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# #5700 PANTHER®
# ALL DAY BATTERY
# FLOOR PREP SYSTEM

# INSTRUCTION MANUAL

**Read Manual Before Operating Machine**


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# 5700 HYDRAULIC SAFE OPERATION

## MAINTAINING A SAFE WORK ENVIRONMENT

Establishing a safe working environment in and around your hydraulic equipment is just common sense. The easiest and most effective way to avoid problems is to make sure associates understand their equipment, know how to operate it safely and recognize the danger it represents if handled carelessly. A few things you must be aware of include:

1. **PRESSURE:** Hydraulic fluid under pressure is dangerous and can cause serious injury.
2. **FLAMMABILITY:** When ignited, some hydraulic fluids can explode and/or cause fires.
3. **MECHANICAL:** Hydraulic fluid creates movement, which causes parts of your equipment to move or rotate. Always be aware of what you are doing.
4. **MOISTURE:** Use caution when operating in wet or high moisture conditions. Make sure all electrical fittings, switches, cords plus stain reliefs are in good condition. Always unplug when not in use and when doing any service work.
5. **ELECTRICAL:** Faulty wiring can also be an electrical hazard. A regular preventive maintenance program should always include a wiring check. Unplug batteries and/or charger before serving.
6. **TEMPERATURE:** Because this machine operates at a relatively low pressure, overheating is not common. If surface of tank becomes too hot to touch by hand (above 130º), shut off machine and allow to cool off.

## PRESSURE

Our system runs at or below 2,000 psi. Never look for a leak when unit is under pressure. Using your hand could cause serious injury. A few common ways to encounter hydraulic fluid under pressure include:

1. **PINHOLE:** Fluid under pressure can cause serious injury. It can be almost invisible escaping from a pinhole, and it can pierce the skin into the body. Do not touch a pressurized hydraulic hose assembly with any part of your body. If fluid punctures the skin, even if no pain is felt, a serious emergency exists. Obtain medical assistance immediately. Failure to do so can result in loss of the injured part or death.
2. **LEAK:** Keep fittings and hoses tight. Only check and service when not under pressure. Leaking hydraulic fluid is not only unsightly, it's hazardous. In addition to making workplace floors slippery and dangerous, leaks also contaminate the environment. Before cleaning an oil spill, always check EPA, state and local regulations.

### LEAK AT THREAD END/SEAT

**Problem:** Coupling leaks at thread or seat. This may be caused by any of the following:

a. Missing or damaged O-rings.
b. Damaged threads or seat angle.
c. Thread alignment.
d. Incompatible thread ends or seat angles.
e. Over or under torquing.

**Solution:** Remove the connection and inspect.

1. Certain couplings require the use of an O-ring. If it is missing, replace it. If an O-ring is used, check for damage caused by installation or possible material breakdown from heat or fluid incompatibility. Alternative O-ring materials may be required. Replace if necessary.
2. Check the threads and/or seat angle for damage that may have occurred prior to or during installation. Any ding or burr may be a potential leak path. Replace if necessary.

## PRESSURE (continued)

3. If the coupling was misaligned during installation, threads may have been damaged. Replace and carefully install.
4. Over torquing of a threaded connection can stretch and damage threads and mating seat angles. Over torquing can also damage the staking area of the nut. Under torquing does not allow proper sealing.

⚠ **CAUTION:** Never check for leaks over hose or hydraulic connections. Instead, use a piece of cardboard to locate a pressurized leak. For drips (low pressure leaks), use a rag to clean the area and determine where the leak originates.

⚠ **CAUTION:** Never touch a pressurized hose assembly. Shut down the hydraulic system before checking hose temperature.

3. **BURST:** Whether due to improper selection or damage, a ruptured hose can cause injury. If it bursts, a worker can be burned, cut, injected or may slip and fall.
4. **COUPLING BLOW-OFF:** If the assembly is not properly made or installed, the coupling could come off and hit or spray a worker, possibly resulting in serious injury. Never operate machine without guards.

## FLAMMABILITY

With the exception of those comprised primarily of water, all hydraulic fluid is flammable when exposed to the proper conditions (including many “fire-resistant” hydraulic fluids).

Leaking pressurized hydraulic fluids may develop a mist or fine spray that can flash or explode upon contact with a cause of ignition. These explosions can be very severe and could result in serious injury or death.

Precautions should be taken to eliminate all ignition sources from contact with escaping fluids, sprays or mists resulting from hydraulic failures. Sources of ignition could be electrical discharges (sparks), open flames, extremely high temperatures, sparks caused by metal-to-metal contact, etc.

## HYDRAULIC FLUID

Only use Texaco Rando 46 Hydraulic Oil or Compatible Fluid like IS032. Non-compatible fluids could cause damage to unit or serious injury.

⚠ **WARNING:** When using electric tools, always follow basic safety precautions to reduce the risk of electric shock and personal injury.

# 5700 RULES FOR SAFE OPERATION

READ AND SAVE ALL INSTRUCTIONS FOR FUTURE USE. Before use, be sure everyone operating this equipment reads and understands this manual as well as any labels packaged with or attached to the machine and components and view the instruction video. Extra copies of the manual and video are available.

1. **KNOW YOUR EQUIPMENT:** Read this manual and view instruction video carefully to learn equipment applications and limitations as well as potential hazards associated with this type of equipment.

**⚠ WARNING:** Disarm machine when not in use. Remove Cutting Head or lower Cutting Head to the floor. When exiting machine (getting off machine), remove lower Cutting Head to the floor. When transporting machine around job site, remove Cutting Head. Failure to follow these instructions could cause severe bodily injury.

2. **DISARM MACHINE:** Remove cutting head or drop cutting head to the floor when machine is not in use.
3. **DO NOT "SIDE HILL" MACHINE:** See Page 23.
4. **DISCONNECT CHARGER'S:** Disconnect machine from charger's before operating machine.
5. **AVOID DANGEROUS ENVIRONMENTS:** Do not use in rain, damp or wet locations, or in the presence of explosive atmospheres (gaseous fumes, dust or flammable materials). Remove materials or debris that may be ignited by sparks.
6. **KEEP WORK AREA CLEAN AND WELL LIT:** Cluttered, dark work areas invite accidents.
7. **DRESS PROPERLY:** Do not wear loose clothing. These may be caught in moving parts. Keep hands and gloves away from moving parts.
8. **USE SAFETY EQUIPMENT:** Everyone in the work area should wear safety goggles or glasses complying with current safety standards. Wear hearing protection during extended use and a dust mask for dusty operations. Hard hats, face shields, safety shoes, etc. should be worn when specified or necessary.
9. **KEEP BYSTANDERS AWAY:** Children and bystanders should be kept at a safe distance from the work area to avoid distracting the operator. Operator should be aware of who is around them and their proximity.
10. **PROTECT OTHERS IN THE WORK AREA:** Provide barriers or shields as needed to protect others from debris and machine operation.
11. **USE PROPER ACCESSORIES:** Using accessories that are not recommended may be hazardous. Be sure accessories are properly installed and maintained. Do not delete a guard or other safety device when installing an accessory, attachment or servicing.
12. **CHECK FOR DAMAGED PARTS:** Inspect guards and other parts before use. Check for misalignment, binding of moving parts, improper mounting, broken parts and any other conditions that may affect operation. If abnormal noise or vibration occurs, turn the tool off immediately and have the problem corrected before further use. Do not use damaged equipment. Tag damaged machine "DO NOT USE" until repaired. A guard or other damaged parts should be properly repaired or replaced. For all repairs, insist on only identical National replacement parts.
13. **REMOVE ALL ADJUSTING KEYS AND WRENCHES:** Make a habit of checking that the adjusting keys, wrenches, etc. are removed from the tool before turning it on.

# 5700 RULES FOR SAFE OPERATION

14. **GUARD AGAINST ELECTRIC SHOCK:** Prevent body contact with grounded surfaces such as pipes, battery plug connection, radiators, ranges and refrigerators. When scoring or making cuts, always check the work area for hidden wires or pipes to reduce shock hazards.

15. **AVOID ACCIDENTAL STARTING:** Be sure equipment is turned off before plugging it in. Do not use if the power switch does not turn the machine on and off properly.

16. **DO NOT FORCE EQUIPMENT:** Equipment will perform best at the rate for which it was designed. Excessive force only causes operator fatigue, increased wear and reduced control.

17. **KEEP HANDS AND FEET AWAY FROM ALL CUTTING EDGES AND MOVING PARTS.**

18. **WEAR GLOVES WHEN CHANGING BLADES.**

19. **DO NOT ABUSE CORD:** Never unplug the battery charger by yanking the cord from the outlet or from the battery. Pull plug rather than cord to reduce the risk of damage. Keep the cord away from heat, oil, sharp objects, cutting edges and moving parts.

20. **DO NOT OVERREACH. MAINTAIN CONTROL:** Stay properly seated. Keep proper footing and balance at all times. Maintain a firm grip.

21. **STAY ALERT:** Watch what you are doing, and use common sense. Do not use when you are tired, distracted or under the influence of drugs, alcohol or any medication causing decreased control.

22. **STARTING MACHINE:** On/off switch must be in off position before connecting to power source.

23. **UNPLUG EQUIPMENT:** Disconnect battery and/or charger's before servicing or when not operating.

24. **MAINTAIN EQUIPMENT CAREFULLY:** Keep control levers dry, clean and free from oil and grease. Keep cutting edges sharp and clean. Follow instructions for lubricating and changing accessories. Periodically inspect battery, charger's and all plug connections. Have damaged parts repaired or replaced.

25. **STORE IDLE EQUIPMENT:** When not in use, store in a dry, secured place. Keep away from children. Remove blade or keep blade lowered to the floor (disarm machine).

26. **MAINTAIN LABELS AND NAME PLATES:** These carry important information. If unreadable or missing, contact National for a free replacement.

27. **MACHINE IS HEAVY, DO NOT DROP:** Counter weights are heavy. Take caution when removing or reassembling. Take caution when moving or transporting. Do not drop batteries.

28. **BATTERIES:** Only replace batteries by the manufacturer or its servicing agent. Do not open or tamper with Batteries. Doing so voids all warranties and could cause injury due to electric shock.

29. **COMMERCIAL APPLICATION:** Machine is intended for commercial use only.

⚠ **WARNING:** Exposure to dust may cause respiratory ailments. Use approved NIOSH or OSHA respirators, safety glasses or face shields, gloves and protective clothing. Provide adequate ventilation to eliminate dust, or to maintain dust level below the Threshold Limit Value for nuisance dust as classified by OSHA.

# 5700 RULES FOR SAFE OPERATION

## CHARACTERISTICS OF A DEFENSIVE OPERATOR

- Education
- Alert
- Skills
- Judgment
- Common Sense
- Recognizes the Hazards
- Understands the Defense
- Acts Correctly

**A GOOD OPERATOR IS A "DEFENSIVE" OPERATOR**

**QUALITIES**

**Education:** Learns about the machine and the environment.

**Alert:** Stays alert at all times…never lets guard down.

**Skills:** Only performs duties he/she are qualified to do. Always tries to improve.

**Judgment:** Plays it safe. Doesn't take chances.

**Common Sense:** Does the right thing without having to be told. Applies knowledge.

**Recognizes the Hazards:** Maintains alertness. Anticipates danger.

**Understands the Defense:** Knows that safety isn't an accident…it's a thinking person's choice.

**Acts Correctly:** Does not cave in to pure pressure. Performs correctly when supervised or not.

# 5700 SAFETY INSTRUCTIONS

Read and understand operators instruction manual and instructional video before operating this equipment.

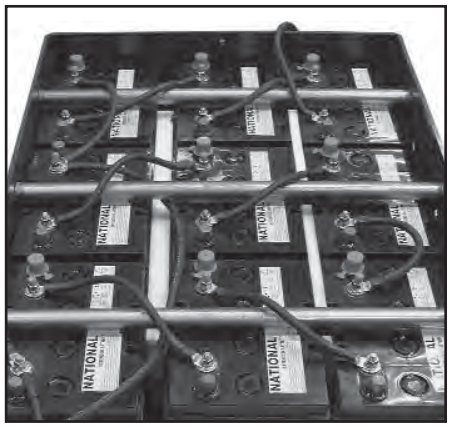
⚠ **WARNING:** Know and understand before operation. Failure to do so could cause damage to equipment or bodily injury.

- Only qualified, trained personnel should operate this unit.
- Loose or damaged parts should be replaced immediately. Failure to do so could cause equipment damage or serious injury.
- Switches and levers should be inspected. (Disconnect battery charger from wall outlet and machine from batteries before repairs to prevent electrical shock). Do not use if defective. Power on/off switch should return to off when lever is released.
- Power control box, motor and switches should be completely enclosed at all times with no exposed wiring.
- Disconnect power from unit before servicing. Failure to do so can cause electrical shock. 
- Only use National components. Failure to do so could cause damage or serious injury.
- Always be aware of support personnel and their proximity when in operation. Block off work area.
- Support personnel should never stand next to machine, in front of or behind machine while machine is running. Failure to do so could cause serious bodily injury or death.
- Manual should be kept with machine in supplied holder for access by operator at all times.
- Always wear eye protection when running machine.
- Never defeat switches or guards.
- Remove blade when machine is not in use and/or lower cutting head to floor. Failure to do so could cause serious bodily injury.
- Wear gloves when changing blades. Always shut machine off when changing blades.

