

*“FINER QUALITY FOR BETTER GOLF”*

# **RANGE M ATE® 2000**

## **GOLF BALL WASHER**

# **MANUAL**

## **SERVICE AND USAGE**

**PHONE: (760) 343-1050**  
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**CUSTOMER :** \_\_\_\_\_

**ACCT: #** \_\_\_\_\_

**MODEL: #** \_\_\_\_\_

**DATE OF PURCHASE:** \_\_\_\_\_

**MANUAL PRICE \$12.00**

# **ATTENTION!**

**THIS MANUAL SHOULD BE READ THOROUGHLY PRIOR TO INSTALLING OR OPERATING GOLF BALL WASHER!**

**THIS BALL WASHER HAS BEEN INSPECTED AND TESTED AT THE FACTORY PRIOR TO SHIPMENT.**

**DO NOT ATTEMPT TO OPERATE BALL WASHER IN ANY MANNER OTHER THAN SPECIFICALLY DESIGNED OR AS INSTRUCTED BY THIS MANUAL.**

**IT IMPORTANT TO READ THE PARTS AND SERVICE WARRANTY CONTAINED IN THIS MANUAL.**

**TERMS AND CONDITIONS APPLY ONLY TO UNMODIFIED MACHINES.**

**ANY UNAUTHORIZED MODIFICATIONS TO BALL WASHER MAY VOID THE WARRANTY.**

**A DEDICATED LINE SHOULD BE USED WHEN CONNECTING THE BALL WASHER CORD TO OUTLET. BE CERTAIN THAT ELECTRICAL VOLTAGE AND CURRENT ARE CORRECT AND CONSISTENT WITH THE SPECIFICATIONS IN THIS MANUAL. DO NOT USE EXTENSION CORDS!**

**DO NOT ATTEMPT TO PLUG IN BALL WASHER INTO ANY OTHER THAN THE CORRECT ELECTRICAL SERVICE.**

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# **A - INTRODUCTION**

THE RANGE MATE® BALL WASHER WAS DESIGNED USING STATE OF THE ART TECHNOLOGY. THE BODY OF THE BALL WASHER IS CONSTRUCTED FROM RECYCLABLE POLYETHYLENE PLASTIC WHICH ELIMINATES CORROSION PROBLEMS ASSOCIATED WITH METAL GOLF BALL WASHERS. EASE OF MAINTENANCE WAS DESIGNED INTO THE BALL WASHER:

- REPLACEABLE INDIVIDUAL POP-IN RUBBER LINERS
- REPLACEABLE NYLON BRUSH
- REMOVABLE LIFT OUT BOTTOM TRAY
- LARGE DRAIN
- LIFT OUT COUPLERS FOR EASY MAINTENANCE

ALL OF THESE FEATURES WERE DESIGNED TO FACILITATE ROUTINE MAINTENANCE WITHOUT USING TOOLS!

THE RANGE MATE® 2000 IS USER SERVICEABLE AND WILL LAST MANY YEARS WHEN MAINTAINED PROPERLY.

READ THIS MANUAL THOROUGHLY, IT HAS BEEN WRITTEN SO THAT YOU CAN MAINTAIN AND OPERATE YOUR BALL WASHER IN A SIMPLE AND SAFE MANNER.

# **B - UNPACKING AND INSPECTION**

YOUR RANGE MATE® 2000 BALL WASHER IS SHIPPED, EITHER, FULLY ASSEMBLED BY TRUCK LINE OR IN TWO CARTONS VIA FED-EXPRESS.\*

WHEN YOU RECEIVE YOUR BALL WASHER CHECK THE EXTERIOR PACKAGING FOR ANY SIGNS OF DAMAGE. YOU ARE RESPONSIBLE FOR FILING CLAIMS WITH THE FREIGHT CARRIER!

IF YOU RECEIVED YOUR BALL WASHER BY TRUCK LINE:

1. CHECK FOR OUTWARD SIGNS OF DAMAGE PRIOR TO UNPACKING. NOTE ANY DAMAGE ON THE BILL OF LADING.
2. CUT BANDING STRAPS OFF BALL WASHER.
3. REMOVE SHRINK WRAP.
4. REMOVE BALL WASHER OFF OF PALLET.
5. CHECK AGAIN FOR SIGNS OF DAMAGE. NOTE ANY DAMAGE ON THE BILL OF LADING.

IF YOU RECEIVED YOUR BALL WASHER BY FED EXPRESS:

1. CHECK FOR OUTWARD SIGNS OF DAMAGE PRIOR TO UNPACKING. IF YOU FIND DAMAGE REPORT DAMAGE TO FREIGHT CARRIER.
2. UNPACK HEAVIER BOX WHICH CONTAINS BOTTOM OF BALL WASHER.
3. UNPACK LIGHTER BOX WHICH CONTAINS BALL HOPPER AND SMALL BOX WHICH CONTAINS MISCELLANEOUS PARTS.

\* THE MAJORITY OF BALL WASHERS ARE SHIPPED IN TWO SEPARATE CARTONS.

## **B - UNPACKING & INSPECTION (CONTINUED)**

4. OPEN SMALL BOX AND CHECK THAT IT CONTAINS:

2 - TIRES

1 - AXLE WITH WASHERS AND COTTER PINS

1 - DRAIN BALL COCK

1 – BALL CHUTE

5. CHECK THE HOPPER FOR ANY SIGNS OF VISIBLE DAMAGE.  
NOTE ANY DAMAGE ON THE BILL OF LADING.

IF YOU FIND DAMAGE REPORT DAMAGE TO THE FREIGHT CARRIER.

YOUR BALL WASHER IS NOW READY FOR ASSEMBLY AND  
INSTALLATION.

# **C - ASSEMBLY**

## **IF YOUR BALL WASHER WAS SHIPPED ASSEMBLED:**

1. OPEN WASHER AND CHECK THAT THE LOWER TRAY IS COMPLETELY DOWN AND SEATED INTO THE BOTTOM TANK SLOTS.
2. CHECK TO ENSURE THAT THE TOP OF THE WASHER AND THE WIRE HOPPER ARE ALIGNED AND SEATED IN PLACE.
3. CLOSE AND SNAP DOWN THE RUBBER LATCHES.

YOUR BALL WASHER IS NOW READY FOR INSTALLATION!

## **IF YOUR BALL WASHER WAS SHIPPED IN TWO CARTONS:**

### **TOOLS REQUIRED:**

- **PLIERS**
- **PHILLIP HEAD SCREW DRIVER**

1. PLACE PARTIALLY ASSEMBLED TANK ASSEMBLY ON A FLAT SURFACE.
2. REMOVE ONE COTTER PIN AND WASHERS FROM AXLE.
3. SLIDE ONE WHEEL ONTO AXLE.
4. SLIDE ONE WASHER ONTO AXLE.
5. INSERT AXLE AND WHEEL INTO BOTTOM TANK ASSEMBLY.
6. SLIDE REMAINING WASHER ONTO AXLE.
7. SLIDE WHEEL ONTO AXLE.

