POWER TEC™

92452

Nitrogen Plastic Welder with Generator

Makes repairs that are stronger than any two-part epoxy or hot air weld. The plastics are melted together, with no oxidation, to form the strongest possible weld.

Kit includes Spray Bottle for panel preparation, part no. Connect 31269.

www.power-tec.co.uk

MADE IN ITALY

Nitrogen Plastic Welder with Generator

Introduction

Plastic welder with its own nitrogen generator, that eliminates the need for a nitrogen gas bottle. Workshop compressed air is used to maintain consistent temperature between welds — the nitrogen is only activated when pulling the trigger so that it's not wasted between welds. Makes repairs that are stronger than any two-part epoxy or hot air weld. The plastics are melted together, with no oxidation, to form the strongest possible weld.

- Compatible with almost every plastic type used in the automotive industry.
- Complete with an integrated nitrogen generator which eliminates the need for a gas bottle.
- Allows the welding of filler material by heating with nitrogen.
- The welder comes complete with a set of plastic consumables including a scraper and roller to finalise the repair, together with a reusable trigger spray water bottle for panel preparation.
- Heats plastic without combustion and therefore without emitting fumes.
- 230v, 50Hz, 1600w, 20-650°C.
- Made in Italy.

The following instructions are for guidance only.

The use of this tool is purely down to the user's discretion and The Tool Connection Ltd. cannot be held responsible for any damage caused whatsoever.

Index

1. General Warnings **5**

2. Safety **6**

2.1 General safety rules 6

2.2 Personal safety rules 8

2.3 Electrical safety rules 10

2.4 Fire safety rules 11

2.5 Safety standards during use 11

2.6 Safety regulations: parts under pressure 12

2.7 Standards on disposal 13

3. Technical Specifications **14**

4. Operating Instructions **14**

4.1 General description 14

4.2 Putting into service 14

4.3 Maintenance and cleaning 14

4.4 Components and controls 15

4.4.1 Combi Nitrogen Plastic Welder 15

4.5 How to use the Combi Nitrogen Plastic Welder 16

4.5.1 Types of plastic 17

Index continued

5. Examples Of Operation **18**

5.1 Using the scraper 18

5.2 Using the strips 19

5.3 Use of the roller and (optional) plier 20

5.4 Support modeling 20

5.5 Reconstruction of missing parts 21

5.6 Closing cuts 24

6. Warranty **26**

7. Declaration of Conformity **27**

1. General Warnings

Before using the Combi Nitrogen Plastic Welder, please read all the safety warnings and all the instructions. Failure to observe these warnings and instructions could result in electric shock, fire and/or serious injury.

POWER-TEC wishes to thank you for purchasing the Combi Nitrogen Plastic Welder, one of the most effective pieces of equipment designed for bodywork operations and to repair all plastic parts.
Do not use the Combi Nitrogen Plastic Welder for other purposes and/or applications that are not described in this manual.

Before using the Combi Nitrogen Plastic Welder, read this manual carefully and follow the simple instructions contained. Before carrying out any operation on the machine, operators and qualified technicians must carefully read the instructions contained in this booklet.

Purpose of this manual is to provide the user with all the information necessary to ensure that, in addition to appropriate usage of the machine, he is able to manage the same as independently and safely as possible. The manual includes information about technical features, operation and safety.

This manual is an integral part of the Combi Nitrogen Plastic Welder supply and should be kept with the utmost care by the buyer, placed close to the machine inside a special container and, above all, sheltered from liquids and whatever else might jeopardise its readability.
This manual should always be supplied with the machine even in the event of a sale of the plastic welder to third parties.

POWER-TEC disclaims any liability for an improper use of the equipment and for failure to follow procedures outlined in this manual.

When reading this instruction booklet, should any part be difficult to understand or any doubts arise, contact the company at the address provided before using the product.
The equipment is produced in accordance with the relevant EC directives and applicable at the time of its placing on the market.

Do not use the Nitrogen Plastic Welder if its efficiency is in doubt.
The equipment must be used in a well-ventilated room, appropriately protected from bad weather and with temperatures ranging from +10 °C to +40 °C.
It is **PROHIBITED** to anyone to copy, modify, or use this manual for personal purposes. POWER-TEC reserves the right to make changes to this manual without any notice.

2. Safety

2.1 General Safety Rules

Failure to follow the safety rules and basic safety precautions of the manual may cause damage to persons and things.

When using electrically powered appliances, always follow common safety precautions to reduce the risk of fire, electric shock, personal injury and material damage.
The machine is designed for a professional workshop use only and to perform only those functions described in this manual. Any different use from that indicated herein is to be considered improper and dangerous and may expose the user to electrical risks and injury.

