INSTRUCTION MANUAL	DATE : 2017. 09. 08. FILE No. : BHDA0003 REV No. : REV. 0 PAGE : 1 of 9

OIL THRUSTOR BRAKE

◉ TB - HD TYPE

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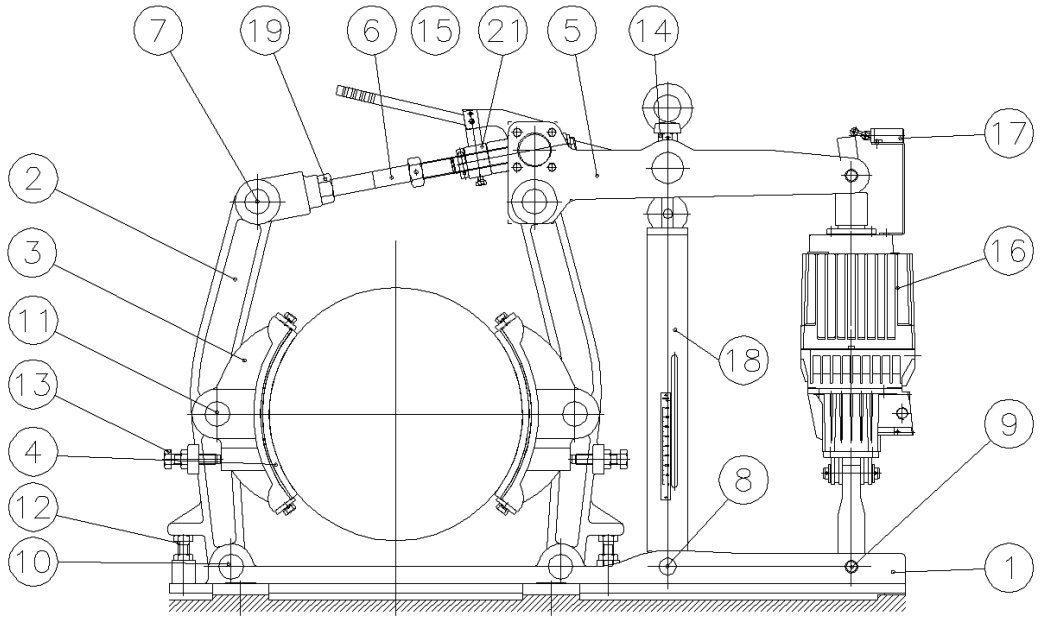
1. OPERATION PRINCIPLE

This Oil Thrustor Brake is made of a system utilizing motor-operated thrustor. If power supply is removed, ompression force of BRAKE SPRING produces braking effect, pushing the SHOE toward inside both POST and making the LINING attached to SHOE to come in close contact with the DRUM. If the power turns on, MOTOR inside the THRUSTOR rotates and generates oil pressure, which pushes the Oil Thrustor Rod upward. And the BRAKE is released when the LEVER connected to this Oil Thrustor Rod pushes the TIE ROD and stretches POST and SHOE outward exceeding the compression force of BRAKE SPRING due to such pressure. Thus, this method of braking system is termed as non-magnetized operation type (B TYPE).

2. MACHINE STRUCTURE

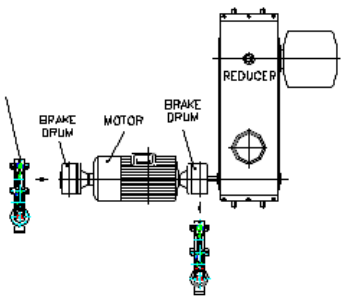


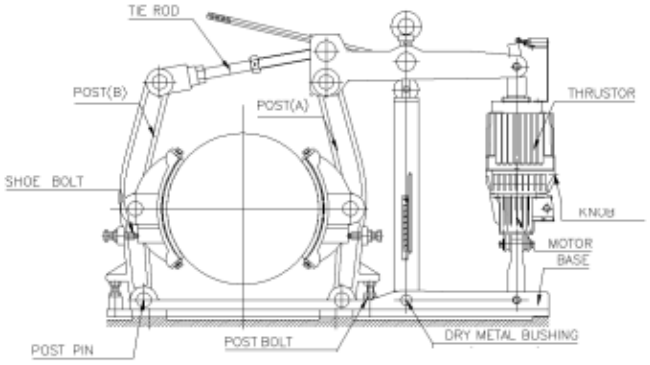
[PICTURE 1]

