Maskinfabrikken REKA A/S . Vestvej 7 . DK-9600 Aars . Tlf. (+45)98624011 . Telefax (+45)98624071
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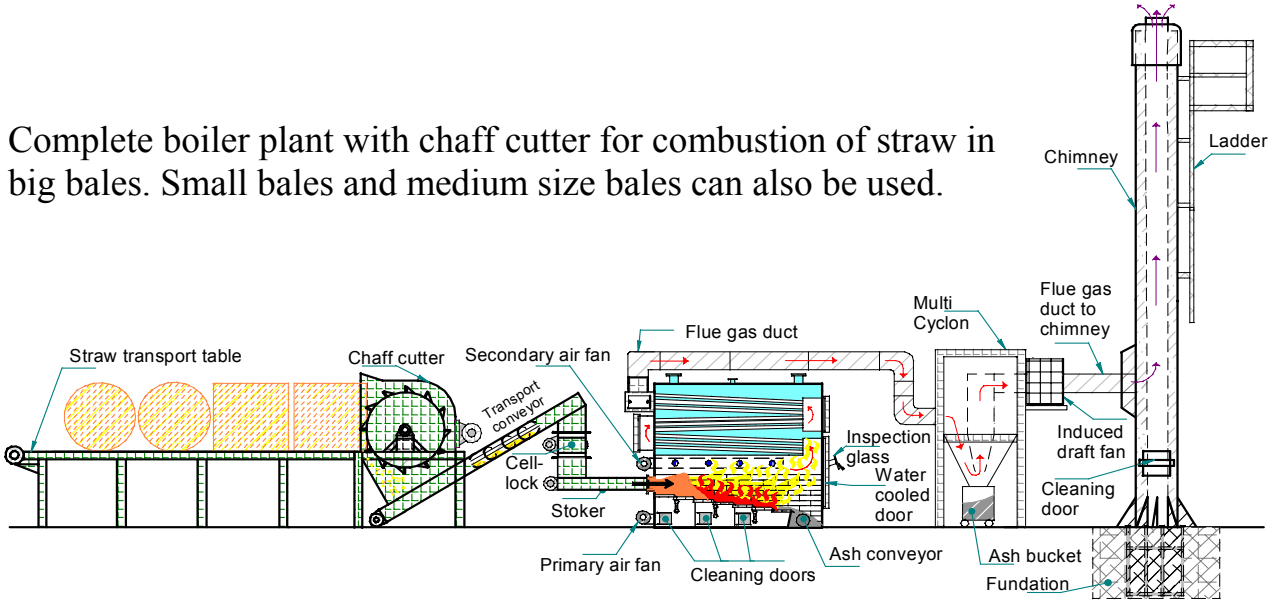
REKA PUSH GRATE BOILER TYPE HKRST
100 kW to 3,5 MW

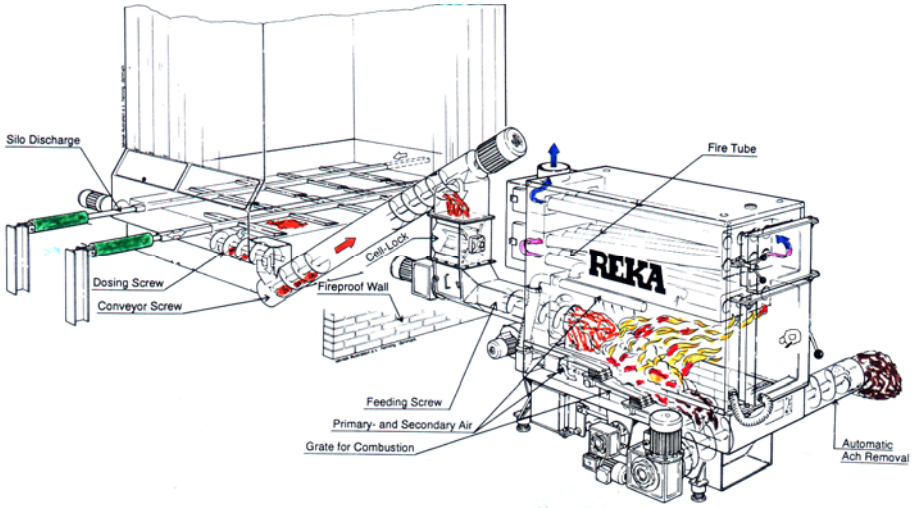
Fully automatic boiler plants for:
(0-30 % humidity in fuel)

Complete boiler plants

Complete boiler plant with chaff cutter for combustion of straw in big bales. Small bales and medium size bales can also be used.



