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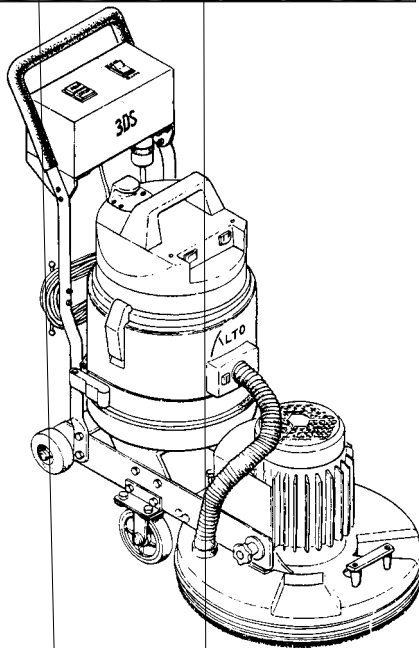
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ALTO®

AMERICAN SANDERS
TECHNOLOGY

Operator's Manual



3DS

READ THIS BOOK

This book has important information for the use and safe operation of this machine. Failure to read this book prior to operating or attempting any service or maintenance procedure to your ALTO machine could result in injury to you or to other personnel; damage to the machine or to other property could occur as well. You must have training in the operation of this machine before using it. If you cannot read English, have this manual explained fully before attempting to operate this machine.

Si Ud. o sus operadores no pueden leer el Inglés, se hagan explicar este manual completamente antes de tratar el manejo o servicio de esta máquina.

All directions given in this book are as seen from the operator's position at the rear of the machine.

For new books write to: ALTO U.S. Inc., 2100 Highway 265, Springdale, Arkansas 72764.

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OPERATOR SAFETY INSTRUCTIONS



WARNING





AVERTISSEMENT




ADVERTENCIA


- DANGER** means: Severe bodily injury or death can or will occur to you or other personnel if the **DANGER** statements found on this machine or in this Operator's Manual are ignored or are not adhered to. Read and observe all **DANGER** statements found in this Operator's Manual and on your machine.
- WARNING** means: Severe injury can occur to you or to other personnel if the **WARNING** statements found on your machine or in this Operator's Manual are ignored or are not adhered to. Read and observe all **WARNING** statements found in this Operator's Manual and on your machine.
- CAUTION** means: Minor personal injury, property damage, or damage to machine can occur if the **CAUTION** statements found on your machine or in this Owner's Manual are ignored or are not adhered to. Read and observe all **CAUTION** statements found in this Operator's Manual and on your machine.

 **DANGER:** Failure to read the Operator's Manual prior to operating or servicing your machine could result in injury to you or to other personnel; damage to the machine or to other property could occur as well. You must have training in the operation of this machine before using it. **If you cannot read English, have this manual explained fully before attempting to operate this machine.**


 **DANGER:** Operating a machine that is not completely or fully assembled can result in injury to the operator or property damage. Do not operate this machine until it is completely assembled. Keep all fasteners tight. Keep adjustments according to machine specifications.

 **DANGER:** Explosive materials, severe bodily injury or death can occur. Sanding/finishing wood floors can create an explosive or combustible environment. Do not operate this machine around solvents, thinners, alcohol, fuels, floor finishes, wood dust or any other flammable materials. Vapors and wood dust generated by sanding or finishing wood flooring can create an explosive environment. Cigarette lighters, pilot lights, electrical sparks and all other sources of ignition should be extinguished or avoided. Keep work area well ventilated.




 **DANGER:** Dust generated from sanding wood floors can spontaneously ignite or explode. Promptly dispose of any sanding dust in a metal container clear of any combustibles. Do not dispose in a fire.




 **DANGER:** Electrocutation could occur if the machine is being serviced while the machine is connected to a power source. Disconnect the power supply before servicing. Always remove the electrical plug from the power source before changing the brush pad or other attachment. Always disconnect the power supply before leaving the machine.




 **DANGER:** Electrocutation or fire could occur if the machine is being operated with a damaged power cord. Keep the power cord clear of the pad. Always lift the cord over the machine. Do not move the machine by the power cord.










