



Type VRF

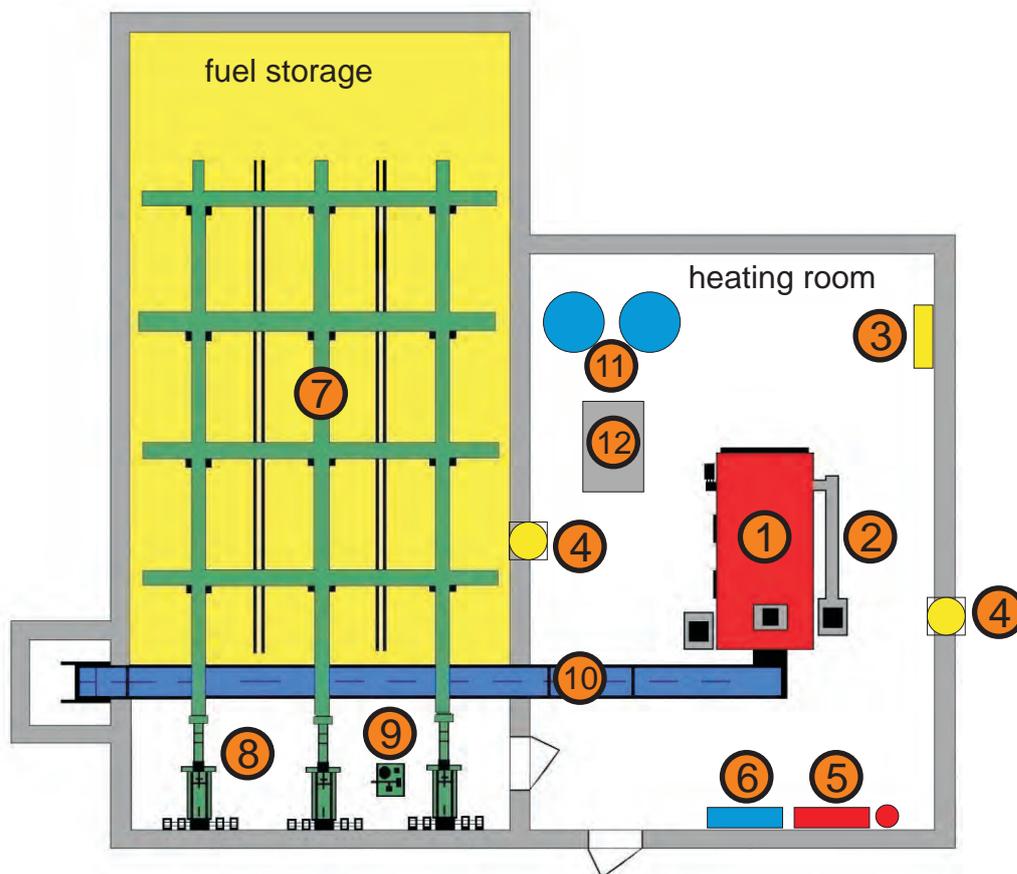
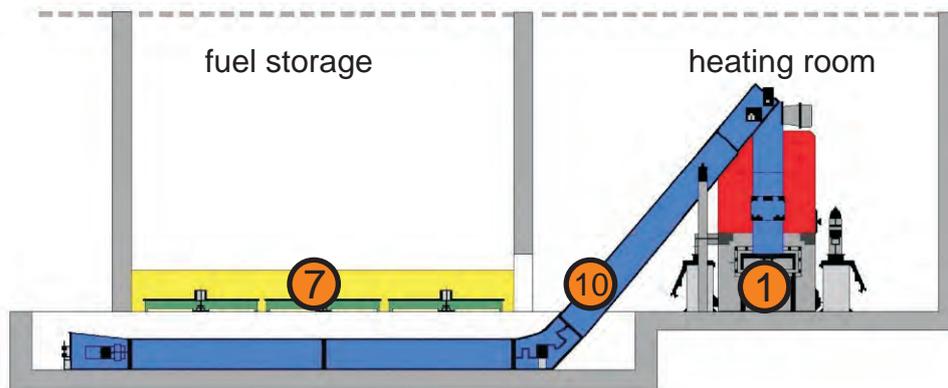
- comfortable
- low-maintenance
- high degree of efficiency

Automatic moving grate firing type VRF

Moving grate firing for biomass
e.g. wood chips, pellets, wood residues
from wood working and processing
Boiler output: 350 - 2400 kW

Q Z S
Quality
Reliability
Safety

Example for a firing plant



legend:

