

UK

TRANSLATION OF THE ORIGINAL
USER MANUAL

Ultima-Tig-Cut



inelco
grinders
The way to grind

Translation of the original EU statement of compliance

Manufacturer: **INELCO GRINDERS A/S**
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hereby declare that

Machine: **ULTIMA-TIG-CUT**

Type: UT110

Serial no.: see page 2

Year of production: see page 2

is produced in accordance with the provisions of the Commission's Directive on harmonization of national legislation's on machinery 2006/42/EU, EMC-directive 2014/30/EU and RoHS2 directive 2011/65/EU.

Authorized to create the technical file: Anders Thy, Industrivej 3, DK-9690 Fjerritslev

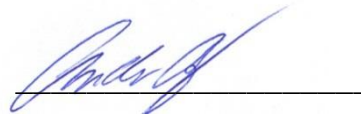
ULTIMA-TIG-CUT is developed and produced according to the following international norms:

EN 12100:2010, EN 50581:2012, EN 61029-1: 2009+A11,
EN 61000-6-4: 2005, EN 61000-6-2: 2007

Person responsible: Name: Anders Thy

Date: 01.12.2019

Signed: _____



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IMPORTANT SAFETY INSTRUCTIONS

When installing and operating the machine the safety rules enclosed

SUPPLIER'S DIRECTIONS

should be read and strictly observed.

This instruction manual and the accompanying supplier's instruction for use must be accessible at all times to staff engaged in the installation, operation and maintenance of the machine.

DISPOSAL



Do not dispose electrical equipment in your ordinary waste disposal. The European guideline 2012/19/EU on Electrical Equipment Waste and its implementation in national laws requires such used equipment to be separately collected and recycled in an environmentally friendly manner

1. General machine description

ULTIMA-TIG-CUT is a patented grinder and cutting device with diamond discs for **wet grinding and cutting** of tungsten electrodes for TIG welding. It is very easy and safe to use.

The diamond disc grinds the tungsten electrodes correctly in the longitudinal direction of the electrode, and the variable angle adjustment allows you, not only to grind in the right angle, but also to grind the tip flat, if needed.

Cutting function with the diamond-cutting disc, gives an exact and sharp cut of the tungsten electrode in the precise length, without any risk of damaging the electrode.

The grinding liquid in the closed grinding and cutting chambers ensures that no harmful dust particles slips out into the surroundings. The cooling effect of the grinding liquid also mean, that there are no discoloration of the tungsten electrode due to heat.

The harmful grinding dust is collected automatically in the special dust collector and hence can be disposed correctly.

The included electrode holder and electrode clamps, in combination with stick-out adjustment, reduces the waste of electrodes, and ensures a uniform grinding result at each grinding.

The ULTIMA-TIG-CUT can be used in a room with an ambient temperature of 0° C to +40° and a relative humidity of up to 50% at 40° C and 90% at 20° C. The machine are tested acc. protection class IP21.

