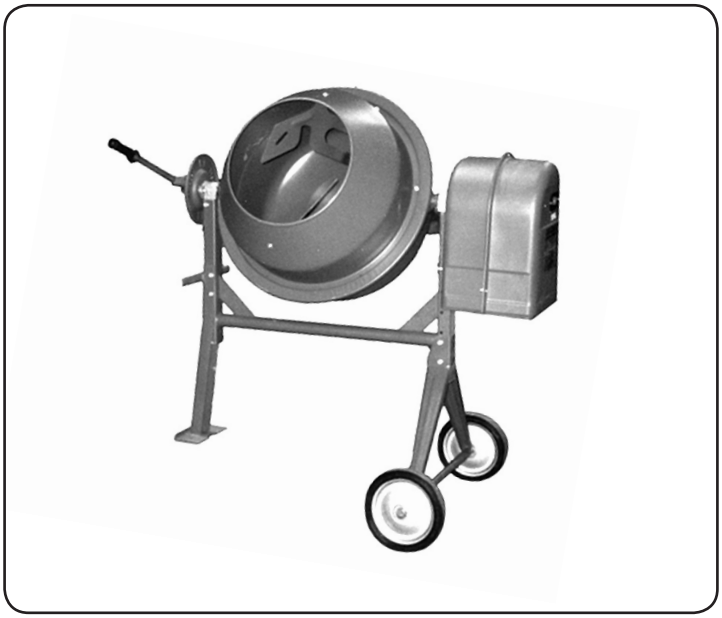
CENTRAL MACHINERY®

3-1/2 CUBIC FEET CEMENT MIXER

Model 31979

SET UP AND OPERATING INSTRUCTIONS



Visit our website at: http://www.harborfreight.com

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

For technical questions or replacement parts, please call 1-800-444-3353.

Revised Manual 10b

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SAVE THIS MANUAL

Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

IMPORTANT SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠DANGER **DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.**

⚠WARNING **WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.**

⚠CAUTION **CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.**

NOTICE **NOTICE is used to address practices not related to personal injury.**

CAUTION **CAUTION, without the safety alert symbol, is used to address practices not related to personal injury.**

General Tool Safety Warnings

WARNING Read all safety warnings and instructions. *Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.*
Save all warnings and instructions for future reference.

1. KEEP GUARDS IN PLACE and in working order.
2. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
4. DON'T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
5. KEEP CHILDREN AWAY. All visitors should be kept safe distance from work area.
6. MAKE WORKSHOP KID PROOF with padlocks, master switches, or by removing starter keys.
7. DON'T FORCE TOOL. It will do the job better and safer at the rate for which it was designed.

8. USE RIGHT TOOL. Don't force tool or attachment to do a job for which it was not designed.

RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS (120 VOLT)				
NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH			
	25'	50'	100'	150'
0 – 6	18	16	16	14
6.1 – 10	18	16	14	12
10.1 – 12	16	16	14	12
12.1 – 16	14	12	Do not use.	
TABLE A				

9. USE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table A shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.
Note: Performance of this tool may very depending on variations in local line voltage. Extension cord usage may also affect tool performance.

10. WEAR PROPER APPAREL. Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.

11. ALWAYS USE SAFETY GLASSES. Also use face or dust mask if operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.

12. DON'T OVERREACH. Keep proper footing and balance at all times.

13. MAINTAIN TOOLS WITH CARE. Keep tools clean for best and safest performance.

14. REDUCE THE RISK OF UNINTENTIONAL STARTING. Make sure switch is in off position before plugging in.

15. USE RECOMMENDED ACCESSORIES. Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.

16. 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.

17. NEVER STAND ON TOOL. Serious injury could occur if the tool is tipped.

18. CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function – check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

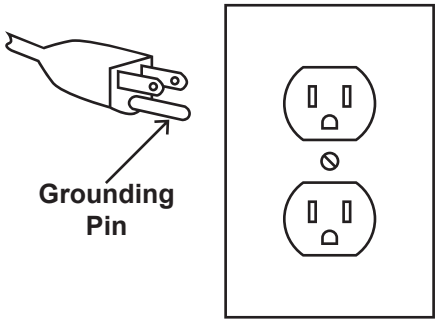
19. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF. Don't leave tool until it comes to a complete stop.

GROUNDING INSTRUCTIONS

⚠WARNING **TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION**
READ AND FOLLOW THESE INSTRUCTIONS:

110-120 V~ Grounded Tools: Tools with Three Prong Plugs

1. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.
2. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.
3. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
4. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
5. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.
6. Repair or replace damaged or worn cord immediately.



125 V~ 3-Prong Plug and Outlet
(for up to 125 V~ and up to 15 A)

7. This tool is intended for use on a circuit that has an outlet that looks like the one illustrated above in **125 V~ 3-Prong Plug and Outlet**. The tool has a grounding plug that looks like the plug illustrated above in **125 V~ 3-Prong Plug and Outlet**.
8. The outlet must be properly installed and grounded in accordance with all codes and ordinances.
9. Do not use an adapter to connect this tool to a different outlet.

Cement Mixer Safety Warnings

1. Keep away from moving parts; do not insert hands or tools into drum while moving. Unplug and wait until mixer has stopped before maintenance, service, or transport.
2. Keep electric components dry.
3. Locate on flat, level, solid surface.
4. Wear ANSI-approved safety goggles during use.
5. Read manual before set up and/or use.
6. Do not overload Mixer.

7. Do not allow Mixer to run unattended.

8. Inspect before every use; do not use if parts loose or damaged. Do not use if cord or wiring insulation is damaged. Keep bystanders at least 6 feet away during operation.

9. Keep safe clearance around mixer. Keep all persons (except operator) a minimum of six feet from the mixer during operation.

10. Do not overload mixer. An overload could damage equipment.

11. Do not move mixer during operation. The mixer could tip over or the motor could be damaged.

12. **DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED.**

13. When servicing use only identical replacement parts.

14. Only use safety equipment that has been approved by an appropriate standards agency. Unapproved safety equipment may not provide adequate protection. Eye protection must be ANSI-approved and breathing protection must be NIOSH-approved for the specific hazards in the work area.

