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1 GENERAL DESCRIPTION

Store the operating and maintenance manual for future use.

This product has been developed and manufactured for use only for the purposes specified in this documentation. Any other method of use not covered in this documentation may damage the product and be dangerous.

The manufacturer is not responsible for any consequences caused by the use of the product for non-intended purpose or use with a method differing from the method of use defined and described in this documentation.

The manufacturer is not responsible for the quality of installation, if installation has not been performed by the manufacturer.

The user may not perform any repair in the automatic system and in case of relevant need they shall always contact a qualified specialist.

Any operations not clearly permitted in this manual are prohibited in case of this product.

If the door is located in an environment with extreme impact factors (humidity, dust, temperature etc), different warranty conditions will apply to the door.

In order to ensure long-term and correct operation of the product, we recommend to conclude a maintenance contract with AS Saku Metall.

2 SAFETY INSTRUCTIONS



WARNING!

Before using the door, read carefully the following safety instructions!












WARNING! Use of the product for non-intended purpose may cause injuries to people and animals or damage to assets.

Depending on the modification, the overhead door has an automatic system and therefore needs special attention when operated!

Operation of the overhead door is safe, when it is used in compliance with the safety regulations!

If the floor has not been completed as designed (floor surface at the site of closure of the door is not at the height specified in the design), the customer shall bear sole responsibility for installation and operation of the overhead door before completion of the floor.

We recommend to follow practical rules, in order to avoid accidents.

-  Open all available locks, in order to prevent damaging the overhead door upon activation of the automatic system!
-  Before any opening and closing operation of overhead door ensure that there are no persons, animals or objects staying in the operating area of the door!
-  If the overhead door has a built-in passage door, ensure before any opening operation of the overhead door that the passage door is closed!
-  Use remote control only when the door is completely visible and you are sure that nobody can pass the aperture during the movement of the door!
-  Do not apply extra force to close or open a moving sectional door! Excessive force may prevent activation of automatic safety brake and/or damage the overhead door!
-  Please do not block intentionally the movement of door sheet.
Do not allow children to use switch buttons or remote control!
-  In case of failure of automatic drive or power failure switch the drive to manual mode. In such case switch off the electricity and activate emergency trigger, in order to use the door in manual operating mode.
-  If the door is not in closed position, switching of drive to manual mode is prohibited!
-  Use the door in manual operating mode only when absolutely necessary! Continuous use of the door in manual mode may damage the automatic system!
-  Do not perform any work or repair in the automatic system or on the door, but always use the assistance of a qualified expert!
-  Before any external cleaning of the overhead door or automatic equipment disconnect the automatic drive from power network.

3 OPERATING INSTRUCTIONS OF MANUALLY OPERATED OVERHEAD DOOR

A rope or manual chain drive (pulley) has been installed for opening and closing manually operated doors.

When opening and closing the overhead door, use rope or handle to ensure smooth movement of the door until limiters at the end of rails. When a manual chain drive is available, use the chain of the manual chain drive for opening and closing the overhead door instead of rope. To fix the opened overhead door, fix the chain into relevant retainer installed on the wall.

Abrupt opening and closing of door is PROHIBITED, because it may damage the moving parts of the door!

4 OPERATING INSTRUCTIONS OF AUTOMATICALLY OPERATED OVERHEAD DOOR

If the product has been correctly installed and maintained as specified in the manual, and it is operated correctly, this automatic mechanism meets the standard safety regulations.

Logic of wall switch and remote control button of automatic domestic system

Automatic system with standard settings operates with 4 – function logic.

4 - function logic:

- first press – opens the door, the door remains open;
- second press during opening – stops the door at the required height;
- third press – closes the door, the door remains closed;
- fourth press during closing – stops the door at the required height.

Logic of wall switch and remote control button of industrial automatic system.

The controller of automatic system installed on the wall has three buttons – **OPEN, STOP, CLOSE**.

When the button **OPEN** is pressed, the door moves up and opens completely.

When the button **CLOSE** is pressed, the door moves down and closes.

When the button **STOP** is pressed during up or down movement of the door, the door stops at the position reached at the moment of press of the button.

When the button is pressed on the remote control, the door opens completely. When the button is pressed again, the door closes.