## **C – ASSEMBLY (CONTINUED)**

8. SECURE AXLE BY ATTACHING COTTER PIN INTO AXLE.
9. UNSCREW HOPPER ATTACHMENT BOLTS (1/4" X 20" X 1") FROM BALL WASHER TOP (SEE EXPLODED VIEW PAGE 32).
10. PLACE HOPPER ONTO WASHER TOP RECESSED AREAS.
11. ALIGN HOPPER BRACKETS WITH SCREW HOLES AND INSERT SCREWS.
12. TIGHTEN SCREWS. **CAUTION, DO NOT OVER TIGHTEN SCREW!**
13. UNSCREW BALL CHUTE ATTACHMENT SCREW (1/4" X 20" X 1-1/4") FROM WASHER LID (SEE EXPLODED VIEW PAGE 32).
14. ALIGN BALL CHUTE ON WASHER LID AND INSERT SCREWS.
15. TIGHTEN SCREWS. **CAUTION, DO NOT OVER TIGHTEN SCREWS!**
16. OPEN WASHER AND CHECK THAT THE LOWER TRAY IS COMPLETELY DOWN AND SEATED INTO THE BOTTOM TANK SLOTS.
17. CHECK TO ENSURE THAT THE TOP OF THE WASHER AND THE WIRE HOPPER ARE ALIGNED AND SEATED IN PLACE.
18. CLOSE AND SNAP DOWN THE RUBBER LATCHES.
19. ATTACH DRAIN VALVE TO PVC NIPPLE PROTRUDING FROM FRONT END OF BALL WASHER (SEE PAGE 32).

YOUR BALL WASHER IS NOW READY FOR INSTALLATION!

## **D - INSTALLATION**

THE AREA YOU WILL BE USING FOR CLEANING YOUR RANGE BALLS SHOULD BE LEVEL AND PROVIDE ADEQUATE SPACE FOR THE BALL WASHER AND CONTAINERS THAT HOLD BOTH DIRTY AND CLEAN RANGE BALLS. WATER AND ELECTRICITY SHOULD BE IN CLOSE PROXIMITY AND DRAINAGE IS A MAJOR CONSIDERATION.

1. WESTERN GOLF, INC. RECOMMENDS A HARD LEVEL SURFACE OF APPROXIMATELY 50 SQUARE FEET.

YOU MAY USE THE RANGE MATE® 2000 OUTDOORS, HOWEVER, THE WASHER SHOULD BE AS LEVEL AS POSSIBLE TO ENSURE PROPER DRAINAGE.

2. YOUR BALL WASHER IS MOBILE AND CAN BE PUSHED TO A SUITABLE LOCATION FOR DRAINAGE. IF YOU PREFER, YOU MAY ATTACH A GARDEN HOSE TO THE DRAIN SPOUT USING STANDARD REDUCERS AVAILABLE AT MOST HARDWARE STORES.
3. PLUG BALL WASHER AND VIBRATOR MOTOR INTO A STANDARD 110 VOLT 3-PRONG WALL RECEPTACLE OR UL APPROVED EXTENSION. KEEP IN MIND THAT A DEDICATED LINE SHOULD BE USED ON ALL POWER EQUIPMENT TO AVOID LOSS OF AMPERAGE. EXTENSIONS THAT ARE OVERLY LONG WILL ALSO RESULT IN LOSS OF AMPERAGE.

***BALL WASHER IS DESIGNED WITH A STANDARD 3-PRONG GROUND SAFETY PLUG.***

 ***DO NOT ATTEMPT TO DEFEAT ITS PURPOSE.*** USE OF A PLUG ADAPTER OR NON-GROUNDED POWER SOURCE CAN RESULT IN SHOCK OR INJURY. KEEP ELECTRICAL POWER SOURCE CLEAR OF WATER.

# **1 - START-UP**

**IT IS POSSIBLE THAT VIBRATION OR MOVEMENT DURING SHIPPING COULD RESULT IN MINOR MISALIGNMENTS.**

1. CHECK THAT THE LOWER TRAY IS COMPLETELY DOWN AND SEATED INTO THE BOTTOM TANK SLOTS.
2. FACING THE OPEN BALL WASHER, CHECK TO ENSURE THAT THE BRUSH AND SHAFT ARE AS FAR TO THE RIGHT SIDE OF THE BALL WASHER WITHOUT RUBBING THE LOWER BALL TRAY.
3. CHECK TO ENSURE THAT THE TOP OF THE WASHER AND THE WIRE HOPPER ARE ALIGNED AND SEATED IN PLACE.
4. CLOSE BALL WASHER AND FASTEN RUBBER LATCHES.

**NEVER OPERATE BALL WASHER WITH LID OPEN OR RUBBER LATCHES UNFASTENED.**

## 5. SOAP AND WATER FILL

- A. USE ONLY A LOW-SUDSING POWDER DETERGENT IN BALL WASHER.

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

- B. FILL THE TANK THROUGH THE OPENING LOCATED BELOW BALL CHUTE. WATER SHOULD BE FILLED 2" BELOW TANK OPENING (NOTCHED AREA) WITH CLEAN WATER.

## **2 - TEST CYCLE**

1. CLOSE BALL WASHER AND FASTEN RUBBER LATCHES.
2. PLACE AN EMPTY UTILITY BASKET OR CONTAINER ON FLOOR BENEATH THE BALL EXIT CHUTE.
3. TURN BALL WASHER ON USING ON/OFF SWITCH LOCATED ON THE LEFT SIDE OF BALL WASHER BELOW MOTOR.
4. TURN VIBRATOR MOTOR ON USING ON/OFF SWITCH LOCATED ON POWER CORD BETWEEN HOPPER AND PLUG.
5. PLACE A FEW BALLS INTO HOPPER AND MAKE SURE THEY ROLL AND ENTER SMOOTHLY THROUGH THE BALL FEEDER THROUGH ON THE RIGHT SIDE OF HOPPER. BALLS SHOULD TAKE APPROXIMATELY 15 SECONDS TO EXIT VIA BALL CHUTE INTO BASKET.
6. YOUR TEST IS COMPLETE. MACHINE IS PERFORMING PROPERLY AND IS READY FOR USE.

# **E - OPERATION GUIDELINES**

IT IS IMPORTANT THAT THE LAYOUT OF YOUR BALL WASHING AREA BE AS EFFICIENT AS POSSIBLE.

CONSIDERATION SHOULD BE GIVEN TO THE PROXIMITY OF THE BALL WASHER TO THE UNLOADING OF YOUR BALL PICKER. WATER AND ELECTRICITY MUST BE READILY AVAILABLE. MORE IMPORTANTLY THE ACTUAL LAYOUT SHOULD MINIMIZE THE PHYSICAL HANDLING OF GOLF BALLS.

BELOW ARE SOME GUIDELINES TO ASSIST YOU WITH LAYING OUT YOUR BALL WASHING STATION AND GETTING THE MOST FROM YOUR NEW RANGE MATE® 2000 BALL WASHER.

1. POSITION YOUR BALL WASHER IN A CLEAN LEVEL AREA (INDOORS OR OUTDOORS) WHICH ALLOWS SPACE FOR BOTH DIRTY AND CLEAN GOLF BALLS.
2. CREATE A PATH FOR EASY MOVEMENT OF BALLS. THE MOVEMENT OF BALLS SHOULD BE FOR THE DIRTY BALLS TO BE TRANSPORTED FROM THE BALL PICKER TO THE BALL WASHER AND CLEAN BALLS FROM THE BALL WASHER TO A STORAGE AREA OR BALL DISPENSER.
3. USE A UTILITY BASKET TO MOVE BALLS FROM EACH WORK STATION. WE RECOMMEND A WIRE BASKET WHICH HOLDS APPROXIMATELY 300 - 350 BALLS. THE WEIGHT OF THIS SIZE UTILITY BASKET IS APPROXIMATELY 45 LBS. AND SHOULD REDUCE USER FATIGUE. OTHER SIZE BASKETS ARE AVAILABLE AND CAN BE FOUND IN THE WESTERN GOLF CATALOG UNDER THE RANGE EQUIPMENT SECTION.
4. CLEAR WATER MAY BE USED IN THE BALL WASHER, HOWEVER, FOR VERY DIRTY BALLS WE RECOMMEND USING A NON SUDSING DETERGENT AS RECOMMENDED ON PAGE 7 OF THIS MANUAL.

