

IX 145-245

GAS CONDENSING BOILERS FOR HEATING ONLY



IX 145 - 50/70



IX 145 EP - 90/110



IX 245 - 130/150



IX 245 SH - 200/250

- **IX 145-50:**
from 5 to 45 kW
- **IX 145-90:**
from 9.4 to 85 kW

- **IX 145-70:**
from 7.2 to 65 kW
- **IX 145-110:**
from 11.4 to 102 kW

- **IX 245-130:**
from 24.3 to 121.5 kW
- **IX 245-150:**
from 28.1 to 140.3 kW

- **IX 245-200:**
from 31 to 185.9 kW
- **IX 245-250:**
from 38.8 to 232.8 kW

(outputs for 80/60°C)



Heating only



Condensation



All natural gas
Propane



* Only IX 145 from 50-70
Outdoor temperature sensor supplied as
standard

OPERATING CONDITIONS

max. operating pressure:

- IX145...: 4 bar
- IX245...: 6 bar

max. operating temperature:

- IX145-50/70/90/110/130/150: 80°C
- IX 245-200/250: 90°C

Safety thermostat; 110°C

Power supply: 230 V/50 Hz

International Protection marking: IP X1B

approval

B23 - B23P - B33 - C13(x) - C33(x) - C43(x) - C53 - C63(x)
- C83(x)

gas category

II2ESi3P
NOx class: 6

IX... is a gas condensing boiler equipped with a robust, high-performance stainless steel exchanger.

The IX... range is designed for new structures and renovated boiler rooms. The boilers are available in 3 versions:

- boilers only,
- boilers equipped with a separation kit, with low-loss header,
- boilers equipped with a separation kit, with plate heat exchanger.

IX boilers are equipped with a control panel, which according to the connected options, enables command and control of up to 3 heating circuits and 1 DHW circuit, according to the outdoor temperature.

The control system also enables:

- Management of combined systems: solar, heat pump, wood boiler, etc.
- Control of 2 to 16 boilers in cascade configuration.

Different air/flue gas connection configurations are possible; we offer connection solutions using a horizontal or vertical forced flue, on a chimney or bi-flow.

Complete water systems for connection of a 2 to 4-boiler cascade are also available (see corresponding technical leaflet).



IX 145/245 identification no.: 0085CP0089

PRESENTATION OF THE RANGE

IX 145-245 gas condensing boilers have a resolutely modern look, featuring a readily distinguishable style and sleek finish. With their compact external dimensions, with a single width of 600 mm across all the models, and a light weight, IX boilers feature very easy installation and facilitated maintenance.

IX... are available in 3 versions:

- Boiler-only versions IX 145-50/70/90/110 and IX 245-130/150/200/250,
- Versions equipped with a separation kit with low-loss header (pre-dimensioned), IX 145 SH - 50/70/90/110 and IX 245 SH - 130/150/200/250,
- Versions equipped with a separation kit with plate heat exchanger (pre-dimensioned), IX 145 EP - 50/70/90/110 and IX 245 EP - 130/150/200/250.

HIGH LEVELS OF PERFORMANCE

- Annual operating efficiency up to 109.5 %
- Output modulation rate of 11-25 to 100% (depending on models - see table on page 5)
- 2 flow and return temperature sensors (for ΔT° management of heating body),
- Low pollutant emissions of NOx and CO (see NOx table below)

MODEL	IX	145-50	145-70	145-90	145-110	245-130	245-150	245-200	245-250
NOx G20 (EN 15502); mg/kWh (Hi)		18.9	25.5	37.2	39	17	23	33.5	35.1
Class		6	6	6	6	6	6	6	6

STRONG POINTS

- Monoblock (IX 145-50/70) or dual-block (IX 145/245-90/110/130/150/200/250) austenitic stainless steel (316 L) compact coiled heating body, featuring a large exchange surface area, low pressure drop and high corrosion resistance, and also requiring only a low irrigation flow (mandatory minimum irrigation flow rate).
- Versions IX... SH and IX... EP are equipped with a modulating pump, PWM-controlled by the control system. This maintains high performances, keeping low temperatures on the boiler return.
- Continuously modulating gas valve (in heating mode and DHW production model).
- Temperature control and management using 2 NTC sensors on the flow and return.
- The boiler comes equipped to operate with natural gas and propane: with optional conversion kit for IX 145-50/70/90/110 and diaphragm supplied for IX 245-130/150/200/250.
- Stainless steel premix burner, output modulation 11-25 to 100 % depending on model (see table on page 5), to ensure output is perfectly in line with the actual requirements of the installation.
- Boiler pump post-circulation device (in heating mode and DHW production model).
- Electronic ignition.
- Ionisation sensor.
- Simplified maintenance thanks to front access.
- IX... boilers are supplied with a control panel equipped with a digital control system to be able to manage any installation scenario, even the most complex. It comes equipped to control and regulate a direct zone. Adding an SA49 temperature sensor will enable control of a DHW tank. By adding up to two control modules for a three-way valve + sensor (package SA45) circuit in the boiler, the control system will be able to control up to 2 mixing zones. The control system is specially designed to enable optimisation of combined systems: solar, heat pump, wood boiler, etc. This control panel can also manage a boiler cascade (see "IX Cascades" technical leaflet). The boilers can also be controlled by a 0 - 10V external controller.
- The front access to the boiler enables easy maintenance, with minimal work on the rear of the boiler. Models equipped with a low-loss header (IX... SH) and models equipped with a plate heat exchanger (IX... EP) have top connection pipes, to facilitate access for connection to the installation.
- IX 245-200 and 250 are equipped with a pallet unloading rail and wheels for easy installation in the boiler room.
- Versions IX... SH are equipped with: an insulated low-loss header, a PWM-controlled modulating pump, connection pipes to the boiler with a non-return valve and a safety valve.
- Versions IX... EP are equipped with: an insulated plate heat exchanger with magnetic mud vessel and degasser, a PWM-controlled modulating pump, an automatic bleed, an expansion vessel, connection pipes to the boiler with a non-return valve and a safety valve (primary side)
- Complete 2-boiler cascade systems are available (boilers with water systems, connection kit with pump, low-loss header kit, etc. (see the "IX Cascades" technical sheet).
- Numerous accessories such as condensates neutralisation stations, pressure regulators, propane conversion kits, etc. are also available.

MODELS AVAILABLE

IX 145/245 BOILERS ONLY

BOILERS	REAR VIEW	USEFUL OUTPUT IN MODE		MODEL	REFERENCE
		HEATING AT 50/30°C (KW)	HEATING AT 80/60°C (KW)		
<p>ADVANCE</p>  <p>IX_Q0100</p>	 <p>IX_Q1200</p>	48.6 70.2	5-45 72-65	IX 145 - 50 IX 145 - 70	7693900 7694352
 <p>IX_Q0103</p>	 <p>IX_Q1201</p>	91.8 110.2	9.4-85 11.4-102	IX 145 - 90 IX 145 - 110	7689867 7693601
 <p>IX_Q0103</p>	 <p>IX_Q1202</p>	130.6 150.9	24.3-121.5 28.1-140.3	IX 245 - 130 IX 245 - 150	7695340 7695343
 <p>IX_Q0108</p>	 <p>IX_Q1203</p>	200 250	31.0-185.9 38.8-232.8	IX 245 - 200 IX 245 - 250	7695347 7695348

Boiler only.
To ensure the min. irrigation flow rate, the installation must be equipped with a:

- variable flow pump (PWM)
- a pressure breaker

(A safety valve must be installed on the boiler flow)

BOILERS EQUIPPED WITH A SEPARATION KIT WITH LOW-LOSS HEADER, IX 145 SH AND IX 245 SH

BOILERS	REAR VIEW	USEFUL OUTPUT IN MODE		MODEL	REFERENCE
		HEATING AT 50/30°C (KW)	DHW AT 80/60°C (KW)		
<p>ADVANCE</p>  <p>IX_Q0101</p>	 <p>IX_Q1000</p>	48.6 70.2	5-45 72-65	IX 145 SH - 50 IX 145 SH - 70	7713880 7713881
 <p>IX_Q0105</p>	 <p>IX_Q1003</p>	91.8 110.2	9.4-85 11.4-102	IX 145 SH - 90 IX 145 SH - 110	7713882 7713883
 <p>IX_Q0104</p>	 <p>IX_Q1004</p>	130.6 150.9	24.3-121.5 28.1-140.3	IX 245 SH - 130 IX 245 SH - 150	7713884 7713885
 <p>IX_Q0110</p>	 <p>IX_Q1006</p>	200 250	31.0-185.9 38.8-232.8	IX 245 SH - 200 IX 245 SH - 250	7713886 7713887

Boilers equipped with a hydraulic low-loss header kit comprising an insulated low-loss header with a magnetic mud vessel and degasser, a modulating primary pump, a valve, connection pipes to the boiler, top-routed secondary side pipes (boiler models without a flow rate constraint).

MODELS AVAILABLE

BOILERS EQUIPPED WITH A SEPARATION KIT WITH PLATE HEAT EXCHANGER, IX 145 EP AND IX 245 EP

BOILERS	REAR VIEW	USEFUL OUTPUT IN MODE		MODEL	REFERENCE
		HEATING AT 50/30°C (KW)	HEATING AT 75/55°C (KW)		
<p>ADVANCE</p>  <p>IX_Q0102</p>	 <p>IX_Q1001</p>	48.6 70.2	5-45 72-65	IX 145 EP - 50 IX 145 EP - 70	7713888 7713889
 <p>IX_Q0106</p>	 <p>IX_Q1002</p>	91.8 110.2	9.4-85 11.4-102	IX 145 EP - 90 IX 145 EP - 110	7713890 7713891
 <p>IX_Q0107</p>	 <p>IX_Q1005</p>	130.6 150.9	24.3-121.5 28.1-140.3	IX 245 EP - 130 IX 245 EP - 150	7713892 7713893
 <p>IX_Q0109</p>	 <p>IX_Q1007</p>	200 250	31.0-185.9 38.8-232.8	IX 245 EP - 200 IX 245 EP - 250	7713894 7713895

Boilers equipped with a hydraulic separation kit comprising an insulated plate heat exchanger, a modulating pump, connection pipes to the boiler, secondary side pipes (boiler models with no flow rate constraint).

