

**schuster®**



# DDS

CARBON STEEL PRESSURIZED BOILER WITH REVERSED FLAME  
FROM 80 kW TO 6100 kW

# Technical features

Pressurized boiler with output range from 80 to 6100 kW, suitable for two stage or modulating gas burners

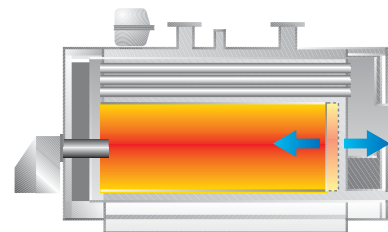
- Range composed by 27 models
- Outer shell in carbon steel, of elliptic shape (up to 870 kW), that creates advantages such as:
  - reduced width dimensions
  - positioning of the tube bundle above the furnace with drastic reduction of the possible condensations
- Up to 560 kW the furnace is constrained between front and rear tube plates.
- Between 680 and 3100 kW it is fluctuating in order to reduce the thermal-mechanical stresses.
- From 3500 to 6100 kW models it is endowed with special circular diaphragms of junction, interposed between the furnace bottom, on the water side, and the rear tube plate, with possibility of absorption of the expansions.
- Furnace bottom with dissipation plates for a better efficiency and a greater mechanical resistance
- Optimization of the heat exchange thanks to:
  - special helical turbulators in the front zone of the smoke pipes
  - driven water way inside the boiler
- Front door with self-centring closing, adjustable in vertical, axial and transversal direction, with the mechanism separated from the hinge.
- Internal insulation of the door in super-light recyclable concrete
- Outer covering casing with mattress of anti-tearing mineral wool of high thickness (50 - 60 - 80 - 100 mm, according to the output)
- Smoke chamber with condensate drain connection.
- Panel boards with thermostatic or electronic control (optional)
- Easy transportation thanks to the upper hooks and strong base elements
- Available in version to be assembled in the boiler house (up to 870 kW)
- Efficiency class: 3 stars



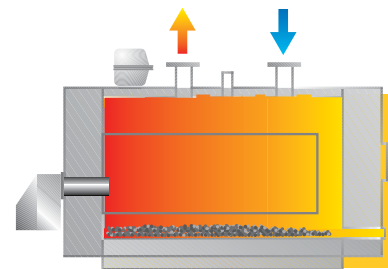
## Smoke pipes

The pipes of the second smoke pass contain, in their inside, special aluminium profiles, that allow:

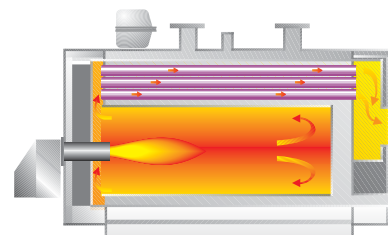
- greater efficiency (+50%) in comparison to a smooth pipe with the same length
- smaller weight compared with a steel pipe, greater elasticity to the thermal expansions and reduction of mechanical stresses on the front and rear tube plates of the boiler body
- "thermal capacity", almost double in comparison to the carbon steel, to withstand the condensation phenomena at the boiler starting and in the use of the boiler at low temperatures
- start of the burners, at the ignition phase, facilitated by the first part of the smoke pipes with just an helicoidal turbulator and the remaining part with the aluminium profiles, pushed against the wall, by a threaded bar.



FLOATING FURNACE



HOMOGENEOUS TEMPERATURE DISTRIBUTION



SMOKE STRUCTURE AND PATH



ADJUSTABLE DOOR

# Panel boards (optionals)

## STANDARD



The STANDARD panel board is endowed with:

- series of switches
- thermometer
- safety thermostat
- thermostat for two stage burner
- internal minimum thermostat (for C.H. pump)

## MASTER MODUL MASTER BISTADIO



The panel boards Master MODUL and BISTADIO for high temperature are endowed with:

- E8 controller
- LAGO BASIC burner controller
- external temperature sensor
- boiler temperature sensor
- D.H.W. storage tank
- temperature sensor
- C.H. flow temp. sensor
- primary circuit temperature sensor
- series of switches
- safety thermostat

## CASCADE MODUL CASCADE BISTADIO



The panel boards CASCADE MODUL and CASCADE BISTADIO are endowed with:

- LAGO BASIC burner controller
- boiler temperature sensor
- series of switches
- safety thermostat

### For boilers DDS combined with MODULATING Burners

SINGLE Boiler	+	1 Panel MASTER MODUL
2 x DDS in cascade	+	1 Panel MASTER MODUL + 1 Panel CASCADE MODUL
(n) x DDS in cascade (max 8 boilers)	+	1 Panel MASTER MODUL + (n-1) Panels CASCADE MODUL