It is prohibited to tamper with the equipment or to modify any of its parts, as this may lead to dangerous situations for the user and will invalidate the warranty, freeing the manufacturer from any liability.

The operator must wear suitable protective clothing such as: safety shoes, gloves, goggles, ear muffs, etc, and not wear loose clothing that could get caught up during the operation.
Disconnect the equipment from the AC mains when not in use.
Take care not to come into direct contact with the gun's heating tube during operation or before the operation cooling down has been completed.
Keep the working area clear; the working area shall allow safe movement for the operator and, more specifically, avoid the presence of slippery or corrosive substances on the floor.
Do not drop the machine or parts of it.
Do not use the machine except as intended and described herein; this will not only damage the machine, but cause but may cause personal injury and material damage.
Do not use the machine with defective parts.
Do not remove or tamper with the machine, only qualified staff are allowed to perform repairs. To avoid damaging the machine or generating any risk of fire, electrical shock or injury, use only accessories supplied by Power-TEC. For spare parts and repairs, please contact the distributor where you purchased the machine, or Power-TEC directly.
Make sure, after any replacement of damaged parts, that the machine works properly.

Read and understand all instructions.
Failure to follow the instructions below may cause an electrical short circuit, fire and/or serious personal injury.

Keep the working area clean and properly lit.
Blocked or insufficiently lit working areas may cause accidents.

⚠ WARNING

IMPORTANT

Work indoors.
Keep the working area well ventilated and dry.

⚠ CAUTION

IMPORTANT

Keep a full fire extinguisher within reach whenever using the Mini Plastic Welder.

Periodically check that any screws are securely tightened, the machine's overall state of wear and make sure that it functions properly.

⚠ WARNING

IMPORTANT

The machine can be used by children older than 8 years and by persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge as long as they are supervised or have been given appropriate instruction concerning the safe use of the machine and fully understand the relative dangers. Children must not be allowed to play with the machine. Cleaning and maintenance operations performed by the user must not be carried out by children unless appropriately supervised. Keep the machine and its cable out of the reach of children under 8 years of age.

2.2 Personal Safety Rules

⚠ WARNING

IMPORTANT

Do not operate the Nitrogen Plastic Welder while under the influence of drugs, alcohol or any type of medicine.

⚠ WARNING

IMPORTANT

Keep your balance, always maintain a stable position and appropriate balance.
A stable position and appropriate balance allow a better control of the Plastic Welder in unexpected circumstances.

⚠ WARNING

IMPORTANT

It is advisable to wear suitable safety welding gloves. During its use, the nozzle of the Nitrogen Plastic Welder gets very hot.

⚠ WARNING

IMPORTANT

Always wear safety glasses when using the Nitrogen Plastic Welder.

⚠ WARNING

IMPORTANT

The fumes and smoke released by hot glues and plastics are toxic. Always wear a dual filter safety mask (protection against dust and fumes).

2.3 Electrical Safety Rules

DANGER

IMPORTANT

Do not use the Nitrogen Plastic Welder in the presence of liquids.

WARNING

IMPORTANT

Disconnect the Nitrogen Plastic Welder cable from the power supply before carrying out any work on it, when it is not in use and before assembly, dismantling or cleaning operations. Never leave the machine unsupervised when it is plugged in AC mains.

CAUTION

IMPORTANT

Should you decide to dispose of this machine, make it unusable by removing or cutting the power cable. Before connecting the machine to the power supply check that the voltage indicated in the technical data matches the local power supply. Do not use plugs or extension cables which are not compatible with the specified technical data.

WARNING

IMPORTANT

Do not use the appliance if the cable, plug or any parts appear damaged. Make sure the power cable is kept away from the machine and does not come into contact with hot parts or any sharp corners or edges.

WARNING

IMPORTANT

Do not use the machine near other people or animals. To avoid any risks, all repairs must be carried out solely and exclusively by authorised, expert technicians. Contact your nearest service centre if you need to purchase a power cable to replace the damaged one. Never wrap the power cable around your hand when the appliance is plugged in. Fully extend the cable before first use.
Do not pull on the cable. Do not use it to carry the appliance or as a handle. Do not pull the power cable around sharp corners or let rest against hot surfaces.

2.4 Fire Safety Rules

WARNING

IMPORTANT

The Nitrogen Plastic Welder dissipates a lot of heat during the operation.
Flammable materials must be kept at proper distance.

2.5 Safety Standards During Use

CAUTION

IMPORTANT

Before you connect the Plastic Welder to AC mains, make sure that the output voltage supplied differs by no more than 10% of the voltage indicated in this manual. Output voltage different from the one specified on the label can cause risks and serious damage to the Plastic Welder.

