BURHANS - SHARPE THRIFTY MIXER OPERATION AND MAINTENANCE MANUAL

INITIAL INSPECTION, RECEIVING AND STORAGE

Immediately upon receipt of the equipment check the crating and contents for any damage that may have occurred in transit. Report any damage immediately to the carrier and to Burhans-Sharpe. Check against packing slip to be sure that all parts were received. Report missing items to Burhans-Sharpe.

Mixer and impellers are normally packed together. The mixer shaft is packed in a separate container. Impellers are usually banded to mixer drive or lag-bolted to drive skid. If space allows, keep shipping containers for possible future use.

Storage: Store mixer in a clean dry location, with circulating air free from wide variations in temperature. Electric motors are easily damaged by moisture. Store the entire unit off the floor, covered with plastic, and use desiccants to reduce moisture build-up. Do not seal the plastic cover as this traps moisture. If the motor shows signs of moisture absorption before start-up, dry the motor out by applying 10% voltage on two leads. This should give approximately 50% rated current. There are also sprays available to help dry out motors. Relubricate motor before start-up when in storage six months or more, using Shell Dolium R or equivalent.

MOTOR CONNECTIONS

WARNING: High voltage and rotating equipment can cause serious of fatal injury. The use of electric machinery can be hazerdous. Installation, operation, and maintenance of electric machinery should be performed by qualified personnel. Familiarity with NEMA saftey standards, National Electrical Code and local building codes are required.

Wiring: Starting and overload control devices must be matched to motor rating. Follow control manufacturer's instructions for proper connections and installation. Electrical connections must conform to National Electrical code and all local regulations. Line voltage and wire capacity must match motor rating stamped on motor nameplate.

Electric motors - single phase: If your mixer is supplied with a single phase motor it will normally be wired by the factory with a ten foot cord and an on/off switch. If no cord or switch is provided refer to the wiring diagram on the motor for correct connections. Check that the switch is in the off position before plugging the cord into a 110 volt outlet.

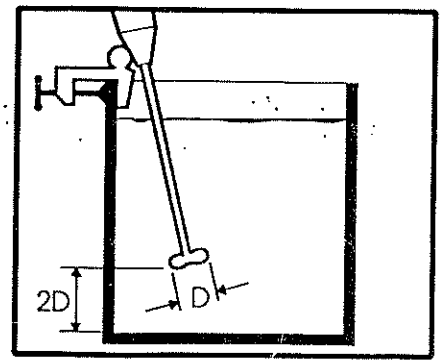
Electric motors - 3 phase: Motors requiring 3 phase power must be wired according to the wiring diagrams on the motor. Rotation of the propeller is clockwise looking down. Interchange lines if necessary for proper rotation.

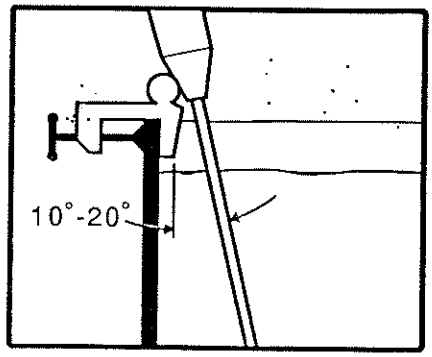
Electric DC Variable Speed: Direct current variable speed electric motors using an SCR controller should be wired following the instructions supplied with the controller. Many adjustments are often required to the SCR controller and instructions should be read carefully before applying power.

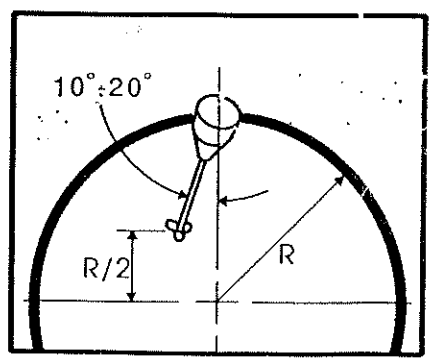
WARNING: Ground the mixer motor properly to avoid serious injury to personnel. Grounding needs to be in accordance with National Electrical Code and consistent with local building codes.

