



**Suregrip Digi-Pull Mig Series
OWNER'S HANDBOOK**

Parker Digi-Pull Mig Welding Torch Owner's handbook



Serial number and product warranty code

Contents of this box

- Digi- Pull mig welding torch.
- Operation instructions
- Voltage supply board
- Liner cutter
- Liner sharpener
- PA liner
- 1.2mm Drive Roller

Product supplied by



Basic product data and conformity information

Basic product data to IEC/EN60974-7

Process: This is a Digi-Pull-Mig/Mag welding torch

Guidance: This is a manually guided product

Voltage rating: 113V Peak value

Rating: Please refer to the specification sheet for your model.

Gas: Argon, Argon, CO₂ and mixed gas

Torch length: 8 meters.

Wear parts: Have been supplied in accordance with your order and the torch part number.

Type of cooling: Either Gas (air) or water-cooled in accordance with your order.

Rating of electrical controls incorporated in the torch: The switch is rated at 1A/250V AC

Conformity information



A sample of this product has been tested and found to be in conformity with the following standards

- IEC/ EN 60974-7 Arc welding equipment Part 7 Torches
- Low voltage amendment to LVD 2014/35/EU
- Supporting documentation in accordance with EN ISO/IEC 17050-2:2004
- RoHS2 compliance to 2011/65/EU, amend 2015/863/EU
- REACH compliance to 1907/2006/EC
- Manufacturing systems to ISO 9001: 2015





Important Safety Instructions

Read all instructions before using this product.

PARKER TORCHOLOGY DIGI- PULL-MIG torches are safe products to use, but like all modern tools, they can be dangerous in untrained hands. Therefore we have assumed that you know how to use these products, and know the dangers of misuse. These Pull-Mig torches have the ability to inflict serious injuries if used by untrained personnel.

You must never point these products at anyone and operate the trigger.

We strongly recommend that you are completely conversant with Pull- Mig welding techniques before you use this product. If you do not know, or are unsure, then you must contact your dealer or a trained person for advice.

Pacemaker users.

All welding operations give off some form of magnetic and electrical interference; If you have a Pacemaker or some other medical device controlled by an electric current, we recommend you consult your doctor before using any welding or cutting equipment.

Thank you for purchasing a PARKER TORCHOLOGY DIGI-PULL-MIG welding torch. The torch has been made under the most stringent manufacturing conditions and the following will explain how it works together with some easy set up instructions to get you going.

The PARKER TORCHOLOGY DIGI-PULL-MIG torch is designed to act as a “power assist” to the main wire drive system. Wire is pushed from the main drive is passed across a motorized drive roll and a pressure roll. A tension knob exerts pressure on these two rolls so that the drive roll motor pulls the wire.

The tension knob is designed to exert sufficient sideways load on the drive roll to ensure that the motor speed slows down to match the main wire drive speed, whilst still exerting sufficient pulling power to feed the wire at a uniform rate. This tension knob is factory pre-set. We do not recommend changing this tension.

The torch has conventional industry standard machine connections, but before connecting your torch, check that your machine is equipped to take Pull- Mig torches. If the machine is not equipped then you will need to fit the Voltage Supply Board that is supplied with the torch. With this arrangement wire speed is optimized from the machine.

The torch is supplied with a 7 wire open-ended trigger/speed control lead and we recommend the fitting of a suitable plug/socket arrangement to facilitate connections to the welding machine by a suitably qualified person..

Pull-mig torches are supplied with either 24V or 42V motors depending on your order specification.

This Handbook is laid out to given an overview of the torch, its control system and set-up guides .

Introduction to the Parker Torchology Digi-Pull-Mig Torch and system.

Traditional Mig Pull welding torches are only controlled by the on/off function which is operated through the torch trigger.

Changes to other welding functions, e.g. amps, volts, arc length and so on, can only be made by constant reference by the welder to the welding power source.

This can be both time consuming and inconvenient.

A further major disadvantage is that the welder has to interrupt the welding process in order to make these changes.

Digi-Pull Mig torches move the welding functions and controls from the welding power source to the torch handle by housing those functions within a purpose built module, ergonomically contoured and designed into the welding torch handle.

The Parker Torchology Digi-Pull mig control system works by utilizing Digital signals to connect the micro processors in both the torch handle and the welding power source. Once these MPU's are fitted to the welding power source, they are designed to recognize the control system so that either traditional, or Digi-Pull mig type torches can be used without any adjustments to the power source, thus giving the end user maximum flexibility to his welding set up.

