MINITUL® MODEL 500 MINIATURE CUT-OFF SAW

TE Connectivity offers a Specialty Saw and a wide range of abrasive saw blades. Please visit our website at www.MicroGroup.com for more information and other products.

The Model-500 Small Diameter Cut-Off Saw is a portable, easy-to-use tube saw for small diameter cutting requirements. It comes fully assembled and ready to perform effi ciently on a variety of metal materials from aluminum to stainless steel tubing.

TE Connectivity stocks replacement parts and replacement saw blades for the Model-500 saw. Included with the purchase of the Model-500 saw are two metal cutting blades (5-080-030A) and a stick of Boelube (item 70200-13).

The MOD-500 has a 90-day limited warranty for workmanship issues.

FEATURES

- Cut lengths from 1/16″
- Cuts with minimal burr
- Miters to 30 degrees
- Portable 115v ac
- Cuts to 1/2″ cross section
- Double-acting vise
- Cuts to +/- 0.005″ tolerance
- 1/2″ Arbor
- Positive drive belt
- Foot control

APPLICATIONS

- Stainless steel
- Brass
- Copper
- Glass
- Plastic
- Composites
- Braided cable
- Coax cable
- Armored cable

THE MODEL 500 SAW BASIC DIRECTIONS & SET- UP

UNPACK CAREFULLY; IT SHOULD INCLUDE THE FOLLOWING

- The saw
- Vise
- Footswitch
- Arbor washers & nut, for shaft
- Wrench & rod, for tightening nut
- Two saw blades (5-080-030A)
- One stick of Boelube (item 70200-13)

INITIAL SET UP

- Plug saw into footswitch
- Plug footswitch into outlet
- Mount one (1) large washer (2-1/4" blade fl ange)
- Blade; followed by the other large washer (concaved side against blade)
- Add the arbor nut (left-handed threaded)
- The slot in the vise should now be aligned with the blade, now tighten bolt securely

SETTING STOP

- The stop is set with the clamp block by the set screw (generally the stop is set by a trial and error method; scribe the rail with identifi cation marks)
- To cut shatter pieces, use a small piece of fl at stock (not supplied) and clamp it to the rail

CUTTING ANGLES

- Use a protractor against left side of base to set the desired angle (note: the vise does not have a guide through it)
- After tightening vise at desired angle carefully bring blade through the jaw part of the vise and partially through table (enough to clear blade)

GENERAL OPERATION

- After setting stop and angle desired; push vise handle down, insert work piece, lift handle to close vise (hold handle up until cut is fi nished)
- With proper blade installed, press footswitch (allow saw to reach speed)
- Pull down on saw handle to cut; generally a steady, fairly fast cut rate gives the best results (too slowly result in burning - too fast labors the motor and will break blades)

SPECIFICATIONS

GENERAL INFORMATION

- 5” cut-off saw
- Overhead pivot type
- 6500 rpm maximum blade speed
- Ball bearing spindle (abrasive duty)
- 1/2” diameter positive drive belt
- Swivel vise for miters to 30°