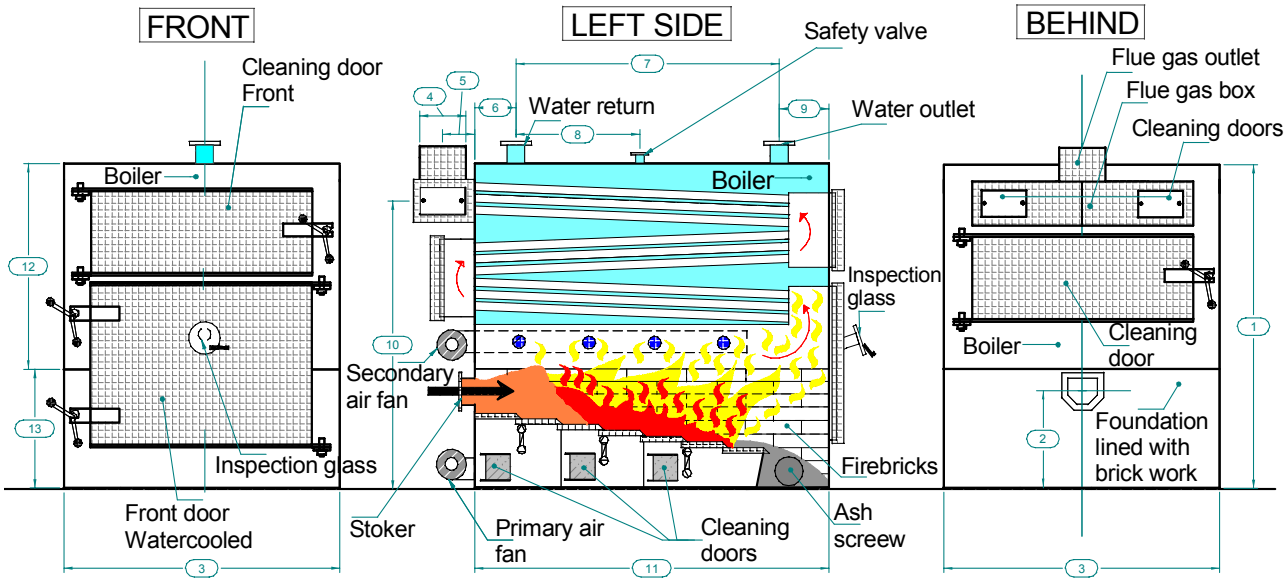
Complete boiler plant with hydraulic discharge system for combustion of cutted straw, wood chips, shaving, nutshells, straw- and wood pellets, grain etc.



The boiler:

REKA push grate boiler type HKRST can be fed with fuel witch has a humidity of max 30 % of total weight.
The boiler is made of 1.class steel materials, and the welding is done by certified welders.
It has 4 passes, 3 of which are convection passes. The boiler tubes have big wall-thickness (4,5mm). Because of this the life time of the boiler is very long, normally 20 years.
The boiler tubes have big diameter, causing easy cleaning.
The secondary air nozzles are placed in the boiler sides. Each nozzle has individual adjusting damper.
The direction of the dampers can easily be changed from outside, without cooling down the boiler.
The nozzles are made of special heat-resisting material.
All inspection doors are made quite big, and are equipped with adjustable hinges and closing mechanism.
The boiler has an external insulation by 100 mm mineral wool which is covered by 1mm thick Al-Zn-covered steel plates.