⚠ **WARNING:** Failure to follow any of the above instructions could cause damage to machine, damage to property or serious bodily injury or death.

# 5700 BATTERY OPERATION

## BATTERY OPERATION




Machine is equipped with two (2) ISO Amp hour, 48 volt battery packs put in parallel to create 300 amp hours.

Batteries do not take a memory allowing recharge at any state.

Do not over discharge. Over discharging could cause damage to batteries

## REMOVING BATTERIES

⚠ **WARNING:** Service work on batteries should only be done by a trained professional. High amperage exists and can cause serious injury or death.

- Remove back lid
- Disconnect and tape two wires that run down to the lower batteries
- Remove top three batteries
- Remove seat plate
- Disconnect back-up alarm
- Remove battery tray
- Disconnect all wiring
- Remove batteries

## REPLACING BATTERIES

- Reverse procedure from above. Replace all twelve batteries at the same time.
- Store in a safe dry place

****See Battery Material Safety Data Information on pages 80-81**

⚠ **WARNING:** Remove all jewelry before servicing batteries.

⚠ **WARNING:** Service work on batteries should only be done by a trained professional. High amperage exists and can cause serious injury or death.

⚠ **WARNING:** Hood has pinch points. Do not get hands or fingers pinched when closing hood.

**CAUTION:** Electric shock hazard.

**CAUTION:** Use caution when connecting or disconnecting to avoid electrical shock.

**CAUTION:** Keep batteries dry.

# 5700 BATTERY SAFE OPERATION

### ⚠ DANGER - RISK OF EXPLOSIVE GASES:

Chargers can ignite flammable materials and vapors. Do no use near fuels, grain, dust, solvents, or other flammables. Batteries generate explosive gases during normal operation. For this reason, to reduce the risk of battery explosion, it is important that each time, before using the charger, you read this manual a manufacturer of any equipment you intend to use in the vicinity of the batteries or battery charger. Review all cautionary markings.

### ⚠ CAUTION - PRECAUTIONS:

a) Contact with electrolytic acid can cause skin irritation and damage clothing. Wear a protective apron, gloves and goggles when working with batteries. Have plenty of fresh water and soap nearby in case battery acid contacts your skin, clothing, or eyes.

b) Remove personal metal items such as bracelets, rings, necklaces, and watches when working with batteries. A battery can produce a short circuit current sufficient enough to weld metal objects, causing severe burns.

c) Never smoke or allow a spark or flame in the vicinity of the batteries. Caution must be taken to reduce the risk of dropping metal tools onto the battery. A spark or short circuit may result in an explosion.

## FIRST AID

Immediately flush eyes with cold, fresh water for a minimum of 10 minutes if electrolytic acid comes in contact with eyes. Seek professional medical attention.

## VENTILATION

Blocking louvers or air flow perforations of convection or fan cooled battery chargers and/or machine will result in damage to the unit. When installing the unit leave space for air to flow freely through the intake and discharge louvers and/or perforations.

## GROUNDING AND A/C POWER CONNECTION INSTRUCTIONS

The charger is equipped with an electrical cord with a equipment grounding conductor and grounding plug. The plug must be attached into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

### ⚠ DANGER

Never alter A/C cord or plug provided. If it will not fit the outlet, have proper outlet installed by a qualified electrician. Improper connection can result in electric shock.

# 5700 BATTERY SAFE OPERATION

## INSTALLATION

1) To provide maximum reliability, charger must be installed in a well-ventilated area, so that free airflow is not restricted through the side intake and exhaust vents.

2) Check polarity of battery posts. Positive (POS, P, +) and Negative (NEG, N, -). Attach positive (red) charger lead to the positive battery post. Attach negative (black) charger lead to the negative battery post.

⚠ **WARNING:** Do not disconnect DC charger leads during charging. Damage to the charger could result and void the warranty.

⚠ **WARNING:** Do not connect DC charger leads if the charger is connected to AC power. DC charger leads must be connected first.

## COOLING TIME

Although it is not necessary, but if the batteries are allowed to cool back to room temperature after being charged, you will get more life out of the batteries and charge cycle.

## BATTERY GENERAL INFORMATION

Batteries are designed to withstand high continuous shock load. They can be safely laid on the side, although keeping them upright at all time is suggested. Batteries are heavy, each battery is 63 pounds. Get help to remove batteries if weight is too much or you are under lifting restrictions. Do Not Drop.

When batteries have used their full life, they are recyclable at locations all over the US and Europe. Call National for recycle center. Batteries should only be maintained by certified National Technician.

Batteries are lead acid constructions. If packs are allowed to reach temperatures above 125° F, ventilation can occur and discharge explosive gases (see warning label). How is this done wrong? Improper charger's or improper connections, allowing for direct short.

## BATTERY FREEZING

Freezing of the batteries will not be covered by warranty. Even though there is no liquid in the batteries, allowing batteries that are discharged below 75% to sit in temperatures below 20° F for more than twenty four hours can freeze. The colder the temperature the faster they will be damaged. Always recharge batteries before allowing to sit in cold temperatures or, hook to charger when conditions permit. This charging system can be left on the batteries (maintenance mode) for long periods without damaging the batteries.

## SHIPPING

Unlike flooded cell or gel cell batteries, these batteries have no liquid in them so they can be shipped by air freight.

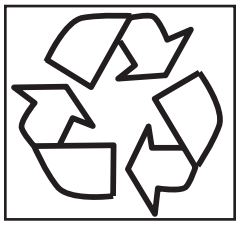
## BATTERY WARRANTY

Six Month warranty stamped on battery case and on label. All warranty is null and void if battery container is tampered with or opened. Replace/maintain only by a National certified technician.

# 5700 BATTERY SAFE OPERATION

⚠ **WARNING:** Do not put battery near fire.
Must be recycled or disposed of properly.
Do not touch terminals with metal objects.

## BATTERY DISPOSAL



Battery must be recycled or disposed of in an environmentally sound manner.

Do not place used batteries in regular trash.

Do not expose the battery to fire or high heat as batteries may explode. Care must be taken not to short terminals together with metal objects: jewelry, keys, nails, screws, tools, etc. Do not attempt to disassemble battery, fire or injury may result. Prior to disposal, protect terminals with heavy insulating tape to prevent shorting.

# 5700 MACHINE CHARGING INSTRUCTIONS

## MACHINE CHARGING

Machine has an on board charger ( Figure A).
**Note: Read & Understand charging manual before using g (pages16.1-16.4)**

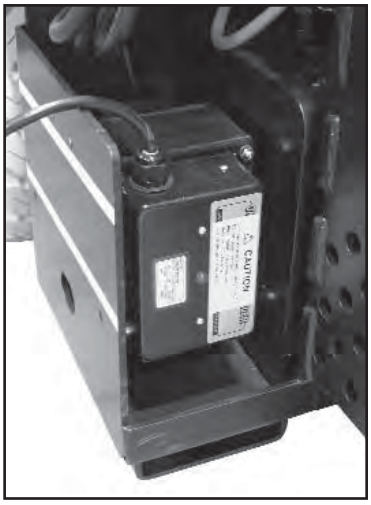


**Figure A**

• To eliminate accidental machine start-up while machine is charging, turn off circuit breaker (Figure B) and depress E-Stop Button (Figure C) before connecting charger to a power source.

• Connect machine to power source using supplied 6 ft 12 gauge extension cord. NOTE: IF NOT USING PROPER SIZED EXTENSION CORD COULD CAUSE IMPROPER CHARGING AND/OR CHARGER DAMAGE.

**NOTE:**
**A steady green light indicates machine is charging in standard charge cycle. Green light will blink when charging is complete and in maintenance mode.**

***See Manufacturers Manual (included) for further Specifications**

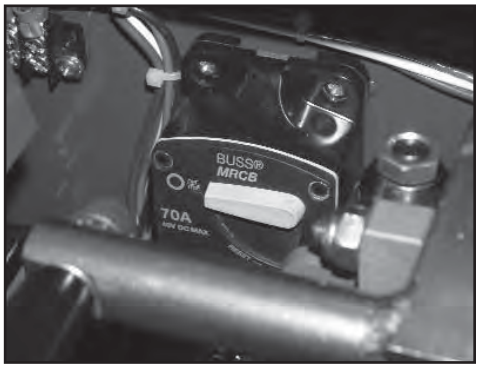



**Figure B**

• Complete charging sequence

• Disconnect cord from the power source. Make sure the cord/plug is completely secure back into the machine. Failure to do so could cause cord to fall under machine which will cause damage to cord and/or plug.

• Turn on circuit breaker

• Release E-Stop

**Figure C**

⚠ **WARNING:** Always find a safe place for recharging power packs with good ventilation away from sparks or flame sources and away from bystanders. Rope off if necessary.

⚠ **WARNING:** Electrical shock hazard. Only use National's approved charging system.

⚠ **WARNING:** Disconnect from power source before operating. Failure to do so could cause damage to machine or bodily injury.

Quick Charge

OPERATING INSTRUCTIONS

## OBAE, OBAEXU, ON BOARD Battery Chargers

**INTRODUCTION:**
The OBAE line of chargers are designed for the permanent installation on battery powered vehicles and equipment. They are an electronically controlled two stage charger. The first stage brings the batteries to the gassing threshold where a three hour timer starts. The batteries are then gassed for three hours. After three hours, the charger drops into a low float mode where the charge is maintained in the batteries indefinitely. Finish current is below 1 amp.

**SOME APPLICATIONS:**
Golf cars, pallet trucks, personnel carriers, scissor lifts, floor scrubbers, stand-by power applications, robotics.

**IMPORTANT: DO NOT USE THIS CHARGER UNTIL YOU HAVE READ ALL THE INSTRUCTIONS.**

**INITIAL INSTALLATION**:
Before making AC connections, refer to the AC requirements labeled on the charger. If your charger is not equipped with an AC plug (*a 220 volt model*) have a qualified electrician install one.

⚠ **CAUTION:** To reduce the risk of fire, use this charger only on circuits provided with a maximum of 20 ampere branch circuit protection (circuit breaker or fuse), In accordance with the National Electric Code, ANSI/NFPA 70, and all local codes and ordinances.

**GROUNDING INSTRUCTIONS:**
This battery charger must be grounded to reduce the risk of electric shock. If the charger is equipped with a grounding type plug, it must be plugged into a nominal 115 volt, 60 Hertz circuit. If the charger is supplied with no plug, have a qualified service person install one.

⚠ **WARNING:** Improper connection of the equipment grounding conductor can result in a risk of an electric shock. **DO NOT USE THIS CHARGER ON A TWO POLE UNGROUNDED OUTLET OR ATTEMPT TO BREAK OFF THE GROUND PRONG FOR USE ON A RECEPTACLE OR EXTENSION CORD NOT HAVING A GROUND.**

The use of an extension cord with this charger should be avoided. The use of an improper extension cord result in a risk of a fire or electric shock. If an extension cord must be used, make sure it is in good condition. Use a three conductor cord no smaller than 14 AWG. And keep it as short as possible. Locate all cords so that they will not be stepped on, tripped over, or otherwise subjected to damage or stress.

Do not operate this charger if it shows any signs of physical damage.

**PROPER CARE AND USE OF BATTERIES:**

⚠ **CAUTION:** Always wear protective eye shields and clothing when working with batteries. Batteries contain acids which can cause bodily harm. Do not put wrenches or other metal objects across the battery terminal or battery top. Arcing or explosion of the battery can result. Do not wear jewelry when working around batteries. Arcing can cause sever burns.

New batteries will not deliver their full performance until after several cycles.

The tops of the batteries and battery hold downs must be kept clean and dry at all times to prevent excessive self discharge and flow of current between the battery post and frame.

Maintain the proper electrolyte level by adding water when necessary. Never allow the electrolyte level to fall below the top of the battery plates. Electrolyte levels fall during discharge and rise during charging. Therefore, to prevent the overflow of electrolyte when charging, add water ONLY AFTER the batteries have been fully charged DO NOT OVERFILL. Old batteries require more frequent additions of water than do new batteries.

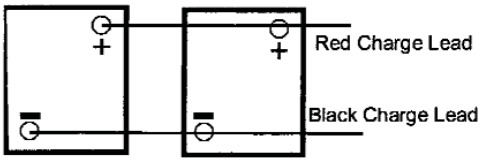
Do not over discharge the batteries. Excessive discharge can cause polarity reversal of individual cells resulting in complete battery failure.

Provide adequate ventilation for the batteries and charger. Do not obstruct the flow of cooling air around the charger. Provide at least 1" of space around charger. Do not allow clothing, blankets or other material to cover the charger. Mount the charger firmly in place.