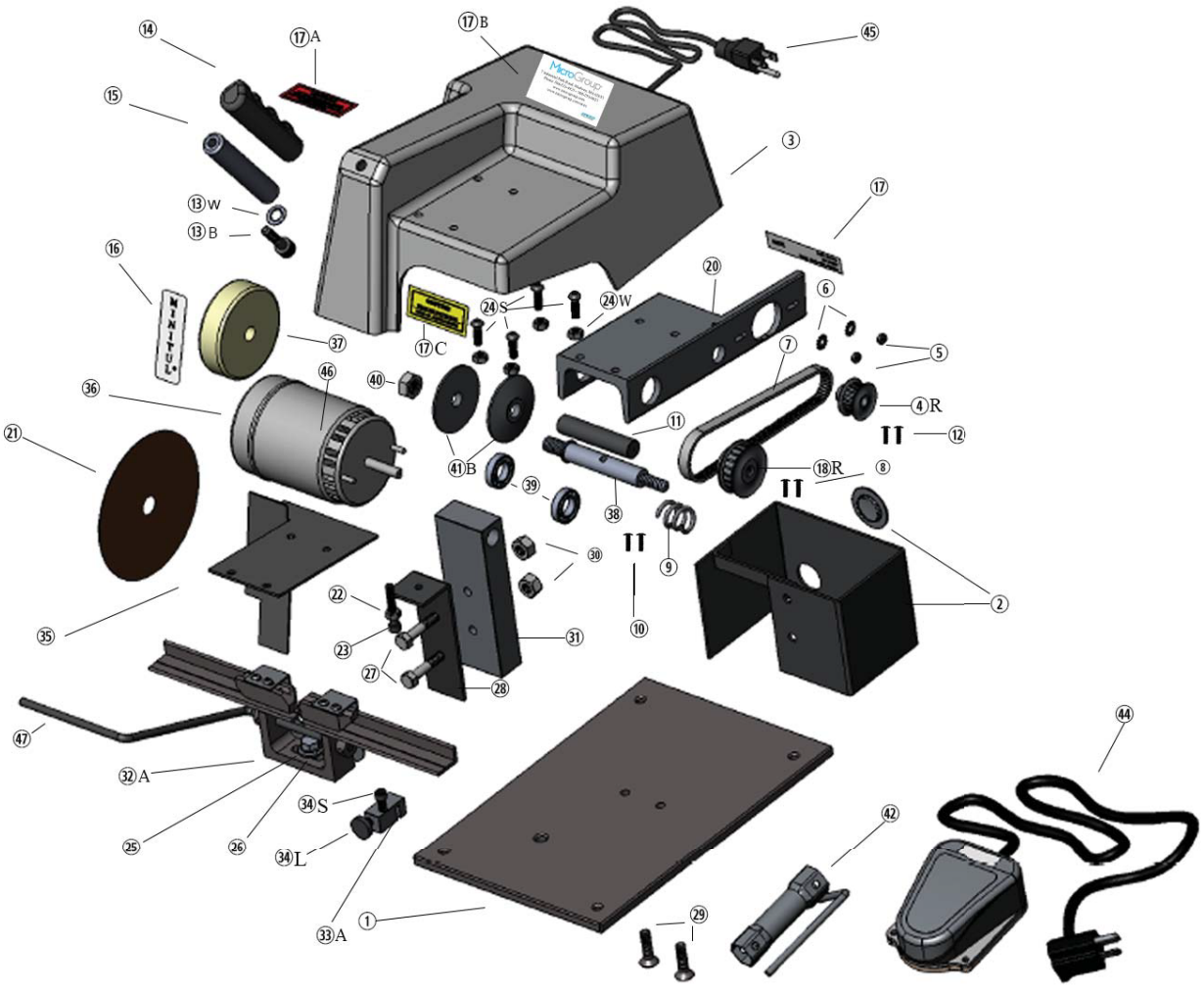
ELECTRICAL INFORMATION

- 1/5 hp 10,000 rpm AC-DC motor (brush type)
- 115V 50/60 cycles per second
- Grounded momentary on-off foot switch (placed on floor)

WORK CAPACITY

- Most solid material to 3/8 diameter (or shape)
- Most tubing to 1/2” outside diameter (or shape)
- Cuts metals, plastics, wood and other materials when equipped with proper blade, some materials may require optional variable speed control and/or the use of a stick lubricant.

