Beeston Steel Solutions

Duomax HP
736 - 2540kW

Ecomax HT
64 - 315kW

Duomax HT
128 - 630kW

Ecomax
64 - 1270kW

Outputs from 64kW to 2540kW
Gas, Oil, Dual Fuel

BEESTON HEATING

● HEATING ● STORING ● MOVING ● CONTROLLING WATER ●

Ecomax
64 - 1270kW

Ecomax HT
64 - 315kW

Beeston Max Range
Energy Saving Boilers

In the 'Max' range, Beeston brings to the commercial heating market the best available technology - an economical, high efficiency solution ideal for new or replacement installations. The Ecomax and Duomax boilers are configured so boiler pipework and burner access is simple and HT models can fit through a normal door width when split down for installation. Control options give maximum flexibility and the appliance carries a three year parts and labour warranty on the burner and a five year parts warranty on the shell and tube.

Whatever your heating requirements, talk to Beeston - we will find the solution that you need.

Outputs from 64kW to 1270kW

The Beeston Ecomax range consists of quiet, energy efficient and durable steel boilers operating on either gas, oil or dual fuel, with outputs ranging from 64kW to 1270 kW in various configurations.

The boilers provide solutions for plant rooms where space is restricted and energy efficiency is a high priority.

Exceptionally reliable due to the careful selection of materials, design and state of the art production and quality control procedures. The burner and accessories are matched and precalibrated according to the power and function of the boiler.

A choice of control panels are available to enhance both the seasonal and boiler efficiency across the range.

Pollutants such as carbons, unburnt hydrocarbons and oxides are radically reduced and in developing the boiler, noise was also considered to be an additional pollutant - so both ranges operate quietly.

Features include:

- all HT models fit through a standard doorway
- reverse flame shell and tube design
- low standing losses
- flue gas temperature monitoring
- precise boiler/burner matching
- boiler/burner systems prewired
- high quality, durable steel shell
- burner lock-out indicator
- on/off, high/low standard options
- fully closing air damper on shut down
- wide range of control panel options
- burner acoustic shrouds included on all HT models
- matched Biral shunt pumps

