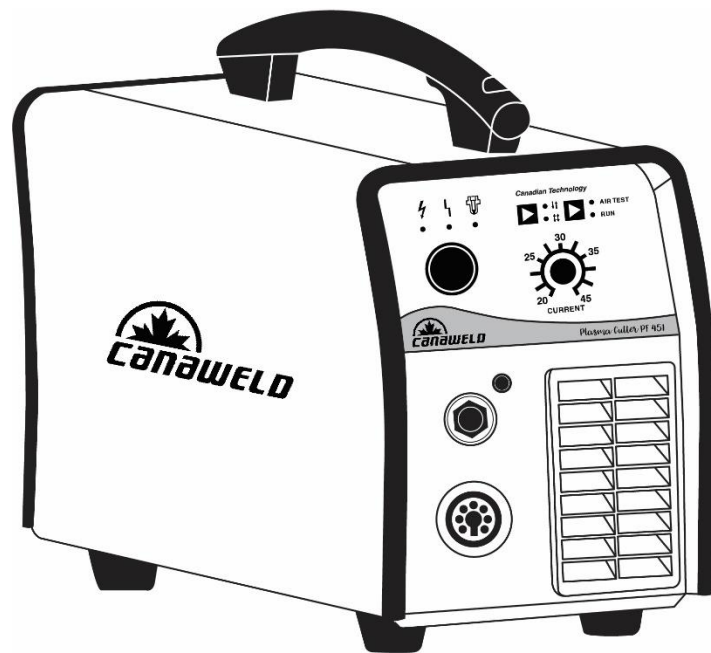




User Manual

Model: Plasma Cut 45 D



Thank You From Canaweld

Thank you for choosing a Canaweld machine, with 30+ years of welding equipment manufacturing experience overseas, you can feel confident that you have made the right choice.

Canaweld Inc. was started in Canada to manufacture the highest quality welding and cutting equipment for the North American market. All of our machines are electronically and weld tested before they leave our factory to ensure the equipment you purchased is ready to work.

Our engineers are continuously working on new equipment to release new models on a regular basis as well as to upgrade our existing line of machines. Canaweld, is in partnership with some of the best European welding and cutting equipment manufacturers, to distribute their machines to the North American market. Our business relationships have been created to offer our customers a wider range of machines - only the best available for every industry.

This user manual should be read carefully to fully understand the machine you have purchased and how to maintain it in the best operating condition.

For more information on our full line of products please visit our website or contact a dealer in your local area, our dealer list can be found on our website –

www.canaweld.com

If you require more information on how to use the equipment, please visit our website at www.canaweld.com and view our tutorials section to find the correct one for your machine.

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Plasma Cut 45 D - Package

1.



2.



3.



5.



4.



Name	Product Number	Quantity
1. Machine	PLC2050525	1
2. Work/Ground Clamp Set	ALP0580127	1
3. Plasma Cutter Torch	TGF0180532	1
4. Canaweld Bag	TGJ2780145	1
5. Gas Flow Meter Hose	TLJ1080189	1

SECTION 1- SAFETY CAUTIONS & SYMBOLS



CAUTION: READ USER MANUAL

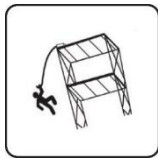
Indicates any section that the user must read the manual to fully understand the machine's characteristics to avoid any hazardous situation.



ELECTRIC SHOCK

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on.

- Do not touch live electrical parts.
- Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
- Do not remove any machine covers while the machine is powered.



WELDING WORKPLACE

Be mindful of working in cramped positions, scaffolds, or any location where you can fall and become injured.

- Wear a safety harness if working above floor level.
- Do not work in wet areas, or while wearing wet clothing.



WELDED PARTS

Immediately after welding, all welded parts will be a very high temperature which will cause burns to any exposed skin that makes contact.

- Do not touch parts after welding. Allow for cooling period before picking up.
- Allow cooling period before working on equipment.
- To handle hot parts, use proper tools and/or wear heavy, insulated welding gloves and clothing to prevent burns.



