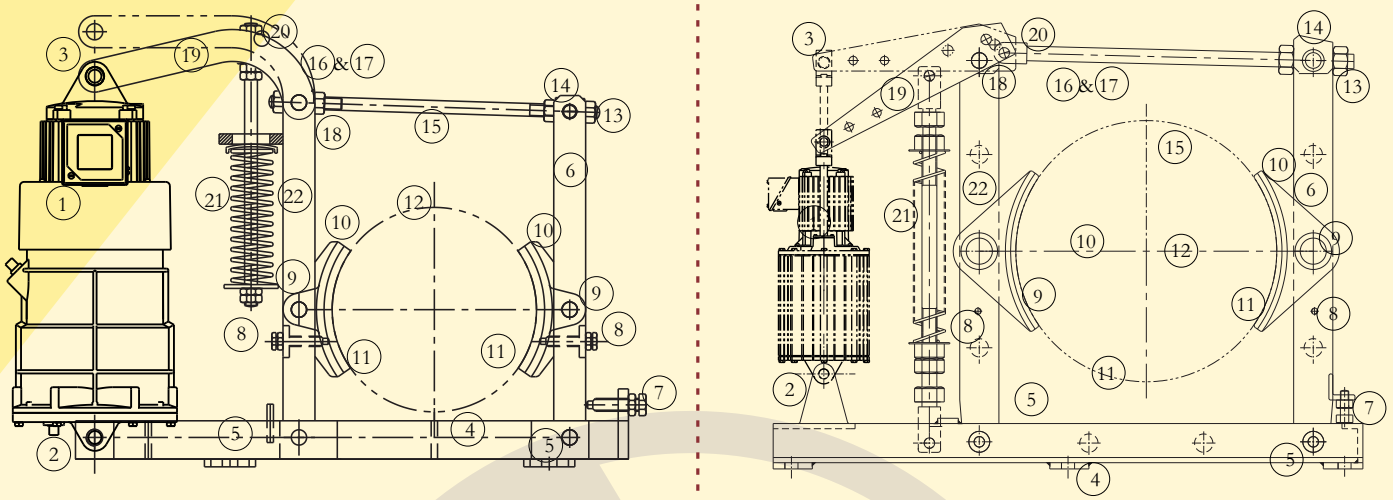
INSTALLATION MANUAL FOR THRUSTER BRAKE



1) Thruster assembly.
2) Thruster Hinge pin (lower)
3) Thruster Hinge pin (Brake lever)
4) Base Plate
5) Foundation bolt holes
6) Side Arm

7) Side Arm stopper screw
8) Shoe adjusting screw
9) Shoe hinge pin
10) Brake shoe
11) Brake liner

12) Brake Drum (User's supply)
13) Tie-rod adjustment nut and lock-nut
14) Swivel Block.
15) Tie rod or, connecting rod.
16) Swivel block for lever..

17) Tie-rod Hinge pin
18) Lever hinge pin
19) Lever
20) Brake Torque Adjustment nuts.
21) Compression Spring
22) Main Arm.

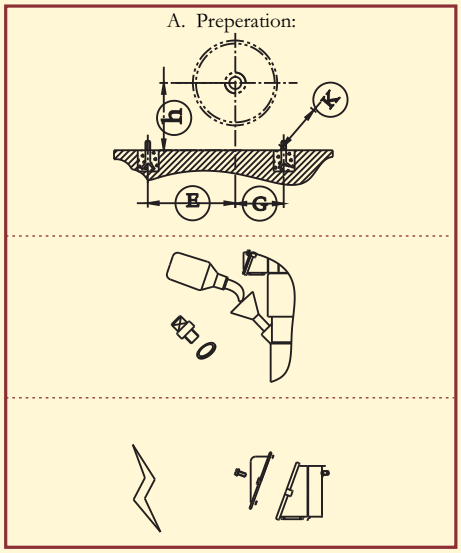
Notes:

Thruster assembly is supplied without operating oil. For recommended quantity and grade of oil, please refer our catalogue.

Thruster assembly is unless otherwise specified, suitable for 415 Volts, 50 Hz., 3-phase power supply. The operating switches and backup safety devices are to be provided by the user.

For size, quantity and placement of the foundation bolts and the height of foundation level from brake drum center-line, please refer our catalogue.

1. INSTALLATION PROCEDURE



1. Ensure that the foundation studs for brake mounting are as per the dimension in the catalogue and they are properly positioned with respect to center-line of the brake drum. Also ensure that the center height of the brake drum is properly maintained.