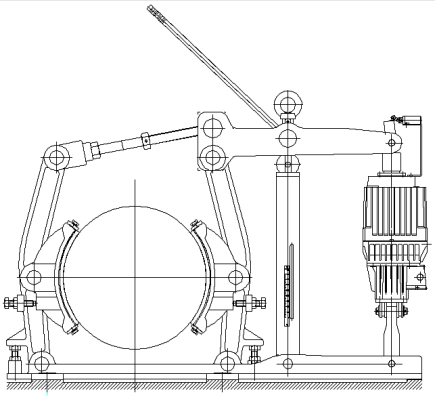
No.	ITEM	No.	ITEM	No.	ITEM
1	BASE PLATE	8	SPRING CASE FIXING PIN	15	MANUAL RELEASE HANDLE (OPTION)
2	POST	9	THRUSTOR FIXING PIN	16	OIL THRUSTOR
3	SHOE	10	POST FIXING PIN	17	LIMIT SWITCH
4	LINING	11	SHOE FIXING PIN	18	SPRING CASE
5	LEVER	12	POST ADJUSTING BOLT	19	TIE ROD FIXING NUT
6	TIE ROD	13	SHOE ADJUSTING BOLT		
7	POST & TIE ROD CONNECTING PIN	14	SPRING ADJUSTING NUT		

3. INSTALLATION

- When the brake is installed behind the motor, please rotate the tie rod bolt and open the brake.
  Then, assemble it while inserting the brake.

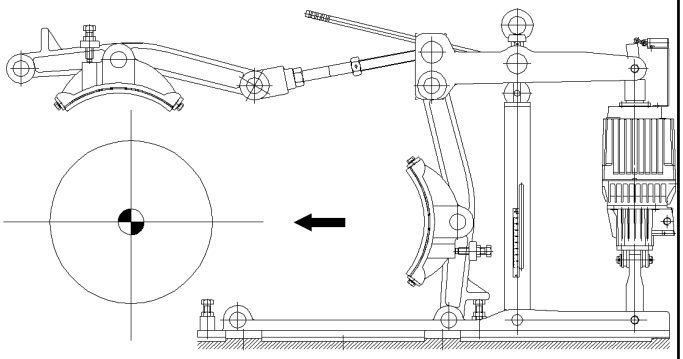




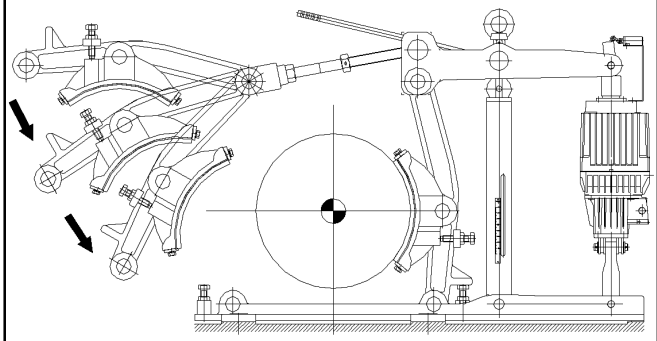


1. After removing the separation pin of upper and lower part of POST(B) and PIN, please stretch out the brake as indicated in the picture.

2. Push the brake into drum.

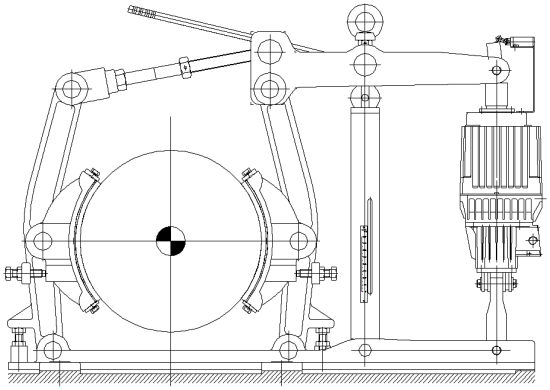


3. Push POST(B) into drum and assemble the upper and lower PIN. (Attention : please assemble PIN after sufficiently releasing the TIE ROD before assembling the upper PIN of POST)

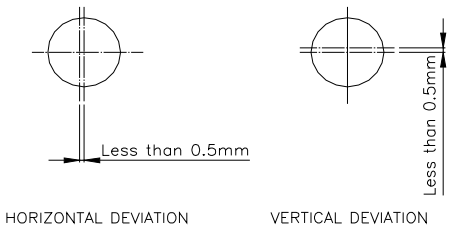


4. Please tentatively assemble the base fixing bolt after setting the brake on braking condition with TIE ROD rotated to right side.

