Original instruction and maintenance manual

Grinding Equipment for Tungsten Electrodes

Cutting- and grinding machine for tungsten electrodes

Operating and Maintenance Manual
The ready-for-use "TIG-Point" grinding basic unit has been subjected to a three-phase final quality check:

1. **precise operation**
2. **construction and electrical specifications (VDE)**
3. **safety control (GS)**

Standard "TIG-Point" Grinding Unit Delivery Package

Complete basic unit, ready for grinding, equipped with the following accessories: universal grinding wheel K 120, double ended box wrench 10 x 13, socket wrench, hexagonal socket wrenches 3+4, rapid change nut, cleaning and roughening rubber

Stand 02/10

CRONITEX
METALLURGIE UND SCHWEISSTECHNIK GmbH

Brief description:
With the grinding machine "TIG-Point", the customer is able to grind tungsten electrodes. The "TIG-Point-Tandem" (dual operational cutter and grinder) has got an additional cutting wheel for separating the electrodes.
The machine is used in the "dry" grinding process.

For grinding the electrodes, a cup wheel with a diameter of 150 mm is used. The perimeter speed is 22,5 m/sec.

Dimensions and weights:

WIG-SPITZ	35 x 32 x 25 cm (LxBxH)	18.0 kg
WIG.SPITZ-Tandem	41 x 32 x 25 cm (LxBxH)	19.5 kg

Technical data:

WIG-SPITZ + WIG-SPITZ-Tandem	230 V/ 50 Hz	110 V/ 60 Hz
output:	180 W	180 W
intensity of current:	1,4A	3.3A
protection category:	IP 54	IP 54

Application:
The "TIG-Point" should only be used for grinding tungsten electrodes. The "TIG-Point-Tandem" should only be used for grinding and cutting tungsten electrodes. Another use is not allowed and nullifies the quality guarantee. The maximum allowable diameter of the electrodes is 6.5 mm.

Operation:
Operating and servicing the machine is only allowed to persons who have read and understood the instruction manual. Servicing the electrical system of the machine is only allowed to an electricity specialist.

Noise emission:
The mention of the noise emission onto EN ISO 4871. Emission noise pressure level at working place onto EN ISO 11201 while grinding a tungsten electrode: Measured A-certified emission pressure level at working place: LPA in decibel: < 70 dB

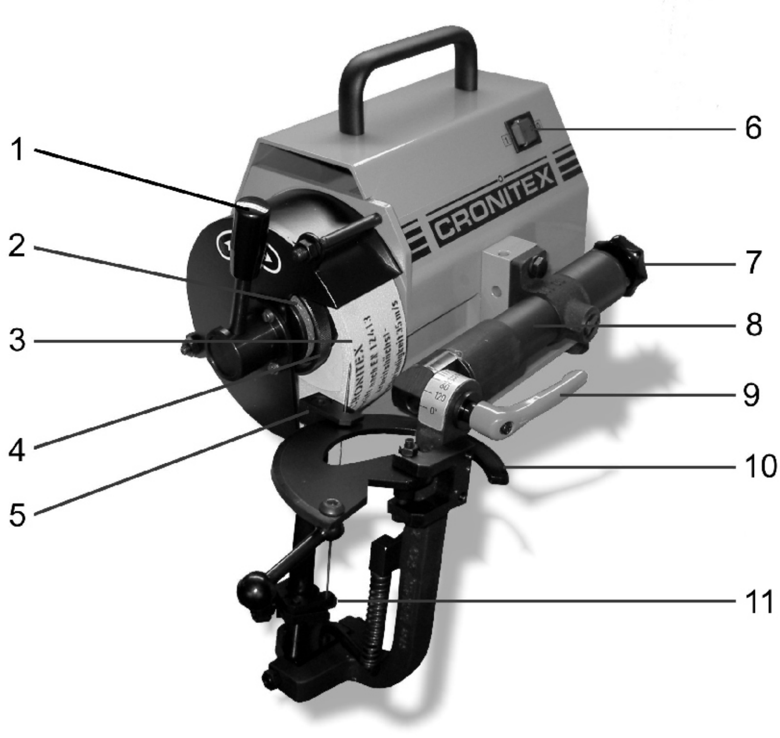
Waste disposal:
Used machines as well as replacement parts and packages are made of valuable and recyclable material. The owner is committed to dispose all materials - according to the laws - correctly and environmentally.

Assembly without Base Cabinet:
Place the motorized unit in a secure position on the edge of a table or use the stand, designed for this purpose (available as part no. 10 520 501)

Assembly with Base Cabinet and Dust Removal Suctions System:
Remove the four rubber buffers from the motorized unit and, using the four M6 socket head cap screws provided, attach the unit to the hood stand (Part no. 10 520 501) of the base cabinet. During operation of the grinding unit, use of the dust removal suction system is highly recommended to promote a healthier, pollution-free working environment. Technical data for the system as follows: power input 900 W, air suction 180 m³/hour, underpressure 140 mbar (1.95 psi), volume 26 litres.

