

EN

Original Instructions
Version 2

DRAPER[®]
Expert

PLASMA CUTTERS

70058, 70066



UK
CA CE

1. Preface

These are the original product instructions. This document is part of the product; retain it for the life of the product, passing it on to subsequent holders. Read this manual in full before attempting to assemble, operate or maintain this product.

This Draper Tools manual describes the purpose of the product and contains all the necessary information to ensure its correct and safe use. Following all the instructions and guidance in this manual will ensure the safety of both the product and the operator and increase the lifespan of the product.

All photographs and drawings within this manual are supplied by Draper Tools to help illustrate correct operation of the product.

Every effort has been made to ensure the information contained in this manual is accurate. However, Draper Tools reserves the right to amend this document without prior warning. Always use the latest version of the product manual.

1.1 Product Reference

User Manual for: High-Frequency Plasma Cutter (60A, 40A)

Stock No: 70058, 70066

Part No: IPC60, IPC40

1.2 Revisions

Version 1: February 2021
First release

Version 2: September 2023
General formatting and content updates

As our manuals are continually updated, always ensure that the latest version is used.

Please visit drapertools.com/manuals for the latest version of this manual and the associated parts list, if applicable.

1.3 Understanding the Safety Content of This Manual



WARNING! – Situations or actions that may result in personal injury or death.



CAUTION! – Situations or actions that may result in damage to the product or surroundings.

Important: – Information or instructions of particular importance.

1.4 Copyright © Notice

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3. Product Introduction

3.1 Intended Use

This machine is designed for cutting ferrous metals using plasma (gas under intense heat) and features inverter technology to produce a stable current and reduce the weight of the machine. Any other application beyond the conditions established for use will be considered misuse. Draper Tools accepts no responsibility for improper use of this product.

Part of our Expert range, this product is intended for frequent trade use, with the quality and features to meet and exceed expectations of the most demanding user.



WARNING! This product is not a toy and must be respected.

Read this manual in full before attempting to assemble, operate or maintain the product and retain it for later use.

Important: Local regulations may restrict the age of the operator.

3.2 Specification

| | | |
|---------------------------|-------------------------|-------------------------|
| Stock No. | 70058 | 70066 |
| Part No. | IPC60 | IPC40 |
| Rated voltage | 220–240V AC | 220–240V AC |
| Input current | 32A | 32A |
| Current range | 20–60A | 20–40A |
| Gas type | Compressed air | Compressed air |
| Working air pressure | 4–5bar (58–72.5psi) | 4–5bar (58–72.5psi) |
| Air flow rate | 250L/min (8.8cfm) | 170L/min (6.0cfm) |
| Cutting thickness | 1–15mm | 1–12mm |
| Ingress protection | IP21S | IP21S |
| Cooling | Air (fan) | Air (fan) |
| Insulation class | F | F |
| Radiation emissions class | A | A |
| Torch type | AG60, pilot arc | P-80, pilot arc |
| Duty cycle | | |
| 60% | At 60A | At 40A |
| 100% | At 40A | At 25A |
| Dimensions | W 210 x H 390 x D 530mm | W 160 x H 285 x D 426mm |
| Weight | | |
| Gross | 18.0kg | 10.0kg |
| Net | 17.2kg | 9.4kg |
| Machine only | 14.0kg | 7.2kg |

Important: This 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 in those locations, due to conducted as well as radiated disturbances.

Important: Read all the Health and Safety instructions before attempting to operate, maintain or repair this product. Non-compliance with these instructions may result in serious injury or damage to the user, the product or the workplace.

4.1 General Health and Safety Instructions

Work area safety

- Keep your work area clean, well-lit and well-ventilated.
- **DO NOT** operate this tool in explosive atmospheres or in the presence of flammable liquids, gases or dust.
- Keep children and bystanders at a safe distance and equipped with all necessary protective equipment.

Electrical safety

- Ensure that the plug fitted matches the outlet; never use adapter plugs with grounded tools.
- **NEVER** modify the plug in any way.
- Avoid earthing your body through contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.
- **DO NOT** expose this tool to rain or wet conditions.
- **DO NOT** abuse the cord and **NEVER** use the cord for carrying, pulling or unplugging the tool
- Keep the power cord away from heat, oil, sharp edges and moving parts.
- Use a residual current device (RCD) when operating this product.

Personal safety

- Use common sense and stay alert at all times; do not use this tool while you are tired or under the influence of drugs, alcohol or medication.
- **ALWAYS** wear appropriate eye protection and other protective equipment while using this tool.
- To prevent unintentional starting, ensure that the on/off switch is in the off position before connecting the tool to a power source or transporting the tool.
- Remove any adjusting tools before switching on the tool.

- Maintain proper footing and keep your balance at all times; **DO NOT** overreach.
- **DO NOT** wear loose clothing or jewellery and keep long hair tied back.
- Ensure the environment is suitably ventilated, using any ventilation equipment supplied or additional equipment.
- **DO NOT** allow familiarity gained from use of the tool to cause you to become complacent and ignore tool safety principles.

Power tool use and care

- **DO NOT** force the tool to perform beyond its capability or intended purpose; the correct tool will do the job better and safer at the rate for which it was designed.
- **DO NOT** use the power tool if the on/off switch does not operate correctly or reliably.
- Disconnect the tool from the power supply before making any adjustments, changing accessories or the tool.
- Store this tool out of the reach of children and do not allow anyone who is unfamiliar with the tool or these instructions to access or operate it.
- Maintain the tool appropriately, checking for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the operation of the tool.
- If the tool becomes damaged, **DO NOT** use it until it has been repaired by a qualified and authorised service agent.
- Use this tool and its accessories in accordance with these instructions with consideration for the working conditions and the work to be performed.
- Keep all handles and grasping surfaces dry, clean and free from oil and grease.

Service

- Have the tool serviced regularly by a qualified and authorised service agent.

4. Health and Safety Information

4.2 Additional Safety Instructions for this Machine

Important: This manual is **NOT** a comprehensive cutting guide. An understanding of this manual alone is not sufficient to safely operate this machine. All operators and bystanders **MUST** be fully trained in the safe use of this product, the processes involved in cutting operations and any relevant emergency procedures.

Installation and Atmospheric Considerations

- This machine **MUST** be fitted with a suitable 32A plug by a qualified electrician before use.
- **ALWAYS** ensure adequate space around the machine during operation to allow the unit to ventilate and cool correctly.
- **NEVER** cover the unit or obstruct the ventilation openings during use.
- Avoid using this machine on tilted surfaces and take precautions to prevent it from toppling during use.
- **DO NOT** use this product in adverse conditions, extreme temperatures, wet conditions, rain or snow and protect it from frost.
- Avoid using this product in windy conditions.
- **DO NOT** use this product in extreme conditions, such as extreme climates, freezer applications and strong magnetic fields.
- **NEVER** operate a welder in wet conditions and ensure that your body is **NOT** in contact with any wet surface without adequate protective measures in place.
- **DO NOT** use this product for operations that require special conditions, such as in potentially explosive atmospheres.
- **DO NOT** use this product for operations that require ingress protection greater than IPX0.
- Before operating the machine, clear the workspace of bright objects and reflective surfaces that may reflect radiation towards you or other susceptible objects.
- Fumes produced when cutting metals displace oxygen; use an appropriate fume extractor when operating in confined spaces.
- When working near pedestrians and traffic, use protective, non-reflective screens to prevent accidental arc glare.
- Ensure that the gas cylinders are positioned or secured in such a way that they cannot fall or be knocked over.