WELDING FUMES

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

- Keep your head out of the fumes stream while welding. Do not breathe the fumes.
- If inside, ventilate the area and/or use local forced ventilation at the welding point to remove welding fumes and gases.
- If ventilation is poor, wear an approved air-supplied respirator.
- Read and understand the Material Safety Data Sheets (MSDSs) and the manufacturer's instructions for metals, consumables, coatings, cleaners, and degreasers.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Always have a trained watchperson nearby.
- Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.



WELDING RAYS

Rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin.

- Wear an approved welding helmet fitted with a proper shade of filter lenses to protect your face and eyes from welding rays.
Use protective screens or barriers to protect others from flash, glare and sparks; warn others not to watch the arc.
- Wear protective clothing made from durable, flame-resistant material (leather, heavy cotton, or wool) and to cover any exposed skin, arms, neck area.



WELDING FIRES

Welding creates heat and can lead to fires, as well certain welding forms create sparks which could also ignite surrounding items and create a fire. The flying sparks, hot workpiece, and hot equipment can cause fires and burns.

- Remove all flammables within 35 ft. (10.7 m) of the welding arc. If this is not possible, cover them with approved covers.

- Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
- Watch for fire, and keep a fire extinguisher nearby.



GASES

Dangerous gases can be produced during welding, breathing these gases in can be hazardous to your health.

- Shut off shielding gas supply when not in use.
- Always ventilate confined spaces or use approved air-supplied respirator.
- Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.



EMF- ELECTRIC MAGNETIC FIELDS

During welding, electric magnetic fields are created and can produce malfunctions in electrical components within the area.

- EMF created by welders may affect wearers of Pacemakers and other Implanted Medical Devices should keep away.
- Implanted Medical Device wearers should consult their doctor and the device manufacturer before going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations.



EXCESSIVE NOISE

Be mindful if your working area creates excessive noise.

- Wear approved ear protection if noise level is high.
- Any workers close by the area will also be effected by the noise and may also require hearing protection.



GAS CYLINDER/LINE DAMAGE

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

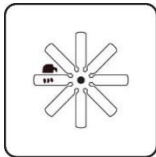
- Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks, and arcs.
- Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping.
- Protect all gas lines from sparks, slag and open flames.
- Open the cylinder valve slowly. Then slowly open regulator valve to avoid damage to the regulator.



ESD- ELECTRIC STATIC DISCHARGE

An electric static charge can be created during welding and discharged immediately after into any items touched by the welder after welding.

- Put on grounded wrist strap BEFORE handling boards or parts.
- Use proper static-proof bags and boxes to store, move, or ship PC boards.



MOVING PARTS

A number of moving parts may be in typical welding machines such as rollers and fans.

- Keep hands away from moving parts such as fans.
- Keep all doors, panels, covers, and guards closed and securely in place.
- Keep away from moving parts.
- Keep away from pinch points such as drive rolls.
- Secure any loose clothing and hair and keep away from moving parts.

Replacing the components can be dangerous

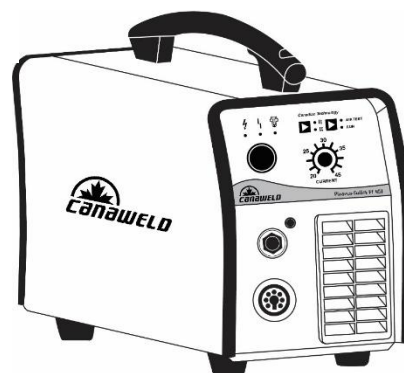
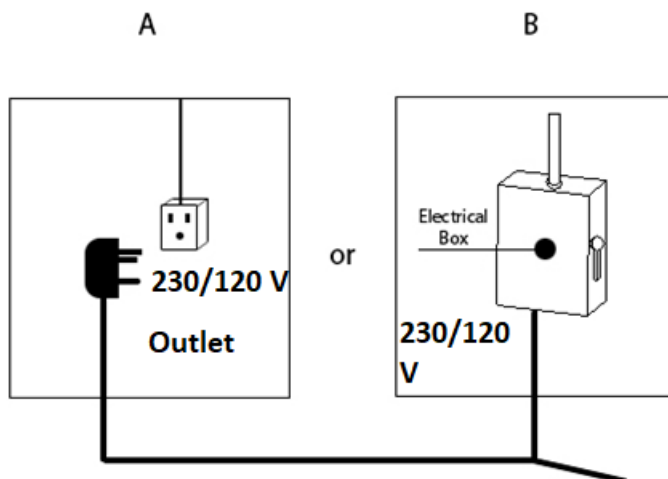
- Only professionals can replace the components of the machine .
- Make sure there are no foreign bodies such as wire leads, screws, gaskets and metal bars falling into the machine inside when replacing the components
- Make sure the connecting wires inside the machine are correctly connected after replacing the PCBs, and then the machine can be run. Otherwise, there is a risk of damage to property