2. Ensure that the thruster is filled with correct quantity and grade of oil.

3. Ensure proper electrical power source and all necessary safety backups. Connect supply cable to motor terminals and connect earth and close the terminal box.

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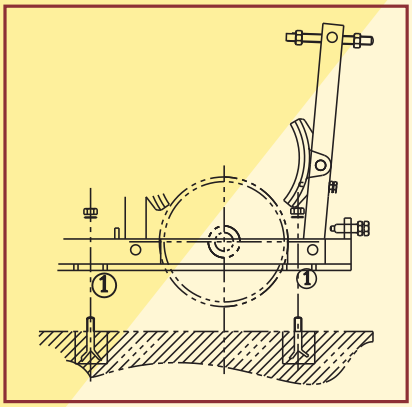


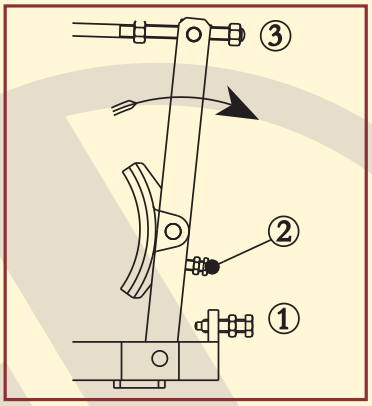
INSTALLATION PROCEDURE :

A. INITIAL INSTALLATION

Insert the brake on the brake Drum and the mounting studs. Fix the brake on foundation by using plain washers and nuts.

B. SHOE SETTING

For increasing the gap between brake shoes and brake drum, shaken lock-nuts and setting screws at Tie-rod and pull out the arm and insert the brake over the brake drum. Lower it on foundation studs.



C. ARM MOVEMENT ARRESTER

1. Reset the tie-rod locknut and nut. (1)

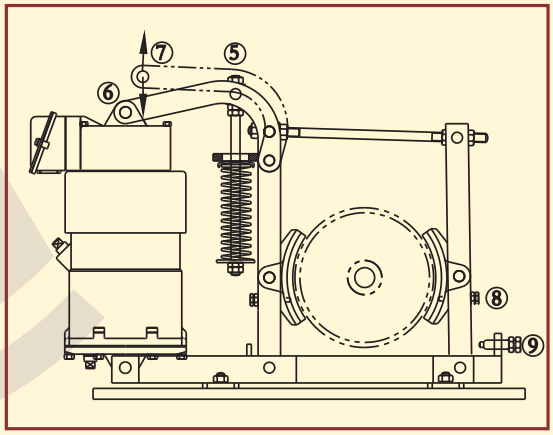
2. Reset shoe setting screw and lock-nut. (2)

3. Reset arm stopper Lock-nut and screw. (3)

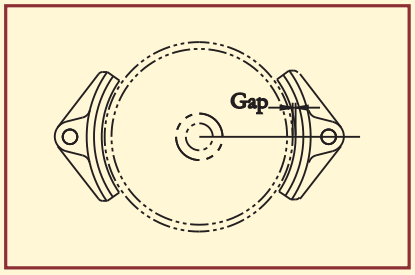
2. FOR SETTING OF BRAKE :

Loosen spring tension rod nut and lock-nut (5), Remove thruster top hinge pin (6) Move Lever up and down (7) for setting the Side Arm, shoes and tie-rod.

- Reset the tie-rod locknut and nut. (5)
- Reset shoe setting screw and lock-nut (8)
- Reset arm stopper lock-nut and screw. (9)



3. ADJUSTING SHOE-DRUM GAP



Measure and adjust the air gap between brake lining and the brake drum, uniformly to about 0.5 to 1.5 mm, by adjusting the screws (1), (2) and (3).

Check gap with feeler gauge or by a shim.

For longer liner life, air-gap at both shoes must be equal and uniform.

Important : The gap should be so adjusted that the shoe liners close on the drum diameter. When the lever is lifted by about 80% (40 mm) distance of the thruster stroke. This 80% (40 mm) of spare thruster stroke is essential for full torque utilization of brake and for future liner wear adjustment.
Reset and tighten all lock-nuts and nuts/bolts.

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4. OPERATION & SETTING OF THRUSTER BRAKES

1. Confirm that the brake is properly positioned and mounted with respect to the brake drum.

2. Check alignment and gaps between both brake-liners and brake drum. If required, adjust the tie-rod nuts and the shoe setting screws to achieve this.

3. Loosen nut and lock-nut of spring tension rod. This will reduce the braking torque and effort required to lift the lever for set up and trial purposes.