DE DIETRICH ECO-SOLUTIONS

ENERGY LABELLING

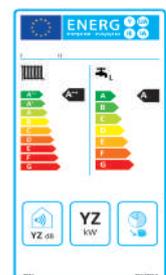
Boilers IX 145-50 and IX 145-70 are supplied with their energy labels; this contains a plenty of information: energy efficiency, annual energy consumption, manufacturer's name, noise level... By combining your boiler with for example a solar system, a DHW storage tank, a control device or even another generator..., you can improve the performance of your installation, and generate a corresponding "system" label. Visit our site "ecodesign.dedietrich-heating.com"



De Dietrich ECO-SOLUTIONS give you the latest generation of multi-energy products and systems: simpler, more efficient and more economical to guarantee your comfort and protect the environment.

The energy label associated with the ECO-SOLUTIONS label indicates the product performance.

www.ecodesign.dedietrich-heating.com



TECHNICAL SPECIFICATIONS

OF THE BOILERS

TECHNICAL AND PERFORMANCE SPECIFICATIONS

Generator type: heating only

Boiler type: condensing

NOx class: 6

Burner: modulating with premix

Energy used: natural gas or propane

Combustion discharge: chimney or sealed

"CE certificate" ref.: 0085CP0089

Approval:

• IX 245-130, IX 245-150, IX 145-50, IX 145-70, IX 145-90, IX 145-110:

B₃₃/B₂₃(P), C₁₃(X), C₃₃(X), C₄₃(X), C₅₃, C₆₃(X), C₈₃(X)

• IX 245-200, IX 245-250:

B₃₃/B₂₃(P), C₁₃, C₃₃, C₄₃, C₅₃, C₆₃, C₈₃

Gas and pressures:

• Natural gas (G20) - 20 mbar

• Natural gas (G25) - 25 mbar

• Propane gas (G31) - 37 mbar

SPECIFICATIONS

MODELS		IX 145	50	70	90	110
Useful output	• nominal determined at Qnom ^(I)	kW	45	65	85	102
	• intermediate at 30 % Qnom ^(II)	kW	15	21.7	28.4	34
Nominal output Pn at 50/30°C		kW	48.6	70.2	91.8	110.2
Efficiency in % LHV, load... % and water temp. ...°C	• 100 % Pn, at ave. temp. 70 °C	%	97.4	97.2	97.3	97.2
	• 30 % Pn, at return temp. 30 °C	%	108.4	108.1	108.2	108.1
Seasonal energy efficiency: Product SEE (without control system)		%	93	93	-	-
Seasonal energy efficiency: Product SEE (with sensor supplied as standard)		%	95	95	-	-
Useful efficiency at ...% of the nominal heat output	• at 100 % Eta 4	%	-	-	87.7	87.6
	• at 30 % Eta 1	%	-	-	97.5	97.4
Modulation ratio		%	11 to 100	11 to 1000	11 to 100	12 to 100
Nominal water flow rate at Pn and Δt = 20 K		m ³ /h	1.94	2.8	3.66	4.39
Stand-by losses at Δt = 30 K		W	45	46	62	72
Electrical output of auxiliaries at Qnom ^(III)		W	100	117	146	185
Electrical output of auxiliaries in standby		W	3	3	3	3
Useful heat output at 50/30 °C min./max.		kW	5.4/48.6	7.8/70.2	10.2/91.8	12.3/110.2
Useful heat output at 80/60 °C min./max.		kW	5/45	7.2/65	9.4/85	11.4/102
Min./max. flue gas mass flow rate		kg/h	7.2/75.6	14.4/111.6	18/144	18/169.2
Pressure available at boiler outlet		Pa	270	270	320	370
Water content		l	2.81	4.98	8.34	9.83
Minimum required water flow rate		l/h	800	1500	2000	2250
Maximum operating temperature		°C	80	80	80	80
Maximum operating pressure (MOP)		bar	4	4	4	4
Water side pressure drop at Δt = 20 K		mbar	500	320	230	250
Max. gas flow rate (15°C-1013 mbar)	• natural gas H	m ³ /h	4.9	7.07	9.25	11.10
	• natural gas L	m ³ /h	5.69	8.22	10.75	12.91
	• propane	kg/h	3.59	5.19	6.79	8.15
Weight (empty)		kg	60	70	104	109

MODELS		IX 245	130	150	200	250
Useful output	• nominal determined at Qnom ^(I)	kW	122	140	186	233
	• intermediate at 30 % Qnom ^(II)	kW	40.4	46.5	62.8	78.6
Nominal output Pn at 50/30°C		kW	130.6	150.9	200	250
Efficiency in % LHV, load... % and water temp. ...°C	• 100 % Pn, at ave. temp. 70 °C	%	98.1	98.1	97.32	97.02
	• 30 % Pn, at return temp. 30 °C	%	108.5	108.5	109.06	109.06
Useful efficiency at ...% of the nominal heat output	• at 100 % Eta 4	%	88.4	88.4	87.68	87.41
	• at 30 % Eta 1	%	97.8	97.8	98.25	98.25
Modulation ratio		%	20 to 100	25 to 100	20 to 100	16 to 100
Nominal water flow rate at Pn and Δt = 20 K		m ³ /h	5.6	6.0	8.0	10.0
Stand-by losses at Δt = 30 K		W	77.7	83.3	95.3	117.3
Electrical output of auxiliaries at Qnom ^(III)		W	187	283	242	369
Electrical output of auxiliaries in standby		W	4.3	4.3	4.3	4.3
Useful heat output at 50/30 °C min./max.		kW	26.2/130.6	30.2/150.9	33.1/200	41.7/250
Useful heat output at 80/60 °C min./max.		kW	24.3/121.5	28.1/140.3	31/185.9	38.8/232.8
Min./max. flue gas mass flow rate		kg/h	43/202	50/230	77/455	103/591
Pressure available at boiler outlet		Pa	170	280	230	230
Water content		l	10	11	13	15
Minimum required water flow rate		l/h	2250	3000	3500	4500
Maximum operating temperature		°C	80	80	90	90
Maximum operating pressure (MOP)		bar	6	6	6	6
Water side pressure drop at Δt = 20 K		mbar	400	400	400	400
Max. gas flow rate (15°C- 1013 mbar)	• natural gas H	m ³ /h	13.1	15.1	20.21	25.40
	• natural gas L	m ³ /h	15.2	17.6	23.51	29.54
	• propane	m ³ /h	5.1	5.9	7.81	9.82
Weight (empty)		kg	126	132	212	232

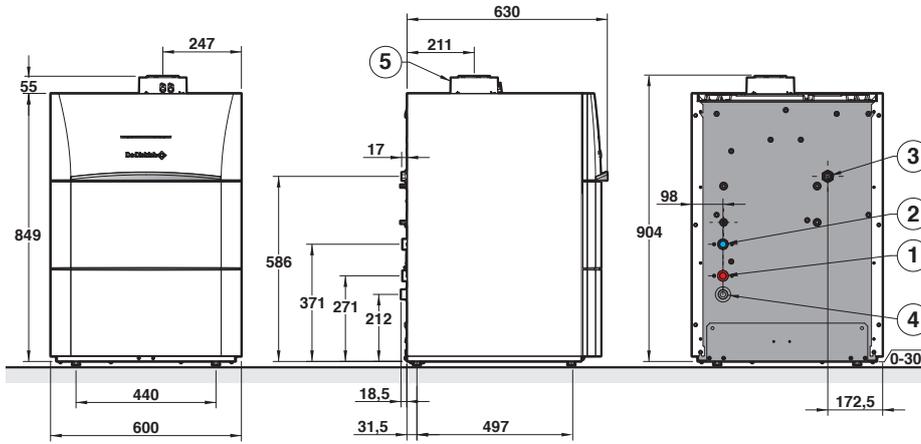
(I) Qnom = nominal heat flow rate

MAIN DIMENSIONS

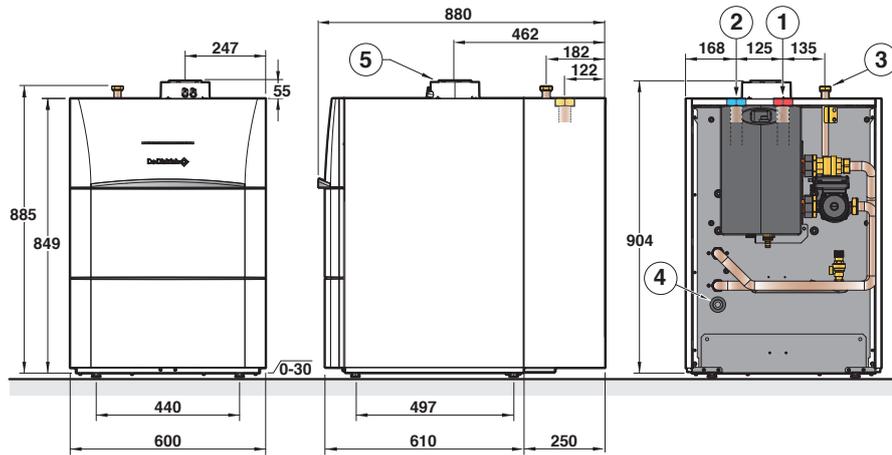
OF IX 145 - 50/70 BOILERS

MAIN DIMENSIONS (IN MM AND INCHES)

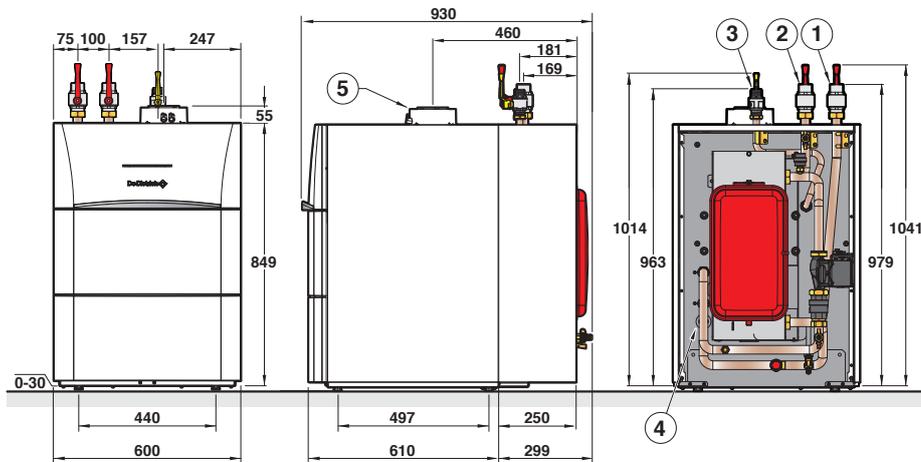
IX 145 - 50/70 (BOILERS ONLY)