Air motors: Air driven mixers must always have a filter, lubricator and moisture trap installed in the air line ahead of the motor to prevent damage. Use the same size or next pipe size larger than intake port of motor. A regulator should be used to govern the mixer speed. Install the air line in the proper port to provide clockwise rotation of the propeller shaft when viewed from above. The muffler is always installed at the factory in its proper position.

POSITIONING







OPERATION

WARNING: High voltage and rotating parts can cause serious or fatal injury. Lockout power before servicing.

Remove the plastic plug covering the access hole on the side of the mixer nosecone. Rotate the coupling until the coupling bolts are exposed. Loosen the two lower coupling bolts. Install the shaft into the coupling until it is against the motor shaft. Tighten all four of the coupling bolts and replace the access hole cover. Position the impeller(s) on the shaft with the concave side of the blades facing away from the mixer drive. Tighten the impeller setscrews. If dual impellers are supplied, the upper impeller should be at least two prop diameters above the lower prop. Position the mixer as shown as above in the sketches.

Rotate mixer shaft by hand to check shaft straightness and to assure that the impeller is free of any obstructions in the tank.

Never operate mixer without the lower impeller immersed in the liquid by at least one prop diameter. Never operate mixer if fluid falls below this level.

The propeller rotates clockwise when viewed from above. Opposite rotation may cause overload and inefficient mixing.

Vortexing may occur if liquid level is too close to the upper impeller. This will cause aeration of the product and excessive vibration of the equipment. When mixing products of dissimilar viscosities and/or specific gravities the lighter or less viscous material should be introduced first. Gradually add the heavier material or powders into the center of the tank while the agitator is running. Never dump large amounts of powder or solids into the mixing tank. This may create clotting or "sanding in" of impeller and cause damage to the equipment.

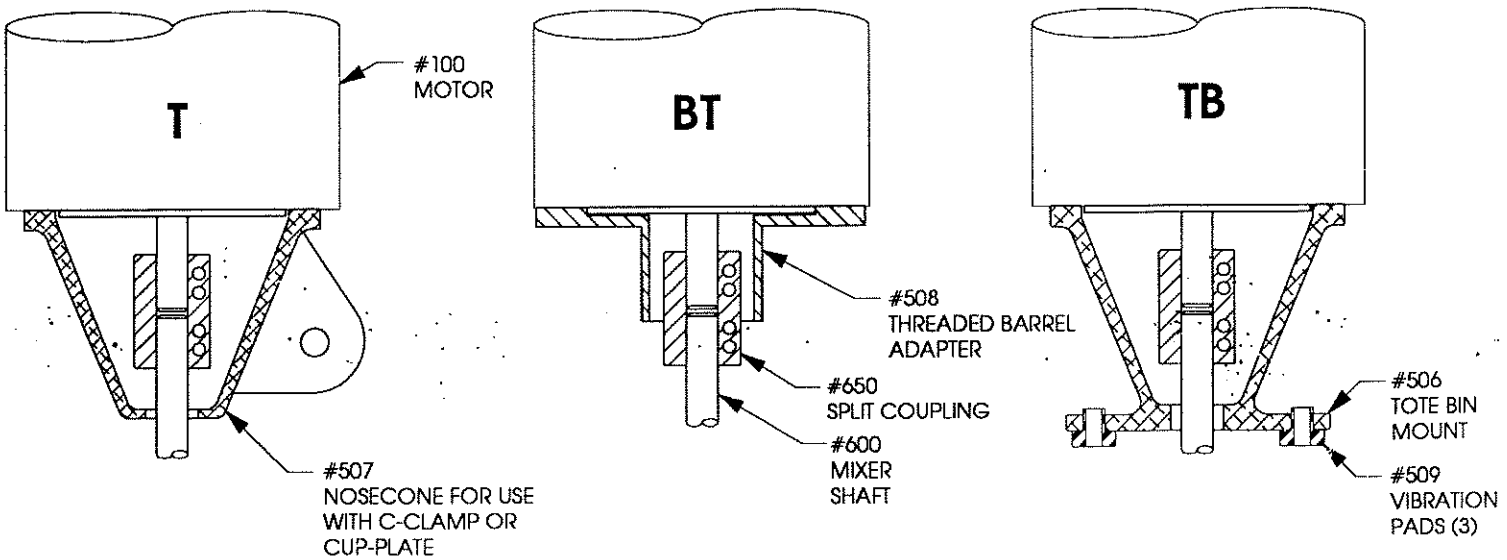
If impeller is buried in solids prior to starting mixer, solids must be dispersed. This may be achieved with an air hose, a recirculating pump, or a large stirring stick if necessary.