HOUSING MATERIAL: MOLDED ABS PLASTIC



Assembly items	Qty
500-01 Base plate	1
500-02 Motor housing with sharp vac plug	1
500-03 Shroud	1
500-04r drive pulley	1
500-05 Hex nut (motor)	2
500-06 Washer (motor)	2
500-07 Belt drive	1
500-08 Set screws (LG pulley)	2
500-09 Pivot post spring	1
500-10 Set screws (pivot post)	2
500-11 Pivot post pin	2
500-12 Set screws (SM pulley)	2
500-13b bolt for handle	1
500-13w washer for handle	1
500-14 Handle grip	1
500-15 Handle (tubing)	1
500-16 Minitul label	1
500-17 Caution label	1
500-17A warning label	1
500-17B microgroup label	1
500-17C MOD500 saw serial number	1
500-18R shaft pulley	1
500-20 Main frame	1
500-21 Blade (see page 8)	1
500-22 Lock nut (stop screw)	1
500-23 Stop screw	1

Assembly items	Qty
500-24S shroud screws	4
500-24W shroud washers	4
500-25 Vise bolt	1
500-26 Vise washer	1
500-27 Stop plate bolt	1
500-28 Stop plate	1
500-29 Pivot post screws	2
500-30 Stop plate nuts	2
500-31 Pivot post block	1
500-32A Vise assembly (including vise handle)	1
500-33A Vise stop & locking screw assemly	1
500-34S Vise stop & locking short screw	1
500-34L Vise stop & locking long screw	1
500-35 Dust shield	1
500-36 Filter cap	1
500-37 Filter	1
500-38 Saw shaft	1
500-39 Shaft bearings	2
500-40 Saw shaft nut	1
500-41B Blade flange	1
500-42 wrench set	1
500-44 Foot switch & cord	1
500-45 Power cord	1
500-46 Motor 1/5 h.P.	1
500-47 Vise handle	1

SPEED TESTED IN ACCORDANCE WITH ANSI B7.1

WARNING: Comply with ANSI 87.1 safety code and OSHA safety require ments. Failure to comply can result in serious physical injury.

- Do not over-speed - never exceed maximum rpm marked on wheel
- Use safety guards
- Check flanges
- Check mounting procedures
- Check general operating rules
- Check handling, storage and inspection
- Check general machine conditions
- Use mechanical work piece clamp
- Always wear safety glasses
- Do not use on portable machines

Cutting dry with abrasive wheels generates dust. Most of the dust generated is from the material being cut.

Excessive dust inhalation may affect the breathing function.

To avoid breathing impairment always employ dust controls and/or protective measures appropriate to the materials being cut.

GOVERNMENT & INDUSTRY STANDARDS CROSS-REFERENCE

REGULATIONS

§1910.215 Abrasive wheel machinery

1910.215(a)
General requirements.
1910.215(a)(1)
Machine guarding. Abrasive wheels shall be used only on machines provided with safety guards as defined in the following paragraphs
of this section, except:
1910.215(a)(1)(i)
Wheels used for internal work while within the work being ground;
1910.215(a)(1)(ii)
Mounted wheels, used in portable operations, 2 inches and smaller in diameter; and
1910.215(a)(1)(iii)
Types 16, 17, 18, 18R, and 19 cones, plugs, and threaded hole pot balls where the work offers protection.
1910.215(a)(2)
Guard design. The safety guard shall cover the spindle end, nut, and flange projections. The safety guard shall be mounted so as to maintain proper alignment with the wheel, and the strength of the fastenings shall exceed the strength of the guard, except:
Safety guards on all operations where the work provides a suitable measure of protection to the operator, may be so constructed that the spindle end, nut, and outer flange are exposed; and where the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted; and
1910.215(a)(2)(ii)
The spindle end, nut, and outer flange may be exposed on machines designed as portable saws.
1910.215(a)(3)
Flanges. Grinding machines shall be equipped with flanges in accordance with paragraph (c) of this section.
1910.215(a)(4)
Work rests. On offhand grinding machines, work rests shall be used to support the work. They shall be of rigid construction and designed to be adjustable to compensate for wheel wear. Work rests shall be kept adjusted closely to the wheel with a maximum opening of one-eighth inch to prevent the work from being jammed between the wheel and the rest, which may cause wheel breakage. The work rest shall be securely clamped after each adjustment. The adjustment shall not be made with the wheel in motion.
1910.215(a)(5)
Excluded machinery. Natural sandstone wheels and metal, wooden, cloth, or paper discs, having a layer of abrasive on the surface are not covered by this section.
1910.215(b)
Guarding of abrasive wheel machinery.
1910.215(b)(1)
Cup wheels. Cup wheels (Types 6 and 11) shall be protected by:
1910.215(b)(1)(i)
Safety guards as specified in paragraphs (b) (1) through (10) of this section;
1910.215(b)(1)(ii)
Band type guards as specified in paragraph (b) (11) of this section; and
1910.215(b)(1)(iii)
Special “Revolving Cup Guards” which mount behind the wheel and turn with it. They shall be made of steel or other material with adequate strength and shall enclose the wheel sides upward from the back for one-third of the wheel thickness. The mounting features shall conform with all requirements of this section. It is necessary to maintain clearance between the wheel side and the guard. This clearance shall not exceed one-sixteenth inch.
1910.215(b)(2)
Guard exposure angles. The maximum exposure angles specified in paragraphs (b) (3) through (8) of this section shall not be exceeded. Visors or other accessory equipment shall not be included as a part of the guard when measuring the guard opening, unless such equipment has strength equal to that of the guard.
1910.215(b)(3)
Bench and floor stands. The angular exposure of the grinding wheel periphery and sides for safety guards used on machines known as bench and floor stands should not exceed 90 deg. or one-fourth of the periphery. This exposure shall begin at a point not more than 65 deg. above the horizontal plane of the wheel spindle. (See Figures O-6 and O-7 and paragraph (b)(9) of this section.)