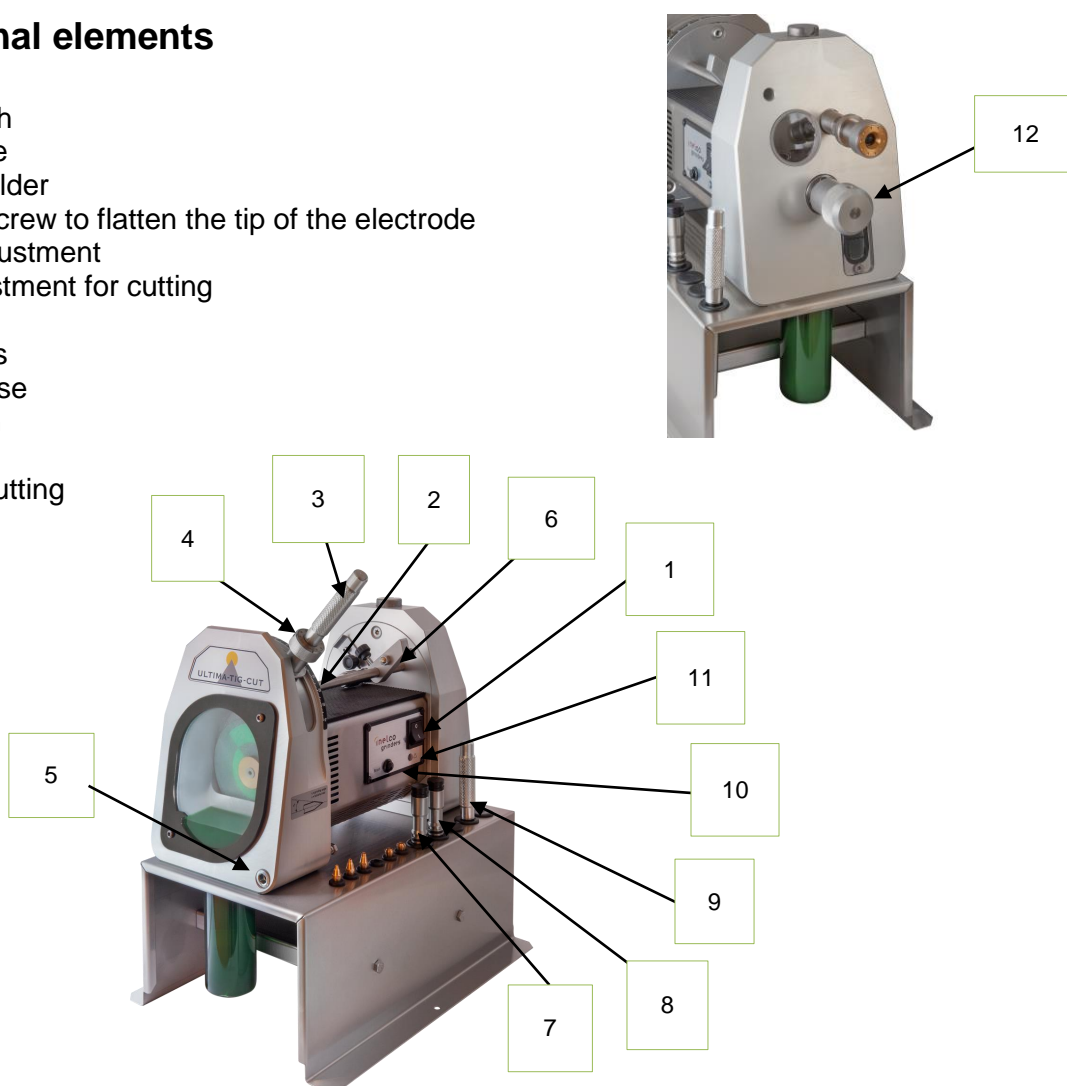
2. What is included

Upon reception und unpacking please, check that the following items are included in the package:

- ULTIMA-TIG-CUT machine
- 2 dust collectors with liquid (Item No. 75494500)
- 2 x 250 ml bottles off grinding/cutting liquid (Item No. 75491200)
- Tungsten electrode holder (Item No. 75520023)
- Pickup (Item NO. 75500170)
- Pickup Release (Item no. 75520021)
- Electrode clamps for Ø1,6 - Ø2,4 and Ø3,2 mm
- Clamps for cutting Ø1,6 - Ø2,4 and Ø3,2 mm
- 2 x Tip collector (Item No.75520049+75520050)
- Worktable, incl. bolts and nuts for mounting

3. Operational elements

1. Power Switch
2. Degree scale
3. Electrode holder
4. Tightening screw to flatten the tip of the electrode
5. Stick-out adjustment
6. Length adjustment for cutting
7. Pickup
8. Tip collectors
9. Pickup release
10. Reset button
11. LED
12. Handle for cutting



4. Initial operation and transport

Remove the protective foil on the enclosed worktable and mount the worktable as shown in the drawing in the back of this manual. Fasten the grinder on the worktable and place it securely on a workbench or table.

IMPORTANT: The ULTIMA-TIG-CUT cannot run without grinding liquid!

The ULTIMA-TIG-CUT grinder does not contain grinding liquid on delivery. Before starting the machine the first time, mount the supplied dust collectors and fill extra grinding liquid from the bottle provided through the tube until the correct liquid level has been reached (please see mark on the inspection cover frame). (See drawing and photos in the back of this manual)

Check that the switch is in the OFF position. ("O" on the switch)

Connect the machine to the mains voltage specified on the nameplate.

IMPORTANT: Only use single-phase power supply outlet WITH an earth connection.

5. Safety procedures

- Never use the product if the grinding disc is damaged
- Use only diamond discs recommended by Inelco Grinders A/S
- Use the product only when all parts of the chamber is mounted
- Use only the grinder with EP770 grinding liquid from Inelco Grinders A/S
- Only grind Tungsten electrodes with electrode holder
- Always use an appropriate size clamp to the electrode for grinding.

