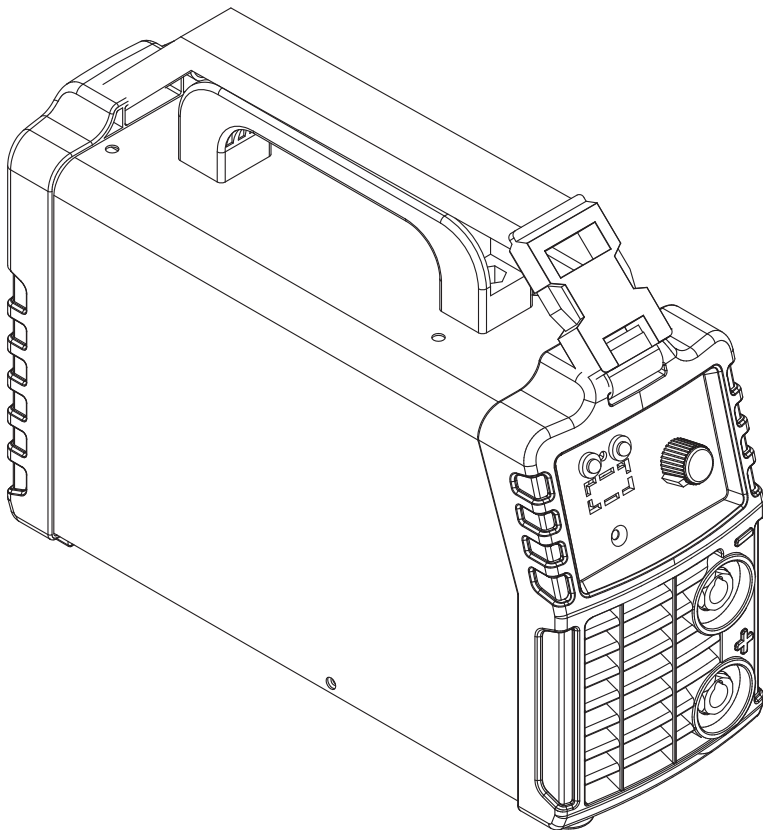


model no. 058-9862-8

Mastercraft[®]

ARC STICK WELDER



IMPORTANT:

Please read this manual carefully before using this arc welder and save it for reference.

**INSTRUCTION
MANUAL**

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NOTE:

If any parts are missing or damaged, or if you have any questions, please call our toll-free helpline at 1-800-689-9928.

**SAVE THESE INSTRUCTIONS**

This manual contains important safety and operating instructions. Read all instructions and follow them when using this product.
Conforms to the standard of CAN ICES-1/NMB-1.

SPECIFICATIONS

Model number	058-9862-8
Power	120 V, 50/60 Hz, 1 Phase
Voltage	70 V (no load)
Output current	20–75 A
Duty cycle	40% at 75 A
Electrodes used	1/16, 5/64, 3/32", (1.6, 2, 2.4 mm)
Dimensions (L x W x H)	12 3/8 x 4 x 6 15/16" (31.5 x 10.2 x 17.6 cm)
Weight	6 lb 10 oz (3 kg)

SAFETY GUIDELINES

Please read and save these instructions. Read through this owner's manual carefully before using product. Protect yourself and others by observing all safety information, warnings, and cautions.

