



GAS-POWERED CURBING MACHINE

OWNER'S MANUAL



WARNING:

Read carefully and understand all **INSTRUCTIONS** before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

Item # 998000

Thank you very much for choosing a NORTHERN TOOL + EQUIPMENT CO., INC. Product! For future reference, please complete the owner's record below:

Model: _____ Purchase Date: _____

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

This machine is designed for certain applications only. Northern Tool + Equipment cannot be responsible for issues arising from modification. We strongly recommend this machine is not modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, DO NOT use the machine until you have first contacted Northern Tool + Equipment to determine if it can or should be performed on the product.

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

INTENDED USE

- The Curb Machine is a gasoline-powered concrete extruder.
- The machine produces continuous concrete edging, borders, and mower strips without the use of form work or guide rails.
- The machine can produce in excess of 500 feet per hour under ideal conditions with constant feeding.
- The machine can create circles with a diameter of 36", and will lay the concrete product as close as 1/4" from an existing structure.
- The machine can also extrude the edging in a trench or above the ground as needed.

TECHNICAL SPECIFICATIONS

Item	Description
Engine	4.5 HP 126cc Robin
Wheel Type	Pneumatic/8-1/2" Diameter x 2" Wide/ 30 PSI Inflation Rating/ 2-Ply
Concrete hopper opening	17-7/8"L x 9-3/8"W
Overall Dimensions	37.4"L x 20"W x 50"H
Accessories	4" x 6" Mower's Edge Slip Form 4" x 6" Slant Style Slip Form 4" x 6" Curb Style Slip Form 4x6 Mowers Edge Trowel 4x8 Curb Style Trowel 4x7 Slant Style Trowel Finishing Trowel 90°
Net Weight	172 lbs.

GENERAL SAFETY RULES



WARNING: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.



WARNING: Only operate the engine in a well ventilated area. Carbon Monoxide produced by the engine during use can kill. Do not use indoors, near windows or in other sheltered areas.

SAVE THESE INSTRUCTIONS

WORK AREA

- **Keep work area clean**, free of clutter and well lit. Cluttered and dark work areas can cause accidents.
- **Do not use your tool where there is a risk of causing a fire or an explosion;** e.g. in the presence of flammable liquids, gasses, or dust. Power tools create sparks, which may ignite the dust or fumes.
- **Keep children and bystanders** away while operating a power tool. Distractions can cause you to lose control, so visitors should remain at a safe distance from the work area.
- **Be aware of all power lines, electrical circuits,** water pipes and other mechanical hazards in your work area, particularly those hazards below the work surface hidden from the operator's view that may be unintentionally contacted and may cause personal harm or property damage.
- **Be alert of your surroundings.** Using power tools in confined work areas may put you dangerously close to cutting tools and rotating parts.

INTERNAL COMBUSTION ENGINE SAFETY



WARNING: Internal combustion engines present special hazards during operation and fueling. Read and follow the warning instructions in the engine Owner's Manual and the safety guidelines below. Failure to follow the warnings and safety standards could result in severe injury or death.

- **DO NOT** run the machine indoors or in an enclosed area such as a deep trench unless adequate ventilation, through such items as exhaust fans or hoses, is provided. Exhaust gas from the engine contains poisonous carbon monoxide gas; exposure to carbon monoxide can cause loss of consciousness and may lead to death.
- **DO NOT** smoke while operating the machine.
- **DO NOT** smoke when refueling the engine.
- **DO NOT** refuel a hot or running engine.
- **DO NOT** refuel the engine near an open flame.
- **DO NOT** spill fuel when refueling the engine.
- **DO NOT** run the engine near open flames.
- **ALWAYS** refill the fuel tank in a well-ventilated area.
- **ALWAYS** replace the fuel tank cap after refueling.
- **ALWAYS** check the fuel lines and the fuel tank for leaks and cracks before starting the engine. Do not run the machine if fuel leaks are present or the fuel lines are loose.