 **DANGER:** Electrocutation could occur if the machine is used on an ungrounded electrical circuit. Always use a three-wire electrical system connected to the electrical ground. Never remove or disable the grounding supply conductor on the electrical cord. Consult an electrician if the grounding conductor is missing or if you suspect your circuit is not grounded properly.




 **WARNING:** Always use a three-wire electrical system connected to the electrical ground. For maximum protection against electric shock, use a circuit that is protected by a ground fault interrupter. Consult your electrical contractor.




-  **DANGER:** To avoid injury keep hands, feet, and loose clothing away from all moving parts on the machine. Disconnect the power cord before replacing the pad, changing the abrasive, or when servicing. Do not operate the machine unless all guards are in place. Never leave the machine unattended while connected to a power source.
-  **WARNING:** Shock hazard. Electrical components of this machine can “short-out” if exposed to water or moisture. Keep the electrical components of the machine dry. Wipe the machine down after each use. For storage, keep the machine in a dry building.
-  **WARNING:** Injury can occur if protective clothing or equipment is not used while sanding. Always wear safety goggles, protective clothing, and dust mask while sanding.
-  **WARNING:** Any alterations or modifications of this machine could result in damage to the machine or injury to the operator or other bystanders. Alterations or modifications not authorized by the manufacturer voids any and all warranties and liabilities.
-  **WARNING:** Operating a machine without observing all labels and instructional information could result in injury to the operator or damage to the machine. Read all machine labels before attempting to operate the machine. Make sure all of the labels and instructional information are attached or fastened to the machine. Get replacement labels and decals from your authorized distributor.
-  **WARNING:** The machine is heavy. Injury could occur to the operator or other bystanders unless proper lifting procedures are used. Get help to lift the machine.


Explosion 

Moving parts 

Heavy Object 

Electrical Shock 

Eye Protection 

Read Owner's Manual 

Explanation of Hazard Symbols

Failure to read operator's manual could result in injury to operator or damage to machine.



The symbol of a flame shows that the material can ignite and burn you.



The symbol of a man with voltage going through him depicts electrocution or shock. This can cause death or severe injury.



This symbol refers to the danger of moving parts. Injury can occur.



This symbol of a person wearing goggles warns of injuries to eyes.



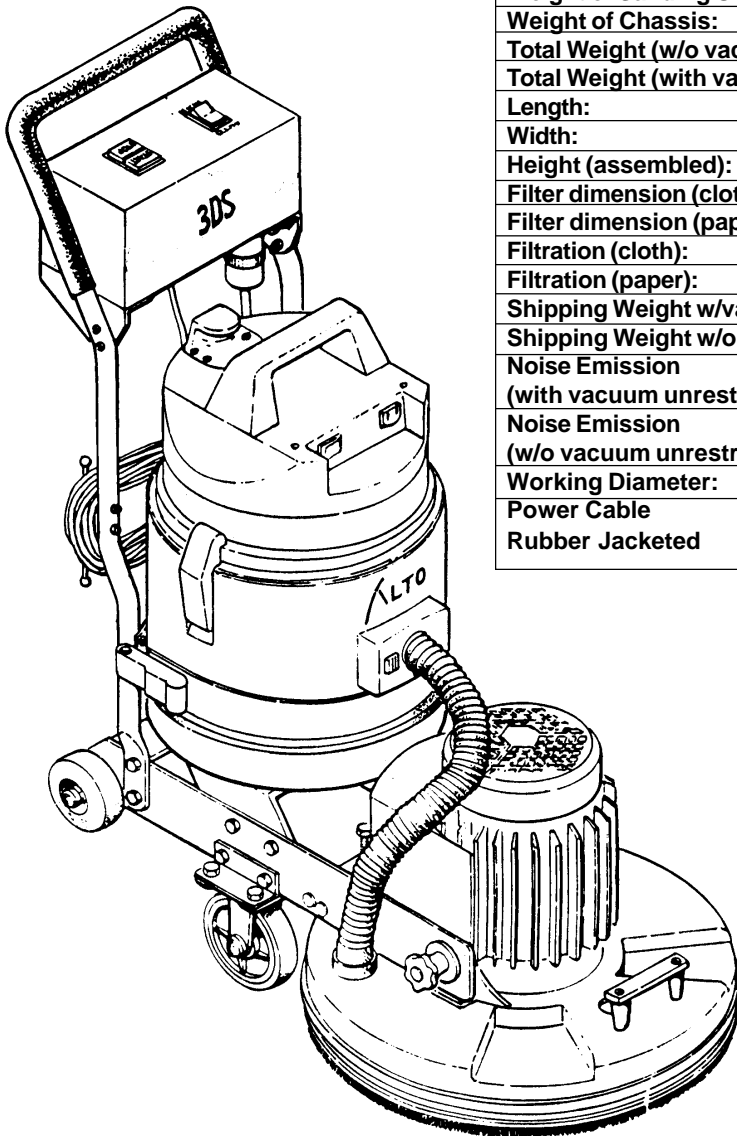
This symbol of a man lifting shows that injury could occur without proper lifting procedures.

