

# Manual for Installation

## TW-1

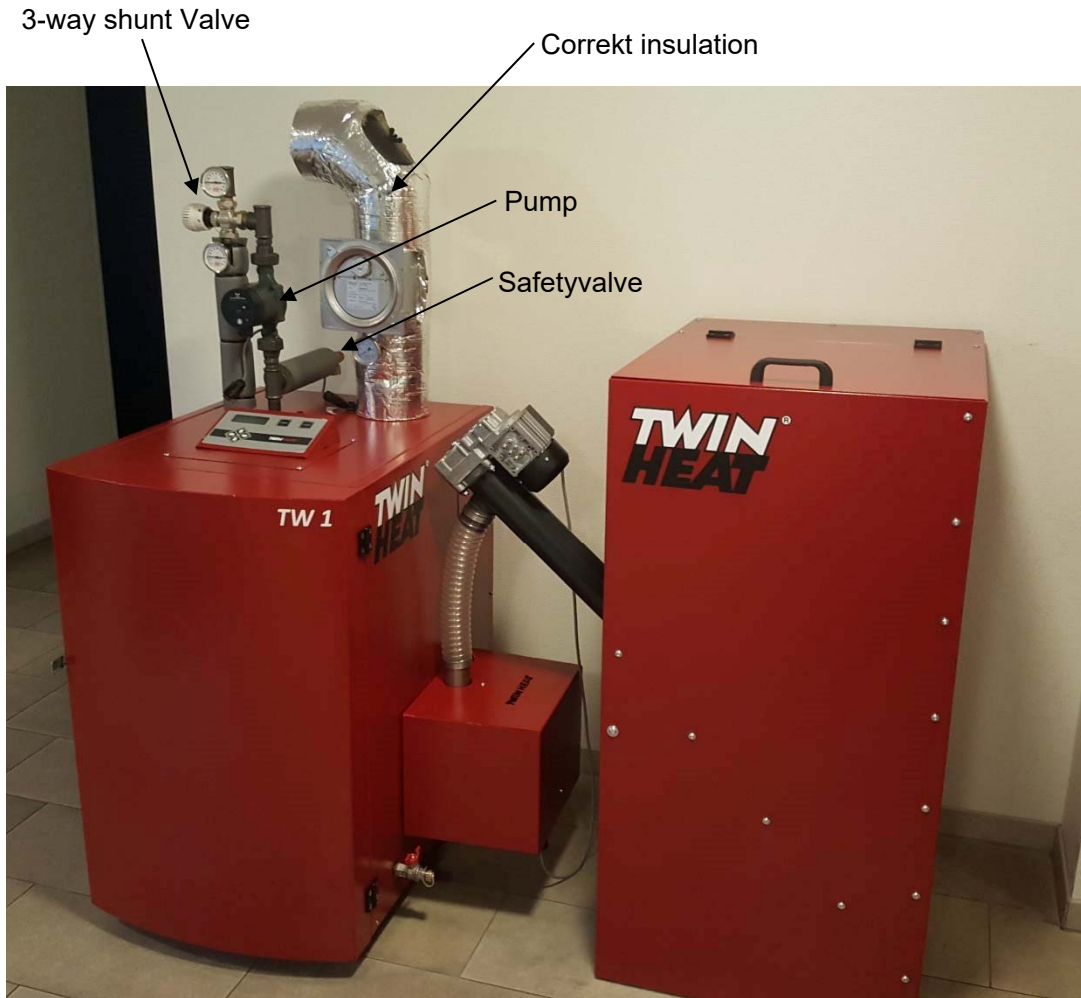
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*Read these instructions carefully before you install your new TW-1.*

|                                                        |               |
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## ***Guide to install your new boiler correct;***

1. The chimney needs to be dimensioned for the boiler. Our recommendation is  $\varnothing 130\text{mm}$ , if diameter becomes larger it Will demand dependent more heat at startup, and flu gas will have tendency to generate condensates inside chimney.
2. The boiler needs to be placed as close to the chimney as possible, and flu gas tube between boiler and chimney need to be insulated (see picture above)
3. 3-way shunt valve need to be mounted (see picture above)
4. To assure that the connecting flex-tube is as vertical as possible, the pellet-silo must be placed similar as on the picture above.
5. By use of closed ekspansion - remember safety valve (see picture above). The safety valve need to be mounted prior to the pump.

