



SUBMERSIBLE SUMP PUMPS

Owner's Manual



50110



50131

! WARNING: Read carefully and understand all ASSEMBLY AND OPERATION INSTRUCTIONS before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

Item #50110 & #50131

SAVE THESE INSTRUCTIONS

Thank you very much for choosing a Powerhorse product!

For future reference, please complete the owner's record below:

Serial Number/Lot Date Code: _____

Purchase Date: _____

Save the receipt, warranty, and this manual. It is important that you read the entire manual to become familiar with this product before you begin using it.

These pumps are designed for certain applications only. Northern Tool and Equipment cannot be responsible for issues arising from modification or use of these products in applications for which they were not designed. We strongly recommend that these products not be modified and/or used for any application other than that for which they were designed.

For technical questions, please call **1-800-222-5381**.

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Intended Use

This sump pump can be used to drain rain water, infiltration water, domestic waste water or to remove water from flooded rooms. The pump can be completely or partially submersed and used to transfer clean or moderately dirty fluids.

Technical Specifications

50110, 1/3 HP Pump

Property	Specification
Voltage	115VAC,60HZ
Motor	1/3 HP
Amperage	5.5A
Max. Head (ft.)	20Ft
Max. Flow Rate (GPH)	3600GPH
Weight	24 lbs.

50131, 3/4 HP Pump

Property	Specification
Voltage	115VAC, 60HZ
Motor	3/4 HP
Amperage	8.5A
Max. Head (ft.)	27.5Ft
Max. Flow Rate (GPH)	4200GPH
Weight	26 lbs.

Important Safety Information

⚠ WARNING

- Read and understand all instructions. Failure to follow all instructions may result in serious injury.
- The warnings, cautions, and instructions in this manual cannot cover all possible conditions or situations that could occur. Exercise common sense and caution when using this tool. Always be aware of the environment and ensure that the tool is used in a safe and responsible manner.
- DO NOT allow persons to operate or assemble this product until they have read this manual and have developed a thorough understanding of how the product works.
- DO NOT modify the product in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the product. There are specific applications for which the product was designed.
- Use the right tool for the job. DO NOT attempt to force a small equipment to do the work of larger industrial equipment. There are certain applications for which this equipment was designed. It will do the job better and more safely at the capacity for which it was intended. DO NOT use this equipment for a purpose for which it was not intended.
- Industrial or commercial applications must follow OSHA requirements.

⚠ WARNING

- This product may contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

⚠ WARNING

WORK AREA SAFETY

- Inspect the work area before each use. Keep work area clean, dry, free of clutter, and well lit. Cluttered, wet, or dark work areas can result in injury. Using the product in confined work areas may put you dangerously close to other cutting tools and rotating parts.
- Do not use the product where there is a risk of causing a fire or an explosion; e.g., in the presence of flammable liquids, gases, or dust. The product can create sparks, which may ignite the flammable liquids, gases, or dust.
- Do not allow the product to come into contact with an electrical source. The tool is not insulated and contact will cause electrical shock.
- Keep children and bystanders away from the work area while operating the tool. Do not allow children to handle the product.
- Be aware of all power lines, electrical circuits, water pipes, and other mechanical hazards in your work area. Some of these hazards may be hidden from your view and may cause personal injury and/or property damage if contacted.

⚠ WARNING

PERSONAL SAFETY

- Stay alert, watch what you are doing, and use common sense when operating the tool. Do not use the tool while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating the tool may result in serious personal injury.
- Dress properly. Do not wear loose clothing, dangling objects, or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts. Air vents on the tool often cover moving parts and should be avoided.
- Wear the proper personal protective equipment when necessary. Wear ANSI Z87.1 compliant safety goggles or safety glasses with side shields, or when needed, a face shield. Use a dust mask in dusty work conditions. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate. This applies to all persons in the work area.
- Do not overreach. Keep proper footing and balance at all times.
- Do not use the tool when tired or under the influence of drugs, alcohol or medication.
- Ensure the power switch is off prior to plugging in the tool.
- Remove keys or wrenches before connecting the tool to an air supply, power supply, or turning on the tool. A wrench or key that is left attached to a rotating part of the tool may cause personal injury.
- Secure the work with clamps or a vise instead of your hand when practical. This safety precaution allows for proper tool operation using both hands.

⚠ WARNING

ELECTRICAL SAFETY

- Grounded tools must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. If the tools should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.
- Double insulated tools are equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way. Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.
- Do not allow the product to come into contact with an electrical source. The tool is not insulated and contact will cause electrical shock.
- Avoid body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators. There is an increased risk of electric shock if your body is grounded.
- Do not abuse the power cord. Never use the power cord to carry the pump or pull the plug from an outlet. Keep the power cord away from heat, oil, sharp edges, or moving parts. Replace damaged power cords immediately. Damaged power cords increase the risk of electric shock.
- When operating a power tool outside, use an outdoor extension cords marked "W-A" or "W". These extension cords are rated for outdoor use, and reduce the risk of electric shock.