Introduction & Machine Specifications

The 3DS is a machine designed primarily for fine finish sanding of hardwood floors. The finish sanding process results in a smoother and flatter floor and assists in removing imperfections created during the drum or belt sanding process. This machine can not be used on wet surfaces.

PRODUCT SPECIFICATIONS

Machine Code	07082C	07085C
Machine Type:	3 Disc Dry Sanding	
Motor:	3 HP Single Phase	
Voltage:	230 Volt	
Frequency:	60 Hz	50Hz
Current:	11.5 Amps	
Fuse:	15 Amps	
Insulation Class:	F	
Sanding Pad Diameter:	8"	20.32cm
Speed of Sanding Pad: (rpm)	717 (Loaded)	
Speed of Sanding Gear Housing: (rpm)	170 (Loaded)	
Weight of Sanding Unit:	109 lbs. (49.44 kg.)	
Weight of Chassis:	37 lbs.(16.78 kg.)	
Total Weight (w/o vacuum):	146 lbs.(66.36 kg.)	
Total Weight (with vacuum):	163 lbs.(74.09 kg.)	
Length:	35"	88 cm
Width:	20"	51 cm
Height (assembled):	39.5"	100 cm
Filter dimension (cloth):	950 sq. cm.	
Filter dimension (paper):	5310 sq. cm.	
Filtration (cloth):	15 microns	
Filtration (paper):	12 microns	
Shipping Weight w/vacuum):	234 lbs.	106 kg
Shipping Weight w/o vacuum):	212 lbs.	96 kg
Noise Emission (with vacuum unrestricted):	76 dBA	
Noise Emission (w/o vacuum unrestricted):	73 dBA	
Working Diameter:	18.75"	48 cm
Power Cable Rubber Jacketed	40' 12-3 Cord	15 meters



Grounding Instructions - 230 Volt

230 VOLT MACHINES INSTRUCTIONS FOR CONNECTION TO THE POWER SUPPLY AND THE ELECTRICAL GROUND

CAUTION: To avoid damage to the machine operate only on AC frequency and electrical voltage shown on the nameplate. Make sure you have the correct frequency and voltage before connecting the power cord to an outlet.

This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment-grounding conductor and grounding plug. The plug must be inserted into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

WARNING: Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the product - if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

This product is for use on a nominal 230 volt circuit and has a grounding attachment plug that looks like one of the plugs illustrated in Fig. 1. Make sure that the product is connected to an outlet having the same configuration as the plug. No adaptor should be used with this product.

This machine must be connected to the electrical ground to protect the operator from electrical shock. The machine has a power cord with two main conductors and one earthing conductor. Connect the plug to the receptacle. The green or green and yellow conductor in the cord is the ground wire. Never connect this wire to any terminal other than the ground terminal.

