#6280-HD HEAVY DUTY HYDRAULIC PANTHER®

INSTRUCTION MANUAL

Read Manual Before Operating Machine

National
Flooring Equipment, Inc.

National Surface Preparation Equipment
"Surface Preparation Solutions"

9250 Xylon Avenue North • Minneapolis, MN 55445 • U.S.A.
800-245-0267 • 763-535-8206 • Fax 763-535-8255 • Fax 800-648-7124
Web Site: www.nationalequipment.com • E-Mail: info@nationalequipment.com

6280-HD TABLE OF CONTENTS

6280-HD TABLE OF CONTENTS

6280-HD 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:** Never operate in wet or high moisture conditions without a proper GFI grounded switch. 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:** Disconnect power before servicing. Unplug cord so it can't be started. Faulty wiring can also be an electrical hazard. A regular preventive maintenance program should always include a wiring check.
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 1,200 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 undertorquing.

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.

PRESSURE (continued)

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.
3. If the coupling was misaligned during installation, threads may have been damaged. Replace and carefully install.
4. Overtorquing of a threaded connection can stretch and damage threads and mating seat angles. Overtorquing can also damage the staking area of the nut. Undertorquing 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.

6280-HD 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 upon request.

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.
2. **GROUND YOUR TOOL:** See Grounding.
3. **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.
4. **KEEP WORK AREA CLEAN AND WELL LIT:** Cluttered, dark work areas invite accidents.
5. **DRESS PROPERLY:** Do not wear loose clothing. These may be caught in moving parts. When working outdoors, wear rubber gloves and insulated non-skid footwear. Keep hands and gloves away from moving parts.
6. **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.
7. **KEEP BYSTANDERS AWAY:** Children and bystanders should be kept at a safe distance from the work area to avoid distracting the operator and contacting the tool or extension cord. Operator should be aware of who is around them and their proximity.
8. **PROTECT OTHERS IN THE WORK AREA:** Provide barriers or shields as needed to protect others from debris and machine operation.
9. **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 or attachment.
10. **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 tools “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.
11. **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.
12. **GUARD AGAINST ELECTRIC SHOCK:** Prevent body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. When scoring or making cuts, always check the work area for hidden wires or pipes. Use a Ground Fault Circuit Interrupter (GFCI) to reduce shock hazards.
13. **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.
14. **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.

6280-HD RULES FOR SAFE OPERATION

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

16. **WEAR GLOVES WHEN CHANGING BLADES.**

17. **DO NOT ABUSE CORD:** Never unplug by yanking the cord from the outlet. 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. Do not unplug cord while machine is operating.

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

19. **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.

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

21. **UNPLUG EQUIPMENT:** When it is not in use, unplug tool before changing blades, accessories or performing recommended maintenance or when not in use.

22. **MAINTAIN EQUIPMENT CAREFULLY:** Keep handles dry, clean and free from oil and grease. Keep cutting edges sharp and clean. Follow instructions for lubricating and changing accessories. Periodically inspect tool cords and extension cords for damage. Have damaged parts repaired or replaced.

23. **STORE IDLE EQUIPMENT:** When not in use, store in a dry, secured place. Keep away from children.

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

⚠ **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.

25. **MACHINE IS HEAVY, DO NOT DROP:** Counter weights are heavy. Take caution when removing or reassembling. Take caution when moving or transporting.

GROUNDING

⚠ **WARNING:** Improperly connecting the grounding wire can result in the risk of electric shock. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the cord or plug is damaged. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

⚠ **WARNING:** Electrical cords can be hazardous. Misuse can result in fire or death by electrical shock. Read carefully and follow all directions.

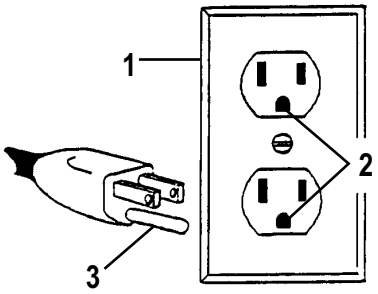


Figure A

1. Cover of grounded outlet b
2. Outlet ground
3. Grounding prong
4. Temporary adapter
5. Screw
6. Green grounding ear

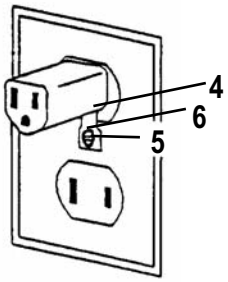


Figure B

GROUNDED TOOLS: TOOLS WITH THREE PRONG PLUGS

Tools marked “Grounding Required” have a three wire cord and three prong grounding plug. The plug must be connected to a properly grounded outlet (See Figure A). If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock.

The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool's grounding system and must never be attached to an electrically “live” terminal.

Your tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should look like those in Figure A.

Figure B illustrates a temporary adapter available for connecting grounded plugs (Figure A) to two prong outlets. The green rigid ear or lug extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box or receptacle. Simply remove the center screw from the outlet, insert the adapter and reattach the screw through the green grounding ear to the outlet. If in doubt of proper grounding, call a qualified electrician. A temporary adapter should only be used until a properly grounded outlet can be installed by a qualified electrician. The Canadian Electrical Code prohibits the use of temporary adapters.

6280-HD RULES FOR SAFE OPERATION

EXTENSION CORDS

⚠ **WARNING:** Electrical cords can be hazardous. Misuse can result in fire or death by electrical shock. Read carefully and follow all directions.

Grounded tools require a three wire extension cord. Double insulated tools can use either a two or three wire extension cord. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage.

The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. When using more than one extension cord to make up the total length, be sure each cord contains at least the minimum wire size required. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum wire size.

GUIDELINES FOR USING EXTENSION CORDS

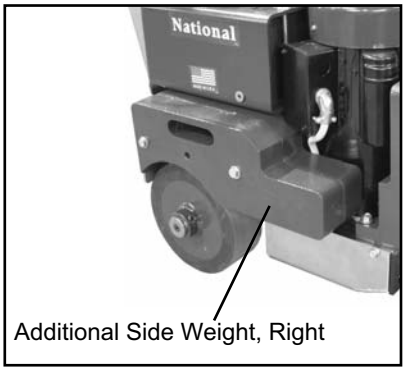
- If you are using an extension cord outdoors, make sure it is marked with the suffix “W-A” (“W” in Canada) to indicate that it is acceptable for outdoor use.
- Be sure your extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it.
- Protect your extension cords from sharp objects, excessive heat and damp or wet areas.
- Keep away from water. Do not use if wet. 
- Inspect thoroughly before each use. DO NOT USE IF DAMAGED.
- Make sure equipment is OFF before connecting cord outlet.
- FULLY INSERT plug into outlet.
- Do not remove, bend or modify any metal prongs or pins of cord.
- Do not use excessive force to make connections.
- Do not connect a three prong plug to a two-hole cord.
- Avoid overheating. Uncoil cord and do not cover it with any material.
- Do not walk on cord.
- Do not drive, drag or place objects over cord.

READ AND SAVE ALL INSTRUCTIONS FOR FUTURE REFERENCE. 

6280-HD SPECIFICATIONS

SPECIFICATIONS	#6280-HD
Length:	33"
Width:	13½"
Height:	41"
Weight (machine only):	318 lbs. (w/o weights) 515 lbs. (w/ weights)
Speed:	30 feet per minute

MOTOR INFORMATION	
RPM:	1725 / 1425
Volts:	110 / 220
HP:	1½
Amps-Full Load:	13
	Continuous Duty



6280-HD TRANSPORTATION

Wheels engage and disengage for easier maneuverability. Wheels in the “engage mode” are secured with the axle pins (See Figure A). This engages the wheels for the machine to be self-propelled.

When wheels are in the “disengage mode” (See Figure B). Machine can be moved around freely when the machine IS NOT under power.

WHEELS ENGAGING OR DISENGAGING

DISENGAGING WHEELS

> ⚠ **WARNING:** Never load or unload machine on a ramp or incline when wheels are in the disengage mode. Failure to do so could cause machine runaway, damage to machine, damage to property or cause serious injury.

Move machine so pin is vertical (See Figure C). Pull up on end of pin to release. Slide pin out. Repeat on second wheel. **Note:** Keeping axle pin facing straight up will make re-engaging easier.

RE-ENGAGING WHEELS

Line up wheel hub hole and axle hole (See Figure D). Insert axle pin and secure pin end. Repeat on second wheel.

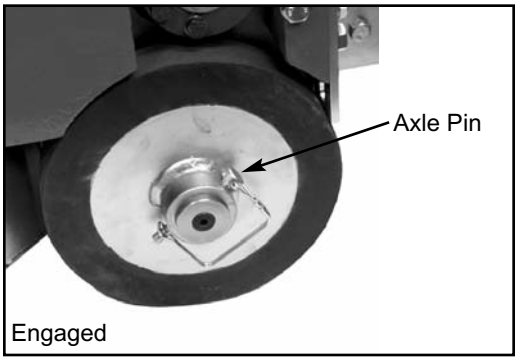


Figure A

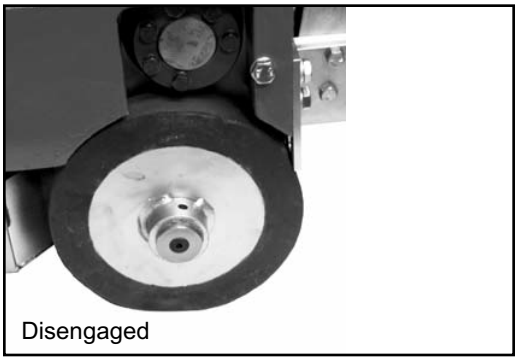


Figure B

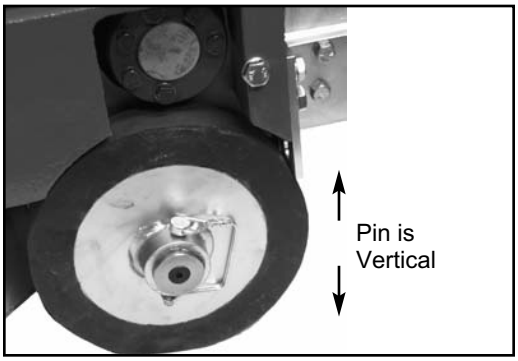


Figure C

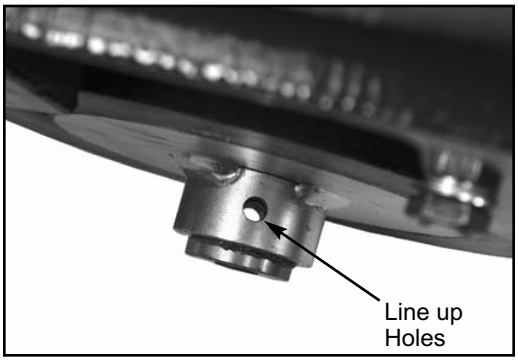


Figure D

6280-HD TRANSPORTATION

⚠ **WARNING:** When maneuvering machine on any type of a incline (ramp, hill, etc.), wheel engage pins MUST be in place (in engaged mode) (See Figure B) and counterweights removed.

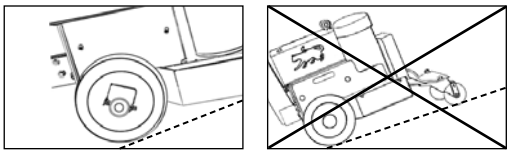
LOADING

ALWAYS REMOVE ALL COUNTERWEIGHTS AND BLADES BEFORE LOADING OR UNLOADING.

LIFTING BAIL

- Easy loading when not driving or using a ramp.
- Use rope, hook system or chain through eyelets located on top of machine (See Figure A).
- Location on lifting bails centrally locates balance of the machine to safely pick-up machine.
- Raise machine with a lifting device rated for the weight of the machine.

⚠ **WARNING:** Keep hands and feet out from under machine.



CORRECT **INCORRECT**

RAMP

⚠ **WARNING:** Only load or unload machine on a ramp with wheel pins engaged (engage mode) (See Figure B) and counterweights removed. Failure to do so could cause machine runaway, damage to machine, damage to property or cause serious injury. See Page 10 for wheel engage mode.

⚠ **WARNING:** Make sure ramp is secure before using. Failure to do so could cause ramp to fall away from truck, causing damage to the machine and/or injury to the operator.

- All counterweights, blades and transport wheels must be removed before unloading (or loading).
- Make sure ramp is clean and dry, free of grease or oil.
- Attach ramp securely to back of vehicle, making sure there is good contact (See Figure C).
- Position machine at back of ramp (See Figure A). Engage power switch and drive onto vehicle.

Figure A

Figure B

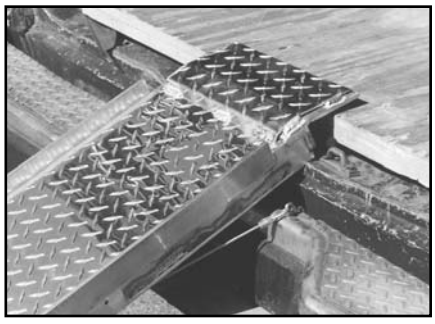


Figure C

6280-HD TRANSPORTATION

UNLOADING

- Position machine at the back of the truck in line with the ramp (See Figure B).
- Carefully move machine onto ramp leaving cutting head down (in contact with ramp surface).

⚠ **WARNING:** Ramp must have good contact with the back of the vehicle. Failure to do so could cause ramp to lose contact with back of vehicle resulting in damage to the machine or injury to the operator.

- Even without counterweights machine weighs 318 pounds
- Make sure you have machine under control. Failure to do so could cause machine runaway, damage to machine, damage to property or cause serious injury.
- Slowly back machine down ramp. This is done the easiest with the machine under power and driving the on or off.
- Ramp is designed to work from a van height. Easy for most loads up to 26" or 19° angle. Somewhat difficult for large loads up to 32" or a 23° angle. Not recommended for anything higher. A pickup is too high.

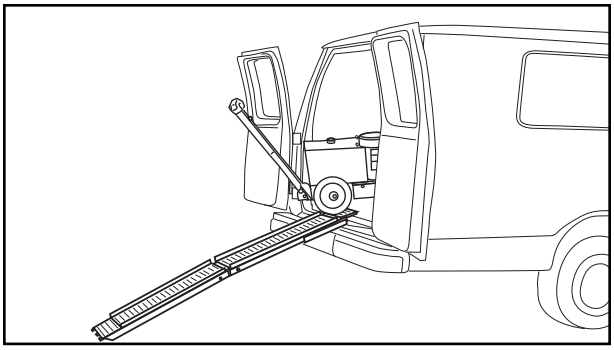


Figure A

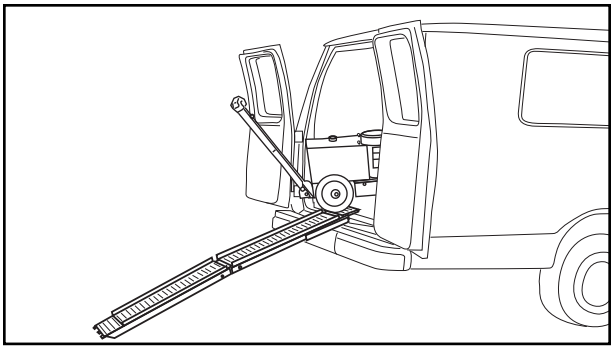
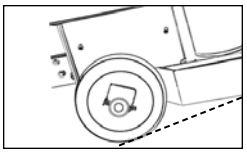
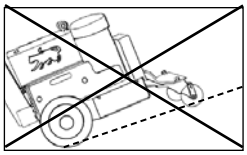


Figure B



CORRECT



INCORRECT

⚠ **WARNING:** Never load or unload machine on a ramp or incline when wheels are in the disengage mode. Failure to do so could cause machine runaway, damage to machine, damage to property or cause serious injury.

6280-HD GENERAL OPERATION

A well-maintained machine is a productive machine. If not properly maintained, it could be unsafe and could break down. A scheduled maintenance program should insure a long system life and a safe work environment.

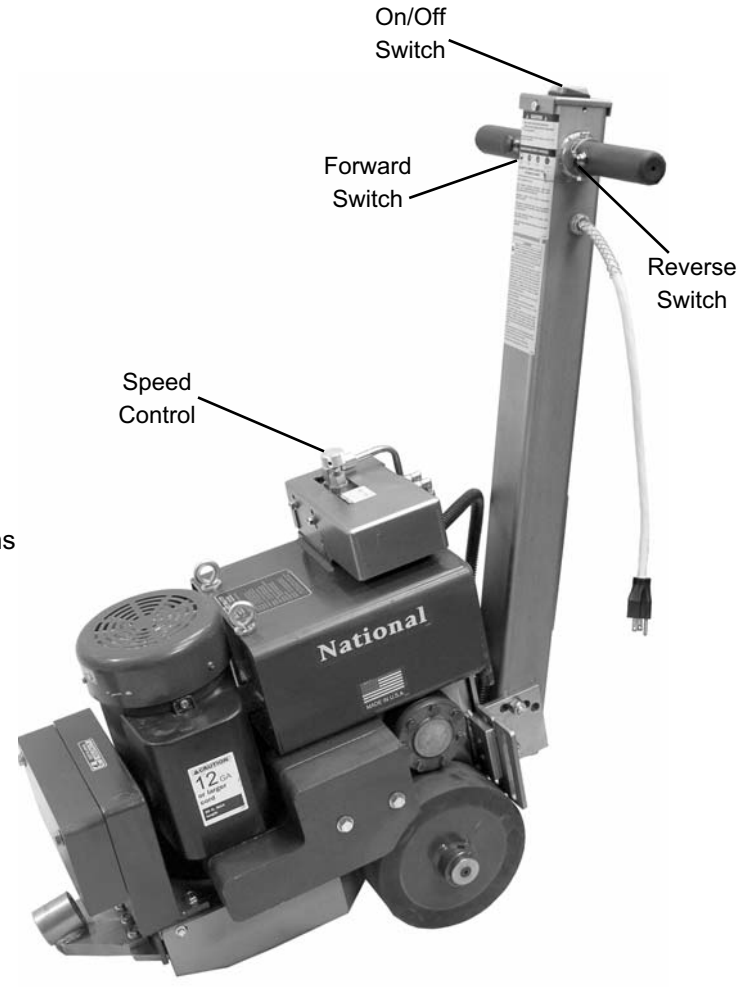
MACHINE START UP PROCEDURE

TO RUN MACHINE:

1. Machine MUST be off before plugging machine into power source.
2. Plug machine into outlet.
3. Turn speed control to slowest position.
4. Turn machine on.
5. Engage forward or reverse switch.
6. Increase speed control to desired speed.