⚠ CAUTION

PUMP USE AND CARE

- Do not force the pump. Pumps do a better and safer job when used in the manner for which they are designed. Plan your work, and use the correct product for the job.
- Check for damaged parts before each use. Carefully check that the pump will operate properly and perform its intended function. Replace damaged or worn parts immediately. Never operate the pump with a damaged part.
- Do not use a pump with a malfunctioning switch. Any pump that cannot be controlled with the power switch is dangerous and must be repaired by an authorized service representative before using.
- Disconnect the power/air supply from the pump and place the switch in the locked or off position before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.
- Store the pump when it is not in use. Store it in a dry, secure place out of the reach of children. Inspect the tool for good working condition prior to storage and before re-use.
- Use only accessories that are recommended by the manufacturer for use with your pump. Accessories that may be suitable for one product may create a risk of injury when used with another tool. Never use an accessory that has a lower operating speed or operating pressure than the tool itself.
- Keep guards in place and in working order. Never operate the product without the guards in place.

Specific Operation Warnings

⚠ WARNING

- Wear ANSI Z87.1 compliant goggles.
- DO NOT start pump or run pump dry. Prime pump before each use.
- Do not submerge pump in water. For indoor use only.
- Pump clean water only. DO NOT use for salt water, brine, laundry discharge or any application that may contain foreign materials and/or caustic chemicals.
- Never pump gasoline or flammable liquids with this product.
- Do not operate pump where flammable or explosive fumes or gases are present. Explosion, fire, or serious injury may result.
- Do not use this product to pump chemicals or corrosive liquids, damage to seals and moving parts will result.
- Do not run the pump with the outlet closed or blocked. The excessive pressure will cause the pump to explode and cause injury or death.
- Before using any pump, check for alignment and binding of moving parts; any broken parts or mounting fixtures; and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician.
- Do not pump water that is hotter than 95 F.
- Electrical connections must be moved to higher ground where there is a risk of flooding.
- Unplug before servicing and when changing accessories.
- When servicing, use only identical replacement parts. Only use accessories intended for use with this pump. Approved accessories are available.
- Do not let water inside pump freeze or let frost build up on pump.
- No alterations shall be made to this product.
- Do not use in swimming pools or marine areas.
- Not for use by or around children.

ELECTRIC SHOCK HAZARD

- Always connect this product to a grounded outlet equipped with a ground fault circuit interruption device (GFCI).
- Before installing this product, have a licensed or certified electrician inspect the outlet to be sure the outlet is correctly grounded. (DO NOT remove ground pin on cord).
- Do not remove or modify the round ground prong on the power cord plug or use an adapter (cheater plug) that eliminates the ground prong. A shock hazard is created and serious injury can result.
- DO NOT plug in power cord when wet or while standing on damp/wet ground.
- Do not use an extension cord with this product.
- Always keep one hand free when plugging this product into an electrical power cord.
- DO NOT operate if power cord or electrical components are damaged or seals are compromised.
- DO NOT attempt to service or open this product while it is connected to an electrical power supply.
- DO NOT lift this product by the electrical power cord.

Grounding

⚠ WARNING

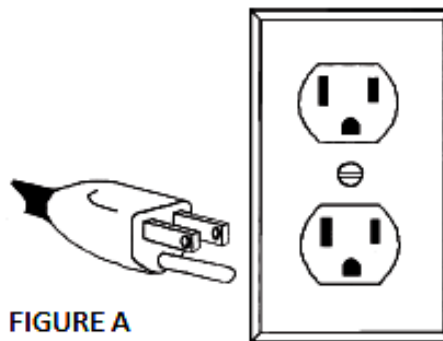
- The pump must be grounded while in use to protect the operator from electrical shock. It is equipped with an electric cord that has an equipment-grounding conductor and a grounding plug. The plug **MUST** be plugged into a matching receptacle that is properly installed and grounded in accordance with ALL local codes and ordinances.
- **DO NOT MODIFY THE PLUG PROVIDED.** If it will not fit the receptacle, have the proper receptacle installed by a qualified electrician.
- **CHECK** with a qualified electrician or service person if you do not completely understand the grounding instructions, or if you are not sure the tool is properly grounded.

Grounded Tools: Tools with 3-Prong Plugs

Tools marked with **Grounding Required** have a 3-wire cord and 3-prong grounding plug. The plug must be connected to a properly grounded outlet. 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. (See Figure A.)

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 the following illustration.



Installation

Before the first installation of the pump, make sure all the parts are present. Compare the contents of the shipping crate with the packing list. If any part is missing or damaged, do not install the pump. If any parts are missing or damaged, contact customer service for replacement parts (see the Replacement Parts section in this manual for the phone number).