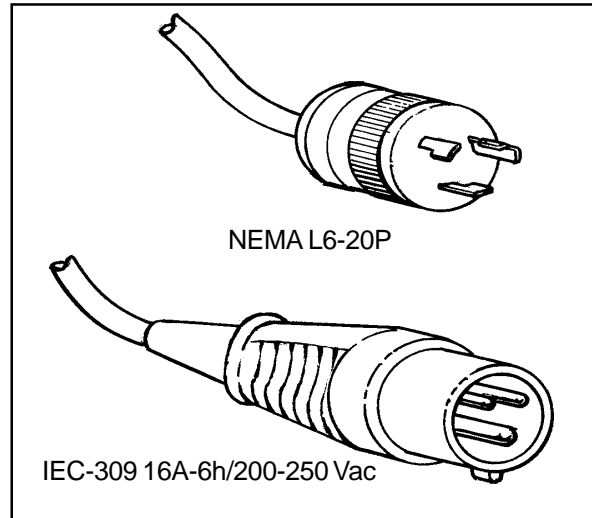


Figure 1

WARNING: To avoid electrical shock always use this machine with an AC three-conductor electrical system connected to the electrical ground. Replace any worn, cut or damaged cords. Replace any damaged plugs, receptacles, or connector bodies. Do not move the machine over an electrical cord. Always lift the cord over the machine.

EXTENSION CORDS

Use only an approved extension cord with two main conductors and one earthing conductor. The machine has a power cord with wire size 12 AWG or 2.5mm².

WARNING: To avoid motor burnout, if you use an extension cord, use an extension cord with minimum wire size of 10 AWG or 4.0mm². Do not use an extension cord longer than 40 feet or 15 meters. Do not join two extension cords.

WARNING: To avoid electrical shock, do not cut, remove or break the ground terminal. Do not try to fit a three-terminal plug into a receptacle or connector body that does not fit the plug. If the receptacle or connector body does not fit the plug, see your authorized American Sanders Technology dealer to get an authorized person to make the connection.

Machine Breakdown/Transportation

To break down the machine, follow this procedure:

1. Unplug machine from wall and wrap cord.

⚠ WARNING: Injury to the operator or bystanders could occur if the power supply remains connected when servicing the equipment, changing abrasive, or emptying the dust bag.

2. Unplug the power cord, motor cord, and vacuum from electric box.
3. Disconnect the vacuum hose from the sanding unit.
4. Remove both hand knobs from the sanding unit and separate sanding unit from truck frame. (see Figure 2)

⚠ WARNING: The sanding unit is heavy (109 lbs.). To avoid injury to the operator or damage to the machine use a firm grip and proper lifting technique. Get assistance if necessary.



5. To lift the sanding unit grasp the assembly at the lifting sites. (see Figure 3)
6. Unwrap the vacuum power cord from the cleats on the handle and place on vacuum head.
7. Disconnect the vacuum straps by unhinging the draw latch. The vacuum strap will spring back and the vacuum can be lifted off the truck frame. (See Figure 4)
8. The handle may be taken off by removing the four 5/16-18 bolts and nuts that secure it to the truck frame.
9. Secure all elements in cargo area when transporting to avoid damage to the machine.

How to Move Machine (Room to Room)

When moving the machine short distances (room to room) it may be moved by tilting it back until the 4" diameter wheels contact the floor. With steady downward pressure on the handle the machine can be pushed to the desired location. (see Figure 5)