IX 145 SH - 50/70 (WITH SEPARATION KIT WITH LOW-LOSS HEADER)



IX 145 EP - 50/70 (WITH SEPARATION KIT WITH PLATE HEAT EXCHANGER)



KEY

- ① Heating flow G 1"
- ② Heating return G 1"
- ③ Gas supply G 3/4"
- ④ Condensate discharge, ext. Ø 22 mm PVC pipe
- ⑤ Combustion products discharge and air supply duct, Ø 80/125 mm

IX_F0001

IX_F0009

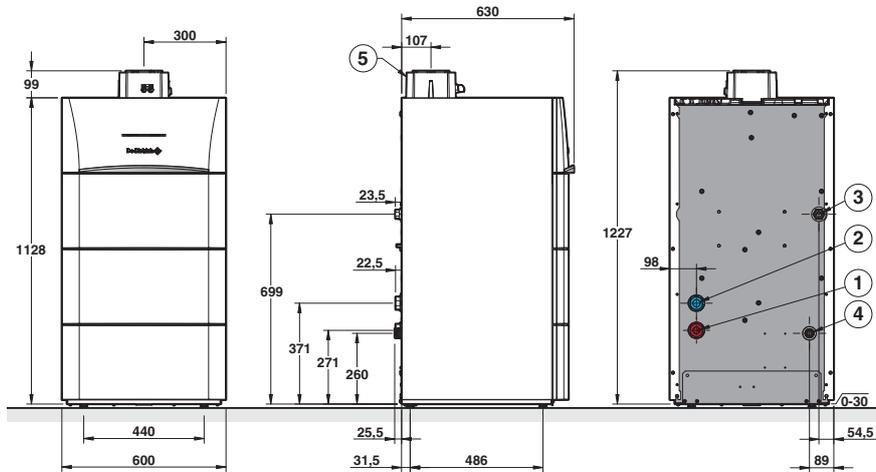
IX_F0005

MAIN DIMENSIONS

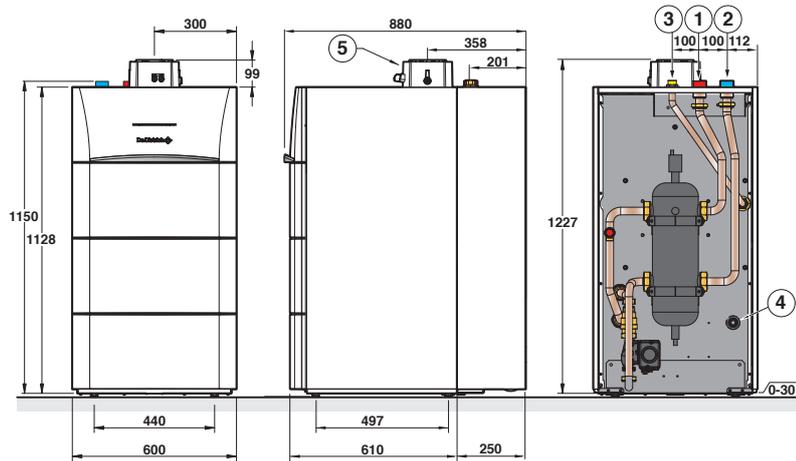
OF IX 145 - 90/110 BOILERS

MAIN DIMENSIONS (IN MM AND INCHES)

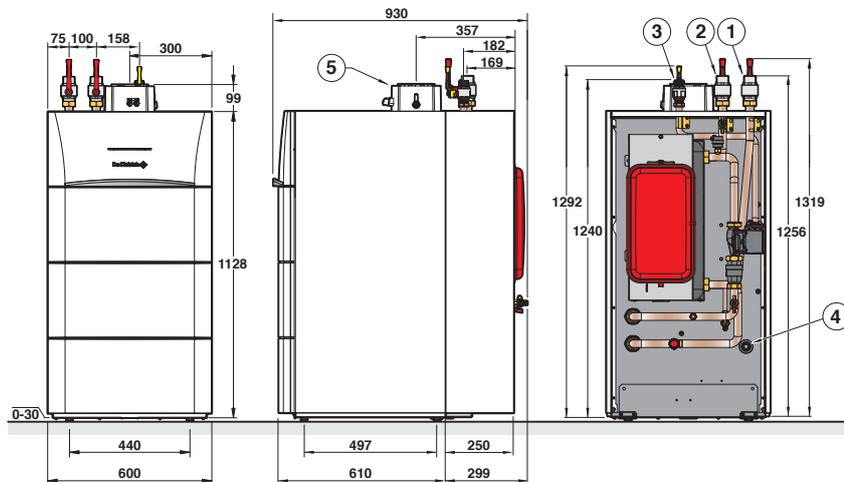
IX 145 - 90/110 (BOILERS ONLY)



IX 145 SH - 90/110 (WITH SEPARATION KIT WITH LOW-LOSS HEADER)



IX 145 EP - 90/110 (WITH SEPARATION KIT WITH PLATE HEAT EXCHANGER)



KEY

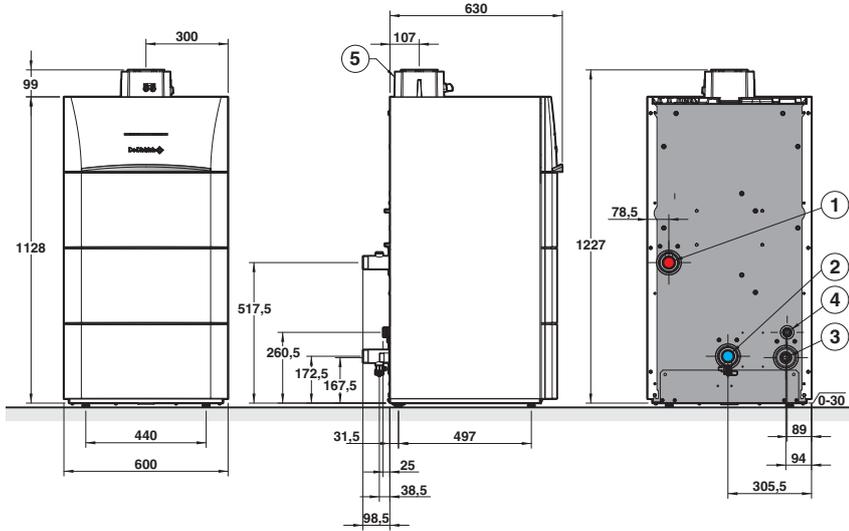
- ① Heating flow G 1" 1/2
- ② Heating return G 1" 1/2
- ③ Gas supply G 1"
- ④ Condensate discharge, ext. Ø 22 mm PVC pipe
- ⑤ Combustion products discharge and air supply pipe, Ø 110/160 mm

MAIN DIMENSIONS

OF IX 245 - 130/150 BOILERS

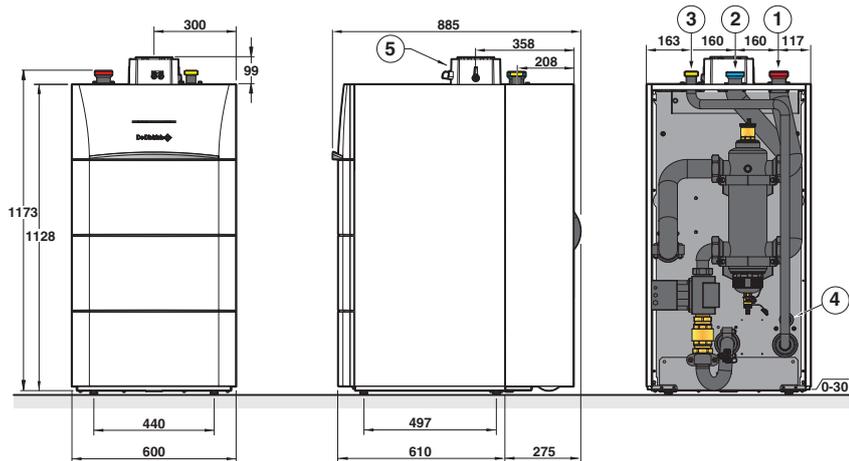
MAIN DIMENSIONS (IN MM AND INCHES)

IX 245 - 130/150 (BOILERS ONLY)



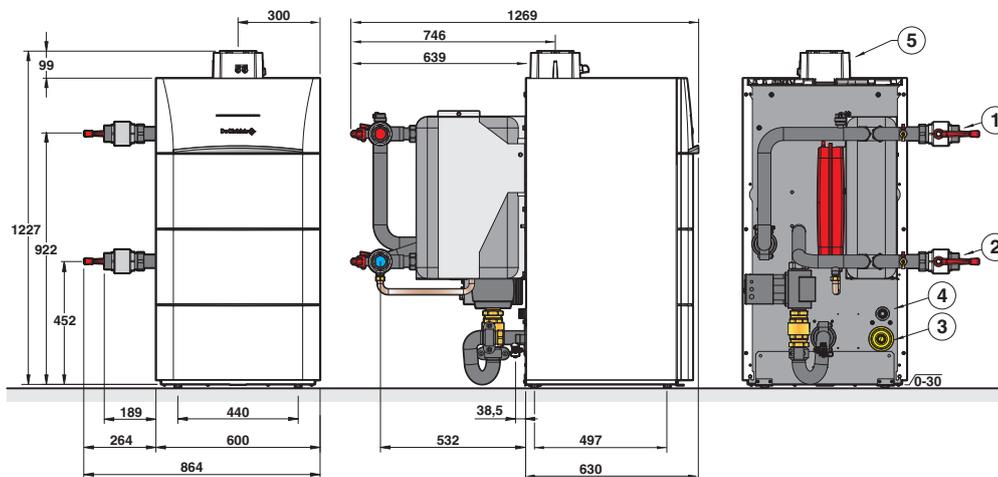
IX_F0003

IX 245 SH - 130/150 (WITH SEPARATION KIT WITH LOW-LOSS HEADER)



IX_F0011

IX 245 EP - 130/150 (WITH SEPARATION KIT WITH PLATE HEAT EXCHANGER)