Minimal shaft vibration is normal with a portable mixer. Excessive vibration may be caused by a shaft or impeller which has been bent, possibly in shipment. Consult factory for recommendations.

Keep motors free from oil, dust, dirt, water, and chemicals. Keep air intakes and outlets free from foreign material. Electric motors supplied, although designed for outdoor use, may be damaged due to weather. A rain hood or similar protection may be necessary to prolong motor life.

Do not drive air motors above 1750 R.P.M.. Adjust lubricator to feed one drop of oil for every 50 - 75 CFM of air through the motor. Use a detergent SAE #10 automotive engine oil.

4AM AIR MOTOR @ 1750 MAXIMUM R.P.M.		
HORSEPOWER	CFM	PSI
1.2	48	100
1.0	39	80
0.75	30	60
0.5	22	40
0.25	14	20



TROUBLE SHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	SOLUTION
• Mixer will not start	• Incorrect wiring • Loose connections • Blown fuse • Incorrect voltage • Mechanical jamming • Water damage to motor	• Check wiring diagram and wire correctly • Check and tighten connections • Replace fuse • Wire for correct voltage • Free all debris for rotation • Service or replace motor
• Mixer will not reach correct speed	• Overload of motor • Loose drive coupling • Insufficient air pressure for air motor • Air motor vanes/ports dirty • Insufficient pressure for air motor • See first four items under "Mixer will not start"	• Check amperage against nameplate data • Check coupling bolt tension • Increase air line, compressor size decrease compressor distance form motor • Flush air motor with non-combustible solvent - relubricate • Increase air line/compressor size decrease compressor distance from air motor
• Motor runs hot	• Low or high voltage • Amperage overload • Product too viscous • Restricted ventilation • Frequent starting and stopping • Unbalanced voltage between phases • Incorrect rotation • Air motor not lubricated properly	• Wire for correct voltage • Contact factory • Check viscosity and specific gravity of product (consult factory) • Clear vents • Check with factory - a special motor may be required • Consult electrician • Change motor leads per nameplate instructions • Lubricate
• Noisy	• Loose drive coupling bolts • Worn or faulty bearings	• Check and tighten coupling • Check bearings
• Motor bearing failure	• High temperature product • Excessive overhung load	• Provide heat shield • Consult factory

WARRANTY

We warrant every SHARPE MIXER to do the job for which it is recommended, and, if a MIXER fails in this, we will refund the purchase price or provide, without additional charge, a mixer which will do the job specified. The materials of which the MIXER is constructed, while not guaranteed against chemical attack, are warranted to be as specified by the buyer, or it's commercial equivalent. We will either repair or replace, at our option and at our expense, any part of a MIXER which our examination shall disclose to our satisfaction to be defective in material or workmanship.

We will pay all transportation charges relative to our repairing or replacing a MIXER, although we will not be responsible for removal, loading, installation, or, similar related expenses.

This warranty extends for twelve (12) months after first installation of the MIXER or for eighteen (18) months after its shipment from our factory, whichever occurs first.

