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Drum Filter Unit

User Manual

Health and Safety

This manual provides instructions for the daily operation of the equipment.

It must be accessible at all times to anyone working with the equipment.

It is important to adhere to the following conditions:

- The manual and other relevant documents must be retained throughout the entire service life of the equipment.
- The manual and other pertinent documents should remain part of the equipment.
- This manual must be provided to all users of the equipment.
- The manual should be updated whenever additions or changes are made to the equipment.
- This manual outlines the methods for proper equipment use.

Safety Code

Please read the relevant sections of the manual before using the equipment or performing maintenance or service.

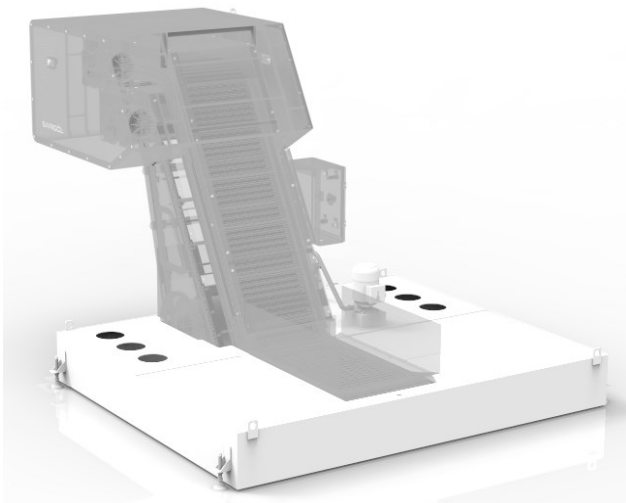
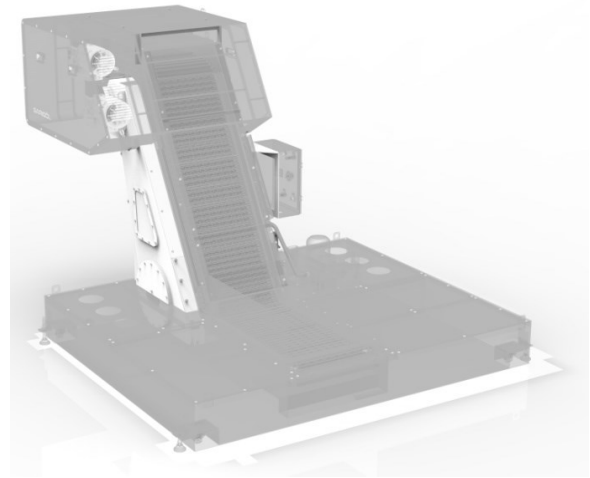
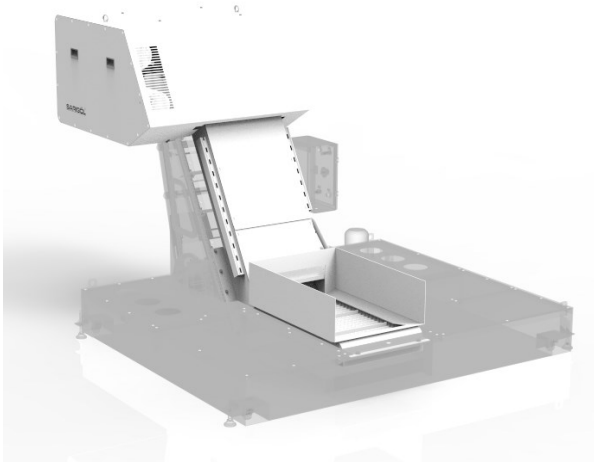
- Assume all electrical equipment is live.
- Assume all hoses and pipelines are under pressure.
- When servicing and maintaining the equipment, ensure the power supply is turned off.
- The connection should be disconnected, and the pressure in the pipes and hoses should be released in a controlled manner.
- Service and maintenance must be carried out only by authorized personnel.
- Use only spare parts approved by Sarigöl Konveyör Sistemleri.
- Ensure that the machine is securely mounted and installed according to the instructions before starting.
- Use the machine only as intended.
- In case of abnormal vibration or noise, stop the machine and consult the manual.
- Electrical installation should be performed by a qualified electrician.
- Cutting oils in tanks must be drained before any lifting operations are conducted.

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General Description

The machine sections are in three main modules: Hinged belt conveyor, rotary drum (scraper conveyor) and the tank.

The hinged belt conveyor transports the main bulk of the chips, while the processed chips are transported by the scraper conveyor. The tank holds the coolant, where the pumps and assistant equipment are located, such as oil scrapers, level sensors and coolers.



1 General Description of the Machine and Its Safety

1.1 Introduction

- Pay attention to all safety and operating warnings stated in this manual, this will reduce the possibility of accidents and increase the life of the machine.
- Before assembling, operating and maintaining the machine, make sure that this user manual has been read and understood by the relevant persons (operators, maintenance staff, etc.).
- It is dangerous for unauthorized persons outside the workplace to interfere with the device.
- Failure to comply with the instructions, procedures or safety warnings contained in this manual may result in accidents, damage and injuries.

1.2 General Warning

- The system is protected against any electrical leakage or jamming. Although the machine is equipped with safety systems, warnings, and usage labels are placed on the machine. These labels must be observed and adhered to.



In addition to the company label containing drum filter unit information, there are various warnings and warning labels on the unit. These labels are placed to help the user determine their behavior when using and maintaining the drum filter unit, to identify possible risks and to warn people at risk. Don't remove any of the labels on the unit.

- Safety labels ensures your and your machines operations to be safe and healthy.
- If one or more of the labels are removed or falls off for any reason, please request from the manufacturer. Be sure to follow the warnings.



1.3 Electricity

- The drive box is made according to protection class IP54. Drive power connection cables are protected by rubber-coated steel spiral. Thus, the system, which does not receive dust or water, is protected from or broken. Do not use worn or crushed cables, replace them.



While motors or gear motors are operating, live, bare (open plug / terminal box) moving or rotating parts pose a risk of life-threatening or serious injury. Documents must be followed.



1.4 Driving system

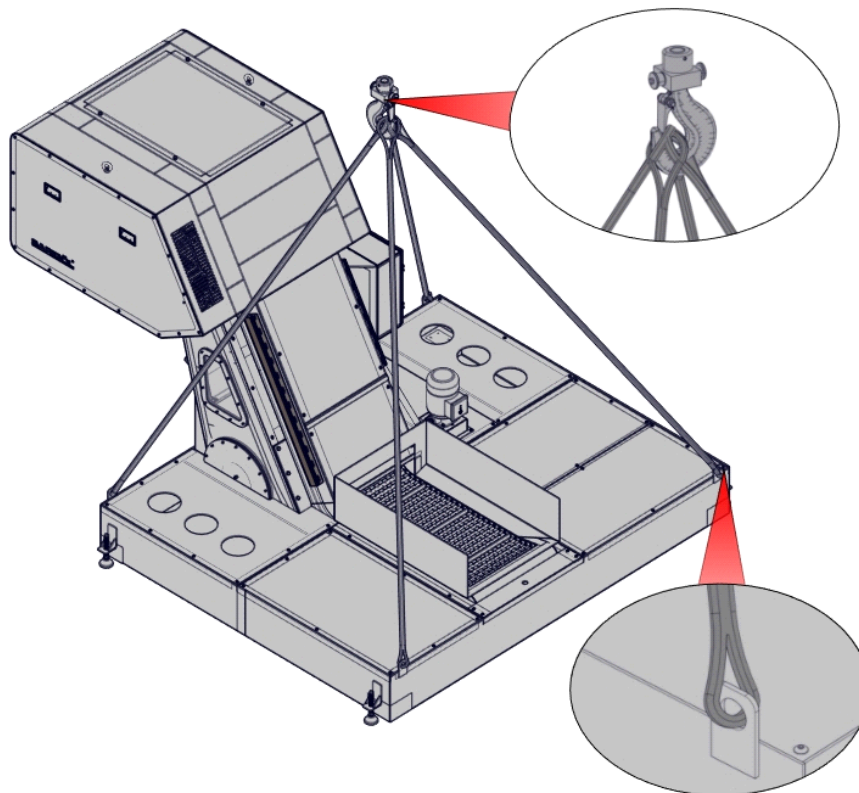
- The driving system of the machine, including the motor, reducer, shaft, gear, and chain, is safely enclosed. Thus, the working parts will not be affected by external interventions, and external factors will not come into contact with the working parts. In addition, risks that may arise from machine rotating parts have been eliminated and users have been warned with the necessary warning and warning labels.