6. Fastening of the electrode in the electrode holder

Select the size of the electrode clamp that match the diameter of the electrode and mount it loosely in the electrode holder. Then insert the electrode into the clamp, so that approximately 20 mm of the electrode is sticking out of the clamp. Tighten the clamp with your fingers, but not so tightened that the electrode cannot slide in the clamp.

Insert the electrode with the electrode holder into the stick-out setting (10), placed below on the right front side of the grinding (see picture), until it stops. Tighten the electrode with a smooth turn of the electrode holder clockwise. Only fasten the electrode as tight, as it does not slide in the electrode clamp. If the electrode is too tight fasten, you risk damage of the clamp.



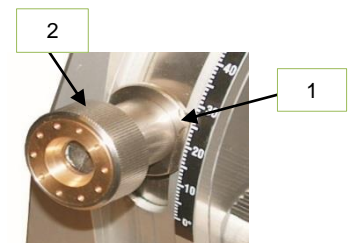
On the back of the stick-out adjustment, there is a regulator screw (see picture), which can be adjusted to determine the length of the electrode sticking out of the clamp. The manufacturer has set the regulation screw to grind approx. 0,3 mm in order to obtain the highest number of grindings per electrode as possible.



This means, that you can re-grind the electrode up to 450 times. It is necessary to adjust the stick-out as the diamond wheel wears down. It is often not necessary to break off metal drops on the electrode before grinding. The metal drops do not melt together with the electrode; the grinding process will remove them.

7. Setting the grinding angle

Adjust the grinding angle by placing the cursor (1) at the desired grinding angle. Tighten the electrode guide by tightening the screw (2).



Note: the grinding angle equals half the tip angle!

After the tungsten electrode is inserted in the electrode holder, it is inserted in the angle adjust unit until the electrode almost touches the diamond disc. Start the machine at the on/off switch and turn the electrode holder in a calm and steady pace and with light pressure until the electrode holder cannot go further in. Keep turning the electrode holder for at least five rounds to get the best possible grinding result.

It is not necessary to press the electrode hard against the diamond wheel, a light pressure and the rotation of the grinding disc is sufficient to grind the electrode.



Pull the electrode holder back a little, so that the electrode does not touch the grinding disc. Turn off the grinder and pull out the electrode holder after the grinder has stopped turning.

Removed the electrode from the electrode holder by re-inserting the electrode into the stick-out adjustment and turn it counterclockwise. Then pull out the electrode.

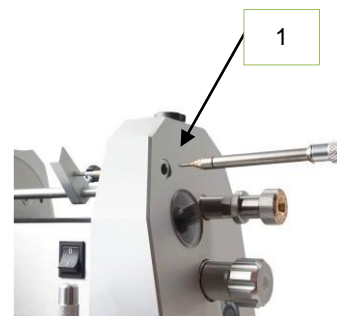
To create a flat tip on the electrode after grinding:

- Setting grinding angle to 90° (while grinder is turned off)
- Put the electrode holder with the electrode in the angle adjustment again
- Turn the tightening screw on the angle setting down until you feel the tip of the electrode touches the grinding wheel.
- Then turn the tightening screw down. A point on the brass bearing on top of the screw corresponds to remove 0.1 mm off the tip.
- Pull the electrode away from the grinding disc.
- Start the grinder and gently push down the electrode holder in a turning movement and the tip is flattened.
- Turn off the grinder and pull out the electrode holder.

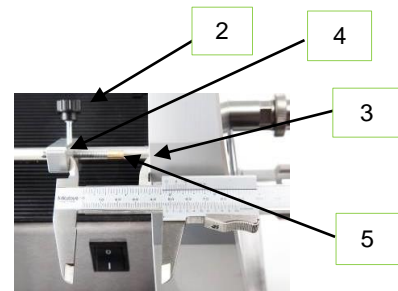
8. Electrode cutting

Turn off the machine after grinding the electrode.

Loosen the electrode in the stick-out (1) on the cutting console, pull out the electrode and tighten the electrode clamp, using your fingers.



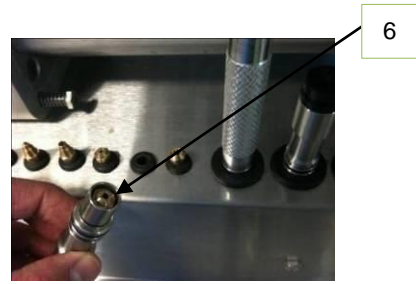
Set the cutting length, using the screw (2) for length stop (4). The cutting length is the same as the distance between the cutter console (3) and the length stop (4). Measure the cutting length, using a caliper (not included). The cutting length can be also adjusted by turning the Brass pin (5) on the length stop.