SECTION 2 - Installation and Overview

INSTALLATION

ELECTRICAL

- The serial number and rating information is located on the bottom of the machine. Use the rating labels to determine input power requirements and rated output.
- Check whether the voltage value variations are within the acceptable working range with a multi-meter.
- (A) The input cable of the machine is ready to be plugged into a 230V/120 V $\pm 10\%$ compatible connector / socket or
(B) you can remove the installed plug and have the input cable “hard” wired into the appropriate building electrical panel.
- Electrical installation must meet all National and Local Codes– have only a qualified electrician do the installation.



OVERVIEW

PRODUCT & DESIGN

Digital plasma cutting machine with high performance advanced technology, the CUT45 is an ultra-portable plasma cutting system suitable for a variety of applications. It can be used in handheld cutting as well as robotic cutting. CUT45 can cut conductive metals such as low carbon steel, as well as stainless steel and aluminum. The cutting thickness depends on the material being cut (see chart).

FUNCTION

Using international leading MUC intelligent digital control technology, combined with easy to use controls all controlled by the machines software. This digital control plasma cutting machine, has improved function / performance when compared with the traditional plasma cutting machine.

PERFORMANCE

PWM technology and a high-power component IGBT, the CUT45 adopts switching power supply inverter technology, greatly reducing the volume and weight of the plasma cutter, and enhancing the conversion efficiency. Switching frequency is beyond audio range, which dramatically reduces and almost eliminates all noise pollution.

One of the characteristics of digital control is that it is not sensitive to the change of parameters; the performance of the cutting machine will not be affected by the change of the parameters of certain electronic parts. This results in the consistency and stability of the digital control over a traditional cutter.

It can cut thick plates such as steel, stainless steel, copper, cast iron and aluminum conveniently and quickly. It is easy to ignite arc by adopting HF arc ignition mode.

SECTION 3 – OPERATION OF EQUIPMENT

OPERATION METHOD

- Turn on the power switch of the machine, the power indicator should illuminate.
- Select proper working mode and proper function. There are two working modes available on the machine panel: 2T and 4T. There are two functions available: normal cutting and metal mesh cutting.
- Place plasma torch close to the surface of the material to be cut, push the torch trigger on the cutting torch and the machine will begin cutting.
- Set cutting current according to the thickness of workpiece.
- A sudden halt may occur when the yellow LED on the front panel turns ON, this indicates the machine is on over-load status. It is unnecessary to restart the machine it will re-start once the internal machine temperature drops. The yellow LED will go Off once the temperature drops and the operator can resume cutting.
- Air Pressure range has been internally adjusted to 80 PSI. If the input air pressure is less than 35 PSI, the pressure switch will detect the air pressure is not enough and it will SHUT OFF the machine and FAULT LED on the front panel will turn ON.
- The built-in fan is very important in enabling the machine to have effective cooling. The operator should make sure that the louvers are not blocked. The minimum distance between the machine and nearby objects should be 25 cm / 10 inches.

CUTTING TIPS

- It is recommended not to ignite the arc in the air if not necessary for it will shorten the lifespan of the electrode and nozzle of the torch.
- It is recommended to initiate the cutting from the edge of workpiece, unless piercing is needed.
- Ensure spatters / sparks fly from the bottom of workpiece while cutting. If spatters / sparks fly from the top of workpiece, it indicates that the workpiece is not being fully cut: the cutting torch is moved too fast, the cutting current is too low or the material thickness exceeds the cutting rating of the machine.
- For cutting round workpiece or to meet precise cutting requirement use a cutting template to guide the torch.
- It is recommended to pull the cutting torch while cutting not pushing it across the material.
- The most suitable distance from nozzle to the workpiece should be approximately 2mm in order to ensure a clean cut of the material.