15. Industrial applications must follow OSHA guidelines.

16. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

17. Avoid unintentional starting. Prepare to begin work before turning on the tool.

18. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.

19. WARNING: Some dust created by 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 or other masonry products
• 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. (California Health & Safety Code § 25249.5, *et seq.*)

20. WARNING: Handling the cord on this product will expose you to lead, a chemical known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling. (California Health & Safety Code § 25249.5, *et seq.*)

21. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may 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.

SAVE THESE INSTRUCTIONS.

SPECIFICATIONS

Electrical	120 V~ / 60 Hz / 1/3 HP
Motor No Load Speed	1720 RPM
Empty Drum Volume	3.5 Cubic Feet
Wet Material Volume	2 Cubic Feet
50 lb. Bag Capacity	3 bags Ready Mix Concrete*
Weight Capacity (including water)	220 lbs.
Drum Speed	30 RPM
Drum Opening	15” Diameter
Drum Diameter	22” Diameter at widest point
Drum Material Type	Steel

*Note: For Portland cement, follow instructions. Do not exceed 220 lbs., including water.

UNPACKING

When unpacking, make sure that the item is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at 1-800-444-3353 as soon as possible.

INSTRUCTIONS FOR PUTTING INTO USE

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

⚠WARNING TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch of the tool to its “OFF” position and unplug the tool from its electrical outlet before assembling or making any adjustments to the tool.

Note: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

Assembly/Mounting

You will need the following tools and supplies to assemble this cement mixer (all sold separately):

1. Wrenches - one set of metric
2. Screw Drivers - Phillips and Flathead
3. Pliers to bend Pins for Wheels
4. Cement (3 oz. RTV Silicone - SKU 90026) and latex gloves for assembling drum.

Assembling the Stand

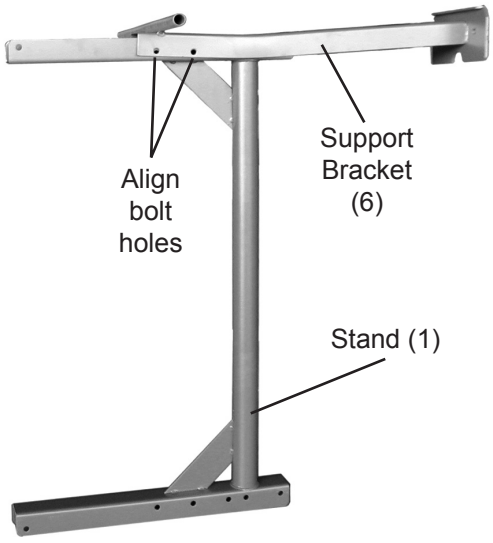


Figure 1

1. Place the Support Bracket (6) onto the Stand (1), aligning the Bolt holes.
2. Insert Bolts (3) through holes from one side, then Flat Washers (4), Spring Washers (7) and Nuts (5) from the other side, and tighten with a wrench.

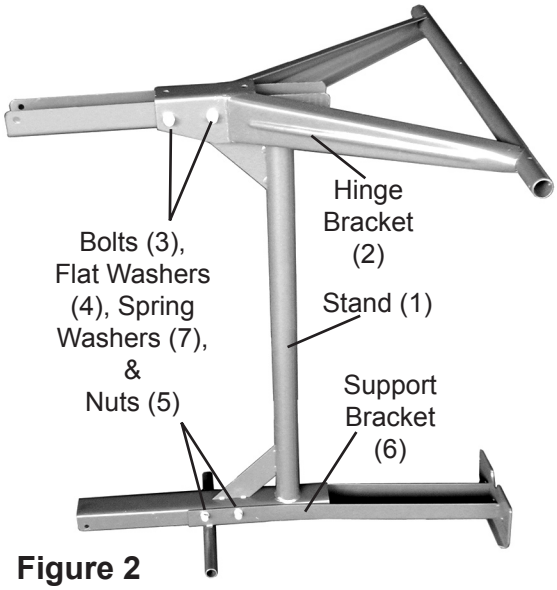


Figure 2

3. Place the Hinge Bracket (2) onto the other end of the Stand (1) so that bolt holes line up with the holes opposite the Support Bracket.

4. Insert the Bolts (3) through holes from one side, then Flat Washers (4), Spring Washers (7) and Nuts (5) from the other side, and tighten with a wrench.

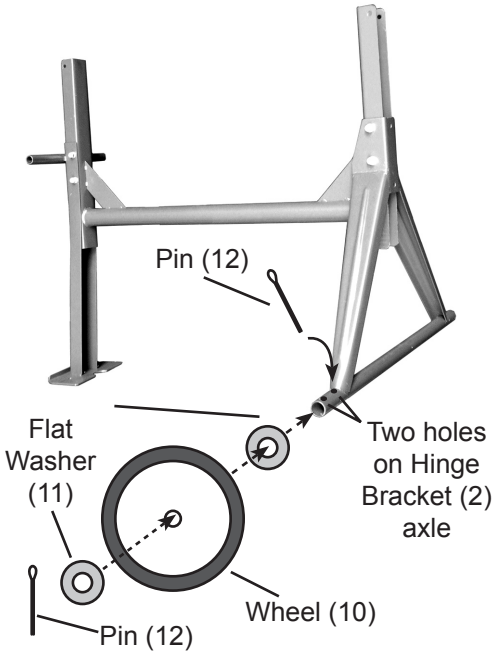


Figure 3

5. Place Stand upright.

6. Slide a Pin (12) in the furthest hole from the axle end on the Hinge Bracket (2) and bend open with pliers (sold separately). Next to the bent Pin, slide a Flat Washer (11), the Wheel (10), and another Flat Washer.

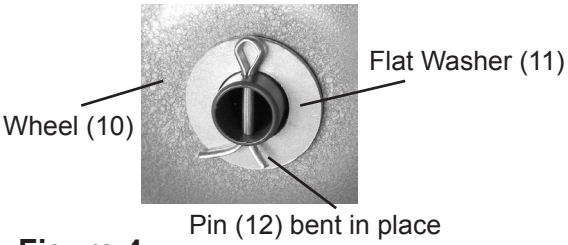


Figure 4

7. Insert another Pin (12) into the outer hole on the Hinge Bracket and bend the ends to hold the Washer/Wheel assembly in place.