PERSONAL SAFETY

- **Stay alert**, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools 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 often cover moving parts and should be avoided.
- **Use safety apparel and equipment**. Use safety goggles or safety glasses with side shields which comply with current national standards, or when needed, a face shield. Use a dust mask in dusty work conditions. This applies to all persons in the work area. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate.
- **Avoid accidental starting**. Make sure the engine power switch is in the “OFF” position while transporting.
- **Do not overreach**. Keep proper footing and balance at all times.
- **Remove adjusting keys or wrenches** before connecting to the power supply or turning on the tool. A wrench or key that is left attached to a rotating part of the tool may result in personal injury.

TOOL USE AND CARE

- **Do not force** the curb machine. Tools do a better and safer job when used in the manner for which they are designed. Plan your work, and use the correct tool for the job.
- **Never use a tool** with a malfunctioning switch. Any power tool that cannot be controlled with the switch is dangerous and must be repaired by an authorized service representative before using.
- **Place the switch** in the locked or off position and disconnect the spark plug before servicing, adjusting, installing accessories or attachments, or storing. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- **Store idle tools**. When tools are not in use, store them in a dry, secure place out of the reach of children. Inspect tools for good working condition prior to storage and before re-use.
- **Maintain your tools**. It is recommended that the general condition of any tool be examined before it is used. Keep your tools in good repair by adopting a program of conscientious repair and maintenance in accordance with the recommended procedures found in this manual. If any abnormal vibrations or noise occurs, turn the tool off immediately and have the problem corrected before further use. Have necessary repairs made by qualified service personnel.
- **Cleaning and Lubrication**. Use only soap and a damp cloth to clean your tools. Many household cleaners are harmful to plastics and other insulation. Never let liquid get inside a tool.
- **Use only accessories that are recommended** by the manufacturer for your model. Accessories that may be suitable for one tool may create a risk of injury when used on another tool.
- **Keep guards in place** and in working order.
- **Never leave** tool running unattended. Turn off and unplug the machine before leaving.
- **Make sure** the curb machine is used on a dry, flat, level, ground surface. Avoid steep inclines where the curb machine could possibly tip over.
- **Maintain labels** and nameplates on the curb machine for they carry important information. If unreadable or missing, contact Northern Tool + Equipment for a replacement.
- **Never stand** on the curb machine. Serious injury could result if the machine is tipped over.

- **Check the hopper** and chute of the curb machine for unwanted debris before each use.
- **Never attempt** to remove material stuck in the moving parts of the curb machine when it is plugged into an electrical outlet.
- **Allow the motor** of the curb machine to reach full speed before feeding concrete into the hopper. When turning off the curb machine, allow the motor to stop on its own.
- **Inspect the concrete** before feeding it into the hopper of the curb machine. To avoid damaging the machine, make sure the concrete does not contain metal, large rocks, or any other foreign material.

ASSEMBLY

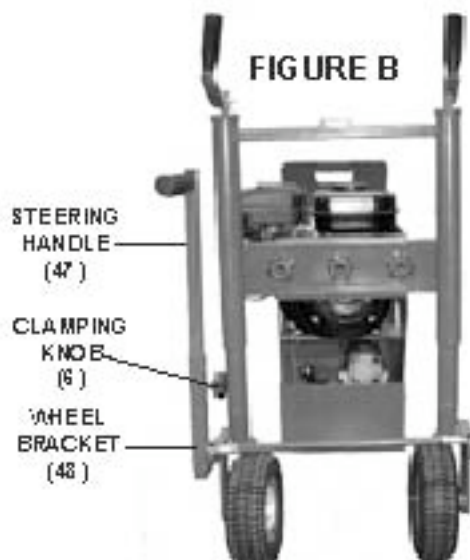


WARNING: Always make sure the engine is off and the spark plug wire is removed prior to assembling the machine, adding any accessories, or making adjustments to the machine.

1. The three Pneumatic Tires (9) must be properly filled with air prior to using the curb machine. Each tire requires 50 PSI of air pressure. Do not overfill.