Tools Required:

- Pipe wrench, Strap Wrench, or Slip-Joint Pliers,
- Hacksaw,
- Screw Driver,
- File or Sandpaper
- Materials Required:
- 1-1/2 " ABS or PVC Pipe with Cement to match
- Threaded Adapter (Pipe to Pump)
- Check Valve: Purchase a check valve for the pump discharge piping

⚠ CAUTION

- Never lift the pump by the power cord.

Installation Instructions

- 1A. Minimum sump size: 12" (305mm) diameter by 12" (305mm) depth for vertical switch models; 18" (457mm) diameter by 18" (457mm) depth for tethered switch models. (See Figure 1.)
- 1B. Construct the sump pit of tile, concrete, steel, or plastic; it must meet local codes.
- 1C. Make certain that no clay, earth, sand, or gravel are in the sump (they will clog the pump). Keep the pump inlet screen clear.

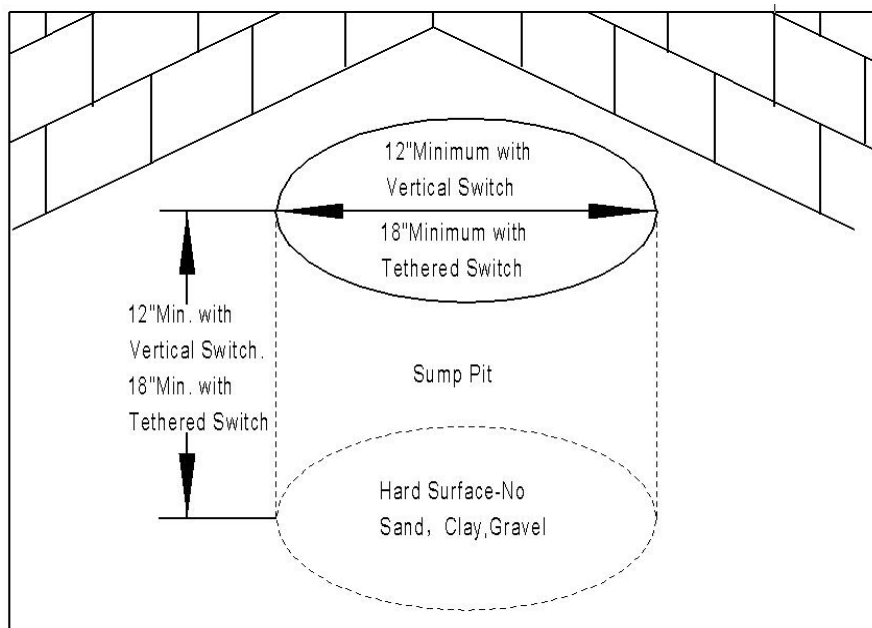


Figure 1

- 2A. Install the discharge plumbing and a check valve using Teflon tape-NOT pipe joint cement. Install the check valve in the vertical discharge pipe to prevent flow backwards through the pump when it shuts off. If the check valve does not have a 1/8 " anti-airlock hole, drill one in the discharge pipe just below the valve. Be sure to install the check valve so that the flow will be away from the pump (an arrow on the valve side will show the flow direction). (See Figure 2.)
- 2B. Tighten the pipe into the pump (hand tight + 1-1/2 turns).
- 2C. To prevent air locking the pump (a restriction of, or complete stoppage of liquid flow caused by gas trapped in a high point of a liquid-filled pipe system), drill a 1/8" (3.2mm) hole in the discharge pipe just above where it screws into the pump discharge. Install the check valve above this hole, but keep it as close to the pump as possible. Be sure the hole is below the waterline and below the check valve.
- 2D. To reduce noise and vibration cut the discharge pipe near the pump and fasten a short length of rubber hose (1-7/8" (48mm) I.D., e.g. radiator hose) into it with hose clamps.

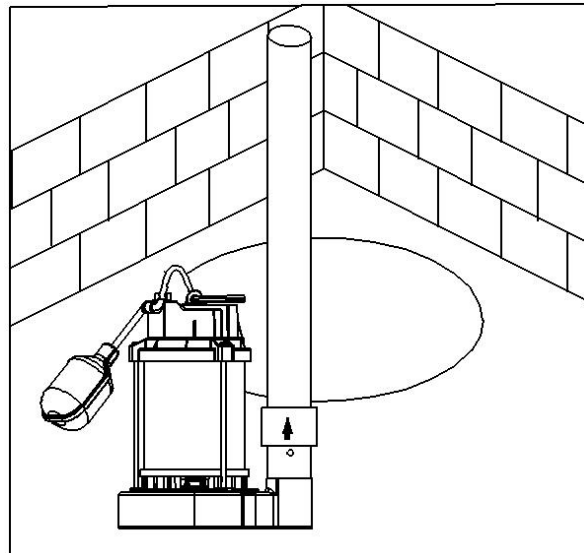


Figure 2

3. Place the pump in the sump; make sure that nothing interferes with switch operation. (See Figure3). **CAUTION:** Make sure the pump cannot move in the sump. If the pump moves when it runs, the piping or sump wall may interfere with the switch and prevent the pump from starting or stopping causing a risk of flooding.