⚠ CAUTION
IMPORTANT

Do not unplug the Nitrogen Plastic Welder from the socket by yanking on the appliance or by pulling the power cable.

⚠ DANGER
IMPORTANT

Suffocation hazard. Do not leave packaging parts within the reach of children. Keep plastic bags away from children. Packaging is not a toy. During use make sure children do not come into contact with the machine. Children must not play with the machine.

2.6 Safety Regulations: Parts Under Pressure

Pressurised equipment is installed inside the Combi Nitrogen Plastic Welder, namely a compressed air filter and a nitrogen membrane module. These devices are certified and supplied complete with declaration of conformity. However, it is necessary to pay attention to the following:

⚠ CAUTION
IMPORTANT

Due to the nature of the device, it is possible that the air around the Combi Nitrogen Plastic Welder becomes oxygen-enriched. Make sure the whole surrounding area is appropriately ventilated. In case of poor ventilation, it is advisable to keep the oxygen level monitored. Nitrogen can lead to suffocation.

⚠ WARNING
IMPORTANT

Keep the area around the machine free from obstacles and covers. Failure to use the machine in observance of the prescriptions set out in this manual may result in injury to the user.

⚠ WARNING
IMPORTANT

Make sure the pressurised device is depressurised before carrying out any maintenance operations. Only authorised and properly trained personnel may carry out maintenance or repairs on the machine.

⚠ WARNING
IMPORTANT

Make sure maintenance is carried out on the pressurised filters at least once a year. Contact the manufacturer or authorised service centre.

⚠ CAUTION
IMPORTANT

Use the machine exclusively at the operating pressure indicated in the technical specifications provided in this manual or on the label stuck to the machine.

2.7 Standards On Disposal

⚠ WARNING
IMPORTANT

The product has been designed and assembled with top quality materials and components which can be recycled and reused. If a product carries the crossed-out wheeled bin symbol it means the product meets the requirements of EC Directive 2012/19/EU. Observe the rules and regulations on the collection and disposal of WEEE products in force in the zone of disposal. Observe the local authority regulations on waste disposal and do not throw old products away with household waste.
Appropriate disposal of products helps to prevent environmental pollution and health hazards.

3. Technical Data

Input voltage	230V - 16 A 50 / 60Hz
Intake power	210W
Air flow (standard)	15 - 20 l / min
Compressed air inlet pressure	6 - 8 bar (87 - 114 Psi)

4. Operating Instructions

4.1 General Description

The Nitrogen Plastic Welder allows you to weld filling material onto plastic parts by heating it up using nitrogen.

4.2 Putting into Service

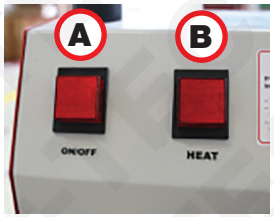
Before using the machine for the first time, make sure that it has not been damaged during transportation; in the case of visible damage please notify the carrier immediately, do not use the machine and contact Power-TEC for information and instructions.

4.3 Maintenance and Cleaning

The Nitrogen Plastic Welder has no parts subject to maintenance needs. Any unauthorised intervention on the machine will therefore invalidate the warranty.
Clean the machine periodically and carefully, removing any dirt, dust, soiling or slippery substances. Use self-cleaning cloths. Do not use water, flammable or corrosive liquids.

4.4 Components and Controls

4.4.1 Combi Nitrogen Plastic Welder



1	Machine control panel
2	Gun with nozzle
3	Cable for connection to the external AC power mains
4	Pressurized air inlet

Machine control panel:

A	Light general start button
B	Light heater (HEAT) start button

4.5 How to Use The Combi Nitrogen Plastic Welder

To be operated, the Nitrogen Plastic Welder must be connected to the AC mains using the power cable provided and supplied with compressed air (refer to the table on page 14).

To weld, proceed as follows:

- Press the light general start button (**A**)
- Then press the illuminated HEAT button (**B**); hot air will start to flow out of the gun reaching the optimal welding temperature in just a few minutes.

The Nitrogen Plastic Welder is fully pre-calibrated during assembly in the factory and does not need to be regulated in any way.

