

INSTRUCTION MANUAL

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ELECTROMAGNET SEPARATOR

(TSS-TYPE)



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1. Wiring

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1. Wiring

- 1) Connects between operation panel and terminal of motor(U.V.W), to check winding direction.
- 2) Connects between operation panel and terminal of supplying magnet(P,N).
- 3) Wiring as operation sequence on drawing.

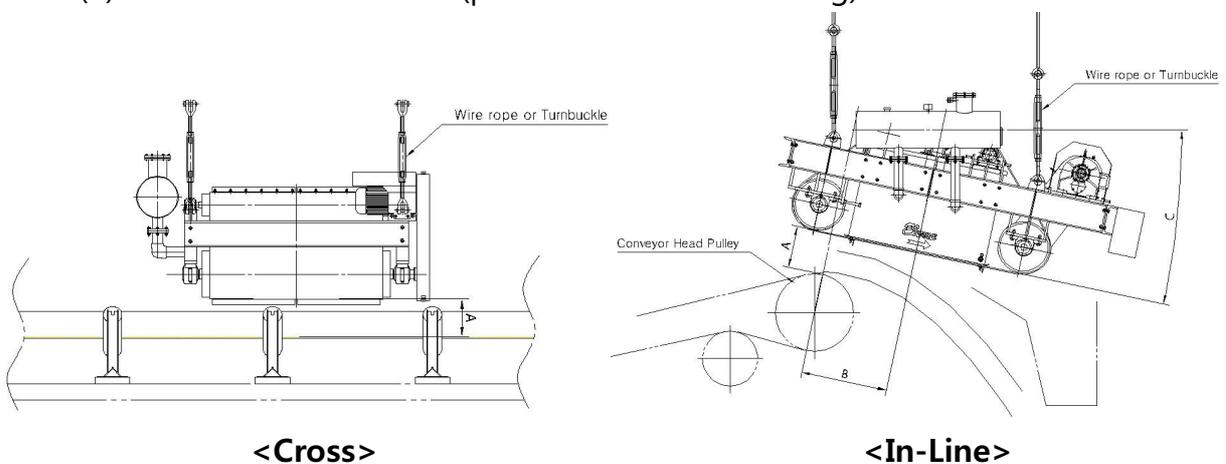
2. Installation

1) Check lists before installation.

Please check outside of magnet separator whether it has some damages or loosen bolt during its delivery.

2) Installation method for magnet separator

- (1) The distance between the magnet bottom plate and the conveyor belt should be set in accordance with the distance shown in the following installation diagram, so that the steel strip can be removed most efficiently.
- (2) The installation height of magnet separator adjusts wire rope or rod with turn buckle, and we highly recommend install beam at the top or bracket to move left and right.
- (3) Location of installation(please see below drawing)