Installation and placement need to be done according to building regulations and with the workers' safety in mind. At the same time the installation and placement need to be done according to local fire technical safety authorities and their rulesets.

Before the final placement of the new boiler, it is recommended to make a visual check if the product has taken damage from transport.

If there are any signs of damage, it needs to be reported to the freight company responsible for the transportation immediately!

## Placement in the boiler- room

**NOTE: Distances in the boiler- room, which are noted on the figure below, need to be followed.**

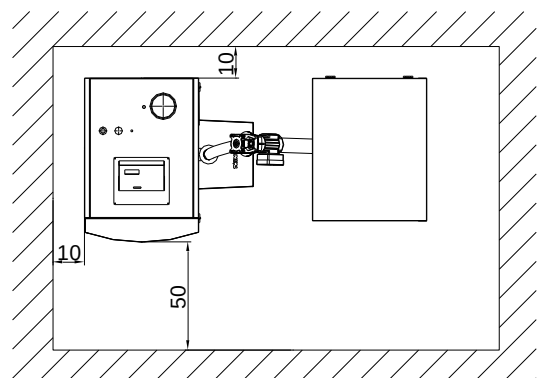
The boiler is delivered complete mounted on a euro pallet, ready for installation.

The boiler including euro pallet is positioned at installation site using a lift or similar.

When the boiler is placed in the desired place it needs to be lifted away from the pallet. It is only allowed to lift under the edge of the base. If the lift is carried out using straps, squashing the boiler cabinet needs to be avoided, spread the force away from touchpoint of straps!

When the boiler is loaded off the pallet and placed on the floor it needs to be adjusted to be level, use a "spirit level" to adjust boiler to horizontal. (*place the "spirit level" on the top of the boiler!*)

1. The figure to the right shows the recommended minimum- distances in the boiler- room.
2. Dependent on the local fire technical safety rules the boiler- room needs a ½" bib faucet/spigot with beam tip.
3. The boiler room needs to have a ventilation opening for fresh air, this can be in form of a window having opening capabilities, or it can be a regular ventilation to the free outside, the opening needs to be approximately square of 15x15cm.



## Heat circuit installation

See Diagram 1

By mounting a shunt-valve using 3 openings the water from return going back to the boiler will be **at least 60°C** in normal operation.

It will cause a higher risk of corrosion inside the boiler and hereby shorten the product life if these 60°C hot return water is not met. This affects the warranty!!

The boiler can be equipped with "open" or "closed" expansion.

General advice

The expansion tank needs to be able to contain 4% of the total heat systems content, when closed expansion method is used.

The boiler needs to be in an open connection to the expansion tank. (Any blocking option or closing tap of this pipe is not allowed).

The expansion tank, if placed in any uninsulated place, needs frost preventive means. Circulating frost proof or hot water installations at the tank can be controlled by thermostatic return valve or similar, this ensures that boiler water does not mix with air in a harmful way.

(Frost prevention is not shown in diagram 1)

## Chimney attachment

See diagram 2

To achieve a good heat economy and to avoid genes from smoke the chimney needs to fit the boiler. The boiler needs to be placed as close to the chimney as possible. The cleansing hatch needs easy access and to be placed on the chimney tube between boiler and vertical chimney.

***Chimney Module elements are not allowed to be placed directly on top of the boiler's flue gas exit, the reason is to avoid rain and condense going directly to the boiler's flue gas box and by that be the cause of corrosion!!***

***To prevent flue gas from condensing into the flue gas box, the flue gas tube needs to be insulated by 30mm. lamel mat with foil.***

**The flue gas tube or chimney needs a draft stabilizer mounted.  
(See diagram 2)**

Recommended chimney dimensions:

| Input- max. Work effect | Boiler- flue gas exit | Chimney- internal diameter | Chimney height         |
|-------------------------|-----------------------|----------------------------|------------------------|
| 12 kW.                  | Ø 130 mm              | Ø130mm                     | 3-6 meter above boiler |

A chimney sweeper needs to approve the installation hench chimney connection, chimney and fire- technics and safety in boiler room.