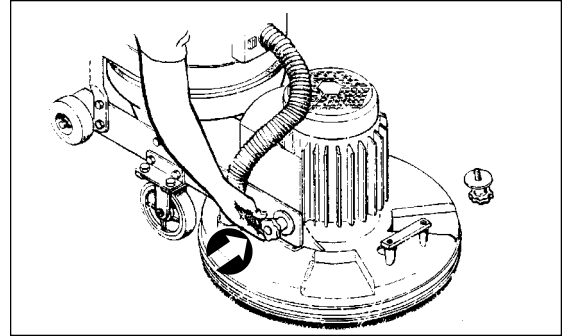


Figure 2

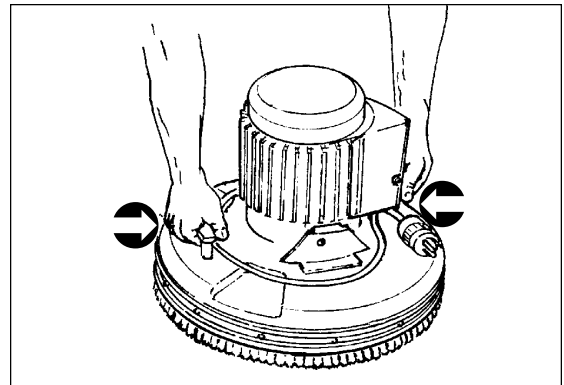


Figure 3

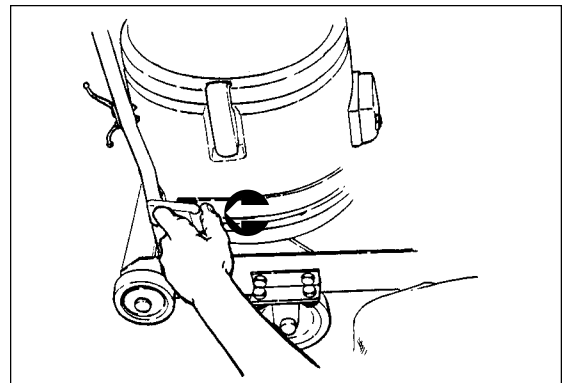


Figure 4

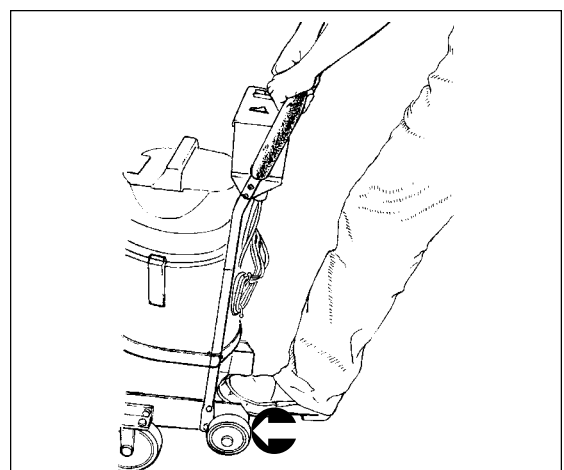


Figure 5

Machine Setup

Listed below are the tools needed for setup of the machine:
1 - #2 Phillips screwdriver
2 - 1/2" open end wrenches or (2) adjustable wrenches.

To prepare the machine for use, follow this procedure:

1. Remove all components of the machine from its package and check for damaged or missing parts.
2. Read Operation and Parts Manual, including all danger, warning, and caution statements before operating the machine. If you or the operator are unable to read the language this manual is printed in, have the manual fully explained before attempting to operate this machine.
3. Attach the sanding unit to the truck frame by securing the two hand knobs through the truck frame to the sanding unit. (see Figure 6). The eccentrics in the truck frame should be used for proper alignment between the truck frame and sanding unit. Match tick marks on spacers and frame; one on right and two on left.
4. Route the motor power cable under the head pressure strap and vacuum support strap, then over the tilt assist strap.
5. Secure the handle assembly to the truck frame by bolting it on with the four 5/16-18 bolts and nyloc nuts supplied and plug in motor power cord. (see Figure 7) Tighten the nuts that hold on the tilt wheels and attach the vacuum support straps as per figure 7.
6. Put Dacron filter around the cloth filter. (See Figure 8)
7. Set the dry vacuum on the vacuum support straps with the center bottom in the 2" diameter hole. NOTE: The vacuum hose port should be facing the sanding unit motor. Attach the vacuum strap around the base of the vacuum. (See Figure 9)
8. An optional disposable paper bag (60711A) is available. If you wish to use the paper bag, remove the vacuum head and install a paper dust control bag by inserting the deflector on the vacuum into the mounting shoe of the paper bag. To ensure the bag is properly seated on the deflector, the rubber seal should rest in the groove of the deflector. (See Figure 10)
NOTE: Check the paper bag for proper seating after transport to avoid dust in the vacuum tank.
9. Wrap the vacuum cord around the cleats located on the back of the handle. Leave enough slack in the cord to plug into the electric box. Turn the vacuum switch to the "ON" position. The vacuum switch should remain in the "ON" position. (See Figure 11 below)