- Use this product **ONLY** in well-ventilated locations and ensure that gas is not permitted to build up in confined spaces.



WARNING! By-products of cutting operations can react with other chemical vapours to produce a toxic or explosive environment. ALWAYS ensure that the work environment is well-ventilated and free from potentially hazardous substances.



WARNING! Gases and fumes produced by cutting processes are dangerous to health and MUST NOT be inhaled; seek medical advice immediately if you begin to feel unwell. Fume types may vary according to the workpiece material. Ensure the workpiece is uncoated and clean before cutting.

Correct Use

- **NEVER** direct the torch towards any person or animal.
- **NEVER** use this product to thaw frozen piping.
- After switching off the tool, allow at least five minutes for the capacitors to discharge before opening any panels or performing any maintenance.
- Ensure that all panels and covers are fitted securely before use.
- **NEVER** cut any object that currently or has previously contained flammable, pressurised or toxic materials, including gases or liquids.
- Avoid cutting zinc-plated and galvanised metals as they may produce toxic fumes.
- **NEVER** allow the tool cables to become entangled around your body or that of any bystander.
- Disconnect the tool from the power supply when it is not in use.
- **NEVER** allow any gas cylinders in the vicinity of the workpiece to become part of the cutting circuit.
- **ALWAYS** use the correct and most appropriate equipment for connecting the gas cylinders to the cutter.

Personal Protection

- **NEVER** work alone and ensure that someone is nearby to come to your assistance in the event of an emergency.
- **NEVER** look directly at the cutting arc unless you are wearing appropriate eye protection as the intense light may cause severe damage to eyes.


- Ensure that no one is looking directly at the cutting point before igniting the arc.
- Be wary of nearby reflective surfaces that may reflect light and radiation back towards you.

Important: Radiation may penetrate through lightweight clothing; ensure you are correctly dressed for the operation.

- Some cutting operations produce significant noise emissions; wear appropriate hearing protection.
- Draper Tools recommends wearing a respirator during operation to reduce the risk of exposure to toxic fumes and airborne byproducts of the operation.
- Button **all** collars and pockets to prevent sparks from entering.
- **DO NOT** operate the machine if the face guard is cracked or damaged.
- Wear isolating, heat-resistant gloves and footwear, a certified welding helmet with appropriate ocular protection filters, and long, flame-resistant sleeves and trousers to protect your skin from sparks and burns.
- Keep a fire extinguisher suitable for electrical fires nearby in case of emergencies.

Important: If you wear contact lenses, seek expert advice before operating this machine.

 **WARNING! NEVER support the cutting unit with your body during operation.**

 **WARNING! Ultraviolet and infrared radiation generated by plasma cutting is highly damaging to the human eye and skin. NEVER operate this equipment or position yourself in its vicinity without suitable protective equipment for your eyes, face and body.**

Handling Equipment and Workpieces

- Ensure that the workpiece is securely fixed to the worktop.


 **WARNING! NEVER hold the workpiece by hand when cutting.**


- Before operation, **ALWAYS** ensure that the workpiece is clean and not coated with paint or chemical agents; contaminated surfaces may release toxic fumes when subjected to intense heat.
- Avoid contacting the cutter unit while it is in use.

- **NEVER** touch the workpiece immediately after operation and **allow** all affected surfaces to cool thoroughly before handling them.
- Protect the cutter unit from shock, fumes, burns and arc rays.
- Gas cylinders must be kept in an upright position at all times during use and storage.
- Follow the manufacturer's information for the safe and correct handling, use and storage of gas cylinders.

Electrical Hazards

- **NEVER** touch the live electric parts of the tool.
- **NEVER** use electrode holders that show evidence of damage to or deterioration of the insulation.
- This product **MUST** be earthed; **ALWAYS** ensure that the earth clamp is suitably connected to a nearby bare-metal surface before switching the machine on.
- For protection, insulate the earth clamp when not in use.
- The operator **MUST** be separated from the floor by insulate material; use a dry insulation mat or other equipment as appropriate.

 **WARNING! Arcing operations generate a magnetic field that may interfere with pacemakers and other such equipment. Consult a qualified medical practitioner before using or working near welding equipment.**

 **WARNING! Stop operating IMMEDIATELY if you detect any electric shock from the machine. Switch the cutter off and have the issue investigated by a qualified professional before using it again.**

Maintenance

- **ALWAYS** switch off and disconnect the machine from the power supply before dismantling the plasma torch head.
- **NEVER** attempt to open or dismantle the sealed parts of the machine.

4. Health and Safety Information

4.3 Additional Safety Instructions for Cutting Operation

- Cutting and associated processes can cause fire and explosions; take all necessary precautions to prevent these hazards.
- **ALWAYS** ensure that the work area is clear of flammable materials and materials that may produce dangerous vapour before operating.
- Cutting operations can cause severe burns; keep your hands and body away from the cutting arc during use.
- Sparks and molten metal are produced during operation; wear heat-resistant clothing and take precautions to prevent fire igniting.

Important: Sparks can pass through gaps and fires may start out of sight. Flammables located in cabinets etc may not be safe.

- **NEVER** cut pressurised containers.
- **NEVER** cut tanks, drums or other vessels until they have been correctly cleaned and prepared for the operation.
- Place a thin piece of sheet metal onto the floor beneath the cutting area to protect the floor from damage from sparks.
- **NEVER** place your feet or any other object directly beneath or around the area being cut.
- **NEVER** use a cutting tip with a higher amperage than the rating of the cutter unit.




WARNING! NEVER direct the torch towards any part of your body or towards any other person. Keep your hands away from the torch tip while it is in use.

4.4 Additional Safety Instructions for Compressed Air



WARNING! Compressed air can cause severe injury.

- **ALWAYS** turn off and disconnect the air supply before making any adjustments or repairs to the product or leaving it unattended.
 - **NEVER** direct compressed air towards yourself or others.
 - Ensure that compressed air is not blocked by or in contact with any part of your body.
 - **ONLY** use clean, dry and regulated compressed air.
-  **WARNING! NEVER use oxygen, combustible gases or other bottled gases as a supply for this product. Use of these substances may cause the product to explode.**
- Ensure that cold compressed air is directed away from your hands.
 - Ensure that the product is compatible with the air supply before use.
 - Ensure all connections are securely tightened.
 - Where universal twist couplings (claw couplings) are used, lock pins must be installed and whipcheck safety cables must be used to safeguard against possible hose-to-tool or hose-and-hose failure.
 - **DO NOT** exceed the maximum stated air pressure.
 - The maximum pressure of the air line **MUST NOT** exceed the rated pressure of any connected tool by more than 10%.
 - **DO NOT** obstruct the ability of the trigger to release once depressed.
 - **NEVER** carry the tool by the air line.