GOVERNMENT & INDUSTRY STANDARDS CROSSREFERENCE

STANDARDS

ANSI B7.1-1988 Safety requirements for the use, care and protection of abrasive wheels

This standard governing the safe operation of abrasive grinding wheels was first published in 1926. It has been revised and updated many times over the years by a Standards Committee representing engineering, safety, abrasive wheel and grinding machine fabricators and user associations, labor organizations, insurance underwriter groups, and a government agency. The Committee believes that through the use of appropriate safety and protective devices, injuries or damage done by accidental wheel breakage can be limited, if not eliminated.

OSHA references this ANSI standard in §1910.215(b)(12) Guard design specifications by requiring that abrasive wheel machinery guards meet the design specifications of the standard. Paragraphs preceded by the letter "E" are explanatory information given to clarify provisions of the standard. These explanations are not considered part of the standard.

The following information has been selected from the standard. For comprehensive information, see ANSI B7.1-1988 Safety requirements for the use, care and protection of abrasive wheels.

1. Scope
1.1 Scope

ANSI B7.1-1988 sets forth requirements for the use, care and protection of abrasive wheels, including safety guards, flanges, chucks, proper storage, handling, and mounting. It outlines the best known practices, tests, and safety devices for the protection of both workers and equipment.

Exclusions from the requirements of this standard are natural sandstone, pulpstone and coated abrasive products.

2. Handling and storage
2.1 Acceptance of Shipment

The first inspection shall be made on the original container. If there is visible evidence of damage to the container, the shipment should not be accepted.

2.2 Handling

All abrasive wheels are breakable and therefore care shall be exercised in handling and storage to prevent damage. The following rules, which are based on experience, shall be observed.

a. Handle wheel carefully to prevent dropping or bumping. If a grinding wheel is dropped or suspected of having been damaged, it shall not be mounted.
b. Do not roll wheels (hoop fashion).
c. Use trucks or other suitable conveyances, which provide support and protection in transporting all wheels which can not be carried by hand.
d. Place wheels carefully on a shelf or rack or in bins, boxes or drawers.
e. Wheels shipped on pallets ·may remain stored on pallets until ready to be mounted on machines.

2.3 Storage

Suitable racks, bins, drawers, or boxes shall be provided to store the various types of wheels used.
Exception: Pallets should only be stacked in accordance with wheel manufacturers' recommendation.
Wheels shall not be stored subject to:

a. Exposure to water or other solvents.
b. Any temperature or humidity condition that causes condensation on the wheels.
c. Freezing temperatures.

