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Removable Container Mixer RC1000L

ASSEMBLY AND MAINTENANCE INSTRUCTIONS

RELIANCE CONTAINER MIXER

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RELIANCE'S CONTAINER MIXER

1. GENERAL

Reliance Container mixers are used for mixing powders and granular material of all kinds.

Reliance Container mixers guarantee intensive mixing at a low RPM, ensuring gentle handling of the product. The units may be filled to 80% of the capacity of the container. To ensure proper mixing, it is recommended that the container be filled to this capacity.

2. PACKING AND TRANSPORT

As the container mixers are delivered in a wide variety of forms (e.g. with and without packing; partly dismantled; etc.), only a few important points will be mentioned:

- The unit is supplied with three braces, two that run the length of the machine under both pedestals, and one that connects the two pedestals mid way up.

-Temporary storage of the mixer and related parts should always be in a dry place, for protection.

If there are bracers dismantled or loose due to shipping, please assemble before lifting.

3. ERECTION

The following points must be observed while setting up the mixer unit to ensure trouble-free and safe operation of the unit.

A. The floor at the installation site must be flat and level so that the unit can be precisely set up and leveled and the mobile containers can be moved under the mixer without any obstructions. On uneven floors, it may be necessary to insert a steel plate of suitable size on the floor.

B. The bottom two braces should be removed first, and then the unit placed in position. After the unit is in the desired location and anchored, the middle brace may be removed.

C. The mixer is balanced for quiet running under no-load conditions. Nevertheless some disturbance may occur during the mixer operation. For this reason the unit should be securely anchored in its installed position at the points provided on the pedestals.

D. There are four mounting locations per pedestal each have one tapped hole and one through hole. The through hole should be used to anchor the equipment. The tapped hole can be used to level the equipment if the floor is not level.

E. For safety, the pivot range of the unit must have a protective barrier.

4. CONNECTIONS

The following parts must be connected (or checked) before starting the unit:

4a. Electric

460V, 3 phase, 60 HZ power shall be supplied using appropriate circuit protection as required by local authorities or NEC.

The drive motor of the unit must be connected so that the mixer tool rotates in the direction of the hardcoating.

The motors (mixer drive and swivel drive) should be connected to a three-phase power of 460V with a frequency of 60 HZ.

Supply cable of mixer shall be connected using 4 conductors through slow blowing fan or suitable breaker.

When connecting the control panel cabinet, make sure that the marked control leads are properly secured to the marked terminals provided in the control panel cabinet.

All connection terminals should be tightened before the unit is put into operation, to ensure a good electrical contact.

4b. Compressed air

Compressed air with a minimum pressure of 80 psi is required for the operation of the pneumatic functions. Air shall be filtered, clean, and dry.

The supply line is connected to the compressed air service unit on the mixer stand. Documentation: Operating Instructions for Compressed Air Service Unit.

5. DRIVES

The mixer unit is equipped with the following drives:

5a. Bottom tool Mixer Drive

Motor: 30 HP

5b. Top tool Mixer Drive

Motor: 15 HP

5c. Tilt Drive

Motor: 3 HP rotate drive

5d. Motor Loading Check

The current consumption of the drive motor can be checked from the keypad installed on the control panel.

The current consumption of the motors will be found on the identification plate on the motor.

A brief overload of up to 50% of rated capacity, for period of 1-2 minutes, is acceptable. If overloading continues beyond this, the motor is switched off by thermally time-lagged overload relays. The overload relay is unlocked by pressing the release buttons on the relay (see circuit diagram).

6. MAINTENANCE

The following maintenance operations should be carried out on the Container Mixer.

6a. Electric Motor

For maintenance data on the electric motors and/or motor gearboxes please refer to the motor suppliers, operating and maintenance instructions attached.

6b. Reduction Gear

The gears are filled with oil prior to shipping. Check prior to start-up if any oil has been lost during shipment, is so fill to appropriate level. For oil changes or inspection see the attached lubricating instructions.

