POWERHORSE™

Post Pounder, 47-lb Driving Head,1.36HP,38cc Engine

Owner's Manual



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# 6701107

READ & 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 (if applicable): _____

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.

This product is designed for certain applications only. Northern Tool and Equipment is not responsible for issues arising from modification or improper use of this product such as an application for which it was not designed. We strongly recommend that this product not be modified and/or used for any application other than that for which it was designed.

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

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Intended Use

- **Use: It can be used for outside piling operation of farms, orchard fences or barriers.**

- **Function**

- It is the engine-type handheld gasoline pile driver which boasts light weight and low discharge capacity.

- The product conforms to the design of man-machine engineering, reduces working strength of the operator to the greatest extent, and boasts simple and comfortable operation. The operator can achieve 360° all-around operation.

- It can regulate impact energy and impact frequency and apply to a variety of piles between 20-80mm (inclusive) in diameter.

- Advantage: Save the trouble of using heavy machines such as generator, air compressor and trucking-lorry.

- The operating handle of the machine is rubber and plastic sponge handle which can greatly reduce the recoil force of the machine. It's installed with two-way damping spring which makes the user more comfortable.

Packaging Contents

- Gasoline post driver (1)
- 1.9 inch adapter (1)
- 2.7 inch adapter (1)
- 3.9 inch adapter (1)
- Priming funnel(1)
- Measuring Cup (1)
- Strainer (1)
- Tool kit (1)

Technical Specifications

Property	Specification
Gasoline engine type	38cc engine EPA
L×W×H (inch)	3.8*1.6*1.4
Fuel	Unleaded gasoline 90# or above
Weight	66 lbs
Displacement	38CC
Max power	1.36HP
Max torque	47lb
Idle speed	3000±250r/min
Fuel consumption rate	≤480g/kW.h
Oil consumption rate	≤1.2g/kW.h

Property	Specification
Impact frequency	700~1900BPM
Impact energy	20~55J
Carburetor type	H129-1C4/H629-1C4
Spark plug type	CMR6A
Starter system	Hand pull start
Pile specification	1.9in., 2.7in. and 3.9in.

Important Safety Information

⚠WARNING

- Read and understand all instructions. Failure to follow all instructions may result in serious injury or property damage.
- 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 the product until they have read this manual and have developed a thorough understanding of how it works.
- Do not modify this 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 small equipment to do the work of larger industrial equipment. There are certain applications for which this equipment was designed. This product will be safer and do a better job 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

PROP 65

- This product can expose you to chemicals including lead, which is known to the State of California to cause cancer. For more information, go to www.p65warnings.ca.gov.
- Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the state of California to cause cancer, birth defects, or other reproductive harm. Some examples of these chemicals are:
  - - lead from lead-based paints,
  - - crystalline silica from bricks and cement and other masonry products, and
  - - arsenic and chromium from chemically-treated lumber.

- Your risk from these exposures varies depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.
- Handling power cords on corded products may expose you to lead, a chemical known to the state of California to cause cancer and birth defects or other reproductive harm. Wash your hands after handling.

⚠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 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. Use ANSI Z87.1 compliant safety goggles (not 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.
- 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.

⚠CAUTION

PRODUCT USE AND CARE

- Do not force the product. Products are safer and do a better 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 product will operate properly and perform its intended function. Replace damaged or worn parts immediately. Never operate the product with a damaged part.
- Do not use a product with a malfunctioning switch. Any power tool 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 product 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 product 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 product. 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.
- Do not leave the tool running unattended.

Specific Operation Warnings

⚠WARNING

1. The operator must wear slip-resistant safety shoes and suitable clothing. For long-time operation, he or she must wear a goggle,a helmet, and earplugs.
2. While operating the machine, please keep balance of the body, **and stand in front of Air Filter to operate the machine.** The operator **shall not smoke, eat or chat** while operating the machine.
3. **After starting the machine, do not operate it with one hand.**
4. When lifting the machine do not pulled the throttle button, which will cause the machine to run at idle.
5. Non-staff shall be away from the operation area to avoid injuries.
6. Operate the pile driver at the medium speed.
7. Keep the handle dry and clean without greasy oil or fuel mixture.
8. If operation is stopped midway; be sure to turn off the engine.
9. Be sure to check whether fastening screws of the connector is tightened before use. If it’s loose,

it's necessary to tighten the screws before use.

