

List of repairs under the warranty

Repair notification date	Date of repair	Details of repair	Signature and stamp of service man

Notes:

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Client's data:

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OPERATION AND MAINTENANCE DOCUMENTATION

with a warranty card

FOR BOILER
TYPE
„DUO-PID”

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4. Boiler design

The boiler was designed based on state-of-the-art technical achievements. Coal combustion takes place on the retort grate or the fixed water grate.

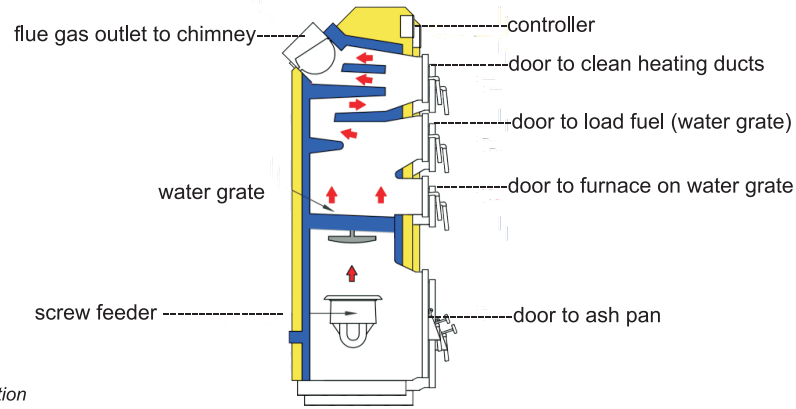


Fig. 1 Boiler cross-section

5. Boiler parts

Body

Duo-Pid as the bent and welded structure has the water body made of certified boiler sheet 6 mm thick. The structure is designed in a manner, to eliminate a number of welded joints by bending the sheet. Between the boiler casing and the exchanger there is insulation material - mineral wool.

Furnace:

Combustion proceeds through automatic movement of fuel on the screw feeder to the cast-iron retort burner. Combustion is supported with the forced air draught. The boiler has a cast-iron deflector located just above the burner. Its surface allows for burnout of combustible gases and evenly distributes flue gas to the heat exchanger. Produced ash is moved to the burner edges and then it falls into the ash pan. Fuel is taken automatically thanks to the controller installed at the boiler.

NOTE! The furnace chamber shall be always closed except for periods of firing up and filling and removal of furnace waste.

Flue and damper

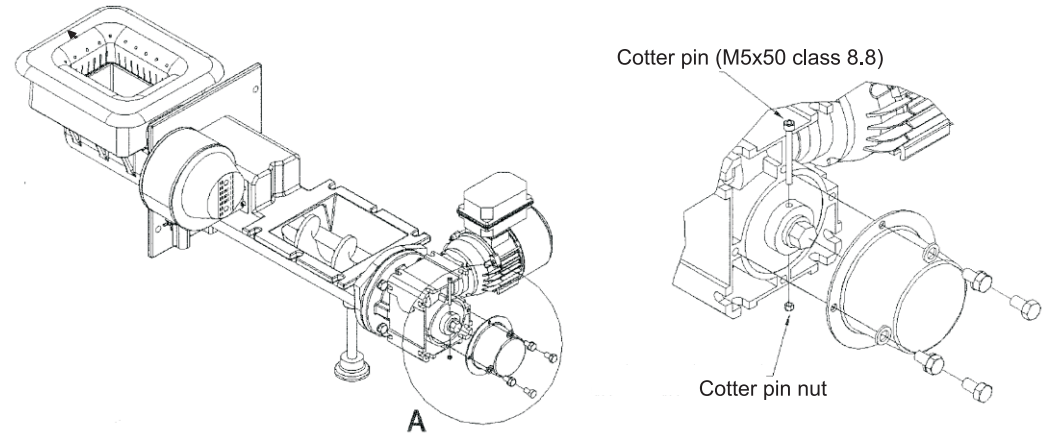
The flue is placed at an angle of 45 degrees - it allows for easy removal of flue gas, and the damper controls its flow, in case of too large chimney draught. During normal operation in the automatic mode, the damper should be open. **In case of combustion on the manual grate, a screw securing the flap shall be unscrewed. When the manual combustion is finished, the flap shall be raised and the screw shall be screwed in again. The red screw is located on the air supply fan casing.**

14. Protections

14.1 Alarms

Electronic controller controls the operation. In the following cases it cuts off the supply and displays the following messages on the screen:

- temperature does not rise. In case of "temperature does not rise" alarm, it is also necessary to monitor the screw protection. In case the protection is broken it shall be replaced.



14.2 Limiter of temperature fuse

When the temperature exceeds 85°C, the temperature limiter stops the feeder and air supply, and starts central heating and hot water pumps. The controller display shows the alarm "temperature too high" and activates sound signal. At that time the power supply of the controller shall not be off, because pumps will stop running and the temperature will start to rise again. When the temperature drops to ca. 40°C, the controller is started again.

NOTE! Before the stove is started again, the problem has to be found and repaired. In case this situation repeats, it is necessary to contact the service.

15. Fuel make-up - cleaning

The feeding bin shall be filled every 1-3 days, depending on fuel consumption. Fuel level in the bin shall be checked at least every 12 hrs. Minimum level of fuel in the feeder is ca. 30% of the feeding bin volume. Please always remember to close the bin tightly after its filling. Before opening of the damper to fill the bin, please check if the fan and the feeder are stopped. Then after re-fill close the damper tightly. When the ash pan is full it shall be taken out and emptied.

