS TO YOURSELF AND OTHERS. TAKE PRECAUTIONS WHEN WELDING. ASK FOR YOUR EMPLOYER'S SAFETY PRACTICES WHICH SHOULD BE BASED ON MANUFACTURERS' HAZARD DATA.

ELECTRIC SHOCK - CAN KILL

- INSTALL AND EARTH THE WELDING UNIT IN ACCORDANCE WITH APPLICABLE STANDARDS.
- DO NOT TOUCH LIVE ELECTRICAL PARTS OR ELECTRODES WITH BARE SKIN, WET GLOVES OR WET CLOTHING.
- INSULATE YOURSELF FROM EARTH AND THE WORKPIECE.
- ENSURE YOUR WORKING STANCE IS SAFE.

FUMES AND GASES - CAN BE DANGEROUS TO HEALTH

- KEEP YOUR HEAD OUT OF THE FUMES.
- USE VENTILATION, EXTRACTION AT THE ARC, OR BOTH, TO TAKE FUMES AND GASES AWAY FROM YOUR BREATHING ZONE AND THE GENERAL AREA.

ARC RAYS - CAN INJURE EYES AND BURN SKIN.

- PROTECT YOUR EYES AND BODY. USE THE CORRECT WELDING SCREEN AND FILTER LENS AND WEAR PROTECTIVE CLOTHING.
- PROTECT BYSTANDERS WITH SUITABLE SCREENS OR CURTAINS.

FIRE HAZARD

- SPARKS (SPATTER) CAN CAUSE FIRE. MAKE SURE THEREFORE THAT THERE ARE NO INFLAMMABLE MATERIALS NEARBY.

NOISE - EXCESSIVE NOISE CAN DAMAGE HEARING

- PROTECT YOUR EARS. USE EARMUFFS OR OTHER HEARING PROTECTION.
- WARN BYSTANDERS OF THE RISK.

MALFUNCTION - CALL FOR EXPERT ASSISTANCE IN THE EVENT OF MALFUNCTION.

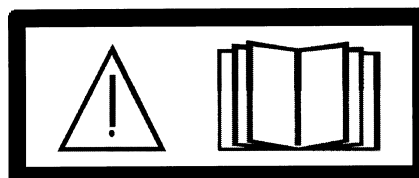
READ AND UNDERSTAND THE INSTRUCTION MANUAL BEFORE INSTALLING OR OPERATING.

PROTECT YOURSELF AND OTHERS!



CAUTION

Read and understand the instruction manual before installing or operating.



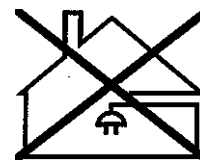
CAUTION

This product is solely intended for arc welding. Any other use may result in personal injury and / or equipment damage.



CAUTION

Class A equipment is not intended for use in residential locations where the electrical power is provided by the public low-voltage supply system. There may be potential difficulties in ensuring electromagnetic compatibility of class A equipment in those locations, due to conducted as well as radiated disturbances.



3 INTRODUCTION

Arc 151i, Arc 201i is a welding current power source intended for use with coated electrodes (MMA welding) and TIG welding.

ESAB's accessories for the product can be found on page 34.

3.1 Equipment

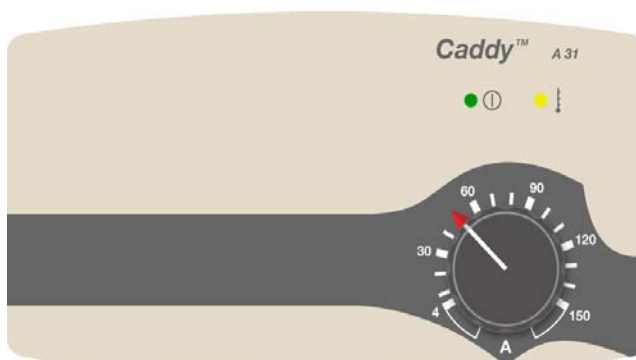
Arc 151i, Arc 201i is supplied with a 9.8 feet welding cable, return cable 9.8 feet mains cable and an instruction manual for power source and control panel.

Instruction manuals in other languages can be downloaded from the website, www.esab.com.

3.2 Control panel

Control panel A31

- Knob for setting the current
- Mains voltage LED (green)
- Thermal overload trip indicator (yellow)



Control panel A33



Welding process parameters are controlled via the control panel.

NOTE! See the separate instruction manual for a detailed description of the control panel.

4 TECHNICAL DATA

	Arc 151i	Arc 201i
Mains voltage	230 V, 1 ~ 50/60 Hz	230 V, 1 ~ 50/60 Hz
Primary current		
$I_{\max}$ GTAW	13.8 A	24.1 A
$I_{\max}$ SMAW	21.3 A	24.9 A
Mains supply	$Z_{\max}$ 0.35 ohm	$Z_{\max}$ 0.30 ohm
No-load power	30 W	30 W
Voltage/current range, SMAW		
A31	8 A /20 V - 150 A /26 V	-
A33	4 A /20 V - 150 A /26 V	4 A /20 V - 170 A /26.8 V
Voltage/current range GTAW	3 - 150 A	3 - 220 A
Permissible load at SMAW		
25% duty cycle	150 A / 26.0 V	170 A / 26.8 V
60% duty cycle	100 A / 24.0 V	130 A / 25.2 V
100% duty cycle	90 A / 23.6 V	110 A / 24.4 V
Permissible load at GTAW		
20% duty cycle	-	220 A / 18.8 V
25% duty cycle	150 A / 16.0 V	-
60% duty cycle	120 A / 14.8 V	150 A / 16.0 V
100% duty cycle	110 A / 14.4 V	110 A / 14.4 V
Power factor at maximum current	0.99	0.99
Efficiency at maximum current	80%	81%
Open-circuit voltage		
A31	58 - 72 V	-
A33	72 V	72 V
Operating temperature	-14°F - +104° F	-14°F - +104° F
Transportation temperature	- 4°F - +131° F	- 4°F - +131° F
Constant A-weighted sound pressure	< 70 dB	< 70 dB
Dimensions, l x b x h	16.5 x 7.4 x 8.2 inch	16.5 x 7.4 x 8.2 inch
Weight		
with A31	17.4 lbs	-
with A33	17.9 lbs	18.3 lbs
Enclosure class	IP 23	IP 23
Application class	S	S

Mains supply, $Z_{\max}$

Maximum permissible line on the network impedance in accordance with IEC 61000-3-11.