CONNECTION OF THE PLASMA TORCH AND GROUND CABLE

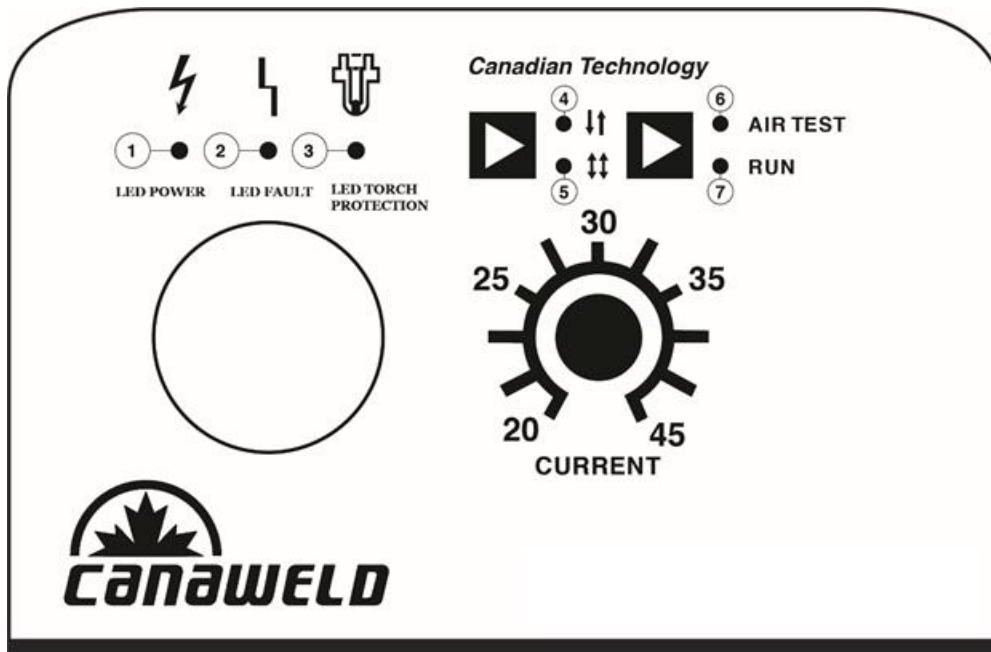
- Connection of cutting torch: Connect the center plug on the cutting torch to the center socket of the power supply, and tighten it clockwise to avoid gas leakage.

- Connection of earth cable: Insert the quick plug on the ground cable into the output terminal “+” on the front panel of the machine, and tighten it clockwise.

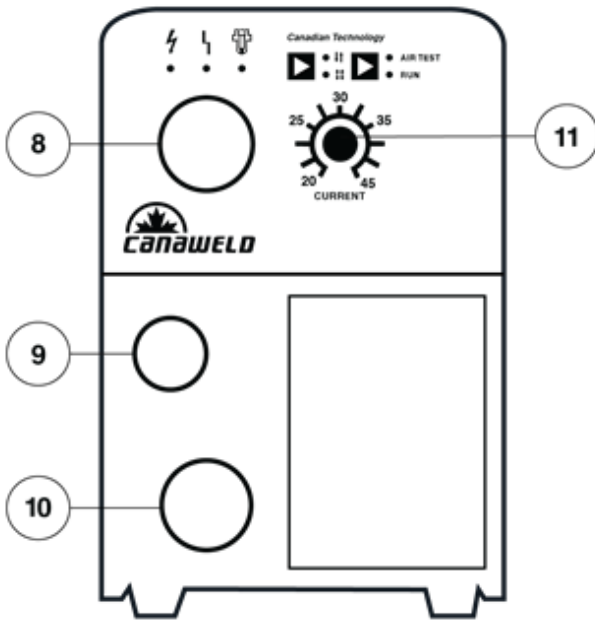
INTERNAL AIR PRESSURE REDUCER VALVE

The internal filter & reducer valve is factory set when leaving factory, operators do not need to set it themselves.

