

# Gassero

technology for your comfort



ECO-FRIENDLY

## FLOOR MOUNT CONDENSING BOILERS

[www.gassero.com](http://www.gassero.com)



● Green dots indicate single heat exchanger    ● Blue dots indicate twin heat exchanger.

# Alubox X-treme

| Capacity (kW) |   |
|---------------|---|
| 70            |   |
| 115           |   |
| 150           |   |
| 170           |   |
| 208           |   |
| 210           |   |
| 250           | ● |
| 290           |   |
| 300           | ● |
| 335           |   |
| 350           | ● |
| 430           | ● |
| 500           |   |
| 530           |   |
| 535           | ● |
| 540           |   |
| 640           | ● |
| 660           |   |
| 700LX         | ● |
| 710           | ● |
| 860           |   |
| 880           | ● |
| 1100          |   |
| 1030          |   |
| 1060          |   |
| 1065          | ● |
| 1160          |   |
| 1315          | ● |
| 1320          |   |
| 1330          |   |
| 1460          | ● |
| 1550          | ● |
| 1760          | ● |
| 2060          |   |
| 2200          |   |
| 2630          | ● |
| 2660          |   |
| 2920          | ● |
| 3100          | ● |
| 3500          |   |

# Alubox

| Capacity (kW) |   |
|---------------|---|
| 70            | ● |
| 115           | ● |
| 150           | ● |
| 170           |   |
| 208           | ● |
| 210           |   |
| 250           |   |
| 290           | ● |
| 300           |   |
| 335           |   |
| 350           |   |
| 430           |   |
| 500           |   |
| 530           |   |
| 535           |   |
| 540           | ● |
| 640           |   |
| 660           |   |
| 700           | ● |
| 710           |   |
| 860           |   |
| 880           |   |
| 1100          | ● |
| 1030          |   |
| 1060          |   |
| 1065          |   |
| 1160          |   |
| 1315          |   |
| 1320          |   |
| 1330          |   |
| 1460          |   |
| 1550          |   |
| 1760          |   |
| 2060          |   |
| 2200          | ● |
| 2630          |   |
| 2660          |   |
| 2920          |   |
| 3100          |   |
| 3500          | ● |

# Ultrabox

| Capacity (kW) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| 70            | 115 | 150 | 170 | 208 | 210 | 250 | 290 | 300 | 335 | 350 | 430 | 500 | 530 | 535 | 540 | 640 | 660 | 700 | 710 | 860 | 880 | 1100 | 1030 | 1060 | 1065 | 1160 | 1315 | 1320 | 1330 | 1460 | 1550 | 1760 | 2060 | 2200 | 2630 | 2660 | 2920 | 3100 | 3500 |  |  |
|               |     |     | ●   |     | ●   | ●   |     |     | ●   |     | ●   | ●   | ●   |     |     |     | ●   |     |     | ●   |     |      | ●    | ●    |      | ●    |      | ●    | ●    |      |      |      |      | ●    |      |      | ●    |      |      |  |  |

# Superbox

| Capacity (kW) |   |
|---------------|---|
| 70            |   |
| 115           |   |
| 150           | ● |
| 170           |   |
| 208           |   |
| 210           |   |
| 250           |   |
| 290           |   |
| 300           |   |
| 335           |   |
| 350           |   |
| 430           |   |
| 500           | ● |
| 530           |   |
| 535           |   |
| 540           |   |
| 640           |   |
| 660           |   |
| 700           |   |
| 710           |   |
| 860           |   |
| 880           |   |
| 1000          | ● |
| 1030          |   |
| 1060          |   |
| 1065          |   |
| 1160          |   |
| 1315          |   |
| 1320          |   |
| 1330          |   |
| 1460          |   |
| 1550          |   |
| 1760          |   |
| 2060          |   |
| 2200          |   |
| 2630          |   |
| 2660          |   |
| 2920          |   |
| 3100          |   |
| 3500          |   |

# Floor Mount Boilers

## Alubox X-treme

- › 250-3100 kW capacity range
- › Aluminum heat exchanger
- › Low NOx value
- › Low flue gas temperatures
- › Turndown ratio up to 8:100
- › Efficiency up to %108,7 according to EN 15502-1+A1



## Alubox

- › 70-3500 kW capacity range
- › Aluminum heat exchanger
- › Low NOx value
- › Low flue gas temperatures
- › Turndown ratio up to 14:100
- › Efficiency up to %108,2 according to EN 15502-1+A1



## Ultrabox

- › 170-2660 kW capacity range
- › Stainless steel heat exchanger
- › Low NOx value
- › Low flue gas temperatures
- › Turndown ratio Up to 4:100
- › Efficiency up to %108,1 according to EN 15502-1+A1



## Superbox

- › 150-1000 kW capacity range
- › Stainless steel heat exchanger
- › Low NOx
- › Low flue gas temperatures
- › Turndown ratio up to 3:100
- › Efficiency up to %109 according to EN 15502-1+A1



# Alubox X-treme

*Floor Mount Condensing Boiler*



- 250-3100 kW capacity range
- Low NOx value
- Low flue gas temperatures
- Aluminum heat exchanger
- Efficiency up to %108,7 according to EN 15502-1+A1
- Turndown ratio up to 8:100
- Cascade operation option up to 16 boilers
- Low noise level
- Energy class A
- 6 bar operation pressure



# Alubox X-treme



- › High corrosion and lime resistance
- › Latest technology, low emission premix burner
- › High modulating and energy-efficient fan

**Smaller size,  
High capacity.**

#### **Safety Features:**

- Frost protection
- Overheat protection
- Low and high water pressure safety
- Flue gas temperature and water pressure safety
- Pump/valve protection
- Legionella protection for DHW tank
- Condensate blockage safety with siphon sensor
- Fan speed safety
- Surface temperature safety
- High pressure switch for gas line

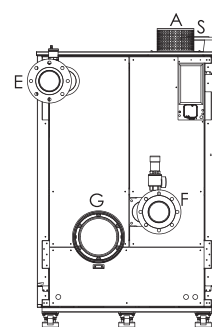
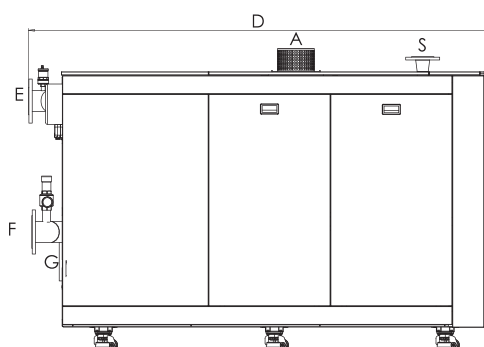
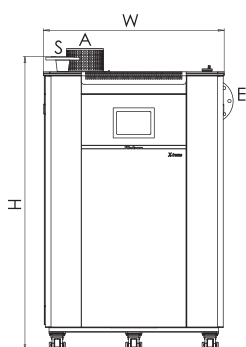
# Alubox X-treme

## Floor Mount Condensing Boiler

### Technical Specifications

|                                              |        | Alubox X-treme |               |               |               |               |               |               |
|----------------------------------------------|--------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                                              |        | 250            | 300           | 350           | 430           | 535           | 640           | 700 LX        |
| THERMAL SPECIFICATIONS                       |        |                |               |               |               |               |               |               |
|                                              | UNIT   |                |               |               |               |               |               |               |
| Nominal heat input (min/max)                 | kW     | 48,0/242,0     | 48,0/285,0    | 65,0/335,0    | 85,0/425,0    | 102,0/510,0   | 75,0/615,0    | 118,4/672,4   |
| Nominal heat output (80/60°C) (min/max)      | kW     | 46,8/237,0     | 46,8/279,5    | 63,7/328,3    | 82,5/416,0    | 99,9/499,8    | 73,8/601,4    | 111,9/650,4   |
| Nominal heat output (50/30°C) (min/max)      | kW     | 51,4/254,0     | 51,4/302,0    | 70,2/351,7    | 91,6/445,9    | 107,1/540,6   | 81,0/641,4    | 127,6/702,0   |
| Heating efficiency (80/60°C) (min/max)       | %      | 96,0/98,1      | 96,1/98,2     | 96,3/98,0     | 96,8/97,9     | 97,1/98,2     | 97,0/97,9     | 96,4/97,0     |
| Heating efficiency (50/30°C) (min/max)       | %      | 108,1/105,3    | 107,6/106,2   | 107,1/106,2   | 108,0/105,0   | 107,6/106,1   | 107,5/106,4   | 108,1/104,8   |
| Partial load efficiency (36/30°C)            | %      | 107,6          | 107,5         | 107,5         | 107,6         | 107,4         | 107,6         | 108,8         |
| Turndown ratio                               |        | 20:100         | 17:100        | 20:100        | 20:100        | 20:100        | 13:100        | 18:100        |
| HYDRAULIC SPECIFICATIONS                     |        |                |               |               |               |               |               |               |
| Operation water pressure (min/max)           | bar    | 0,8/6          | 0,8/6         | 0,8/6         | 0,8/6         | 0,8/6         | 0,8/6         | 0,8/6         |
| Exchanger water volume                       | lt     | 23,0           | 23,0          | 36,2          | 43,7          | 51,1          | 58,8          | 81,7          |
| Water flow rate (min/max)                    | m³/h   | 2,2/10,9       | 2,2/12,9      | 3,1/15,2      | 3,9/19,3      | 5,3/23,5      | 3,9/28,4      | 5,5/30,3      |
| Pump head                                    | mWC    | 5,9            | 6,6           | 5,4           | 6,0           | 6,2           | 6,2           | 5,9           |
| Max. operation temp.                         | °C     | 90             | 90            | 90            | 90            | 90            | 90            | 90            |
| GAS AND COMBUSTION SPECIFICATIONS            |        |                |               |               |               |               |               |               |
| Gas type                                     |        | G20            | G20           | G20           | G20           | G20           | G20           | G20           |
| Gas supply pressure (G20/G31)                | mbar   | 20             | 20            | 20            | 20            | 20            | 20            | 20            |
| Flue gas pressure                            | Pa     | 60             | 60            | 60            | 71            | 78            | 195           | 220           |
| Combustion products flow rate (min/max)      | g/sc   | 22/110         | 22/127        | 31/154        | 40/201        | 47/238        | 39/271        | 54/308        |
| CO <sub>2</sub> emission (min/max)           | %      | 8,9/8,9        | 8,9/9,0       | 9,1/9,2       | 9,2/9,2       | 8,7/8,9       | 8,8/9,1       | 8,9/9,1       |
| CO emission (min/maks)                       | ppm    | 7,0/23,0       | 7,0/28,0      | 2,0/70,0      | 2,0/89,0      | 3,0/47,0      | 8,0/90,0      | 0/74,0        |
| Flue gas temp. (80/60°C) (min/max)           | °C     | 56,1/69,2      | 55,8/71,8     | 57,8/68,7     | 59,0/69,0     | 57,7/69,5     | 58,1/67,9     | 60,2/73,5     |
| Flue gas temp. (50/30°C) (min/max)           | °C     | 31,4/45,6      | 31,4/47,9     | 30,7/45,4     | 31,2/46,1     | 29,7/47,6     | 31,0/44,9     | 31,6/48,3     |
| NO <sub>x</sub> class                        |        | 6              | 6             | 6             | 6             | 6             | 6             | 6             |
| NO <sub>x</sub> value                        | mg/kWh | 35             | 41            | 34            | 39            | 21            | 16            | 25            |
| Gas consumption (min/max)                    | m³/h   | 4,9/25,5       | 4,8/30,1      | 6,9/35,2      | 8,8/44,6      | 10,8/53,9     | 8,5/64,5      | 12,1/70,1     |
| CONNECTION SPECIFICATIONS                    |        |                |               |               |               |               |               |               |
| Boiler water inlet (F) / outlet diameter (E) | DN     | 50/50          | 50/50         | 100/100       | 100/100       | 100/100       | 100/100       | 100/100       |
| Fresh air (A) / flue gas diameter (G) (B23)  | mm     | 100/200        | 100/200       | 125/250       | 200/250       | 200/250       | 200/250       | 200/250       |
| Gas supply diameter (S)                      | DN     | 32             | 32            | 50            | 65            | 65            | 65            | 65            |
| ELECTRICAL SPECIFICATIONS                    |        |                |               |               |               |               |               |               |
| Power supply                                 | V/Hz   | 230/50         | 230/50        | 230/50        | 230/50        | 230/50        | 230/50        | 230/50        |
| Electrical consumption                       | W      | 260            | 310           | 260           | 450           | 670           | 900           | 942           |
| GENERAL SPECIFICATIONS                       |        |                |               |               |               |               |               |               |
| Energy efficiency class                      |        | A              | A             | A             | A             | A             | A             | A             |
| Noise power level                            | dB(A)  | 63,7           | 65,2          | 67,6          | 64,2          | 68,4          | 70,1          | 72,3          |
| Dimensions (W/D/H)                           | mm     | 690x1460x1360  | 690x1460x1360 | 835x1220x1600 | 935x1420x1600 | 935x1705x1600 | 935x1705x1600 | 935x1745x1600 |
| Boiler weight                                | kg     | 280            | 280           | 305           | 381           | 425           | 452           | 525           |