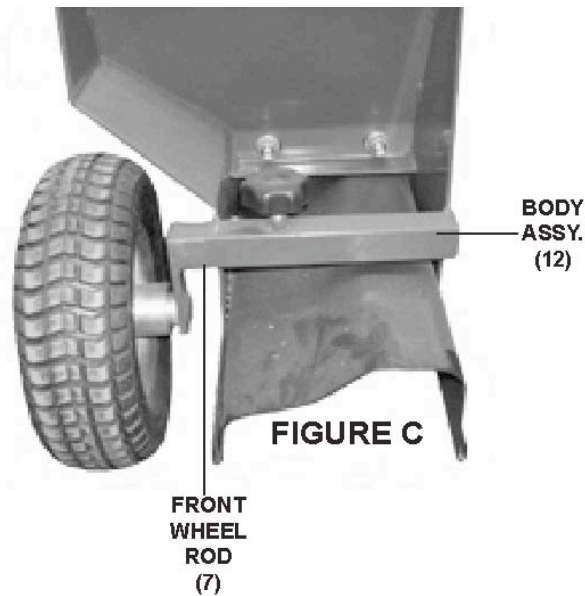


2. The Steering Handle (47) must be attached to the Wheel Bracket (48) prior to use. To do so, insert the Steering Handle into the Wheel Bracket, and secure the Steering Handle to the Wheel Bracket, using a Locking Grip (6) (see Figure B).



3. Next, the Front Wheel Rod (7), with its pre-attached Wheel (9) must be connected to the Body Assembly (12). Insert the Front Wheel Rod into the Body Assembly, and secure the Front

Wheel Rod to the Body Assembly, using a Locking Grip (6) (see Figure C).



4. The Curb Machine comes with three different styles of Slip Forms (1) (see Figures D, E, and F). Select the desired slip form, align the two mounting holes in the Slip form with the two mounting holes located in the front/bottom of the Body Assembly (12), and secure the using two Bolts (5), two Flat Washers (3), two Spring Washers (4), and two Hex Nuts (2) (see Figure G).

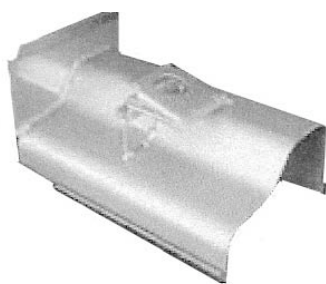


FIGURE D
MOWER'S EDGE (1A)

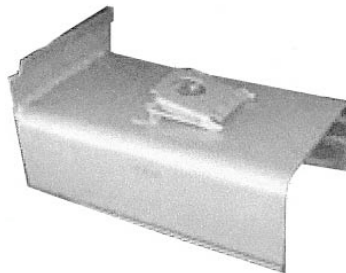
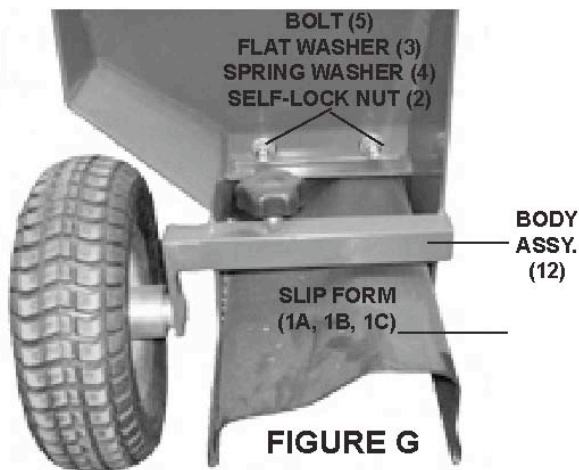


FIGURE E
CURB STYLE (1B)



FIGURE F
SLANT STYLE (1C)



GETTING FAMILIAR WITH THE CURB MACHINE

1. It is recommended that you test the curb machine in your driveway or garage before actual use.

Experiment by running concrete sand or mortar sand (slightly moist and without cement) to get an idea of how to run the curb machine. This experiment is done without risk since it will not set up.

