Milenyum Conveyor

Revision 2026-11

OPERATING AND MAINTENANCE MANUAL

Chip Conveyor

Hinged steel belt chip conveyors for CNC machine tools – installation, operation and maintenance



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1. Preface

Thank you for choosing a MILENYUM CONVEYOR chip conveyor. This manual explains how to use your chip conveyor safely and keep it running for many years, and what to do if a malfunction occurs.

Correct use and timely maintenance save money and extend the service life of the machine. Keep this manual close to the machine and make it available to operators and maintenance staff at all times. Operate and maintain the conveyor only as described here; the manufacturer is not responsible for damage resulting from any other use.

> **WARNING:** Do not operate the conveyor before you have read and understood this manual. Follow the warning labels on the machine and observe all safety precautions.

If you cannot solve a problem with the help of this manual, contact the manufacturer for service. When ordering spare parts, always state the machine type and serial number shown on the nameplate of the conveyor.

2. The chip conveyor

A chip conveyor carries the chips produced in CNC lathes, machining centres and special-purpose machines out of the machine. Depending on the chip type, three main versions are used:

- **Hinged steel belt chip conveyor** – for long and curly chips
- **Short-chip (scraper) conveyor** – for short chips and fine swarf
- **Magnetic chip conveyor** – for small ferrous chips

Choose the conveyor according to the chips produced in your process and use it only for that purpose. A hinged steel belt conveyor, for example, should only be used with long chips; otherwise it will work inefficiently and faults will occur frequently. Used correctly, the conveyor removes chips from the machine cleanly and safely and saves time and labour.

3. Packaging

Conveyors are wrapped in plastic film against water and dust and fixed on a pallet to protect them against impacts. The conveyor, inside its profile cage, can be lifted with a crane using ropes attached to the four lifting points of the cage. The pallet under the package also allows handling with a forklift.