4.5 Connection to the Power Supply



WARNING! Risk of electric shock.
DO NOT open this product.

This appliance is not supplied with a plug. For your safety, an approved plug rated 32A **MUST** be fitted by a qualified technician; see **6.1 Connecting a Plug**.

ALWAYS ensure that the fitted plug is suitable for the operation.

If the power supply cord is damaged, it must be replaced by Draper Tools, an authorised service agent or similarly qualified personnel in order to avoid a hazard.

The damaged or incomplete plug, when cut from the cable, shall be disabled to prevent connection to a live electrical outlet.

This is a Class I* product and is designed for connection to a power supply matching that detailed on the rating label and compatible with the plug fitted.

The fuse in the power supply for this product cannot be replaced. Contact Draper Tools for replacement options if the fuse in the supplied plug has blown.

If an extension lead is required, use an approved and compatible lead rated for this appliance.

Follow all the instructions supplied with the extension lead.

Important: Always follow the extension lead instructions regarding maximum load while the cable is wound. If in doubt, unwind the entire cable. A coiled extension lead generates heat which could melt the lead and cause a fire.

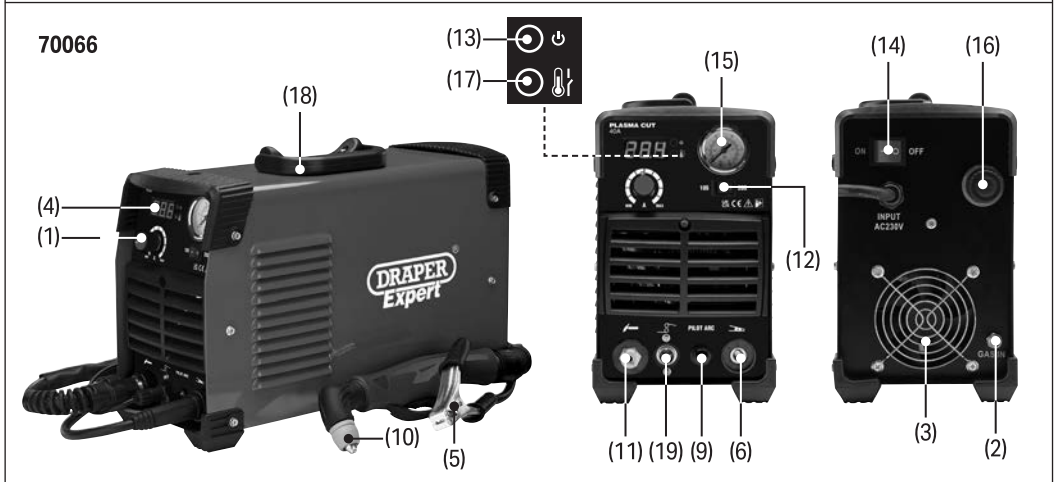
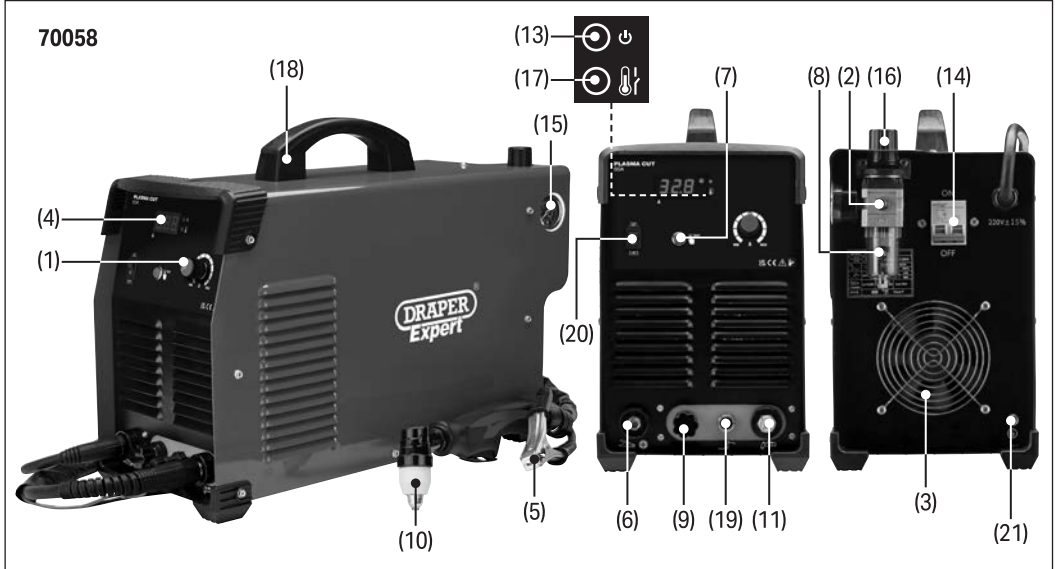
***Earthed:** This product requires an earth connection to protect against electric shock from accessible conductive parts in the event of a failure of the basic insulation.

4.6 Residual Risk

The safety instructions in this manual cannot account for all possible conditions and situations that may occur. Exercise common sense and caution when using this product and protect against any additional conceivable risks.