The Parker Torchology Digi-Pull Mig torch has the ability to save programs as "Job's". These jobs are given a numerical reference (or job number) and are stored in the welding machines memory. All buttons have a slow start followed by fast forward. Repeated pressing of the buttons provides an "inch" facility. Holding the function buttons down causes the digital displays to advance quickly to aid searching.

Your Digi-pull Mig gun has the following On-arc Functions: Job mode, LED on/off; Program select LED Programme reference, Amps, Wire speed, and Arc length, up/down, control. (On-arc refers to the ability of the system to change welding parameters whilst welding.)

These functions represent the default factory settings, all units can be customized to operate in different modes to suit individual customer requirements.

The following text details the functions available with examples of the control options and their use.

Functions: Job mode, LED on/off, Program select LED Programme ref Amps, Wire speed, Arc length, up/down mouse control.

The Digi-Pull Mig is designed for "on-arc" operation. With the exception of Job number, function values can be changed during the welding process.

Depending on the chosen welding power source set up, the module can control four welding functions independently and has the additional benefit of a real time visual display.

The Mode switch (M) is pressed and held down for one second to allow the unit to activate and register itself with the welding power source. The LED indicator will glow constantly, and the display will light up.

Momentarily re-pressing the mode switch (M) will change the program between Program number, Amperage, Wire speed and Arc length modes.



The selected function can then be changed by holding down either the upper finger pad to increase or the lower finger pad to decrease. Once set, the unit can be de-activated by switching it off by pressing and holding the mode switch (M) . This will prevent a accidental changes to the chosen settings during the welding operation. When re-activated, the unit returns to the current setting.

Digi-novus® Two wire Digital BUS system©

Within the torch package is an Interface board. This board acts as the Digi-novus interface between the power source and the Digi-pull torch.

The system is designed to be a universal addition to any Digital Mig welding machine or power source, and once installed will enable the equipment to accept either digital or traditional torches without the need for further adjustments.

This interface acts as a “Translator” BUS so that control wire signals, together with the torch power supply and digital signals are transmitted in a language understood by the Digi-Pull torch.

The Interface is designed to automatically recognize digital signals when such products are offered to the machine and is capable of accepting and recognizing non-digital models. This includes the Parker range of Digi-Mig welding torches.

When traditional torches are connected, the power source automatically reverts back to its normal operation.

Parker team of specialist technical engineers is available to provide assistance to specifiers to enable them to select the most appropriate model and to give advice with the installation of the necessary software.

Note: some machine types may already have integrated interface board inside machine. Please check your machine manual for details. If a board is fitted then there is no need to take further action.

Drive head set up

Setting up the Pull-Mig torch is a simple process but before starting check that you have the correct drive roll for the wire you will be using. The size is marked on the drive roll.

Main components of the drive head.

- 1 Pressure roll
- 2 Pull-Mig Handle cover
- 3 Drive roll
- 4 Tension knob
- 5 Pressure arm
- 6 Neck liner nipple



To set up.

- Before starting make sure that the end of the welding wire has been dressed and burrs and sharp edges removed to prevent internal scoring of the torch liner
- Open the Pull-Mig Handle cover
- Unscrew the tension knob
- Open the pressure arm assembly
- Toggle feed the wire from the machine until it emerges from the liner.
- Carefully and slowly feed the wire into the neck liner nipple.
- Close the pressure arm assembly.
- Tighten the tension knob so it is fully wound down and locked into position
- Close the handle cover

The pressure arm is factory set to deliver the correct amount of side force to the drive roll.
We do not recommend changing this setting.

Water-cooled Pull – Mig torches.

If you have purchased a Water-Cooled variant, the water connections are industry standard and are marked blue (showing the cold water inlet) and red (showing the hot water outlet)

We recommend a good quality water coolant additive is added to the cooling fluid, this will enhance cooling through the torch body and will prolong torch hose life. It will also prevent frost damage to the torch internal components.

When first connecting a water-cooled variant, run the cooler before you weld to remove any trapped air pockets and remember to check the water levels in the cooler after this startup check. An average 8m torch will hold around 0.5 liters of coolant. After welding, we recommend that you run the water cooler for at least one minute to cool all the torch's internal components. When removing a water-cooled torch from a recirculator and to prevent loss of coolant from the torch, use the red and blue stoppers that are supplied. We recommend draining the torch of coolant if it is not going to be used for any length of time.