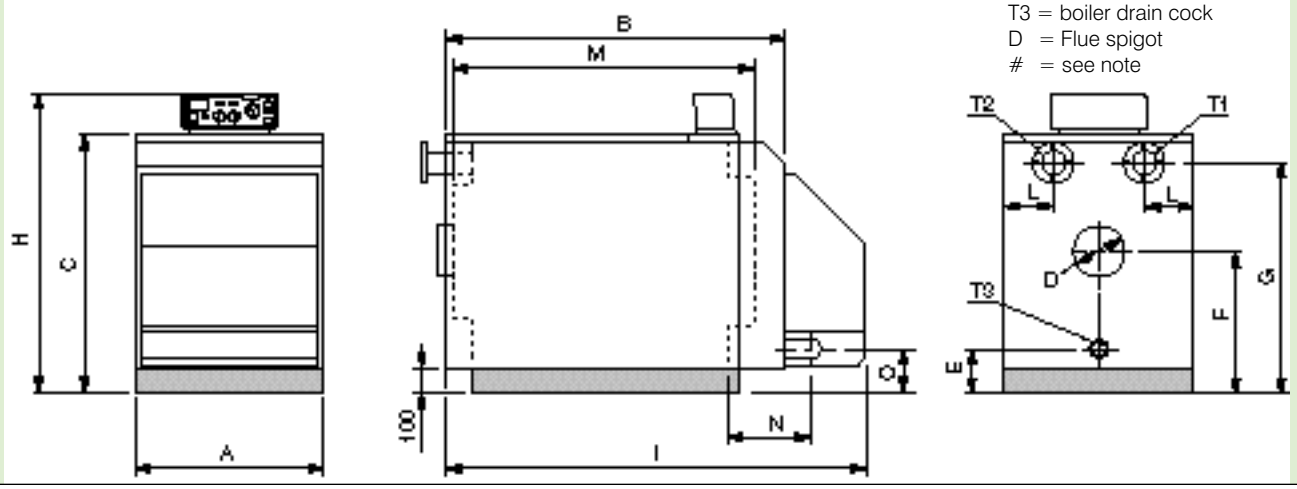
Ecomax HT

ECOMAX HT Technical data

Ecomax HT	model	6	7	8	10	12	14	17	21	25	30
Heat output max	kW	64	74	90	104	125	150	185	220	260	315
Heat input max	kW	70.2	81	98.4	113.5	136.1	163.1	200.8	238.3	281.3	340.2
Nett efficiency	%	90.1	90.2	90.2	90.2	90.2	90.4	90.2	90.5	90.6	90.5
Max working pressure	bar	6	6	6	6	6	6	6	6	6	6
Boiler water content	L	106	106	106	130	130	173	173	214	268	268
Nitrogen oxide emissions	ppm	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55
NOx (0% O2)for natural gas	mg/kWh	<110	<110	<110	<110	<110	<110	<110	<110	<110	<110
Nitrogen oxide emissions	ppm	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
NOx (0% O2)for oil	mg/kWh	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180
Electrical supply V/Hz		230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50
Max electrical absorption (kW)	Oil	0.45	0.5	0.5	0.52	0.52	0.56	0.56	1.1	1.1	1.1
	Gas	0.48	0.48	0.48	0.65	0.65	0.76	0.76	0.88	0.88	0.88
Min gas feed pressure	mbar	15	15	15	15	15	15	15	15	15	15
Hydraulic resistance at 11°CΔT	kPa	1.1	1.1	1.2	1.5	1.8	2.0	2.0	2.5	2.8	2.8
Biral full flow pump		LX323	LX323	LX401	LX401	LX402	LX402	LX503	LX504	LX652	LX652
Biral shunt pump at 25°CΔT equivalent		M12	M12	M12	M12	M13	M14-2	M14-2	M15-2	LX325	LX326
Boiler weight dry	kg	305	307	310	340	343	405	407	470	580	585

Overall dimensions

Key
T1 = system flow
T2 = system return
T3 = boiler drain cock
D = Flue spigot
# = see note



model ECOMAX HT	DIMENSIONS in mm.													connections			flue
	A*	A* *	B	C	E	F	G	H	I	L	M	N* * *	O* * *	T1 DN/PN6	T2 DN/PN6	T3 Ø	D Ø
6	690	695	1115	860	200	528	780	1027	1325	167	1030	183	150	50	50	3/4"	160
7	690	695	1115	860	200	528	780	1027	1325	167	1030	183	150	50	50	3/4"	160
8	690	695	1115	860	200	528	780	1027	1325	167	1030	183	150	50	50	3/4"	160
10	690	695	1275	860	200	530	780	1030	1625	167	1190	196	150	50	50	3/4"	180
12	690	695	1275	860	200	530	780	1030	1625	167	1190	196	150	50	50	3/4"	180
14	690	750	1345	1030	178	568	920	1197	1670	195	1235	246	158	65	65	3/4"	200
17	690	750	1345	1030	178	568	920	1197	1670	195	1235	246	158	65	65	3/4"	200
21	690	750	1595	1030	175	468	820	1197	1920	195	1485	246	158	65	65	3/4"	220
25	790	850	2020	1030	175	468	875	1197	2325	210	1865	313	158	80	80	3/4"	250
30	790	850	2020	1030	175	468	875	1197	2325	210	1865	313	151	80	80	3/4"	250

* without casing * * with casing * * * Gas / oil burner pipeline centres # Safety valve should be fitted to each unit in flow pipework