IX_F0007

KEY

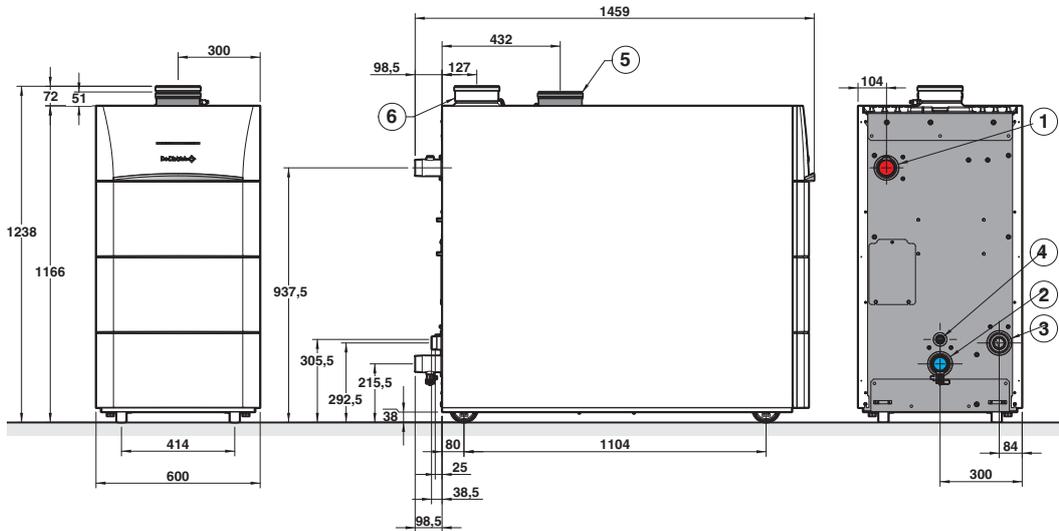
- ① Heating flow G 1" 1/2
- ② Heating return G 1" 1/2
- ③ Gas supply G 1"
- ④ Condensate discharge, ext. Ø 22 mm PVC pipe
- ⑤ Combustion products discharge and air supply pipe, Ø 110/160 mm

MAIN DIMENSIONS

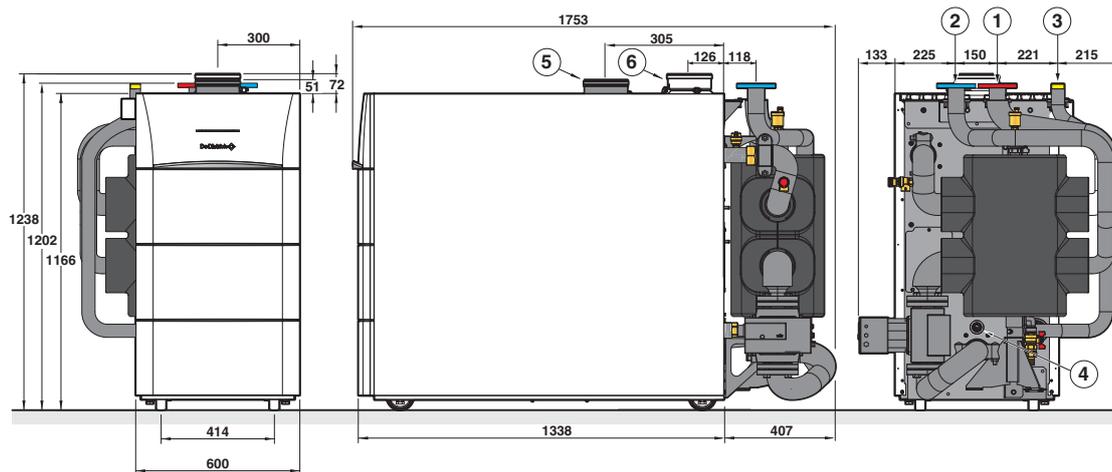
OF IX 245 - 200/250 BOILERS

MAIN DIMENSIONS (IN MM AND INCHES)

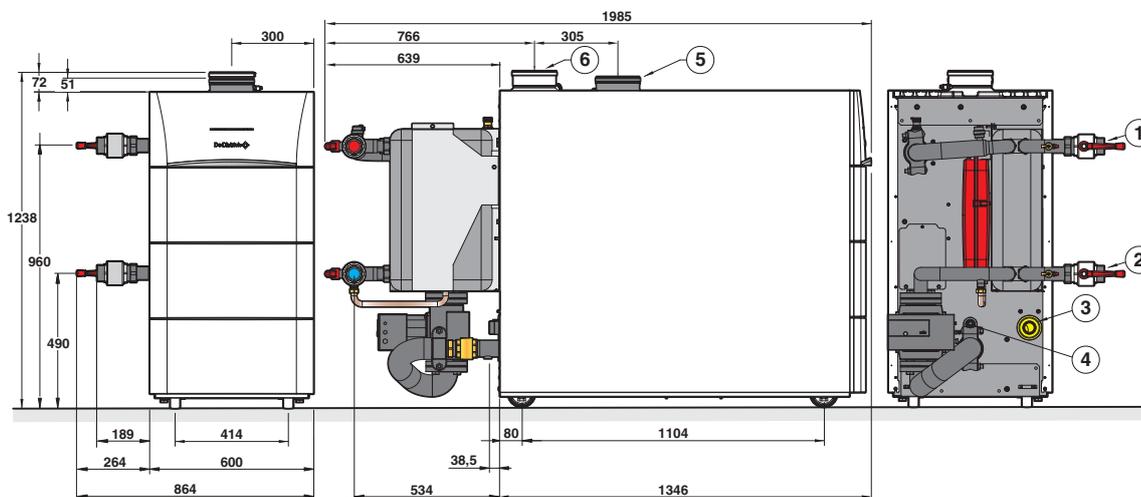
IX 245 - 200/250 (BOILERS ONLY)



IX 245 SH - 200/250 (WITH SEPARATION KIT WITH LOW-LOSS HEADER)



IX 245 EP - 200/250 (WITH SEPARATION KIT WITH PLATE HEAT EXCHANGER)



KEY

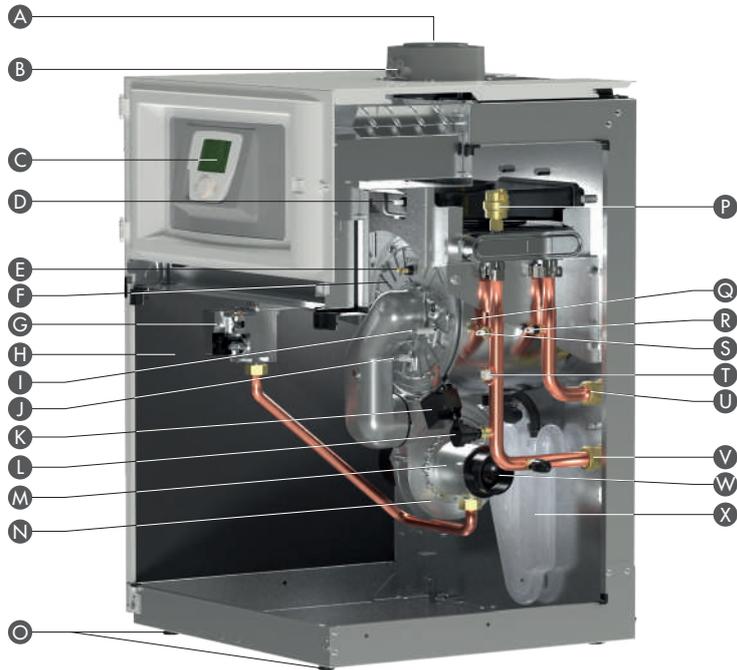
- ① Heating flow G 2"
- ② Heating return G 2"
- ③ Gas supply G 1" 1/2
- ④ Condensate discharge, ext. Ø 22 mm PVC pipe
- ⑤ Air supply pipe Ø 150 mm
- ⑥ Combustion product discharge Ø 150 mm

TECHNICAL SPECIFICATIONS

OF IX 145 - 50/70 AND IX 145 - 90/110 BOILERS

DESCRIPTION

MODEL IX 145 - 50/70



- A Flue gas connection Ø 80/125 mm
- B Flue gas measuring point
- C Control panel
- D Flue gas measuring sensor
- E Combustion chamber door safety thermostat
- F Burner

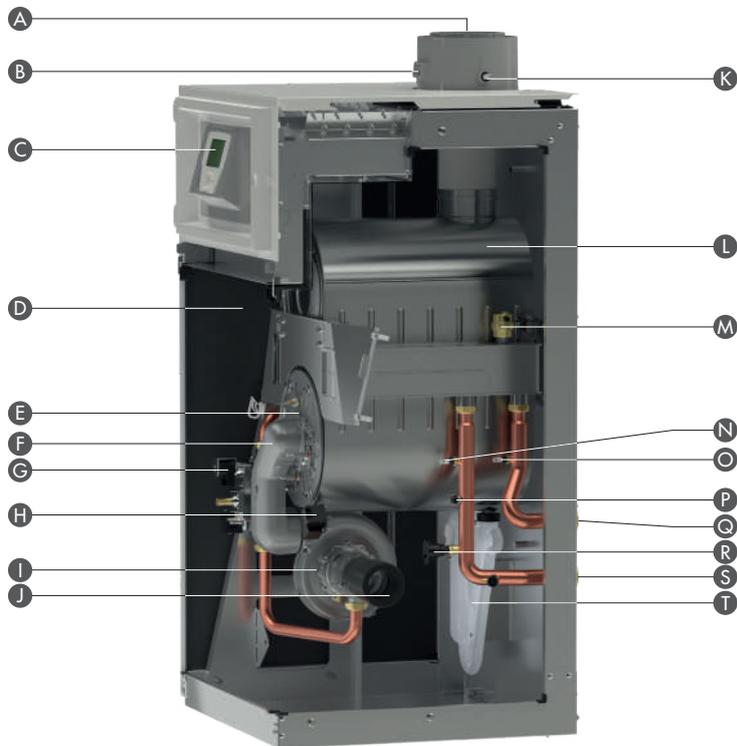
- G Gas valve
- H Sound insulation
- I Ignition electrode
- J Ionisation sensor
- K Ignition transformer
- L Hydraulic pressure sensor
- M Venturi

- N Fan
- O Adjustable feet
- P Automatic air vent
- Q Stainless steel coil exchanger
- R Return temperature sensor
- S Flow temperature sensor
- T Safety thermostat