You will require a water cooler (recirculator) with the following specification:

- Minimum water flow : 1.2 l/m
- Minimum inlet pressure :2.0 bar
- Minimum cooling capacity :1600W
- Maximum inlet pressure 5.0 bar
- Maximum water inlet temperature 50 degrees C

We strongly recommend that a flow switch be fitted to the return side of the recirculator and wired in series with the torch trigger. This flow switch will shut down the system and give torch protection should the water flow rate drop below 1.2 Litres per minute. (72 Litres per hour)

Water-Cooled neck assemblies

Water-Cooled Torch necks are supplied with a location pin. The purpose of this pin is to lock the neck in a positive position. The location pin registers in one of eight equi-spaced holes drilled in the neck seat.

If a different position is required to one of those eight pre-set positions, the pin can be removed but it must be removed with the Torch coolant drained from the torch. A gentle pull on the pin will remove it.

Once the pin is removed and the neck refitted, the neck can be rotated to different positions by gently loosening the lock nut and moving the neck to the new position. Care should be taken not to pull the neck out of the body whilst rotating. Pulling the neck from the body will break the O-ring water seal and Torch coolant will be lost.

Drive Roll replacement.

Drive Rolls can be supplied in sizes to suit 0.8, 0.9, 1.0, 1.2 and 1.6 diameter wire sizes.

Your torch will have been supplied with a

standard 1.2 drive roll suitable for soft wires unless a different size has been specified on your order.

Drive rolls can be supplied for

Hard wires these have a Vee groove, or soft wires with a U groove.

They are replaced by inserting a screwdriver blade into the drive shaft, whilst at the same time applying spanner force in an anti-clockwise direction to unscrew the drive roll from the shaft.

The drive rolls are supplied with a left-hand thread and are double grooved to add service life to each roll.

The unused groove can be used by inverting the drive roll.

Liner replacement.

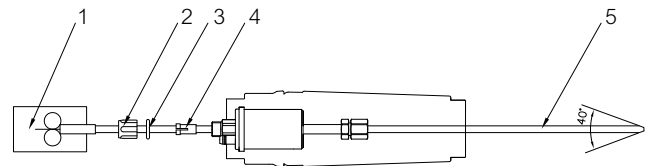
Liners will give a good service life if maintained at regular intervals. This is done by clearing debris and dust from the Liner with a clean and dry air supply inserted into the Liner. Wet air will corrode the internal surface of the liner.

It is best to blow the liner from the wire entry point of the liner because during operation, debris and dust is generally carried forward towards the neck end of the Liner. Blowing from the opposite direction will push the debris into the Liner.

When a liner is due for replacement there are a number of points to note.

Steel Liner replacement

- Lay the torch out straight, ensuring it is not twisted.
- Unscrew the Liner nut and remove the old Liner.
- Uncoil the new liner and feed it into the torch until resistance is felt. You can also check the Liner has reached the end of its travel by viewing the liner end through the viewing holes in the liner nipple.
- Measure the excess liner sticking out from the rear-end and remove the Liner
- Cut off the excess liner material but leave an extra 5mm of liner. This added 5mm to the Liner length will ensure the liner is always under slight compression within the torch.
- Grind the cut end to an inclusive angle of 40 degrees; the liner cut end must be ground to an inclusive angle of 40 degrees to ensure the liner beds into the front end fittings.
- Gently feed the Liner into the torch taking care not to bend or “kink” the liner and re-tighten the Liner nut.

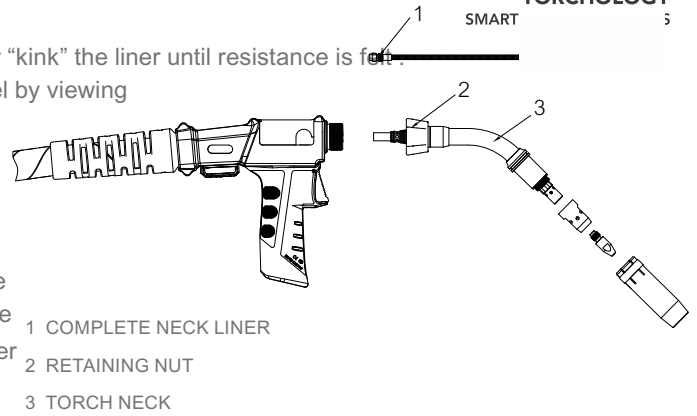


- | | |
|-----------------|------------|
| 1 DRIVE ROLLS | 4 CLAMPING |
| 2 RETAINING NUT | 5 TEFLON |
| OR PA LINER | |
| 3 O-RING | |