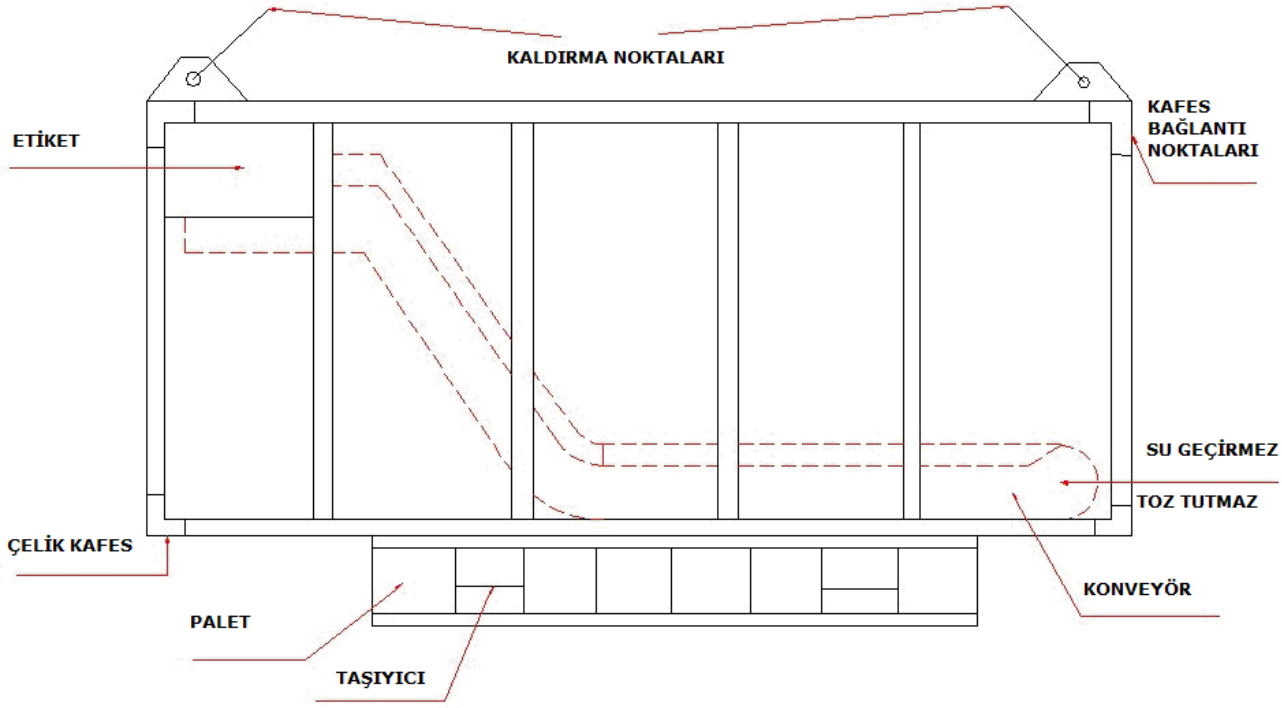


Figure 1 – Packaging of the conveyor – lifting points

