Plate Compactor

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# 5898323

READ & SAVE THESE INSTRUCTIONS

Thank you very much for choosing a NorthStar 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**.

Table of Contents

Intended Use

Plate compactor is the machine that compacts the ground and it intends to make the surface smooth, by transmitting vibration through vibrating plate, which power generated from single rotor in vibrator case.

This machine is suitable for making the ground surface smooth, such as leveling the soil and beaching, finishing the asphalt paving.

Packaging Contents

- Plate Compactor(1)
- Wheel Kit(1)
- Air Filter Element (1)
- Belt A710 (2)
- Operation Manual for plate compactor (1)
- Operation Manual for engine (1)
- Spark Plug Sleeve (1)
- Fuel Hose (1)
- A Pair of Gloves (1)
- Goggle (1)
- Priming Funnel (1)

Technical Specifications

Property	Specification
Impact Force	3600 lbf.
Max Speed	5500 Vibrations per Minute
Travel Speed	65.6-82 ft/min
Compact Depth	23″
Plate Size	17-3/4″ x 21-1/4″
Engine Type	Honda GX160
Tank Size	3/4 Gallon
Wheel Size	5″
Weight	202.4 lbs

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

Setup Precautions

1. Gasoline fuel and fumes are flammable and potentially explosive.Use proper fuel storage and handling procedures. Do not store fuel or other flammable materials nearby

2. Have multiple ABC class fire extinguishers nearby

3. Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrestor may be required.The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

4. Set up and use only on a flat, level,well-ventilated surface.

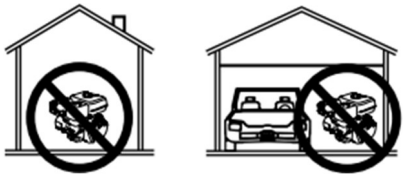
5. Wear ANSI-approved safety goggles,heavy-duty work gloves, and dust mask/respirator during set up

6. use only lubricants and fuel recommended in the engine manual or in the Specifications chart of this manual

Operation Precautions

1. Gasoline fuel and fumes are flammable and potentially explosive.Use proper fuel storage and handling procedures. Do not store fuel or other flammable materials nearby.Engine exhaust contains carbon monoxide.This is a poison you cannot see or smell.

2 . NEVER use inside a home or garage.EVEN IF doors and windows are open.



3 .Only use OUTSIDE and far away from windows,doors, and vents.

4. Keep children away from the equipment,especially while it is operating.

5. Keep hands and feet away from the compactor Bottom plate.Grip the Upper Handle of the Vibrator Plate firmly with both hands.Never place tools under the Vibrator Plate.

6. Keep all spectators at least six feet from the Vibrator plate during operation.

7. Only use a suitable means of transport and lifting devices with sufficient weight bearing capacity when transporting the Vibrator plate.

8. Only use sturdy loading ramps with sufficient weight bearing capacity.Secure the Vibrator Plate on transport vehicles to prevent the tool from rolling, slipping, and tilting.

9. Keep a safe distance away from the edges and banks of ditches and use care to prevent the Vibrator plate from toppling over.

10. Ascend slopes carefully in a direct path.

11. pull backwards up steep slopes to prevent the Vibrator plate from toppling over onto the operator.

12. When performing compacting work in the vicinity of buildings or above pipelines,make sure to check the affect of the vibrations on the buildings and pipelines.If necessary,immediately stop the compacting work.

13. Park the Vibrator plate on a firm and level surface.

14. Industrial applications must follow OSHA requirements.

15. Do not leave the equipment unattended when it is running Turn off the equipment (and remove safety keys.if available) before leaving the work area.

16. Wear ANSI-approved safety glasses,hearing protection,and NIOSH-approved dust mask/respirator under a full face shield along with steel-toed work boots during use.

17. People with pacemakers should consult their physician(s) before use.Electromagnetic fields in close proximity to a heart pacemaker could cause pacemaker interference or pacemaker failure. Caution is necessary when near the engine's magneto or recoil starter.

18. Use only accessories that are recommended by Dealer for your model.Accessories that may be suitable for one piece of equipment may become hazardous when used on another piece of equipment.

19. Do not operate in explosive atmospheres such as in the presence of flammable liquids, gases, or dust.Gasoline-powered engines may ignite the dust or fumes.

20. Stay alert, watch what you are doing and use common sense when operating this piece of equipment.Do not use this piece of equipment while tired or under the influence of drugs, alcohol or medication.

21. Do not overreach.Keep proper footing and balance at all times.This enables better control of the equipment in unexpected situations.

22. use this equipment with both hands only.Using equipment with only one hand can easily result in loss of control.

23. Dress properly.Do not wear loose clothing or jewelry. Keep hair, clothing and gloves away from moving parts. Loose clothes, jewelry or longhair can be caught in moving parts.

24. Parts, especially exhaust system components.get very hot during use. Stay clear of hot parts.

25. Do not cover the engine or equipment during operation.

26. Keep the equipment, engine, and surrounding area clean at all times.

27. Do not smoke, or allow sparks, flames or other sources of ignition around the equipment, especially when refuelling.

28. Use the equipment, accessories, etc.,in accordance with these instructions and in the manner intended for the particular type of equipment, taking into account the working conditions and the work to be performed.Use of the equipment for operations different from those intended could result in a hazardous situation.

29. Do not operate the equipment with known leaks in the engine's fuel system.

30. When spills of fuel or oil occur, they must be cleaned up immediately.Dispose of fluids and cleaning materials as per any local, state,or federal codes and regulations.Store oil rags in a bottom-ventilated, covered, metal container.