Teflon or PA Liner replacement

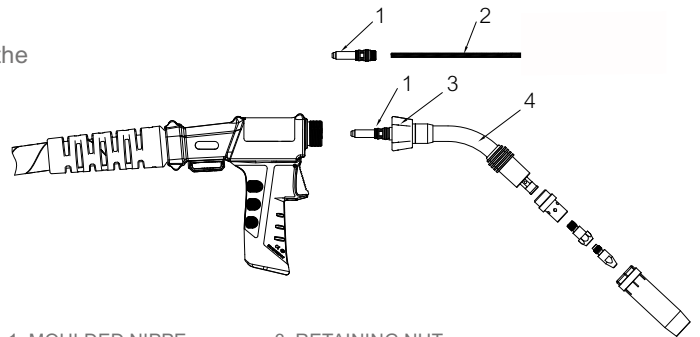
- Lay the torch out straight, ensuring it is not twisted.
- Unscrew the Liner retaining nut 2 and remove the old Liner.
- Uncoil the new liner 5, and use the Liner sharpener supplied to cut the end to a 40-degree inclusive angle. This is to ensure the minimum clearance between the liner and the liner nipple.

- Gently feed the Liner into the torch taking care not to bend or “kink” the liner until resistance is felt. You can also check the Liner has reached the end of its travel by viewing the liner end through the viewing holes in the liner nipple.
- Slide the clamping collet 4, O-ring 3, and Liner retaining nut 2 over the new liner 5, re-assemble the liner retaining nut and tighten.
- Measure the excess liner sticking out from the rear-end to the machine drive rolls and cut the liner directly in front of the wire feeder drive rolls 1. Cut this end and using the Liner sharpener supplied, cut a 40-degree inclusive angle to give the closest clearance to the drive rolls.



Swan Neck Water-Cooled neck liners.

- Unscrew and remove the Swan neck assembly 3 from the torch.
- Remove the old neck liner and replace with the new liner 1.
- Replacement liners are supplied cut to length and ground to 40 degrees. They do not need adjustment and can be used straight from the package.
- Refit the liner and nipple to the swan neck and re-assemble the swan neck to the torch tightening the retaining nut to 2.5Nm.

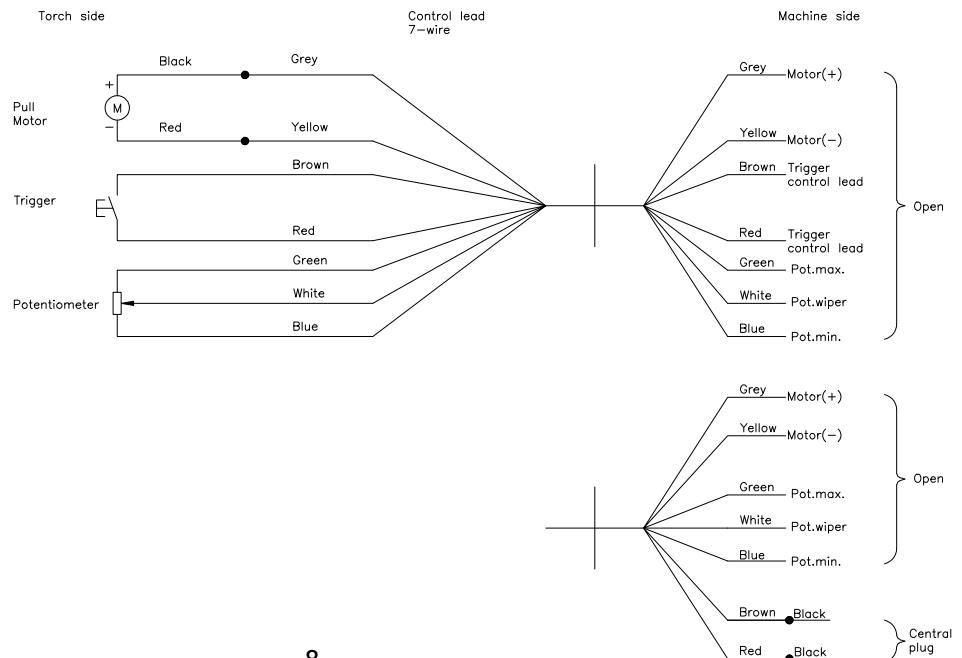


Swan Neck Air-Cooled neck liners.