1. Keep the environment you will be welding in free from flammable materials.
2. Always keep a fire extinguisher accessible to your welding environment.
3. Always have a qualified person install and operate this equipment.
4. Make sure the area is clean, dry and ventilated. Do not operate the welder in humid, wet or poorly ventilated areas.
5. Always have your welder maintained by a qualified technician in accordance with local, provincial and national codes.
6. Always be aware of your work environment. Be sure to keep other people, especially children, away from you while welding.
7. Check all components to ensure they are clean and in good operating condition before use.
8. Do not operate the welder if the output cable, electrode, or any part of the system is wet.
9. Do not immerse them in water.
10. Do not allow any body part to come in contact with the electrode if you are in contact with the material being welded, ground or electrode from another welder.
11. Do not weld if you are in an awkward position. Always have a secure stance while welding to prevent accidents. Wear a safety harness if working above ground.
12. Do not drape cables over or around your body.
13. Wear a full-coverage helmet with shade (see ANSI Z87.1 safety standard) and safety glasses while welding.
14. Wear proper gloves and protective clothing to prevent your skin from being exposed to hot metals, UV and IR rays.
15. Do not overuse or overheat your welder. Allow proper cooling time between duty cycles.
16. Always use this welder in the rated duty cycle to prevent excessive heat and failure.
17. Do not attempt to repair or maintain the welder while the power is on.
18. Do not touch the electrode and the ground or grounded work piece at the same time.
19. Do not use a welder to thaw frozen pipes.

WARNING!

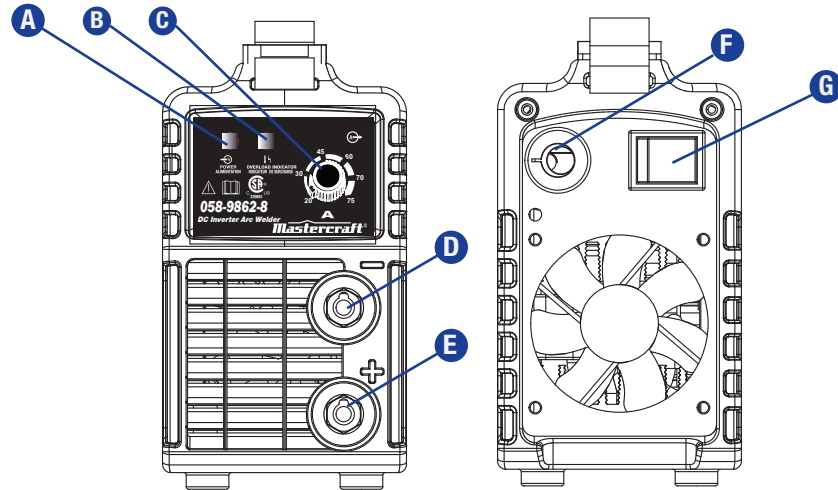
Read all safety warnings and instructions before attempting to install or operate this product. Failure to follow the warnings and instructions may result in personal injury and property damage.

**CAUTION!**

The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

KEY PARTS DIAGRAM

No.	Description
A	Power
B	Alarm
C	Current adjustment
D	Ground cable and clamp
E	Welding cable and electrode holder
F	Input power
G	ON/OFF switch



PACKAGE CONTENTS

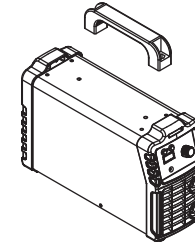
- 1 Remove cartons, bags or foam containing the welder and accessories.
- 2 Check the contents with the packing list below.

No.	ITEM	QTY.
1	ARC welder	1 unit
2	Handle	1 pc
3	5' (1.5 m) Removable ground cable	1 pc
4	8' (2.4 m) Removable welding cable	1 pc
5	Belt	1 pc
6	Operator's manual	1 pc

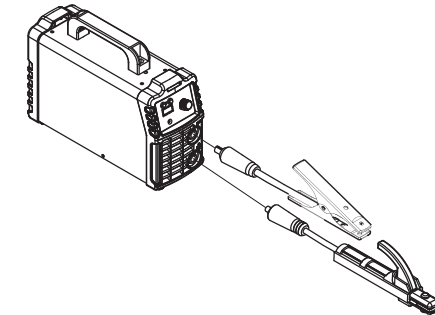
ASSEMBLY

Tools required for assembly: 5 mm Screwdriver.

1. Lay the machine side panel on a flat surface. Install the handle on the top using two sets of screws. See following image.



2. Connect the welding cable and ground cable as shown below: welding cable connected to anode and ground cable connected to cathode.