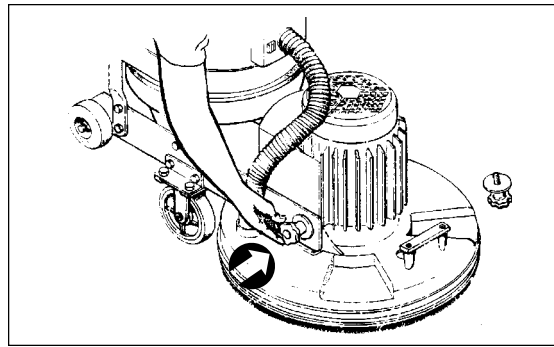


Figure 6

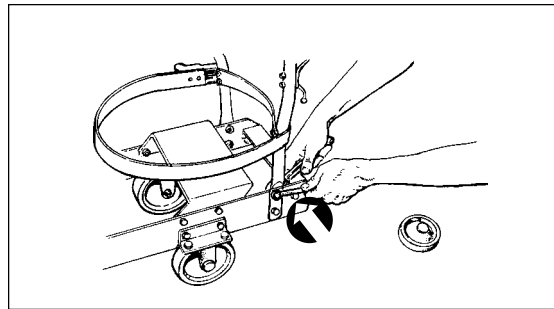


Figure 7

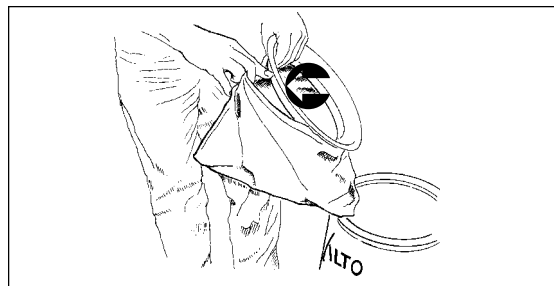


Figure 8



Figure 9

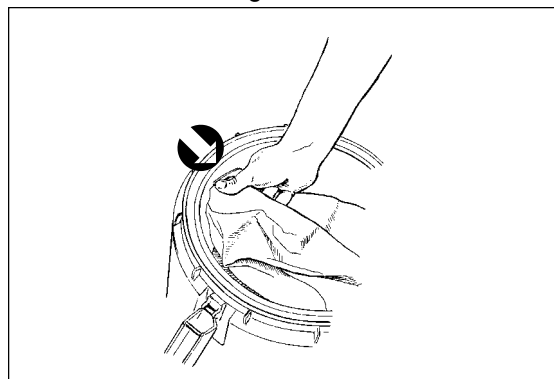


Figure 10

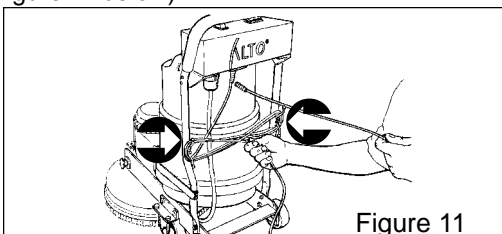


Figure 11

Machine Setup (cont)

WARNING: Injury could occur to the operator or bystanders if the machine should tip or fall while replacing the pad or changing the abrasive.

WARNING: Never allow the machine to be started while tilted up. Severe injury could result if the machine is started while the abrasive is being changed.

CAUTION: Damage to the sanding head will occur if the unit is allowed to drop freely from the tilted position.

CAUTION: Damage to the pad driver will occur if the machine is operated without sandpaper or screen and pad. Damage to the pad driver can also occur if the pad is less than 1/8" thick.

10. Install or replace sandpaper or screen and pad. The sandpaper, screen, and pad should be replaced if there are any tears or if they have become worn and dull. The pad should also be replaced if its thickness is less than 1/8". To install or replace the sandpaper, screen, or pad: (See Figure 12)

DANGER: Disconnect the power source. Electrocutation could occur if the machine is connected to the power source while changing the abrasives, pads or emptying the dust bag.



