Milenyum Conveyor

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OPERATING AND MAINTENANCE MANUAL

Paper Band Filter

Paper filter separator for coolant filtration – installation, operation and maintenance



Milenyum Conveyor Makina Sanayi ve Ticaret Ltd. Şti.
Pazarsuyu Köyü 2, OSB Mevkii, 5. Cadde No:23, 28100 Bulancak / Giresun
Türkiye

+90 539 507 38 28
info@milenyumconveyor.com
www.milenyumconveyor.com

> Read these instructions carefully before starting the unit for the first time. The manufacturer is not liable for damage or faults caused by failure to follow these instructions. We reserve the right to make technical changes for further development.

1. Documentation and main components

This manual contains the function description, the safety and operating instructions and the maintenance instructions. The electrical diagram is supplied with the unit. Keep all parts of the documentation together and store them near the filter, accessible at all times.



Figure 1 – Paper band filter

Main components:

1. Filter paper roll
2. Paper-end switch
3. Drum
4. Control panel
5. Drum drive motor
6. Used filter paper
7. Belt (filter paper bed)

2. Basic instructions

2.1 Function

1. The contaminated liquid reaches the inlet chamber through an inlet unit mounted on the magnetic unit.
2. The liquid is first filtered by the magnetic unit and then passed to the paper filter.
3. Dirt particles collect on the filter paper and form a filter cake.
4. When the filter paper is saturated, the liquid level rises to its maximum height.
5. At the maximum level, the level switch starts the drive motor, which draws in fresh filter paper.
6. The liquid level then falls again and a new filtration cycle can begin.
7. The used filter paper is pushed out of the filter chamber together with the dirt particles and falls into an external sludge container.

2.2 Intended use

The compact paper band filter may only be used for its intended purpose. It is particularly suitable for filtering water-based emulsions, oils and waste water, and for other liquids within the permitted temperature range.

Acidic liquids may only be filtered in stainless steel units designed specifically for this purpose.

> **WARNING:** Any other operating conditions must be approved in writing by the manufacturer beforehand.

3. Safety instructions

The filter may only be connected, operated and maintained by trained or suitably qualified personnel. National regulations must be observed.



Figure 2 – Always wear the prescribed personal protective equipment

- **Accident hazard:** Isolate the filter from the power supply (operate the EMERGENCY STOP and the main switch) before working on the machine and before changing the filter material.
- **Health hazard:** Avoid contact with the filtered liquid and the sludge. Protect your eyes, skin and clothing.
- **Crushing hazard:** Never feed the filter paper roll by hand while the machine is running.
- **Accident hazard:** Do not make any modifications to the unit.
- **Accident and crushing hazard:** Do not remove any protective covers.
- **Environmental hazard:** Dispose of used filter material and sludge in accordance with the regulations.

4. Transport and storage

4.1 Loading and unloading

Make sure the machine is secure during loading and unloading; its centre of gravity may not be in the middle. When lifting with a forklift or crane, check that the machine is safely supported before lifting and secure it if necessary. Only specially trained personnel (crane operators or certified forklift drivers) may load and unload the machine.

1. Remove the collection tank (if fitted).
2. Lift the filter using all four lifting points.
3. Keep the filter perfectly level to prevent distortion of the machine.

> **WARNING:** Never lift the filter while the collection tank is bolted to it.

4.2 Transport damage

- Always report transport damage in writing.
- If the equipment is damaged but the packaging is not, photograph the packaging and the item immediately and report the damage to us in writing.

5. Installation and connection

5.1 Prerequisites

1. Sweep and clean the installation area thoroughly.
2. Make sure there is adequate ventilation.
3. Remove any unevenness from the installation surface.
4. Remove the transport safety devices from the equipment.
5. Remove the collection tank (if fitted) – never lift the filter while the tank is bolted to it.
6. Lift the filter using all four lifting points.
7. Keep the filter perfectly level to prevent distortion.

5.2 Installation

> **WARNING:** Use only tools approved by national regulations for work on electrical equipment. Follow the electrical diagrams supplied.

1. Isolate the electrical circuits from the power supply.
2. Make sure the cables are of sufficient size.
3. Make sure the pipes are of sufficient diameter (otherwise there is a risk of clogging). 2–3 metres before the filter, the pipe diameter must be enlarged to match the inlet diameter of the filter.
4. Place the collection tank (if fitted) perfectly level at the installation site.
5. Place the filter on the tank.

6. Bolt the filter to the tank.
7. Connect the pipes.
8. Connect the power supply.
9. Make sure the electric motors rotate in the correct direction.
10. Check all accessories (level switch, control devices, gauges, etc.) and make sure they are in perfect working order.

6. Commissioning and operation

6.1 Commissioning

1. Installation and assembly are complete.
2. Feed in the filter material (see “Changing the filter paper”).
3. Turn the selector switch in the electrical cabinet to MANUAL and hold it.
4. Turn the selector switch back to AUTO.
5. Open the liquid inlet slowly.
6. Check the housing for leaks.
7. Observe the filter for several cycles.

6.2 Messages and fault warnings

- **Paper end:** The paper-end switch signals when the filter paper roll is used up. Fit a new roll as described in “Changing the filter paper”.
- **Drive fault:** If the drive motor does not advance the paper, switch the unit off, isolate it from the power supply and contact our service.

7. Maintenance and service

Wear the prescribed work clothing. Observe the specified adjustment, maintenance and inspection intervals. Brief the maintenance and service staff before starting work on the machine.

7.1 Daily

- Clean the dirt from the inlet chamber.
- Clean the level switch and test its function. Never clean the level switch with compressed air.
- Clean the clogging pressure switch: remove it, clean the pipe separately, then refit and tighten the switch.

7.2 Weekly

- Make sure the conveyor belt has sufficient tension; otherwise the filtered liquid may become contaminated.

7.3 Monthly

- Grease the drive shaft bearings.

- Clean the outside of the drive motor, blow out the ventilation openings with compressed air and remove oily dirt.

7.4 Changing the filter paper (as required)

1. Disconnect the filter from the power supply and secure it against reconnection. Wear protective gloves.
2. Separate the filter paper from the roll.
3. Remove the filter roll from its holder.
4. Loosen the bolts with an Allen key. Part of the old paper stays in the filter trough so that the new paper can be pulled over it.
5. Fit the new filter paper roll on the sleeve of the hanger bar.
6. Tighten the bolts with the Allen key.
7. Hang the filter roll in the holder.
8. Pull the filter paper over the guide bar into the gap between the seal and the conveyor belt. Align it carefully so that it runs exactly parallel. If pieces of old paper remain on the belt, let the new paper overlap them generously; this prevents sediment from contaminating the filtered liquid.
9. Switch on the power.
10. Turn the switch to MANUAL or press the push button – the filter paper is drawn in. Do not adjust the position of the paper while it is being drawn in.
11. When the end of the paper reaches the sludge container, turn the switch to AUTO or release the push button.
12. Observe the filter for several cycles.

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