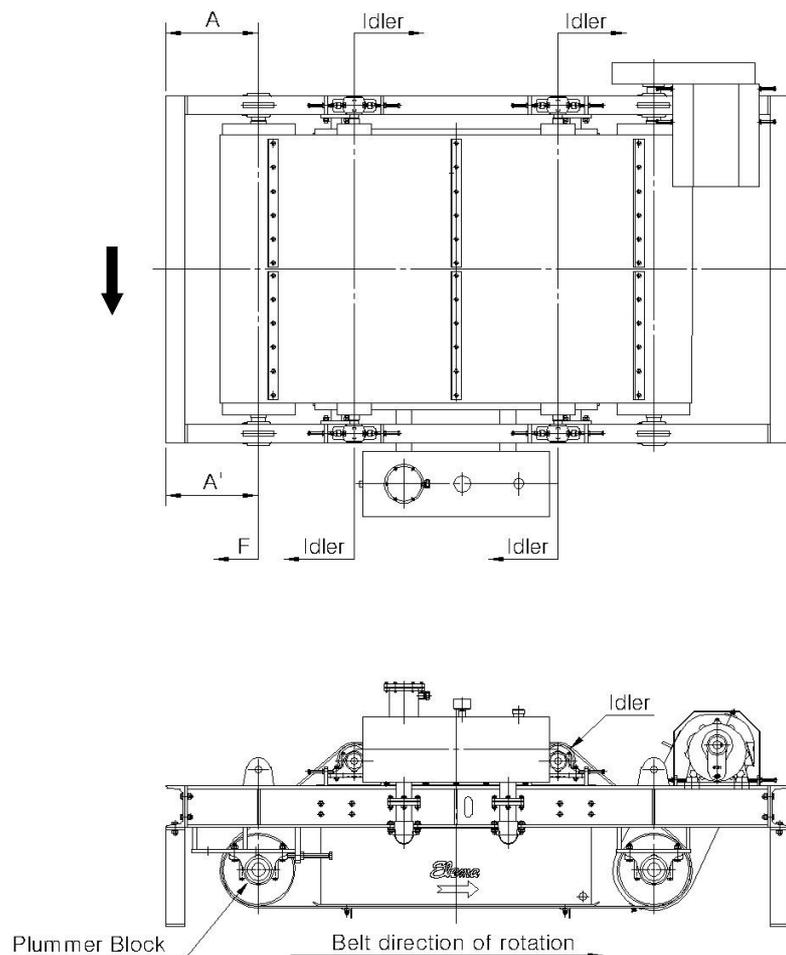


<Cross>	<In-Line>
Conveyor No.	A(mm) B(mm)
-	- -

3) Management of tracking process for magnetic separator belt

Tracking process for Magnet separator belt will be done before delivery. However, if it is necessary, please follow below lists.

- (1) Push pulley to use plummer block until tension of belt is same tension. Please use 30mm adjustable wrench.
- (2) Adjust each measurement show as below drawing after measuring A and A'.
- (3) If belt has to move direction(↓), idler is necessary to move same direction (using 30mm adjustable wrench).
- (4) If tracking process need to do continually, plummer block move to F direction as below drawing of A' part(Use 30mm adjustable wrench).



3. Operation

Please check below lists before operation of magnet separator.

- Check lists for magnet separator
 - a. Please re-check products for defects or assembling status for each part.
 - b. Measure resistance value for magnet coil to check whether it is same resistance value than name plate.
 - c. To check insulation resistance for Magnet Coil(above 5~2000 MΩ).
 - d. Please check foreign material got caught in all rotation parts.
 - Check for control panel
 - a. Please re-check products for defects or assembling status for each parts.
 - b. Please re-check wiring based on circuit diagram.
- 1) Place the NFB in the on position. At this time, the power source lamp is turned on.
 - 2) The control mode is local and remote with the local-remote switch.
 - 3) LOCAL Mode
 - (1) For local operation, set control select switch to local.
 - (2) When the local on button is pressed, the magnet coil is energized as the drive motor rotates.
 - (3) To stop local operation, press local off button to stop operation.
 - 4) REMOTE Mode
 - (1) For remote operation, set the control selection switch to remote.
 - (2) When the start signal is given in the electric room, the magnet coil is excited as the drive motor rotates.
 - (3) remote To stop the operation, stop the operation by giving the stop signal in the electric room.
 - a. Inspection
 - ◆ Check fuse. If fuse is damaged, please replace fuse.
 - ◆ Check rectifier unit. If rectifier unit has damaged from over current, please replace rectifier unit.
 - ◆ If overload circuit breaker works, please check bottom surface.
When heavy iron sticks on the bottom surface, geared motor gets overload.

4. Maintenance

1) Belt of magnet separator

Please adjust plummer block to locate belt to the center.

2) Replace time for bearing and greasing method

It could be shorten its lifetime from balancing between bearing and pulley.

Greasing needs monthly, greasing fills one of third at plummer block due to high speed operation.

(Careful about over greasing due to heating or leaking of grease.)

3) Panel

Please clean filter of ventilator installed in the panel periodically.

4) Magnet

Check insulation resistance annually, insulation resistance must bigger than 5MΩ.

Please contact us, if insulation resistance less 5 MΩ.