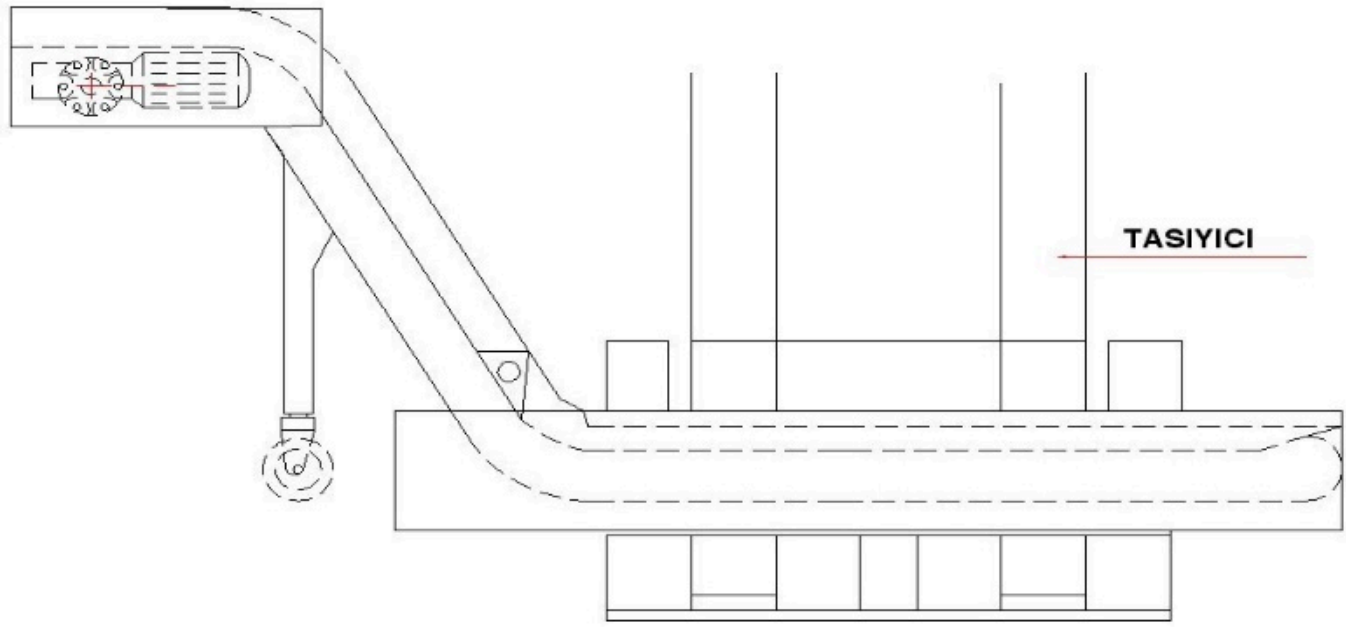
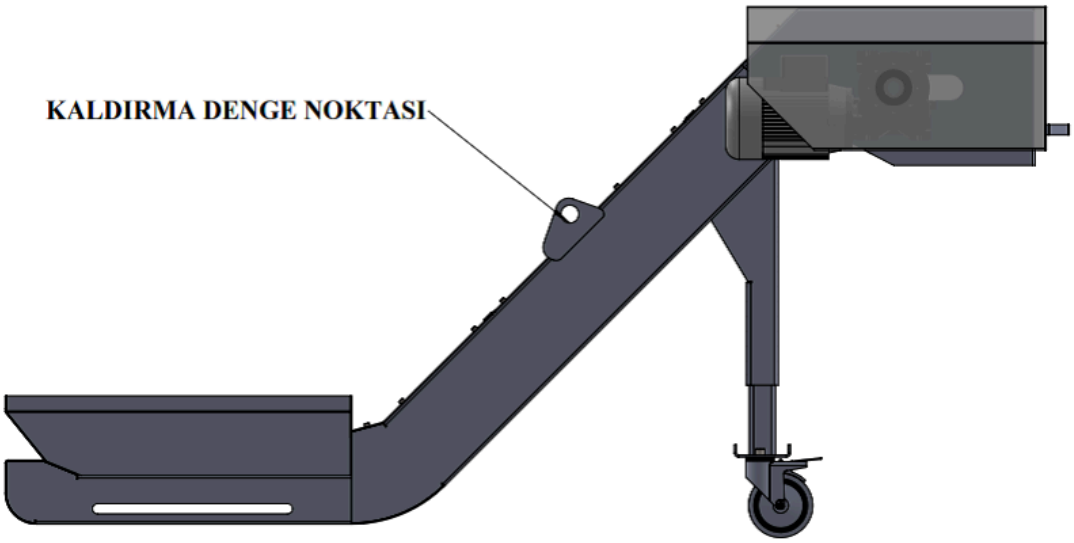


