

Operation Manual

Contents

| | |
|--|-----------|
| 1. Application | 5 |
| 2. Technical description | 5 |
| Layout of the instrument panel | 6 |
| 3. Technical specifications | 7 |
| Captions for the diagrams of the boilers | 8 |
| Technical specifications | 8 |
| Diagrams of the boilers | 9 |
| Sections of the D14P, D21P and D25P boiler | 9 |
| Sections of the D31P boiler | 10 |
| 4. Accessories delivered with the boiler | 11 |
| Automatic removal of ash from the boiler body | 11 |
| 5. Fuel | 12 |
| 6. Boiler foundations | 12 |
| 7. Type of environment and location of the boiler with the burner in the boiler room | 13 |
| 8. Chimney | 13 |
| 9. Flue gas duct of the boiler | 14 |
| 10. Fire protection within the installation and use of heat appliances | 14 |
| 11. Connection of boilers to the electric mains | 15 |
| 12. Electric wiring diagram for the D14P, D21P and D25P boilers without an extraction fan with a 6-pin connector | 17 |
| 13. Electric wiring diagram for the D14P, D21P and D25P boilers without an extraction fan, with a 6-pin connector and module AD02 to control pump in boiler circuit. Option only for model 2012, with the burner control unit AC07X (R, R2, sensors TV, TS, TK, | 18 |
| 14. Electric wiring diagram for the D31P boiler with an extraction fan - model 2012 with a 6-pin connector | 19 |
| 15. Electric wiring diagram for the D31P boiler with an extraction fan - model 2012 with a 6-pin connector and module AD02 to control exhaust fan of the boiler from the burner control unit AC07X (R) | 20 |
| 16. Electric wiring diagram for the D31P boiler with an extraction fan - model 2012 with a 6-pin connector and module AD03 to control exhaust fan of the boiler and pump in boiler circuit from the burner control unit AC07X (R and R2) | 21 |
| 17. Obligatory ČSN EN standards for the design and installation of boilers | 22 |
| 18. Selection and method of connection of control and heating-system elements | 22 |
| 19. Protection of the boiler from corrosion | 23 |
| 20. Basic connection of the boilers D14P, D21P and D25P with an equalizing tank and burner control by the TS and TV sensors | 23 |
| 21. Connection of the boilers D14P, D21P and D25P with an equalizing tank and burner control by the TS and TV sensors and control of the boiler pump on the basis of the TK sensor directly from burner A25 | 24 |
| 22. Prescribed connection of the boilers D14P, D21P and D25P with an equalizing tank and the ACD01 control unit | 24 |
| 23. Possible connection of the boiler D14P, D21P and D25P | 25 |
| 24. Connection of the boiler D31P with an equalizing tank and burner control by the TS and TV sensor and control of the boiler pump on the basis of the TK sensor and exhaust fan directly from burner A25 | 25 |
| 25. Connection of the boiler D31P with an equalizing tank and burner control by the TS and TV sensor and control of the boiler pump on the basis of the TK sensor and exhaust fan over module AD03 | 26 |
| 26. Prescribed connection of the boiler D31P with an equalizing tank and controlled return water in to the boiler from control unit ACD01 | 26 |
| 27. Laddomat 21 | 27 |
| 28. Thermoregulatory valve | 27 |
| 29. Operation instructions | 28 |
| Preparation of boilers for the operation | 28 |
| 30. Burner A25 connection for the D14P, D21P and D25P boilers | 29 |
| 31. Boiler system with an external storage container and conveyor | 29 |
| 32. Burner A45 connection for the D31P boiler | 30 |
| 33. Boiler system with an external storage container and conveyor | 30 |
| 34. Boiler room with a large built-in pellet storage | 31 |
| 35. Cleaning of the boilers and ash removal | 32 |
| 36. Maintenance of the heating system, including boilers | 33 |
| 37. Operation and supervision | 33 |
| 38. Possible failures and troubleshooting | 34 |
| 39. Spare parts | 35 |
| Replacing the door sealing cord | 35 |
| Adjusting the door hinges and closures | 35 |
| 40. Environment protection | 36 |
| Disposal of the boiler after the end of its service life | 36 |
| GUARANTEE CONDITIONS | 37 |
| RECORD OF INSTALLATION OF THE BOILER AND BURNER | 38 |
| ANNUAL INSPECTIONS RECORDS | 39 |
| RECORDS OF GUARANTEE PERIOD AND POST-GUARANTEE PERIOD REPAIRS | 40 |

HOPING YOU WILL BE SATISFIED WITH OUR PRODUCT WE RECOMMEND YOU TO OBSERVE THESE MAIN PRINCIPLES, IMPORTANT FOR THE SERVICE LIFE AND PROPER FUNCTIONING OF THE BOILER

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1. The installation, lighting of the test fire and training of the operators shall be **performed by an installation company trained by the manufacturer**, which shall also fill in the boiler installation record (page 36).
2. When using pellets for heating only **use high-quality fuel with the diameter of 6 - 8 mm**, made of soft wood without bark and contaminants (white pellets).
3. During **fuel combustion** substances are produced that may damage the boiler body. Therefore, the boiler must be equipped with Laddomat 21 or a thermo-regulation valve to maintain **the minimum temperature of return water to the boiler of 65°C**.
The operation temperature of the water in the boiler must be in the range of **80 - 90°C**.
4. Each circulation pump in the system must be controlled by a separate thermostat so that **the minimum temperature of return water can be guaranteed**.
5. We recommend you to use the boiler in a system with **one equalizing tank** the volume of which should be 500 - 100 l to achieve a higher service life of the pellet burner and lower fuel consumption.



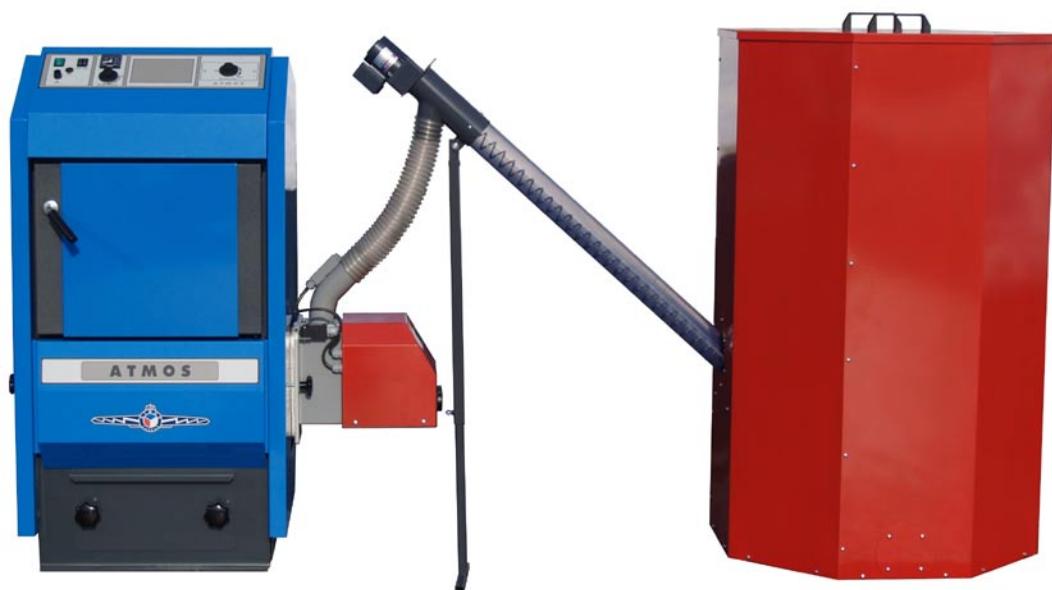
CAUTION - If the boiler is equipped with Laddomat 21 or a hot-water thermo-regulation valve - 60°C and an equalizing tank (see the attached diagrams), the boiler body is subject to an extended guarantee of 36 months instead of 24 months. The guarantee period of the other parts remains unchanged. If these principles are not observed, the service life of the boiler body may be considerably reduced due to low-temperature corrosion.

1. Application

ATMOS D14P, D21P, D25P and D31P hot-water boilers are designed for convenient heating of family houses, holiday homes and other buildings with pellets. For the heating you can use high-quality wooden pellets with the diameter of 6 to 8 mm. **The boiler is not intended for burning of wood, sawdust and minor wood waste.**

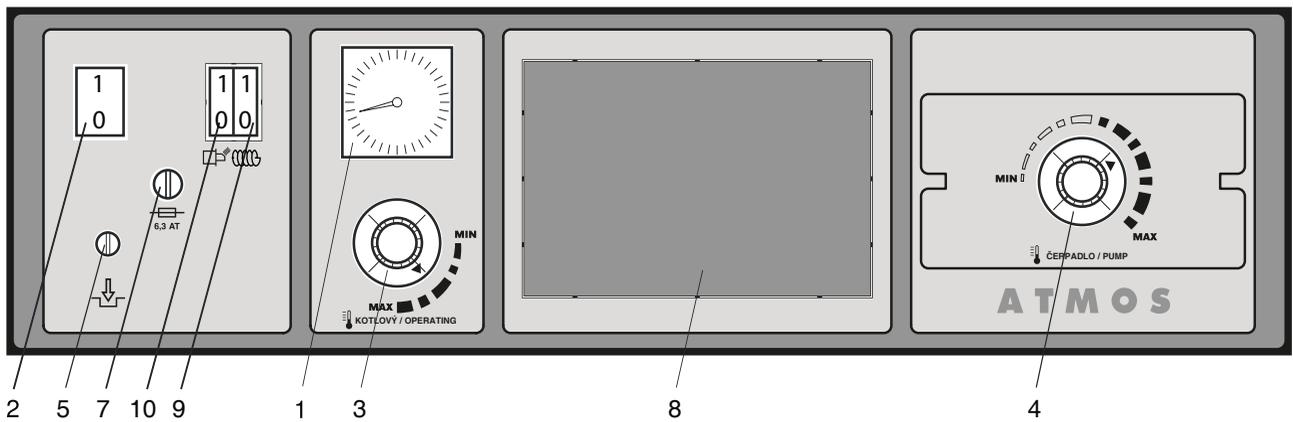
2. Technical description

The boilers are designed in such a way that in their left or right side an ATMOS A25 (D14P, D21P, D25P) and ATMOS A45 (D31P) pellet burner with a conveyor is installed that is attached to a boiler frame with an 18 x 32 mm sealing cord with the use of screws. The boiler body is made as a weldment of steel sheets with the thickness of 3 - 6 mm. It consists of a combustion chamber that is equipped in its top part with a three-tube exchanger with inserted decelerators that increase efficiency. In the bottom part of the boiler there is a large ash pan. The front part of the boiler is equipped in its top part with a cleaning door behind which **a stainless-steel screen ensuring high quality of fuel combustion with high efficiency is inserted.** The boiler body is insulated from the outside with mineral felt located under the sheet-metal covers of the outer boiler jacket. In the top part of the boiler there is a panel with the main switch, the automatic deashing switch (if installed), the switch of the pellet burner, an operation (control) thermostat, a pump thermostat, a safety thermostat, a thermometer and a 6.3A fuse. In the bottom right part of the boiler there is a blind flange for additional installation of automatic ash discharge. The boiler is not equipped with a cooling loop against overheating as thanks to the small quantity of fuel in the burner there is no risk of boiler overheating in case of a power supply failure. Boiler D31P is equipped with exhaust fan.



Boiler with an ATMOS A25 burner, a 500 l fuel container and a 1.5 m conveyor.

Layout of the instrument panel



- | | |
|---------------------------------------|---|
| 1. Thermometer | |
| 2. Main switch | 7. 6.3A fuse - T6, 3A/1500 - type H |
| 3. Control thermostat (of the boiler) | 8. Place for an electronic control unit (92x138 mm) |
| 4. Pump thermostat | 9. Automatic deashing switch |
| 5. Safety thermostat | 10. Burner switch |

Description:

- 1. Thermometer** - monitors the output temperature of the boiler water
- 2. Main switch** - allows you to switch off the whole boiler if necessary (restart the pellet burner)
- 3. Control thermostat** - control the operation of the pellet burner by the output temperature of the boiler water
- 4. Pump thermostat** - it is designed to switch the pump in the boiler circuit (set to a temperature of 70 - 80°C)
- 5. Irreversible safety thermostat** - it serves as protection of the boiler from overheating in case of a failure of the control thermostat or as an indicator of exceeding of the emergency temperature - after exceeding of the emergency temperature it must be reset
- 7. Fuse (6.3 A)** - protection of the electronic unit of the pellet burner
- 8. The place for an electronic control unit** of the heating system can be fitted with any control unit that matches the opening (92x138 cm), e.g. ACD01. The electric harness is already prepared for its power supply.
- 9. Automatic deashing switch** - it is used to switch off deashing for the purpose of emptying of the auxiliary ash pan and restart of automatic deashing. By turning the switch off and on you will activate the deashing module in such a way that it will stop emitting the warning sound and start the automatic deashing operation.
- 10. Burner switch** - it is used to start the burner and to stop it (initiate the burn-down process) before cleaning of the boiler.

3. Technical specifications

| ATMOS boiler type | | D14P | D21P | D25P | D31P |
|---|--------------------|---|----------------|----------------|----------------|
| Boiler output | kW | 4 - 14 | 4 - 19,5 | 7 - 24 | 9 - 30 |
| Heat-delivery area | m ² | 1,7 | 1,7 | 2 | 2,2 |
| Fuel shaft volume | dm ³ | 88 | 88 | 105 | 132 |
| Filling opening dimensions | mm | 270x450 | 270x450 | 270x450 | 270x450 |
| Prescribed chimney draught | Pa | 16 | 18 | 22 | 18 |
| Max. working overpressure of water | kPa | 250 | 250 | 250 | 250 |
| Boiler weight | kg | 231 | 231 | 254 | 263 |
| Exhaust orifice diameter | mm | 152 | 152 | 152 | 152 |
| Boiler height | mm | 1207 | 1207 | 1207 | 1307 |
| Boiler width | mm | 620 | 620 | 620 | 620 |
| Boiler depth | mm | 768 | 768 | 868 | 882 |
| Ingress protection of the electric part | IP | 20 | | | |
| El. power input - on startup - in operation | W | 522/1042 42 | 522/1042 42 | 522/1042 42 | 520/1092 97 |
| Boiler efficiency | % | 90,3 | 90,2 | 90,2 | 90,2 |
| Boiler class | | 3 | | | |
| Flue gas temperature at the nominal output (pellets) | °C | 127 | 147 | 151 | 147 |
| Weight flow of flue gas at the nominal output (pellets) | kg/s | 0,011 | 0,015 | 0,018 | 0,026 |
| Prescribed fuel | | high-quality pellets with the diameter of 6 - 8 mm and the calorific value of 15 - 18 MJ/kg ⁻¹ | | | |
| Average consumption of fuel - pellets - at the nominal output | kg·h ⁻¹ | 3,5 | 4,5 | 5,4 | 6,8 |
| Water volume in the boiler | l | 56 | 56 | 62 | 70 |
| Hydraulic loss of the boiler | mbar | 0,18 | 0,18 | 0,19 | 0,19 |
| Minimum volume of the equalizing tank | l | 500 | 500 | 500 | 500 |
| Mains voltage | V/Hz | 230/50 | | | |
| <p>The prescribed minimum temperature of return water in operation is 65 °C. The prescribed operation temperature of the boiler is 80 - 90 °C.</p> | | | | | |