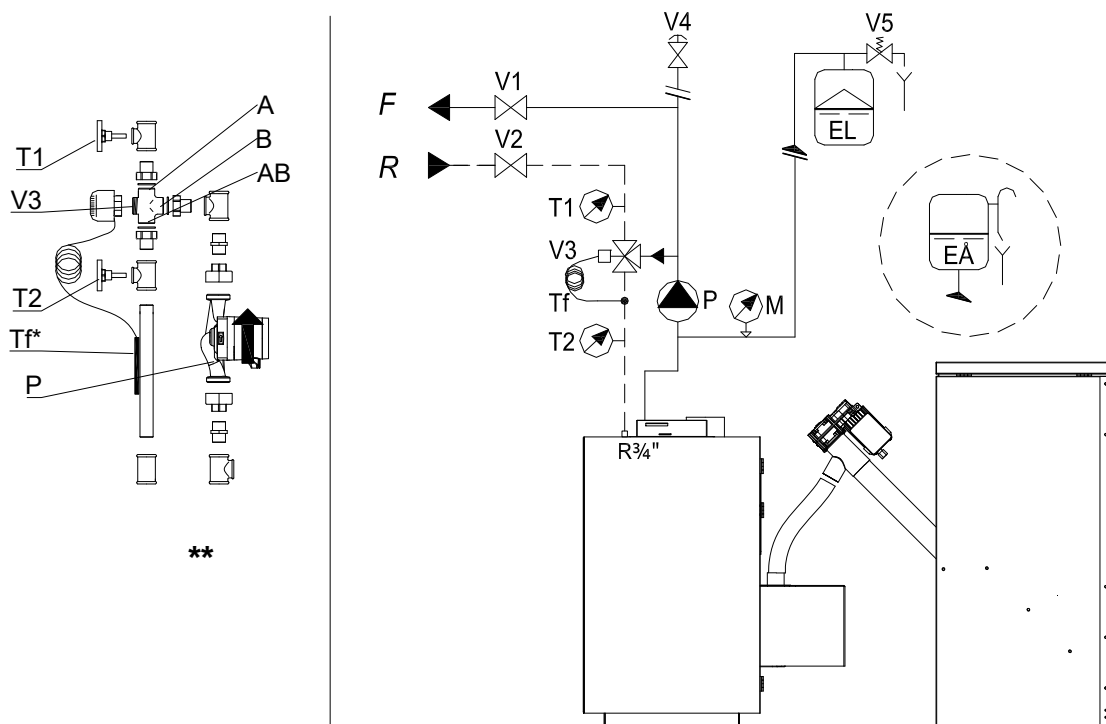
## Electric attachment

See diagram 3

The electric installations need to be carried out by an authorized electric-technician. The cable connection needs its own separate cut off switch (ce- plug/safety switch)

The boiler needs 1x230V+N+PE, from 10-amp fuse group.