1.5 Tow Hitch

- For domestic shipment, the unit can be connected to 2 or 4 lifting eyes on the units and lifted with the help of a crane, by loading and unloading.



Stay at a safe distance from the load during loading and unloading. Unauthorized persons should not intervene.



2 Drum Filter Unit Definition and Components

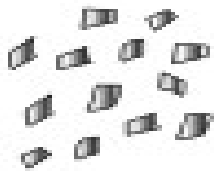
Drum Filter Units are used to transporting short, thin, broken chips made of materials such as transmission steel, manufacturing steel, aluminum alloy metals, as steel, well as fiber, teflon, and delrin.

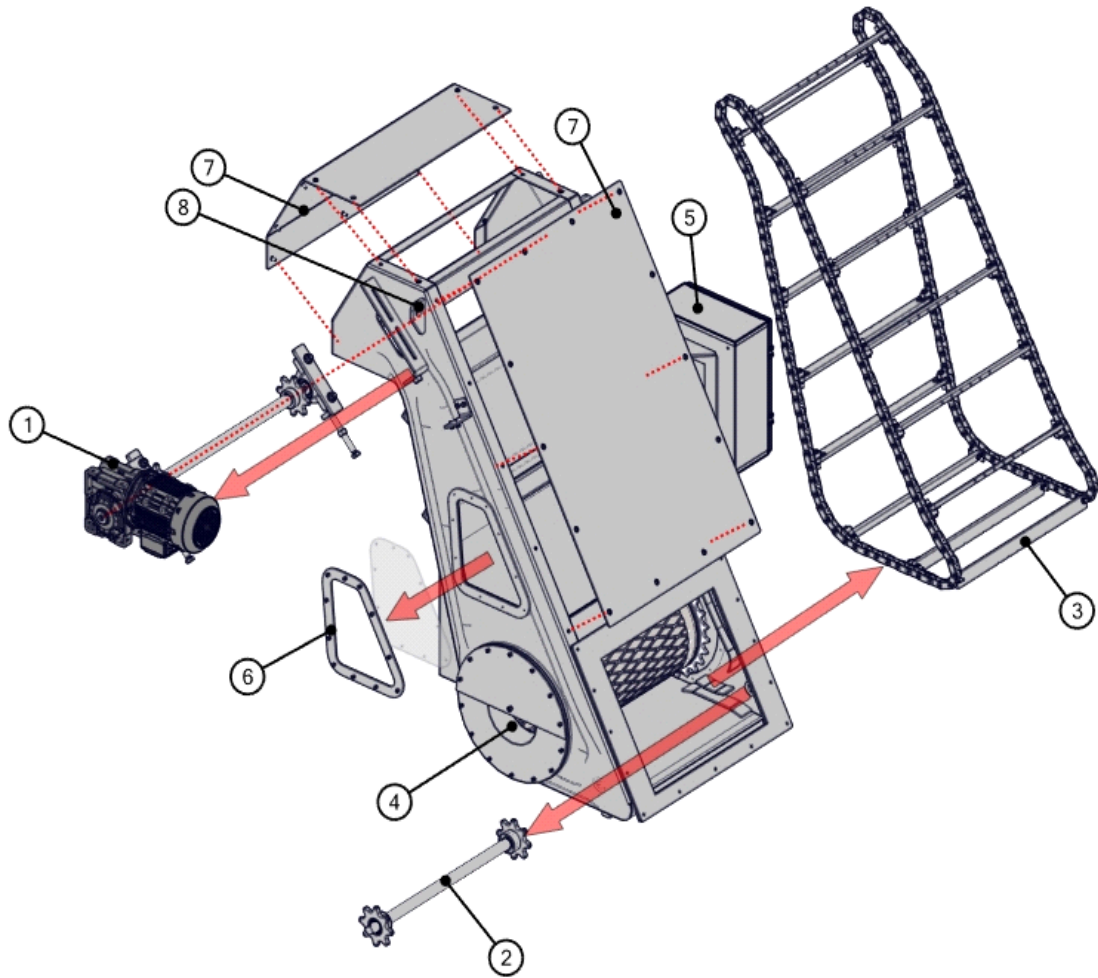
These are the systems designed to evacuate the chips generated during the manufacturing process and to separate coolant from the chips. It can be produced with a tank to send coolants back to the system or as conveyor only to be placed inside the existing tank.

When the drum filter unit is used correctly, the chips generated during manufacturing will be transported out of the machine cleanly and safely. Thus, it will save you time and work force.

