

Automatic ash removal

Biopel

Automatic ash removal is device pushing ashes created during combustion to the outside box for easier maintenance. You don't need to remove ashtray from the inside of the boiler to clean properly. Automatic ash removal is increasing intervals between manual cleaning, which doesn't have to be performed so often.

There are two types of ash removal, for v8 or v9 Biopel boiler. Read all informatio in this manual carefully to install, setup and activate this device properly.

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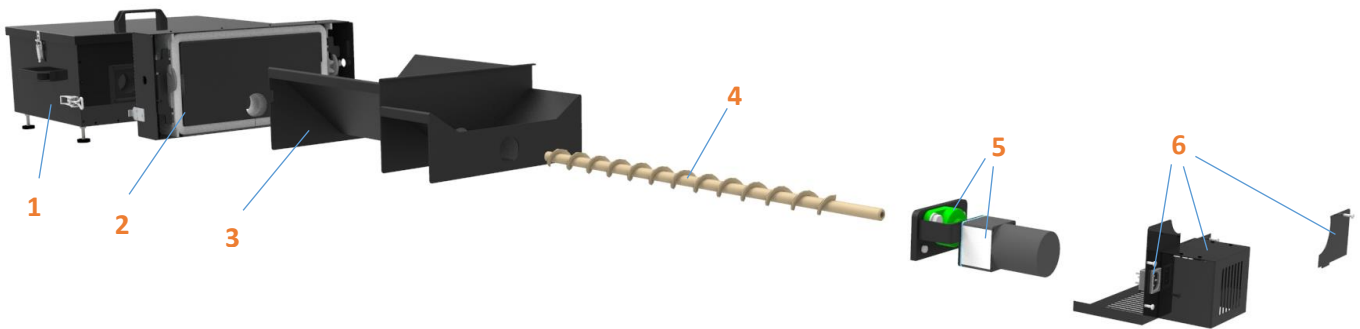
1. PACKAGING

The following items can be found in the package of automatic ash removal:

1. A container for automatic ash removal with a lid
2. Ash door with a hole for ash removal spiral
3. The second lock of ash door (the first is installed on the boiler during boiler manufacture)
4. Spiral with the engine and connecting pieces
5. Engine cover with socket
6. Ashtray
7. Power Cable
8. Fasteners
9. User Manual

2. BASIC DESCRIPTION

Automatic ash removal is delivered disassembled and must be installed in place of boiler installation. It consists of three main parts: a motor with a spiral, a container for the ashes, inner ashtray.



1. A container for the extracted ashes provided with a cover flap for closing the opening when emptying the dust container.
2. The second ash door provided with an opening through which the spiral extends. The door is closed on both sides, so it is necessary to install additional boiler hinge closure for the other side of the boiler (non-standard side).
3. Inner ashtray, which is inserted into the inner part of the boiler to replace the original (standard) ashtray.
4. Spiral which pulls the ashes from the boiler. Connected to the motor.
5. An engine bearing, mounted on the rear part of the boiler.
6. Motor cover with socket.

The entire device is delivered disassembled and is assembled to the boiler in the sequence described below. Follow the instructions according to the Installation chapter.

3. TECHNICAL SPECIFICATION

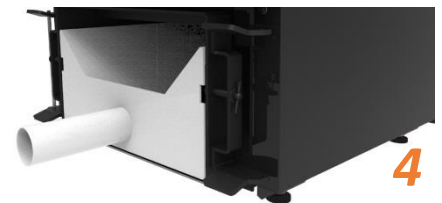
The following table is a list of the main technical parameters.

- Supply voltage 230V
- El. consumption 15W
- Max load current of 0.5A
- Maximum flue gas temperature 150 ° C
- Max Ambient temperature -20 to 45 ° C
- Total weight 30kg

4. INSTALLATION

Installation of automatic ash removal is simple, however it requires about two hours of on-site work. Follow the steps below for correct installation and activation of the device.