5. Turn the power to brake on the tightly fix the base fixing bolt after adjusting the gap of the right and left part, and upper and lower part of Lining and Drum under opening condition.



6. Please perform no-load test about 10 times after completion of adjustment.



7. Please make sure before use whether the installation tolerance of up and downside, left and right side from the center of Brake Drum is within the range of 0.5mm.

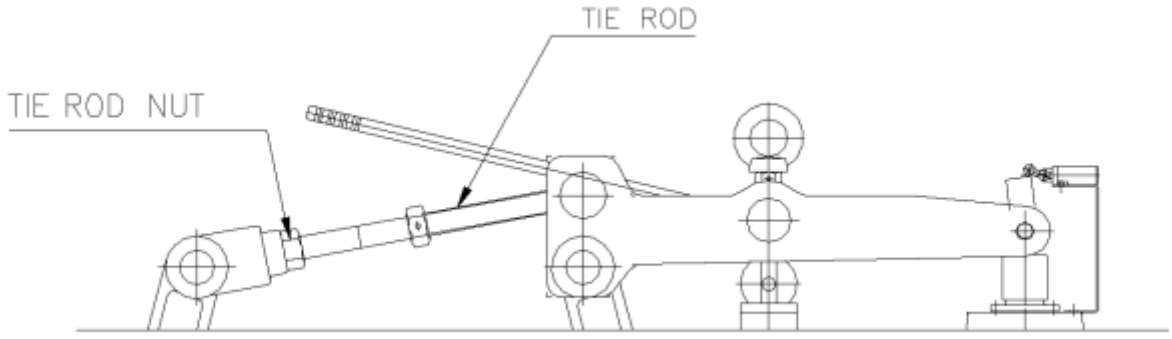
8. Please make sure whether the parallel tolerance between Brake Drum and Lining is within the range of 0.4mm.

4. WIRING

1) Open the terminal box cover of oil thrustor and connect the wire to the terminal.
2) Make sure without fail that the voltage of the power is same as the nameplate specification before connection.
3) 3 wires can be connected to any of terminal U,V,W because there is no distinction between them.
4) Motor lead wire color is distinguished as Blue for AC440V, and Red for AC220V.

5. ADJUSTMENT

1) Gap adjustment of Lining and Drum

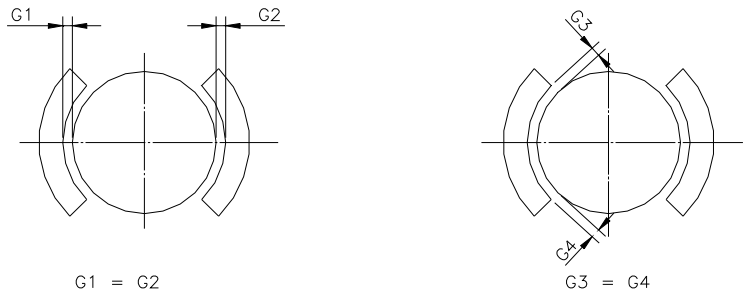


[PICTURE 2]

- As TIE ROD used for STROKE is consisted of Right Screw at upper part and Left Screw at lower part, the GAP decreases when the screw turns right and increases when turns left.

- Please adjust the GAP of LINING and DRUM within the range of 0.6mm~1.5mm after opening TIE ROD FIXING NUT(the left screw) at the lower part in the first place when the STROKE adjustment is required.

- Left and right GAP adjustment of LINING and DRUM shall be made by POST Adjustment Bolt, and upward and downward GAP adjustment be made by SHOE Adjustment Bolt following STROKE adjustment.