8. Repeat steps 6 and 7 for the other Wheel.

Attaching the Drum and Degree Adjusting Assembly

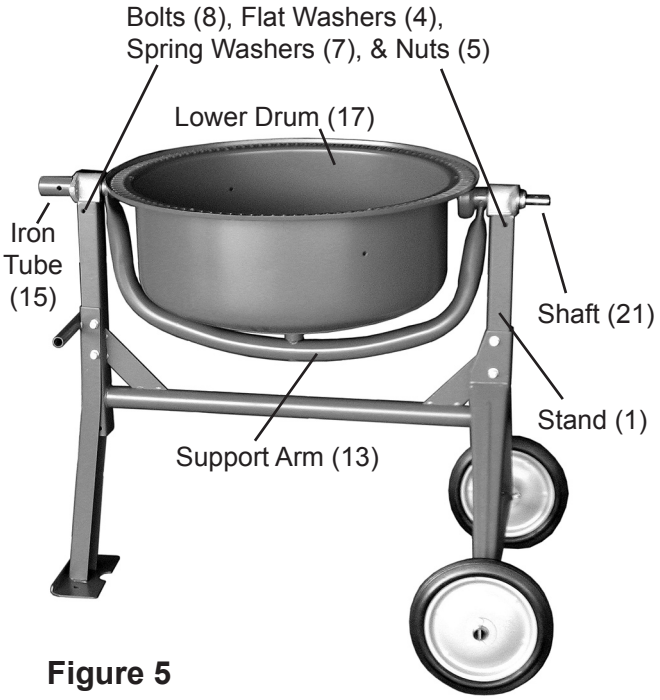


Figure 5

1. With two people, set the Lower Drum (17), with attached Support Arm (13) assembly, into the Stand (1) assembly so

that the Shaft (21) is on the wheel side and the Iron Tube (15) is on the Support Bracket (6) side of the assembly.

2. Insert Bolts (8) through the holes from one side, then a Flat Washer (4), a Spring Washer (7) and a Nut (5) from the other side, and tighten with a wrench.

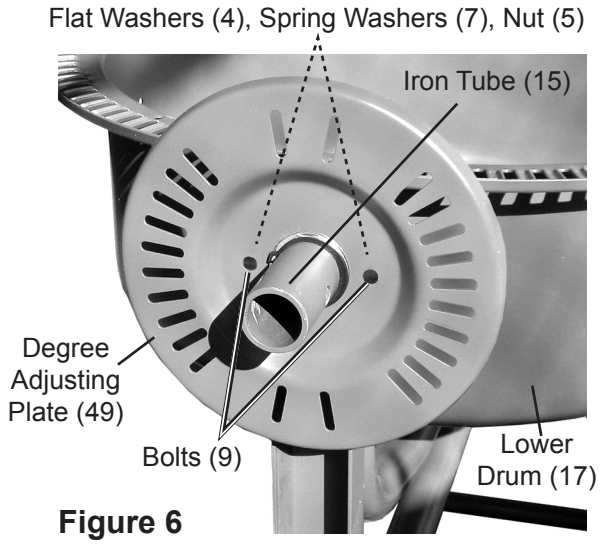


Figure 6

3. Mount the Degree Adjusting Plate (49) to the Iron Tube (15) using two Bolts (9) inserted from the outside. Secure from the backside with Flat Washers (4), Spring Washers (7), then Nuts (5).

4. To attach the Degree Adjusting Arm (50) to the Iron Tube (15):
   a. Insert the Coil Spring (73) into the lower hole of the Degree Adjusting Arm.

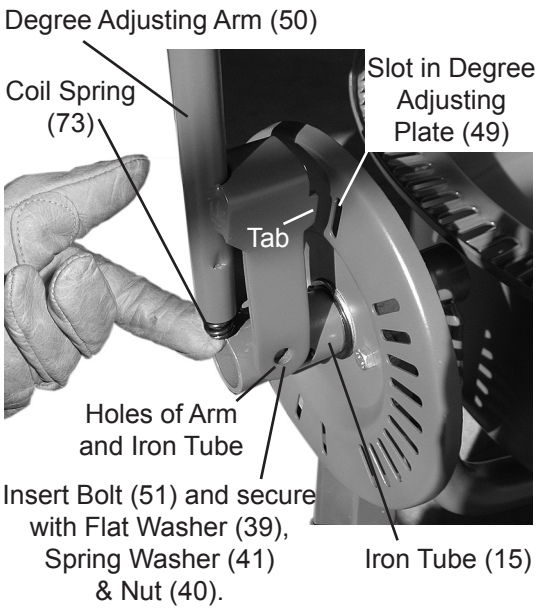


Figure 7

   b. While holding the Spring in place, slide the Arm over the Iron Tube.
   c. Press down on the Arm until the holes on the Arm align with the holes in the Iron Tube (15).

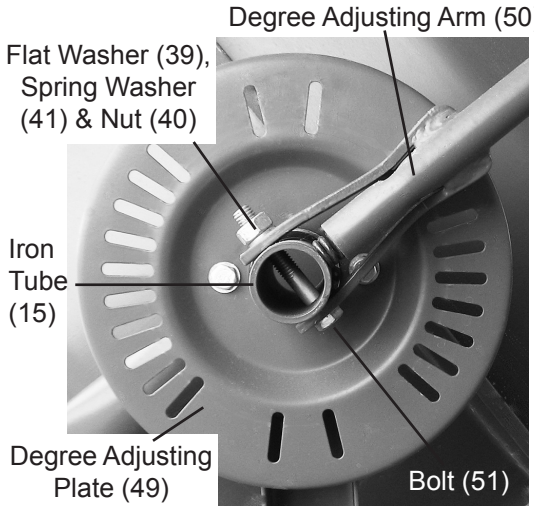


Figure 8

   d. Insert the Bolt (51) and secure with a Flat Washer (39), Spring Washer (41) and Nut (40).
   e. Tighten to a point where the Arm can still move.

