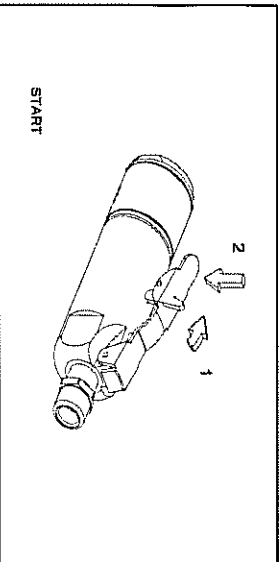
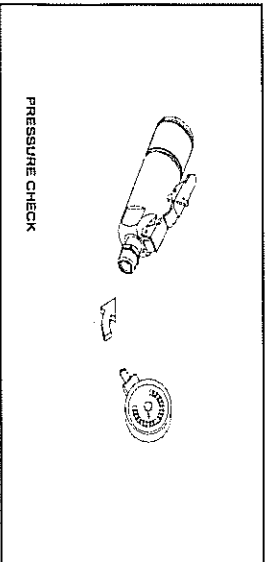


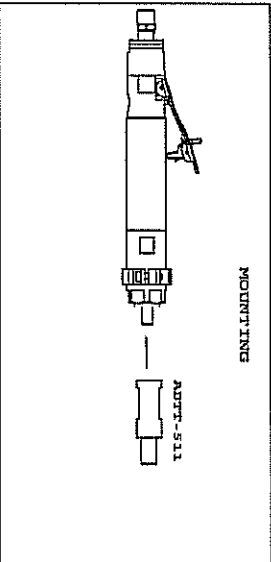
FIGURE 4  
SPEED CHECK



START



PRESSURE CHECK



MOUNTING



ADPT-511

**Maintenance Instructions**

**WARNING!!!**

- > Make sure you are familiar with the operating instructions before you use this machine.
- > This machine, it's attachments and accessories must be used for the purpose for which they were designed.
- > Product liability and safety reasons prohibit any modifications to this machine.
- > Any attachments or accessories must be agreed in advance with an authorized representative of the manufacturer.
- > *To prevent personal injury and long time risks:*

- > Familiarize yourself with the enclosed leather "General Operators Instructions".
- > Before making any adjustments to the machine, e.g. changing an accessory, please ensure that the air supply is disconnected and the machine is safely isolated.
- > Inspect the tool retainer before attaching the new equipment.
- > The inserted tool equipment must be approved for the normal operation of the machine.
- > Check the condition of the inserted tooling at regular intervals and whenever the machine has been serviced.
- > Maintenance is to be carried out according to the service manual by authorized service personnel only.

*Properly maintained air tools are less likely to fail or cause accidents. If tool vibrates unusually or produces an unusual sound, repair immediately.*

**LUBRICATION**

- > An air line filter-regulator-lubricator should be located as closely as possible to the tool.
  - > Clean out dirt and moisture from air hoses daily. Keep screen handle bushing in tool.
  - > OIL TOOLS DAILY. Mobil DTE Light or an equivalent is recommended. Pour about ½ oz. in air inlet and run tool to allow oil to be carried to interior.
- Additional safety information is available from the American National Standards Institute, Inc., 1430 Broadway, New York, N.Y. 10018(ANSI B186.1)*

**OVERHAUL**

Twice a year at heavy duty operation and once a year at light duty operation respectively the machines should be dismantled for cleaning and maintenance of internal parts.

**500AH1MK Horizontal Sander/Polisher  
Certificate of Conformity**

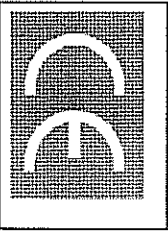
We at: T.C. Service Co. Inc.  
38285 Pelton Rd.  
Willoughby, Ohio 44094  
U.S.A.

Declare under our sole  
Responsibility that the product:

Machine Name: Horizontal Sander

Model Number: 500AH1MK

Serial/Batch Number: 15006829



to which this declaration relates, is in conformity with the requirements of the Council Directive of 29 June 2006 on the approximation of the laws of the Member States relating to machinery (2006/42/EC)

Harmonized Standards Applied: : 89/392/EEC, EN-12096, EN-28662-1, ISO-8662-2, ISO-5349, EN-12366, ISO-11201, ISO-3744, ISO-4871, ISO-7574-1, ISO-7574-4, ISO-8662-2