3. Instructions for carry strap installation:

<p>step 1 Get the strap through the buckle.</p> <p>Leave 165 mm on each end.</p> <p>Put the shoulder pad in the middle of the strap.</p>	<p>step 3 Pull the two ends through the buckle.</p>	<p>step 4 Pull the strap tight until it becomes locked by the buckle.</p>
<p>step 2 Install the strap onto the machine.</p>		

OPERATING INSTRUCTIONS

ELECTRODE SELECTION

The welding electrode is a rod coated with a layer of flux. When welding, electrical current flows between the electrode (rod) and the grounded metal workpiece. The intense heat of the arc between the rod and the grounded metal melts the electrode and the flux. The most popular electrodes are:

- E6011 60,000 PSI tensile strength for deep penetrating applications.
- E6013 60,000 PSI tensile strength used for poor fit-up applications.
- E7014 70,000 PSI tensile strength used for high deposition and fast travel speeds with light penetration.
- E7018 70,000 PSI tensile strength (not suitable for this welder).

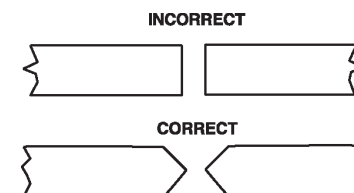
This welder is capable of welding with 1/16" (1.6 mm), and 5/64" (2 mm) and 3/32" (2.4 mm) electrodes.

WELDING POSITION

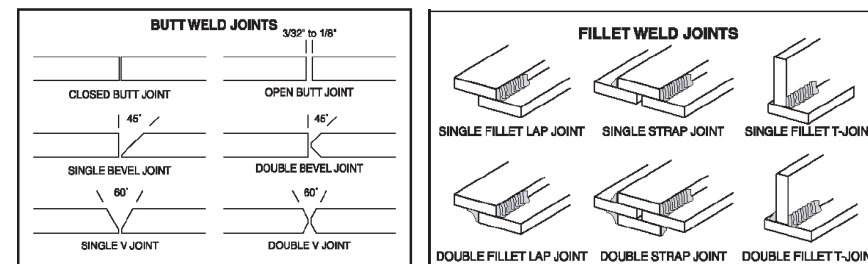
There are two basic positions for welding: flat and horizontal. Flat welding is generally easier, faster, and allows for better penetration. If possible, the workpiece should be positioned so that the bead will run on a flat surface.

PREPARING THE JOINT

Before welding, the surface of the workpiece must be free of dirt, rust, scale, oil or paint, which create a brittle and porous weld. If the base metal pieces to be joined are thick or heavy, it may be necessary to bevel the edges with a metal grinder. The correct bevel should be around 60 degrees. See following picture:



Based on different welding positions, there are different welding joints; see following images for more information:

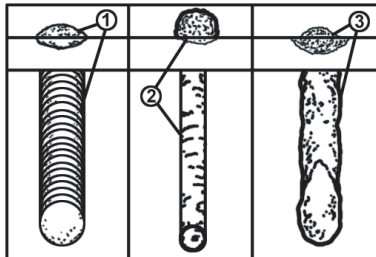


GROUND CLAMP CONNECTION

Clear any dirt, rust, scale, oil or paint on the ground clamp. Make certain you have a good solid ground connection. A poor connection at the ground clamp will waste power and heat. Make sure the ground clamp touches the metal.

SELECTING THE PROPER ELECTRODE

There is no golden rule that determines the exact rod or heat setting required for every situation. The type and thickness of metal and the position of the workpiece determine the electrode type and the amount of heat needed in the welding process. Heavier and thicker metals require more amperage. It is best to practice your welds on scrap metal which matches the metal you intend to work with to determine correct heat setting and electrode choice. See the following troubleshooting tips to determine if you are using the correct electrode.



① When the proper rod is used:

- The bead will lay smoothly over the work without ragged edges.
- The base metal puddle will be as deep as the bead that rises above it.
- The welding operation will make a crackling sound similar to the sound of eggs frying.