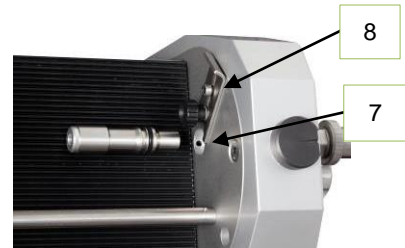
Place the electrode holder in the stick-out on the cutting console and tighten the electrode by turning the electrode holder.

Mount the clamp for the correct electrode diameter in the Pickup (6) by pushing in the back part of the Pickup and using your fingers to screw the clamp in. Please note that the clamps for the Pickup are different (flat) from the clamps for the electrode holder.

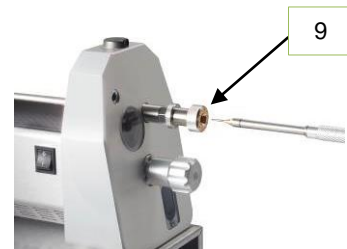
Warning: If the clamps for the electrode holder are used in the Pickup, the clamps will be damaged by the cutting disc.



Mount the Pickup in the hole on the back of the cutting console (7). Make sure the Catch for Pickup (8) is holding the Pickup in place.



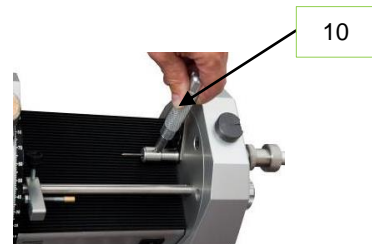
Place the electrode holder in the electrode guide (9),



and push it in, while releasing the Pickup with your fingers (for short electrodes),



or with the Pickup release (10) (for long electrodes) where the electrode pass through the Pickup, ensuring that the electrode tip is secured in the Pickup.



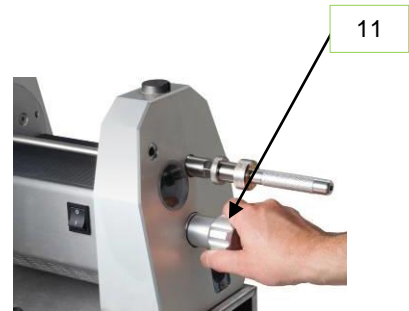
After the electrode holder is in place, tighten the clamp for the Pickup to ensure that the Pickup is kept in place during cutting.



To avoid grinding liquid splashing out of the electrode guide on the grinding part, the Pickup release (10) can be placed in the electrode guide.

Turn on the machine.

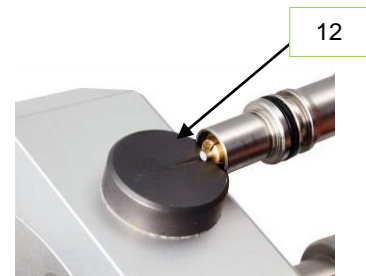
Push in the handle (11) and slowly turn it clockwise until the electrode is completely cut through and the handle reaches the stop. Turn the handle back slowly until it comes back out. To minimize burrs on the electrode tip, hold the electrode holder tight during cutting, using the other hand.



Important: Turn the handle all the way to the right to make sure that the electrode is cut through.

Turn off the machine.

Loosen the screw for the Clamp, release the clamp and remove the Pickup.



Remove the burrs on the electrode tip, using the Deburring block (12) before removing the tip from the Pickup.

The cutting length can be fine adjusted using the tightening screw on the electrode guide. One round equals 1 mm. This adjustment is also needed when long electrode clamps are used in the electrode holder, when grinding and cutting short electrodes, to prevent the cutting disc from damaging the electrode clamp.



For cutting off a damaged tip on an electrode, which has not been grinded, use one of the supplied tip collectors instead of the Pickup module. Choose the tip collector suitable for the diameter of the electrode.



9. Maintenance

The ULTIMA-TIG-CUT must always have sufficient grinding liquid, in order to secure an optimum collection of dust and cooling of the grinding process. A mark on the glass frame of the grinding chamber indicate the correct amount of grinding liquid (measured while the grinder is off). Check amount of grinding liquid regularly and top up if necessary. To ensure a long service life of the grinder and the diamond discs use original ULTIMA-TIG- CUT grinding liquid.