THE FOREGOING OBLIGATIONS OF THIS WARRANTY ARE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON OUR PART, AND STATE OUR ENTIRE AND EXCLUSIVE LIABILITY AND BUYER'S EXCLUSIVE REMEDY FOR ANY CLAIM FOR DAMAGES IN CONNECTION WITH THE SALE OR FURNISHING OF GOODS OR PARTS, THEIR DESIGN, SUITABILITY FOR USE, INSTALLATION OR OPERATION. WE NEITHER ASSUME, NOR AUTHORIZE ANY OTHER PERSON TO ASSUME FOR US, ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF THIS MIXER. WE WILL IN NO EVENT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OR DELAY WHATSOEVER, AND OUR LIABILITY UNDER NO CIRCUMSTANCE WILL EXCEED THE CONTRACT PRICE FOR THE GOODS FOR WHICH LIABILITY IS CLAIMED. THIS WARRANTY SHALL NOT APPLY TO THIS MIXER OR ANY PART THEREOF WHICH HAS BEEN SUBJECT TO ACCIDENT, NEGLIGENCE, ALTERATION, ABUSE, OR MISUSE. WE MAKE NO WARRANTY WHATSOEVER IN RESPECT TO ACCESSORIES OR PARTS NOT SUPPLIED BY US.

SHARPE MIXERS

THE BURHANS-SHARPE COMPANY

P.O. Box 3906 • Seattle, WA 98124 • (206) 767-5660 • FAX (206) 767-9170

TO - 7471 - 4 - 1294

OPERATION

WARNING: High voltage and rotating parts can cause serious or fatal injury. Lockout power before servicing.

Remove the plastic plug covering the access hole on the side of the mixer nosecone. Rotate the coupling until the coupling bolts are exposed. Loosen the two lower coupling bolts. Install the shaft into the coupling until it is against the motor shaft. Tighten all four of the coupling bolts and replace the access hole cover. Position the impeller(s) on the shaft with the concave side of the blades facing away from the mixer drive. Tighten the impeller setscrews. If dual impellers are supplied, the upper impeller should be at least two prop diameters above the lower prop. Position the mixer as shown as above in the sketches.

Rotate mixer shaft by hand to check shaft straightness and to assure that the impeller is free of any obstructions in the tank.

Extended operation of mixer when liquid level is at or near bottom impeller is not recommended.

The propeller rotates clockwise when viewed from above. Opposite rotation may cause overload and inefficient mixing.

Vortexing may occur if liquid level is too close to the upper impeller. This will cause aeration of the product and excessive vibration of the equipment. When mixing products of dissimilar viscosities and/or specific gravities the lighter or less viscous material should be introduced first. Gradually add the heavier material or powders into the center of the tank while the agitator is running. Never dump large amounts of powder or solids into the mixing tank. This may create clotting or "sanding in" of impeller and cause damage to the equipment.

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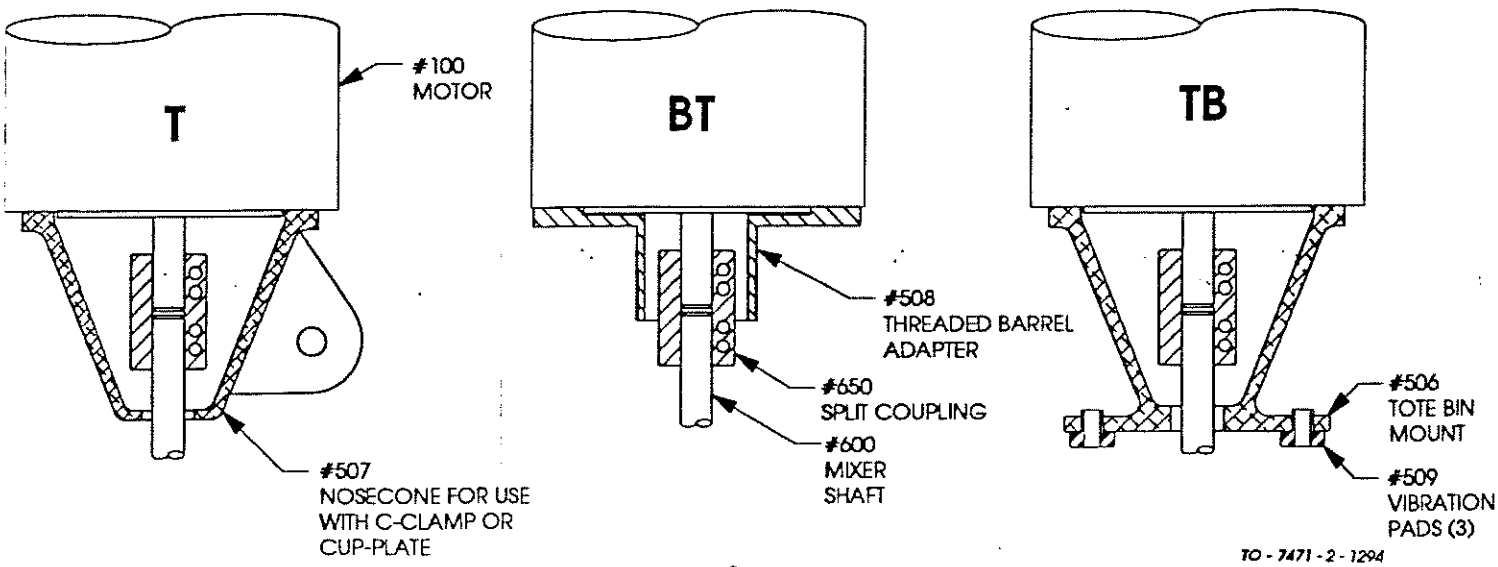
Do not drive air motors above 1750 R.P.M.. Adjust lubricator to feed one drop of oil for every 50 - 75 CFM of air through the motor. Use a detergent SAE #10 automotive engine oil.