13. If the Connector Seal (26) is not glued to one of the Drum sections, attach it to the Drum sections as follows:

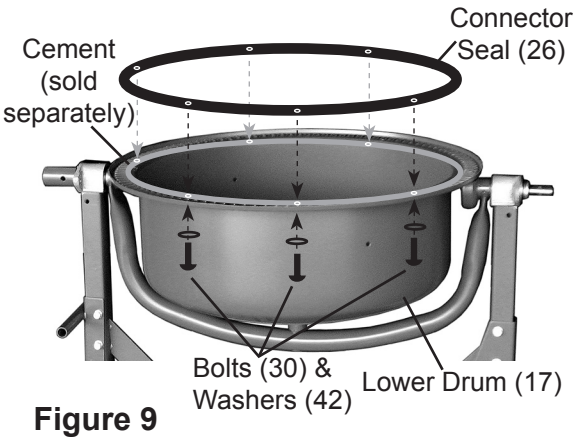


Figure 9

a. Wearing latex gloves, place a bead of cement along the edge of the Lower Drum (17).

b. With the help of another person, align the six bolt holes in the Seal with the holes in the Lower Drum and press the Seal onto the Drum, sliding the Bolts (30) up through a Washer (42) and the Lower Drum holes and the Seal.

14. To attach the Upper Drum (27) to the Lower Drum (17):

a. Place cement on the Upper Drum (27) where the sections will meet.

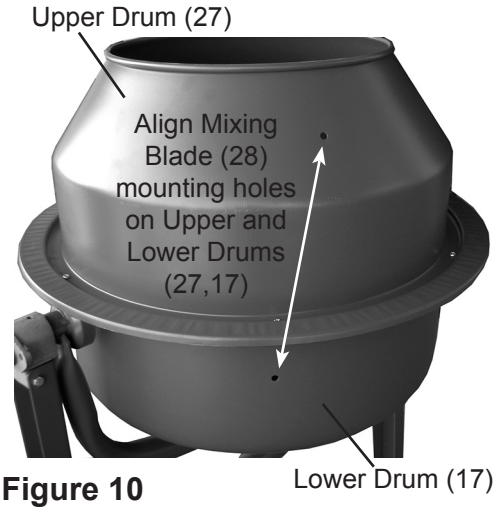


Figure 10

b. Carefully place the Upper Drum onto the Lower Drum. Make sure that the Connecting Seal is flat, and that the six bolts slide up through the Upper Drum holes.

Note: When placing the Upper Drum, align the Mixing Blade (28) mounting holes in the side of the drums as shown in Figure 10. If they are too far away from each other, the Mixing Blades holes will not match up with the mounting holes on the Drums.

c. Secure the six Bolts in place with Spring Washers (34) and Nuts (35).

Installing the Mixing Blades

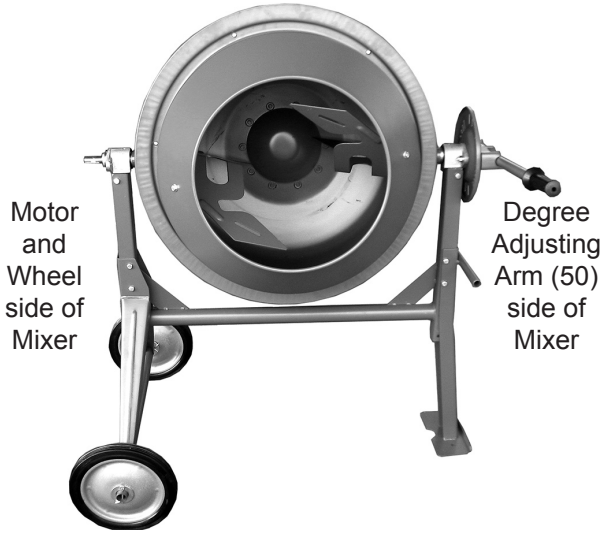


Figure 11

1. Position the Mixer with the Motor and Wheel side on the left, and tilt the Drum as shown in Figure 11.

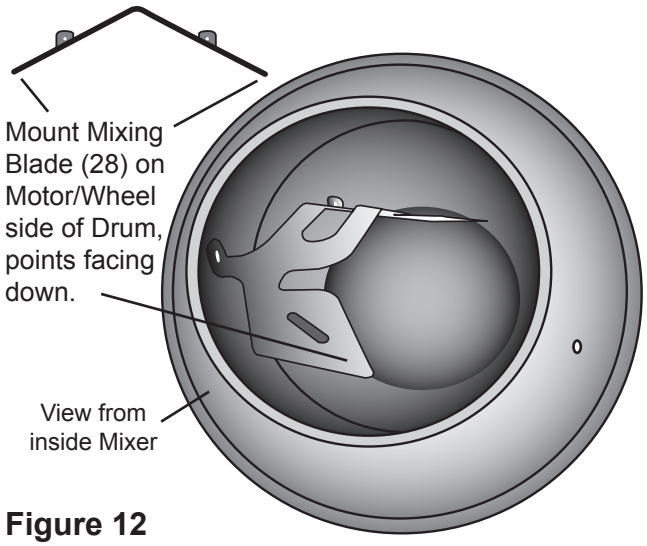


Figure 12

2. To mount one Mixing Blade (28), working on the Motor/Wheel side of the Drum, slide Leather Gasket Washers (76) onto two Bolts (31) and insert the bolts through the outside of the drum. Slide a Leather Gasket Washer (76) on the bolts. Position a Mixing Blade over the Bolts and Gaskets, with the pointed ends of the Blade facing downward. Secure with Flat Washers (4), Spring Washers (7) and Nuts (5).

3. Rotate the drum so the remaining mounting holes are on the Motor/Wheel side and mount the remaining Mixing Blade as described in previous step 2.

Note: The V-shaped bend in the Mixing Blade should point in the direction of the Drum rotation. The Mixing Blades may need to be adjusted to fit the holes if they are bent during shipping.