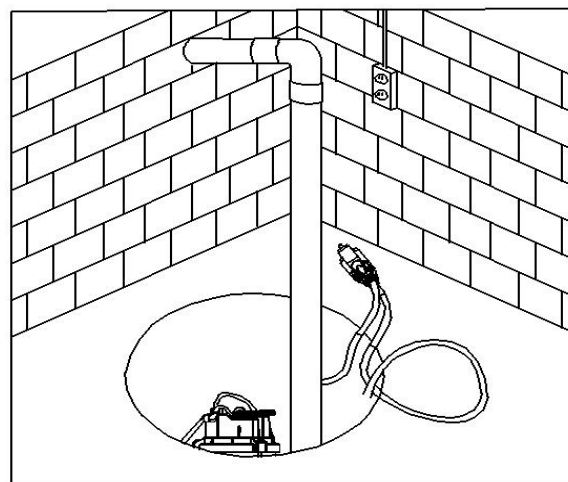


Figure 3

4. Finish installing the necessary plumbing. Follow the pipe glue manufacturer's instructions for safety precautions and curing time.
- 5A. Power Supply: This pump requires a 115V, 60Hz, 15 amp individual branch circuit. The circuit must be grounded and should be dedicated to the sump pump.
- 5B. The pump is supplied with a 3-wire cord set with grounding- type plug. Insert the switch plug directly into the outlet then insert the pump plug into the back of the switch plug. (See Figure 4.)

CAUTION: To avoid the risk of electrical shock, always ground the pump to a suitable electrical ground, such as a grounded metal water pipe, a properly grounded metallic raceway, or a ground wire system. Do not cut off the round ground pin from the pump or switch plugs.

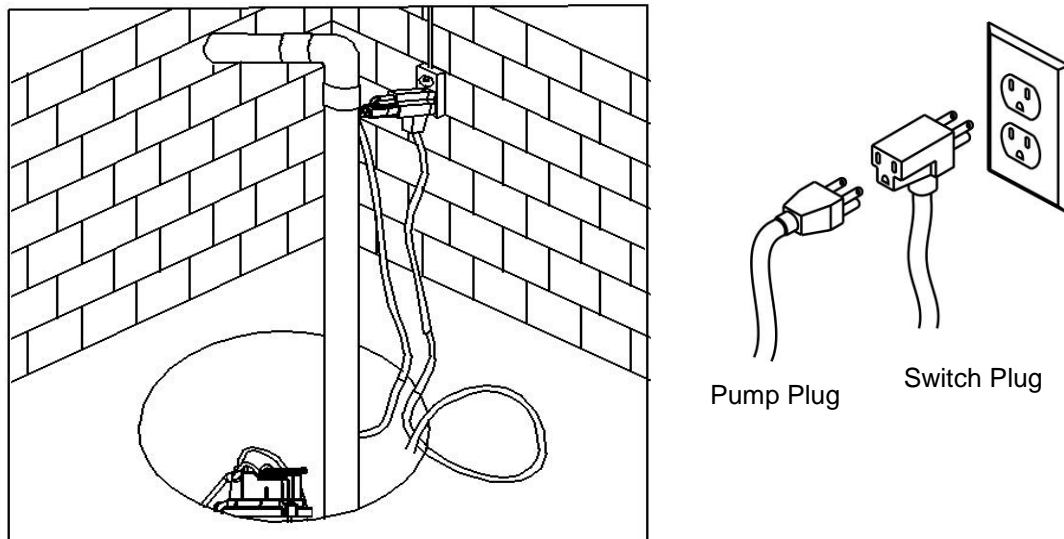


Figure 4

6. Check pump operation by filling the sump with water and observing the pump's operation through one complete cycle. **CAUTION:** Failure to make this operational check may lead to improper operation, premature failure, and flooding.