## **E - OPERATION GUIDELINES (CONTINUED)**

5. YOU MUST TURN ON BOTH THE BALL WASHER AND VIBRATION MOTOR PRIOR TO PLACING BALLS INTO BALL WASHER HOPPER.
6. KEEP AN EMPTY UTILITY BASKET PLACED BELOW BALL EXITING CHUTE.

**NOTE:** WESTERN GOLF DOES SELL A METAL BALL WASHER STAND WHICH ELEVATES THE BALL WASHER SO THAT A 40 GALLON PLASTIC TRASH CONTAINER CAN BE PLACED UNDER THE EXIT BALL CHUTE (SEE PAGE 44 OF THIS MANUAL FOR THIS OPTION) OR TO FACILITATE A BALL CONVEYOR SYSTEM.

7. ALWAYS MONITOR THE BALLS IN THE HOPPER FOR STICKS, ROCKS, CHUNKS OF MUD, GOLF TEES, BROKEN BALLS OR ANY OTHER DEBRIS AND REMOVE AS FOUND. THESE TYPES OF DEBRIS WILL EFFECT THE ABILITY OF THE BALL WASHER TO CLEAN THE GOLF BALLS.
8. LARGER OBJECTS WILL CLOG THE BALL WASHER AND MUST BE REMOVED TO PREVENT DAMAGE TO THE BALL WASHER.

**NOTE:** OVER SIZE GOLF BALLS SUCH AS THE SPALDING-MAGNUM AND THE PINNACLE-OVERSIZE COULD HAMPER THE FLOW OF BALLS AND SHOULD BE REMOVED PRIOR TO CLEANING.

9. IF SOAP IS USED TO CLEAN BALLS THEY SHOULD BE RINSED OR DUNKED IN CLEAR WATER TO REMOVE SOAP FILM.
10. WATER MUST BE DRAINED AFTER EACH USE OR WHEN WATER IS VERY DIRTY.
12. EMPTY WATER FROM TANK. STANDING WATER WILL EFFECT THE RUBBER LINERS AND NYLON BRUSH'S ABILITY TO CLEAN BALLS AND CAUSE THEM TO DETERIORATE.

## **E - OPERATION GUIDELINES (CONTINUED)**

13. BALL WASHER TANK AND HOPPER SHOULD BE HOSED DOWN TO REMOVE DIRT AND DEBRIS.
14. YOUR BALL WASHER WAS DESIGNED FOR COMMERCIAL USE AND CAN BE USED CONTINUOUSLY TO PROVIDE YOU WITH CLEAN RANGE BALLS.
15. THE MOTOR ON YOUR BALL WASHER IS EQUIPPED WITH AN OVERLOAD PROTECTOR. IN CASE OF BLOCKAGE, THE MOTOR WILL AUTOMATICALLY SHUT OFF\* TO PREVENT MAJOR DAMAGE.

\* TO RESET THE MOTOR, PRESS THE OFF BUTTON AND CLEAR THE BLOCKAGE IN THE BALL WASHER. WAIT FIVE MINUTES THEN RE-START THE BALL WASHER BY PRESSING THE ON BUTTON.

# **F - MAINTENANCE**

THE RANGE MATE® 2000 IS VIRTUALLY MAINTENANCE FREE. ALL MOVING PARTS HAVE BEEN ENGINEERED TO WITHSTAND NORMAL USE. THE MOTOR HAS BEEN PRE-TESTED AND REQUIRES NO MAINTENANCE.

THE BALL WASHER BODY IS CONSTRUCTED FROM RECYCLABLE PLASTIC AND ALL METAL PARTS HAVE BEEN PLATED OR POWDER COATED TO INHIBIT RUST AND CORROSION.

PREVENTATIVE MAINTENANCE IS REQUIRED AND SHOULD BE PRACTICED OFTEN.



***UNPLUG BALL WASHER PRIOR TO ANY MAINTENANCE.***

1. DIRT AND DEBRIS SHOULD BE REMOVED FROM MOTOR AREA BY REMOVING THE FOUR SCREWS THAT HOLD DOWN THE MOTOR COVER (SEE PAGE 32).
2. CHECK FOR UNUSUAL NOISES OR VIBRATIONS.
3. CHECK FOR WORN OR LOOSE COUPLINGS.
4. CHECK FOR WORN WIRING.
5. CHECK FOR OVERHEATED CONNECTORS ON MOTOR.
6. CHECK FOR LOOSE MOUNTING BOLTS.
7. CHECK ATTACHMENT LATCHES.
8. AFTER EACH USE:
  - A. DRAIN WATER FROM TANK.

## **F – MAINTENANCE (CONTINUED)**

- B. CLEAN TANK, DRAINPIPE AND SILLCOCK.
  - C. OPEN BALL WASHER AND THOROUGHLY RINSE RUBBER INSERT LINERS IN LID.
  - D. REMOVE BRUSH AND THE BOTTOM LINER TRAY. RINSE RUBBER LINERS IN BOTTOM TRAY.
  - E. REMOVE AND RINSE DEBRIS FROM WATER TANK.
9. DURING OPERATION:
- A. BALLS LOADED INTO HOPPER SHOULD BE CHECKED FOR STICKS, ROCKS, BROKEN BALLS, CHUNKS OF MUD OR OTHER DEBRIS AND REMOVED.
  - B. DIRTY OR MUDDY WATER SHOULD BE CHANGED.

# **1 - ACCESSING BOTTOM WATER TANK AND BRUSH.**



UNPLUG BALL WASHER PRIOR TO OPENING BALL WASHER LID!

1. UNFASTEN LATCHES AND LIFT OPEN TOP. THE WIRE KICK STAND ATTACHED TO THE HOPPER WILL SUPPORT THE TOP.
2. ALIGN THE CONNECTORS SO THAT THE SET SCREWS FACE UPWARD.

SET SCREWS

BRUSH

COUPLERS

MOTOR

FIG. A

3. \ PLACE YOUR HANDS BENEATH BRUSH AND LIFT STRAIGHT UP. SET BRUSH ASIDE.
4. LIFT OUT BOTTOM TRAY USING DRAIN AND DEBRIS SLOTS AT EACH END OF BOTTOM TRAY.
5. THE BALL WASHER TANK IS NOW EXPOSED AND MAY BE CLEANED.

## **2 - BRUSH REPLACEMENT**

1. CHECK BRUSH FOR WEAR AND DETERMINE IF IT NEEDS TO BE REPLACED.
2. REMOVE COUPLER BY UNSCREWING SET SCREW. (SEE PAGE 17, FIG. B).
3. REMOVE WASHER AND BOTH NYLON BUSHINGS FROM SHAFT.
4. SECURE BRUSH AND SHAFT BY INSERTING SHAFT INTO A VICE GRIP, COUPLER SIDE IN VICE.
5. LOCATE THE 4 SCREWS THAT HOLD THE BRUSH IN PLACE (ONE SCREW ON THE MOTOR SIDE AND THREE SCREWS ON THE OPPOSITE END) AND REMOVE.
6. SLIP BRUSH OFF THE BRUSH DRUM AND CLEAN THOROUGHLY.
7. YOUR NEW BRUSH IS SHIPPED WITH THE SCREWS IN PLACE.
8. LOCATE THE END OF BRUSH WITH THE MULTIPLE SCREWS AND SLIP BRUSH ON SHAFT WITH THE SINGLE SCREW DOWN NEXT TO VICE.
9. ALIGN HOLES ON THE BRUSH AND THE HOLES IN THE SHAFT AND SCREW IN YOUR FIRST SCREW.
10. KEEPING THE BRUSH FLUSH WITH THE END OF THE BRUSH DRUM LOCATE THE NEXT SCREW. IF IT DOES NOT ALIGN WITH EXISTING HOLE USE THE HOLE IN THE BRUSH AS A GUIDE AND DRILL A NEW 9/64" HOLE MATCHING THE EXISTING HOLE.
11. SET THE SCREW IN PLACE AND REPEAT WITH THE REMAINING SCREW.
12. REMOVE BRUSH SHAFT FROM VICE AND INSERT OPPOSITE END INTO VICE AND SECURE.