10. Prohibit the use of pure gasoline fuel (no two-stroke oil), **shall refer to Chapter 4.2 for recommended ratios of fuel.**

11. Gasoline is highly flammable. Therefore, replenish fuel in a well-ventilated environment. During fuel filling, gasoline engine must be turned off.

12. Do not add too much oil. The oil shall not exceed the neck of oil filer of fuel tank. If fuel spills, start the machine after fuel on the machine volatilizes completely.

13. After refueling, tighten the oil lid. During work, check whether oil can is damaged and spills frequently. If damage is found**, close down** the machine immediately for replacement.

14. Reserve oil in storage areas. Remove hidden troubles of fire or open flame.

15. While the pile driver is used in closed areas such as tunnels, trenches and deep groove, it's necessary to guarantee normal air circulation to avoid waste gas poisoning and suffocation.

16. Forbid quick acceleration or braking so as not to damage the machine.

17. Before transport, **empty fuel inside the fuel tank to avoid leakage.**

- Non-professional maintenance staff are prohibited from dismounting the pile driver to avoid structural damage of parts, shortened service life of the pile driver or accidents.

Main Parts of Product

Subassembly

No.	Name of Part	No.	Name of Part	No.	Name of Part
1	Handle	2	Stop Switch	3	Combination Switch
4	Fuel Bubble	5	Fuel Tank Lid	6	Fuel Tank
7	Regulating Switch	8	Throttle Switch	9	Front placket
10	Timber guide sleeve	11	Timber guide sleeve retainer	12	Air door spanner
13	Air Filter	14	Throttle Cable Starter	15	Lubricating Oil Filling Port
16	Positioning Sleeve	17	Oil plug	18	Grip
19	Damping Spring	20	Support Plate		

