

# GP3000 GRINDER

# INSTRUCTION MANUAL



Read Manual Before Operating Machine



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# Specifications

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Product Specifications				
Width	Length	Height	Weight	Input Voltage / Amp Draw
29.5" (749 mm)	72.25" (1,835 mm)	52" (1,321 mm)	1,425 lbs (646 kg)	3-Phase 230 V / 69 A

# Safety

## GENERAL RULES FOR SAFE OPERATION

Before use, anyone operating or performing maintenance on this equipment must read and understand this manual, as well as any labels packaged with or attached to the machine and its components. Read the manual carefully to learn equipment applications and limitations, as well as potential hazards associated with this type of equipment. Keep manual near machine at all times. If your manual is lost or damaged, contact National Flooring Equipment (NFE) for a replacement.

### Personal

#### **Dress properly and use safety gear.**

Do not wear loose clothing; it may be caught in moving parts. Anyone in the work area must wear safety goggles or glasses, hearing protection during extended use, and a dust mask for dusty operations. Hard hats, face shields, safety shoes, etc. should be worn when specified or necessary.

#### **Maintain control; stay alert.**

Keep proper footing and balance, and maintain a firm grip. Observe surroundings at all times and use common sense. Do not use when tired, distracted, or under the influence of drugs, alcohol, or any medication that may cause decreased control.

#### **Keep hands away from all moving parts and tooling.**

Wear gloves when changing tooling. Remove tooling when machine is not in use and/or lower cutting head to the floor.

#### **Do not force equipment.**

Equipment will perform best at the rate for which it was designed. Excessive force only causes operator fatigue, increased wear, and reduced control.

### Environment

#### **Avoid use in dangerous environments.**

Do not use in rain, damp or wet locations, or in the presence of explosive atmospheres (gaseous fumes, dust, or flammable materials). Remove materials or debris that may be ignited by sparks. Keep work area tidy and well-lit - a cluttered or dark work area may lead to accidents. Extreme heat or cold may affect performance.

#### **Protect others in the work area and be aware of surroundings.**

Provide barriers or shields as needed to protect others from debris and machine operation. Children and other bystanders should be kept at a safe distance from the work area to avoid distracting the operator and/or coming into contact with the machine. Operator should be aware of who is around them and their proximity. Support personnel should never stand next to, in front of, or behind the machine while the machine is running. Operator should look behind them before backing up.

#### **Guard against electric shock.**

Ensure that machine is connected to a properly grounded outlet. Prevent bodily contact with grounded surfaces, e.g. pipes, radiators, ranges, and refrigerators. When scoring or making cuts, always check the work area for hidden wires or pipes.

### Maintenance & Repairs

#### **Begin maintenance work only when the machine is shut down, unplugged, and cooled down.**

#### **Use proper cleaning agents.**

Ensure that all cleaning rags are fiber-free; do not use any aggressive cleaning products.

#### **Schedule regular maintenance check-ups.**

Ensure machine is properly cleaned and serviced. Remove all traces of oil, combustible fuel, or cleaning fluids from the machine and its connections and fittings. Retighten all loose fittings found during maintenance and repair work. Loose or damaged parts should be replaced immediately; use only NFE parts.

#### **Do not weld or flame-cut on the machine during repairs, or make changes to machine without authorization from NFE.**

### Equipment

#### **Use proper parts and accessories.**

Only use NFE-approved or recommended parts and accessories. Using any that are not recommended may be hazardous.

#### **Ensure accessories are properly installed and maintained.**

Do not permanently remove a guard or other safety device when installing an accessory or attachment.

#### **Inspect for damaged parts.**

Check for misalignment, binding of moving parts, loose fasteners, improper mounting, broken parts, and any other conditions that may affect operation. If abnormal noise or vibration occurs, turn the machine off immediately. Do not use damaged equipment until repaired. Do not use if power switch does not turn machine on and off. For all repairs, insist on only identical NFE replacement parts.