## Diagram 1 – Heat Circuit installation

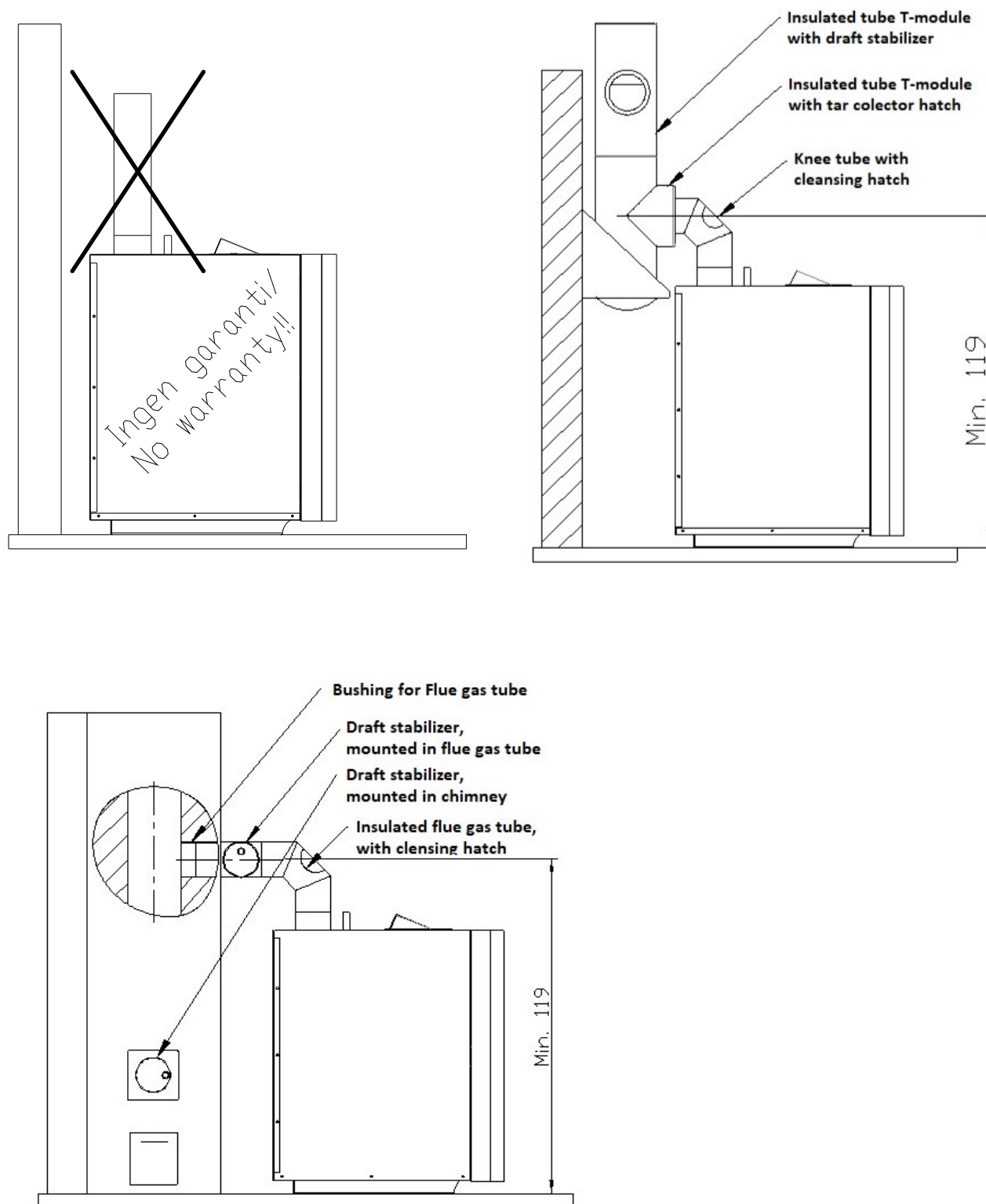


\*Attach "Tf" on the outside of nipple-pipe with strip.  
Pipe shell or similar insulation needs to be mounted on the sensor- and nipple-pipe.

