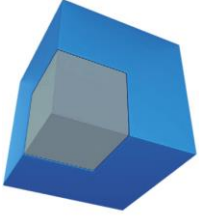


BİRİKİM MÜHENDİSLİK
ve ENDÜSTRİYEL YÜKLENİM LİMİTED ŞİRKETİ

AIRLOCK

TECHNICAL FILE **(OPERATING, MAINTENANCE AND SERVICE** **INFORMATIONS)**





BİRİKİM MÜHENDİSLİK
ve ENDÜSTRİYEL YÜKLENİM LİMİTED ŞİRKETİ

TECHNICAL FILE SECTIONS

I. WARNINGS

II. OPERATING MANUAL

III. MAINTENANCE AND SERVICE INFORMATION

NOTES:

It is highly important regarding the safety that the persons who will install, use, adjust and maintenance tasks for the Airlock or who will deal with the equipment in any manner should carefully read the warnings indicated in this document and should comply with these warnings.

The instructions contained in this document should be fully understood by the relevant persons. Any instructions / warnings that are not well understood due to the wording differences or other reasons should urgently be reported BİRİKİM ENGINEERING Company.

Furthermore, care should be taken to avoid damage to the warning labels and signs on the units when installing, using, adjusting and maintenance of the equipment, and these labels and signs should be replaced if they are worn out to the extent they are illegible.

It should not be forgotten that any failures originating from any operator errors, inadequate and incomplete maintenance, faulty spare parts and material defects are not covered by warranty.

PART 1

WARNINGS

IMPORTANT!

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The meanings of the signs and symbols used in this manual



Read the written instructions



Do not operate without the guards



Warning



Watch out your hands




Use gloves






Electrical hazard



2.1. General Warnings

Warning	
	<p>An air lock is an air cutter that prevents the air flow between the areas where the material is taken and discharged from places such as silos, cyclones, mixers in pneumatic systems and ensures the product to flow easily.</p> <p>The upper and lower parts of the machine are open, there are rotating rollers inside. The size of the rollers determines how much the airlock is. Since it cuts the air gradually, the product flows easily. It consists of a cast body. It works with the help of a geared motor at low speed. Gearmotors vary according to need and use and are sold separately. BIRIKIM ENGINEERING should be consulted when intending to transport any other materials.</p> <p>The equipment must not be used in potentially explosive atmosphere and in underground areas.</p>




2.2 Warnings Regarding Transportation and Installation

	<p>Serious injuries may occur in case of failure to comply with the following rules during the loading the equipments or their components on the transport vehicles and unloading them from the vehicles, moving them to the assembly sites, and during the installation procedures:</p>
	<p>The location where the equipment should be appropriately prepared. If necessary, the floor should be strengthened and appropriate fasteners should be used.</p>
	<p>It is absolutely necessary to wear hand-protection gloves in order to protect the hands from sharp edges during the transportation and installation of the product.</p> <p>Certain components of the product (engines, etc.) may be too heavy to be carried by a person. Special care should be given when these parts are lifted and moved, and if necessary, proper lifting and handling tools should be used.</p>



2.3. Warnings Related with the first Start-up and Settings

	<p>Before starting-up the equipment, sufficient grounding should be ensured against the dangers associated with the electrical power supply.</p>
	<p>Before the first start-up of the machine, it should be ensured that all assembly operations have been completed, and that the guards and honeycombs have been installed in their places.</p> <p>Bearings and ball-bearings should be lubricated, and the tension of the belt rubber should be at a medium level. Airlock is operated after the airlock has been subjected to a stop-start run sequence.</p>



2.4. Warnings Related with the Operation

	<p>After a power outage for any reason, it must be ensured that the equipment does not run by itself automatically. It is recommended to switch off the power supply or to use automatic on-off switches during power outages against the power outage caused by such a situation.</p>
	<p>There is no audible or light warning system indicating that the equipment is running. Therefore, the person who turns on the switch for the operation of the equipment must make sure that the equipment is not maintained or no one is in contact with the equipment at that time.</p>
	<p>Please make sure that there is no living creature that will be exposed to the danger around equipment during use.</p> <p>Make sure that all the enclosures are fully installed before use.</p>