31. Keep hands and feet away from moving parts.Do not reach over or across equipment while operating.

32. Before use, check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the equipment's operation.if damaged, have the equipment serviced before using. Many accidents are caused by poorly maintained equipment.

33. Use the correct equipment for the application.Do not modify the equipment and do not use the equipment for a purpose for which it is not intended.

34. Vibration Hazard:This tool vibrates during use.Repeated or long-term exposure to vibration may cause temporary or permanent physical injury,particularly to the hands, arms and shoulders.To reduce the risk of vibration-related injury.

(1) Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check-ups to ensure medical problems are not being caused or worsened from use. Pregnant women or people who have impaired blood circulation to the hand, past hand injuries, nervous system disorders,diabetes, or Raynaud's Disease should not use this tool. If you feel any symptoms related to vibration (such as tingling, numbness, and white or blue fingers), seek medical advice as soon as possible.

(2) Do not smoke during use.Nicotine reduces the blood supply to the hands and fingers,increasing the risk of vibration-related injury.

(3) Wear suitable gloves to reduce the vibration effects on the user.

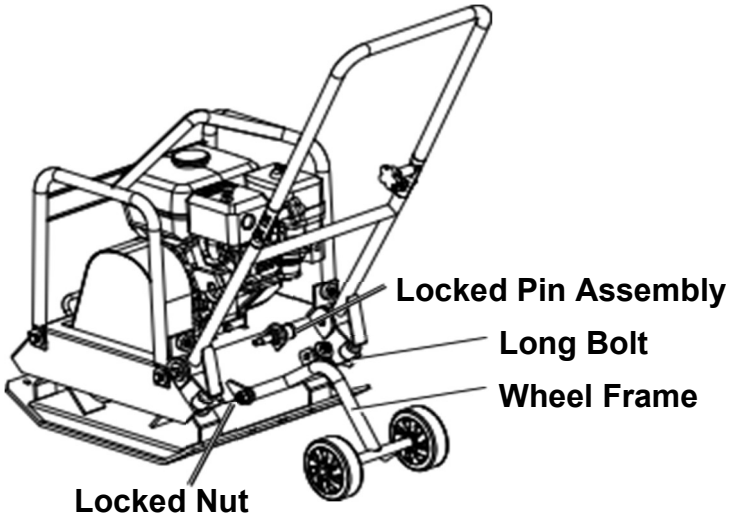
(4) Use tools with the lowest vibration when there is a choice between different processes.

(5) Include vibration-free periods each day of work.

(6) Grip tool as lightly as possible (while still keeping safe control of it). Let the tool do the work.

(7) To reduce vibration, maintain the tool as explained in this manual.If any abnormal vibration occurs, stop use immediately.

Main Parts of Product



Subassembly
Plate Compactor
Wheel Kit

Assembly Instructions

⚠WARNING

1 Loosen the Locked Nut and Flat Gaskets, remove the Long Bolt.

2 Align the wheel frame holes and support plate holes. Insert the Long Bolt through all hole.

3 Add Flat Gasket and tighten Locked Nut to end of Long Bolt.

4 Place wheels in stored position, pull Locked Pin Assembly and swing wheels frame back up until they engage with pin.

Before Each Use

⚠WARNING

Pre-Start Checks

1 Inspect engine and equipment looking for damaged, loose, and missing parts before set up and starting. If any problems are found, do not use equipment until fixed properly.

2 IMPORTANT: CHECK HARDWARE TIGHTNESS BEFORE EVERY USE.The strong vibrations created during use will cause some hardware to loosen.

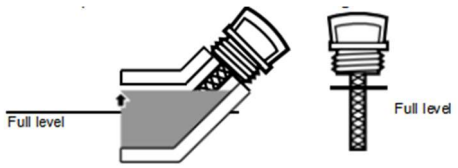
3 Firmly attach the Upper Handle BEFORE use.

4 Checking and Filling engine Oil.NOTICE: Your Warranty is VOID if the engine’ s crankcase is not properly filled with oil before each use. Before each use, check the oil level.Engine will not start with low or no engine oil.

5 Make sure the engine is stopped and is level.

6 Close the Fuel Valve.

7 Clean the top of the Dipstick and the area around it. Remove the Dipstick by turning it counterclockwise, and wipe it off with a clean, lint free rag.



8 Reinsert the Dipstick without threading it in and remove it to check the oil level. The oil level should be up to the full level as shown above.

9 If the oil level is at or below the low mark add the appropriate type of oil until the oil level is at the proper level. SAE 10W-30 oil is recommended for general use.

10 Thread the dipstick back in clockwise.

11 NOTICE: Do not run the engine with too little oil. Engine will shut off if engine oil level is too low.

12 Checking and Filling Fuel.WARNING! TO PREVENT SERIOUS INJURY FROM FIRE.Fill the fuel tank in a well-ventilated area away from ignition sources. If the engine is hot from use, shut the engine off and wait for it to cool before adding fuel. Do not smoke.Clean the Fuel Cap and the area around it.Unscrew and remove the Fuel Cap.

13 Note: Do not use gasoline containing more than 10% ethanol (e10). Do not use e85 ethanol. add fuel stabilizer to the gasoline or the Warranty is VOID.

14 Note: Do not use gasoline that has been stored in a metal fuel container or a dirty fuel container. it can cause particles to enter the carburetor, affecting engine performance and/or causing damage.

15 If needed, fill the Fuel Tank to about 1 inch under the fill neck of the Fuel Tank with 87 octane or higher unleaded gasoline that has been treated with a fuel stabilizer additive. Follow fuel stabilizer manufacturer’s recommendations for use.

16 Then replace the Fuel Cap.

17 Wipe up any spilled fuel and allow excess to evaporate before starting engine.To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.