Replaced the grinding fluid heavily contaminated with dust.

Deposit grinding fluid and/or containers containing dust in accordance with national regulations depending on the grinding dust content. Please see the data sheet of the selected electrodes.

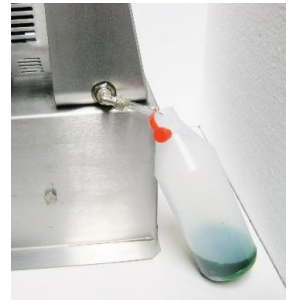
Daily Inspection

In order to secure free movement of the angle adjustment, move it all the way back and forward every day. Not following this procedure, the machine will gradually collect dust inside the grinding chamber, and as a result, the angle setting will be stuck and it is impossible to change the grinding disc. Also make a daily check of the free movement of the arm for cutting.

Monthly/1000 grind service

Clean the grinding chamber when the LED lights yellow or at least once every month following these steps:

1. Drain out the grinding fluid through the hose into an empty container.
2. Set the angle adjustment to 90°.
3. Remove the two screws, the frame and the inspection cover.
4. Wipe off the grinding chamber with a cloth or paper towel. Eventually remaining stuck dust can carefully be scraped off.
5. Mount the inspection cover and frame and top up with grinding liquid.
6. Reset the service counter by turning on the grinder and pressing and holding the pushbutton for 3 seconds.



If the grinding liquid does not come out of the hose, it may be due to grinding dust inside the grinding chamber blocking the hole. To get the grinding dust away, press a little air or grinding fluid through the hose, using the grinding fluid bottle.



Quarterly/5000 grind service

When the LED blinks yellow or at least once every three months clean the inside of the grinding chamber following these steps:

The power to the ULTIMA-TIG must be turned off – pull out the plug.

1. Drain out the grinding fluid through the hose into an empty container.
2. Set the angle adjustment to 90°.
3. Remove the dust collector under the grinding chamber.
4. Place a support under the motor housing, ~20mm tall. Remove the three torx screws on the back of the grinding chamber and the two bolts under the table. Now you can remove the grinding chamber from the motor housing.
5. Clean out the grinding dust inside the grinding chamber. Dismantle the angle adjust unit if necessary. Make sure the angle adjust unit can slide smoothly all the way back and forth.
6. When assembling the parts add bearing grease to all moving parts, screws and gaskets except for the Inspection cover mounting.
7. Check the O-ring on the backplate before mounting the grinding chamber.
8. Mount and tighten the torx screws and the two bolts.
9. Carefully check the dust collector before mounting and top up with new grinding fluid.
10. Reset the service counter by turning on the grinder and pressing and holding the pushbutton for 5 seconds.

Clean the Ultima-TIG-CUT thoroughly each time the grinding disc is replaced, when the dust collector is full, or earlier if necessary. Perform cleaning as mentioned above.

Clean the Cutter module on the inside when changing the cutting disc. (See section 11)

Please ensure that the person cleaning the ULTIMA-TIG-CUT wears the appropriate safety gear e.g. rubber gloves and protection glasses.

It can be difficult to remove the grinding dust from the aluminum parts without damaging the parts; boiling hot water is an effective way to dissolve the grinding dust. Do not use chemicals, solvents or high pressure cleaning.

Check the main cable regularly. Only qualified personnel must replace it. If necessary, contact Inelco Grinders A/S or your local distributor for service.

10. Replacement of the grinding disc

Please follow the procedure below when disassembling the machine:

The power to the ULTIMA-TIG-CUT **must** be turned off – pull out the plug.
Tap of the grinding liquid from the grinding chamber; remove the two screws, the cover frame and the plastic inspection cover. Set the grinding angle at 90°. The disc is now assessable. Unlock the center screw (**Note:** Left-hand screw). Remove the U-wheel and the Grinding disc and mount a new grinding disc.