2.5. Warnings Related with Maintenance and Service

	<p>Power supply should be disconnected on the main switch and power switch, and an information sign indicating “UNDER MAINTENANCE” or similar message should be placed on the main switch.</p> <p>When the equipment is de-energized, it must be ensured that all components should be stopped before any contact with the equipment.</p> <p>If it is needed to operate the equipment during the maintenance works, necessary measures should be taken against the parts that can be thrown out, and protective equipments such as gloves, goggles and helmets should be used.</p>
	<p>Protective gloves should be put on against the risk of contact with sharp-edges during maintenance works.</p> <p>Certain components of the product (motor, etc.) may be too heavy to be carried by a person. Special care should be given when these parts are lifted and moved, and if necessary, proper lifting and handling tools should be used.</p>

2.6. Warnings Relevant with Periodic Inspection and Replacement Parts

	<p>The corrosion likely to occur over time in all components of the equipment must be checked periodically.</p> <p>Mobile locations where the moving parts are present and bearings must be lubricated regularly.</p>
	<p>All electrical equipment of the machines (switches, cables, connection elements) should be checked periodically against wears, cracks and breakage and should be replaced if necessary.</p> <p>The oils of the pulleys and the roller bearings should be replaced depending on the lifetime of the oil used, and the lubrication should be made at the specified periods.</p>

PART 2

USER INSTRUCTIONS

IMPORTANT!

It is highly important regarding the safety that the persons who will use the equipment should carefully read the warnings indicated in this document and should comply with these warnings.

The instructions contained in this document should be fully understood by the user.







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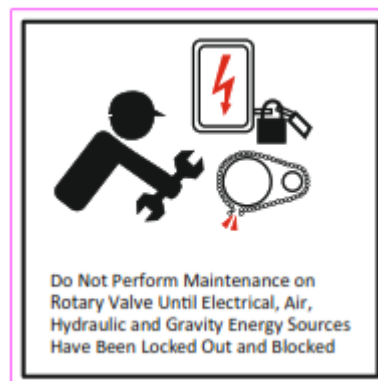
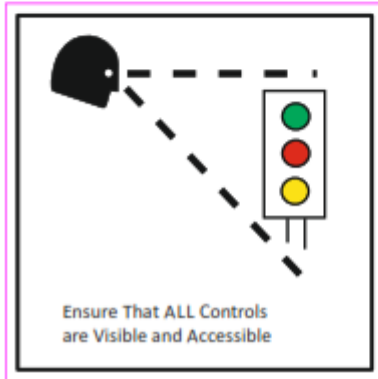
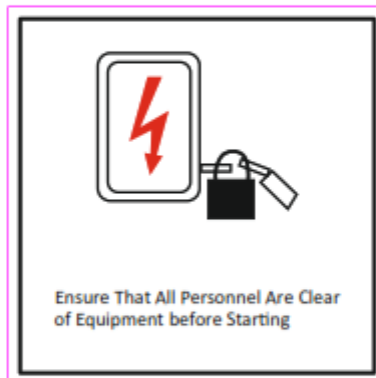
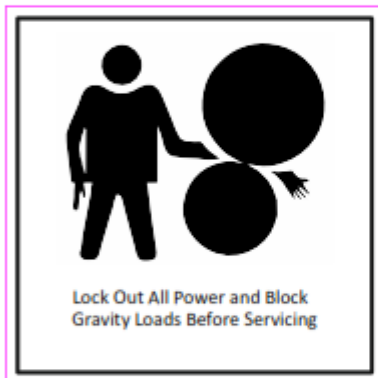
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3.1. Installation of the Equipment and Preparation for Operation