Operating Instructions

⚠WARNING

Starting the engine

Before starting the engine:

a. Follow the Set up instructions in the equipment manual to prepare the equipment. b. Inspect the equipment and engine.

c. Fill the engine with the proper amount and type of

both stabilizer-treated unleaded gasoline and oil.

d. Read the equipment Operation section in the equipment manual

1 To start a cold engine, move the Choke to the CHOKE position. To restart a warm engine, leave the Choke in the RUN position.

2 Open the Fuel Valve.

3 Slide the Throttle Line Assembly to 1/3 away from the SLOW position.

4 Turn the Engine Switch on.

Note: If engine does not start, check engine oil level. Engine will not start with low or no engine oil.

5. Grip the Starter Handle of the Engine loosely and pull it slowly several times to allow the gasoline to flow into the Engine's carburetor. Then pull the Starter Handle gently until resistance is felt. Allow Cable to retract fully and then pull it quickly. Repeat until the engine starts.

Note: Do not let the Starter Handle snap back against the engine. Hold it as it recoils so it doesn't hit the engine.

6. Allow the Engine to run for several seconds. Then, if the Choke lever is in the CHOKE position,move the Choke Lever very slowly to its RUN position.

NOTE: Moving the Choke Lever too fast could stall the engine

IMPORTANT: Allow the engine to run at no load for five minutes with no load after each start-up so that the engine can stabilize.

7 Grip the Upper Handle firmly with both hands.

8 Depending on the desired speed at which the Vibrator Plate will vibrate, use the Speed Control Lever to adjust the Throttle Line Assembly between its "LOW" to "HIGH" position.

9 Slowly push or pull the Vibrator Plate while guiding the tool in the desired direction.

10 Keep a safe distance away from the edges and banks of ditches and use care to prevent the Vibrator Plate from toppling over.

11 Ascend slopes carefully in a direct path. Pull backwards up steep slopes to prevent the Vibrator Plate from toppling over onto the operator.

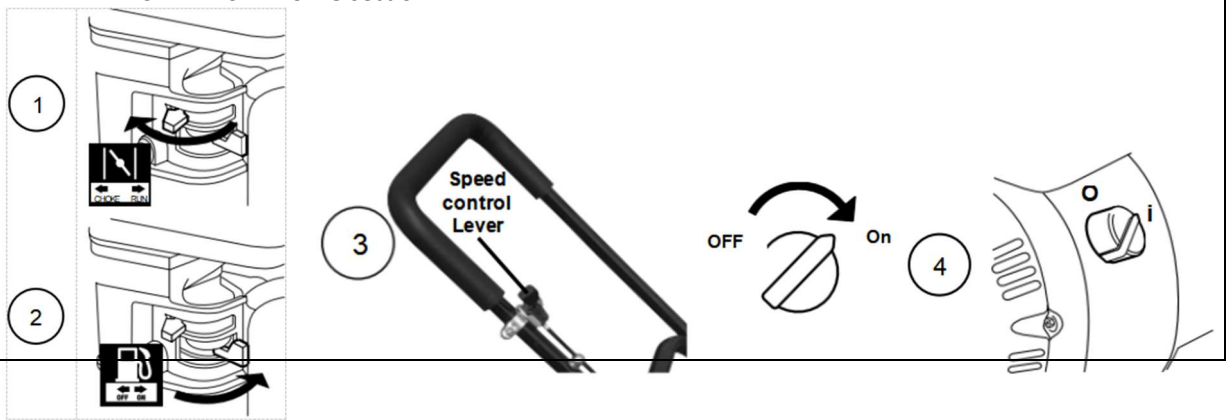
12 Break-in period:

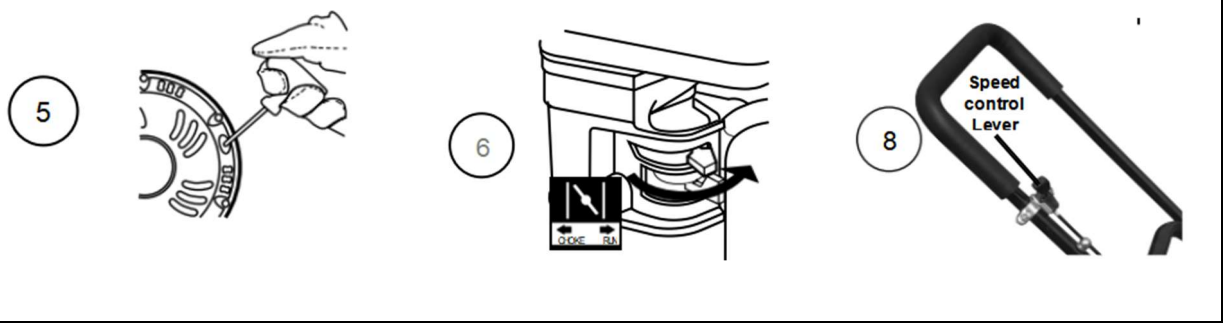
a. Breaking-in the engine will help to ensure proper equipment and engine operation.

b. The operational break-in period will last about 3 hours of use.Do not operate the engine at its maximum speed during this period.

c. The maintenance break-in period will last about 20 hours of use. Change the engine oil after this period.

Under normal operating conditions subsequent maintenance follows the schedule explained in the MAINTENANCE AND SERVICING section





After Each Use

⚠WARNING

Stopping the engine

To stop the engine in an emergency,turn the engine Switch off.