2.1 Suitable Chip Types

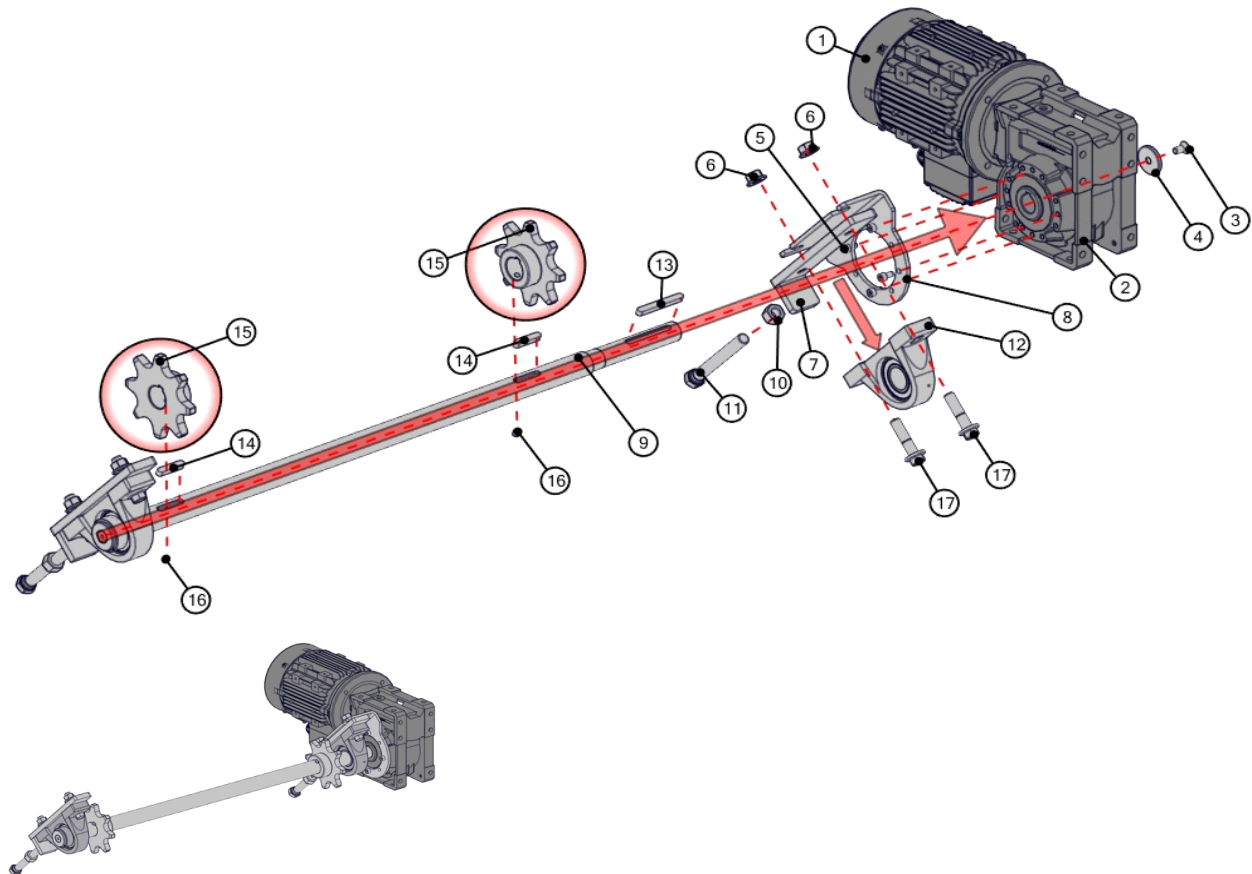
<u>Broke</u>	<u>Short</u>	
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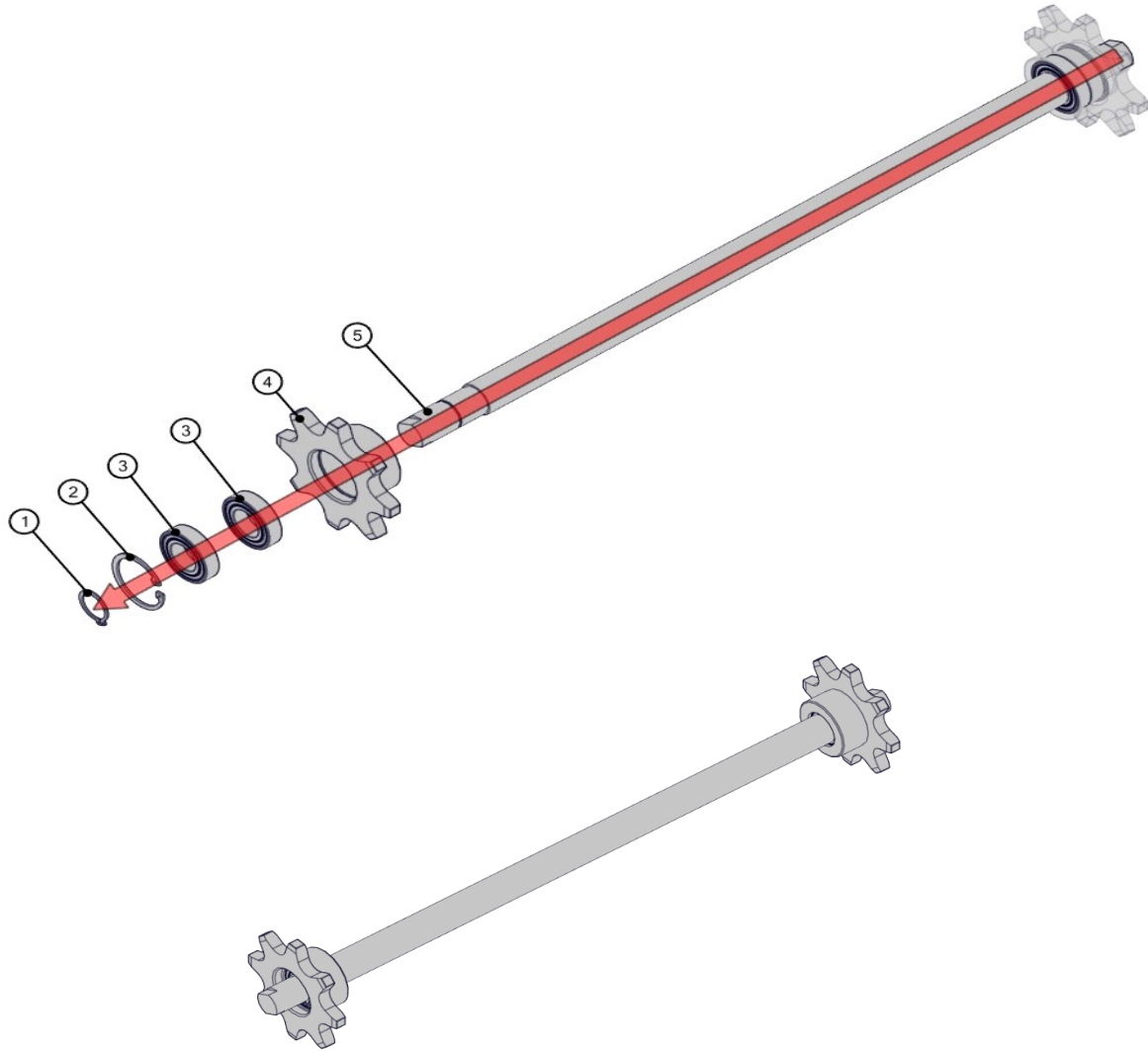
2.2 Drum filter unit component groups

BALLOON NO	GROUPS
1	Impulsion and turnbuckle group
2	Rear idler return group
3	Belt Group
4	Drum filter group
5	Electricity control group
6	Drum window cover group
7	Pop-up cover group
8	Lifting eye group



