

50G Washer

Junior & Super Manual



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Operator's Manual for 50G and 50G Jr. Ball Washers

I. INTRODUCTION

WITTEK Ball washers are shipped in a corrugated shipping crate which is designed to absorb considerable damage and abuse while protecting the machine. As long as the machine is securely banded to the pallet, it should not have sustained any damage.

Inspect the machine immediately after removing the outer portion of the shipping crate. If it is found detached or moved from the pallet, there is possibility of damage. Inspect the machine. If any damage is discovered, immediately notify the shipping carrier and take the appropriate action.

CUSTOMER IS RESPONSIBLE FOR FILING ANY DAMAGE CLAIMS WITH THE CARRIER.

- A. Unpacking and Inspection
 - 1. Make a visual inspection of machine:
 - a. Make sure the machine is securely banded to the pallet.
 - b. Check the hopper and upper portion of the machine for any visible damage.
 - 2. Cut or break the steel bands that secure the machine and lift it from the pallet. Make sure the machine is lifted by the frame. Lifting the washer by the plastic tank or wire hopper may result in damage to the drain on the bottom of the tank.
The machine is now ready for installation.
- B. Installation and Hook-up
 - 1. Select a working location with:
 - a. Adequate working space (recommended minimum of 50 square feet).
 - b. A hard, stable surface.

NOTE

The machine may be used outdoors; however, **DO NOT PLACE THE MACHINE DIRECTLY ON OPEN GROUND. A HARD SURFACE (SUCH AS A PIECE OF ¾" PLYWOOD) MUST BE KEPT BETWEEN THE MACHINE AND OPEN GROUND.**

- 2. It is not necessary that the machine be perfectly level. The 50G Washer is designed to drain in the center of the tank, permitting efficient water drainage from off-level positions.
- 3. The machine is shipped with a 1 ¼" ball valve which is placed inside the hopper of machine during shipping. Remove ball valve from hopper, attach to drain pipe, and tighten by hand.
- 4. A drain extension can be attached to the ball valve. A standing drain pipe or fixture can be connected directly. Many applications use a standard ¾" garden hose as a flexible drain extension. Attachment to a garden hose requires use of a reducer/adaptor, which can be obtained from a hardware store or other local source.
- 5. Plug machine into a standard 110V, 3-prong wall receptacle or UL approved extension. Be careful to keep electrical power source clear of water.

WARNING: THE MACHINE IS DESIGNED WITH A STANDARD 3-PRONG GROUNDED SAFETY PLUG. DO NOT ATTEMPT TO DEFEAT ITS PURPOSE. USE OF A PLUG ADAPTOR OR NON-GROUND POWER SOURCE CAN RESULT IN SHOCK OR INJURY.

C. Machine Start-up and Test Cycle

1. Check Drum Alignment

- a. The machine has been properly tested and inspected in the factory prior to shipment. It is possible, however, that vibration or movement during shipping could cause minor drum misalignment. Check drum alignment prior to starting the machine.
- b. Open the lid of the machine and place golf balls in each of the slots between the molded guides, in the lower drum front. Gently rotate the drum by hand, turning the top of the drum toward the front of the machine. The drum should turn smoothly and evenly as the balls travel through the lower tank and appear behind the drum.
- c. If the balls bind or jam, or if the drum turns with uneven resistance, it is out of alignment.

2. Soap and Water Fill

- a. Put one cup of WITTEK Golf Ball Soap, or any other low-sudsing (Borax-type) powder detergent into the empty tank.
- b. Fill the tank approximately 2 inches from the top with luke-warm to hot water.

WARNING: USE ONLY A LOW-SUDSING POWDER DETERGENT IN THE MACHINE. DO NOT USE LAUNDRY DETERGENTS, LIQUID CLEANERS, CHEMICAL SOLVENTS, OR ACIDS IN THE MACHINE. USE OF ANYTHING OTHER THAN A LOW-SUDSING POWDER DETERGENT CAN CAUSE PERSONAL INJURY, OR DAMAGE TO GOLF BALLS OR RUBBER LINERS.

3. Test Cycle

- a. Make sure the machine is closed and the rubber latches are fastened.

WARNING: NEVER OPERATE MACHINE WITH LID OPEN OR THE RUBBER LATCHES UNFASTENED.

- b. With the tank properly filled, place an empty basket or container on the floor in front of the machine below the ball exit chute.