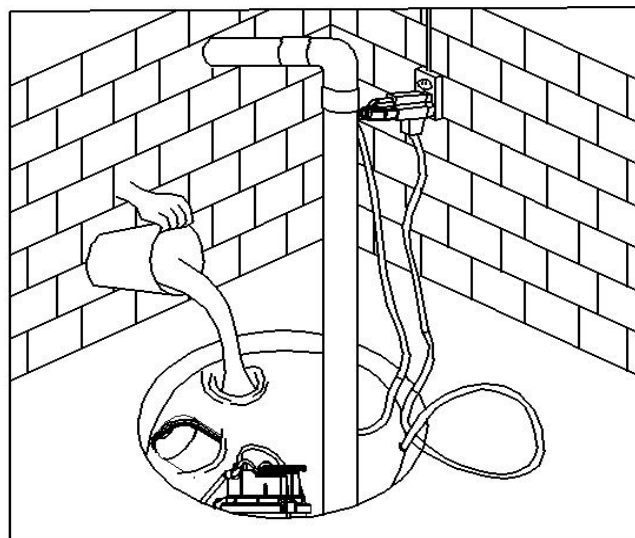


Figure 5

Before Each Use

⚠ WARNING

- Inspect the work area before each use. Keep work area clean, dry, free of clutter, and well lit. Cluttered, wet, or dark work areas can result in injury. Using the tool in confined work areas may put you dangerously close to other cutting tools and rotating parts.
- Check for damaged parts before each use. Carefully check that the pump will operate properly and perform its intended function. Replace damaged or worn parts immediately. Never operate the pump with a damaged part.
- Do not use the pump where there is a risk of causing a fire or an explosion; e.g., in the presence of flammable liquids, gases, or dust. The tool can create sparks, which may ignite the dust or fumes.
- Keep children and bystanders away from the work area while operating the pump. Do not allow children to handle the pump.
- Be aware of all power lines, electrical circuits, water pipes, and other mechanical hazards in your work area. Some of these hazards may be below the work surface hidden from your view and may cause personal harm or property damage if unintentionally contacted.

Operating Instructions

⚠ WARNING

- Stay alert, watch what you are doing, and use common sense when operating the pump. Do not use the pump while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating the pump may result in serious personal injury.
- Use ANSI-approved safety goggles or safety glasses with side shields, or when needed, a face shield. Also use non-skid safety shoes, gloves, and hearing protection when appropriate.
- Do not place the pump in water while it is connected to electric power and do not plug the pump in to an electric socket with wet hands.
- This pump is designed for use with clean water only. It cannot be used with sea water, dirty or gritty water, or flammable, corrosive, explosive or dangerous liquids. Dirty water or sand will damage the pump. If the water is dirty, use a filter on the inlet.
- Do not use in the presence of flammable or explosive vapors. Using this pump with or near flammable liquids or vapors can cause an explosion or fire, resulting in property damage, serious personal injury and/or death.
- NEVER allow the pump to run dry.
- **Always make sure the pump is unplugged before the supply water level gets below the suction line inlet.** At water levels below the inlet, the pump may begin to pump air and be EXTREMELY LOUD, which will cause the pump to overheat and burn out. Running the pump without sufficient water will damage it.
- The pump housing may be HOT while operating and can cause serious skin burns. To avoid burns, unplug the pump and allow time for it to cool after periods of extended use.

1. Make sure there is ample water for the pump.
2. If not already connected to power, insert the switch plug into a 115 volt GFCI power outlet (for automatic operation) and the pump plug into the back for the switch plug. For manual operation insert only the pump plug directly in the outlet. The pump will start operating.

Note: The motor is equipped with an automatically resetting thermal overload protector. If the motor overheats, the pump shuts off. Then when it cools sufficiently, the overload protector resets and the motor restarts.

If the overload protector stops the pump repeatedly, disconnect the power from the pump and after the pump cooling down, check to find the problem. Low voltage, a long extension cord, clogged impeller, screen blocked by debris, or water that is too hot can cause the motor to overheat.

⚠ WARNING

If the pump is operating and suddenly no water comes out of the discharge hose, shut off the unit immediately! The inlet screen may be blocked by debris. Check for the cause and correct it before attempting to restart the pump.

After Use

Before moving the pump after use, unplug it then allow time for it to cool because it will be HOT. Drain the pump housing.

CAUTION

- Never lift the pump by the power cord.

Store the pump when it will not be used for a long time. Store it in a dry, secure place out of the reach of children. Make sure the stored pump is protected from frost and freezing. Inspect the pump for good working condition prior to storage and again before re-use.