## **2 - BRUSH REPLACEMENT (CONTINUED)**

13. USE BOTH HANDS AND ROTATE THE BRUSH AROUND THE BRUSH DRUM UNTIL IT FITS TIGHT ON THE BRUSH DRUM.
14. SET THE SINGLE SCREW INTO THE EXISTING HOLE. IF HOLE DOES NOT ALIGN, DRILL NEW HOLE WITH A 9/64" DRILL AND SET REMAINING SCREW.
15. IT IS IMPORTANT TO WIND BRUSH ONTO SHAFT WITH SUFFICIENT TENSION TO AVOID A LOOSE FITTING BRUSH! BRUSHES CAN BE ORDERED INSTALLED ON BRUSH DRUM TO SAVE TIME.
16. PLACE NYLON BUSHINGS ONTO BRUSH SHAFT (CHECK FOR BEARING WEAR AND REPLACE IF NECESSARY).
17. LOCATE SHAFT END WITH THE FLAT SURFACE (SHOULD BE END WITH SINGLE SCREW) AND SLIP THE 5/8" X 1-3/4" WASHER ONTO SHAFT.
18. REMOUNT THE COUPLER BRACKET ONTO SHAFT SEATING THE INSERT SCREW AGAINST FLAT SHAFT SURFACE.
19. YOUR BRUSH IS NOW READY TO INSTALL INTO THE BALL WASHER.

### **3 - BRUSH ASSEMBLY INSTALLATION**

1. WHEN INSTALLING THE BRUSH ASSEMBLY INTO THE BALL WASHER ALIGN THE NYLON BUSHING SO THAT THEY FIT INTO THE BEARING SLOTS. (SEE FIG. B ).
2. ALIGN THE COUPLER BRACKET SO THAT SET SCREW FACES UPWARD.
3. ALIGN WASHER TO FIT OUTSIDE OF THE BEARING SLOT (BETWEEN WASHER BODY AND COUPLER).
4. LOWER BRUSH INTO PLACE AND CLOSE LID AND SECURE FASTENERS.

1. COUPLERS
2. SET SCREWS
3. WASHER
4. NYLON BUSHING

FIG. B

## **4 – LINER REPAIR AND ASSEMBLY**

**CHANGING LINERS** - THE INSTALLATION OF THE LINERS HAS BEEN DESIGNED SO THAT IT'S A SIMPLE AND QUICK PROCEDURE. THE LINER GUIDES HAVE BEEN MOLDED INTO THE LID OF THE BALL WASHER AND THE EASY TO ACCESS BOTTOM TRAY.

1. USING A SIDE CUTTER TOOL SNIP OFF THE CHRISTMAS TREE FASTENERS THAT HOLD THE RUBBER LINER IN PLACE. (SEE PAGE 19, FIG. D).
2. REMOVE THE OLD RUBBER LINER STRIP AND CLEAN THE LINER GUIDE.
3. PLACE THE NEW RUBBER LINER INTO THE LINER GUIDE AND ALIGN HOLES WITH THOSE PRE-DRILLED INTO THE LINER GUIDES.
4. USING HAND PRESSURE PUSH A NEW CHRISTMAS TREE FASTENER INTO PRE-DRILLED HOLES UNTIL IT SITS TIGHTLY AGAINST LINER GUIDE. (SEE PAGE 19, FIG. C).

NOTE!      ROUGH SURFACE OF RUBBER LINER SHOULD FACE OUT ON BOTTOM TRAY. SMOOTH SURFACE SHOULD FACE OUT ON TOP LINER (LID).

5. REPEAT AS REPLACEMENTS ARE NEEDED.
6. ON BOTTOM TRAY, TURN OVER AND CUT EXCESSIVE LENGTH OF FASTENER. BE SURE TO LEAVE TWO ROWS OF BARBS TO ENSURE THAT THE RUBBER LINER IS HELD IN PLACE. (SEE PAGE 19 FIG. D).

**FIG. C**

**LINER WITH FASTENER**

**CUT OFF**

**CUT AWAY VIEW OF CHRISTMAS  
THREE FASTENER INSTALLATION  
FIG. D**

## **6 - MOTOR REPAIRS AND ASSEMBLY**

### **MOTOR/DRIVE SYSTEM**

**READ THIS DOCUMENT CAREFULLY BEFORE ATTEMPTING TO DISASSEMBLE, REASSEMBLE, OPERATE OR MAINTAIN THE PRODUCT DESCRIBED. PROTECT YOURSELF AND OTHERS BY OBSERVING ALL SAFETY INFORMATION. FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN PERSONAL INJURY AND / OR PROPERTY DAMAGE! RETAIN INSTRUCTIONS FOR FUTURE REFERENCES.**

### **GENERAL SAFETY INFORMATION**



**HIGH VOLTAGE AND MOVING PARTS AROUND GEARMOTOR DRIVEN EQUIPMENT CAN CAUSE SERIOUS OR FATAL INJURIES. ALWAYS DISCONNECT POWER SOURCE BEFORE WORKING ON A GEARMOTOR OR ITS CONNECTED LOAD. INSTALLATION MUST CONFORM TO ALL OSHA REQUIREMENTS, THE NATIONAL ELECTRICAL CODE (NEC) IN THE UNITED STATES AND ALL LOCAL CODES.**



**DO NOT USE THIS GEARMOTOR IN A LOCATION WHERE FIRE OR EXPLOSION HAZARDS MAY EXIST AS DEFINED BY ARTICLE 500, HAZARDOUS LOCATIONS, OF THE NATIONAL ELECTRIC CODE (NEC) IN THE UNITED STATES.**

**GEARMOTOR MUST NOT BE USED IN ANY COMBUSTIBLE ATMOSPHERE OR NEAR ANY COMBUSTIBLE MATERIAL.**

***INSTALLATION, MAINTENANCE, TROUBLESHOOTING, OR SERVICE TO BE PERFORMED BY ONLY QUALIFIED PERSONNEL.***

## **6 - MOTOR REPAIRS AND ASSEMBLY (CONTINUED)**

### **ELECTRICAL SAFETY**



**DISCONNECT POWER BEFORE  
INSTALLING OR SERVICING.**

MAKE CERTAIN THAT THE POWER SOURCE CONFORMS TO THE REQUIREMENTS OF THE GEARMOTOR.

GEARMOTOR MUST BE SECURELY AND ADEQUATELY GROUNDED BY WIRING WITH A GROUNDED METALLIC CONDUIT, OR OTHER GROUNDING METHOD APPROVED BY THE NEC.

### **MECHANICAL SAFETY**

REMOVE THE OUTPUT SHAFT KEY BEFORE RUNNING THE GEARMOTOR WITHOUT A CONNECTED LOAD.

GUARD ALL MOVING PARTS.