HINT: For the first couple of golf balls, the basket should be held near the exit chute. Golf balls might bounce out if the basket is left on the ground.

- c. Turn the machine on using the ON\OFF switch located on the end of the drive motor. The machine should make a low humming sound: motor, drive shaft, and drum should turn.
- d. Make certain that the vibrator motor is running and that the hopper is vibrating. The vibrator motor ON\OFF switch is located on the connecting wire between the vibrator motor and the drive motor.
- e. Place a few balls in the hopper. Observe and make sure the balls roll and enter smoothly through the ball entry trough on the left side of the hopper. After approximately 20 seconds, the balls should exit the machine from the ball exit chute (front right of machine) and fall into the basket.
- f. Test cycle is complete. The machine is performing properly and is ready for general use.

WARNING: DO NOT RUN GOLF BALLS THROUGH THE MACHINE WITHOUT WATER IN THE TANK. SERIOUS DAMAGE CAN OCCUR BY RUNNING BALLS THROUGH A DRY MACHINE.

D. Operation and Maintenance for Effective Cleaning

WITTEK Ball Washers are designed such that no periodic mechanical maintenance is necessary. All moving parts, such as motors and bearings, are sealed so that no lubrication is required. Metal surfaces are powder coated. The upper and lower tank is constructed of high-impact molded polyethylene. Most breakdowns or mechanical failures occur as a result of torque overload from accumulation of dirt or debris. Therefore, it is *imperative* to maintain proper operating practices and to clean the machine after *every* use in order to insure efficient continuous performance.

In any material handling operation, location variables, operator capability, logic, and common sense are the major factors in the creation of a system. Methods of maintaining a steady flow of balls through the machine will vary from operator to operator. However, there are some general rules to follow for

obtaining the most effective use of the WITTEK Ball Washer.

1. The use of open-web wire baskets (such as WITTEK R-2 Baskets) is recommended. Make sure that an adequate supply is on hand to facilitate a workable flow of balls.
2. *Always* use the proper soap and water solution,
3. Always turn the machine on before feeding hopper.
4. Have an empty basket in place below the ball exit chute.
5. **MONITOR THE FLOW OF BALLS IN THE HOPPER** for sticks, rocks, chunks of mud, golf tees, broken balls or any other debris, and **REMOVE AS DISCOVERED**. Foreign matter hinders the machine's cleaning ability, and solid objects, such as golf tees, can cause considerable damage.
6. The machine is designed to pass small debris through the drain slot on the bottom of the lower drum. Large objects must be removed by hand.
7. Exceptionally dirty or muddy balls should be presoaked or cycled through the machine twice.
8. After balls are clean, rinse soap film by dunking in clear water or rinsing with a garden hose.
9. Drain water after each use or when exceptionally dirty.
10. **DO NOT LEAVE WATER IN THE TANK**. Standing water will accelerate deterioration of rubber cleaning surfaces.
11. Regularly remove the drum from washer to inspect for broken or cut balls, large debris, or other obstructions that may be lodged in the lower drum guides or drainage slot.

The pillow block bearings are designed with quick-release pins to facilitate easy drum removal. To remove the drum:
 - a. Remove the quick-release pins from each pillow block bearing.
 - b. Rotate the drum until the drive coupling is vertically aligned.
 - c. Pull the drum straight up and out of the lower tank.
12. Hose down the inside of the machine after each use to clear the machine of dirt and debris.
13. The typical washer is used for approximately two or three hours per day. This is not a limit. WITTEK Washers are designed for heavy duty, continuous use. Many machines are used for much longer periods of time with excellent results.
14. The machine is equipped with an overload protector. In case of blockage, the machine will automatically shut OFF to prevent serious damage. Removing the drum may be necessary. To reset, turn ON/OFF switch to "OFF" position, clear machine of blockage, wait five minutes, and then turn "ON" again.

II. REPAIRS AND ASSEMBLIES

WARNING: ALWAYS TURN POWER OFF WHEN WORKING ON MACHINE! NEVER INSERT HAND IN THE BALL FEED BASKET WHEN MACHINE IS ON!

A. Motor \ Drive System

All motor \ drive components are easily removable and accessible by removing the motor from the motor support platform.

1. Removing Motor and Coupler

- a. Remove motor shroud.
- b. Remove hex head motor mounting bolts.
- c. Loosen the allen head set screw on the two-piece solid drive coupling.
- d. Remove motor away from drum.
- e. Remove coupler from shaft.