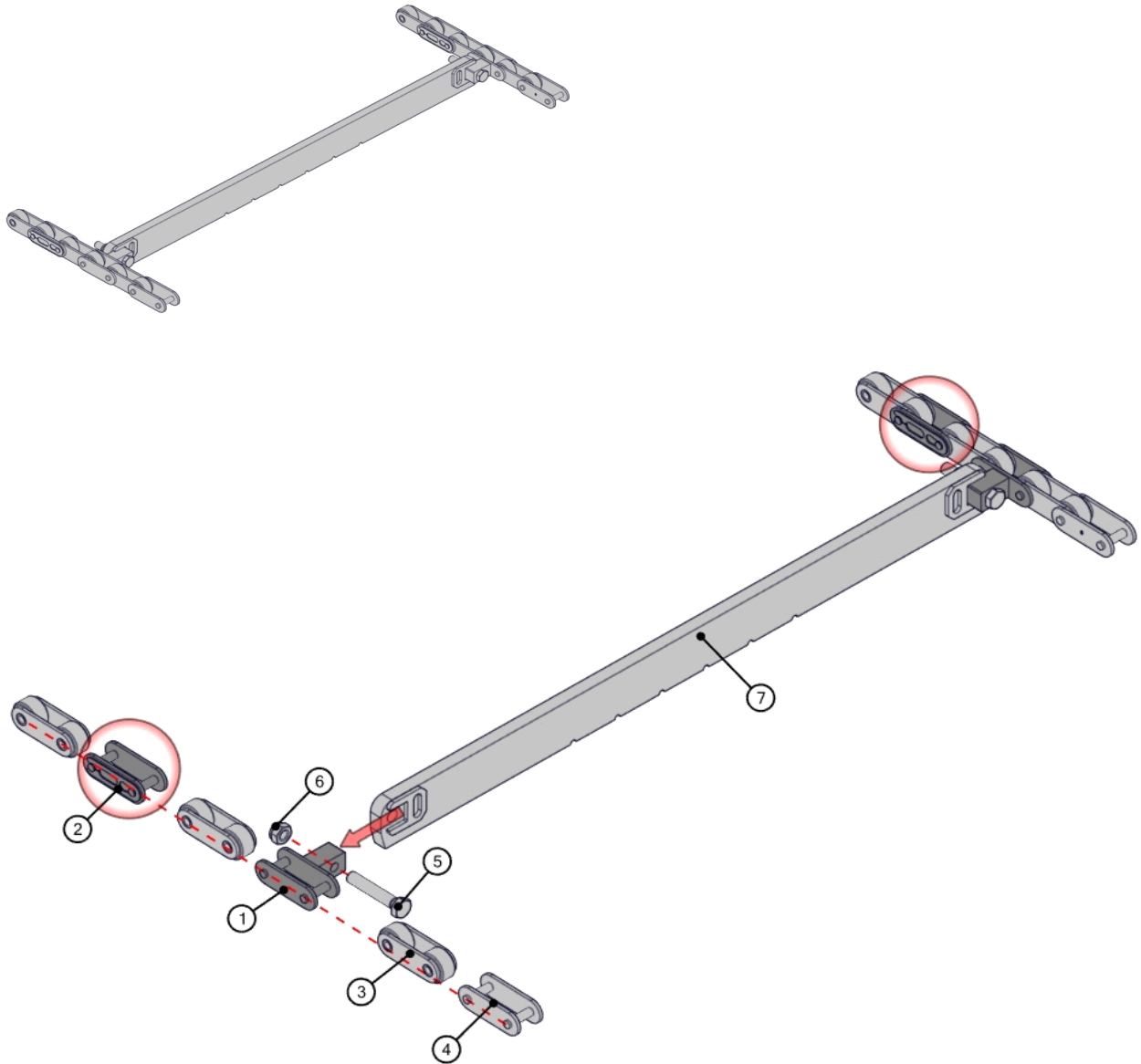
2.2.1 Propulsion Group

BALLOON NO	ITEM NO	DESCRIPTION	QUANTITY
1	150-01-2217	ELECTRIC MOTOR (0,55KW 900 rpm B14 FOOTLESS)	1
2	150-01-1412	REDUCER (PQ63 i:100 (9 rpm) TYPE 2 WITH FLANGE HYDRO-MEC)	1
3	150-01-0078	BOLT IMBUS COUNTERSUNK HEAD BLACK DIN 7991 (M8X16)	2
4	150-01-0327	SPECIAL MANUFACTURING OF STAMPS (OUTER DIAMETER:38 MM INNER DIAMETER: 8MM THICKNESS: 5MM)	2
5	150-01-3054	BOLT IMBUS FULL TEETH BLACK DIN912 (M6X12)	4
6	150-01-0377	NUT FLANGE WHITE DIN6923-6 QUALITY (M12)	4
7	150-01-3091	TENSIONING SLIDE	4
8	150-01-0478	REDUCER CONNECTION PART	1
9	150-01-0265	DRIVESHAFT	1
10	150-01-0379	NUT WHITE DIN 934-6 QUALITY (M14)	2
11	150-01-0081	BOLT FULL THREAD BLACK DIN 933(M14X120)	2
12	150-01-0343	BEARING (UCP 206)	2
13	150-01-0114	STRAIGHT KEY DIN6885(8X7X70)	1
14	150-01-0113	STRAIGHT KEY DIN 6885(8X7X40)	2
15	150-01-2695	CHAIN SPROCKET (38.10 PITCH 8 TOOTH 30)	2
16	150-01-1970	SETSCREW DIN 916 (M8X8)	2
17	150-01-1499	BOLT FLANGE FULL TEETH WHITE DIN 6921 (M12x50)	4



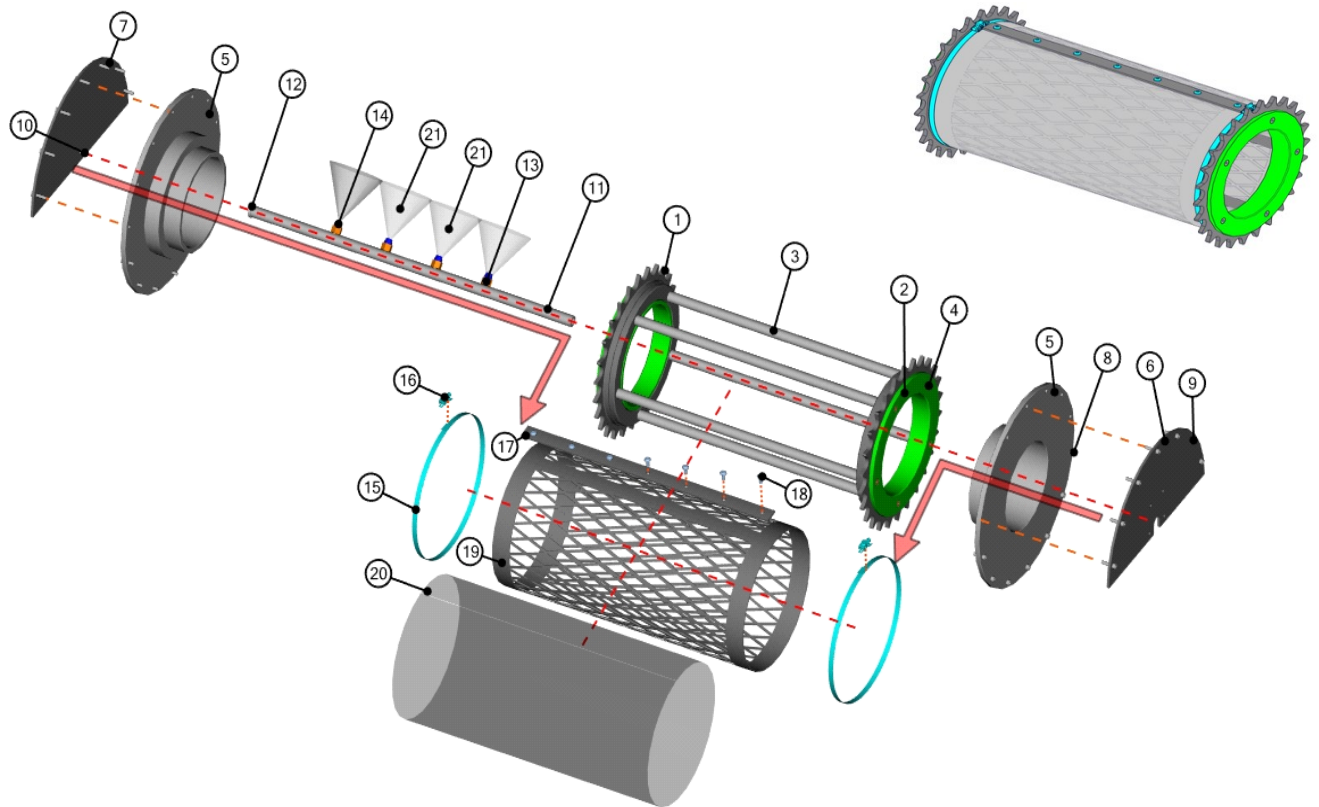
2.2.2 Rear Idler Return Group

BALLOON NO	ITEM NO	DESCRIPTION	QUANTITY
1	150-01-0106	EXTERNAL CIRCLIP (DIN 471/25)	2
2	150-01-1073	INTERNAL CIRCLIP (DIN 472/47)	2
3	150-01-0541	BEARING (6005 2RS)	4
4	150-01-397	CHAIN SPROCKET IDLE (38,10 PITCH Z:8 GÖBEK:47)	2
5	150-01-0264	REAR SHAFT	1



2.2.3 Belt Group

BALLOON NO	ITEM NO	DESCRIPTION	QUANTITY
1	150-03-0060-R2	CARRIER FLANGE	2
2	150-01-0124	CHAIN LOCK 1 1/2" (C2062)	2
3	150-03-0060	CHAIN LINK (38,10 PITCH C2062)	6
4	150-03-0060-R1	CHAIN LINK (38,10 PITCH C2062)	2
5	150-01-2056	BOLT FULL THREAD BLACK DIN 931 (M8X45)	2
6	150-01-0375	NUT FIBER WHITE DIN 985-6 QUALITY(M8)	2
7	150-01-3091	CARRIER	1