5. Identification and Unpacking

5.1 Product Overview



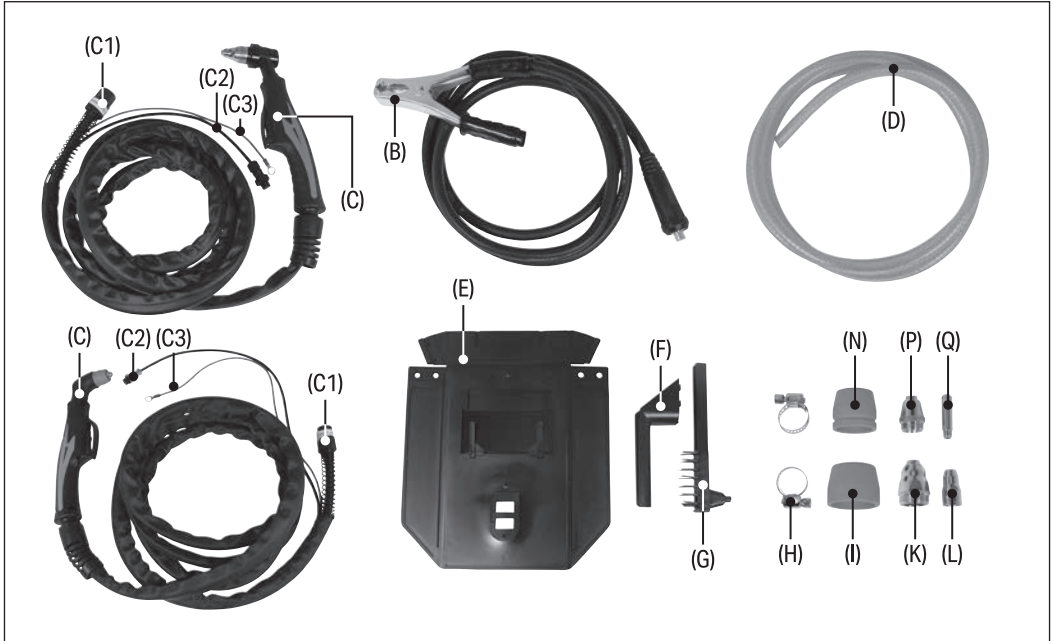
- | | | |
|---|---|---|
| (1) Amperage control dial | (9) Pilot arc connector | (16) Pressure regulator |
| (2) Compressed air inlet | (10) Plasma torch | (17) Thermal overload indicator |
| (3) Cooling fan | (11) Plasma torch connector port | (18) Transport handle |
| (4) Digital amperage display | (12) Post gas control switch (70066 only) | (19) Trigger connector port |
| (5) Earth clamp | (13) Power indicator | (20) Trigger mode control switch (70058 only) |
| (6) Earth clamp connector port | (14) Power switch | (21) Unit earth point (70058 only) |
| (7) Gas test button (70058 only) | (15) Pressure gauge | |
| (8) On-board moisture filter (70058 only) | | |

5.2 What's in the Box?

Carefully remove the product from the packaging and examine it for any signs of damage that may have occurred during shipment.

Before assembling the product, lay the contents out and check them against the parts shown below. If any part is damaged or missing, do not attempt to use the product.

Please contact the Draper Helpline; contact details can be found at the back of this manual.



- | | | |
|----------------------------------|---|------------------------------------|
| (A) 1 x Welding unit (not shown) | (G) 1 x Hammer and brush tool | <i>70066 only</i> |
| (B) 1 x Earth clamp and cable | (H) 2 x Screw clamps | (N) 1 x Spare shield cup |
| (C) 1 x Plasma torch | <i>70058 only</i> | (O) 1 x Standoff guide (not shown) |
| (C1) Torch connector | (I) 1 x Shield cup | (P) 1 x Spare tip |
| (C2) Trigger connector | (J) 1 x Roller standoff guide (not shown) | (Q) 1 x Spare electrode |
| (C3) Pilot arc cable contact | (K) 2 x Spare tips | |
| (D) 1 x Air supply hose | (L) 2 x Spare electrodes | |
| (E) 1 x Face guard plate | (M) 1 x Spanner tool (not shown) | |
| (F) 1 x Face guard handle | | |

5.3 Packaging


Keep the product packaging for the duration of the warranty period for reference should the product need to be returned for repair.

WARNING! Keep packaging materials out of reach of children. Dispose of packaging correctly and responsibly and in accordance with local regulations.

Please visit drapertools.com for our full range of accessories and consumables.

6. Preparation Instructions

Important: Before operating this product, read and understand all the safety instructions listed in this manual.

 **WARNING!** Ensure that the product is switched off and disconnected from the power supply before performing any preparation work or adjustments to the machine.

6.1 Connecting a Plug

Important: This product must be fitted with a 32A plug, rated for 220–240V, by a qualified electrician before it can be used. **DO NOT** attempt to use this product with a 13A plug.

6.2 Positioning the Machine

Position the machine near to the power supply and allow at least 50cm around all sides of the machine to ensure that the unit is sufficiently ventilated during operation. The cooling fan (3) at the back of the unit must particularly be kept clear.

Important: Ensure that there is no debris in the surrounding area that may be drawn into the fans during operation.

The machine should be positioned on a firm and level surface that is separate to the operating worktop.

Important: Ensure that there are no reflective surfaces around the unit and the worktop that may reflect light and radiation back towards you during operation.

6.3 Assembling the Face Guard

This machine is supplied with a rudimentary face guard. To assemble the face guard:

1. Ensure that the glass visor (22) is fitted.
2. Fold the face guard plate (E) so that the visor pins (23) are on the inside of the shield.

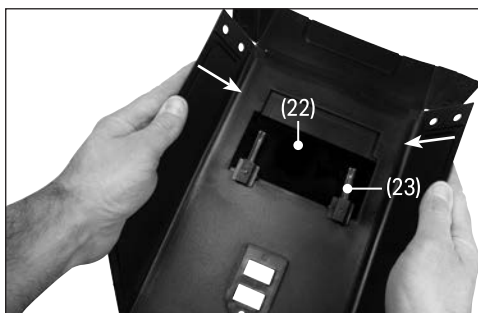


Fig. 1

3. Locate the four pins at the sides of the top panel into the holes on the side panels, ensuring it holds reliably.



Fig. 2

4. Insert the tabs of the face guard handle (F) into the slots on the outer face of the guard and push upwards to locate the locking pin into the aligning hole.



Fig. 3

During operation, hold the guard in front of your face to protect your eyes from light and spatter while the welder is switched on.

Important: ALWAYS ensure that the visor is secure in the viewing port before operating.

6. Preparation Instructions

6.4 Connecting the Air Supply

This product requires connection to a supply of compressed air in order to function. The air line pressure should be 4–5bar (58–72.5psi).

Important: Use **ONLY** clean compressed air to supply this product. **NEVER** supply the product with oxygen or any other gas.

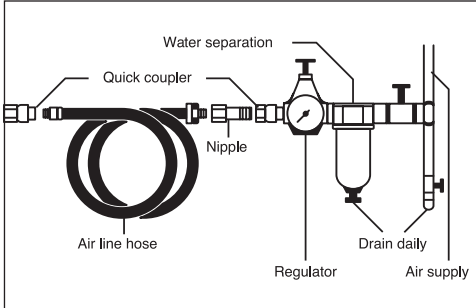


Fig. 4

The compressed air system must be controlled by a combination pressure regulator and in-line moisture filter. This will ensure a constant supply of dry air at all times, provided it is properly maintained.

Important: Always check the machine operating pressure before use.

Water in the compressor tank may cause considerable corrosion to air tools; the compressor should be drained daily to avoid excessive water in the air supply. Dirty or wet air can significantly shorten the lifespan of the product.

Important: Both Stock Nos. 70058 and 70066 feature an integrated pressure regulator and stock No. 70058 also features an integrated moisture filter. However, Draper Tools recommends that in-line pressure regulators and moisture filters are still used to ensure a controlled and clean supply of air to the tool.

CAUTION! DO NOT lubricate the air line when using plasma cutters. Ensure that any oil device has been removed and any residual oil purged from the system before connecting the machine.

To connect an air supply to the machine, attach the air supply hose (D) supplied to the compressed air inlet (2) and a suitable compressed air system. Use the screw clamps (H) to secure the hose to the inlet and air line connections.