2. Steel and Fiber Gears: Inspection and Replacement

The machine is designed so that teeth will shear off of the fiber gear in order to prevent the motor from burning out due to sudden blockages. It is recommended to keep a spare fiber gear in stock for immediate emergency service.

- a. Disconnect two-piece coupling from motor shaft.
- b. Remove allen set screws and face plate from motor.
- c. Visually inspect motor housing for damage to steel or fiber gears. Gears with any visible damage (such as broken or missing teeth) must be replaced.
- d. Remove and replace faulty gear or gears.
- e. Lightly grease gears with lithium grease.
- f. Reassemble and remount coupling and motor.

3. Drum Alignment

- a. Loosen but *DON'T REMOVE* the four bearing mounting bolts and motor mounting bolts.
- b. Place golf balls in the slots between the ball guides in the front of the drum. Rotate drum toward you, about $\frac{1}{4}$ of the way. Place golf balls in the slots in back of drum. Rotate the drum away from you so that the balls are between the inner and outer drums.
- c. Leave the balls in place and tighten the bearings and motor mounting bolts. The drum is now horizontally aligned. Make sure coupler set is level after tightening bolts.
- d. Gently rotate the top of the drum toward the front of the machine. The drum should turn smoothly and evenly as balls travel between the lower guides and appear behind the drum.
- e. If the balls bind or jam, or if the drum turns with uneven resistance, there are two probable causes:

- 1) Foreign matter caught between the guides.
Remove the drum. Rinse the lower drum with water. This will eliminate any small debris or foreign bodies lodged in the tracks.
- 2) Vertical drum misalignment.
Shim under the pillow block bearings with 1/16" washers or sheet metal. Apply one layer of shim at a time, rechecking the drum alignment after each layer, until the drum turns freely. Excessive shim will interfere with proper ball clearance on top of the drum.

NOTE

Resistance in drum rotation can also be a result of binding in pillow block bearings. Check by removing motor from the machine and turning drum by hand without balls in the slots. Difficult rotation means bearings are binding and must be replaced.

4. Replacing or Converting to a Nylon Brush Drum.
The procedure for replacing or converting an inner drum is similar to the procedure for removing the drum for purposes of inspection and cleaning (Sec. I, D, Step 11; page 4). In addition to these directions, the bearings and coupler must be transferred to the new drum shaft.
 - a. Remove Quick Release pins from pillow block bearings.
 - b. Vertically align coupler.
 - c. Remove drum from tank by lifting straight up.
 - d. Remove coupler and bearings from old drum shaft. Take care to retain keys from keyways in coupler sections.
 - e. Place the bearings on shaft of the new brush drum.
 - f. Lower drum/bearing unit into place.
 - g. Visually align drum in the center of the tank. Tighten set screws on bearings.
 - h. Make sure than the drive coupler halves are sung to each other and that the key is in place in the keyway.
 - i. Tighten set screw on coupler.
 - j. Recheck drum alignment. (Sec. I C, 1; page 2)

B. Replacing Rubber Liners

1. Relining the Inner Drum

The 50G Inner Drum Liner Replacement Kit consists of two pieces of rubber (one textured and one smooth) and all necessary mounting hardware.

- a. Remove inner drum as described in Sec I, D, Step 11; page 4..
- b. Remove old liner.
 - 1) Remove sheet metal screws from inner drum.
 - 2) Remove and discard old rubber liner and shim.
 - 3) Clean residue of old liner from drum surface.
- c. Installing new liner
- d. Wrap the trimmed shim rubber around the drum and secure with tape. Three wraps around the circumference of the drum will generally be enough.
- e. Wrap, mark, cut, and tape the long textured liner to the drum in the same manner as the shim.
- f. Use a 7/64" or 1/8" drill bit. Drill 9 holes, each approximately 1/2" apart, along one side of the liner seam. Make sure than the holes are in the recesses between the ribs of the rubber. Then drill 9 matching holes on the opposite side of the seam.
- g. Drive one of the #10 sheet metal screws (Phillips head) into each of the 18 holes, beginning from the edges and working toward the center. Make sure that the heads of the screws are seated well beneath the surface of the rubber ribs.
- h. Turn the drum around to the halfway point, exactly opposite from the liner seam. Drill two more holes and install two more screws, each about 1 inch from the edge.
- i. **Repeat** this procedure seven or more times, placing pairs of screws at various points around the drum. There will be 35 total screws holding the shim and liner in place around the drum.
- j. Remove the tape. The relining of the Inner Drum is now complete.
- k. Trim the width of liner.