MAINTENANCE

1. Always wear eye protection.
2. Keep flammable and fragile objects away from this tool.
3. Always check nuts and bolts to make sure they are tight.
4. Always use the tool with proper voltage specified in the machine's name plate.
5. Always keep guards in place.
6. Do not operate around water or wet conditions without use of GFI on cord.
7. Use properly grounded cord and receptacle.
8. Unplug from power before servicing.
9. Use 12 gauge or heavier wire cord, not exceeding 50 feet in length.
10. Do not force machine.
11. Do not alter machine.
12. Pressure valve has been factory set and should NOT be tampered with.



MAINTENANCE (continued)

13. Hydraulic Fluid: Keep clean and at a proper level. See page 5 and 26.

14. Keep wheels free from debris. See page 25.

INSPECTION PROCEDURE HYDRAULIC PREVENTIVE MAINTENANCE CHECKLIST

By following this preventive maintenance checklist, you can maintain your equipment hose efficiently, safely and with very little effort. Each step is covered in detail in the following section.

⚠ **WARNING:** Do not lock wheel drive into a permanent on position. If operator would lose control or be disabled, machine continues to operate.

- Always turn off and unplug electrical source before servicing.
- Place equipment and components in a safe or neutral position.
- Remove access panels (if any) and inspect hose and fittings for damage or leaks.
- Repair or replace as needed.
- Inspect all hydraulic components.
- Reinstall the access panels.
- Turn power back on.
- Be aware of your equipment, always look and listen for anything unusual.

REMOVAL TIPS

• Keep Blades Sharp!

• Dull blades greatly affect the performance of the machine.

• Wood or wood like floors: pound down or remove any nails or metal obstruction to avoid blade damage.

• 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.

• The harder a job comes up, for best results, use a smaller blade.

DIALING IN THE MACHINE

Dialing in the machine is matching the correct cutting head, blade size, blade angle, speed 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).

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.

CUTTING HEAD ANGLE

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

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

⚠ **CAUTION:** Never change an angle attachment, a cutting head or service blades while machine is running. Unplug machine from the power source before doing so.

6280-HD ANGLE ATTACHMENTS

The Angle Attachments angles the cutting head and blade or carbide shank to where the material comes up the easiest. Lower is usually the best.

7280-2B Standard Angle
Attachment - 22 degree

7280-2C Steep Angle
Attachment - 30 degree

MOUNTING ANGLE ATTACHMENT

- Disconnect machine from power source.
- Tilt machine back.
- Securely block machine up (See Figure A).

⚠ **WARNING:** Failure to block up the machine could cause damage to the machine or cause serious injury.

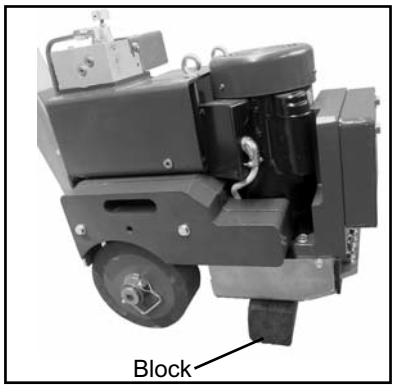


Figure A

- Insert desired cutting head or carbide shank into the angle attachment.

NOTE: Cutting head or carbide shank should freely swivel in the angle attachment. This movement allows the blade to stay in contact with the floor. Grease may need to be applied to the shaft of the attachment before inserting.

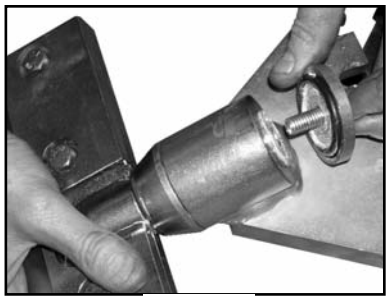


Figure B

- Secure with Retainer Cap (See Figure B).
- Mount angle attachment onto the cutting head support (See Figure C).
- Securely tighten all five mounting bolts.

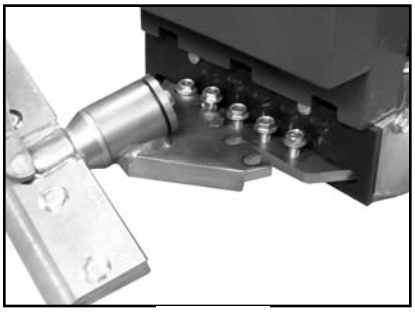


Figure C

6280-HD BLADES

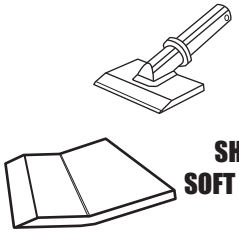
- Match the cutting head to the blade size.
- Dull blades greatly reduce cutting ability and affect the performance of the machine. Re-sharpen or replace as needed.
- Proper blade size and placement, depending on material and sub-floor typed, affects performance.
- Start with a narrow blade, then increase blade size to optimize cutting pass. Narrower blades work easier than wider blades and usually clean the floor surface better. Wider is not always better or faster.
- Blades are sharp. Always wear gloves when handling blades.
- KEEP BLADES AND CARBIDES SHARP!
- Everyone in the work area should wear eye protection.

BLADE SETTING

- Normally bevel on blade is up or concrete. Bevel down for wood or soft sub-floors.

BEVEL UP
CONCRETE FLOORS

BEVEL DOWN
WOOD FLOORS



SHOE BLADE
SOFT SUB-FLOORS

- Blades get inserted into a cutting head. Typically, the cutting head size it the same size as the blade. If the blade is wider than the cutting head, center the blade in the head. It is imperative to have the same size cutting head when using self scoring blades.
- Cutting heads swivel in the angle attachment to keep the blade in contact with the floor. Grease may need to be applied to the shaft of the cutting head to allow easy movement and longer life.
- When using razor blades a razor blade cutting head is needed.
- For best removal results on sheet vinyl, solid vinyl, rubber tile, urethane or PVC sheet roofing they will need to be scored first (See Figure A). #584 Scoring Tool or use self scoring blades.
- Score flooring to the width of the blade being used (See Figure B).

Figure A

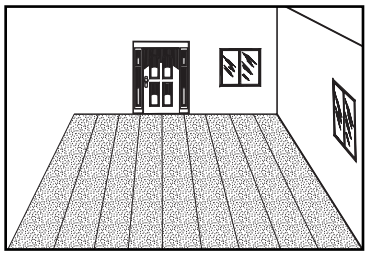


Figure B

6280-HD BLADES

BLADE SETTING (continued)

- Self scoring blades eliminate the need for pre-scoring material (See Figure A). They are available in a number of sizes. Depending upon the type of material being removed and the sharpness of the blades and scoring wings, self scoring blades may make it harder to control the machine.
- Keep scoring wings sharp at all times.
- Blades can be offset in cutting head for easier access to toe kicks or removal along the wall (See Figure B).

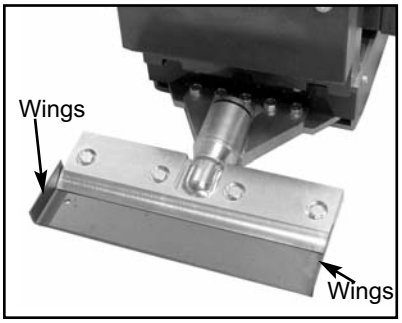


Figure A

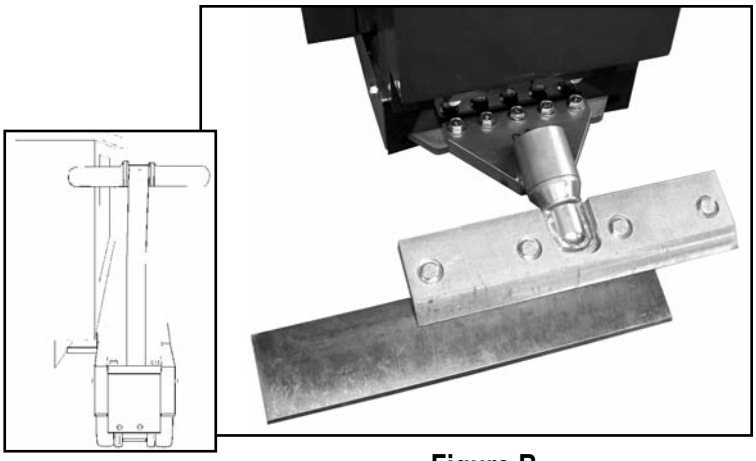


Figure B

CARBIDE SHANK SETTING

- Carbide shanks do not require a cutting head.
- Shanks get inserted into angle shank attachments and are secured with a retainer cap (See Figure C).
- The carbide tip allows for longer sharpness, and has greater durability for hard to remove materials such as ceramic.
- Shanks swivel in the angle attachment to keep the shank in contact with the floor. Grease may need to be applied to the shaft of the shank to allow easy movement.

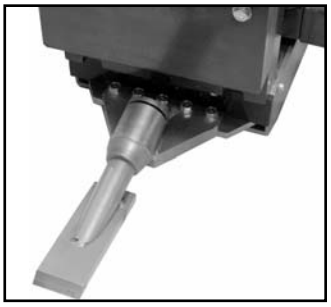


Figure C

6280-HD BLADES

BLADE CHANGING

⚠ **CAUTION:** Blades are sharp.

- Sharp blades are imperative for good performance.
- Always wear gloves when changing blades.
- Tilt machine back.
- Securely block machine up (See Figure A).
- Use supplied extended wrench or a socket wrench with at least a 3" extension to keep a hand safely away from the sharp edge of the blade.

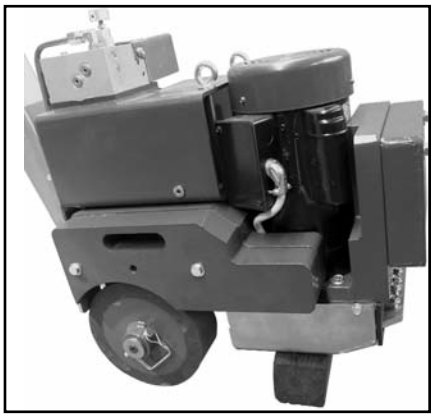


Figure A

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

- Because the cutting head swivels in the angle attachment, it is recommended to remove the cutting head from the angle attachment before changing the blades.
- Loosen hex head bolts with extended bolt wrench (See Figure B). It is not necessary to remove bolts.

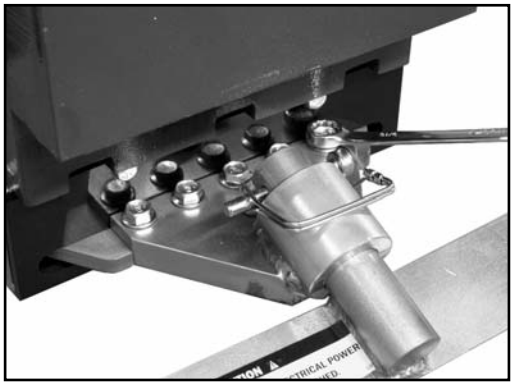


Figure B

- Place blade into cutting head to the back of the bolts (See Figure C).
- If the blade is wider than the cutting head, center blade to head.
- If blade is smaller than the cutting head, first pass blade should be mounted in center of the cutting head.

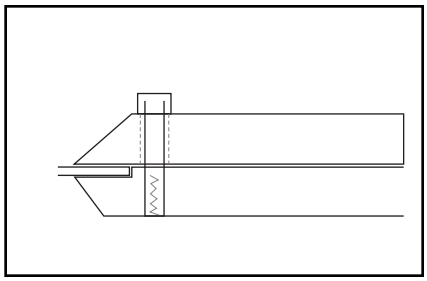


Figure C

6280-HD BLADES

BLADE SHARPENING

- Always wear gloves and safety glasses
- Because blade swivels in the machine, blade needs to be removed from machine before sharpening.
- 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.
- In use, blades develop a back-bevel (See 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.

- 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 (See Figure B). Use a file on the “wing” edge. Sharpen the flat part of the blade, the same way as described.

- **CARBIDE TIPPED BLADE SHARPENING**

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

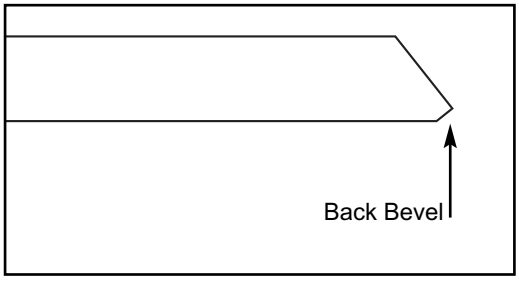


Figure A

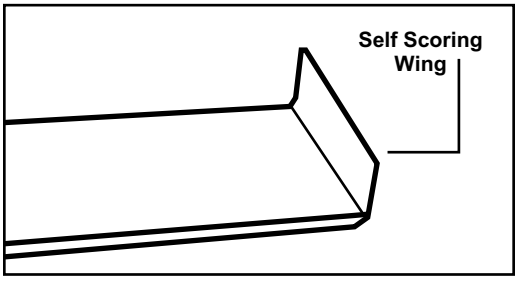
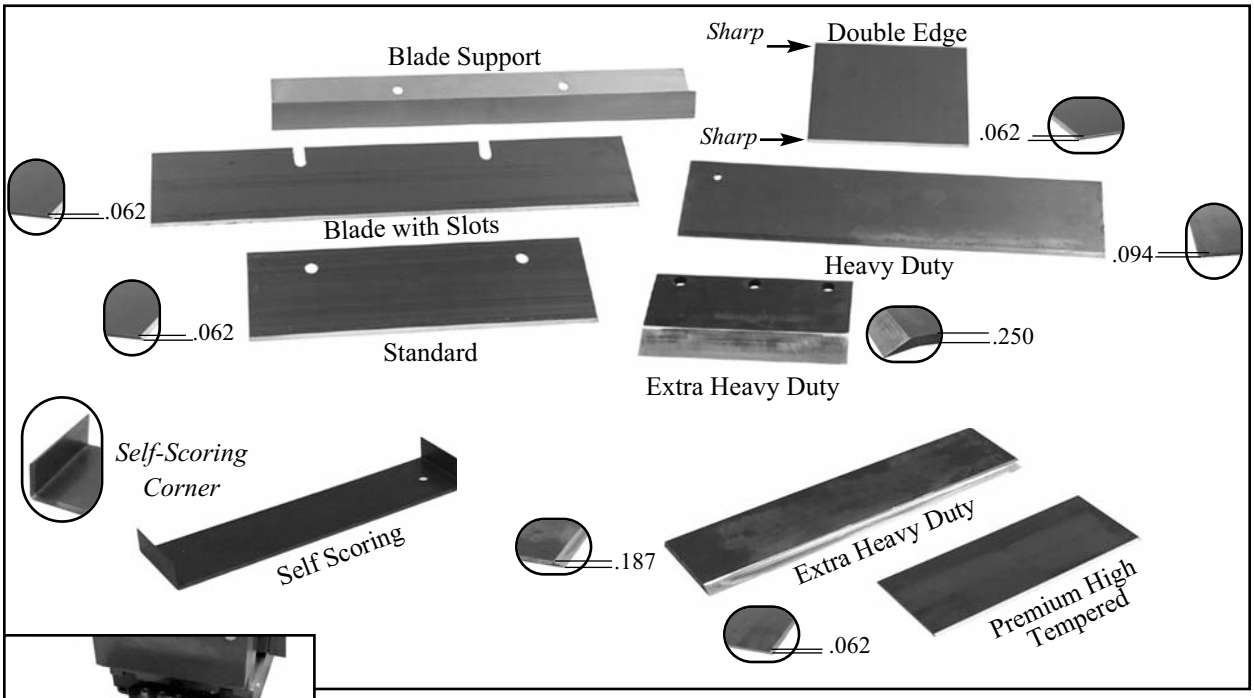
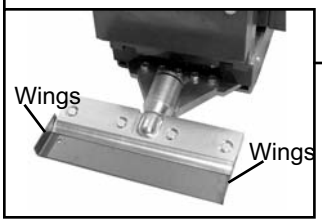


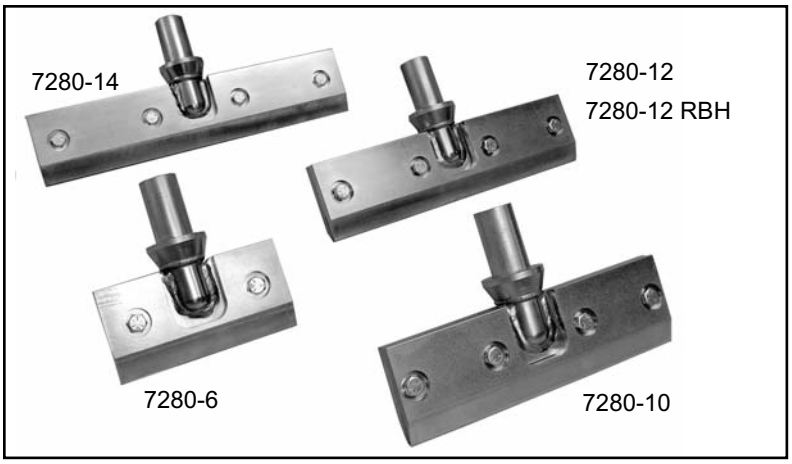
Figure B

6280-HD BLADES





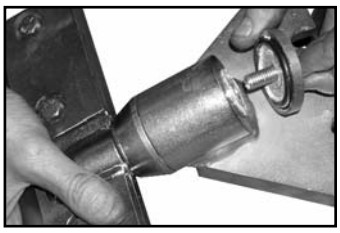
SELF SCORING BLADES: Eliminates pre-scoring carpet. See sizes and accessories on Page 22.