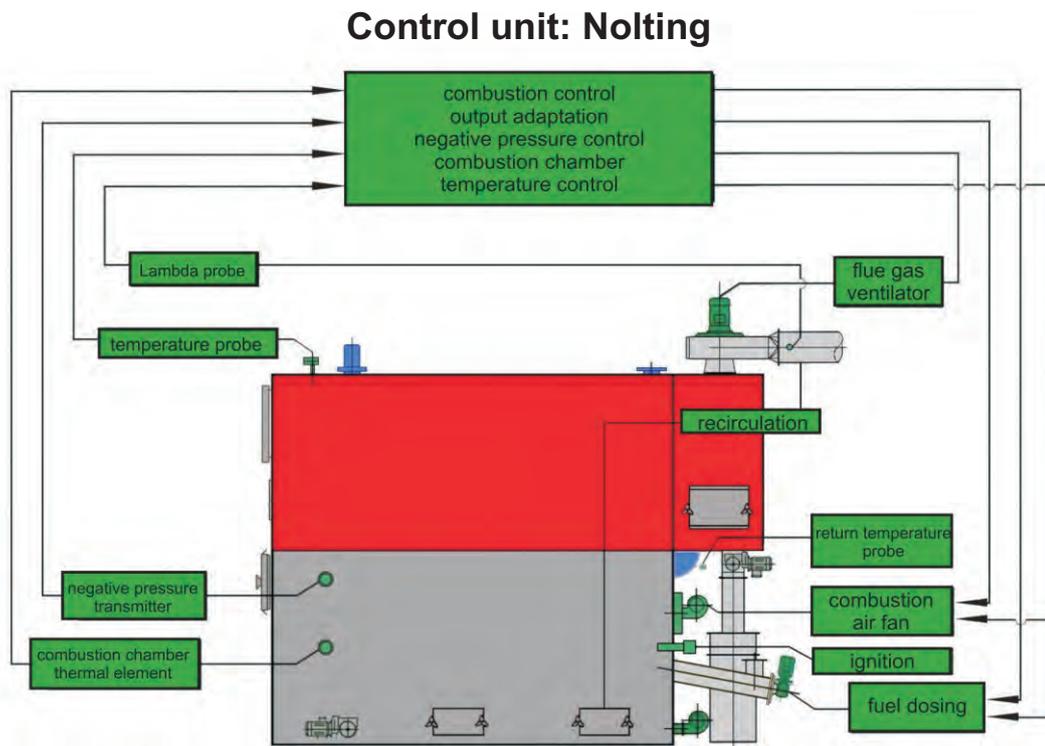
heating room:

- 1 firing with boiler,
flue gas dust separator and flue gas ventilator
- 2 automatic combustion chamber de-ashing
- 3 control panel (switch cabinet)
- 4 chimney
- 5 thermal expansion vessel
- 6 heating distribution
- 11 buffer storage
- 12 peak load boiler

fuel storage

- 7 slide-bottom discharging unit
- 8 hydraulic cylinder
- 9 hydraulic aggregate
- 10 fuel feeding (scraper conveyor)

Precise regulation means optimising functions and simultaneously reduce emissions



The **control unit Nolting** is a system especially produced for wood firing technique with an automatic combustion control, an automatic output adaptation and an automatic combustion chamber negative pressure control. The control unit also includes the process control and safety monitoring of the firing's operation. An extensive signaling on a touch screen display makes it easier to deal with this firing technology (see separate brochure "control technology").

Combustion control: different fuel characteristics are recognised by measuring the residual air relation (Lambda probe) and are corrected by control technique. A constant good combustion quality is guaranteed.

Output adaptation¹: occurring change of load in the system, or summer and winter operation require the adaptation of boiler output to the actual heat demand. The focus is always on continuity of the boiler operating times. The automatic boiler output adaptation has a direct influence on the combustion quality of the system.

Negative pressure control¹: the automatic negative pressure control changes or adapts the negative pressure for an optimal operation. The negative pressure is measured in the combustion chamber of the system. The negative pressure control as well as accompanies the combustion control as well as the automatic output adaptation and therewith supplies the base for continuous presuppositions for optimization of boiler operation.

Combustion chamber temperature control¹: The combustion chamber temperature control is an important factor for the process of the complete firing operation. On the one hand the combustion chamber may not become too hot, on the other hand they may not cool down too much during partial load operation. In addition preserving the fire during the fire maintaining phases has to be controlled. The combustion chamber temperature is an important variable for control and regulation which serve further improvement of the burning quality.

