

# INSTRUCTION MANUAL

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## FORK ARM TYPE DC MAGNETIC BRAKE

**TB - DCF TYPE**



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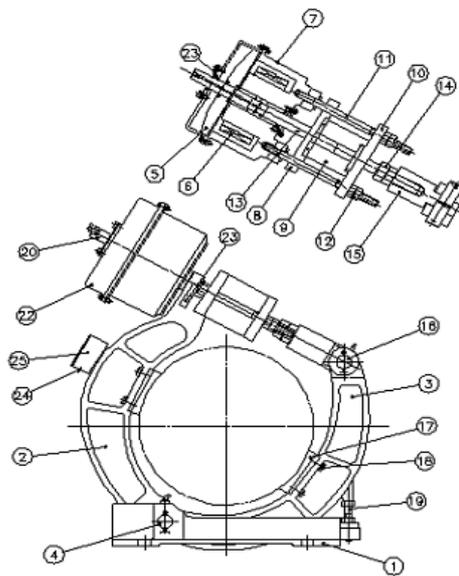
**1. OPERATION PRINCIPLE**

This FORK TYPE DC MAGNETIC BRAKE utilizes the powerful attraction of DC electromagnets.

It is in close contact with DRUM of LINING which is attached to both POST by the compressive force of BRAKE SPRING

When the DC power is supplied to the MAGNET COIL, the attracting force is generated and the electromagnet The TIE ROD is operated while sucking the compression force of SPRING.

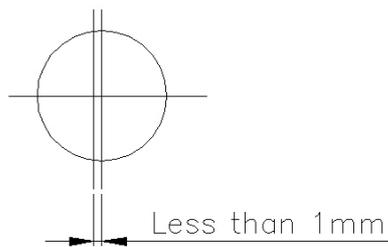
**2. MACHINE STRUCTURE**



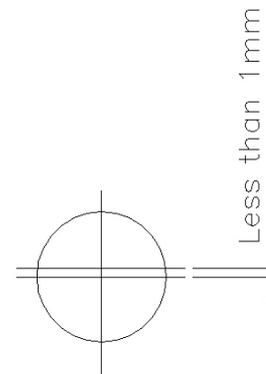
No.	ITEM	NO.	ITEM	NO.	ITEM
1	Base	10	Spring Washer	19	Lining adjustment Bolt
2	Post (A)	11	Spring Compression bar	20	Stroke adjustment bar
3	Post (B)	12	Spring Nut	21	Stroke Indicator
4	Pin	13	Tie Rod	22	Electromagnet Cover
5	Electromagnet	14	Nut	23	Dust Cover
6	Coil	15	Tie Rod fixing Nut	24	Lead
7	Coil Case	16	Pin	25	Terminal Box
8	Spring Washer	17	Lining	26	Lead Box
9	Spring	18	Lining fixing Bolt		

**3. INSTALLATION**

- 1) Brake the drum and the center of the motor and attach the brake.
- 2) Loosen the Stroke adjustment hex rod (20) and nut (14) and open the post outward.
- 3) Push in the brake and adjust to match the center of the brake drum and lining.
- 4) With both lining lightly holding the drum, adjust the stroke adjustment hexagon and nut  
Secure the brake behind the joint.
- 5) After fixing the brake, move it to the nut (14) position.
- 6) Make sure that the installation error with the center of the brake drum is within 1mm of each side.