Abrasive wheel:
The following abrasive wheels are allowed for use: Borazon- and diamond grinding wheels onto EN 13236 / 150 x 25 x 20 W 11 x E 10 mm, max. 8,020 rpm
Diamond cutting wheel EN 13236 (150x0,8 5 20mm, max. 5,093 rpm)

Note:
Use of mineral grinding wheels on the TIG-POINT grinder without supplementary use of the dust removal suction system will inevitably shorten the service life of the grinding element due to abrasion. Use of borazon grinding wheels (for faster, cooler dry grinding) in connection with the dust removal suction system (located in the service cabinet) ensures a much longer service life for the parts subject to normal wear. At continous operation of the machine, grindig dust must be exhausted. The dust remoral suction system must be in accordance with the application category K1. Tungsten electrodes with more than 2% thorium alloy are slightly radioactive. For both of these reasons, the manufacturer recommends strongly use of the TIG-POINT grinder with the service cabinet and dust removal suction system. Furthermore, we kindly ask for our permission if the customer would like to use tungsten electrodes with more than 2% thorium alloy as German laws require such a permission. Incorrect operation or use of the equipment for purposes other than those intended by the manufcturer nullifies the quality guarantee. Other special accessories available are detailed in the enclosed brochure.

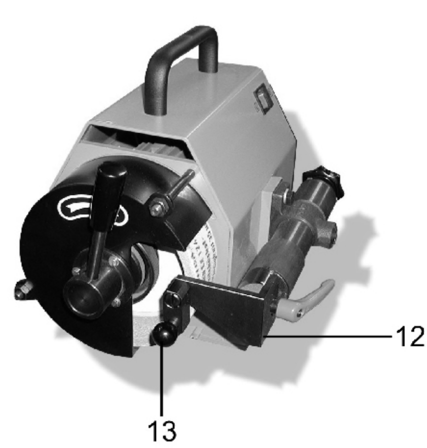


	Part no.
1. brake lever	10 520 705
2. brake system	10 520 950
3. grinding wheel	10 520 603
4. rapid change nut	10 520 614
5. universal grinding support	10 520 204
6. on/off - switch	10 520 117
7. Fine adjustment screw	10 520 313
8. adjustment device	10 520 300
9. clamp lever	10 520 315
10. universal grinding support	10 520 203
11. Electrode support bearing	10 520 206
12. dressing fixture	10 520 400
13. diamond dresser	10 520 403

The picture above shows the brake system (2) in the starting postion. By turning the lever (1) in the coil slot to the left, operation of the brake (2) ist started. The brake should only be operated in 0-position.

Change of a grinding wheel:
Turn the apparatus switch in Pos. "0" and disconnect the power plug. Remove the grinding wheel cover, then fix the flange nut with the delivered socket wrench an release the rapid change nut by hand. The change the old wheel int a new one. Put the flange and rapid change nut on again and fix the flange nut with the socket wrench. Then seize the rapid change nut by hand. Please do a test run of 1 minute after the change of the wheel. If anything is abnormal, switch the machine off immediately and clear the cause of the malfunction.

Dressing of the grinding wheel:
The new equipment is equipped with dressed grinding wheels; in normal operation, the wheel retains this attribute automatiacally due to the oscillating motion of the tungsten electrode.
However, should the grinding wheel rotate unevenly resulting in ridge formation or should the grain surface become clogged with dirt, dressing of the wheel is then required using the dressing fixture and diamond dresser. An optimal grind can only be obtained through use of clean, even- surfaced grinding wheels. To dress the wheel, remove the complete grinding element and attach the diamond dresser to the grinding angele gauge using the clamp lever.



Only corundum gringing wheels are dresses using a pendular movement of the diamond dressed against the cup wheel with simultaneous adjustment. To clean a clogged grain surface on boracon diamond lapping wheels, use whetstone (Part No. 10.520.607)

The Grinding Operation:

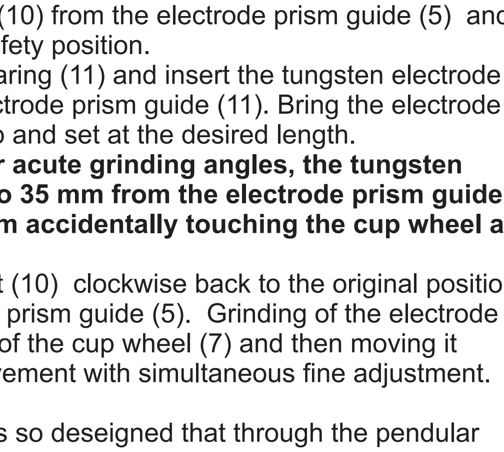
A Using the clamp lever (9) adjust the gauge to the desired grinding angle
B Free the manual drive segment (10) from the electrode prism guide (5) and rotate counterclockwise to the safety position.
C Loosen the electrode support bearing (11) and insert the tungsten electrode from above or below into the electrode prism guide (11). Bring the electrode support into position under the tip and set at the desired length.