4AM AIR MOTOR @ 1750 MAXIMUM R.P.M.		
HORSEPOWER	CFM	PSI
1.2	48	100
1.0	39	80
0.75	30	60
0.5	22	40
0.25	14	20

In the event of a breakdown within the warranty period, Shapre Mixers must be notified within 15 days if it is intended that the warranty is to cover the problem. When requesting spare parts anytime, have the serial number and model number off the mixer nameplate readily available. Do not dissassemble components without prior authorization from Sharpe Mixers or warranty will be voided. Sharpe Mixers will not accept back charges for any repair work that has not been previously authorized.



TO - 7471 - 2 - 1294

BALDOR®
MOTORS AND DRIVES

BALDOR ELECTRIC COMPANY
P. O. BOX 2400 • FORT SMITH, ARKANSAS 72902-2400 U.S.A. • (501) 646-4711 • FAX (501) 648-5792

REDUCER INSTALLATION, MAINTENANCE AND LUBRICATION

BALDOR 900 SERIES REDUCERS will achieve maximum performance and life, by following these instructions.

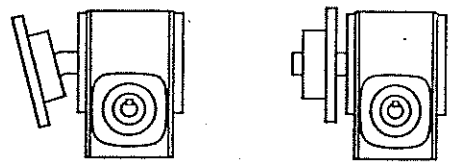
INSTALLATION

BALDOR 900 SERIES REDUCERS are ready for installation as removed from the carton. These reducers incorporate an integral expansion chamber, which eliminates the traditional requirement for a breather. Each reducer has been filled with Mobil SHC634 synthetic lubricant at the factory. The oil quantity is sufficient for any mounting position.

Mount the reducer on a flat surface, to assure proper bolt tension and to prevent damage to the mounting base.

When direct coupling the reducer to the driven machine, carefully align the reducer output shaft to the input shaft of the driven machine. These shafts must be connected with a flexible coupling.

Power transmission components, such as sprockets, gears, or sheaves, mounted on the reducer shafts produce overhung loads. Mount these components as close as possible to the reducer with the hub facing outward. This mounting minimizes the load on the reducer shaft and bearings and increases life. Carefully align these components with their counterparts on the driven machine.



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MAINTENANCE

BALDOR 900 SERIES REDUCERS require no periodic maintenance. Visual inspection for leakage, accumulation of dirt, and general operating condition is recommended.

Accumulation of material on the reducer can lead to overheating and reduced life.

LUBRICATION

Oil changes are not required. Oil should only be replaced when maintenance is performed that requires disassembly. If the oil is replaced, use only Mobil SHC634. This oil has long life and is suitable for ambient temperatures as low as -10°F.