Control panel



1. POWER Indicator LED
2. TEMPERATURE indicator LED OVERHEAT
3. TORCH MALFUNCTION Indicator LED
4. 2 – Step Mode LED indicator
5. 4 – Step Mode LED indicator
6. AIR TEST Indicator LED
7. CUTTING MODE indicator LED



8. Gauge

9. Ground Connection

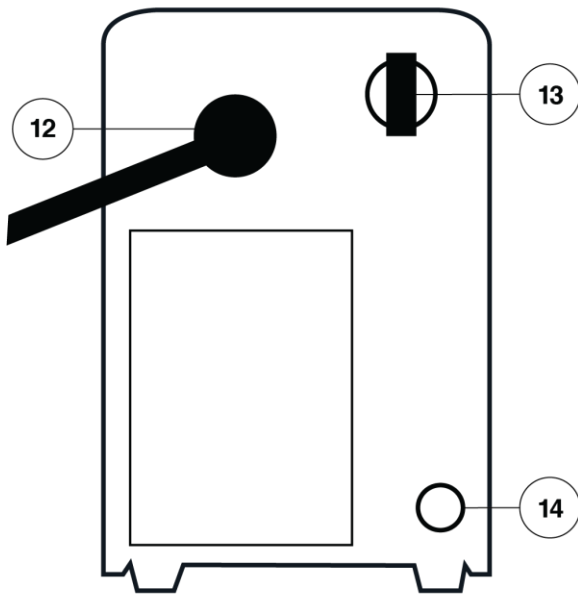
10. Torch Central Connector

11. Amperage Adjustment

12. Input Cable

13. ON/OFF Switch

14. Air/Gas Inlet port



SECTION 4 - MAINTENANCE

WARNING: Always disconnect the machine power source before doing any maintenance to avoid personal injury accidents such as electric shock and burns.


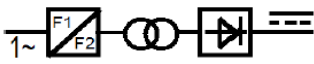




TIPS

- Inspect plasma torch tip consumables before using the machine each time to ensure proper function of the machine, replace worn / damaged parts as necessary.
- Inspect all hoses and cables to insure not cracks / worn areas are present.
- Insure clear working area around machine, consistent airflow through the machine is critical to ensure the machine will not over heat – this reduces the machines life.
- The temperature of the working environment should be between -10°C and 40°C.