#### **Maintain equipment and labels.**

Keep handles dry, clean, and free from oil and grease. Keep cutting edges sharp and clean. Follow instructions for lubricating and changing accessories. Motor and switches should be completely enclosed at all times with no exposed wiring. Inspect cord regularly. Labels carry important information; if unreadable or missing, contact NFE for a free replacement.

#### **Avoid accidental starting; store idle equipment.**

When not in use, ensure that the machine is unplugged and breaker is set to OFF. Store in a dry, secured place. Remove tooling when storing, and keep away from children.

# Safety

## GRINDER SAFETY GUIDELINES

Before use, anyone operating this equipment must read and understand these safety instructions.

### Grinding

#### Beware of hidden obtrusions.

Watch out for hidden dangers and protrusions in flooring. Do not use on largely uneven surfaces.

#### Avoid contact with hot tooling and shroud.

Do not touch the tooling or shroud without proper hand protection. Both become hot during operation and remain hot after stopping the machine.

#### Use correct tooling and accessories.

Provide barriers or shields as needed to protect others from debris.

#### Use for correct applications.

Do not force equipment to do heavier duty work than it was made for.

#### Do not block the machine's air flow.

Blocking ventilation slots or air flow will result in damage to the machine. Leave space for air to flow freely during operation.

#### Use dead man cable during operation.

Loss of control of the grinder could cause damage, injury, or death.

### Dust Collection

#### Use with appropriate dust collecting system.

Do not operate machine designed for use with a dust collector without the dust collector. Ensure dust collector is on and operating properly while grinding.

#### Use with appropriate dust collection hose.

Do not operate the machine without the hose securely attached to the inlet of the dust collector and the outlet of the grinder. In order to maintain system efficiency, do not use a damaged hose.

#### Dispose of collected waste before, during, and after use.

Do not leave the dust collector bag full of waste. Handle and dispose of bag and waste in accordance with all applicable local, state, and federal regulations. Dispose of waste prior to transport.

### Battery (Propane Machines Only)

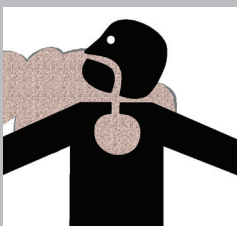
#### Remove personal metal items when working with battery.

A battery can produce a short circuit current sufficient enough to weld metal objects, causing severe burns. Be careful to not drop metal tools on the battery, as a spark or short circuit could cause an explosion.

#### Never smoke or allow a spark or flame near the battery.



**WARNING:** BE CAUTIOUS WHEN WORKING WITH BATTERY. IF ELECTROLYTIC ACID GETS IN THE EYES, IMMEDIATELY FLUSH OUT WITH COLD, FRESH WATER FOR AT LEAST 10 MINUTES AND GET MEDICAL HELP.



**WARNING:** GRINDING/CUTTING/DRILLING OF MASONRY, CONCRETE, METAL AND OTHER MATERIALS CAN GENERATE DUST, MISTS AND FUMES CONTAINING CHEMICALS KNOWN TO CAUSE SERIOUS FATAL INJURY OR ILLNESS, SUCH AS RESPIRATORY DISEASE, CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. IF YOU ARE UNFAMILIAR WITH THE RISKS ASSOCIATED WITH THE PARTICULAR MATERIAL BEING CUT, REVIEW THE MATERIAL SAFETY DATA SHEET AND/OR CONSULT YOU EMPLOYER, THE MATERIAL MANUFACTURER/SUPPLIER, GOVERNMENTAL AGENCIES SUCH AS OSHA AND NIOSH AND OTHER AUTHORITIES ON HAZARDOUS MATERIALS. CALIFORNIA AND SOME OTHER AUTHORITIES, FOR INSTANCE, HAVE PUBLISHED LISTS OF SUBSTANCES KNOWN TO CAUSE CANCER, REPRODUCTIVE TOXICITY, OR OTHER HARMFUL EFFECTS. CONTROL DUST, MIST AND FUMES AT THE SOURCE WHERE POSSIBLE. IN THIS REGARD USE GOOD WORK PRACTICES AND FOLLOW THE RECOMMENDATIONS OF THE MANUFACTURER/SUPPLIER, OSHA/NIOSH, AND OCCUPATIONAL AND TRADE ASSOCIATIONS. WHEN THE HAZARDS FROM INHALATION OF DUST, MISTS AND FUMES CANNOT BE ELIMINATED, THE OPERATOR AND ANY BYSTANDERS SHOULD ALWAYS WEAR A RESPIRATOR APPROVED BY OSHA/MSHA FOR THE MATERIAL BEING CUT.