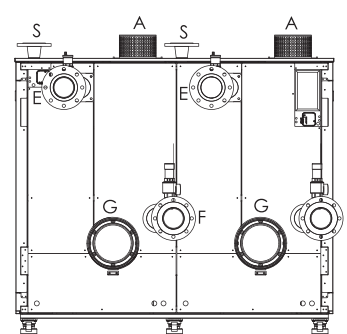
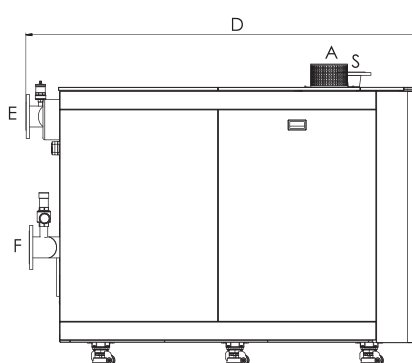
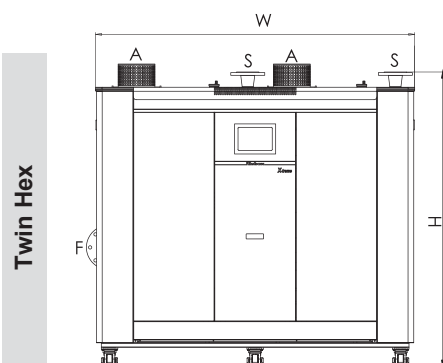
Single Hex



# Alubox X-treme

\*Twin hex are indicated in grey zone.

| Alubox X-treme |               |               |               |               |               |                |                |                |                |
|----------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| 710            | 880           | 1065          | 1315          | 1480          | 1550          | *1760          | *2630          | *2920          | *3100          |
| 134,6/685,6    | 132,9/849,4   | 159,5/1025    | 220,0/1261,0  | 250,0/1400,0  | 250,0/1490,0  | 132,9/1699     | 220/2522       | 250/2800       | 250/2980       |
| 129,6/669,2    | 124/824,5     | 152,9/999,9   | 212,0/1220,0  | 243,0/1360,0  | 243,0/1445,0  | 124/1649       | 212/2440       | 243/2720       | 243/2890       |
| 145,9/711,3    | 142,3/885,1   | 171,9/1065,5  | 235,0/1315,0  | 268,0/1460,0  | 268,0/1555,0  | 142,3/1770     | 235/2630       | 268/2920       | 268/3110       |
| 95,7/97,8      | 96,8/97,7     | 96,9/97,7     | 96,5/97,3     | 97,1/97,4     | 97,1/97,3     | 96,8/97,7      | 96,5/97,3      | 97,1/97,4      | 97,1/97,3      |
| 108,7/104,1    | 107,5/104,6   | 108,2/104,9   | 107,2/104,7   | 107,4/104,6   | 107,4/104,4   | 107,5/104,6    | 107,2/104,7    | 107,4/104,6    | 107,4/104,4    |
| 108,5          | 108,7         | 108,4         | 108,1         | 108,1         | 108,0         | 108,7          | 108,1          | 108,1          | 108,0          |
| 20:100         | 16:100        | 16:100        | 18:100        | 18:100        | 17:100        | 8:100          | 9:100          | 9:100          | 9:100          |
| 0,8/6          | 0,8/6         | 0,8/6         | 0,8/6         | 0,8/6         | 0,8/6         | 0,8/6          | 0,8/6          | 0,8/6          | 0,8/6          |
| 68,7           | 99,7          | 117,7         | 135,8         | 153,8         | 153,8         | 2x99,7         | 2x135,8        | 2x153,8        | 2x153,8        |
| 6,7/30,4       | 6,2/38,1      | 7,3/45,9      | 9,2/55,5      | 10,3/61,1     | 10,3/63,5     | 6,2/38,1       | 9,2/51,1       | 10,3/61,1      | 10,3/63,5      |
| 7,2            | 6,0           | 6,3           | 6,9           | 7,1           | 7,0           | 6,0            | 6,9            | 7,1            | 7,0            |
| 90             | 90            | 90            | 90            | 90            | 90            | 90             | 90             | 90             | 90             |
| G20            | G20           | G20           | G20           | G20           | G20           | G20            | G20            | G20            | G20            |
| 20             | 20            | 20            | 20            | 20            | 20            | 20             | 20             | 20             | 20             |
| 220            | 179           | 252           | 265           | 221           | 255           | 2x179          | 2x265          | 2x221          | 2x255          |
| 63/314         | 60/389        | 73/467        | 104/556       | 112/622       | 112/668       | 60/389         | 104/556        | 112/622        | 112/668        |
| 9,0/9,1        | 9,1/9,0       | 8,9/9,1       | 8,6/9,4       | 8,9/8,9       | 9,1/9,1       | 9,1/9,0        | 8,6/9,4        | 8,9/8,9        | 9,1/9,1        |
| 5,0/71,0       | 0/63,0        | 0/68,0        | 2,0/74,0      | 1,0/54,0      | 1,0/72,0      | 0/63,0         | 2,0/74,0       | 1,0/54,0       | 1,0/72,0       |
| 60,0/70,0      | 59,4/69,5     | 59,6/68,7     | 59,6/68,7     | 59,8/67,3     | 59,8/67,5     | 59,4/69,5      | 59,6/68,7      | 59,8/67,3      | 59,8/67,5      |
| 31,3/43,0      | 30,3/46,3     | 31,2/45,0     | 31,1/46,7     | 30,8/42,0     | 30,8/43,1     | 30,3/46,3      | 31,1/46,7      | 30,8/42,0      | 30,8/43,1      |
| 6              | 6             | 6             | 6             | 6             | 6             | 6              | 6              | 6              | 6              |
| 23             | 32            | 32            | 36            | 27            | 33            | 32             | 36             | 27             | 33             |
| 14,0/71,8      | 13,4/88,5     | 16,4/106,6    | 22,7/129,6    | 25,5/139,7    | 25,5/150,3    | 13,4/177       | 22,7/259,3     | 25,5/279,4     | 25,5/300,7     |
| 100/100        | 125/125       | 125/125       | 125/125       | 125/125       | 125/125       | 125/125        | 125/125        | 125/125        | 125/125        |
| 200/250        | 200/250       | 200/250       | 200/250       | 200/250       | 200/250       | 200/250        | 200/250        | 200/250        | 200/250        |
| 65             | 65            | 65            | 65            | 65            | 65            | 65             | 65             | 65             | 65             |
| 230/50         | 400/50        | 400/50        | 400/50        | 400/50        | 400/50        | 400/50         | 400/50         | 400/50         | 400/50         |
| 880            | 1466          | 2213          | 3162          | 3726          | 4306          | 2932           | 6325           | 7451           | 8611           |
| A              | A             | A             | A             | A             | A             | A              | A              | A              | A              |
| 71,9           | 73,7          | 75,5          | 77,2          | 76,4          | 75,3          | 78,6           | 77,2           | 76,4           | 75,3           |
| 935x1745x1600  | 935x2140x1600 | 935x2140x1600 | 985x2730x1600 | 985x2730x1600 | 985x2730x1600 | 1738x2140x1600 | 1872x2680x1600 | 1872x2680x1600 | 1872x2680x1600 |
| 525            | 625           | 685           | 811           | 925           | 925           | 1120           | 1630           | 1700           | 1700           |





# Alubox

*Floor Mount Condensing Boiler*



- › 70-3500 kW capacity range
- › Low NOx Value
- › Low flue gas temperatures
- › Aluminum heat exchanger
- › Efficiency up to %108,2 according to EN 15502-1+A1
- › Turndown ratio up to 14:100
- › Cascade operation option up to 16 boilers's
- › Low noise level
- › Energy class A
- › 6 bar working pressure





- › High corrosion and lime resistance
- › Latest technology, low emission premix burner
- › High modulating and energy-efficient fan

#### **Safety Features:**

- Frost protection
- Overheat protection
- Low and high water pressure safety
- Flue gas temperature and pressure safety
- Pump/valve protection
- Legionella protection
- Condensate blockage safety with siphon sensor
- Fan speed safety
- Surface temperature safety
- High pressure switch for gas line