② When a rod too small is used:

- The bead will be high and irregular.
- The arc will be difficult to maintain.

③ When the rod is too large:

- The arc will burn through light metals.
- The bead will undercut the work.
- The bead will be flat and porous.
- The rod may freeze or stick to the workpiece.

1. Setting the amperage control

The welder has an infinite output current control. It is capable of welding with 1/16, 5/64, 3/32, 1/8, and 5/32" electrodes.

There is no golden rule that determines the exact amperage required for every situation. It is best to test your welds on scrap metal which matches the metals you intend to work with to determine correct setting for your job. The electrode type and the thickness of the workpiece metal determine the amount of heat needed in the welding process. Heavier and thicker metals require more voltage (amperage), whereas lighter and thinner metals require less voltage (amperage).

2. Welding techniques

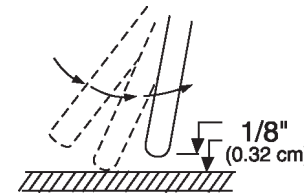
The best way to teach yourself how to weld is with short periods of practice at regular intervals. All practice welds should be done on scrap metal that can be discarded. Do not attempt to make any repairs on valuable equipment until you have satisfied yourself that your practice welds are of good appearance and free of slag or gas inclusions.

2.1 Holding the electrode

The best way to grip the electrode holder is the way that feels most comfortable to you. To position the electrode to the workpiece when striking the initial arc it may be necessary to hold the electrode perpendicular to the workpiece. Once the arc is started the angle of the electrode in relation to the workpiece should be between 10 and 30 degrees. This will allow for good penetration, with minimal spatter.

2.2 Striking the arc

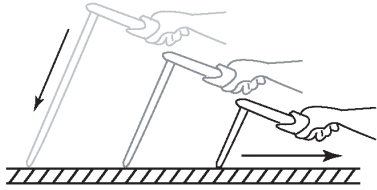
Scratch the work piece with the end of the electrode to start an arc and then raise it quickly to about a 1/8" gap between the rod and the workpiece. See the following picture:



WARNING!

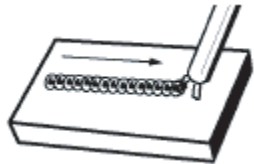
Rate of travel over the work also affects the weld. To ensure proper penetration and enough deposit of rod, the arc must be moved slowly and evenly along the weld seam. THIS WELDING MACHINE MUST BE CONNECTED TO POWER SOURCE IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODES.

It is important that the gap be maintained during the welding process and it should be neither too wide nor too narrow. If too narrow, the rod will stick to the workpiece. If too wide, the arc will be extinguished. It needs much practice to maintain the gap. Beginners may usually get sticking or arc extinguishing. When the rod sticks to the workpiece, gently rock it back and forth to make it release. If not, the circuit will be shorted, and it will overload the welder. A good arc is accompanied by a crisp, crackling sound. The sound is similar to that made by eggs frying. To lay a weld bead, only 2 movements are required; downward and in the direction the weld is to be laid, as in the following figure:

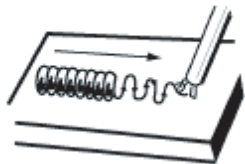


2.3 Types of weld bead

The following paragraphs discuss the most commonly used arc welding beads. The stringer bead is formed by travelling with the electrode in a straight line while keeping it centred over the weld joint.

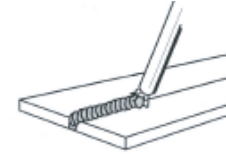


The weave bead is used when you want to deposit metal over a wider space than would be possible with a stringer bead. It is made by weaving from side to side while moving with the electrode. It is best to hesitate momentarily at each side before weaving back the other way to improve penetration.

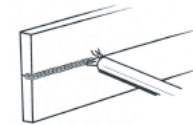


2.4 Welding position

The flat position is the easiest of the welding positions and is most commonly used. It is best if you can weld in the flat position if at all possible as good results are easier to achieve.

