

plasma brush[®]

Operating Instructions

PB3 nozzle and electrode replacement
for activation processes



i

Important advice!

It is essential to read these operating instructions thoroughly prior to assembly, installation and commissioning.

It is essential to observe the safety instructions! Nonobservance of the safety instructions can result in accidents and cause serious injury and damage to property.

Commissioning and operation of the plasma generator must only be carried out by qualified and instructed technicians!

Provide instruction for your personnel. The operating company/user is responsible for ensuring that personnel fully comprehend how to operate the device and understand the safety regulations.

© Copyright **relyon plasma GmbH** 2015.

Alle Rechte vorbehalten. All rights reserved.

Texts, images and graphic, including their layout, are protected by copyright and other protective laws. Dissemination and reproduction of this document, utilization and disclosure of its contents are prohibited unless expressly permitted. Violators shall be liable to pay damages. All rights in the case of patent, utility patent or design patent registration reserved.

Translation Operating Instructions

1	Safety	3
1.1	Residual dangers	3
2	Electrode replacement	Fehler! Textmarke nicht definiert.
3	Nozzle replacement	5
4	Notes	6

1 Safety

The plasma generator has been built in accordance with the relevant international standards. As with every technical product, however, the system may be dangerous in the case of unauthorized or non-specified use.

In addition to the notes in these operating instructions, observe generally applicable safety instructions.

Work with the plasma generator can be dangerous and result in serious - in some cases even fatal - injuries. Therefore always protect yourself and others.



Caution – Danger!

Please mind and follow the safety advices and demands of this operation instructions, otherwise serious – in some cases even fatal – injuries may result of the use of this device.

1.1 Residual dangers

This device has been produced with state-of-the-art technology. Nevertheless, residual risk can never be totally excluded.

It is essential to observe the following safety instructions:



Caution – electrical voltage!

- Danger from high voltage
 - Never place your hands in the plasma jet.
 - Never touch the plasma generator during operation.
 - Never direct the plasma jet at persons or animals.



Caution – hot surface!

Temperatures of up to 200 °C are possible at the housing of the plasma generator.

- Wear protective gloves when handling the device.
- Wait until the device has cooled down.



Caution – damage to device possible!

By loosening the threaded connections the plasma generator can be destroyed.

- Please follow the instructions in the operating and maintenance instructions for the plasma generator.
- Do not loosen any threaded connections which are not expressly necessary for nozzle and electrode replacement.

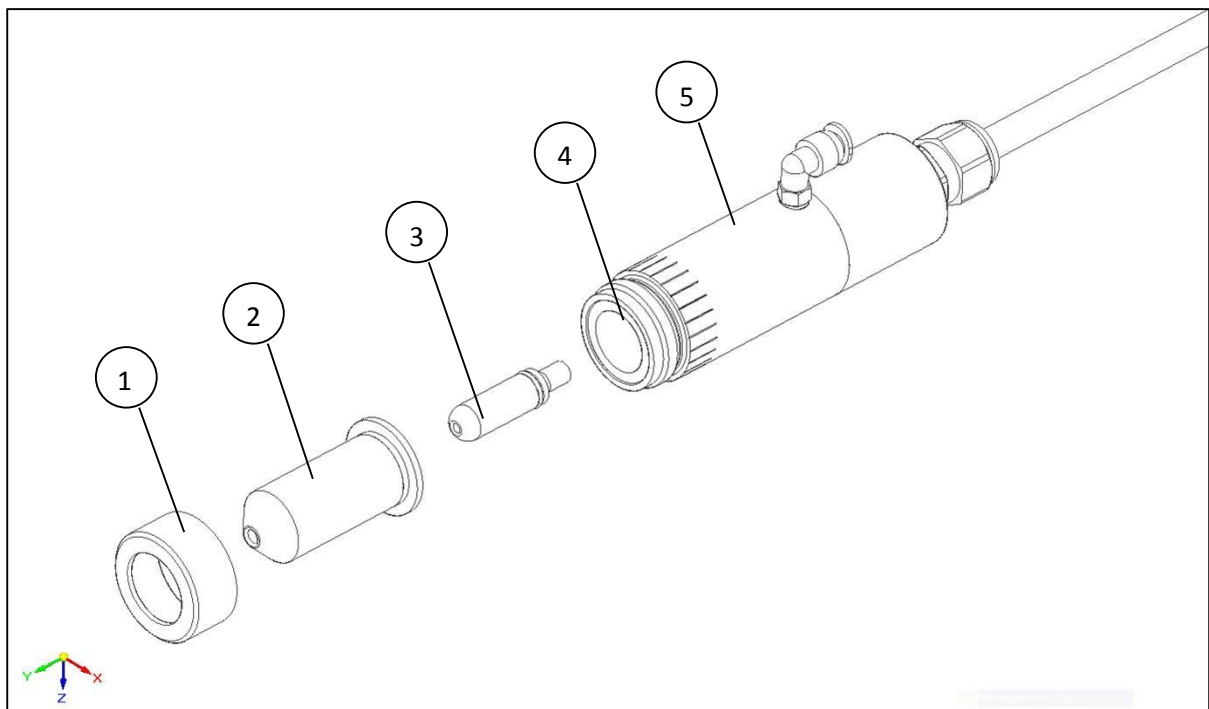
2 Electrode replacement

The electrode of the plasma generator has to be replaced in certain intervals depending on the application.