National Standards Applied: ANSI B1861-1984

Name and Position of Issuer: Donald K. Kuhl  
Manager

Signature of Issuer: *Donald K. Kuhl*

Place and Date of Issue: Cleveland, OH USA - January 10, 2010

# 500AH1MK SANDER

## Disassemble

1. Disconnect air and remove all wheels and accessories.
2. Secure tool in vise vertically with output of tool oriented toward upward direction. Clamp onto the sides of the live handle (do not to clamp on lever).
3. Unscrew motor housing (545-1A)(right hand thread) from back-head (500-G-5(S)) using flats on housing.
4. Remove snap ring (500-46) from groove in endplate (500-3). Remove snap ring (592020) from groove on spindle (JM-14).
5. Rap sharply on the rear O.D. of the motor housing with plastic hammer. The rear end plate, cylinder (500-2A) and blades (500-6A) will dislodge and can be easily removed.
6. Move rotor (500-5A) back and forth until it slides over the key (500-H-10). Remove rotor and key.
7. Rap rear O.D. of housing and the front endplate (500-7) will slide out.
8. Re-install key and slide spindle holder (1100-820) over the key. Make sure the holder goes all the way down into the case. Clamp holder in vise and, while holding motor case with a wrench, remove front flange nut (500-42) for standard models or output adapter (503-xx)(right hand thread) for 1, 2 or 3 models. (The motor casing assembly will have a tendency to spin during this process due to the gear drive. It is necessary to hold the motor case assembly from spinning with a wrench in order to unscrew the front nut or adapter.)
9. Remove from vise. Remove spindle holder and key.
10. Secure the housing assembly in vise vertically with output of tool oriented toward downward direction. Clamp on flats of bearing cap (545-29) in center of vise.
11. Loosen and unscrew gear ring (535-20) (left hand thread). Remove from vise.
12. Secure the housing assembly in vise vertically with output of tool oriented toward upward direction. Clamp on flats of motor housing (545-1A) in center of vise. Unscrew ring gear (left hand thread).
13. Remove snap ring (500-46) from groove in gear spider(535-32). Lift motor spindle from gear spider.
14. Remove snap ring (500-46) from groove on spindle (JM-14). Press bearing (300-G-29) from spindle.
15. Slide exhaust deflector (545-2) off of motor housing and remove o-ring (500-23).
16. Support the outside edges of gear ring vertically on a suitable drill block with output upward. Press spindle through front bearing (700-7) with an arbor press. Remove bearing (700-7) from ring gear with a punch.
17. Support bearing (590026) in a drill block with output downward. Place a suitable punch in center of spider. Press bearing from spider.
18. Clamp onto flats of back half of gear spider (535-32) in center of vise with output facing in an upward direction. Remove 4 screws (591174) from spider. Using 2 screwdrivers (one on each side) between planetary gears (535-12) and front half of spider (535-25-40 on standard model or 535-30 on 1, 2 or 3 models) lift front half of spider from back half.
19. Remove 4 planetary gears from spider.
20. Remove bearings (535-52) from each half of gear spider using an appropriate punch
21. Slide exhaust deflector (545-2) off of housing. Remove o-ring (500-23).

22. To check throttle valve, unscrew plug (700-S-26) and lift out valve spring (600-51) and plunger (560-13) Replace o-ring (200-9) if cracked or worn.