1. Remove the ash door. Remove the cotter pin on the side of the boiler, which holds the ash door.
2. Remove standard ashtray which is in the boiler.
3. Remove the cover on the rear bottom side of the boiler together with a sealing plate, which is attached by two bolts.
4. Insert the new ashtray of automatic ash removal into the boiler.
5. Insert the engine assembly with the spiral in to the opening on the rear side of the boiler.
6. Fit the motor cover on the rear boiler casing of the boiler. Do not forget to attach the motor wiring into the socket on the cover.
7. Attach the ashtray door lock to the front of the boiler. One lock is already installed during boiler manufacture. The second belongs to the opposite side of the ash door opening, as shown below.
8. Attach the new ash door. Spiral is pushed through a hole in the ash door.
9. Attach the container on the ash door. Make sure that the position of the screw inside the container is correct.

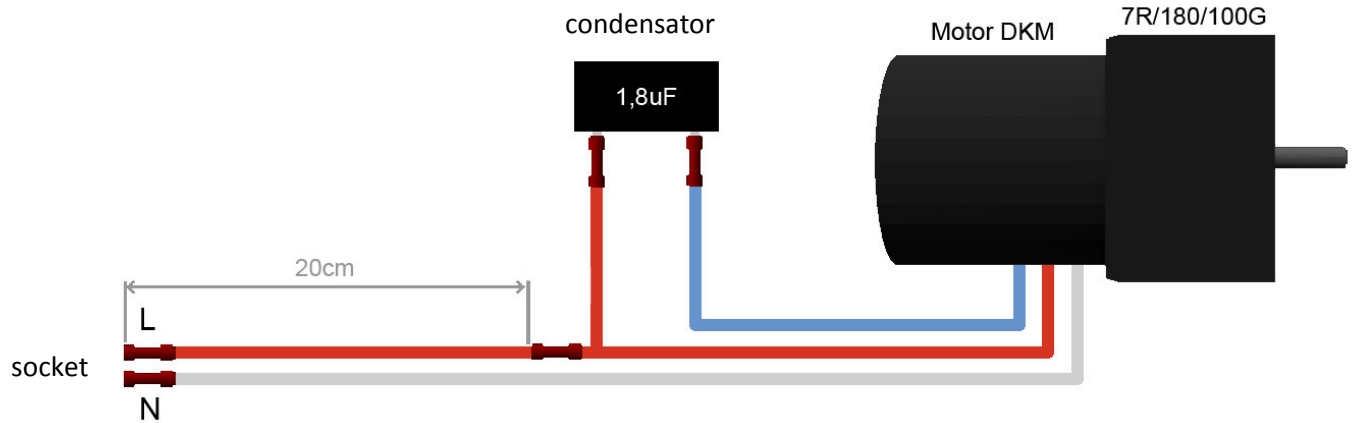


The next step is the installation of electrical wiring and motor activation in the boiler control unit. The engine is already prepared to activate, you need only a power cable to connect into the socket at the rear of the boiler (on the motor cover). Follow the information below.

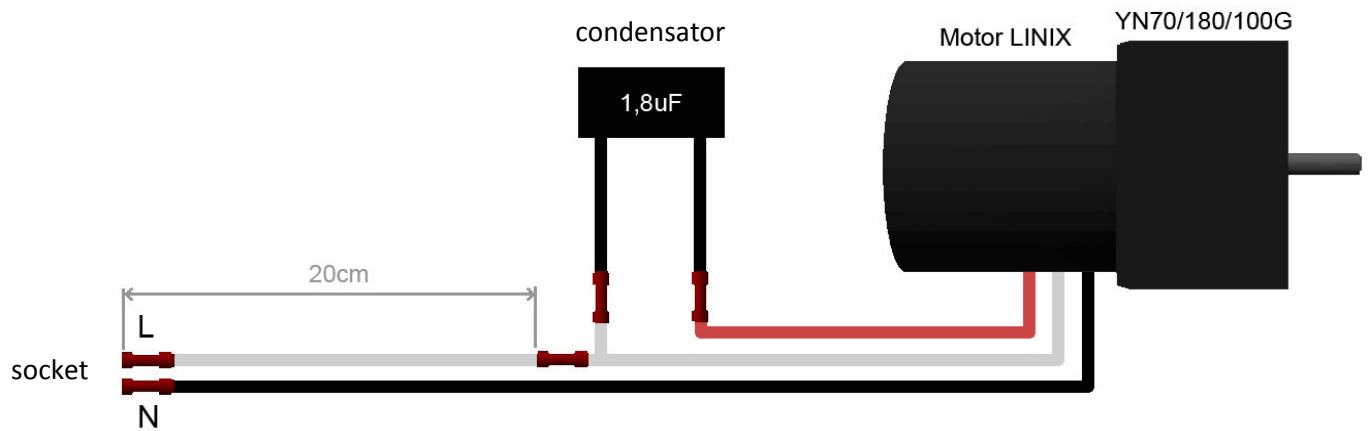
5. ELECTRICAL CONNECTION

Automatic ash removal is sold with the engine DKM R7 / 180G. In the past, automatic ash removal was sold with engine YN70 / 180G. Check the electrical wiring according to engine type included in the supplied set. Connect the wires into the socket according to the engine type. The polarity of the cables connected does not matter.