Maintenance

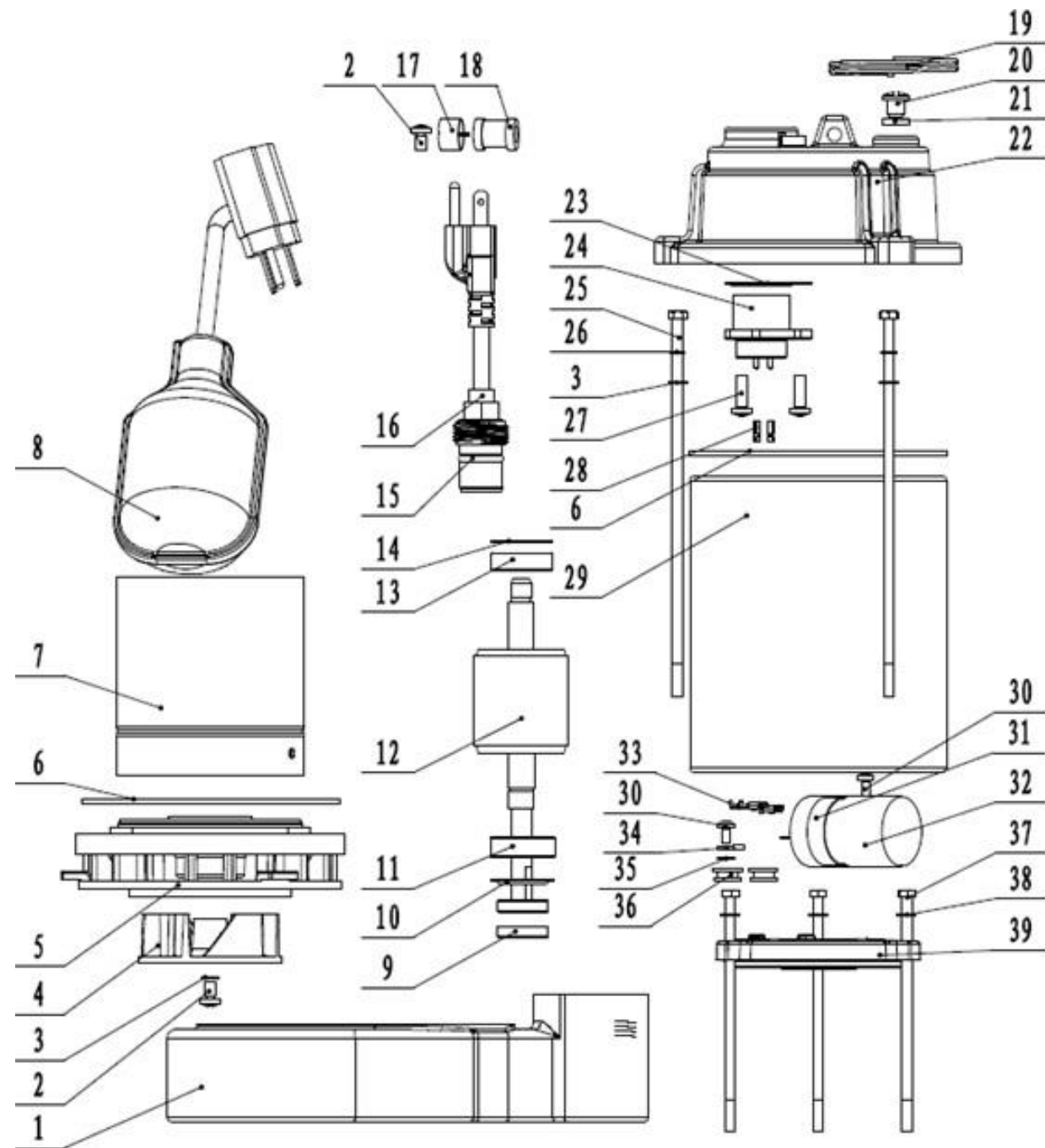
Maintain your tool. It is recommended that the general condition of any tool be examined before it is used. Keep your tool in good repair by adopting a program of conscientious repair and maintenance in accordance with recommended procedures.

WARNING

- Before inspection, always unplug the pump from power and allow it to cool.
- This pump must be monitored frequently (at least once a month, possibly more frequently if used in water that is full of debris). If the pump becomes overly clogged with debris (leaves, sticks, mud, etc.), excess pressure could cause the motor seal to weaken and water could come in contact with the electric motor. If a proper GFCL outlet is not being used, hazardous shock could occur. NEVER STAND IN WATER WITH A RUNNING OR ELECTRICALLY-CONNECTED PUMP!
- Do not disassemble the motor housing. This pump has NO repairable internal parts, and disassembling may cause an oil leak or dangerous electrical wiring issues.

Use only identical replacement parts.