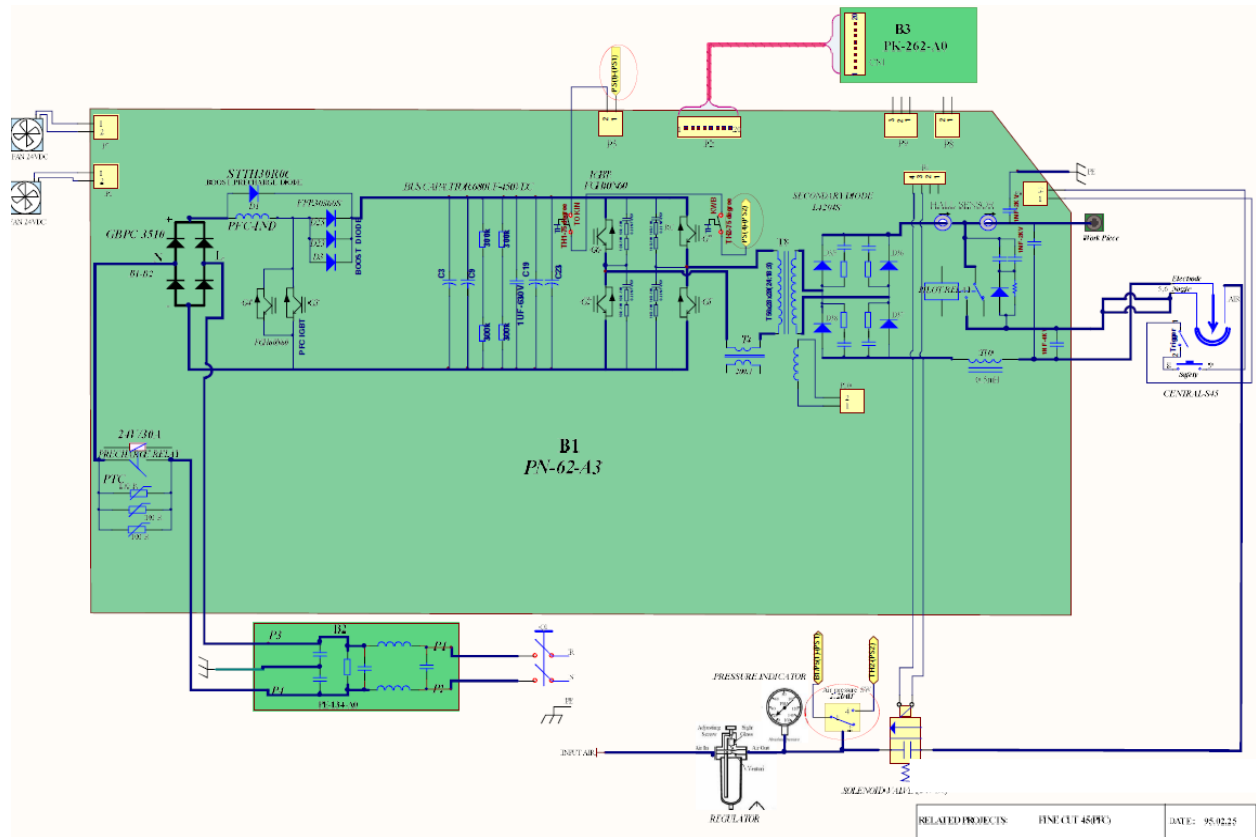
BASIC TROUBLESHOOTING

PROBLEM	POSSIBLE REASON	SOLUTION
The workpiece is not cut fully.	The cutting current is too low. The cutting speed is too high. The workpiece is too thick.	Increase the current. Decrease the cutting speed. Check that the thickness of your workpiece is not thicker than recommended cutting thickness.
When the machine is switched on and the power indicator illuminates, the control keys do not function, and there is no response when pushing the torch trigger.	Computer error has occurred.	Restart the machine.
When the machine is switched on and the power indicator illuminates, the control keys work normally, but there is no response when pushing the torch trigger.	If the LEDs on the main board are on, then the control PCB is malfunctioning	Control Board needs to be replaced – contact your dealer / service provider.
Pilot Arc does not ignite.	The air pressure is not correct (high / low)	Inspect air source and adjust according.

SECTION 5 - ELECTRICAL SPECIFICATIONS, DIMENSIONS & WEIGHT

CANAWELD Inc. 155 Drumlin Circle , unit 1 , Vaughan , ON , Canada Made in Canada									
TYPE : PLASMA CUT 45 D			Serial No:						
			IEC 60974-1						
Cutting output									
		230 V(-15%,+10%)				120 V(-15%,+10%)			
		20A/88V to 45A/ 98V				20A/88V to 30A/92V			
	U0 = 290 v	X40°C	30%	60%	100%	X40°C	—	80%	100%
		I2(A)	45	35	30	I2(A)	—	30	25
	U2(V)	26.4	25.2	24.6	U2(V)	—	92	90	
	1~50/60HZ		I1max=23 A , I1eff=15A			I1max=30.5 A , I1eff=23A			

Schematic Diagram



SECTION 6 - SPARE PARTS

Name	Part Number
Cable	CGB0380655
Gage	TGJ1050231
Rubber Feet	CGA6380191
Hose	CGA7080130
Gas connector/Air Faucet	CGA3180617
Quick Connector (Male)	CGA3180116
Solenoid Valve	CGB1096503
Filter Regulator	CGB1080228
Mother Board Package	CGC9180638
Gas Fitting T-Shaped (MALE)	CGA3180561
Gas Fitting T-Shaped (FEMALE)	CGA3180562
Gas Fitting L- Shaped	CGA3180563
Gas Fitting Male	CGA3180564

SECTION 7 – WARRANTY AND SERVICE

STATEMENT OF LIMITED WARRANTY:

Canaweld Inc. warrants to the end user (purchaser) of all new welding and cutting equipment, and accessories (the “Warranted Goods”) that such Warranted Goods will be free of defects in workmanship and material. This warranty is void if Canaweld Inc. or its Authorized Repair Centre finds that the equipment has been subjected to improper installation, improper care or abnormal operations. THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. All statutory warranties are excluded or limited to the maximum extent permitted by law.