⚠ **WARNING:** Chargers can ignite flammable materials and vapors. Do not use near fuels, grain, dust, solvents, or other flammable's.

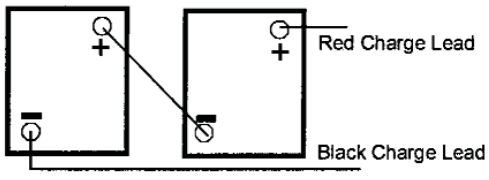
⚠ **CAUTION:** Before connecting the charger to the batteries, make sure the battery pack is of the same voltage rating of the charger. If you are unsure, count the number of cells on the battery pack and multiply by two. This figure should be the same as the DC voltage rating of the charger. (*see ratings label on charger*).

**Below is an illustration of Parallel and Series battery packs.**




Parallel

When batteries are connected in parallel, the battery amp hour rating is additive, and the voltage remains the same. Example: Two 180 amp hour, 12 volt batteries would equal 12 volts, and 360 amp hours capacity.




Series

When batteries are connected in series, the voltage is additive, and the amp hour rating remains the same. Example: Two 180 amp hour, 12 volt batteries would equal 24 volts, and 180 amp hours of capacity.

⚠ **WARNING:** Make sure the DC output leads, terminals or connector are all in good working condition.

**DO NOT USE THIS CHARGER IF:**
The DC output connector, *(if equipped)* is loose or does not make good contact; Is cracked or broken; The leads are cut or have exposed wires; The DC output leads or connector feel hot when used.

Using this charger with any of the above symptoms could result in a fire, property damage, or personal injury. Have a qualified service person make the necessary repairs. Repairs should not be made by people who are not qualified.

**NORMAL OPERATION**

1.) When connecting charge leads directly to the battery, apply grease to the terminals to inhibit corrosion.

2.) Plug the charger into AC power having the same ratings as that of the charger.

3). The LED on the charger will light, indicating charge current is flowing.

4). The OBAE chargers are equipped with a electronic timer. At the battery gassing threshold, (2.3 volts per cell) the timer will activate and run for three hours. During this period, the batteries are in a gassing or equalizing mode. (2.5 - 2.6 volts per cell max.) After three hours the charger will drop the batteries into a low float mode, indicated by a blinking LED. (2.26 volts per cell) Current in the float mode is less than 1 amp.

The charger may be left on indefinitely, but water level should be checked periodically on wet batteries.

5). To discontinue charging, unplug the AC power cord. Plugging the AC power back in will cause the charger to repeat the cycle.

⚠ **WARNING:** Do not disconnect the DC output leads or unplug the connector from the batteries when the charger is on. The resulting arcing could cause the batteries to explode. If the charger must be stopped unplug the AC power.

⚠ **WARNING:** Failure to unplug AC power before moving or driving equipment will result in damage to cords, plugs and receptacles.

**TROUBLE SHOOTING:**

⚠ **CAUTION:** DO NOT DISASSEMBLE THE CHARGER. Incorrect assembly may result in a risk of electric shock or fire. Contact factory.

⚠ **DANGER:** To reduce the risk of electric shock, always disconnect both the AC power supply cord and the output leads or connector before attempting any maintenance cleaning.

1). **LED DOES NOT COME ON WHEN POWER IS APPLIED**
Be sure you are plugged into a live circuit. Check the AC cord for breaks in the cord or plug. Check the DC leads for breaks. Check the DC connections to the battery, clean if heavily corroded.

Place a volt meter across the battery terminals where the charger is connected. Apply AC power. If the voltage rises on the battery, the charger is working and the LED is defective. *NOTE:* LED's do not burn out, but it has probably received a sharp blow causing physical

damage. No harm will come from operating the charger without a working LED.

2). **LED NEVER BLINKS**
This could be one of two problems. The batteries never reached timer trip voltage and the charger was unable to gas and fall into the float mode. This indicates several shorted cells. overheating and excessive water usage are symptoms of this condition. Performance will also be greatly diminished. Replace defective battery.

The charger did reach the float mode, but the battery has one or more shorted cells inhibiting the charger current to fall low enough to start the LED blinking. Replace defective battery.

3). **AC LINE FUSE OR CIRCUIT BREAKER BLOWS**
Either the circuit breaker or fuse is weak, or the charger is shorted internally.

4). **NO POWER IS PRESENT ACROSS THE DC LEADS WHEN A VOLT METER IS CONNECTED**
Good. The charger will not turn on until leads are connected, correct polarity to the battery.

5). **BATTERIES DON'T RECEIVE FULL CHARGE**
The battery you are charging may be to large for the charger, or if you have the charger plugged into a long extension cord that is too small, a voltage drop will cause a decrease in charger output, extending charge times.

**OBAE Battery Chargers**
**"LIMITED WARRANTY"**

National Flooring Equipment, Inc. (National) warrants the OBAE line of chargers for one (1) year from the date of purchase.

After the warranty period, chargers returned to the factory for repair will be charged a minimum rate of $25.00. Charger will be returned, freight and repair charges, C.O.D. unless other arrangements have been made.

This warranty covers all defects in manufacture and performance, provided the unit is operated in compliance with manufactures's operating instructions.

For repairs to made at:
National Flooring Equipment, Inc.
9250 Xylon Avenue North
Minneapolis, MN 55316

National, will at it's option, repair or replace the charger or component in question. The repaired item will then be returned. This warranty is void if the charger or component have been altered, changed, or repaired by anyone not authorized by National, or if the charger or component have been subject to misuse, negligence, or harsh environmental conditions. (Except those chargers designed for such conditions).

If returning the charger to the factory is not practical, replacement parts may be shipped to the customer for field repair at no charge. On parts such as circuit boards, the customer will be required to return the board suspected to be defective to National, freight prepaid. If such defective parts are not returned, the customer will be invoiced for the repair parts.

Field repairs are made at the user's own risk. "Authorization" by National to repair refers to maintaining the warranty only. National assumes no responsibility or liability for field servicing, and shall not be responsible for incurred travel or labor charges.

National shall not in any event be liable for the cost of any special, indirect or consequential damages to anyone, product or thing.

This warranty is in lieu of all other warranties expressed or implied. National neither assumes nor authorizes any representative or other person to assume for us any liability in connection with the sale of this product.

# 5700 BATTERY OPERATION

## COMMONLY ASKED QUESTION

1. **Question:** When the charging battery has not been fully discharged will it take a memory set?
   **Answer:** No, the design of these batteries allow charging at any stage of discharge without memory problems.

2. **Question:** Do I lose a complete cycle when I charge batteries that are only partially discharged?
   **Answer:** No, battery design allows for recharge but only loses one complete cycle when fully discharged.

3 . **Question:** Does the battery slow down as it discharges?
   **Answer:** No, this design will give full power to 90% of the battery cycle. This drop off in the last 10% allows extra time to get back to your charger or extra packs.

4. **Question:** Can the battery spill?
   **Answer:** No, unlike other batteries, there is no liquid to spill out which allows for high shock load applications.

5. **Question:** Will batteries go dead?
   **Answer:** No, the battery design will hold up to 90% of its' charge up to 2 years without being used or charged.

6. **Question:** Does severe cold effect the batteries?
   **Answer:** If fully charged, no. If allowed to warm up (room temperature) battery will perform better. If battery is under 75% charge, severe cold will destroy the battery.

7. **Question:** Do I have to let batteries cool down after charge?
   **Answer:** No, but if you do, you will get more life out of the battery.

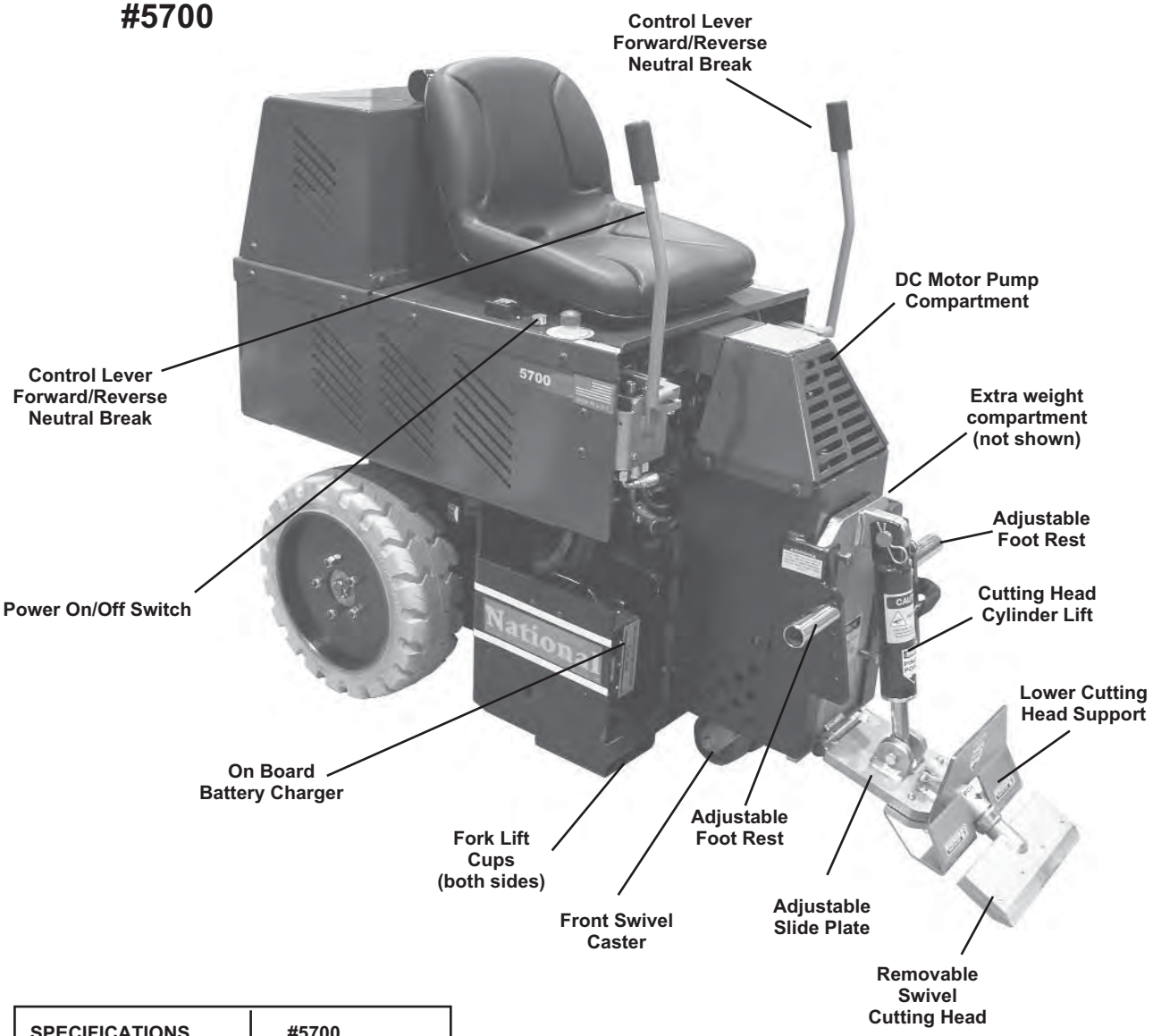
8. **Question:** Can the battery overheat and discharge gases?
   **Answer:** Yes, if improper charge is used or the battery heats to over 125° FH, gases off the vents inside of the batteries is possible. Caution must always be taken when charging batteries. Charge in a good ventilated area, away from sparks and open flame and away from bystanders.

9. **Question:** Can I leave the charger on too long?
   **Answer:** No, our charging system is designed to read batteries state of charge constantly if left on for long periods of time (over the weekend) it will not hurt batteries or cause over charging problem.

10. **Question:** Can I leave the charger running while I am running the machine?
    **Answer:** No, the charger must be unplugged from the power supply before using.

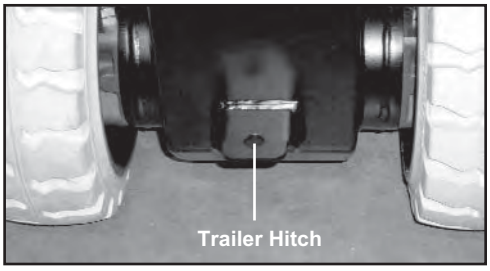
# 5700 FEATURES/SPECIFICATIONS

**#5700**




| SPECIFICATIONS | #5700 |
|---|---|
| Width: | 24½" |
| Height with seat: | 48" |
| Length without Jaw: | 54" |
| Weight (machine only): | 1830 lbs. |
| Added Weight: | |
| Pocket Weight: | 232 lbs. |
| Gross Weight: | 2062 lbs. |
| Speed: | Up to 120 feet per minute |

| MOTOR INFORMATION (#5700) | |
|---|---|
| RPM: | 2200 |
| Volts: | 48 |
| HP: | 5 |
| Amps-Full Load: | 100 |
| Continuous Duty | |




⚠ **WARNING:** Trailer hitch is only intended to move small trailers on the job site.