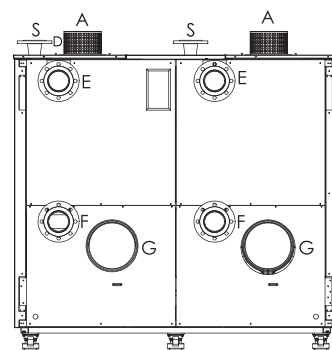
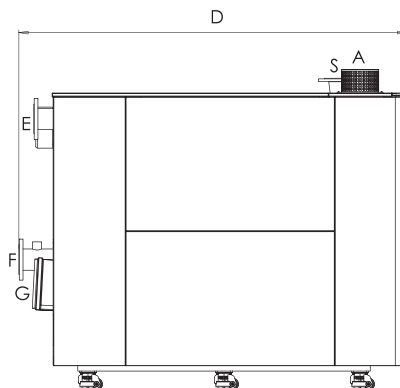
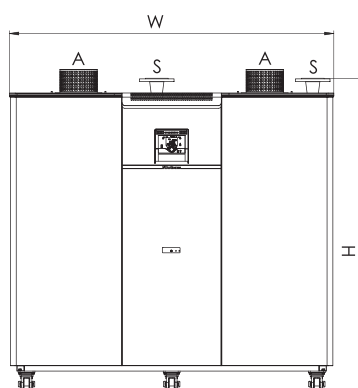
**With low emission values,  
ECO friendly GASSERO.**



### Technical Specifications

|                                              |        | Alubox       |              |              |               |               |               |               |
|----------------------------------------------|--------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|
|                                              |        | 70           | 115          | 150          | 208           | 290           | 540           | 700           |
| THERMAL SPECIFICATIONS                       |        |              |              |              |               |               |               |               |
|                                              | UNIT   |              |              |              |               |               |               |               |
| Nominal heat input (min/max)                 | kW     | 10,2/65,6    | 14,9/112,3   | 19,9/143,1   | 35,7/197,3    | 48,1/277,4    | 81,9/517,0    | 101,4/661,0   |
| Nominal heat output (80/60°C) (min/max)      | kW     | 9,9/63,4     | 14,3/109,5   | 19,2/139,8   | 34,9/192,2    | 46,8/270,2    | 79,1/502,9    | 97,8/643,1    |
| Nominal heat output (50/30°C) (min/max)      | kW     | 11,6/68,5    | 15,1/118,1   | 22,3/149,1   | 36,7/207,7    | 50,0/286,5    | 84,7/539,2    | 107,8/708,4   |
| Heating efficiency (80/60°C) (min/max)       | %      | 96,7/97,2    | 96,8/98,2    | 97,0/98,2    | 97,7/97,4     | 97,2/97,4     | 96,6/97,3     | 96,5/97,3     |
| Heating efficiency (50/30°C) (min/max)       | %      | 108,0/103,9  | 108,2/104,8  | 108,1/103,2  | 103,1/103,8   | 105,4/103,6   | 105,0/104,0   | 107,0/107,4   |
| Partial load efficiency (36/30°C)            | %      | 108,4        | 108,71       | 108,4        | 107,2         | 107,1         | 106,7         | 108,6         |
| Turndown ratio                               |        | 16:100       | 14:100       | 14:100       | 18:100        | 18:100        | 16:100        | 16:100        |
| HYDRAULIC SPECIFICATIONS                     |        |              |              |              |               |               |               |               |
| Operation water pressure (min/max)           | bar    | 0,8/6        | 0,8/6        | 0,8/6        | 0,8/6         | 0,8/6         | 0,8/6         | 0,8/6         |
| Exchanger water volume                       | lt     | 3,2          | 4,6          | 6            | 29,1          | 40,6          | 75,5          | 99,2          |
| Water flow rate (min/max)                    | m³/h   | 0,6/3,8      | 0,6/4,5      | 0,8/6,2      | 1,6/8,9       | 2,0/12,4      | 3,4/23,6      | 4,4/30,1      |
| Pump head                                    | mWC    | 5,0          | 5,0          | 5,5          | 5,3           | 6,5           | 5,2           | 5,2           |
| Max. operation temp.                         | °C     | 85           | 85           | 85           | 90            | 90            | 90            | 90            |
| GAS AND COMBUSTION SPECIFICATIONS            |        |              |              |              |               |               |               |               |
| Gas type                                     |        | G20          | G20          | G20          | G20           | G20           | G20           | G20           |
| Gas supply pressure (G20/G31)                | mbar   | 20           | 20           | 20           | 20            | 20            | 20            | 20            |
| Flue gas pressure                            | Pa     | 130          | 200          | 330          | 160           | 160           | 150           | 150           |
| Combustion products flow rate (min/max)      | g/sc   | 5,0/28,0     | 6,0/49,0     | 9,0/63,0     | 16,5/69,3     | 22,5/119,6    | 38,0/235,1    | 47,0/292,4    |
| CO2 emission (min/max)                       | %      | 9,1/9,6      | 9,4/9,4      | 9,5/9,6      | 8,8/9,1       | 9,0/9,4       | 8,9/9,1       | 8,9/9,4       |
| CO emission (min/maks)                       | ppm    | 29/152       | 27/156       | 24/169       | 1/21          | 3/31          | 2/29          | 5/33          |
| Flue gas temp. (80/60°C) (min/max)           | °C     | 55,4/72,1    | 56,8/64,9    | 56,9/70,3    | 55,1/64,5     | 55,6/61,1     | 55,5/63,6     | 55,6/61,1     |
| Flue gas temp. (50/30°C) (min/max)           | °C     | 30,1/52,3    | 30,2/53,5    | 30,5/47,1    | 29/52,7       | 29/47,4       | 30,3/40,1     | 34,2/34,5     |
| NOx class                                    |        | 6            | 6            | 6            | 6             | 6             | 6             | 6             |
| NOx value                                    | mg/kWh | 28           | 43           | 44           | 32            | 63            | 36            | 51            |
| Gas consumption (min/max)                    | m³/h   | 1,1/6,9      | 1,5/11,8     | 2,1/15,1     | 3,7/20,8      | 4,9/28,8      | 8,5/54,0      | 10,5/68,7     |
| CONNECTION SPECIFICATIONS                    |        |              |              |              |               |               |               |               |
| Boiler water inlet (F) / outlet diameter (E) | DN     | 25/25        | 25/25        | 25/25        | 50/50         | 50/50         | 80/80         | 80/80         |
| Fresh air (A) / flue gas diameter (G) (B23)  | mm     | 100/150      | 100/150      | 110/100      | 100/200       | 100/200       | 125/250       | 125/250       |
| Gas supply diameter (S)                      | DN     | 20           | 25           | 25           | 32            | 32            | 65            | 65            |
| ELECTRICAL SPECIFICATIONS                    |        |              |              |              |               |               |               |               |
| Power supply                                 | V/Hz   | 230/50       | 230/50       | 230/50       | 230/50        | 230/50        | 230/50        | 230/50        |
| Electrical consumption                       | W      | 116          | 203          | 313          | 450           | 510           | 1400          | 1620          |
| GENERAL SPECIFICATIONS                       |        |              |              |              |               |               |               |               |
| Energy efficiency class                      |        | A            | A            | A            | A             | A             | A             | A             |
| Noise power level                            | dB(A)  | 66,2         | 61,3         | 69,3         | 62,1          | 64,3          | 66,5          | 71,2          |
| Dimensions (W/D/H)                           | mm     | 640x575x1095 | 640x575x1095 | 640x575x1095 | 645x1420x1420 | 645x1420x1420 | 838x1731x1680 | 838x1731x1680 |
| Boiler weight                                | kg     | 85           | 93           | 103          | 262           | 295           | 450           | 510           |

Twin Hex



\*Twin hex are indicated in grey zone.

## Alubox

1100 \*2200 3500

150,5/1029,6 301,0/2059,2 174,4/3303,8

146,0/1001,8 292/2003,6 166,8/3233,0

160,7/1007,6 321,4/2215,2 187,9/3405,0

97,0/97,3 97,0/97,3 96,6/97,9

107,1/107,0 107,1/107 108,2/103,3

108,0 108,0 108,8

15:100 7:100 5:100

0,8/6 0,8/6 0,8/6

155,1 2x155,1 493,5

6,4/46,9 6,4/93,6 8,0/139,4

5,4 2x5,4 5,4

90 90 90

G20 G20 G20

20 20 20

150 2x150 130

69,1/459,6 69,1/459,6 79,4/1462,4

9,0/9,3 9,0/9,3 8,8/9,0

6/44 6/44 6/44

61,9/64,6 61,9/64,6 54,7/65,9

29,4/33,8 29,4/33,8 29,4/33,8

6 6 6

46 46 39

15,6/107,6 15,6/215,2 20,6/335,6

100/100 100/100 200/200

200/250 200/250 200/400

65 65 80

400/50 400/50 400/50

2650 5300 9112

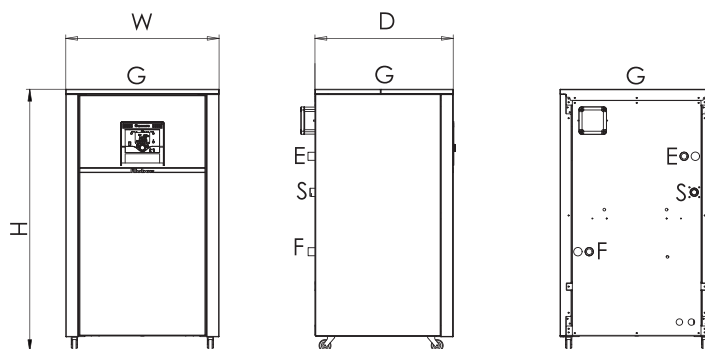
A A A

74,9 74,9 84,7

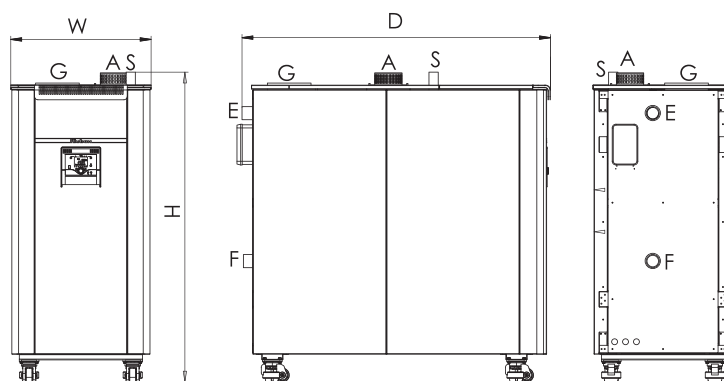
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680 1378 2540