BE CAREFUL WHEN TOUCHING THE EXTERIOR SURFACE OF AN OPERATING GEARMOTOR!

GEARMOTOR SURFACE MAY BE HOT ENOUGH TO BE PAINFUL OR CAUSE INJURY. THIS CONDITION IS NORMAL FOR MOST GEAR MOTORS WHEN OPERATED AT RATED LOAD AND VOLTAGE.

DO NOT PERMIT THE LOAD TO EXCEED THE GEARMOTOR TORQUE RATING.

WHEN MAKING REPAIRS ONLY USE DAYTON AUTHORIZED REPLACEMENT PARTS.

# **MOTOR REPAIR & ASSEMBLY (CONTINUED)**

## **RECOMMENDED MAINTENANCE**

REMOVE DIRT ACCUMULATIONS IN AND AROUND GEARMOTOR, SPECIFICALLY AROUND MOTOR VENT OPENINGS, BY VACUUMING. **DIRT ACCUMULATIONS CAN CAUSE MOTOR HEATING AND A FIRE HAZARD.** ENCLOSED MOTORS CAN BE CLEANED WITH AN AIR JET; WEAR EYE PROTECTION.

PERIODICALLY INSPECT THE INSTALLATION. CHECK FOR DIRT ACCUMULATION; UNUSUAL NOISES OR VIBRATION; OVERHEATING; WORN OR LOOSE COUPLINGS; HIGH MOTOR CURRENT; POOR WIRING OR OVERHEATED CONNECTIONS; VOLTAGE; LOOSE MOUNTING BOLTS OR GUARDS; AND WORN MOTOR STARTER CONTACTS.

DAYTON GEARMOTOR BEARINGS (BALL AND/OR SLEEVE) ARE PRE-LUBRICATED AT THE FACTORY AND DO NOT REQUIRE RE-LUBRICATION.

### **ORDERING REPLACEMENT PARTS**



***USE ONLY DAYTON AUTHORIZED  
REPLACEMENT PARTS WHEN  
REPLACING GEARMOTOR.***

**IMPORTANT:** FOR REPLACEMENT PARTS INFORMATION, REFER TO THE ENCLOSED PRODUCT SPECIFIED INFORMATION MANUAL.

***ORDER REPLACEMENT PARTS BY CALLING TOLL FREE :  
1-800-443-4350 OR 1-760-343-1050***

PLEASE PROVIDE THE FOLLOWING INFORMATION:

- MODEL NUMBER
- SERIAL NUMBER (IF ANY)
- PART NUMBER AS SHOWN IN PRODUCT SPECIFIC INFORMATION MANUAL

# G - RANGE MATE® BALL WASHER

## TROUBLE SHOOTING – BALL WASHER

THIS SECTION COVERS COMMON ANSWERS TO TYPICAL MALFUNCTIONS OF THE RANGE MATE® 2000 WASHER. USE THIS CHART IN CONJUNCTION WITH OTHER SECTIONS OF THIS MANUAL. THIS LIST IS NOT ALL-INCLUSIVE AND DOES NOT NECESSARILY APPLY TO ALL CASES. WHEN UNUSUAL OPERATING CONDITIONS, REPETITIVE FAILURES, OR OTHER PROBLEMS OCCUR, CALL WESTERN GOLF, INC. FOR TECHNICAL ASSISTANCE.

<u>SYMPTOM</u>	<u>POSSIBLE CAUSE</u>	<u>CORRECTIVE ACTION</u>
UNIT FAILS TO OPERATE	1. NO POWER	CONSULT LOCAL POWER COMPANY
	2. BLOWN FUSE OR OPEN CIRCUIT BREAKER	REPLACE FUSE OR RESET CIRCUIT BREAKER
	DEFECTIVE MOTOR	REPAIR OR REPLACE
UNIT STALLS DURING OPERATION	DEFECTIVE CONTROL SWITCH OR STARTER	REPAIR OR REPLACE
	OVERLOAD	CHECK FOR DEBRIS AND CLEAN
	DEFECTIVE MOTOR	REPAIR OR REPLACE
BALLS WON'T FEED INTO WASHER	BALL WASHER NOT LEVEL	WASHER DOES NOT HAVE TO BE PERFECTLY LEVEL, HOWEVER, THE FUNNEL SIDE OF THE WASHER SHOULD BE ON LOW SIDE.

## **TROUBLE SHOOTING – BALL WASHER (CONTINUED)**

<u><b>SYMPTON</b></u>	<u><b>POSSIBLE CAUSE</b></u>	<u><b>CORRECTIVE ACTION</b></u>
	DEBRIS LOGGED IN LINER TRACK	OPEN BALL WASHER AND CHECK FOR DEBRIS AND REMOVE
	LOWER TRAY NOT PROPERLY SEATED	OPEN BALL WASHER AND ENSURE THAT LOWER TRAY FIT SNUGLY INTO BOTTOM TANK GROOVES
	RUBBER LATCHES NOT CLOSED AND SECURED	CLOSE PROPERLY
	BRUSH NOT PROPERLY ALIGN	FACING THE BALL WASHER MAKE SURE THAT THE BRUSH AND SHAFT ARE AS FAR TO THE RIGHT AS POSSIBLE. LOOSEN SET SCREWS ON COUPLERS AND ADJUST BRUSH. TIGHTEN SET SCREWS
	TOP OF WASHER AND WIRE HOPPER NOT PROPERLY ALIGNED	LOOSEN ATTACHMENT SCREWS AND SEAT HOPPER BRACKET ONTO TOP MOUNTING LEDGE.

		TIGHTEN SCREWS
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## **TROUBLE SHOOTING – BALL WASHER (CONTINUED)**

<b><u>SYMPTON</u></b>	<b><u>POSSIBLE CAUSE</u></b>	<b><u>CORRECTION ACTION</u></b>
	OVERSIZED GOLF BALLS JAMMED IN BALL GUIDES	OPEN TOP, REMOVE BRUSH AND REMOVE OVERSIZE BALL(S)
ROTATION OF COUPLERS NOT CIRCULAR	MOTOR MOUNT PLATE OUT OF ALIGNMENT	LOOSEN MOTOR MOUNT PLATE BOLTS AND ADJUST SO THAT COUPLERS ROTATE EVENLY
BALLS COME OUT DIRTY	DIRTY WATER	CHANGE WATER
	WORN RUBBER LINER	REPLACE RUBBER LINER
WATER DOES NOT DRAIN	CLOGGED DRAIN FAULTY VALVE	CLEAR DRAIN CHECK AND REPLACE IF NECESSARY

# TROUBLESHOOTING - MOTOR

THIS CHART SUGGESTS COMMON ANSWERS TO GEARMOTOR PROBLEMS. THE INFORMATION IS NOT ALL-INCLUSIVE AND DOES NOT NECESSARILY APPLY IN ALL CASES. WHEN UNUSUAL OPERATING CONDITIONS, REPETITIVE FAILURES, OR OTHER PROBLEMS OCCUR, OBTAIN TECHNICAL ASSISTANCE.