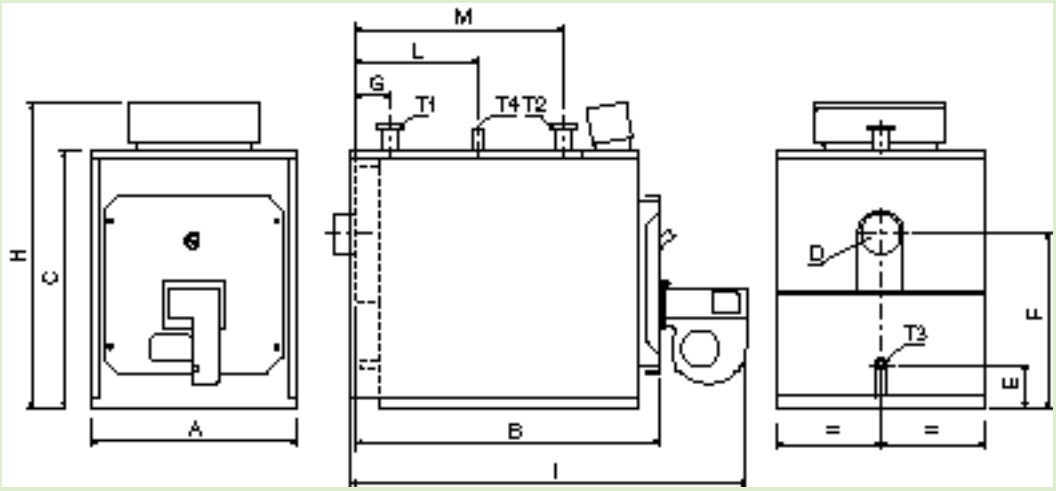
Ecomax

ECOMAX Technical data - models 6 - 35

Ecomax	model	6	7	8	10	12	14	17	21	25	30	33	35
Heat output max	kW	64	74	90	104	125	150	185	220	260	310	349	368
Heat input max	kW	70.3	81.3	98.6	114	136.9	163.9	201.7	239.4	283	342.4	378.9	399.1
Nett efficiency	%	91.0	91.0	91.3	91.2	91.3	91.5	91.7	91.9	91.9	92	92.1	92.2
Max working pressure	bar	6	6	6	6	6	6	6	6	6	6	6	6
Boiler water content	L	120	120	135	135	135	172	172	220	340	500	500	500
Nitrogen oxide emissions	ppm	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55
NOx (0% O2)for natural gas	mg/kWh	<97	<97	<97	<97	<97	<97	<97	<97	<97	<97	<97	<97
Nitrogen oxide emissions	ppm	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
NOx (0% O2)for oil	mg/kWh	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180
Electrical supply	V/Hz	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50	400/50	400/50
Max electrical absorption (kW)	Oil	0.5	0.5	0.5	0.52	0.52	0.56	0.56	0.56	1.1	1.1	1.3	1.3
	Gas	0.5	0.5	0.5	0.65	0.65	0.76	0.76	0.88	0.88	0.88	1.3	1.3
Min gas feed pressure	mbar	10	10	10	10	15	15	15	15	15	15	20	20
Hydraulic resistance at 11°CΔT	kPa	1.1	1.1	1.2	1.5	1.8	2.0	2.0	2.5	2.8	2.8	2.1	2.1
Biral full flow pump		LX322	LX323	LX401	LX402	LX403	LX403	LX652	LX652	LX652	LX653	LX653	LX802*
Biral shunt pump at 25°CΔT equivalent		M12	M12	M12	M13	M13	M14-2	M14-2	M15-2	LX325	LX326	LX402	LX403
Boiler weight dry	kg	247	247	304	304	304	372	372	491	653	760	760	760

* 3 phase supply only

Overall dimensions and fittings



T1 Flow
T2 Return
T3 Boiler drain cock
T4 Safety valve Connection
D Flue spigot
I1 Gas Burner
I2 Oil Burner
I3 Dual fuel Burner