2. Make sure the engine is off, and the spark plug is disconnected.
3. To produce curbing, the front Wheel (9) should be installed upside down or removed, leaving the front of the Slip Form on the ground (see Figure C).
4. Adjust the two rear Wheel Brackets (48) so that the front of the Slip Form is on the ground and the back of the Slip Form is raised about 1/4" above the ground (See Figure H).
5. Start the Engine of the Curb Machine according to the Engine manufacturer's instruction manual.
6. Check to make sure the Compaction Ram (69) is moving back and forth in the bottom of the Hopper without scraping or binding on either edge. By pulling the Shield (11) out of the Hopper, you can observe the inner workings of the machine and make any necessary adjustments.



WARNING: ALWAYS turn off the engine and disconnect the spark plug prior to making any adjustments inside the Motor and Gear Box compartment

7. To test, use slightly wet sand and shovel one shovel-full at a time into the Hopper. When the sand starts to come out of the Slip Form, place your foot in front of the sand to force compaction. The curb machine will now start to propel itself as the sand becomes compacted and starts to extrude a temporary curb.
8. When finished with the experiment, make sure to turn off the Engine according to the Engine manufacturer's instruction manual.

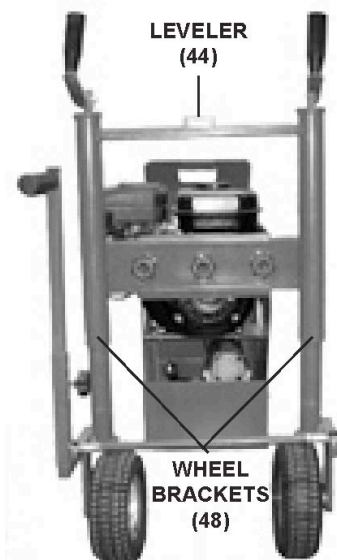


FIGURE H

OPERATION



WARNING: Avoid accidental cuts. Keep hands and fingers away from the Hopper and Chute areas of the curb machine.

1. Make sure the curb machine is turned off.
2. Transport the Curb Machine to the starting point, and install the front Wheel (9) upside down or remove (see Figure C).
3. Place the front end of the Slip Form on the prepared ground where you desire the curb to begin (see Figure G).
4. Move the Rear Pneumatic Tires (9) so that the left Tire is in the trench.
5. Adjust the Wheel Brackets (48) so that the Curb Machine is level and the Slip Form is at the proper height. The front of the Slip Form should be on the ground and the rear approximately 1/4" above the ground.
6. Start the Engine according to the Engine manufacturer's instruction manual.
7. Feed the concrete mix shovel by shovel into the Hopper. Do not allow the mix to stack up in the Hopper. The Curb Machine will propel itself against the concrete and will stop when the Hopper is empty.
8. The operator should be aware:
 - a. That he steers the Curb Machine where it should be going. He can see the inside of the Slip Form through the small window above the Motor and Gear Box. Make sure not to get the machine hung up on roots or the sod.
 - b. That he keeps the Curb Machine level by constant observation of the Leveler (44). (See Figure H.)
 - c. That he keeps the Slip Form (1A, 1B, 1C) at the proper height.

Feeding the Hopper:

1. It is not necessary or advisable to completely fill the Hopper with concrete. It is most efficient to tap the bottom of the Hopper with a shovel at the end of the Compaction Ram (64) stroke to keep the curb machine moving. If the machine extrudes at every stroke, it can produce over 500 feet per hour.
2. It is not recommended to use a small mouth shovel to stamp down the concrete, as it could become jammed by the Compaction Ram (64) resulting in damage to the Gear Box or Drive Arm.

Hand Troweling:

1. The concrete finishing work should be performed before the concrete begins to dry or set up.
2. All of the curbing should be hand troweled as soon as possible after the curb is laid. You should go over each section lightly at least once, but do not over trowel.
3. Some areas, especially tight curves and circles, will leave cracks in the surface which can be filled and finished with a finishing hand trowel. On tight circles, a slightly wetter mix will help alleviate some of the cracking.
4. When finishing the work, keep firm but light pressure on the rear of the finishing hand trowel so that it does not gouge the concrete.