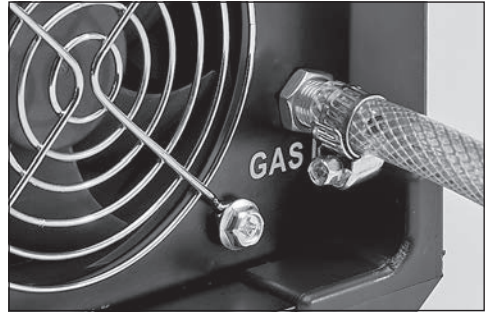


Fig. 5

CAUTION! All connected air line components, including the air supply hose, must be rated for the working air pressures required by this machine.

6.5 Attaching the Earth Clamp to the Unit

The earth clamp (B) must be installed to create an arcing circuit with the workpiece.

To install the earth clamp, position its plug so that the notch on the connector is directed upwards. Insert the connector into the earth clamp connector port (11) and rotate it 180° clockwise to lock it in place.

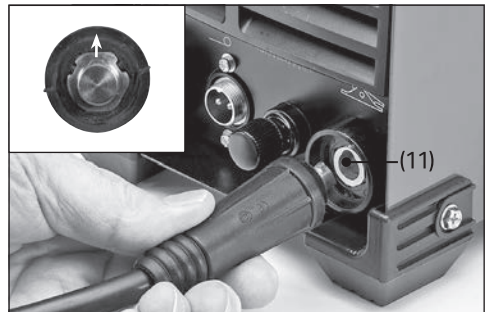


Fig. 6

Important: The earth clamp connection should be finger tight **ONLY**.

6. Preparation Instructions

6.6 Attaching the Plasma Torch to the Unit

WARNING! ALWAYS ensure that the machine is switched off and disconnected from the power supply before installing, removing or performing any maintenance on the plasma torch. Failure to do so may result in serious burns or exposure to high DC voltages.

WARNING! The cutter unit and plasma torch become very hot during use. Allow the machine to cool completely before making any adjustment to the torch.

Important: Ensure that the torch remains free from slag and other waste produced by the cutting process.

Important: The plasma torch consists of several consumable components. Check the torch consumables for wear and erosion before **EVERY** use.

1. Ensure that the plasma torch (10) is correctly assembled (see **8.2 Torch Head Care**) and that the following components are present:
 - Electrode
 - Tip
 - Shield cup
 - Standoff guard if required

Important: Ensure that the torch is detached from the main unit before disassembling the torch head.

2. Check the components for erosion and excessive wear and replace them if necessary.
3. Install the standoff guard (J) (O) onto the shield cup (I) (N) if necessary.

Important: Use of the standoff guide, where appropriate, will extend the life of the torch consumables.

4. Ensure that the connector cover (24) is fully inserted onto the torch connector (C1) so that the connector is flush with the edge of the connector.
5. Remove the dust cover from the plasma torch connector port (11) and screw the threaded torch connector (C1) securely into the port.

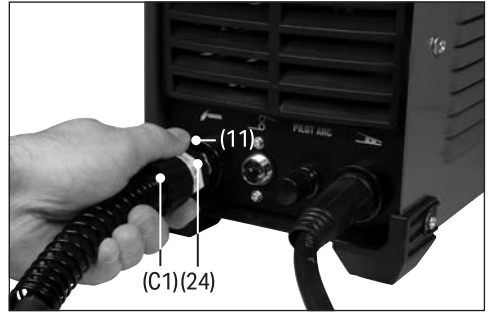


Fig. 7

6. Align the two pins of the trigger connector (C2) with the holes in the trigger connector port (19) and screw the threaded ring securely into place.

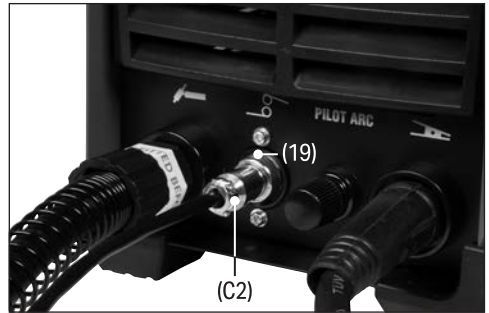


Fig. 8

7. Unscrew the cap from the pilot arc connector (9) and remove the washer.
8. Place the pilot arc cable contact (C3) and the washer onto the connector terminal and screw the cap back into place.

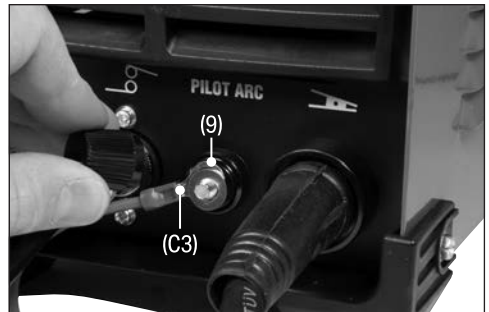


Fig. 9

Important: Read all the Health and Safety information in this manual before attempting to operate this machine. Failure to do so may result in serious injury or damage to the user, the tool or the workpiece.

Important: Ensure that the machine is correctly prepared for the cutting operation to be undertaken. Disconnect the cutter from the power supply and allow both it and the workpiece to cool thoroughly before making any change to the operation.

7.1 Basic Operation Procedures

1. Drain any moisture from any moisture filters on the cutter (8) and in the air supply.
The on-board moisture filter (70058 only) can be drained by pressing the valve on the bottom of the filter inwards.

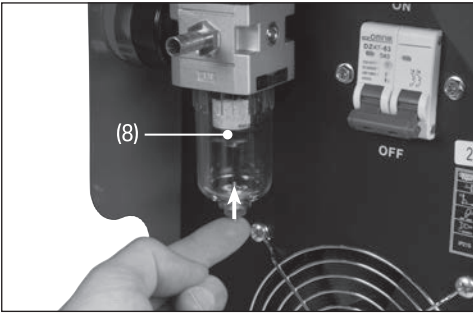


Fig. 10

2. Connect the air supply, earth clamp (B) and plasma torch (C), ensuring that all connections are secure.
3. Set the air pressure using the pressure regulators on the cutter (16) and the air line.

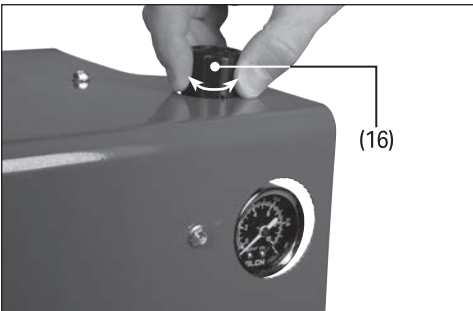


Fig. 11

Important: Pull the on-board pressure regulator dial outwards to unlock it and press it inwards to lock it in place once the correct pressure has been selected.