# 5700 FEATURES/SPECIFICATIONS

## VIBRATION/SOUND DATA

**VIBRATION DATA:**

| Axis | Stationary | Moving |
|---|---|---|
| X | >0.1 | 0.5 |
| Y | 0.3 | 0.3 |
| Z | 0.4 | 0.1 |
| Vector Sum | >0.1 | 0.6 |

Whole Body
Vibration Levels in m/s^2

| Axis | Left | Right |
|---|---|---|
| X | 0.5 | 1.4 |
| Y | 0.3 | 1.4 |
| Z | 0.6 | 0.5 |
| Vector Sum | 0.9 | 2.0 |

Hand/Arm
Vibration Levels in m/s^2

**SOUND DATA:**

| | dBA |
|---|---|
| Stationary | 77.0 |
| Moving | 73.0 |

Operator Sound Level
dBA ref. 20 Pa

# 5700 OPERATING CONTROLS

**POWER ON SWITCH (FIGURE A)**

Never use the power on/off switch as a method for speed control. Speed control is achieved by the hydraulic valve only. Using the on/off switch repeatedly will cause excessive wear, causing premature replacement of electrical components. An Emergency Stop Switch (E-Stop) is located by right hand (Figure B). To start machine, the E-Stop switch should be up (green band will be visible). There is also a seat safety switch (operator must be properly seated for machine to operate). Push the on/off button to start machine.

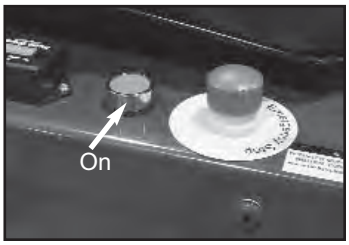



**Figure A**

**MACHINE START-UP PROCEDURE (FIGURE E)**

- Verify *70 amp circuit breaker* is in "On" position (Figure C)
- Verify *48-volt blue plugs* are firmly connected (Figure D)
- Operator should be properly positioned on seat
- Twist *E-Stop* (Figure B) to "up" position exposing green ring
- Push green "on" button
- Maneuver machine with hydraulic levers (see instruction below)

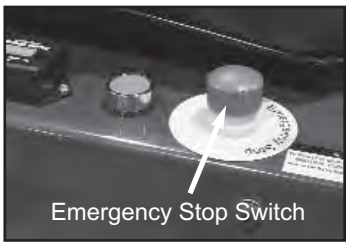



**Figure B**

**HYDRAULIC LEVERS (FIGURE E)**

The hydraulic levers steer the machine. They are feathered spool valves. For smooth even movement, always move **levers slowly**. Fast movement on control levers will result in jerky, uneven movement.

- Move levers slowly.
- Both levers forward ⬆⬆ move the machine forward.
- Both levers backward ⬇⬇ move the machine backward.
- The left lever forward and the right lever backward ⬆⬇ turn the machine quickly to the right.
- The left lever backward and the right lever forward ⬇⬆ turn the machine quickly to the left.
- Only using the left or right lever forward ⬆, turns the machine slowly to the right or left.
- Only using the left or right lever backwards ⬇, turns the machine slowly to the left or right.
- Correcting direction while moving forward is accomplished by slightly reducing pressure on one lever or the other while moving.
- The center position on levers causes wheels to lock-up.
- Always chock wheels and tie down machine when transporting.

*Control levers are low in vibration.*

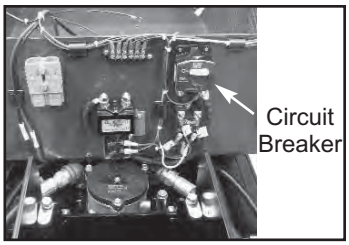



**Figure C**

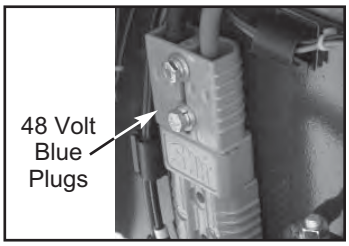



**Figure D**

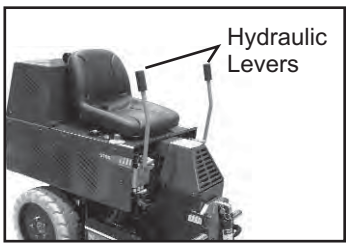



**Figure E**

# 5700 OPERATING CONTROLS

**EMERGENCY STOP SWITCH (FIGURE A)**

The emergency stop switch is designed to kill the power to the system.


**Figure A**

**SEAT SWITCH**

The seat has a safety switch. Operator must be properly positioned for machine to run.

**TO STORE MACHINE (FIGURE B)**

When the machine is in storage, remove the blue plug and turn circuit breaker to off. This will help to keep someone from operating the machine when it shouldn't be.

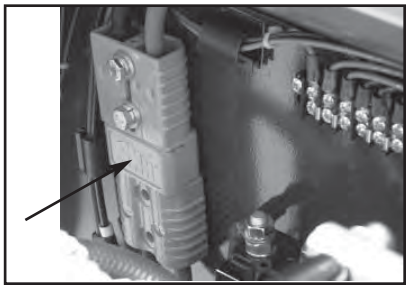


**Figure B**

**CYLINDER LIFT (FIGURE C)**

The cylinder lift lever raises and lowers the cylinder and cutting head. After setting slide plate to proper height, use the cylinder lift lever to set blade to proper cutting angle. Pull back ⬇ on the cylinder lift lever to raise the cutting head. Push the cylinder lift lever forward ⬆ to lower the cutting head. Continuing to push the cylinder lift lever forward and it will adjust the angle of the cutting head. This will also jack up the front of the machine (Figure D). This will need to be done when doing maintenance on the machine (ie: wheel changing, front caster maintenance etc). When doing machine maintenance, besides raising the cutting head angle, place blocks under the machine (Figure E). Never use the cutting head only.

⚠ **WARNING:** Do Not alter a switch or lever. Do Not defeat a safety device.

⚠ **WARNING:** Disarm machine by removing the cutting head or dropping the cutting head to the floor when the machine is not in use.

**Figure C**

**Figure D**

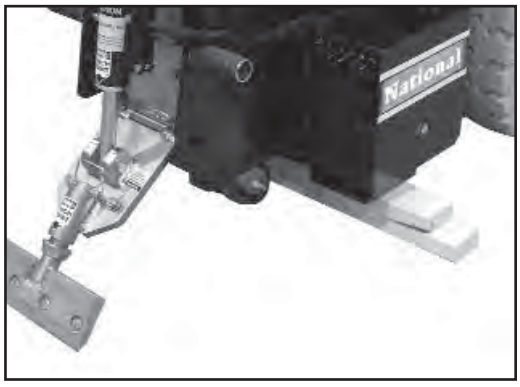



**Figure E**

# 5700 OPERATIONAL TIPS

**CASTER**

Keep clean and free of debris, make sure it can move freely. Clean as needed. Inspect before each use. Grease once a month.

Moving a "weighted" machine only on the front caster and not on the cutting head or the Front Wheel Assembly can seem to make the machine turn sluggish. It might turn hard to the right or the left. This is normal.

**FOOT PEG**

Keep feet resting and secured on foot pegs when operating machine. Foot pegs are adjustable. Make sure securing nut is securely tightened

**SEAT**

Always be properly seated before operating machine. Machine will not run if the operator is not properly seated

**DISARM MACHINE**

Remove blade or drop cutting head to the floor when machine is not in use.

**TURN MACHINE OFF**

Never change cutting head or service blade while machine is running.

**LEAKAGE**

Keep fittings and hoses tight. If a leak is noticeable, retighten fitting. If leakage persists, remove the connection and inspect.

**ANGLE OF THE HEAD IS SET STEEP**

When raising the front of the machine to a steep angle, the bottom of the slide plate should be raised so it is higher or even with the bottom of the guide channels, 6” to 7” off the floor. This will allow for a steep blade angle without tipping the machine too far back (usually used for re-scrape). The most common mode for take up, is the slide plate is almost to the floor (1/4” to 1/2” from the floor).

**RAISING OR LOWERING THE SLIDE PLATE**

This will only work without a cutting head inserted in the machine. Completely loosen slide plate bolts. Use cylinder lift lever to raise or lower machine to move slide plate up or down.

⚠ **WARNING:** Always disconnect on board charger before operating machine.

# 5700 LOADING/UNLOADING

- Always remove blade and cutting head when machine is being moved or transported
- Cutting head and slide plate can be removed to make the machine more compact.
- NEVER leave machine unattended on an incline.
- Removing added weights help to make the machine easier and safer to move in and out of a vehicle.

⚠ **WARNING:** Machine has a swivel front caster. **Never** side hill (Figure A). The machine on a incline without power, the front caster will cause machine to swing to the lowest point. If it is necessary to run machine on an incline, run machine on cutting head. Place at least a 8'' cutting head in machine. To keep from damaging floor, clamp a piece of carpet into cutting head to slide on the floor. This will give positive contact with the floor when power is disengaged from the wheels.

**DOCK HEIGHTS**

It is best to load or unload the machine from a level/equal dock height (a van from a van dock height, a truck/semi from a regular dock height).

**POWER-GATE**

A power-gate can be used when the dock height is not available. Make sure gate is properly rated for 2300 lbs. Make certain the machine is secure so it does not roll off the power-gate. To better secure machine, raise machine onto the lowered cutting head, raising machine off the caster. Tie machine down, chock wheels.

**RAMPS**

To be safe, the ramp needs to be very long to accommodate the machine being loaded/unloaded. Remove added weight. Make sure ramp is secured. Do not have at a steep incline. The use of a power winch or hand come-a-long is much safer. For a van, the ramp should be 12 to 18 feet in length depending on the depth of the incline. For truck height taller than a van, longer ramps will be needed. See OSHA guidelines. It is not recommended to drive the machine, connected with power, on a ramp. Make sure ramp is secure and has good contact before using. Failure to do so could cause ramp to fall away from the vehicle.

**Note:** See correct and safe operating angles and center of gravity on page 25.

**CAUTION: DO NOT "SIDEHILL"**

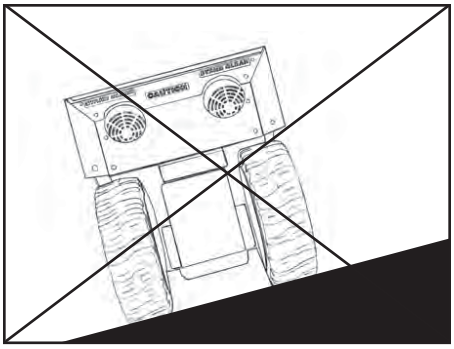
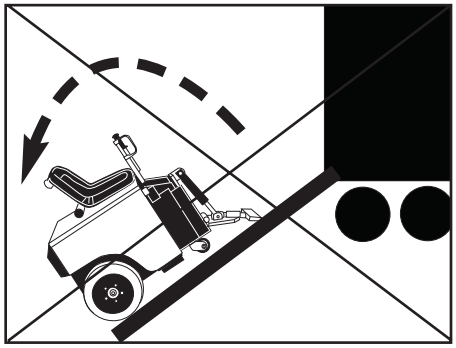


**Figure A**

**CAUTION: MACHINE IS BACK HEAVY.**
**DO NOT RUN ON STEEP INCLINE--**
**THIS COULD CAUSE MACHINE TO TIP OVER!**



# 5700 LOADING/UNLOADING

**FORKLIFT CUPS**

There are two forklift cups mounted under the front of the machine (Figure A). Slide fork lift forks through forklift cups. Slide forks all the way back to touch the rear tire (Figure B). Before lifting machine, secure machine to fork lift with heavy 3000 lb. or heavier rope or chain. Tilt forks back to lift machine Figure C).

⚠ **WARNING:** Never tilt machine forward. It could slide off fork lift forks.

**WINCHES**

Winches should be used for safety when loading or unloading with ramps. 2000 lb. winch minimum.

**TRANSPORTING**

Secure machine down with ratchet straps when transporting the machine. Chock wheels to keep machine from rolling, hydraulic levers should **not** be locked in the forward or backward position. Hydraulic levers should be straight up in the "neutral" position. This helps to lock drive wheels. Lift machine off swivel caster by lowering cutting head for better stabilization. Proper securing straps need to be rated at least twice the weight of the machine.

**WHEEL CHOCKS**

Wheel chocks will help to secure the machine but DO NOT use wheel chocks alone to secure the machine.

