

Betjeningsvejledning • Bedienungsmanual • Instruction manual

# ULTIMA-TIG



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Inelco Grinders A/S • Industrivej 3 • DK-9690 Fjerritslev • Denmark • E-mail: [info@inelco-grinders.com](mailto:info@inelco-grinders.com)

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**Serie-Nr. / Serien-Nr. / Serial No.**

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**Produktions år / Herstellungsjahr / Year of production**

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# ULTIMA-TIG INSTRUCTIONS MANUAL

## EU statement of compliance

Manufacturer: **INELCO GRINDERS A/S**  
**Industrivej 3**  
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**Tif. + 45 96 50 62 33**  
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**SE/VAT Nr. : DK 32652964**  
**Email: info@inelco-grinders.com**

hereby declare that

Machine: **ULTIMA-TIG**  
**Type: UT 03 and UT04**  
**Serial No.: see page 2**

**Year of production: see page 2**

is produced in accordance with the provisions of the Commission's Directive on harmonisation of national legislation's on machinery 2006/42/EU, low-voltage directive 2006/95/EU and EMC-directive 2004/108/EU.

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

EN 61029  
EN 61000-6-4  
EN 61000-6-2

The CE-mark was used first time in 2003.

Person responsible: Name: Anders Thy  
Date: 01.01.2010

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 2002/96/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 is a patented grinder with a diamond wheel for **wet grinding** of tungstenelectrodes. This unique and patented construction gives together with the well-known benefits of wetgrinding many advantages to obtain a perfect welding result.

The special grinding liquid in the sealed grinding chamber ensures that no contaminated dust particles will be emitted into the surroundings. The grinding liquid also ensures no discoloration of the tungstenelectrode due to the heat, which has a negative effect of the welding process.

A fine-grained grinding in the length-wise direction of the electrode is ensured due to the unique construction of the wolframelectrode holder and feeder together with the tangential grinding on the surface of the diamond wheel. This is important for the ignition capability of the tungstenelectrode.

To ensure minimum grinding of the tungstenelectrode (0,3-0,5 mm) a combined electrode stick-out and locking device is located on the front of the machine. The grinding angle can be infinitely adjusted from 7,5 to 90 degrees (half angle) inclusive. In the 90-degree position the tip of the electrode can be removed to the required amount using the micrometre screw. This is of importance to the electrode's tool life at high welding currents.

A container for collection of toxic dust is placed under the machine. This container is easily replaced.

## 2. Delivered with the machine

Upon receipt please check that the following items are included in the package:

- ULTIMA-TIG machine with a diamond wheel
- Instruction manual and datasheet for the grinding liquid
- Dust Collector with grinding liquid
- Tungstenelectrode holder
- Electrode clamp  $\varnothing 1,6\text{mm}$
- Electrode clamp  $\varnothing 2,4\text{mm}$
- Electrode clamp  $\varnothing 3,2\text{mm}$

## 3. Initial operation and transport

Place the ULTIMA-TIG on the enclosed table and fasten the machine. Please ensure that the table is fixed.

The ON/OFF switch must be in the “**OFF**” position.

Connect the ULTIMA-TIG to the mains voltage stated on the type label. Use single-phase power supplied with earth.

**The ULTIMA-TIG must not operate without grinding liquid!!**

The ULTIMA-TIG **does not** contain grinding liquid on delivery. Before starting the machine grinding liquid **must** be applied. Mount the enclosed liquid container (39) to the machine. Place the filler neck on to the enclosed container. Feed the ULTIMA-TIG with original Ultima-TIG grinding liquid through the hose (29) until the correct liquid level has been reached (please see mark (~~~) on the inspection cover frame (7)). There is sufficient liquid in the grinding chamber when the diamond wheel is seen to pump up the fluid as the machine is switched on.

For safety reasons the grinding liquid must be drained from the ULTIMA-TIG into a sealed closed container during transport.

ULTIMA-TIG can be operated in locations with surrounding temperatures ranging from 0°C to +40°C and a relative humidity up to 50% at 40°C and 90% at 20°C.

The machine has been tested in accordance to protection class IP21.