IMPORTANT
To avoid damaging the gun when turning off the machine, follow strictly the following procedure:

- **Turn off switch B button (HEAT).**
- **Wait for the air coming out of the nozzle to cool down (5-7 mins).**
- **Turn off the main power switch A button: the air flow will stop by itself.**

4.5.1 Types of Plastic

There are many types of plastic and the main ones, with the related acronyms, are the following:

Acronym	English Name
PP	Polypropylene
PE	Polyethylene
PC	Polycarbonate
ABS	ABS
TPO	TPO
PA / Nylon	Polyamide / Nylon
GTX	GTX

Generally, each plastic part shows an indication of the type of composition printed on it. **Before performing any repair, check that the welding material is the same type as the material to repair.** About 80% of plastics used in the automotive field are PP (polypropylene). Therefore, the filler material strips supplied with the machine are PP.
The plastic filling materials can be supplied in many different profiles and sizes. The most commonly used are in the form of strips with a circular segment and a straight and rounded side.

Below you can see some of the profiles supplied by Power-TEC:

Wider strips are more appropriate in the reconstruction of missing parts and supports, while the narrower ones in the closure of cuts or holes.
If your filling material is not the same type of plastic as the part to be repaired or you need a profile shape and/or size different to those provided please contact Power-TEC.

5. Examples Of Operation

5.1 Using the Scraper

In case you wish to work on both sides of the support to be repaired, begin first with the part not in view. The material to be repaired, before welding new plastic, should be cleaned by using the scraper supplied.

In case of reconstruction of missing parts use the scraper on the contact surfaces.
In case of cuts or holes, clean the profile with the angle of the blade of the scraper, so to make it uniform to the profile.
Once prepared, the material must be clean and without grease or oil traces — use a degreaser to thoroughly clean the surfaces to be worked with the scraper.

5.2 Using the Strips

When using strips which have a rounded side and a flat one, the rounded side must be placed in direct contact with the plastic to be repaired.
The strip should be positioned by twisting it at an angle of about 90°, with the nozzle of the gun at an angle of about 45° with the plastics to repair.

The gun must be kept at 1.5 cm from the plastic to repair. Make sure that the nozzle of the gun does not come into contact with the plastic parts as the heating must be supplied only by the gas. When the strip begins to melt, move it slowly towards you.
The nitrogen flows from the nozzle of the gun must be directed on the material to be repaired and not on the welding material.
In case of cuts, allow the strip to bend slightly in order to allow a greater penetration of the welding material inside the slot.
Stop at the end of the part to be repaired, by cutting the excessive part of the strip with a pair of scissors or nipping it off with use of the same gun.
Proceed on the outer side of the repair as done on the inner side.

5.3 Use of the Roller and (optional) Plier

The roller and the (optional) gripper should be used to ease the compression of the plastic.
The roller, suitable when closing cuts or holes, must be used as soon as the welding material has been placed by exerting pressure on the handle and, if necessary, by heating the welding material with the gun. The roller smooths out any seams created.

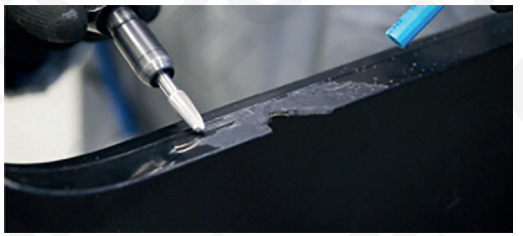
5.4 Support Modeling

Once you have finished the use of roller or (optional) gripper, the plastic can be trimmed.
Once cooled, the inner side not in view can be left in its raw state, while the outer side can be sanded down and then you can use a filler (if necessary), primer and paint.

5.5 Reconstruction of Missing Parts

Example of reconstructing an eyelet that has been broken off a bumper:

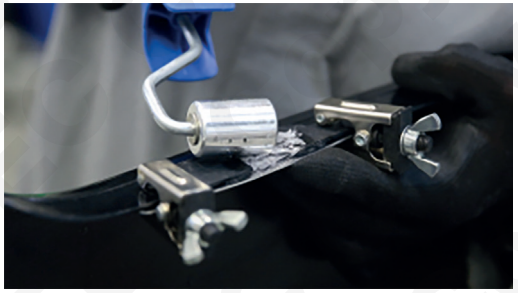
1. Clean the surface to work with a scraper and then with a degreasing agent.



2. Before starting, take the aluminium plate and two clamps provided. Fix the plate in the place where the repair work needs to be performed using the two clamps to keep in place.

3. With the gun, heat around the part on which to melt new plastic; move forward slowly with the gun and the plastic strip. Check correct grip, including on the edges.

4. Apply any plastic part to do the finishing.
5. After uniformly heating up the filler material, use the roller to smooth it out.



6. Turn the part over and repeat the same sequence of operations on reverse side.
7. Press with the (optional) gripper after uniformly heating up the filler material.