Figure 2 – Packaging of the conveyor – on pallet

4. Transport

Use the lifting hooks on the conveyor (balance point) for transport. A forklift may also be used for loading and unloading, provided the balance point is taken into account.

On delivery, check the conveyor for transport damage. Report any damage to the carrier or to us. Follow occupational safety rules during transport.



(Şekil-2 Konveyörün Taşınması)

Figure 3 – Transporting the conveyor

5. Installation and commissioning

Fit the two transport wheels supplied with the conveyor so that it can be moved easily. Push the conveyor into the chip outlet of the machine tool. Level the conveyor under the machine with a spirit level, then fix it with the fixing bolts so that it cannot move during operation.

After installation, plug the cable of the control switch into the socket to power the conveyor. Before putting the conveyor into operation with the machine, grease the moving parts that are not in contact with coolant and run the conveyor idle for five minutes.

> **WARNING:** Always earth (ground) the conveyor and never power it without an earth connection. Earth faults cause accidents and injuries. Use only the yellow-green conductor for the earth connection.

Start the conveyor after the machine tool has started and stop it when the machine stops. If the machine does not do this automatically, use the control switch on the conveyor. Not running the conveyor unnecessarily extends its life and saves energy.

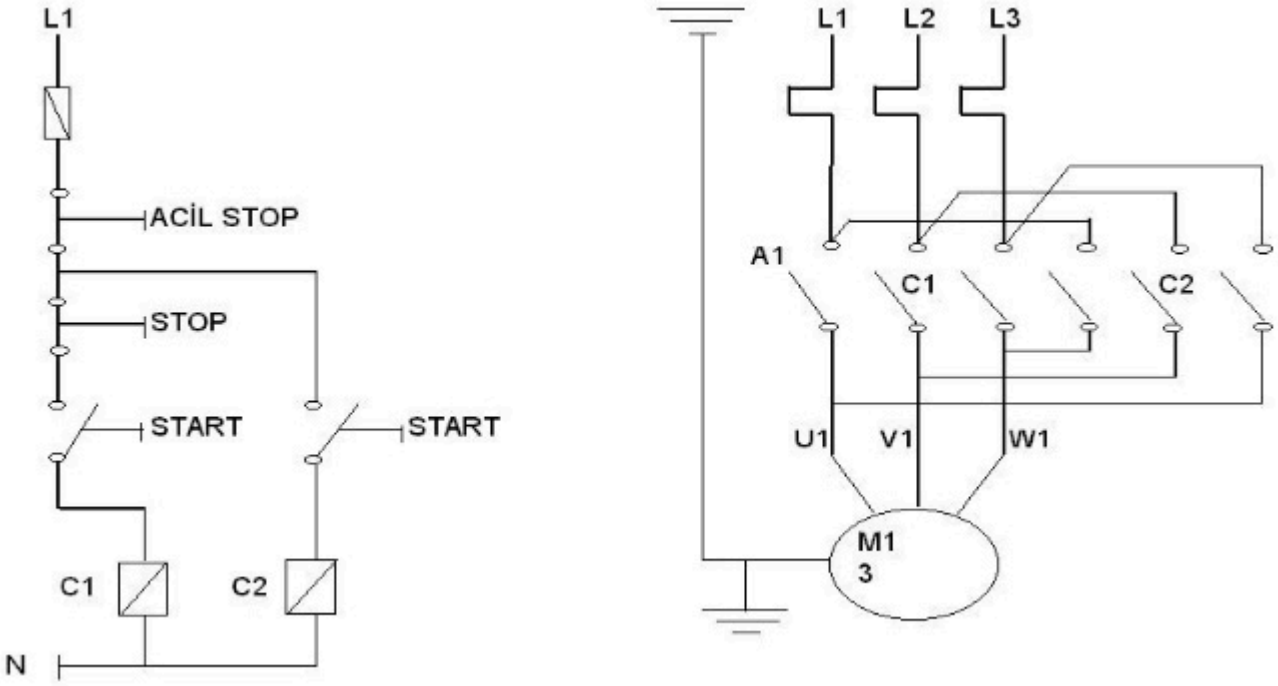


Figure 4 – Electrical wiring diagram

5.1 Checks before the first start

- Check the level while the conveyor is in its working position.
- Grease the surfaces that are not in contact with coolant.
- Check that the electrical connection is correct.
- Check the running direction.

6. Protective safety systems

1. **Electrical system:** The control switch box has IP54 protection. The power cables are protected by a rubber-coated steel spiral hose, so the system is protected against dust, water, cutting and breakage.
2. **Drive:** The gear motor, shaft, sprocket and chain are enclosed by a cover. Moving parts are protected against outside intervention, and the risks from rotating parts are marked with warning labels.
3. **Conveying section:** This section cannot be covered for functional reasons, so warning signs are fitted. Following these signs prevents damage to the conveying equipment.
4. **General:** The system is protected against electrical leakage, breakage of parts and jamming by foreign objects.

In addition to these safety systems, warning and instruction labels are placed on the machine. Observing them supports the existing safety measures.

7. Operation

The conveyor is started by turning the control switch to position "1". While parts are being machined, the conveyor must always run forward. Otherwise it draws back the chips that should be discharged and causes a

jam. If this happens, stop machining, run the conveyor idle in the forward direction and clean the inside.

If parts or tools fall onto the conveyor belt, stop the conveyor with the control switch and remove them before they are carried into the conveyor; otherwise parts may break. The operator must pay attention to this.

In normal operation, the only thing required is to turn the switch to "1".

> **WARNING:** Do not approach rotating or moving parts and do not put your hands into these areas while the conveyor is running.