Duty cycle

The duty cycle refers to the time as a percentage of a ten-minute period that you can weld at a certain load without overloading. The duty cycle is valid for 104°F.

Enclosure class

The IP code indicates the enclosure class, i. e. the degree of protection against penetration by solid objects or water. Equipment marked IP 23 is designed for indoor and outdoor use.

Application class

The symbol **S** indicates that the power source is designed for use in areas with increased electrical hazard.

5 INSTALLATION

The installation must be done by a professional.



WARNING

THE CHASSIS MUST BE CONNECTED TO AN APPROVED ELECTRICAL GROUND. FAILURE TO DO SO MAY RESULT IN ELECTRICAL SHOCK, SEVERE BURNS OR DEATH.

Mains supply requirements

High power equipment may, due to the primary current drawn from the mains supply, influence the power quality of the grid. Therefore connection restrictions or requirements regarding the maximum permissible mains impedance or the required minimum supply capacity at the interface point to the public grid may apply for some types of equipment (see technical data). In this case it is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment may be connected.

5.1 Location

Position the power source such that its cooling air inlets and outlets are not obstructed.

5.2 Primary input



WARNING

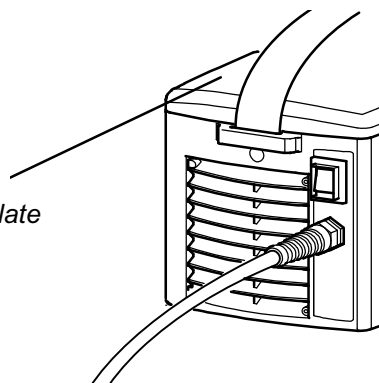
ELECTRIC SHOCK CAN KILL! PRECAUTIONARY MEASURES SHOULD BE TAKEN TO PROVIDE MAXIMUM PROTECTION AGAINST ELECTRICAL SHOCK.

BE SURE THAT ALL POWER IS OFF BY OPENING THE LINE (WALL) DISCONNECT SWITCH WHEN PRIMARY ELECTRICAL CONNECTIONS ARE MADE TO THE POWER SOURCE.

BE SURE TO CHECK YOUR INPUT LEADS WITH A VOLTMETER TO MAKE SURE ALL POWER IS OFF.

Check that the welding power source is connected to the correct voltage and that the correct fuse size is used. A protective earth connection must be made in accordance with regulations

Location of rating plate



5.2.1 Recommended fuse sizes and minimum cable area

	Arc 151i	Arc 201i
Mains voltage	230 V $\pm$ 10 %, 1-phase	230 V $\pm$ 10 %, 1-phase
Mains frequency	50-60 Hz	50-60 Hz
Mains cable, area	3G2.5 mm ²	3G2.5 mm ²
Phase current I _{1eff}	11.5 A	13.4 A
Welding cable, area	16 mm ²	16 mm ²
Fuse		
anti-surge	16 A	16 A
type C MCB	13 A	16 A

NOTE!

The cable area and fuse rating above comply with Swedish regulations. Use the welding power source in accordance with the relevant national regulations.

6 OPERATION

General safety regulations for the handling of the equipment can be found on page 3. Read through before you start using the equipment!



WARNING

BEFORE MAKING ANY CONNECTIONS TO THE POWER SOURCE OUTPUT TERMINALS, MAKE SURE THAT ALL PRIMARY INPUT POWER TO THE MACHINE IS OFF.



WARNING

ELECTRIC SHOCK CAN KILL! “MACHINERY LOCKOUT PROCEDURES” SHOULD BE EMPLOYED. IF IT IS NOT POSSIBLE TO USED PADLOCKS, ATTACH A RED TAG TO THE LINE DISCONNECT SWITCH (OR FUSE BOX) WARNING OTHERS THAT THE CIRCUIT IS BEING WORKED ON.



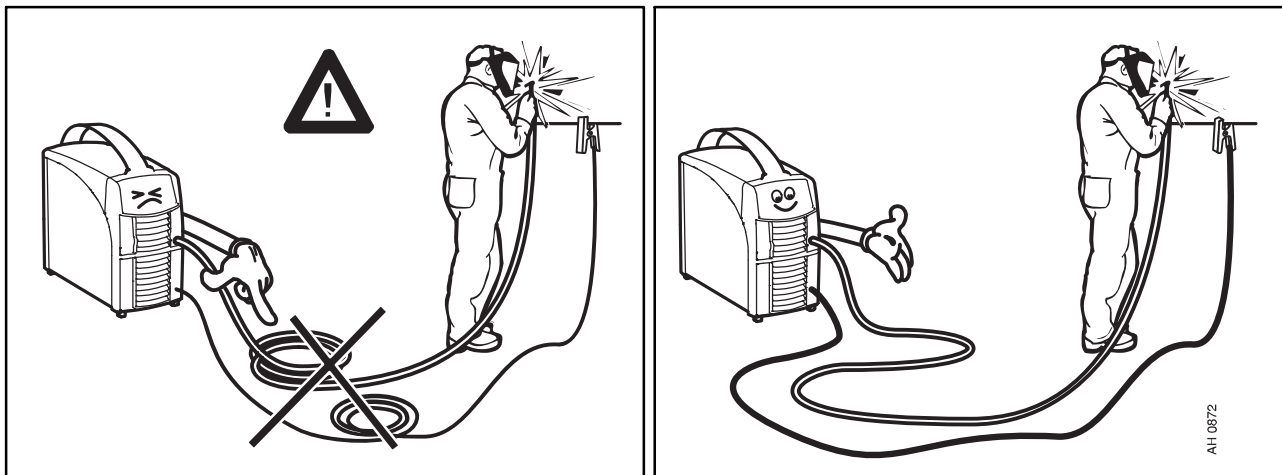
WARNING

ELECTRIC SHOCK CAN KILL! WHEN THE CONTACTOR SWITCH IS IN THE “ON” POSITION, OUTPUT POWER WILL BE PRESENT THROUGHOUT THE WELDING CIRCUIT; IE. CABLES, WIRE FEEDER, WIRE SPOOL, DRIVE STAND, GUN AND ELECTRODE. BE SURE ALL ARE CLEAR OF THE WORKPIECE OR ARCING WILL RESULT.