Under normal conditions, use the following procedure:

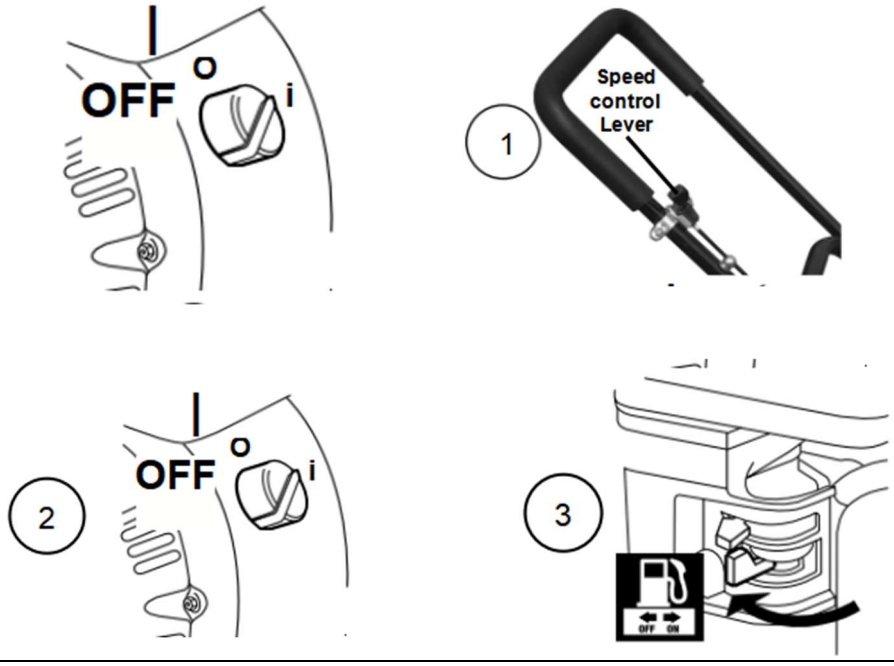
1. Slide the Throttle Line Assembly to SLOW.

2. Turn the Engine Switch off.

3. Close the Fuel Valve.

4. Park the Vibrator Plate on a firm and level surface after use.

5. The Locked Pin Assemblies can be loosened and the Upper Handle folded down to aid in storage.



Maintenance

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL STARTING:

Turn the power Switch of the equipment to its “OFF” position, wait for the engine to cool, and disconnect the spark plug cap before performing any inspection, maintenance, or cleaning procedures.

TO PREVENT SERIOUS INJURY FROM EQUIPMENT FAILURE:

Do not use damaged equipment. if abnormal noise, vibration, or excess smoking occurs, have the problem corrected before further use.

Follow all service instructions in this manual. the engine may fail critically if not serviced properly.

Many maintenance procedures, including any not detailed in this manual, will need to be performed by a qualified technician for safety. if you have any doubts about your ability to safely service the equipment or engine, have a qualified technician service the equipment instead.

Checking and Filling Fuel

Warning! TO PREVENT SERIOUS INJURY FROM FIRE

Fill the fuel tank in a well-ventilated area away from ignition sources. If the engine is hot from use, shut the engine off and wait for it to cool before adding fuel. Do not smoke.

1. Clean the Fuel Cap and the area around it.
2. Unscrew and remove the Fuel Cap.

Note: Do not use gasoline containing more than 10% ethanol (e10). Do not use e85 ethanol. add fuel stabilizer to the gasoline or the Warranty is VOID.

Note: Do not use gasoline that has been stored in a metal fuel container or a dirty fuel container. it can cause particles to enter the carburetor, affecting engine performance and/or causing damage.

3. If needed, fill the Fuel Tank to about 1 inch under the fill neck of the Fuel Tank with 87 octane or higher unleaded gasoline that has been treated with a fuel stabilizer additive. Follow fuel stabilizer manufacturer’s recommendations for use.

4. Then replace the Fuel Cap.

5. Wipe up any spilled fuel and allow excess to evaporate before starting engine. To prevent FIRE, do not start the engine while the smell of fuel hangs in the air

Engine Oil Change

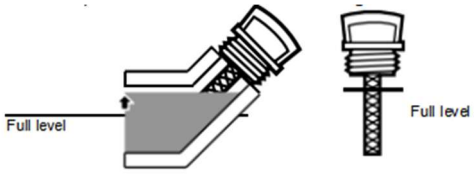
CAUTION! Oil is very hot during operation and can cause burns. Wait for engine to cool before changing oil.

1. Make sure the engine is stopped and is level.
2. Close the Fuel Valve.
3. Place a drain pan (not included) underneath the crankcase’s drain plug.

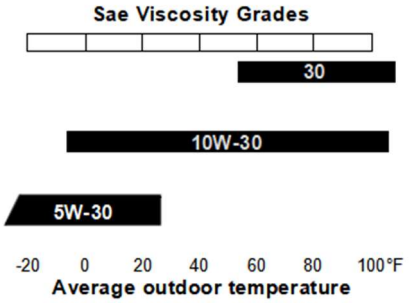
4. Remove the drain plug and, if possible,tilt the crankcase slightly to help drain the oil out. Recycle used oil.

5. Replace the drain plug and tighten it.

6. Clean the top of the Dipstick and the area around it. Remove the Dipstick by turning it counterclockwise, and wipe it off with a clean, lint free rag.



7 Add the appropriate type of oil until the oil level is at the full level. SAE 10W-30 oil is recommended for general use.The SAE Viscosity Grade chart shows other viscosities to use in different average temperatures



8 Thread the dipstick back in clockwise

NOTICE: Do not run the engine with too little oil.Engine will not start with low or no engine oil

Air Filter element Maintenance

1. Remove the Air Cleaner Cover and the air filter(s) and check for dirt. Clean as described below.

2. Cleaning:

• For paper filters:

To prevent injury from dust and debris,wear ANSI-approved safety goggles,NIOSH-approved dust mask/respirator, and heavy-duty work gloves. In a well-ventilated area away from bystanders, use pressurized air to blow dust out of the filter.