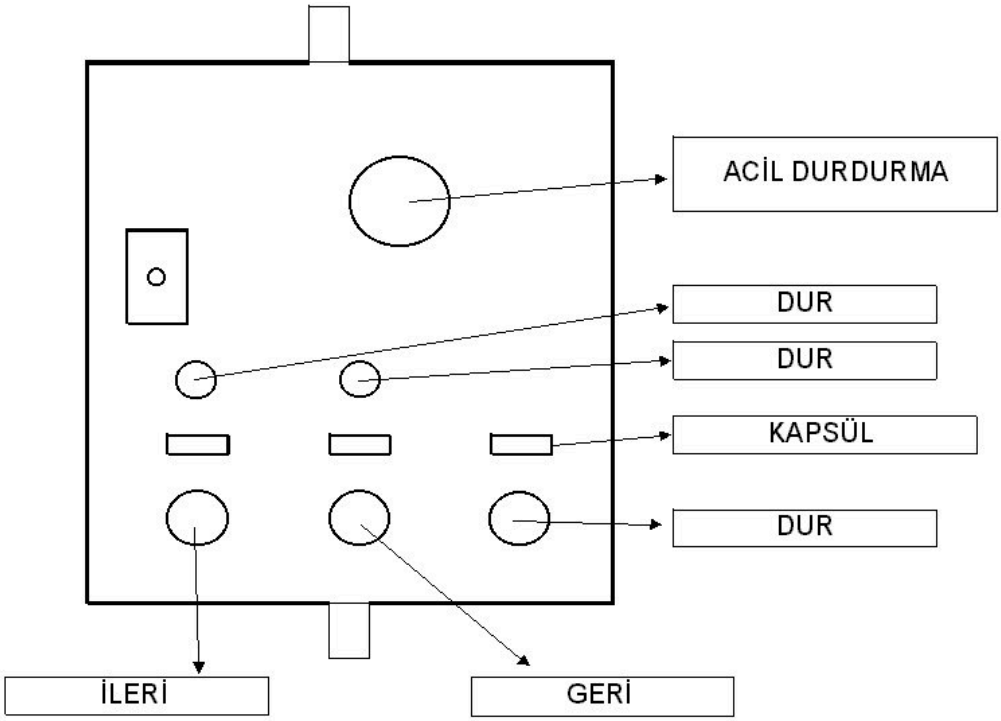


Figure 5 – Control panel – front view

8. Maintenance

Use hinged steel belt conveyors only for long chips and short-chip conveyors for short chips. Never use a hinged belt conveyor for short chips: short chips flow between the belt plates and can lock the belt.

Check regularly that the coolant keeps its properties. The coolant in the conveyor tank also lubricates the moving parts. Contaminated or degraded coolant causes corrosion, so the conveyor runs heavily or even locks.

Run the conveyor forward while parts are being machined; otherwise the belt will jam. If it jams, free it by moving it back and forth by half turns.

Cleaning: Pull the conveyor out of the tank and remove the chips from the tank. Run the conveyor in reverse to discharge the chips at the back, then run it forward to discharge them at the front. This cleans the inner bottom of the conveyor. A cloth can be used for cleaning.

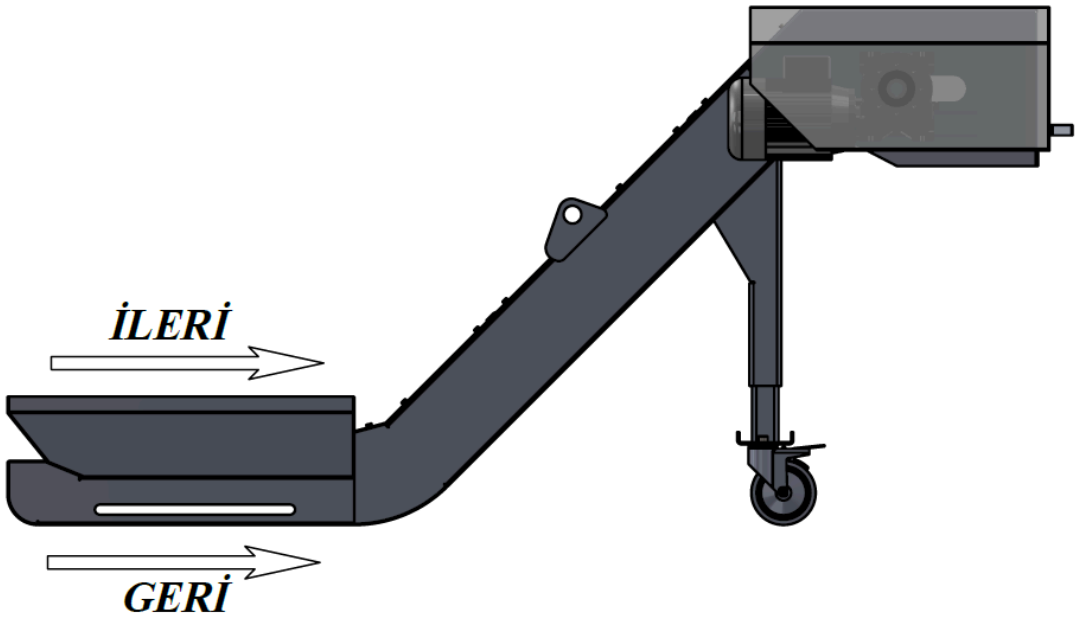


Figure 6 – Cleaning the conveyor – forward and reverse running

Grease the bearings of the drive shaft once a month.