11. Replacement of the cutting disc

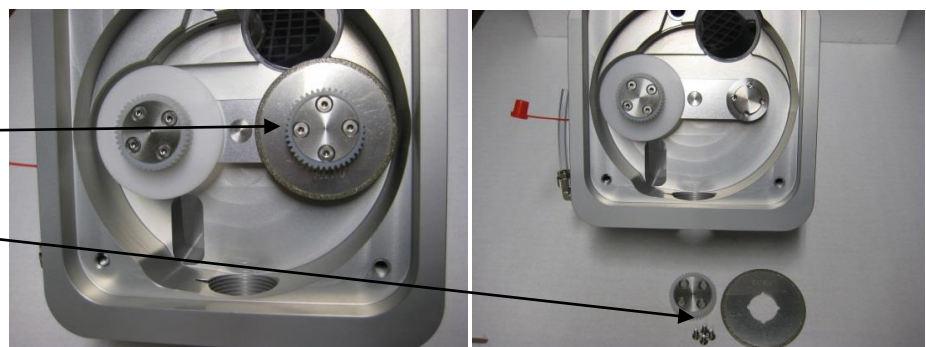
Empty the liquid from the chamber and remove the dust collector.

Loosen the cutter module from the working table.

Remove the three screws from the back of the cutting house, and pull the house away from the back plate.



Remove the four small screws that holds the cutting disc and remove the cutting disc.



Replace the new cutting disc and mount the Plastic cogwheel, Washer and the screws again.

Clean all parts with water and make sure to collect this in the return bottle. Deposit the wastewater as described under section 9. 20171448/16246

Apply grease on the inside of the console and on the edge of the rear plate where the two parts meet each other. This facilitates the remounting and contributes to reseal the device.

Push the house back on to the rear plate and be careful to position the bar with the two wheels so that the teeth on the plastic wheels fit on to the teeth of the cogwheel on the motor axel.

Also, make sure that the seal on the rear plate is correctly in place and not twisted while sliding the house into place. Mount the three screws to fasten the house to the rear plate, mount the dust collector and top up with additional liquid. The correct level of liquid is marked by (~~~) on the lower square inspection cover.

12. Field of application

Only use the device for grinding and cutting of **tungsten electrodes**.

13. Technical specifications

The Ultima-TIG-CUT are covered by Wolfram grinder patent application No. 95942059.7
Current class: (single-phase alternating current) 1x120V or 1x220-240V AC. Depending on the model.
Please see the nameplate on the grinder for the power supply.
Safety protected with protective earth. Directive 2006/95/EU

14. Training

No special education is required to operate the ULTIMA-TIG-CUT. However, persons who are to operate the ULTIMA-TIG machine should read the instruction manual thoroughly beforehand and to have received basic training in use of the machine.

15. Safety data sheet for grinding fluid

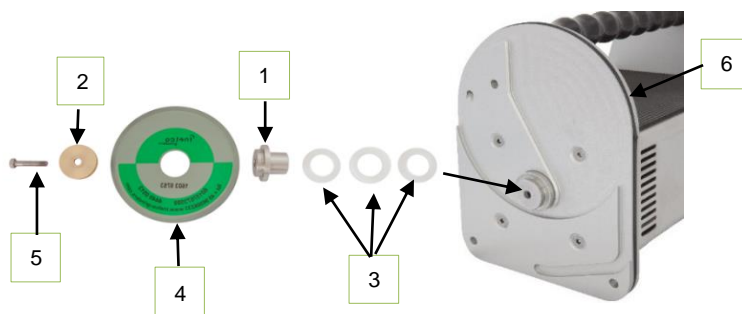
Please go to the following link <http://www.inelco-grinders.com/specifications> to find the MSDS data sheet for the grinding fluid.

16. Spare parts overview



Pos.	Item No.	Description
1	75522500	Drain/filling pipe
2a	44490901	Frame
2b	44490700	Plastic Inspection Cover
2c	44520009	Packing ring f. insp.cover
2d	40320410	Retaining screw M4x10
3	75520001	Angle adjust unit
4	44520007	Metal strip
5	44520008	Degree scale bush
6	44520022	Stretching screw
6a	44470312	O-ring ø12x2

Pos.	Item No.	Description
7	44520004	Tightening screw
7a	40310404	Pointed screw M4x6
8	44470124	Rubber pack
9	44520027	Bronze bearing Outward
10	44520024	Screw f. stick-out
11	40040670	Screw M6x70
12	44520028	Spring f. stick-out
13	62189220	Degree scale