<b>SYMPTOM</b>	<b>POSSIBLE CAUSE (s)</b>	<b>CORRECTIVE ACTION</b>
UNIT FAILS TO OPERATE	1. NO POWER	1. CONSULT LOCAL POWER COMPANY
	2. BLOWN FUSE OR OPEN CIRCUIT BREAKER	2. REPLACE FUSE OR RESET CIRCUIT BREAKER. CHECK FOR GROUNDED MOTOR WINDING
	3. VOLTAGE TOO LOW AT MOTOR TERMINALS DUE TO LINE DROP	3. CONSULT LOCAL POWER COMPANY. CHECK FOR POOR CONNECTIONS. INCREASE WIRE SIZE (REFER TO MINIMUM WIRE SIZE TABLE)
	4. IMPROPER LINE CONNECTIONS	4. CHECK CONNECTIONS AGAINST DIAGRAM SUPPLIED WITH UNIT
	5. DEFECTIVE MOTOR	5. REPAIR OR REPLACE
	6. DEFECTIVE CONTROL SWITCH OR STARTER	6. REPAIR OR REPLACE
	7. IF PERMANENT, SPLIT CAPACITOR UNIT, CAPACITOR MAY BE DEFECTIVE	7. REPLACE. REFER TO UNITS NAMEPLATE FOR CORRECT VALUE

## TROUBLESHOOTING – MOTOR (CONTINUED)

SYMPTOM	POSSIBLE CAUSE (s)	CORRECTIVE ACTION
UNIT FAILS TO OPERATE (CONTINUED)	8. GEARMOTOR MAY BE OVERLOADED	8. REDUCE LOAD OR INCREASE GEARMOTOR SIZE. CHECK LOAD AND ALIGNMENT OF COUPLING
	9. TIGHT MOTOR SHAFT ON OPEN C-FRAME TYPE SHADED POLE GEAR MOTORS	9. OCCASIONALLY DURING SHIPMENT THE MOTOR SLEEVE BEARING MAY MISALIGN CAUSING THE MOTOR SHAFT NOT TO ROTATE FREELY. TAP SLIGHTLY ON SIDE OF THE MOTOR WITH A PLASTIC Mallet TO ALIGN THE BEARINGS. DO NOT TAP ON MOTOR BOBBIN COIL OR BEARING BRACKET
UNIT STALLS DURING OPERATION	1. OVERLOAD	1. DETERMINE CAUSE OF OVERLOAD. REDUCE LOAD OR INCREASE GEARMOTOR SIZE
	2. LOW VOLTAGE	2. VERIFY THAT NAMEPLATE VOLTAGE IS MAINTAINED
UNIT OPERATIONAL BUT NO OUTPUT	1. DEFECTIVE GEAR(s)	1. CHECK & REPLACE IF NECESSARY
	2. GEAR LOOSE ON SHAFT	3. CHECK & REPLACE IF NECESSARY

## TROUBLESHOOTING – MOTOR (CONTINUED)

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
UNIT OPERATIONAL BUT NO OUTPUT (CONTINUED)	3. LOOSE COUPLING, SHEAVE OR SPROCKET	3. CHECK AND TIGHTEN IF NECESSARY
	4. SHEARED KEY ON OUTPUT SHAFT	4. REPLACE KEY AND INSPECT KEYWAY FOR DAMAGE
INTERMITTENT ROTATION OF OUTPUT SHAFT	DAMAGED INTERMEDIATE GEAR CAUSED BY SHOCK LOAD	REPLACE, AND IF POSSIBLE, AVOID SHOCK LOAD
EXCESSIVE NOISE	1. BEARING WORN OR DAMAGED	1. REPLACE
	2. OVERHUNG-LOAD EXCEEDS RATING AND CAUSES BEARING WEAR	2. CORRECT LOAD AND/OR REPLACE BEARING
	3. DEFECTIVE GEAR(s)	3. REPLACE
	4. OUTPUT SHAFT MISALIGNED	4. REALIGN
	5. LOOSE SHEAVE OR SPROCKET OR MISALIGNED COUPLING	5. TIGHTEN SET SCREW(s) REALIGN COUPLING
	6. DEFECTIVE MOTOR WINDING	6. REPLACE
UNIT OVERHEATS WHILE RUNNING UNDER LOAD	1. OVERLOADED	1. REDUCE LOAD, INCREASE GEARMOTOR SIZE;
	2. HIGH OR LOW VOLTAGE	2. CHECK VOLTAGE AT MOTOR CONNECTIONS, SHOULD NOT BE MORE THAN 10% ABOVE BELOW
UNIT OVERHEATS WHILE RUNNING UNDER LOAD (CONTINUED)	3. FAULTY CONNECTION	3. CHECK AND TIGHTEN IF NECESSARY

## TROUBLESHOOTING – MOTOR (CONTINUED)

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
	4. DIRT BLOCKING VENTILATION OPENINGS 5. DEFECTIVE MOTOR	4. CLEAN MOTOR  5. REPAIR OR REPLACE
UNIT DOES NOT COME UP TO SPEED OR TAKES TOO LONG TO ACCELERATE	1. VOLTAGE TOO LOW AT MOTOR TERMINALS	1. CHECK FOR POOR CONNECTIONS. INCREASE WIRE SIZE (REFER TO MINIMUM WIRE SIZE TABLE)
	2. STARTING LOAD TOO HIGH	2. UNIT MAY BE UNDER SIZE TO START LOAD. INCREASE UNIT SIZE. LOAD CONTAINS A BOUND CONDITION. CLEAR CONDITION
	3. EXCESSIVE LOADING	3. REDUCE LOAD; INCREASE UNIT SIZE. ADJUST BELT OR CHAIN TENSION
	4. DEFECTIVE GEARMOTOR	4. REPAIR OR REPLACE
	5. INADEQUATE STARTING TORQUE. HIGH INERTIA LOAD	5. REPLACE WITH LARGER UNIT

# **H - TECHNICAL SECTION**

WESTERN GOLF'S BALL WASHER IS DESIGNED TO BE COMPLETELY USER-SERVICEABLE. ANY NECESSARY SERVICE OR MAINTENANCE CAN BE DONE BY OPERATOR PERSONNEL AT OPERATOR'S LOCATION WITH STANDARD, AVAILABLE REPLACEMENT PARTS OR PARTS AVAILABLE FROM WESTERN GOLF'S INVENTORY.

THE FOLLOWING SECTION OF THIS MANUAL CONTAINS COMPLETE AND COMPREHENSIVE INFORMATION ON THE TECHNICAL ASPECTS OF THE WESTERN GOLF BALL WASHER, INCLUDING PHYSICAL SPECIFICATIONS, TROUBLESHOOTING GUIDE, RECOMMENDED MAINTENANCE, DETAILED SUB-ASSEMBLY DRAWINGS, ITEMIZED PARTS LISTS, AN ELEMENTARY MACHINE ELECTRICAL DIAGRAM, AND INSTRUCTIONS ON TYPICAL MAINTENANCE PROCEDURES.

IF ANY ADDITIONAL ASSISTANCE WITH SERVICE OR OPERATION IS DESIRED, OR FOR ANY INFORMATION NOT CONTAINED IN THIS MANUAL, CALL WESTERN GOLF, INC. DURING NORMAL BUSINESS HOURS. A WESTERN REPRESENTATIVE WILL BE HAPPY TO ANSWER ANY QUESTIONS ON WESTERN GOLF'S RANGE EQUIPMENT.

WHEN ORDERING PARTS, IT IS IMPORTANT TO CORRECTLY IDENTIFY THE MODEL MACHINE. USE THE SPECIFICATIONS AND DIMENSIONS DRAWING IN THIS SECTION. IT WILL ALSO BE HELPFUL TO REFER TO THE ITEM NUMBERS AND PARTS NUMBERS FROM THE LISTS AND DRAWINGS IN THE "PARTS AND ASSEMBLIES" SECTION.