CUTTING HEADS: Unique swivel cutting head assemblies. Swivel head allows blade to stay in contact with the floor. Razor Blade Head (RBH) is designed to hold Razor Blade.

ANGLE ATTACHMENTS: Angle attachments angle the cutting head or carbide shank to where the material comes up the easiest. Lowest is usually the best. A steep angle us usually used for re-scraping.

RETAINER CAP ASSEMBLY: Secures cutting head assemblies to angle attachments.



6280-HD BLADES

Part #	Description	Application	Thickness
#130-S	3" x 10" Blade with slots	Glued down carpet, tile or resilient	.062
#130-D	#130 Blade with both edges sharpened	Carpet, tile or resilient on wood & concrete floors	.062
#131-S	3" x 16" Blade with slots	Glued down rubber carpet, floor accumulation	.062
#135	5" x 16" Blade	Rubber back carpet on wood or concrete floors, excellent for cleanup and longer durability	.062
#136	5" x 8" Blade	Removal of wood flooring	.062
#147	4" x 6" Blade	Tile or linoleum on concrete floors	.062
#147-D	#147 Blade with both edges sharpened	Tile or linoleum on concrete floors	.062
#148	5" x 6" Blade	Tile or linoleum on wood floors	.062
#148-D	#148 Blade with both edges sharpened	Tile or linoleum on wood floors	.062
#368-12	7/8" x 12" 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	.045
#6255-BU	4" x 6" 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 Uniband hot melts	.062
#6257-BU	3" x 9" Self Scoring Blade - Bevel Up		.062
#6258-BU	3" x 12" Self Scoring Blade - Bevel Up		.062
#6259-BU	3" x 14" Self Scoring Blade - Bevel Up		.062
#6276-BU	3" x 10" Self Scoring Blade - Bevel Up	Same application as the .062 blade. 45° angle, self scoring wings for easy sharpening. The thickness greatly reduces breakage.	.094
#6277-BU	3" x 12" Self Scoring Blade		.094
#6278-BU	3" x 14" Self Scoring Blade		.094
#6270	1-1/2" x 3" Extra Heavy Duty Blade	Ultra tough coatings, ceramic & hardwood	.250
#6271	3" x 6" Extra Heavy Duty Blade	Ultra tough coatings, ceramic & hardwood	.250
#6273	3" x 11" Extra Heavy Duty Blade	Ultra tough coatings, ceramic & hardwood	.250
#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
#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
#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
#7081	3" x 10" 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 8" Increased Angle Blade		.062
#7281-2	2" x 6" Carbide Shank	The ultimate for tough removals. Works well for ceramics, wood & thick epoxy.	.375
#7281-4	4" x 6" Carbide Shank		.375
#7281-6	6" x 6" Carbide Shank		.375

6280-HD BLADES

⚠ **WARNING:** Never remove flooring containing asbestos without fully understanding proper state and federal procedures and guidelines.

TYPES OF TEAROUTS

REMOVAL MATERIALS

- **VCT TILE:** Never use a blade wider than the size of the tile being removed. If goods being removed still do not come up clean or machine jumps on top of goods, reduce blade size to a smaller blade until proper blade size is found or use a smaller portion of the blade.
- **PURE VINYL RUBBER TILE:** Goods will need to be scored down to 10 to 12 inches for proper removal. Self scoring blades can be used with some materials. A 10" blade is recommended for this product, but determine what size blade works best.
- **CERAMIC:** The use of carbide shanks will be the most efficient (See Figure C). On small random block styles of tile, pre-breaking may not be necessary. Open an area large enough for machine or blade to fit in, or start from a doorway. Keep work area clean to keep good wheel contact with floor. Use slow speed.

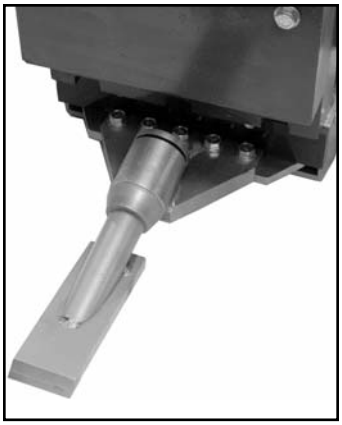


Figure C

- **DIRECT GLUED CARPET:** Can be done with either self scoring blades (Figure D) or pre-score carpet to blade width prior to stripping with #584 Scoring Tool. Pre-scored carpet makes machine easier to control and blades stay sharper longer. Blades up to 16" wide can be used. Normally 12" to 14" blades are used on direct glued carpet, secondary backed, unitary, double glued, vinyl foam, urethane foam. Latex foams usually come up easier with a 16" blade.
- **WOOD:** A 3" x 6" .250 Extra Heavy Duty Blade in a 6" Cutting Head usually will work the best. The blade should be as flat an angle as possible. Bevel up. Bending up the corners of the blade will help from the blade digging into the floor. Sometimes a carbide shank will work. Approach should be at a 45° angle to the board. This helps from digging into the wood and hanging up at the seams.

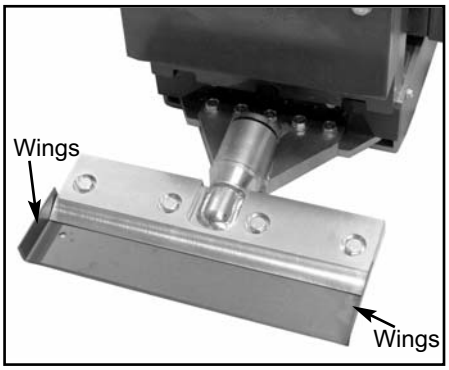


Figure D

- **THIN COATINGS:** Use razor blades with a Razor Blade Cutting Head or a Carbide Shank. Experiment to see which method works the best for the job application. It is important to keep the blade and/or carbide tips sharp.
- **RESCRAPE:** Use razor blades with a Razor Blade Cutting Head or a .062 standard blade. Experiment to see which method works the best for the job application. It is important to keep the blade sharp. A steeper angle might need to be used.

6280-HD TYPES OF TEAR-OUT

TYPES OF TEAROUTS (continued)

SUBFLOOR SURFACES

- **GLUED HARD WOOD FLOORING:** A 10" blade is recommended for regular adhesive, a 6" blade for epoxy. For proper removal of hardwood flooring (plank solid, plank laminated, parkay laminated), flooring must be scored to blade width. This is done by using a circular saw set at a depth of 99% of the thickness of the board, just missing the subfloor surface when on concrete (See Figure A). A chalk line for scoring lines can be used across the floor the width of the blade (See Figure B). A ripping guide attached to the saw can be used to eliminate chalk line marks. Open an area large enough to fit machine or start from a doorway. It is important to keep all debris cleaned up for maximum performance of machine. True Parkay flooring scoring is not necessary. It will come up in small pieces.

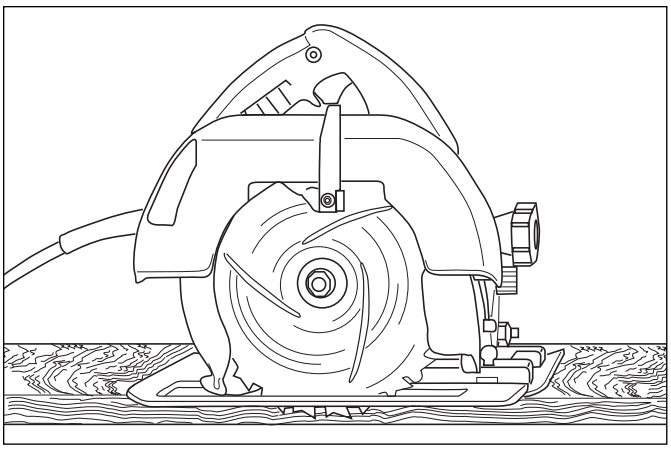


Figure A

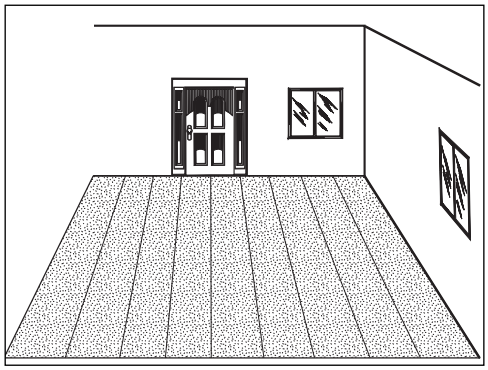


Figure B

- **WOOD:** When working over plywood sub-flooring, try to run machine in the same direction as the grain in the wood. Blade in most cases bevel down. On solid wood floors like plank, run in the same direction as the plank, not cross grain or cross plank. Removing the front counter weight or weights will help on all soft surfaces.
- **CONCRETE:** When working on concrete slab, normal blade position is bevel up for best performance, especially when cleaning adhesive. On occasion, bevel down gives better blade life. Test each job for best performance.

- **GIBCRETE AND SOFT POURED FLOORING:** Usually require blade bevel down to create a better wearing surface, although bevel up may work if front counter weight is removed.

⚠ **CAUTION:** Beware of expansion joints and floor mounted receptacles or other obstacles in the floor.

⚠ **WARNING: EYE PROTECTION SHOULD BE USED AT ALL TIMES.**

6280-HD PROCEDURES

COUNTER WEIGHTS

- It is not necessary to have counter weights on to use machine. Use only as needed (See Figure A).
- Use 9/16" blade wrench (supplied). Each counter weight is attached with two 3/8" bolts. Remove bolts and counter weights. Weights are heavy, use caution when removing or mounting.
- Weights: main front weight - 47lbs., add on front weight - 40 lbs., each right side weight - 33 lbs., each left side weight - 22lbs.
- Machine total weight with counter weights – 515 lbs.
- Machine weight without counter weights – 318 lbs.

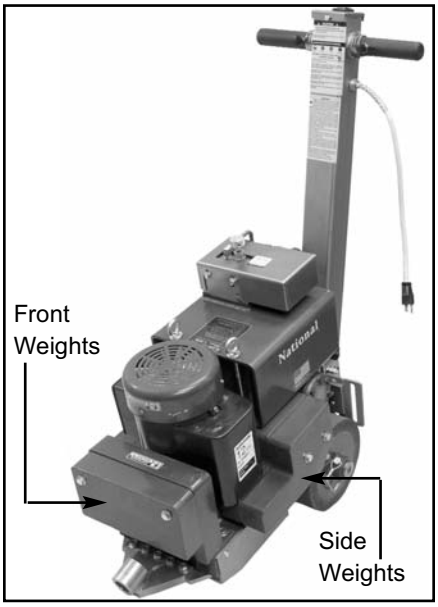


Figure A

WHEEL CLEANER ADJUSTMENT

- Unplug machine.
- Loosen wheel cleaner with 9/16" wrench (See Figure B).
- Slide cleaner up to face of wheel until it touches but DOES NOT dig into wheel surface.
- Retighten firmly.
- Over tightening wheel cleaner could cause damage to wheel.

⚠ **CAUTION:** Pinch Point.

Figure B

WHEEL REMOVAL

- Examine back of wheels (with a flashlight is helpful) to see if debris is built up.
- Keep clean from yarn build up.
- Unplug machine.
- Lay machine on its side.
- Use provided 3/16" allen wrench.
- Remove Axle Pin (See Figure C).
- Remove wheel securing cap.
- Wheel will slide off. Watch for keyway key. DO NOT LOSE.
- Remove wheel spacer. This should be inspected at regular intervals.

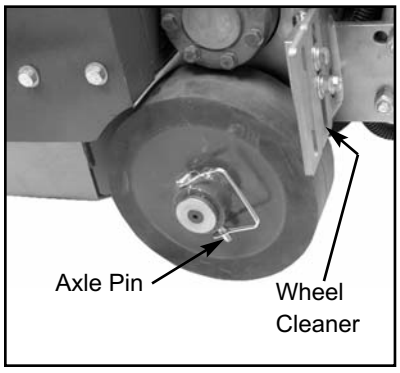


Figure C

HYDRAULIC FLUID LEVEL

- Machine is run at a low temperature and pressure.
- Check fluid level if there has been a leak, damaged or ruptured hose or a loose fitting.
- Fluid level should be higher than the Return Line. See Figure A. Or from the Filler Port, 1" from the top of the tank (See Figure B).
- Machines have a fluid level sight window. See Figure A. The fluid should be in the middle to the top of the window when the machine is sitting in a normal operating position without a blade. If your machine does not have a sight window, fluid should be 1" from the top of the tank.

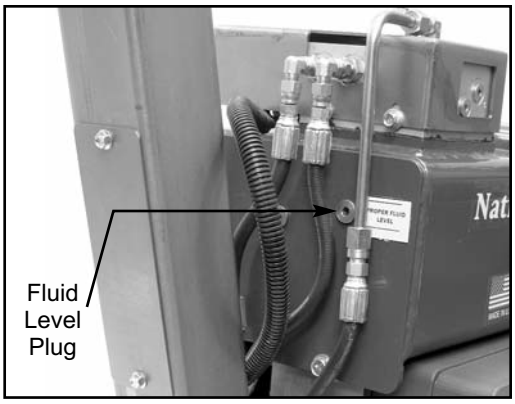


Figure A

ADDING OR CHANGING HYDRAULIC FLUID

- Occasionally blow out the Filler Port Cap filter to remove debris.
- Change or add fluid only when needed.
- To add fluid, unscrew Filler Port Cap from top of machine located under the valve block cover (See Figure B).
- To change fluid, remove Filler Port Cap. Remove drain plug from side of machine (See Figure C). A container approximately two gallons in size will be needed to drain fluid into (fluid will not be removed from hoses).
- Machine has a straining system, but add fluid through a filter or funnel with a screen to keep fluid clean.
- Use Texaco Rando 46 Hydraulic Oil Light, stock #6280-1 or comparable.

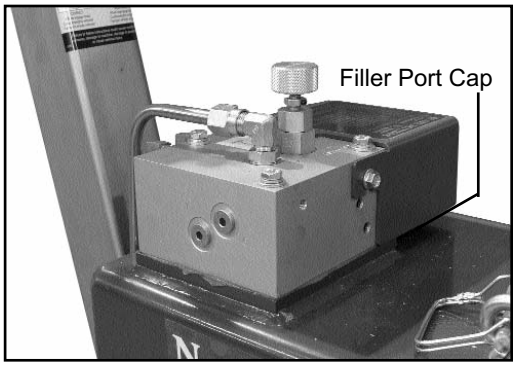


Figure B

TANK REMOVAL

Removing the tank will be necessary to repair the pump or to replace or service internal hoses.

- Drain tank by removing top Filler Port Cap and Drain Plug on side of machine (See Figure C). A container approximately two gallons in size will be needed to drain fluid into.
- Replace Drain Plug and Filler Port Cap.
- Remove two lifting bail eyebolts and the two bolts from the back of the tank.
- Disconnect return line on back of tank, carefully lift tank 3" to 4" and disconnect suction line. Tank can now be removed.

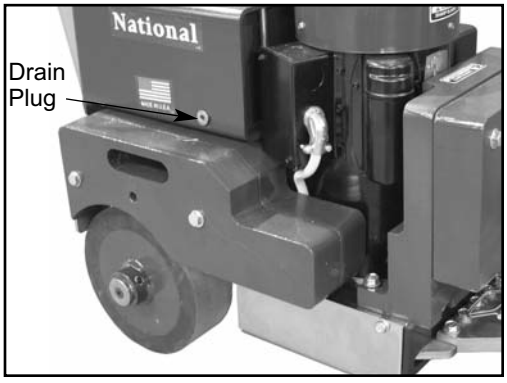


Figure C

INSPECTION OF INTERNAL PARTS

Visual inspection of internal parts can be done without draining tank.