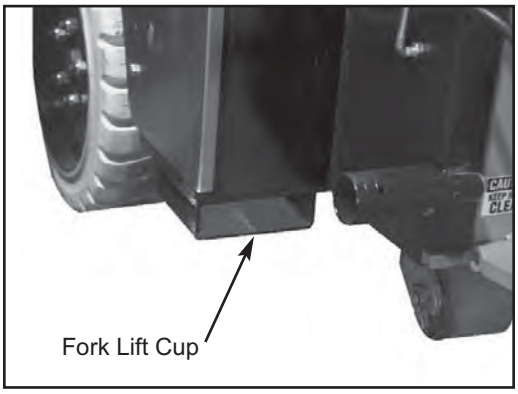



**Figure A**

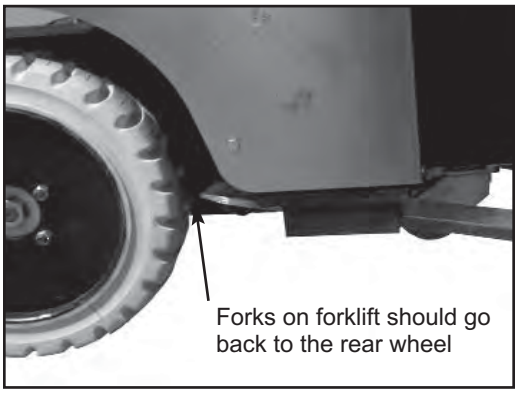



**Figure B**

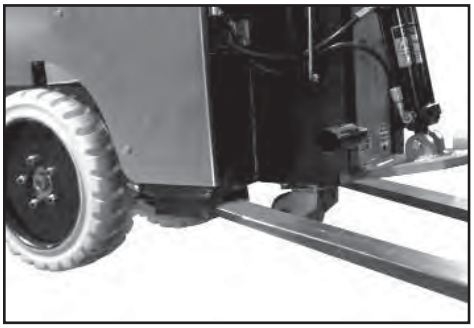
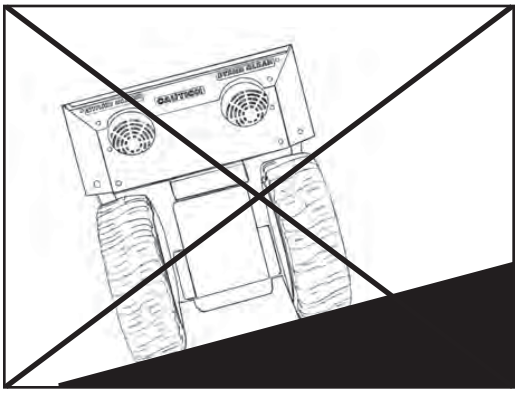
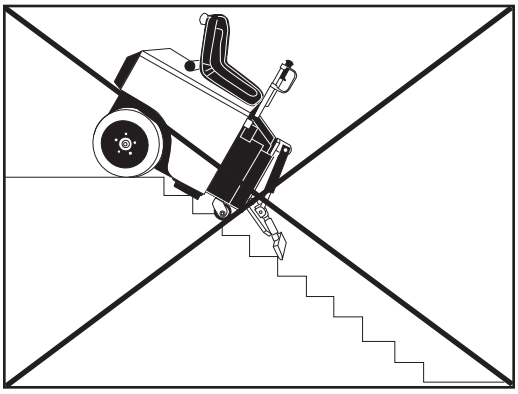


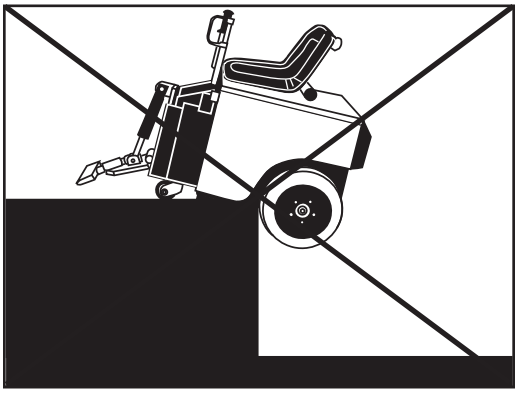
**Figure C**

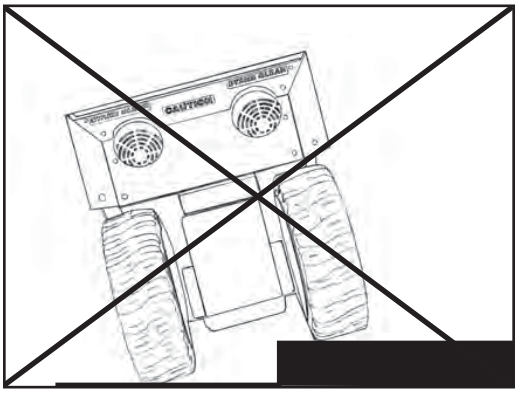
# 5700 CENTER OF GRAVITY

Be aware of your surroundings and machines operating angles. When changing from a low slide plate to a high slide plate setting or a low cutting head angle to a high cutting head angle, the operating “attitude” of the machine changes. When a floor surface is not level (ramps, inclines, large amounts of debris which would lift the drive wheel of the machine, etc.), the center of gravity changes. Too much of an angle could make the machine unsafe (a cause for tip-over). **Do Not** run the machine in unsafe environments.

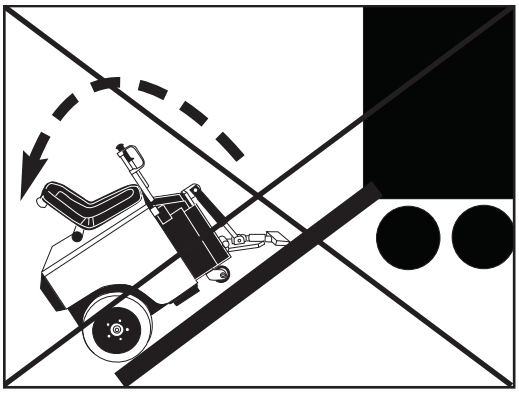








**CAUTION: MACHINE IS BACK HEAVY.
DO NOT RUN ON STEEP INCLINE--
THIS COULD CAUSE MACHINE TO TIP OVER!**



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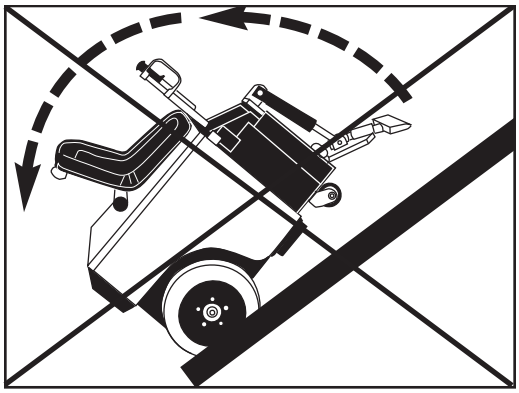


# 5700 JOB SITE MOVEMENT

- Always remove blade and cutting head when machine is being moved or transported
- Cutting head and slide plate can be removed to make the machine more compact.
- NEVER leave machine unattended on an incline.
- Removing added weights help to make the machine easier to move.

**TAPING WHEELS**

Taping the wheels with a wide like masking tape helps to prevent damage and dirt to floors during move-in and move-out.

**LEAP FROGGING BOARDS**

Leap frogging boards help to protect floors from damage. Use two or three ¼" luan or plywood sheets, approximately 27" wide by 6' long. Cover one side of the board with a thin a carpet. With the carpet side to the floor, place a board in front of the machine. Drive onto the board. Set the next board in front of the machine. As you drive off one board, pick it up and set it in front of the machine.

**PALLETIZING**

Only use a solid platform pallet. If a solid platform pallet is not available, place a piece of ¾" plywood on top of a pallet. Using a forklift with the forks inserted in the forklift cups, place machine on pallet. Use ratchet straps to secure machine to pallet.

**FRONT WHEEL ASSEMBLY (FIGURE A)**

The Front Wheel Assembly is an optional attachment (#5110-100) that is very helpful when moving the machine around on a job-site or loading the machine that is not on a pallet. It allows machine stability and safe transportation over most surfaces. It is easy and quick to attach or detach. Raise slide plate so the bottom of the slide plate is higher or even with the bottom of the guide channels. Raise cylinder, insert Front Wheel Assembly into cutting head. Secure with securing pin.

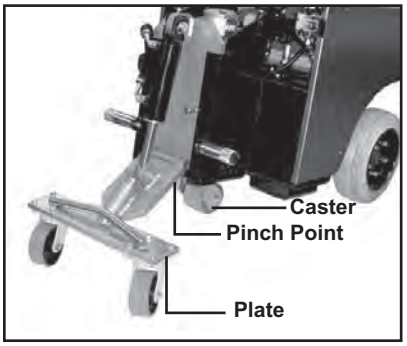



**Figure A**

Note: Make sure the plate is parallel with the floor so the caster swivels freely.

⚠ **CAUTION:** When moving the slide plate, be aware of pinch point at the bottom of the plate.Failure to do so could cause serious bodily injury.

⚠ **WARNING:** Protect others in work area. Provide barriers or shields as needed to protect others from debris and machine operation. Operator should be aware of who is around them and their proximity.

# 5700 JOB SITE MOVEMENT

**TO MOVE MACHINE WITHOUT POWER (PUSHING MACHINE)**

**Forward:** To move the machine forward, levers need to be pushed forward. To lock levers in place, connect a bungee-strap from each lever (pushing levers forward), pulling straps down to and connecting to the front plate (Figure A). Never leave machine unattended with strap holding levers open.

**Backward:** To move machine backward, levers need to be pulled backwards. To lock levers in place, connect a bungee-strap from each lever (pushing levers backward), Pulling straps to the back of the machine and connecting behind the seat or the rear of the machine (Figure B). Never leave machine unattended with strap holding levers open.

**MOVING MACHINE ON CASTER**

Moving a "weighted" machine only on the front caster and not on the cutting head or the Front Wheel Assembly can seem to make the machine turn sluggish. It might turn hard to the right or the left. This is normal.

⚠ **WARNING:** Always remove straps before starting motors. Failure to do so will make machine move and may cause property damage and/or bodily injury.

**FORWARD**

**Figure A**

**BACKWARD**

**Figure B**

# 5700 WHEEL SIZES

**WHEEL SIZE**

The 18" wheel comes standard on the machine. This wheel will work on all job types of application and heavy debris build-up (vct, ceramic etc.). It also works best for slippery/slimy residue, ie. double stick.

Keep wheels clean and free of debris, make sure it can move freely. Clean as needed. Inspect before each use.

To change wheels, see Wheel Changing on page 42.

⚠ **WARNING:** When doing maintenance or changing a wheel, make sure machine is supported properly or serious injury could occur.

# 5700 CUTTING HEAD & BLADES

### DIALING IN THE MACHINE

Dialing in the machine is matching the correct cutting head, blade size, blade angle and added weight to the machine to make the material removal as easy as possible. For every material being removed, there is an optimum blade width, thickness, sharpness, angle and bevel (bevel up or bevel down).

### SAVING TIME WITH EXTRA CUTTING HEADS

The machine is supplied with one cutting head. Having additional cutting heads will save time on the job. Insert blades into the extra cutting heads before starting a job. When the blade is dull, instead of taking the time to replace it or sharpen it on the job, take out the cutting head and replace it with another. Or when a different type or size of blade is needed, you have them ready to use.

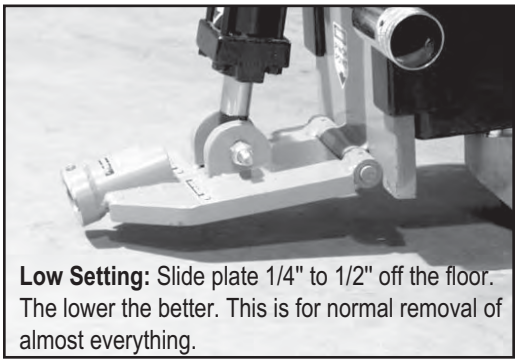
### ADJUSTING SLIDE PLATE AND CUTTING HEAD (FIGURE A & B)

**Caution:** Pinch point. When adjusting slide plate, keep feet and hands out from underneath the cutting head and slide plate. Failure to do so could cause severe bodily injury. When bolts are removed from the slide plate, the cutting head and the slide plate will drop down to the floor.

- Loosen the two bolts on the front of the slide plate with a 3/4" wrench (Figure C).
- Slide plate up or down to achieve the desired height of the cutting head.
- Firmly retighten both bolts.

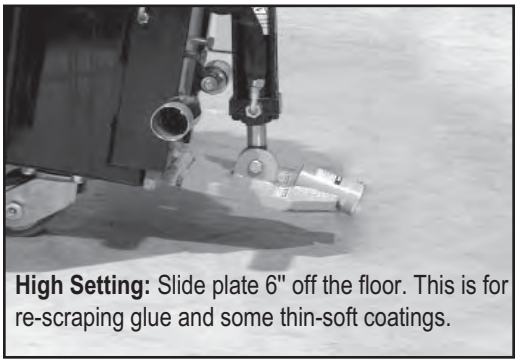
### SHEAR POINT

The shear point is the point where material to be removed will cut cleanly from the floor. If the blade is too wide, too dull, or too steep, the shear point is lost.



**Low Setting:** Slide plate 1/4" to 1/2" off the floor. The lower the better. This is for normal removal of almost everything.