	<p>Removing the Equipment Components from the Packaging</p> <p>Equipment components may have been shipped, depending on their sizes, in a box, with wooden palettes or in a bare form. The equipment should be removed from the packaging, if any, before the installation, and care must be taken to avoid damaging the outer surfaces of the components during this task.</p> <p>Do not forget to use the right hawser and the correct method for the transport of the materials. Material weights are indicated on the packages, in packing lists, and may be forwarded in the electronic media (if so requested).</p>
	<p>Do not forget to request a supervisor to perform the installation from BIRIKIM ENGINEERING.</p>
	<p>Do not start any installation work unless reading the instructions for Maintenance and Security. If there are issues that are not well understood in the instructions, please consult your supervisor or request information from BIRIKIM ENGINEERING.</p>
	<p>The geared motor must be assembled following the instructions and oriented as specified by the manufacturer, so as to avoid lubrication problems. Always install the protective covers on rotating parts, where available.</p> <p>The electrical/instrument connection concerns:</p> <ul style="list-style-type: none"> • the geared motor • the instruments- Zero Speed Sensor <p>The connections must be made in accordance with the applicable standards. For details about the cables and terminal boards, see any specific documentation provided.</p>
	<p>Electrical connections of the motor should be made by qualified personnel, selecting an appropriate cable diameter and completing the ground connection.</p>
	<p>Set the system in a safe condition and make sure that no operator may be injured by the rotation of parts.</p> <p>Carry out a trial start-up in manual mode so that you can bring the machine to an immediate halt should it malfunction.</p> <p>If the system rotates freely, carry out another start-up in manual mode for a few minutes to make sure that everything is working properly.</p> <p>Make sure that the direction of rotation is correct for the transport of dust.</p> <p>If it is working properly, carry out a start-up in remote mode, and check that the sequences are followed correctly.</p> <p>Once the no-load tests have been passed, the system may be started up with a load.</p> <p>Check also that the value of the power consumption with and without a load complies with the characteristics of the geared motor.</p>

3.2. Operation and Use of Equipment

It is absolutely recommended to take into account the following warnings during the use of the Airlock equipment, and to consult BIRIKIM ENGINEERING company in case of any incomprehensible or abnormal conditions in order to ensure the safe use, environment and personnel health and safety.



PART 3

MAINTENANCE AND SERVICE INSTRUCTIONS

IMPORTANT!

It is highly important regarding the usage life and the safety of the equipment that the persons who will use the equipment should carefully read the warnings indicated in this document and should comply with these warnings.

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4.1. Preparation for maintenance

The indications for carrying out maintenance work on the machine in safe conditions and for staff training are given in the USING THE MACHINE IN SAFE CONDITIONS section.

The machine has no "wearable parts" as such.

As it consists of rotating mechanical parts, routine maintenance must be carried out on all the components specified. In particular, routine maintenance includes:

- Greasing of bearings
- Replacement of geared motor lubricants

Bearings and gears are normally subject to gradual wear. Check the geared motors and heads periodically from outside, so as to identify any deterioration or faults (temperature, noise).

Other parts that are subject to wear or deterioration in the long term are:

- seals set on the end plate to seal the drive and counter part
- blades (only when extremely abrasive materials are conveyed)

4.2. Extraordinary Maintenance

When an inspection is carried out inside the machine, take all the precautions listed in the USING THE MACHINE IN SAFE CONDITIONS section. Then enter the hoppers and distribution pipes of the machine, using torches where necessary.

Turn off the system and set it in a safe condition

- Disconnect the electrical power supply

Shaft Mounted Helical Geared Motors

- Remove the bolt on the reaction bracket and keep the shock absorber
- The geared motor is now free and may be extracted, by sliding it off the hollow shaft

Geared Motors Other Than Shaft-Mounted

- Remove the coupling joint, where present
- Free the motor from the supporting saddle by removing the fixing bolts

Be extremely careful as, when the constraints have been removed, the geared motor, may be subject to sudden movements due to its own weight and may fall. For the removal procedure, use should be made of chains, hoists and everything else required for safe operation, according to the type of installation.

For further details about the operations to be performed on geared motors, see the documentation provided by the manufacturer.

4.3. Removing foreign body from screw

- Try to restart the machine in the opposite direction, and then in the correct direction (where this is possible)
- Turn off the system's power supply and set the system in a safe condition.