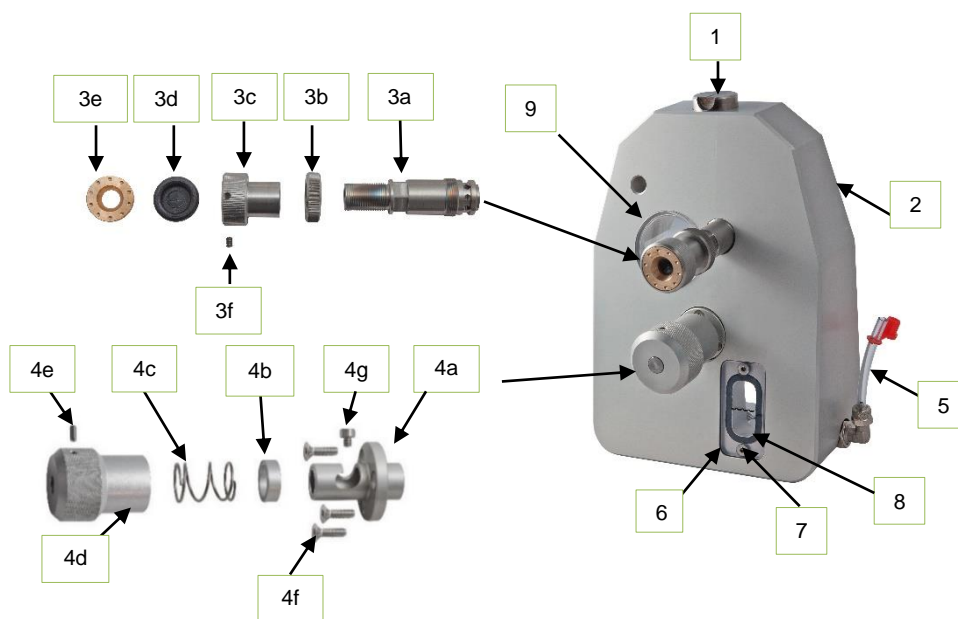
Pos.	Item No.	Description
1	44520017	Bush f. wheel
2	41530530	U-wheel UT
3	44520018	Weather ring f. bush (set)
4	44490512	Diamond disc
5	44496525	Screw M5 lefthand
6	44520010	Packing ring f. rear plate



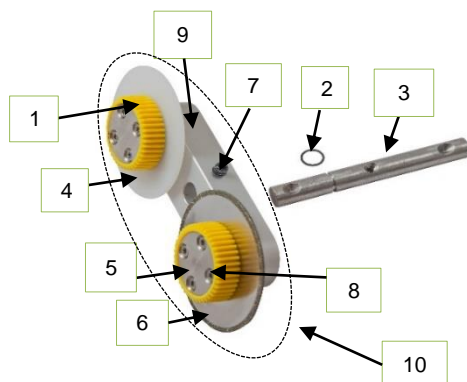
Pos.	Item No.	Description
1	75520023	Electrode holder
2	75494500	Liquid container W95/1-45



Pos.	Item No.	Description
1	44520106	Rod for length stop
2a	44520107	Arm for length stop
2b	44520109	Brass pin f. length stop
2c	41110605	Nut M6
2d	44493210	Screw BT16P M4x16
3a	44520112	Screw for pickup
3b	44520045	Catch for pickup
3c	40110511	Screw M4x12
3d	41512304	Plate disc rustproof ø4
4	17110027	Power switch
5	44520130	Stick-out bolt cut
6	44520103	Transmission cogwheel
7	44520010	Packing ring f. rear plate



Pos.	Item No.	Description
1	44520060	Deburring block
2	44520031	Cutter console
3a	44520047	Guide f. elektrode holder
3b	44520048	Locknut
3c	44520004	Tightening screw
3d	44470124	Rubber (membrane)
3e	44520027	Bronze bearing Outward
3f	40310404	Pointed screw M4x6
4a	44520070	Hub for arm Cut
4b	44520036	Space ring for spring
4c	44520037	Spring
4d	44520034	Handle Cut
4e	40310610	Pointed screw M6x10
4f	40310524	Torx screw M4x12 (3 pcs.)
4g	40310520	Guide screw for arm
5	75522500	Drain/filling pipe
6	44520125	Inspec. cover f. liquid level
7	40310524	Torx screw M4x12 (2 pcs.)
8	44520126	Gasket f. liquid Insp. cover
9	44510290	Inspection cover



Pos.	Item No.	Description
1	44490522	Cogwheel (2 pcs .)
2	44470216	O-ring f. shaft ø8x1
3	44520038	Shaft for arm
4	44490521	Plastic disc
5	44490523	Washer f. gear(2 pcs)
6	44490520	Cutting disc
7	40310610	Pointed screw M6x10
8	40310521	Torx screw M3x12 (8 pcs.)
9	75520068	Cutting arm
10	75500168	Cutting module