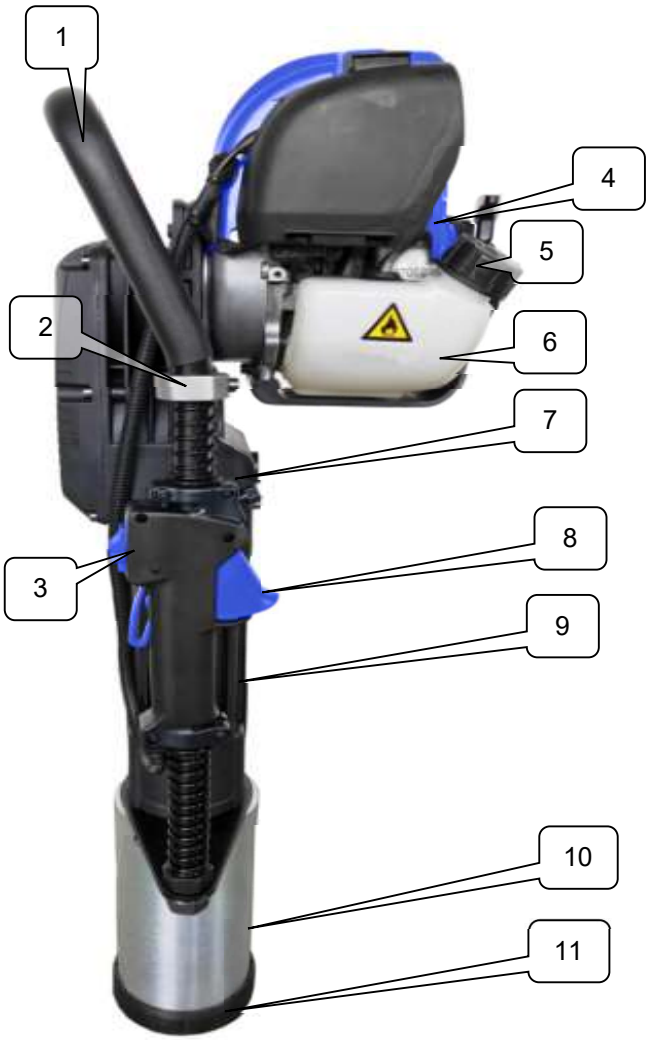


Fig. 1

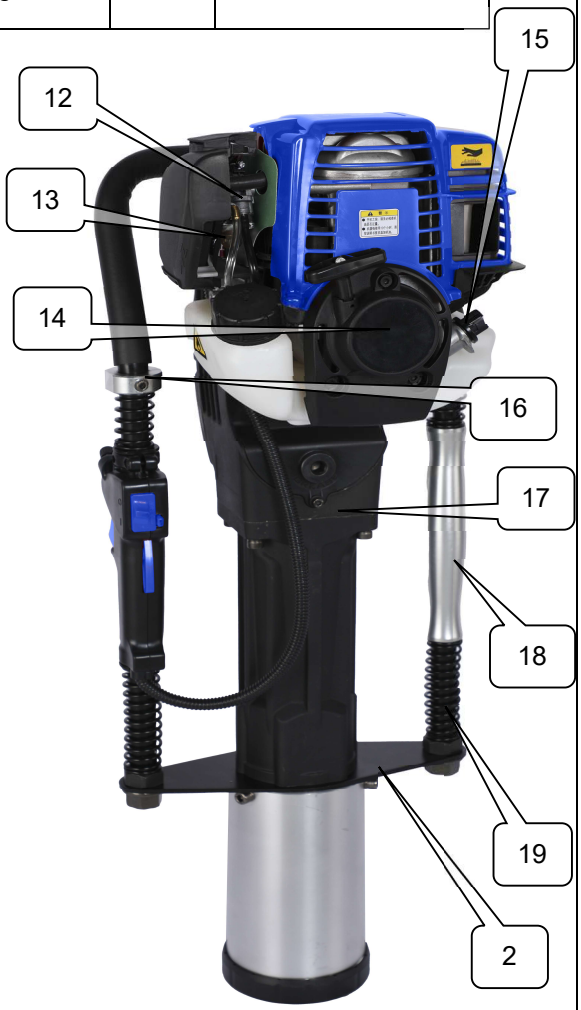


Fig. 2

Assembly Instructions

- **Piling socket**

• Install or change piling socket retainer. Select a corresponding retainer according to the sizes of the piling from 20～49、50～69、70～99mm, as it's shown in Fig. 3;

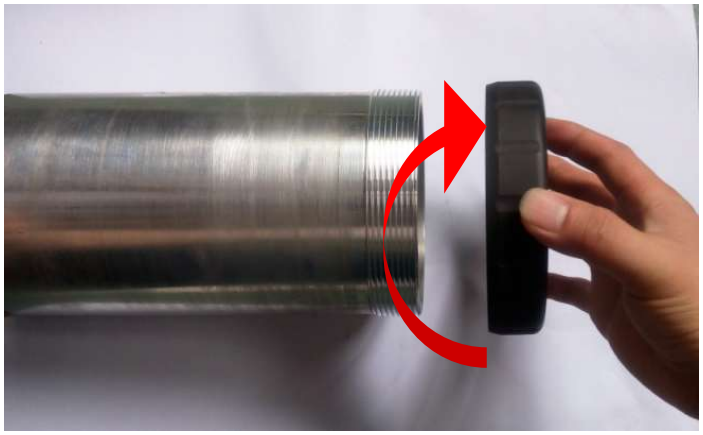


Fig. 3

Before Each Use

Step 1 Piling socket

• Install or change piling socket retainer. Select a corresponding retainer according to the sizes of the piling from 20～49、50～69、70～99mm, as it's shown in Fig. 3;

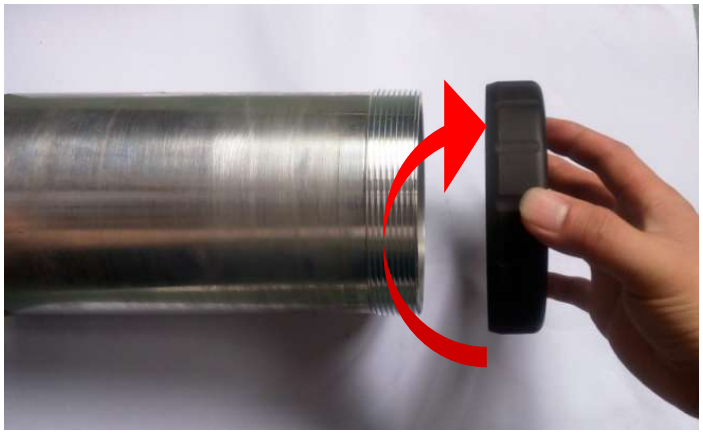


Fig. 3

Step 2 Adding fuel

• Use unleaded 90# gasoline or above.

• When the gasoline engine is stopped, add fuel at well-ventilated areas away from open fire

• If the engine is just operated, cool down to environmental temperature before adding oil.

• Do not add too much oil. The oil shall not exceed the neck of the oil can. If fuel spills, wait until the fuel volatilizes completely and then start the machine.

• Tighten the lid of oil can after refueling.

• The machine uses pure gasoline as fuel.