- Remove two lifting bail eyebolts and the two bolts from the back of the tank.
- Carefully lift tank 3" to 4".
- Using a flashlight, inspect drive chain, hoses, front seal on motor, and suction and pressure line on pump.
- If service is necessary, follow procedure for tank removal.

SPEED CONTROL

- Speed control knob can be adjusted while machine is running.
- Turning speed control knob counter clockwise will make machine run faster (See Figure A).
- Turning speed control knob clockwise will make machine run slower (See Figure A).

SPEED CONTROL REPLACEMENT

- Use a 3/32" allen wrench to remove plastic knob.
- Use a 1" deep socket to remove and replace speed control valve.
- Re-install plastic knob.

PRESSURE VALVE REPLACEMENT

This has been factory set and should not be tampered with.

- Use a 1" deep socket to remove old unit and install new.

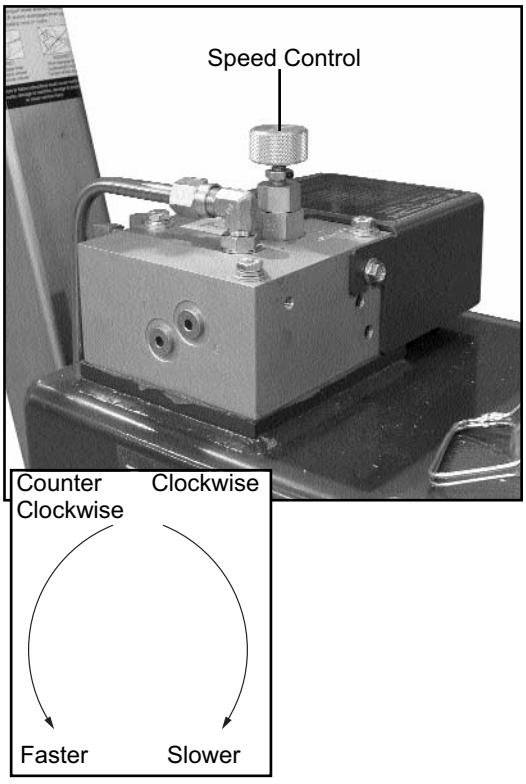
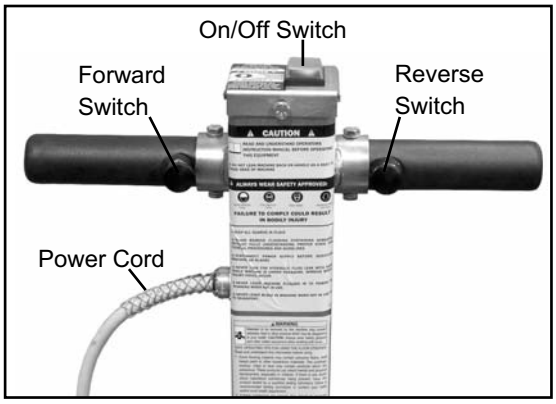


Figure A

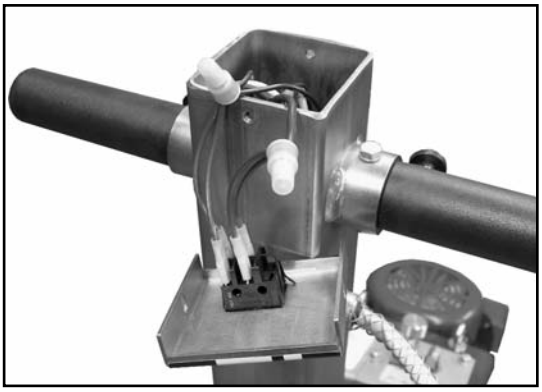
6280-HD PROCEDURES

FORWARD AND REVERSE SWITCH REPLACEMENT



- Disconnect power source to unit.
- Remove 2 1/4 - 20 x 1/2 hexhead bolts from handle. Use 7/16 diameter wrench or socket.
- Loosen 9/16 nut that secures switch to handle.
- Remove handle and switch.
- Remove 2 spade connectors from switch.
- Install switch, making sure the spades are in tight.
- Install black washer. Tighten with a 9/16 wrench or socket. Use care not to strip threads.
- Insert handle into collar on handle column, and replace the bolts. Tighten bolts with 7/16 wrench.

POWER CORD

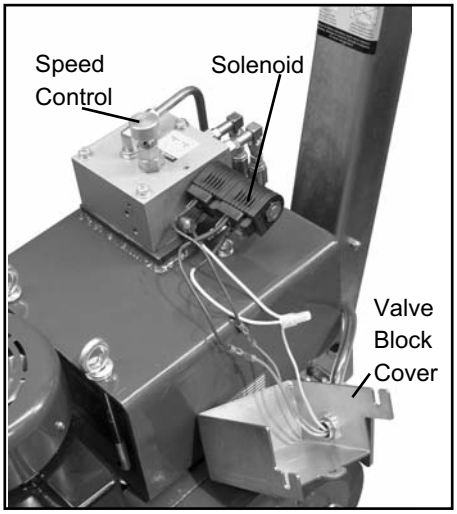


- If power cord is damaged, it must be replaced by National or its service agent, or a similar qualified person in order to avoid a hazard.

ON/OFF SWITCH WIRE DIAGRAM

- 2 power wires go to copper spades
- 2 other wires go to other spades

CARTRIDGE REPLACEMENT



- Remove valve block cover (3 7/16 bolts).
- Disconnect solenoid wires from solenoid.
- Remove nut on top of solenoid.
- Remove solenoid and spacer.
- Remove cartridge with a 1" wrench.
- Replace with new cartridge.
- Remount solenoid to make sure spacer is in between.
- Re-install nut with lock-tight (do not over tighten).
- Reconnect solenoid wires.

Note: The two blue solenoid wires will need to be switched if the machine reverses for the forward switch or forward for the reverse switch.

6280-HD TROUBLESHOOTING

IF THERE IS NO FORWARD OR REVERSE:

1. Check speed control valve. Turn counterclockwise to open valve.
2. Check wheel pins. Make sure they are in the wheels.
3. Check belt. Remove front cover plate (#6280-145) and inspect.

IF MOTOR SHUTS OFF OR WILL NOT START:

1. Push reset button located on electric box on motor (See Figure A). Refer to label on motor.

IF WHEELS DO NOT TURN WHEN MACHINE IS UNDER POWER:

1. Make sure axle pins are in place.

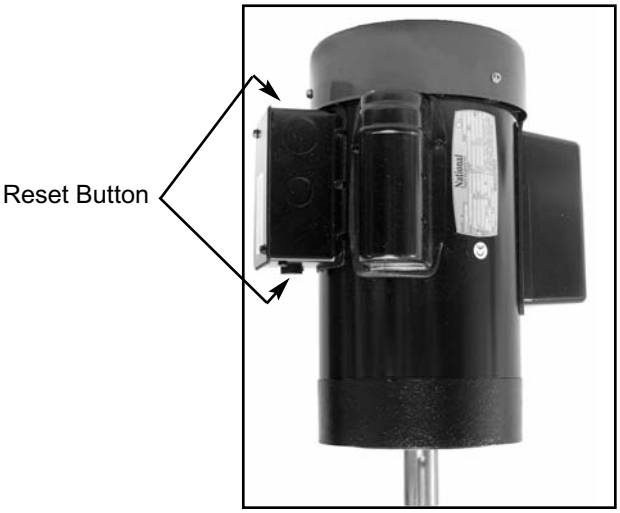


Figure A

MOTOR PROBLEMS (HUMMING, ETC):

1. Press the reset button.
2. If problem persists, take *fan cove*r off and unscrew the 4 bolts to take *fan* off.
3. Clean starter switch (set of points) with an emery board or cloth between points.
4. Reassemble.

Note: **Number in parenthesis ( ) is the amount needed on each machine. Parts are sold individually therefore order the number of parts needed.**

6280-HD COMPLETE PARTS LIST

PARTS

PART #	DESCRIPTION
6254-1	FEMALE CONNECTOR ONLY, 4729C (NOT SHOWN)
6254-2	MALE PLUG ONLY, 5266C (NOT SHOWN)
6280-1	HYDRAULIC FLUID, GALLON (NOT SHOWN)
6280-7	TANK MOUNTED STRAINER
6280-104	AXLE SPROCKET
6280-104A	AXLE SPROCKET KEY
6280-111A	WHEEL KEY (NOT SHOWN)
6280-112	WHEEL CAP (2)
6280-113S	PUMP SPLINED
6280-113-1	SEAL KIT (NOT SHOWN)
6280-116A	PUMP SHAFT SPLINED
6280-119	PUMP SPACER
6280-120	SUCTION HOSE
6280-125	IDLER ASSEMBLY COMPLETE
6280-125W	IDLER MOUNTING BRACKET & PIN
6280-126A	IDLER BEARING CAP
6280-147-1	STARTER SWITCH
6280-148	MOTOR FAN COVER
6280-148A	MOTOR FAN COVER SCREW (3)
6280-149	MOTOR FAN (NOT SHOWN)
6280-150	CAPACITOR COVER
6280-152	MOTOR JUNCTION BOX ONLY (NOT SHOWN)
6280-152-1	MOTOR JUNCTION BOX COVER ONLY
6280-152-3	MOTOR JUNCTION BOX COVER GASKET ONLY (NOT SHOWN)
6280-152-4	MOTOR JUNCTION BOX GASKET (NOT SHOWN)
6280-153R	RIGHT UPPER MAIN BODY
6280-155L	LEFT UPPER MAIN BODY
6280-168	POWER CORD
6280-170	HANDLE BAR (2)
6280-170A	HANDLE BAR GRIP (2)
6280-175	HUBBLE TWIST LOCK FEMALE PLUG 110 VOLT (NOT SHOWN) (INSIDE HANDLE BODY)
6280-176	HUBBLE TWIST LOCK MALE PLUG 110 VOLT (NOT SHOWN) (INSIDE HANDLE BODY)
6280-178	POWER CORD STRAIN RELIEF
6280-179	MOTOR SPACER RING (NOT SHOWN)
6280-206	FORWARD/REVERSE SWITCH (2)
6280-207	ON/OFF SWITCH
6280-208A	SPEED CONTROL KNOB ONLY
6280-221	HYDRAULIC MOTOR CONNECTOR (2)
6280-223	HYDRAULIC MOTOR SHAFT KEY
6280-225	HYDRAULIC MOTOR SPACER
6280-226	HYDRAULIC MOTOR MOUNTING BRACKET
6280-229	DRIVE CHAIN MASTER LINK ASSEMBLY
6280-230	SIDE WEIGHT RIGHT (2)
6280-241	SIDE WEIGHT LEFT (2)
6280-301	FRONT TRANSPORT WHEEL ONLY (NOT SHOWN)
6280-1152A	PUMP SHAFT SNAP RING
6280HD-1	CUTTING HEAD BASE PLATE
6280HD-14	PUMP DRIVE ASSEMBLY
6280HD-15	PUMP SHEAVE ONLY
6280HD-17	PUMP SHEAVE RETAINER W/ SET SCREWS
6280HD-102	SNAP RING 1-1/8 (2)
6280HD-103	DRIVE AXLE

6280-HD COMPLETE PARTS LIST

PARTS (continued)

PART #	DESCRIPTION
6280HD-104	AXLE SPROCKET ONLY (KEY SOLD SEPARATELY)
6280HD-105L	AXLE BEARING SUPPORT, LEFT
6280HD-105R	AXLE BEARING SUPPORT, RIGHT
6280HD-107	BASE PLATE
6280HD-108	PUMP DRIVE BELT
6280HD-111-2D	DRIVE WHEEL COMPLETE WITH BEARING
6280HD-112	WHEEL SPACER (2)
6280HD-131	ECCENTRIC KEY
6280HD-138	MAIN BOTTOM COVER
6280HD-139	REAR COVER
6280HD-145	FRONT COVER
6280HD-146	FRONT COUNTERWEIGHT
6280HD-146A	ADD-ON FRONT COUNTERWEIGHT
6280HD-150	VALVE BLOCK
6280HD-151	FILTER
6280HD-152	DRAIN TUBE
6280HD-162	HYDRAULIC TANK
6280HD-164	VALVE BLOCK COVER
6280HD-165	WHEEL CLEANER (2)
6280HD-167	HANDLE BODY
6280HD-167C	HANDLE COVER
6280HD-167D	HANDLE CAP
6280HD-180	LOWER MOTOR HOSE
6280HD-181	PUMP HOSE
6280HD-182	UPPER MOTOR HOSE
6280HD-183	PUMP HOSE TO BLOCK HOSE
6280HD-200	MOTOR JUNCTION BOX
6280HD-202	MOTOR CAPACITOR (RUN) (2)
6280HD-203	MOTOR CAPACITOR (START)
6280HD-204	CAPACITOR COVER
6280HD-204A	CAPACITOR COVER GASKET (NOT SHOWN)
6280HD-210	SOLENOID 110 VOLT
6280HD-211	SOLENOID VALVE CARTRIDGE
6280HD-212	SPEED CONTROL CARTRIDGE
6280HD-225	HYDRAULIC MOTOR
6280HD-228	DRIVE CHAIN
6280HD-400	ECCENTRIC
70609	SWITCH CAP (2)
70810	CUTTING HEAD VIBRATION ISOLATOR (9)
71072	1/2" ID BEARING (2)
71115	1 X 2 X ½ BEARING (4)
71118	1" ID FLANGE BEARING
71128	1⅛" BEARING (2)
71129	1.18" ID, 2.44" OD BEARING (2)
71132	1¼" BEARING
71141	1-7/16" ID BEARING
72362	MOTOR 115 VOLT, 1.5 HP
72461	THERMO-OVERLOAD SWITCH
72801	HOSE FITTING (2)
73002	1/4-20 SPLIT WASHER (HANDLE BAR-8, VALVE BLOCK-3, VALVE BLOCK COVER-4)
73003	1/4-20 X 5/8 BUTTON HEAD SCREW
73009	1/4-20 HEX NUT

6280-HD COMPLETE PARTS LIST

PARTS (continued)

PART #	DESCRIPTION
73010	1/4-20 X 1/4 SET SCREW
73012	1/4-20 X 3/8 SET SCREW (AXLE SPROCKET-1, ECCENTRIC-3)
73016	1/4-20 X 5/8 HEXHEAD BOLT (4)
73018	1/4-20 X 3 HEXHEAD BOLT (3)
73019	1/4-20 X 3/4 HEXHEAD BOLT (SIDE WEIGHT-4, HANDLE BAR-8)
73101	1/8 SPACER
73201	3/8-16 X 1 HEXHEAD BOLT, GRADE 5 (BASE PLATE PARTS-4, WHEEL CLEANER-4)
73203	3/8 FLAT WASHER (ADD-ON WEIGHT-(2), SIDE WEIGHT-2, WHEEL CLEANER-4)
73204	3/8 SPLIT WASHER (BASE PLATE PARTS-4, WHEEL CLEANER-4)
73206	3/8-16 X 1-1/4 HEXHEAD BOLT (MOTOR MOUNTING BRACKET-3)
73211	3/8-16 WIZLOCK NUT (BASE PLATE-9, BOTTOM COVER-2)
73215	3/8 EXTERNAL LOCK WASHER
73217	3/8-16 X 3/4 LOWHEAD BOLT (9)
73218	3/8-24 X 3/4 HEXHEAD BOLT, GRADE 5
73219	3/8-16 X 5 HEXHEAD BOLT (4)
73220	3/8-16 X 3 HEXHEAD BOLT (2)
73222	3/8-16 X 1 WIZLOCK BOLT (BASE PLATE-5, INTERNAL PARTS-4)
73223	3/8-16 X 1-1/4 WIZLOCK BOLT
73228	3/8-16 X 8 EYE BOLT (2)
73245	3/8-16 X 1-1/2 WIZLOCK BOLT (2)
73260	3/8 90º CABLE CONNECTOR
73270	3/8 X 3 PIN
73304	5/16 WAVY WASHER (2)
73306	5/16-18 X 1/2 HEXHEAD BOLT (2)
73310	5/16-18 X 7/8 SOCKET HEAD CAP SCREW, RIGHT, GRADE 5 (2)
73311	5/16-18 X 1 SOCKET HEAD CAP SCREW, LEFT, GRADE 5(AXLE BEARING SUPPORT-2, UPPER MAIN BODY-4)
73314	5/16-18 X 3/8 FLAT HEAD CAP SCREW (2)
73318	5/16-18 X 5/8 WIZLOCK BOLT (BOTTOM COVER-6, REAR COVER-2)
73330	5/16 X 2 PIN
73402	1/2-13 NYLOCK NUT (2)
73405	1/2-20 STAR WASHER (9)
73412	1/2-13 X 4-1/2 HEXHEAD BOLT (2)
73418	1/2-20 X 1 HEXHEAD BOLT (9)
74402	10-32 X 3/8 SET SCREW
74508	6-32 X 1/2 PHILLIPS HEAD MACHINE SCREW (10)

ACCESSORIES

PART #	DESCRIPTION
6251	LOADING RAMP
6251-1	REPLACEMENT PINCH POINT GUARD (SET)
6254	50' 12 GAUGE POWER CORD
6280HD-250	TRANSPORT WHEELS
6280-301	REPLACEMENT WHEEL ONLY
7280-2	RETAINER CAP O-RING
7280-2B	STANDARD ANGLE ATTACHMENT, 22 DEGREE
7280-2C	STEEP ANGLE ATTACHMENT, 30 DEGREE
7280-4	RETAINER CAP ASSEMBLY
7280-4A	RETAINER CAP HEXHEAD BOLT
7280-4B	RETAINER CAP ONLY