For Stock No. 70058, press the gas test button (7) while setting the air pressure to view the actual air flow pressure and adjust the pressure accordingly.

4. Connect the cutter to the power supply and move the power switch (14) to the "ON" position; the power indicator (13) illuminates when the cutter is on.
5. Select the trigger mode using the trigger mode control switch (70058 only); see **7.2 Trigger Mode Selection**.
6. Select the post gas duration using the post gas control switch (12) as appropriate (70066 only); see **7.3 Post Gas Control**.
7. Rotate the amperage control dial (1) to set the current range as appropriate for the thickness of the metal; see **7.7 Settings Reference Chart**.

 **WARNING DO NOT adjust the current range while cutting.**

8. Clip the earth clamp (5) onto a nearby metal surface, ideally the workbench or workpiece, that is free from rust or paint.
Important: Attach the earth clamp as close as possible to the area being cut. **DO NOT** attach the earth clamp to the piece to be cut away.
9. Position the torch tip perpendicular to the workpiece surface and slightly clear of the workpiece edge.
10. Open the torch trigger guard and squeeze the trigger to start the plasma torch; the air flow will begin when the trigger is squeezed and the arc will ignite after a short delay.

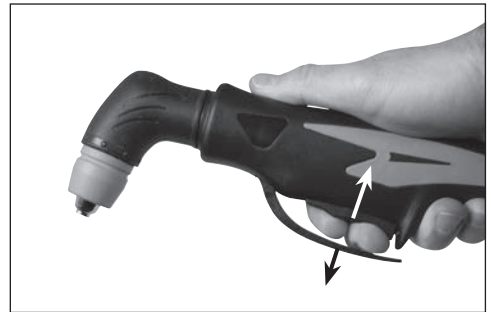


Fig. 12

Important: For Stock No. 70058, operate the trigger as determined by the chosen trigger mode selection; see **7.2**.

7. Operating Instructions

11. Keeping the torch tip a short distance above the workpiece and in a perpendicular position, move the torch steadily across the workpiece, maintaining a consistent pace.

To maintain a consistent gap, use the standoff guide.

Important: The speed of the pass will impact on the quality of the cut; see **7.4 Tips for Use**.


Important: As the torch tips supplied are suitable for drag cutting, the tips can be placed directly against the workpiece; however, this will increase wear and reduce the lifespan of the consumables.

12. When the cut is complete, release the trigger to stop the arc.

The arc will extinguish but the air will continue to flow for a few seconds to cool the torch after use.

Important: For Stock No. 70058, operate the trigger as determined by the chosen trigger mode selection; see **7.2**.

Important: For Stock No. 70066, the post gas duration is determined by the post gas control switch; see **7.3**.

 **CAUTION! DO NOT turn off the machine until the air has stopped flowing as this may damage the plasma torch and its consumables.**

13. Disconnect the earth clamp from the attachment point.
14. Allow a few minutes for the cutter to cool, then move the power switch to the "OFF" position and disconnect the power supply.

7.2 Trigger Mode Selection (70058 only)

On Stock No. 70058, the way in which the trigger operates can be set according to your preference using the trigger mode selection switch (20).

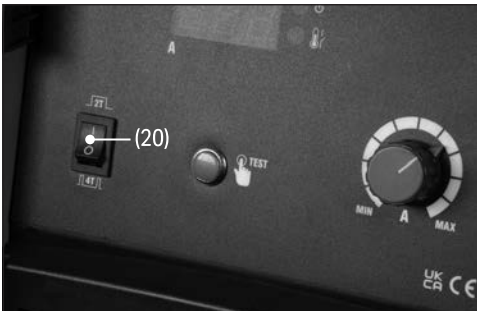


Fig. 13

Two trigger operation modes are available:

- **2T**
 - To ignite the plasma torch, press and hold the trigger for the duration of the cut.
 - To extinguish the plasma torch, release the trigger.
- **4T**
 - To ignite the plasma torch, press and release the trigger; the torch operates until manually extinguished.
 - To extinguish the plasma torch, press and release the trigger a second time.



CAUTION! DO NOT operate the trigger mode switch during a cut as it may damage the machine.

7.3 Post Gas Control (70066 only)

On Stock No. 70066, the period after the arc has extinguished for which the air continues to flow to cool the torch head can be set as appropriate for the current and length of the cut required.

Typically, higher-amperage or longer cuts require longer cooling (post gas) periods. This is set using the post gas control switch (7).



Fig. 14

Two settings are available:

- **10S:** The post gas continues for 10 seconds after the arc has extinguished.
- **20S:** The post gas continues for 20 seconds after the arc has extinguished.



CAUTION! DO NOT operate the post gas control switch during a cut as it may damage the machine.

7.4 Tips for Use

Important: Read this section in full before attempting to operate this machine.

- Keep both hands behind the torch at all times.
 - Use your free hand to support your gripping hand as you operate the plasma cutter.
- As the cutter delivers a pilot arc, there is no need to 'strike' the torch against the workpiece when starting a cut, provided that the torch head is near to the workpiece when the trigger is pressed.
- Use cutting guides to assist with creating straight and consistent cuts.
 - Securely fasten a straight metal edge against the workpiece and run the torch tip or standoff guide along the cutting guide.



WARNING! DO NOT hold the cutting guide by hand.

- Maintain a steady and consistent motion during the cut.
 - Stopping and starting will create an uneven and jagged cut.
 - Moving too fast may cause poor penetration and damage the torch head.
 - Moving too slowly may cause excessive buildup of slag on the underside of the workpiece and will cause the torch head consumables to wear more quickly.
- The tool may be used to "pierce" the workpiece:
 - This is when the cut is made directly into the middle of a workpiece without passing in from an edge.
 - When piercing the workpiece, tilt the torch head slightly to one side to prevent the arc deflection from damaging the torch tip, then revert to a perpendicular position once the penetration is established and the sparks appear underneath the workpiece.

Important: Piercing causes the torch head consumables to wear more rapidly.



WARNING! Ensure that the torch is directed away from you to prevent injury from spark deflections.

- The tool may also be used for "gouging" welded seams from a workpiece:
 - This is when the cutter is used to melt weld seams that are then blown away by the force of the compressed air.

- When gouging a seam, angle the torch head lower and in the direction of travel to force welding debris from the seam.

Important: Gouging causes the torch head consumables to wear more rapidly and may produce uneven results.

7.5 Duty Cycles

The machine duty cycle is given as a percentage of 10 minutes for which the cutter can operate at a rated load without overheating or interruption by the thermal cut-out device.

For example, Stock No. 70058 is rated for a duty cycle of 60% at 60A:

- Six minutes of welding time at 60A
- Four minutes of down time before next use.

At 40A, this machine is rated for a duty cycle of 100%. This means that the welder can be used continuously when operating with a current of no more than 40A.