Captions for the diagrams of the boilers

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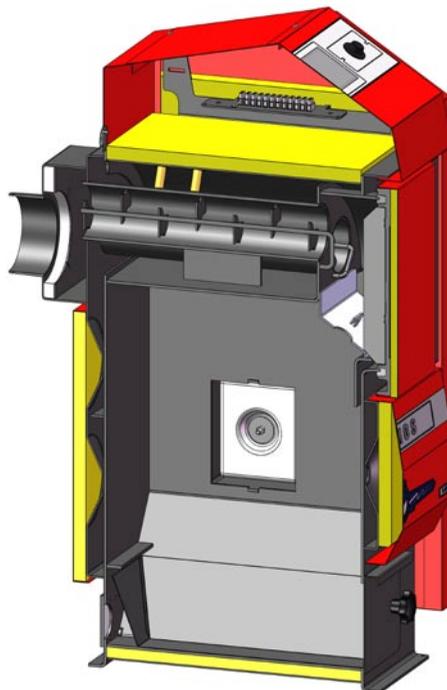
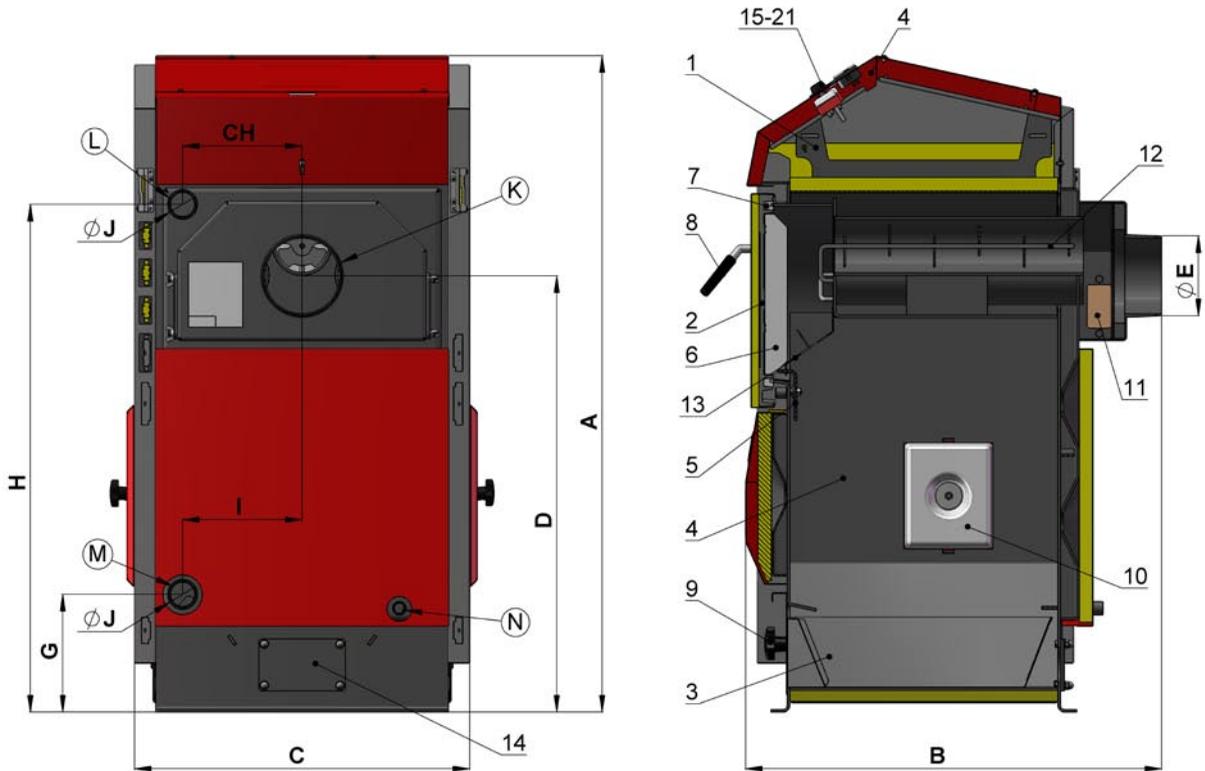
- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Boiler body 2. Cleaning door 3. Ash pan for D14P, D21P (code: P0097) for D25P - (code: P0080) 4. Control panel 5. Frame screen 6. Door filling - Sibrál - large (code: S0263) 7. Door gasket, 18 x 18 mm (code: S0240) 8. Closure (code: S0212) 9. Decorative nut (code: S0413) 10. Lid of the burner opening - plate + insulation (code: S0275) 11. Cleaning lid of the smoke channel 12. Tube plate decelerator 13. Stainless-steel screen of the combustion chamber for D14P (P14) - (code: S0936) for D21P, D25P (P21, P25) - (code: S0937) | <ol style="list-style-type: none"> 14. Blind flange for installation of automatic deashing 15. Thermometer (code: S0041) 16. Main switch (code: S0091) 17. Control (boiler) thermostat (code: S0021) 18. Pump thermostat (code: S0023) 19. Safety thermostat (code: S0068) 20. Fuse T6,3A/1500 - typ H 21. Double switch of automatic deashing and the pellet burner (code: S0098) 22. Exhaust fan (D31P) |
|--|--|
-
- | |
|--|
| <p>K - flue gas orifice</p> <p>L - water outlet from the boiler</p> <p>M - water inlet to the boiler</p> <p>N - socket for the filling tap</p> |
|--|

Technical specifications

| Dimensions | D14P | D21P | D25P | D31P |
|------------|---------|---------|---------|---------|
| A | 1207 | 1207 | 1207 | 1307 |
| B | 770 | 770 | 870 | 882 |
| C | 620 | 620 | 620 | 620 |
| D | 801 | 801 | 801 | 901 |
| E | 150/152 | 150/152 | 150/152 | 150/152 |
| G | 215 | 215 | 215 | 215 |
| H | 934 | 934 | 934 | 1034 |
| CH | 221 | 221 | 221 | 221 |
| I | 221 | 221 | 221 | 221 |
| J | 6/4" | 6/4" | 6/4" | 6/4" |

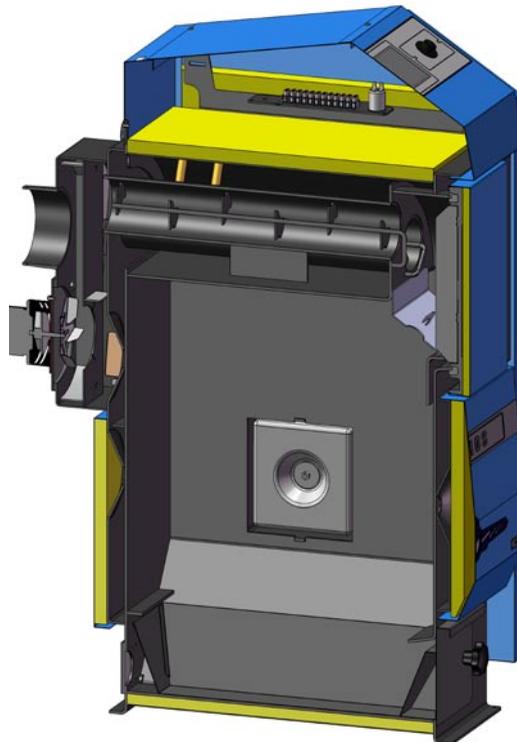
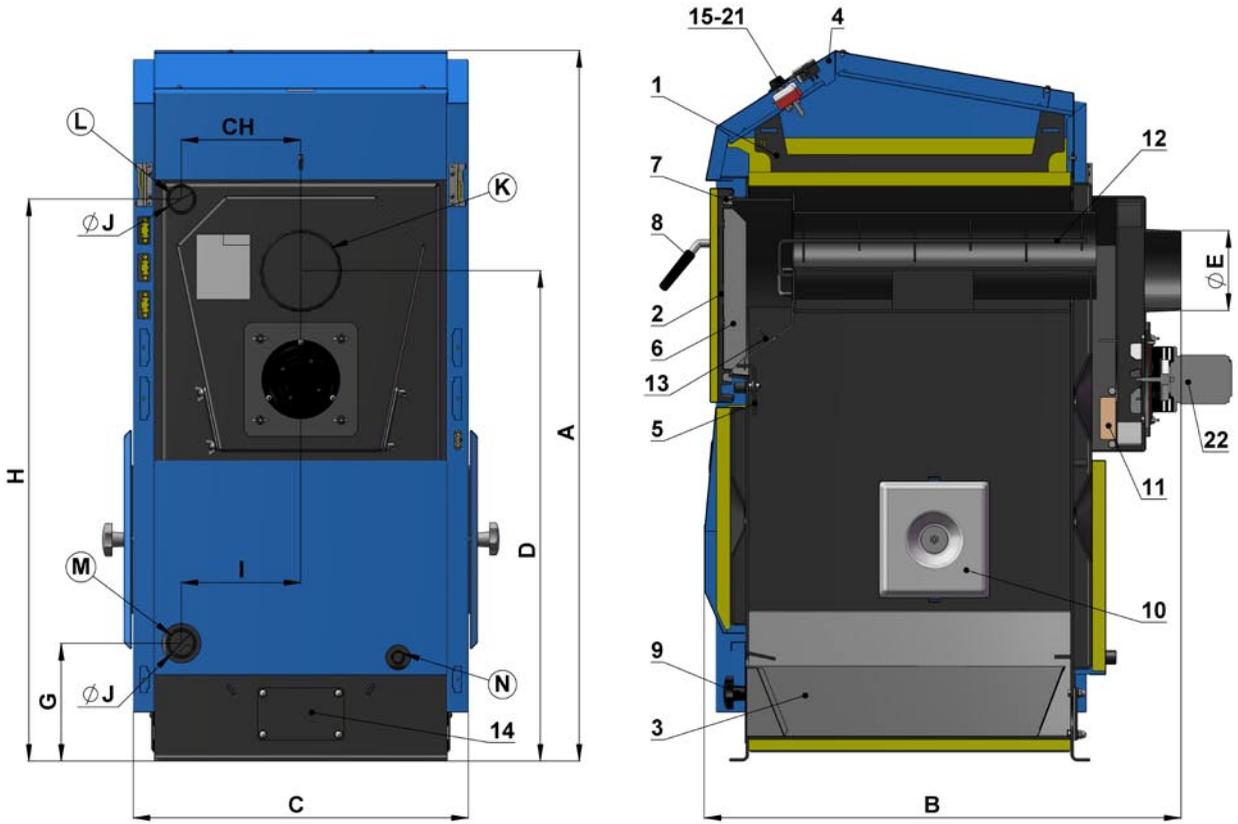
Diagrams of the boilers

Sections of the D14P, D21P and D25P boiler



Sections of the D31P boiler

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4. Accessories delivered with the boiler

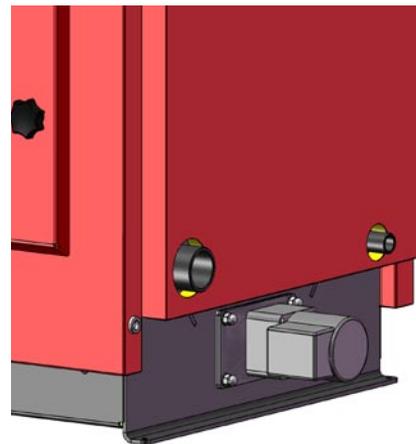
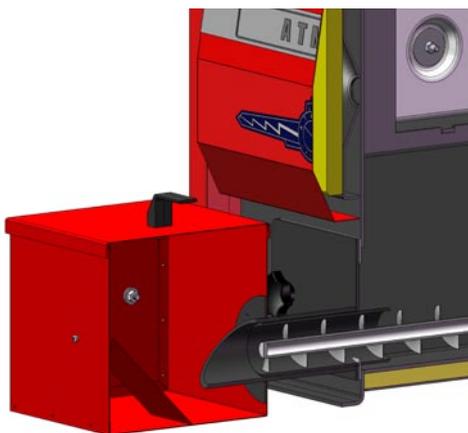
| | |
|--|---------|
| Steel brushes with accessories | 1 piece |
| Poker for cleaning of the boiler body | 1 piece |
| Poker for easy cleaning of the combustion chamber of the pellet burner | 1 piece |
| Filling tap | 1 piece |
| Operation and maintenance manual | 1 piece |

Automatic removal of ash from the boiler body

As an accessory for every pellet boiler produced after April 1, 2010 (from the serial no. 209500 on) you can equip the boiler with automatic ash removal from the boiler body to an additional ash pan that only needs emptying once every 3 to 45 days depending on the quality of pellets and heating intensity. This automatic device uses a worm conveyor with a gearbox to remove ash from the chamber under the burner in regular intervals two times a day for one minute or on the basis of another setting in the deashing module, which is installed under the boiler hood. You can repeat the cycle any time by turning off and on the switch /20(15)/ on the boiler. When the additional ash pan is completely full, the ash removal device (worm) will be automatically switched off and the deashing module will start to emit a sound signal. You can restart the device after cleaning (emptying) of the additional ash pan by merely turning off and on the switch /20(15)/ on the boiler for 5 seconds.



The automatic deashing system does not require any special operation; you only need to empty the additional ash pan in regular intervals that is attached with two securing clips with a safety pin to the boiler, which must be properly snapped during operation of the boiler to prevent the deashing system from releasing and the ash from getting to the boiler room. You must also properly tighten and snap the body of the automatic ash removal system and the lid of the entire additional ash pan top prevent ash from being pushed to the boiler plant. When installing this system follow the installation instructions supplied with it.



CAUTION - The deashing system for the D14P, D21P, D25P and D31P boilers is not the same as for the D15P and D20P boilers and is sold separately under a different code. The recommended additional ash pans with the volume of 28 and 67 l are the same.

5. Fuel

The prescribed fuel are high-quality pellets of Ø 6 - 8 mm and the length of 10 - 25 mm and the calorific value of 16 - 19 MJ/kg⁻¹. Such pellets are considered as high-quality pellets that do not disintegrate into sawdust and are made of soft wood without bark and other pollutants (white pellets). We also recommend you to burn pellets without biological additives that reduce burning-down of the fuel and increase ash production.

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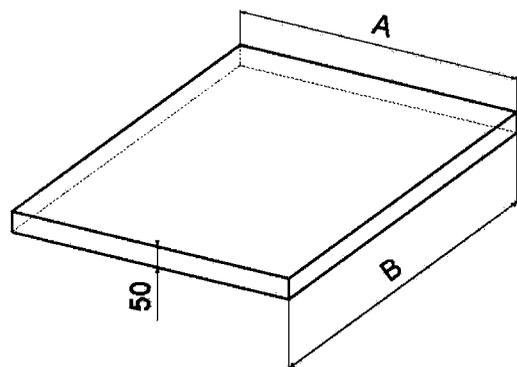
High-quality wooden pellets - white without black dots (bark)



Poor-quality wooden pellets - dark with bark (with black dots)

6. Boiler foundations

| Boiler type (mm) | A | B |
|------------------|-----|-----|
| D14P, D21P | 700 | 700 |
| D25P, D31P | 700 | 800 |

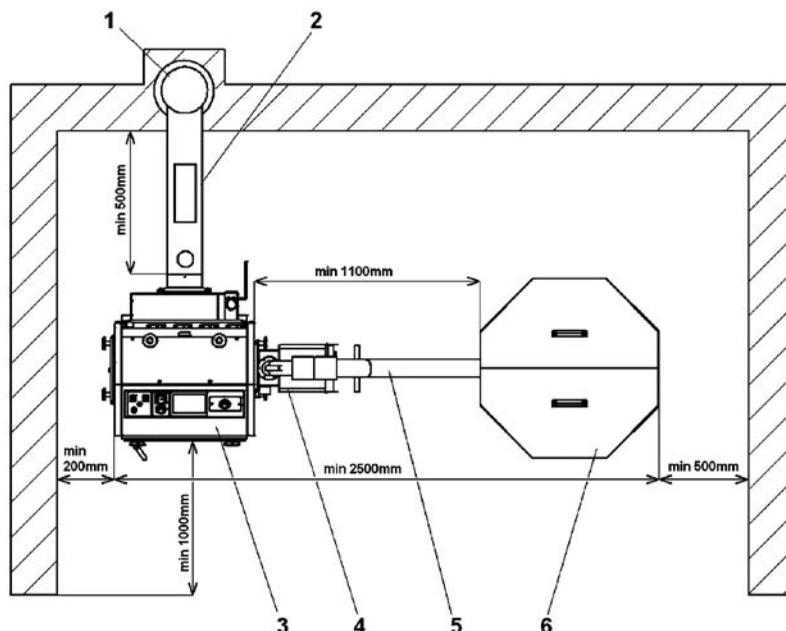


We recommend you to make concrete (metallic) foundations for the boiler.

7. Type of environment and location of the boiler with the burner in the boiler room

Boilers with a pellet burner may be used in the AA5/AB5 basic environment in accordance with the ČSN3320001 standard. Boilers must be installed in a boiler room with guaranteed sufficient supply of combustion air. It is unacceptable to locate boilers on residential premises (incl. corridors). The cross-section of the opening for supply of combustion air to the boiler room must be at least 350 cm² for boilers with an output of 15 - 45 kW.

1. Chimney
2. Flue gas duct
3. Boiler
4. A25 burner
5. External conveyor
6. Bin (500 l)



8. Chimney

A boiler with a burner must always be connected to the chimney vent with consent of the responsible chimney maintenance company. The chimney vent must always produce sufficient draught and exhaust flue gas to the free atmosphere in virtually all operation conditions. For proper function of boiler the separate chimney vent must be properly dimensioned **as the combustion, output and service life of the boiler depends on its draught.** The draught of a boiler directly depends on its cross-section, height and roughness of the inner wall. No other device may be connected to the chimney to which a boiler is connected. **The diameter of the chimney must not be smaller than the outlet on the boiler (min. 150 mm).** The chimney draught must achieve prescribed values (see the technical specifications in the boiler manual). However, the boiler must not be excessively high so as not to reduce the efficiency of the boiler and not to disturb its combustion (tear the flame). In case of too strong draught install a throttling flap or draught reducer in the flue gas duct between the boiler and the chimney.

Guideline values of dimensions of the chimney cross-section:

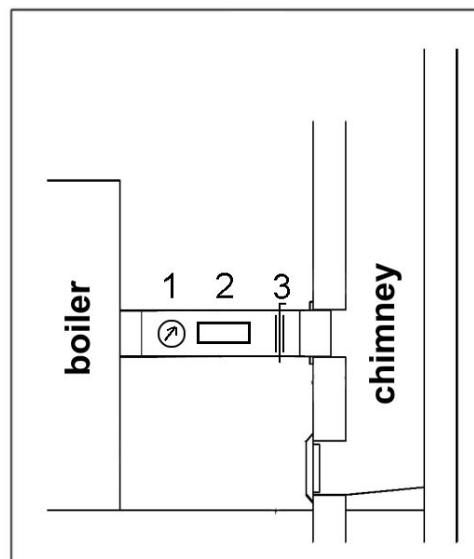
| | |
|------------|-------------|
| 20 x 20 cm | height 7 m |
| Ø 20 cm | height 8 m |
| 15x15cm | height 11 m |
| Ø 16 cm | height 12 m |

The exact determination of chimney dimensions is defined by the ČSN 73 4201 standard.