Removal of Gear Motors

The Tilt Gearmotor can be remove by the following:

1. Remove Pedestal Covers.
2. Remove top and middle cover angle iron from back of Pedestal
3. Support Gearmotor with forklift or hoist.
4. Loosen set screws for Encoder Coupling
5. Remove outside Encoder Mounting Plate with Encoder
6. Remove outside bolts for Coupling Mounting Plate and remove Plate
7. Remove Large Bolt from Tilt Shaft Keeper Plate and remove Plate.
8. Remove Mounting Bolts that keep Gearmotor Flange Fastened to Pedestal Flange.
9. Remove Gearmotor

The Top Tool Gearmotor can be remove by the following:

1. Remove Capnut, Clamping Plate, Tools, Seal Housings, Spacer Bushings, Etc.
2. Remove Bolt and Keeper Plate on back of Top Tool Gearmotor.
3. Push Solid Shaft through the Mixing head, Inner Race of Needle Bearing will come out with shaft.
4. Unbolt Gearmotor from Gearmotor Mounting Flange and remove.

The Bottom Tool Gearmotor can be remove by the following:

1. Remove Top Tool Gearmotor as indicated above
2. Remove Capnut, Bottom Tool, Seal Housings, Retaining Ring, Retaining Spacer, Etc.
3. Push Hollow Shaft through Mixing head
4. Unbolt Gearmotor Flange from Adapter Connection Piece and remove.

6c. Shaft seal

The mixer shafts are fitted with seals to prevent material leakage, forward and reverse lip seals made of PTFE mixed viton rubber, at the mixer bottom. The pressure regulator used for the seals is located in the control box on the mixing head. The regulator should be set so that the pressure is approximately 3-5 psi.

Air purging system is provided to blow air in the seal housing.
The seals should be inspected every 250 operating hours, or every 3-month, and replaced if they show signs of wear.

Location and size of seals are shown in the assembly drawing.
The seals are assembled in the seal housing. For inspection and/or replacement the seal housing is dismantled as follows:

-Remove mixer tools and related parts.
-Undo and take out the screws of the seal housing.
-Drive 9/16" size screws into the screw hole to force out the seal housing.
-Replace the seals with two forward lip and one reverse lip seals.

The seal retainer is assembled in the reverse sequence.

Dismantling/Inspection is in the following sequence:

-Unlock the cap nut by turning it clockwise (left-hand threads) (item #8).
-Remove threaded nut.
-Remove mixing tool(s) and spacers.

6d. Clamping device

The unit is equipped with (4) pneumatic clamps. The clamps are fabricated wedges that are pneumatically engaged. Limit Switches are mounted on the tie rod for clamp/unclamps indication.

7. FUNCTIONAL DESCRIPTION

The functional description, which follows, describes the actions necessary for operating the unit in either manual or automatic mode:

Prevention of Accidents

For the prevention of accidents the following instructions must be observed:
Maintenance work on the open unit may only be carried out with the main switch on the panel is at 'OFF' position.

Qualified personnel should only carry out Work on the switch cabinet.
The swiveling range of the mixing unit must be guarded by means of grilles, chain barrier or the like, so that operating personnel are not endangered in the swiveling area.

Operating Procedure:

Mixer is designed for manual or automatic operation.

Install electrical control panel and connect all pre tagged wires supply power to the main panel. Provide appropriate circuit protection as required by local authority and NEC.

See Control Panel Operation Manual.

Cleaning/Safety

When cleaning the unit the following should be observed:

-Swivel the mixer bowl to Clean Position after selecting on Selector Switch.
-**Lock the main breaker on the cabinet in the '*OFF*' position.**
-The unit can be cleaned with water. If solvents are used, note the materials of the seals:
    -Cover seal of Perbunan.
    -Shaft seal of Piton or PTFE.
-Clean the hopper separately from mixer bowl.

Setting clamps and unclamps limit sensors

The clamps are engaged using a pneumatic air cylinder. This cylinder rotates the clamp shaft which in turn forces the clamp arm to secure the mixing container. The shaft is allowed to rotate freely by the support of a brass bearing. There is a limit switch mounted on the air cylinder, which detects when the hopper is clamped. The clamp will not be allowed to engage unless the hopper is in the up position. This means the hopper up limit switch must make contact prior to clamping.