• For foam filters:

Wash the filter in warm water and mild detergent several times. Rinse. Squeeze out excess water and allow it to dry completely. Soak the filter in lightweight oil briefly,then squeeze out the excess oil.

3. Install the cleaned filter(s). Secure the Air Cleaner Cover before use

Spark plug Maintenance

1. Disconnect spark plug cap from end of plug.Clean out debris from around spark plug.

2. Using a spark plug wrench, remove the spark plug.

3. Inspect the spark plug:

If the electrode is oily, clean it using a clean, dry rag. If the electrode has deposits on it, polish it using emery paper. If the white insulator is cracked or chipped, the spark plug needs to be replaced.

NOTICE: Use only the spark plug listed on the Engine Manual.Using an incorrect spark plug may damage the engine.

4. When installing a new spark plug, adjust the plug's gap to the specification on the Engine Manual. Do not pry against the electrode, the spark plug can be damaged.

5. Install the new spark plug or the cleaned spark plug into the engine. Gasket-style: Finger-tighten until the gasket contacts the cylinder head, then tighten about 1/2-2/3 turn more.Non-gasket-style: Finger-tighten until the plug contacts the head, then tighten about 1/16 turn more.

NOTICE: Tighten the spark plug properly.If loose,the spark plug will cause the engine to overheat. If overtightened, the threads in the engine block will be damaged

6. Apply dielectric spark plug boot protector (not included) to the end of the spark plug and reattach the wire securely.

Belt Tension Adjustment

1. Turn off engine.

2. Loosen, but do not remove, the four Nuts that hold the Engine to the Connecting Plates.

3. Slide the Engine , away from the Clutch Assembly, until the belts are properly tensioned.

4. Tighten the four Nuts that hold Engine to the Connecting Plates.

Belt Replacement

1.Turn off engine.

2. Loosen, but do not remove, the four Nuts that hold the Engine to the Connecting Plates.

3 Using Nut and Bolt,slide the Engine towards the Clutch Assembly until Belts can be removed.

4 Remove the old Belts, then install new ones.

5 Check the alignment of the two pulleys.(side by side - in the same level/surface)

6 Using Nut and Bolt , slide Engine away from Clutch Assembly until Belt is properly tensioned.

7 Re-tighten the four Nuts that hold the Engine to the Connecting Plates.

Long-Term Storage

When the equipment is to remain idle for longer than 20 days, prepare the engine for storage as follows

1 CLEANING:

Wait for engine to cool, then clean engine with dry cloth. NOTICE: Do not clean using water. The water will gradually enter the engine and cause rust damage.Apply a thin coat of rust preventive oil to all metal parts.

2 FUEL:

To protect the fuel tank during storage, fill the tank with gasoline that has been treated with a fuel stabilizer additive. Follow fuel stabilizer manufacturer's recommendations for use.

WARNING! TO PREVENT SERIOUS INJURY FROM FIRE Fill tank in a well-ventilated area away from ignition sources. If the engine is hot from use, shut the engine off and wait for it to cool before adding fuel. Do not smoke.

3 LUBRICATION:

a. Change engine oil.

b. Clean out area around spark plug.Remove spark plug and pour one tablespoon of engine oil into cylinder through spark plug hole

c. Replace spark plug, but leave spark plug cap disconnected.

d. Pull Starter Handle to distribute oil in cylinder.Stop after one or two revolutions when you feel the piston start the compression stroke(when you start to feel resistance).

4 STORAGE AREA:

Cover and store in a dry, level, well-ventilated area out of reach of children. Storage area should also be away from ignition sources, such as water heaters, clothes dryers, and furnaces.

NOTICE: During extended storage periods the Engine must be started every 3 months and allowed to run for 15–20 minutes or the Warranty is VOID.

5 AFTER STORAGE:

Before starting the engine after storage, keep in mind that untreated gasoline will deteriorate quickly. Drain the fuel tank and change to fresh fuel if untreated gasoline has been sitting for a month,if treated gasoline has been sitting beyond the fuel stabilizer's recommended time period, or if the engine does not start.

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 and Lubrication Schedule

note: This maintenance schedule is a general guide only. If performance decreases or if equipment operates unusually, check systems immediately. The maintenance needs of each engine will differ depending on factors such as duty cycle, temperature, air quality, fuel quality, and other factors.

note: The following procedures are in addition to the regular checks and maintenance explained as part of the regular operation of the engine and equipment.

Maintenance Interval	Maintenance Point
Daily before operating	1 Brush off outside of engine. 2 Check and tighten all hardware. 3 Check engine oil level and deposit cup.
After the first 10 operating hours or every week	1 Check and tighten all hardware. 2 Clean air cleaner
After the first 20 operating hours or every two week	1 Check and tighten all hardware. 2 Clean air cleaner 3 Change engine oil
After the first 50 operating hours or every month	1 Check and tighten all hardware. 2 Clean air cleaner 3 Change engine oil 4 Check and clean spark plug
After the first 100 operating hours or every 6 month	1 Check and tighten all hardware. 2 Clean air cleaner 3 Change engine oil 4 Check and clean spark plug
After the first 300 operating hours or every year	1 Check and tighten all hardware. 2 Clean air cleaner 3 Change engine oil 4 Check and clean spark plug 5 Clean fuel tank, strainer and carbureto 6 Check/replace fuel Hose