A packet of Fel-Pro C5-A Anti-Seize Lubricant is supplied with the reducer. lubricate the motor shaft and key with the anti-seize lubricant before installing the motor onto the reducer.

MOUNTING POSITIONS

For maximum seal life, the reducer should be mounted with the input shaft as high as possible. ***Mounting the reducer with the input seal vertically down is not recommended.*** If a vertically down input shaft position is required, consult the factory.

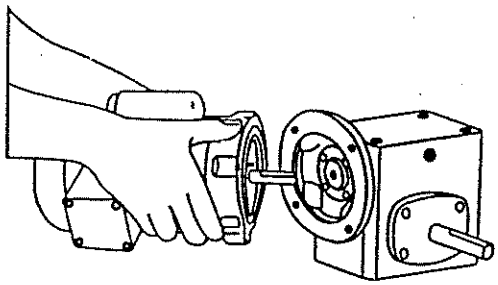
OPERATING ENVIRONMENT

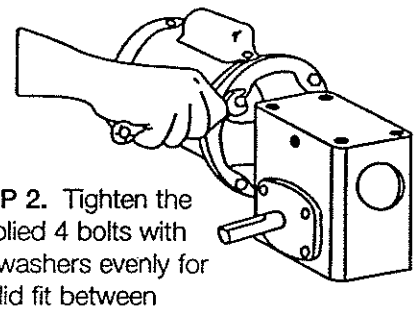
Baldor Reducers are designed to operate in ambient temperatures of -10°F to 100°F. The oil sump temperature of the reducer must not exceed 200°F. Consult the factory for applications requiring ambient operating temperature outside this range.

Baldor Speed Reducers are available in a Wash Down version for those applications requiring frequent cleaning or for those applications operating in wet or humid conditions. Baldor Wash Down Reducers incorporate white epoxy paint, stainless steel output shafts and stainless steel hardware.

"C" FLANGE – HOLLOW BORE WORM STYLE:

STEP #1. Position key in reducer worm bore. Apply anti-seize compound to the motor shaft. Line up the key with the keyslot and slip the motor shaft in the reducer worm bore.





STEP 2. Tighten the supplied 4 bolts with lockwashers evenly for a solid fit between motor and "C" flange.

EXTENDED "C" FLANGE WITH FLEXIBLE COUPLING STYLE:

STEP #1: Mount one coupling half on motor shaft so that the coupling half and end of key are flush with end of motor shaft. (See Drawing A)

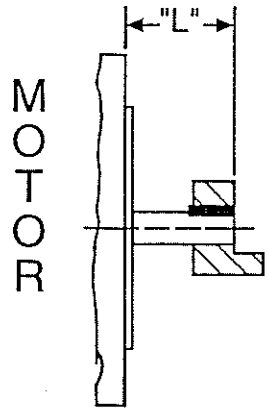
STEP #2: Tighten coupling setscrews. Thread locking compound is recommended on all coupling setscrews. Measure distance from inner face of coupling to motor mounting surface. (See Drawing A)

STEP #3: Mount other coupling half on the reducer input shaft so the coupling end measures the same distance to the mounting surface of the "C" flange. (See Drawing B) Tighten setscrews. Key should be flush with shaft end. Use pipe plug opening in side of "C" flange to loosen, tighten or make any adjustments in coupling position.

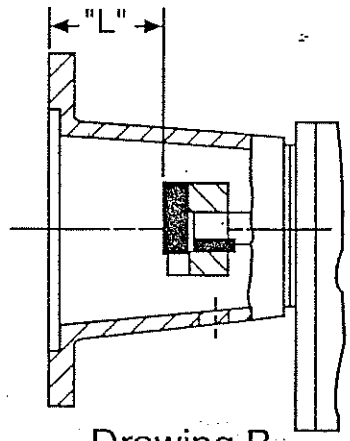
STEP #4: Align coupling halves and install motor.

STEP #5: Rotate motor to required position and tighten the supplied four bolts and lockwashers evenly for a solid fit between motor and "C" flange. Re-install and tighten the pipe plug in the flange access hole.

Follow the lubrication directions.



Drawing A



Drawing B

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