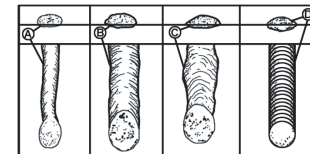


The horizontal position is performed very much the same as the flat weld except that the angle is different such that the electrode, and therefore the arc force, is directed more toward the metal above the weld joint. This more direct angle helps prevent the weld puddle from running downward while still allowing slow enough travel speed to achieve good penetration. A good starting point for your electrode angle is about 30 degrees DOWN from being perpendicular to the workpiece.



2.5 Judge a good weld bead

When the trick of establishing and holding an arc has been learned, the next step is learning how to run a good bead. The first attempts in practice will probably fall short of acceptable weld beads. Too long an arc will be held or the travel speed will vary from slow to fast. See the following picture:



- A. Weld speed is too fast.
- B. Weld speed is too slow.
- C. Arc is too long.
- D. Ideal weld.

A solid weld bead requires that the electrode be moved slowly and steadily along the weld seam. Moving the electrode rapidly or erratically will prevent proper fusion or create a lumpy, uneven bead. To prevent ELECTRIC SHOCK, do not perform any welding while standing, kneeling, or lying directly on the grounded work.

2.6 Finish the bead

As the coating on the outside of the electrode burns off, it forms an envelope of protective gasses around the weld. This prevents air from reaching the molten metal and creates an undesirable chemical reaction. The burning coating, however, forms slag. The slag formation appears as an accumulation of dirty metal scale on the finished weld. Slag should be removed by striking the weld with a chipping hammer. The intense heat produced at the arc sets up strains in the metals joined by welding. Peening the weld not only removes the scale left behind in the welding but relieves the internal strains developed by the heating and cooling process. Use a hammer or brush after the workpiece has cooled.

MAINTENANCE

The welder needs regular maintenance:

- Periodically clean dust, dirt, grease, etc., from your welder. Every six months, or as necessary, remove the cover panel from the welder and air-blow any dust and dirt that may have accumulated inside the welder.
- Replace power cord, ground cable, ground clamp, or electrode assembly when damaged or worn.
- Store in a clean, dry facility, free from corrosive gas, excess dust and high humidity. Store in a temperature range from -12 to 49°C (10 to 120°F) and relative humidity not more than 90%.
- When transporting or storing the welder after use, it is recommended to repack the product as it was received for protection. Cleaning is required before storage and you must seal the plastic bag in the box for storage.