When the button is pressed on the remote control during up or down movement of the door, the door stops at the position reached at the moment of press of the button. When the button is pressed again, the door starts moving in opposite direction to the previous motion – the opened door closes, the closed door opens..

Logic of photocells (if installed)

OPENING PHASE - takistuse sattumisel fotoandurite vahele jätkab tõstuks liikumist.

CLOSING PHASE - upon detection of an obstacle between the sensors, the overhead door stops and reverses the movement immediately, i.e. the doors starts to open again. To close the overhead door, remove the obstacle from between the sensors and press the control button.

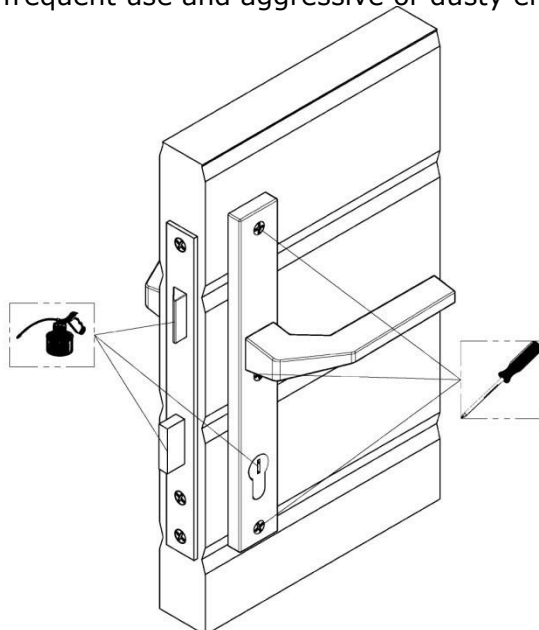
Description and elimination of failures

Description of failure	Remedial action
1. Gate does not open or close, when the button is pressed.	<ol style="list-style-type: none"> 1. Check obstacles between sensors. Remove obstacles, if necessary. 2. Check, if the control block is connected into power network. 3. Check that the latch of the overhead door is not closed. 4. Check, if the automatic system has been switched into manual operation mode. 5. If the gate still does not open, call an expert.
2. Gate closes, but opens immediately after reaching the closed position.	<ol style="list-style-type: none"> 1. Check obstacles in the movement zone of the gate. Remove obstacles, if necessary. 2. If the failure persists, call an expert.

NB! In case of failure of drive or power failure switch the drive to manual mode. In order to do this, release the drive from the overhead door with the help of rope connected to the drive guide rail, pulling it downwards.

5 MAINTENANCE INSTRUCTIONS OF LOCK PRODUCTS

Maintenance of lock products shall be performed at least twice a year, or monthly in case of frequent use and aggressive or dusty environment.



Check tightness of lock frame, lock cylinder, door handle and other parts of the lock, tighten (see the lubrication and screw tightening scheme) the fastening screws, if necessary.

Use special cleaning agent for cleaning the lock cylinder and special lock oil for lubrication. For cleaning we recommend to use Assa Lock Cleaner cleaning agent and for lubrication Abloy or Assa lock oil. Other cleaning agents or lubricants may damage the cylinder.

Cleaning/lubrication procedure:

1. Spray sufficient amount of cleaning agent into the lock cylinder, until small amount of the agent starts to flow out of the cylinder.
2. Insert key into the lock cylinder and pull out. NB! Do not turn the key in the cylinder – this will spread dirt in the cylinder, and the cylinder may jam.
3. Clean the key.
4. Repeat the procedure, until no dirt remains on the key.

5. Spray sufficient amount of lock oil into the lock cylinder. Repeat the cleaning movement 1-2 times with the key, and then turn the key in the cylinder, locking/unlocking the lock.
6. After cleaning with cleaning agent always use lock oil, because the cleaning agent has chemically active properties.

Lock cylinder shall be protected from debris, excessive dust etc.

Never paint lock cylinder, lock frame or any other parts of the lock.

