USER AND MAINTENANCE INSTRUCTIONS FOR DOOR CLOSERS

1. GENERAL

1. In order to ensure proper long-term functioning of a door closer, the door closer must be professionally assembled and installed. Please observe the installation instructions and advice provided by the manufacturer of the door closer. The manufacturer of the lock and Saku Metall AS will not be held liable for any issues arising from improper installation, assembly, use, or maintenance of the door closer.
2. The door closers supplied by Saku Metall AS are covered by the manufacturer's/supplier's warranty. The warranty period is calculated based on the terms and conditions established by the manufacturer/supplier. Warranty services are provided based on a properly drawn up document which proves the purchase.

2. DESCRIPTION OF THE OPERATING PRINCIPLE OF A DOOR CLOSER

A door closer is a mechanical device which is designed for automatic closing of a door. The functioning elements of a door closer are the coil spring located in the case of the closer and the rack and pinion piston transmission which is used to transfer the movement of the spring to the rotating axle of the closer. The axle of the closer is in turn connected to the door or the door frame by a hinged swing arm.

When the door is opened, the coil spring is compressed. When the door is released, the force of the spring is applied to the door via the transmission mechanism and the door closes. In order to prevent the door from closing very quickly, the door closer is filled with oil which prevents free movement of the rack and pinion piston. When the piston moves, the oil is pressed through channels from one side of the piston to another. Movement of the oil in the channels can be regulated by jets. When a jet is open (the opening of the jet is wider), the oil can move more freely and the door also moves faster and, vice versa, when the jet opening is smaller, movement of the oil is obstructed, and the door moves slower.

3. INSTALLATION INSTRUCTIONS FOR DOOR CLOSERS

1. Prior to installation of a door closer, make sure that the force (EN class) and structure (e.g. type of the swing arm) are suitable for the specific door.
2. The installation schemes and stencils of the door closer included in the packaging of the door closer must be used and followed closely.
3. Having fixed the parts of the door closer, adjust the closing (angle of operation: ~180º- ~15º) and latching speed (final draw or angle of operation: ~15º-0º) of the door closer and, if necessary, the force (see Chapter 5: Door closer adjustment schemes) depending on the peculiarity of the door. Adjust any additional functions, such as backcheck (BC) and delayed closing (DC), if applicable. Always make sure that

the lock latches when the door is closed. Also make sure that the door is not closed too quickly ('slammed shut'). This puts people in danger and may also damage the door.

4. We advise to have the door closer installed by a trained specialist.

4. USER INSTRUCTIONS FOR DOOR CLOSERS

1. Do not disassemble the case of the door closer, the spring in the case is under pressure.
2. Only release the hinge of the swing arm for installation and maintenance.
3. Do not use a door closer if the screws are not properly tightened or have loosened.
4. Do not turn the adjustment screws (jet screws) of the door closer above the surface of the closer, as this would result in leaking of oil from the closer which would render the closer unusable. Also avoid complete tightening of the adjustment screws as this would prevent movement of the oil which may result in breaking of the internal part of the closer.
5. Only use the devices designed for this purpose for keeping the door open (special swing arms, door holder loops, etc.).
6. The backcheck function of the door closer is not designed for restricting the extent of opening of the door. Use proper door holders for this purpose.
7. In the event of an oil leak or jamming of the closer, remove the swinging arm of the closer and contact a specialist.
8. Products which have failed due to improper installation, assembly, use, or maintenance are not subject to replacement under the warranty.
9. The warranty does not apply to normal wear and tear of the product and to small defects which have no impact on the functioning of the locks, such as superficial scratches or wearing.
10. The warranty does not apply to adjustment of the door closer.
11. In addition to maintenance of the door closer and its parts, the functioning of the door and the lock should also be checked regularly. The door should fit smoothly and properly into the frame and the lock latches should latch without any significant obstructions.