model ECOMAX	DIMENSIONS in mm.												connections				flue	boiler weight
	A	B	C	E	F	G	H	I1	I2	I3	L	M	T1 DN/PN6	T2 DN/PN6	T3 Ø	T4 Ø	D Ø	kg
6	690	1012	830	65	445	205	1000	1245	1245	1255	410	625	50	50	3/4"	1"	180	247
7	690	1012	830	65	445	205	1000	1245	1245	1255	410	625	50	50	3/4"	1"	180	247
8	750	1105	880	55	460	265	1045	1485	1460	1440	500	730	50	50	3/4"	1"1/4	200	304
10	750	1105	880	55	460	265	1045	1485	1460	1440	500	730	50	50	3/4"	1"1/4	200	304
12	750	1105	880	55	460	265	1045	1485	1460	1440	500	730	50	50	3/4"	1"1/4	200	304
14	750	1260	930	80	495	240	1095	1640	1620	1620	530	840	65	65	3/4"	1"1/4	200	372
17	750	1260	930	80	495	240	1095	1640	1620	1620	530	840	65	65	3/4"	1"1/4	200	372
21	800	1480	1030	160	585	240	1200	1860	1870	1860	635	1035	65	65	3/4"	1"1/2	220	491
25	900	1780	1030	75	550	240	1200	2160	2170	2160	790	1340	80	80	3/4"	2"	250	653
30	900	1880	1030	75	550	240	1200	2600	2425	2600	835	1435	80	80	3/4"	2"	250	760
33	900	1880	1030	75	550	240	1200	2600	2425	2600	835	1435	80	80	3/4"	2"	250	760
35	900	1880	1030	75	550	240	1200	2600	2425	2600	835	1435	80	80	3/4"	2"	250	760

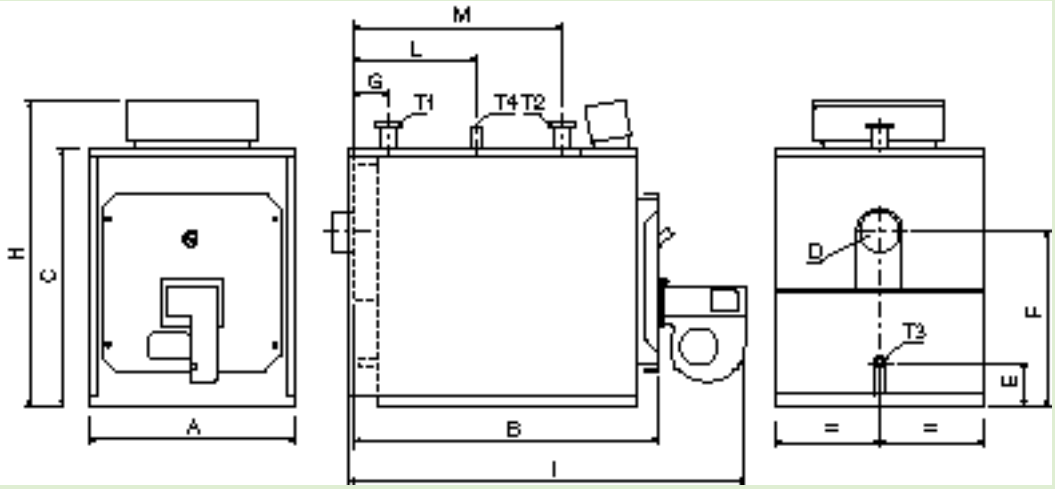
Ecomax

ECOMAX Technical data - models 40 - 120

Ecomax	model	40	45	50	55	60	70	80	90	100	110	120
Heat output max	kW	421	473	527	582	630	735	846	954	1060	1170	1270
Heat input max	kW	456.5	521.8	571.5	631	683	797	918	1034.5	1149.5	1269	1377
Nett efficiency	%	92.2	92.2	92.2	92.2	92.2	91	91	91.2	91.2	91.3	91.3
Max working pressure	bar	6	6	6	6	6	6	6	6	6	6	6
Boiler water content	L	500	570	640	640	640	890	890	1240	1240	1430	1430
Nitrogen oxide emissions	ppm	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55
NOx (0% O2)for natural gas	mg/kWh	<97	<97	<97	<97	<97	<97	<97	<97	<97	<97	<97
Nitrogen oxide emissions	ppm	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
NOx (0% O2) for oil	mg/kWh	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180
Electrical supply	V/Hz	400/50	400/50	400/50	400/50	400/50	400/50	400/50	400/50	400/50	400/50	400/50
Max electrical absorption (kW)	Oil	1.3	1.65	1.65	2.3	2.3	4.2	4.2	4.2	5.6	5.6	5.6
	Gas	1.3	1.3	1.65	1.65	1.65	4.2	4.2	4.2	5.6	5.6	5.6
Min feed pressure gas	mbar	20	20	20	20	20	20	20	20	20	20	20
Hydraulic resistance at 11°CΔT	kPa	2.1	3.5	2.3	2.9	3.8	3.6	3.9	4.5	4.7	5.7	6.0
Biral full flow pump		LX802*	LX802*	LX802*	LX803*	LX804*	L1001*	L1001*	L1001*	L1001*	L1001*	L1002*
Biral shunt pump at 25°CΔT equivalent		LX503	LX503	LX504	LX504	LX652	LX652	LX652	LX653	LX654	LX804*	LX804*
Boiler weight dry	kg	760	905	1123	1123	1123	1310	1310	1810	1810	2060	2060