**4. Operational elements**

- Current and main switch
- Carry handle
- Degree scale
- Electrode holder
- Stick-out adjustment
- Grinding fluid container 250 ml
- Micrometre screw to flatten the tip of the electrode

**5. Safety procedures**

- Never use the product if the grinding wheel is damaged
- Use only grinding wheels recommended by Inelco Grinders A/S
- Only use the product when all parts have been assembled

**6. Fastening of the electrode in the electrode holder**

Place the electrode clamp fitting the diameter of the tungsten electrode into the electrode holder. Push the electrode through the electrode clamp and into the electrode holder. Use your fingers to tighten the electrode lightly, please ensure that it may still be able to slide in the electrode holder. The electrode must be extended approx. 2 cm from the clamp. Then place the electrode and the holder into the stick-out setting(10) placed below on the right front side until it stops and tighten the electrode with a smooth turn of the electrode holder to the right. The electrode clamp has a hexagon which fits the hole of the stick-out setting. The electrode may only be fastened so tight, that it does not slide in the electrode clamp. If the electrode is fastened too tightly the clamp may be damaged. A regulation

Screw on the back of the stick-out-setting makes it possible to determine the length of the electrode you wish to grind. If you remove the regulation screw, more the electrode will be ground and vice versa. The manufacturer has set the regulation screw to grind approx. **0,3 mm** in order to obtain maximum number of grindings per electrode as possible. A remaining length of 30 mm of the electrode means that you can re-grind the electrode 450 times. It is often not necessary to break off metal drops on the electrode. The metal drops do not melt together with the electrode. They will be removed during grinding and a new wolfram surface which is necessary for a good ignition of the electrode and a stable arc. In case a clean tungsten surface is not achieved the length of the stick-out can be extended. It is necessary to adjust the stick-out as the diamond wheel is used up.

## 7. Setting the grinding angle

The grinding angle is set by aligning the pointer (24) on the electrode guide (22) to the required number on the degree scale. The electrode guide is then locked in position using the tightening screw (20). After inserting the tungstenelectrode into the electrode holder push it into the electrode guide until the electrode reaches the diamond wheel. Start the machine using the ON/OFF switch (35) and turn the electrode holder with gently pushing the electrode against the diamond wheel when the shoulder of the electrode holder meets the face of the electrode guide the grinding is completed and the electrode holder is withdrawn from the guidetube.

**It is only necessary to press the electrode holder lightly against the diamond wheel, as the weight of the electrode holder gives sufficient pressure by itself.**

Remove the electrode from the electrode holder by placing the electrode holder into the stick-out setting (10) and turn it left. Remove the electrode.

## 8. Maintenance

The ULTIMA-TIG should always be filled with sufficient grinding liquid to ensure optimum collection of all grinding dust as well as adequate cooling of the grinding process. The correct liquid level is between the minimum and maximum marks on the inspection cover frame (7). Please check the liquid level frequently and top up the level of liquid as necessary. Only the original ULTIMA-TIG grinding liquid ensures the optimum lifetime of the diamond wheel.

Heavily polluted grinding liquid or receivers containing grinding dust must be deposited according to national regulations.

After approx. 10-15 hours of operation, the grinding chamber should be rinsed thoroughly for grinding liquid and dust. Tap off the grinding liquid through the hose (29) and retain it in a deposit bottle. Dust Collector (39) is removed. Remove screws (21A), inspection cover frame (7) and plastic inspection cover (6), and wash out the grinding chamber with water, to be retained in the bottle. Then replace inspection cover frame (7) and the liquid tank (39) and fill grinding liquid to appropriate level.

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

Mains cables should be inspected at regular intervals, and should only be replaced by a qualified electrician. Contact Inelco (address is on [www.inelco-grinders.com](http://www.inelco-grinders.com)) for further information concerning electrician.

## 9. Replacement of the grinding wheel

Please follow the procedure below when disassembling the machine:

- The power to the ULTIMA-TIG **must** be turned off – pull the plug
- The grinding liquid is tapped off; screws (21A), plastic inspection cover and cover frame (7) are removed. The wheel (4) wheel is now assessable. Unlock the centre screw (23) (**OBS! Left-hand**) and remove the retaining disc (5) remove the wheel (4) and reassemble with a new.

## 10. Field of application

The grinder is only to be used for grinding of tungsten electrodes.

## 11. Technical specifications

The Ultima-TIG is covered by Wolfram grinder patent application No. 95942059.7.  
Current class: (single-phase alternating current) 1x110V or 1x220-240V AC  
Protection isolated without protection cable 10-16A UMEC 97/66/68-CEE (7) VII

## 12. Training

No special education is required to operate the ULTIMA-TIG. 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.