- U Heating return
- V Heating flow
- W Air inlet
- X Siphon

IX_C0161

MODEL IX 145 - 90/110



- A Flue gas connection Ø 110/160 mm
- B Flue gas measuring point
- C Control panel
- D Sound insulation
- E Ionisation sensor

- F Burner
- G Gas valve
- H Ignition transformer
- I Fan
- J Air inlet

- K Flue gas measuring sensor
- L Stainless steel coil exchanger
- M Automatic air vent
- N Flow temperature sensor
- O Return temperature sensor

- P Safety thermostat
- Q Heating return
- R Hydraulic pressure sensor
- S Heating flow
- T Siphon

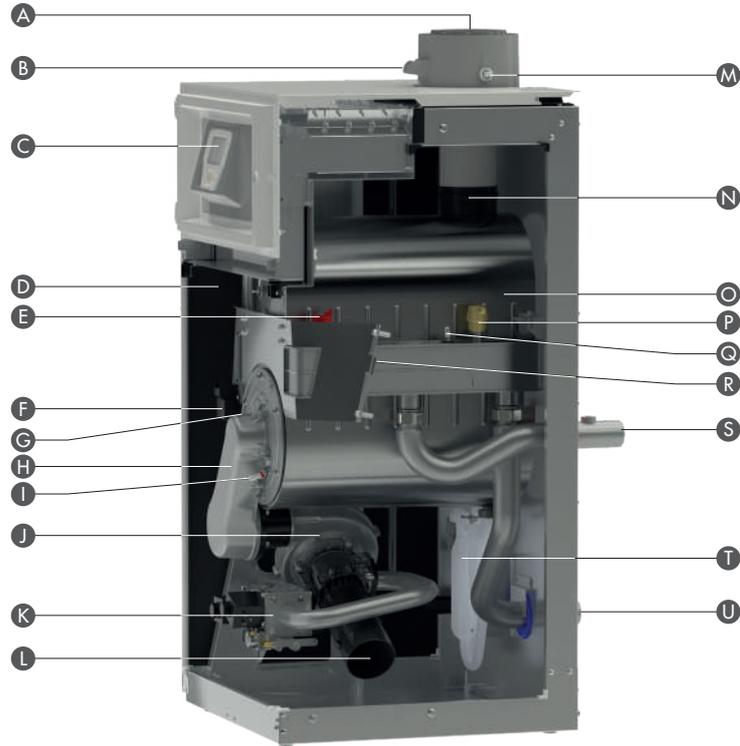
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TECHNICAL SPECIFICATIONS

OF IX 245 - 130/150 AND IX 245 - 200/250 BOILERS

DESCRIPTION

MODEL IX 245 - 130/150



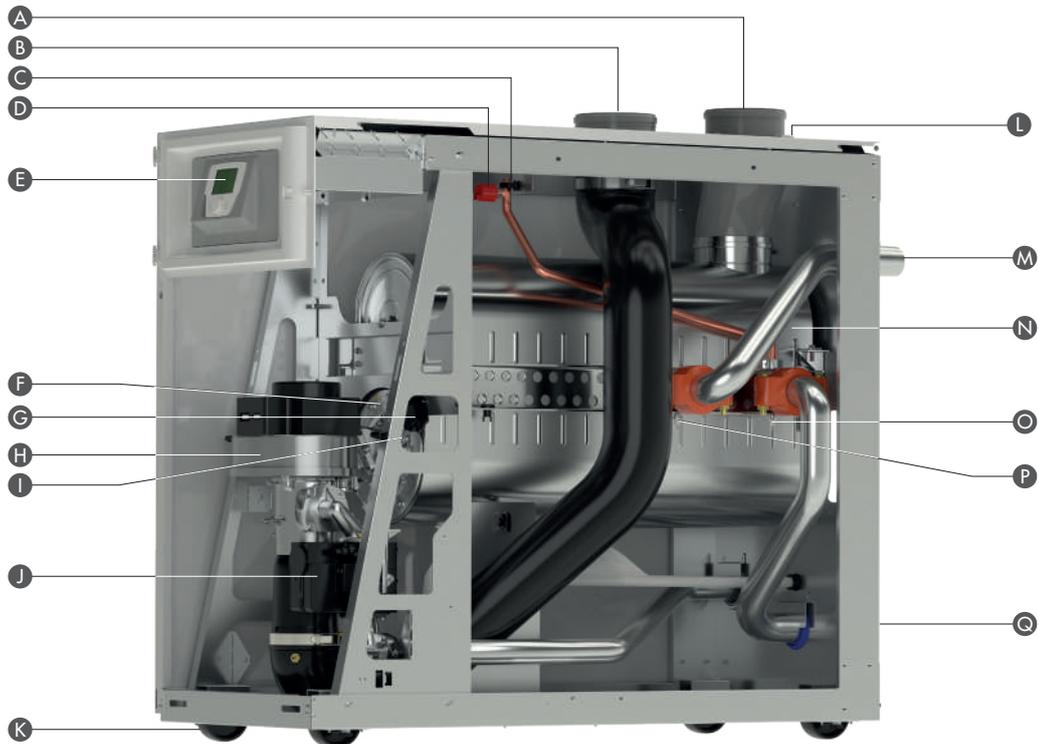
A Flue gas connection \varnothing 110/160 mm
 B Flue gas measuring point
 C Control panel
 D Sound insulation
 E Hydraulic pressure sensor
 F Ignition transformer

G Ignition electrode (not visible)
 H Burner
 I Ionisation sensor
 J Fan
 K Gas valve unit
 L Air inlet silencer

M Flue gas sensor
 N Flue gas connector
 O Stainless steel coil exchanger
 P Automatic air vent
 Q Return temperature sensor
 R Flow temperature sensor (not visible)

S Heating flow
 T Siphon
 U Heating return

MODEL IX 245 - 200/250



A Combustion product discharge \varnothing 150 mm
 B Air supply duct \varnothing 150 mm
 C Automatic air vent
 D Hydraulic pressure sensor
 E Control panel

F Burner
 G Ignition transformer
 H Fan
 I Ionisation sensor
 J Gas valve

K Wheels
 L Flue gas sensor
 M Heating flow
 N Stainless steel coil exchanger
 O Return temperature sensor

P Flow temperature sensor
 Q Heating return

TECHNICAL SPECIFICATIONS

OF IX 145/245 SH AND IX 145/245 EP BOILERS

The IX 145/245 SH and EP versions are equipped with kits to be installed in the rear of the boilers, enabling hydraulic separation of the primary circuit (boiler) from the secondary circuit (installation).

This separation presents the following advantages:

- Both versions (SH and EP) enable zero-flow operation,
- Establishing a hydraulically neutral point,
- Ensuring a controlled flow rate in the primary,
- Enabling good control of the flow rate and pressures in the secondary, especially when several circuits are operating independently of each other,
- Provide the option of having circuits at different temperatures in the secondary,
- Enabling air discharge thanks to its degassing function,
- Mud decanting and elimination, thanks to the mud clearing function (for the version with SH kit only),
- We recommend using a mud vessel and degasser on the secondary side (for version with EP kit only).

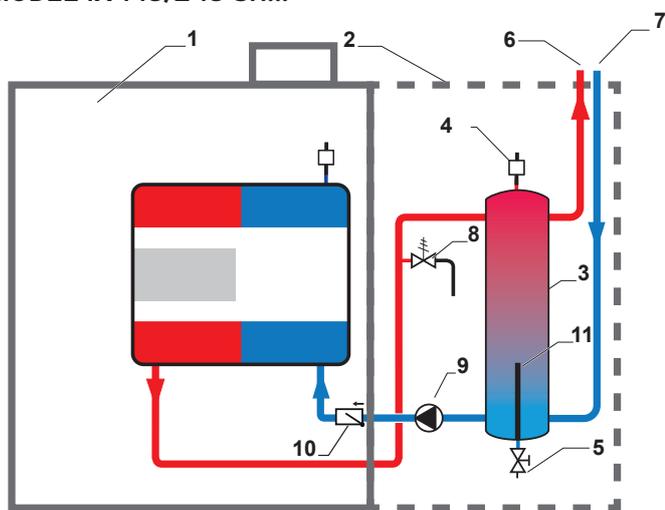
In EP versions, the plate heat exchanger has the main advantage of hydraulically isolating the primary and secondary circuits. Hence it protects the boiler body against the impurities present in the secondary heating circuit water (case of old, highly oxidised installation).

IMPORTANT NOTE

These low-loss header kits installed on the rear of SH and EP boilers are also available as an option.

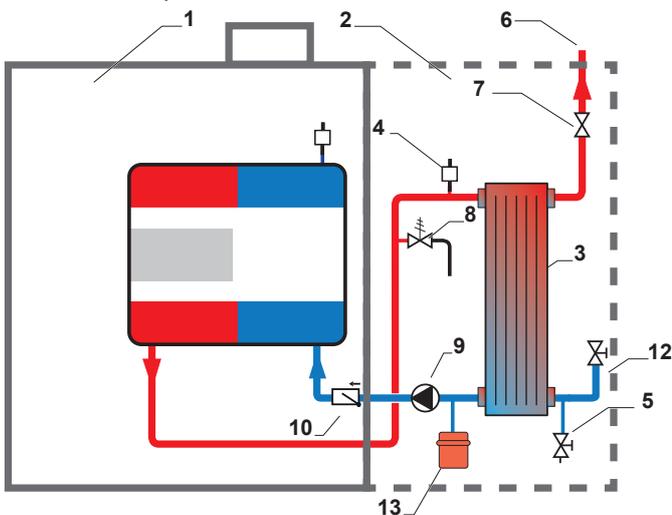
OPERATING PRINCIPLE

MODEL IX 145/245 SH...



- | | |
|-----------------------|-------------------------------|
| ① Boiler | ⑥ Heating circuit flow |
| ② Low-loss header kit | ⑦ Heating circuit return |
| ③ Low-loss header | ⑧ Safety valve |
| ④ Bleed | ⑨ Modulating circulating pump |
| ⑤ Drain valve | ⑩ Non-return valve |

MODEL IX 145/245 EP...



- | | |
|----------------------------|-------------------------------|
| ① Boiler | ⑧ Safety valve |
| ② Plate heat exchanger kit | ⑨ Modulating circulating pump |
| ③ Plate heat exchanger | ⑩ Non-return valve |
| ④ Bleed | ⑪ Drain valve |
| ⑤ Drain valve | ⑫ Valve |
| ⑥ Heating circuit flow | ⑬ Expansion vessel |
| ⑦ Valve | |



IX_Q1004

IX_F0106



IX_Q1005

IX_F0107

CONTROL PANEL

FOR IX...