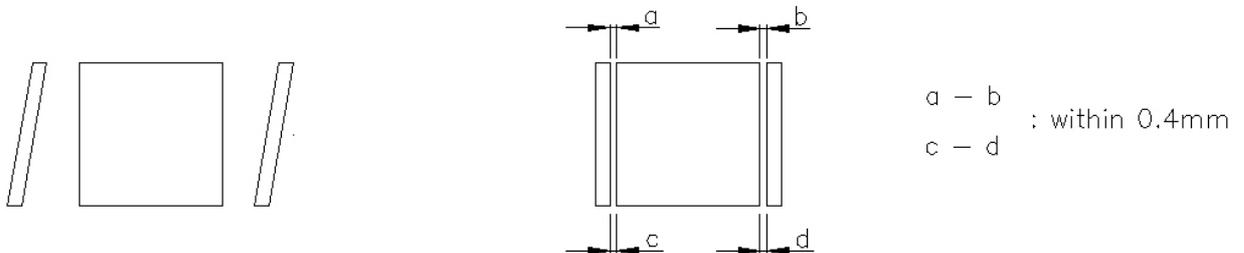


HORIZONTION DEVIATION



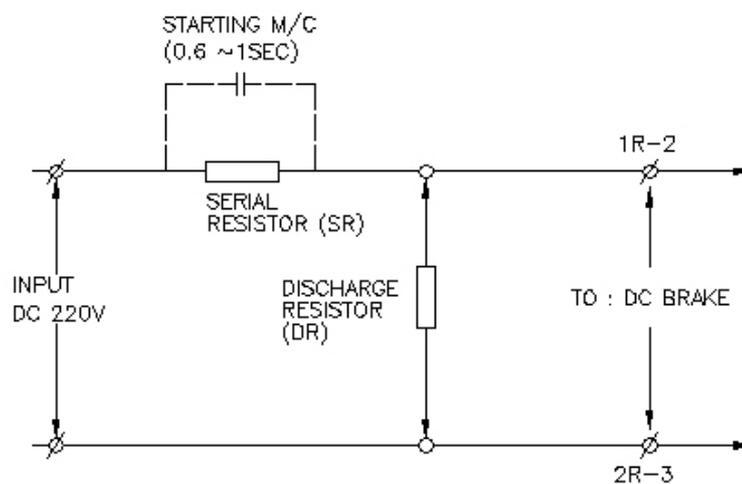
VERTICAL DEVIATION

- 7) The parallelism error between the brake drum and lining should be within 0.4 mm.



**4. WIRING**

During braking of the brake, the electromagnets are spaced 5-10 mm apart from the coil case  
 Therefore, in order to open the brake, And after the operation is completed, the electromagnet is in  
 close contact with the coil case The suction force can be reduced by about 1/8 of the initial  
 operation The size of the brake and the reasons for economic reasons must be controlled by a  
 controller use..

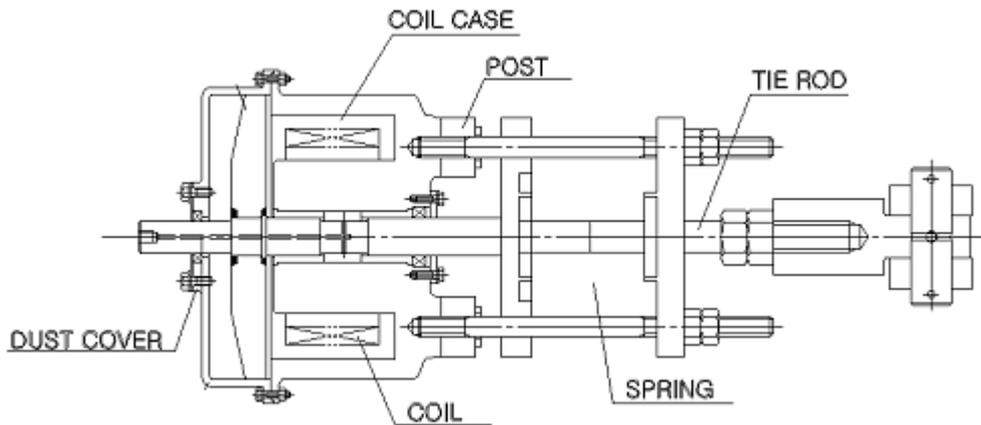


The DCBRAKE medication excitation control unit uses a series-parallel resistor,  
 MAGNETIC CONTACTOR is mainly built into the HOISTING PANEL.

**5. ADJUSTMENT**

**1) Coordination of Electromagnet Stroke**

Loosen the nut (14), stroke the stroke indicator (21) with the stroke adjustment hexagon and lock the nut (14)  
 after adjustment.

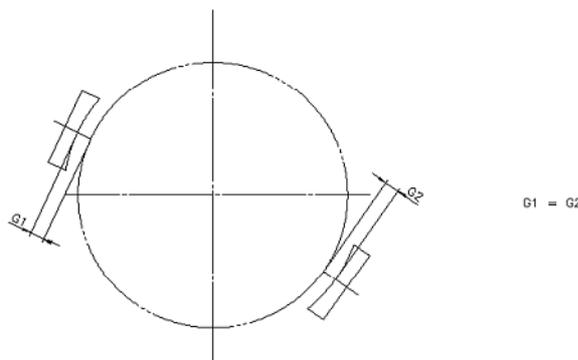


**2) Lining 과 Drum 과의 Gap 조정**

The gap adjustment between the lining and the drum with the brake open is done by adjusting the lining adjustment bolt.

Adjust the gap to pay. Usually, the gap between the lining and the drum is about 0.6 to 1 mm.

Adjust the gap between coil case and electromagnet plate to 4 ~ 6mm.



**3) Adjustment of braking torque**

Adjust the compression length of the spring with the adjustment nut (12) of the brake to the length specified on the nameplate.

After adjustment, secure the adjustment nut.

**6. INSPECTION**

**1) Post-installation check**

- . Is the installation error between the center of the brake drum and the brake within 1mm?
- . Is the parallelism error between the brake drum and the lining 0.4mm?

**2) Inspection before commissioning**

- . Does the power supply voltage match the specifications of the brake?
- . Is the wiring correct?
- . Is the stroke adjustment fine?
- . Does the length of the braking spring match the length on the nameplate?
- . Is the state of the lining normal?
- . Is the connection defective and tightened normally?
- . Is the body of the brake firmly fixed?