Installing Curbing in a Straight Line:

1. Mark the installation with a string line set 1/4" from the desired curb edge.
2. Run the curb machine with the left side (the "straight" side) along the string.
3. After the section has been extruded, remove the string and place it in line directly over the curb. Portions which are still not straight can be pushed into place with the back of a shovel.

Installing Curved Curbing:

1. It is important for the control of the curb machine, as well as for the protection of the landscape, that you do not make curves too tight. Gentle curves look best, and will allow you to be more efficient with the curb machine.
2. If you have a tight curve or circle, make sure to allow for the curb machine to operate properly by digging the trench a little wider. The extra clearance will allow the Slip Form (1A, 1B, 1C) to make it around the curve.

Installing Circles:

1. The most critical part of a circle is a good radius or trench.
2. Pull a string from the center point of the circle, and mark the outside of the circle with spray paint or chalk.
3. Dig the trench, and place the curb machine in the circle.
4. As the concrete is extruded, help pull the curb machine around the circle so the back of the Slip Form doesn't catch on the sod. Most circles smaller than 6 feet in diameter will "break up" as you drive the machine.
5. As you reach the end of the circle, move the Rear Pneumatic Tires more towards the middle of the circle and you will be able to extrude the concrete almost on top of the beginning of the circle. You may wish to cut off and remove the first foot or two of curbing, as it is likely the machine will move inward as you follow this process. As you trowel the outside of the circle, use your hand on the inside to keep the concrete together. Then, finish with an inside trowel (not included).

Finishing Into a Solid Object:

When installing curbing into a wall or other existing structure, the last two or three feet will need to be finished by hand. To do so, stop the curb machine and remove it from the curb line. Shovel some concrete onto the ground, hand pack it, and then shape it with a finishing hand trowel.

Cutting Control Joints:

1. Control joints should be cut every 3 feet. If you are in an area where there is a lot of ground movement or freezing in the winter, control joints should be cut every 3 feet for the Mower's Edge Style Slip Form (1A) and every 4 feet for the Curb Style Slip Form (1C). This is done with a heavy bladed butcher knife (not included).
2. With a butcher's knife, cut about halfway through the concrete before it sets, pulling the knife carefully out the front or back (usually within 15 to 30 minutes) after the concrete is poured.
3. It is also recommended that on sharp turns a control joint be cut on the sharpest portion of the curve to relieve the pressure in case of ground movement. The purpose of this control joint is to allow the concrete to move with the ground rather than forcing hairline cracks in the concrete.

Sealing:

Once the job is finished, you may to apply a concrete sealer. Sealers aid the concrete in curing and seal out water and other concrete damaging elements.

When the Job Is Finished:

1. Turn off the machine, unplug it, and remove its Slip Form.
2. Clean the Hopper, Chute, Slip Form, and exterior Body of the curb machine thoroughly with water.
3. Clean excess cement off the front edge of the curb, off the grass and other vegetation.
4. Once the concrete is stable, the front and back edges of the curb can be filled in with soil.

Caring For the New Curbing:

1. Most cement products require approximately 28 days to totally cure. During the first 24 hours, take extra precaution to protect the cement from damage. During the first 24 hours, the new curbing will be “soft,” and it can crumble slightly or become scratched if sharp objects come in contact with it or excessive weight or pressure is put on it.
2. Some fertilizers and chemicals will stain the new curbing. Alert those using fertilizers and chemicals to avoid spraying on the curbing. If fertilizers and chemicals come in contact with the new curbing, immediately hose it down thoroughly.
3. During the first 24 to 48 hours, avoid direct sprinkler impact on the curbing. After 24 hours, a fine mist will not cause any damage.

MAINTENANCE



WARNING: Always make sure the engine is off and the spark plug wire is removed prior to assembling the machine, adding any accessories, or making adjustments to the machine.