4. MAINTENANCE INSTRUCTIONS FOR DOOR CLOSERS

1. Inspection and maintenance of a door closer should be performed at least twice a year or, if necessary, more frequently. It is recommended to check the door closers installed on exterior doors when the outdoor temperature drops under -3 ºC for a prolonged period of time.
2. In the course of inspection, check visually whether the door closer is fully assembled and free of significant damage.
3. Check whether all parts of the door closer are fixed properly and are not loose, tighten the screws, if necessary.
4. Check whether the door closer closes the door sufficiently quietly so that the door is latched. If the door is not latched, the lock or the door may be functioning

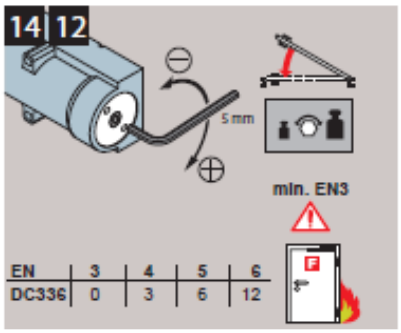
improperly, e.g. movement of the lock latches may be obstructed due to dirt or wear and tear or the lock latches may require maintenance or the door may have sagged or be bent which results in improper closing.

5. If the closing (angle of operation: ~180º-~15º) and latching speed (final draw or angle of operation: ~15º-0º) of the door are incorrect (the door closes too quickly or the lock does not latch), adjust them by using the respective jet screws (see Chapter 5: Door closer adjustment schemes).
6. In the case of a door closer with additional functions, such as backcheck (BC), delayed closing (DC), or adjustable spring force (EN …-…), adjust these as well, if necessary.
7. Release the hinge of the swinging arm of the door closer carefully as the spring is under pressure, as a result of which releasing of the swing arm may result in injuries.
8. Clean the door close with a dry piece of cloth.
9. It is recommended to have the door closer maintained by a trained specialist.

5. DOOR CLOSER ADJUSTMENT SCHEMES

Adjustment scheme of the Abloy DC336 BC door closer

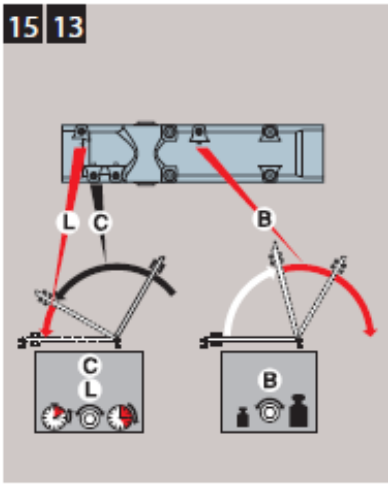
– adjustment of the spring
NB! The Abloy DC336 BC door closer is adjusted in the factory in compliance with the EN 3 force class
(+) - stronger
(-) - weaker



L jet – adjustment of the latching speed

C jet – adjustment of the closing speed

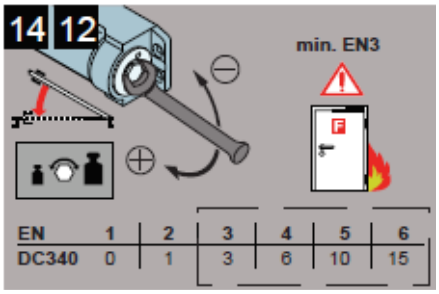
L and C jets:
Clockwise - slower
Counter-clockwise - faster

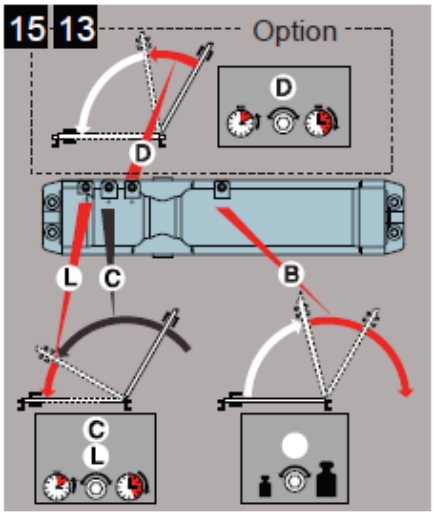


B jet – adjustment of the force of the BC backcheck
Clockwise - stronger
Counter-clockwise – weaker