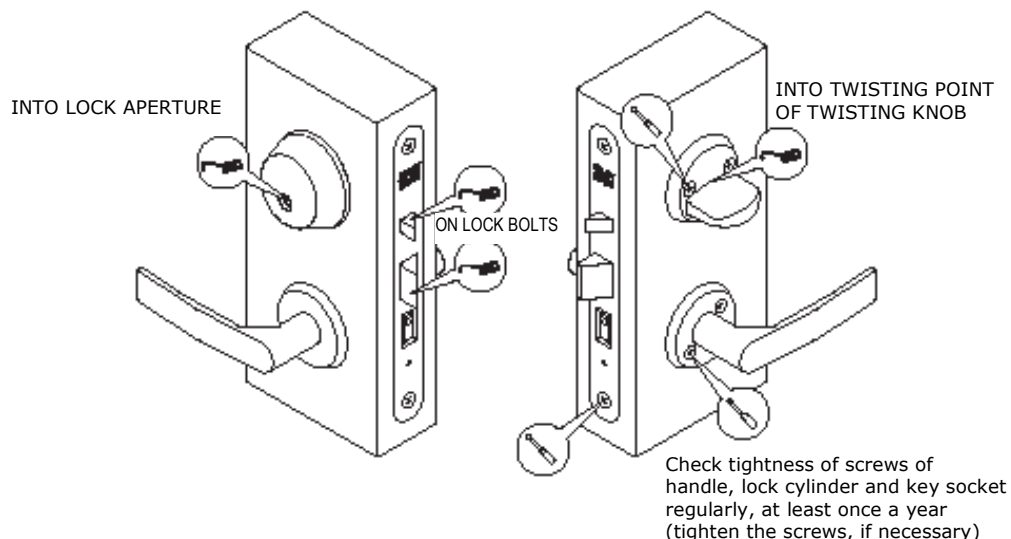
Lock bolts shall be lubricated from the sides with special lock lubricant (see the lubrication and screw tightening scheme). We recommend Assa lock lubricant.

Do not use corrosive or chemically active agents for cleaning the lock.

Ensure that all moving parts of the lock are free of debris. Also, prevent access of water into the lock.

Do not use any means that cause scratches or other mechanical damages for cleaning door handles, latches and decorative cover plates. If necessary, soft dusting cloth moistened with water can be used for cleaning handles and covers.

Lubricate moving parts of door handle and twisting knob with lock oil or lock lubricant at least once a year (see the lubrication and screw tightening scheme).



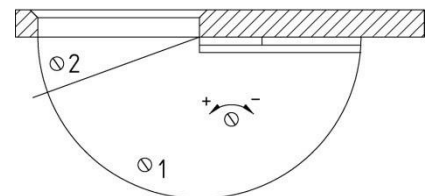
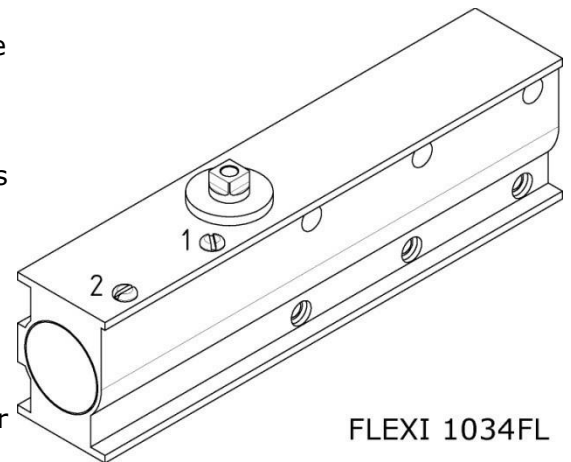
6 DESCRIPTION OF OPERATING PRINCIPLES OF DOOR CLOSURE, OPERATING AND MAINTENANCE INSTRUCTIONS

