



MK EQUIPMENT CORPORATION

INSTRUCTION MANUAL

#6280 HYDRAULIC PANTHER

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 strain 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 130°), 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.

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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

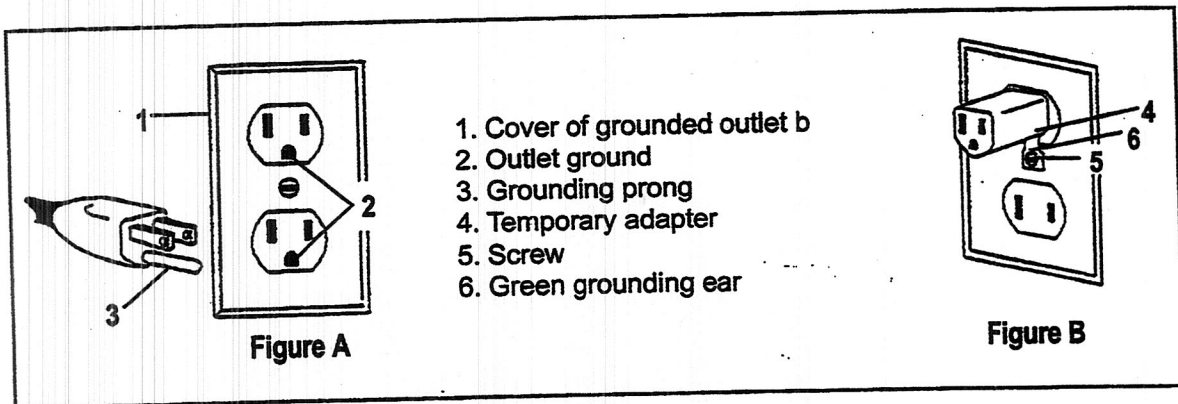
15. **KEEP HANDS AWAY FROM ALL CUTTING EDGES AND MOVING PARTS.**
 16. **WEAR GLOVES WHEN CHANGING BLADES.**
 17. **DO NOT ABUSE CORD:** Never unplug by yanking the cord from the outlet. Pull plug rather than cord to reduce the risk of damage. Keep the cord away from heat, oil, sharp objects, cutting 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.

6280-HD RULES FOR SAFE OPERATION

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.



GROUNDING 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.

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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 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.

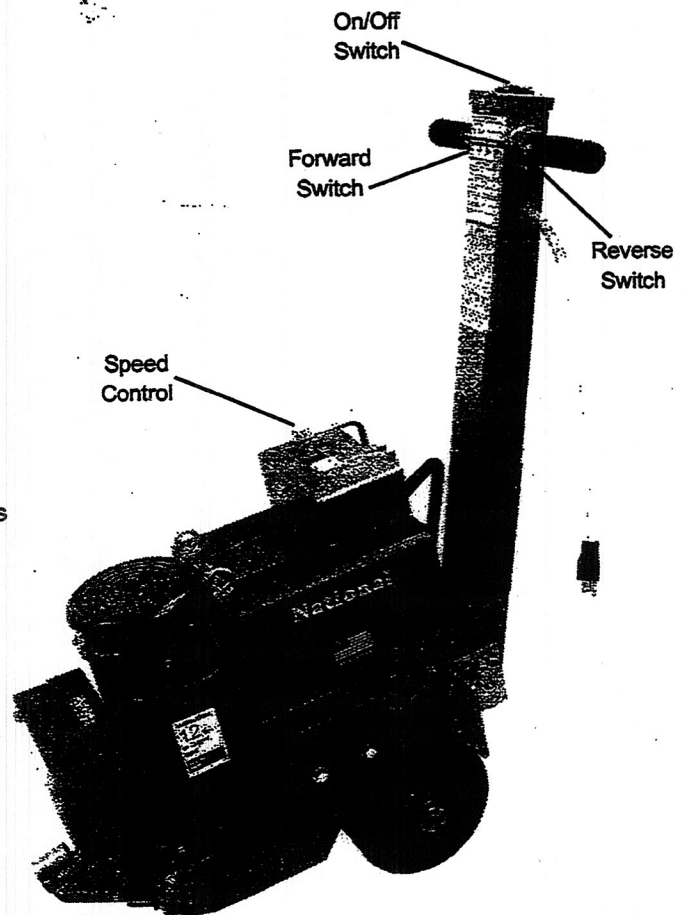
MACHINE START UP PROCEDURE

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.



6280-HD GENERAL OPERATION

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.

6280-HD GENERAL OPERATION

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.