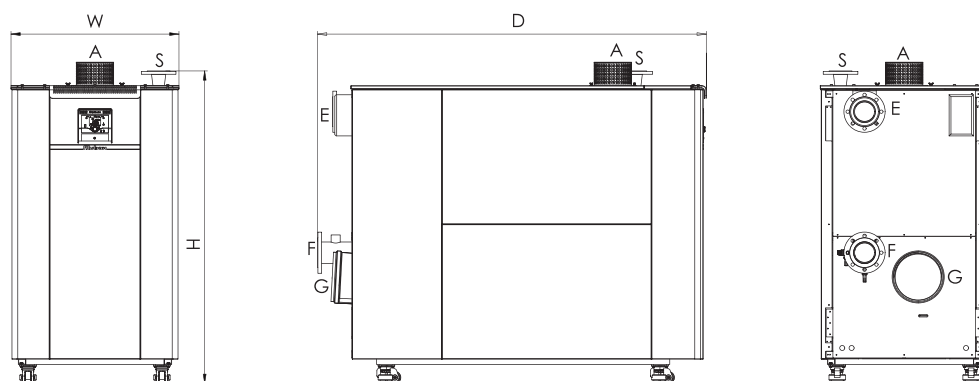
## Alubox 70-115-150



## Alubox 208-290



## Alubox 540-700-1100



# Ultrabox

*Floor Mount Condensing Boiler*



- › 170-2660 kW capacity range
- › Low CO emissions
- › Low flue gas temperatures
- › Stainless steel heat exchanger
- › Efficiency up to %108,1 according to EN 15502-1+A1
- › Turndown ratio up to 4:100
- › Cascade operation option up to 16 boilers'
- › Low NOx value
- › Low noise level
- › Energy class A
- › 6 bar operation pressure



# Ultrabox



- › High efficient and durable heat exchanger
- › Latest technology, low emission premix burner
- › High modulating and energy-efficient fan

#### Safety Features:

- Frost protection
- Overheat protection
- Low and high water pressure safety
- Flue gas temperature and pressure safety system
- Pump/valve protection
- Legionella protection
- Condensate blockage safety with siphon sensor
- Fan speed safety
- Surface temperature safety
- High pressure switch for gas line

Advanced condensation technology,  
Low fuel consumption.

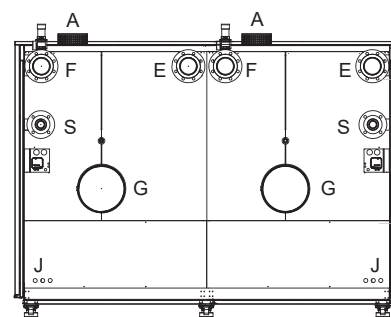
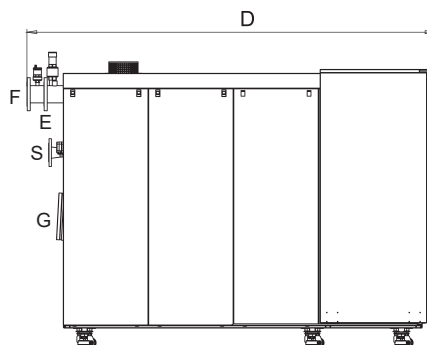
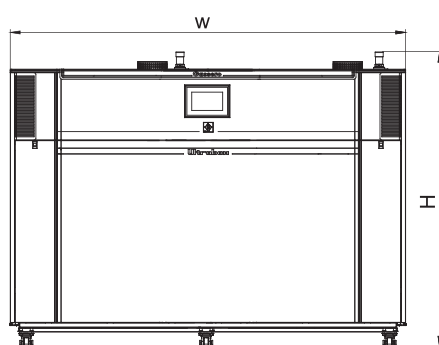
# Ultrabox

## Floor Mount Condensing Boiler

### Technical Specifications

|                                              |        | Ultrabox     |              |              |               |               |               |               |
|----------------------------------------------|--------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|
|                                              |        | 170          | 210          | 250          | 335           | 430           | 500           | 530           |
| THERMAL SPECIFICATIONS                       |        | UNIT         |              |              |               |               |               |               |
| Nominal heat input (min/max)                 | kW     | 23,0/158,5   | 23,0/197,0   | 23,0/235,5   | 41,8/311,5    | 41,8/405,5    | 60,0/470,0    | 60,0/500,0    |
| Nominal heat output (80/60°C) (min/max)      | kW     | 22,3/154,3   | 22,3/191,8   | 22,3/228,9   | 40,6/303,3    | 40,6/393,0    | 58,4/456,3    | 58,4/486,0    |
| Nominal heat output (50/30°C) (min/max)      | kW     | 24,7/170,0   | 24,7/210,0   | 24,7/250,0   | 45,0/334,1    | 45,0/430,0    | 64,8/501,3    | 64,8/535,0    |
| Heating efficiency (80/60°C) (min/max)       | %      | 97,2/97,4    | 97,2/97,4    | 97,2/97,2    | 97,3/97,4     | 97,3/97,1     | 97,4/97,1     | 97,4/97,3     |
| Heating efficiency (50/30°C) (min/max)       | %      | 107,5/107,3  | 107,5/106,7  | 107,5/106,2  | 107,9/107,3   | 107,9/106,1   | 108,1/107,1   | 108,1/107,2   |
| Partial load efficiency (36/30°C)            | %      | 108,1        | 108,1        | 108,1        | 108,4         | 108,3         | 108,0         | 108,5         |
| Turndown ratio                               |        | 15:100       | 12:100       | 12:100       | 14:100        | 11:100        | 13:100        | 12:100        |
| HYDRAULIC SPECIFICATIONS                     |        |              |              |              |               |               |               |               |
| Operation water pressure (min/max)           | bar    | 0,8/6        | 0,8/6        | 0,8/6        | 0,8/6         | 0,8/6         | 0,8/6         | 0,8/6         |
| Exchanger water volume                       | lt     | 30,6         | 30,6         | 30,6         | 41,5          | 41,5          | 61,5          | 61,5          |
| Water flow rate (min/max)                    | m³/h   | 1,0/7,4      | 1,0/9,1      | 1,0/10,6     | 1,8/14,3      | 1,8/18,3      | 2,6/21,7      | 2,6/22,8      |
| Pump head                                    | mWC    | 6,1          | 6,5          | 6,0          | 6,9           | 6,0           | 6,5           | 6,8           |
| Max. operation temp.                         | °C     | 90           | 90           | 90           | 90            | 90            | 90            | 90            |
| GAS AND COMBUSTION SPECIFICATIONS            |        |              |              |              |               |               |               |               |
| Gas type                                     |        | G20          | G20          | G20          | G20           | G20           | G20           | G20           |
| Gas supply pressure (G20/G31)                | mbar   | 20           | 20           | 20           | 20            | 20            | 20            | 20            |
| Flue gas pressure                            | Pa     | 90,2         | 90,2         | 90,2         | 187,3         | 187,3         | 209,9         | 209,9         |
| Combustion products flow rate (min/max)      | g/sc   | 12/77        | 12/95        | 12/112       | 24/142        | 24/207        | 40/230        | 40/235        |
| CO <sub>2</sub> emission (min/max)           | %      | 8,6/8,8      | 8,6/8,7      | 8,6/8,7      | 8,7/8,5       | 8,7/8,8       | 8,9/8,7       | 8,9/9,2       |
| CO emission (min/maks)                       | ppm    | 0/80         | 0/84         | 0/93         | 0/108         | 0/96          | 2/92          | 2/93          |
| Flue gas temp. (80/60°C) (min/max)           | °C     | 62,2/64,9    | 62,2/68,3    | 62,2/73,1    | 63,4/67,5     | 63,4/74,3     | 61,5/66,4     | 61,5/67,3     |
| Flue gas temp. (50/30°C) (min/max)           | °C     | 33,7/37,0    | 33,7/40,6    | 33,7/42,6    | 38,5/40,6     | 38,5/46,6     | 33,0/39,1     | 33,0/41,5     |
| NO <sub>x</sub> class                        |        | 6            | 6            | 6            | 6             | 6             | 6             | 6             |
| NO <sub>x</sub> value                        | mg/kWh | 34           | 34           | 34           | 35            | 33            | 24            | 24            |
| Gas consumption (min/max)                    | m³/h   | 2,4/16,9     | 2,4/20,9     | 2,4/24,8     | 4,3/32,6      | 4,3/41,7      | 6,1/49,0      | 6,1/51,6      |
| CONNECTION SPECIFICATIONS                    |        |              |              |              |               |               |               |               |
| Boiler water inlet (F) / outlet diameter (E) | DN     | 50/50        | 50/50        | 50/50        | 65/65         | 65/65         | 65/65         | 65/65         |
| Fresh air (A) / flue gas diameter (G) (B23)  | mm     | 125/150      | 125/150      | 125/150      | 200/200       | 200/200       | 200/250       | 200/250       |
| Gas supply diameter (S)                      | DN     | 32           | 32           | 32           | 65            | 65            | 65            | 65            |
| ELECTRICAL SPECIFICATIONS                    |        |              |              |              |               |               |               |               |
| Power supply                                 | V/Hz   | 230/50       | 230/50       | 230/50       | 230/50        | 230/50        | 230/50        | 230/50        |
| Electrical consumption                       | W      | 204          | 226          | 260          | 360           | 450           | 670           | 685           |
| GENERAL SPECIFICATIONS                       |        |              |              |              |               |               |               |               |
| Energy efficiency class                      |        | A            | A            | A            | A             | A             | A             | A             |
| Noise power level                            | dB(A)  | 63,7         | 65,2         | 67,6         | 64,2          | 68,4          | 70,1          | 72,3          |
| Dimensions (W/D/H)                           | mm     | 725x1160x950 | 725x1160x950 | 725x1160x950 | 960x1520x1072 | 960x1520x1072 | 960x1846x1072 | 960x1846x1072 |
| Boiler weight                                | kg     | 180          | 260          | 260          | 270           | 451           | 451           | 461           |

Twin Hex

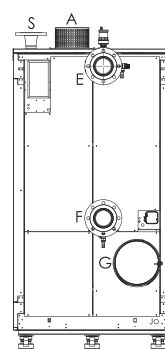
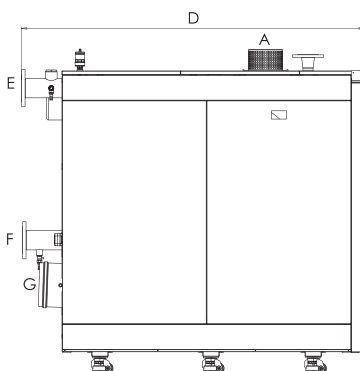
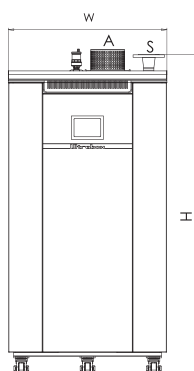


# Ultrabox

\*Twin hex are indicated in grey zone.