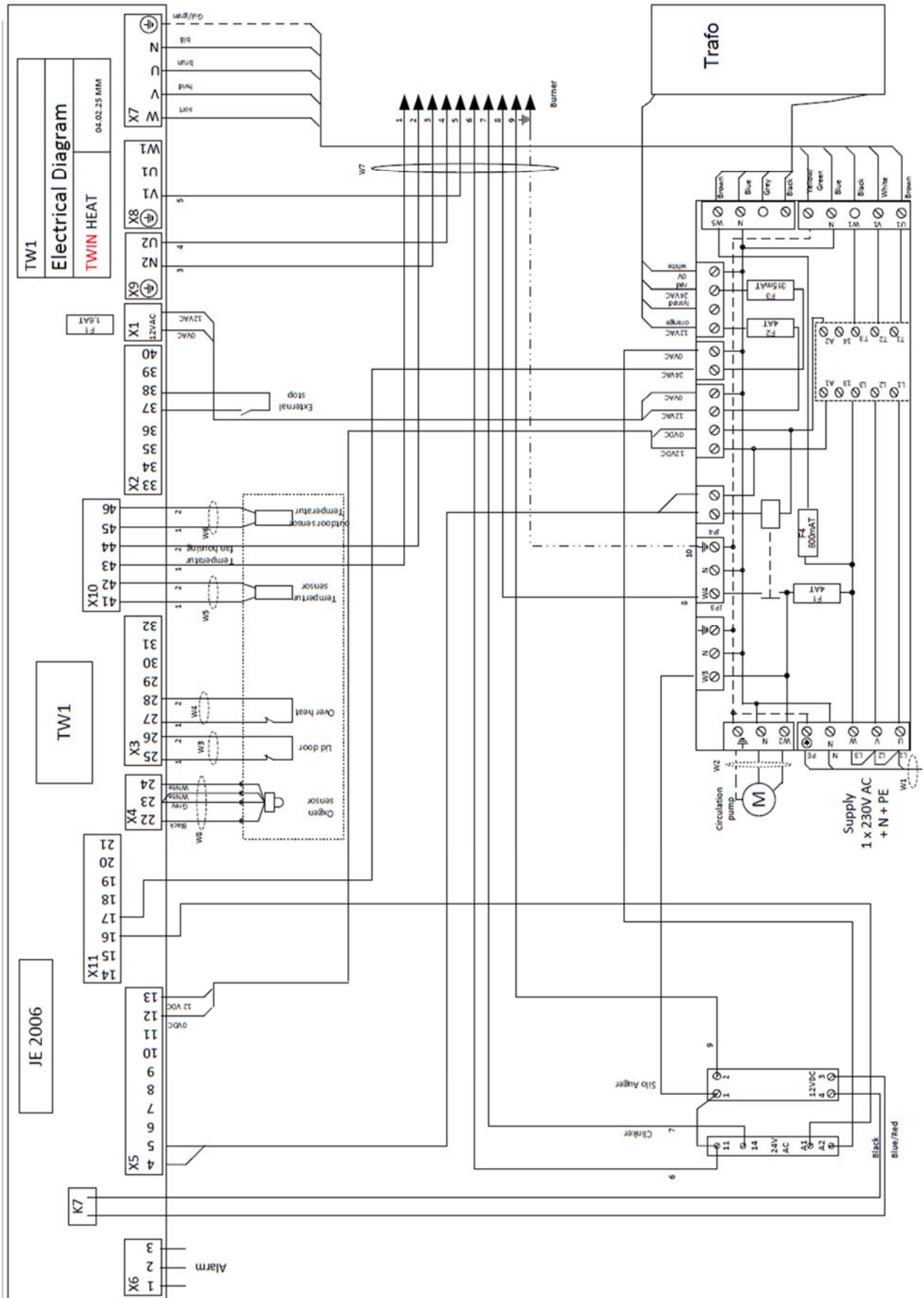
\*\* T-piece for connecting the expansion/safety valve

|  |                                                       |       |                                                                                     |
|--|-------------------------------------------------------|-------|-------------------------------------------------------------------------------------|
|  | Shutoff-valve                                         | V1-V2 | Shutoff valve at flow, return and cold water-supply for sprinkler, in boiler room.  |
|  | 3-way thermostatic-controlled mix valve (shunt valve) | V3    | 3 way- shunt valve to ensure that 60°C hot water returning to boiler is always met. |
|  | ventilation                                           | V4    | ventilation, eventually automatic, placed by need.                                  |
|  | Safety valve 2,5 bar                                  | V5    | No armature allowed between boiler and safety valve!                                |
|  | Thermometer                                           | T1-T2 | Thermometer for return positioned before and after shunt valve.                     |
|  | Temperature sensor                                    | Tf    | Temperature sensor for regulating the shunt valve.                                  |
|  | Manometer                                             | M     | Manometer for system pressure.                                                      |
|  | Pump                                                  | P     | Circulation- pump.                                                                  |