CAUTION

Never operate the power source with the cover removed. In addition to the safety hazards, improper cooling may cause damage to the components. Keep side panels closed when unit is energized. Welding helmet, gloves and other personal protection should always be worn when welding.

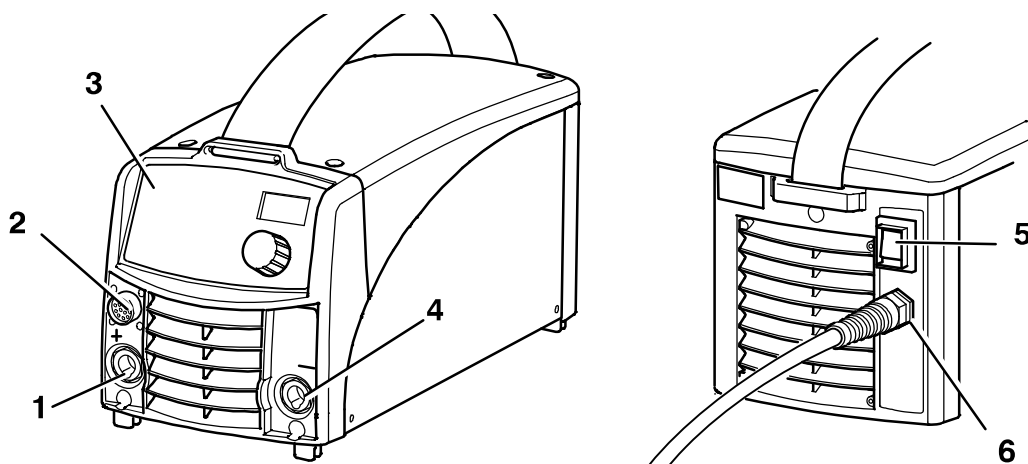


6.1 PFC - Power factor correction

The Caddy™ Arc 151i/201i are 230 V single-phase power sources equipped with a PFC circuit making it possible to use the full range of the machine on a 16 A fuse. The PFC also protects the machines against fluctuating mains voltage and makes it safer to use with a generator. Caddy™ Arc 151i/201i can operate with extra long mains cables, over 100 m, giving you a very larger working radius.

6.2 Connections and control devices

- | | |
|--|--|
| <p>1 Connection (+)
SMAW: for return cable or welding cable
GTAW: for return cable</p> <p>2 Connection for remote control unit</p> <p>3 Control panel, see under 3.2</p> | <p>4 Connection (+)
SMAW: for return cable or welding cable
GTMW: for Tig torch I</p> <p>5 Toggle switch for mains power supply 0 / 1</p> <p>6 Mains cable</p> |
|--|--|



6.3 Connection of welding and return cable

The power source has two outputs, a positive terminal (+) and a negative terminal (-), for connecting welding and return cables. The output to which the welding cable is connected depends on the type of electrode used. The connecting polarity is stated on the electrode packaging. Connect the welding cable to the terminal stated on the electrode packaging.

Connect the return cable to the other output on the power source. Secure the return cable's contact clamp to the work piece and ensure that there is good contact between the work piece and the output for the return cable on the power source.

6.4 Overheating protection

The welding power source has a thermal overload trip which operates if the temperature becomes too high, interrupting the welding current and lighting a yellow indicating lamp on the front of the power source. The thermal overload trip resets automatically when the temperature has fallen.

6.5 SMAW welding

Arc 151i / 201i gives direct current, and you can weld most metals to alloy and non-alloy steel, stainless steel and cast iron.

Arc 151i / 201i allows you to weld most coated electrodes from Ø 1.6 to Ø 3.25.

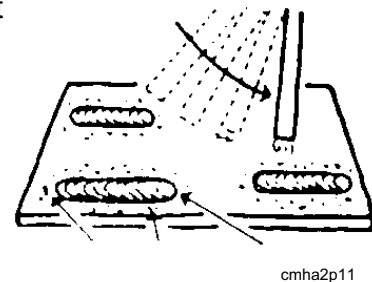
MMA welding may also be referred to as welding with coated electrodes. Striking the arc melts the electrode, and its coating forms protective slag.

If, when striking the arc, the tip of the electrode is pressed against the metal, it immediately melts and sticks to the metal, rendering continued welding impossible.

Therefore, the arc has to be struck in the same way that you would light a match.

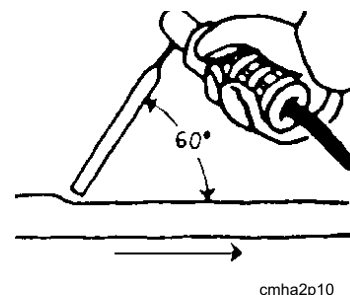
Quickly strike the electrode against the metal, then raise it so as to give an appropriate arc length (approx. 0.1 inch). If the arc is too long, it will crackle and spit before finally going out completely.

If you are working on a welding bench, check before attempting to strike the arc that residual waste metal, pieces of electrode or other objects on the bench do not insulate the part to be welded.



Once the arc has been struck, move the electrode from left to right. The electrode must be at an angle of 60° to the metal in relation to the direction of welding.