4. Lift the lever and adjust the tie-rod nuts such that the brake shoes close on brake drum when the lever is lifted by about 40 mm (80%) of the total stroke of thruster enable to adjust the liner wear.

5. Adjust the side arm arrester screw and lock-nut such that the screw arrests the further movement of the Side arm when the lever is lifted by about 30-35% of the thruster stroke. This will cause the equal working of both arms, and equal wear on both liners.

6. Connect the thruster to the power source as specified on the rating plate of the thruster. Install proper safety backups and switching devices.

7. Start the main (Brake Drum) motor and test operate the thruster brake. Ensure that the thruster and the brake is functioning normally. Check for the smooth operation of thruster, the smooth lifting of brake lever and equal working of the brake shoes.

8. During test trials, gradually tighten the spring tension rod nuts, which will increase the spring compression force and as a result, increase in the braking torque at the brake drum. Repeat the trials, till required braking torque is obtained.

9. It is necessary to set the brake for appropriate braking torques. This will ensure the safety of equipments and lower liner wear. Excessive braking torques cause noise, rattling and mechanical stresses. Very low braking torque will result in smooth but delayed and smooth braking.

10. As a guideline the braking torque required for normal applications is between 200% to 250% of rated torque of the main motor. For Hoisting duty, higher values up to 300% may be used to get acceptable slippage of load, while lifting. For long travel and cross travel applications, lower values, between 125% to 200% may be used.

    The brake is now ready for normal operations.

The thruster and the thruster brake need very little or no maintenance for normal working.

Regular check up of some key points will help long and smooth functioning.

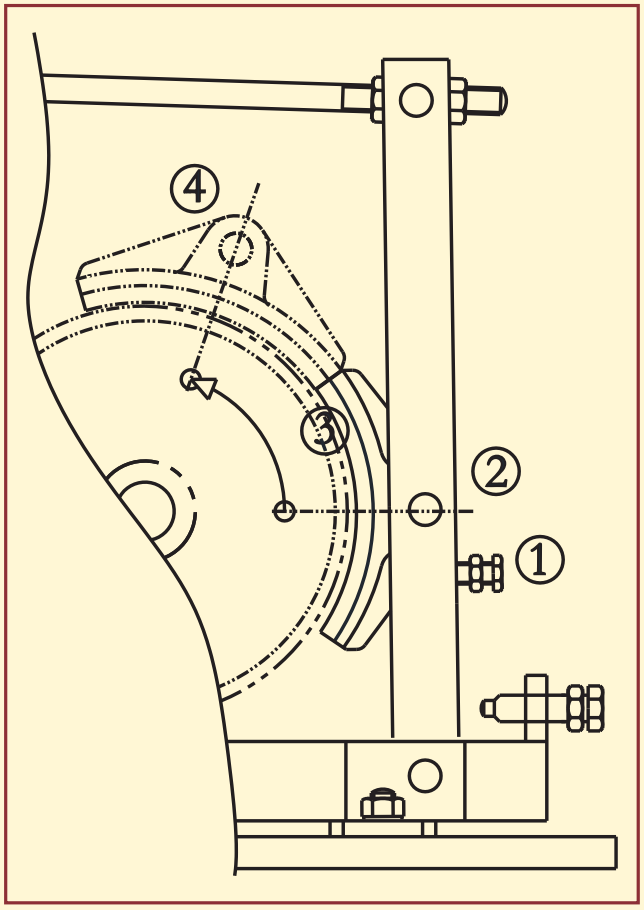
1. Check oil level in thruster tank. Top up the level, if so required.

2. Check up supply cable for rupture or brakes. Check connections in thruster terminal box.

3. Check up all elements of the brake, their welded joints, guide and hinge pins, their retaining split-pins and deformations in the shapes of various linkages.

4. Check up for wear of the liners and the working gap of liners and brake drum. If required the brake shoes should be replaced with new shoe assembly.

5. When replacement is necessary, replace both shoes with new ones. The procedure of replacement of shoes is given below.



5 . REPLACEMENT OF BRAKE SHOE

1. Loosen lock-nut and setting bolt for shoe. (1)

2. Remove one split pin of hinge pin of shoe. Remove the hinge pin. (2)

3. This will loosen the existing shoe (3), which can now be turned to position (4) by sliding the brake liner on the brake drum diameter and can be removed.

4. Replace the old shoe with new one.

5. Reassemble the new shoe in its place, replace the hinge pin and retaining split pin.

6. Repeat the procedure for the other shoe.

7. Reset the gap and tighten the setting screws.