2. Relining White Molded Outer Drum Guides - Bottom Half

The Replacement Kit for the 50G Superwash Outer Drum contains 4 strips of textured rubber (of equal length) that are mounted in the bottom half, and the sheet metal screws necessary for mounting. The 50G Jr. has 3 similar strips.

Note that the new rubber liner strips are shipped oversized and must be trimmed to match the length and shape of the old strips, and that new mounting holes must be drilled to match those in the old strips.

NOTE:

Do not attempt to remove the white molded plastic guide “shell” itself. These pieces are permanently installed into the drum halves at the factory and are not meant for removal or replacement.

- a. Remove inner drum if not already removed.
- b. Remove sheet metal screws from each rubber strip.
- c. Clean off the residue of the old rubber strip.
 - 1) ONE STRIP AT A TIME, lay each old strip over each corresponding new strip, and cut the ends to duplicate the trim angle of the old strip.
 - 2) After trimming, drill through the existing holds of the old strip to make new holes in the corresponding new strip.

NOTE:

When trimming or drilling new liner strips, it is important to keep the new and old pieces together TEXTURED SIDES DOWN, and always drill or cut into a secure wooden surface such as a workbench, or 2” x 4”.

- d. Install the new strips into the existing holes in the tracks in the white molded guide “shell” with the new screws that are provided.
3. Relining White Molded Outer Drum Guides - Top Half
The Replacement Kit for the 50G Superwash Outer Drum contains 5 strips (four of equal length and one short piece) of textured rubber that are mounted in the top half, and the sheet metal screw necessary for mounting. The 50G Jr. has four strips.
- a. Cut, trim, and drill the top strips in the same manner as the bottom strips.
 - b. Taper the ends of the new strips that line up to the entry and exit chutes to match the taper of the old ones.
 - c. Install the new strips into the existing holes of the liners as described above.

C. Electrical System

WARNING: ALWAYS DISCONNECT THE MACHINE FROM POWER SOURCE WHEN WORKING WITH THE ELECTRICAL SYSTEM.

1. Replacing Heater Coil.
 - a. Remove cover plate from starter switch.
 - b. Remove old heater cover.
 - c. Insert new heater coil.
 - d. Replace cover plate over starter switch.
2. Replacing Heater Coil and Starter Switch Unit.

WARNING: INCORRECT WIRING CONNECTIONS CAN CAUSE PERSONAL INJURY OR DAMAGE TO MACHINE.

- a. Remove cover plate from NEW starter switch.
- b. Install NEW heater coil into NEW starter switch.
- c. Remove cover plate from old starter switch.
- d. Disconnect all wires from terminals.
- e. Loosen the wire retainer screw. Remove the lock nut that attaches starter switch box to motor cover.
- f. Knock out one of the openings in the NEW starter switch box and mount to the motor with the conduit nipple and lock nut.
- g. Reconnect all wires.
- h. Install the cover plate.

D. Installing the 50G Dolly (Note: Dollies are not available for the 50G Jr.)

1. Remove the 1 ¼" ball valve.
2. Remove the two ¼-20 hex head thread cutter screws from the drainpipe support bracket.
3. Turn drain pipe a quarter turn to the left (counter-clockwise), so that the drain pipe is on an angle. Make sure the drain pipe clears the framework of the dolly.
4. **CAUTION: HANDLE DRAIN ASSEMBLY CAREFULLY! ONLY SWIVEL THE DRAINPIPE HORIZONTALLY; NEVER APPLY ANY VERTICAL PRESSURE OR TORQUE TO THE DRAINPIPE ASSEMBLY.**
5. Lift ball washer onto the dolly (handles in front of machine).
6. Move drain pipe back into place.
7. Reinstall support bracket onto washer frame. Slide plate over drain pipe marker hole placements with a punch or a marker. Drill holes with a 3/16" drill bit.
8. Reinstall screws.
9. Reinstall 1 ¼" ball valve.

E. Replacing Rubber Latches

Rubber latches are made of a durable flexible material designed to withstand abuse. They may, however, eventually require replacement. Refer to the illustration below.

1. Remove the machine screws from each top and bottom hinge bracket
2. Replace latch and re-install screws.

F. Troubleshooting

This section covers most of the typical malfunctions of the WITTEK washer. Use this section in conjunction with the parts list and diagrams found elsewhere in this manual.