When you want to weld wide beads, or when you want the weld to be so thick that you have to weld in a number of layers, however, you have to use lateral movements.



6.6 GTAW welding

TIG welding melts the metal of the workpiece, using an arc struck from a tungsten electrode, which does not itself melt. The weld pool and the electrode are protected by shielding gas.

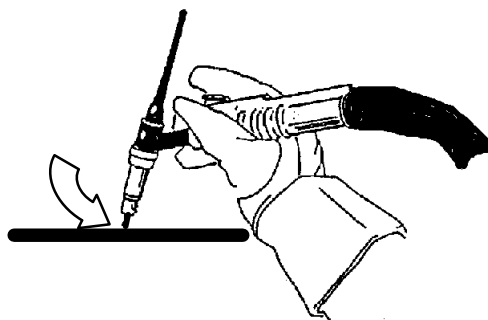
TIG welding is particularly useful where high quality is demanded and for welding thin plate. Arc 151i / 201i also has good characteristics for TIG welding.

In order to TIG weld Arc 151i / 201i must be equipped with:

- a TIG torch with gas valve
- a welding gas cylinder (a suitable welding gas)
- a welding gas regulator (suitable gas regulator)
- tungsten electrode
- suitable auxiliary material, if necessary.

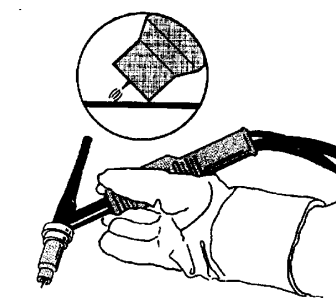
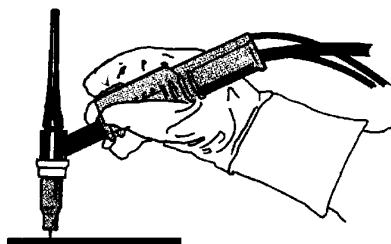
TIG scrape start (only A31)

To scrape start lightly scrape the tungsten electrode against the workpiece to create an arc.



"Live TIG-start" (only A33)

With "Live TIG start" the arc strikes when the tungsten electrode is brought into contact with the workpiece and then lifted away from it.



6.7 Remote control unit

The remote control unit is connected to the remote control socket on the power source.

7 MAINTENANCE

Regular maintenance is important for safe, reliable operation.

Only those persons who have appropriate electrical knowledge (authorized personnel) may remove the safety plates to connect or carry out service, maintenance or repair work on welding equipment.



WARNING

INSPECTION, TROUBLESHOOTING, AND REPAIR OF THIS EQUIPMENT SHOULD BE UNDERTAKEN BY A COMPETENT INDIVIDUAL HAVING AT LEAST GENERAL EXPERIENCE IN THE MAINTENANCE AND REPAIR OF SEMI-CONDUCTOR ELECTRONIC EQUIPMENT. MAINTENANCE OR REPAIR SHOULD NOT BE UNDERTAKEN BY ANYONE NOT HAVING SUCH QUALIFICATIONS.



WARNING

FAILURE TO REPLACE WORN OR DAMAGED CABLES MAY RESULT IN A BARE CABLE TOUCHING A GROUNDED OBJECT. THE RESULTING ELECTRICAL ARC MAY INJURE UNPROTECTED EYES AND WILL PRESENT A SERIOUS FIRE HAZARD. BODY CONTACT WITH A BARE CABLE, CONNECTOR, OR CONDUCTOR MAY RESULT IN SEVERE ELECTRICAL SHOCK, CAUSING SERIOUS BURNS OR DEATH.



CAUTION

Supplier warranty is void if customer attempts any work on product during the warranty period.



CAUTION

Do not use filters on this unit as they would restrict the volume of intake air required for proper cooling. Output ratings on this unit are based on an unobstructed supply of cooling air drawn over its internal components. Warranty is void if any type of filtering device is used.



CAUTION

If this power source 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 power source. Use only recommended replacement parts.

7.1 Inspection and cleaning

Power source

Check regularly that the welding power source is not clogged with dirt.

How often and which cleaning methods apply depend on: the welding process, arc times, placement, and the surrounding environment. It is normally sufficient to blow down the power source with dry compressed air (reduced pressure) once a year.

Clogged or blocked air inlets and outlets otherwise result in overheating.

TIG torch

The TIG torch's wear parts should be cleaned and replaced at regular intervals in order to achieve trouble-free welding.

8 FAULT-TRACING



WARNING

ELECTRICAL SERVICE AND REPAIR SHOULD BE ATTEMPTED ONLY BY A TRAINED ELECTRICIAN.

Try these recommended checks and inspections before sending for an authorized service technician.

Type of fault	Corrective action
No arc.	• Check that the mains power supply switch is turned on. • Check that the welding current supply and return cables are correctly connected. • Check that the correct current value is set. • Check to see whether the MCB has tripped.
The welding current is interrupted during welding.	• Check whether the thermal cut-outs have tripped (indicated by the orange lamp on the front panel). • Check the mains power supply fuses.
The thermal cut-out trips frequently.	• Check to see whether the dust filter is clogged. • Make sure that you are not exceeding the rated data for the power source (i.e. that the unit is not being overloaded).
Poor welding performance.	• Check that the welding current supply and return cables are correctly connected. • Check that the correct current value is set. • Check that the correct electrodes are being used. • Check the gas flow.

8.1 Fault codes

Arc 151i, 201i comes with built-in fault monitoring. If a fault occurs, a code is shown in the display. See instruction manual for the control panel.

9 ORDERING SPARE PARTS



CAUTION

Do not make any repairs to equipment unless you are fully qualified, as described in the maintenance section.

Repair and electrical work should be performed by an authorized ESAB service personnel. Use only ESAB original replacement and wear parts.

To ensure proper operation, it is recommended that only genuine ESAB parts and products be used with this equipment. The use of no-ESAB parts may void your warranty.

