

POWER HORSE™

Mini Cultivator, 10" width, 43cc 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# 6845194

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

BEST APPLICATION – The Power Horse mini cultivator is great for Lawn & Garden applications such as digging, soil cultivation, aeration, creating seedbeds and weed removal. It has plenty of power to weed, work-in fertilizer, or aerate soil. It is designed to work in all kinds of pre-tilled soil.

Packaging Contents

- Middle Handle (1)
- Upper Handles (2)
- Wing nuts and bolts (4 ea.)
- Cable Ties (3)
- Operator's Manual (1)
- 2.6 fl. oz US bottle of 2-Cycle engine oil (1)

Technical Specifications

VENDOR: Provide the technical specifications of the product. Replace the information in the table (example below) with the correct specifications. Add any additional information.

Property	Specification
Engine	43 cc, 2 cycle, Full-Crank
Tilling Width	7"-10"
Tilling Depth	Up to 5"
Fuel Tank Capacity	28 oz (840 ml)
Fuel Type	Unleaded Gasoline-89 Octane or higher
Full Speed	8,000-9,000 RPM
Fuel Mixture	50:1 (Gasoline: 2-Cycle Oil)
Spark Plug	LD L6, NGK BM6A
Net Weight	33 lbs (15 kg)

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 people 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, hard hat, gloves, dust collection systems, and hearing protection when appropriate. This applies to all people in the work area.
- Do not overreach. Keep proper footing and always balance.
- 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 conditions 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.

Assembly Instructions

⚠WARNING

- Do NOT place the cultivator on a high surface where it can fall and cause property damage or personal injury.

1. Place the cultivator upright with tines and wheels on a hard level surface. Wheels should be set in the lowest position.
2. Assemble the middle handle to the lower handle with the 2 bolts and wing nuts. Refer to Figure 1. Firmly hand-tighten the wing nuts.
3. Attach the upper handles to the middle handle using the two remaining bolts and wing nuts. Refer to Figure 1.
4. Assemble the throttle trigger to the right upper handle with the screw. Use included wrench. See Figure 1.
5. The drag stake is shipped with the point facing upwards. To use for cultivating, remove detent pin, and turn the drag stake upside down so the point faces downward. Re-insert the detent pin. Refer to Figure 2.
6. Secure the throttle cable to the handle with FIVE retaining clips already mounted to the handle. Refer to Figure 1.



Operating Instructions

⚠WARNING

- Do not smoke or allow smoking near fuel or the cultivator. Mix and pour fuel outdoors WHERE THERE ARE NO SPARKS OR FLAMES.
- The 2-cycle engine on your cultivator requires that fuel and 2-cycle engine oil need to be pre-mixed before adding to the fuel tank.
- Always mix the gasoline and 2-cycle oil in a container approved for gasoline. Never mix fuel directly in the engine fuel tank.
- Use fresh unleaded gasoline with an octane rating of 89 or higher and less than 10% ethanol.
- Use 2-cycle oil that meets or exceeds JASO - FC specifications and is intended for mixing at a fuel to oil ratio of 50:1. We recommend the continuous use of a 2 cycle fuel additive/stabilizer to counteract the effects of ethanol. These additives also prolong the shelf life of gasoline.

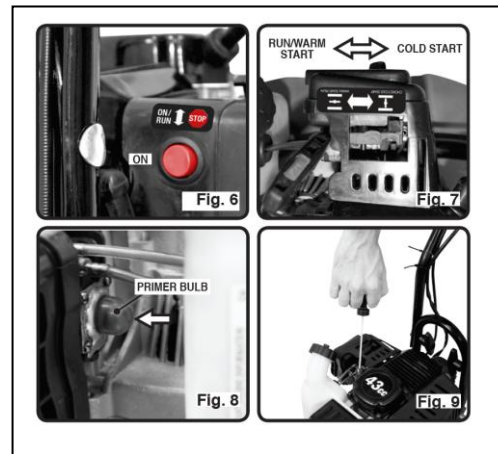
Adding Fuel to Cultivator

1. Stop engine and allow it to cool before refueling.
2. Place the unit upright on the ground or on a sturdy bench and wipe away any debris from around the fuel cap.
3. Remove fuel cap slowly and use a funnel to pour the mixture into the tank, and replace the fuel cap.
4. Avoid spilling fuel or oil. Wipe up all fuel spills.
5. Move at least 10 feet (3 meters) away from fueling site before starting engine.