- a.) Unplug the machine from its power source and move the power cord out of your way.
- b.) Tilt the machine back by pressing on the tilt assist strap with your foot while also pushing down on the handle. (see Figure 13)
- c.) Remove foot from tilt assist strap and continue to push down on the handle until the machine rests in the up position on the handle and tilt wheels. (see Figure 14)
- d.) To remove the existing paper or screen / pad stand to the side of the machine and pull from one edge. The screen may have a plastic pushpin in the center that will require removing prior to the screen's removal. (See Figure 15)
- e.) Center the new paper or screen / pad over the pad driver and press against the pad driver until the hooks on the driver hold them in position.

WARNING: The machine is heavy. Keep others away from the machine because of possible injury if the machine should tip or fall. When replacing the pad or changing the abrasive use caution when tilting the machine. The operator or other bystanders could be injured.

- f.) Return the machine to upright position by standing behind the handle and raising it from the floor until the caster wheels contact the floor. Place your foot on the tilt assist strap and ease the sanding unit to the floor.

11. Connect the vacuum hose to the sanding unit and vacuum.

12. Connect the power cord to the electric box.

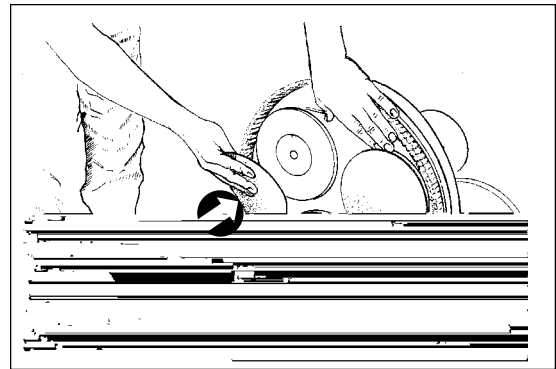


Figure 12

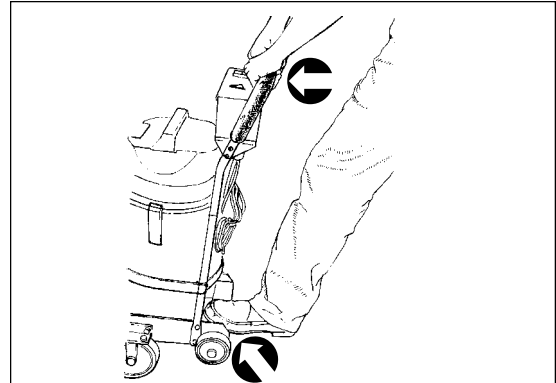


Figure 13

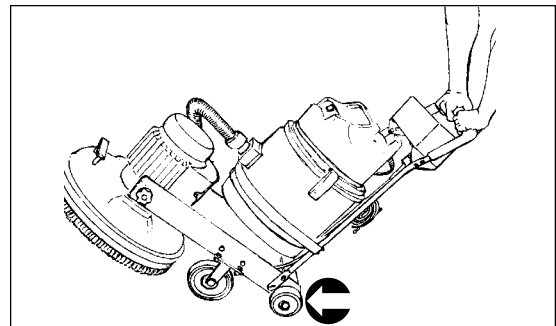


Figure 14

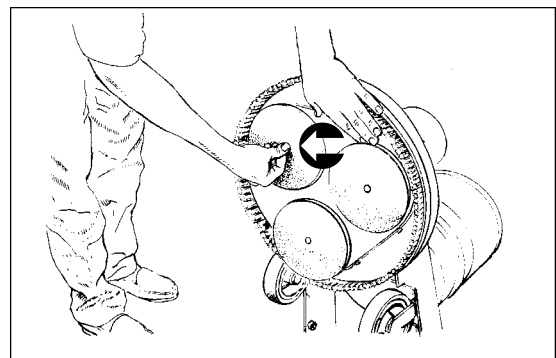


Figure 15

Operating Instructions - Sanding

To operate the machine, follow this procedure:

1. Move machine to work location. When sanding the area, work so that you are moving away from the power supply. This will help to avoid damaging the power cord and reduce the need to move the power cord as frequently.

NOTE: For sanding cuts and sandpaper, see page 13.

⚠ WARNING: Injury can occur if the machine is connected to a power source while installing or replacing the abrasives. Disconnect the machine before installing the abrasives.