## 13. Safety data sheet for grinding fluid

In compliance with regulation (EC) no. 453/2010, appendix I

### 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY:

Product name:	Neutra grinding liquid EP770
Supplier	Inelco Grinders A/S Industrivej 3 9690 Fjerritslev Denmark + 45 96 50 62 33
Emergency phone	+ 45 82 12 12 12
Product use:	Ready to use grinding liquid
MSDS date	1/7-2011
Replaces	17/8-2010

### 2. HAZARDS IDENTIFICATION:

The product is not classified as hazardous.  
Repeated or prolonged contact may cause defatting of the skin, which may lead to skin irritation and/or dryness.

### 3. INFORMATION ON INGREDIENTS:

Not a dangerous substance or a substance according to regulation (EC) no. 453/2010, appendix I

### 4. FIRST AID MEASURES:

**Inhalation:**

Remove the person from exposure. Obtain medical assistance if soreness or redness persists.

**Skin contact:**

Wash skin with soap and water.

**Eye contact:**

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Obtain medical assistance if soreness or redness persists.

**Ingestion:**

Do not induce vomiting. Rinse mouth thoroughly and seek medical assistance.

### 5. FIRE FIGHTING MEASURES:

**Danger of fire:**

The product is unable to develop fire or explosion.

**Extinguishing media:**

Use foam, dry chemical, carbon dioxide or water spray.

**Precautions:**

Avoid to inhale hazardous fumes and smoke.

### 6. ACCIDENTAL RELEASE MEASURES.

Contain and absorb using earth, sand or other inert material. Transfer into suitable container for recovery or disposal.

**7. HANDLING AND STORAGE:****Handling:**

Avoid contact with the skin and eyes. Avoid inhalation.

**Storage:**

Store frost free in original packing and below 35°C.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION:****Precautions by use:**

Under normal working conditions there is no need for personal protection equipment.

**Respiratory protection:**

No special demand

**Gloves and protective clothing:**

Use gloves of PVC, nitrile or another resistant rubber type when working with the concentrated product.

**Eye protection:**

At the risk of contact or by working with the product wear protective glasses.

**Occupational exposure limits:**

No maximal value for ingredients.

**9. PHYSICAL AND CHEMICAL PROPERTIES:**

Form:	Liquid
Color:	Green
Odor:	Weak odor
pH:	-
Boiling point:	Ca 100°C
Melting point:	< 0°C
Density:	Ca 1,0 g/ml
Solubility:	Water

**10. STABILITY AND REACTIVITY:**

Chemically stable in normal conditions of industrial use.

**11. TOXICOLOGICAL INFORMATION:****Acute****Inhalation and ingestion**

-

**Skin and eye contact**

Will cause irritation.

**Long-term effects**

Long-term or repeated skin contact with the concentrate may result in inflammation of the skin.

**12. ECOLOGICAL INFORMATION:**

The product is not classified as dangerous to the environment.  
The product will leach into soil.

**13. WASTE DISPOSAL CONSIDERATIONS:**

Used fluid is to be disposed according to state regulations or returned to Inelco Grinders A/S

**14. TRANSPORT INFORMATION:**

The product is not classified as dangerous goods according to ADR and IMDG.

**15. REGULATORY INFORMATION.****Classification**

The product is not classified as dangerous material.

**Nature of risk**

None

**Safety warnings**

None

**Limitations to use**

None

**Need for special training**

None

**Special regulation**

None

**Chemical safety evaluation**

No chemical safety evaluation has been conducted for this product.

**16. OTHER INFORMATION:**

This material safety datasheet has been produced on information provided by the supplier regarding the physical and chemical properties and the full recipe for the product. The conditions for the consumer's usage of the product are not known and it is the user's obligation to evaluate the use and to comply with applicable laws and regulations.