CONTROL PANEL

The IX control panel is a highly developed panel with a built-in programmable electronic control system that manages the most complex commercial applications. All settings are carried out using a control panel installed on the front panel of the boiler. The control panel has a large backlit display making it simple and easy to use. Ergonomic controls mean, that with the use of a rotary button, you can intuitively navigate dropdown menus and the display presents the most important operating information (time, temperatures, operating modes etc.) and the status of different installation components (valves, pumps etc.) clearly and simply. The programmable electronic control system adapts the boiler temperature by acting on the modulating burner based on the outdoor temperature (the outdoor temperature sensor is supplied with the boiler) and possibly the room temperature if an interactive remote control is connected (optional SA47). As standard, the control system is able to automatically run a central heating system with one direct circuit and one DHW circuit (DHW sensor to be ordered in optional SA49). Connection of the DHW sensor means the DHW circuit can be programmed and managed. Up to three circuits can be managed by the control system: one direct + two mixing zones. Each mixing zone is controlled by an integrable three-way valve circuit control module (flow sensor included in SA45 package). Each of these circuits can be fitted with an SA47 room sensor which is available as an option. This control system has been specifically developed to enable optimal management of systems combining different heating generators (boilers in cascade, wood boilers, oil-fired boilers, solar system, buffer tanks, etc.). It allows the installer to configure the entire heating system, no matter how complex. For larger installations, it is possible to connect to the control system up to 16 boilers in cascade configuration (see "IX cascades" technical leaflet). Each boiler in the cascade can manage up to three circuits. One of the boilers is designed to manage the assembly of boilers. It can also manage (without programming) the boiler through a configurable 0-10 V signal.



IX_Q011

The "User menu" button provides direct access to basic settings such as: establishing temperature set points, operating mode (heating mode, heating set point, forced DHW mode, DHW set point, operating mode, etc.)

The main menu provides access for 3 different skill levels:

- **User level:** accessible by the end user, enabling them to alter the parameters relating to the temperatures of the various operating modes and the timer programmes.
- **Installer level:** accessible by the installer for the purpose of configuring the various installation parameters, to perform commissioning
- **Specialist level:** only accessible by the installer. Used to configure the programmable inputs and outputs.

CONTROL PANEL

INFORMATION

The system set points, real-time measurements and operating modes can be viewed on the control panel screen:

- Outdoor temperature,
- Room temperature of circuits 1, 2 and 3,
- Water temperature in DHW tank,
- Water temperature in the buffer tank- swimming pool water temperature,
- Flow water temperature in circuits 1, 2 and 3,
- The set point values in the installation operation.

HEATING PROGRAMMING

For each circuit connected to the control system, a timer programme can be applied.

Programming can be done easily using the menu.

Programming is possible day by day or in blocks of 7 days, in 10-minute intervals, i.e. up to 6 periods per day and per circuit. It is possible at any time to restore the standard programs (06:00/22:00) presents upon initial commissioning.

DIAGNOSTIC HELP

The IX control system has a test program used to check the operation of all the installation components (remote control, valves, pump(s), etc.).

ALARMS

In case of an operating fault, the screen displays in clear text an error message and a code corresponding to the malfunction.

DHW PRODUCTION

The control panel includes the DHW production function by an independent tank. Management of the DHW preparation is activated upon connection of the universal DHW sensor, SA49. A second DHW sensor can be connected to optimise the tank load (maximising the load and the DHW available). Installing 2 DHW sensors reduces: burner start-ups, pre-ventilation and post-ventilation. IX 145/245 boilers are compatible with all the instant DHW tanks, FWPC, FWS and FWM. In this way the tank load will be optimised with a high available DHW capacity.

CONTROL PANEL

CHOICE OF OPTIONS ACCORDING TO THE CONNECTED CIRCUITS (UP TO 3 MIXING ZONES)

Circuit type (1)	DHW	direct	valve	direct + 1 valve	2 x valve	direct + 2 x with valve	3 x with valve
IX 145/245	1 or 2 x SA49	as standard	1 x SA45	1 x SA45	2 x SA45	2 x SA45	2 x SA45 + 1 x SA44

(1) Each of the heating circuits can have an additional remote control, SA47

(2) 4-boiler cascade possible. Each boiler in the cascade can control 1 direct zone and 2 mixing zones (with 2 x option SA45).

CHOICE OF OPTIONS ACCORDING TO THE CONNECTED CIRCUITS (UP TO 6 MIXING ZONES)

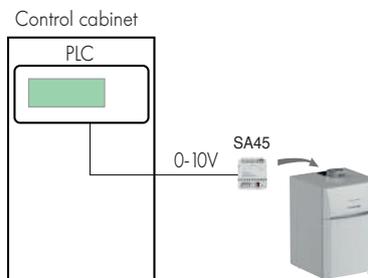
If there are more than 3 connected circuits, one or more VH HSM external modules (package SA43) will need to be used, connecting the additional circuits to them. Communication between the boiler panel and the VM HSM module is via the OCI 345 communication module (package SA50), to be installed in the boiler.

Circuit type (1)	Boiler	Module VM HSM	Boiler	Module VM HSM	Boiler	Module VM HSM	Boiler	Module VM HSM
	3 x with valve	1 x with valve	3 x with valve	1 direct + 1 with valve	3 x with valve	2 x with valves	3 x with valve	3 x with valve
Control panel + VM HSM module	2 x SA45 + 1 x SA44 + 1 x SA50	SA43	2 x SA45 + 1 x SA44 + 1 x SA50	SA43	2 x SA45 + 1 x SA44 + 1 x SA50	SA43 + 1 x SA44	2 x SA45 + 1 x SA44 + 1 x SA50	SA43 + 2 x SA44

(1) Each of the heating circuits can have an additional remote control, SA47

BOILER CONTROL WITH A 0 - 10 V SIGNAL

The IX... boiler can be controlled by means of a 0 - 10 V signal from a control cabinet in the boiler room; this will manage all the secondary circuits. (1) integrable zone controller SA45, installed in the boiler - with the 0 - 10 V input installed on contact H2)



IX CONTROL PANEL OPTIONS



IX_Q013

PROGRAMMABLE WIRED ROOM SENSOR - PACKAGE SA47

Room appliance with backlit screen with dropdown menu and clear text.
Choice of operating mode: Automatic (three different programs), Manual, Frost protection, Holiday etc.
Access to boiler parameters.
Fault alerts with fault codes and breakdown history.
Management of two circuits.
Room sensors can be added to the system to increase energy performance.



IX_Q012

NEWM THREE-WAY VALVE CIRCUIT CONTROL MODULE, INTEGRABLE - PACKAGE SA45

Control module that can be integrated in the boiler, and can manage a circuit with a three-way valve (flow sensor included) or a solar DHW tank.
It also manages an external boiler via a 0-10 V signal.
It has an outlet to manage a pump in PWM or 0-10 V mode.



IX_Q017

OCI 345 COMMUNICATION MODULE (LPB MODULE) - PACKAGE SA50

Fitted under the boiler cover, it allows you to connect boilers in cascade or external regulators.



IX_Q014

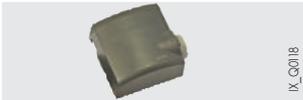
UF6C DHW UNIVERSAL SENSOR FOR SENSOR TUBE (LENGTH 6 M) - PACKAGE SA49

This enables temperature control and programming of DHW production.

CONTROL PANEL

OPTIONS

IX CONTROL PANEL OPTIONS



IX_Q0018

UAF6C STRAP-ON FLOW SENSOR AFTER MIXING VALVE - PACKAGE SA48

It can be used as a cascade sensor (flow/return) in the case of a IX boilers cascade (provide 2 sensors).



MPX_Q0007

OUTDOOR TEMPERATURE SENSOR, QAC 34 - PACKAGE HX94

Sensor supplied with the boiler.



IX_Q0020

VM HSM CONTROLLER - PACKAGE SA43

External zone controller enabling management of a direct zone, a three-way valve circuit and a DHW circuit. Contains the necessary temperature sensors. See technical sheet "VM HSM".



IX_Q0019

NEWM THREE-WAY VALVE CIRCUIT CONTROL MODULE, WALL-MOUNTED - PACKAGE SA44

Wall-mounted control module, able to manage a circuit with a three-way valve (flow sensor included) or a solar DHW tank. It can also control an external boiler via a 0-10 V signal. It has an outlet to manage a pump in PWM or 0-10 V mode.



IX_Q0022

OZW WEB SERVER:

- OZW 672.01 (FOR 1 BOILER) - PACKAGE SA51
- OZW 672.04 (FOR 4 BOILERS) - PACKAGE SA52
- OZW 672.16 (FOR 16 BOILERS) - PACKAGE SA53

With the OZW communication module (to be connected to the internet), there are multiple communication options:

- Create a website for your boiler room.
- Remote access to parameters for the boiler and the circuits it is controlling.
- Access to boiler parameters locally, on a PC (USB).
- Data exchange with other systems (API).

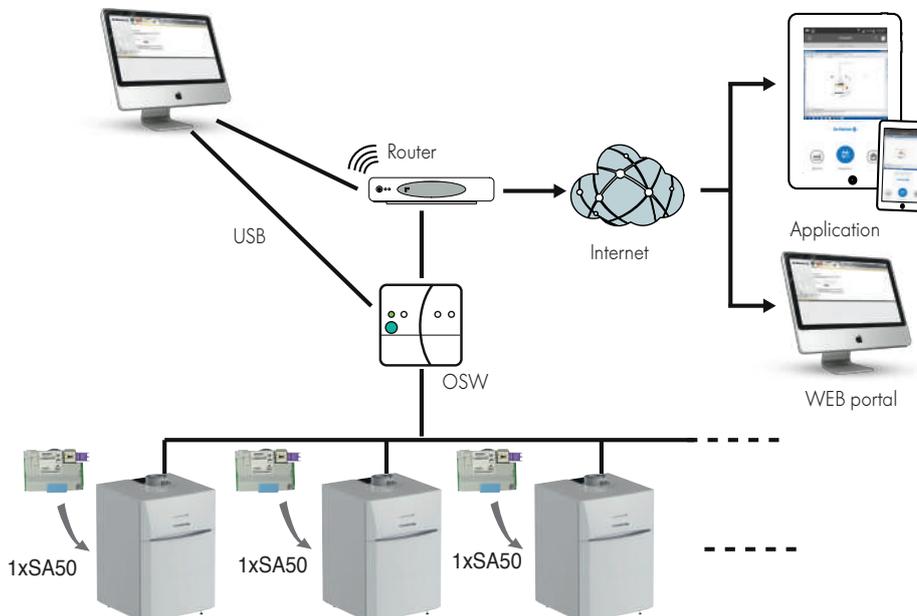
CONTROL PANEL

WEB

REMOTE MANAGEMENT OF A FLEET OF BOILERS - WEB GATEWAY/WEB SERVER

Remote fleet management:

- Error code feedback,
- Report generation (define frequency and parameters),
- Maintenance reminder message (by number of operating hours),
- Data updates,
- Equipment operation information retrieval,
- Option of accessing all the boiler parameters.