## TRANSPORT

With counterbalancing weights in the upper weight baskets, tilt the machine so that the caster wheel is firmly on the floor. You can use the flop handle to pull the machine or you can fold the flop handle over and push from gear case side.

## START-UP PROCEDURE

1. Ensure plug is properly connected to the power source.
2. Ensure dust hose is connected correctly to dust collector and machine.
3. Check that the main switch is turned on and the dead man switch is in place, with the lanyard around the operator's wrist.
4. Place downward pressure on handle; press the 'Run' button.
5. Release pressure from handle and immediately begin moving the machine from side-to-side to prevent the tools from digging into the concrete surface and creating an uneven profile. When grinding in work area is complete, push the 'Stop' button.

## TOOLING INSTALLATION

1. Remove weights.
2. Raise adjustable handle as far forward as possible; lock into position and put one foot on the rubber-tired wheel.
3. Tip the machine back to the floor so that the handle lays on the floor.
4. Clean mounting surface; slide the diamond into the holder (Figure 1) and tap into place.
5. After the diamonds are installed, raise the machine until it is in operating position with all tooling touching the floor.
6. Lower handle to position best suited for the operator, and re-place the weights.

## Directional Tooling Placement

When looking at the machines from the bottom (Figure 2), the directional tooling marked "Right" should be placed on the heads that rotate counterclockwise. Tooling marked "Left" should be placed on the heads that rotate clockwise.

## CONTROLLER

### Operating Controls (Figure 3)

**Run/Stop** - Pushing the key button "Run" will turn the controls on and start the motor. Pushing the key button "Stop" will stop the motor.

**Reset** - Resets the drive to clear a fault situation.

**Lo/Re** - This button is not used.

**Esc** - Returns to a previous menu.

**Up/Down Arrows** - While powered on but without the motor running, the up and down arrow buttons can be used to set the motor speed faster or slower than the base RPM of the motor, or to move through the menu.

**"Dead Man" Key** - The "dead man" key is located in the lower center of the red box, and is intended to be used for the safety of the operator and protection of the machine



FIG. 1

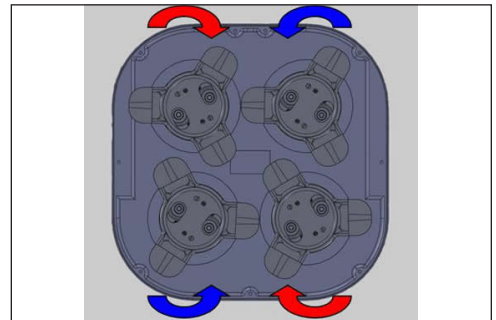


FIG. 2



FIG. 3



# Operation



FIG. 4

FIG. 5



FIG. 6

FIG. 7



FIG. 8

FIG. 9



FIG. 10

FIG. 11



FIG. 12

FIG. 13



FIG. 14

from excess damage in the event of an emergency. Lanyard must be worn by operator for this safety device to work properly. Pull key out to stop the machine motor.

## Controller Settings

Below is a list of settings that the operator can scroll through on the controller, in order of appearance. Press up/down arrows until the desired parameter is shown.