Starting the Engine

Starting a Cold Engine

1. Place the cultivator on a flat surface.
2. Move the ignition switch to the "on" position. (See Figure 6)
3. Move the choke lever to the 'cold start' position. (See Figure 7)
4. Press the primer bulb slowly 6 times. (See Figure 8)
5. Grab the recoil starter handle with your right hand, and support the cultivator with your left hand. (See Figure 9)
6. Pull the recoil starter handle sharply until the engine starts and runs
7. After engine starts and runs for 10-15 seconds, move choke lever to "run/ warm start" position. (See Figure 7)



Starting a Warm Engine

1. Place the cultivator on a flat surface.
2. Move the ignition switch to the "on" position. (See Figure 6)
3. Move the choke lever to the 'run/ warm start' position. (See Figure 7)
4. Grab the recoil starter handle with your right hand, and support the cultivator with your left hand. (See Figure 9)
5. Pull the recoil starter handle sharply until the engine starts and runs.

After Each Use

To prevent fuel gum deposits and corrosion in the unit's carburetor and fuel system, it is highly recommended to use a fuel additive/stabilizer formulated for ethanol fuels. Follow the stabilizer manufacturer's instructions. Run the engine at least 5 minutes after adding stabilizer.

1. Allow engine to cool and empty the fuel tank before storing or transporting in vehicle. Use up remaining fuel in the carburetor by starting the engine and letting it run until it stops.
2. When not in use, store cultivator indoors in a dry location. Store cultivator above the reach of children or in a locked area out of the reach of children.
3. Store unit and fuel in areas where fuel vapors cannot reach sparks or open flames from water heaters, electric motors or switches, furnaces, etc.
4. When preparing the cultivator for storage or when cultivator will not be used for 30 days or more:
 - a. Empty fuel tank and use up remaining fuel in the carburetor by starting the engine and letting it run until it stops. Squeeze primer bulb several times to purge fuel from carburetor.

- b. Inspect and clean the cultivator thoroughly.
- c. Lightly oil all external metal surfaces.
- d. Remove the spark plug, place a few drops of 2-cycle engine oil into the cylinder. Pull the recoil starter several times to distribute the oil. Replace the spark plug.
- e. Inspect and clean air filter as required.

Maintenance

⚠ WARNING

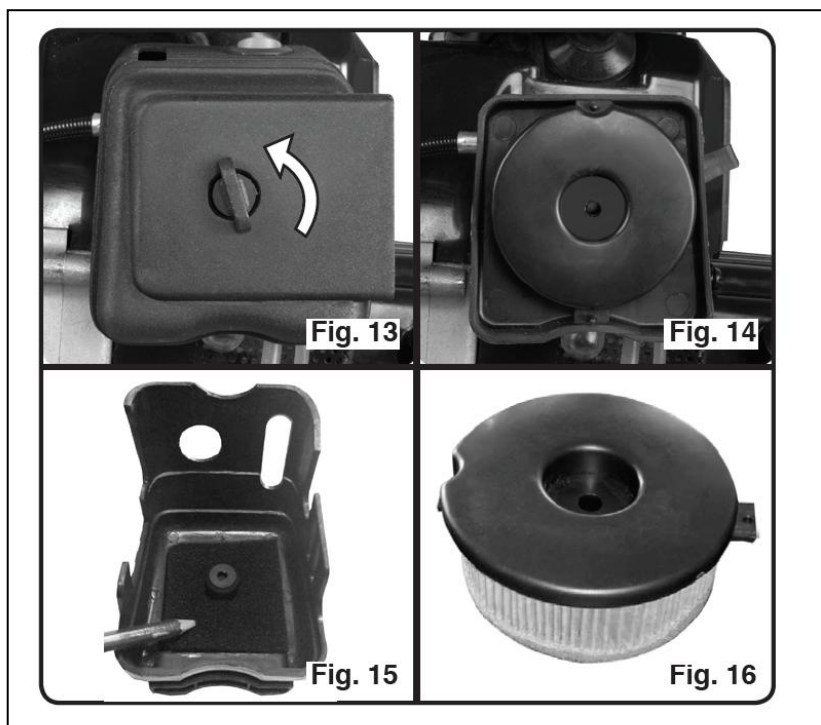
Turn off ignition switch, and disconnect the spark plug before performing maintenance except for carburetor adjustments. Reconnect the spark plug wire after the service is done.