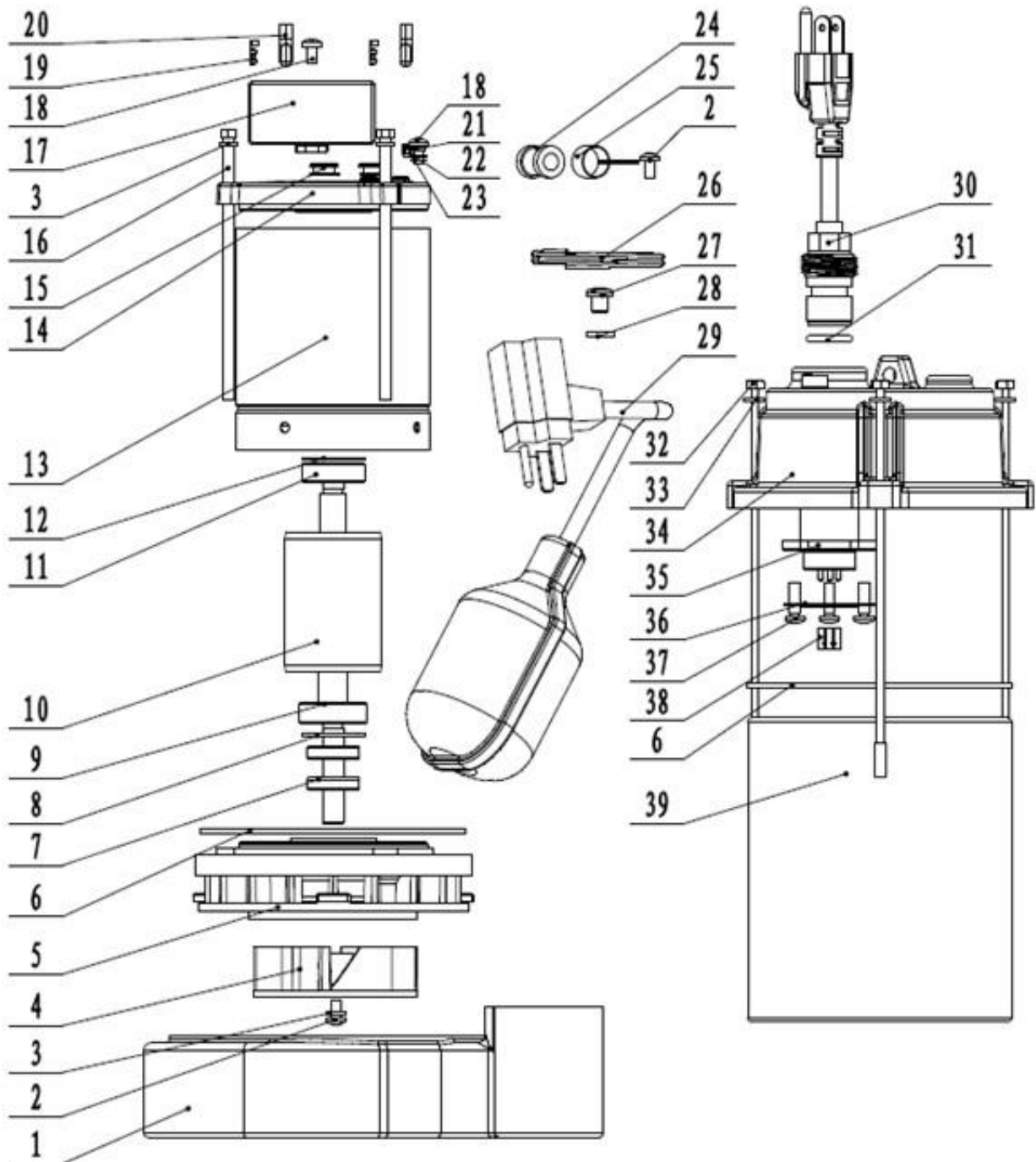
Parts Diagram - 50110



Parts List - 50110

Part No.	Description	Quantity
1	Pump body	1
2	Cross recess pan head screw M5*8	2
e	Flat washer 5	4
4	Impeller	1
5	Base plate	1
6	Seal washer	2
7	Stator	1
8	Float switch component	1
9	Insourcing skeleton axis lip seals FB10 25 6	2
10	Adjusting shim	1
11	Single row centripetal ball bearing	1
12	Rotor	1
13	Single row centripetal ball bearing 6200	1
14	Wave spring D30	1
15	O-ring rubber seal 15.8*3.1	1
e	Us plug cable components	1
17	Wire clamp	1
18	Clamp sheath	1
19	Handle ring	1
20	Slotted pan head screw M8*8	1
21	Rectangle ring 15*8*2.5	1
22	Header	1
23	Socket gasket	1
24	Connector	1
25	Hexagon head screw M5*185	3
26	Spring washer 5	3
27	Cross recess pan head screw M5*16	3
e	Copper female plug	3
29	Pump barrel	1
30	Cross recess pan head screw M4*8	2
31	Capacitor clamp	1
32	Capacitor 20Uf/300v 34*55	1
33	Flexural spring	2
34	Lug plate 4.2	1
35	External teeth lock washer	1
36	Off-track	2
37	Hexagon bolt M5*115	3
38	Flat washer	3
39	cover	1