Mounting the Inner Motor Cover and Motor Mount Plate

To prepare the Motor (52) for mounting, remove the Motor from the Inner Motor Base Cover (58) by unthreading the two nuts and bolts holding it in place for shipping.

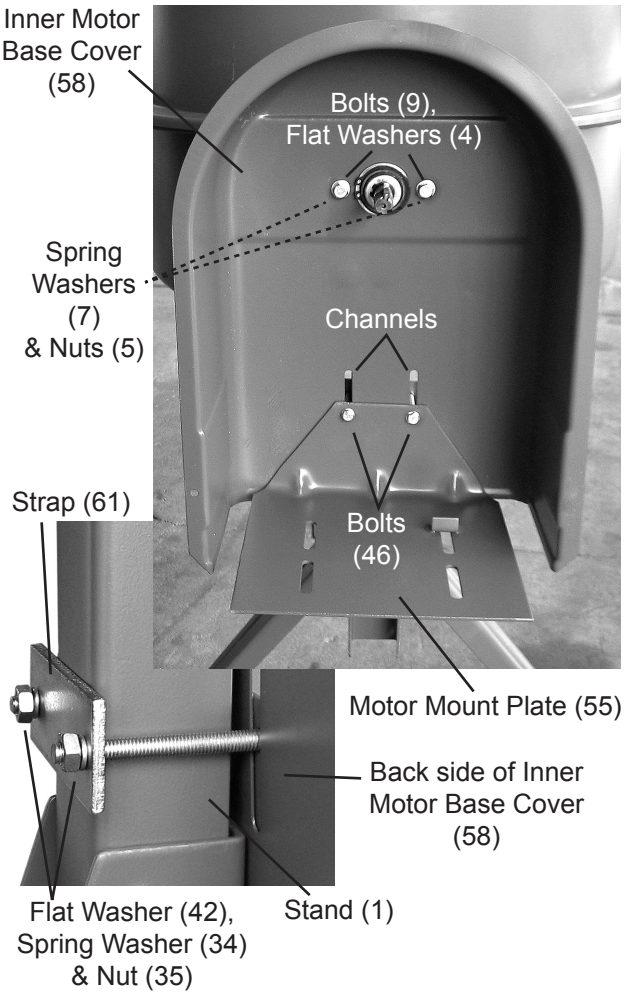


Figure 13

1. To mount the Inner Motor Base Cover (58) to the Iron Tube Fixture (37), slide Flat Washers (4) onto two Bolts (9), and insert the Bolts through the Motor Base Cover and the Tube Fixture. Secure with Spring Washers (7) and Nuts (5).

2. To attach the Motor Mount Plate (55) to the Inner Motor Base Cover (58), insert Bolts (46) through the Motor Mount Plate holes, and the Motor Base Cover channels. Slide the Strap (61) Flat Washers (42), and Spring Washers (34) onto the Bolts. Thread Nuts (35) onto the Bolts and hand tighten.

Note: Once the Motor (52) is mounted, the Motor Mount Plate must be adjusted up or down to tighten the Belt (68).

Mounting the Motor

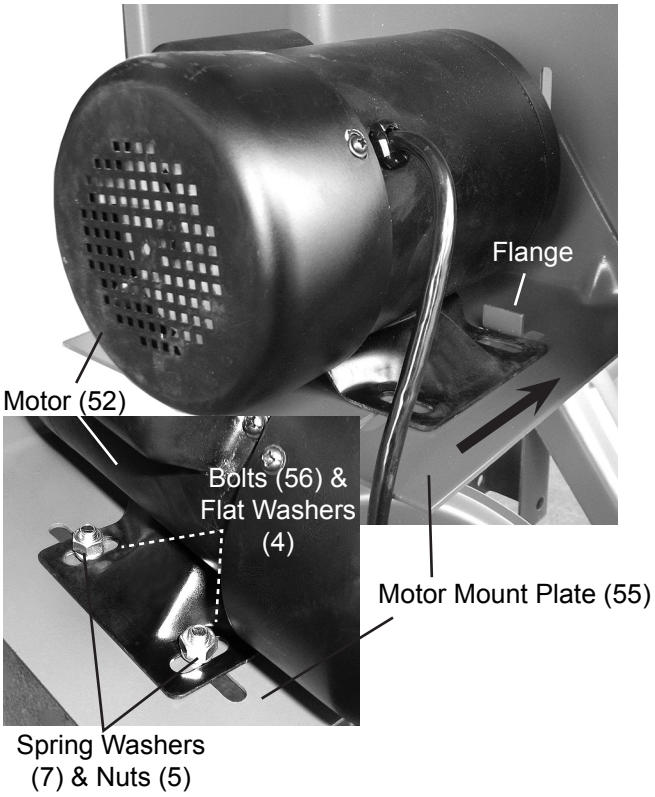


Figure 14

1. Place the Motor (52), on top of the Motor Mount Plate (55) and slide it all the way up against the flanges on the Plate.

Note: The Motor (52) is attached to the Outer Motor Base Cover (64) by a power cable. While installing the Motor, have a helper hold the Cover out of the way, without placing tension on the power cable.

2. To secure the Motor, slide Flat Washers (4) on four Bolts (56), then slide the Bolts up through the bottom of the Motor Mount Plate and the Motor. Secure in place with Spring Washers (7) and Nuts (5).

3. Tighten all four Nuts hand-tight. The Motor will be adjusted forward or backward later.

Mounting the Pulley and Belt

Figure 15

1. Clean the Shaft (21) of all plastic protective material and other debris. Also clean out debris from Drum Pulley (43) center hole.

2. Position the Drum Pulley so that the Set Screw (70) hole is facing outward. Squarely push the Pulley center onto the Shaft so that the groove in the Drum Pulley engages the Key (53). The Pulley should be flush with the step on the Shaft. Thread the Set Screw and tighten in place.

Caution: Do not pound the Drum Pulley onto the Shaft. Damage can occur resulting in a loose fit.

3. To install the Belt (68), loosen the Bolts holding the Motor (52) to the Motor Mount Plate (55). Place the Belt around the Motor Pulley (54), then over the

Drum Pulley (43). Push the Motor inward until the drive pulley is directly under the belt Pulley. Tighten the four Bolts securing the Motor to the Motor Mount Plate.