7. Technical Data

Technical data of boilers type DUO-PID

Boiler type	J.m.	DUO-PID 11 MINI	DUO-PID 16	DUO-PID 21	DUO-PID 26	DUO-PID 31
Rated output	kW	11	16	21	26	31
Output (power) range	kW	4-11	5-16	7-21	9-26	10-31
Heating surface	m ²	1,3	1,9	2,4	2,9	3,4
Heated room surface	m ²	do 130	do 170	do 210	do 250	do 300
Max. work pressure allowed	MPa	0,15				
Required flue gas draft (pass)	Pa	22	25	25	29	29
Furnace dimensions* W x D x H*	mm	350/340/235	350/340/270	400/340/270	400/390/270	450/440/270
Dimensions of loading opening (WxH)*	mm	350 x 168	350 x 168	400 x 168	400 x 168	400 x 168
Single fuel load	l	160	250	250	270	270
Furnace capacity	l	27	30	36	42	52
Water temp. on supply [min/max.]	°C	55/90				
Boiler weight	kg	360	420	450	473	500
Boiler water capacity	l	35	65	72	80	88
Min. chimney height	m	6	6	6	7	7
Boiler efficiency	%	do 90,3				
Flue dimensions	ø/mm	ø180	ø180	ø180	ø180	ø180
Supply and return diameter	in	6/4"				
Electric power supply	V/Hz	230/50				
Power consumption by controller	W	11				
Power consumption by fan	W	80				
Motor power consumption	W	90				

Table 1 Technical specification of Duo-Boss boilers

Parameters specified above are approximate values and may be slightly changed due to technological modifications.

8. Heating system - boiler installation

The boiler may be installed by persons with suitable qualifications, who became familiar with the boiler O&M manual. User's obligation is to assure that the boiler installation is performed in compliance with applicable regulations. A company which installs the boiler should issue a guarantee for executed works. The client shall have a declaration of the chimney sweeper on the passage and draft of the chimney flue to which the boiler will be connected. Duo-Pid stove can be mounted in the open system (Fig. 2), i.e. with the buffer vessel, or in a closed system providing that a device to remove excess heat is installed. Manufacturer recommends installation of the following in the system:

- three-way valve
- thermostat valves at radiator

Installation of these valves is necessary, as the min. temperature at the controller is 45°C and it could be too hot in the building. These valves allow for the reduction of the temperature in the rooms.

Manufacturer requires installation of a safety valve at supply and return (of max. work pressure 1.5 bar) upstream of any other valves.

The maintenance space around the boiler should be min. 40 cm, and from the feeder side min. 1 meter. The stove should be levelled and aligned, and placed in a manner so that connection between the flue gas flange and the chimney flue is as short as possible, safe and convenient during boiler operation and maintenance. Flue gas discharge pipe should be led out to a chimney connection with a steel pipe (min. 2 mm thick) of suitable diameter and min. 5% rise upwards. It is not allowed to weld the flue duct to the boiler flue gas flange and reduce the flue diameter. Manufacturer does not grant warranty for chimney flues. The boiler accessories include complete cabling, required for its connection to the electrical power supply system.

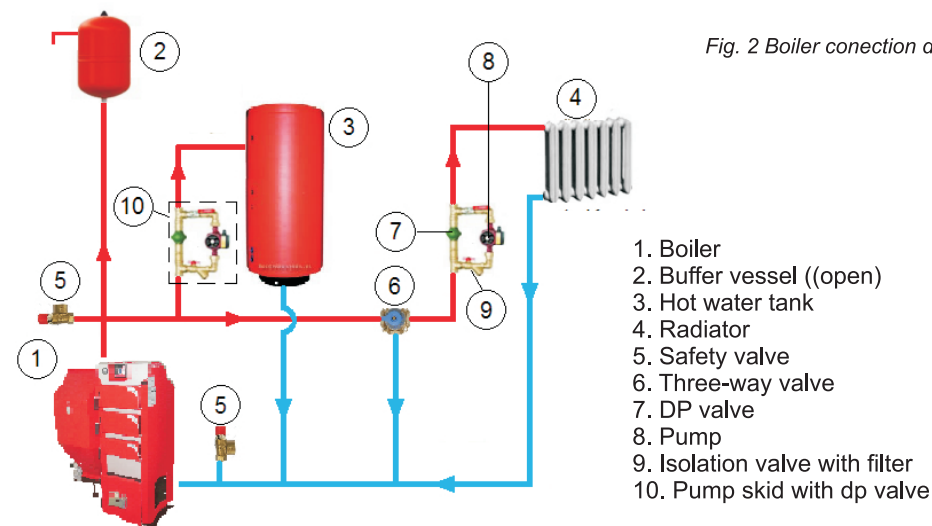


Fig. 2 Boiler connection diagram

9. Check before start-up

NOTE!

The first start-up may be carried out only by authorized persons, who became familiar with the boiler O&M manual. Before each start-up of the boiler the following shall be checked:

- water level in the boiler and heating system
- conditions of connections and electric protections
- cleanliness of the ash pan, furnace, flue gas ducts, chimney
- passage of the safety valve

NOTE!

Filling with fuel, boiler cleaning, emptying and inserting the ash pan may only be performed with air supply off.