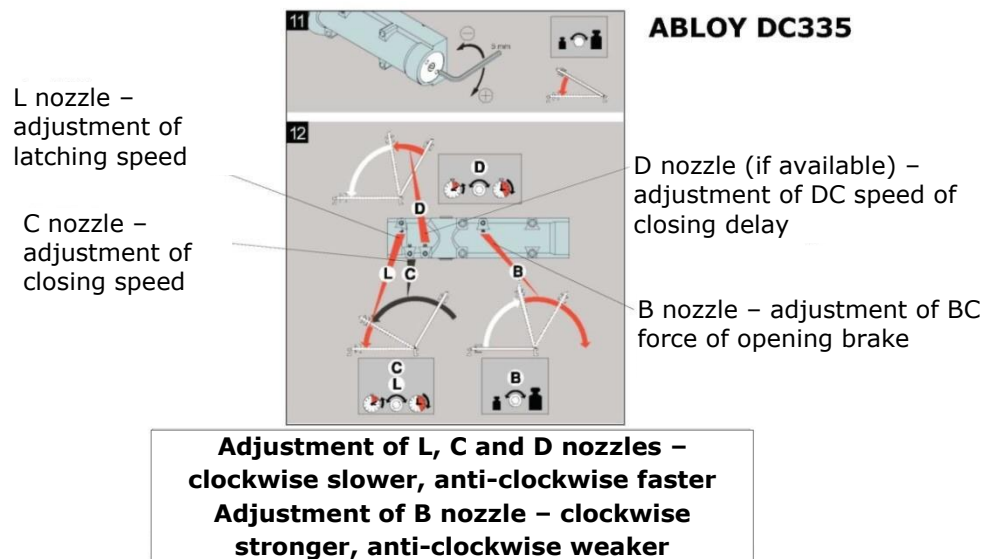
6.1 Description of operating principles of door closure

Door closure is a mechanical device intended for automatic closing of the door. Operating element of door closure is spiral spring inside the case and rack-and-pinion gear, transmitting the movement of spring to rotating axis of the closure. Axis of door closure is in turn connected to door sheet or jamb with slide drive rod. Upon opening of the door, the spiral spring is compressed. When the door is released, the force of the spring is applied to the door through the transmission mechanism, and the door closes. In order to prevent fast closing of the door, the door closure is filled with oil, preventing free movement of the rack-and-pinion gear. During movement of piston, oil is forced from one side of the piston to another through channels. Movement of oil in the channels can be adjusted with nozzles. When nozzle is opened (aperture of the nozzle is larger), oil can move more freely and also the movement of door sheet is faster, and other way round, if the aperture of the nozzle is smaller, movement of oil is blocked and the door sheet moves more slowly.

6.2 Operating instructions of door closure

1. It is prohibited to dismantle the case of door closure, because it contains a strong spring under high tension.
2. It is prohibited to open the pin joint of drive rod of door closure for any other purpose than installation and maintenance.
3. Do not use the door closure, if its fastening screws are not fastened properly or have become loose.
4. Speed adjustment screws (nozzle screws) of door closure may not be turned higher than the surface of the closure, because in such case the oil in the closure can escape, and the closure becomes unfit for use. Also, the adjustment screws may not be tightened completely, because this prevents oil flow and internal parts of the closure may be damaged.
5. Use only the intended equipment for keeping the door open (special drive rods, eyelets of door limiter etc.).
6. The function of opening brake or wind brake of door closure is not intended for limiting the extent of opening of the door. Use suitable door limiters (door stops) for that purpose.
7. If there is oil leak in the closure or the closure has jammed, remove the drive rod of the closure and call an expert.
8. Warranty does not cover replacement of products, the failure of which has been caused by incorrect installation, setup, use or maintenance.
9. Warranty does not cover normal wear of the product or minor defects, which do not impact operation of the door closure, such as scratches or wear of surface covers.
10. Warranty does not cover adjustment of the door closure.
11. In addition to the maintenance of the door closure and its parts, check regularly also operation of the door and the lock. Door sheet shall close smoothly and correctly into the jamb, and lock bolt(s) should move without major resistance.





6.3 Maintenance instructions of door closure

1. Inspection and maintenance of door closure shall be performed at least twice a year or more frequently, if necessary. On front doors, closures should be inspected also when outdoor temperature falls permanently below -3 °C.
2. During maintenance check visually, if the door closure is complete and without major damages.
3. Ensure that all parts of the door closure are correctly fastened, are not loose, and tighten the screws, if necessary.
4. Ensure that the door closure closes the door sufficiently gently and the lock is latched. If the lock does not latch, the cause may be also incorrect operation of the lock or the door – for example, movement of lock bolt(s) is blocked due to dirt or wear, bolts are not maintained, or the door has lowered or is curved, and does not close correctly.
5. If closing (door stroke ~180°-~15°) and latching speed (end draw or door stroke ~15°-0°) of the door is incorrect (the door closes too fast or the lock does not latch), adjust relevant nozzle screws.
6. On door closures with additional functions, such as opening brake or wind brake (BC), closing delay (DC) and adjustable spring force (EN ...-...), these can be also adjusted, if necessary.
7. Take care when dismantling the pin joint of drive rod of door closure, because the spring of the closure is tensioned and therefore the released drive rod may cause injuries.
8. Use dry dust cloth for cleaning the door closure.
9. We recommend to order maintenance of the door closure from a skilled expert.