4. To tension the Belt, loosen the Nuts (35) on the Strap (61), then push the Motor downward until the Belt tension is tight. When the belt is tight enough so that there is only 1/4" deflection when the Belt is pressed, tighten the Nuts on the Strap.

5. Check if Motor and belt turns true. Hand turn the Drum Pulley (43) and verify that the Motor Pulley and Drum Pulley does not rub against any other part, and that the pulleys turn true. Make adjustments to Motor location as required.

Figure 16

6. Mount the Outer Motor Base Cover (64) to the Inner Motor Base Cover (58) using three Bolts (65), Spring Washers (66), Flat Washers (59) and Nuts (67). Make sure that the power cord from the Motor to the Switch (71) does not come in contact with moving parts.

7. The Cement Mixer assembly is complete. Go back and retighten all screws, nuts, and bolts.

OPERATING INSTRUCTIONS

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Tool Set Up

⚠WARNING TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch OFF and unplug the Mixer from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.

TO PREVENT SERIOUS INJURY: DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED.

Work Piece and Work Area Set Up

1. Designate a work area that is clean and well-lit. The work area must not allow access by children or pets to prevent distraction and injury.

2. Route the power cord along a safe route to reach the work area without creating a tripping hazard or exposing the power cord to possible damage. The power cord must reach the work area

with enough extra length to allow free movement while working.

General Operating Instructions

1. Place the Cement Mixer on a solid, even surface capable of supporting the weight of the machine and all materials placed within it.
2. Connect the Power Cord (72) to an electrical outlet (or properly rated extension cord) with a third, ground prong.
4. Adjust the Drum angle by pulling out on the Degree Adjusting Arm (50), disengaging the locking pins, and pushing on Arm until the desired angle is reached. Re-engage the locking pins.
5. Flip the Switch (71) to the (I) or On position.
6. Follow the mixing instructions on the cement bag. See Sample Mixing Procedures following this section.
7. When finished, flip the Switch to the (O) or Off position, and disconnect the Power Cord.
8. Turn the Drum angle as far down as possible to drain all fluids from Drum.
9. Being careful to keep from spraying water into the motor, clean the inside and outside of the Mixer immediately after each use.
10. After cleaning the drum, store the mixer in a safe dry location, out of children's reach.

Warning: Do not attempt to move the Cement Mixer when it is full and/or in operation, serious personal injury could occur.

Warning: Never leave the Cement Mixer running while unattended. Do not turn the Mixer Off while full of cement.

Note: Filling and emptying the Drum is best done with the Drum rotating.

Sample Mixing Procedures

CAUTION: Do not exceed the 220 lb. total weight capacity. One gallon of water weighs approximately 8 lbs. The weight of one shovel full of material varies from the material and the size of the shovel. The following instructions assume that one shovel full of material weighs 10 lbs. Include the water weight and material weight in all calculations when mixing.

Using Pre-Mixed Concrete

1. To mix about 180 lbs. of concrete you will use approximately 2-1/2 gallons of water and two 80 lb. bags of pre-mixed concrete.
2. To mix:
   a. Start the mixer in motion.
   b. Pour 2 gallons of water into the Drum.
   c. Pour 1 bag of the pre-mixed concrete into the Drum.
   d. Slowly add the other bag of pre-mixed concrete.
   e. Gradually add enough of the remaining 1/2 gallon of water to obtain the desired consistancy of concrete.

Mixing Sand and Gravel

1. To mix about 140 lbs. of material you will use approximately 2-1/2 gallons of water, 60 lbs. of gravel or round stone, 20 lbs. of Portland cement, and 40 lbs. of masonry sand. The amount of water needed will vary based on the moisture level of the sand and gravel.

2. To mix:
   a. Start the mixer in motion.
   b. Pour 2 gallons of water into the Drum.
   c. Pour 6 shovels full of gravel or round stone into the Drum.
   d. Add 2 shovels full of Portland cement.
   e. Slowly add 4 shovels full of masonry sand.
   f. Gradually add enough of the remaining 1/2 gallon of water to obtain the desired consistancy of concrete.

MAINTENANCE AND SERVICING

Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠WARNING TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the motor OFF and unplug the Mixer from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.

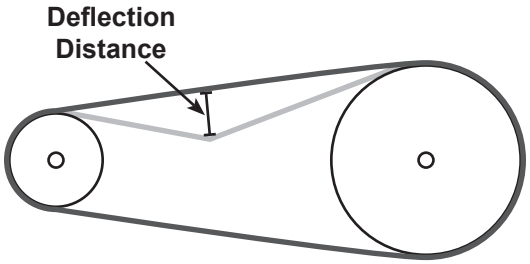
TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:
Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE,** inspect the general condition of the Mixer. Check for loose hardware, misalignment or binding of moving parts, cracked or broken parts, damaged electrical wiring, and any other condition that may affect its safe operation.
2. **AFTER USE,** clean the external surfaces of the Mixer.
1. After use, immediately wash out all debris from the inside and outside of the Cement Mixer. Make sure the Power Cord is disconnected.
2. Do not apply water in or around the Motor Base Cover.
3. Retighten belt after the first 25 hours of use. The belt should be able to be pressed in no more that 1/4 inch.
4. Periodically recheck all nuts, bolts, and screws for tightness.
5. **⚠WARNING! If the supply cord of this power tool is damaged, it must be replaced only by a qualified service technician.**

Belt Inspection and Tensioning

1. Remove belt cover, if equipped.
2. Examine belt for cracks, tears in the backing, or other damage. Replace belt if damaged according to steps below:
   a. Loosen the motor mounting bolts and slide the motor towards the other pulley as far as possible.
   b. Slide the old belt off of the smallest pulley first, then remove it.
   c. Put the new belt around the larger pulley first, then around the smaller pulley.
   d. Move the motor away from the other pulley until it is properly tensioned according to the directions below. Tighten the motor mounting bolts.
3. Check and adjust belt tension according to the steps below:



   a. Press on the center of the longest span on the belt with moderate finger pressure (5 to 10 lb.). Then measure the deflection distance, the distance that

the belt moved. The belt should deflect approximately 1/4".

b. **If the belt deflects too much,** tighten belt by loosening the motor mounting bolts and moving the motor away from the other pulley slightly. Secure motor mounting bolts and retest tension. If the belt is too long to be properly tensioned, it must be replaced.

c. **If the belt deflects too little,** loosen belt by loosening the motor mounting bolts and moving the motor towards the other pulley very slightly. Secure motor mounting bolts and retest tension.