Adjustment scheme of the Abloy DC240(DC340) BC door closer

– adjustment of the spring
NB! The Abloy DC240(DC340) BC door closer is adjusted in the factory in compliance with the EN 2 force class
(+) - stronger
(-) - weaker





L jet – adjustment of the latching speed

C jet – adjustment of the closing speed

L and C jets:
Clockwise - slower
Counter-clockwise - faster

B jet – adjustment of the force of the BC backcheck
Clockwise - stronger
Counter-clockwise – weaker

Adjustment scheme of the Dorma TS83 BC door closer

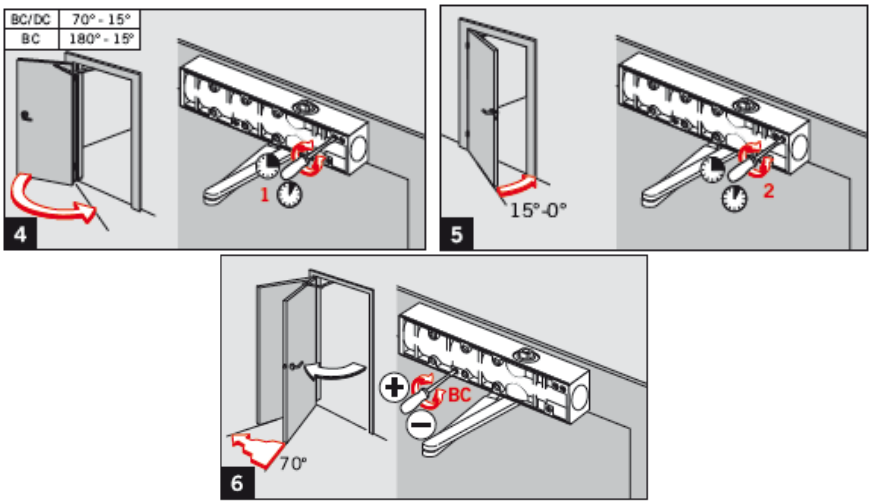


Figure 4. – adjustment of the closing speed; clockwise – slower, counter-clockwise - faster
Figure 5. - adjustment of the latching speed; clockwise – slower, counter-clockwise - faster
Figure 6. – adjustment of the force of the BC backcheck; clockwise – stronger, counter-clockwise - weaker

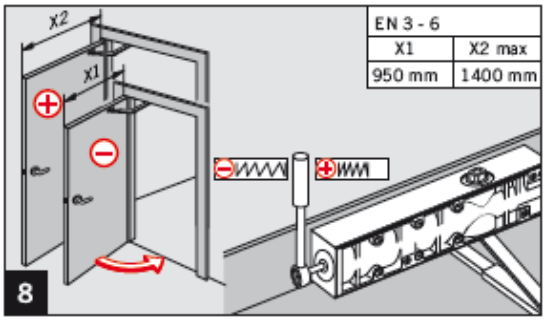


Figure 8. – adjustment of the force of the spring **NB! The <u>Dorma TS83 BC</u> door closer is adjusted in the factory in compliance with the EN 3 force class;** (+) – stronger, (-) – weaker