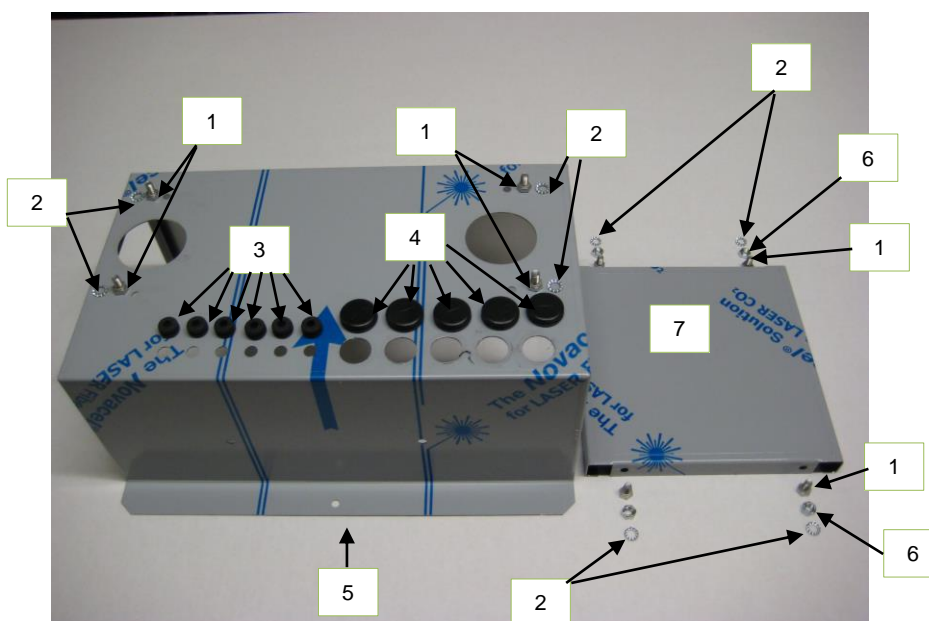


Pos.	Item No.	Description
1	75500170	Pickup
2	44525158	Clamp Cut. Ø0,8
2	44525171	Clamp Cut. Ø1,0
2	44525162	Clamp Cut. Ø1,6
2	44525172	Clamp Cut. Ø2,0
2	44525164	Clamp Cut. Ø2,4
2	44525173	Clamp Cut. Ø3,0
2	44525165	Clamp Cut. Ø3,2
2	44525174	Clamp Cut. Ø4,0



Pos.	Item No.	Description
1	75520049	Tip collector Ø 2,5
2	75520050	Tip collector Ø 4,2

17. Working table



Pos.	Item No.	Description
1	40040610	Bolt stainless M6x10
2	41711106	Tooth lock washer ø6
3	44470029	Rubber lead-in ring ø9
4	44470124	Rubber pack (membrant)
5	44529001	Desk console
6	41110605	Nut M6
7	44529002	Stiffening plate

18. Accessories

Item No.	Electrode Clamp 	Item No.	For short electrodes 
44510158	Electrode clamp, Diameter 0,8 mm	44511162	Electrode clamp, Diameter 1,6 mm
44510171	Electrode clamp, Diameter 1,0 mm	44511164	Electrode clamp, Diameter 2,4 mm
44510161	Electrode clamp, Diameter 1,2 mm	44511165	Electrode clamp, Diameter 3,2 mm
44510163	Electrode clamp, Diameter 1,5 mm	44511171	Electrode clamp, Diameter 1,0 mm
44510162	Electrode clamp, Diameter 1,6 mm	44511172	Electrode clamp, Diameter 2,0 mm
44510172	Electrode clamp, Diameter 2,0 mm	44511173	Electrode clamp, Diameter 3,0 mm
44510164	Electrode clamp, Diameter 2,4 mm	44511174	Electrode clamp, Diameter 4,0 mm
44510173	Electrode clamp, Diameter 3,0 mm		
44510165	Electrode clamp, Diameter 3,2 mm		
44510174	Electrode clamp, Diameter 4,0 mm		



Item No.	Grinding Liquid – EP770
75491200	Grinding liquid, 250 ml
75491201	Liquid disposal bottle 250ml
75494000	Grinding liquid, 5 litre
75491301	Grinding Liquid Con. 250 ml
75491300	Grinding liqiud Conc. 3 L for 60 L
75491305	Grinding Liquid conc. 4,5 L
44491225	Tap for 5 L canister

AutoGrind for automated grinding on the Ultima-Tig-CUT can be retrofitted.

Ask your dealer for more information.