4. Before use, replace belt cover if equipped.

Troubleshooting

Problem	Possible Causes	Likely Solutions
Mixer will not start.	1. Cord not connected. 2. No power at outlet. 3. Motor's thermal reset breaker tripped. 4. Internal damage or wear. (Carbon brushes or switch, for example.)	1. Check that cord is plugged in. 2. Check power at outlet. If outlet is unpowered, turn off Mixer and check circuit breaker. If breaker is tripped, make sure circuit is right capacity for Mixer and circuit has no other loads. 3. Turn off Mixer and allow to cool. Press reset button on tool. 4. Have technician service tool.
Mixer operates slowly.	1. Extension cord too long or wire size too small. 2. Too much weight in Drum.	1. Eliminate use of extension cord. If an extension cord is needed, use shorter/heavier gauge cord. See *Extension Cords* in *GROUNDING* section. 2. Remove some of the mixture from the Drum.
Performance decreases over time.	Carbon brushes worn or damaged.	Have qualified technician replace brushes.
Excessive noise or rattling.	1. Belt too loose (slipping) or too tight (bearing damage). 2. Internal damage or wear. (Carbon brushes or bearings, for example.)	1. Properly tension belt. 2. Have technician service tool.
Overheating.	1. Forcing machine to work too long. 2. Blocked motor housing vents. 3. Motor being strained by long or small diameter extension cord.	1. Run machine in shorter intervals.. 2. Check Motor for dirt and debris and clean if needed. 3. Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See *Extension Cords* in *GROUNDING* section.

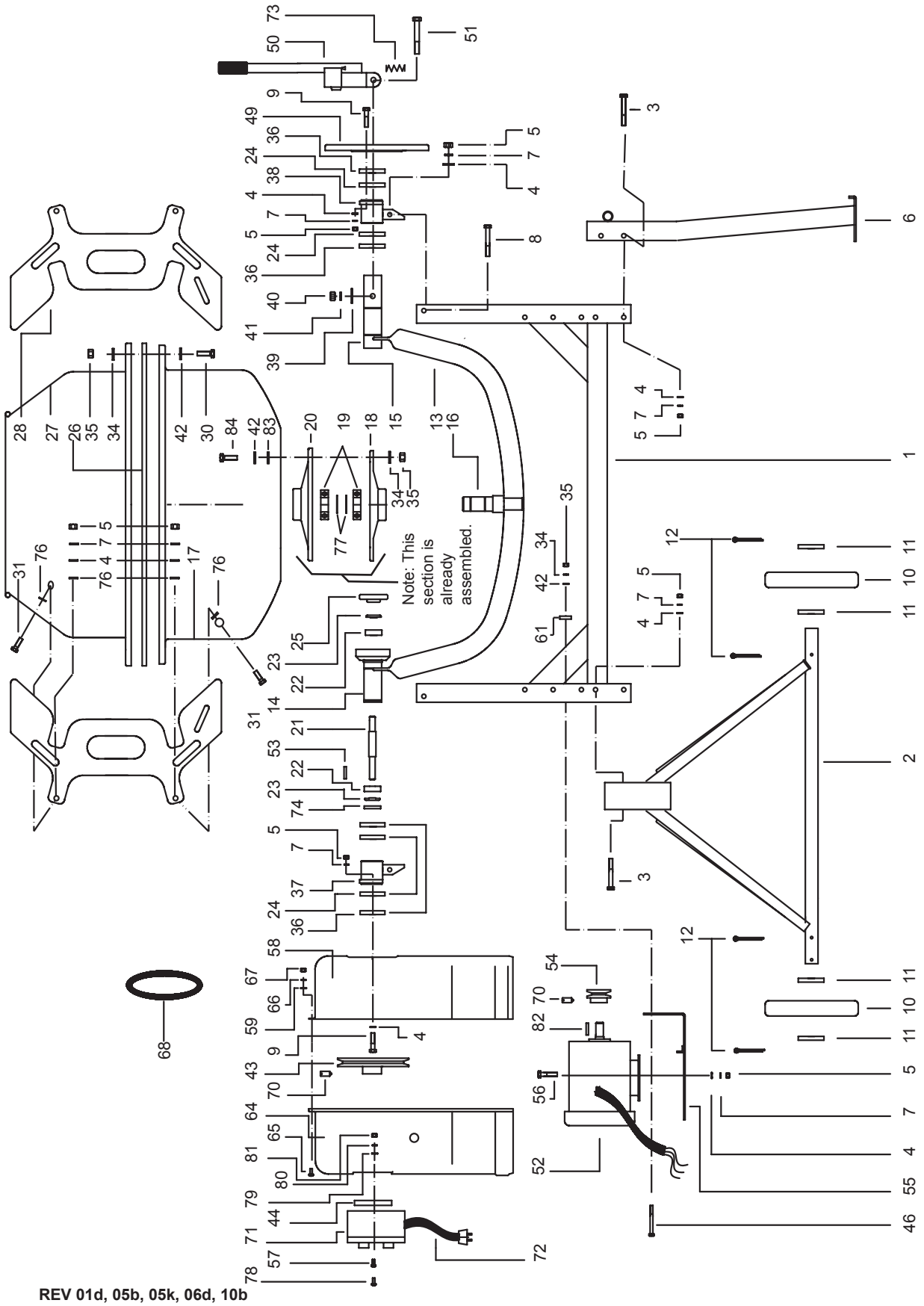
Follow all safety precautions whenever diagnosing or servicing the tool. Disconnect power supply before service.