Step 3 Check and supply of engine oil

• To avoid damage of the gasoline engine, before start, it's necessary to check whether the engine oil is adequate and needs replacement; for use of every 10 hours or that the gasoline engine has worked continuously for 10 hours, it's necessary to check liquid level of the engine oil and supplement engine oil to the upper limit of the oil tank.

• The gasoline engine shall be placed horizontally. Unscrew the oil level gauge and check the oil liquid level as it's shown in Fig. 4. For inadequate oil, add to the upper limit. If oil is too dirty, replace it.

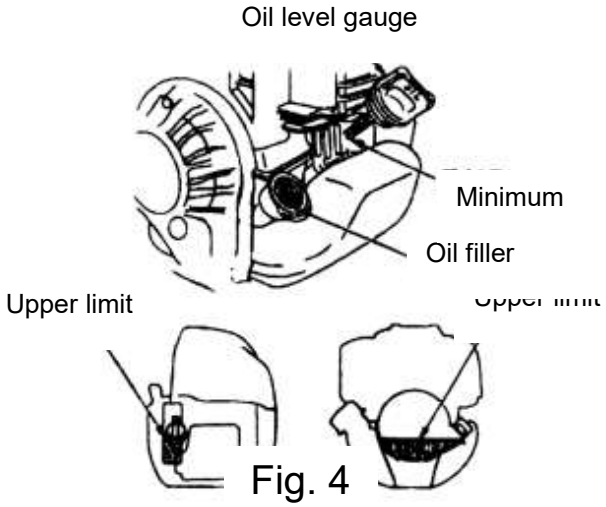
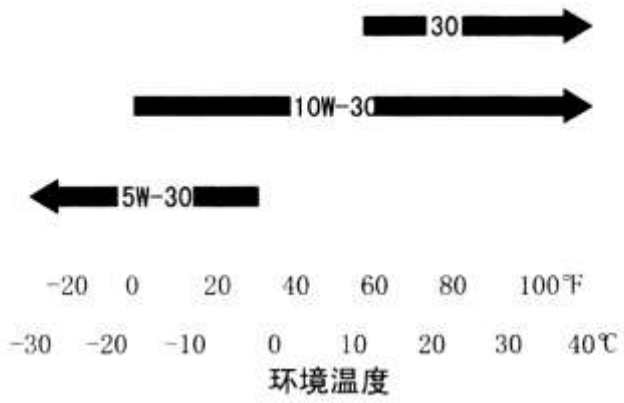


Fig. 4

• The recommended environmental temperature of the machine is -15℃-40℃. Recommend use of SAE 10W-30 engine oil which equals to API classification SE, SF, and SG. Fig. 5 below is SAE Engine Oil Consistence Table.

SAE Engine Oil Viscosity Grade



Environmental temperature

Fig. 5

Step 4 Check of air filter

- Take apart the cover of the air filter, and check whether filter element is clean. If not, clean it.
- After the check, correct ly install the cover of the air filter to its normal position.

Operating Instructions

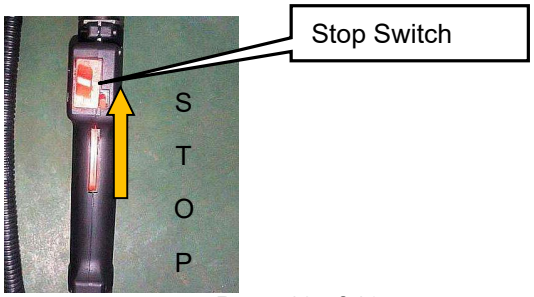
- After the gasoline engine is started, first carry out idle operation for 5 minutes to warm up the machine.
- When the gasoline engine is warmed up, press throttle button to the appropriate regulatory position according to the required impact energy.

Note: The new gasoline pile driver use shall mainly boast low or medium-speed for work in the first 20 hours of operation and the maximum throttle shall not be used in order to extend the service life.

- Operating speed of the gasoline engine shall be at medium speed.
- High-speed operation of pile driver during non-piling is prohibited.

After Each Use

- Release throttle button and carry out idle running of the machine for 3-5 minutes.
- Pull Stop Switch to the position of flameout. See the position of Stop Switch.