**3) Periodic inspection**

Checking list	Identification and Action
Stroke adjustment	Position of ruler, check gap between lining and drum
Thickness of Lining	If it is less than 1/2 of the initial thickness, replace
Surface of Drum	If oil is present, remove it, break it, or In case of abnormal condition,
Brake opening and closing motion	After confirming the operation, repair or replace the faulty place
Fastening condition of each screw	Check loose and broken condition of nut
Connection pin and electromagnetism	Grase gasoline at least once a month

**7. Maintenance instructions**

**1) Exchange of lining**

Lining shall be replaced as follows when the minimum thickness is 3mm as a consumable item.

- \* Check that there is no problem even if the braking is released.
- \* Loosen the Stroke adjustment hex rod (20) and open the post outward.
- \* Loosen the lining cover fixing bolt (18) and pull it along the groove of the lining post.
- \* Replace with new lining and assemble in reverse order of disassembly.

- \* Adjust the stroke of the electromagnet with the adjustable bolt (19) after adjustment.

Readjust the gap between the lining and the drum.

- \* Once the electromagnet stroke adjustment is complete, lock nut (14).

## **2) Coil exchange**

If the coil is damaged, identify the cause and replace it according to the following procedure.

Replace the brake with the power off.

- \* Check if there is any abnormality even if braking is released.
- \* Open the lid of the lead wire connection box (26), disconnect the lead wire and connect the dust cover (23) and Remove the magnet cover (22).
- \* Loosen the nut (14), adjust the stroke, loosen the hexagonal bar (20), and remove the electromagnet and the tie rod (13).
- \* Loosen the spring adjustment nut (12) and remove the coil case (7) attached to the post (2).  
Be careful when disassembling because it is heavy.
- \* Change the new coil, pour the hardening resin, keep it horizontal until hardened give
- \* When the resin is completely cured, clean the area that is in contact with the electromagnet, Assemble.
- \* When assembly is finished, adjust the brake adjustment part.
- \* Before connecting the input terminal of the coil, make sure that there is no abnormality in the disconnection or insulation of the coil.

## **3) oiling**

The connection part of each pin and the moving part of the electromagnet prevent the rust and smooth the operation of the brake

In order to do this, be sure to inject grease.

**3) Maintenance Tips**

<b>Failure status</b>	<b>No.</b>	<b>Cause</b>	<b>Maintenance instructions</b>
Coil is also can not open.	1	. Lead wire connection failure or disconnection	Abnormal after checking with tester Where there is repair.
	2	. Coil has high burnout voltage . Time rating exceeded	Whether the coil is energized Check coil and replace coil
	3	. Electromagnetism stroke	Adjust and adjust ruler
	4	. The brake spring is too large.	Spring length to nameplate length adjustment
	5	. Input voltage is dropping.	Avoid voltage drop.
During motor operation More braking occurs. .	6	. Coil is a wire .	Whether the coil is energized Check coil and replace coil
	7	. Input voltage is dropping.	Avoid voltage drop.
The stopping time is long.	8	. Drum and lining on foreign matter, Oil and so on.	Drum and lining surface clean Clean.
	9	. The parallelism of the drum and lining Not right.	Set the parallelism within 0.4 mm .
	10	. Drum has abnormal heat. lining changes.	Lining mounting status check replacement And stroke adjustment.
	11	. The braking force is weak.	Spring length to nameplate length adjustment
	12	. Brake capacity is low .	Capacity review to establish countermeasures.
Drum surface temperature Too high.	13	. Brake conditions and Severe load conditions .	Use according to brake specification.
	14	. Electric braking and parallel braking More than.	Electric Braking Circuit Review .
	15	. Stroke is too small And lining are in contact .	Adjust Brake Adjustment.
Abnormal wear of lining Heavy smell during driving And smoke.	16	. Same as items 10, 13, 14 and 15	Same as items 10, 13, 14 and 15

<b>Failure status</b>	<b>NO.</b>	<b>cause</b>	<b>Maintenance instructions</b>
The brake release Can not be done.	17	. Defective input power.	Same as items 1 and 5
	18	. Failure of control box.	After checking the output voltage of the control box Abnormal part repair and replacement.
	19	. Coil burnout.	Whether the coil is energized Check coil and replace coil
	20	. The braking spring is too large.	Spring length to nameplate length adjustment
	21	. Stroke excess, underestimation	Stroke adjustment.
	22	. Defective operating mechanism.	Repair after repair.
The braking force is weak.	23	. Compression force of braking spring weak.	Same as Item 4.
	24	. Drum and lining on foreign matter, Oil and so on.	Same as item 8.
	25	. Lining with Wear and Drum Contact failure.	Lining wear and contact Replace after checking status.
Coil burnout and Abnormal temperature rise .	26	Electromagnetism stroke.	Adjust and adjust ruler
	27	With the failure of the control box We can not switch about women.	Control box repair and coil replacement.
	28	An over-voltage of about the excitation voltage.	. Check whether timer in control box works And SR resistance adjustment (Series parallel resistance type)
	29	Defective insulation of coil.	Coil Replacement