# **I - DIMENSIONS AND SPECIFICATIONS**

<b>A.</b>	<b>WIDTH</b>	<b>48"</b>	<b>WEIGHT EMPTY</b>	<b>125 LBS.*</b>
<b>B.</b>	<b>HEIGHT</b>	<b>41"</b>	<b>TANK CAPACITY</b>	<b>9 GAL.</b>
<b>C.</b>	<b>DEPTH</b>	<b>22-1/2"</b>	<b>MOTOR</b>	<b>1/6 HP</b>

**\* ADD 10 LBS. FOR SHIPPING WEIGHT**

**2 – EXPLODED  
VIEW**

**SEE PAGE 35 – REPLACEMENT PARTS DESCRIPTION**

### **3 - BALL HOPPER / VIBRATOR MOTOR ASSEMBLY**

- HOLDS 600 BALLS
- WEIGHT 20 LBS
- SIZE 26L X 22 W 2 70D

#### **RWW2-12**

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>
1.	HOPPER KICK STAND
2.	VIBRATOR MOTOR POWDER CORD
3.	VIBRATOR MOTOR
4.	BALL FEEDER CHUTE
5.	MOUNTING BRACKETS
6.	WIRE HOPPER

## 4 - REPLACEMENT PARTS

WESTERN GOLF, INC. MAINTAINS A COMPLETE INVENTORY OF PARTS FOR YOUR RANGE MATE® 2000 BALL WASHER.

MANY OF THE PARTS ARE READILY AVAILABLE AT LOCAL HARDWARE STORES. IF YOU HAVE ANY QUESTIONS REGARDING REPLACEMENT PARTS, PLEASE CALL OUR CUSTOMER SERVICE REPRESENTATIVE AT **(800) 443-4350**.

ALWAYS REFER TO THIS MANUAL'S TECHNICAL SECTION TO ENSURE YOU ARE ORDERING THE CORRECT PART. A DETAILED EXPLODED VIEW (PAGE 32) WILL ASSIST YOU IN CORRECTLY IDENTIFYING THE REPLACEMENT PART YOU REQUIRE.

# RANGE MATE® 2000

## **REPLACEMENT PARTS – BALLWASHER** **(REFER TO EXPLODED VIEW PAGE 32)**

<b><u>CAT. NO.</u></b>	<b><u>DESCRIPTION</u></b>
1. RWW2-12X	WIRE HOPPER
2. RMW2-07 RMW2-071	VIBRATOR MOTOR ONLY BRACKET-VIBRATOR MOTOR
3. RMW2-23	BALL EXIT CHUTE
4. RMW2-4T	WASHER TOP (W/O LINERS)
5. RMW2	TRAY LINERS
RMW2-03	LINER SET (TOP & BOTTOM W/FASTENERS)
6. RMW2-06	BEARING-NYLON QUICK RELEASE
7. RMW2-24	BOTTOM TRAY
8. RMW2-17	LATCH
9. RMW2-25	NIPPLE-DRAIN
10. RMW2-13	DRAIN VALVE
11. RMW2-BO8	WHEEL WASHER
12. RMW2-BO9	WHEEL COTTER PIN
13. RMW2-14	REPLACEMENT WHEEL
14. RMW2-20	3/4" AXLE FOR WHEELS
15. RMW2-16	ON-OFF SWITCH
16. RMW2-4	TANK ASSEMBLY

## **RANGE MATE® 2000 - CONTINUED**

### **REPLACEMENT PARTS – BALL WASHER** **(REFER TO EXPLODED VIEW PAGE 32)**

17.	RMW2-19	PLATE (MOTOR)
18.	RMW2-26	MOTOR COVER
19.	RMW2-BO1	BOLT-MOTOR COVER
20.	RMW2-01	REPLACEMENT MOTOR
21.	RMW2-05	DRIVE COUPLING (2-PIECE) SET
22.	RMW2-04	WASHER - BRUSH SHAFT
23.	RMW2-10	REPLACEMENT BRUSH ONLY
24.	RMW2-11	REPLACEMENT SHAFT-ONLY

### **OTHER AVAILABLE PARTS**

RMW2-04	BRUSH W/SHAFT
RMW2-08	LINERS-TOP ONLY
RMW2-09	LINERS-BOTTOM ONLY
RMW2-15	SINGLE LINER STRIP
RMW2-18	FASTENER FOR LINER STRIP
RMW2-21	POWER CORD
RMW2-22	CONNECTOR (POWER CORD)
RMW2-28	BOLT PACK
RMW2-220	BALL WASHER (220 VOLT)

## **RANGE MATE® 2000 - CONTINUED**

## **REPLACEMENT PARTS – BALL WASHER** **(REFER TO EXPLODED VIEW PAGE 32)**

RMW2-220-B	BALL WASHER (220 VOLT W/OUT VIBRATOR)
RMW2-220-C	BALL WASHER (220 VOLT W/OUT VIBRATOR AND ON/OFF)
RMW2-BO2	BOLT-BALL SHUTE
RMW2-BO3	BOLT-BEARING CAP
RMW2-BO4	RUBBER GROMMET-BEARING CAP MOUNT
RMW2-BO5	BOLT-HOPPER
RMW2-BO6	BOLT-MOTOR PLATE TO BODY
RMW2-BO7	BOLT-MOTOR TO PLATE
RMW2-B10	ROMEX CONNECTOR

# **EXPLODED VIEW**

## **5 – MOTOR DIAGRAM**

**MODELS 6Z816A THRU 6Z822A**

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**FOR REPLACEMENT PARTS CALL: 1-800-443-4350  
OR 1-760-343-1050**

**PLEASE PROVIDE THE FOLLOWING INFORMATION:**

- MODEL NUMBER**
- SERIAL NUMBER (IF ANY)**
- PART DESCRIPTION AND NUMBER  
AS SHOWN IN PARTS LIST**

## 6 – REPLACEMENT PARTS - MOTOR

FIGURE 1 - REPLACEMENT PARTS ILLUSTRATION FOR MODELS 6Z816A - 6Z822A

### MODELS 6Z816A THRU 6Z822A

#### REPLACEMENT PARTS FOR MODELS 6Z816A THRU 6Z822A

REF. NO	DESCRIPTION	PART NUMBER	QUANTITY
1	8-32 X 3/8" Screw	826-288-5064	6
2	Motor subassembly	750-500-8021	1
3	Wire Nut	194-710-1000	2
4	† Capacitor	*	1
5	Gasket	127-200-0100	1
6	Thrust Ball	908-110-2500	5
7	Output Key	130-200-9000	1
8	Hardened Washer	109-485-0120	1
9	Gear housing Assembly	101-200-0130	1
10	Output Oil Seal	902-101-8411	1
11	2 - 1/4" Screw	870-290-5361	5
12	Base Plate	125-287-0300	1
13	1/2" Screw	816-104-5081	4
14	0.625" Needle Bearing	900-410-1062	2
15	0.312" Needle Bearing	900-410-1031	1
16	Low Speed Subassembly	*	1
17	High Speed Subassembly	*	1
18	Intermediate Subassembly	*	1
19	Retaining Ring	910-205-0011	1
20	Cooling Fan	206-042-1000	1
21	Fan Shroud	207-042-1000	1
22	10 – 32 x 1/4" Screw	826-190-5044	2
23	Junction Box	198-042-4000	1
24	Junction Box Cover	198-042-4004	1
▲	Input Oil Seal	902-081-4411	1
▲	Brake Shaft Cover	166-042-1000	1