5) Air Breathers

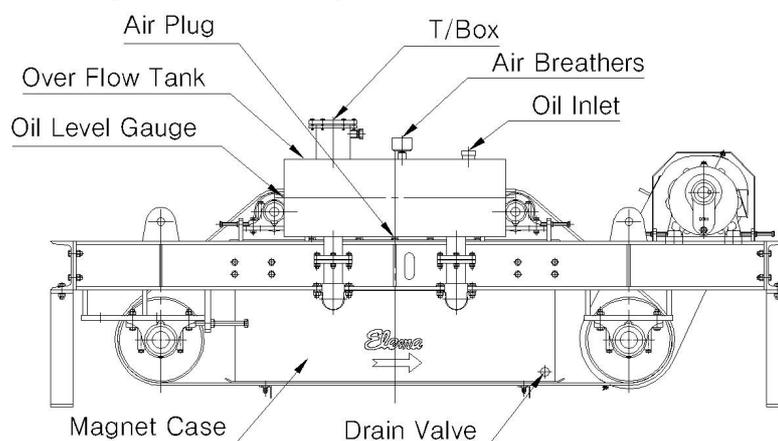
Please clean air breathers to prevent occurring internal pressure of magnet and over flow tank.

6) Changing period for insulating oil

(1) When possible measure dielectric strength or oxidation stability, dielectric strength of insulation oil is less than 25kV, or acid value is more than 0.2.

(2) When impossible measure dielectric strength or oxidation stability, please replace insulating oil annually with clean and clear days due to oxidation from rising coil temperature or bad surrounding(dust etc.).

7) Changing insulating oil and management of oil level

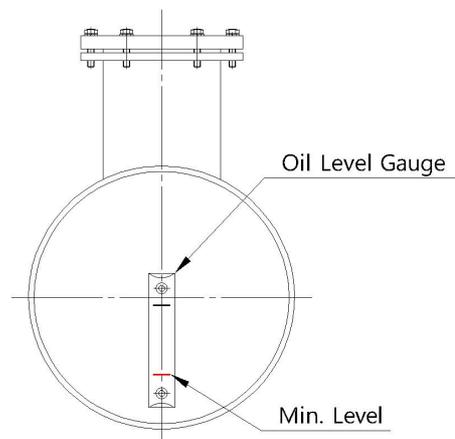


(1) Changing insulating oil

- a. Please drain all oil with drain valve at inside magnet case.
- b. Fuel insulating oil to clean inside of tank and magnet case for removing all sludge.
- c. After cleaning process, installs filter at oil inlet of over flow tank to avoid inflowing foreign material for magnet case.
- d. Remove air inside tank with air plug which located in top of magnet case to avoid air pocket.
- e. First fuel needs to fill insulating oil until insulating oil flow from air plug.
- f. After first fuel, close air plug than fill insulating oil up to lower level of oil level gauge at over flow tank.
- g. Use KS C 2301 Class 1, 4 insulation oil.

(2) Manage level insulating oil

- a. Please manage oil level with level gauge at both over flow tank.
- b. Oil level manages with oil level gauge at over flow tank to keep below oil level before operating separator(30 hours after operation).
- c. If oil level is below lower level at level gauge before operation (cold status), please refill insulating oil.



8) Roller Chain

(1) Abrasion of pin and bush of roller chain causes of damage for chain or sprocket.

(2) Maintenance

- Replacement of roller chain when chain size increased 1.5% or damaged.

$$\text{(Elongation of the chain)} = \frac{\text{((Determining dimensions)-(Standard length))}}{\text{(Standard length)}} \times 100(\%)$$

Please manage replacement before above matter.

- Highly recommend check roller chain monthly. But, please check shorter period if,

- a. Poor environmental condition.
- b. Frequently operating high speed or precipitate stop.
- c. If suspended, or intermittent operation.

9) Geared Motor

(1) Please change geared motor oil within 300 hours from its first operation due to wear particle could be go into oil. After first change, please change oil every 1,000 hours. (However, in the case of a small geared motor, it is grease lubricated, and the exchange time should be changed every 10,000 hours).

(2) Geared motor oil fill up to center of oil level gauge at reducer with horizontality. Bearing or gear could be damaged if oil is too few or too many.

* Select geared motor oil refer to below list.

Ambient temperature	Viscosity ISOVG	Remarks
10°C or more	ISO VG 220	
below 10°C	ISO VG 150	

* If the ambient temperature is above 40 ° C, consult the manufacturer of the reducer.