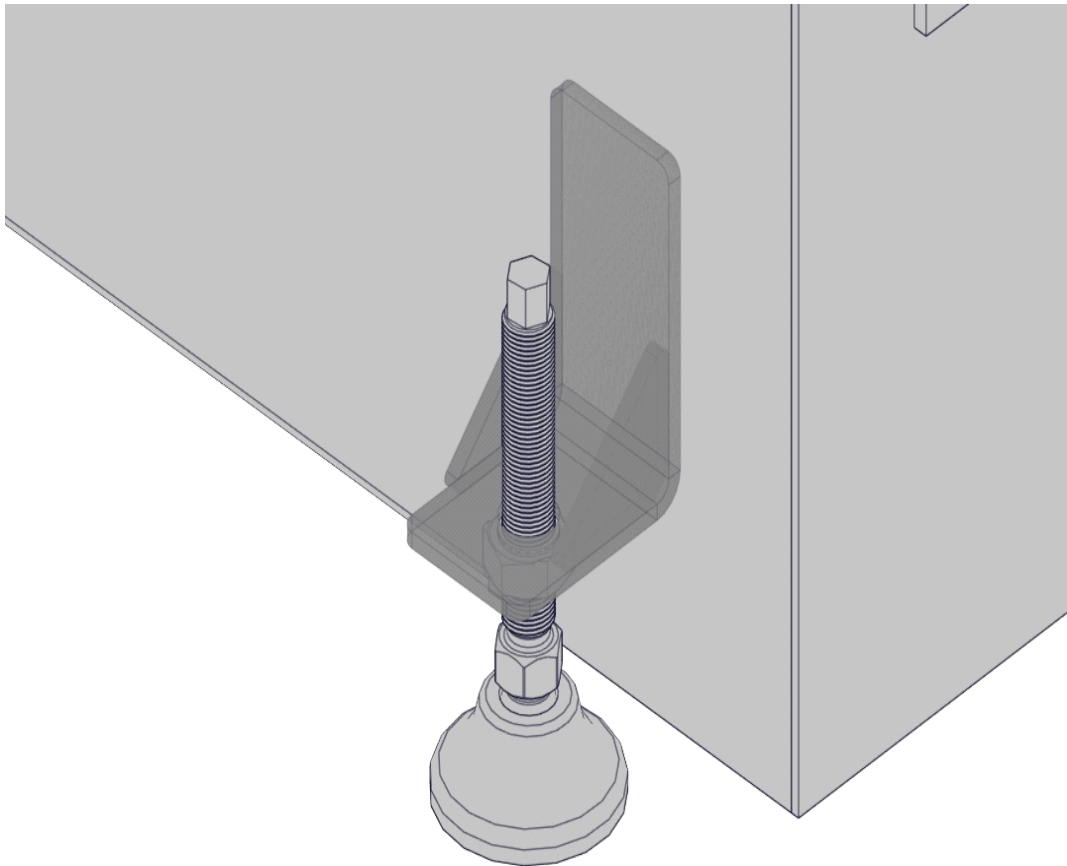


2.2.4 Drum Filter Group

BALLOON NO	ITEM NO	DESCRIPTION	QUANTITY
1	150-01-2920	CHAIN SPROCKET	2
2	150-01-2979	CHAIN SPROCKET INNER FLANGE	2
3	150-01-1480	CHAIN GEAR CONNECTION PART	5
4	150-01-3125	BOLT IMBUS COUNTERSUNK HEAD BLACK DIN 7991(M6X50)	10
5	150-01-2352	OUTER FLANGE	2
6	150-01-0478-1	OUTER FLANGE COVER	1
7	150-01-0478-2	OUTER FLANGE COVER	1
8	150-01-0066	BOLT IMBUS FULL TEETH BLACK DIN912 (M6X20)	14
9	150-01-2680	BOLT IMBUS FULL TEETH BLACK DIN912 (M6X25)	14
10	150-01-0069	BOLT IMBUS FULL TEETH BLACK DIN 912(M8X16)	1
11	150-01-0024	PIPE	1
12	150-01-0600	BLIND FLANGE	1
13	150-01-3071	SLEEVE IRON HEXAGON	4
14	150-01-0556	FLAT JET NOZZLE	4
15	150-01-3127	METAL ROLL CLAMP	2
16	150-01-3128	METAL ROLL CLAMP CLIPS	2
17	150-01-0477	SCREEN CONNECTION PIECE	1
18	150-01-1407	BOLT DIN 7381 BLACK GALVANIZED 10.9 QUALITY M6X16	7
19	150-01-1627	FILTER BODY PART	1
20	150-01-2926	STAINLESS STEEL DRUM FILTER SCREEN	1
21	150-00-0000	SOLUTION	4

3 INSTALLATION AND ASSEMBLY

3.1 Drum Filter Unit Installation and Connections



The drum filter unit can be brought to the installation site with the help of the transport wheels (Figure 3.1.1) included in the package. Then the machine which the drum filter unit will be used should be driven into the channel on the machine, bench or press to be used and/or into the chip discharge section of the machine. The drum filter unit placed under the machine should be balanced with the help of a water gauge.

After the balance adjustment, the unit must be fixed with the help of fixing bolts to ensure that the unit does not move while operating.

After the installation process, electrical energy must be supplied by making a suitable connection to the control switch or the power input connected to the panel end. The parts which are not in contact with coolant should be oiled with grease and run idle for 5 minutes before drum filter unit and the machine are operated.



There must be a grounding line in the working field of the drum filter unit. Do not apply energy without grounding. Do not forget that grounding errors can lead to serious injuries. Never use any other color cable other than the yellow-green cable (standard) for the grounding cable.

Drum filter unit should be operated together with the machine and when the machine stops it is better to stop it after running for a certain period of time (minimum 5 minutes). If this process cannot be done automatically from the machine, it can be done manually from the driver/control panel on the drum filter unit. In this way, you will extend the life of the drum filter unit and save energy by not running it in vain.

As mentioned in the assembly section, some issues must be taken into consideration before the machine is put into operation for the first time. These points are listed below;

Check the balance while the machine is in the operating position. Do not interfere with working or moving parts. Lubricate the surfaces that are not in contact with the coolant with grease.

Check the electrical connection and motor current. Loose connections are dangerous.

Check the working direction of the machine.

3.2 Electrical panel

Our conveyor models that require remote control operate entirely with inverters (AC speed control devices) (Figure 3.2.1 and Figure 3.2.2) specially designed and manufactured for Sarigöl Standards.

Note: Only valid for products with panels!





Drivers are first sent by programming values for the customer's operation. In cases where conditions are changed, you can access the driver user manual electronically from our website or upon request from our company, so that the parameters can be adjusted in line with the customer's request.

- **Driver control cannot be carried out in the working environment by other than authorized personnel and cannot be intervened for change.**
- **Operations that do not comply with the requirements may cause serious financial losses or personnel injuries.**
- **Operations that do not comply with the requirements may cause minor injuries or material losses.**
- **During installation, commissioning, or maintenance be sure to follow the instructions in the safety and precautions section of the manual.**
- **Do not use the speed controller with damaged or missing parts as this may cause injury.**
- **Keep away from flammable materials. Otherwise, it may cause a fire.**
- **Do not drop cable fragments or screws into the device; may damage the device.**
- **Make sure that no power is applied before connection. Otherwise, there may be a risk of electric shock.**
- **The cover must be closed properly before energizing the device. Otherwise, there may be a risk of electric shock.**
- **Make sure that external fasteners are connected correctly. Otherwise, a malfunction may occur.**
- **Do not open the speed controller cover after power is applied. Otherwise, there may be a risk of electric shock!**
- **Do not touch the speed controller and the circuit around the device with wet hands. Otherwise, there may be a risk of electric shock.**
- **Do not touch the device's connection terminals (including the control terminal). Otherwise, there may be a risk of electric shock.**

Temperature, humidity, dust and vibration effects in the environment will cause the components in the speed controller to age. This may cause the device to malfunction or reduce the life of it. Therefore, routine and periodic maintenance of the device is required.