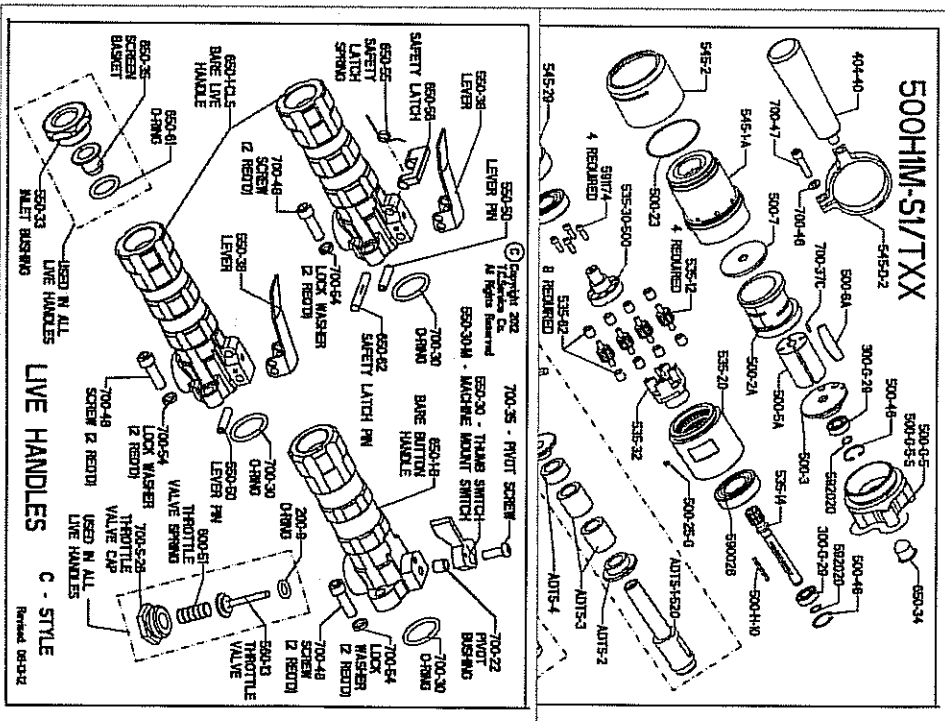
## Assembly

1. All parts should be clean and free of any abrasives.
2. Install o-ring (500-23) on housing (545-1A). Lightly oil inside of exhaust deflector (545-2) and slide over case.
3. Press bearings (535-52) into each half of spider. Grease bearings with a suitable bearing grease. Our recommended gear grease is any lithium soap based NGLI grade 2 grease.
4. Clamp back half of spider (535-32) in center of vise facing upward. Clamp onto flats on rear of gear spider. Place 4 planetary gears into bearings and place front half of spider (535-25-40 on standard model or 535-30 on 1, 2 or 3 models) onto back half, taking care to align planetary gears in bearings properly. Install screws (591174) into spider assembly and slowly tighten bolts evenly (alternating from corner to corner). Check that planetary gears turn freely and that the two halves of spider are completely engaged.
5. Press bearing (700-7) onto front half of spider assembly with an appropriate bearing driver.
6. Press seal (500-H-14) into bearing cap (545-29). With spider still in vise, slip front cap over end of spider. Screw on and tighten front nut (500-42) for standard models or output adapter (503-xx)(right hand thread) for 1, 2 or 3 models. Remove assembly from vise.
7. Grease spider assembly, and especially planetary gears, thoroughly with a suitable gear grease. Our recommended gear grease is any lithium soap based NGLI grade 2 grease. Carefully place spider gear assembly into gear ring (535-20). Tighten bearing cap onto gear ring (left hand thread).
8. Using an appropriate bearing driver, press rear spider bearing (590026) onto rear of spider assembly in an arbor press.
9. Press bearing (300-G-29) onto spindle (JM-14) until it bottoms against shoulder.
10. Put gear end of spindle into rear of spider assembly. Install snap ring (500-46) over bearing and into groove in rear half of spider using snap ring pliers.
11. Clamp spider assembly into center of vise with output in downward direction. Clamp onto flats of bearing cap (545-29). Thread motor housing onto gear ring and tighten (left hand thread).
12. Slip front endplate (500-7) over motor spindle and press until endplate bottoms against motor housing. Remove from vise.
13. Install key (500-H-10) into slot on motor spindle. Slide rotor (500-5A) onto spindle and key.
14. Install cylinder (500-2A) with locating pin toward rear of tool.
15. Drop in the 4 blades (500-6A).
16. Install rear end plate (500-3)-be sure to align small locating hole with cylinder pin.
17. Secure flange nut in vise and drive bearing (300-G-29) onto the spindle. Install snap rings (500-46 and 592020).
18. Clamp live handle (550-1-AL) and back-head assembly in vise.
19. Place a few drops of oil in the motor assembly and screw on the back-head.
20. Place wrench on the housing flats (545-1A). Run tool and tighten firmly.
21. Check RPM with a reliable tachometer. Tool must run at or below speed stamped on tool.