- “Fxx.xx” is the input frequency used to adjust tooling RPM (Figure 4).
- “For” or “rEv” is used for changing the rotational direction of the tooling to forward or reverse (Figures 5 and 6).
- “0.00” is the output frequency setting (Figure 7).
- “0.0A” is the output current draw (Figure 8).
- “0.0v” is the voltage output to the motor (Figure 9).

The following settings should not be selected or used by the operator:

- “Mon” monitor display (Figure 10).
- “vrFY” verify menu (Figure 11).
- “STUP” setup mode (Figure 12).
- “PAR” parameter setting mode (Figure 13).
- “ATUn” auto-tuning (Figure 14).

## Input Frequency Setting

The input frequency (Figure 4) can be used as follows to adjust tooling RPM:

1. Press the up/down arrows until “Fxx.xx” is shown, where xx.xx is some number.
2. Press “Enter;” the first digit will flash.
3. Press the up/down arrows until the desired number is shown for the first digit.
4. To change any other digit, use the “>” key to select the digit, then press the up/down arrows until the desired number is shown in that position.
5. Press “Enter” then press “Esc.”

## Setting the Tooling Rotational Direction

To set tooling rotational direction (Figures 5 and 6) to forward or reverse, complete the following steps:

1. Press the up/down arrows until “For” or “rEv” is shown.
2. Press “Enter;” the letters will flash.
3. Press the up/down arrows until the desired rotational direction is shown.
4. Press “Enter,” then press “Esc.”



## LUBRICATING THE MACHINE

- Four grease fittings to be greased with 3 shots of grease every six months.
- The main gear box contains 28 pounds of grease. Check the level once per year by removing plug at the front of the gear case. Grease should be halfway up on the drive upper gear. Do not fill to the top. The drive gear must not be covered.

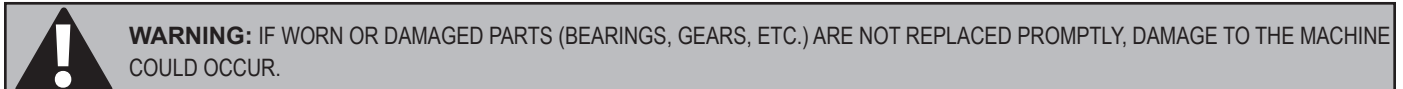
## KEEPING MACHINE CLEAN

Schedule daily cleaning after each days grinding. Do not let any cake-up of cement grinding paste occur, as this could create an overload on the machine.

1. Tilt machine back on handle
2. Clean under carriage with water using a garden hose and nozzle.
3. Clean all grease fittings.

Make sure to clean the air filter daily.

## REPLACING WORN, DAMAGED, MISSING PARTS



### Morflex Couplings

- Bolts should be checked weekly for tightness. Loose bolts cause extreme vibrations and premature failure of rubber inserts in the couplings.
- Flexible couplings should be changed a minimum of once per year whether machine is used or not.

## HIGH MOTOR TEMPERATURE

- “Running Hot” is normal for the smaller, lighter “T” type motor. Even though they will run hotter, the “T” motors run more efficiently on this machine.
- Electric motors on this machine are designed to operate efficiently at 165°F (73.8°C)
- The temperatures of motors are rated by temperature rise and full load over and above room temperature (77°F or 25°C).
- Do not touch the motors while they are hot. To check the temperature of the motor, place a 200°F thermometer on the frame of the motor and a glob of putty over the bulb of the thermometer.
- A thermal protected starter is used on these machines, which protects the motor against low voltage and overload conditions which could raise the temperature of the motor beyond safe limits.

## TOOLING WEAR AND REPLACEMENT

Check diamonds for wear periodically, as they may be worn flush with the holder lugs.

1. Remove the weights.
2. Unscrew safety knob.
3. Push knob to the rear to release the locking mechanism.
4. Raise handle two or three notches
5. Lock handle by reversing the above procedure and tilt holders off the floor.