WARRANTY PERIOD:

Canaweld Inc. will assume both the parts and labor expense of correcting defects during the warranty period. All warranty periods start from the date of purchase to the original end user provided that the original invoice evidencing the date of purchase is provided. In the event that the original invoice evidencing the date of purchase is not provided, then the warranty period shall start on the date of delivery to the dealer. The warranty period shall extend for three (3) years from the start of the warranty period.

CONDITIONS OF WARRANTY TO OBTAIN WARRANTY COVERAGE:

In order for any repair and/or replacement services of Warranted Goods to be covered pursuant to this warranty, such service must be performed by an Authorized Repair Centre. For assistance in locating an Authorized Repair Centre go to www.canaweld.com. Final determination of warranty on Warranted Goods will be made by Canaweld Inc.

Purchaser must present copy of a copy of the original proof of purchase, i.e. receipt/invoice, to be mailed in along with the completed Warranty/Product Registration form.

Mail the warranty/product registration form and proof of purchase to:

Canaweld Inc.

Attn: Warranty Department
155 Drumlin Circle, Unit 1
Vaughan, Ontario, Canada L4K 3E7

WARRANTY REPAIR:

If the Authorized Repair Centre confirms the existence of a defect covered by this warranty, the defect will be corrected by repair or replacement at Canaweld Inc.’s option. At Canaweld Inc.’s request, the Authorized Repair Centre will return to Canaweld Inc. any equipment/accessories claimed defective under Canaweld Inc.’s warranty. By submitting Warranted Goods to an Authorized Repair Centre, the purchaser confirms that the Authorized Repair Centre is authorized to deliver the Warranted Goods to Canaweld Inc. Repair or replacement is the sole and exclusive remedy available under this limited warranty.

FREIGHT COSTS:

The purchaser is responsible for shipment to and from the Authorized Repair Centre.

WARRANTY LIMITATIONS:

Canaweld Inc. will not accept responsibility or liability for

- repairs made outside of an Authorized Repair Centre;
- failures resulting from any improper use or installation;
- failures resulting from attachments, accessory items and parts not sold or approved by Canaweld Inc.;
- failures resulting from purchaser's delay in delivering the Warranted Goods to an Authorized Repair Centre after being notified of a potential problem with the Warranted Goods;
- damage resulting from normal wear and tear; and
- repairs or replacement of any parts reasonably considered to be consumables, including but not limited to the following TIG torch components: (i) collet and collet body, (ii) gas nozzles, (iii) gas cups, (iv) insulators, (v) back cups, and (vi) gas lenses, and to the following MIG/MAG torch components (vii) gas nozzles, (viii) tips, (ix) gas lenses, (x) liners, and (xi) drive wheels.

Canaweld Inc.'s liability under this warranty shall not exceed the cost of correcting the defect of the Warranted Goods or the cost of replacing them, whichever is less.

Canaweld Inc. will not be liable under this warranty for any loss suffered by the purchaser which:

- in any manner relates to a loss of revenue, profits, opportunity or production, loss or denial of use of any equipment or facility, increased expense of operation, economic loss, loss of goodwill or reputation, delay, business interruption or the cost of repair to or replacement of equipment, facilities or goods and related third party services; or
- in any manner can be construed as indirect, incidental, special, punitive or consequential losses or damages;

This warranty and the rights granted herein are non-transferrable.

This warranty gives the purchaser specific legal rights. The purchaser may also have other rights which vary from country to country.

For Purchasers in Quebec: The parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intents à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.



155 Drumlin Circle, Unit 1
Vaughan, Ontario, Canada, L4K 3E7
T: 416-548-5650 F:416-548-5651
www.canaweld.com
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