Troubleshooting

⚠WARNING

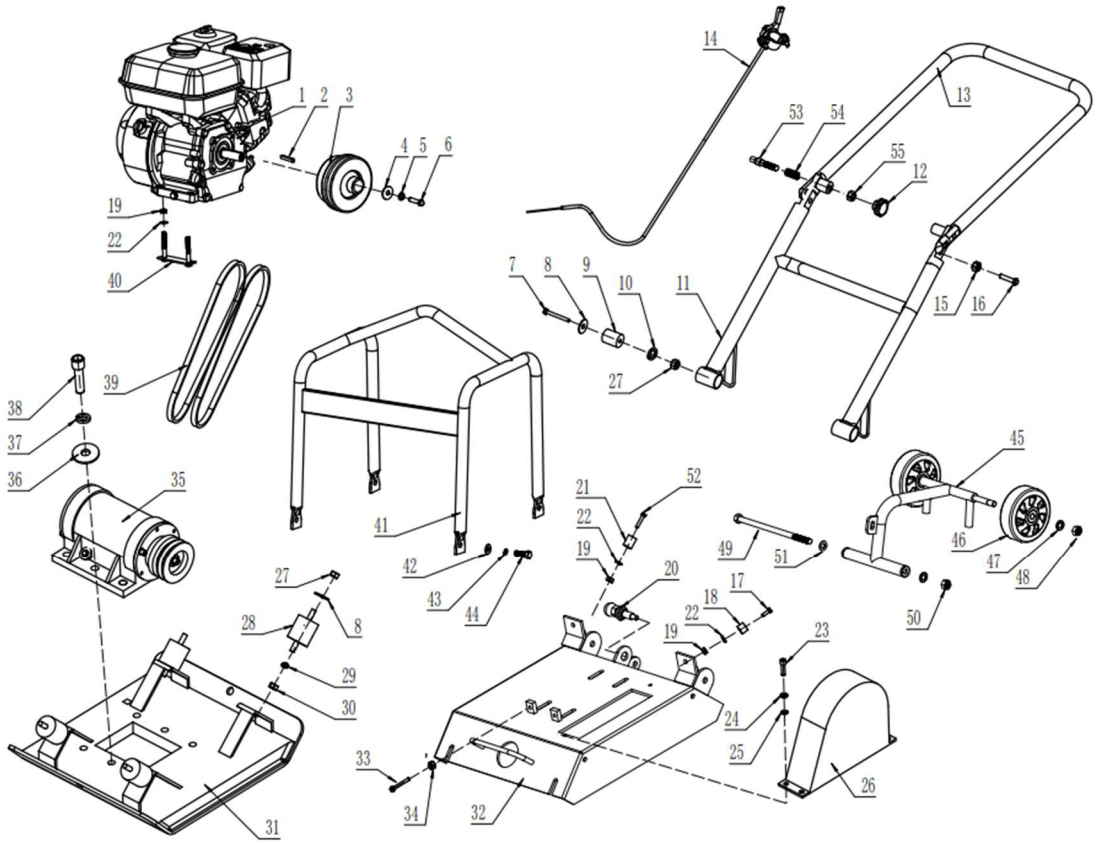
Follow all safety precautions whenever diagnosing or servicing the equipment or engine

Failure	Possible Cause	Corrective Action
Engine will not start	FUEL RELATED: 1. No fuel in tank or fuel valve closed. 2. Choke not in START position, cold engine. 3. Gasoline with more than 10% ethanol used. (E15, E20, E85, etc.) 4. Low quality or deteriorated, old gasoline. 5. Carburetor not primed. 6. Dirty fuel passageways. 7. Carburetor needle stuck. Fuel can be smelled in the air. 8. Too much fuel in chamber. This can be caused by the carburetor needle sticking. 9. Clogged Fuel Filter.	FUEL RELATED: 1. Fill fuel tank with fresh 87+ octane stabilizer- treated unleaded gasoline and open fuel valve. **Do not use gasoline with more than 10% ethanol (e15, e20, e85, etc.).** 2. Move Choke to START position. 3. Clean out ethanol rich gasoline from fuel system. Replace components damaged by ethanol. Use fresh 87+ octane stabilizer- treated unleaded gasoline only. **Do not use gasoline with more than 10% ethanol (e15, e20, e85, etc.).** 4. Use fresh 87+ octane stabilizer-treated unleaded gasoline. **Do not use gasoline with more than 10% ethanol (e15, e20, e85, etc.).** 5. Pull on Starter Handle to prime. 6. Clean out passageways using fuel additive. Heavy deposits may require further cleaning. 7. Gently tap side of carburetor float chamber with screw driver handle. 8. Turn Choke to RUN position. Remove spark plug and pull the start handle several times to air out the chamber. Reinstall spark plug and set Choke to START position.