The prescribed chimney draught is specified in the “Technical data” chapter of the manual of the particular boiler.

9. Flue gas duct of the boiler

The flue gas duct from the boiler must lead to the chimney vent. If the boiler cannot be connected directly to the chimney vent, the corresponding flue gas duct adapter must be as short as possible with regard to the particular conditions, but not longer than 1 m, without additional heating surface and it must rise towards the chimney. Flue gas ducts must be mechanically strong and leak-proof for flue gas and cleanable inside. Flue gas ducts must not lead through other owners' residential or commercial units. The inner cross-section of the flue gas duct must not be larger than the inner cross-section of the smoke uptake and must not get narrower towards the chimney. The use of smoke elbows is not suitable. Designs of passages of flue gas ducts through structures of flammable materials are defined in Annexes 2 and 3 of ČSN 061008 and are mainly suitable for mobile units, wooden huts, etc.



- 1 - Flue gas thermometer
- 2 - Cleaning opening
- 3 - Throttling flap (draught reducer)



INFO - In case of too strong draught of the chimney install a throttling flap /3/ or a draught reducer in the flue gas duct, see the ATMOS price list.

10. Fire protection within the installation and use of heat appliances

Extract from ČSN 061008 - Fire safety of local appliances and sources of heat

Safe distances

On installation of an appliance the safe distance from building materials must be maintained, at least 200 mm. This distance is valid for boilers and flue gas ducts located near flammable materials of the B, C1 and C2 flammability class (the flammability class is specified in tab. no. 1). The safety distance (200 mm) must be doubled if boilers and flue gas ducts are located near flammable materials of the C3 class (see tab. no.1). The safety distance must be doubled if the flammability class of flammable material is not evidenced. The safety distance may be reduced to a half (100 mm) if you use a non-flammable heat insulating panel (asbestos panel) with the thickness of at least 5 mm, located 25 mm from the protected flammable material (flammable insulation). A shielding panel or protective screen (on the protected object) must exceed the outline of the boilers (incl. flue gas ducts) at each side by at least 150 mm and the top surface of the boiler by at least 300 mm. A shielding panel or protective screen must also be used to protect fixtures of flammable materials if the safe distance cannot be maintained (e.g. in mobile units, huts, etc. - more details in ČSN 061008). The safety distance must also be maintained in case of installation of fixtures near boilers.

If boilers are located on a floor of flammable materials, they must be installed on a non-flammable, heat-insulating pad, exceeding the ground plan at the side of the feeding and ashpan opening by at least 300 mm before the opening - at the other sides by at least 100 mm. As non-flammable, heat insulation pads you can use all materials of the A flammability class.

Tab. 1

| Flammability classes of building materials and products | |
|---|--|
| A - no flammability | granite, sandstone, concrete, brick, ceramic tiles, mortar, fire-resistant plastering, etc. |
| B - difficult flammability | Akumin, Izomin, cemented fibreboard, Lignos, panels of basalt felt, fibreglass panels, Novodur |
| C1- poor flammability | hardwood (oak, beech), hardboard panels, plywood, Sirkolit, Werzalit, hardened paper (Formica, Ecrona) |
| C2- medium flammability | softwood (pine, larch, spruce), chipboard and cork panels, rubber flooring (Industrial, Super) |
| C3- high flammability | Fibreboard panels (Hobra, Sololak, Sololit), cellulose materials, polyurethane, polystyrene, polyethylene, lightened PVC |



WARNING - In circumstances leading to the danger of transient ingress of flammable gases or vapours and during work that might result in a temporary risk of a fire or explosion (e.g. gluing of linoleum, PVC, etc.) the boilers must be put out of operation in time before the occurrence of the danger. **No objects of flammable substances may be put on the burner and boiler in a smaller distance than the safe distance from them (more - see ČSN EN 13501-1).**

11. Connection of boilers to the electric mains

The boilers are connected to 230 V, 50 Hz mains with a mains cable without a plug. The mains supply cable in case of repair it must be replaced with the same type by the servicing organization. Connection, maintenance and reparation can be made only by a qualified person in accordance with valid regulations of the particular country.



CAUTION - The mains cable must not be equipped with a plug (designed to be connected to a socket). It must be connected in a fixed way to a switchboard or junction box to avoid confusion of the conductors.

Mains cable must be regularly checked and maintained in the prescribed condition. It is forbidden to interfere in to the safety circuits and elements for safe and reliable operation of the boiler. If any damage of electrical equipment must be the boiler out of operation, disconnect from the mains and ensure a qualified repair according to applicable standards and regulations.

For boilers: D14P, D21P and D25P



Connectors in the right side hood

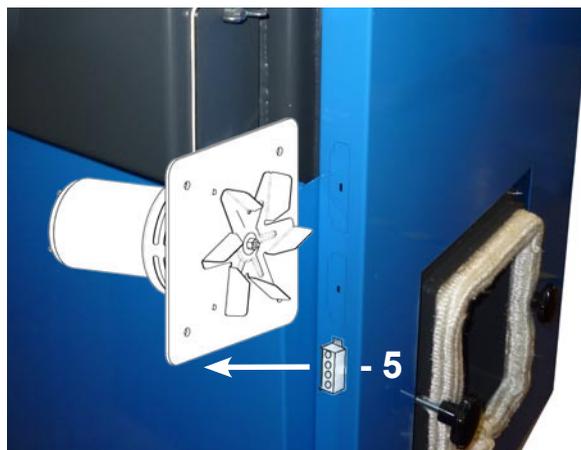


Connector in the left side hood

For boiler: D31P



Connectors in the right side hood



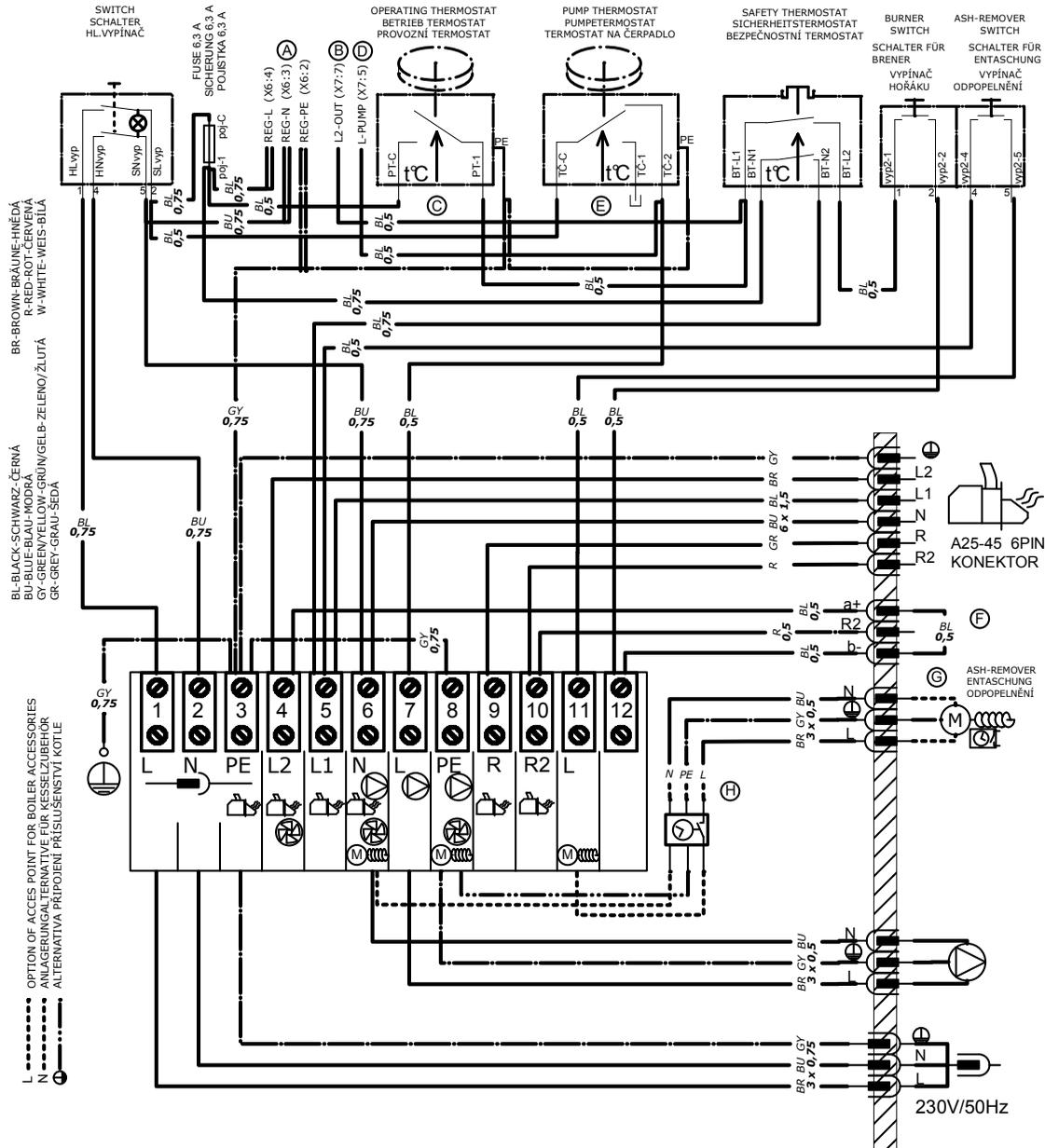
Connector in the left side hood

Connectors in the right side hood:

- 1 - connector for power cord - black (L - brown, N - blue, PE - green/yellow)
- 2 - connector for pump in boiler circuit - white (L - brown, N - blue, PE - green/yellow)
- 3 - connector for external regulator of the boiler (with jumper)
- 4 - connector for burner ATMOS connection (L1, L2, R, N, PE) / model 2012 - (L1, L2, R, R2,N, PE)
- 5 - connector for exhaust fan (for D31P)

At the bottom part of the side hood is red connector blinded with black cap. Standard designed to engage the automatic ash removal (or other applications) - not connected to the terminal.

12. Electric wiring diagram for the D14P, D21P and D25P boilers without an extraction fan with a 6-pin connector

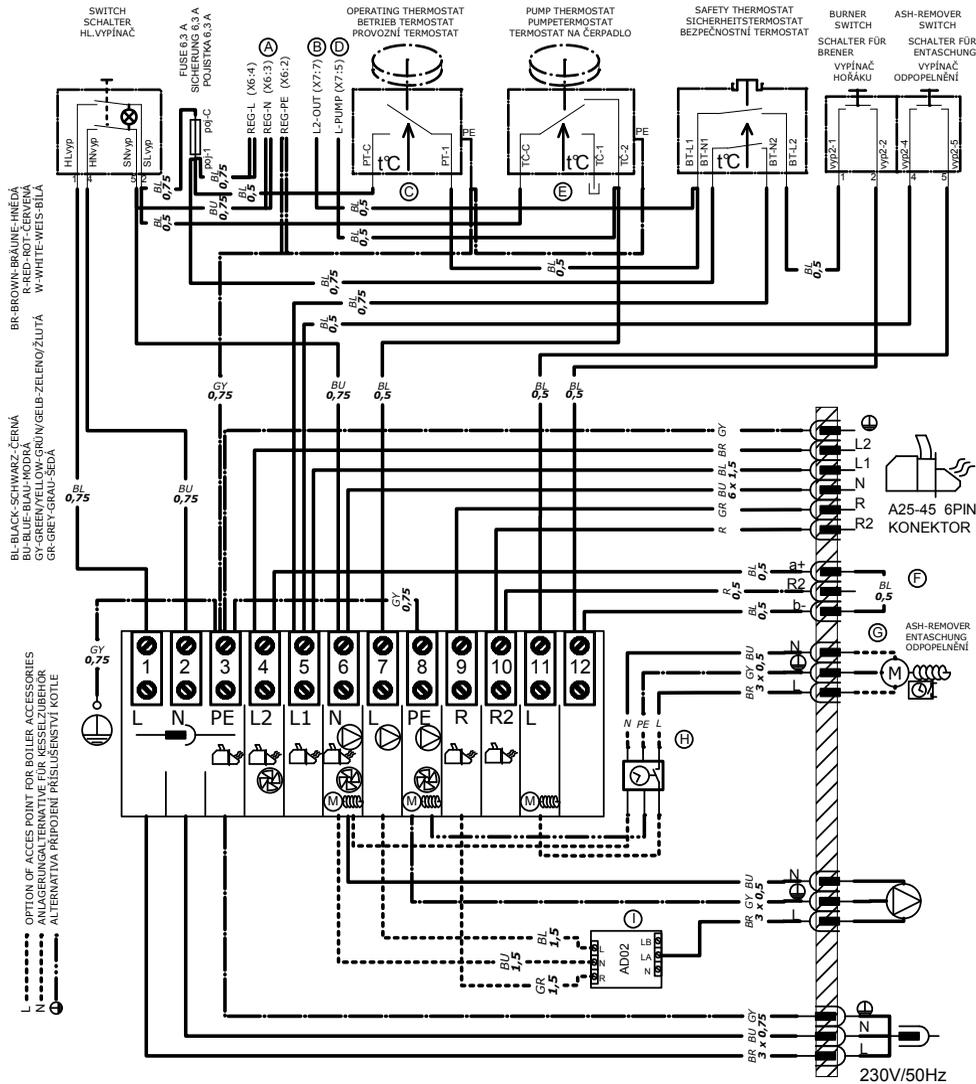


**WHEN USE ELECTRONIC REGULATION ADD01 AND PELLETBURNER A25-45 MUST BE THESE CHANGES OF WIRING:
 BEI DER STEUERUNG DES KESSELBETRIEBES DER ELEKTRONISCHE REGELUNG ADD01 UND PELLETBRENNER A25-45 MÜSSEN DIESE ÄNDERUNGEN MACHEN SEIN:
 PŘI ZAPOJENÍ ELEKTRONICKÉ REGULACE ADD01 A PELETŮVÉHO HOŘÁKU A25-45 PROVĚDTE TYTO ZMĚNY:**

- (A)** VARIANTS OF RESERVOIR POINTS "REG L,N,PE" (FERRULE/FASTON 6,3) FOR ELECTRONIC REGULATION
 SPEISEKLEMMEVARIANTEN "REG L,N,PE" (ADERENDHÜLSE/FASTON 6,3) FÜR ELEKTRONISCHE REGELUNG
 VARIANTY NÁPAJEKÝCH SVOREK "REG L,N,PE" (DUTINKA/FASTON 6,3) PRO ELEKTRONICKOU REGULACI
- (B)** RESERVOIR POINT "L2 OUT" OF BURNER AND FAN TO THE ELECTRONIC REGULATION (ACD01)
 SPEISEKLEMME "L2 OUT" DER BRENNER UND VENTILATOR FÜR DIE ELEKTRONISCHE REGELUNG (ACD01)
 PŘIPOJOVACÍ SVORKA "L2 OUT" HOŘÁKU A VENTILATORU DO ELEKTRONICKÉ REGULACE (ACD01)
- (C)** WHEN ELECTRONIC REGULATION CONTROL BURNER - CONNECTOR "PT-C" MUST BE UNCONNECT
 DEN KONNEKTOR "PT-C" ABKLEMMEN BEI DER BRENNERBEDIENUNG DER ELEKTRONISCHE REGELUNG
 KONNEKTOR "PT-C" ODPPOJIT PŘI OVLÁDÁNÍ HOŘÁKU ELEKTRONICKOU REGULACÍ
- (D)** RESERVOIR POINT "L PUMP" OF BOILER PUMP TO THE ELECTRONIC REGULATION (ACD01)
 SPEISEKLEMME "L PUMP" DER KESSELPUMPE FÜR DIE ELEKTRONISCHE REGELUNG (ACD01)
 PŘIPOJOVACÍ SVORKA "L PUMP" KOTLOVÉHO ČERPADLA DO ELEKTRONICKÉ REGULACE (ACD01)
- (E)** WHEN ELECTRONIC REGULATION CONTROL BOILER PUMP - CONNECTOR "TC-2" MUST BE UNCONNECT
 DEN KONNEKTOR "TC-2" ABKLEMMEN BEI DER KESSELPUMPESEBEDIENUNG DER ELEKTRONISCHE REGELUNG
 KONNEKTOR "TC-2" ODPPOJIT PŘI OVLÁDÁNÍ KOTLOVÉHO ČERPADLA ELEKTRONICKOU REGULACÍ
- (F)** ACCES POINT FOR EXTERNAL BOILERREGULATION - PLUG IN KONNEKTOR
 ANLAGERUNG FÜR EXTERN KESSELREGELUNG - KLEMME IN DEN KONNEKTOR
 PŘIPOJOVACÍ SVORKY PRO EXTERNÍ REGULACI KOTLE - KLEMA V KONNEKTORU
- (G)** CONNECTOR (BLACK/RED) - FOR EXAMPLE RESERVOIS POINT FOR MODUL AD01 - MOTOR OF ASH-REMOVER
 KONNEKTOR (SCHWARZ/ROT) - ZUM BEISPIEL FÜR DEN MODUL AD01 - ENTASCHUNGSMOTOR
 KONNEKTOR (ČERNO ČERVENÝ) - NAPŘÍKLAD PRO MODUL AD01 - MOTOR ODPOPELŇENÍ
- (H)** ACCES POINTS - FOR EXAMPLE FOR MODUL AD01 - TIMEUNIT OF ASH-REMOVER
 SPEISEKLEMME - ZUM BEISPEILE FÜR MODUL AD01 - ZEITBEDIENUNG FÜR DEN ENTASCHUNG
 PŘIPOJENÍ - NAPŘÍKLAD PRO MODUL AD01 - ČASOVÝ MODUL ODPOPELŇENÍ