| Ultrabox      |                |                |                |                |                |                |                |                |
|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 660           | *860           | 1030           | *1060          | *1160          | *1320          | 1330           | *2060          | *2660          |
| 60,0/620,0    | 41,8/811,0     | 95,0/956,0     | 60,0/1000,0    | 60,9/1090,0    | 60,0/1240,0    | 95,0/1235,0    | 95,0/1912,0    | 95,0/2470,0    |
| 58,4/602,0    | 40,6/786,0     | 92,2/932,2     | 58,4/972,0     | 58,4/1058,3    | 58,4/1204,0    | 92,2/1205,0    | 92,2/1864,0    | 92,2/2410,0    |
| 64,8/665,0    | 45,0/860,0     | 102,0/1030,0   | 64,8/1070,0    | 64,8/1166,3    | 64,8/1330,0    | 102,0/1333,0   | 102,0/2060,0   | 102,0/2666,0   |
| 97,4/97,2     | 97,3/97,1      | 97,1/97,5      | 97,4/97,3      | 97,4/97,4      | 97,4/97,2      | 97,1/97,6      | 97,1/97,5      | 97,1/97,6      |
| 108,1/107,4   | 107,9/106,1    | 108,0/107,8    | 108,1/107,2    | 108,1/107,4    | 108,1/107,4    | 107,3/108,1    | 108,0/107,8    | 107,3/108,1    |
| 108,5         | 108,3          | 108,1          | 108,5          | 108,5          | 108,5          | 108,3          | 108,1          | 108,3          |
| 10:100        | 6:100          | 10:100         | 6:100          | 6:100          | 5:100          | 8:100          | 5:100          | 4:100          |
| 0,8/6         | 0,8/6          | 0,8/6          | 0,8/6          | 0,8/6          | 0,8/6          | 0,8/6          | 0,8/6          | 0,8/6          |
| 61,5          | 2x41,5         | 130,9          | 2x61,5         | 2x61,5         | 2x61,5         | 130,9          | 2x130,9        | 2x130,9        |
| 2,6/28,9      | 1,8/18,3       | 3,9/44,1       | 2,6/22,8       | 2,6/50,6       | 2,6/28,9       | 3,9/56,6       | 3,9/44,1       | 3,9/56,6       |
| 6,7           | 2x6,0          | 8,5            | 2x8,7          | 2x6,7          | 2x6,7          | 9,1            | 2x8,5          | 2x9,1          |
| 90            | 90             | 90             | 90             | 90             | 90             | 90             | 90             | 90             |
| G20           | G20            | G20            | G20            | G20            | G20            | G20            | G20            | G20            |
| 20            | 20             | 20             | 20             | 20             | 20             | 20             | 20             | 20             |
| 287,3         | 2x187,3        | 285,4          | 2x209,9        | 2x287,3        | 2x287,3        | 285,4          | 2x285,4        | 2x285,4        |
| 40/280        | 24/202         | 62/460         | 40/235         | 40/280         | 40/280         | 108/561        | 62/460         | 108/561        |
| 8,9/8,7       | 8,7/8,8        | 9,0/9,2        | 8,9/9,2        | 8,9/8,7        | 8,9/8,7        | 9,0/9,0        | 9,0/9,2        | 9,0/9,0        |
| 0/98          | 0/96           | 0/96           | 2/93           | 0/98           | 0/98           | 0/84           | 0/96           | 0/84           |
| 61,5/73,1     | 63,4/71,3      | 65,1/66,6      | 61,5/67,3      | 61,5/73,1      | 61,5/73,1      | 65,1/66,1      | 65,1/66,1      | 65,1/66,1      |
| 33,3/47,7     | 38,5/46,6      | 37,5/38,7      | 33,0/47,5      | 33,0/47,7      | 33,0/47,7      | 37,4/36,3      | 37,5/38,8      | 37,4/36,3      |
| 6             | 6              | 6              | 6              | 6              | 6              | 6              | 6              | 6              |
| 22            | 33             | 36             | 24             | 22             | 22             | 33             | 36             | 32,9           |
| 6,1/64,1      | 4,0/76,5       | 9,7/97,8       | 5,5/95,3       | 6,1/113,1      | 6,1/128,2      | 9,8/128,8      | 9,7/195,6      | 9,8/257,5      |
| 65/65         | 65/65          | 100/100        | 65/65          | 100/100        | 65/65          | 100/100        | 100/100        | 100/100        |
| 200/250       | 200/200        | 200/300        | 200/250        | 200/250        | 200/250        | 200/300        | 200/300        | 200/300        |
| 65            | 65             | 65             | 65             | 65             | 65             | 65             | 65             | 65             |
| 230/50        | 230/50         | 400/50         | 230/50         | 230/50         | 230/50         | 400/50         | 400/50         | 400/50         |
| 909           | 900            | 2213           | 1370           | 1670           | 1800           | 3170           | 4426           | 6340           |
| A             | A              | A              | A              | A              | A              | A              | A              | A              |
| 71,9          | 68,4           | 77,2           | 72,3           | 73,7           | 73,7           | 75,3           | 77,2           | 75,3           |
| 960x1846x1072 | 1975x1625x1502 | 1184x2080x1385 | 1835x1840x1270 | 1835x1846x1270 | 1835x1840x1270 | 1184x2490x1385 | 1184x2080x1385 | 2235x2492x1588 |
| 471           | 942            | 897            | 962            | 970            | 982            | 925            | 1834           | 1890           |

Single Hex





# Superbox

## Floor Mount Condensing Boiler



- › 150-1000 kW capacity range
- › Low NOx value
- › Low flue gas temperatures
- › Stainless steel heat exchanger
- › Up to %109 efficiency according to EN 15502-1+A1
- › Up to 3:100 turndown ratio
- › Cascade operation option up to 16 boilers
- › Low noise level
- › Energy class A
- › 6 bar operation pressure

- › High efficient and durable heat exchanger
- › Latest technology, low emission premix burner
- › High modulating and energy-efficient fan

### Safety Features:

- Frost protection
- Overheat protection
- Low and high water pressure safety
- Flue gas temperature and pressure safety system
- Pump/valve protection
- Legionella protection
- Condensate blockage safety with siphon sensor
- Fan speed safety
- Surface temperature safety
- High pressure switch for gas line



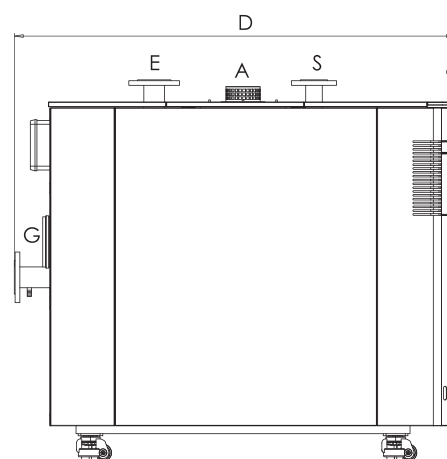
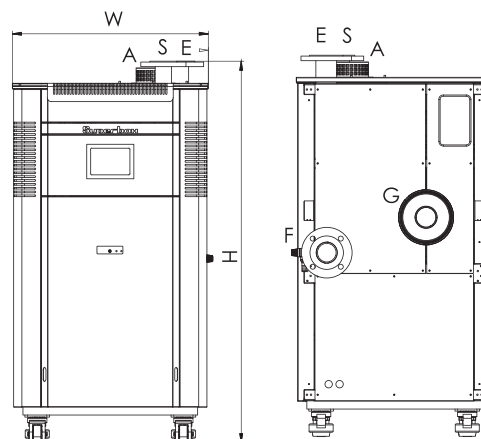
# Superbox

\* Twin hex are indicated in grey zone.

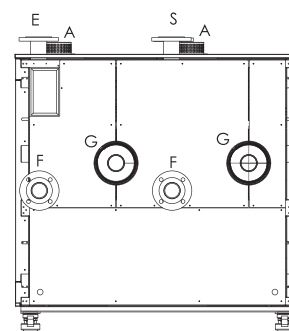
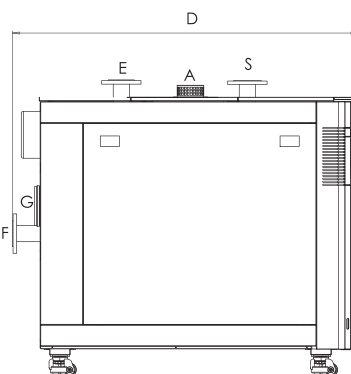
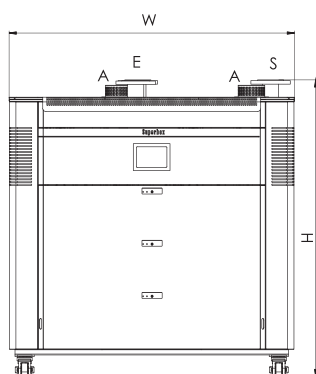
## Technical Specifications

|                                              | Superbox |             |               |                |
|----------------------------------------------|----------|-------------|---------------|----------------|
|                                              | 150      | 500         | *1000         |                |
| THERMAL SPECIFICATIONS                       | UNIT     |             |               |                |
| Nominal heat input (min/max)                 | kW       | 21,0/143,0  | 27,2/498,5    | 27,2/996,9     |
| Nominal heat output (80/60°C) (min/max)      | kW       | 19,5/138,0  | 26,3/481,7    | 26,3/962,1     |
| Nominal heat output (50/30°C) (min/max)      | kW       | 22,7/150,0  | 29,1/527,4    | 29,1/1051,9    |
| Heating efficiency (80/60°C) (min/max)       | %        | 96,5/97,7   | 96,5/96,6     | 96,5/96,5      |
| Heating efficiency (50/30°C) (min/max)       | %        | 106,5/105,3 | 106,5/105,5   | 106,6/105,3    |
| Partial load efficiency (36/30°C)            | %        | 108,3       | 107,0         | 106,9          |
| Turndown ratio                               |          | 15:100      | 6:100         | 3:100          |
| HYDRAULIC SPECIFICATIONS                     |          |             |               |                |
| Operation water pressure (min/max)           | bar      | 0,8/6       | 0,8/6         | 0,8/6          |
| Exchanger water volume                       | lt       | 11,4        | 69,8          | 139,6          |
| Water flow rate (min/max)                    | m³/h     | 0,9/6,3     | 1,1/21,4      | 1,1/42,8       |
| Pump head                                    | mWC      | 8,6         | 7,2           | 7,2            |
| Max. operation temp.                         | °C       | 90          | 90            | 90             |
| GAS AND COMBUSTION SPECIFICATIONS            |          |             |               |                |
| Gas type                                     |          | G20         | G20           | G20            |
| Gas supply pressure (G20/G31)                | mbar     | 20          | 20            | 20             |
| Flue gas pressure                            | Pa       | 310         | 100           | 100            |
| Combustion products flow rate (min/max)      | g/sc     | 9,7/67,3    | 12,6/226,7    | 12,6/226,7     |
| CO2 emission (min/max)                       | %        | 9,4/9,8     | 9,0/9,2       | 9,0/9,2        |
| CO emission (min/maks)                       | ppm      | 0/208       | 3/105         | 5/122          |
| Flue gas temp. (80/60°C) (min/max)           | °C       | 62,9/77,7   | 59,8/80,3     | 59,7/80,5      |
| Flue gas temp. (50/30°C) (min/max)           | °C       | 38,1/65,8   | 30,6/43,2     | 30,6/43,9      |
| NOx class                                    |          | 6           | 6             | 6              |
| NOx value                                    | mg/kWh   | 37          | 45            | 53             |
| Gas consumption (min/max)                    | m³/h     | 2,1/14,7    | 2,8/51,8      | 2,8/103,6      |
| CONNECTION SPECIFICATIONS                    |          |             |               |                |
| Boiler water inlet (F) / outlet diameter (E) | DN       | 32/32       | 65/65         | 65/65          |
| Fresh air (A) / flue gas diameter (G) (B23)  | mm       | 110/100     | 100/180       | 100/180        |
| Gas supply diameter (S)                      | DN       | 25          | 50            | 65             |
| ELECTRICAL SPECIFICATIONS                    |          |             |               |                |
| Power supply                                 | V/Hz     | 230/50      | 230/50        | 230/50         |
| Electrical consumption                       | W        | 461         | 900           | 1440           |
| GENERAL SPECIFICATIONS                       |          |             |               |                |
| Energy efficiency class                      |          | A           | A             | A              |
| Noise power level                            | dB(A)    | 61,7        | 68,3          | 72,1           |
| Dimensions (W/D/H)                           | mm       | 555x780x990 | 715x1610x1394 | 1340x1620x1390 |
| Boiler weight                                | kg       | 110         | 522           | 1060           |