> **WARNING:** Do not open or lubricate the gearbox that drives the belt; its oil cannot be changed. In case of a gearbox fault, contact our service without intervening.

To clean the coolant tank, drain it completely, then scrape out and remove the chips that have settled on the bottom.

8.1 Weekly maintenance

- Remove chips and other harmful material.
- Check the coolant level and top up if necessary.
- Check the electrical connections and fixing bolts of the motor.
- Check the belt tension.

8.2 Monthly maintenance

- Pull the conveyor out from under the machine and drain the coolant.
- Open the cleaning cover and wash the inside with hot water.
- Check the belt tension.
- Check the level after placing the conveyor back under the machine.
- Fill with coolant – the conveyor is ready for operation.

9. Removing and refitting the belt

If a part falls into the conveyor, stop it immediately. If the part cannot be removed without starting the conveyor, run it in a controlled way until the belt brings the part out. If this does not work, do not run the conveyor any further, otherwise the belt will be damaged: remove the belt and clean the conveyor.

To remove the belt, first locate the chain joint and align it with the dismantling holes of the FK 205 bearings that support the drive shaft. Loosen the tension bolts. Remove the locking pin and pull the shaft out through the dismantling hole. The belt can then be pulled out from the top.

After repair or maintenance, refit the belt in the reverse order.