Important: Especially at settings for acute grinding angles, the tungsten elctrode must protrude at least 30 to 35 mm from the electrode prism guide to prevent the guide element itself from accidentally touching the cup wheel and being damaged!

D Rotate the manual drive segment (10) clockwise back to the original position and lock in place in the electrode prism guide (5). Grinding of the electrode takes place by position it in front of the cup wheel (7) and then moving it back-and-forth in a pendular movement with simultaneous fine adjustment.
E Turn on the TIG-Pointer (6)
F The manual drive segment (10) is so deseigned that through the pendular movement the tungsten electrode rotates automatically in the prism guide (5) and is ground continuously over the entire width of the cup wheel (3) surface.
G When the tip has been sharpened sufficiently, discontinue the adjusting procedure; to achieve an optimal grind, however, continue manipulating the manual drive segment until no further sparks are evident.
H Turn off the Tig-Point grinder (6) and again free the manual drive segment (10) from the electrode prism guide (5) and rotate counterclockwise to the safety position! (See B above)
I The tungsten electrode can be removed from above or below; for short electrodes, use of pliers is recommended.

for tungsten electrodes - in the version "TIG-POINT-TANDEM" only

The clean solution of separating



The requested electrode length can be adjusted by releasing the lever (14) at the cutting-fixture (15). A tungsten electrode can be positioned and cutted by pressing up the lever in the starting position. Cutting is effected by slowly pressing down the lever.

Maintenance Instructions:
Keep the rubber coating of the manual drive segment free of oil and dirt.
Use only a rubber eraser or methylated spirit for cleaning purposes!
Extremely roughened rubber coatings or rubber where contaminants have adhered to the surface can be smoothed out using fine sandpaper (300 - 400 grain).
Lubrication of the bearing elements is not necessary.
Too much play in the grinder bearings can influence the correct rotation of the tungsten electrode. Should this be the case, the conical-head bolts must be adjusted and locked.
Possible play in the adjustment spindle can be corrected by slightly tightening the slotted screws on the side.
The following parts which are subject to normal wear and deterioration are not warranted:

1. Grinding wheels	(3)
2. Manual drive segment	(10)
3. Electrode prism guide	(5)
4. Electrode bearing support	(11)

Replacement parts

Part Description	Part No.	item
diamond cutting wheel for "TIG-POINT-TANDEM	10 520 612	1
stand for "TIG-POINT-TANDEM	10 520 501	1
Halogen magnifying	10 520 601a	1
dressing fixture without diamond	10 520 400	1
Diamond dresser	10 520 403	1
Grinding support for short electrodes less than 40 mm; diameter: 1,6 - 2,4 - 3,2 mm; special dimensions are available on demand (+10%)	10 520 619	1
Manual drive element (new)	10 520 203	1
Manual drive element (as exchange)	10 520 203a	1
Universal grinding support	10 520 204	1
Universal grinding support (hard metal)	10 520 204a	1
Universal grinding support - measurement to 8,0mm	10 520 204b	1
Electrode support bearing with holder	10 520 206	1
Electrode support bearing (as exchange)	10 520 623	1
Corundum rough grinding wheel K80	10 520 602	1
Corundum universal grinding wheel K120	10 520 603	1
Corundum polishing wheel KK150	10 520 604	1
Diamond lapping wheel DL	10 520 605	1
Borazon universal grinding wheel	10 520 606	1
Combi-pre-grinding and lapping wheel	10 520 625	1
Cleaning and roughing rubber for friction material	10 520 608	1
Whestone for diamond and borazon wheel	10 520 607	1

EC - DECLARATION OF CONFORMITY

In accordance with the EEC machine directive 2006/42/EG, appendix II 1A

We hereby certify that the following described machine / equipment in its conception, construction and form put by us into circulation is in accordance with all relevant essential health and safety requirements of the EC machinery directive 2006/42/EEC as amended and the national laws and regulations adopting this directive. This declaration is no longer valid if the machine is modified without our consent.

Manufactors name:	**CRONITEX GmbH** Metallurgie und Schweißtechnik Zum Scheider Feld 18 51467 Bergisch Gladbach
Description of the machine / equipment:	Cutting- and grinding machine for tungsten electrodes
Type:	**TIG-Point / TIG-Point Tandem**
Serial number:	838
Corresponding EC directives:	EC machinery directive 2006/42/EEC EG-EMV (2004/108/EG)
Applied on harmonized standards in particular:	EN ISO 12100-1 / EN ISO 12100-2 EN 60204, part 1, EN ISO 13732-1 EN 61000-6-2, EN 61000-6-4
Authorized person for the technical documentation:	Mr. Josef Brück see company's address above

Bergisch Gladbach, den 17.02.2010

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