6280-HD COMPLETE PARTS LIST

ACCESSORIES (continued)

PART #	DESCRIPTION
7280-6	6" CUTTING HEAD
7280-10	10" CUTTING HEAD
7280-12	12" CUTTING HEAD
7280-12RBH	12" RAZOR BLADE CUTTING HEAD
7280-14	14" CUTTING HEAD
73330	SECURING PIN ONLY

BLADES

PART #	DESCRIPTION
130-S	3" X 10" BLADE WITH SLOTS
130-D	3" X 10" DOUBLE EDGE BLADE
131-S	3" X 16" BLADE WITH SLOTS
135	5" X 16" BLADE
136	5" X 8" BLADE
138	5" X 8" BLADE
147	4" X 6" BLADE
147-D	4" X 6" DOUBLE EDGE BLADE
148	5" X 6" BLADE
148-D	5" X 6" DOUBLE EDGE BLADE
368-12	7/8" X 12" RAZOR/SCRAPER BLADE (50/PKG)
6255-BU	4" X 6" SELF SCORING BLADE
6257-BU	3" X 9" SELF SCORING BLADE
6258-BU	3" X 12" SELF SCORING BLADE
6259-BU	3" X 14" SELF SCORING BLADE
6276-BU	3" X 10" SELF SCORING BLADE
6277-BU	3" X 12" SELF SCORING BLADE
6278-BU	3" X 14" SELF SCORING BLADE
6270	1-1/2" X 3" EXTRA HEAVY DUTY BLADE
6271	3" X 6" EXTRA HEAVY DUTY BLADE
6273	3" X 11" EXTRA HEAVY DUTY BLADE
6281	3" X 8" HEAVY DUTY BLADE
6282	3" X 14" HEAVY DUTY BLADE
6284	3" X 12" HEAVY DUTY BLADE
6285	3" X 6" HEAVY DUTY BLADE
6286	3" X 10" HEAVY DUTY BLADE
6290	3" X 6" EXTRA HEAVY DUTY BLADE
6291	3" X 8" EXTRA HEAVY DUTY BLADE
6292	3" X 12" EXTRA HEAVY DUTY BLADE
6293	3" X 14" EXTRA HEAVY DUTY BLADE
7050-200	3" X 6" PREMIUM HIGH TEMP BLADE
7050-201	3" X 8" PREMIUM HIGH TEMP BLADE
7050-202	3" X 10" PREMIUM HIGH TEMP BLADE
7050-203	3" X 12" PREMIUM HIGH TEMP BLADE
7050-204	3" X 14" PREMIUM HIGH TEMP BLADE
7081	3" X 10" INCREASED ANGLE BLADE
7083	3" X 8" INCREASED ANGLE BLADE
7281-2	2" CARBIDE SHANK
7281-4	4" CARBIDE SHANK
7281-6	6" CARBIDE SHANK

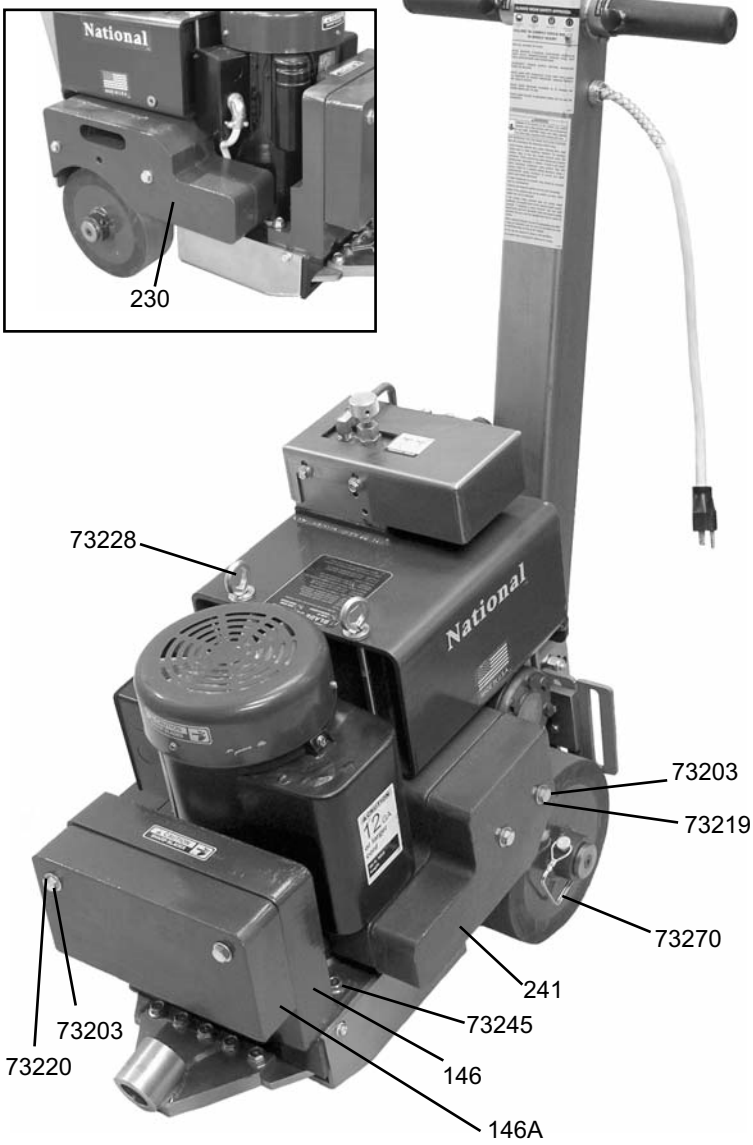
6280-HD COMPLETE PARTS LIST

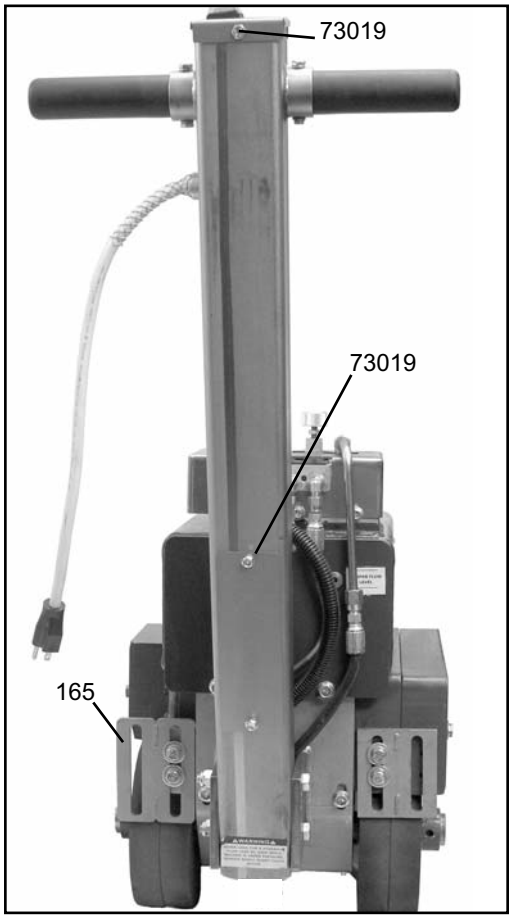
LABELS

PART #	DESCRIPTION
L37	CAUTION SHARP BLADE LABEL
L49	POWER CORD LABEL
L95C	FORWARD LABEL
L95D	REVERSE LABEL
L95E	SPEED CONTROL LABEL
L95F	WARNING FLUID LEAK LABEL
L95G	FLUID LEVEL LABEL
L95H	CAUTION DO NOT RUN LABEL
L95J	110 VOLT LABEL (NOT SHOWN)
L95K	RAMP LABEL (2)
L141	MADE IN USA LABEL
L175	NATIONAL LABEL, SMALL
L177	STOCK NUMBER LABEL
L186	ON/OFF SWITCH LABEL
L187	REMOVE COUNTERWEIGHTS LABEL
L188	CAUTION GENERAL INFO LABEL
L189	ASBESTOS LABEL
L190	BLADE SETTING LABEL
L223	PATENT NUMBER LABEL

6280-HD PART NUMBERS & DIAGRAMS

EXTERNAL PARTS



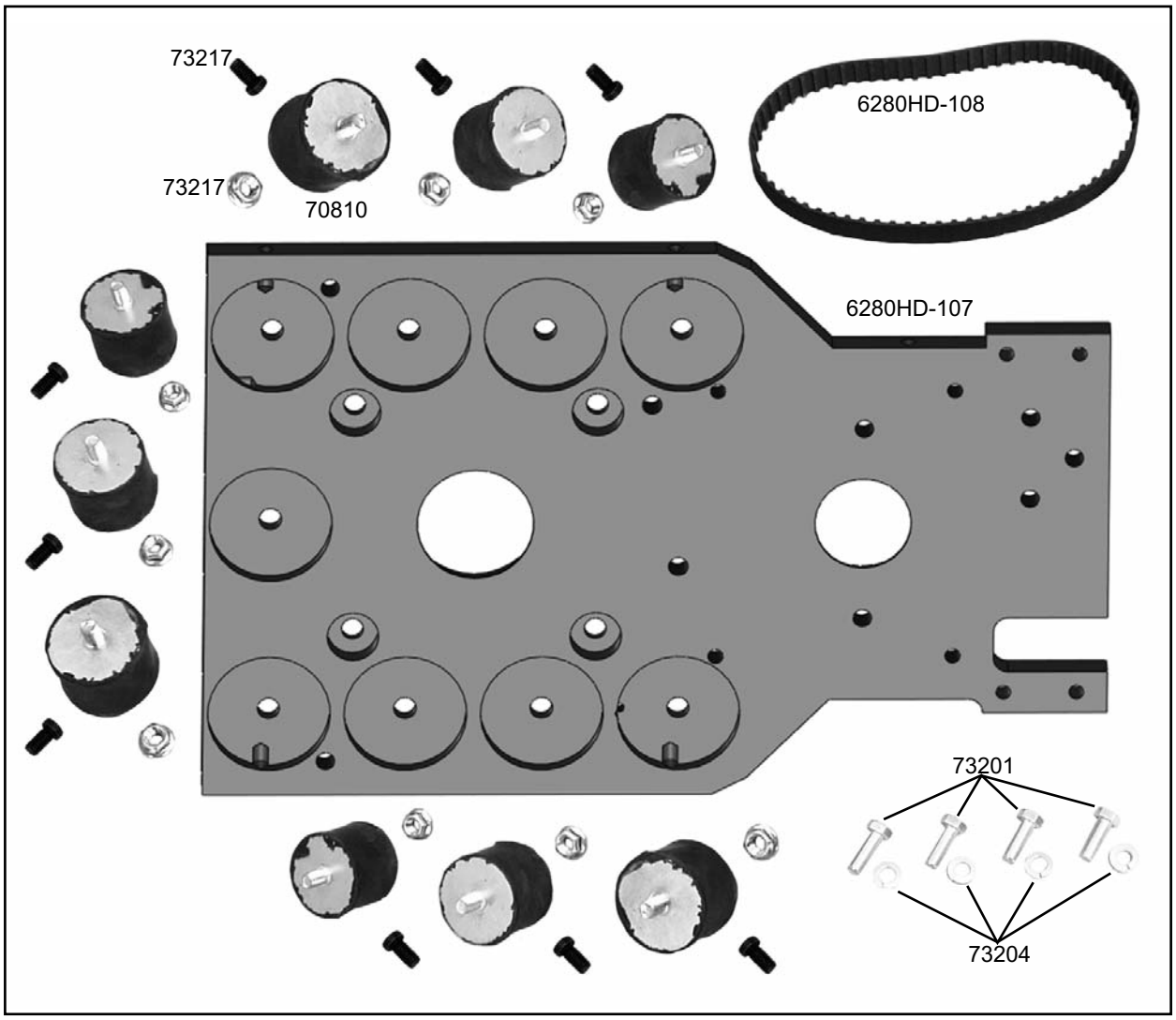


PART #	DESCRIPTION
6280-230	Side Weight, Right (2)
6280-241	Side Weight, Left (2)
6280HD-146	Front Counterweight
6280HD-146A	Add-On Front Counterweight
6280HD-165	Wheel Cleaner

PART #	DESCRIPTION
73019	1/4-20 x 3/4 Hexhead Bolt (4)
73203	3/8 Flat Washer (6)
73219	3/8-16 x 5 Hexhead Bolt (4)
73220	3/8-16 x 3 Hexhead Bolt (2)
73228	3/8-16 x 8 Eye Bolt (2)
73245	3/8-16 x 1-1/2 Wizlock Bolt (2)
73270	3/8 x 3 Pin

6280-HD PART NUMBERS & DIAGRAMS

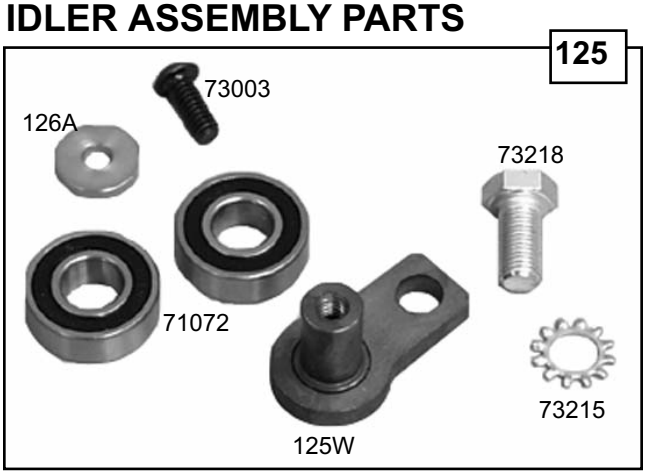
BASE PLATE PARTS



PART #	DESCRIPTION	PART #	DESCRIPTION
6280HD-107	Base Plate	73204	3/8 Split Washer (4)
6280HD-108	Pump Drive Belt	73211	3/8-16 Wizlock Nut (9)
70810	Cutting Head Vibration Isolator (9)	73217	3/8-16 x 3/4 Lowhead Bolt (9)
73201	3/8-16 x 1Hexhead Bolt, Grade 5 (4)		

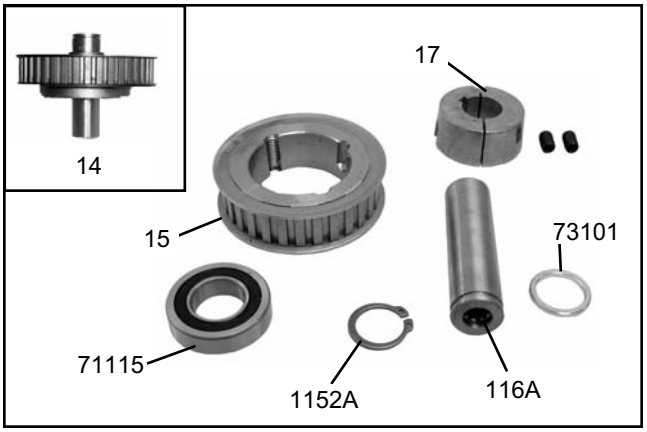
6280-HD PART NUMBERS & DIAGRAMS

IDLER ASSEMBLY PARTS



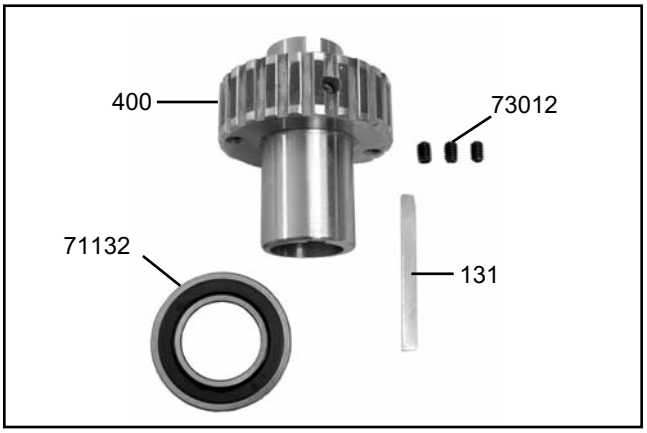
PART #	DESCRIPTION
6280-125	Idler Assembly Complete (includes 125W, 126A, 71072, 73003, 73215, 73218,)
6280-125A	Idler Mounting Bracket & Pin
6280-126A	Idler Bearing Cap
71072	1/2" ID Bearing (2)
73003	1/4-20 x 5/8 Button Head Screw
73215	3/8 External Lock Washer
73218	3/8-24 x 3/4 Hexhead Bolt, Grade 5

PUMP DRIVE ASSEMBLY PARTS



PART #	DESCRIPTION
6280-116A	Pump Shaft Splined
6280-1152A	Pump Shaft Snap Ring
6280HD-14	Pump Drive Assembly
6280HD-15	Pump Sheave Only
6280HD-17	Pump Sheave Retainer w/ Set Screws
71115	1 x 2 x ½ Bearing
73101	1/8 Spacer