The electrode replacement cycle of approximately 1000 hours was determined by relyon plasma in standardized tests. Deviations are possible depending on the application.

To replace the electrode, carry out the following steps:

1. Switch of the device and wait until the plasma generator is cooled down.
2. Unscrew the nozzle (2) together with the coupling nut (1) (right-hand thread).
Caution: by removing the nozzle, the ceramic bushing (4) and the spacer may fall out of the generator housing (5)!
3. Unscrew the electrode with O-ring (3) (right-hand thread) with a hex key AF 2,5 mm.
4. Pull the electrode with O-ring (3) out of the helix by hand.
5. Insert the new electrode with O-ring (3) with a rotary movement into the helix and fasten it with a torque-limiting wrench (tightening torque 1 Nm).
6. If necessary, mount first the spacer (plastic) and then the ceramic bush (4) into the generator housing (5).
Caution: Ensure the correct order for reassembly!
7. Screw the nozzle (2) together with the coupling nut (1) on to the generator housing (5) and tighten them hand-tight.
8. The electrode is now replaced.



3 Nozzle replacement

The nozzle of the plasma generator has to be replaced in certain intervals depending on the application.

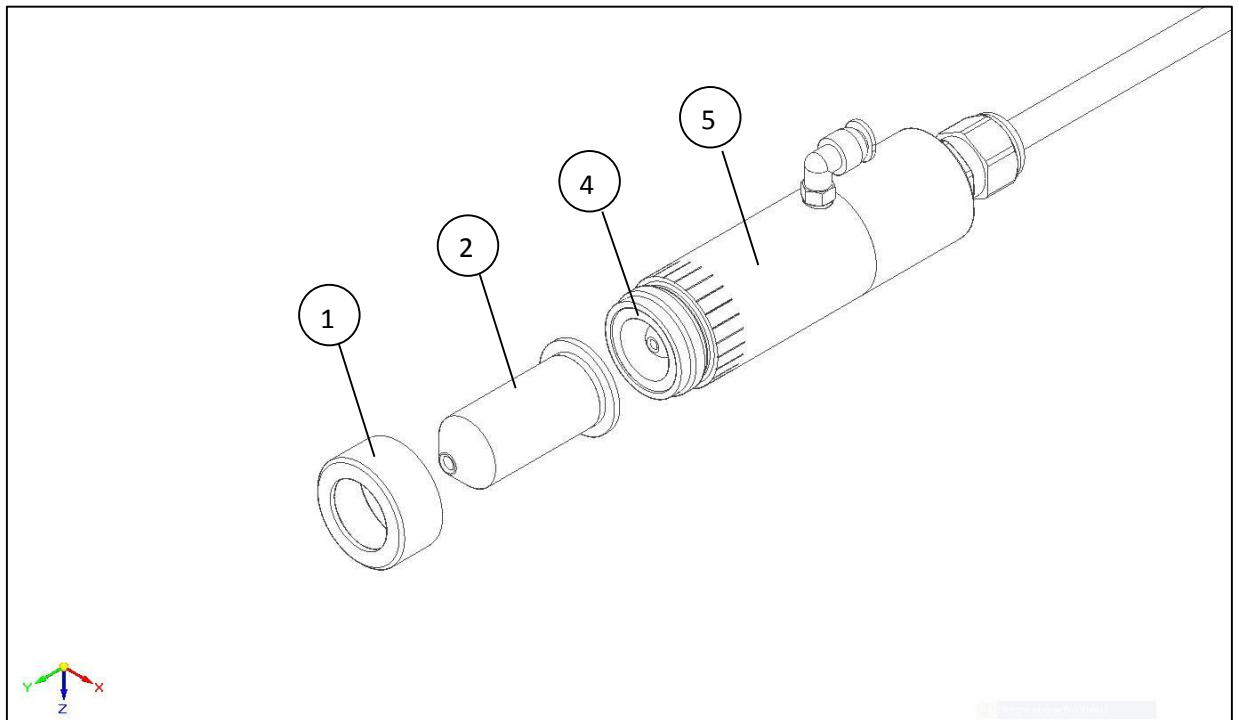
The nozzle replacement cycles were determined by relyon plasma in standardized tests.

- Copper nozzles operated with compressed air: approximately 200 hours
- Copper nozzles operated with nitrogen: approximately 1000 hours

Deviations are possible depending on the application.

To replace the nozzle, carry out the following steps:

1. Switch of the device and wait until the plasma generator is cooled down.
2. Unscrew the nozzle (2) together with the coupling nut (1) (right-hand thread).
Caution: by removing the nozzle, the ceramic bushing (4) and the spacer may fall out of the generator housing (5)!
3. Remove the nozzle (2) from the coupling nut (1).
4. Insert the new nozzle (2) into the coupling nut (1).
5. If necessary, mount first the spacer (plastic) and then the ceramic bush (4) into the generator housing (5).
Caution: Ensure the correct order for reassembly!
6. Screw the nozzle (2) together with the coupling nut (1) on to the generator housing (5) and tighten them hand-tight.
7. The nozzle is now replaced.



4 Notes

relyon plasma GmbH

Weidener Straße 16
93057 Regensburg
Germany

Telephone: +49-941-60098-0
Fax: +49-941-60098-100
E-mail: info@relyon-plasma.com
<http://www.relyon-plasma.com>

Service Hotline: +49-941-60098-120