D14-25P_11-05-01_A25-45_6P

13. Electric wiring diagram for the D14P, D21P and D25P boilers without an extraction fan, with a 6-pin connector and module AD02 to control pump in boiler circuit. Option only for model 2012, with the burner control unit AC07X (R, R2, sensors TV, TS, TK, TSV)

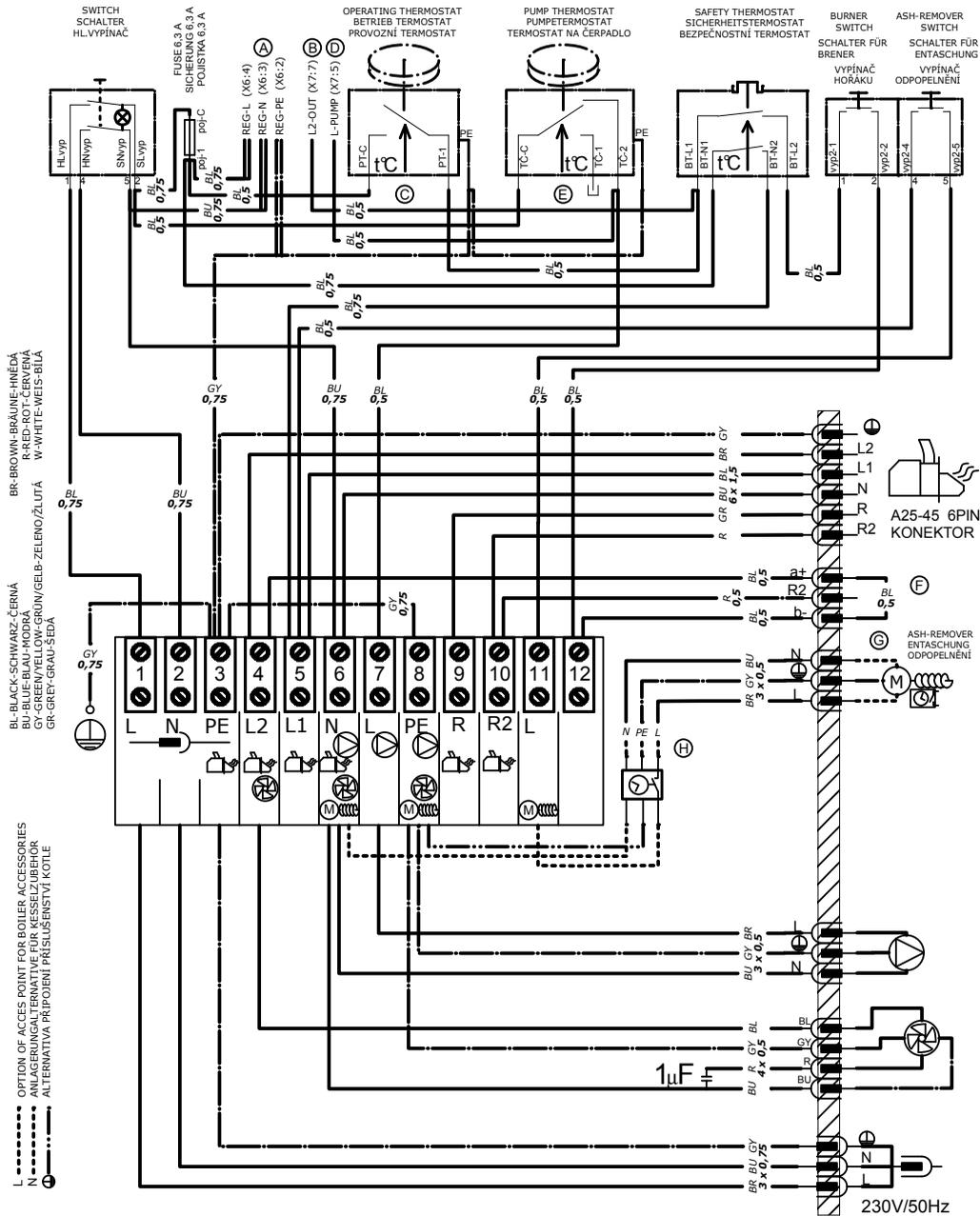


**WHEN USE ELECTRONIC REGULATION ACD01 AND PELLETBURNER A25-45 MUST BE THESE CHANGES OF WIRING:
BEI DER STEUERUNG DES KESSELBETRIEBES DER ELEKTRONISCHE REGELUNG ACD01 UND PELLETBRENNER A25-45 MÜSSEN DIESE ÄNDERUNGEN MACHEN SEIN:
PŘI ZAPOJENÍ ELEKTRONICKÉ REGULACE ACD01 A PELETOVÉHO HOŘÁKU A25-45 PŘEVZĚTE TYTO ZMĚNY:**

- (A)** VARIANTS OF RESERVOIR POINTS "REG L,N,PE" (FERRULE/FASTON 6.3) FOR ELECTRONIC REGULATION SPEISEKLEMMENVARIANTEN "REG L,N,PE" (ADERENHILFSE/FASTON 6.3) FÜR ELEKTRONISCHE REGELUNG VARIANTY NAPÁJECÍCH SVOREK "REG L,N,PE" (DUTINKA/FASTON 6.3) PRO ELEKTRONICKOU REGULACI
- (B)** RESERVOIR POINT "L2 OUT" OF BURNER AND FAN TO THE ELECTRONIC REGULATION (ACD01) SPEISEKLEMME "L2 OUT" DER BRENNER UND VENTILATOR FÜR DIE ELEKTRONISCHE REGELUNG (ACD01) PŘIPOJOVACÍ SVORKA "L2 OUT" HOŘÁKU A VENTILÁTORU DO ELEKTRONICKÉ REGULACE (ACD01)
- (C)** WHEN ELECTRONIC REGULATION CONTROL BURNER - CONNECTOR "PT-C" MUST BE UNCONNECT DEN KONNEKTOR "PT-C" ABKLEMMEN BEI DER BRENNERBEDIENUNG DER ELEKTRONISCHE REGELUNG KONNEKTOR "PT-C" ODPOJIT PŘI OVLÁDÁNÍ HOŘÁKU ELEKTRONICKOU REGULACI
- (D)** RESERVOIR POINT "L PUMP" OF BOILER PUMP TO THE ELECTRONIC REGULATION (ACD01) SPEISEKLEMME "L PUMP" DER KESSELPUMPE FÜR DIE ELEKTRONISCHE REGELUNG (ACD01) PŘIPOJOVACÍ SVORKA "L PUMP" KOTLOVÉHO ČERPADLA DO ELEKTRONICKÉ REGULACE (ACD01)
- (E)** WHEN ELECTRONIC REGULATION CONTROL BOILER PUMP - CONNECTOR "TC-2" MUST BE UNCONNECT DEN KONNEKTOR "TC-2" ABKLEMMEN BEI DER KESSELPUMPEBEDIENUNG DER ELEKTRONISCHE REGELUNG KONNEKTOR "TC-2" ODPOJIT PŘI OVLÁDÁNÍ KOTLOVÉHO ČERPADLA ELEKTRONICKOU REGULACI
- (F)** ACCESS POINT FOR EXTERNAL BOILERREGULATION - PLUG IN KONNEKTOR ANLÄGERUNG FÜR EXTERN KESSELREGELUNG - KLEMME IN DEN KONNEKTOR PŘIPOJOVACÍ SVORKY PRO EXTERNI REGULACI KOTLE - KLEMA V KONNEKTORU
- (G)** CONNECTOR (BLACK/RED) - FOR EXAMPLE RESERVOIS POINT FOR MODUL AD01 - MOTOR OF ASH-REMOVER KONNEKTOR (SCHWARZ/ROT) - ZUM BEISPIEL FÜR DEN MODUL AD01 - ENTASCHUNGSMOTOR KONNEKTOR (ČERNO ČERVENÝ) - NAPŘÍKLAD PRO MODUL AD01 - MOTOR ODPOPELNĚNÍ
- (H)** ACCESS POINTS - FOR EXAMPLE FOR MODUL AD01 - TIMEUNIT OF ASH-REMOVER SPEISEKLEMME - ZUM BEISPIELE FÜR MODUL AD01 - ZEITBEDIENUNG FÜR DEN ENTASCHUNG PŘIPOJENÍ - NAPŘÍKLAD PRO MODUL AD01 - ČASOVÝ MODUL ODPOPELNĚNÍ
- (I)** NO WITH ACD01 - MODUL AD02 FOR CONTROL BOILERPUMP FROM BURNER A25/45 NEIN MIT ACD01 - MODUL AD02 FÜR KESSELPUMPEBEDIENUNG BEI DEM BRENNER A25/45 NEPLATI S ACD01 - MODUL AD02 K OVLÁDÁNÍ ČERPADLA KOTLE HOŘÁKEM A25/45

D14-25P_11-05-01_A25-45_6P_AD02

14. Electric wiring diagram for the D31P boiler with an extraction fan - model 2012 with a 6-pin connector



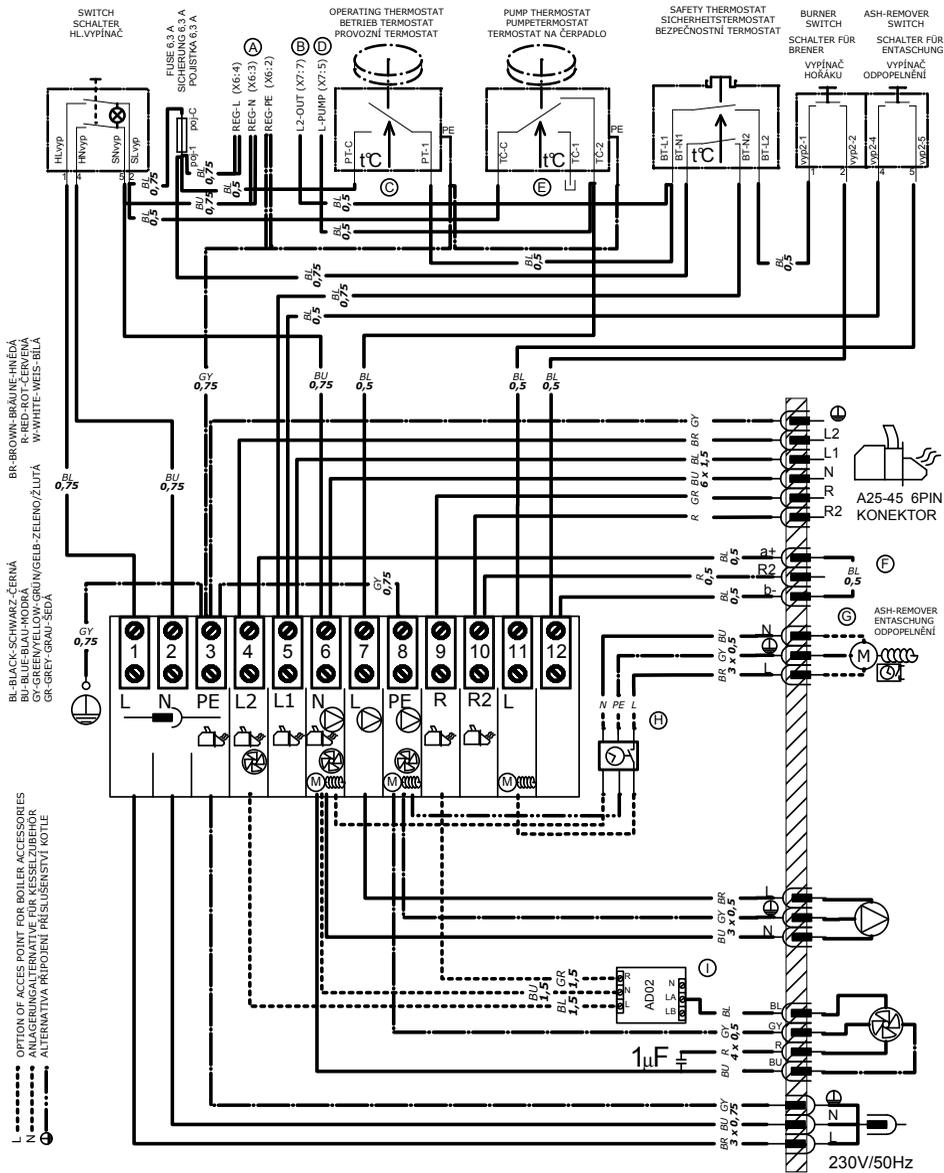
**WHEN USE ELECTRONIC REGULATION ACCD01 AND PELLETBURNER A25-45 MUST BE THESE CHANGES OF WIRING:
 BEI DER STEUERUNG DES KESSELBETRIEBES DER ELEKTRONISCHE REGELUNG ACCD01 UND PELLETBRENNER A25-45 MÜSSEN DIESE ÄNDERUNGEN MACHEN SEIN:
 PŘI ZAPOJENÍ ELEKTRONICKÉ REGULACE ACCD01 A PELETOVÉHO HOŘÁKU A25-45 PROVÉDTE TYTO ZMĚNY:**

- (A) VARIANTS OF RESERVOIR POINTS "REG L,N,PE" (FERRULE/FASTON 6,3) FOR ELECTRONIC REGULATION
 SPEISEKLEMMEN-VARIANTEN "REG L,N,PE" (ADREHNÜLS/FASTON 6,3) FÜR ELEKTRONISCHE REGELUNG
 VARIANTY NÁPAJECÍCH SVOREK "REG L,N,PE" (DUTINKA/FASTON 6,3) PRO ELEKTRONICKOU REGULACI
- (B) RESERVOIR POINT "L2 OUT" OF BURNER AND FAN TO THE ELECTRONIC REGULATION (ACD01)
 SPEISEKLEMME "L2 OUT" DER BRENNER UND VENTILATOR FÜR DIE ELEKTRONISCHE REGELUNG (ACD01)
 PŘÍPOJOVACÍ SVORKA "L2 OUT" HOŘÁKU A VENTILÁTORU DO ELEKTRONICKÉ REGULACE (ACD01)
- (C) WHEN ELECTRONIC REGULATION CONTROL BURNER - CONNECTORS "PT-C" AND "PT-1" MUST BE UNCONNECT
 DEN KONNEKTOREN "PT-C" UND "PT-1" ABKLEMMEN BEI DER BRENNERBEDIENUNG DER ELEKTRONISCHE REGELUNG
 KONNEKTORY "PT-C" A "PT-1" ODPOJIT PŘI OVLÁDÁNÍ HOŘÁKU ELEKTRONICKOU REGULACI
- (D) RESERVOIR POINT "L PUMP" OF BOILER PUMP TO THE ELECTRONIC REGULATION (ACD01)
 SPEISEKLEMME "L PUMP" DER KESSELPUMPE FÜR DIE ELEKTRONISCHE REGELUNG (ACD01)
 PŘÍPOJOVACÍ SVORKA "L PUMP" KOTLOVÉHO ČERPADLA DO ELEKTRONICKÉ REGULACE (ACD01)
- (E) WHEN ELECTRONIC REGULATION CONTROL BOILER PUMP - CONNECTORS "TC-C" AND "TC-2" MUST BE UNCONNECT
 DEN KONNEKTOREN "TC-C" UND "TC-2" ABKLEMMEN BEI DER KESSELPUMPEBEDIENUNG DER ELEKTRONISCHE REGELUNG
 KONNEKTORY "TC-C" A "TC-2" ODPOJIT PŘI OVLÁDÁNÍ KOTLOVÉHO ČERPADLA ELEKTRONICKOU REGULACI
- (F) ACCES POINT FOR EXTERNAL BOILERREGULATION - PLUG IN KONNEKTOR
 ANLAGERUNG FÜR EXTERN KESSELREGELUNG - KLEMME IN DEN KONNEKTOR
 PŘÍPOJOVACÍ SVORKY PRO EXTERNÍ REGULACI KOTLE - KLEMA V KONNEKTORU
- (G) CONNECTOR (BLACK/RED) - FOR EXAMPLE RESERVOIS POINT FOR MODUL AD01 - MOTOR OF ASH-REMOVER
 KONNEKTOR (SCHWARZ/RÖT) - ZUM BEISPIEL FÜR DEN MODUL AD01 - ENTASCHUNGSMOTOR
 KONNEKTOR (SCHWARZ/ROTE) - NÄHRKLAD PRO MODUL AD01 - MOTOR ODPPELNĚNÍ
- (H) ACCES POINTS - FOR EXAMPLE FOR MODUL AD01 - TIMEUNIT OF ASH-REMOVER
 SPEISEKLEMME - ZUM BEISPIELE FÜR MODUL AD01 - ZEITBEDIENUNG FÜR DEN ENTASCHUNG
 PŘÍPOJENÍ - NAPŘÍKLAD PRO MODUL AD01 - ČASOVÝ MODUL ODPPELNĚNÍ