* 3 phase supply only

Overall dimensions and fittings



T1 Flow
T2 Return
T3 Boiler drain cock
T4 Safety valve Connection
D Flue spigot
I1 Gas Burner
I2 Oil Burner
I3 Dual fuel Burner

model ECOMAX	DIMENSIONS in mm.												connections				flue	boiler weight
	A	B	C	E	F	G	H	I1	I2	I3	L	M	T1 DN/PN6	T2 DN/PN6	T3 Ø	T4 Ø	D Ø	kg
40	900	1880	1030	75	550	240	1200	2600	2425	2600	835	1435	80	80	3/4"	2"	250	760
45	1000	1935	1170	110	645	260	1340	2655	2480	2655	860	1460	80	80	3/4"	DN 50	300	905
50	1100	2025	1285	130	670	250	1445	2745	2575	2745	900	1555	100	100	3/4"	DN 50	350	1123
55	1100	2025	1285	130	670	250	1445	2745	2575	2745	900	1555	100	100	3/4"	DN 50	350	1123
60	1100	2025	1285	130	670	250	1445	2745	2575	2745	900	1555	100	100	3/4"	DN 50	350	1123
70	1250	2365	1475	135	825	290	1640	3255	2985	3455	1000	1800	100	100	1"1/4	DN 65	350	1310
80	1250	2365	1475	135	825	290	1640	3255	2985	3455	1000	1800	100	100	1"1/4	DN 65	350	1310
90	1350	2640	1530	95	830	325	1695	3530	3260	3730	1110	2045	125	125	1"1/4	DN 80	400	1810
100	1350	2640	1530	95	830	325	1695	3530	3260	3730	1110	2045	125	125	1"1/4	DN 80	400	1810
110	1400	2845	1575	95	855	330	1740	4435	3555	4345	1210	2250	125	125	1"1/4	DN 80	450	2060
120	1400	2845	1575	95	855	330	1740	4435	3555	4345	1210	2250	125	125	1"1/4	DN 80	450	2060

Note measurements I1,I3 include gas train

Duomax HT
128 - 630kW

Duomax HP
736 - 2540kW

Outputs from 128kW to 2540kW

The Beeston Duomax range, with outputs from 128kW to 2540kW, brings together leading edge technologies to produce high seasonal and boiler efficiencies.

The Duomax HT allows two boilers to be mounted in 'piggy-back' style creating a very small footprint enabling the boiler to pass through a standard door opening. High efficiencies are also achieved due to the turn down ratios of on/off, High Low or modulating burners.

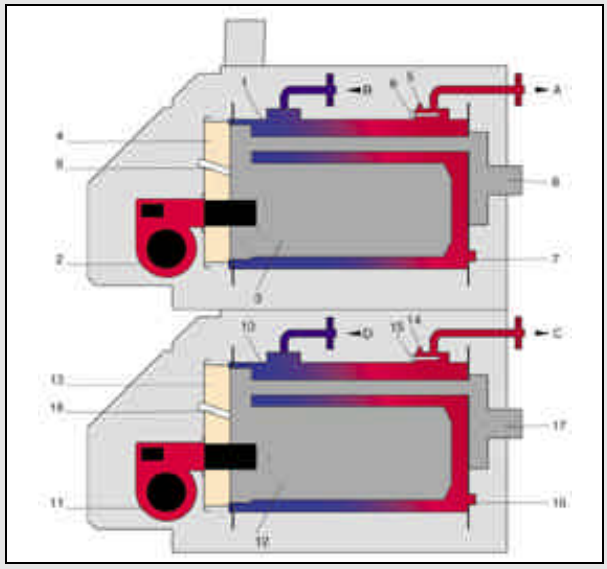
The boilers have been designed to operate as quietly as possible - with two boilers producing a sound power level only 3dB higher than that generated by a single unit.