Replacement parts may be ordered from your ESAB Distributor

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

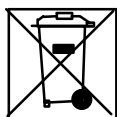
Refer to the Communication Guide located on the last page of this manual for a list of customer service phone numbers.

Arc 151i, Arc 201i is designed and tested in accordance with the international and European standards 60974-1 and 60984-10 . It is the obligation of the service unit which has carried out the service or repair work to make sure that the product still conforms to the said standard.

10 DISMANTLING AND SCRAPPING

Welding equipment primarily consists of steel, plastic and non-ferrous metals, and must be handled according to local environmental regulations.

Coolant must also be handled according to local environmental regulations.



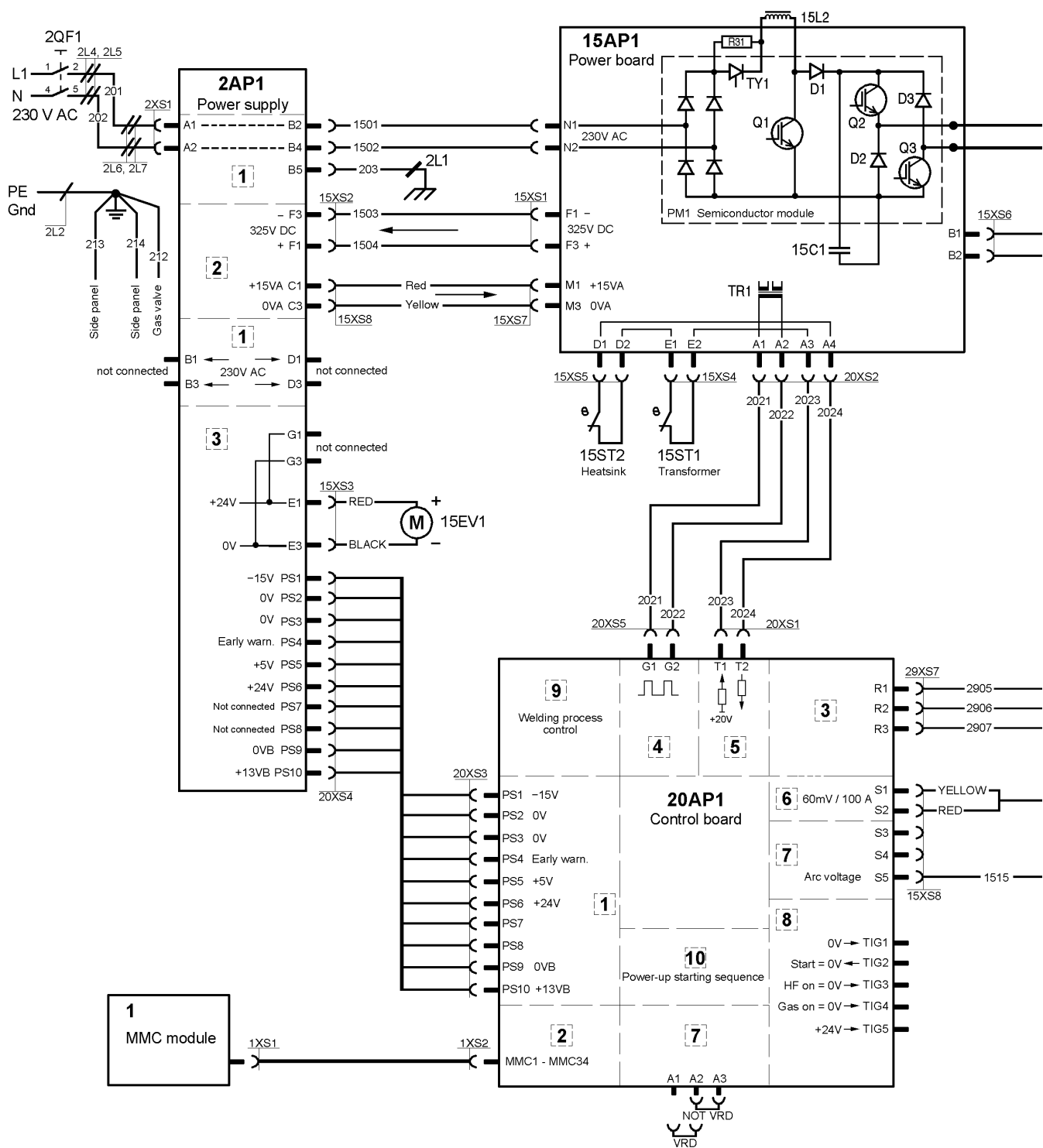
Do not dispose of electrical equipment together with normal waste!