D20-45P_11-05-01_A25-45_6P

15. Electric wiring diagram for the D31P boiler with an extraction fan - model 2012 with a 6-pin connector and module AD02 to control exhaust fan of the boiler from the burner control unit AC07X (R)

GB



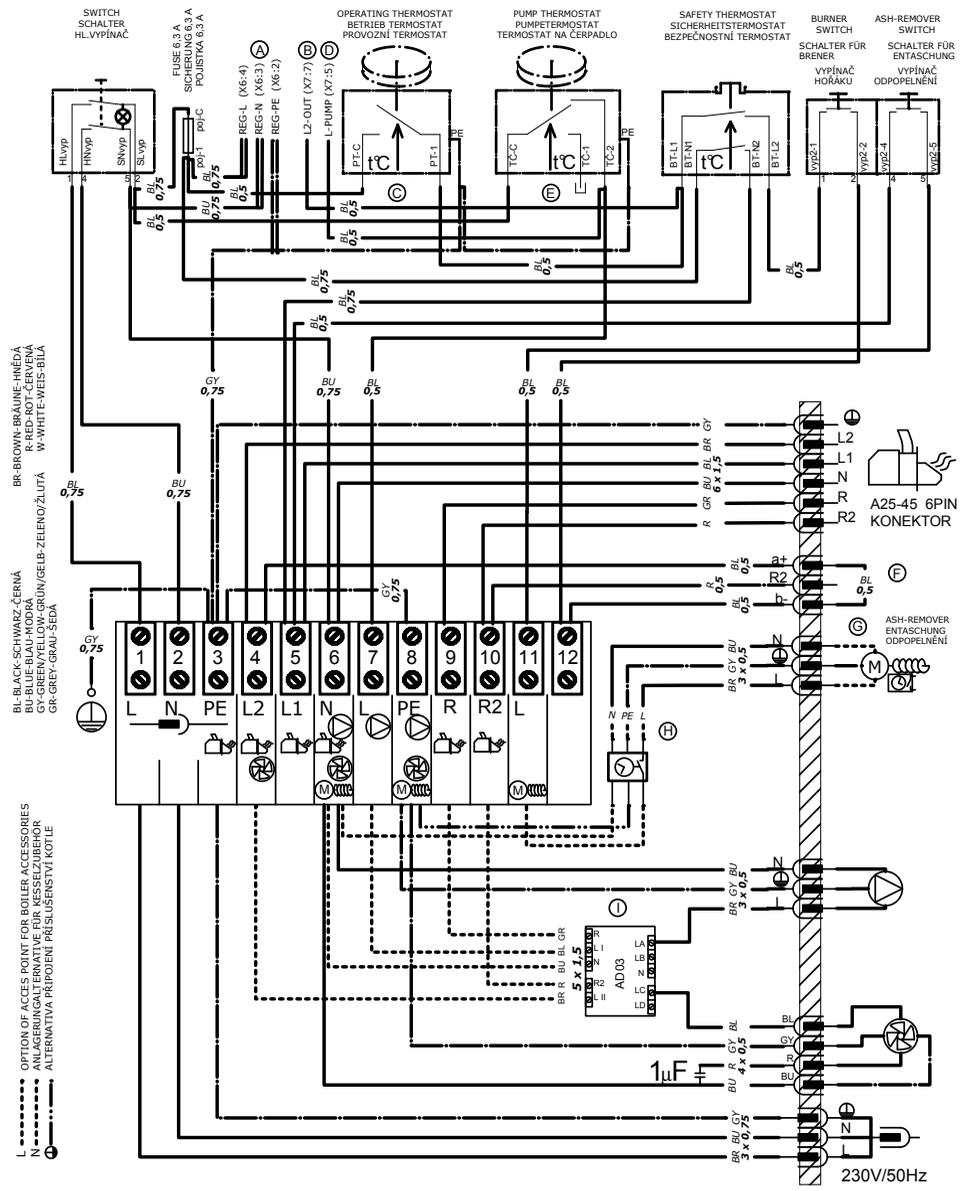
**WHEN USE ELECTRONIC REGULATION AC001 AND PELLETBURNER A25-45 MUST BE THESE CHANGES OF WIRING:
BEI DER STEUERUNG DES KESSELBETRIEBES DER ELEKTRONISCHE REGELUNG AC001 UND PELLETBRENNER A25-45 MÜSSEN DIESE ÄNDERUNGEN MACHEN SEIN:
PŘI ZAPOJENÍ ELEKTRONICKÉ REGULACE AC001 A PELETOVÉHO HOŘÁKU A25-45 PŘI OVLÁDÁNÍ HOŘÁKU ELEKTRONICKOU REGULACÍ:**

- (A) VARIANTS OF RESERVOIR POINTS "REG L,N,PE" (FERRULE/FASTON 6,3) FOR ELECTRONIC REGULATION SPEISEKLEMMEVARIANTEN "REG L,N,PE" (ADERENDHÜLSE/FASTON 6,3) FÜR ELEKTRONISCHE REGELUNG VARIANTY NÁPAJEČÍCH SVOREK "REG L,N,PE" (DŮTINKA/FASTON 6,3) PRO ELEKTRONICKOU REGULACI
- (B) RESERVOIR POINT "L2 OUT" OF BURNER AND FAN TO THE ELECTRONIC REGULATION (AC001) SPEISEKLEMME "L2 OUT" DER BRENNER UND VENTILATOR FÜR DIE ELEKTRONISCHE REGELUNG (AC001) PŘIPOJOVACÍ SVORKA "L2 OUT" HOŘÁKU A VENTILÁTORU DO ELEKTRONICKÉ REGULACE (AC001)
- (C) WHEN ELECTRONIC REGULATION CONTROL BURNER - CONNECTORS "PT-C" AND "PT-1" MUST BE UNCONNECT DEN KONNEKTOREN "PT-C" UND "PT-1" ABKLEMMEN BEI DER BRENNERBEDIENUNG DER ELEKTRONISCHE REGELUNG KONNEKTORY "PT-C" A "PT-1" ODPPOJIT PŘI OVLÁDÁNÍ HOŘÁKU ELEKTRONICKOU REGULACÍ
- (D) RESERVOIR POINT "L PUMP" OF BOILER PUMP TO THE ELECTRONIC REGULATION (AC001) SPEISEKLEMME "L PUMP" DER KESSELPUMPE FÜR DIE ELEKTRONISCHE REGELUNG (AC001) PŘIPOJOVACÍ SVORKA "L PUMP" KOTLOVÉHO ČERPADLA DO ELEKTRONICKÉ REGULACE (AC001)
- (E) WHEN ELECTRONIC REGULATION CONTROL BOILER PUMP - CONNECTORS "TC-C" AND "TC-2" MUST BE UNCONNECT DEN KONNEKTOREN "TC-C" UND "TC-2" ABKLEMMEN BEI DER KESSELPUMPEBEDIENUNG DER ELEKTRONISCHE REGELUNG KONNEKTORY "TC-C" A "TC-2" ODPPOJIT PŘI OVLÁDÁNÍ KOTLOVÉHO ČERPADLA ELEKTRONICKOU REGULACÍ
- (F) ACCESS POINT FOR EXTERNAL BOILERREGULATION - PLUG IN CONNECTOR ANLAGERUNG FÜR EXTERNI KESSELREGELUNG - KLEMME IN DEN KONNEKTOR PŘIPOJOVACÍ SVORKY PRO EXTERNI REGULACI KOTLE - KLEMA V KONNEKTORU
- (G) CONNECTOR (BLACK/RED) - FOR EXAMPLE RESERVOIS POINT FOR MODULE AD01 - MOTOR OF ASH-REMOVER KONNEKTOR (SCHWARZ/ROT) - ZUM BEISPIEL FÜR DEN MODUL AD01 - ENTASCHUNGSMOTOR KONNEKTOR (ČERNO ČERVENÝ) - NAPŘÍKLAD PRO MODUL AD01 - MOTOR ODPPELNĚNÍ
- (H) ACCESS POINTS - FOR EXAMPLE FOR MODULE AD01 - TIMEUNIT OF ASH-REMOVER SPEISEKLEMME - ZUM BEISPELE FÜR MODUL AD01 - ZEITBEDIENUNG FÜR DEN ENTASCHUNG PŘIPOJENÍ - NAPŘÍKLAD PRO MODUL AD01 - ČASOVÝ MODUL ODPPELNĚNÍ
- (I) NO WITH AC001 - MODULE AD02 FOR BOILERFAN CONTROL FROM BURNER A25/45 NEIN MIT AC001 - MODUL AD02 FÜR KESSELVENTILATORBEDIENUNG BEI DEN BRENNER A25/45 NEPLÁTI S AC001 - MODUL AD02 K OVLÁDÁNÍ VENTILÁTORU KOTLE HOŘÁKEM A25/45

D20-45P_11-05-01_A25-45_6P_1AD02

16. Electric wiring diagram for the D31P boiler with an extraction fan - model 2012 with a 6-pin connector and module AD03 to control exhaust fan of the boiler and pump in boiler circuit from the burner control unit AC07X (R and R2)

GB



**WHEN USE ELECTRONIC REGULATION ACCD01 AND PELLETBURNER A25-45 MUST BE THESE CHANGES OF WIRING:
BEI DER STEUERUNG DES KESSELBETRIEBES DER ELEKTRONISCHE REGELUNG ACCD01 UND PELLETBURNER A25-45 MÜSSEN DIESE ÄNDERUNGEN MACHEN SEIN:
PŘI ZAPOJENÍ ELEKTRONICKÉ REGULACE ACCD01 A PELETOVÉHO HOŘÁKU A25-45 PŘEVEDTE TYTO ZMĚNY:**

- A** VARIANTS OF RESERVOIR POINTS "REG L,N,PE" (FERRULE/FASTON 6,3) FOR ELECTRONIC REGULATION SPEISEKLEMMENVARIANTEN "REG L,N,PE" (ADERENDHÜLSE/FASTON 6,3) FÜR ELEKTRONISCHE REGELUNG VARIANTY NÁPÁJECÍCH SVORKŮ "REG L,N,PE" (DUTINKA/FASTON 6,3) PRO ELEKTRONICKOU REGULACI
- B** RESERVOIR POINT "L2 OUT" OF BURNER AND FAN TO THE ELECTRONIC REGULATION (ACD01) SPEISEKLEMME "L2 OUT" DER BURNER UND VENTILATOR FÜR DIE ELEKTRONISCHE REGELUNG (ACD01) PŘÍPOJOVACÍ SVORKA "L2 OUT" HOŘÁKU A VENTILÁTORU DO ELEKTRONICKÉ REGULACE (ACD01)
- C** WHEN ELECTRONIC REGULATION CONTROL BURNER - CONNECTORS "PT-C" AND "PT-1" MUST BE UNCONNECT DEN KONNEKTORŮN "PT-C" AND "PT-1" ABKLEHMEN BEI DER BURNERBEDIENUNG DER ELEKTRONISCHE REGELUNG KONNEKTORY "PT-C" A "PT-1" ODPJOIT PŘI OVLÁDÁNÍ HOŘÁKU ELEKTRONICKOU REGULACÍ
- D** RESERVOIR POINT "L PUMP" OF BOILER PUMP TO THE ELECTRONIC REGULATION (ACD01) SPEISEKLEMME "L PUMP" DER KESSELPUMPE FÜR DIE ELEKTRONISCHE REGELUNG (ACD01) PŘÍPOJOVACÍ SVORKA "L PUMP" KOTLOVÉHO ČERPADLA DO ELEKTRONICKÉ REGULACE (ACD01)
- E** WHEN ELECTRONIC REGULATION CONTROL BOILER PUMP - CONNECTORS "TC-C" AND "TC-2" MUST BE UNCONNECT DEN KONNEKTORŮN "TC-C" AND "TC-2" ABKLEHMEN BEI DER KESSELPUMPEBEDIENUNG DER ELEKTRONISCHE REGELUNG KONNEKTORY "TC-C" A "TC-2" ODPJOIT PŘI OVLÁDÁNÍ KOTLOVÉHO ČERPADLA ELEKTRONICKOU REGULACÍ
- F** ACCES POINT FOR EXTERNAL BOILERREGULATION - PLUG IN KONNEKTOR ANLAGERUNG FÜR EXTERN KESSELREGELUNG - KLEMME IN DEN KONNEKTOR PŘÍPOJOVACÍ SVORKY PRO EXTERNÍ REGULACI KOTLE - KLEMA V KONNEKTORU
- G** CONNECTOR (BLACK/RED) - FOR EXAMPLE RESERVOIS POINT FOR MODUL AD01 - MOTOR OF ASH-REMOVER KONNEKTOR (SCHWARZ/ROT) - ZUM BEISPIEL FÜR DEN MODUL AD01 - ENTASCHUNGSMOTOR KONNEKTOR (ČERNO ČERVENÝ) - NAPŘÍKLAD PRO MODUL AD01 - MOTOR ODPPELNĚNÍ
- H** ACCES POINTS - FOR EXAMPLE FOR MODUL AD01 - TIMEUNIT OF ASH-REMOVER SPEISEKLEMME - ZUM BEISPIELE FÜR DEN MODUL AD01 - ZEITBEDIENUNG FÜR DEN ENTASCHUNG PŘÍPOJENÍ - NAPŘÍKLAD PRO MODUL AD01 - ČASOVÝ MODUL ODPPELNĚNÍ
- I** NO WITH ACCD01 - MODUL AD03 FOR CONTROL BOILERPUMP AND BOILERFAN FROM BURNER A25/45 NEHM MIT ACCD01 - MODUL AD03 FÜR KESSELPUMPE UND KESSELVENTILATORBEDIENUNG BEI DEM BURNER A25/45 NEPLATÍ S ACCD01 - MODUL AD03 K OVLÁDÁNÍ ČERPADLA A VENTILÁTORU KOTLE HOŘÁKEM A25/45

D20-45P_11-05-01_A25-45_6P_AD03

17. Obligatory ČSN EN standards for the design and installation of boilers

- ČSN EN 303-5 - Central heating boilers using solid fuel
- ČSN 06 0310 - Central heating, design and installation
- ČSN 06 0830 - Safety devices for central heating and hot water preparation
- ČSN EN 73 4201 - Designing of chimneys and flues
- ČSN EN 1443 - Chimney structures - General requirements
- ČSN 06 1008 - Fire safety of local appliances and sources of heat
- ČSN EN 13501-1 - Fire classification of construction products and building structures - part 1
- ČSN EN 1264-1 - Floor heating - Systems and components - Definitions and marking
- ČSN EN 1264-2 - Floor heating - Systems and components - Heat output calculation
- ČSN EN 1264-3 - Floor heating - Systems and components - Design
- ČSN EN 442-2 - Heating elements - Tests and their evaluation

Standards for evaluation of conformity and other technical standards:

ČSN EN ISO 12100:2012, ČSN EN 953+A1:2009, ČSN EN ISO 11202:2011, ČSN EN ISO 3746:2011, ČSN ISO 1819:1993, ČSN EN 60335-1ed.2:2003



CAUTION - The installation of the boiler must always be carried out in accordance with a prepared design. The boiler may only be installed by persons trained by the manufacturer.

18. Selection and method of connection of control and heating-system elements

The boilers are delivered to the user with the basic control of the boiler output, which complies with the requirements for the heating comfort and safety. **The control ensures the required output temperature of the boiler water (80 - 90°C).** The boilers are equipped with a built-in thermostat controlling the pump in the boiler circuit. The connection of these elements is indicated in the electric wiring diagram. Each pump in the system must be controlled with a separate thermostat **to avoid cooling of the boiler at the return line** below 65°C. If the boiler is installed without a storage or equalizing tank, the pump in the circuit of the heated building must be controlled by a separate thermostat or electronic control unit to only run when the pump in the boiler circuit is running. If you use two thermostats, either for the control of one pump, set the thermostat that controls the pump in the circuit of the heated building to the value of 80°C and the thermostat that controls the pump in the boiler circuit to the value of 75°C. You can also control both the pumps with one thermostat at the same time. If there is very good spontaneous (gravity) circulation of water between the boiler and the system, which extends the time necessary for the boiler to reach the required temperature, you can reduce the setting of the thermostat of the boiler circuit pump to a lower temperature. The required water temperature for the building is always set with the use of a three-way mixing valve. The mixing valve may be controlled manually or with an electronic control unit, which will contribute to more comfortable and more economical operation of the heating system. **The way of connection of all the elements is always determined by the designer in accordance with the specific conditions of the heating system.** The electric installation related to the sufficient equipment of the boilers with the above mentioned elements must be implemented by a qualified person in accordance with valid ČSN EN standard. If you install the ACD01 electronic control unit, follow the instructions in the operation manual of this unit. Connect this control unit in the boiler in accordance with the electric wiring diagram in this manual. **Never switch off the ACD01 electronic control unit outside the heating season (with the main switch on the boiler)!**



For the installation of the boiler we recommend you to use an open expansion vessel; however, it may also be closed if permitted by the legislation of the particular country. You must install the boiler in such a way to avoid its overheating and consequent damage even in case of a power supply failure.