Boiler dimensions

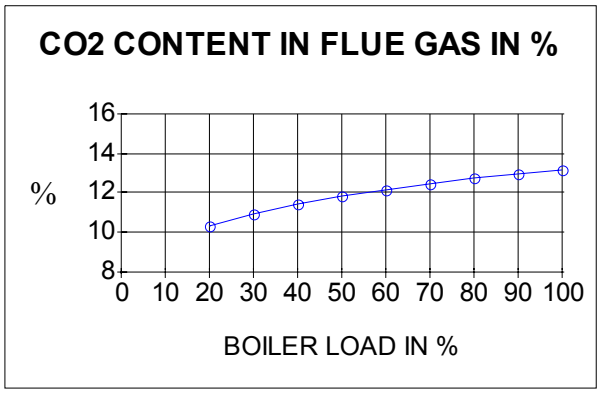


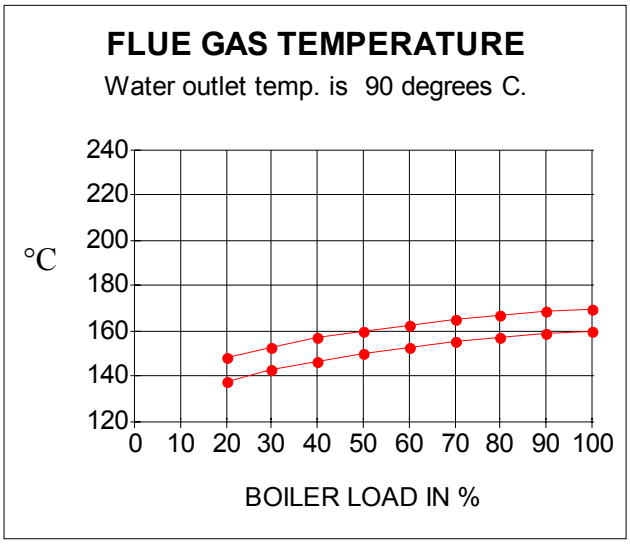
Boiler sizes	kW	100	160	200	300	350	400	500	600	650	750	1000	1300	1500	2000	2600	3000	3500
1. (Total height incl. Insul.)	mm	1900	2050	1970	2400	2240	2420	2350	2420	2420	2780	2800	3210	3410	3655	3655	4840	4840
2. (Floor to stoker)	mm	800	880	900	930	930	930	950	1010	1010	1120	1150	1150	1150	1450	1450	1910	1910
3. (Total. width)	mm	990	930	1236	1316	1316	1370	1534	1534	1546	1534	1534	1722	1722	2340	2340	2700	2700
4. (Flue gas duct diam.)	mm	215	215	215	250	250	250	250	300	300	300	300	350	350	590*590	590*590	500	550
5. (Flue gas box to boiler)	mm	250	270	250	240	240	240	240	240	240	350	300	320	320	600	600	400	400
6. (Back end to flange)	mm	320	320	400	330	400	370	538	390	390	515	730	730	730	1680	1680	1930	1930
7. (Between outl.- retu. fl.)	mm	950	1400	1500	1370	1300	1440	1344	1600	1600	1970	1805	2000	2000	2250	2250	2300	2300
8. (Between safty - retu. fl.)	mm	360	600	750	680	650	690	672	800	800	1045	970	1000	1000	1130	1130	1380	1380
9. (Front end to outl. flange)	mm	240	550	400	570	570	460	734	630	630	795	730	720	720	600	600	600	600
10.(Floor to flue gas box)	mm	1675	1820	1800	2100	2065	2150	2120	2270	2270	2515	2550	2920	3120	2970	2970	4025	4025
11.(Total length)	mm	1770	2515	2300	2520	2520	2520	2780	2780	2900	3528	3530	3700	3700	4530	4530	4830	4830
12. (Boiler height)	mm	1270	1300	1270	1646	1546	1670	1610	1610	1610	1850	1850	2260	2460	2455	2455	3300	3300
13. (Foundation height)	mm	625	750	750	750	750	750	750	810	810	930	950	950	950	1200	1200	1540	1540
Stoker screw diameter	mm	150	150	180	180	180	180	180	200	200	250	250	250	250	300	300	400	400
Ash screw diameter	mm	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Outlet flange (PN 16)	mm	50	50	65	65	80	80	100	100	100	100	125	150	150	200	200	200	200
Return flange (PN 16)	mm	50	50	65	65	80	80	100	100	100	100	125	150	150	200	200	200	200
Safety valve flange (PN 16)	mm	32	32	40	40	40	40	40	40	40	40	50	50	50	125	150	150	150
Boiler weight without water	kg	1500	1800	1900	2100	2300	2400	3300	3600	3800	4000	5800	7000	7700	10200	11000	14000	15500
Foundation section weight	kg	1000	1200	1200	1600	1600	1600	2500	3000	3000	3500	3700	5000	5000	6000	7000	10000	10000
Water content	litre	1000	1150	1250	1400	1600	1800	2300	2600	2900	3100	5200	5000	5600	10500	10000	16700	16500
Hydraulic test pressure	bar	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2
Design pressure max	bar	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5
Turning radius frontal door	mm	550	700	700	800	800	800	1000	1150	1150	1100	1100	1150	1150	1150	1150	1200	1200