**Note:** Pushing the handle forward two or three notches creates a safe stone position for changing.

# Maintenance

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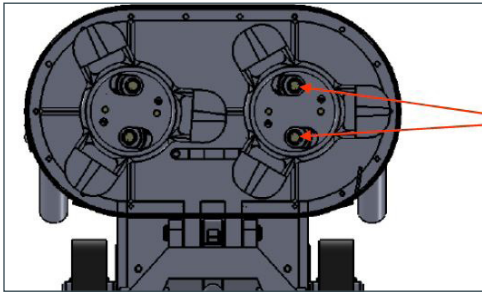


FIG. 15

## ACCESSING THE DRIVE PLATE, DRIVE KEY, AND GREASE SEAL

- Remove tool plate and coupling by removing two 3/4" bolts (Figure 15).
- Remove the drive plate by removing 1-7/16" lock nut (Figure 16).

### Replacing a Damaged Key

If the drive plate won't spin, the key is likely damaged. Complete the above steps to gain access to the key and check for damage (Figure 17). Replace if damaged or contact NFE for further assistance.

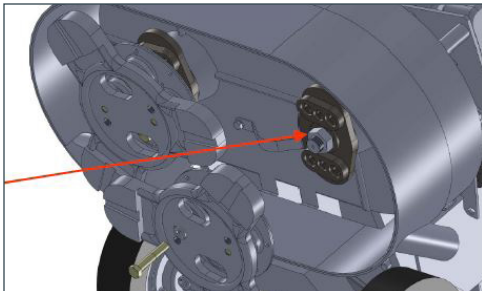


FIG. 16

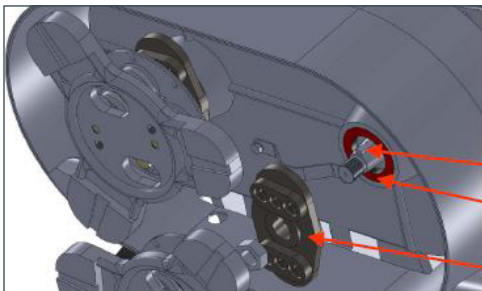
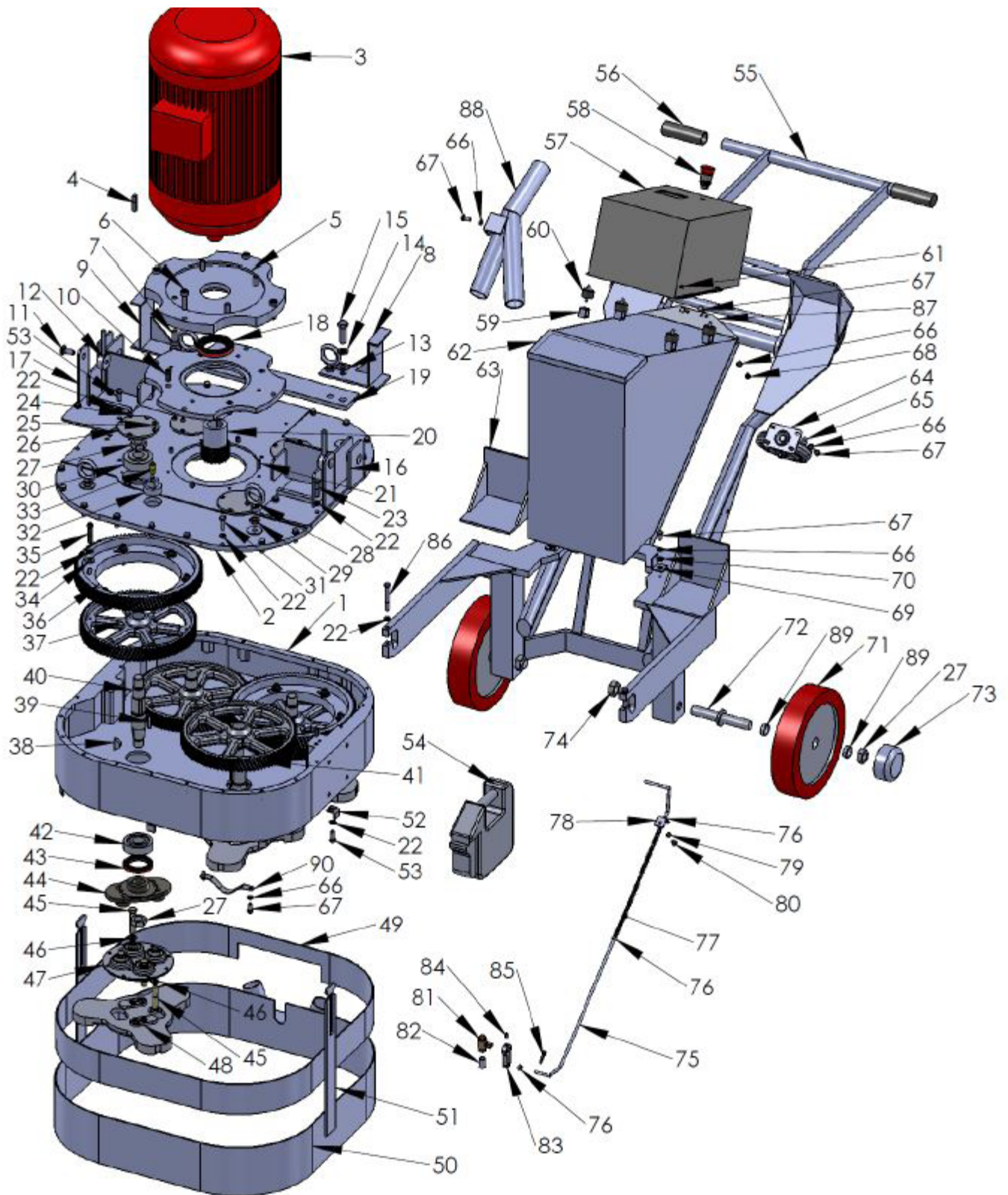