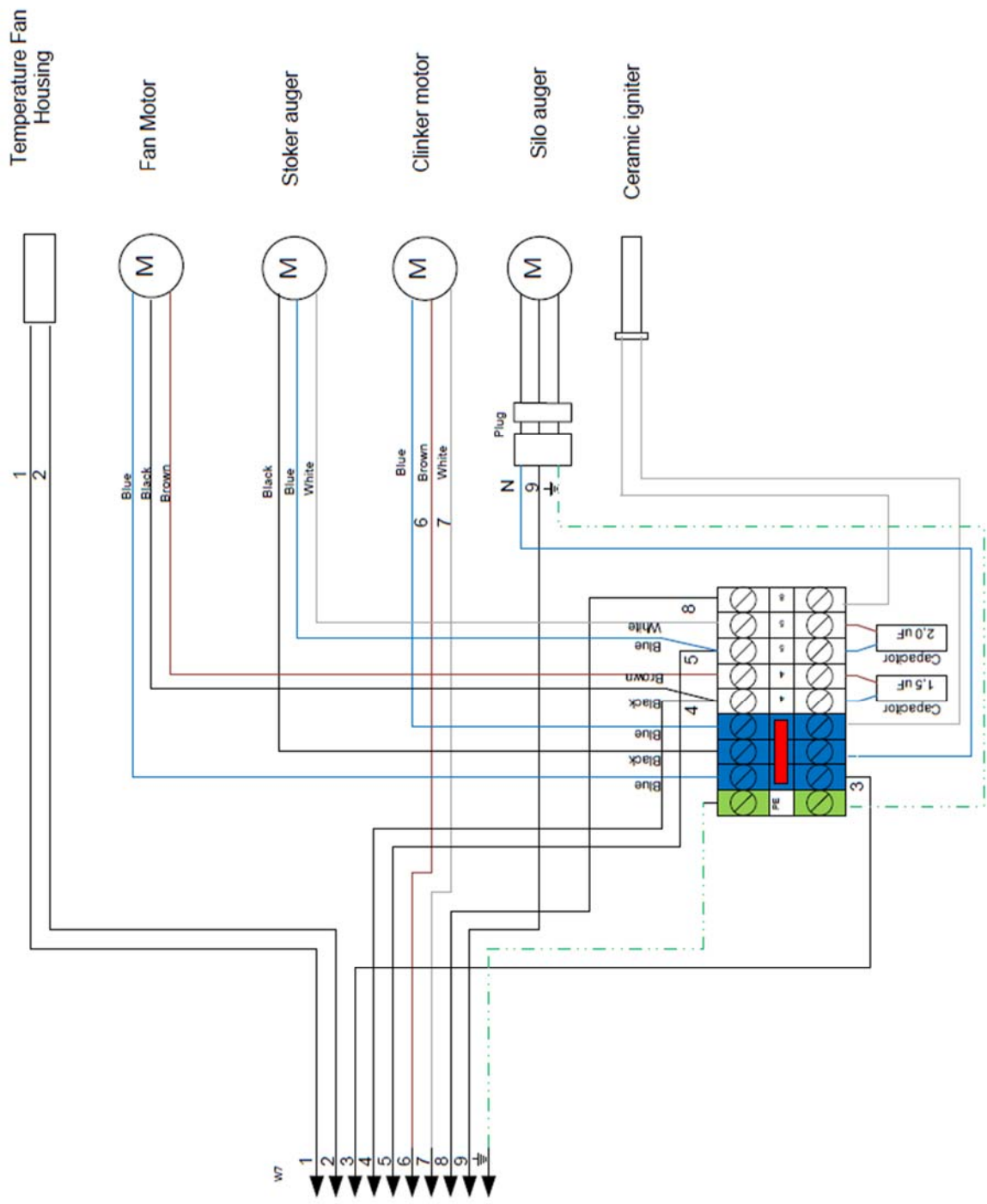
## Diagram 2 – Chimney attachment



# AFSNIT 7- EL-DIAGRAMMER



# TW1 Burner



|                    |             |
|--------------------|-------------|
| TW1                |             |
| Electrical Diagram |             |
| TWIN HEAT          | 04.02.25 MM |