The Duomax can be operated on gas or oil giving a turn down ratio of 2:1 or 4:1 providing smooth and progressive reduction in output and fuel consumption closely matching the system demand.

Features include:

- all HT models fit through standard door opening
- reverse flame shell and tube design
- separate and independent water circuits to each shell
- low standing losses
- two matched burners, oil or gas supplied with flying leads and sockets for quick installation and ease of maintenance
- burner lock-out indicator
- on/off, high/low standard options
- fully closing air damper on shut down
- wide range of control panel options
- burner acoustic shrouds included on all HT models
- 4:1 or 2:1 turn down options

Duomax HT hydraulic diagram



A-C	Heating flow	5-14	Connection for boiler manometer
B-D	Heating return	6-15	Thermostat pockets
1-10	Boiler shell	7-16	Drain cock connection
2-11	Gas or oil burner	8-17	Flue spigot
3-12	Combustion chamber	9-18	Sightglass
4-13	Door insulation in preformed ceramic fibre		

Duomax 4 electronic flame control.
Digital sequence control and 4 flames with automatic rotation of lead boiler for balanced use of the two fireboxes.

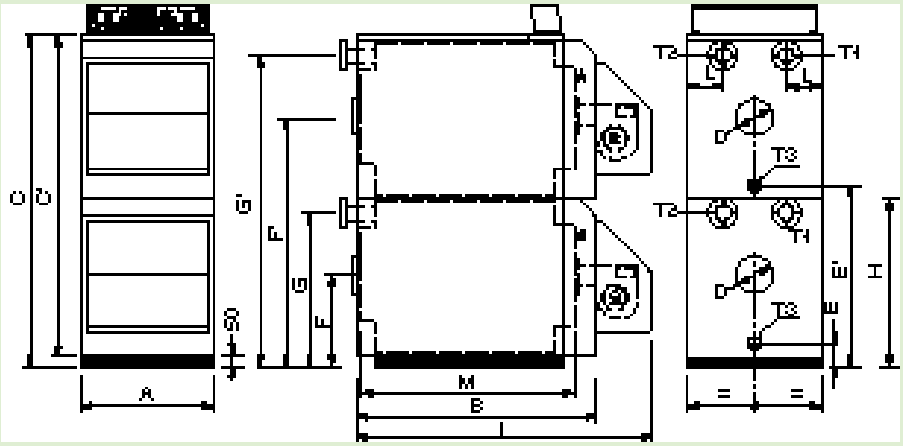
Duomax 4 electronic cascade control.
Digital sequence control of 4 flames and rotation of lead boiler for balanced use of the two fireboxes, additional weather compensation control.
* Other control panel options available