**Figure A**



**High Setting:** Slide plate 6" off the floor. This is for re-scraping glue and some thin-soft coatings.

**Figure B**

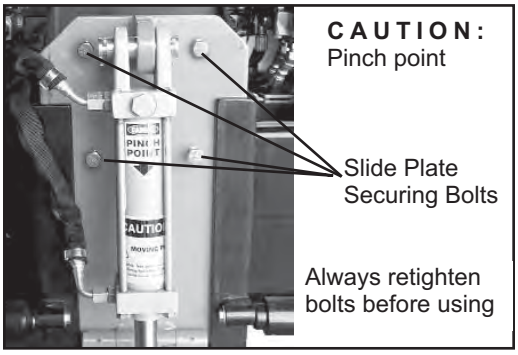



**Figure C**

**CAUTION:** Blades are sharp, use extreme caution.

**CAUTION:** Never change cutting head or service blades while machine is running.

**WARNING:** Disarm machine when machine is not in use. Remove the cutting head or drop cutting head to the floor. Failure to do so could cause severe bodily injury.

# 5700 CUTTING HEAD & BLADES

**WEIGHT VS. SHARPNESS**

The most common way to compensate for a dull blade is to add more weight and raise the blade angle (see re-scrape setting). Weight allows dull blades to be used to a point. Weight also causes blades to dull and break easier. Blades of any thickness tend to catch cracks and expansion joints and will bend or break the blade if set at a high angle. For best results, run a small ditching blade at a low angle to identify as many cracks and joints as possible. If blades are breaking, you are misunderstanding the conditions.

**CUTTING HEAD ANGLE**

Set the cutting head angle to where the material comes up the easiest. The lowest is usually the best.

**STEEP CUTTING HEAD ANGLE**

A steep angle is only used for re-scraping. The slide plate has to be raised so the bottom of the slide plate is higher or even with the bottom of the guide channels (Figure A). Not raising the slide plate when operating the machine at a steep angle will cause the machine to jump and buck. It does not give the operator a clear vision of the cutting head and it raises the machine to operate at a unsafe operating height (Figure B). Failure to raise the slide plate could cause machine damage and/or bodily injury.

**SWIVEL HEAD**

The swivel head keeps the blade in contact with the floor even when the floor is uneven. When using a flat blade, by swiveling the head over 180° allows another sharp edge on the blade without having to replace the blade.

**SAVING TIME WITH EXTRA CUTTING HEADS**

The machine is supplied with one cutting head. Having additional cutting heads will save time on the job. Insert blades into the extra cutting heads before starting a job. When the blade is dull, instead of taking the time to replace it or sharpen it on the job, take out the cutting head and replace it with another. Or, when a different type or size of blade is needed, you have them ready to use.

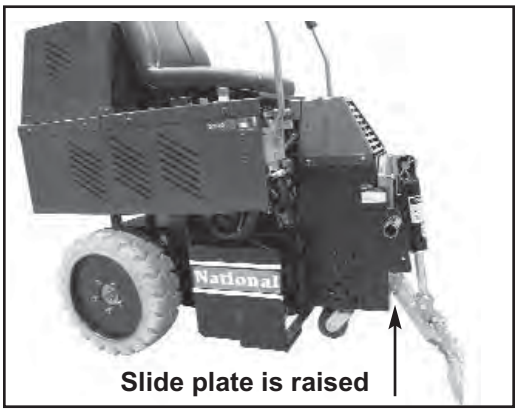



**Figure A**

Correct slide plate setting with a steep cutting head angle.

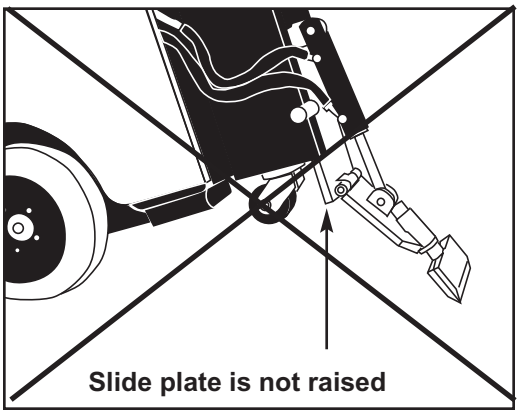



**Figure B**

Incorrect slide plate setting with a steep cutting head angle.

⚠ **CAUTION:** Watch out for obstructions in the floor (ie. expansion joints, nails, bolts, receptacles). They will break blades.

# 5700 CUTTING HEAD & BLADES

**CUTTING HEAD INSERTION**

With machine off, insert desired cutting head into cutting head holder. Secure with cutting head clip.

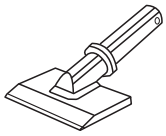
**SHANK BLADE INSERTION**

Shank blades do not require a cutting head. Insert desired shank blade into cutting head holder. Secure with cutting head clip.

**BLADE SETTING**

- Dull blades greatly reduce cutting ability. Re-sharpen or replace as needed.
- Proper blade size and placement, depending on material and sub-floor type, affects performance.
- The harder a job comes up, for best results, use a smaller blade.
- Start with a narrow blade, then increase blade size to optimize cutting pass. Narrower blades work easier than wider blades and usually clean the floor better. Wider is not always better or faster.
- Normally bevel on blade is up for concrete. Bevel down for wood and shoe blades for soft sub-floors.



- KEEP BLADES SHARP.
- Dull blades greatly affect the performance of the machine and reduce cutting ability, resharpen or replace as needed.
- Keep your work area clean and clear of debris.
- After you have removed a portion of material, remove it out of the way. This will give the machine maximum performance and help to keep the work area safe.
- Always wear gloves when handling blades.
- Everyone in work area should wear eye protection.

**SELF-SCORING BLADES**

Instead of pre-scoring a job, for soft goods (carpet, vinyl, linoleum, membrane) the self-scoring blades automatically do the scoring.

**BLADE INSERTION OR BLADE CHANGING**

Using a 3/4" socket wrench, loosen bolts on cutting head. Quantity of bolts will very depending upon cutting head size. Insert blade into the cutting head to back of notch (Figure A). Tighten firmly.

Note: A cordless 3/8" drive impact wrench will speed up this process especially out on the job.

- Sharp blades are imperative for good performance. • Always wear gloves when handling blades.

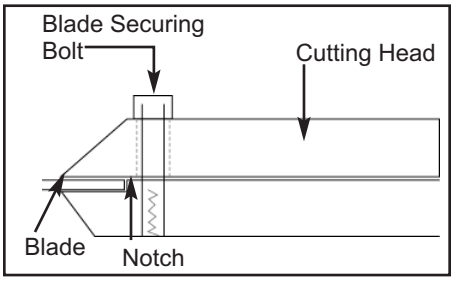



**Figure A**

⚠ **CAUTION:** Blades are sharp, use extreme caution.

⚠ **CAUTION:** Never change cutting head or service blades while machine is running.

⚠ **WARNING:** Disarm machine when machine is not in use. Remove the cutting head or drop cutting head to the floor. Failure to do so could cause severe bodily injury.

# 5700 BLADE APPLICATION/SET-UP

**CERAMIC SET-UP**

Slide plate should be set low, 1/4" to 1/2" off the floor. Use a Shank Blade or a Shank Blade with a carbide tip.

**WOOD SET-UP**

Slide plate should be set low, 1/4" to 1/2" off the floor. Use Shank Blades, Shank Blades with carbide tips or a 6"or 8" Cutting Head with Shoe Blades, Bent Shoe Blades or Heavy Duty Blades. Note: run machine 45° to the grain of the wood.

**SECONDARY BACKING CARPET SET-UP**

Slide plate should be set low, 1/4" to 1/2" off the floor. Use a Cutting head from 10" to 27" with Heavy Duty Blades or a Cutting Head from 10" to 14" with a Self-Scoring Blade.

**FOAM BACK CARPET SET-UP**

Slide plate should be set low, 1/4" to 1/2" off the floor. Use Cutting Heads from 10" to 14" with Self-Scoring Blades. If it is not stuck tight, use a Cutting Head from 14" to 27" with a Standard Blade.

**DOUBLE STICK CARPET SET-UP**

Slide plate should be set low, 1/4" to 1/2" off the floor. It is best to test to see which is the easiest way to remove double stick. Start with a Cutting Head from 10" to 14" with Self-Scoring Blades. If self-scoring blades do not work, score thru the carpet (Figure A) the width of the blade (Standard Blade) and scrape up. In some cases, carpet might pull off the pad and then scrape up the pad separately. Usually leaving carpet connected to the pad works the best. Sharp blades are necessary for proper operation.

**VCT TILE SET-UP**

Slide plate should be set low, 1/4" to 1/2" off the floor. If goods come up easily, change to a larger Cutting Head. If goods come up harder, use a Cutting Head from 6" to 8" with a Premium High Tempered Blade (.062) to match cutting head size. Sometimes a .094 blade may work better. If goods remove easily, a Tile Box #7074 can be used. A tile box also works for wind rowing, assists for a fast clean-up and collection of tile debris for quick removal.

**DITCHING** **(see page 32)**

**RUBBER TILE SET-UP**

Slide plate should be set low, 1/4" to 1/2" off the floor. Use a Cutting Head from 6" to 14" with self-scoring blades or use ditching method with a flat blade (see page 34).

**Figure A**

⚠ **CAUTION:** Blades are sharp, use extreme caution.

⚠ **CAUTION:** Never change cutting head or service blades while machine is running.

⚠ **WARNING:** Disarm machine when machine is not in use. Remove the cutting head or drop cutting head to the floor. Failure to do so could cause severe bodily injury.

# 5700 BLADE APPLICATION/SET-UP

**RE-SCRAPING SET-UP**

Slide plate should be set high, 6" to 8" off the floor. Use a Cutting Head from 8" to 27" with Scraper Blades to match cutting head size. A 15" scrapper blade would use a 14" Cutting Head. Razor Blades are faster but a Cutting Head from 8" to 14" can be used with a Standard Blade. Flip head regularly.

**THIN COATING SET-UP**

Slide plate could be set high, 6" to 8" or low 1/4" to 1/2" off the floor. Test to see which works best. Use a Cutting Head from 8" to 27" with Razor Blades to match cutting head size.

**WORKING OVER CONCRETE**

Blade should be bevel up when working over concrete. Pretty much anything over concrete works. Try different set-ups to see which works best. If goods come up difficult, slide plate should be at a low setting, 1/4" to 1/2" off the floor. Use a smaller size blade. If goods come up easily, a wider blade can be used.

**WORKING OVER WOOD**

A heavy machine cannot be used on wood subfloors or raised panel computer floors. Keep machine light, remove all weights. A weighted machine could break through the floor. Slide plate should be set low, 1/4" to 1/2" off the floor. Blades should be as flat of an angle as possible. Use a "shoe blade", Extra Heavy Duty Blade (these blades have a bend to them) or a regular blade, bevel up. When using a regular blade, bending up the corners of the blade will help from the blade digging into the floor. Sometimes a shank blade or a shank blade with a carbide tip will work. Allow blade to shear material from the floor. The trick on wood floors is to run the blade flat. Approach should be at a 45° angle to the board. This keeps from digging into the board and hanging up at the seams.

**WORKING OVER SOFT SUB-FLOOR**

Slide plate should be set low, 1/4" to 1/2" off the floor. Blades should be as flat of an angle as possible. Use a "shoe blade", Extra Heavy Duty Blade (these blades have a bend to them) or a regular blade, bevel up. When using a regular blade, bending up the corners of the blade will help from the blade digging into the floor. Sometimes a shank blade or a shank blade with a carbide tip will work.

⚠ **CAUTION:** Blades are sharp, use extreme caution. 

⚠ **CAUTION:** Never change cutting head or service blades while machine is running.

⚠ **WARNING:** Disarm machine when machine is not in use. Remove the cutting head or drop cutting head to the floor. Failure to do so could cause severe bodily injury.

**Note:** When removing carpet from over VCT Tile and the tile needs to be saved, run the machine at a 45° angle over the tile. This should help to save the tile.

# 5700 BLADE APPLICATION/SET-UP

## DITCHING

### CROSS ROOM DITCHING

When removing hard to remove ceramic, Vct or vat, cross-room ditching will help to make the removal easier. Using a blade 2" to 6" in width, make ditches 1' to 2' apart in the same direction the machine will be removing the goods (Figure A). This "relieves" the pressure holding the tiles together. If ditching helps and the goods are coming up easy, try using a wider blade to ditch with.

### CHECKER BOARD DITCHING

To make carpet removal and debris cleanup easier, checker board ditching is very helpful. Using as wide of a self-scoring blade as possible, make ditches 4' to 6' apart crossways from the way the machine will be removing the goods (Figure B). Running the machine crossways from the ditches will make smaller pieces of debris to be hauled away. Instead of large gummy rolls of carpet, there are small squares that can be rolled, palletized, put on a dolly or folded with the sticky side in. This makes removing the debris easier and reduces the amount of debris.