Both air filters should be cleaned by following these instructions:

1. Before removing air filter cover, brush away any loose dirt or debris on and around the filter cover.
2. Remove the screw securing the air filter cover. (Fig 13)
3. Remove and clean foam filter. (Fig 15)
 - Light surface dust can readily be removed by tapping the filter.
 - Heavy deposits should be washed out in soap and water. Squeeze out any remaining water and allow the filter to completely dry.

Never clean filter with gasoline or other flammable solvents.

4. Add a drop of thin oil to the filters and replace it.
5. Remove the paper air filter element. (Fig 16) Clean filter by gently tapping it on a flat surface. Replace if very dirty.
6. Reassemble the filter element and the air filter cover.



Spark Plug

Inspect the spark plug after every 10-15 hours of use; adjust spark plug gap and replace spark plug as necessary. Replace spark plug every year to maintain engine performance and easy starting.

To inspect or replace the spark plug:

1. Remove the insulated spark plug boot.
2. Use the spark plug wrench to remove the spark plug, by turning counter-clockwise.
3. Visually inspect the spark plug for cracks or damage. If damaged, replace spark plug with a recommended replacement (see “Product Specifications”).
4. Clean carbon deposits. If excessive carbon build up, replace spark plug.
5. Adjust the spark plug gap to 0.024 – 0.028 in.(0.6 - 0.7mm).
6. Install the spark plug finger tight in the cylinder head, and then tighten firmly with the spark plug wrench.
7. Re-install the insulated spark plug boot.