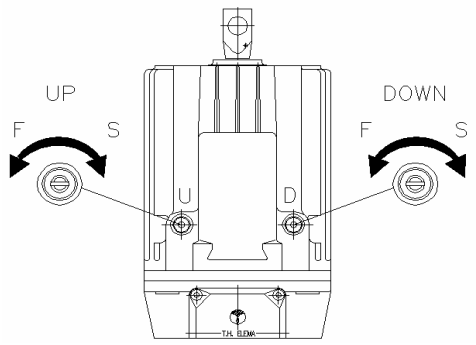


[PICTURE 3]

2) Adjustment of Braking Torque

- Please adjust the SPRING by Brake Spring Adjustment Nut in conformity with Torque Scale marked on Spring Case.

3) Adjustment of Downtime



[PICTURE 5]

① Moving-Down Time is marked on right side(FAST) : on the left side(SLOW) at 0.6 sec : Adjustment up to 6 sec is possible and even up to 30 sec is available upon request when ordering.

6. INSPECTION

1) Check after installation as to whether ;
   - The installation tolerance between the center of Brake Drum and Brake is within the range of 0.5mm.
   - The parallel line tolerance between the Brake Drum and Lining is within the range of 0.4mm.

2) Inspection before test operation
   - Does the supply voltage comply with the requirement of brake specification ?
   - Is wiring properly connected ?
   - Is Stroke Adjustment well done ?
   - Is the length of Brake Spring coincided with the length marked on the name plate ?
   - Is the Lining condition normal ?
   - Is the joining and tightening condition of connecting part normal ?
   - Is the main body of Brake firmly fixed and adhered ?

3) Periodical Inspection

Checking Point	Point of work after checking
STORKE Adjustment	Confirm the position indicator and gap between the Lining and Drum.
LINING Thickness	Replace the lining when the thickness reaches 3mm.
DRUM Surface	* Remove oil when it sticks to surface. * Take necessary action after investigating the cause of problem in case of any damage or abnormal condition.
Opening and closing operation of brake	Repair or replace the abnormal part after checking the operation condition.
Screw tightening condition of each part	Confirm the looseness and damage condition of Nut.

7. POINT OF REPAIR

1) LINING Replacement

LINING, as consumer goods, should be replaced in accordance with following point of repairing if the minimum Lining thickness reaches 3mm.

- Check if there is any functional abnormality even after braking is released.
- Release the Stroke Adjustment Nut and Shoe Adjustment Bolt. And then, rotate Tie Rod to the left in order to stretch the Post and Shoe outward.
- Release Lining Cover Fixing Bolt at top of Shoe and detach Lining Cover.
- Pull out the Lining while lifting it up toward Drum cylinder.
- Assemble new Lining in retrograde order of dismantling after replacement.
- Readjust the gap of Stroke, and gap between Drum and Lining by Stroke Adjustment Nut and Shoe Adjustment Bolt following assembling.

2) The point of repair

Trouble Condition	Item	Cause	Repair Method
Unable to open	1	MOTOR COIL burnt down	Replace MOTOR COIL
	2	THRUSTOR OIL ROD not lifted up	Supplement oil
	3	One side LINING only released	Adjust STROKE and GAP
	4	BRAKING SPRING is too strong	Adjust the length of SPRING as marked on the name plate
	5	Problem of power supply line	Check if the power is normally supplied
Abnormal braking occurred during MOTOR operation	6	COIL burnt down	Same as Item 2
	7	Same as Item 5	Same as Item 5
Stoppage time during operation takes long	8	Foreign materials, oil, etc are adhered to DRUM and LINING	Thoroughly cleanse the DRUM and LINING surface
	9	Poor contact of DRUM and LINING	Reset the adjustment part and remove foreign materials
	10	Braking force is weak	Same as Item 4
	11	BRAKE capacity is small	Check the capacity and establish measures
DRUM surface temperature goes too high (In case the temperature of Drum surface rises exceeding 160℃)	12	Use and load condition of the BRAKE are severe	Use appropriately as set forth in BRAKE specification
	13	Due to too short STROKE, DRUM and LINING are contacting each other	Reset the BRAKE adjustment part
BRAKE releasing action is slow	14	Poor condition of Oil Rod	Repair after operation check
	15	Same as Item 2, 4	Same as Item 2, 4