During the installation support the back part of the boiler to raise it by 10 mm to facilitate its rinsing and bleeding.

For the control of the heating system we recommend the following controllers:

- a) ATMOS ACD 01 - equithermal control set for solid fuel boilers
- b) KOMEXTHERM, Prague phone: +420 235 313 284
- c) KTR, Uherský Brod phone: +420 572 633 985
- d) Landis & Staefa phone: +420 261 342 382

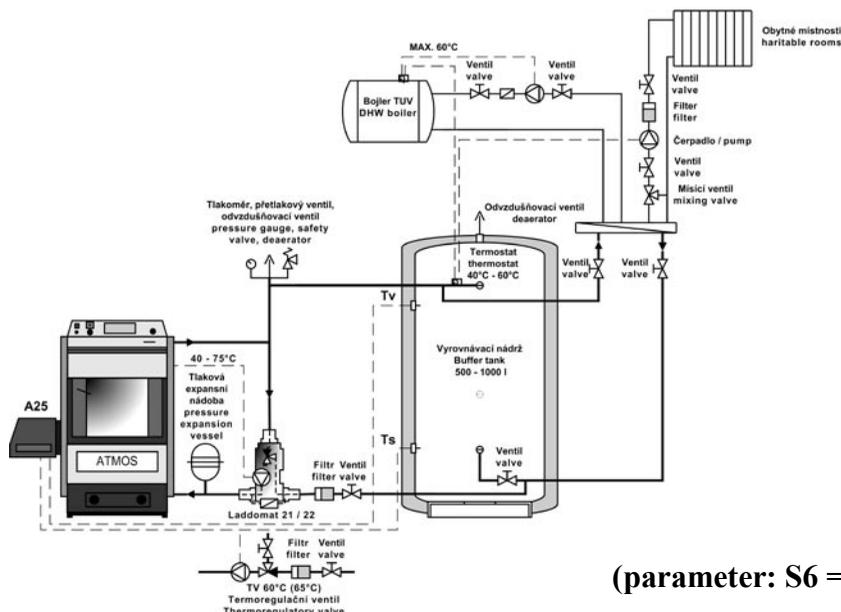
19. Protection of the boiler from corrosion

The prescribed solution consists in the installation of the boiler with **Laddomat 21**, or a thermo-regulation valve, which allows you to create a separated boiler and heating (primary and secondary) circuit to ensure the **minimum temperature of return water to the boiler of 65°C**. The higher the return water temperature is, the lower you will keep condensation of tar and acids that are harmful for the boiler body. **The output water temperature of the boiler must be permanently in the range of 80 - 90°C**. The flue gas temperature must not drop **below 110°C** during normal operation. A low flue gas temperature causes condensation of tar and acids even though the output water temperature (80 - 90°C) and the return water temperature (65°C) is maintained. These situations may occur e.g. in case of a wrong setting of the pellet burner (low output). For the outputs of 4 - 100 kW you can also use a three-way mixing valve with a servo drive and electronic control to maintain the minimum temperature of return water to the boiler (65 - 75°C).



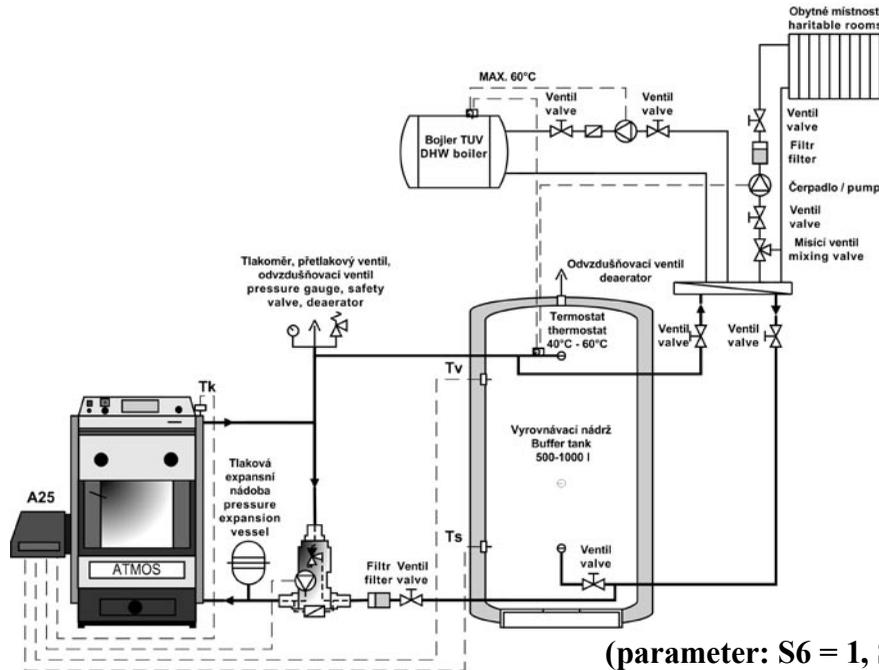
CAUTION - We recommend you to always use the D14P, D21P and D25P boilers in combination with an equalizing tank with the volume of 500 to 1000 l.

20. Basic connection of the boilers D14P, D21P and D25P with an equalizing tank and burner control by the TS and TV sensors

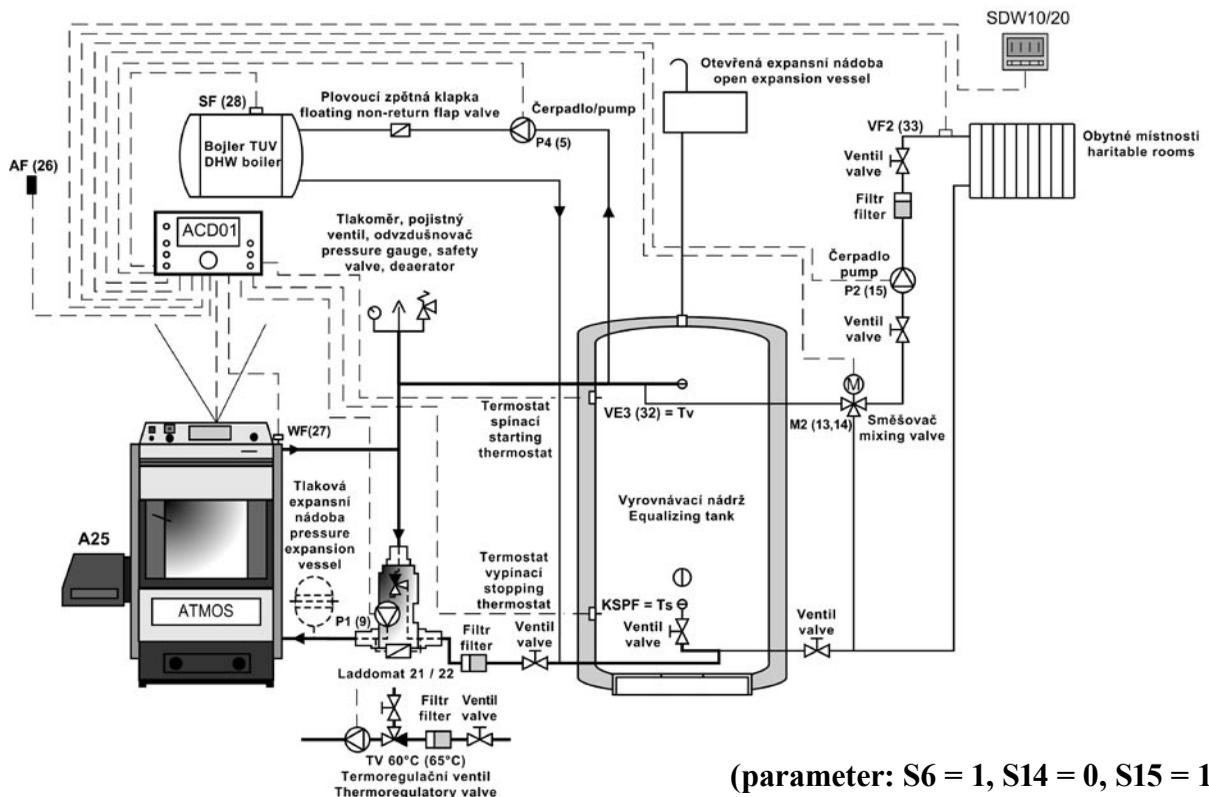


(parameter: S6 = 1, S14 = 0, S15 = 2)

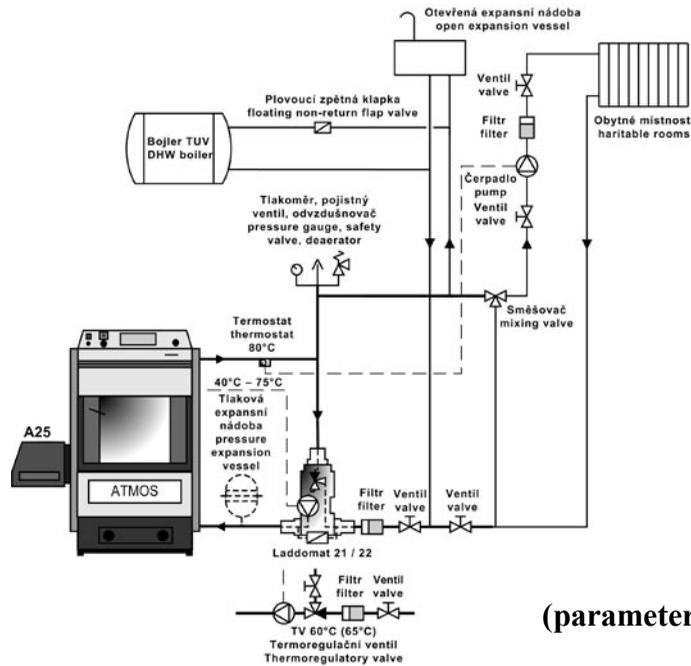
21. Connection of the boilers D14P, D21P and D25P with an equalizing tank and burner control by the TS and TV sensors and control of the boiler pump on the basis of the TK sensor directly from burner A25



22. Prescribed connection of the boilers D14P, D21P and D25P with an equalizing tank and the ACD01 control unit

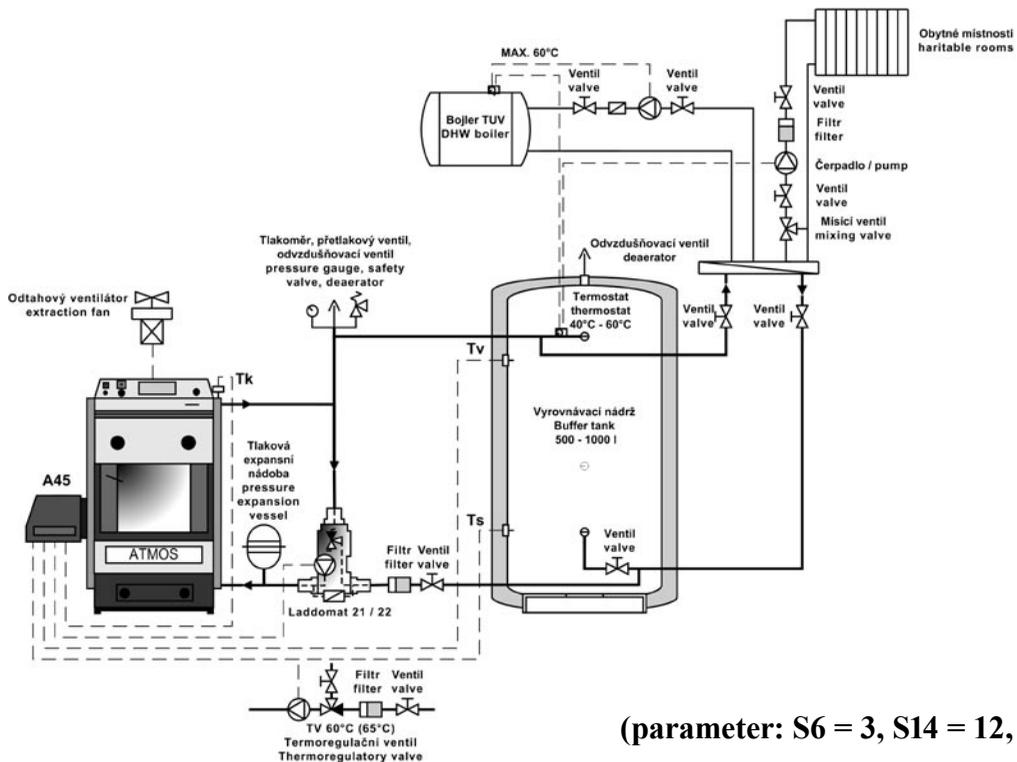


23. Possible connection of the boiler D14P, D21P and D25P



(parameter: S6 = 1, S14 = 0, S15 = 1)

24. Connection of the boiler D31P with an equalizing tank and burner control by the TS and TV sensor and control of the boiler pump on the basis of the TK sensor and exhaust fan directly fom burner A25

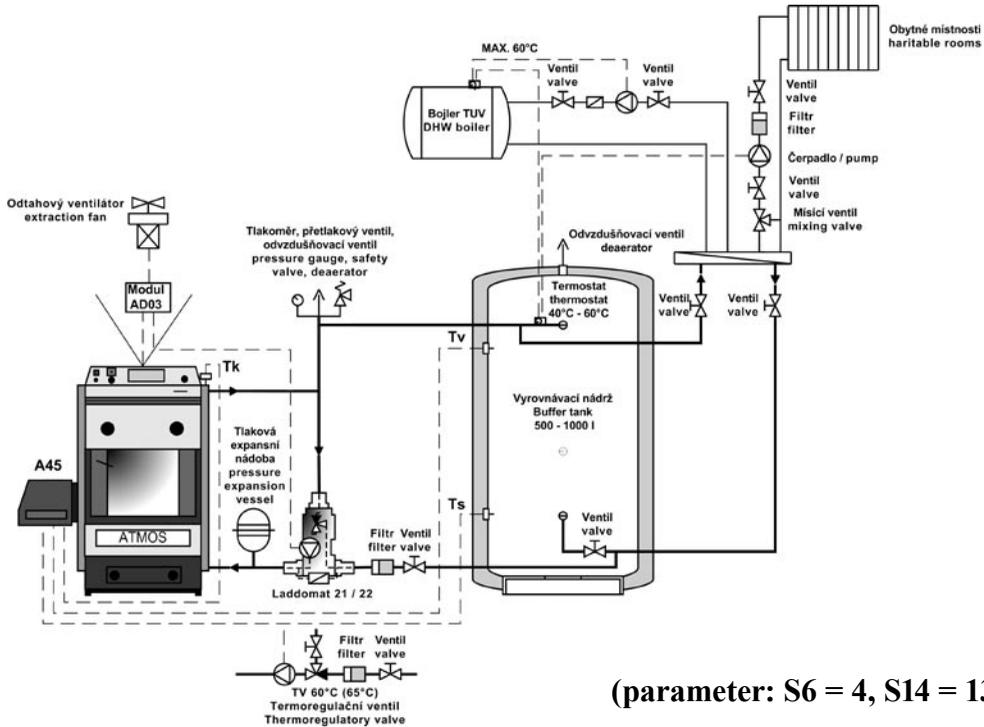


(parameter: S6 = 3, S14 = 12, S15 = 2)

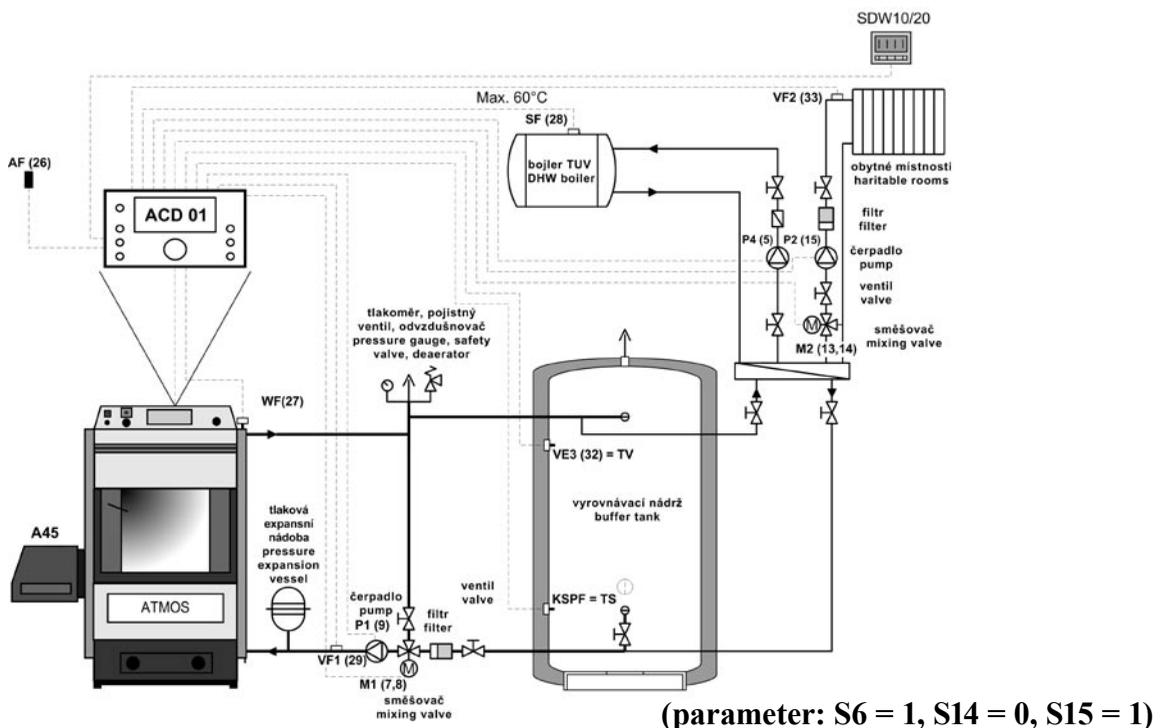


INFO - the boiler D31P is not designed for burning wood, so the exhaust fan of the boiler and boiler pump can be controlled directly from the burner (without module AD02)