## Reservedelsliste • Spare Parts List • Ersatzteilliste

Pos.	(DK) Betegnelse	(GB) Description	(D) Bezeichnung	Varenr. Article No. Warennr.
	Ultima-TIG Wolframsliber	Ultima-TIG Tungsten grinder	Ultima-TIG Wolframschleifmaschine	88897022
1	Slibekonsol	Grinding konsole	Schleif-Konsole	44520000
2	Vinkelindstillter	Angle adjust unit	Winkeleinstellungseinheit	44520001
2A	Metalbånd	Metal strip	Metallband	44520007
3	Bagplade for konsol	Rear plate for konsol	Rückplatte für Konsol	44520002
4	Diamantskive	Grinding disc	Schleif-Scheibe	44490512
5	Bøsning for skive	Bush for disc	Buchse für Scheibe	44520017
6	Skueglas	Plastic Inspection Cover	Schauglas	44490700
7	Ramme for glas	Frame	Glasrahmen	44490901
8	Bundprop	Drain plug	Ablafschraube	44491120
9A	Bærehåndtag	Handle	Tragehandgriff	44520012
9B	Gummi for håndtag	Rubber for handle	Gummi für Handgriff	44520013
10	Bolt for Stick-out	Bolt for Stick-out	Bolt für Stick-out	44520024
11	Motor 230V-50/60Hz	Motor	Motor	17809004
12	Fjeder for stick-out	Spring for stick-out	Feder für Einstellschablone	44520028
13	Bagplade	Rear plate	Rückplatte	44520003
14	Tætningsring f. skueglas	Packing ring f. insp. cover	Dichtring f. Schauglas	44520009
15	Møbelhoved	Mounting screw	Møbelschraube	44491711
16	Styreprint	Control PCB	Steuer-Leiterplatte	71618967
17	Gevindstang	Thread bar	Gewindestange	44520011
18	Lejehus	Bearing housing	Lagergehäuse	44520029
19	Skaft	Shaft	Stiel	44520020
20	Spændeskruer med anslag	Tightening screw	Spanschraube mit Anschlag	44520004
21A	Spændeskruer for skueglas	Screw for inspection cover	Schraube für Schauglas	40320410
21B	Skive for spændeskruer	Dome washer for screw	Scheibe für Schraube	41512304
22A	Bronzeleje Udvendig	Bronze bearing outward	Äusser Bronzelager	44520027
22B	Bronzeleje indvendig	Bronze bearing inward	Inner Bronzelager	44520026
23	Skruer M5 Links	Screw M5 Lefthand	Schraube M5 Links	44496525
24	Gradskalabøsning	Logging scale bush	Gradskaler-Buchse	44520008
25	Omløber for pen	Barrel for electrode clamp	Umläufer für Elektrodenzange	44520023
26	U-skive	U-wheel	U-scheibe	41530530
27	Klemtang	Electrode clamp	Elektrodenzange	4451016x
29	PVC-slange ø4x60	Tapping hose Ø4x60	PVC-Schlauch	44492600
30	Smørenippelhætte	Grease nipple stopper	Schmiernippel-Stöpsel	44492610
31	Vridbar vinkel	Elbow pipe	Winkelrohr	44492500
32	Tætningsring f. bagplade	Packing ring f. rear plate	Dichtring f. Rückplatte	44520010
33	Tætningsring for bøsning	Packing ring for bush	Dichtungsring für Buchse	44520018
34	O-ring Ø12x2,5 mm	O-ring Ø12x2,5mm	O-ring 12x2,5 mm	44470312
35	Afbryder	Switch	Schalter	17110027
36	Aflastning PG9	Relief PG9	Verschraubung PG9	18480012
37	Netledning	Mains cable	Netzkabel	74250014
38	Låg for Støvopsamler	Cover for Dust Collector	Deckel für Staubfangbehälter	44494540
39	Støvopsamler	Dust Collector	Staubfangbehälter	75494500
40	O-ring Ø13x1,5 mm	O-ring Ø13x1,5 mm	O-ring Ø13x1,5 mm	44470213
41	Arbejdsbord	Worktable	Arbeitstisch	88897910
43	Gradskala	Degree scale	Gradskala	62189220
44	Gummi membran	Rubber pack (membrane)	Gummi Membran	44470124
45	Afstandsstykke motor	Space piece motor	Abstandstück Motor	44520019
46	Afstandsskruer	Stretching screw	Abstandsschraube	44520022
47	Etiket Ultima-TIG	Label Ultima-TIG	Etikett Ultima-TIG	62189222
	Slibevæske 250 ml	Grinding liquid, 250ml	Schleifflüssigkeit 250ml	75491200
	Slibevæske 5 ltr.	Grinding liquid 5 L	Schleifflüssigkeit 5 L	75494000

Tegning/Drawing/Zeichnung - Ultima-TIG