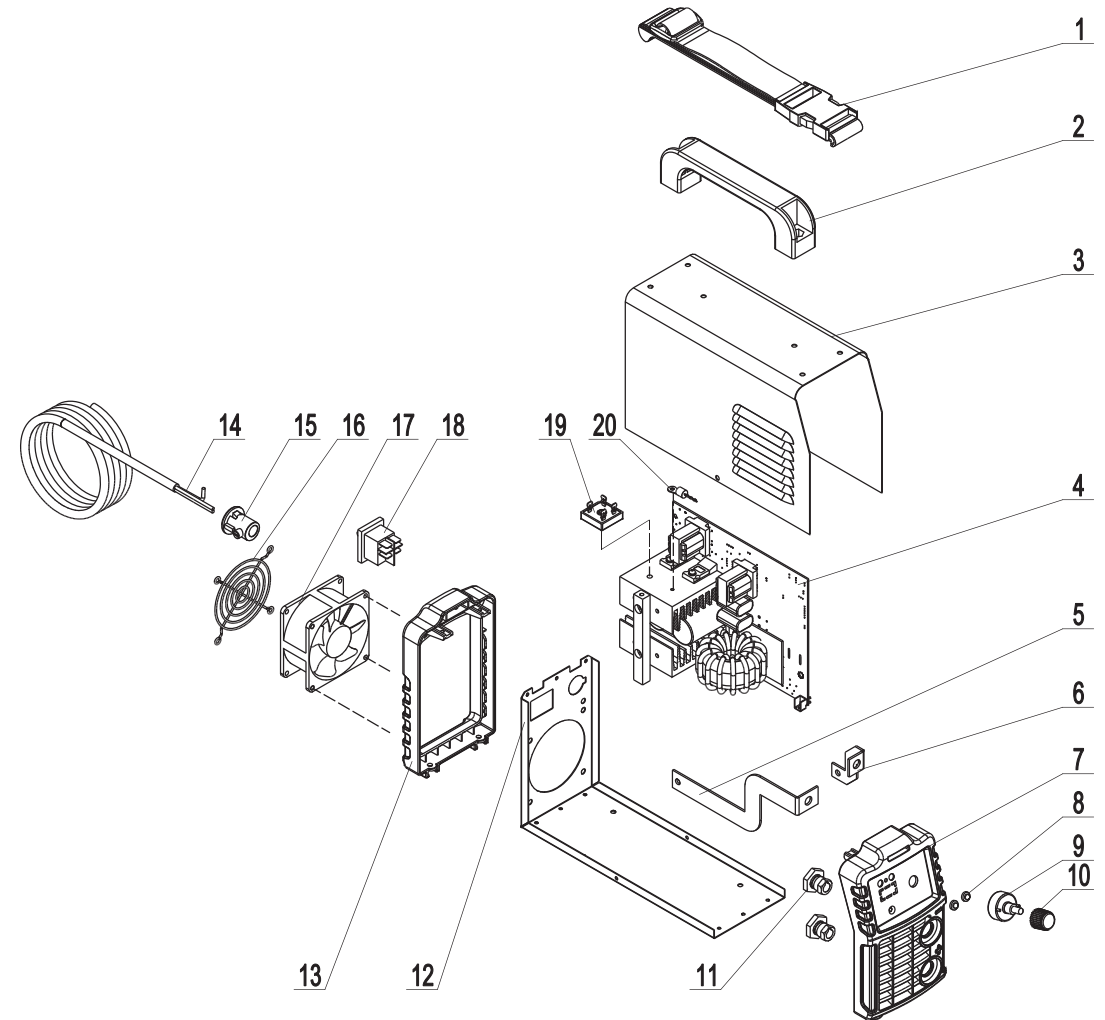
WARNING!

- Always wear qualified safety goggles and full face shield when using the welder.

TROUBLESHOOTING

Problem	Possible Cause	Corrective Action
Welder does not work when the main switch is turned on.	<ol style="list-style-type: none"> 1. No power input. 2. The power cord or power plug is broken. 3. Main switch is broken. 	<ol style="list-style-type: none"> 1. Check circuit breaker or fuse in power source. 2. Replace power cord. 3. Replace switch.
Does not weld.	<ol style="list-style-type: none"> 1. Incorrect power input. 2. Inadequate current at output. 3. Poor connection of output cable. 4. Dirty surfaces. 5. Wrong welding wire. 	<ol style="list-style-type: none"> 1. Check the power source. 2. Check for proper grounding to the workpiece. 3. Check output connection. 4. Clean surfaces. 5. Use correct wire.
Blows fuse.	Wrong fuse in power supply.	Check the fuse in power source. It should be a 25 A fuse.
Arc is hard to start.	<ol style="list-style-type: none"> 1. The wrong electrode. 2. Base metal not grounded properly. 	<ol style="list-style-type: none"> 1. Use recommended electrode. 2. Make sure there is a good ground connection.
Welding bead too thin.	The welding speed is too fast.	Slow down the welding speed.
Welding bead too thick.	The welding speed too slow.	Speed up the welding speed.
Electrode sticks to work piece.	Electrode is in contact with the work piece too long when starting arc.	After the arc has started, move the electrode away from the workpiece immediately.
Poor welding performance; spatter.	<ol style="list-style-type: none"> 1. Damp electrode. 2. Wrong type electrode. 	<ol style="list-style-type: none"> 1. Use dry one. 2. Use correct one.
Others.		Contact us.