FIG. 17

# Parts List and Diagrams



# Parts List and Diagrams

ITEM NO.	DESCRIPTION	QTY.
1	GEAR CASE	1
2	GEAR CASE LID	1
3	25 HP, 230/460 V, 3 PH, 60 Hz	1
4	PINION KEY	1
5	MOTOR PLATE	1
6	CAPSCREW	4
7	CAPSCREW	4
8	TILT STOP - LEFT HAND	1
9	TILT STOP - RIGHT HAND	1
10	CAPSCREW	4
11	CARRIAGE BOLT	2
12	SPLASH GUARD LOCK NUT	2
13	WASHER	2
14	LOCK WASHER	2
15	CAPSCREW	2
16	WEIGHT AND LIFT BRACKET	1
17	WEIGHT AND LIFT BRACKET	1
18	GREASE SEAL	1
19	TILT STOP MOUNT	1
20	PINION 3100-3P	1
	HIGH SPEED PINION	1
21	DOWEL PIN	6
22	LOCK WASHER	48
23	CAPSCREW	6
24	GREASE ZERK	4
25	CAPSCREW	16
26	BEARING CAP	4
27	LOCK NUT	10
28	LIFT RING	4
29	JAM NUT	4
30	BEARING CONE AND CUP	4
31	CAPSCREW	17
32	PIPE PLUG	1
33	BREATHER CAP	1
34	WROUGHT WASHER	12
35	CAPSCREW	12
36	DRIVE GEAR	2
37	DRIVEN GEAR - RH	2
38	WOODRUFF KEY (403629)	4
39	HELICAL GEAR KEY	4
40	HELICAL GEAR SHAFT	4