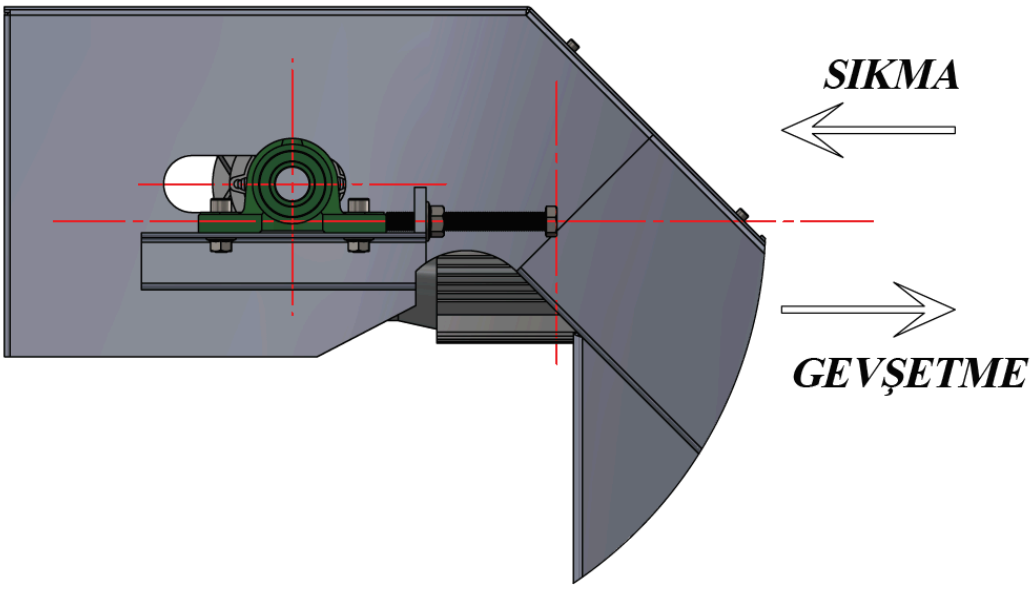


Figure 7 – Tension bolts

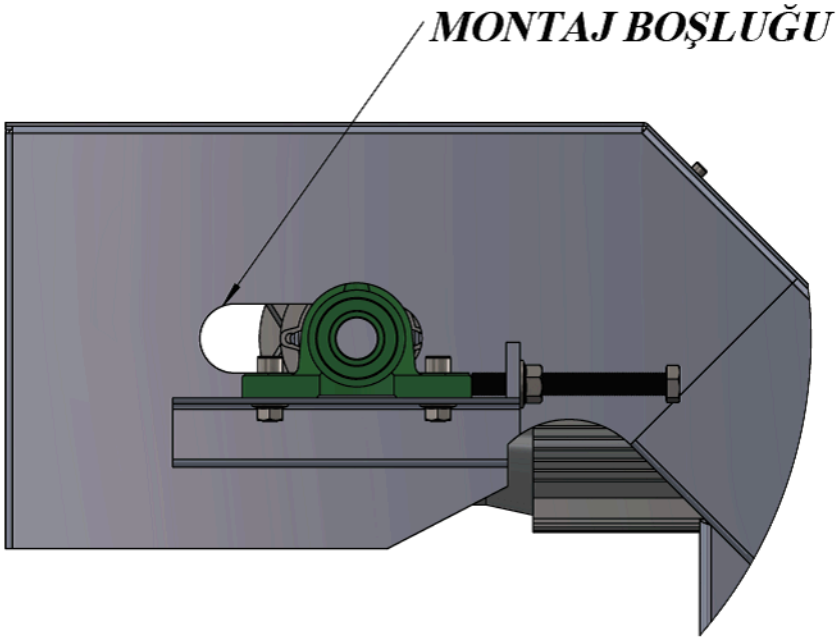


Figure 8 – Dismantling hole

10. Misuse

- Check the electrical system and connect the power supply according to the system specifications.
- If a conveyor designed for coarse chips is used with fine chips, clean the belt once an hour; otherwise it will lock over time.
- Always run the conveyor forward. Never run it in reverse except for maintenance and cleaning.
- If the motor is faulty, do not start the conveyor until the fault has been found – small faults can become major ones.
- Pay attention to the warning labels and do not operate the conveyor before reading and understanding this manual.

11. Warning labels

Apart from the nameplate with the conveyor data, several warning labels are fitted on the conveyor. They help users to act correctly during operation and maintenance, show possible risks and warn the people exposed to them.

> **WARNING:** Never remove the labels or operate the conveyor without them.

If a label is lost or damaged, replace it with the spare labels supplied with this manual, or request new labels from the manufacturer.