Maintenance

The following data are given from the common use of the product. Under worse working conditions such as dusty environment or long work hours of the gasoline-powered wrench, the maintenance cycle should be shortened correspondingly.		Before work	After work or every day	After Filling oil	Every Week	Every Month	Temporary Failure	If necessary
The whole machine	Outlook check (state, tightness of screws)	√		√				
	Clean		√					
Control handle/stop button	Function check	√		√				
Air filter	Clean				√			√
	Replace						√	
Fuel filter	Check					√		
	Replace						√	
Oil can/Oil can lid	Clean		√	√				
	Check	√		√				
	Tighten							√
Reduction gearbox/impact cylinder	Clean					√		
	Add grease							√
Muffler	Check					√		
	Remove carbon deposit							√
Cylinder cooling fin	Check					√		
	Clean							√
Spark plug	Check/Adjust the distance between electrodes					√		
	Replace							√
Screw and nut	Check	√		√				
	Tighten							√

Troubleshooting

Problem analysis and solving

Example 1: Difficulties in starting engine in cooling state

Whether the spark plug is damp	→Wipe dry the spark plug
↓	
Whether the spark plug produces electric spark	→Replace the spark plug
↓	
Too much fuel absorbed	→Reduce the fuel supply

Example 2: Difficulties in restarting after a sudden stop

Whether fuel is used up or the carburetor is blocked	→Refill the fuel tank or clean the carburetor
↓	
Whether the fuel filter is blocked	→Clean the fuel filter
↓	
Too much carbon deposit in the spark plug	→Remove carbon deposit from the spark plug and clean the filter element

Example 3: Slow speed and weak power

Carbon deposit in the cylinder or muffler	→Remove carbon deposit
↓	
Whether the oil tube and the air vent of the oil can is blocked	→Clean
↓	
Air filter is blocked	→Clean the filter