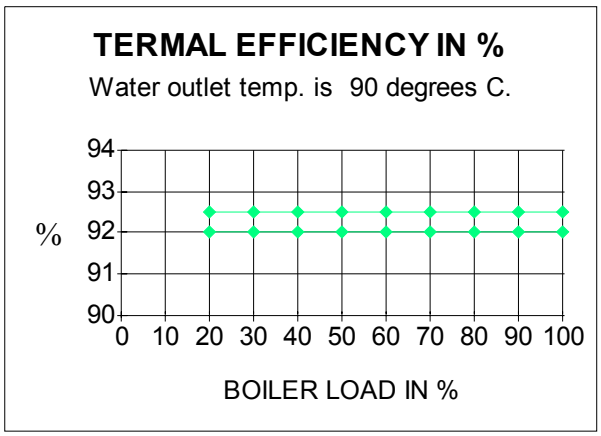
Push grate section:

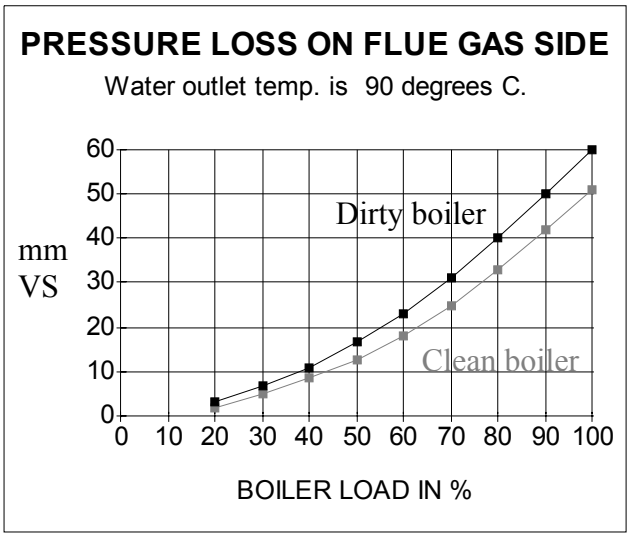
The push grate section is placed straight below the boiler. The grate elements are made from heat resisting cast iron. The travelling- and stopping time can be adjusted in the control table.
There is very little falling-through-ashes because of the special design of the grate elements.
All grate elements can be exchanges without special tools.
If there is used special slag-creating fuels as straw etc., the grate can be equipped with water cooling.
The ashes which has dropped through the grate is normally taken out through the cleaning door manually.
If there is a special wish from the customer the drop-through ashes can be removed automatically (more price).
The ashes from the grate is normally almost 100% burnet out (light grey colour). It is brought out from the grate end by a heat resistant ash screw.
At the front end the grate has a big admission water cooled door. This door has an inspection glass, which can be turned, so that it is protected during service.
The room below the grate is divided in zones. Every zone is supplied by primary air through a channel. Each channel has an adjustable damper.
Inside the grate section is insulated with mineral wool. Then moler bricks, and then (inmost) heat resistant chamotte bricks

Graphs









Start-up advice

By start-up of cold boiler there will normally create a little condensation water in the flue gas outlet box. This will disappear when the boiler water temperature has reached 60 ºC.
By start-up of new boiler, the boiler should run by low load (approach 25% load) in approach 24 hours. Then the load can be increased. This should be done in order to get a good drying-out of the brickwork in the inspection doors and in the furnace.

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