		9. Replace Fuel Filter.
	IGNITION (SPARK) RELATED: 1. Spark plug cap not connected securely. 2. Spark plug electrode wet or dirty. 3. Incorrect spark plug gap. 4. Spark plug cap broken. 5. Incorrect spark timing or faulty ignition system.	IGNITION (SPARK) RELATED: 1. Connect spark plug cap properly. 2. Clean spark plug. 3. Correct spark plug gap. 4. Replace spark plug cap. 5. Have qualified technician diagnose/ repair ignition system.
	COMPRESSION RELATED: 1. Cylinder not lubricated. Problem after long storage periods. 2. Loose or broken spark plug. (Hissing noise will occur when trying to start.) 3. Loose cylinder head or damaged head gasket. (Hissing noise will occur when tryingto start.) 4. Engine valves or tappets mis-adjusted or stuck.	COMPRESSION RELATED: 1. Pour tablespoon of oil into spark plug hole. Crank engine a few times and try to start again. 2. Tighten spark plug. If that does not work, replace spark plug. If problem persists, may have head gasket problem 3. Tighten head. If that does not remedy problem,replace head gasket. 4. Have qualified technician ad just/repair valves and tappets.
	ENGINE OIL RELATED: 1. Low engine oil. 2. Engine mounted on slope, triggering low oil shut down.	ENGINE OIL RELATED: 1. Fill engine oil to proper level. Check engine oil before EVERY use. 2. Operate engine on level surface. Check engine oil level.
Engine misfires	1. Spark plug cap loose. 2. Incorrect spark plug gap or damaged spark plug. 3. Defective spark plug cap. 4. Old or low quality gasoline. 5. Incorrect compression.	1. Check cap and wire connections. 2. Re-gap or replace spark plug. 3. Replace spark plug cap. 4. Use only fresh 87+ octane stabilizer-treated unleaded gasoline. **Do not use gasoline with more than 10% ethanol (e15, e20, e85, etc.).** 5. Diagnose and repair compression. (Use **engine will not start: COMPRESSION RELATED** section.)

Engine stops suddenly	1. Fuel tank empty or full of impure or low quality gasoline. 2. Low oil shutdown. 3. Defective fuel tank cap creating vacuum, preventing proper fuel flow. 4. Faulty magneto. 5. Disconnected or improperly connected spark plug cap.	1. Fill fuel tank with fresh 87+ octane stabilizer- treated unleaded gasoline. **Do not use gasoline with more than 10% ethanol (e15, e20, e85, etc.).** 2. Fill engine oil to proper level. Check engine oil before EVERY use. 3. Test/replace fuel tank cap. 4. Have qualified technician service magneto. 5. Secure spark plug cap.
Engine stops when under heavy load	1. Dirty air filter 2. Engine running cold.	1. Clean element. 2. Allow engine to warm up prior to operating equipment.
Engine knocks	1. Old or low quality gasoline. 2. Engine overloaded. 3. Incorrect spark timing, deposit buildup, worn engine, or other mechanical problems.	1. Fill fuel tank with fresh 87+ octane stabilizer- treated unleaded gasoline. **Do not use gasoline with more than 10% ethanol (e15, e20, e85, etc.).** 2. Do not exceed equipment's load rating. 3. Have qualified technician diagnose and service engine.
Engine backfires After sudden impact, engine will run, but equipment will not operate	1. Impure or low quality gasoline. 2. Engine too cold. 3. Intake valve stuck or overheated engine. 4. Incorrect timing. Shaft key or other shear pin broken by impact to disconnect engine and limit damage.	1. Fill fuel tank with fresh 87+ octane stabilizer- treated unleaded gasoline. **Do not use gasoline with more than 10% ethanol (e15, e20, e85, etc.).** 2. Use cold weather fuel and oil additives to prevent backfiring. 3. Have qualified technician diagnose and service engine. 4. Check engine timing. Have qualified technician check and replace broken shaft key or other shear pins.

Parts Diagram 1



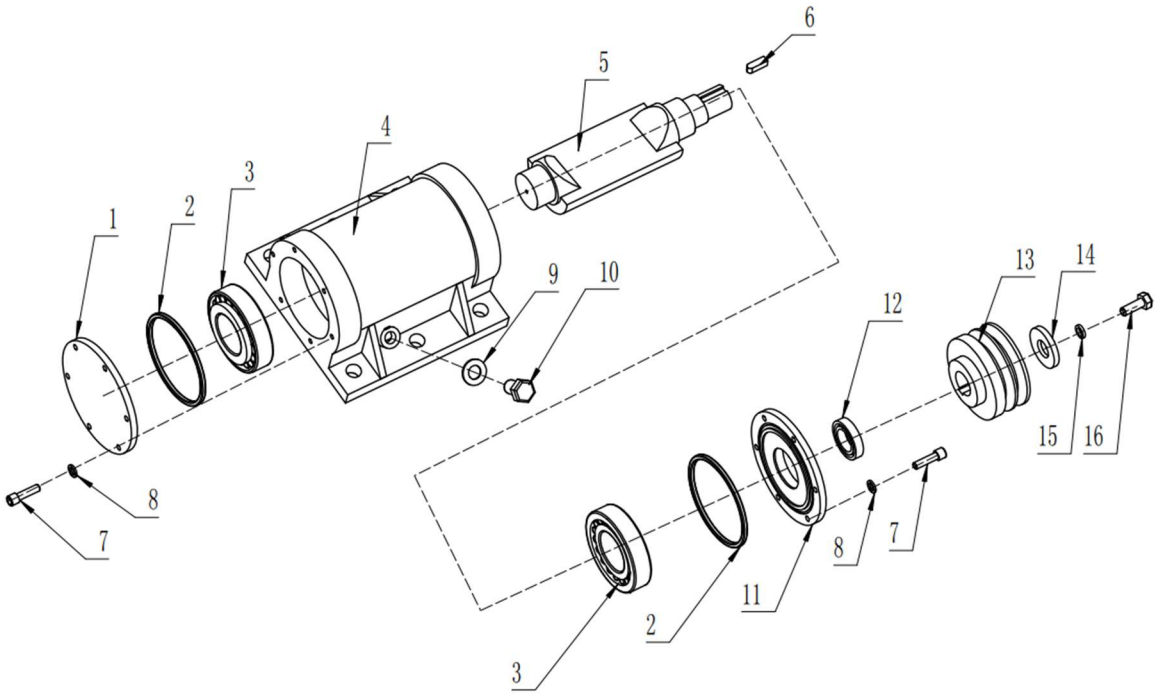
Parts List 1

Reference	Part Number	Part Description	Quantity
1	58983201	Engine	1
2	58983202	Key 5*40	1
3	58983203	Clutch Assembly	1
4	58983204	Conical Flat Gasket 8×30×6	1
5	58983205	Spring Gasket Ø 8	1
6	58983206	External hexagon bolt M8*30	1
7	58983207	External hexagon bolt M12*80	2
8	58983208	Enlarged Flat Gasket 12*35	6
9	58983209	Handle gluesheath	2
10	58983210	Flat Gasket Ø 12	2
11	58983211	Lower handle	1
12	58983212	Plum blossom Nut M10	2