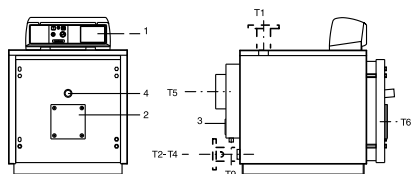
### For boilers DDS combined with BISTADIO Burners

SINGLE Boiler	+	1 Panel MASTER BISTADIO
2 x DDS in cascade	+	1 Panel MASTER BISTADIO + 1 Panel CASCADE BISTADIO
(n) x DDS in cascade (max 8 boilers)	+	1 Panel MASTER BISTADIO + (n-1) Panels CASCADE BISTADIO

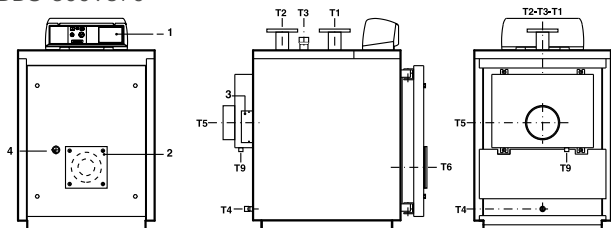
MODEL	Nominal output min/max	Nominal input min/max	Boiler capacity	Water side pressure drop	Flue gas pressure drop	Max. boiler operating pressure	Efficiency Class	Dimensions h x l x d	Weight
	kW	kW		l	m c.a.			mm c.a.	
DDS 80	60÷80	63,3÷85,2	86	0,08÷0,15	3,8÷6,8	6	★★★	912x690x995	221
DDS 120	90÷120	94,6÷127,4	126	0,06÷0,11	6,1÷10,8	6	★★★	1002x760x1210	325
DDS 160	120÷160	125,8÷169,4	151	0,11÷0,20	8,9÷15,8	6	★★★	1002x760x1390	366
DDS 200	150÷200	157÷211,3	203	0,10÷0,17	11,1÷19,7	6	★★★	1127x860x1442	505
DDS 250	187,5÷250	195,8÷263,6	247	0,12÷0,22	13,3÷23,6	6	★★★	1127x860x1692	583
DDS 300	225÷300	234,6÷315,8	298	0,12÷0,22	15,9÷28,4	6	★★★	1372x860x1541	665
DDS 370	277,5÷370	288,8÷388,7	398	0,08÷0,14	18,1÷32,2	6	★★★	1542x890x1606	845
DDS 450	337,5÷450	351÷472,4	462	0,11÷0,20	20,2÷35,8	6	★★★	1542x890x1801	986
DDS 560	420÷560	436,8÷587,9	565	0,17÷0,30	23,7÷42,1	6	★★★	1542x890x2113	1119
DDS 680	510÷680	530,4÷713,9	671	0,12÷0,21	27,8÷49,4	6	★★★	1622x1122x1989	1435
DDS 780	585÷780	608,4÷818,9	753	0,15÷0,27	30,7÷54,4	6	★★★	1622x1122x2184	1557
DDS 870	652,5÷870	678,6÷913,4	836	0,19÷0,33	33÷58,6	6	★★★	1622x1122x2379	1656
DDS 1000	750÷1000	780÷1049,8	1040	0,11÷0,19	35,9÷63,9	6	★★★	1622x1352x2346	1970
DDS 1180	885÷1180	920,4÷1238,8	1242	0,15÷0,26	38,6÷68,6	6	★★★	1622x1352x2686	2175
DDS 1400	1050÷1400	1092÷1469,8	1418	0,15÷0,26	42,1÷74,9	6	★★★	1732x1462x2781	2975
DDS 1650	1237,5÷1650	1287÷1732,3	1617	0,20÷0,36	45,5÷80,9	6	★★★	1732x1462x3151	3465
DDS 2000	1500÷2000	1560÷2099,7	2086	0,16÷0,38	40,5÷72	6	★★★	1892x1622x3225	4390
DDS 2350	1762,5÷2350	1833÷2467,1	2324	0,21÷0,38	43,2÷76,9	6	★★★	1892x1622x3545	4700
DDS 2700	2025÷2700	2106÷2834,6	2667	0,28÷0,50	45,6÷81	6	★★★	1990x1720x3835	5370
DDS 3100	2325÷3100	2418,1÷3254,5	4142	0,37÷0,66	43,3÷76,9	6	★★★	2271x1970x3879	6990
DDS 3500	2625÷3500	2730,1÷3674,5	4455	0,37÷0,65	50,4÷89,5	6	★★★	2271x1970x4279	7790
DDS 3900	2925÷3900	3042,1÷4094,4	6012	0,28÷0,50	44,4÷78,6	6	★★★	2533x2088x4738	8630
DDS 4400	3300÷4400	3432,1÷4619,3	6012	0,35÷0,63	56,6÷100,5	6	★★★	2533x2088x4738	8630
DDS 4800	3600÷4800	3744,1÷5039,3	7058	0,42÷0,75	50,5÷92,2	6	★★★	2653x2214x4928	9675
DDS 5200	3900÷5200	4056,1÷5459,2	7058	0,50÷0,88	59,3÷105,4	6	★★★	2653x2214x4928	9675
DDS 5700	4275÷5700	4446,1÷5984,1	7909	0,59÷1,05	49,5÷90,5	6	★★★	2860x2380x5484	13060
DDS 6100	4575÷6100	4758,1÷6404,1	7909	0,68÷1,21	56,7÷100,7	6	★★★	2860x2380x5484	13060