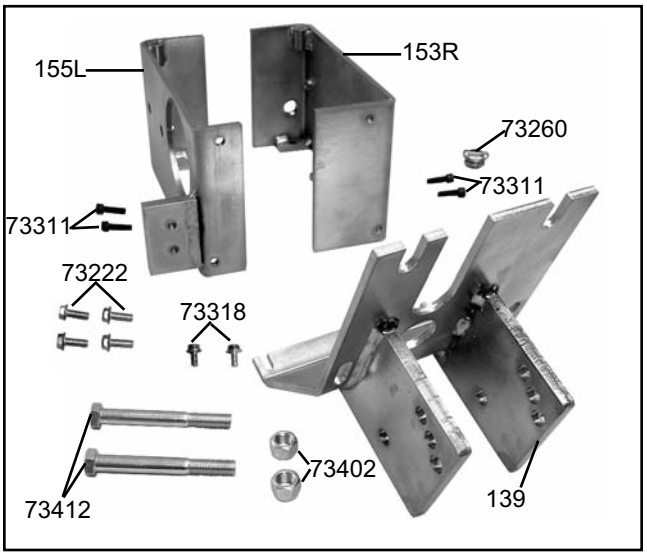
ECCENTRIC ASSEMBLY PARTS



PART #	DESCRIPTION
6280HD-131	Eccentric Key
6280HD-400	Eccentric
71132	1¼" Bearing
73012	1/4-20 x 3/8 Set Screw (3)

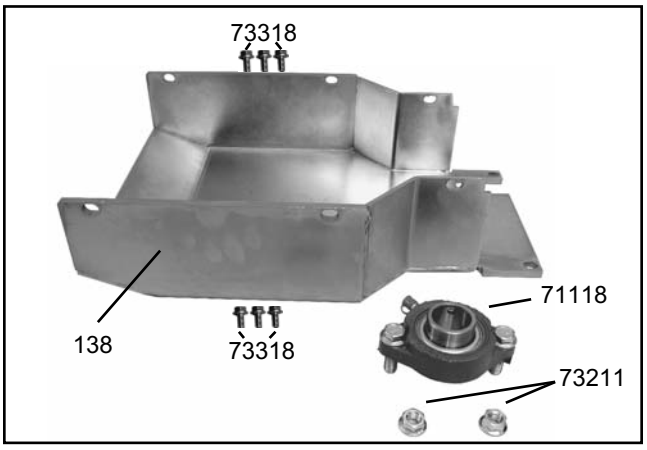
6280-HD PART NUMBERS & DIAGRAMS

BODY PARTS



PART #	DESCRIPTION
6280-153R	Right Upper Main Body
6280-155L	Left Upper Main Body
6280HD-139	Rear Cover
73222	3/8-16 x 1 Wizlock Bolt (Tank) (4)
73260	3/8 90° Cable Connector
73311	5/16-18 x 1 Socket Head Cap Screw (4)
73318	5/16-18 x 5/8 Wizlock Bolt (Rear Cover-2)
73402	1/2-13 Nylock Nut (2)
73412	1/2-13 x 4-1/2 Hexhead Bolt (2)

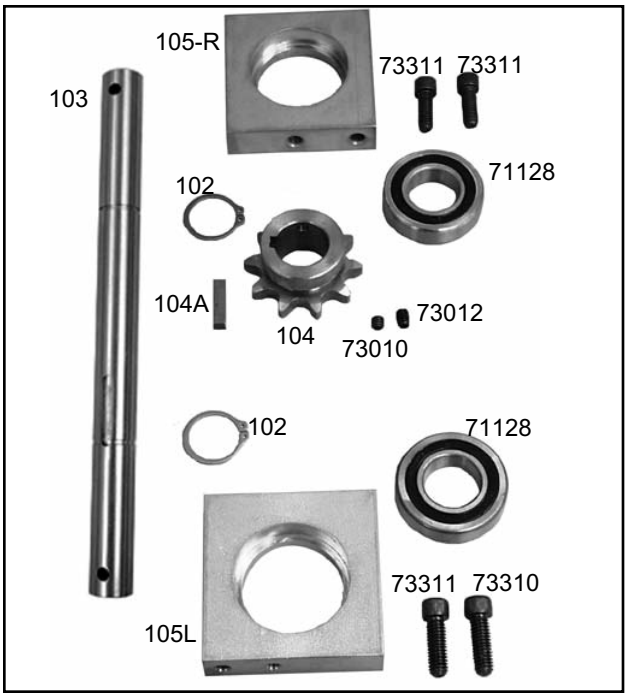
BOTTOM COVER PARTS



PART #	DESCRIPTION
6280HD-138	Main Bottom Cover
71118	1" ID Flange Bearing
73211	3/8-16 Wizlock Nut (2)
73318	5/16-18 x 5/8 Wizlock Bolt (Bottom Cover-6)

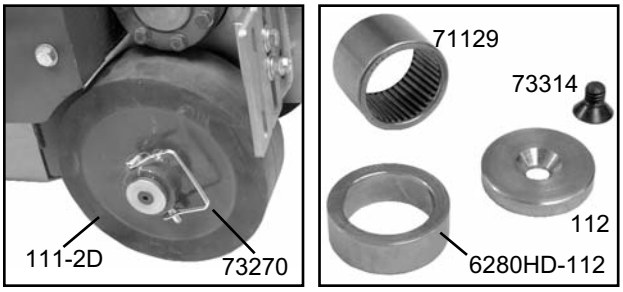
6280-HD PART NUMBERS & DIAGRAMS

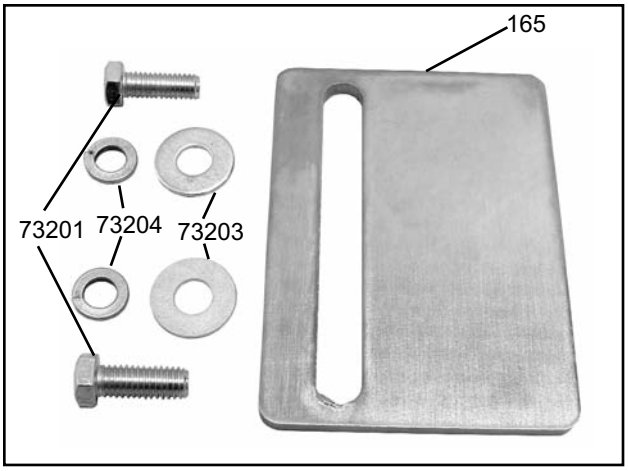
AXLE ASSEMBLY PARTS



PART #	DESCRIPTION
6280-104A	Axle Sprocket Key
6280HD-102	Axle Snap Ring 1-1/8 (2)
6280HD-103	Drive Axle
6280HD-104	Axle Sprocket only (key sold separately)
6280HD-105L	Axle Bearing Support, Left
6280HD-105R	Axle Bearing Support, Right
71128	1⅛" Bearing (2)
73010	1/4-20 x 1/4 Set Screw
73012	1/4-20 x 3/8 Set Screw
73310	5/16-18 x 7/8 Socket Head Cap Screw, Right, Grade 5 (2)
73311	5/16-18 x 1 Socket Head Cap Screw, Left, Grade 5 (2)

WHEEL PARTS

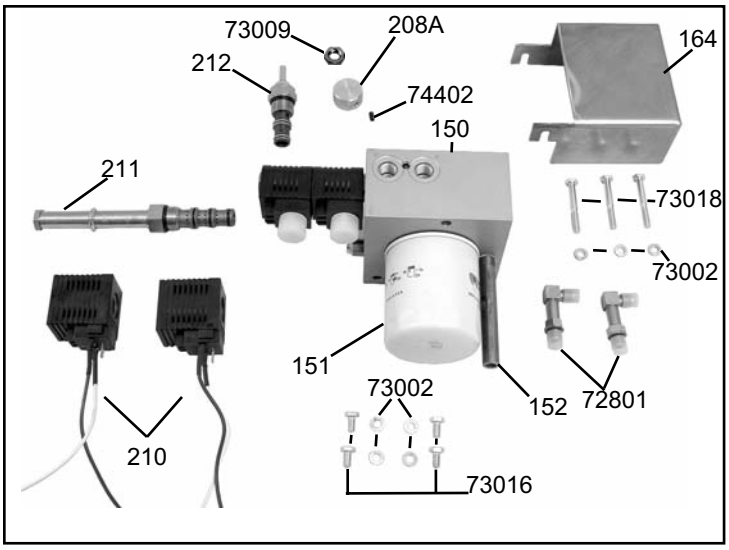




PART #	DESCRIPTION
6280-112	Wheel Cap (2)
6280HD-111-2D	Drive Wheel Complete w/ Bearing
6280HD-112	Wheel Spacer (2)
6280HD-165	Wheel Cleaner (2)
71129	1.18" ID, 2.44" OD Bearing (2)
73201	3/8-16 x 1 Hexhead Bolt, Grade 5 (4)
73203	3/8 Flat Washer (4)
73204	3/8 Split Washer (4)
73270	3/8 x 3 Pin
73314	5/16-18 x 3/8 Flat Head Cap Screw (2)

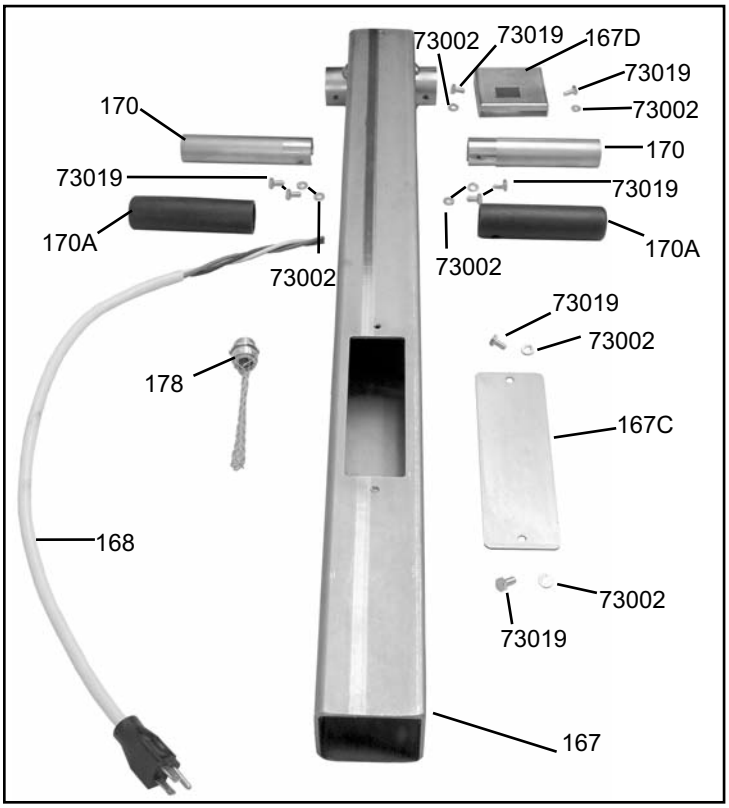
6280-HD PART NUMBERS & DIAGRAMS

INTERNAL HANDLE PARTS



PART #	DESCRIPTION
6280-208A	Speed Control Knob Only
6280HD-150	Valve Block
6280HD-151	Filter
6280HD-152	Drain Tube
6280HD-164	Valve Block Cover
6280HD-210	Solenoid-110Volt
6280HD-211	Solenoid Valve Cartridge
6280HD-212	Speed Control Cartridge
72801	Hose Fittings (2)
73002	1/4-20 Split Washer (7)
73009	1/4-20 Hex Nut
73016	1/4-20 x 5/8 Hexhead Bolt (4)
73018	1/4-20 x 3 Hexhead Bolt (3)
74402	10-32 x 3/8 Set Screw

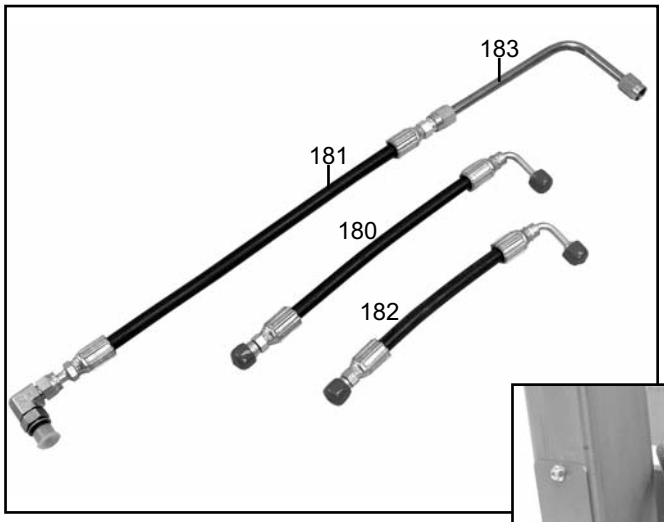
HANDLE PARTS



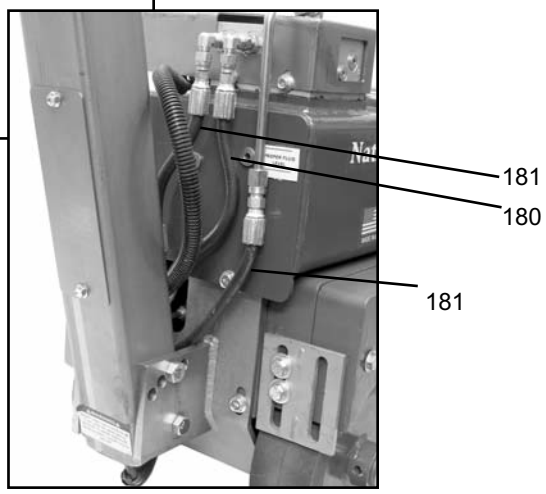
PART #	DESCRIPTION
6280-168	Power Cord
6280-170	Handle Bar (2)
6280-170A	Handle Bar Grips (2)
6280-178	Power Cord Strain Relief
6280HD-167	Handle Body
6280HD-167C	Handle Cover
6280HD-167D	Handle Cap
73002	1/4-20 Split Washer (8)
73019	1/4-20 x 3/4 Hexhead Bolt (8)

6280-HD PART NUMBERS & DIAGRAMS

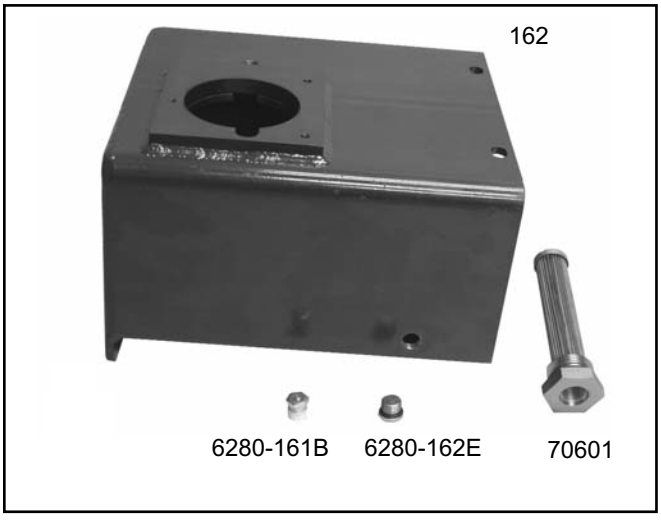
HOSE PARTS



PART #	DESCRIPTION
6280HD-180	Lower Motor Hose
6280HD-181	Pump Hose
6280HD-182	Upper Motor Hose
6280HD-183	Pump Hose to Block Hose



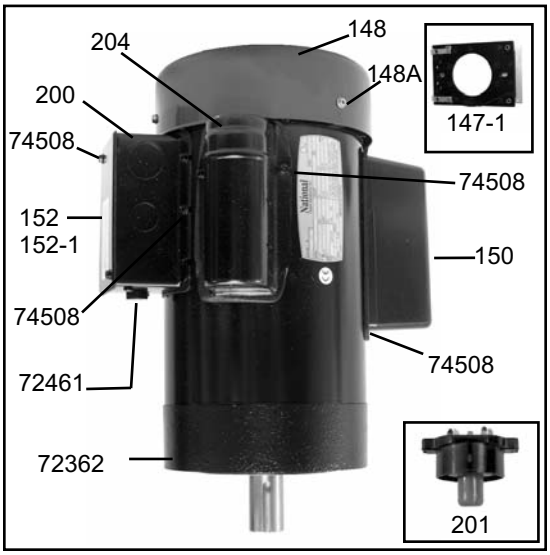
TANK PARTS

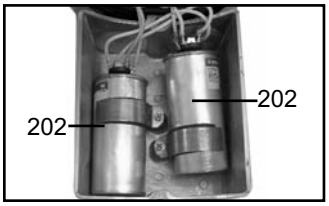


PART #	DESCRIPTION
6280-161B	Filler Cap Vent Plug Only
6280HD-162	Hydraulic Tank
70601	Tank Mounted Strainer