The device must be serviced in the following cases:

- If there is an abnormal change in the motor's operating sound,
- If there is vibration during motor operation
- If there is a change in the environmental conditions of the area where the speed controller is installed,
- If the speed controller is overheated

Routine cleaning

- The speed controller must always be kept clean.
- Dust on the speed controller should be cleaned. In particular, metal dust should be prevented from entering inside the device.
- Oil stains on the speed control device should be cleaned.

Periodic check-up

- Check ventilation ducts and keep them clean.
- Check if screws are missing.
- Check whether the speed controller is corroded.
- Check if there is an arc or not on the cables.
- Perform motherboard insulation test.

4 Operating

4.1 General

A driver and/or control panel containing the necessary equipment has been placed to operate the drum filter unit and to easily monitor its operation.



4.2 Operating the Drum Filter Unit

In manual mode (Figure 3.2.2), the start/stop buttons on the keypad are active without function and are suitable for manual operation. To start the drum filter unit in the working direction, simply press the start button once.

The drum filter unit belt speed is programmed by the manufacturer to the capacity required by the customer and will automatically reach the desired value after the start.

With the up and down buttons in Figure 3.2.2, the belt can be operated manually forward and backward in case of any malfunction alarm. The belt will stop as soon as the contact with the buttons is lost. If the belt gets stuck so much that it cannot be operated for any reason, the belt will stop. No operation can be performed. In this case, the device should not be forced by continuous trials and **technical support should be obtained from the manufacturer immediately.**

While in this mode (Figure 3.2.2), the start button on the keypad has the function of activating automatic operation. After all the checks are made, it is sufficient to press the start button once to start the drum filter unit and control it from the machine. The start button also detects the problem of the drum filter unit in case of any malfunction. It also has a forward operating function for easy operation.

The stop button has the function of manually operating the drum filter unit after the drum filter unit is stopped from the machine. It also has the function of manually starting the drum filter unit backward in order to detect the problem of the machine in case of any malfunction. It is sufficient to press the stop button once to run it in the reverse direction. In case the malfunction in the machine is eliminated, pressing the start button once is sufficient for the machine to start automatically from the bench.

In case of a malfunction in the drum filter unit controlled by the machine, the drum filter unit will go into failure mode. As a result of this attempt, the machine will stop completely for problems that require intervention and the fault cannot be fixed. To detect the problem, the parts of the system are belt, chain, motor, reducer, bearing, etc. All equipment must be checked by authorized staff. The machine can be operated manually to check the fault by using the start and stop button functions. If the problem is rectified, the machine can be started by the bench by turning it into an auto position again with the start button.

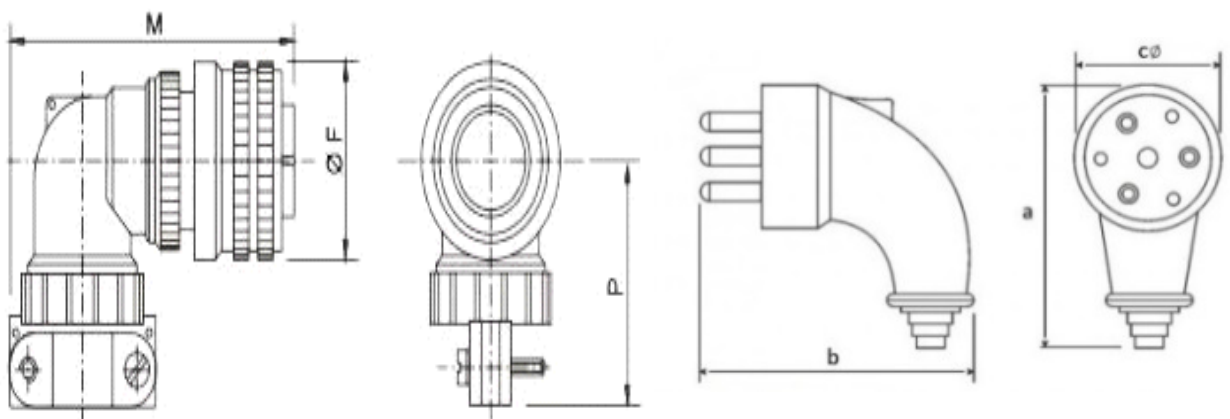


If the machine does not work despite all intervention, maintenance, and cleaning, no action should be taken, the machine should not be forced by continuous attempts and **technical support should be obtained from the manufacturer immediately.**

- **It is very important that no other than an authorized operator and/or electrician is allowed to intervene in the control panel as this poses a life-threatening risk.**

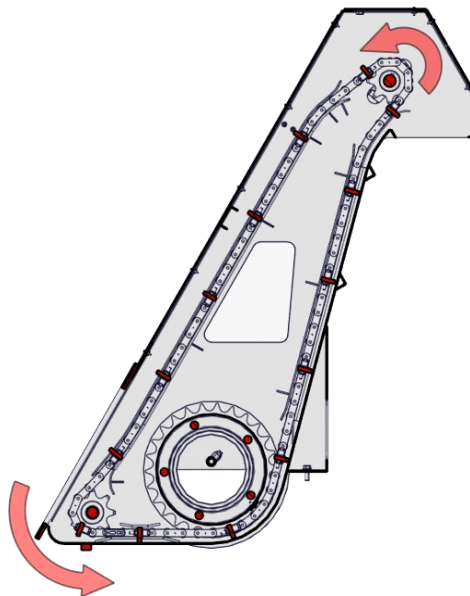
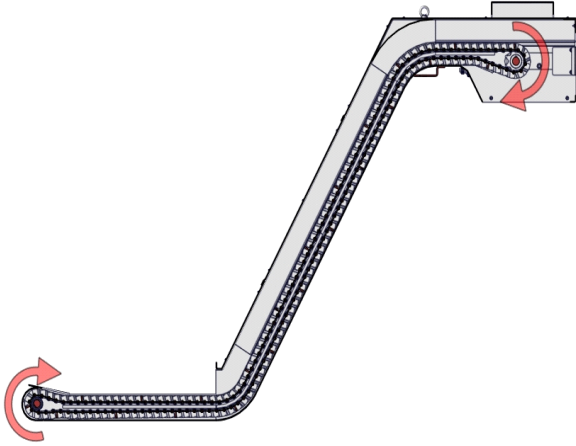
On the status of the machine and customer request, the three-phase plug or military socket for the driver energy supply is sent and assembled by the manufacturer.

Note: Only valid for products with military sockets!



4.3 Drum Filter Unit Operation Direction

Units are suggested to be operated constantly for one shift. Units should be allowed to clean all the chips in the direction indicated in the figure 1-1 and 1-2 before stopping.