SEPARATION KITS WITH LOW-LOSS HEADER (SH) FOR IX 145 - 50/70/90/110

Pre-dimensioned hydraulic low-loss header kits which are installed on the rear of the boiler, and comprise:

- A PWM-controlled modulating pump,
- An insulated low-loss header, mud clearing valves and degasser,
- Connection pipes to the boiler with non-return valve and safety valve,
- Top-routed secondary pipes on the boiler,
- A top-routed gas pipe on the boiler (easier connection to boiler room network),
- Casing sheets.

LOW-LOSS HEADER KIT

- for IX145-50/70 - Package JL203
(complete kit contents: 3.3 litres)



IX_Q0151



IX_Q1000

- for IX145-90/110 - Package JL204
(complete kit contents: 8.1 litres)



IX_Q0155



IX_Q1003

BOILER OPTIONS

SEPARATION KITS WITH LOW-LOSS HEADER (SH) FOR IX 245 - 130/150/200/250

Pre-dimensioned hydraulic low-loss header kits which are installed on the rear of the boiler, and contain:

- A 0/10V controlled modulating pump,
- A PWM to 0 - 10V signal conversion module for pump control,
- An insulated low-loss header, mud clearing valves and degasser,
- Connection pipes to the boiler with non-return valve and safety valve,
- Top-routed secondary and gas pipes on the boiler, for easy connection to the boiler room network,
- Casing sheets (except for IX - 200/250 SH).

- for IX245-130/150 - Package JL270 (complete kit contents: 17.5 litres)

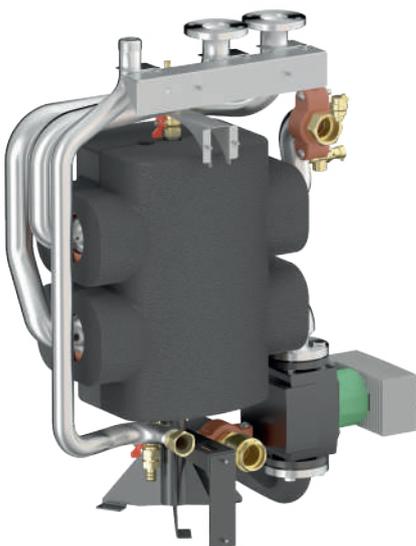


IX_00154

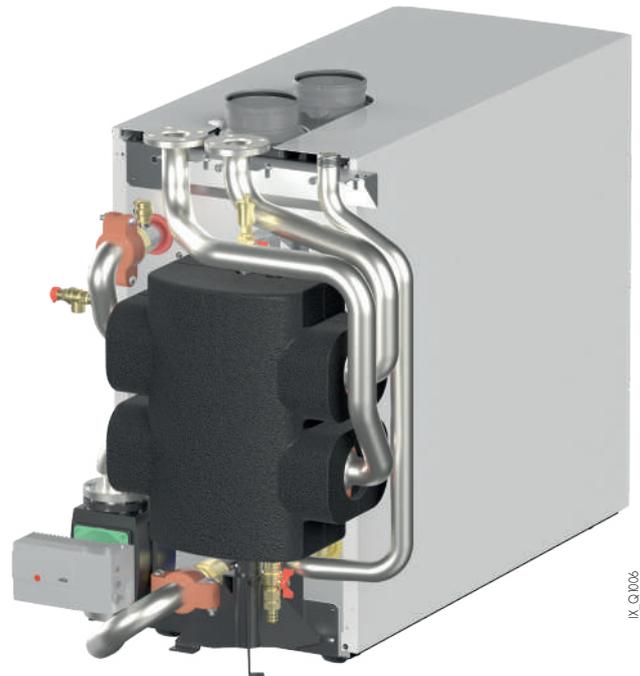


IX_Q1004

- for IX245-200/250 - Package JL271 (complete kit contents: 21.3 litres)



IX_Q0160



IX_Q1006

BOILER OPTIONS

SEPARATION KITS WITH PLATE HEAT EXCHANGER (EP) FOR IX 145 - 50/70/90/110

Separation kits with pre-dimensioned plate heat exchanger, which are installed on the rear of the boiler, and contain:

- A PWM-controlled modulating pump,
- An insulated plate heat exchanger,
- An expansion vessel,
- Primary connection pipes to the boiler with non-return valve and safety valve, exchanger drain valve and air bleed,
- Top-routed secondary and gas pipes on the boiler, for easy connection to the boiler room network, drain and cleaning valve,
- Casing sheets.

- for IX145-50/70 - package JL205
(primary side complete kit contents: 11.6 litres - secondary side exchanger contents: 2.7 litres)



IX_Q0152



IX_Q1001

- for IX145-90/110 - package JL206
(primary side complete kit contents: 13.4 litres - secondary side exchanger contents: 4.4 litres)



IX_Q0156



IX_Q1002

EXCHANGER PRESSURE DROP (to be factored into secondary pump dimensioning)

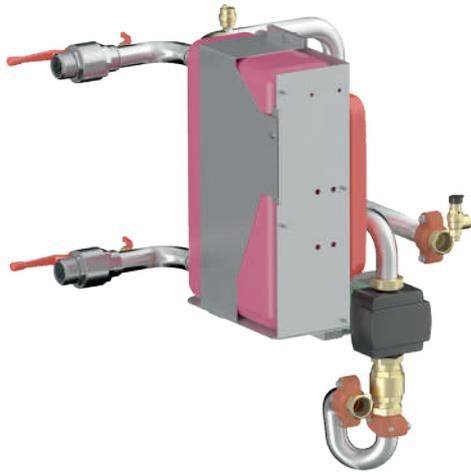
	IX 145-	50	70	90	110
▶ With primary temperature $\Delta T = 20\text{ }^{\circ}\text{C}$					
Secondary flow rate	m ³ /h	2.191	3.068	3.945	4.821
Secondary pressure drop	kPa	4.94	8.36	5.80	8.36
Secondary maximum operating pressure	bar	16	16	16	16

BOILER OPTIONS

SEPARATION KITS WITH PLATE HEAT EXCHANGER (EP) FOR IX 245 - 130/150/200/250

- A 0/10V controlled modulating pump,
- A PWM to 0 - 10V signal conversion module for pump control,
- An insulated plate heat exchanger,
- An expansion vessel,
- Primary connection pipes to the boiler with non-return valve and safety valve, exchanger drain valve and air bleed
- Top-routed secondary and gas pipes on the boiler, for easy connection to the boiler room network, drain and cleaning valve.

- for IX245-130/150 - package JL280
(primary side complete kit contents: 20.3 litres - secondary side exchanger contents: 6.6 litres)

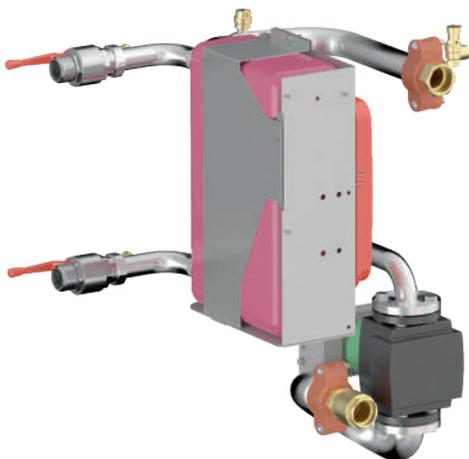


IX_Q0157

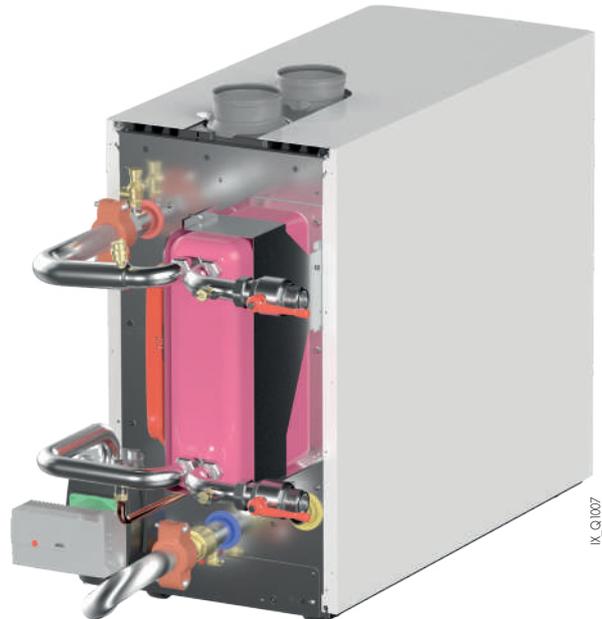


IX_Q1005

- for IX245-200/250 - Package JL281
(primary side complete kit contents: 22 litres - secondary side exchanger contents: 6.6 litres)



IX_Q0159



IX_Q1007

EXCHANGER PRESSURE DROP (to be factored into secondary pump dimensioning)

	IX 245-	130	150	200	250
▶ With primary temperature $\Delta T = 20\text{ }^{\circ}\text{C}$					
Secondary flow rate	m ³ /h	5.63	6.5	8.66	10.83
Secondary pressure drop	kPa	7.42	9.67	16.5	24.9
Secondary maximum operating pressure	bar	16	16	16	16

BOILER OPTIONS



DNI_Q0002/C330_Q0006/C330_Q0005/C330_Q0008/DNI_Q0001

GRAVITY FLOW CONDENSATES NEUTRALISATION STATION:

- DN1 (UP TO 75 KW) - PACKAGE SA1
- DN2 (UP TO 450 KW) - PACKAGE SA3
- DN3 (UP TO 1300 KW) - PACKAGE SA9

CONDENSATES NEUTRALISATION STATION WITH LIFT PUMP FOR BOILERS OR BOILER CASCADES:

- UP TO 120 KW - PACKAGE DU13
- UP TO 300 KW - PACKAGE SA4
- UP TO 1300 KW - PACKAGE DU15

The materials used for the condensate drain pipes must be appropriate. Otherwise, the condensate must be neutralised.