6280-HD PART NUMBERS & DIAGRAMS

MOTOR PARTS



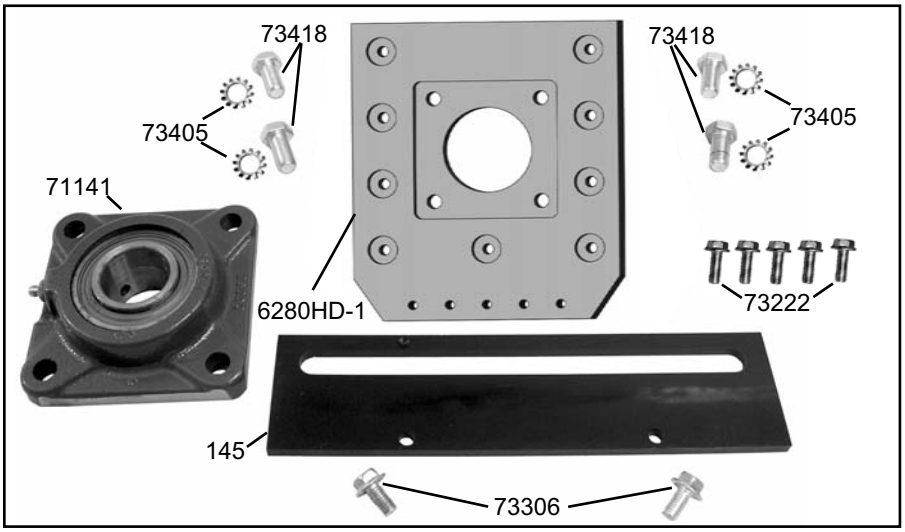


PART #	DESCRIPTION
6280-147-1	Starter Switch
6280-148	Motor Fan Cover
6280-148A	Motor Fan Cover Screw (3)
6280-149	Motor Fan (Not Shown)
6280-150	Capacitor Cover
6280-152	Motor Junction Box Only (Not Shown)
6280-152-1	Motor Junction Box Cover Only
6280-152-3	Motor Junction Box Cover Gasket Only (Not Shown)

PART #	DESCRIPTION
6280-152-4	Motor Junction Box Gasket (Not Shown)
6280HD-200	Motor Junction Box
6280HD-202	Motor Capacitor (Run) (2)
6280HD-203	Motor Capacitor (Start)
6280HD-204	Capacitor Cover
6280HD-204A	Capacitor Cover Gasket (Not Shown)
72362	Motor 115 Volt, 1.5 HP
72461	Thermo-Overload Switch
74508	6-32 x 1/2 Phillips Head Machine Screw (10)

6280-HD PART NUMBERS & DIAGRAMS

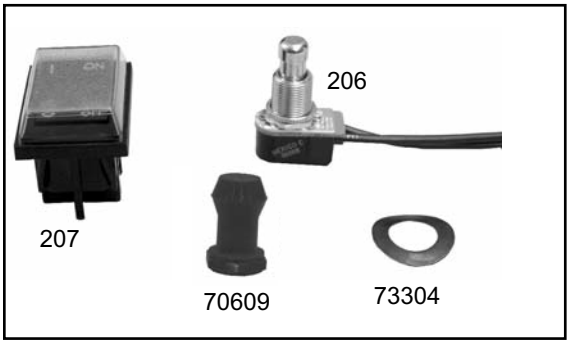
CUTTING HEAD PARTS



PART #	DESCRIPTION
6280HD-1	Cutting Head Base Plate
6280HD-145	Front Cover
71141	1-7/16" ID Bearing
73222	3/8-16 x 1 Wizlock Bolt (5) (Base Plate)

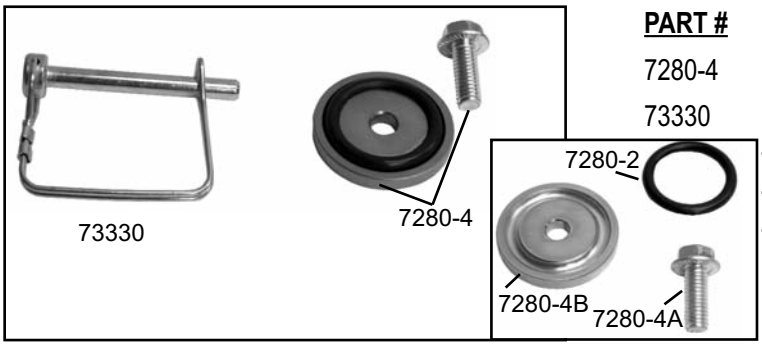
PART #	DESCRIPTION
73306	5/16-18 x 1/2 Hexhead Bolt (2)
73405	1/2-20 Star Washer (9)
73418	1/2-20 x 1 Hexhead Bolt (9)

SWITCH PARTS



PART #	DESCRIPTION
6280-206	Forward/Reverse Switch (2)
6280-207	On/Off Switch
70609	Switch Cap (2)
73304	5/16 Wavy Washer (2)

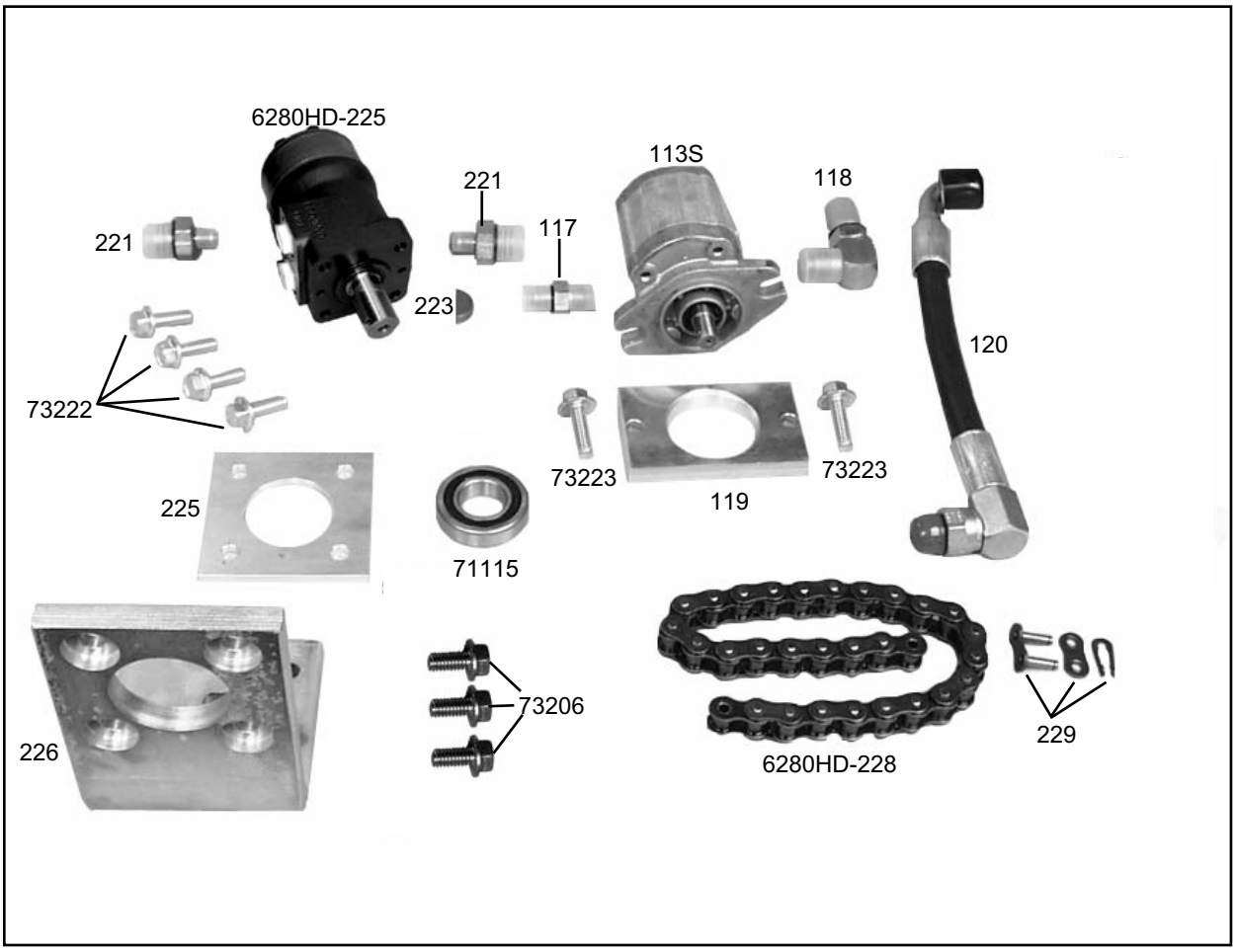
HEAD SECURING PARTS



PART #	DESCRIPTION
7280-4	Retainer Cap Assembly
73330	5/16 x 2 Pin
7280-2	Retainer Cap O-Ring
7280-4A	Retainer Cap Hexhead Bolt
7280-4B	Retainer Cap Only

6280-HD PART NUMBERS & DIAGRAMS

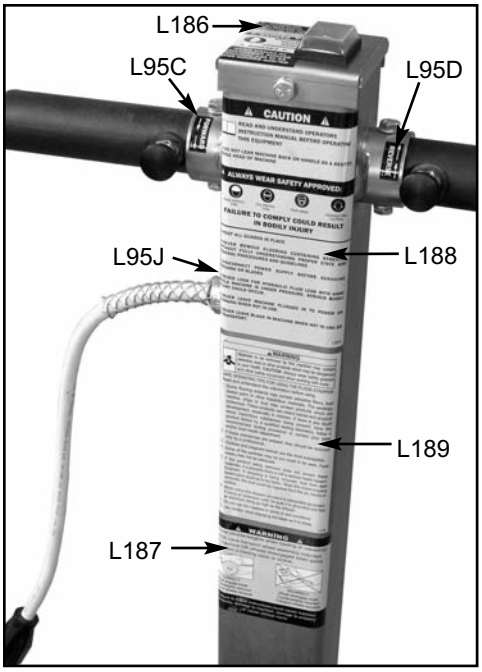
INTERNAL PARTS

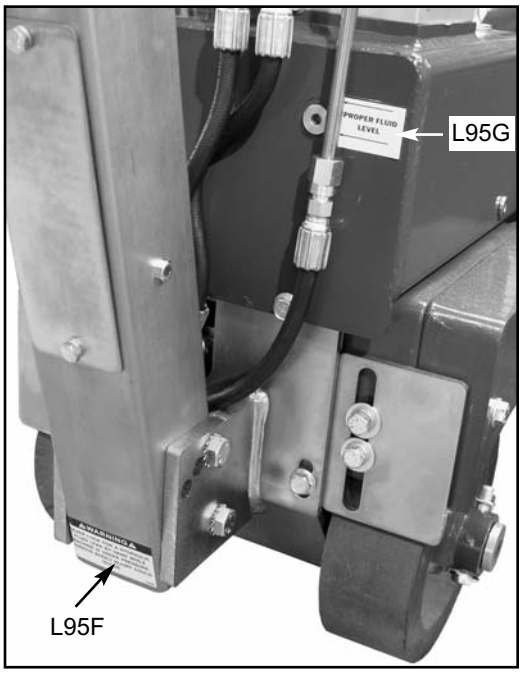


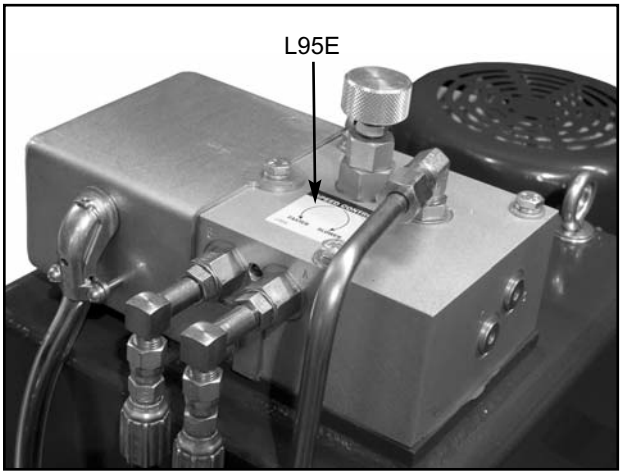
PART #	DESCRIPTION
6280-113S	Pump Splined
6280-113-1	Seal Kit (Not Shown)
6280-117	Pressure Hose to Pump Connector
6280-118	Suction Hose to Pump Connector
6280-119	Pump Spacer
6280-120	Suction Hose
6280-221	Hydraulic Motor Connector (2)
6280-223	Hydraulic Motor Shaft Key

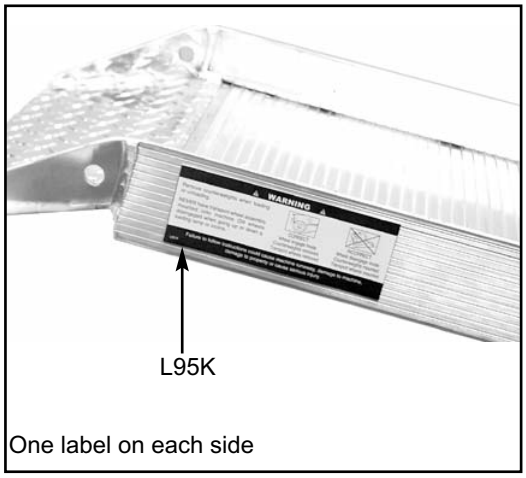
PART #	DESCRIPTION
6280-225	Hydraulic Motor Spacer
6280-226	Hydraulic Motor Mounting Bracket
6280-229	Drive Chain Master Link Assembly
6280HD-225	Hydraulic Motor
6280HD-228	Drive Chain
71115	1 x 2 x 1/2 Bearing
73206	3/8-16 x 1-1/4 Wizlock Bolt (3)
73222	3/8-16 x 1 Wizlock Bolt (4)
73223	3/8-16 x 1-1/4 Wizlock Bolt (2)

6280-HD LABELS





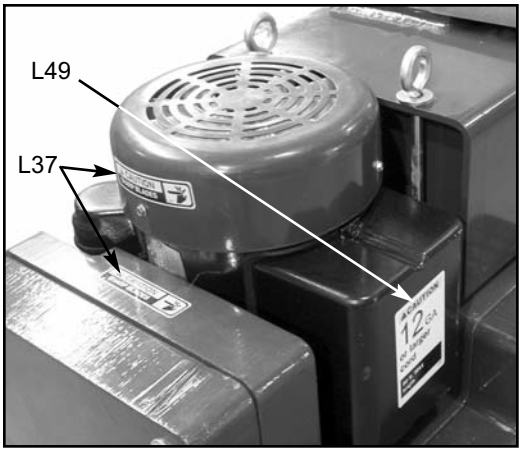


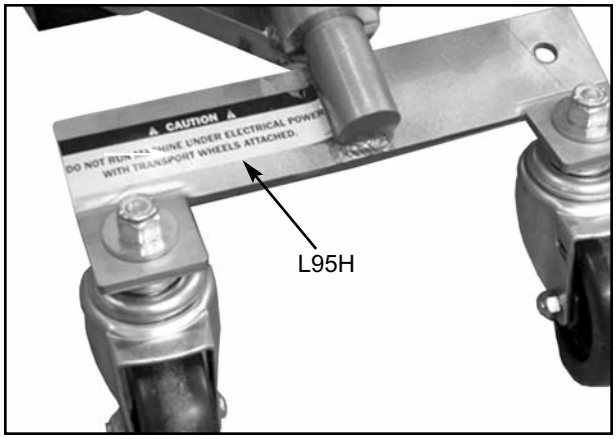


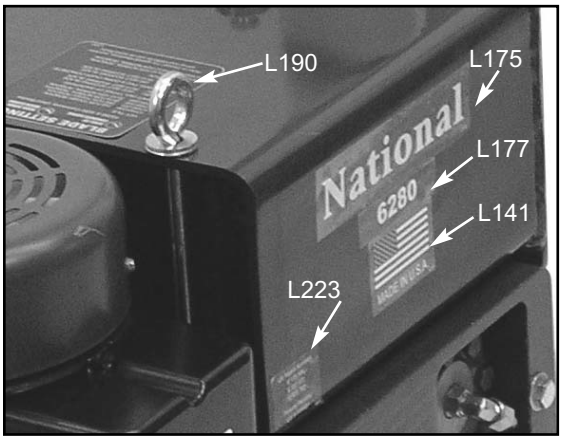
PART #	DESCRIPTION
L95C	Forward Label
L95D	Reverse Label
L95E	Speed Control Label
L95F	Warning Fluid Leak Label
L95G	Fluid Level Label
L95J	110 Volt Label (Not Shown)
L95K	Ramp Label (2)

PART #	DESCRIPTION
L186	On/Off Switch Label
L187	Remove Counterweights Label
L188	Caution General Info Label
L189	Asbestos Label

6280-HD LABELS







PART #	DESCRIPTION
L37	Caution Sharp Blade Label (2)
L49	Power Cord Label
L95H	Caution Do Not Run Label
L141	Made In USA Label

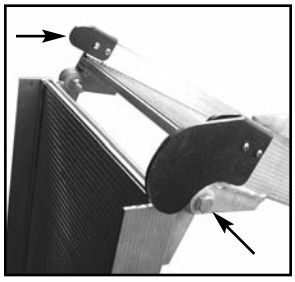
PART #	DESCRIPTION
L175	National Label, Small
L177	Stock Number Label (2)
L190	Blade Setting Label
L223	Patent Number Label

6280-HD ACCESSORIES

#6251 LOADING RAMP

Durable light weight construction. Folds for easy transportation and storage.