5 MAINTENANCE

5.1 Weekly maintenance

The drum filter unit should be examined, chips and other harmful materials that may cause malfunction should be cleaned,

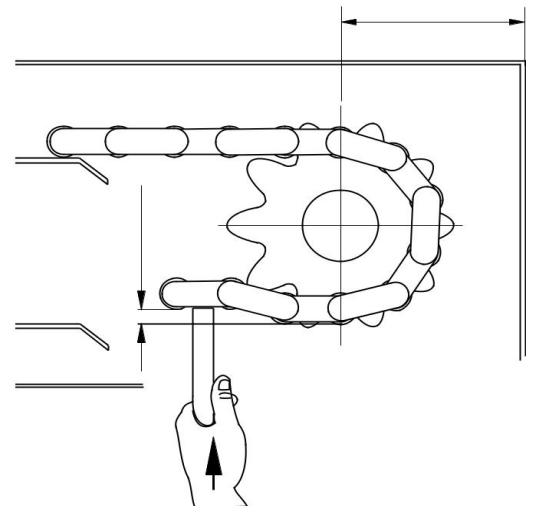
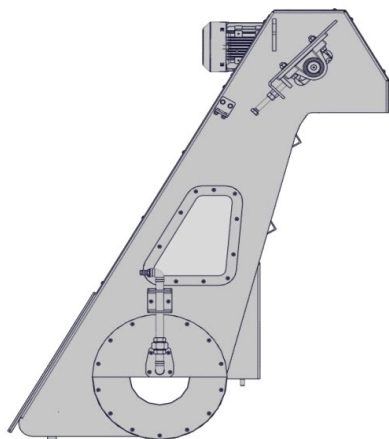
If the unit's liquid spill spout has a sieve, the sieve should be cleaned of chips,

The coolant mixture ratio should be checked if it is missing, it should be fulfilled,

The electricity and bolt connections of the electric motor should be checked,

The tension of the belt should be checked and if necessary it should be tensioned. The simplest tension control is to manually push the belt upwards if the gap is 10mm tensioning is appropriate.

(Figure 5.1.3) The distance **X** should be measured from both sides and should be the same.

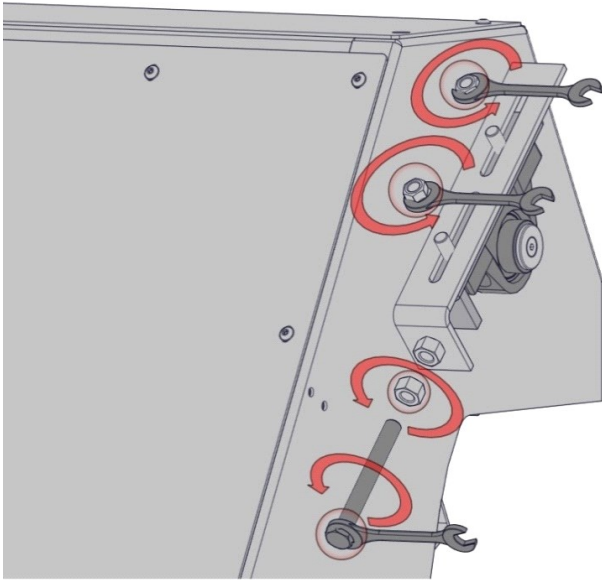


5.2 Monthly maintenance

The drum filter unit should be taken from under the bench and the coolant should be drained,

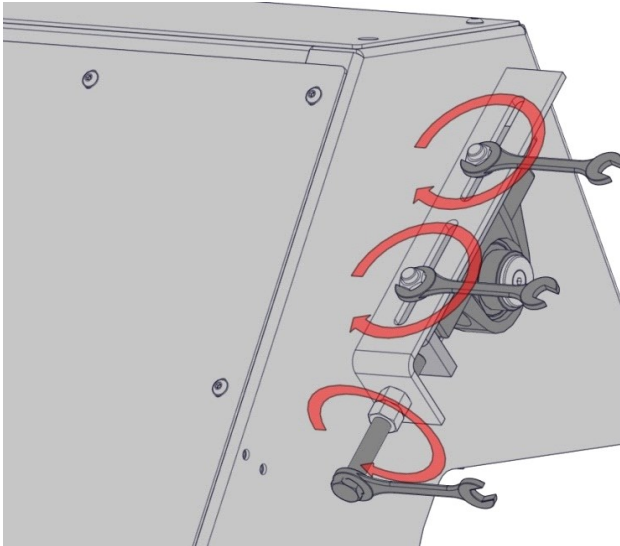
The cleaning cover should be opened and washed with hot water or diesel fuel,

The tension of the belt, the chain, sprockets, axes, belts, and shafts should be checked.



After the belt chain tension control is done, bolt number 1 securing the cover containing the belt chain drive shaft and bearings is removed for tensioning when needed (Figure 5.2.1).


The counter nut on the tension stud bolt number 2 is loosened and the bolt is tightened to the desired ideal amount. The counter nut is fixed again. The fixing bolts number 1 are tightened back to the body.

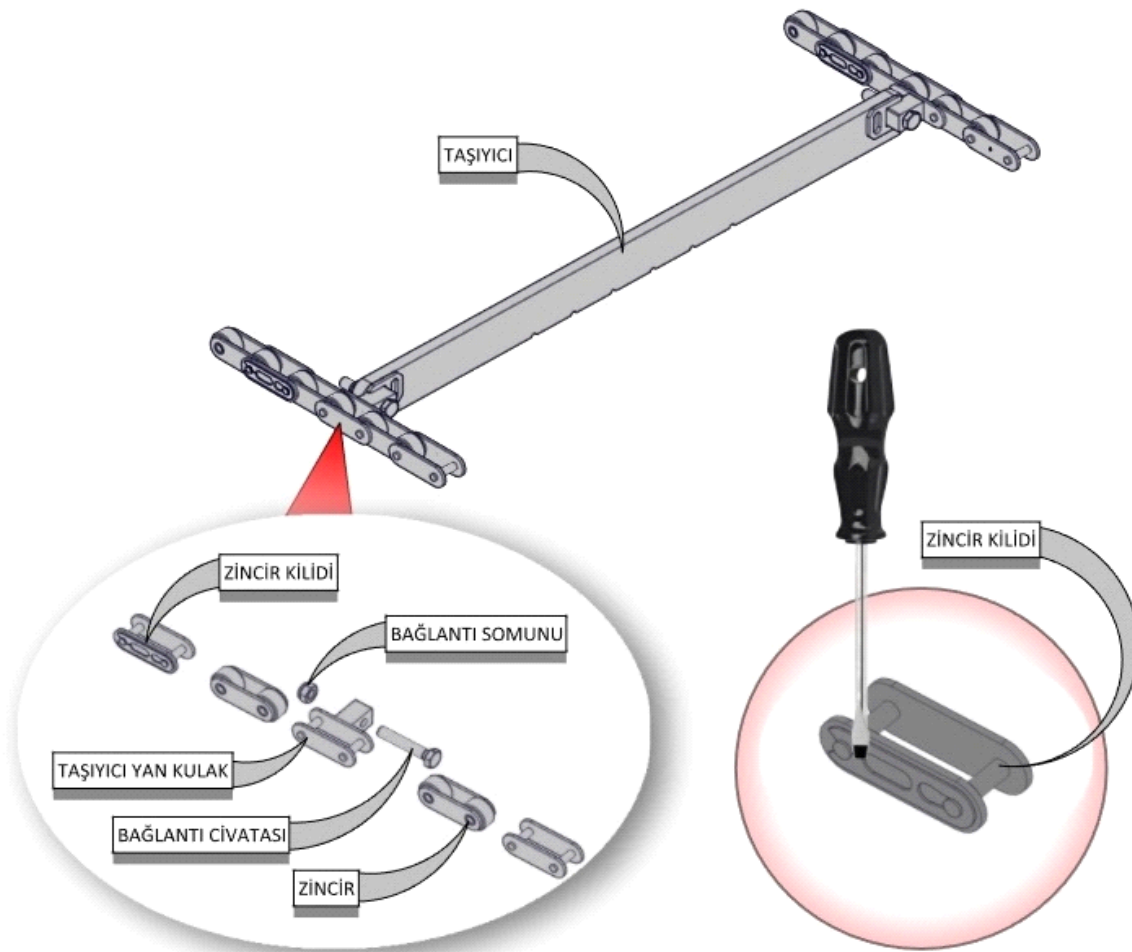


In case of wear, breakage, or split be sure to warn and inform the manufacturer. Balance control should be made when placing the unit under the bench. The machine should be made ready for operation by adding coolant.