7.6 Thermal Cut-Out

This machine is equipped with a self-resetting thermal cut-out device to protect the motor from overuse and overheating. When this occurs, the overload cut-out is activated automatically, shutting off the motor until it has sufficiently cooled. The thermal overload indicator illuminates until the machine is cool enough to be used.

Thermal overload is often caused by the following conditions:

- Extended use of the plasma cutter without sufficient down time
- Insufficient ventilation
- Use in environments with a high ambient temperature

If the thermal cut-out device activates, disconnect the earth clamp (5) from the attachment point and leave the machine powered on to allow the cooling fan to thoroughly cool the unit.

If the thermal cut-out device continues to activate, switch off the machine and have it serviced by an authorised agent.

7. Operating Instructions

7.7 Settings Reference Chart

The following chart provides a general guide for the required amperage and air pressure for given workpiece thicknesses.

Important: This chart is intended as a guide **ONLY**. Assess the requirements of each workpiece individually and adjust the values as required to suit your own technique.

| Workpiece thickness (inch) | Amps (A) | Air pressure (bar / psi) |
|----------------------------|----------|--------------------------|
| 1/64 | 20 | 2 / 30 |
| 1/32 | 20 | 2 / 30 |
| 3/64 | 20 | 2 / 30 |
| 1/16 | 20 | 2 / 30 |
| 5/64 | 20 | 2 / 30 |
| 3/32 | 20 | 2 / 30 |
| 7/64 | 20 | 2 / 30 |
| 1/8 | 20 | 2 / 30 |
| 9/64 | 20 | 2 / 30 |
| 5/32 | 20 | 2 / 30 |
| 11/64 | 20 | 2 / 30 |
| 3/16 | 20 | 2 / 30 |
| 13/64 | 30 | 2.75 / 40 |
| 7/32 | 30 | 2.75 / 40 |
| 15/64 | 30 | 2.75 / 40 |
| 1/4 | 30 | 2.75 / 40 |
| 17/64 | 30 | 2.75 / 40 |
| 9/32 | 30 | 2.75 / 40 |
| 19/64 | 30 | 2.75 / 40 |
| 5/16 | 40 | 2.75 / 40 |
| 21/64 | 40 | 2.75 / 40 |

| Workpiece thickness (inch) | Amps (A) | Air pressure (bar / psi) |
|----------------------------|----------|--------------------------|
| 11/32 | 40 | 2.75 / 40 |
| 23/64 | 40 | 2.75 / 40 |
| 3/8 | 40 | 2.75 / 40 |
| 25/64 | 50 | 2.75 / 40 |
| 13/32 | 50 | 2.75 / 40 |
| 27/64 | 50 | 2.75 / 40 |
| 7/16 | 50 | 2.75 / 40 |
| 29/64 | 50 | 2.75 / 40 |
| 15/32 | 50 | 2.75 / 40 |
| 31/64 | 50 | 2.75 / 40 |
| 1/2 | 50 | 3.4 / 50 |
| 33/64 | 50 | 3.4 / 50 |
| 17/32 | 50 | 3.4 / 50 |
| 35/64 | 50 | 3.4 / 50 |
| 9/16 | 50 | 3.4 / 50 |
| 37/64 | 50 | 3.4 / 50 |
| 19/32 | 50 | 3.4 / 50 |

Important: Allow the machine to cool, then switch off the welder and disconnect it from the power supply before performing any maintenance on this tool.

Important: ALWAYS switch off and disconnect the cutter unit from the power supply and allow it to cool before performing any maintenance on the product. After switching off the tool, allow at least five minutes for the capacitors to discharge before opening any panels or performing any maintenance.

8.1 General Maintenance

This product requires minimal servicing by the user. However, regular inspection and cleaning will ensure a longer life for the product and more effective results.

- Keep the shield cup and torch tip clean and free from spatter debris to prevent blockage of the air line.
 - Use a wire brush to clean the shield cup and tip and replace worn parts where necessary.
- Use a damp cloth to clean the outside of the unit.



CAUTION! DO NOT use solvents or other aggressive chemicals as they may damage plastic or insulated parts.

- Use a vacuum to keep all ventilation grilles free from dust and debris.
- Ensure that all connection cables are in good condition and have not frayed or split.



WARNING! Replace broken cables immediately to prevent electric shock.

- Occasionally allow the thermal cut-out device to activate by exceeding the maximum duty cycle at a rated current to ensure that the machine is still protected.
- Ensure that the warning labels and rating plate remain visible and legible.
- Have any worn or damaged parts replaced by a qualified and authorised technician.
- Have the helmet visor glass replaced when it becomes damaged or insufficient for protecting your eyes.
- Have the machine regularly inspected and serviced by a qualified and authorised technician to ensure that it remains in good working order and all earthing points are sound.

- Drain the on-board moisture filter after every use and before storing the product.
- Disconnect the earth clamp and all plasma torch connections before storing the product and install the appropriate dust caps onto the ports.
- Store the machine



CAUTION! DO NOT use compressed air to clean any part of this product as this may force metal particles to become lodged between live electrical parts and short-circuit the cutting equipment.

8. Maintenance & Troubleshooting

8.2 Torch Head Care



WARNING! NEVER dismantle to perform maintenance on the plasma torch while it is connected to the cutter unit or while the unit is switched on. Failure to disconnect the plasma torch may result in serious burns or exposure to high voltages.

Important: If the product has been recently used, allow the unit to cool and the cooling fan to completely stop before switching off the product, disconnecting the power supply and detaching the plasma torch.

The plasma torch must be kept free of slag to ensure free passage of air out of the tip. The consumables must be checked for damage and wear before **EVERY** use and replaced if necessary.

Loss of cutting capacity or the angle of the cut no longer being 90° are typical indications that the tip or electrode has become worn.

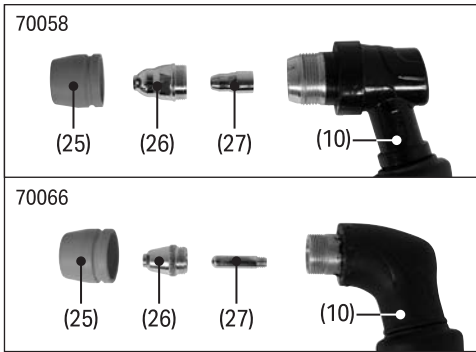


Fig. 15

1. **Important:** Continuing to use the plasma torch with damaged or worn consumables may result in a poor-quality finish, damage to the machine and risk of injury. Switch off the unit, disconnect the power supply and detach the plasma torch (10) from the plasma torch connector port (11).

2. Position the torch so the tip is directed upwards.
3. Unscrew the shield cup (25) anticlockwise to remove it.
4. Unscrew the torch tip (26) anticlockwise to remove it.
5. Unscrew the electrode (27) anticlockwise to remove it.
6. Check inside the torch head for excessive wear or damage.

Important: If the torch head itself is damaged, contact Draper Tools to discuss repair or replacement options. **DO NOT** continue to use the tool.