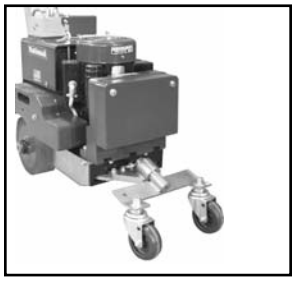
#6251-1	Replacement Pinch Point Guard (Set)

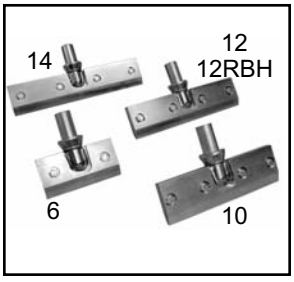


#6280HD-250 TRANSPORT WHEELS

Allows stability and safe transportation over any surface. Easy and quick to attach.

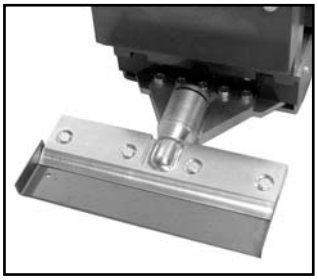
#6280-301	Replacement Wheel Only
#73330	Securing Pin Only

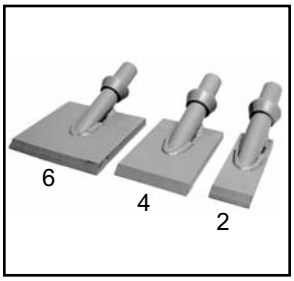




#7280 CUTTING HEADS

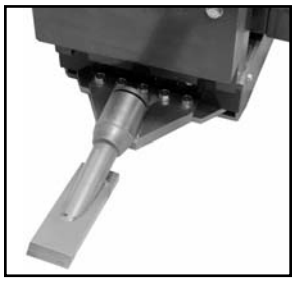
7280-4	Retainer Cap Assembly
7280-6	6" Cutting Head
7280-10	10" Cutting Head
7280-12	12" Cutting Head
7280-12RBH	12" Razor Blade Cutting Head
7280-14	14" Cutting Head

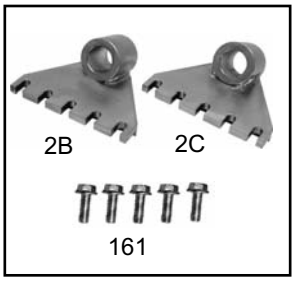




#7281 CERAMIC BITS

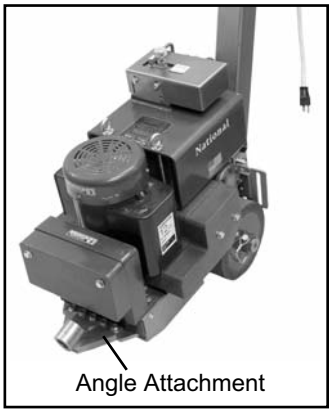
7280-4	Retainer Cap Assembly
7281-2	2" Carbide Bit
7281-4	4" Carbide Bit
7281-6	6" Carbide Bit





#7280 ANGLE ATTACHMENTS

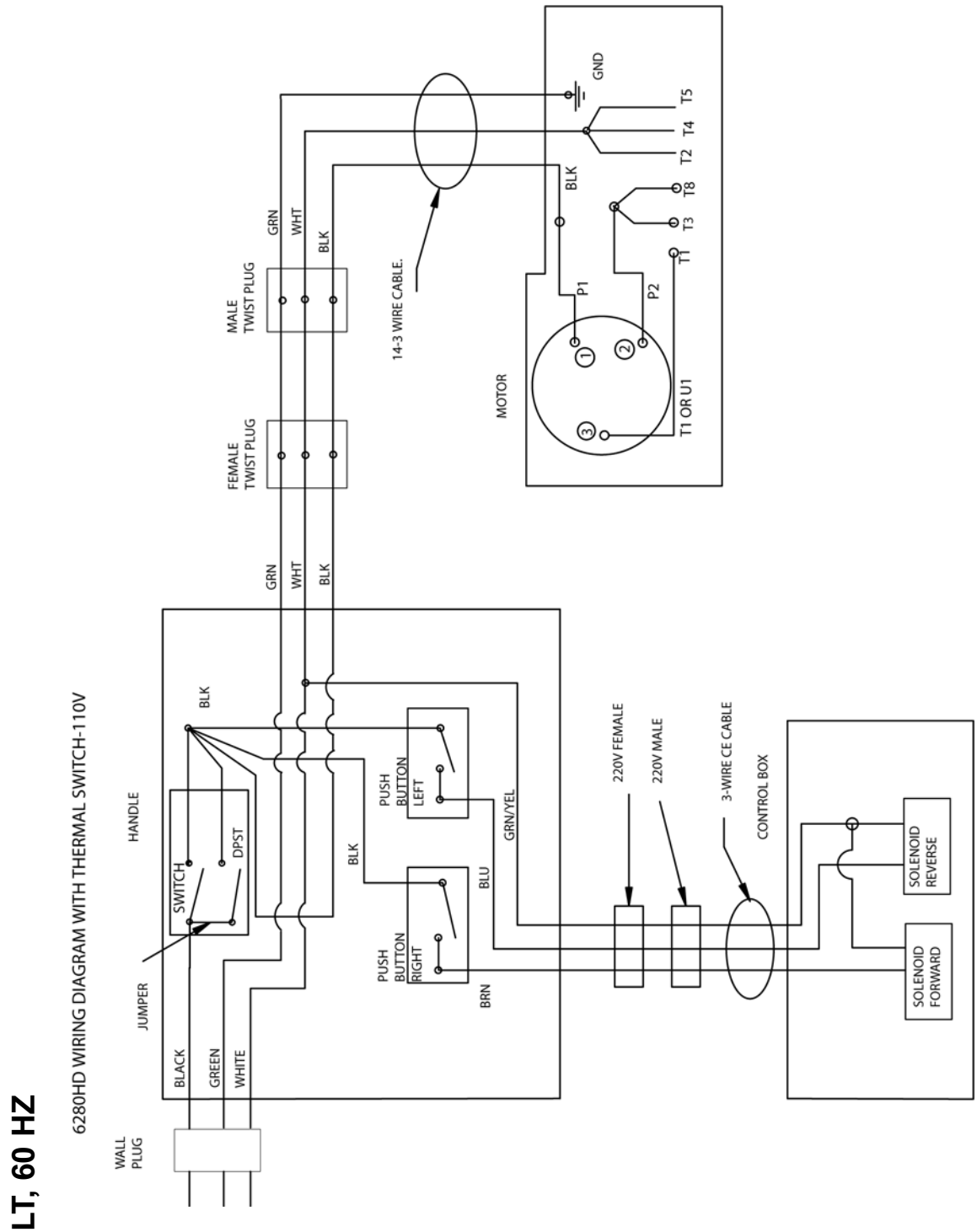
7280-2B	Standard Angle Attachment 22 Degree
7280-2C	Steep Angle Attachment 30 Degree
6280HD-161	Mounting 3/8-16 x 1 Bolt (5)



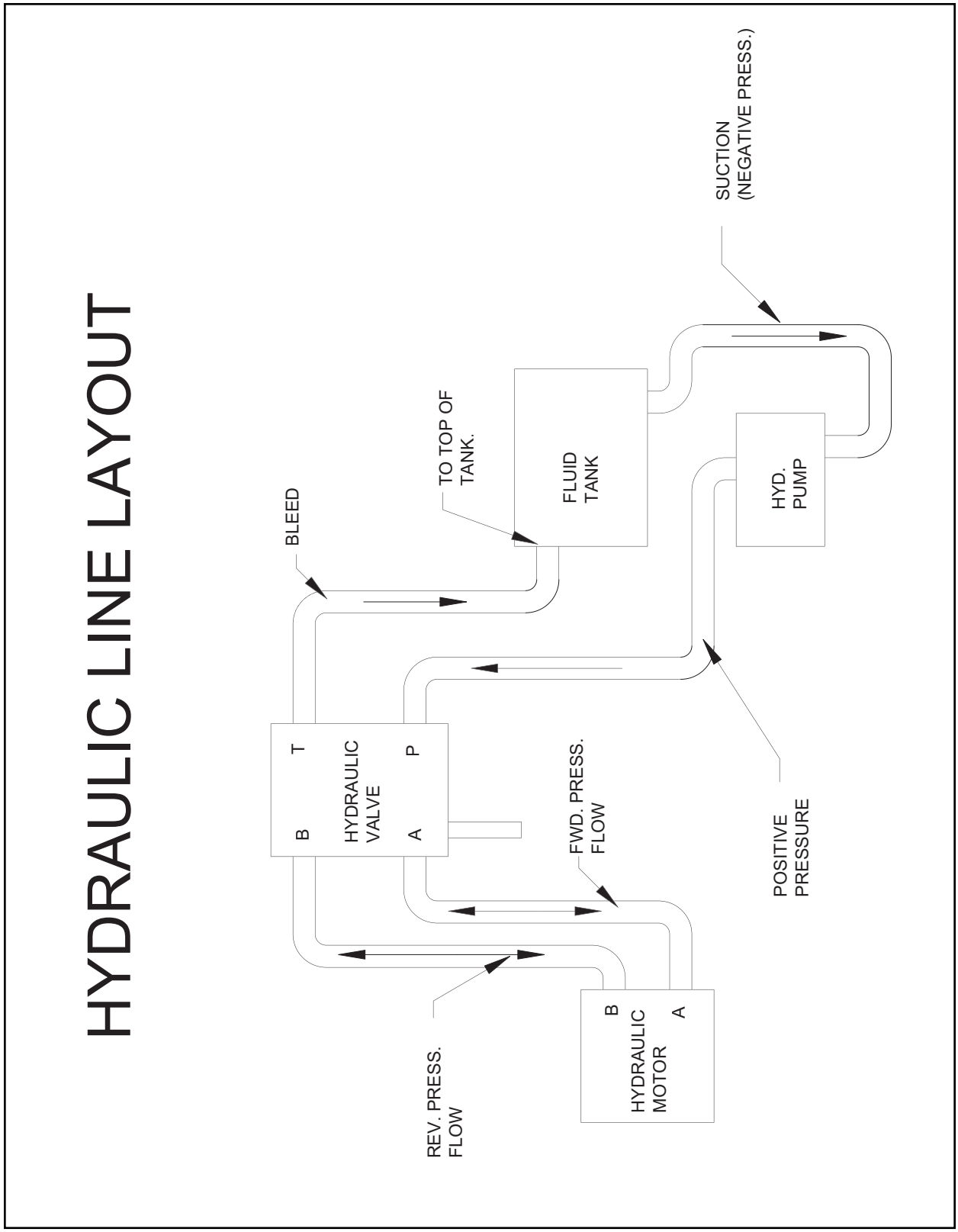
#6254 50' POWER CORD

12 Gauge Power Cord

110 VOLT WIRING DIAGRAM



6280-HD HYDRAULIC LINE LAYOUT



Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Texaco Rando® HD 22 - 68

Product Number(s): CPS221655, CPS221657, CPS221658, CPS221659
Synonyms: Texaco Rando® HD 22, Texaco Rando® HD 32, Texaco Rando® HD 46, Texaco Rando® HD 68
Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Road
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
email : lubemsds@chevron.com
Product Information: 800-LUBE-TEK
MSDS Requests: 800-414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	90 - 100 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.
Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: (Cleveland Open Cup) 150 °C (302 °F) (Min)
Autoignition: No Data Available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO_2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
Respiratory Protection: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Yellow
Physical State: Liquid
Odor: Petroleum odor

pH: Not Applicable
Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1
Boiling Point: >315.6°C (600°F)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 0.86 - 0.87 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)
Density: 0.86 kg/l - 0.9 kg/l @ 15°C (59°F)
Viscosity: 22 cSt - 61.2 cSt @ 40°C (104°F) (Min)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.
Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.
Skin Sensitization: No product toxicology data available.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE
This material is not expected to be readily biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR
Additional Information:NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: NO
2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: NO
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required.

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Hydraulic oil)

WHMIS CLASSIFICATION:
This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:
Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 2.
Revision Date: January 15, 2007

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

6280-HD GUARANTEE

National Flooring Equipment, Inc. (National) warrants to the first consumer/purchaser that this National brand product (the #6280-HD Heavy Duty Panther® Self-Propelled Stripper), when shipped in its original container, will be free from defective workmanship and materials and agrees that it will, at its option, either repair the defect or replace the defective product or part thereof at no charge to the purchaser for parts or labor for the period(s) set forth below.

This warranty does not apply to any appearance items of the product, to the additional excluded items set forth below, or to any product, the exterior of which has been damaged or defaced, which has been subjected to misuse, abnormal service or handling, or which has been altered or modified in design or construction.

In order to enforce the rights under this limited warranty, the purchaser should follow the steps set forth below and provide proof of purchase to National.

The limited warranty described herein is in addition to whatever implied warranties may be granted to purchasers by law. ALL IMPLIED WARRANTIES INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE PERIODS FROM THE DATE OF PURCHASE AS SET FORTH BELOW. Some states do not allow time limitations on an implied warranty, so the above limitation may not apply to you.

Neither the sales person of the seller, nor any other person, is authorized to make any other warranties other than those described herein, or to extend the duration of any warranties beyond the time period described herein on behalf of National.

The warranties described herein shall be the sole and exclusive warranties granted by National and shall be the sole and exclusive remedy available to the purchaser. Correction of defects in the manner and for the period of time described herein, shall constitute complete fulfillment of all liabilities and responsibilities of National to the purchaser with respect to the product and shall constitute full satisfaction of all claims, whether based on contract, negligence, strict liability or otherwise. In no event shall National be liable, or in any way responsible for any damage or defects in the product which were caused by repairs or attempted repairs performed by anyone other than National. Nor shall National be liable, or in any way responsible, for any incidental or consequential, economics or property damage. Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

WARRANTY PERIOD

The #6280-HD Heavy Duty Panther® Self-Propelled Stripper is guaranteed to be free of manufacturer defective workmanship and in quality of materials for a period of one year.

Items excluded from warranty coverage, unless found and reported defective immediately upon removal from the original shipping container and before being used by the original purchaser.

A freight damage claim must be filed with the carrier by the purchaser, the shipper cannot file the freight claim.

To obtain service contact National Flooring Equipment, Inc. toll free at 800-245-0267 for a repair authorization number. COD freight returns will not be accepted. Freight collect shipments will not be accepted. Warranty repairs must be accompanied by date of purchase receipt and a return/repair authorization number.

6280-HD RETURN SHEET

Company Name _____

Contact Name _____

Telephone Number _____

Approximate Usage (hours) _____

Problems Encountered _____

_____

_____

_____

_____

Check One: ❑ Repair

Do you wish to be contacted before repairing ❑ Yes ❑ No

❑ Return

Contact National if a loaner is needed

Return Authorization Number _____ Date _____

required, contact National

Customer Number _____

if known

Purchased From _____

if not directly from National

INTERNAL USE ONLY

Date Received _____

Unit Serial Number _____

Subject To Warranty _____

6280-HD BLADE ORDER FORM

Part #	Description	Thickness	Quantity
#130-S	3" x 10" Blade with Slots	.062	
#130-D	3" x 10" Double Edge Blade	.062	
#131-S	3" x 16" Blade with Slots	.062	
#135	5" x 16" Blade	.062	
#136	5" x 8" Blade	.062	
#147	4" x 6" Blade	.062	
#147-D	4" x 6" Double Edge Blade	.062	
#148	5" x 6" Blade	.062	
#148-D	5" x 6" Double Edge Blade	.062	
#368-12	7/8" x 12" Razor/Scraper Blade (50/pkg)	.045	
#6255-BU	4" x 6" Self Scoring Blade	.062	
#6257-BU	3" x 9" Self Scoring Blade	.062	
#6258-BU	3" x 12" Self Scoring Blade	.062	
#6259-BU	3" x 14" Self Scoring Blade	.062	
#6276-BU	3" x 10" Self Scoring Blade	.094	
#6277-BU	3" x 12" Self Scoring Blade	.094	
#6278-BU	3" x 14" Self Scoring Blade	.094	
#6270	1-1/2" x 3" Extra Heavy Duty Blade	.250	
#6271	3" x 6" Extra Heavy Duty Blade	.250	
#6273	3" x 11" Extra Heavy Duty Blade	.250	
#6280-500	Swivel Head Attachment		
#6281	3" x 8" Heavy Duty Blade	.094	
#6282	3" x 14" 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	.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	
#7050-200	3" x 6" Premium High Temp Blade	.062	
#7050-201	3" x 8" Premium High Temp Blade	.062	
#7050-202	3" x 10" Premium High Temp Blade	.062	
#7050-203	3" x 12" Premium High Temp Blade	.062	
#7050-204	3" x 14" Premium High Temp Blade	.062	
#7081	3" x 10" Increased Angle Blade	.062	
#7083	3" x 8" Increased Angle Blade	.062	

BILL TO:
Attn:_____
Company:_____
Address:_____
_____
_____
Phone:_____

SHIP TO:
Attn:_____
Company:_____
Address:_____
_____
_____
Phone:_____

TO ORDER:
Phone: 800-245-0267 or
763-535-8206
Fax: 800-648-7124 or
763-535-8255
Online:www.nationalequipment.com

All orders and payment terms to be verified prior to shipping.

National Flooring Equipment, Inc. • 9250 Xylon Avenue North • Minneapolis, MN 55445
Phone 800-245-0267 or 763-535-8206 • Fax 800-648-7124 or 763-535-8255
Web Site: www.nationalequipment.com • E-Mail: info@nationalequipment.com