5.3 Maintenance of the Scraper Belt

In cases where materials are likely to fall into the drum filter unit, the unit should be stopped immediately. If the material cannot be removed by the unit, the operator should take the material out of the unit with hands.

 **Otherwise, dropping material will cause of the unit scrapers to deform by squeezing.**



In the face of such negative situations, you can request service and technical support from our authorized company.

Chain and carrier: As shown in Figure 1-1, press the slotted part of the chain lock with a flat screwdriver and rotate the lock part clockwise to remove it from the pin.

Remove the chain and carrier from the pin by pressing the slotted part on the chain lock with a flat screwdriver moving the lock part clockwise, as shown in Figure 1-1.

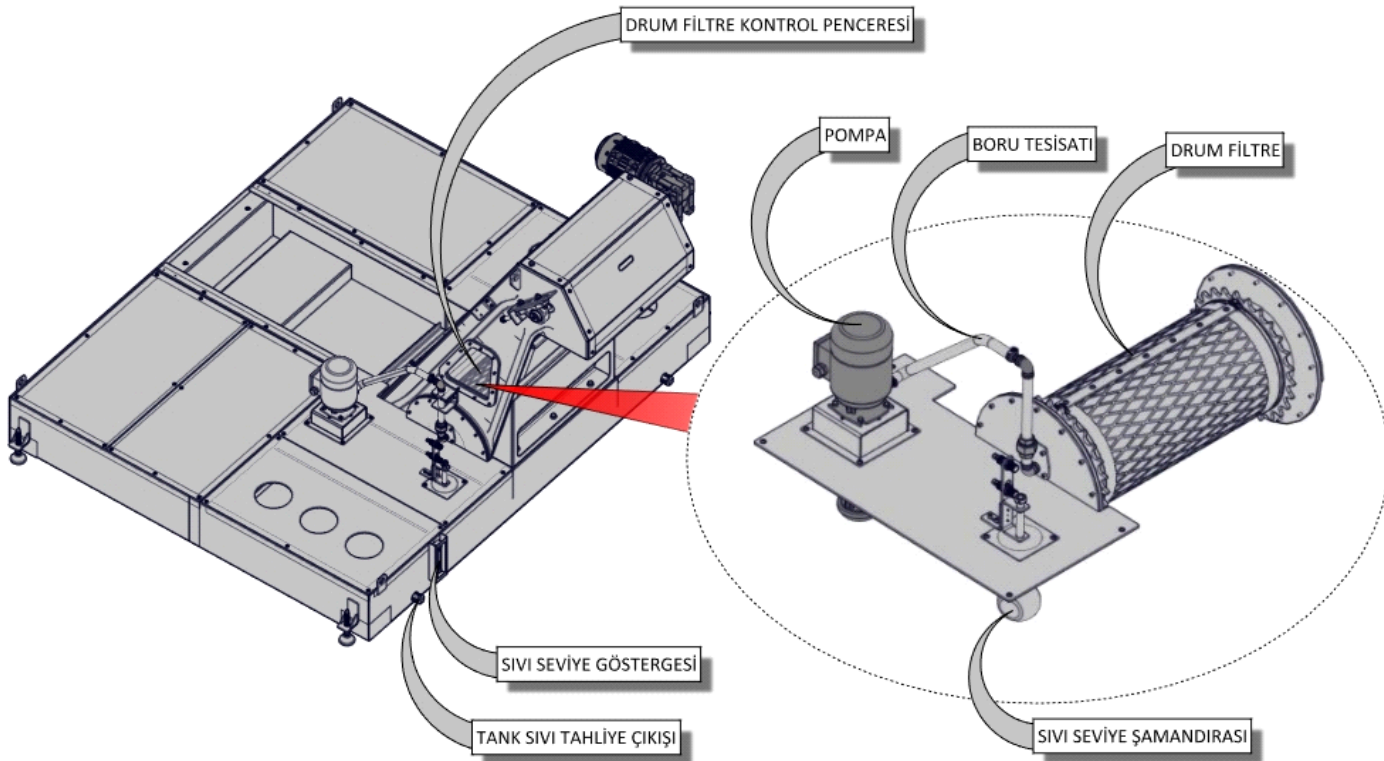
Remove and install the chain link in order as shown in FIGURE 1-2!

WARNING!

The unit must be shut down and electrically isolated before any corrective action is taken.
Electrical maintenance and repairs must be carried out by suitably qualified persons.



Electrician Only!



5.4 Troubleshooting

Problem	Possible reasons	What needs to be done
<p>5.4.1 * Drum filter unit not operating</p>	<p>* The cable is loose. It was operated with excessive load. *The unit is jammed. *The circuit breaker may be "Off".</p>	<p>*Check all connection cables. *Reset overload. *Clear the congestion. *Turn the switch to the "On" position.</p>
<p>5.4.2 *The drum filter unit motor is running, but the belt is not moving.</p>	<p>* The drum filter unit may be jammed.</p>	<p>* Clear congestion</p>
<p>5.4.3 * The drum filter unit is frequently jammed or stripped.</p>	<p>* Belt overloaded *There may be excessive chip accumulation or foreign metal between the pallet and the body.</p>	<p>* Clear the jammed area.</p>
<p>5.4.4 *If the machine is overheating</p>	<p>*The unit may be jammed or overloaded. *The settings are overloaded. *A motor running without phase.</p>	<p>*Clean the jammed area. (Running the drum filter unit in reverse may prevent jamming.) *Check if the motor current rating is overloaded in the settings. *Check if there is any looseness in the cable connections.</p>

<p>5.4.5 *Cooling pump operating at low pressure and/or low flow rate</p>	<p>*The pump may be running in the wrong direction. *The impeller may be worn or the pump may be clogged. *Wrong voltage or frequency *There may be insufficient coolant in the tank.</p>	<p>*Change direction. *Repair and clean the pump if necessary. *Check feeding and replace if necessary. *Add coolant.</p>
<p>5.4.6 *Excessive contamination in the clean coolant tank</p>	<p>*The sieve may be damaged. *Excessive foaming in the coolant *The coolant viscosity is higher than the original value *The coolant flow rate is higher than the original value</p>	<p>*Replace if necessary. *Consult coolant supplier. *Change coolant or screen type. *Reduce flow rate to match screen filter system capacity.</p>
<p>5.4.7 *No separation of chips and particles in the sieve</p>	<p>*The flow rate of the nozzles in the sieve decreases or stops completely.</p>	<p>*Remove the inner sieve, clean, or replace. *Check if the flow control valve is closed. *Check if the nozzle pump is working properly. *Check for stuffed nozzles, clean, and replace if necessary.</p>
<p>5.4.8 *Coolant level is always high</p>	<p>*Coolant overflow</p>	<p>*Clean or replace the sieve.</p>

6 About Malfunctions

6.1 General Explanations

The information contained in this booklet has been prepared based on experience gained as a result of service work and factory tests.

The symptoms and causes of the malfunctions are mentioned according to the notifications received by our service companies and the results encountered by the service technicians.

First of all, a detailed visual inspection of any problems is useful encountered.

Good monitoring of the fault prevents any unwanted damage that may occur during repair.

Firstly:

Check the electrical connections for looseness.

Check parts that may affected by short circuits or heat.

Despite trying the solutions specified in this book if the problem persists, please contact our company.

Having all kinds of troubleshooting, maintenance, and repair works done by our company in terms of speed and safety is the best for your unit and your business.

Any action taken without knowledge may lead to wrong results, cause your business to stop unnecessarily or cause costly damages.