PROBLEM:	PROBABLE CAUSE:	REMEDY
Motor does not turn	-Power outage -Electrical malfunction in machine	-Check external electrical source -Check/replace heater coil -Check/replace starter switch -Check/replace motor
Motor shuts off during operation	-Thermal overload -Machine is jammed by foreign matter	-Clean machine and reset starter switch
Repeated motor shut-off, or repeated jamming (no foreign matter)	-Drum misalignment -Bearings binding -Faulty motor	-Realign drum -Replace pillow block bearings -Replace motor
Sudden jam-up	-Large foreign body lodged in tracks	-Clear machine and reset starter switch
Gradual slow down / Machine stops running	-Drum misalignment -Uneven wear in liners	-Realign drum -Replace liners
Motor turns and makes loud noise (drum is not turning)	-Faulty steel or fiber gear in motor	-Remove and replace faulty gear(s)
Balls are not being cleaned	-Dirty water -Worn liners	-Change water -Replace liners
Drive motor turns but hopper motor does not vibrate	-Faulty connection -Faulty hopper motor	-Check and repair electrical connections in motor -Check/replace hopper motor
Water does not drain	-Clogged drain -Faulty valve	-Clear drain -Check/replace ball valve

G. Ordering Replacement Parts

WITTEK Ball Washers are designed for continuous use and are virtually indestructible. However, certain component parts, such as pillow block bearings, liners and guides, molded guideliners, and motor gears, are subject to wear and deterioration and may eventually require replacement.

WITTEK Ball Washers' parts (pillow block bearings, motor gears, replacement guide liner sets, etc.), are maintained in stock in the factory for immediate delivery. The WITTEK parts department can ship parts quickly. In emergency cases, parts can be shipped via next-day delivery.

All assemblies and replacements of WITTEK Ball Washers utilize standard hardware and can be accomplished by reasonably competent maintenance personnel. Be sure to follow all fundamental operation and safety rules when working machinery.

II. PARTS LIST

Model 50G Superwash Parts List

73175	Starter Switch with Heater Coil
73176	Vibrator Motor
73186	Drive Coupling
73567	2002 Model Rubber Liner 2 ½" x 10 ¼" (1 needed)
73568	2002 Model Rubber Liner 1 ½" x 24" (1 needed)
73569	2002 Model Rubber Liner 1 ½" x 32.68" (5 needed)
73572	½ H.P. Motor with Starter Switch and Heater Coil
73573	½ H.P. Motor, No Switch
73574	2001 and earlier 1 ½" x 32" Rubber Liner (7 Needed)
73575	2001 and earlier 1 ½" x 23" Rubber Liner (1 Needed)
73576	2001 and earlier 1 ½" x 9 ¼" Rubber Liner (1 Needed)
73577	Custom Quick Release Washer Bearing Only
73578	Custom Quick Release Washer Bearing Complete with Housing
73579	Plastic Coated Wire Hopper with Entry Chute
73581	Quick Release Pin Only
73585	50G LID Replacement
73588	Replacement 50G Nylon Brush Drum
73589	Replacement 50G Drum with Rubber Liner
M-73-43	50G Superwash Replacement Rubber Latch
M-73-102	50G Superwash Motor Guard
M-73-126	50G Superwash Liner/Guide Set
M-73387-2	50G Superwash Heater Coil Only

Model 50G Junior Parts List

73173	¼ H.P. Motor with Starter Switch and Heater Coil
73174	¼ H.P. Motor, no Switch
73175	Starter Switch with Heater Coil
73176	Vibrator Motor
73181	Fiber Gear for Motor
73182	Steel Gear for Motor
73186	Drive Coupling
73192	Slanted Steel Gear For Motor
73193	Plastic Coated Wire Hopper with Entry Chute
73582	5.75" x 2.375" Rubber Liners (1 needed)
73583	19.5" x 1.75" Rubber Liners (2 needed)
73584	20.375" x 1.75" Rubber Liners (3 needed)
73586	12.875" x 1.75" Rubber Liners (1 needed)
73590	Replacement 50G Jr. Drum with a rubber liner
73595	Replacement 50G Jr. Drum with a nylon brush drum
73592	50G Junior LID replacement rubber liner for drum
M-73-11	Heater Coil Only
M-73-30	50G Junior Washer Motor Guard
M-73-154	50G Junior Liner/Guide Set
M-73-56	50G Junior Replacement Rubber Latch