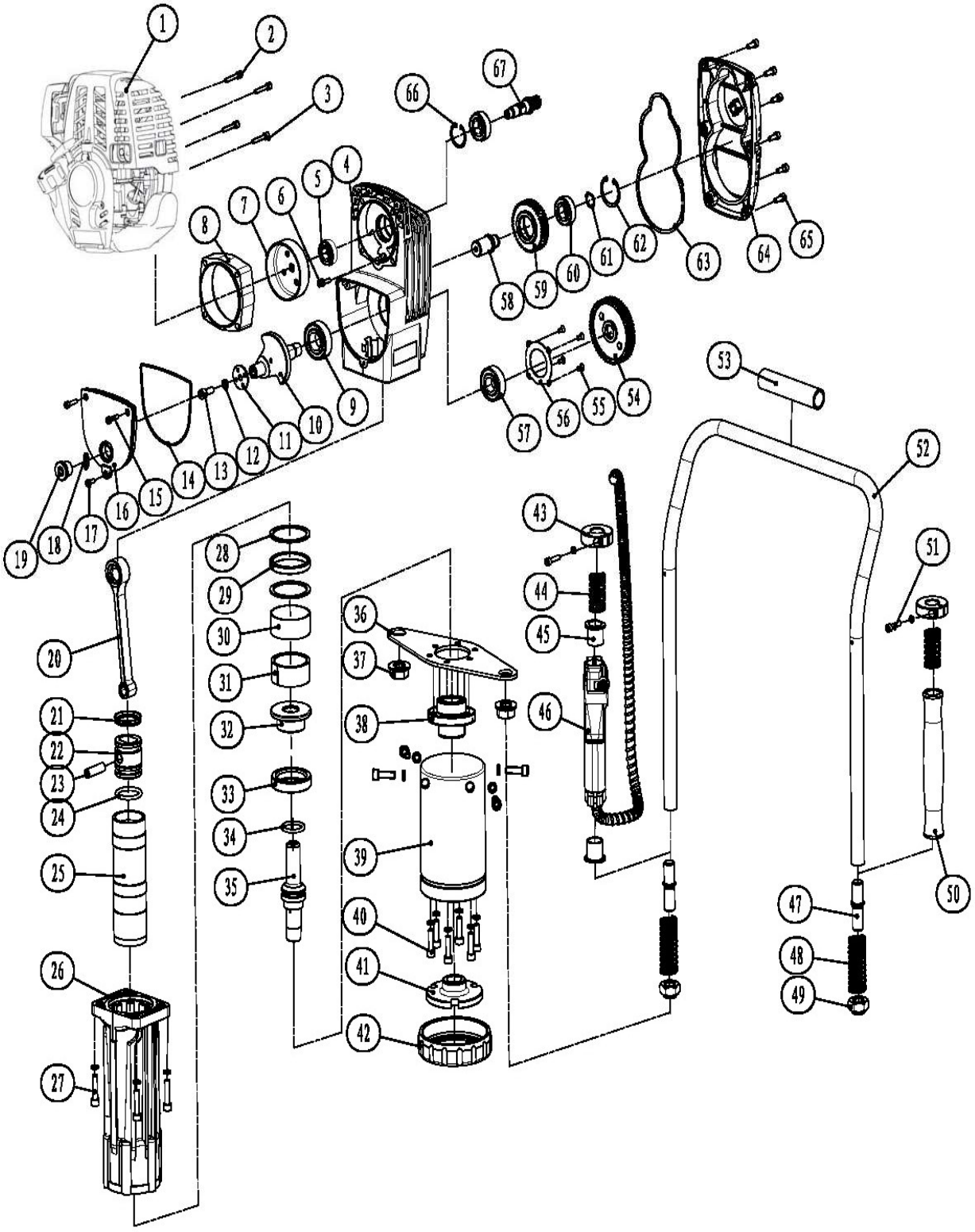
Example 4: Abnormal sound

Carbon deposit found in the combustion chamber	→Remove carbon deposit
↓	
Serious abrasion in active components	→Replace

Example 5: The machine is working normally but the work efficiency is very low

Rubber ring of the impact piston is aged and worn	→Replace

Parts Diagram



Parts List

Parts No.	Name	Qty		Parts No.	Name	Qty
1	139F four-travel Gasoline Engine	1		41	Inner Pile Head	1
2	Inner Hexagon Cheese-head Screw M6×50	2		42	Piling Socket Retainer	1
3	Inner Hexagon Cheese-head Screw M6×45	2		43	Positioning Sleeve	2
4	Gearbox	1		44	Compression Spring Φ22.5×Φ27.5×60	2
5	Deep Groove Ball Bearings 6202-2RZ	1		45	Switch Handle Guide Sleeve	2
6	Inner Hexagon Cheese-head Screw M6×25	1		46	Combination Switch	1
7	Driven Disk	1		47	Connecting Thread Head	2
8	Link block	1		48	Compression Spring Φ22.5×Φ27.5×123	2
9	Deep Groove Ball Bearings 6205-2RZ	1		49	Step Nut	2
10	Impact Crankshaft	1		50	Handle Sleeve	1
11	Crankshaft Retainer	1		51	Inner Hexagon Cheese-head Screw M6×40	2
12	Elastic Washer 8×2.1	15		52	Steel tube handle	1
13	Inner Hexagon Cheese-head Screw M8×20	5		53	Handle hose	1
14	Oil Storage Box Seal	1		54	Big Gear	1
15	Inner Hexagon Cheese-head Screw M5×20	2		55	Cross Recessed Countersunk Head Screw M5×10	4
16	Oil Storage Box Lid	1		56	Bearing Holder	1
17	Inner Hexagon Cheese-head Screw M5×16	1		57	Deep Groove Ball Bearings 6204-2RZ	1
18	O-ring Φ18×2.65	1		58	Gear Shaft	1
19	Oil Plug M20×1.5	1		59	Middle Gear	1
20	Impact Connecting Rod	1		60	Deep Groove Ball Bearings 6203-2RZ	2
21	Lip-shaped Ring Φ35.5×Φ45.5×6	1		61	Shaft Retainer 17	1

22	Impact Piston	1		62	Hole Retainer 40	1
23	Impact Piston Pin	1		63	Gearbox Cover Seal	1
24	O-ring Φ35.5×5	1		64	Gearbox Cover	1
25	Impact Cylinder	1		65	Inner Hexagon Cheese-head Screw M6×16	6
26	Aluminum Hammer Case	1		66	Hole Retainer 35	1
27	Inner Hexagon Cheese-head Screw M8×35	4		67	Small Gear	1
28	Iron Ring	2				
29	Small Vibration Absorption Ring	1				
30	Opening Ring Rubber Circle	1				
31	Opening Ring	1				
32	Iron Handle Sleeve	1				
33	Big Vibration Absorption Ring	1				
34	O-ring Φ33X4	1				
35	Shock	1				
36	Support Plate	1				
37	Hexagon Flange Nut M18×1.5	2				
38	Shock Guide Sleeve	1				

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 information will be required: item description, item model number, item serial number/item lot date code, and the replacement part reference number.
- The distributor reserves the rights to make design changes and 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, for a period of one year 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.

POWERHORSE™

Distributed by:

Northern Tool & Equipment Company, Inc.

Burnsville, Minnesota 55306

www.northerntool.com

Made in **Thailand**