# Dimensions and technical data

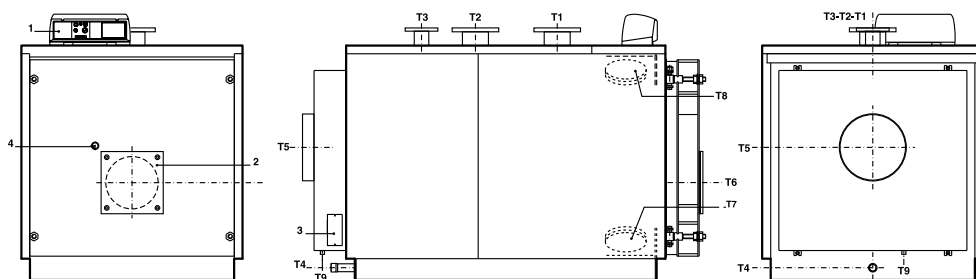
DDS 80÷250



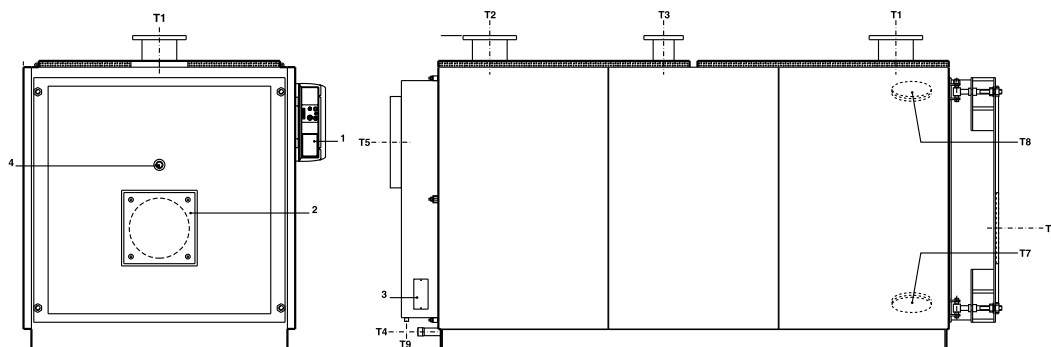
DDS 300÷870



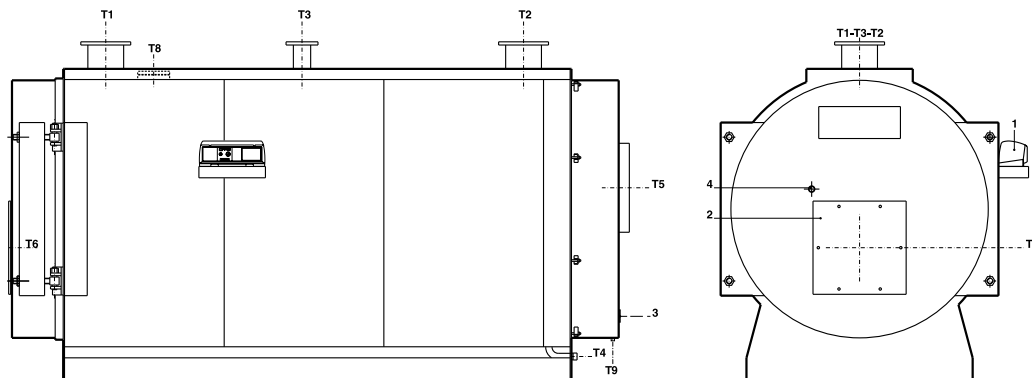
DDS 1000÷2350



DDS 2700÷3500



DDS 3900÷6100



- 1 Panel board
- 2 Burner supporting plate
- 3 Smoke chamber cleaning door
- 4 Flame sight glass
- T1 C.H. flow
- T2 C.H. return
- T3 Expansion vessel connection
- T4 Boiler drain
- T5 Chimney connection
- T6 Burner connection
- T7 Sludge drain flange
- T8 Inspection flange
- T9 Condensate drain