Ash removal
Biopel
DKM motor version

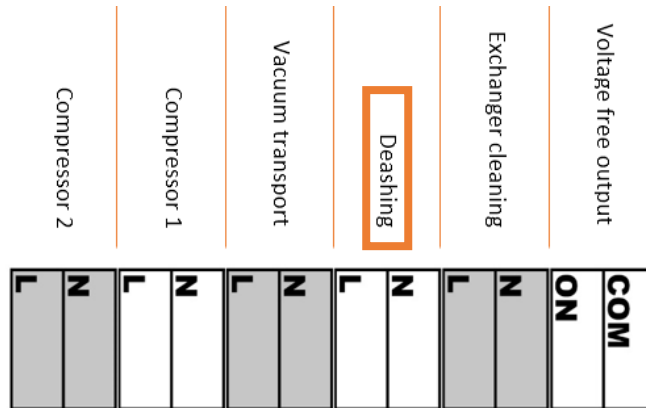


Ash removal
Biopel
DKM motor version



6. ACTIVATION

Connect the power cord to the rear of the boiler (on the motor cover) and also plug the other end into the slot in the connection board named Deashing.



6.1. Setup

Automatic ash removal operation is preset. Automatic ash removal works at regular intervals according to the boiler output. Below is a table of preset values, which can be adjusted in the fitters menu.

Fitters menu, Ash removal	10kW	15kW	20kW	30kW	40kW	60Kw	80Kw
Operation time	5min	5min	5min	10min	10min	10min	10min
Interval time	10h	10h	10h	10h	10h	10h	10h

Values represent expected working intervals, but these intervals should be adjusted according to the pellet consumption and speed of ash creation to prevent ashes to remain in the boiler for long time. Ask you installer for help if needed.

Preset values are recommended to keep. Only in the case of excessive formation of ash we recommended to reduce the time to set lower value in order to start automatic ash removal more frequently.

Activation of the automatic ash removal is carried out during the First start of the boiler (activated by plumber). The second option is to enter the Fitters menu and set the operation times manually. This automatic ash removal will be activated and will operate according to preset values in the operating time and pause time functions.

- Operating time - time of one cycle of ash removal operation. It takes 5 to 10 minutes. But it can be extended if needed.
- Interval time - after completion of operating time, waiting for specified time is performed. It is then activated again and works for a set period of time again.

Correct function of automatic ash removal can be check the Fitters menu, Manual mode. Here you can force the motor to run and check proper function to make sure the screw rotates in the right direction and whether is the motor and screw operation smooth, without shocks or jamming.

7. WARRANTY CONDITIONS, GENERAL INFORMATION

All requirements below must be fulfilled by installer and end user to fulfill warranty conditions and also to ensure correct installation in terms of the applicable standards, and safety from the perspective of ensuring the non-problematic usage of the boiler and all other equipment.