<u>Adjustment of the OTS-430 BC door closer</u>

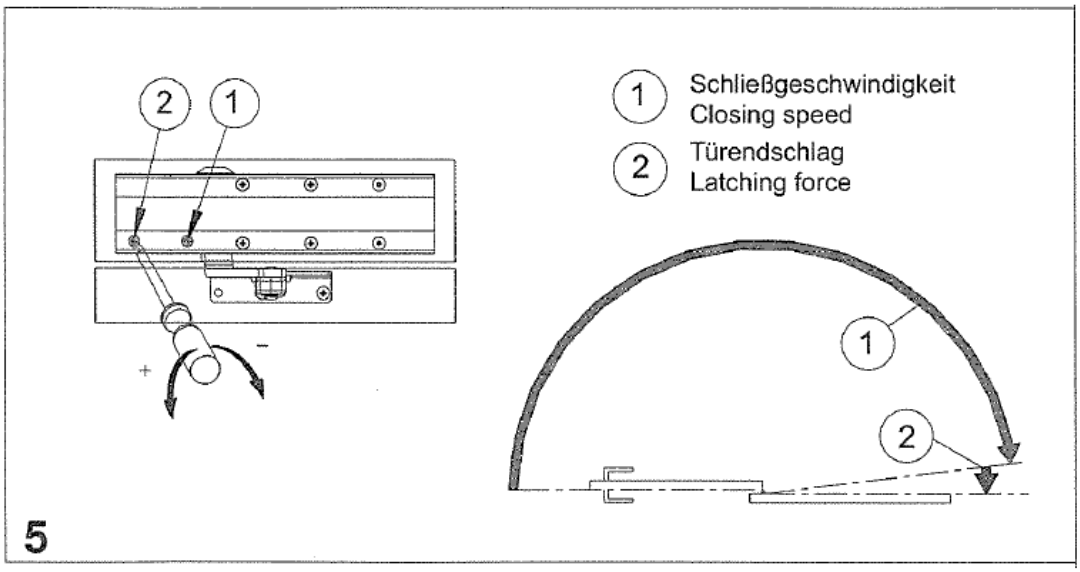
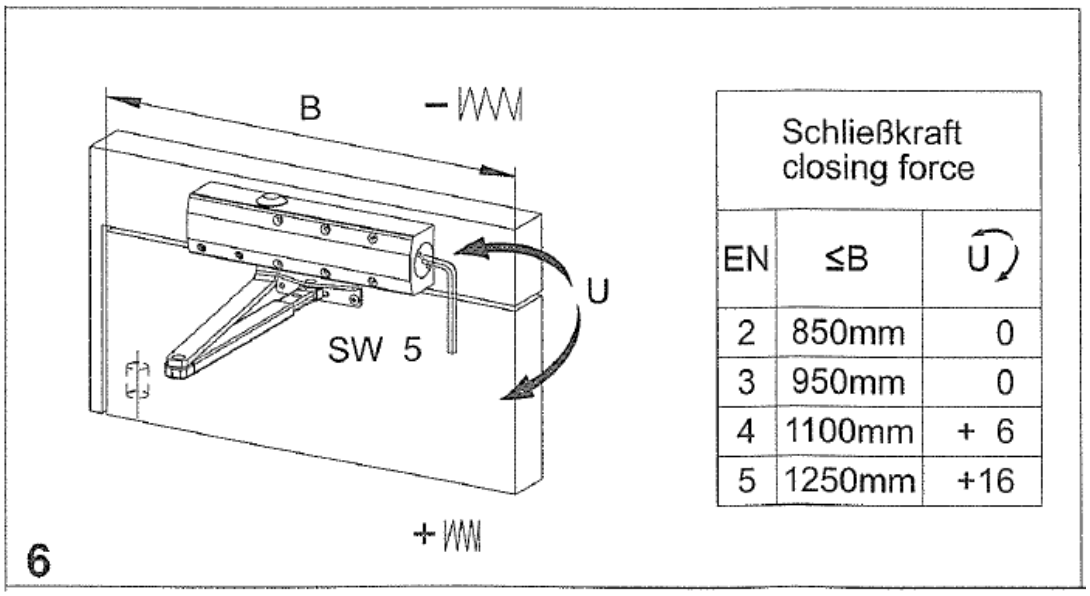


Figure 5:

1 – adjustment of the closing speed; clockwise – slower, counter-clockwise - faster
2 - adjustment of the latching speed; clockwise – slower, counter-clockwise – faster



Schließkraft closing force		
EN	≤B	U
2	850mm	0
3	950mm	0
4	1100mm	+ 6
5	1250mm	+16

Figure 6. - adjustment of the force of the spring **NB! The OTS-430 BC door closer is adjusted in the factory in compliance with the EN 2 force class;** clockwise – stronger, counter-clockwise – weaker