**(†) ALL MODELS ARE 10FD, 330VAC, EXCEPT FOR MODEL 6Z816A WHICH IS 6 MFD, 375 VAC.**

**(\*) SEE SPECIFIC REPLACEMENT PARTS LIST**

**(▲) NOT SHOWN**

## SPECIFIC REPLACEMENT PARTS LIST FOR MODELS 6Z816A THRU 6Z822A

<b>MODEL</b>	<b>REF. NO. 4 CAPACITOR</b>	<b>PART NO. REF. NO. 16 LOW SPEED SUBASSEMBLY</b>	<b>REF. NO 17 HIGH SPEED SUBASSEMBLY</b>	<b>REF. NO. 18 INTERMEDIAT E SUBASSEMBL Y</b>
6A822A	195-500-1000	144-549-0130	146-300-0018	NONE
6Z821A	195-500-1000	144-523-0110	146-526-0130	NONE
6Z820A	195-500-1000	144-525-0110	146-525-0130	NONE
6Z819A	195-500-1000	144-524-0110	146-523-0130	145-257-0120
6Z818A	195-500-1000	144-524-0110	146-300-0003	145-257-0020
6Z817A	195-500-1000	144-726-0300	146-726-5100	145-726-0200
6Z816A	195-500-1010	144-242-0300	146-300-0002	145-242-0200

## **7 - ELECTRICAL DIAGRAM**

PLEASE READ AND SAVE THIS REPLACEMENT PARTS MANUAL. READ THIS MANUAL AND THE GENERAL OPERATING INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO ASSEMBLE, INSTALL, OPERATE OR MAINTAIN THE PRODUCT DESCRIBED. PROTECT YOURSELF AND OTHERS BY OBSERVING ALL SAFETY INFORMATION. THE SAFETY INSTRUCTIONS ARE CONTAINED IN THE GENERAL OPERATING INSTRUCTIONS. FAILURE TO COMPLY WITH THE SAFETY INSTRUCTIONS ACCOMPANYING THIS PRODUCT COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE! RETAIN INSTRUCTION FOR FUTURE REFERENCE.

### **DAYTON® PARALLEL SHAFT HIGH TORQUE AC GEAR MOTORS**

## **8 – MOTOR DISASSEMBLY / ASSEMBLY**

### **DISASSEMBLY**

**NOTE:** REFER TO THE REPLACEMENT PARTS ILLUSTRATIONS.

1. REMOVE THE FIVE (5) TORX® FLATHEAD SCREWS FROM THE OUTPUT SIDE OF THE UNIT. SUITABLE TORX® KEY WRENCHES MAY BE ORDERED FROM DAYTON, STOCK NO. 2A276.
2. PLACE THE UNIT SHAFT DOWN AND PRY OFF THE MOTOR AND COVER ASSEMBLY. THIS WILL DESTROY THE GASKET. WATCH SO THAT THRUST BALLS ARE NOT DROPPED AND LOST. DO NOT DAMAGE SEAL BEAD ON COVER.
3. WITH HOUSING DISASSEMBLED, GEARS CAN NOW BE REMOVED.
4. MOTOR CAN BE DISMOUNTED BY REMOVING FOUR (4) NO. 8 SCREWS WHICH PASS THROUGH THE COVER AND INTO THE MOTOR FACE. THESE ARE SPECIAL #8-32 X 5/8" LONG SCREWS WITH PLASTIC SEALS UNDER THE HEAD, TO PREVENT LEAKAGE AROUND THE SCREW HEADS. NEW, EXACT DUPLICATE REPLACEMENTS SHOULD BE USED.
5. OIL SEALS CAN BE REMOVED BY PRYING OUT WITH A SCREWDRIVER. CLEAN THE CAVITY AND PRESS NEW SEAL SQUARELY IN PLACE, LIP EDGE INWARD TOWARDS GEAR CAVITY UNTIL SEAL BOTTOMS.

### **REASSEMBLY**

1. CARE MUST BE TAKEN THAT THE 1/4" DIAMETER THRUST BALLS REMAIN IN PLACE DURING ASSEMBLY. THIS CAN READILY BE ACCOMPLISHED WITH A SMALL DAB OF GREASE.
2. CLEAN GEAR BOX COMPLETELY AND REPLACE WITH NEW LUBRICANT. AFTER ALL GEARS ARE IN PLACE, REFILL THE GEARCASE WITH HODSON 4111 OR GULF HARMONY #121 HEAVY GEAR OIL. ABOUT FOUR OUNCES (BY WEIGHT) WILL BE REQUIRED. DO NOT MIX LUBRICANTS.

## **8 – MOTOR DISASSEMBLY/ASSEMBLY - CONTINUED**

4. INSTALL A NEW GASKET AND PLACE THE MOTOR COVER ASSEMBLY ON BACK END OF HOUSING. HOLD FIRMLY TOGETHER AND REPLACE THE FIVE (5) TORX® HEAD SCREWS IN FACE OF GEAR BOX.
  
5. START AND STOP THE MOTOR. THE GEARING SHOULD TURN FREELY WITHOUT BINDING AND COAST SLIGHTLY AS THE MOTOR COMES TO A STOP.

# **I - OPTIONS**

## **BALL WASHER STAND**

MANY GOLF FACILITIES USE LARGE TRASH CONTAINERS TO STORE AND TRANSPORT THEIR CLEAN GOLF BALLS. LARGER GOLF FACILITIES OFTEN USE CONVEYOR SYSTEM TO MOVE THEIR GOLF BALLS.

BECAUSE OF THIS, WESTERN GOLF, INC. OFFERS A BALL WASHER STAND THAT ELEVATES THE RANGE MATE® 2000 BALL WASHER TO FACILITATE LOADING BALLS INTO A 40 GALLON TRASH CONTAINER AND MOST CONVEYOR SYSTEMS.

- TIRES AND AXLE ARE INTERCHANGEABLE FROM 2000 BALL WASHER AND ARE NOT INCLUDED.

**RMW2-30  
BALL WASHER STAND**

## **LIMITED WARRANTY**

FOR A PERIOD OF 90 DAYS AFTER SHIPMENT OF MACHINE FROM FACTORY, WESTERN GOLF, INC. WILL SUPPLY FREE OF CHARGE, F.O.B. FACTORY, THOUSAND PALMS, CALIFORNIA REPLACEMENT PARTS FOR PARTS WHICH PROVE DEFECTIVE IN WORKMANSHIP OR MATERIALS. DEFECTIVE PARTS MUST BE RETURNED FREIGHT PREPAID TO WESTERN GOLF FOR FULL CREDIT.

WARRANTY DOES NOT EXTEND TO PARTS WORN THROUGH NORMAL OPERATION OR DESIGNED TO BE PERIODICALLY REPLACED; OR WHERE DAMAGE IS CAUSED BY NEGLIGENCE, ACCIDENT, ABUSE, OR IMPROPER INSTALLATION OR OPERATION, OR THROUGH THE PERFORMANCE OF FACTORS NORMALLY EMPLOYED IN CONJUNCTION WITH MACHINE.

WESTERN GOLF ASSUMES NO RESPONSIBILITY FOR THE QUALITY OR PERFORMANCE OF SOAP, WATER, CLEANING AGENTS, DETERGENTS, OR ANY OTHER MATERIALS USED IN CONJUNCTION WITH THE BALL WASHER.

GOODS NOT MANUFACTURED BY WESTERN GOLF CARRY ONLY THE MANUFACTURER'S WARRANTY.

THIS UNDERTAKING IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE.

## **LIMITATION OF LIABILITY**

TO THE EXTENT ALLOWABLE UNDER APPLICABLE LAW, WESTERN GOLF'S LIABILITY FOR CONSEQUENTIAL AND INCIDENTAL DAMAGES IS EXPRESSLY DISCLAIMED. WESTERN GOLF'S LIABILITY IN ALL EVENTS IS LIMITED TO AND SHALL NOT EXCEED THE PURCHASE PRICE PAID.