## Single Hex



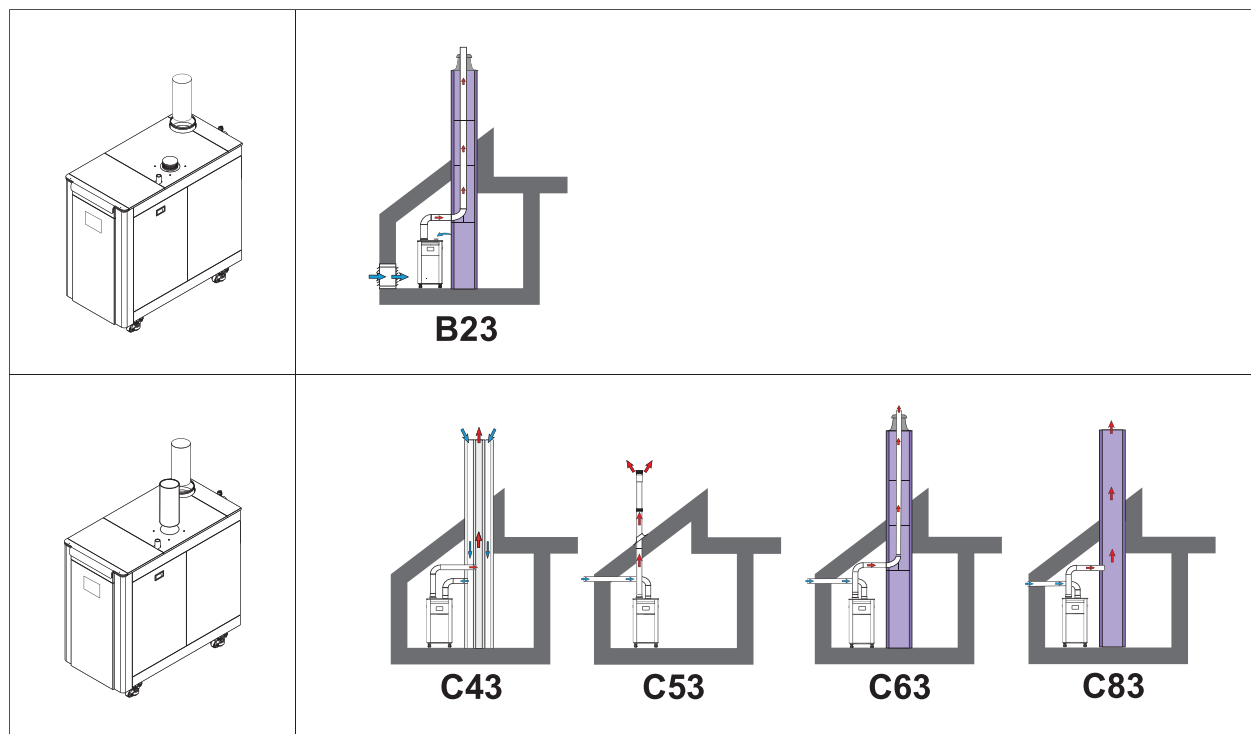
## Twin Hex



## Optional Accessories

| Product Image                                                                       | Product Name                             | Specifications                                                                                                      |
|-------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|    | <b>Outside Sensor</b>                    | Operates between -50 °C and 70 °C.<br>Max. distance 120 m with 1.5 mm <sup>2</sup> cable.<br>Tolerance ±1 K         |
|    | <b>Clamp Type Temperature Sensor</b>     | Operates between -30 °C and 125 °C.<br>Max. distance 120 m with 1.5 mm <sup>2</sup> cable.<br>Tolerance ±0,5 K      |
|  | <b>Immersion Type Temperature Sensor</b> | Operates between 0 °C and 95 °C.<br>Tolerance ±0,5 K.                                                               |
|  | <b>External Zone Module</b>              | Provides 3-way valve control function on temperature based zones. Requires additional relay and sensor connections. |
|  | <b>Modbus Module</b>                     | Provides Building Management Systems (BMS) connection.                                                              |

## Flue Applications



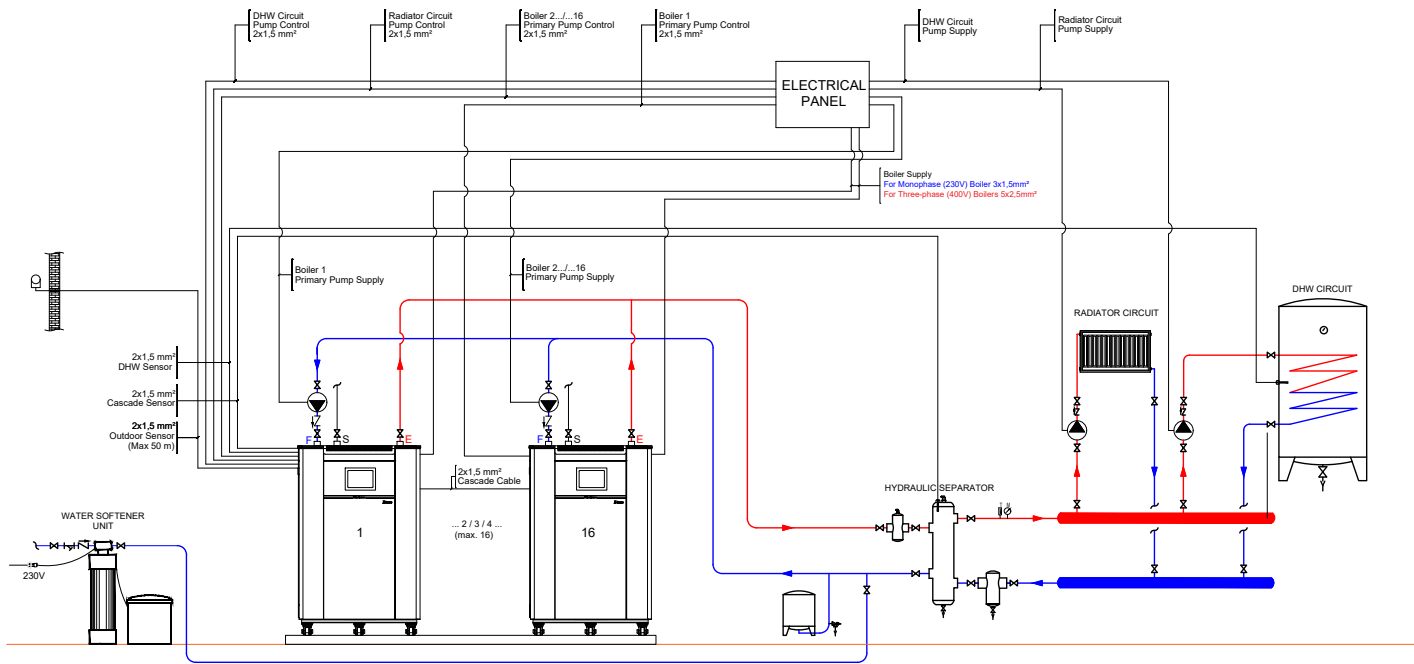
## IRIS Air Adjustment Damper



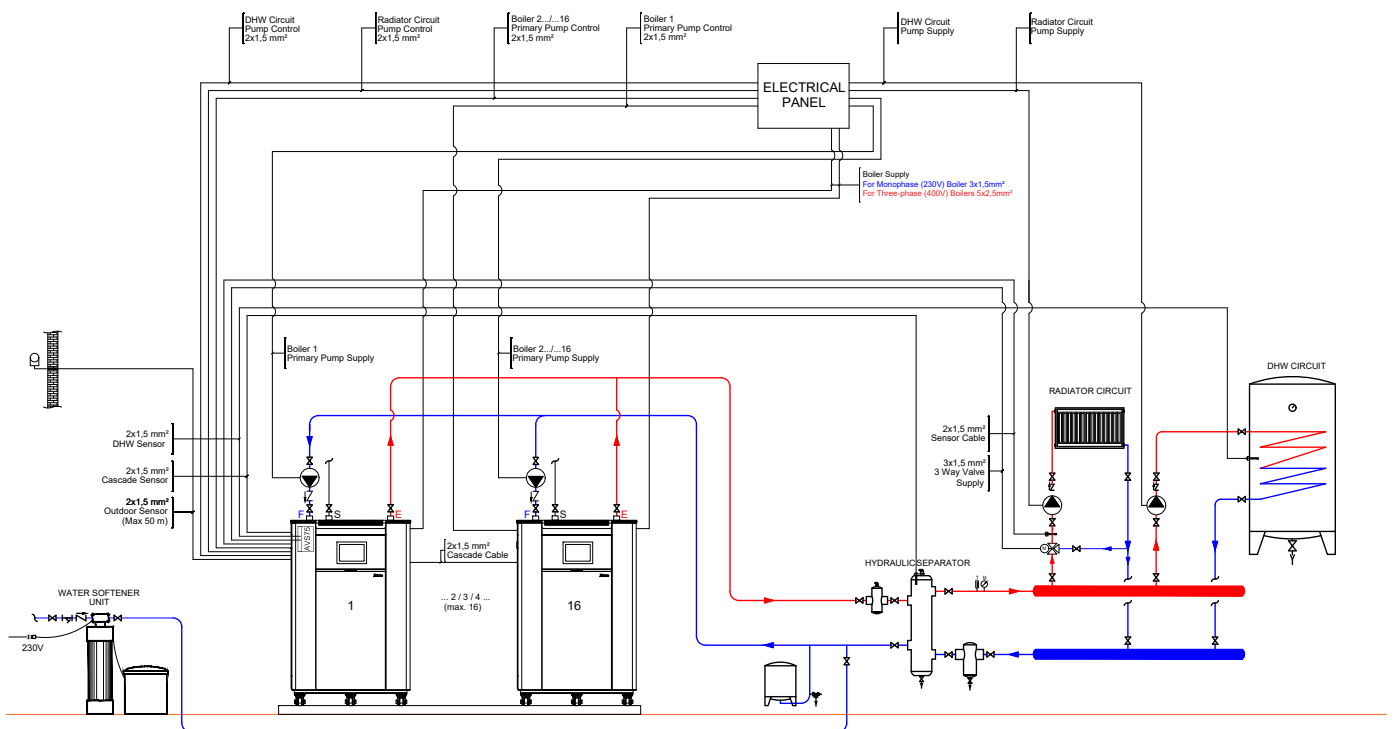
- Provides air adjustment option in radial air ducts.
- Manually controlled air damper can be adjusted at necessary air volume and fixed by the locking mechanism on it.
- Made of galvanized steel sheet.
- Ideal air flow adjustment and measuring equipment for radial air ducts.
- Provides an uniform air flow inside with adjustable iris diameter.
- Suitable for continuous use at -10 °C to +80 °C.