PARTS LIST

Part	Name	Description	Qty
1	Stand		1
2	Hinge Bracket		1
3	Bolt (for Stand)	M8 x 70	4
4	Flat Washer	Ø8	18
5	Nut	M8	18
6	Support Bracket		1
7	Spring Washer	Ø8	18
8	Bolt (for Lower Drum)	M8 x 65	2
9	Bolt (for Adjusting Base & Inner Cover)	M8 x 25	4
10	Wheel		2
11	Flat Washer (for Wheels)		4
12	Pin	Ø5 x 40	4
13	Support Arm		1
14	Iron Tube (L.H.)		1
15	Iron Tube (R.H.)		1
16	Shaft Assembly		1
17	Drum, Lower		1
18	Bearing Cover, Lower		1
19	Ball Bearing	6206-2RS	2
20	Bearing Cover, Upper		1
21	Shaft		1
22	Ball Bearing	6002-2RS	2
23	Bearing Shell		2
24	Shaft Ring		4
25	Gear		1
26	Connector Seal		1
27	Drum, Upper		1
28	Mixing Blade		2
30	Cross Head Bolt (for Drums)	M6 x 18	6
31	Cross Head Bolt (for Mixing Blades)	M8 x 25	4
34	Spring Washer	Ø6	18
35	Nut	M6	18
36	Shaft C-clip	Ø38	4
37	Iron Tube Fixture (L.H.)		1
38	Iron Tube Fixture (R.H.)		1
39	Flat Washer	Ø10	1

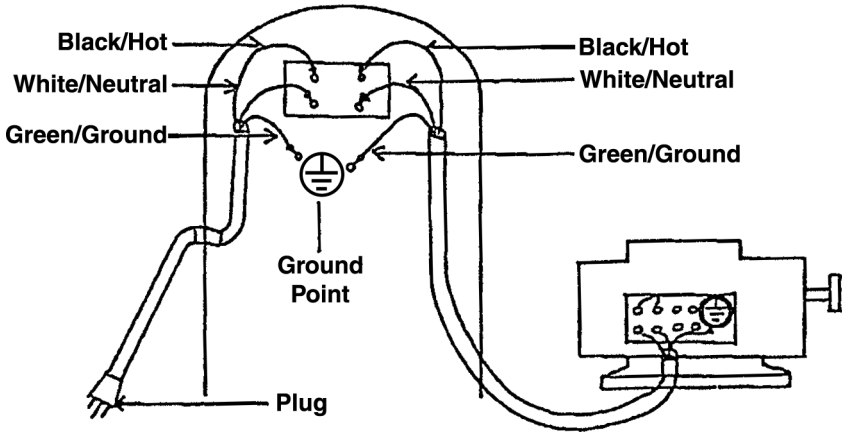
Part	Name	Description	Qty
40	Nut	M10	1
41	Spring Washer	Ø10	1
42	Flat Washer	Ø6	18
43	Drum Pulley		1
44	Switch Faceplate		1
46	Bolt (for Mounting Plate)	M6 x 60	2
49	Degree Adjusting Plate		1
50	Degree Adjusting Arm		1
51	Bolt (for Arm)	M10x65	1
52	Motor		1
53	Key	5 x 35	1
54	Motor Pulley		1
55	Motor Mount Plate		1
56	Bolt (for Motor on Base)	M8 x 20	4
57	Cross Head Bolt	M4 x 16	2
58	Motor Base Cover, Inner		1
59	Flat Washer	Ø5	3
61	Strap		1
64	Motor Base Cover, Outer		1
65	Bolt (for Outer Cover)	M5 x 10	3
66	Spring Washer	Ø5	3
67	Nut	M5	3
68	Belt	3/8” x 35”	1
70	Set Screw	M5 x 12	2
71	Switch		1
72	Power Cord		1
73	Spring		1
74	Shaft Clip	Ø15	
76	Leather Gasket Washer	Ø7	8
77	Shaft Clip	Ø30	2
78	Cross Head Bolt	M4 x 12	4
79	Flat Washer	Ø4	6
80	Spring Washer	Ø4	4
81	Nut	M4	6
82	Key	5 x 35	1
83	Leather Gasket Washer	Ø5	10
84	Hex Bolt	M6 x 20	10

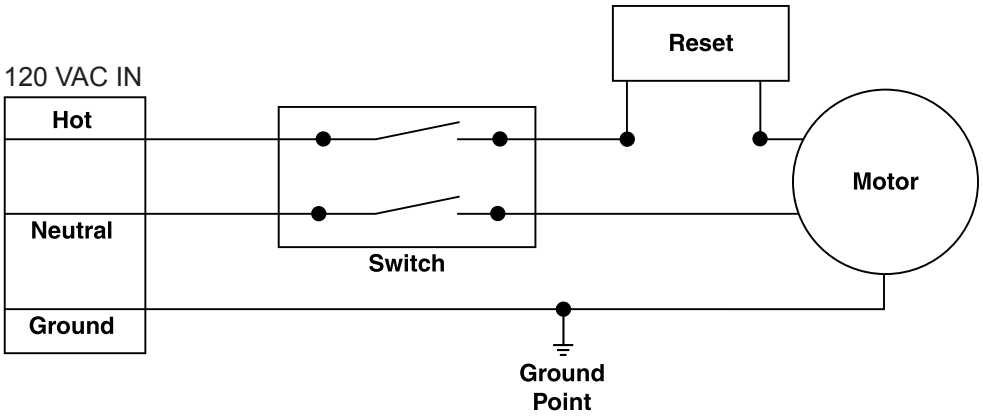
ASSEMBLY DIAGRAM



REV 01d, 05b, 05k, 06d, 10b

Wiring Connection Diagrams





Note: The motor may require wiring prior to use. For your safety, this work should be done only by an electrician or qualified technician.

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

LIMITED 1 YEAR / 90 DAY WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that for a period of ninety days from date of purchase that the engine/motor, the belts (if so equipped), and the blades (if so equipped) are free of defects in materials and workmanship. Harbor Freight Tools also warrants to the original purchaser, for a period of one year from date of purchase, that all other parts and components of the product are free from defects in materials and workmanship (90 days if used by a professional contractor or if used as rental equipment). This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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Record Product's Serial Number Here:_____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.