2. Install the abrasive. Use the same procedure outlined in MACHINE SETUP for installing the sandpaper or screen / pad. (See Page 5)

⚠ DANGER: Electrocutation could occur if the machine is used on an ungrounded electrical circuit. Always use a three-wire electrical system connected to the electrical ground. Never remove or disable the grounding supply conductor on the electrical cord. Consult an electrician if the grounding conductor is missing or if you suspect your circuit is not grounded properly.

3. Loosen the head pressure until the rubber foot is not touching the mainframe. (See Figure 16) Tighten until the rubber foot touches the main frame. Adjust to suit by running the machine, then making adjustments either up or down to get sanding action desired.

4. Connect machine's power cord to an appropriately fused and grounded circuit.

5. Stand behind the handle, place the rocker switch to "Automatic" and press the green start switch. To stop the machine, press the red stop button. (See Figure 17)

⚠ CAUTION: To prevent possible damage to the flooring and to reduce heat buildup, keep the machine in motion while the motor is running.

6. The operator must be moving the machine when the machine is running. The operator may move the machine in any direction when sanding the floor.

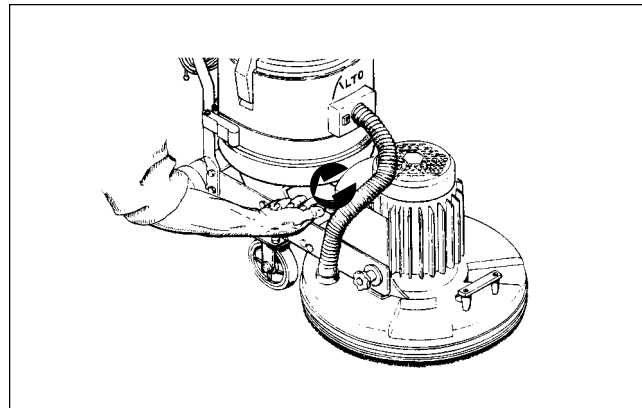


Figure 16

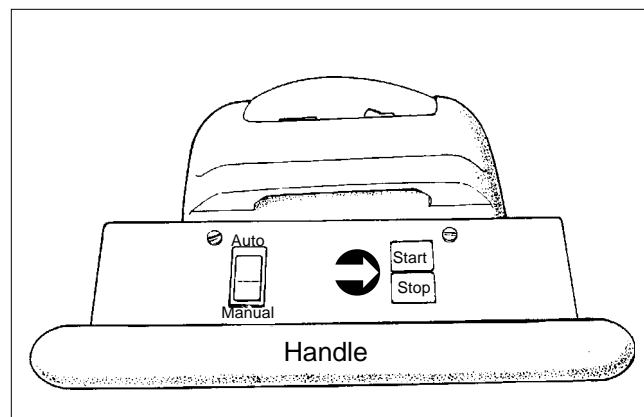


Figure 17

Maintenance

User Maintenance:

The paper bags should be replaced after every 3 hours of use, minimum. Paper bags may need to be replaced more often with heavy cutting and softer wood types.

NOTE: Before paper bags are replaced, the machine must be vacuumed to remove all dust and the cloth filter must be cleaned to remove accumulated dust. **(See the DTV-7 Operator's Manual for instructions on how to clean the cloth filter)**

When changing the sanding paper or screen, the foam and dual lock "velcro" on the sanding pads should be checked for any frays, wear, or damage.

Service Maintenance:

The 3DS Sander must be serviced after every **600 hours** of use. **Contact an authorized Alto Service Center/Person for service.** (The Service Centers are listed on the inside back cover of the Operator's Manual).

The following service should include:

1. Check and/or change the brushes and commutator in the vacuum motor **(See DTV-7 operator's manual)**.
2. Check the rubber grommets on the sanding pads for wear and tear; replace if damaged.
3. Check foam on sanding pads for wear and tear; replace if damaged.
4. Check the drive mechanisms for wear, i.e. belts, pulleys, motor shaft.
5. Blow accumulated dust out of vacuum motor.
6. Clean cloth filter on vacuum.

In addition to the above the following service should be done:

1. After **1500 hours** the **drive belt** should be **replaced**.
2. After **3000 hours** the **bearings** on the drive pulleys should be **replaced**.

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