

## HAND GRINDER for tungsten electrodes



**D33**



**User's manual**



## **WELDING EQUIPMENT SUITABLE FOR TODAY'S NEEDS**

### **Thank you for purchasing our product!**

You have made a right choice. Plasma welding and welding processes are carried out in difficult conditions that expose welding equipment to extreme tests of its strength. Only high quality equipment can ensure required reliability and performance during realization of the above-mentioned processes. SPARTUS® products are characterized by precisely such features: they are primarily reliable and durable, but they are also versatile. We listen carefully to clients' needs. Therefore, our offer covers such a wide assortment of products. Thank you very much for your trust in our company. We would like to invite you to familiarize yourself with the remaining products and offer at [www.spartus.info](http://www.spartus.info) or directly at a local distributor of SPARTUS® products.

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## **IMPORTANT!**

*Before using this product, read the instruction manual in its entirety, with understanding. Keep the instructions for quick reference to it if necessary. Pay special attention to safety instructions provided for your protection. In the event of any points of misunderstanding instructions, contact your supplier or supervisor.*

## 1. SAFETY RULES



Information in this manual on the safe use of the provided equipment does not release the operator from following safety regulations in force on site.

In addition, the operator should have an information on the necessary safeguards as defined in relevant national and international standards and regulations.

It is forbidden to use the equipment without previous reading of this manual.

**!** *This symbol is dedicated for tips not using of which may be dangerous to life or health. These tips should be used while keeping special caution in these situations. These tips should be given to all users of the device.*

### 1.1 INTENDED USE

Hand grinder for tungsten electrodes SPARTUS® D33 is dedicated for sharpening of tungsten electrode tip (non-consumable electrode), use for TIG welding procedure.

**!** *It is **forbidden** to grind tungsten electrodes with thorium without first connecting the extractor and separating the dust with proper filtration. The dust generated as the result of the grinding of thorium electrodes is highly harmful to health and life of the operator..*

*It is **forbidden** to use the device for improper purposes!*

### 1.2 SAFETY USE

Before each use check the condition of the device and additional accessories. It is forbidden to use damaged or technically inoperable device. Used and damaged parts must be replaced with original spare parts.

**!** *Breaking the safety rules may lead to the risk of losing health or life!*

#### 1.2.1 Eye and face protection

The wheel rotational speed reaches 1100 rpm. During the grinding, splinters and impurities that can form in the eye may appear. High temperature can be produced due to strong friction forces. The rotating wheel of the grinder can pose a risk to the operator's hands and fingers.

In order to prevent hazards mentioned above and other risks that accompany the grinding process, the following rules must be followed:

- it is absolutely forbidden to use the device when the protective cover is removed or damaged,
- it is forbidden to put hands or fingers inside the grinding chamber when the device is connected to the electricity supply,
- sharpened electrode always should be secured by a clamp.

### 1.2.2 Noise load

The device itself emits a low level of noise. However, during the sharpening of tungsten electrode, the level of noise increases. Excessive noise can cause permanent damage to hearing. In order to prevent threats mentioned above, following rules must be followed:

- use appropriate hearing protectors,
- people in the vicinity should be informed about the dangers of exposure to excessive noise. People in the work zone must wear appropriate hearing protection.

### 1.2.3 Risk of electric shock

The unit is powered from single-phase network 230V +/- 10%. Like all device supplied with electricity network, the grinder may cause risk of electric shock to the operator. Electrical shock from the electricity network can result in permanent damage to health or loss of life. In order to prevent threats mentioned above, following rules must be followed:

- it is forbidden to use when the power cord, plug or cover is damaged,
- do not touch electrical components of the device under voltage,
- take special care when using the device in small rooms or in areas with increased air humidity,
- avoid contact with water.

## 1.3 ENVIRONMENTAL CONDITIONS

### Conditions during the operation, storage and transport

Ambient temperature during operation	-10°C ÷ +40°C
Relative air humidity	50% in +40°C 90% in +20°C
Ambient air	free from excessive amounts of dust, acids, corrosive gases
Ambient temperature during transportation and storage	-20°C ÷ +55°C

## 2. EC DECLARATION OF CONFORMITY

Hand grinder SPARTUS® D33 is in conformity with the relevant Union harmonization legislation:

**LVD 2014/35/UE**

Low Voltage Directive

**EMC 2014/30/UE**

Electromagnetic Compatibility Directive

harmonized standards:

**EN 60745-1:2006** Hand-held motor-operated electric tools – Safety – Part 1: General requirements.

Product is marked with CE sign .