Reference	Part Number	Part Description	Quantity
13	58983213	Upper handle	1
14	58983214	Throttle Line Assembly	1
15	58983215	Locked Nut M10	2
16	58983216	Flange Bolt M10*35	2
17	58983217	Flat Cross Bolt M8*25	4
18	58983218	Handle Damper 35*15	2
19	58983219	Locked Nut M8	8
20	58983220	Locked Pin Assembly	1
21	58983221	Handle lower Damper	2
22	58983222	Flat Gasket Ø8	8
23	58983223	External hexagon bolt M8*25	2
24	58983224	Spring Gasket Ø8	2
25	58983225	Medium Flat Gasket 8*24	2
26	58983226	Belt Cover	1
27	58983227	Locked Nut M12	6
28	58983228	Shock Absorber	4
29	58983229	Spring Gasket Ø12	4
30	58983230	Nut M12	4
31	58983231	Bottom Plate	1
32	58983232	Engine Support Plate	1
33	58983233	Flange Bolt M8*50	2
34	58983234	Nut M8	2
35	58983235	Exciter	1
36	58983236	Flat Gasket Ø16	6
37	58983237	Spring Gasket Ø16	6
38	58983238	Inner Hexagon bolt M16*45	6
39	58983239	Belt A710	2
40	58983240	Engine Fix Plate	2
41	58983241	Guard Frame	1
42	58983242	Flat Gasket Ø10	4

Reference	Part Number	Part Description	Quantity
43	58983243	Spring Gasket Ø10	4
44	58983244	External hexagon bolt M10*35	4
45	58983245	Wheel Frame	1
46	58983246	Wheel	2
47	58983247	Flat Gasket Ø 12	2
48	58983248	Locked Nut M12	2
49	58983249	Long Bolt M12*230	1
50	58983250	Locked Nut M12	1
51	58983251	Flat Gasket Ø10	2
52	58983252	Inner hexagon bolt M8*40	2
53	58983253	Pin for Plum blossom Nut	2
54	58983254	Spring for Plum blossom Nut	2
55	58983255	Nut M10	2

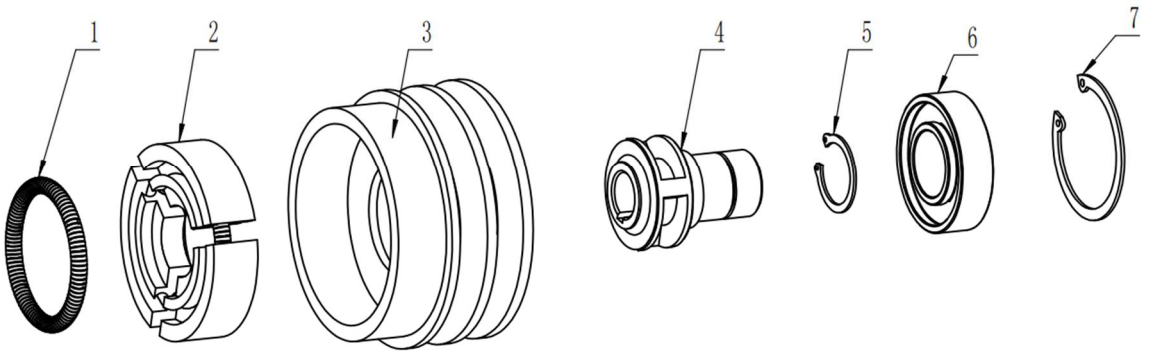
Parts Diagram 2



Parts List 2

Reference	Part Number	Part Description	Quantity
1	5898323501	Case Cover(shut-off)	1
2	5898323502	“O” Ring 110*3.1	1
3	5898323503	Bearing 6309	2
4	5898323504	Vibrating Case	1
5	5898323505	Eccentric Shaft	1
6	5898323506	Key 8*30	1
7	5898323507	Inner Hexagon bolt M6*20	12
8	5898323508	Flat Gasket Ø6	12
9	5898323509	Copper Gasket Ø14	1
10	5898323510	Oil Drainage Bolt M14*1.5	1
11	5898323511	Case Cover(Pulley)	1
12	5898323512	Oil Seal 35*52*7	1
13	5898323513	Small Pulley	1
14	5898323514	Enlarged Flat Gasket 10*35	1
15	5898323515	Spring Gasket	1
16	5898323516	Inner hexagon bolt M10*30	1

Parts Diagram 3



Parts List 3

Reference	Part Number	Part Description	Quantity
1	5898320301	Spring	2
2	5898320302	Centrifugal block	3
3	5898320303	Big Pulley	1
4	5898320304	Shaft Converter	1
5	5898320305	Clip Ø30	1
6	5898320306	Bearing 6206-2RS	1
7	5898320307	Clip Ø62	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 NorthStar 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.

Distributed by:

Northern Tool & Equipment Company, Inc.

Burnsville, Minnesota 55306

www.northerntool.com

Made in China