7 GENERAL MAINTENANCE INSTRUCTIONS

Maintenance of automatic system:

- Automatic system shall be inspected annually by a qualified expert.
- It is recommended to prevent accumulation of dirt on the parts of the automatic system or remove dirt regularly.
- Keep optical parts of photocell and indicators of luminescent signal always clean.
- Ensure that tree branches or bushes do not obscure security equipment (photocells).

Maintenance of overhead door:

One operating cycle of overhead door is a period, during which the door has opened and closed. Tensioned torsion springs, parts fastened to them and door cables give rise to serious risks in case of unskilled or incorrect use and maintenance of overhead door, and may cause injuries or damage the door.

Damaged or worn components shall be always replaced only by Saku Metall or an authorised representative of Saku Metall.

For the time of inspection of the door switch off the automatic system. Ensure that the automatic system cannot be activated unintentionally.

After installation of overhead door, the door panels can be covered with car wax and seals with slight petroleum jelly layer.

7.1 Regular maintenance (operating frequency of door 4-5 times a day)

Every 6 months

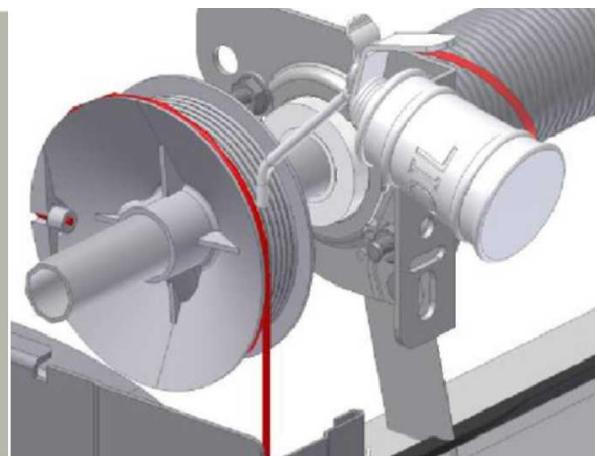
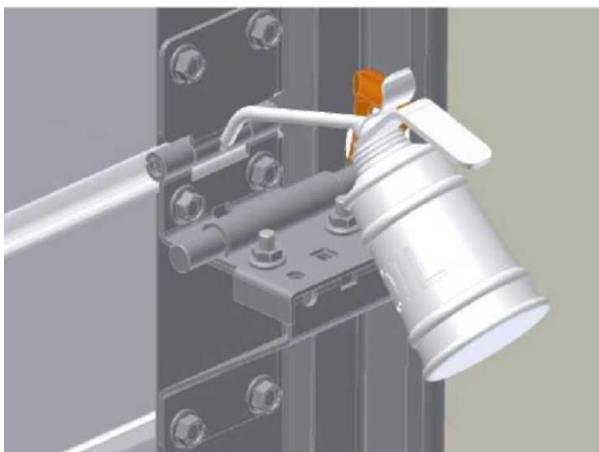
Check, if lateral seals of the door have signs of wear or tear	USER
Check, if upper seal of the door has signs of wear or tear	USER
Check, if lower seal of the door has signs of wear or tear	USER
Clean movement paths of rail rollers	USER
Lubricate bearings of rollers	USER
Lubricate roller shafts	USER
Lubricate hinges	USER
Lubricate locks	USER
Lubricate upper, lower and lateral seals with silicone oil	USER
Clean door panels	USER
Clean windows (use only water, not cloth)	USER
Remove dirt and waste from the front and around the door	USER