EXPLODED VIEW



TROUBLESHOOTING

EXPLODED VIEW

PARTS LIST

No.	Description	Qty.	No.	Description	Qty.
1	Belt	1	16	Fan cover	1
2	Handle	1	17	Fan harness	1
3	Outer case	1	18	Rocker switch	1
4	Main control board	1	19	Single phase rectifier bridge	1
5	Busbar 1	1	20	NTC resistance harness	1
6	Busbar 2	1			
7	Plastic front panel	1			
8	LED Mount	2			
9	Potentiometer harness	1			
10	Potentiometer knob	1			
11	European fast socket	2			
12	Back panel	1			
13	Plastic frame	1			
14	Power input harness	1			
15	Cable clamp	1			

3-Year Limited Warranty

This Mastercraft product is guaranteed for a period of **three (3) years** from the date of original retail purchase, against defects in materials and workmanship.

Subject to the conditions and limitations described below, this product, if returned to us with proof of purchase within the stated warranty period and if covered under this warranty, will be repaired or replaced (with the same model, or one of equal value or specification), at our option. We will bear the cost of any repair or replacement and any costs of labour relating thereto.

This warranty is subject to the following conditions and limitations:

- a bill of sale verifying the purchase and purchase date must be provided;
- this warranty will not apply to any product or part thereof which is worn or broken or which has become inoperative due to abuse, misuse, accidental damage, neglect or lack of proper installation, operation or maintenance (as outlined in the applicable owner's manual or operating instructions) or which is being used for industrial, professional, commercial or rental purposes;
- this warranty will not apply to normal wear and tear or to expendable parts or accessories that may be supplied with the product which are expected to become inoperative or unusable after a reasonable period of use;
- this warranty will not apply to routine maintenance and consumable items such as, but not limited to, fuel, lubricants, vacuum bags, blades, belts, sandpaper, bits, fluids, tune-ups or adjustments;
- this warranty will not apply where damage is caused by repairs made or attempted by others (i.e., persons not authorized by the manufacturer);
- this warranty will not apply to any product that was sold to the original purchaser as a reconditioned or refurbished product (unless otherwise specified in writing);
- this warranty will not apply to any product or part thereof if any part from another manufacturer is installed therein or any repairs or alterations have been made or attempted by unauthorized persons;
- this warranty will not apply to normal deterioration of the exterior finish, such as, but not limited to, scratches, dents, paint chips, or to any corrosion or discolouring by heat, abrasive and chemical cleaners;
- this warranty will not apply to component parts sold by and identified as the product of another company, which shall be covered under the product manufacturer's warranty, if any.

**WARNING!**

If any part is missing or damaged, do not use the product until the missing or damaged part has been replaced.

NOTE:

The manufacturer and/or distributor has provided the parts list and assembly diagram in this manual as a reference tool only. Neither the manufacturer nor distributor makes any representation or warranty of any kind to the buyer that he or she is qualified to make any repairs to the product, or that he or she is qualified to replace any parts of the product. In fact, the manufacturer and/or distributor expressly states that all repairs and parts replacements should be undertaken by certified and licensed technicians, and not by the buyer. The buyer assumes all risk and liability arising out of his or her repairs to the original product or replacement parts thereto, or arising out of his or her installation of replacement parts thereto.

Additional Limitations

This warranty applies only to the original purchaser and may not be transferred. Neither the retailer nor the manufacturer shall be liable for any other expense, loss or damage, including, without limitation, any indirect, incidental, consequential or exemplary damages arising in connection with the sale, use or inability to use this product.

Notice to Consumer

This warranty gives you specific legal rights, and you may have other rights, which may vary from province to province. The provisions contained in this warranty are not intended to limit, modify, take away from, disclaim or exclude any statutory warranties set forth in any applicable provincial or federal legislation.

Made in China

Imported by

Mastercraft Canada Toronto, Canada M4S 2B8