# Parts List and Diagrams

ITEM NO.	DESCRIPTION	QTY.
41	HELICAL GEAR - LH	2
42	BEARING CONE AND CUP	4
43	GREASE SEAL (403630)	4
44	DRIVE PLATE (403628)	4
45	CAPSCREW	16
46	LOCK WASHER	16
47	FLEXIBLE COUPLING (403627)	4
48	SPEED SHIFT TOOL PLATE	4
	PLUG STONE HOLDER	4
	UNIVERSAL TOOL PLATE	4
49	STATIONARY GUARD - SS	1
	STATIONARY GUARD	1
50	ADJUSTABLE GUARD - SS	1
	ADJUSTABLE GUARD	1
51	ADJUSTABLE GUARD STRAP	2
52	GUARD BRACKET	9
53	CAPSCREW	13
54	42 LB POCKET WEIGHT	4
55	HANDLE BAR	1
56	HANDLE GRIPS	2
57	INVERTER DRIVE 25 HP, 460 V, 3 PH	1
	INVERTER DRIVE 25 HP, 230 V, 3 PH	1
	MANUAL START 25 HP, 230 V, 3PH	1
	MANUAL START 25 HP, 380 V, 3PH	1
	MANUAL START 25 HP, 415 V, 3PH	1
	MANUAL START 25 HP, 460 V, 3PH	1
58	EMERGENCY STOP	1
59	SWITCH BOX MOUNTING BRACKET	4
60	VIBRATION MOUNT	4
61	HEX HEAD NUT	6
62	WATER TANK	1
63	CENTER WEIGHT BASKET	2
64	CASTER	1
65	WROUGHT WASHER	4
66	LOCK WASHER	9
67	CAPSCREW	9
68	HEX HEAD NUT	2
69	WATER TANK CLIP	2
70	WASHER	2
71	12" WHEEL	2
72	WHEEL SHAFT	2
73	WHEEL CAP	2

# Parts List and Diagrams

ITEM NO.	DESCRIPTION	QTY.
74	JAM NUT	2
75	WATER TANK ROD	1
76	LOCK COLLAR	3
77	COMPRESSION SPRING	1
78	WATER GUIDE BRACKET	1
79	LOCK WASHER	1
80	CAPSCREW	1
81	WATER VALVE	1
82	VALVE STEM	1
83	WATER LEVER	1
84	SET SCREW	1
85	COTTER PIN, 1/4 X 2 1/2	1
86	CAPSCREW	2
87	WATER TANK BRACKET	1
88	Y-PIPE	1
89	WHEEL BEARING SPACER	4
90	WATER HOSE GUIDE	1

## NOT PICTURED

DESCRIPTION	QTY.
6-4 Cable (460 Volt)	100'
4-4 Cable (230 Volt)	100'
MALE PLUG, 50A, 3 PH (460 Volt)	1
FEMALE PLUG, 50A, 3 PH (460 Volt)	1
MALE PLUG, 60A, 3 PH (230 Volt)	1
FEMALE PLUG, 60A, 3 PH (230 Volt)	1
VACUUM HOSE	
BRUSH STRIP (403737)	
DUST SEAL (403617)	1
36" Water Hose	1
Cord Connector	1
Straight Cord Connector	2
Connector Lock Nut	2
CABLE CONNECTOR	3
Hose Clamp - Water Hose	2
Grease Zerk Cap	6
15" Cable Tie	2
RING TONGUE TERMINAL	3
NAME/SERIAL # PLATE	1
DRIVE SCREW #2	2
GREASE (LBS)	20

LABEL, 208/230V, 3-PHASE ONLY (403715)	1
PLUG, MALE, IEC 60309, 3P4W, 100A 3PH 250V (403716)	1
PLUG, FEMALE, IEC 60309, 3P4W, 100A 3PH 250V (403750)	1







9250 Xylon Avenue N • Minneapolis, MN 55445 • U.S.A.  
Toll-free 800-245-0267 • Phone 763-315-5300 • Fax 800-648-7124 • Fax 763-535-8255  
Web Site: [www.nationalequipment.com](http://www.nationalequipment.com) • E-Mail: [info@nationalequipment.com](mailto:info@nationalequipment.com)