This declaration applies only to the machine in the state in which it was on the market and does not include components added by the end-user or subsequent actions carried out by it.

### 3. GENERAL DESCRIPTION

Hand grinder SPARTUS® D33 for tungsten electrodes enables precise and efficient sharpening of the tungsten electrode tip according to the technological requirements.

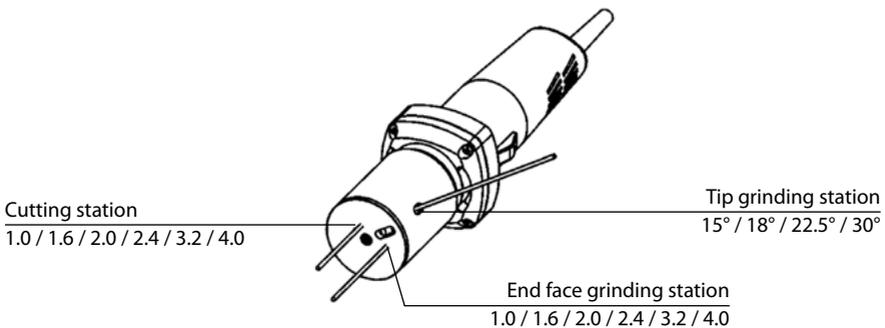
The grinder enables sharpening of electrodes with diameters of 1.0 to 4.0mm at an angle 15°, 18°, 22.5° and 30°. The ergonomic shape ensures comfort of use.

The advantages of the device are above all high output, low noise and energy saving.

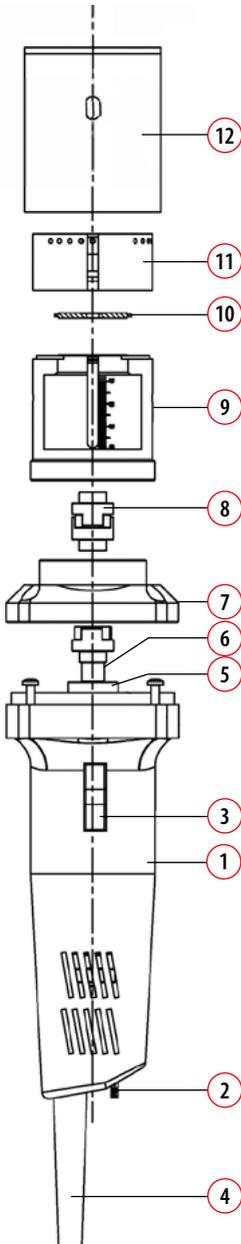
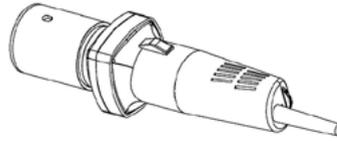
### 4. TECHNICAL SPECIFICATIONS

Input	~1 x 230V ± 10% 50 / 60 Hz
Electric motor power [W]	750
Grinding angle [°]	15, 18, 22.5, 30
Max. rotational speed [obr/min]	11 000
Diameter of electrodes [mm]	1.0 – 4.0
Grinding wheel diameter [mm]	φ33.5 x φ5 x 2.4(mm)
Min length of grinding electrodes [mm]	30
Dimensions [mm]	340 x 76 x 76
Grinder weight [kg]	1.6

### 5. DEVICE CONSTRUCTION



Hand grinder SPARTUS® D33  
CODE: SP147-00-200



- |   |              |                       |
|---|--------------|-----------------------|
| ① | SP147-99-201 | Motor +housing        |
| ② | SP147-99-209 | Speed governor        |
| ③ | SP147-99-211 | Switch                |
| ④ | SP147-99-212 | Power cord            |
| ⑤ | SP147-99-208 | Bearing               |
| ⑥ | SP147-99-207 | Lining                |
| ⑦ | SP147-99-206 | Front bearing bracket |
| ⑧ | SP147-99-205 | Cross-linked coupling |
| ⑨ | SP147-99-204 | Bearing coat          |
| ⑩ | SP147-99-210 | Grinding wheel        |
| ⑪ | SP147-99-203 | Angle plate           |
| ⑫ | SP147-99-202 | Dust cover            |

## 6. INSTALLATION AND USE



*Situations and threats that may cause direct danger during use of the device.  
Precautions to be taken by the operator in order to avoid hazards!*

### **Health-impaired materials that electrodes are made of!**

Tungsten electrodes can contain harmful materials. Follow the manufacturer's instructions and recommendations! In case of doubt concerning the composition of tungsten electrodes contact the manufacturer / supplier of electrodes.