Inspect the inside of rotor and manually remove the foreign bodies by hand (to do this, see the USING THE MACHINE IN SAFE CONDITIONS section).

4.4. Eliminating contacts

Elimination of the problem is a delicate operation to be performed by qualified staff: we therefore recommend you contact Supplier before proceeding to work.

Turn off the system's power supply and set the system in a safe condition.

- Remove the gear box and both ends
- Take the rotor out of the main body
- Grind the tips of rotor
- Re-assembly the part again.

4.5. Problem solving

The Screw will not start

Set the machine in manual mode and proceed as follows:

- Check for power on the motor terminals
- Check the electrical connections
- Remove the geared motor and carry out the no-load test. If the test is failed, check the functioning of the geared motor and take the appropriate action
- Check for foreign bodies inside the rotor
- Check that the rotor turns freely; check for points of contact between the casing and the coil and eliminate them

The rotor starts but stops immediately afterwards

Set the machine in manual mode and proceed as follows:

- check the status of thermal protection of the electrical power supply: if the protective device has triggered, reload it and restart the system or, alternatively, take the action indicated in the case entitled THE rotor WILL NOT START
- if the rotor stops again, inspect the inside and check for foreign bodies or surplus material; in the former case, proceed as indicated in the case entitled THE SCREW WILL NOT START; in the latter, empty the rotor and restart

The machine makes an intermittent metallic noise when the screw is operating

Proceed as described in the REMOVING FOREIGN BODIES FROM section or, alternatively, in the ELIMINATING CONTACT BETWEEN THE CASING AND THE rotor section.

Other problems

If problems other than those listed in this chapter are encountered or remain unsolved after taking the action indicated, contact Supplier.

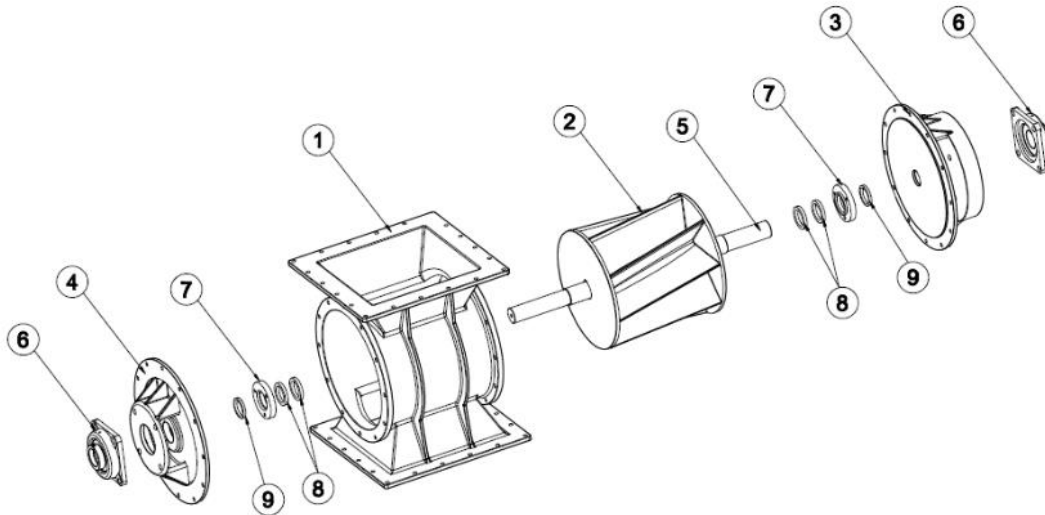
Dismantling

The screw is to be dismantled in the following parts:

- Motors
- Bearings
- Synthetic seals
- Instruments

For the disposal of all types of material, procedures compliant with the local legislation in force must be followed.

4.4. Airlock Parts



No	Ünite adı	Item description
1	Gövde	Body
2	Rotor	Rotor
3	Tahrik Flanji	Drive Side End Flange
4	Avare Flanji	End Flange
5	Şaft	Shaft
6	Rulman Yatağı	Bearing Set
7	Sızdırmazlık Kapağı	Seal Cover
8	Salmastra	Seal
9	Yağ Keçesi	Seal