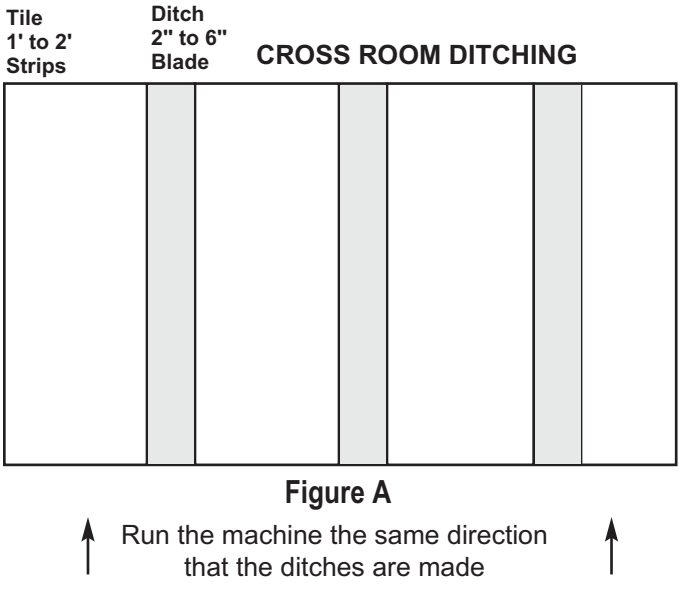



**Figure A**

Run the machine the same direction that the ditches are made

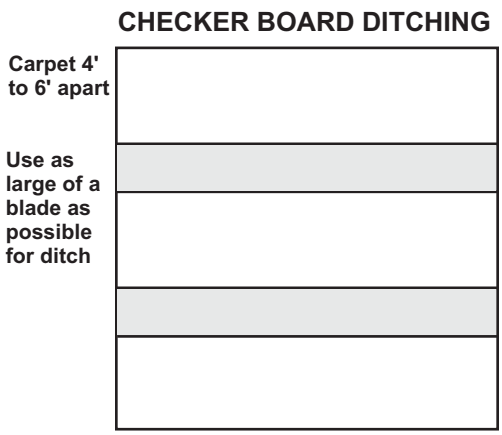



**Figure B**

Run the machine crossways from the directions that the ditches are made

# 5700 BLADES

## TYPES OF BLADES

**PREMIUM HIGH TEMPERED BLADES (.062)**

Works on all glued down carpets, VCT, VAT, rubber tile, cork, re-scraping adhesive, elastomeric coatings. Great for floor accumulations. Ultra high quality spring steel is extra hard for long blade life between sharpening.

**HEAVY DUTY BLADES (.094)**

Works on VCT, VAT, wood, tile, rubber epoxy, thin-set, elastomeric coatings, scraping, thin set and glued ceramic. A heavy-duty blade that still gives a little flex. Blade sharpening process helps these blades to stay sharper longer.

**EXTRA HEAVY DUTY BLADES (.187 & .250)**

Works on VCT, VAT, wood, tile, thin ceramic, re-scraping thin set, all carpets, cork, elastomeric coatings re-scraping rubber and urethane coatings. Extremely hard, high abrasion alloy for though tear-up situations. Holds the edge extremely well.

**SHOE BLADES/ANGLE SHANK BLADES (.500)**

Works well for ceramic, wood, thick epoxy, thin-set, mud set, decorative concrete topping and much more. Blade is mounted at an angle to achieve the optimum shear point for optimum performance. Made from an ultra tough alloy, which is put through special processing to achieve an unbelievable edge holding ability.

**SHOE BLADES/ANGLE SHANK BLADES WITH CARBIDE TIPS (.500)**

Works well for ceramic, wood, thick epoxy and elastomeric coatings. Carbide tipped for holding a sharp edge for long periods. Nothing else performs like carbide when no other blade will work. Blade is mounted at an angle to achieve the optimum shear point for optimum performance. Made from an ultra tough alloy, which is put through special processing to achieve an unbelievable edge holding ability.

**SELF-SCORING BLADES (.062 & .094)**

Works on attached cushion, Unitary or secondary backing, vinyl back, soft to medium PVC, linoleum, carpet tiles, soft cork, Enhancer and Unibond hot melts. Instead of pre-scoring a job, the self-scoring blades have "wings" that automatically do the scoring. Blade hardening process makes these blades tough and long lasting.

**RAZOR/SCRAPER BLADES (.032 & .045)**

Used for re-scraping thin epoxies, thin mil coatings like; urethane paint, poured elastomeric coatings up to 60 mil, hard to remove adhesive and much more.

**TILE BOX**

Assists for a fast cleanup and collection of tile debris for quick removal. Can be used to remove easy to remove tile. Extremely high abrasion alloy for a long lasting edge. Edge can be re-sharpened.

# 5700 BLADES

**BLADE SHARPENING**

Dull blades greatly reduce cutting ability. Re-sharpen or replace as needed. In use, blades develop a back-bevel (Figure A). When re-sharpening, blade will not be truly sharp until all back-bevel is gone.

**Note:** Thinner blades are easier to sharpen, but they also break easier.

- Always wear gloves and safety glasses.
- Grind blade using a 4" diameter disk with 120 or finer grit. Be careful not to catch disk on edge or corner of blade.
- Pass grinder back and forth along blade edge being careful to hold grinder at proper angle of blade. Grind until sharp.
- Using a good quality fine tooth hand file, use same procedure as above.
- Blades are sharp. Use extreme caution.
- Have plenty of sharp blades on each job so on-the-job blade sharpening is eliminated.
- It is best to resharpen dull blades on proper bench or belt grinder in the shop, so the blades are ready for the next job.

**SELF-SCORING BLADE SHARPENING**

It is important to keep the “wings” on a self-scoring blade sharp (Figure B). Use a file on the “wing” edge. Sharpen the flat part of the blade, the same way as described above.

**CARBIDE TIPPED BLADE SHARPENING**

To sharpen carbide tipped blades, a wheel to grind carbide is necessary, ie: green wheel or diamond wheel.

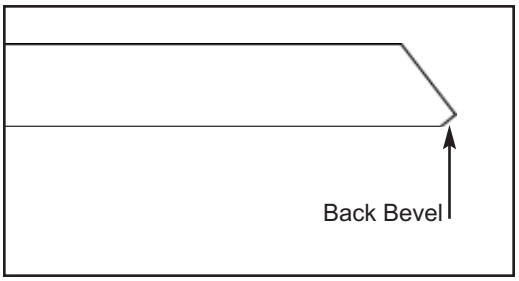



**Figure A**

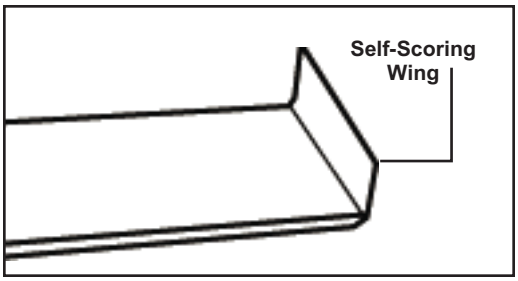



**Figure B**

**CAUTION:** Blades are sharp, use extreme caution.

**CAUTION:** Never change cutting head or service blades while machine is running.

**WARNING:** Disarm machine when machine is not in use. Remove the cutting head or drop cutting head to the floor. Failure to do so could cause severe bodily injury.

# 5700 BLADES

| Part # | Description | Application | Thickness |
|---|---|---|---|
| #135 | 5" x 16" Blade | Rubber back carpet on wood or concrete floors, excellent for cleanup and longer durability | .062 |
| #147 | 4" x 6" Blade | Tile or linoleum on concrete floors | .062 |
| #148 | 5" x 6" Blade | Tile or linoleum on wood floors | .062 |
| #363-2 | 3/4" x 8" Razor/Scraper Blade (50/pkg) | Razor sharp, super hard for scraping thin epoxies, thin mil coatings like; urethane paint, poured elastomeric coatings up to 60 mil, hard to remove adhesive and much more. | .032 |
| #368-8 | 7/8" x 8" Razor/Scraper Blade (50/pkg) | | .045 |
| #368-12 | 7/8" x 12" Razor/Scraper Blade (50/pkg) | | .045 |
| #368-15 | 7/8" x 15" Razor/Scraper Blade (50/pkg) | | .045 |
| #6258-BU | 3" x 12" Self-Scoring Blade - Bevel Up | Works on attached cushion, Unitary or secondary backing, vinyl backing, soft to medium Pvc, linoleum, carpet tiles, soft cork, Enhancer and Unibond hot melts. | .062 |
| #6259-BU | 3" x 14" Self-Scoring Blade - Bevel Up | | .062 |
| #6260-BD | 3" x 6" Heavy Duty Ditching | | .094 |
| #6276-BU | 3" x 10" Self-Scoring Blade | Same application as the .062 blade. The 45° angle, self-scoring wings for easy sharpening. The thickness greatly reduces breakage, especially on heavily weighted machines. | .094 |
| #6277-BU | 3" x 12" Self-Scoring Blade | | .094 |
| #6278-BU | 3" x 14" Self-Scoring Blade | | .094 |
| #6281 | 3" x 8" Heavy Duty Blade | A heavy duty blade that still gives a little flex. Made with Nationals proven blade hardening process, these blades will stay sharper longer with better overall performance than any other blade on the market. Works on Vct, Vat, wood, tile, rubber epoxy, thin-set, elastomeric coatings, scraping thin-set, glued ceramic. | .094 |
| #6282 | 3" x 14" Heavy Duty Blade | | .094 |
| #6283 | 3" x 27" Heavy Duty Blade | | .094 |
| #6284 | 3" x 12" Heavy Duty Blade | | .094 |
| #6285 | 3" x 6" Heavy Duty Blade | | .094 |
| #6286 | 3" x 10" Heavy Duty Blade | | .094 |
| #6290 | 3" x 6" Extra Heavy Duty Blade | Extremely hard, high abrasion alloy for tough tear-up situations. Vct, Vat, wood, tile, thin ceramic, re-scraping thin-set, all carpets, cork, elastomeric coatings, re-scraping rubber and urethane coatings. Holds the edge extremely well. | .187 |
| #6291 | 3" x 8" Extra Heavy Duty Blade | | .187 |
| #6292 | 3" x 12" Extra Heavy Duty Blade | | .187 |
| #6293 | 3" x 14" Extra Heavy Duty Blade | | .187 |
| #6294 | 3" x 27" Extra Heavy Duty Blade | | .187 |
| #7050-200 | 3" x 6" Premium High Tempered Blade | Ultra high quality spring steel is extra hard for long blade life between sharpening. Works on all glue down carpets, Vct, Vat, rubber tile, cork, re-scraping adhesive, elastomeric coatings. Great for floor accumulations. | .062 |
| #7050-201 | 3" x 8" Premium High Tempered Blade | | .062 |
| #7050-202 | 3" x 10" Premium High Tempered Blade | | .062 |
| #7050-203 | 3" x 12" Premium High Tempered Blade | | .062 |
| #7050-204 | 3" x 14" Premium High Tempered Blade | | .062 |
| #7050-205 | 3" x 27" Premium High Tempered Blade | | .062 |
| #7070-2 | 4" x 2" Straight Shank Blades | Works well for ceramic and thick epoxy. Made from an ultra tough alloy, which is put through special processing to give these blades unbelievable edge holding ability for ceramic, epoxy, thin-set, mud-set, decorative concrete toppings and much more. | .500 |
| #7070-3 | 4" x 3" Straight Shank Blades | | .500 |
| #7070-4 | 4" x 4" Straight Shank Blades | | .500 |
| #7070-6 | 4" x 6" Straight Shank Blades | | .500 |
| #7071-2 | 4" x 2" Angle Shank Blades | Works well for ceramic and thick epoxy. The same application as the #7070 Blades except mounted at an angle to achieve the optimum shear point for optimum performance. | .500 |
| #7071-3 | 4" x 3" Angle Shank Blades | | .500 |
| #7071-4 | 4" x 4" Angle Shank Blades | | .500 |
| #7071-6 | 4" x 6" Angle Shank Blades | | .500 |
| #7072-2 | 4" x 2" Straight Shank w/Carbide Tip | Works well for ceramic and thick epoxy. The same application as the #7070, includes the angle like the #7071 and carbide tipped like the #7072. Works well on elastomeric coatings. | .500 |
| #7072-3 | 4" x 3" Straight Shank w/Carbide Tip | | .500 |
| #7072-4 | 4" x 4" Straight Shank w/Carbide Tip | | .500 |
| #7072-6 | 4" x 6"Straight Shank w/Carbide Tip | | .500 |