Parts Diagram - 50131



Parts List - 50131

Part No.	Description	Quantity
1	Pump body	1
2	Cross recess pan head screw M5*8	2
3	Flat washer	4
4	Impeller	1
5	Base plate	1
6	Seal washer	2
7	Insourcing skeleton seal	2
8	Adjusting shim	1
9	Deep groove ball bearing6201	1
10	Rotor	1
11	Deep groove ball bearing 6200	1
12	Wave spring D30	1
13	Stator	1
14	End cover	1
15	Off-track	2
16	Hexagon bolt M5*125	3
17	Capacitor 25Uf/300w	1
18	Cross recess pan head screw M4*8	2
19	Flexural spring	2
20	Flame retardant jacket	2
21	Spring washer	1
22	Cold compression	1
23	Serrated lock washers external teeth	1
24	Clamp sheath	1
25	Wire clamp	1
26	Handle ring	1
27	Slotted pan head screw M8*8	1
28	Rectangle ring	1
29	Float switch components	1
30	Us plug cable components	1
31	O ring rubber seal 15.8-3.1	e
32	Hexagon head screw	3
33	Flat washer	3
34	Tectum	1
35	Connector	1
36	Socket gasket	1
37	Cross recess pan head screw M5*16	3
38	Copper female plug	3
39	Pump case	1

Troubleshooting

Problem	Possible Cause	Corrective Action
Pump does not start or run	<ol style="list-style-type: none"> 1. Blown fuse 2. Tripped breaker 3. Plug disconnected 4. Corroded plug 5. Thermal overload 6. Motor failed 	<ol style="list-style-type: none"> 1. Replace fuse 2. Reset breaker 3. Secure plug 4. Clean plug prongs 5. Disconnect the pump from power for 30 minutes, then reconnect 6. Contact customer service for replacement
Pump operates but pumps little or no water	<ol style="list-style-type: none"> 1. Pump screen or screen cover blocked 2. Impeller loose on shaft 3. Impeller broken 4. Pipe or hose loose 	<ol style="list-style-type: none"> 1. Clean screen 2. Reassemble impeller 3. Contact customer service for replacement 4. Secure pipe or hose

Replacement Parts

- For replacement parts and technical questions, please call Customer Service at **1-800-222-5381**.
- Not all product components are available for replacement. The illustrations provided are a convenient reference to the location and position of parts in the assembly sequence.
- When ordering parts, the following will be required: Model Number, Serial Number/Lot Date Code, and Description.
- The distributor reserves the rights to make design changes and or improvements to product lines and manuals without notice.

Limited Warranty

Northern Tool and Equipment Company, Inc. ("We" or "Us") warrants to the original purchaser only ("You" or "Your") that the Powerhorse product purchased will be free from material defects in both materials and workmanship, normal wear and tear excepted. 50110 is covered for a period of one year and 50131 is covered for a period of two years from date of purchase. The foregoing warranty is valid only if the installation and use of the product is strictly in accordance with product instructions. There are no other warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose. If the product does not comply with this limited warranty, Your sole and exclusive remedy is that We will, at our sole option and within a commercially reasonable time, either replace the product or product component without charge to You or refund the purchase price (less shipping). This limited warranty is not transferable.

Limitations on the Warranty

This limited warranty does not cover: (a) normal wear and tear; (b) damage through abuse, neglect, misuse, or as a result of any accident or in any other manner; (c) damage from misapplication, overloading, or improper installation; (d) improper maintenance and repair; and (e) product alteration in any manner by anyone other than Us, with the sole exception of alterations made pursuant to product instructions and in a workmanlike manner.

Obligations of Purchaser

You must retain Your product purchase receipt to verify date of purchase and that You are the original purchaser. To make a warranty claim, contact Us at 1-800-222-5381, identify the product by make and model number, and follow the claim instructions that will be provided. The product and the purchase receipt must be provided to Us in order to process Your warranty claim. Any returned product that is replaced or refunded by Us becomes our property. You will be responsible for return shipping costs or costs related to Your return visit to a retail store.

Remedy Limits

Product replacement or a refund of the purchase price is Your sole remedy under this limited warranty or any other warranty related to the product. We shall not be liable for: service or labor charges or damage to Your property incurred in removing or replacing the product; any damages, including, without limitation, damages to tangible personal property or personal injury, related to Your improper use, installation, or maintenance of the product or product component; or any indirect, incidental or consequential damages of any kind for any reason.

Assumption of Risk

You acknowledge and agree that any use of the product for any purpose other than the specified use(s) stated in the product instructions is at Your own risk.

Governing Law

This limited warranty gives You specific legal rights, and You also may have other rights which vary from state to state. Some states do not allow limitations or exclusions on implied warranties or incidental or consequential damages, so the above limitations may not apply to You. This limited warranty is governed by the laws of the State of Minnesota, without regard to rules pertaining to conflicts of law. The state courts located in Dakota County, Minnesota shall have exclusive jurisdiction for any disputes relating to this warranty.



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