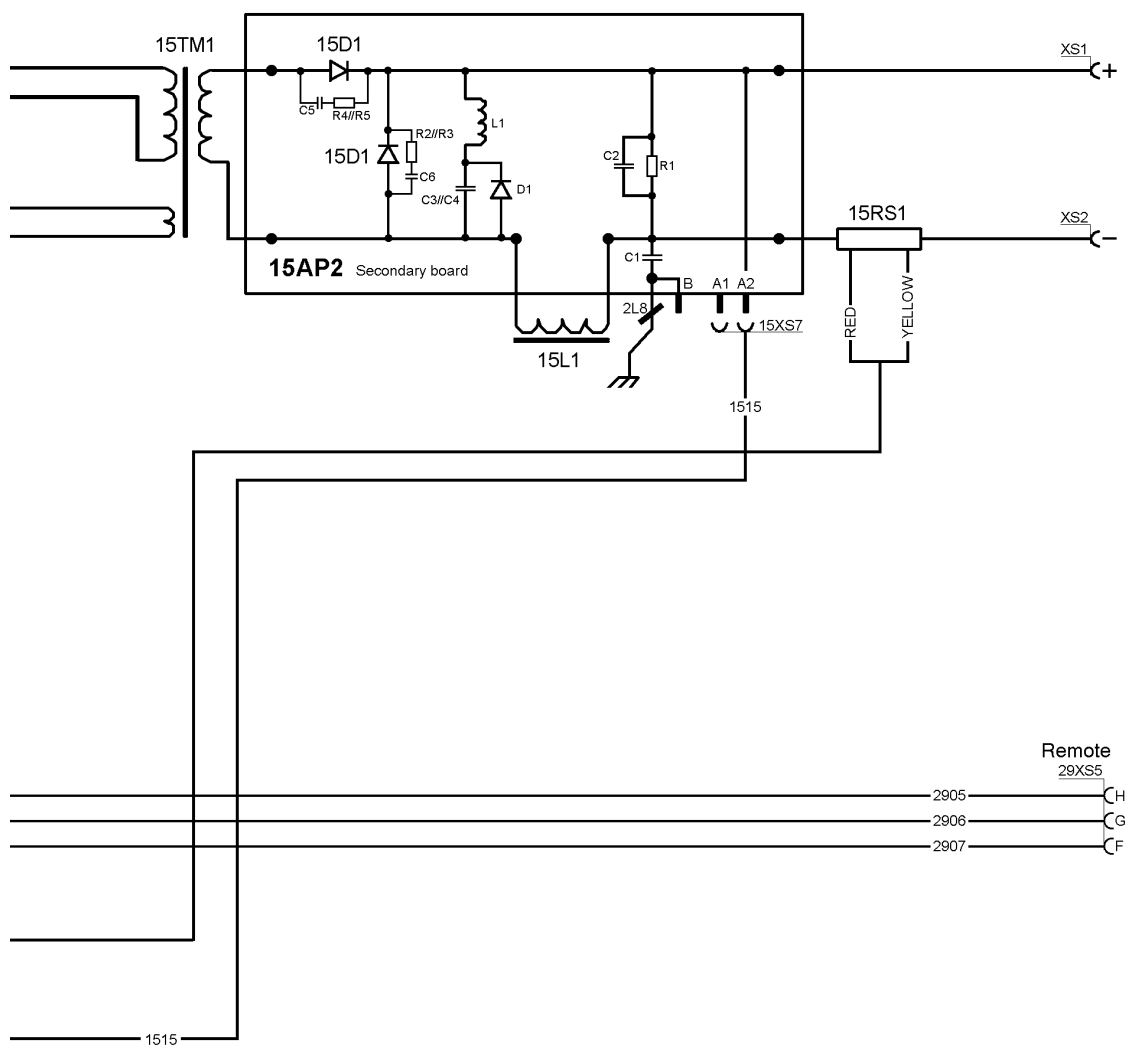
In observance of European Directive 2002/96/EC on Waste Electrical and Electronic Equipment and its implementation in accordance with national law, electrical equipment that has reached the end of its life must be collected separately and returned to an environmentally compatible recycling facility. As the owner of the equipment, you should get information on approved collection systems from our local representative.

By applying this European Directive you will improve the environment and human health!