# 5700 BLADES

| Part # | Description | Application | Thickness |
|---|---|---|---|
| #7074 | 5" x 27" Tile Box with 6" High Box | Extremely high abrasion alloy for a long lasting edge. Box assists for a fast clean-up and collection of tile debris for quick removal. | .187 |
| #7075-8 | 2" x 8" Tapered Cutting Head Shank | The long taper works great on tough wood floors (glued & nailed). The long length allows the blade to easily slide under tough material. Works well on most ceramics and VCT. | .300 |
| #7075-11 | 2" x 11" Tapered Cutting Head Shank | | .300 |
| #7077-8 | 3.5" x 8" Tapered Cutting Head Shank | | .300 |
| #7077-11 | 3.5" x 11" Tapered Cutting Head Shank | | .300 |
| #7076-8 | 2" x 8" Tapered w/Carbide Tip | The long taper works great on tough wood floors (glued & nailed). The long length allows the blade to easily slide under tough material. Works well on most ceramics and VCT. Carbide tipped for holding a sharp edge for long periods. | .300 |
| #7076-11 | 2" x 11" Tapered w/Carbide Tip | | .300 |
| #7078-8 | 3.5" x 8" Tapered w/Carbide Tip | | .300 |
| #7078-11 | 3.5" x 11" Tapered w/Carbide Tip | | .300 |
| #7079-2 | 2" x 6" Ultra HD Ceramic Epoxy Blade | Designed for ceramic removal & thin-set re-scraping. 1/2" of carbide which is twice the carbide of the #7072 series blades. The extra carbide allows for maximum re-sharpening. Strong enough to work on machines up to 3500 lbs. | .500 |
| #7079-4 | 4" x 6" Ultra HD Ceramic Epoxy Blade | | .500 |
| #7079-6 | 6" x 6" Ultra HD Ceramic Epoxy Blade | | .500 |
| #7081 | 3" x10" Increased Angle Blade | Mainly used for VCT but can be used on most other applications. Supplies more of an angle when needed. Prevents machine from jumping off material. | .062 |
| #7083 | 3" x 3" Increased Angle Blade | | .062 |

# 5700 MACHINE MAINTENANCE

**SLIDE PLATE**

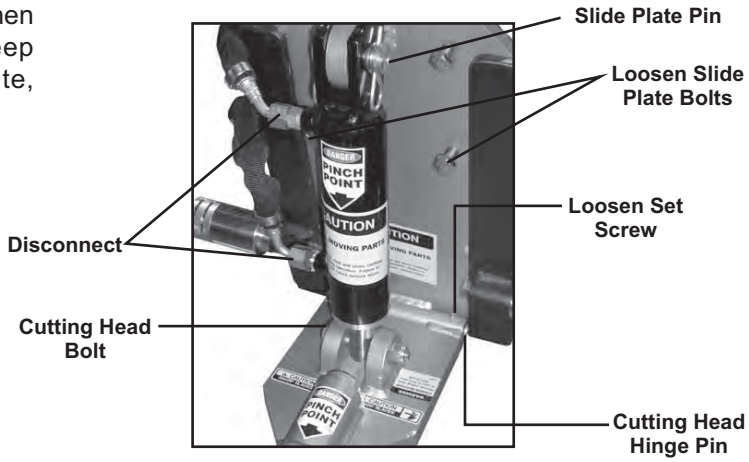
To Remove Slide Plate

1. Disconnect machine from power.
2. Remove slide plate pin. Remove cutting head bolt. Remove cylinder from slide plate. Remove slide plate.

OR

1. Disconnect machine from power.
2. Unplug hydraulic lines from cylinder. A small amount of oil leak out of lines. Cap lines or bleed into a container. Wipe up spillage immediately.
3. With lines removed, loosen slide plate securing bolts. Hold slide plate at the top of the cylinder. Take Caution: slide plate will drop to the floor when slide plate securing bolts are disengaged. Keep hands and feet out from underneath slide plate.
4. Remove slide plate, cylinder and lower cutting head support.

**Take Caution:** slide plate will drop to the floor when slide plate securing bolts are disengaged. Keep hands and feet out from underneath slide plate, failure to do so could cause severe bodily injury.




**RAISING OR LOWERING THE SLIDE PLATE**

This will only work without a cutting head inserted in the machine. Completely loosen slide plate bolts. Use cylinder lift lever to raise or lower machine to move slide plate up or down.

**LOWER CUTTING HEAD SUPPORT**

To Remove Lower Cutting Head Support

1. Lower slide plate so cutting head hinge pin is below machine bottom. Retighten.
2. Loosen both cutting head pin set screws at the base of the lower cutting head support (hinge area).
3. Drive cutting head pin out using a punch and hammer.
4. Remove cylinder securing hex head bolt.

**LEAK MAINTENANCE**

All fittings on this machine are O-ring style.

1. Disconnect machine from power.
2. If a leak is detected, tighten fitting with the proper wrench size. DO NOT over tighten. Over tightening could damage O-rings.
3. If a leak still persists, remove fitting and replace O-ring.

# 5700 MACHINE MAINTENANCE

**OIL LEVEL**

To Check Oil Level

1. Remove Breather Dip Stick (See Figure A)
2. Check to see that Hydraulic Fluid is visible on Dip Stick

   OR

1.Remove Filler plug (See Figure B).

2.Oil should be visual 2” below hole.

3.Reinsert plug.

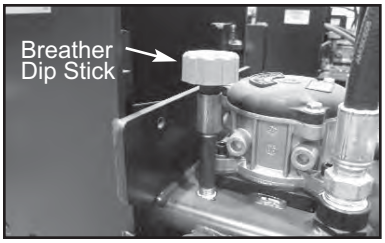



**Figure A**

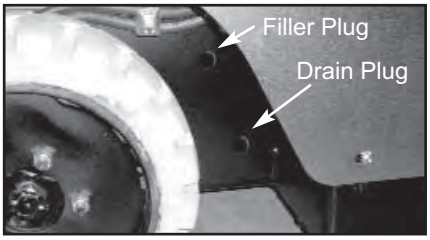



**Figure B**

**OIL CHANGE OUT**

1. Disconnect machine from power (charger or battery).
2. Drain fluid by removing the drain plug from side of tank (See Figure B). **Take Caution:** this unit contains twelve gallons of fluid. Make sure you have the proper amount of containers to catch fluid.
3. Replace drain plug.
4. Remove filler plug (See Figure B).
5. Add oil into the filler plug hole until visual 2” below hole.

**WHEEL MOTOR CHANGE OUT**

1. Disconnect machine from power.
2. Block up machine to remove wheel. See wheel changing on page 42.
3. Remove wheel.
4. Remove oil lines from wheel motor. A small amount of oil will run out of the lines. Drain into a container. Wipe up spills immediately.
5. Remove four 1/2" wheel motor securing nuts.
6. Pull out on wheel motor to remove.

# 5700 MACHINE MAINTENANCE

**HOSE CHANGE OUT**

To Remove Or Change A Hose

1. Disconnect machine from power.
2. Remove hood.
3. Using proper wrench size, remove hose from fitting.
4. When replacing, make sure O-ring is properly seated on hose fitting.

**FOOT PEG**

To Remove Or Replace Foot Peg

1. Insert a socket wrench into foot peg and secure bolt head.
2. Remove nut and washer.
3. Remove bolt and foot peg.
4. Replace foot peg before operating machine. DO NOT use machine without foot pegs.

**PUMP CHANGE OUT**

1. Remove doghouse to expose pump.
2. Disconnect hydraulic lines.
3. Remove two 5/16" pump securing bolts.
4. Remove pump by pulling pump straight out from pump motor.

**VALVE CHANGE OUT**

1. Disconnect machine from power (charger or battery).
2. Lift hood and secure in place.
3. Remove hoses from valve body. have a container ready to catch leakage from lines.
4. Take notice of angle of valve fittings.
5. Remove two 1/4" bolts securing valve body.

**MOTOR CHANGE OUT**

1. Disconnect motor from power.
2. Lift hood and secure in place.
3. Remove pump (see pump change out).
4. Loosen the bracket holding the motor.
5. Remove motor.

# 5700 MACHINE MAINTENANCE

**HYDRAULIC CYLINDER CHANGE OUT**

1. Disconnect machine from power.
2. Disconnect cylinder lines. Have a container ready to catch oil from lines.
3. Remove cylinder securing hexhead bolt from lower cutting head support.
4. Remove clips and pin from cylinder and slide plate.
5. Remove cylinder upper pin.
6. Remove cylinder.

**WHEEL CHANGING**

1. Jack machine up by pushing the cylinder lift forward to lower and adjust the angle of the cutting head to raise machine.
2. Place blocks under Forklift Cups on the side of the machine that wheel is being changed. **Take Caution:** Make sure machine is supported properly or serious injury could occur.
3. Let cylinder down resting machine on blocks allowing rear wheel to be lifted off the floor.
4. Remove five 1/2" lug nuts with an extended arm wrench, remove wheel.
5. Replace wheel.
6. Replace five lug nuts and tighten, making sure lug nuts are very tight.
7. Raise cylinder to raise machine off of blocks. Remove blocks and lower machine.
8. Repeat to other side if necessary.

**CHANGING FILTER-** Filter should be replaced yearly.

NEW STYLE (Figure A)

1. Remove old filter by turning counter-clockwise
2. Install new filter by turning clockwise

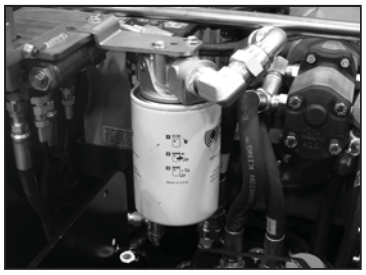


**Figure A**

# 5700 MACHINE MAINTENANCE

**CASTER MAINTENANCE**

1. Keep clean and free of debris, make sure it can move freely.
2. Give a shot of grease in grease zerc on caster every six months to keep moving freely.
3. To remove caster, machine will need to be raised. Push the cylinder lift lever forward to lower and adjust the angle of the cutting head to jack up the machine (Figure C). Block up machine (Figure D). Remove four bolts, pull caster off, clean/replace as needed.
4. Replace caster.
5. Replace and firmly tighten the four bolts.
6. Lower the machine.

*Note: A spacer is needed with caster when using an 18 inch wheel.


**Figure C**

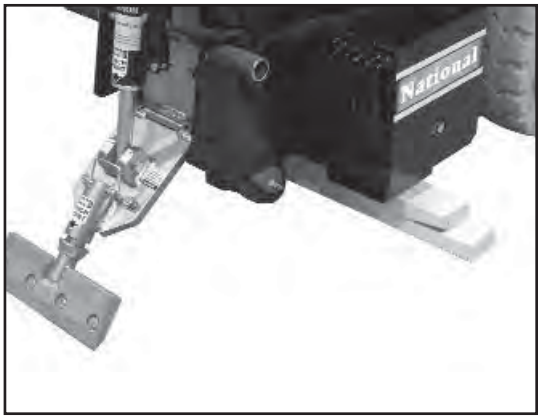



**Figure D**

⚠ **WARNING:** Do Not alter a switch or lever. Do Not defeat a safety device.

⚠ **WARNING:** The Back Up Beeper is on the machine for safety. It is important to keep it in good working condition. Failure to do so could cause bodily injury.

# 5700 MACHINE MAINTENANCE

**SEAT REPLACEMENT**

1. Remove four (4) button hexhead screws on each side of the hood (4 times).
2. Slightly raise seat plate & unplug wire harness.
3. Lift hood off.
4. Remove seat.
5. To replace seat, set seat on top of hood.
6. Replace the four 5/16 button hexhead screws from underneath the hood.
7. Firmly tighten.
8. Reconnect back-up beeper and seat switch wires.
9. Replace hood and screws.

⚠ **WARNING:** Always disconnect from battery before maintaining. ⚠

⚠ **WARNING:** Never operate machine without pump guard housing in place.

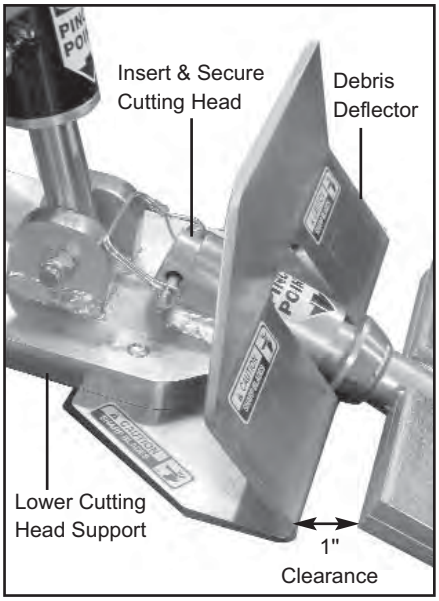
**SWITCHES**

There are three switches:

1. On (Start) Switch
2. Off (E-Stop) Switch
3. Seat Switch

**# 5200-258**

**DEBRIS DEFLECTOR MOUNTING INSTRUCTIONS**




•Insert and secure a cutting head, making sure cutting head is **all the way in.**

**•If there are holes on your lower cutting head support**, place debris deflector under the lower cutting head support and bolt in place.

**•If there are not holes on the lower cutting head support**, place debris deflector on the lower cutting head support, measuring a 1" clearance between the cutting head and the front of the debris deflector. This clearance will reduce a “pinch point”.

•Secure with C-clamps.

•Mark the holes from the debris deflector on the lower cutting head support.

•Either drill a 1/2" hole on each mark and secure debris deflector with a bolt and lock nut **OR** drill a 27/64" hole and tap 1/2-13.

•Firmly secure debris deflector under the cutting head.