# Installation Schemas

## DHW + Radiator (Hydraulic Separator)



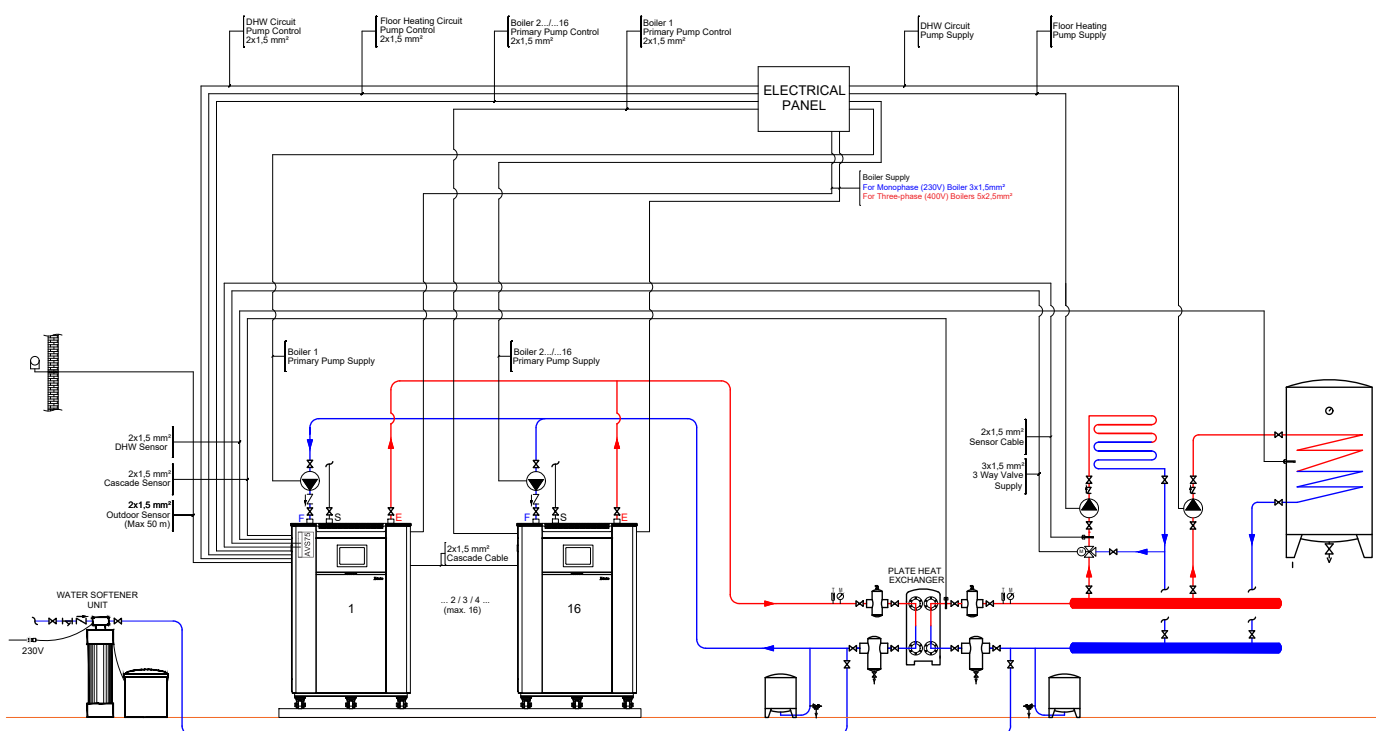
## DHW + Radiator (Hydraulic Separator and 3 Way Valve)



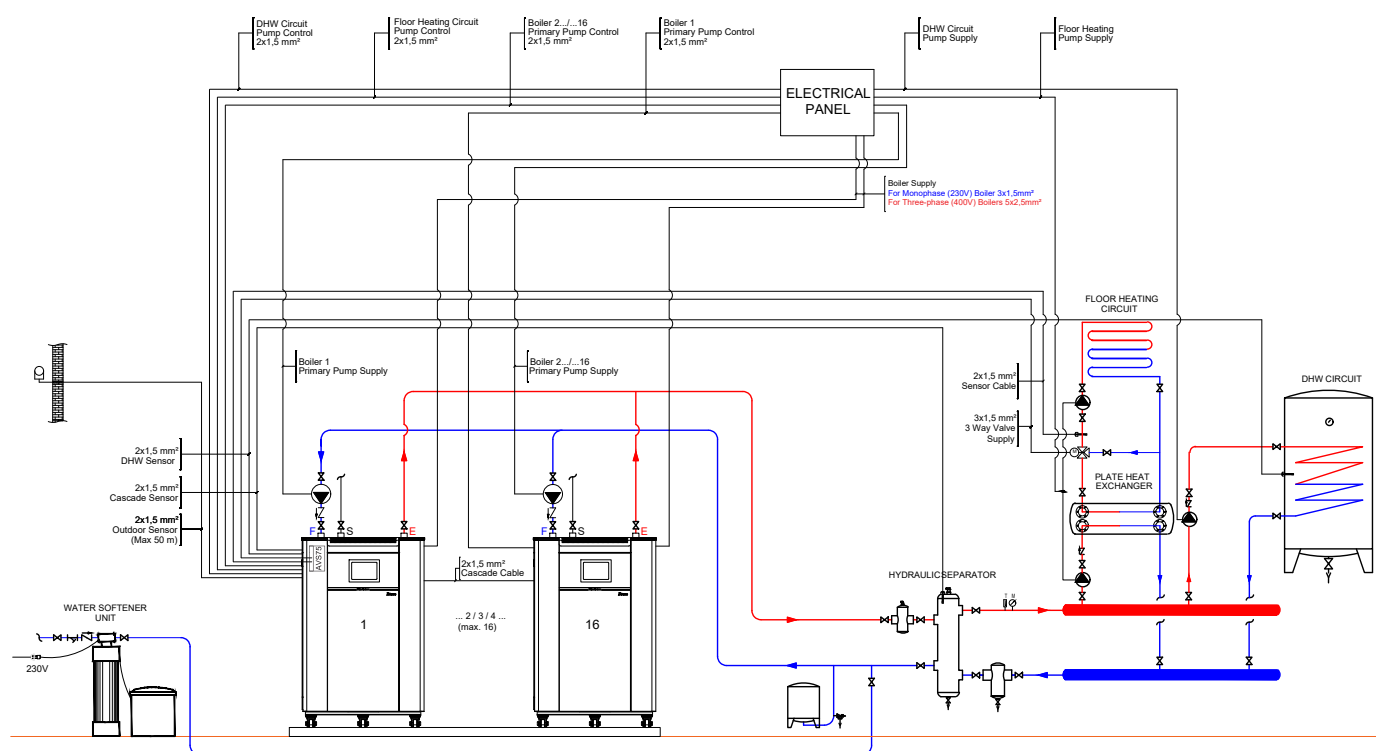
|      |       |                  |          |                    |                |                  |             |           |              |       |               |                |                  |
|------|-------|------------------|----------|--------------------|----------------|------------------|-------------|-----------|--------------|-------|---------------|----------------|------------------|
|      |       |                  |          |                    |                |                  |             |           |              |       |               |                |                  |
| PUMP | VALVE | NON-RETURN VALVE | STRAINER | TEMPERATURE SENSOR | OUTDOOR SENSOR | AIR RELIEF VALVE | THERMOMETER | MANOMETER | SAFETY VALVE | DRAIN | AIR SEPARATOR | DIRT SEPARATOR | EXPANSION VESSEL |