1. Biopel boilers can be installed only by a company with a valid authorization to perform its installation and maintenance.
2. Installation project must be elaborated in accordance with applicable regulations.
3. The heating system must be filled with water, which meets the requirements of ČSN 07 7401 and especially its hardness must not exceed the required parameters. Using antifreeze fluids is not recommended by the manufacturer.
4. Connecting the boiler to the system must be done in accordance with applicable regulations and standards.
5. The flue gas path must be checked by chimney-sweeper before commissioning of the boiler. Require an audit report covering the basic parameters of the flue gas path, including the diameter of the chimney, its length and chimney draft.
6. Flue should not be longer than one meter (distance between the boiler and chimney inlet) and should be fitted with a cleaning opening. The flue can be extended only if the chimney draft was measured and recorded no longer than 30 cm from the boiler outlet and it meets the minimum operating draft, see chapter *Main parameters*.
7. Biopel boiler must be installed in a separate boiler room, specially adapted for heating. The boiler room must have sufficient space for installation and maintenance of the boiler. There must be sufficient circulation of fresh air for combustion. The boiler must never be installed in open spaces or balconies, in areas inhabited by people. Such as kitchen, living room, bathroom, bedroom, also in areas where there are explosive and flammable materials.
8. It is recommended to install the boiler on a concrete base from fire-proof material. There should be guaranteed minimum handling area around boiler and pellet hopper. 60cm rear and lateral sides, 100cm from the front of the boiler and hopper.
9. When installing and operating the boiler it is necessary to keep a safe distance of 200 mm from flammable materials.
10. It is disallowed to store fuel behind the boiler or next to the boiler within a distance smaller than 800 mm.
11. It is interdicted to store the fuel between two boilers in the boiler room.
12. We recommend to keep the distance between the boiler and fuel min. 1000 mm or store the fuel in a different room.
13. Guarantee fuel types are considered pellets made only of wood, their diameters ranging from 6-8 mm.
14. Boiler manufacturer is responsible for fuel quality in terms of combustion quality, the amount of ash, intervals for cleaning. These facts only affect the external factors such as the quality of pellets, dust and moisture in the pellets, chimney draft and correct setting of the combustion process.
15. To ignite pellets it is forbidden to use flammable liquids (gasoline, alcohol, etc.).
16. During the boiler operation it is forbidden to overheat it. Maximal CH temperature should be 85°C.
17. If there is a danger of development and penetration of combustible vapors or gases into the boiler room, or during works with temporarily developed fire or explosion danger (gluing the floorings, painting with combustible paints etc.), boiler must be put out of operation.
18. Upon completion of the heating season, it is necessary to clean the boiler including flue. The boiler room must be kept clean and dry.
19. It is forbidden to interfere with construction and electrical installation of the boiler.
20. Manufacturer is not liable for damage caused by improper adjustments or setup or improper handling of the product.
21. Wear parts are not covered by the standard warranty period. These parts are: sealing cord, grenamat bricks, ignitor, lambda sensor. These parts, however, perform for a long time if the boiler and its components are operated in accordance with the instruction manual.
22. The manufacturer is not responsible for rust on the boiler and its components, since it is always and only caused by external influences, as the humidity in the room, in the fuel or due to improper installation without boiler protection against low-temperature corrosion.
23. Boiler must be protected against low return temperature via a valve, which prevents the cold water going back to the boiler. Minimum acceptable return water temperature is set by the manufacturer at 55 ° C.
24. The manufacturer is not responsible for the condensation of cold air in the flue path, since this must be prevented by proper installation of flue gas path and by the correct setting of the combustion processes.
25. The manufacturer is not responsible for the leakage of smoke from the boiler into the room in case that this is caused due to low chimney draft, incorrect installation of the boiler, or incorrect setting of the combustion process.
26. The manufacturer is not liable for damage caused by handling, shipments, incorrect settings or improper use or other external factors, which are not directly caused by the individual components operation.
27. Installing company that sold the boiler to the end customer is always responsible for proper installation, boiler setup and activation.
28. In the event, it was agreed to maintain the warranty conditions by a third party subject (eg. startup company), then it must be so agreed on three sides, by sales representative, installer and the end customer. All mentioned subjects must agree with this and must be included with signatures in the appendix of warranty card.

8. STANDARDS AND REGULATIONS

These standards must be met during boiler installation and usage. Informations below are meant for installers as a support files for installation and boiler start up.

Heating system:

The heating system must be filled with water that meets requirements of ČSN 07 7401 and especially its hardness must not exceed the required parameters: hardness = 1mmol/l, Ca²⁺ = 0,3mmol/l, concentration of total Fe+Mn = 0,3mg/l.

ČSN 06 0310	Heating systems in buildings - Design and installation
ČSN 06 0830	Heating systems in buildings - Safety devices
ČSN 07 7401	Water and steam for thermal energy equipments with working steam pressure up to 8 MPa.
ČSN EN 303-5	Boilers for central heating – Part 5: Heating boilers for solid fuel, with manual or automatic fuel supply, nominal heat output up to 500 kW – Terminology, requirements, testing and marking.