Part Number	Description	Parts List
JM-14	MOTOR SPINDLE	
300-G-29	BEARING (2 REQ.)	
404-40	DEAD HANDLE	
500-G-5	ALUMINUM BACKHEAD (SPECIFY SPEED)	
500-G-5-S	STEEL BACKHEAD (SPECIFY SPEED)	
500-G-47	1/2-13 JAM NUT	
500-H-10	KEY	
500-2A	CHROME CYLINDER	
500-2-C	REAR ENDPLATE	
500-3	ROTOR	
500-5A	BLADE (4 REQ.)	
500-7	FRONT ENDPLATE	
500-23	O-RING	
500-25-G	GREASE FITTING	
500-42	OUTPUT FLANGE (500H1M)	
500-46	LOCK RING (2 REQ.)	
501-42A	1/2 I.D. FLANGE	
503-50	1/2-13 X .687 OUTPUT ADAPTER	
503-51	1/2-13 X 2 1/4" OUTPUT ADAPTER	
503-52	5/8-11 X 1 1/8" OUTPUT ADAPTER	
503-53	5/8-11 X 2 1/8" OUTPUT ADAPTER	
503-54	7/8-14 X 1-1/16 OUTPUT ADAPTER	
535-12	PLANETARY GEAR (4 REQ.)	
535-20	RING GEAR	
535-25-40	FRONT HALF OF GEAR SPIDER (500H1M)	
535-30	FRONT HALF OF GEAR SPIDER (500H1M)(1/2)(3)	
535-32	BACK HALF OF GEAR SPIDER	
535-62	BEARING (8 REQ.)	
545-D-2	DEAD HANDLE BRACKET	
545-1-A	MOTOR CASE	
545-2	EXHAUST DEFLECTOR	
545-29	FRONT CAP	
650-H-14	SEAL	
650-34	SCREEN BASKET	
700-4	5/8 I.D. FLANGE	
700-7	BEARING	
700-34	5/8-11 JAM NUT	
700-37C	ROLL PIN	
700-46	LOCK WASHER	
700-47	SCREW	
590026	BEARING	
591174	SCREW (4 REQ.)	
592020	SNAP RING (2 REQ.)	
TOOL 5		
1100-094	15/16" WRENCH	
1100-100	1" WRENCH	

ASSEMBLIES  
AA-650-1-BLS SAFETY HANDLE ASSY.

Model Number	Throttle Type	Operating Speed	Rated Power	Weight	Overall Length	Air Consumption	Sound Pressure Level	Sound Power Level	Vibration
500AH1MK	Safety Lever	4000 R.P.M.	1.5 HP 1.13 KW	6.7 Lbs. 3.0 Kg	7.1 in. 180 mm	35 cfm 16.5 l/s	87 dB(A) Uncertainty - 4.0	98 dB(A) Uncertainty - 3.1	> 2.5 m/s

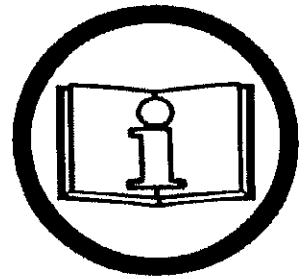


This tool is designed to operate on 90 psig. (6.2 bar) maximum air pressure with 1/2" (12.7 mm) hose.



## **T.C. Service Co.**

Manufacturer of *Top Cat®* Pneumatic Tools  
38285 Pelton Rd.  
Willoughby, OH 44094 U.S.A.  
(800) 321-6876 • (440) 954-7500  
FAX (440) 954-7118  
sales@tcservice.com • <http://www.tcservice.com>



### **EC Declaration of Conformity**

### **General Operator's Instructions**

### **Important Information for Safer Grinding**

This manual follows the EC Machinery Directive (2006/42/EC) regarding operator's instructions and relevant parts of standards from CEN TC 255 "Hand-held power driven non-electric tools - Safety". These instructions concern operation, handling of machines, inserted tool and equipment as well as maintenance. Neglect to follow these long established recommendations may cause serious hazards. Make sure the operator fully understands the following recommendations and has full access to them.

**Warning !!!!** Pay strict attention to following measures the operator must take in order to avoid risks of misuse or accident.

#### **Installation**

When lubrication is recommended - use recommended lubricants only. Check hose size and air pressure. The air pressure at the tool inlet with the grinder running shall not exceed the maximum operating pressure 90 psi (6.1 bar). Avoid risk of whipping hose - regularly check hose, hose fitting and clamp conditions. Check that the exhaust air is directed away to avoid blowing dust or air from the work piece onto the operator or other persons. When necessary, use exhaust hose and arrange for dust collection.

**Note:** Pneumatically driven power tools are not generally insulated against coming in contact with electric sources. *Explosive atmosphere must not be ignited* - to prevent injury and property loss from fire use other non-sparking process.

#### **Correct Use of Grinder**

Follow the information concerning intended applications and grinding wheels and accessories to be used in the maintenance instructions supplied with the machine.