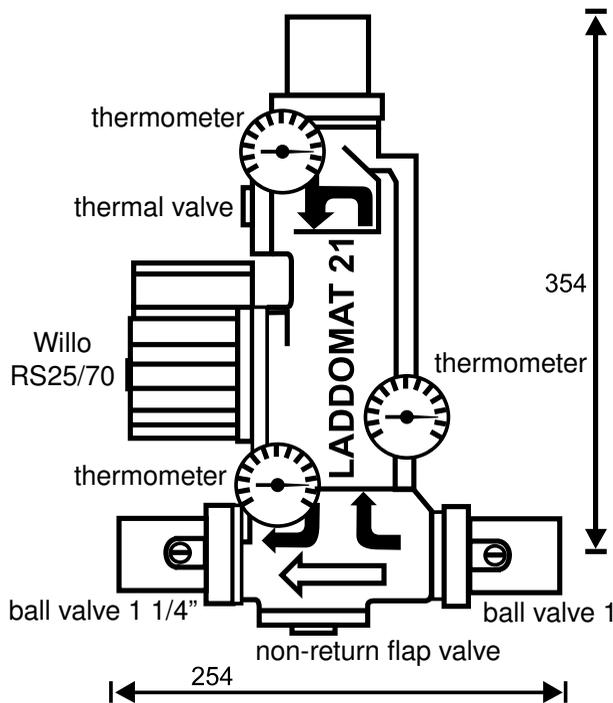
25. Connection of the boiler D31P with an equalizing tank and burner control by the TS and TV sensor and control of the boiler pump on the basis of the TK sensor and exhaust fan over module AD03



26. Prescribed connection of the boiler D31P with an equalizing tank and controlled return water in to the boiler from control unit ACD01



27. Laddomat 21



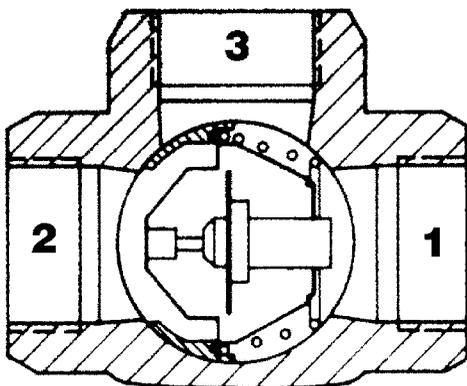
With its construction, Laddomat 21 replaces the traditional connection composed of individual parts. It is composed of a cast-iron body, thermoregulatory valve, pump, non-return flap valve, ball valves and thermometers. When the water temperature reaches 78 °C, the thermoregulatory valve opens the water supply from the storage tank. The connection with Laddomat 21 is considerably easier and therefore, we recommend it. A spare thermo-cartridge of 72 ° C is supplied with the Laddomat 21 device. It is used for boilers over 32 kW.

| OPERATION DATA | |
|-------------------------------|----------|
| Max. operating pressure | 0,25 MPa |
| Design pressure | 0,25 MPa |
| Test over pressure | 0,33 MPa |
| Highest operating temperature | 100°C |



WARNING - Laddomat 21 is designed only for boilers with output up to 75 kW (inclusive). We recommend using it only with boilers with output up to 50 kW (inclusive). For boilers with an output over 50 kW we recommend using Laddomat 22, which is factory fitted with thermo-cartridge of 72°C.

28. Thermoregulatory valve



Thermoregulatory valve type, TV 60°C (65°C) is used with solid fuel boilers. When the boiler water temperature reaches + 60 °C , the thermoregulatory valve opens and fluid from the building heating circuit (2) enters the boiler circuit (3 → 1). Inlets 1 and 3 always remain open. This ensures that the minimum temperature of the water returning to the boiler is maintained. If need be, a thermoregulatory valve set to a higher temperature (E.g. 72°C) may be used.

Recommended sizes of the thermoregulatory valve TV 60°C.

For boilers: D14P, D21P, D25PDN25, DN32
 D31P DN32

29. Operation instructions

Preparation of boilers for the operation

Before putting the boiler in operation you must make sure that the system is filled with water and bled. You must always operate the boiler in accordance with the instructions contained in this manual to achieve high quality and safety of the functionality of the boiler. **The boiler may only be operated by adult persons.** The commissioning of the boiler must be done in accordance with this manual and the operation manuals attached to the pellets burner by a qualified person.

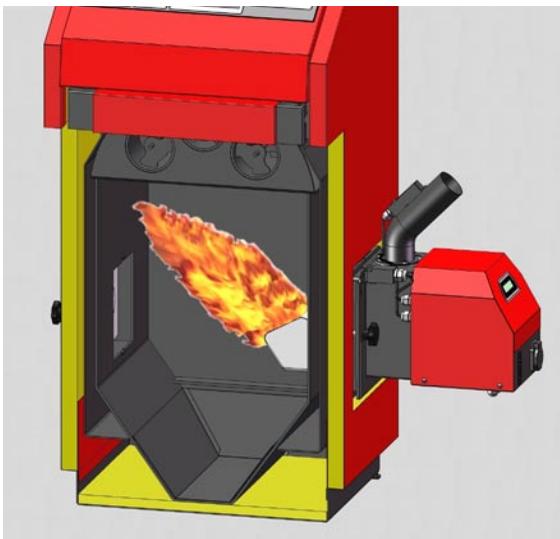
Before igniting pellets perform several operations. Check all the lids and doors for proper closing. Check whether the burner is properly tightened to the boiler over the gasket and that the end switch stop is in its place. Also, check the hose between the burner and the conveyor for proper tensioning and such inclination that allows free falling of pellets to the burner. They must not accumulate in the hose. The angle of the worm conveyor should be at least 45°; otherwise the boiler may not achieve the nominal output.

If everything is OK, draw pellets to the conveyor. In the case of the ATMOS A25 burner plug the power supply cord of the conveyor to a standard 230V/50Hz socket. When pellets start to fall out of the conveyor, plug the power supply cord of the conveyor back to the socket for normal operation. Turn on the main switch (green), the switch of the pellet burner and the switch of the automatic deashing system (if installed).

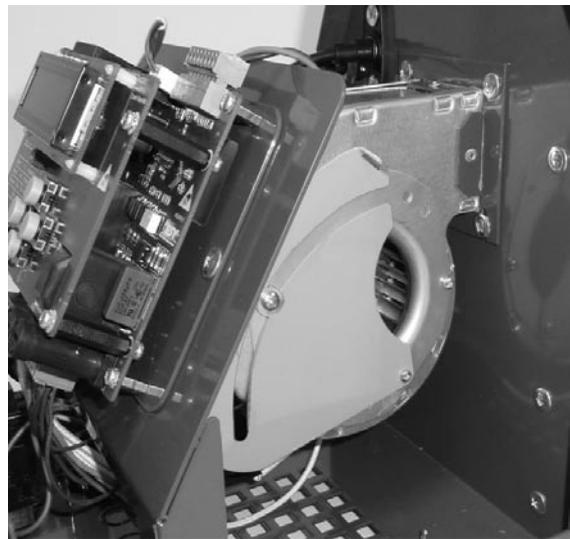
Adjust combustion of the burner with the use of a flue gas analyzer in the measurement place (opening) in the flue between the boiler and the chimney. Always adjust the burner in a stabilized condition, approx. 20 - 30 minutes after fuel ignition. If there is no flue gas analyzer available for the boiler adjustment at the moment, you can adjust the pellet burner „roughly by guesswork“. Set the quantity of fuel and combustion air in such a way to stop the flame just before the opposite wall (the flame should not touch the wall). However, the flames must not turn at the opposite wall. In such a way add combustion air (open the fan flap) or reduce the fuel supply.



CAUTION - This adjustment does not replace adjustment made with the use of a flue gas analyzer by a qualified person. Changes of settings of the boiler and burner may only be performed by a person that is qualified in accordance with all the valid regulations and ČSN EN standards.

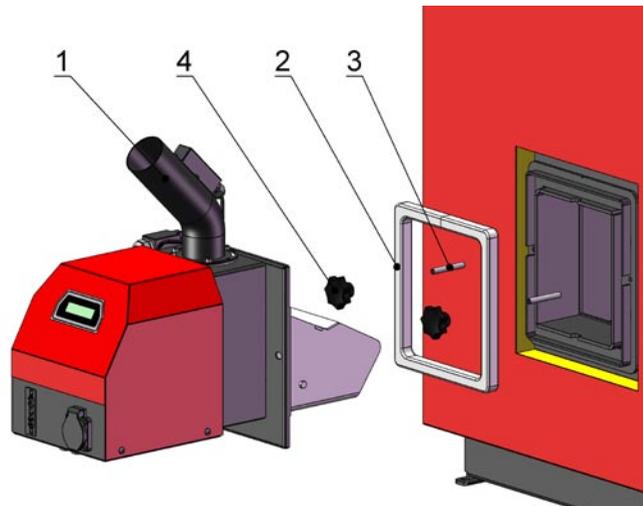


Burner flame ending 1 - 3 cm before the opposite wall.



Fan of the burner with an air flap. By opening the air flap you will reduce the length of the flame.

30. Burner A25 connection for the D14P, D21P and D25P boilers

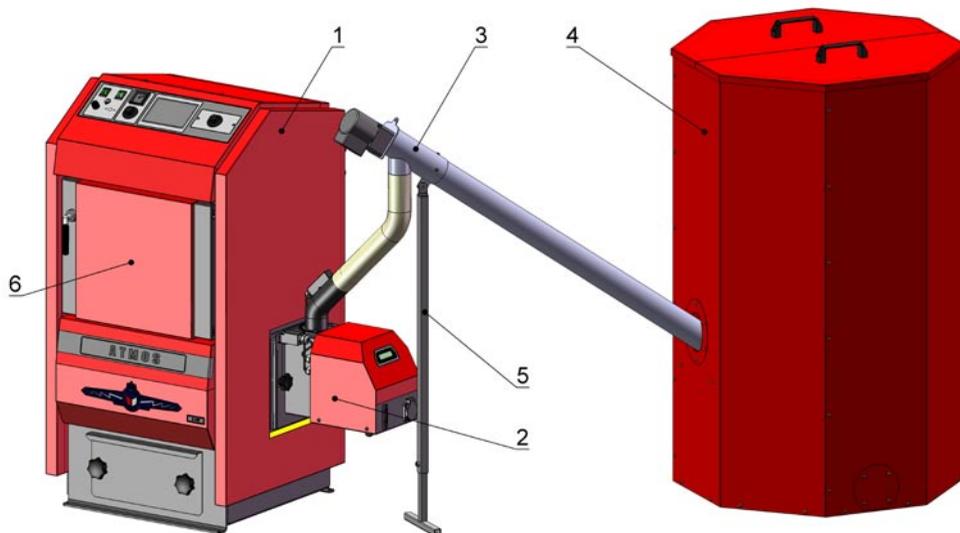


- | | |
|--|-------------------------|
| 1. ATMOS A25 pellet burner | 3. 2 x M8 screw |
| 2. Sealing cord, 18 x 32 mm, small (code: S0165) | 4. 2x M8 decorative nut |



CAUTION - For A25 burner we standardly use conveyors DA1500, DA2000 a DA2500

31. Boiler system with an external storage container and conveyor

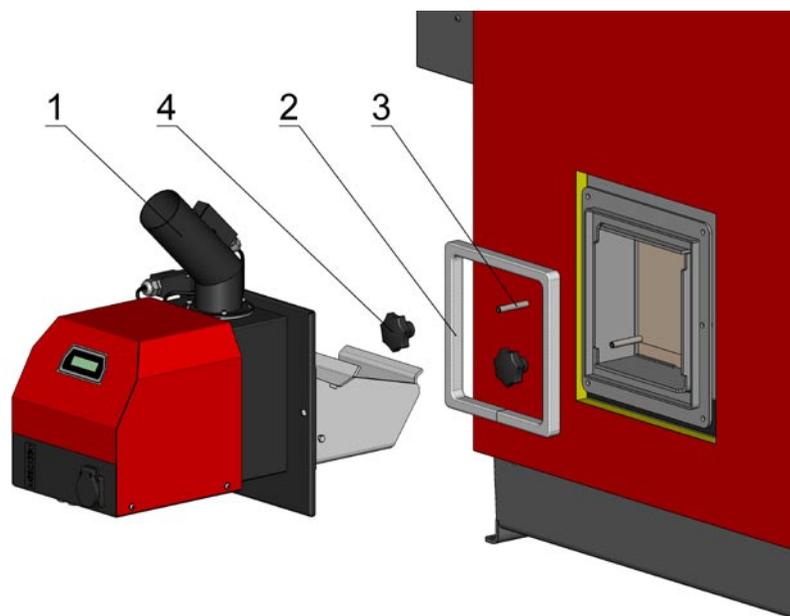


- | | |
|----------------------------------|---|
| 1. ATMOS D14P, D21P, D25P boiler | 4. Pellet container (250, 500 and 1000 l) |
| 2. ATMOS A25 pellet burner | 5. Conveyor leg |
| 3. ATMOS DA1500 conveyor - 1.5 m | 6. Cleaning door |



RECOMMENDATION - We recommend you to select the container size of 500 l to 1000 l, which will be sufficient for 3 to 14 days, depending on the consumed power. The larger the volume of the container, the better. The length of the conveyor may be 1.5 m, 2.5 m or 2.5 m. As the pellet storage you can also use a clearly delimited part of the room complying with fire regulations from which pellets may be drawn to an intermediate storage container at the boiler, or directly to the boiler.

32. Burner A45 connection for the D31P boiler



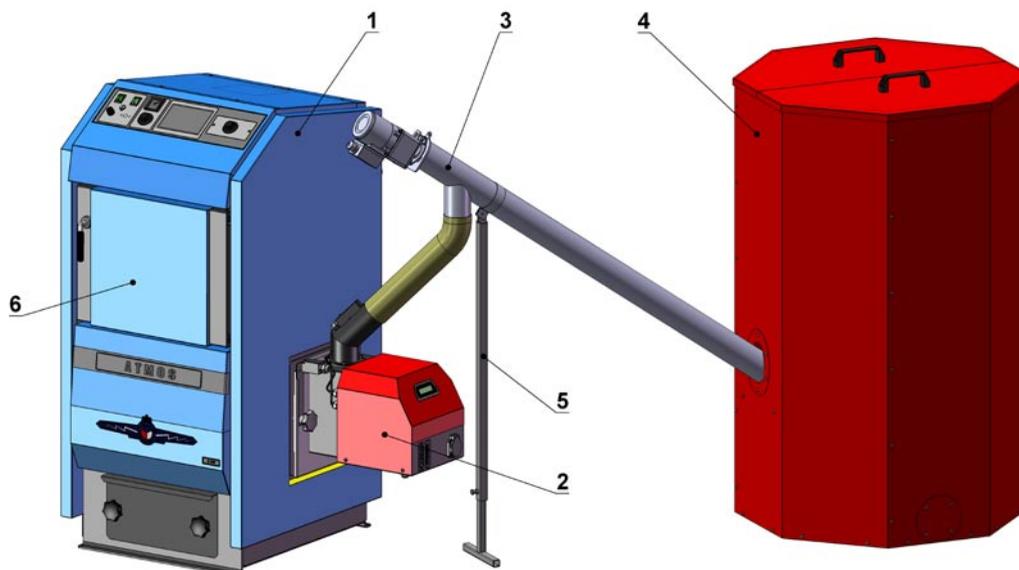
1. ATMOS A45 pellet burner
2. Sealing cord, 18 x 32 mm, big (code: S0174)

3. 2 x M10 screw
4. 2x M10 decorative nut



CAUTION - For A45 burner we standardly use conveyors DRA50 - 1,7 m, 2,5 m, 4 m and 5 m