- Unscrew and remove the swan neck assembly 4 from the torch.
- Unscrew the moulded neck liner nipple 1. This will withdraw the neck liner from the neck.
- Unscrew the old neck liner from the moulded liner nipple 1. It is a conventional right hand thread and will easily unscrew.
- Replace the new neck liner by screwing it into the nipple through approximately 2 to 3 turns.
- Refit the liner and nipple to the swan neck and re-assemble the swan neck to the torch tightening the moulded nut retaining to 2.5Nm.

Appendix “A”

Typical Pull-mig wiring diagram.





Maintenance, Fault Finding and Warranty.

Maintenance, Fault Finding and Warranty.

Used correctly, you can expect a long life from a Parker Pull-Mig- MIG torch, but in order to ensure this long life, there are a few common sense precautions you should take note of when using and servicing your torch.

We would recommend that you should pay attention to the following:

O Ring care

Swan necks are fitted with O-rings to seal both water and gas channels. The condition of these rings is critical to the smooth operation of a Parker Torchology Pull-Mig torch. Damage to these O-rings may affect the weld performance.

Great care should always be taken when removing or replacing the neck. Each time the neck is withdrawn from the body, the O-rings should be inspected. If any wear or damage is suspected, the O-rings must be replaced.

Any suitable lubricant designed for O-Ring assembly should always be applied to the O-rings whenever the neck is removed, or when fitting replacement O-rings. When applying lubricant, care should be taken not to block any of the gas or water passage holes.

Front end consumables

The nozzle, contact tip and diffuser all run at very high temperatures and you should regularly inspect them for wear and operational damage. When changing a contact tip, always use a contact tip spanner to prevent over tightening. Repeated over tightening will destroy the threads in the tip adaptor.

Drive Rolls

Always make sure you have the correct drive roll for the type and size wire you are using and note that the drive roll threads are left-hand and the drive roll can be inverted to double its life.

The drive roll and pressure roll should be inspected regularly for wear. Run the gun in a quiet place, without wire feeding and listen for any unusual noises. You can eliminate pressure roll from drive roll noise by releasing the pressure arm. If you suspect something is wrong, you should contact your distributor or dealer.

The area around the drive roll should be regularly dusted off to prevent dust and workshop debris from accumulating. We do not recommend lubricating the drive shaft or pressure roll. These are sealed for life units and lubrication oils or greases will only pick up dust and turn these oils and greases into a grinding paste. A simple dust off is all that is required.

The gearbox, drive motor and shaft top bearing are also sealed for life. No maintenance is required.

PARKER TORCHOLOGY PULL-MIG Warranty

Every PARKER TORCHOLOGY PULL-MIG welding torch is manufactured to the highest standards and carries a 3 month warranty from the date of sale to the end user. The warranty covers and is limited to, a fault developing as a result of faulty workmanship or faulty materials.

What is covered?

- Defective materials used in the manufacture of the product.
- Faulty workmanship in the manufacture of the product.

What is not covered?

- Incorrect use or damage.
- Normal wear and tear to either the product or the consumables supplied with the product.
- Faults arising from using non-Parker spare parts.
- Direct or indirect costs of any form arising as a result of a suspected, or actual, defective product.

How to make a claim.

This warranty is limited to the original purchaser of the product, it is not transferable. If a fault is suspected, the dealer or ourselves must be contacted and informed of the fault before the product is returned.

You can contact us by

✉ Mail: sales@Parker Torchology.com.cn

☎ Phone: 0086 531 88239823

📠 Fax: 0086 531 88239398

How will we handle any claim?

Parker's sales office may ask you to return the product with a copy of your proof of purchase, (If you are the end user) or a copy of proof of sale (If you are a distributor).

Depending on the nature of the claim, we may ask one of our

technical staff to discuss the problem with you to get a quick resolution.

Once the cause of the problem is established and at our discretion, we will either repair or replace the defective product free of charge.

We will refund the costs incurred in returning the product if a defect is found, but will only refund normal transport costs. We will not pay for UPS, Express deliveries or any other high speed carriers.

If we believe the product failure is as a result of any reason other than defective materials or manufacture, we will issue a written report to you detailing our findings.

Other issues.

Whilst Pull-Mig welding torches will give long and lasting service, we do understand the harsh and demanding working environment in which our products operate, therefore Parker retain the right to deal with any fault in a manner that best suits Parker .

This warranty is an addition to Parker's standard terms and conditions and Parker's standard Terms and Conditions of Sale will take precedence over this warranty.



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