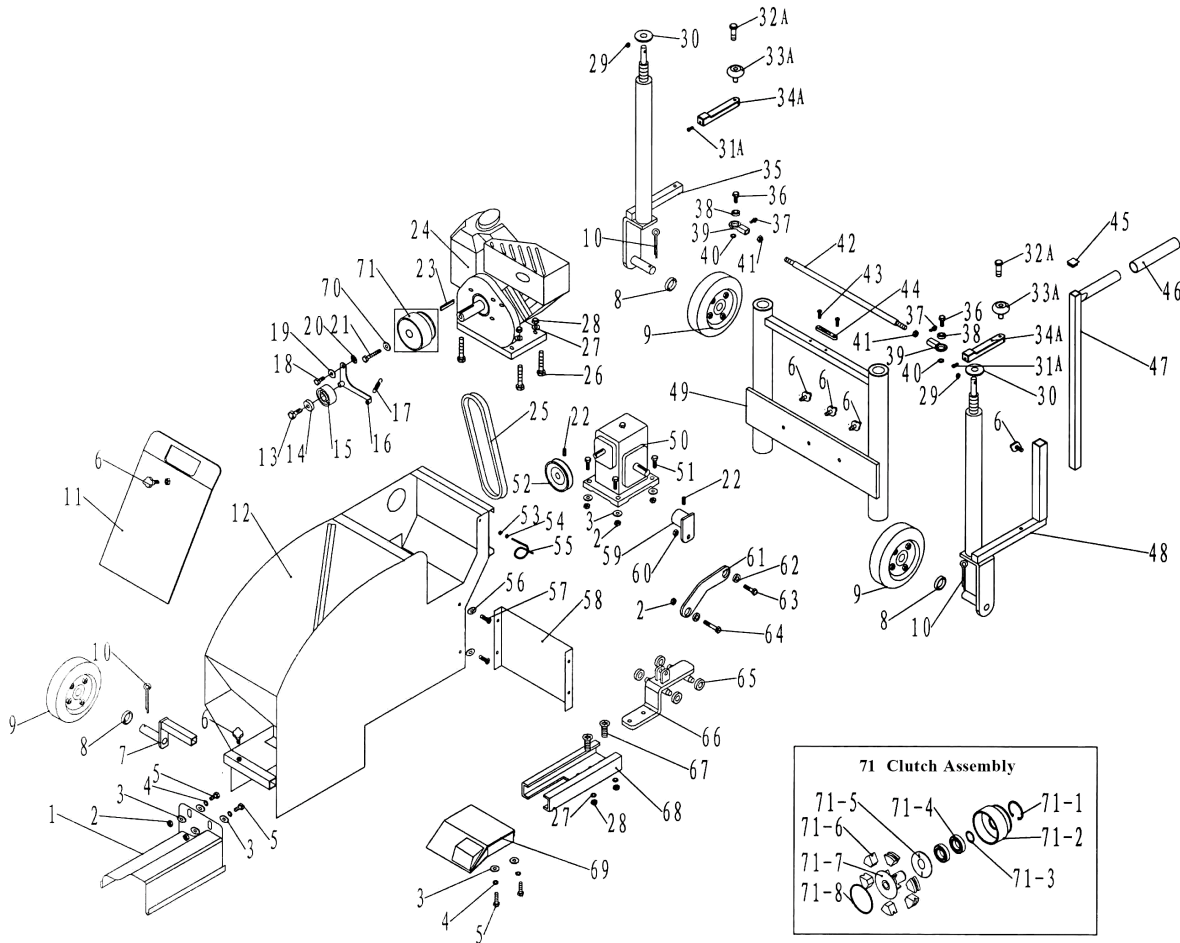
Many maintenance procedures, including any not detailed in this manual, will need to be performed by a qualified technician for safety. If you have any doubts about your ability to safely service the equipment or engine, have a qualified technician service the equipment instead.

Note: These procedures are in addition to the regular checks and maintenance explained as part of the regular operation of the engine and equipment.