#### **Avoid Misuse**

- Do not use abrasive wheels with lower maximum working speed than rated spindle speed
- Do not use circular saw blades or other cutters than the abrasive wheels or brushes specified
- Do not use the grinder without a wheel guard
- Do not attach bonded wheels to a sander without a wheel guard
- Do not side grind with cut-off wheels and straight wheels or with inside of cup wheels
- Use of this grinder for any purpose other than stated in these instructions is strictly forbidden
- Do not manipulate speed of grinder

**Note:** The tool must not be modified for product liability and safety reasons

#### **Avoid Accidents when using the machine**

##### **Potential Injuries:**

- Eye injuries due to sparks, chips or wheel (Always wear eye protection to prevent vision loss.)

- Cutting or severing
- Drawing in or trapping of loose hair and clothing
- Stored gas or fluid may cause a hazard
- Risk of a whipping compressed air hose
- Disintegrating abrasive wheel may cause even fatal injuries

Keep Wheel Guards:

- In place and correctly mounted
- In good condition and regularly inspected (*Do not use a wheel guard suspect to a wheel failure.*)

Grinding Wheels

Learn Proper Handling and Storing of Abrasive Wheels:

- Store and handle the abrasive product with care in accordance with the manufacturer's instructions
- Maximum operating speed marked on the wheel must be equal to or higher than the rated spindle speed
- Check wheel dimensions
- Inspect wheels before use (No cracked or chipped wheels shall be used.)
- Do not fit a wheel soaked in any fluid
- Fit on spindle shall be free, but not loose
- Attach wheel with flanges conforming to International standard and in good condition
- Flanges shall have flat contact surface and be without cracks and burrs
- Do not use unauthorized bushings or adapters to attach large hole abrasive wheels
- Use blotters when delivered with grinding wheels
- Do not mismatch wheel and spindle thread
- Spindle and spindle thread shall be without damage or wear
- Do not bottom spindle thread ends in cup or plug wheels with threaded insert - use a spacer
- Mount the wheel correctly and tighten to prescribed torque
- Test run every new wheel in a safe position for 30 seconds

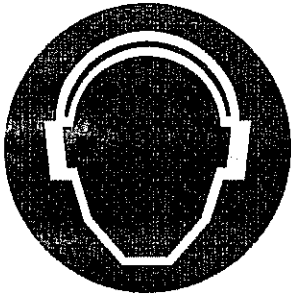
For Prolonged Life of Grinder

**Warning:** Overspend may cause grinding wheel disintegration

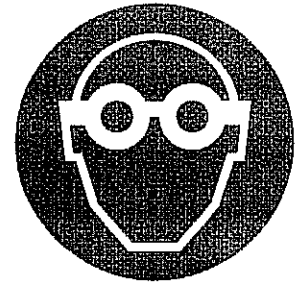
- Check spindle speed regularly with a tachometer
- Note: Never measure spindle speed with abrasive wheel attached!!!***
- Free speed shall not exceed the rated speed marked on the tool
  - Speed test intervals shall be determined based on the working environment and the compressed air quality (Use shorter intervals when conditions are unfavorable, dirty air, corrosive atmosphere and irregular lubrication. It is acceptable to use longer intervals when conditions are favorable.)

Correct Working with a Grinder

- Work piece shall be properly supported or fixed
- When cutting off, support work piece not to jam the wheel (Slot shall remain constant or become wider during operation.)
- If jamming the wheel during cutting off, shut off power and ease the wheel free (Check wheel for damage before continuing operation.)
- Ensure that sparks from the process do not create a hazard to eyes or will ignite the environment
- Special precautions shall be taken when working in explosive atmospheres
- Grinders shall not be used in potentially explosive atmospheres
- The operator must check that no bystanders are in the vicinity



- Personal protective equipment shall be used:  
*Always wear eye and hearing protection and when necessary, other personal safety equipment such as gloves, apron and helmet*



- Remember that there is a running on after the throttle has been released
- If a grinder fitted with an abrasive wheel is dropped, the wheel must be thoroughly examined before re-use
- Disconnect from power supply before servicing and changing of wheels
- Release control device in case of interruption of energy supply
- Ensure that guard is in place, in good condition, correctly mounted and regularly inspected
- Always keep the tool in a clean, dry place when not in use

For information regarding Sound Pressure, Sound Power and Vibration, see the spec chart of the maintenance instructions.

### Couplings

For information regarding the design and dimension of couplings, see the specific areas of the maintenance instructions listed below:

- Specification of couplings - parts list
- Specification of hoses with regard to pressure and flow - notes in spec chart
- Maximum flow - spec chart
- Maximum inlet pressure - notes in spec chart