Flue gas recirculation¹: The flue gas recirculation is used to cool the burning and the combustion chamber. The recirculation volume is suitably regulated for the fuel (Avoids slagging.)

Automatic ignition¹: A special program with freely configurable key data provides the necessary safety in the ignition program's process.

additional functions for the control unit¹ : automatic de-ashing unit, control of return temperature increase, buffer storage management and cascade control

¹ as an option

The performance of a firing plant is considerably influenced by the quality of the additional components. Our experienced staff support you in the planning in order to provide you a suitable solution for the best possible general concept.



Flue gas recirculation (option)

With the operation of a flue gas recirculation a part of the flue gas is supplied to the combustion chamber together with the primary air. The secondary air is injected separately into the combustion chamber by high speed injectors.

Hereby, the slagging of the fuel is reduced and the emission of the NO_x values is decreased.

By reducing the temperature in the combustion chamber the grate's operational life will be increased.



Pressure blast cleaning (option)

With a pressure surge directly into the flue pipe it is possible to remove the dust depositions in the horizontal heat exchanger tubes and stir up the dust. This raised dust is absorbed and discharged from the following flue gas stream.



Individual planning ash removal (optional)

A complete de-ashing of the furnace is done by the ash discharging unit for combustion chamber, by the undergrate de-ashing and by the cyclone separator's de-ashing.



Ash discharging unit for combustion chamber

By a time-controlled movement of the grate bars the fuel is pushed through the furnace. At the end of the fire grate the remaining ash falls down into the ash removal screw. The ash, which falls down through the rips of the movable grates, will be picked up by the hydraulically movable undergrate de-ashing and will be transported to the ash removal screw. The manual ash removal is no longer required.

Convincing advantages:

- high comfort when operating
- warranties of emissions according to the new 1st BImSchV or 4th BImSchV
- high degree of efficiency: over 90%
- easy to maintain
- for more than 65 years experience in firing technique
- boilers “made in Germany“
- customer service directly from the manufacturer

VRF - technique

- hydraulic moving grate
- low-wear, heat-resisting grate bars
- controllable moving speed of the grate carriage
- low-maintenance, heat-resisting bearing technique
- lying flue gas tube boiler with turning chamber
- large dimensioned cleaning doors
- combustion chamber with vault ceiling
- automatic ash removal* for grate ash room, combustion chamber and dust separator
- fuel insertion into the fire with compact stoker screw for fuel up to size G 50 according to Ö-Norm (P45 according to DIN CEN/TS 14961)



vault ceiling

moving grate

- for coarse, bulky fuels (G 100 according to Ö-Norm/P63 according to DIN CEN/TS 14961) we offer as an option a hydraulic insertion
- the insertion channel is equipped with concrete lining, watercooled, isolated and covered outer sheath; this reduces burn-back and ensures safety

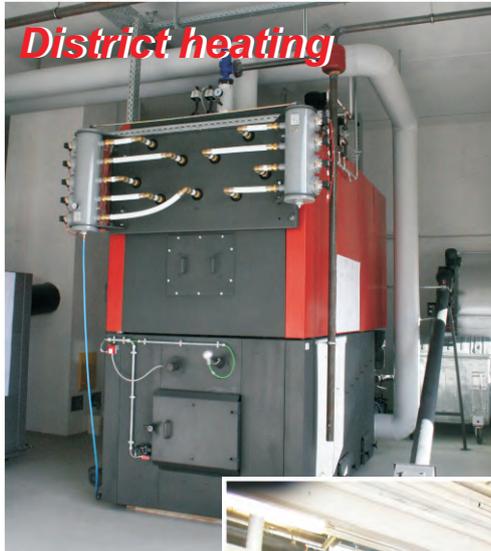
Options:

- automatic output adaptation (20 - 100 %)
- automatic ignition
- automatic de-ashing for combustion chamber
- multicyclone dust separator / fine particle filter
- flue gas recirculation
- return temperature control
- buffer storage management
- cascade control
- remote maintenance
- external access, etc.

* Option

Examples of realisations:

www.nolting-online.de



District heating



Market gardening



Industry

Agriculture



Carpenter

Orthopaedic technique



Local authorities

Nolting
Holzfeuerungstechnik GmbH

Aquafinstraße 15
D - 32760 Detmold

Tel.: +49 (0)5231/9555-0
Fax: +49 (0)5231/9555-55

E-mail: info@nolting-online.de
Internet: www.nolting-online.de