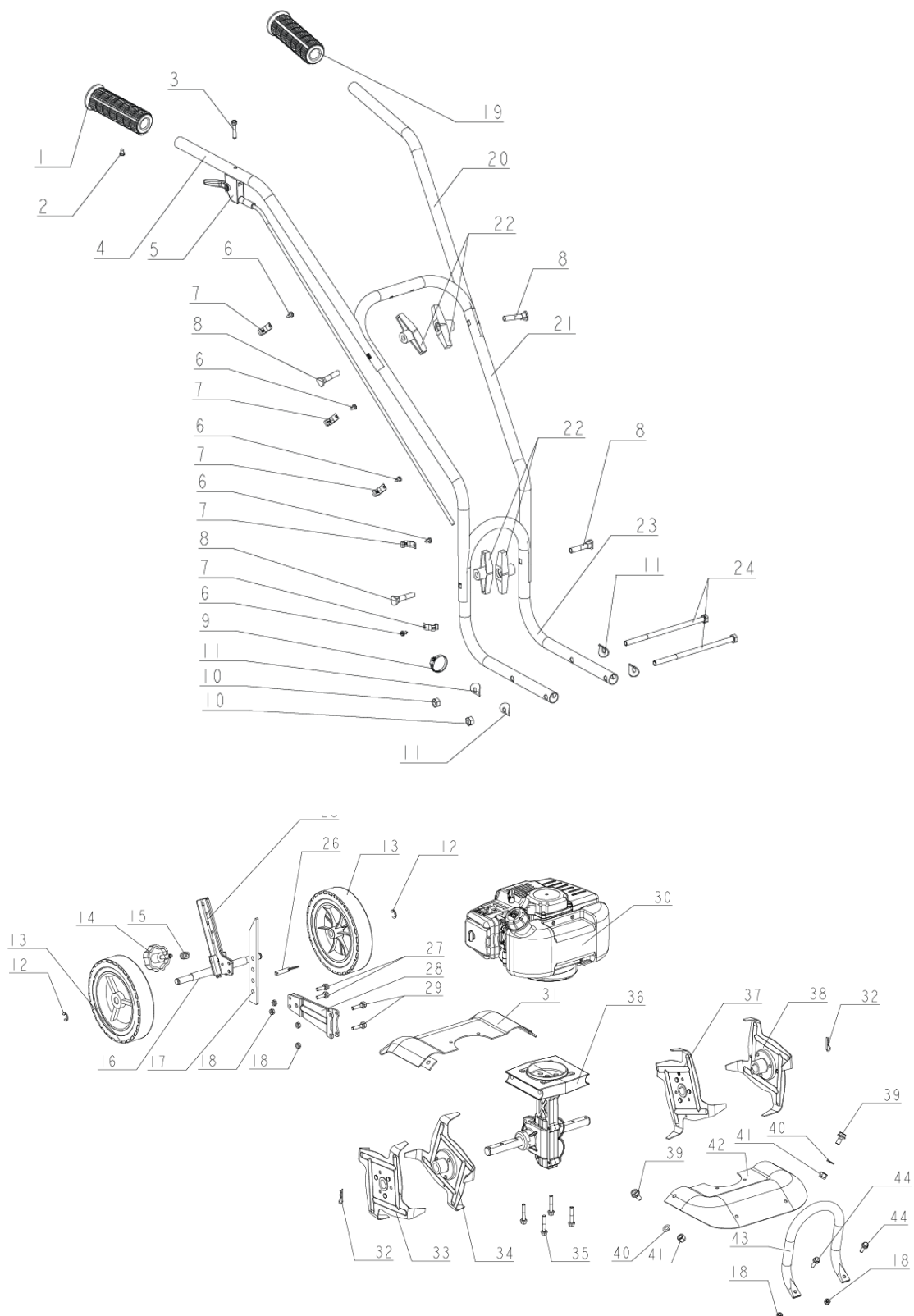
Maintain the product by adopting a program of conscientious repair and maintenance in accordance with the following recommended procedures. It is recommended that the general condition of any tool be examined before it is used. Keep your tool in good repair. Keep all cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control. Keep handles dry, clean, and free from oil and grease. Also refer to the engine manufacturer's instruction manual for additional information about engine maintenance. The following chart is based on a normal operation schedule.

Maintenance Interval	Maintenance Point
Daily Before Operating	Inspect cultivator for damaged parts, and make sure all fasteners and guards are in place and secure.
After every 5 hours of use	Clean the air filter
After every 10 to 15 hours of use	Adjust the spark plug gap and replace the spark plugs as needed