Flue gas system:

ČSN 73 4201	Designing chimneys and flues.
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Fire regulations:

ČSN 06 1008	Fire safety of heat installations.
ČSN EN 13 501-1+A1	Fire classification of construction products and buildings - Part 1: Classification using test data from reaction to fire.

Electricity network:

ČSN 33 0165	Electrical regulations. Marking the conductors with colors or digits. Implementing regulations.
ČSN 33 1500	Electrical regulations. Revision of electrical devices.
ČSN 33 2000-3	Electrical regulations. Electrical equipment. Part 3: Setting the basic characteristics.
ČSN 33 2000-4-41	Electrical devices: part 4: Safety chap. 41: Protection against electric shock.
ČSN 33 2000-5-51	Electrical regulations. Construction of electrical equipment.
ČSN 33 2130	Electrical regulations. Internal wiring.
ČSN 33 2180	Electrical regulations. Connection of electrical devices and appliances.
ČSN 34 0350	Electrical regulations. Regulations for mobile connections and wiring management.
ČSN EN 60 079-10	Electrical regulations. Regulations for electrical equipment in areas with potentially explosive flammable gases and vapors.
ČSN EN 60 079-14 ed.2	Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines).
ČSN EN 60 252-1	Capacitors for AC motors - Part 1: General - Performance, testing and rating - Safety requirements - Guide for installation and operation.
ČSN EN 60 335-1 ed.2	Electric appliances for household and similar purposes - Safety - Part 1: General requirements.
ČSN EN 60 335-2-10	Electric appliances for household and similar purposes Safety - Part 2-102: Particular requirements for appliances burning gas, oil and solid fuel having electrical connections.
ČSN EN 60 445 ed. 3	Basic and safety principles for man – machine interface, marking and identification.
ČSN EN 60 446	Basic and safety principles of machinery operation - Marking the conductors with colors or digits.
ČSN EN 61000 – 6 – 3 EMC – Part 6 – 3: Generic standards – Emissions - residential, commercial and light industry.	
ČSN EN 61000 -3 – 2 EMC - Part 3 – 2: Bound – Limits for harmonic current emissions (equipment input current up to 16 A inclusive).	
ČSN EN 61000 – 3 –3 EMC – Part 3 - Bound - chapter 3: Limitation of voltage fluctuation and flicker in low-voltage supply systems for equipment with rated current <16A.	

System for DHW:

ČSN 06 0320	Heating systems in buildings - Hot water preparation - Designing and planning.
ČSN 06 0830	Heating systems in buildings - Safety devices.
ČSN 73 6660	Water supply systems

Placement options:

ČSN 06 1008	Combustibility grade B, C1, C2 and C3.
ČSN EN 13 501-1	Building materials and products classified in the flammability degree
ČSN 33 2000-3	The basic environment for handling space around the boiler AA5 / AB5.

9. WARRANTY

Automatic ash removal for Biopel v8 and v9 controllers

Manufacturer: OPOP spol. s r.o., Valašské Meziříčí, Czech republic

Tel.: 00420 571 675 589, **fax.:** 00420 571 611 225

Warranty conditions:

This warranty certificate includes a certificate of quality and completeness. The manufacturer certifies that the product is inspected and meets its design specifications and EN 303-5. For quality, function and we guarantee the boiler for 24 months from the date of sale to the consumer, no longer than 30 months after expedition from the factory and in a way that demonstrably result of defects due to faulty materials, faulty design, faulty design or removed as soon as at our expense, provided that the device:

- it is in normal condition according to the Instruction manual
- is not damaged mechanically (no unauthorized interference with the exception of interference allowed in the instructions)
- consumer complaints submitted with the application of this warranty certificate duly completed
- When a fault occurs it is always necessary to submit the warranty certificate, give the exact address and the circumstances under which the defect occurred. The manner and place of repair will be decided in our company.
- Device was installed only by a firm authorized to mount OPOP equipment.
- Date and installer stamp must be included with warranty list.

Date and stamp of manufacturer:

Date of sale and stamp of installer:

OPOP, spol. s r. o.

Zašovská 750

757 01 Valašské Meziříčí

Bankovní spojení:

Komerční banka a.s., č. účtu:1608851/0100

IČO: 47674105, DIČ: CZ 47674105

Telefon: obchodní oddělení: 571 675 589, sekretariát: 571 611 250, výroba: 571 675 405

Zásobování: 571 675 114, finanční oddělení: 571 675 472