Duomax HT

DUOMAX HT Technical data

Duomax HT	model	120	140	170	200	240	280	350	420	500	600
Total heat output	kW	128	148	180	208	250	300	370	440	520	630
Total heat input max	kW	140.3	162	196.7	227	272.2	326.2	401.6	476.6	562.6	680.4
Nett efficiency	%	91.2	91.4	91.5	91.6	91.9	92	92.1	92.3	92.4	92.6
Max working pressure	bar	6	6	6	6	6	6	6	6	6	6
Boiler water content	L each	106	106	106	130	130	173	173	214	268	268
Nitrogen oxide emissions	ppm	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55
NOx (0% O2) for natural gas	mg/kWh	<110	<110	<110	<110	<110	<110	<110	<110	<110	<110
Nitrogen oxide emissions	ppm	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
NOx (0% O2) for oil	mg/kWh	<209	<209	<209	<209	<209	<209	<209	<209	<209	<209
Electrical supply	V/Hz	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50
Max. electrical absorption (kW)	Oil	1.76	1.92	1.92	2.08	2.08	2.08	2.24	2.24	2.24	2.4
	Gas	1.92	1.92	1.92	1.92	2.6	2.6	3.04	3.04	3.04	3.52
Min gas feed pressure	mbar	15	15	15	15	15	15	15	15	15	15
Hydraulic resistance at 11°CΔT	kPa	2.4	2.6	2.8	3.0	2.6	2.8	3.1	2.5	3.0	3.2
Biral full flow pump x 2		LX322	LX323	LX401	LX401	LX402	LX402	LX503	LX504	LX652	LX652
Biral shunt pump x 2 at 25°CΔT equivalent		M10	M12	M12	M13	LX321	LX322	LX323	LX401	LX402	LX402
Total dry boiler weight	kg	610	614	620	680	686	810	814	940	1160	1170

Overall dimensions



Key
A = without casing
A* = with casing
T1 = system flow
T2 = system return
T3 = boiler drain cock
# = see note

model DUO MAX HT	DIMENSIONS in mm.															connections		flue
	A	A*	B	C	C'	E	E'	F	F'	G	G'	H	I	L	M	T1, T2 DN/PN6	T3 Ø	D Ø
120	690	695	1115	1540	1490	150	830	480	1210	730	1460	860	1320	167	1030	50	3/4"	160
140	690	695	1115	1540	1490	150	830	480	1210	730	1460	860	1320	167	1030	50	3/4"	160
170	690	695	1115	1540	1490	150	830	480	1210	730	1460	860	1320	167	1030	50	3/4"	160
200	690	695	1275	1540	1490	150	830	480	1210	730	1460	860	1625	167	1190	50	3/4"	180
240	690	695	1275	1540	1490	150	830	480	1210	730	1460	860	1625	167	1190	50	3/4"	180
280	690	750	1345	1880	1830	128	978	520	1420	870	1770	1030	1665	195	1235	65	3/4"	200
350	690	750	1345	1880	1830	128	978	520	1420	870	1770	1030	1665	195	1235	65	3/4"	200
420	690	750	1595	1880	1830	128	978	520	1420	870	1770	1030	1915	195	1485	65	3/4"	220
500	790	850	2015	1880	1830	135	985	520	1420	870	1770	1030	2335	210	1865	80	3/4"	250
600	790	850	2015	1880	1830	135	985	520	1420	870	1770	1030	2335	210	1865	80	3/4"	250

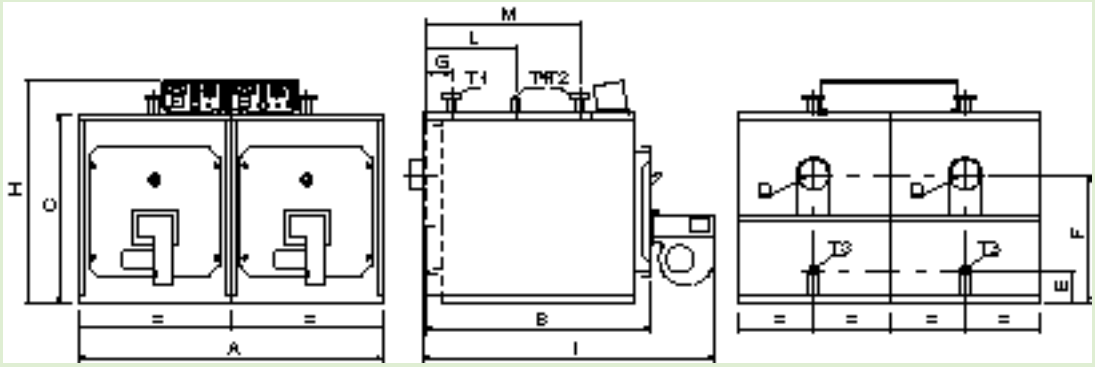
Safety valve should be fitted to each unit in flow pipework