7. Check the shield cup, tip and electrode for damage and excessive wear and replace them as necessary.
 - When inspecting the shield cup, check for cracks, chips and thinning of the ceramic material.
 - When inspecting the tip, check for erosion around the centre hole and or an uneven nozzle surface, and check for build-up of debris inside the centre hole.
 - When inspecting the electrode, check for wear around the centre point of the electrode tip.
 8. Screw the electrode and tip back into the torch head, lightly tightening each item with pliers or a similar tool.
- Important:** **DO NOT** overtighten the consumables as this may damage the threads of the parts of the torch head.
9. Screw the shield cup finger tight onto the torch head and attach the standoff guard to the shield cup groove if required.

8.3 Troubleshooting

| Problem | Possible Cause | Remedy |
|---|---|---|
| The plasma arc does not ignite. | The unit is not connected to an active power supply or is not switched on. | Check the connection to the power supply and ensure that the power switch is in the ON position. |
| | The earth clamp is poorly connected or incorrectly positioned. | Ensure that the earth clamp is attached to the workpiece or a nearby metal surface and that the surface is clean and free from grease, rust and other materials. |
| | The air pressure is too low. | Detach the earth clamp and ensure that air flows from the torch tip when the trigger is pressed. |
| The thermal cut-out indicator is illuminated. | Ensure that the on-board pressure gauge continues to indicate a suitable pressure during a cut. | Ensure that the air line and its connections are not leaking. |
| | Ensure that the torch tip is not obstructed by debris. | Allow the cooling fan to run until it stops, then switch off and disconnect the product for a few minutes until the unit has cooled. When it has cooled, switch the unit back on. |
| | Ensure that the ambient temperature is not too high for the machine. | Ensure that any power extension cables are appropriately rated for use with the unit. |
| | Test the product by operating it at a lower amperage. If this is successful, the power supply may be unstable. Use a different power source and check all power cables between the outlet and the unit. | |
| The air flow in the torch head is obstructed. | Ensure that the torch head has been assembled correctly and ensure that the centre hole of the tip is not obstructed by debris. | |
| | Ensure that the air flow has stopped before pressing the trigger as the arc will not ignite if air is already flowing from the torch. | |
| The pilot arc contact is not connected to the terminal. | | Ensure that all parts of the plasma torch are correctly connected to the front of the cutter unit and all connections are sound. |

8. Maintenance & Troubleshooting

| Problem | Possible Cause | Remedy | |
|--|--|---|--|
| The plasma arc is intermittent or is interrupted while cutting. | The trigger is inadvertently released during use. | Hold the torch lightly with a relaxed grip against the workpiece. Avoid pushing down on the workpiece and ensure that the trigger remains depressed while cutting. | |
| | The speed of the cut motion is too low. | Increase the speed of the cut motion across the workpiece to ensure that the arc is maintained. | |
| | The torch moves too far away from the workpiece. | Ensure that the torch remains close to the workpiece during cutting or the arc will be broken. | |
| | The compressor cannot keep up with the demand for air. | | Ensure that the compressor is appropriately rated to meet the required air supply. |
| | | | Ensure that the pressure gauge on the unit reads the intended pressure when the cut is interrupted and that all connections for the torch and air line are secure and not leaking. |
| | Allow the compressor time to fully repressurise before resuming the cut. | | |
| | The thermal cut-out feature is activated. | Allow the cooling fan to run until it stops, then switch off and disconnect the product for a few minutes until the unit has cooled. When it has cooled, switch the unit back on. | |
| Sparks fly upwards, not downwards through the workpiece, during the cut. | The plasma arc is not fully penetrating the workpiece. | The speed of the cut motion is too fast. Move the torch across the workpiece more slowly. Ensure that there is good contact between the earth clamp and the grounding point. Increase the amperage. | |

For spare parts, servicing, and repair and replacement options, please contact the Draper Tools Product Helpline for details of your nearest authorised agent.

Draper Tools will endeavour to hold any spare parts, if applicable, for seven years from the date that it sells the final matching stock item.

Any servicing or repairs carried out by unauthorised personnel or installation of spare parts not supplied by Draper Tools will invalidate your warranty.

Important: For safety, **ALWAYS** drain and clean the product of any oil, fuel, chemicals or other substances before returning it to Draper Tools or its authorised agent. Store these materials in suitable containers and dispose of them in accordance with local regulations. Draper Tools and its agents cannot be responsible for the disposal of these substances.

At the end of its working life, dispose of the product responsibly and in line with local regulations. Recycle where possible.

- **DO NOT** dispose of this product with domestic waste; most local authorities provide appropriate recycling facilities.
- Dispose of used electrodes and other consumables separately and in accordance with local regulations.



10. Warranty

Draper Tools products are carefully tested and inspected before shipment and are guaranteed to be free from defective materials and workmanship.

Should the tool develop a fault, return the complete tool to your nearest distributor or contact Draper Tools directly. Contact information can be found at the back of this manual.

Proof of purchase must be provided.

If, upon inspection, it is found that the fault occurring is due to defective materials or workmanship, repairs will be carried out free of charge. This warranty period covers parts and labour for 12 months from the date of purchase. Where tools have been hired out, the warranty period covers 90 days from the date of purchase.

This warranty does not apply to any consumable parts, batteries or normal wear and tear, nor does it cover any damage caused by misuse, careless or unsafe handling, alterations, accidents, or repairs attempted or made by any personnel other than the authorised Draper Tools repair agent.

In all cases, to make a claim for faulty workmanship or materials within the standard warranty period, please contact or return the product to the place of purchase. Proof of purchase may be required.

If the place of purchase is no longer trading or if you experience any difficulties with your warranty, please contact Customer Services with the product details and your proof of purchase. Contact details can be found at the back of this manual.

If the tool is not covered by the terms of this warranty, repairs and carriage charges will be quoted and charged accordingly.

This warranty supersedes any other guarantees expressed or implied and variations of its terms are not authorised.

Your Draper Tools guarantee is not effective until you can produce, upon request, a dated receipt or invoice to verify your purchase within the guarantee period.

Please note that this warranty is an additional benefit and does not affect your statutory rights.

Draper Tools Limited

11. Explanation of Symbols



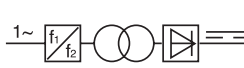
Read the instruction manual



Plasma torch



Warning!



Single-phase static frequency converter-transformer-rectifier



Wear eye and face protection suitable for arcing operations



Single-phase AV power and rated frequency



Wear protective gloves



Flat external static volt-ampere characteristic



Variable current range (example)



Net product weight



Max air pressure



Do not expose to rain



Rated input voltage



WEEE -
Waste Electrical & Electronic Equipment
Do not dispose of Waste Electrical & Electronic Equipment in with domestic rubbish



Rated duty cycle at the given amperage



European conformity



Ingress protection



UK Conformity Assessed



Thermal cut-out device



Fan-cooled

Contact Details

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Please contact the Draper Tools Product Helpline for repair and servicing enquiries.