33. Boiler system with an external storage container and conveyor

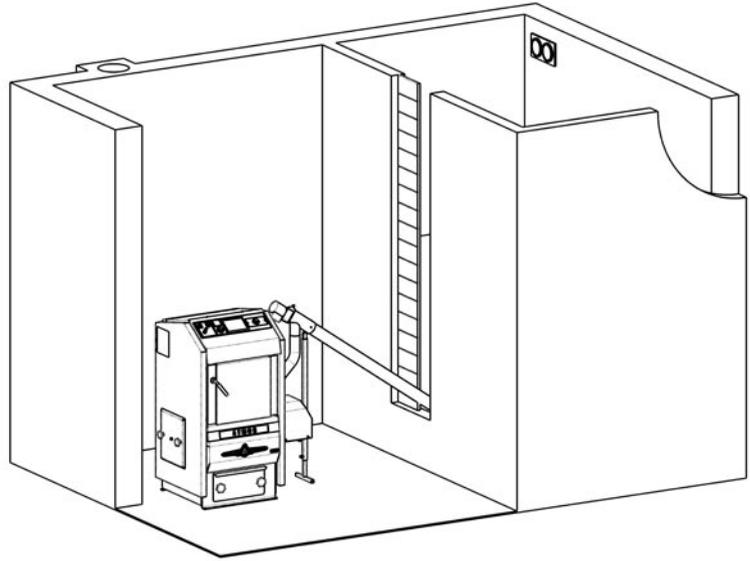


1. ATMOS D31P boiler
2. ATMOS A45 pellet burner
3. ATMOS DRA50 conveyor - 1.7 m

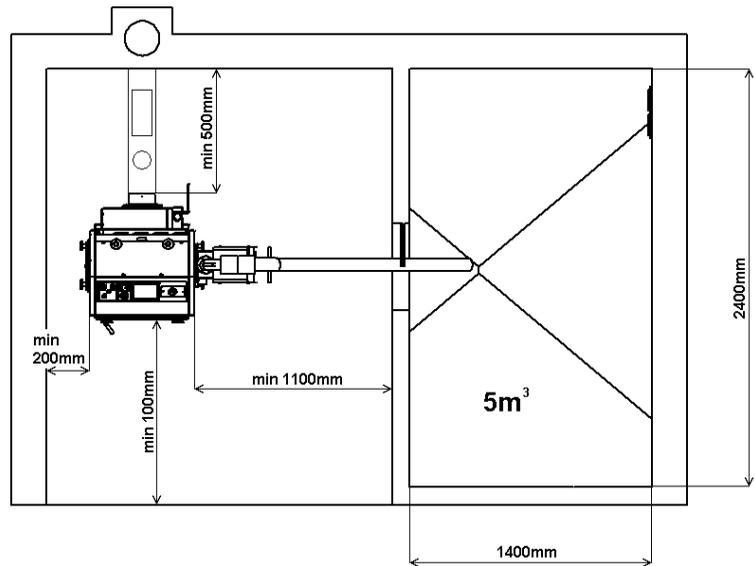
4. Pellet container (500 and 1000 l)
5. Conveyor leg
6. Cleaning door

34. Boiler room with a large built-in pellet storage

A boiler plant with a built-in pellet storage with the volume of e.g. 5 m³ in which you can store 3250 kg of pellets. For this purpose a 2 m (2.5 m) conveyor is used. For easy access to the storage a segmented opening is produced that can be adapted to the pellet level in the storage and enables cleaning of the storage from dust and dirt once a year. In the top part of the storage there are two openings for replenishment of pellets from a cistern that have different sizes with regard to pellet suppliers.



For optimum collapsing of the pellet heap the optimum angle of the inner walls in the storage must be at least 45°. All the walls are inclined to the lowest point of the storage from which the worm conveyor draws pellets.

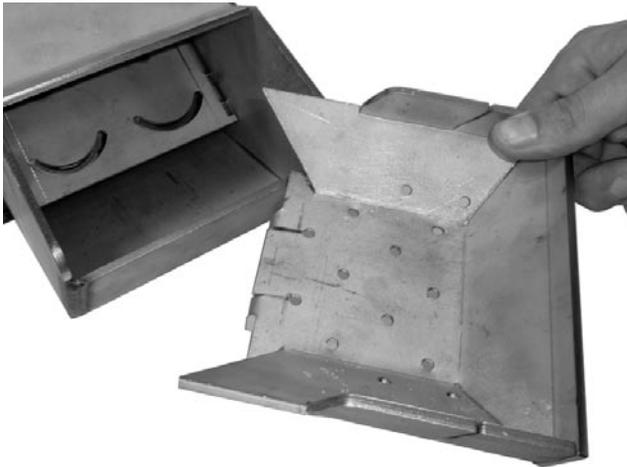


CAUTION - If pellets are drawn to the storage in the boiler plant directly from the cistern, several principles must be observed that prevent their crushing during pneumatic transport. First of all you must make sure that they do not hit the hard wall of the storage, but a screen that is suspended in the centre of the storage from the ceiling. This way you will ensure even filling of the storage and prevent crushing into small pellets and dust. Ask the pellet suppliers about further possibilities and conditions of pellet drawing.

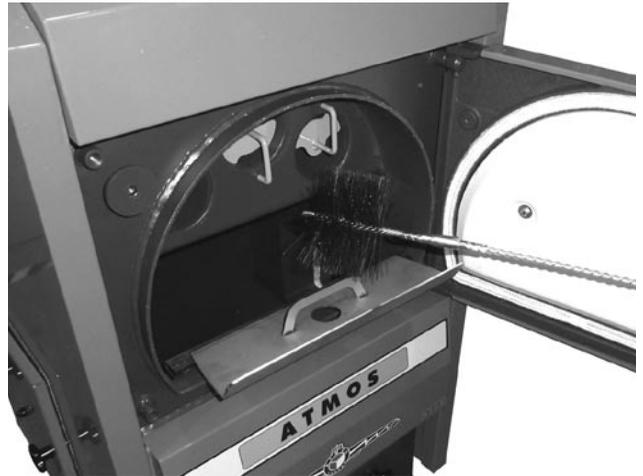
35. Cleaning of the boilers and ash removal

The burner and the boiler must be cleaned regularly and thoroughly once every 1 to 30 days depending on the quality of pellets and the output setting. Fly-ash and dirt accumulated in the combustion chamber of the burner and boiler considerably reduce the service life and output. Do the regular cleaning of the boiler in such a way that you first let the burner burn out (turn off the burner switch /20/). Open the cleaning door, remove the front stainless-steel screen and clean the combustion chamber of the burner, incl. the air openings in the chamber with the provided poker. If the combustion chamber of the burner is heavily soiled, remove it for cleaning. Further, remove the decelerators from the tube plates located in the top part of the combustion chamber and clean them with the provided brush. During this cleaning return the front stainless-steel screen back to the boiler, but the other way round to make it prevent large quantities of dust from falling out of the boiler during the cleaning. Also, do not forget to clean the back smoke channel and scrape the walls of the combustion chamber of the boiler with the provided poker or brush. Finally, remove the ash pan and dispose of the ash while observing all the fire measures. The interval of the cleaning and ash removal depends on the fuel quality, heating intensity, chimney draught and other circumstances. Put everything in the original condition after the cleaning. At least once a year remove the burner and clean it completely. See the manual of the burner.

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Removable combustion chamber of the burner with air supply openings - must be cleaned regularly



Sample cleaning of the tube plate with the front screen arranged the other way round



Sample cleaning of the smoke channel. It is performed after cleaning of the tube plate in the combustion chamber of the boiler



Sample cleaning of impeller and checking uprightness of vane on exhaust fan (boiler D31P)



Burner removing for year servicing and cleaning



Large ash pan partly drawn out

GB

36. Maintenance of the heating system, including boilers

At least once every 2 weeks check or replenish water in the heating system. If the boilers are out of operation in winter, there is a danger of water freezing in the system and therefore you had better drain water from the system or fill it with an antifreeze mixture. Otherwise, only drain water in inevitable cases and for the shortest possible time. After the end of the heating season thoroughly clean the boiler and replace the damaged parts. **Do not wait with the replacement of parts until the last moment; prepare the boiler for the heating system in spring already.**

37. Operation and supervision

Boiler operators must always follow the operation and maintenance instructions. Interventions into boilers that could endanger the health of the operators or other persons in the vicinity are prohibited. Boilers may only be operated by a person that is more than 18 years old, that has been acquainted with the instructions and operation of the equipment and that complies with the requirements of § 14 of the Directive no. 24/1984 Coll. The boiler operation needed increased attention to safety in terms of potential burns from hot boiler parts and systems. You must never leave unattended children near boiler that is in operation. During the operation of solid fuel boilers it is prohibited to use any flammable liquids for lighting the fire and it is also prohibited to increase the nominal output of the boiler during operation (overheating). **You must not put flammable objects on the boiler and near the fuel feeding and ash pan openings and ash must be stored in non-flammable containers with a lid.** When handling fuel and ash, wear protective equipment (gloves, dust mask). Boilers in operation must be under occasional supervision of the operator. The user may only carry out repair consisting in simple replacement of a spare part (e.g. a sealing cord, etc.). During the operation check the doors and cleaning openings for tightness and always tighten them properly. The user must not alter the structure and electric installation of boilers. The boiler must always be cleaned properly and in time so that free passage of all the ways can be guaranteed. Cleaning doors must always be properly closed.



CAUTION - Follow valid fire regulations and have in reach portable fire extinguisher. If any non-standard behavior of the boiler shut down the boiler from operation and call the service.

38. Possible failuress and troubleshooting

| Problem | Cause | Remedy |
|--|---|--|
| The “mains” indicator does not light up | <ul style="list-style-type: none"> - no mains voltage - incorrectly inserted plug in the mains socket - faulty main switch - defective cord | <ul style="list-style-type: none"> - check - check - replace - replace |
| The boiler does not achieve the set output and the set water temperature | <ul style="list-style-type: none"> - little water in the heating system - high output of the pump - the output of the boiler is not sufficiently sized for the particular hot-water system - poor-quality fuel - low chimney draught - high chimney draught - insufficiently cleaned boiler | <ul style="list-style-type: none"> - replenish - adjust the flow and pump control - design issue - burn high-quality pellets - new chimney, unsuitable connection - install a throttling flap in the flue or a pressure reducer - clean |
| Leaky doors | <ul style="list-style-type: none"> - faulty glass cord - low chimney draught | <ul style="list-style-type: none"> - replace - adjust the door hinges - faulty in the chimney |
| Defects and shortcomings of the burner, conveyor and the deashing system | <ul style="list-style-type: none"> - no more fuel - the fuel is cindered and blocks the chamber on the burner - the hose between the conveyor and the burner gets clogged - the burner does not provide the required output - the worm conveyor does not run (stops) - other defects of the burner - the deashing system does not work after turning the switch off and on | <ul style="list-style-type: none"> - replace and before the new star draw pellets to the conveyor - clean the combustion chamber and hose replace pellets or clean the combustion chamber of the burner once a day until you burn all the poor-quality pellets - low calorific value of the pellets, change the setting - replace the gearbox of the conveyor - defect - check the quality of pellets, high resistance (diameter, length) - follow the operation instructions of the burner - check - replace the module under the boiler hood or the defective gearbox |

39. Spare parts

| | |
|--|---|
| Thermometer /15/ (code: S0041) | 1 |
| Main switch /16/ (code: S0091) | 1 |
| Control thermostat /17/ (code: S0021) | 1 |
| Pump thermostat /18/ (code: S0023) | 1 |
| Safety thermostat /19/ (code: S0068) | 1 |
| Fuse T6,3A/1500-typ H /20/ (code: S0200) | 1 |
| Door sealing cord, 18 x 18 /7/ (code: S0240) | 1 |
| Ash pan /3/ D14P, D21P (code: P0097), D25P, D31P (code: P0080) | 1 |
| Sealing cord between the burner and boiler, 18 x 32 mm D14P, D21P, D25P (code: S0165), D31P (code: S0174) | 1 |
| Double switch of the automatic deashing system and pellet burner /20/ (code: S0098) | 1 |
| Sibral gasket under the smoke channel lid (with an opening) (code: S0120) | 1 |
| Klingerite gasket under the smoke channel lid (without openings) (code: S0124) | 1 |
| Sibral insulation of the burner opening lid /10/ (code: S0275) | 1 |
| Tube plate decelerator /12/ D14P, D21P (code: P0098), D25P, D31P (code: P0210) | 3 |

Replacing the door sealing cord

Procedure: Use a screwdriver to remove the old cord and clean the groove where it was seated. Use a hammer to slightly shape the cord from the square cross-section to the trapezoidal cross-section. Grip the cord and impress it along the perimeter of the door (with the narrower base to the groove) to make it sit in the groove (you can use a small hammer as an auxiliary tool). Hold the handle of the door closure pointing upwards and by means of slow knocks with the door press the cord into the groove until you can close the door. Finally, adjust the position of the wheel where the cam of the closure gets engaged. Only using this procedure you can guarantee tightness of the door!

Adjusting the door hinges and closures

Cleaning doors are firmly connected to the boiler body with a set of two hinges. A hinge consists of a nut that is welded to the boiler body and an adjustment crew to which the door is fixed with a pin. If you want to change the setting of the hinges, first release and lift the top hood (control panel), knock both the pins out, remove the door and turn the adjusting screw (hinge) with the right thread as necessary. Put everything in the original condition in the reverse order.

The door closure consists of a lever with a handle and a cam that engages to a wheel that is screwed to the boiler and secured with a nut preventing its turning. After a certain time the sealing cord in the door gets compressed and therefore the wheel should be screwed deeper into the boiler. So release the nut on the wheel and screw it into the boiler in such a way that the handle can indicate 20 minutes on an imaginary clock dial after firm closing of the door. Finally, tighten the nut.

40. Environment protection

ATMOS gasification boilers comply with the most stringent environmental requirements. The boilers are certified in accordance with the EN 303-5 European Standard and belong to class 3.

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Disposal of the boiler after the end of its service life

You must ensure ENVIRONMENT-FRIENDLY disposal of individual parts of the boiler.

Properly remove fly-ash from the boiler before its disposal and put it in a dustbin.

Scrap the boiler body and the hoods.

Ceramic parts and insulation - discard to a legal dumping site.



NOTE - To ensure environment-friendly heating you must not burn any other fuel or substances in the boiler than specified. This is mainly the case of plastic bags, various types of plastic materials, paint, textiles, glass fibre as well as sawdust, sludge, vegetable (biological) pellets, dust coal.

GUARANTEE CONDITIONS

Hot-water boiler

1. If adhered to the product's use, operation and maintenance as described in the instruction manual, we guarantee that the product will maintain the characteristics as stipulated by the corresponding technical standards and terms for the duration of a guarantee period – of 24 months after the product's acquisition by the user, a maximum of 32 months after the manufacturer sells it to the sales representative. If the boiler is installed with a TV 60°C thermoregulatory valve or with a Laddomat 21 in combination with the accumulation storage tanks (see attached schematics), the guarantee period for the boiler drum is extended from 24 to 36 months. The guarantee period for other parts remains unaffected.
2. If a defect not caused by the user, appears on the product during the guarantee period, the defect will be repaired free of charge.
3. The guarantee period is extended by the period of time for which has the product been under repair.
4. A claim to provide a guarantee period repair shall be made by the customer at the service company.
5. The guarantee claim is justified only in cases where the boiler installation was carried out by a person trained by the manufacturer and in compliance with valid standards and the instruction manual. A necessary condition for justifying a guarantee claim is possession of a legible and complete record identifying the company who installed the boiler. If the installation was not carried out in a professional manner, the subsequent costs are borne by the company that carried out the installation.
6. The purchaser was familiarised with the use and operation of the product – in a provable way.
7. A claim to provide an after-guarantee period repair shall be made by the customer at the service company, too. In this case, the customer bears the repair costs.
8. The user is obliged to adhere to instructions from the operation and maintenance manual. If the operation and maintenance manual is not adhered to, in cases of negligent or unprofessional handling, or burning prohibited substances, the guarantee expires and the repair costs are borne by the customer.
9. Boiler installation and operation must be in compliance with the instruction manual where the outgoing water temperature is in the 80 - 90° range and the temperature of water returning to boiler at least 65°C in all its operation modes.
10. There is an obligation to have the boiler inspection carried out including its controls settings, structural elements and extraction system by an expert company at least once a year – confirmed in a warranty card
For boilers designated for the Czech Republic, Poland, Russia, Romania, Lithuania, Latvia and Hungary no guarantee conditions or insurance policies from outside these countries apply.

Guarantee and post-guarantee period repairs are carried out by:

- installation company that carried out the installation

**- Jaroslav Cankař a syn ATMOS, Velenského 487, 294 21 Bělá pod Bezdězem,
Czech Republic, Telephone. +420 326 701 404**

RECORD OF INSTALLATION OF THE BOILER AND BURNER

GB

The installation was performed by:

Company: □

Street: Town:

Telephone: Country:

Ascertained data:

Chimney:

Dimensions:

Height:

Chimney draught:*

Date of last inspection:

Flue-gas duct:

Diameter:

Length:

Number of elbow pieces:

Waste gas temperature:*

Boiler connected with mixing valves and fittings (brief description of connection):

..... □

..... □

..... □

..... □

Fuel:

Type:

Size:

Moisture content:*

Measured data:

Waste gas temperature: °C

Emissions in stabilised state : CO

CO₂

O₂

Person responsible for the inspection: Date:

Stamp :

(Responsible person's signature)

Customer's signature:

* measured values

ANNUAL INSPECTIONS RECORDS

GB

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| stamp and signature | stamp and signature | stamp and signature | stamp and signature |
| Date | Date | Date | Date |
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RECORDS OF GUARANTEE PERIOD AND POST-GUARANTEE PERIOD REPAIRS

GB

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Repair:

repair carried out by, date

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