Troubleshooting

Failure	Possible Cause	Corrective Action
Engine will not start.	1. Ignition Switch in the "OFF" position. 2. Engine flooded. 3. Fuel Tank empty. 4. Spark Plug not firing. 5. Fuel not reaching carburetor. 6. Carburetor requires adjustment.	1. Move ignition switch to the ON position. 2. See Starting a Flooded Engine in OPERATION section. 3. Fill tank with correct fuel mixture. 4. Replace Spark Plug. 5. Check for kinked or split fuel line; repair or replace. 6. Contact a qualified service center.
Engine will not accelerate, lacks power or stalls.	1. Fuel not reaching carburetor. 2. Air filter dirty. 3. Spark plug fouled. 4. Carburetor requires adjustment. 5. Carbon build-up on muffler outlet screen. 6. Compression low.	1. Check for kinked or split fuel line; repair or replace. 2. Clean air filter. 3. Clean or replace spark plug 4. Contact a qualified service center. 5. Contact a qualified service center. 6. Contact a qualified service center.
Engine smokes excessively.	1. Fuel mixture incorrect. 2. Air filter dirty. 3. Carburetor requires adjustment. 4. Choke lever in the CHOKE/COLD START position.	1. Empty Fuel Tank and refill with correct fuel mixture. 2. Clean or replace air filter. 3. Contact a qualified service center. 4. Rotate choke lever to the RUN/WARM START position.
Engine runs hot.	1. Fuel mixture incorrect. 2. Spark Plug incorrect. 3. Carburetor requires adjustment. 4. Carbon build-up on muffler outlet screen.	1. See Mixing Fuel / 2-Cycle Oil in OPERATION section. 2. Replace with correct Spark Plug. 3. Contact a qualified service center. 4. Contact a qualified service center.
Engine will not idle properly.	1. Carburetor requires adjustment. 2. Crankshaft seals worn. 3. Compression low.	1. Contact a qualified service center. 2. Contact a qualified service center. 3. Contact a qualified service center.

Parts Diagram



Parts List

Reference	Part Number	Part Description	Quantity
1	30020710101800	Left Handle Grip	1
2	B050142012C5	Countersunk self-tapping screws ST4.2*12 50.	1
3	31690810101030	Self-tapping Screw ST4.8*32	1
4	30040710101090	Right-upper Handle	1
5	20010710101800	Throttle Cable	1
6	B05034209EC7	Slotted Pan Head Tapping Screw ST4.2*9.5	5
7	30240710101030	Clip	5
8	30080710101020	Wing Bolt M8*36	4
9	20070710101020	Adjustable Clamp	1
10	B04340800046	Nylon Lock Nut M8	4
11	30100710101020	Wing Washer	4
12	B08100000917	Split Washer $\Phi 9$	2
13	200508201024P0	Wheel Assembly	2
14	20010820103000	Knob Assembly	1
15	30670820201000	Spring	1
16	20050710101020	Axle Weld Assy	1
17	30120710101090	Stake, Depth	1
18	B04340600046	Nylon self-locking Nut M6	6
19	30030710101800	Right Handle Grip	1
20	30010710101090	Left-Upper Handle	1
21	30050710101090	Middle-handle	1
22	30310820301001	T-shaped Knob Assy	4
23	30060710101090	Lower Handle	1
24	30090710101020	Hexagon Bolt M8 $\times$ 165	2
25	20040710101020	Stake, Wheel Assy	1
26	30140710101020	Safe Pin	1
27	B01330602066	Flange Bolt M6*20	2
28	20190710101090	Bracket Weld Assy	1
29	B01330602566	Flange Bolt M6*25	2
30	101040150003000	Engine	1

Reference	Part Number	Part Description	Quantity
31	200307101016J0	Back Deck Weld Assy	1
32	30160710101020	R-pins	2
33	20120710101000	Right-outer Tine Assy	1
34	20110710101000	Right-inside Tine Assy	1
35	B01330603566	Flange Bolt M6*35	4
36	20090710101045	Gearbox Assembly	1
37	20100710101000	Left-inside Tine Assy	1
38	20090710101000	Left-outer Tine Assy	1
39	B01310801666	Flange Bolt M8*16	2
40	B07010008046	Flat Washer Φ8	2
41	B04340800046	Nylon Lock Nut M8	4
42	301107101016J0	Front Deck	1
43	30070710101090	Front Lifting Handle	1
44	B01330601226	Flange Bolt M6*12	2

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 right 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.



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www.northerntool.com

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