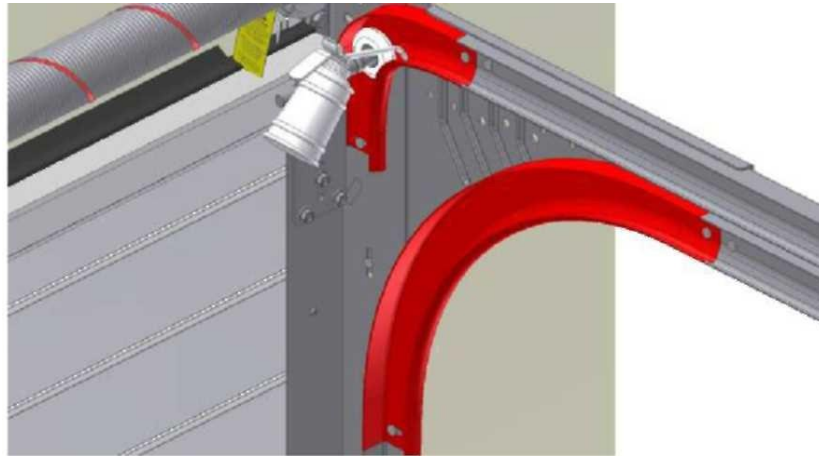
Every 12 months

Check or test fastening of spring nozzles on springs	TECHNICIAN
Check balance of door and adjust, if necessary	TECHNICIAN
Check, if cables have signs of damage or wear	TECHNICIAN
Check connection points of cables on drums and at lower brackets	TECHNICIAN
Check, if rollers have signs of wear, and if they have free space for moving	TECHNICIAN
Check integrity of the hinges of door panel	TECHNICIAN
Check, if door panels have signs of damage, wear or rust	TECHNICIAN
Check the protection against spring breakage according to instructions	TECHNICIAN
If drive is available, check and test security systems of drive – photocells, pneumatic sensor etc	TECHNICIAN
Check manual operation of overhead door	TECHNICIAN
Lubricate springs	TECHNICIAN

Every two years

Lubricate all abovementioned points	TECHNICIAN
Check fastening of spring nozzles on springs	TECHNICIAN
Check balance of door and adjust, if necessary	TECHNICIAN
Check, if cables have signs of damage or wear	TECHNICIAN
Check connection points of cables on drums and at lower brackets	TECHNICIAN
Check, if rollers have signs of wear, and if they have free space for moving	TECHNICIAN
Check integrity of the hinges of door panel	TECHNICIAN
Check, if door panels have signs of damage, wear or rust	TECHNICIAN
Check the protection against spring breakage according to instructions	TECHNICIAN
If drive is available, check and test security systems of drive – photocells, pneumatic sensor etc	TECHNICIAN
Check manual operation of overhead door	TECHNICIAN
Lubricate springs	TECHNICIAN
Check, if lateral seals of the door have signs of wear or tear	TECHNICIAN
Check, if upper seal of the door has signs of wear or tear	TECHNICIAN
Check, if lower seal of the door has signs of wear or tear	TECHNICIAN
Check, if shaft has signs of damage or wear	TECHNICIAN
Check, if lower bracket of the door has signs of damage or wear	TECHNICIAN
Check fastening of drum to shaft	TECHNICIAN
Check bolts of shaft coupling and tighten, if necessary	TECHNICIAN
Check fastening of rail assembly	TECHNICIAN
Check fastening of door to lintel and ceiling	TECHNICIAN





It is prohibited:

- to remove any details from the door.

8 WARRANTY

General warranty conditions of Saku Metall are valid for an overhead door manufactured by AS Saku Metall and the door has **two-year warranty**. The warranty does not cover variations in the quality of the door caused by normal wear (stretching of cables, initial run of torsion spring).

If the overhead door has not been installed by Saku Metall, the warranty is valid only for materials and assembly of the overhead door.

Installer of the door (installing company) shall issue warranty for the installation of the overhead door.

In order to ensure problem-free operation of the purchased product for many years, the user shall follow carefully all recommendations and regulations specified in the abovementioned instructions.

The warranty issued by Saku Metall is valid only, if:

- regular maintenance of the door has been performed;
- Saku Metall has been immediately notified of any warranty case;
- instructions provided by Saku Metall have been followed during use, maintenance and service of the product;
- defective product is available to Saku Metall for inspection;
- no unsuitable additional equipment is fixed to the door (if necessary, consult with sales representatives);
- no mechanical damage is caused to the door;
- painted surfaces and seals are not subjected to the impact of chemicals;
- parts of the door are not painted over.