8. Use the roller to smooth out.
9. Finish with fine abrasive paper.

5.6 Closing Splits

To close an open split or crack along a bumper, proceed as follows:

1. Clean the surface to repair with a scraper, creating a V-shaped profile may be useful to achieve a hole of 5.5 mm in diameter at the end of the cutting itself, in order to prevent its enlargement The clean the whole surface with a degreasing agent.

2. If necessary, hold the ends of the opening still and apply a staple. Make an incision at the end using the handpiece (see heading 3.6 in this manual).
3. Proceed to move along slowly with the gun and filler rod. Check the correct penetration of the plastic inside the slot.

4. Apply the roller to spread the welded plastic and to help it penetrate deeper inside. Before using the roller, heat the plastic with the gun to make it more flexible and easier to shape.

5. Finish with fine abrasive paper.
6. If necessary, you can carry out the same operation on the other side of the bumper.

6. Warranty

The Combi Nitrogen Plastic Welder is covered by 12 months warranty against defects of conformity in accordance with the European Directive 1999/44/EC.

The warranty period starts from the date indicated on the document of purchase (receipt or invoice) issued by the seller and to be kept together with the equipment.

1. During the warranty period, replacement or repair of the product with defects in accordance with established and experienced technical service of the manufacturer and caused by manufacturing defects, will be performed at no cost for the user.
2. Replacing the product, instead of repairing, will be carried out only in cases where the latter is, in the opinion of the manufacturer, objectively impossible or excessively inconvenient.
3. Repairs carried out under warranty or replacement of the product does not extend or renew the terms of warranty expiry.
4. If unable to produce the document of purchase bearing the date of purchase and the name of the seller, the warranty will be void.
5. If the defect is not found to be a lack of conformity following the verification of the manufacturer, the user will be notified and charged for any incurred cost (transport, labour and materials).
6. Warranty does not cover defects resulting from:
   - negligence, inexperience and carelessness during usage;
   - modifications, adaptations or maintenance performed by unauthorised personnel;
   - tampering or carrying out interventions on the product;
   - improper or unreasonable use of the product;
   - damage due to bumps, drops, transportation damage;
   - replacement of parts.
7. The manufacturer declines any responsibility for any damage that may directly or indirectly be caused to persons, property or animals as a result of improper usage of the product.

This warranty does not affect the user's legal rights which may change from country to country. For more information and/or service, contact Power-TEC.

7. Declaration Of Conformity

DECLARATION OF CONFORMITY

Manufacturer's Name: MWM srl

Address: Via Toscana, 2/A - 40069 Zola Predosa (Bologna) – Italy

Model: COMBI NITROGEN PLASTIC WELDER

Detailed purpose: Gas welder for plastics for professionals use

Is compliant with the essential requirements of the European Community Directives EMC 2014/30/UE, LVD 2014/35/UE, PED 2014/68/UE e ROSH/65/2011/UE that are applicable to the product.

In addition, the equipment mentioned in the above declaration is compliant with the relevant Union harmonisation legislation:

EN 55014-1 : 2006 + A1 : 2009 +A2 :2011
EN 55014 - 2 :1997 +A1 :2001 + A2 :2008
EN 61000 - 3 - 2 :2014
EN 61000 - 3 -3 - 2013
EN 60335 - 1 : 2012 + A11 :2014
EN 62233 : 2008

Zola Predosa, 18/10/2016

M W M SRL

Raffaele Mongiorgi

Our products are designed to be used correctly and with care for the purpose for which they are intended. No liability is accepted by the Tool Connection for incorrect use of any of our products, and the Tool Connection cannot be held responsible for any damage to personnel, property or equipment when using the tools. Incorrect use will also invalidate the warranty.

If applicable, the applications database and any instructional information provided has been designed to offer general guidance for a particular tool's use and while all attention is given to the accuracy of the data no project should be attempted without referring first to the manufacturer's technical documentation (workshop or instruction manual) or the use of a recognised authority such as Autodata.

It is our policy to continually improve our products and thus we reserve the right to alter specifications and components without prior notice. It is the responsibility of the user to ensure the suitability of the tools and information prior to their use.

Safety First. Be Protected.

RoHS Compliant

Guarantee

If this product fails through faulty materials or workmanship, contact our service department direct on: **+44 (0) 1926 818186**. Normal wear and tear are excluded as are consumable items and abuse.

www.power-tec.co.uk

TOOL CONNECTION
The Complete Connection

Distributed by The Tool Connection Ltd

Kineton Road, Southam, Warwickshire CV47 0DR
T +44 (0) 1926 815000 **F** +44 (0) 1926 815888
info@toolconnection.co.uk **www.toolconnection.co.uk**

recycle
When you have finished with this leaflet please recycle it

92452_Instructions_V1

5 018341 924522