DUOMAX HP Technical data

Duomax HP	model	700	800	900	1000	1100	1200	1400	1600	1800	2000	2200	2400
Total heat output max	kW	736	842	946	1054	1164	1260	1470	1692	1908	2120	2340	2540
Total heat input max	kW	798.2	913	1025.6	1143	1262	1366	1594	1836	2069	2290	2538	2754
Nett efficiency	%	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2
Max working pressure	bar	6	6	6	6	6	6	6	6	6	6	6	6
Boiler water content	L each	500	500	570	640	640	640	890	890	1240	1240	1430	1430
Nitrogen oxide emissions	ppm	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55
NOx (0% O2) for natural gas	mg/kWh	<110	<110	<110	<110	<110	<110	<110	<110	<110	<110	<110	<110
Nitrogen oxide emissions	ppm	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
NOx (0% O2) for oil	mg/kWh	<209	<209	<209	<209	<209	<209	<209	<209	<209	<209	<209	<209
Electrical supply	V/Hz	400/50	400/50	400/50	400/50	400/50	400/50	400/50	400/50	400/50	400/50	400/50	400/50
Max. electrical absorption (kW)	Oil	2.6	2.6	3.3	3.3	4.6	4.6	4.6	8.8	8.8	12.6	16	16
	Gas	2.6	2.6	2.6	3.3	3.3	3.3	8.8	8.8	12.6	12.6	12.6	16
Min. gas feed pressure	mbar	20	20	20	20	20	20	20	20	20	20	20	20
Hydraulic resistance at 11°CΔT	kPa	2.1	2.1	3.5	2.3	2.9	3.8	3.6	3.9	4.5	4.7	5.7	6.0
Biral full flow pump x 2		LX802*	LX802*	LX802*	LX802*	LX802*	LX802*	L1001*	L1001*	L1001*	L1001*	L1002*	L1002*
Biral shunt pump x 2 at 25°CΔT equivalent		LX403	LX503	LX503	LX504	LX504	LX652	LX652	LX652	LX653	LX654	LX802*	LX802*
Total dry boiler weight	kg	1730	1745	1750	2015	2025	2035	2620	2620	3620	3620	4120	4120

* 3 phase supply only

Overall dimensions



Key
T1 - System flow
T2 - System return
T3 - Boiler drain cock
T4 - Safety valve connection
D - Flue spigot
I1 - Gas burner
I2 - Oil burner

model DUOMAX HP	DIMENSIONS in mm.											connections				flue
	A	B	C	E	F	G	H	I1	I2	L	M	T1 DN/PN6	T2 DN/PN6	T3 Ø	T4 Ø	D Ø
700	1800	1880	1030	75	550	240	1193	2600	2425	835	1435	80	80	3/4 "	2"	250
800	1800	1880	1030	75	550	240	1193	2600	2425	835	1435	80	80	3/4 "	2"	250
900	2000	1935	1170	110	645	260	1333	2655	2480	860	1460	80	80	3/4"	DN 50	300
1000	2200	2025	1285	130	670	250	1448	2745	2575	900	1555	100	100	3/4 "	DN 50	350
1100	2200	2025	1285	130	670	250	1448	2795	2575	900	1555	100	100	3/4 "	DN 50	350
1200	2200	2025	1285	130	670	250	1448	2795	2575	900	1555	100	100	3/4 "	DN 50	350
1400	2500	2365	1475	135	825	290	1640	3255	2985	1000	1800	100	100	1 1/4"	DN 65	350
1600	2500	2365	1475	135	825	290	1640	3255	2985	1000	1800	100	100	1 1/4"	DN 65	350
1800	2700	2640	1530	95	830	325	1695	3530	3260	1110	2045	125	125	1 1/4"	DN 80	400
2000	2700	2640	1530	95	830	325	1695	3530	3260	1110	2045	125	125	1 1/4"	DN 80	400
2200	2800	2845	1575	95	855	330	1740	4435	3555	1210	2250	125	125	1 1/4"	DN 80	450
2400	2800	2845	1575	95	855	330	1740	4435	3555	1210	2250	125	125	1 1/4"	DN 80	450

Note measurements I1,I3 include gas train

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