# Installation Schemas

## DHW + Floor Heating (Plate heat exchanger and 3 Way Valve)



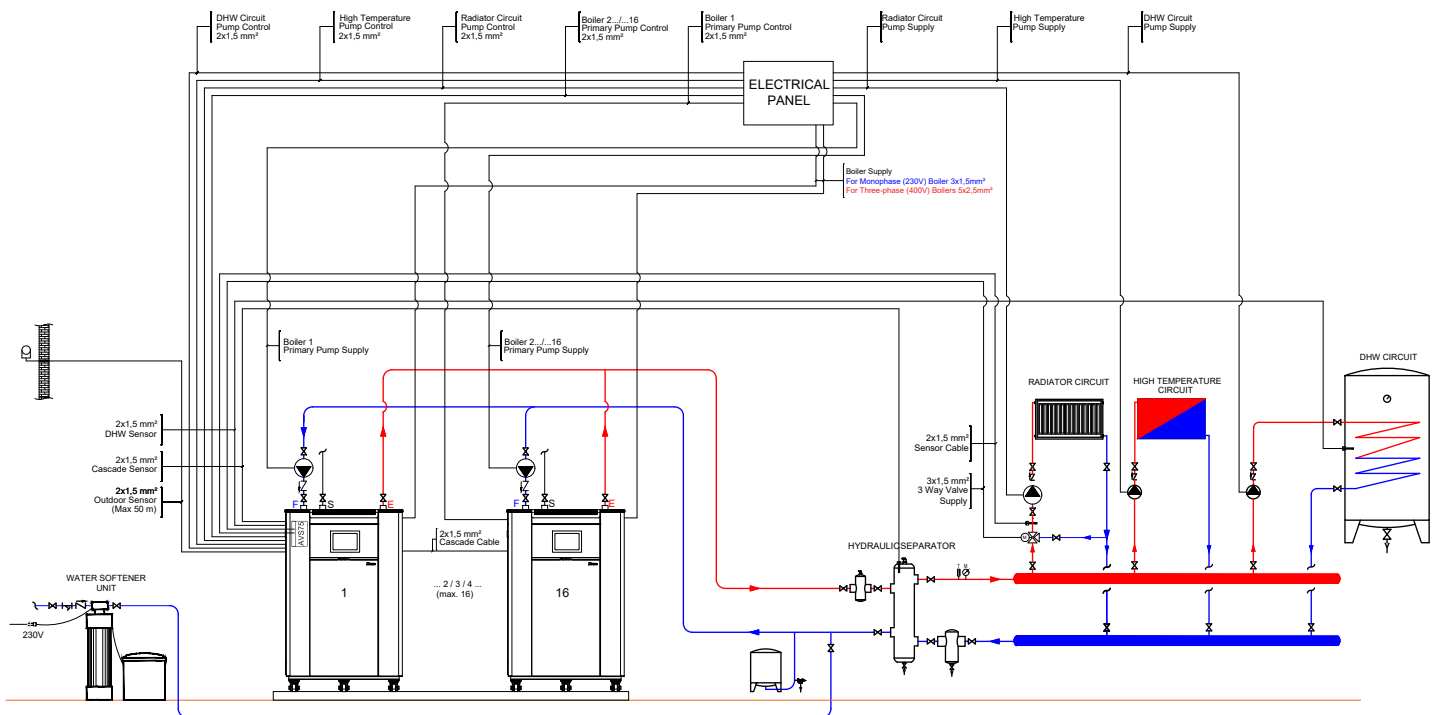
## DHW + Floor Heating (Hydraulic Separator, Plate Heat Exchanger and 3 Way Valve)



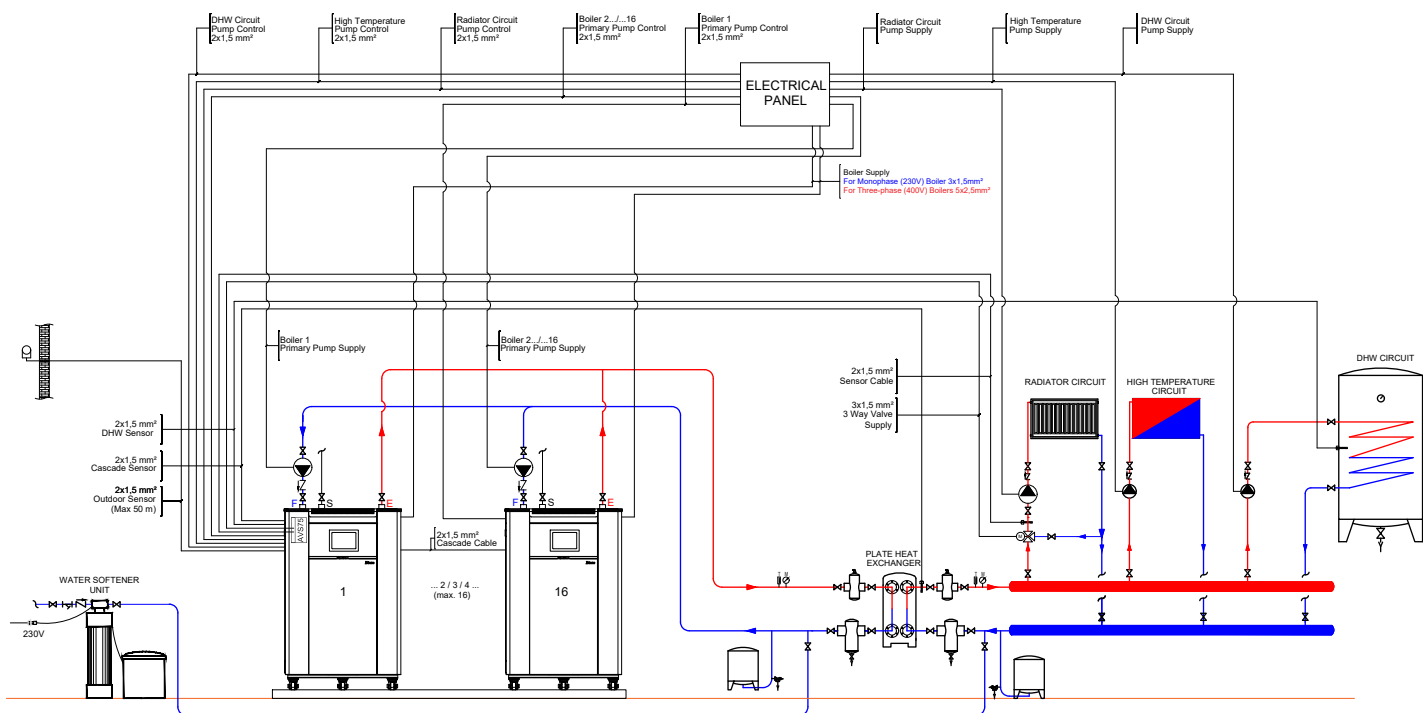
|      |       |                  |          |                    |                |                  |             |           |              |       |               |                |                  |
|------|-------|------------------|----------|--------------------|----------------|------------------|-------------|-----------|--------------|-------|---------------|----------------|------------------|
|      |       |                  |          |                    |                |                  |             |           |              |       |               |                |                  |
| PUMP | VALVE | NON-RETURN VALVE | STRAINER | TEMPERATURE SENSOR | OUTDOOR SENSOR | AIR RELIEF VALVE | THERMOMETER | MANOMETER | SAFETY VALVE | DRAIN | AIR SEPARATOR | DIRT SEPARATOR | EXPANSION VESSEL |

# Installation Schemas

## DHW + High Temperature Circuit + Radiator (Hydraulic Separator and 3 Way Valve)



## DHW + High Temperature Circuit + Radiator (Plate Heat Exchanger and 3 Way Valve)



|      |       |                  |          |                    |                |                  |             |           |              |       |               |                |                  |
|------|-------|------------------|----------|--------------------|----------------|------------------|-------------|-----------|--------------|-------|---------------|----------------|------------------|
|      |       |                  |          |                    |                |                  |             |           |              |       |               |                |                  |
| PUMP | VALVE | NON-RETURN VALVE | STRAINER | TEMPERATURE SENSOR | OUTDOOR SENSOR | AIR RELIEF VALVE | THERMOMETER | MANOMETER | SAFETY VALVE | DRAIN | AIR SEPARATOR | DIRT SEPARATOR | EXPANSION VESSEL |

# BOILER ROOM APPLICATION RECOMMENDATIONS

**Gassero** is strictly advising to use water softening unit before commissioning process for long term usage. Otherwise, system could harm because of undesirable substances.

It is highly recommended to use plate heat exchanger, if there is floor heating system on the heating line.

The devices that are commissioned outside of the required conditions, could be out of warranty.

## Water Condition Range

| Total Hardness °d | pH (Aluminium) | pH (Stainless) | Iron (Not Diluted) | Conductivity | Flushing                                                                  |
|-------------------|----------------|----------------|--------------------|--------------|---------------------------------------------------------------------------|
| 1                 | 6,5-8,5        | 7,5-9,5        | <10ppm             | ≤2000µS/cm   | It is mandatory to comply with BSRIA 7593 (See: Gassero Flushing Process) |

### WATER CONDITIONS

Nitrite protection should not be used in boilers with aluminum heat exchangers

As GASSERO, we recommend flushing in the system to prolong the life of system and boilers. No acid-based products should be used during flushing.

The water used in the installation have to be city-water. **Never use well-water**

The boiler have to be serviced annually. All this maintenance should be made by authorized service, water values and the water softening unit (resin, salt etc.) values should be measured and maintained by service

Depending on the water conditions specified in the table, the problems that may occur in the boiler heat exchanger could make out of warranty.

Assembly and installation should made according to Gassero sample schemes.

### HYDRAULIC

Boiler (primary) pump have to be selected to in accordance with the required pressure and flow rate.

The boiler (primary) pump have to be in the direction of the installation return line to the boiler.

The system operating pressure should match with the working pressure of boiler. Sales Engineers could give consultancy.

All heat exchanger manufacturers; recommends to use of plate exchanger instead of the hydraulic separator for separate the primary circuit and the secondary circuit.

Domestic waste system could be used for condensate water. In system with a total power of 200 KW and above, a neutralization tank must be used.

Boiler output and input diameters have to be strictly followed, other equipment should be selected according to the this diameters. In order to install other equipment, the diameter of the boiler out should not be reduced.

It is mandatory to use a suitable diameter filter and check valve to the boiler return line pipe at each boiler turn.

Please contact our service department about detail of collector connection in installation of floor mount boiler.

Additional zone control modules and sensors have to be requested if there are equipment such as three-way valves and boilers that must be checked on the heating collector. Please contact our Sales Engineer for more information.

Have to be used air separator and dirt separator with hydraulic separator.

In case the plate heat exchanger is used instead of the hydraulic separator as the system separator, expansion tank have to be placed in the primary circuit. If an automatic filling valve is used in the system, a water meter have to be used for following how much water is added to the system.

In cascade systems, the sensor housing must be placed on the hydraulic separator or on the secondary flow line. If the system is separated by a plate heat exchanger, place the sensor housing on the secondary circuit flow line.

### ELECTRIC AND FLUE

6A fuses have to be used for the power supply of the boilers. The electrical system must be grounded.

Chimney connections have to be made in accordance with the chimney types and regulations.

The flue gas analysis measuring probe (probe hole) have to be opened by the flue company for each boiler.

Boiler chimneys should be extended by a minimum 1 meter from the boiler flue outlet direction and then connected to the chimney collector without elbows or with elbows.

If the chimney connections passes over the boiler, the connections should be checked properly and water tightening should be provided. Water in the chimney due to leaks may cause the system out of warranty. Adequate ventilation should be provided for the boiler room.

### GAS AND OTHER

The operating pressure of the boilers in the natural gas installation is 21 Mbar. Therefore, it is necessary to use a regulator in the gas line. There should be a minimum distance of 1-2 meters between the regulator and the boiler gas flange. There should be discharge line after regulator for discharge of the excess air.

In order to control the gas pressures, the manometer must be fitted before and after the regulator.

Gassero boilers are manufactured for heating and domestic water. Not suitable for commercial or industrial purposes. **GASSERO shall not be held responsible for any problems arising out of the design purpose.**

[www.gassero.com](http://www.gassero.com)

**Gassero**  
technology for your comfort

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