E2.3 Abrasive wheels must be protected while awaiting use. Wheel storage should be arranged to allow for removal of wheels without disturbing or damaging other wheels. Storage and records should also be set up to allow for wheel use on a rotational basis so that wheels will be in storage a minimum length of time. This minimizes the possibility of damage from lengthy storage. Such suitable storage should be available for partly used wheels as well as new wheels.

MODEL-500 SAW & OTHER ABRASIVE CUT-OFF BLADES

TE Connectivity sells a wide variety of saw blades for most applications and requirements.
The following is a comprehensive listing of our stocked blades. These blades can be purchsed at our online store:
www.microgroup.com/store

A = Aluminum Oxide

S = Silicon Carbide

HS = High Speed Steel

HG = Hollow Ground High Speed Steel

● = Dry Cut

● = Use Boelube

Item #	General Purpose Saw Blades	Diameter	Grit/ # Teeth	Thickness	Type	Arbor Size	Alum < 1/4"	Alum > 1/4"	Brass < 1/4"	Brass > 1/4"	Copper < 1/8"	Copper > 1/8"	Glass	Plastics < 1/8"	Plastics > 1/8"	Steel Stainless	Steel	Wood
4-240-013A 4-120-016A	Non-Reinforced Rubber Abrasive Blade with Special Mixed Abrasive Sizes for minimum burr. Most commonly used for cutting any steels up to 1/2" diameter	4 4	240 120	013 016	A A	1/2			● ●	● ●						● ●	● ●	
5-120-015A	Non-Reinforced Rubber Abrasive Blade. Recommended for cutting metals when #5-80-030 causes motor to labor excessively or when burrs are unacceptable. The blade is somewhat fragile and used for very light wall to 1/2" diameter.	5	120	015	A	1/2										●●	●●	
4-90-025A	Non-Reinforced Rubber Abrasive Blade. Rugged blade cuts metals, reduces motor load. Best blade if used only occasionally), due to rugged construction, to be used on most stock over 3/8" dia.	4	90	025	A	1/2			●	●						●	●	
4-060-030AR 5-060-030AR	Heavy Duty Reinforced Resin Abrasive Blade Can be used for cutting Titanium	4 5	60 60	047 047	A A	1/2 1/2										● ●	● ●	
5-080-030A 5-080-035A	Heavy Duty Non-Reinforced Rubber Abrasive Blade. Similar to 4-90-025A. The best all purpose blade. For heavy cuts.	5 5	80 80	030 035	A	1/2			● ●	● ●						●● ●●	●● ●●	
5-080-060A	For extra-heavy cuts.	5	80	060	A	1/2			●	●						●	●	
5-046-060AR	Heavy Duty Reinforced Resin Abrasive Blade. Similar to 4-90-025A. For heavy cuts.	5	46	067	A	1/2			●	●								
4-SPL-009S	Non-Reinforced Rubber/Silicon Carbide Blade. Silicon abrasive allows this blade to cut through very small diameter hypodermic tubing, drill blanks and glass; However, this blade requires extreme care in handling to prevent breakage since it is only .009" thick. Use with a Boelube®.	4	-	009	S	1/2							●					
4-120-025S	Non-Reinforced Rubber/Silicon Carbide Heavy Duty Blade for cutting glass, ceramics, and thermocouple cable. Should be used with Boelube®.	4	120	025	S	1/2							●					
5-150-015S	Non-Reinforced Rubber/Silicon Carbide Heavy Duty Blade for cutting glass, ceramics, and thermocouple cable. Should be used with Boelube®.	5	150	015	S	1/2							●					
4-010-030HG 5-010-030HG	Hollow-Ground High-Speed Steel Blade. Used on larger sections of soft metals and wood due to hollow ground side which prevents jamming in cut. Excellent for cutting copper, aluminum and brass. Should be used with Boelube®, except on brass (cut dry).	4 5	10 10	030 030	HG HG	1/2 1/2	● ●	● ●	● ●		● ●	●			●		●	

TE.com/medical

05/23 med-metals-mod-500-saw-sg-en