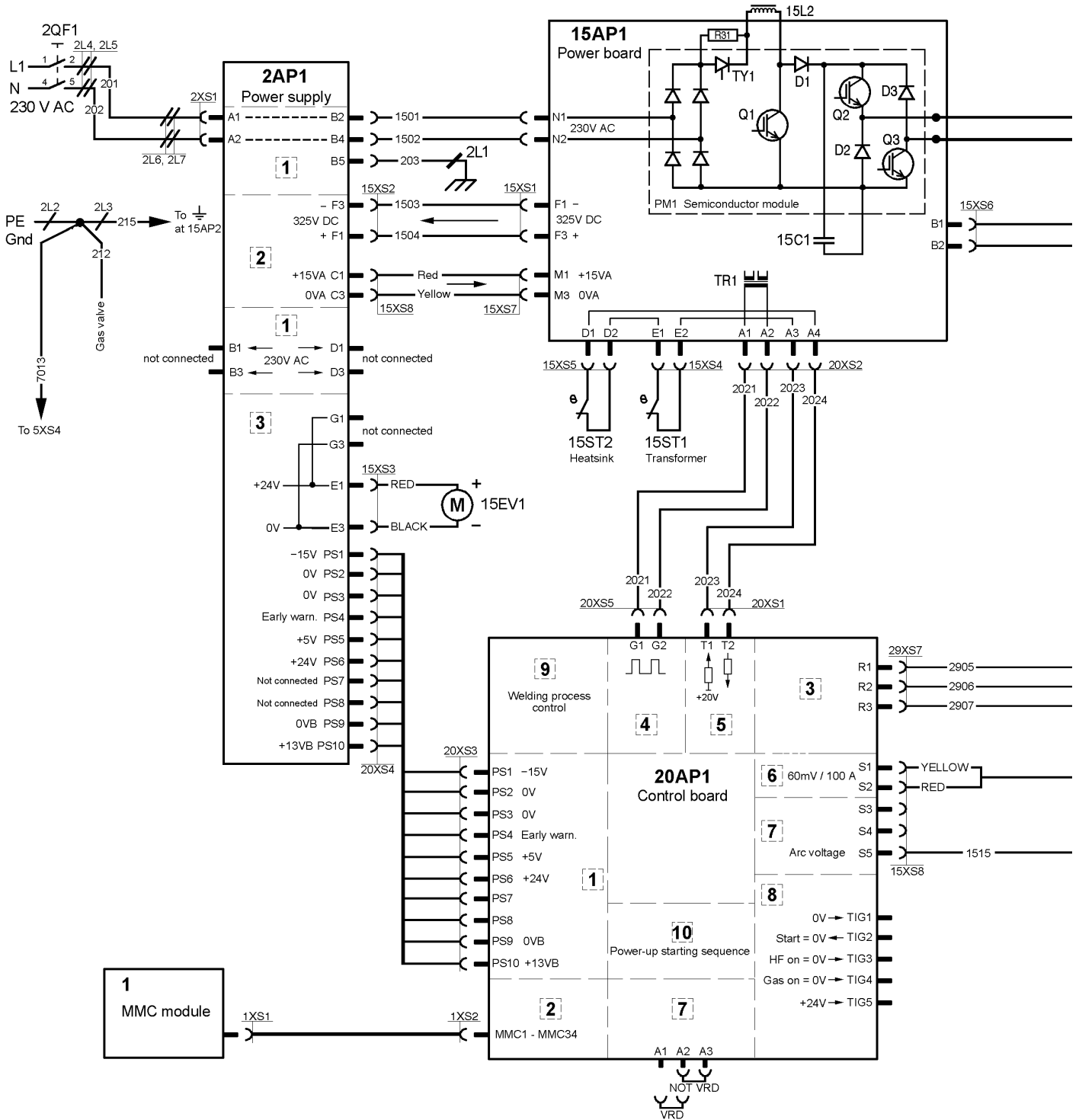
Schematic diagram

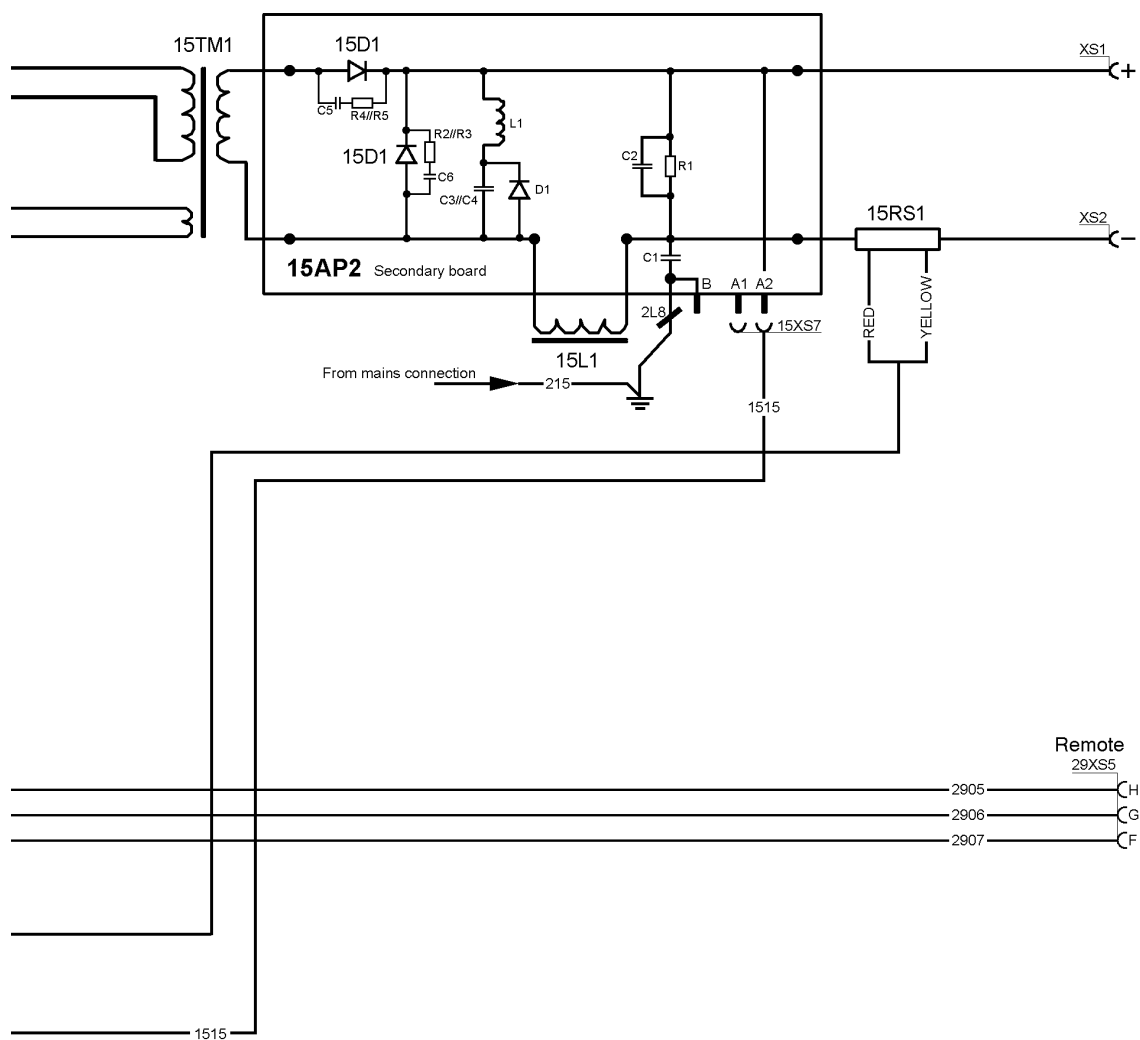
Arc 151i





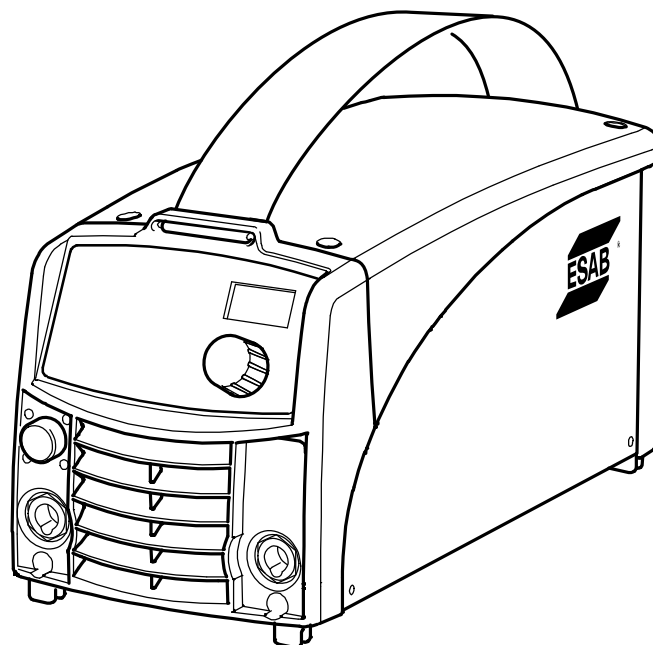
Arc 201i





[illegible]