- Before each use, inspect the general condition of the Curb Machine. Check for loose screws, misalignment or binding of moving parts, cracked or broken parts, damaged electrical wiring, and any other condition that may affect its safe operation. If abnormal noise or vibration occurs, have the problem corrected before further use. Do not use damaged equipment.
- After each use, clean the Hopper, Chute, Slip Form, and exterior Body of the Curb Machine thoroughly with water. Do not introduce water into the Motor compartment of the machine.
- The gear box is shipped filled with the proper amount of grease, however once a year you must open the Gear Box and check the grease level. Only add grease up to the top of the gears. Do not overfill grease. Overfilling will damage the equipment.
- DO NOT attempt to clean or service the machine while it is running. Rotating parts can cause severe injury.
- DO NOT crank a flooded engine with the spark plug removed on gasoline-powered engines. Fuel trapped in the cylinder will squirt out the spark plug opening.
- DO NOT test for spark on gasoline-powered engines if the engine is flooded or the smell of gasoline is present. A stray spark could ignite the fumes.
- DO NOT use gasoline or other types of fuels or flammable solvents to clean parts, especially in enclosed areas. Fumes from fuels and solvents can become explosive.
- ALWAYS keep the area around the muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite the debris and start a fire.
- ALWAYS replace worn or damaged components with spare parts designed and recommended by the manufacturer.

- ALWAYS disconnect the spark plug on machines equipped with gasoline engines, before servicing, to avoid accidental start-up.
- ALWAYS keep the machine clean and labels legible. Replace all missing and hard-to-read labels. Labels provide important operating instructions and warn of dangers and hazards.

DIAGRAM



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

PARTS LIST

Part No.	Description	Qty.	Part No.	Description	Qty.
1	Slip Form	1	41	Nut M10	2
2	Self-Lock Nut M10	11	42	Steering Rod	1
3	Flat washer Φ 10	10	43	Cross Head Twist Bolt M3X16	2
4	Spring washer Φ 10	8	44	Balancer	1
5	Bolt M10X25	4	45	Square Block S	1
6	Locking Grip Q	6	46	Handrail Sleeve	1
7	Front Wheel Rod	1	47	Steering Handle	1
8	Shaft Sleeve	1	48	Wheel Bracket II	1
9	Wheel A	3	49	Stand Assembly	1
10	Open Pin 4X30	3	50	Gear Box	1
11	Shield	1	51	Bolt M10X35	4
12	Body Assembly	1	52	Gear Box Pulley	1
13	Bolt M10X20	1	53	Self-Lock Nut M5	1
14	Bearing 6200	1	54	NUT M5	1
15	Idle Pulley	1	55	Fixing Ring	1
16	Support Plate I	1	56	Flat Washer Φ 5	4
17	Support Plate I Spring	1	57	Cross Head Twist Bolt M5X10	4
18	Bolt	1	58	Lower Cover Plate	1
19	Flat Washer Φ 8	1	59	Crank Arm	1
20	Washer	1	60	Nut M10	1
21	Bolt 8X40	1	61	Link Arm	1
22	Screw M8X10	1	62	Bearing 61900	2
23	Flat Key 5X10	1	63	Bolt Pin 1	1
24	Engine 4.5HP	1	64	Bolt Pin 3	1
25	V-Belt A560	1	65	Bearing 6001	4
26	Bolt M8X40	4	66	Push/Pull Assembly	1
27	Flat Washer Φ 8	11	67	Cross Head Twist Bolt M8X20	2
28	Self-Lock Nut M8	7	68	Track	1
29	Self-Lock Nut M6	2	69	Compaction Ram	1
30	Washer	2	70	Washer 8X30X2	1
31A	Blot M6X30	2	71	Clutch Assembly	1
32A	Handle Pin	2	71-1	Hole Circlip Φ 55	1
33A	Plastic Grip	2	71-2	Clutch Pulley	1
34A	Handle	2	71-3	Shaft Circlip Φ 30	1
35	Wheel Bracket I	1	71-4	Bearing 6006	2
36	Bolt Pin 2	2	71-5	Wheel Shield	1
37	Oil Cup M6	2	71-6	Idle Pulley	6
38	Bearing GE10E	2	71-7	Impeller	1
39	Turning Ball Head	2	71-8	Spring	1
40	Spacing Sleeve	2			



WARNING

Engine exhaust contains or emits chemicals known to the State of California to cause cancer and birth defects, or other reproductive harm.



WARNING

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 those dust masks that are specially designed to filter out microscopic particles.



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