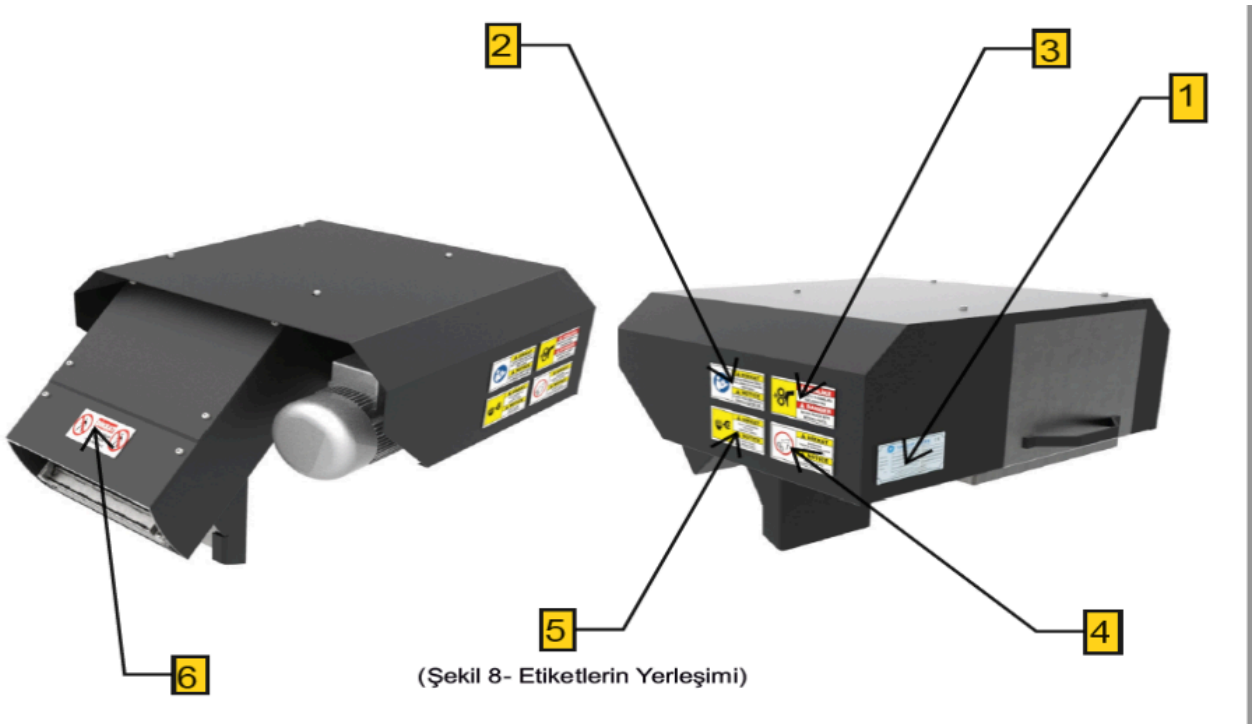


Figure 9 – Position of the labels



Label 1 – Nameplate (8.5 × 20 cm)



Label 2 – The conveyor may start without warning (5 × 7 cm)



Label 3 – Danger: keep hands away



Label 4 – Intended use and safety notice (10 × 14 cm)



Label 5 – Do not walk on the conveyor (5 × 7 cm)

12. Part list

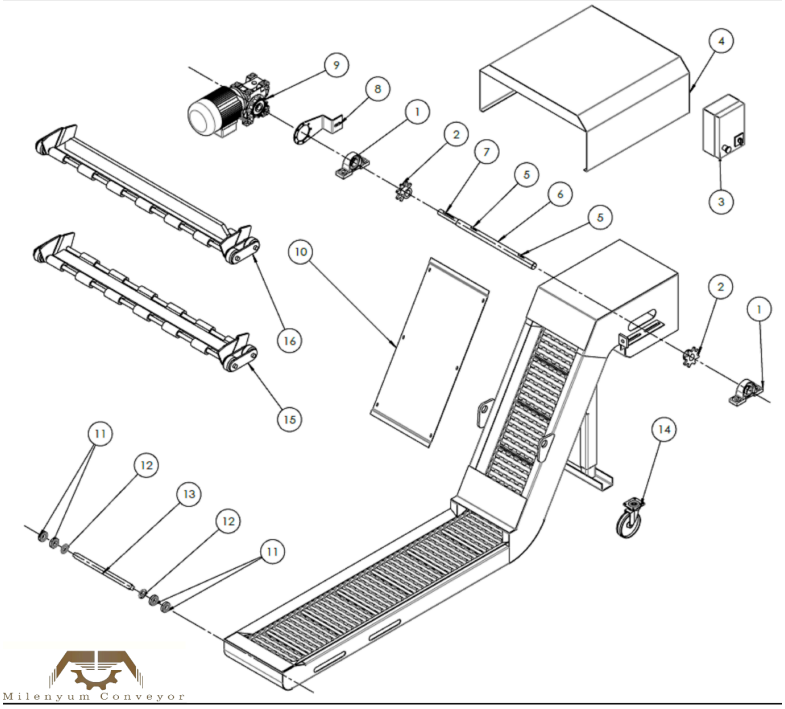


Figure 10 – Exploded view of the conveyor

Part no.	Part name
1	Head bearing
2	Belt sprocket
3	Control box
4	Gearbox cover
5	Belt sprocket key
6	Drive shaft
7	Gearbox key
8	Gearbox base
9	Gearbox (gear motor)
10	Maintenance cover
11	Ball bearing
12	Ball bearing fixing plate
13	Tail shaft
14	Caster
15	Standard hinge belt
16	Hinge belt with plain cleat

13. Service and fault reporting

In case of a malfunction, request service from the manufacturer or from the company you bought the machine from. Our own service staff will help you. Our contact details are given in this manual and on the nameplate.

When reporting a fault, please state:

- Brand of the machine
- Conveyor type
- Serial number
- Year of manufacture
- Date of the fault
- Cause of the fault and defective parts, if known
- Required spare parts, if known
- Company name, address and telephone number
- Name of the contact person

Report faults as soon as possible, preferably in writing (e-mail).

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14. Final inspection chart

Inspected part	Serial number	Approval
Electrical control panel		
Chain and belt parts		
Gear motor		
Drive system		
Housing covers		
General assembly		
Labels		
Paint		