Ordering number

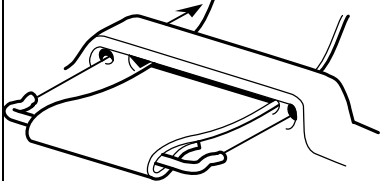
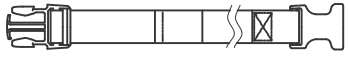
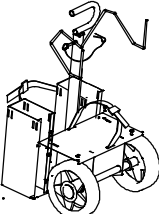
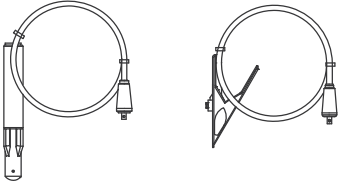
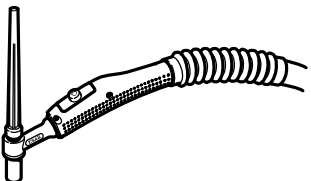


Ordering no.	Denomination	Type
0460 445 481	Welding Power source	Caddy™ Arc 151i, A31
0460 445 483	Welding Power source	Caddy™ Arc 151i, A33
0460 445 484	Welding Power source	Caddy™ Arc 201i, A33
0460 449 074	Instruction manual Control panel	Caddy™ A32, A33, A33
0459 839 027	Spare parts list	Caddy™ Arc 151i, Arc 152i, A31
0459 839 028	Spare parts list	Caddy™ Arc 151i, Arc 201i, A33

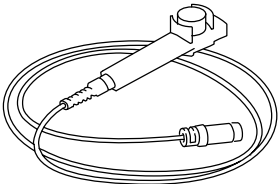
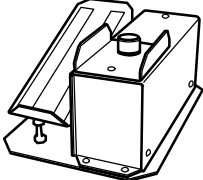
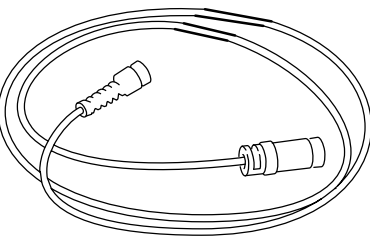
Instruction manuals and the spare parts list are available on the Internet at **www.esab.com**

Arc 151i/Arc 201i

Accessories

	Strap 0460 265 001
	Cable holder 2 pcs 0460 265 002
	Shoulder strap 0460 265 003
	Trolley for gasbottle 1.32-2.64 Gallon 0459 366 885
	Welding cable kit, Arc 151i 0700 006 898 Return cable kit, Arc 151i 0700 006 899 Welding cable kit, Arc 201i 0700 006 900 Return cable kit, Arc 201i 0700 006 901
	Tig torch TXH 150V, Arc 151i 0460 011 843 Tig torch TXH 200V, Arc 201i 0460 012 841

Only for A33 control panel

	Remote control MMA 1 (32.8 ft cable) 0349 501 024 MMA and TIG: current
	Foot control FS002 0349 090 886 MMA and TIG current
	Remote control unit AT1 0459 491 896 MMA and TIG: current
	Remote control unit AT1 CF 0459 491 897 MMA and TIG: rough and fine setting of current.
	Remote cable 12 pole - 8 pole 16,4 ft 0459 552 880 32.8 ft 0459 552 881 49.2 fr 0459 552 882 82.0 ft 0459 552 883

**ESAB Welding & Cutting Products, Florence, SC Welding Equipment
COMMUNICATION GUIDE - CUSTOMER SERVICES**

A	CUSTOMER SERVICE QUESTIONS:				
	Telephone: (800) 362-7080 / Fax: (800) 634-7548				Hours: 8.00 AM to 7:00 PM EST
	Order Entry	Product Availability	Pricing	Order Information	Returns
B	ENGINEERING SERVICE:				
	Telephone: (834) 664-4416 / Fax: (800) 446-5693				Hours: 7.30 AM to 5:00 PM EST
	Warranty Returns	Authorized Repair Stations	Welding Equipment	Troubleshooting	
C	TECHNICAL SERVICE:				
	Telephone: (800) ESAB-123 / Fax: (843) 664-4452				Hours: 8.00 AM to 5:00 PM EST
	Part Numbers	Technical Applications	Specifications	Equipment Recommendations	
D	LITERATURE REQUESTS:				
	Telephone: (843) 664-5562 / Fax: (843) 664-5548				Hours: 7.30 AM to 4:00 PM EST
E	WELDING EQUIPMENT REPAIRS:				
	Telephone: (843) 664-4487 / Fax: (843) 664-5557				Hours: 7.30 AM to 3:30 PM EST
	Repair Estimates	Repair Status			
F	WELDING EQUIPMENT TRAINING:				
	Telephone: (843) 664-4428 / Fax: (843) 679-5864				Hours: 7.30 AM to 4:00 PM EST
	Training School Information and Registrations				
G	WELDING PROCESS ASSISTANCE:				
	Telephone: (800) ESAB-123				Hours: 7.30 AM to 4:00 PM EST
H	TECHNICAL ASST. CONSUMABLES:				
	Telephone: (800) 933-7070				Hours: 7.30 AM to 5:00 PM EST

IF YOU DO NOT KNOW WHOM TO CALL

Telephone: (800) ESAB-123
Fax: (843) 664-4452
Hours: 7:30 AM to 5:00 PM EST

or

visit us on the web at <http://www.esabna.com>

The ESAB web site offers:
Comprehensive Product Information
Material Safety Data Sheets
Warranty Registration
Instruction Literature Download Library
Distributor Locator
Global Company Information
Press Releases
Customer Feedback & Support

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