### **Activation with an electrode applied to the grinding wheel!**

Launching and commissioning of the device with an electrode applied to the grinding wheel may cause twist of the electrode and damage the grinding wheel, the equipment and personal injury! During the launching, the electrode must not adhere to the surface of the grinding wheel. Check the electrode position before switching on.

### **Open supply channel!**

During the grinding procedure splinters and dust which can fall into the eye or be released into the air can get through a supply channel.

Prior to switching on the device, place the electrode holder in the supply channel. Keep in mind that the end of the grounded electrode should not touch the grinding wheel.

After turning off, wait until the grinding wheel has completely stopped before pulling out the electrode holder from supply channel.

### **Too much clamping force between electrode and grinding wheel!**

Using too much clamping force on grinding wheel can cause overheating and an annealing of electrode. Annealed electrode may be unusable or damage the device.

Do not use too much clamping force between electrode and grinding wheel!

Rotate the electrode evenly over the grinding wheel during sharpening!



*Before each use make sure that all components are properly installed and technically functional.  
It is **forbidden** to use the device if it is technically inoperable!*



*The unit is powered from single-phase network 230V. **RISK OF ELECTRIC SHOCK**. Connect to a single-phase network with the parameters indicated in the technical documentation. Check the status of plug and power supply lines. Replace the damaged power supply line or plug with a new one!*

## 6.1 HOW TO USE SPARTUS® D33 HAND GRINDER

### 6.1.1 Tungsten electrode tip grinding method:

1. Check if the switch (3) is in the „OFF“ position.
2. Set the angle of electrode sharpening.
3. Put the electrode inside the tip grinding station.
4. Switch on the grinder using the switch (3).
5. Slowly and evenly rotate the electrode, thus sharpening end of the electrode.
6. Switch of the grinder.
7. Put off the electrode.

### 6.1.2 Grinding method of the end face of the tungsten electrode:

1. Check if the switch (3) is in the „OFF“ position.
3. Put the electrode inside the end face grinding station.
4. Switch on the grinder using the switch (3).
5. Observe the degree of grinding, when achieving the effect.
6. Switch of the grinder.
7. Put off the electrode.

### 6.1.3 Tungsten electrode cutting method:

1. Check if the switch (3) is in the „OFF“ position.
3. Put the electrode inside the cutting station.
4. Switch on the grinder using the switch (3).
5. Slowly and evenly rotate the electrode, until it is broken.
6. Switch of the grinder.
7. Put off the electrode.

### 6.1.4 Grinding speed adjustment:

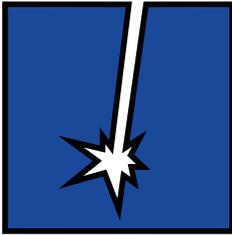
According to grinding tungsten electrode of different diameters, choose the grinding speed to achieve the best grinding quality.

### 6.1.5 Replacement method of grinding wheel:

1. Remove the protective cover by loosening the screw.
2. Unscrew the screws on the angle plate and remove it.
3. Remove the locking screw of the grinding wheel on the bearing coat. When removing it, Hold a metal rod needs to be inserted into the hole on the circumference of the bearing coat. Remove the old grinding disc and replace it to the new one.
4. The grinding wheel can be used on both sides.

## 7. TROUBLESHOOTING

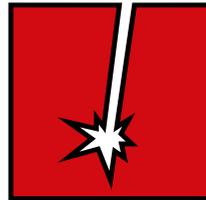
The end of the tungsten electrode after the grinding is overheated.	Too much clamping force between electrode and grinding wheel.
Uneven grinding of the electrode.	Incorrect tungsten electrode grinding technique. The grinding wheel is worn out.
End of the electrode is not sharp enough – the electrode is not sharpened.	Too low grinding depth.



**EASY**

*Simple solutions and an attractive price – these are the features of SPARTUS® Easy series devices. Our equipment has been designed with ease of use and ergonomics at work in mind.*

*A masterly combination of high quality production, excellent parameters and ergonomics – these are features of the SPARTUS® Master series of devices, which were created with demanding welding jobs in mind.*



**MASTER**



**PRO**

*Precision, functionality, excellent parameters and resistance to high workloads – these are the features of the SPARTUS® Pro industrial series of devices. This series consists of specialised solutions which will satisfy even the most demanding users.*



Videopresentation of products



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