INSTALLATION SUPPORT FOR NEUTRALISATION STATION - PACKAGE SA2



C330_Q0009

GRANULATE RECHARGE FOR NEUTRALISATION STATION - REF. 9422-5601 (10 KG)

GRANULATE RECHARGE FOR NEUTRALISATION STATION - PACKAGE SA7 (25 KG)

An annual inspection of the system is required, including a check of the effectiveness of the granulates via a pH measurement. If necessary, the granulates must be replaced.



C230_Q0002/

300 MBAR GAS PRESSURE REGULATOR:

- GDJ 15 - PACKAGE SA11
- GDJ 20 - PACKAGE SA12
- GDJ 25 - PACKAGE AD245
- GDJ 50 - PACKAGE AD246

It is fitted on the gas inlet circuit. It is needed if the gas is supplied at a pressure of 300 mbar.

CAUTION: The gas controller is limited to an output of 300 kW in a boiler room installation. Above this output, it must be installed outside the boiler room.

CONTROLLER	MAX. NATURAL GAS FLOW RATE IN m ³ /h	MAX POWER CONSUMED IN KW	CONNECTION Ø
GDJ 15	15	150	Rp 1/2"
GDJ 20	34	340	Rp 3/4"
GDJ 25	70	700	Rp 1"
GDJ 50	140	1400	Rp 2"

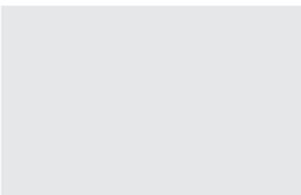


IX_Q4000

PROPANE CONVERSION KIT:

(For IX 245 boilers, the propane conversion kits are supplied with the boiler. The kit comprises a diaphragm to be installed on the gas valve unit)

- FOR IX 145- 50 - REF. 7716148
- FOR IX 145- 70 - REF. 7716149
- FOR IX 145- 90 - REF. 7716150
- FOR IX 145- 110 - REF. 7716151



G25 CONVERSION KIT:

(For IX 245 boilers, a conversion kit is not required)

- FOR IX 145- 50 - REF. 7716152
- FOR IX 145- 70 - REF. 7716153
- FOR IX 145- 90 - REF. 7716154
- FOR IX 145- 110 - REF. 7716155

BOILER OPTIONS



DOMESTIC HOT WATER PREPARATION

The De Dietrich independent tanks in the B... series, with a capacity of 150 to 3000 litres, enable production of domestic hot water for individual and collective housing, and industrial and commercial premises. The specifications and performance of these tanks are given in the price catalogue and respective technical leaflets for the independent tanks.

FLUE GAS SYSTEM



FLUE GAS SYSTEM KIT WITH NON-RETURN VALVE AND SIPHON:

- Ø 80/110 MM FOR IX 145 - 50/70 - PACKAGE DY433
- Ø 110/110 MM FOR IX 145 - 90/110/130/150 - PACKAGE DY432

The non-return valve is integrated into IX 245-200/250.



- Ø 80 MM PPS EXTENSION (L. 250 MM) (2-PART) - PACKAGE DY613
- Ø 110 MM PPS EXTENSION (L. 500 MM) - PACKAGE DY180

TECHNICAL SPECIFICATIONS

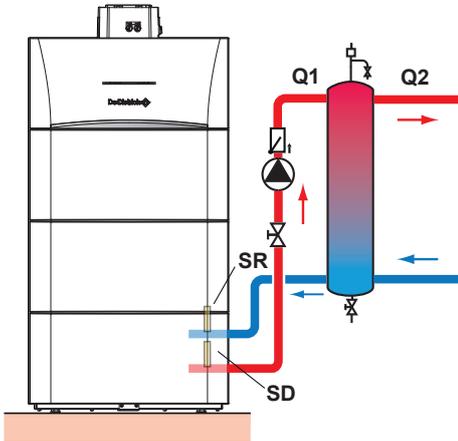
FOR IX 145/245 BOILERS VERSIONS SH AND EP

VARIABLE FLOW RATE PUMP AND OUTPUT ADJUSTMENT

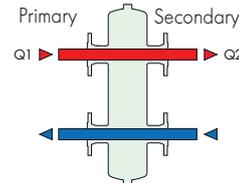
SH VERSION

The variable flow rate pump adjusts the flow rate Q_1 to obtain the greatest ΔT (boiler flow /return sensor), and modulates the burner output to obtain the flow temperature setpoint. In most cases, using the pump flow rate, we obtain $Q_1 = Q_2$, the objective being to obtain low water heating return temperatures (condensation), and reduce the mixing in the header (maintaining the boiler's efficiency).

WHERE $Q_1 = Q_2$



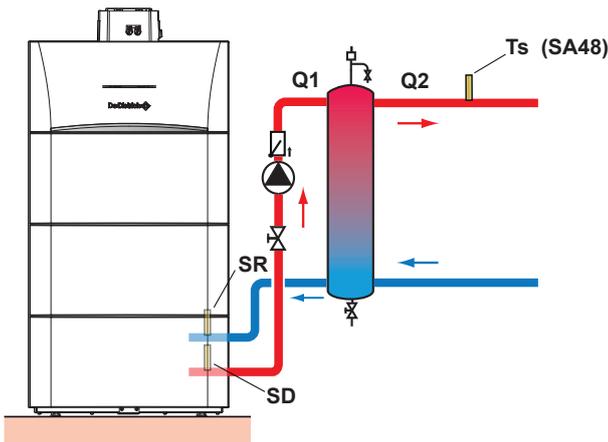
The variable flow rate pump adjusts the flow rate Q_1 to flow rate Q_2 , which limits the mixing in the header.



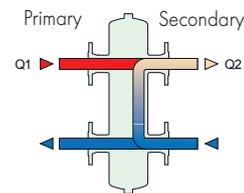
IX_F0105

IX_F0116

WHERE $Q_1 < Q_2$



The boiler primary flow rate $Q_1 < Q_2$: the TS sensor adjusts the T° and boiler outgoing flow rate Q_1 to obtain the flow T° setpoint Q_2 (max. boiler ΔT° 30 °C, no heating of the returns).



KEY
 SR: boiler return sensor
 SD: boiler flow sensor
 Q1: primary flow rate
 Q2: secondary flow rate
 Ts: flow sensor

IX_F0105

IX_F0116

Because of the mixing in the header, the flow temperature T_s cannot be respected; a temperature sensor SA48 will need to be provided, to adjust the boiler's flow temperature to the needs of the various circuits.

Versions IX... SH/EP and the low-loss header kits ensure hydraulic independence of the boilers. The control system enables optimum operation, by adjusting the water flow rate and burner output.

EP VERSION

In the IX... EP versions, the header is replaced by a plate heat exchanger, but the control principle remains the same.

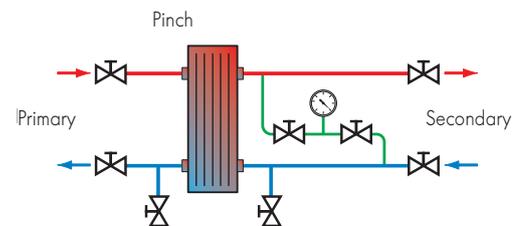
Inside the exchanger, a large amount of energy is exchanged with a minimal temperature difference between the primary inflow water and the secondary outflow water.

This difference corresponds to the pinch temperature of the exchanger, which is between 5 and 7°C. This means that, at a boiler primary temperature of 80/60°C, the heating circuit secondary water temperature will be 75/55°C. The operation of the boiler at nominal output equates to approximately 10 days per year. The boiler modulates its output and temperature for 99 % of its operating time. The exchanger improves its performance by further reducing this pinch temperature, thereby reducing its influence on boiler efficiency.

The plate heat exchanger provides added mud and scaling protection for the boiler on networks where we have difficulty controlling the installation's water quality.

Thanks to the 2 isolation valves and the other 2 valves, it is also easy to clean/replace in case of clogging. To limit clogging, we strongly recommend installing a sludge vessel/clarifier unit and a degasser on the secondary side.

The exchanger secondary performance is guaranteed up to ΔT° 20 °C (75/55°C). For use with ΔT° other than 20°C, you will need to factor in a temperature or output drop out of the secondary.



AC_F0018

INFORMATION REQUIRED

FOR INSTALLATION

STATUTORY GUIDELINES FOR INSTALLATION AND MAINTENANCE

Installation and maintenance of the appliance must be performed by a qualified professional in accordance with the relevant statutory guidelines and good industrial practice.

POSITIONING OF IX 145 - 50/70 (BOILERS ONLY, AND SH & EP VERSIONS)

IX 145 - 50/70 boilers can be installed at any point in the home, but it must be in a frost-free room with ventilation. The International Protection marking enables them to be installed in kitchens and bathrooms, although outside of protection volumes 1 and 2. To ensure good accessibility around the boiler, we recommend respect the minimum dimensions shown opposite.

ROOM VENTILATION

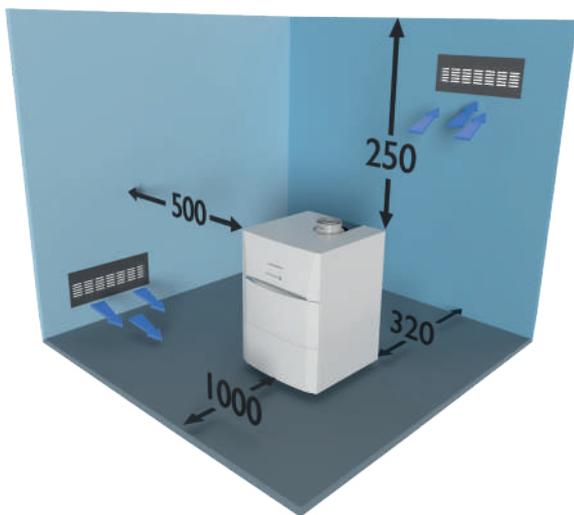
(with chimney connection - type B₂₃, only)

The room ventilation section (where the combustion air is extracted) must comply with the prevailing standard.

NOTE

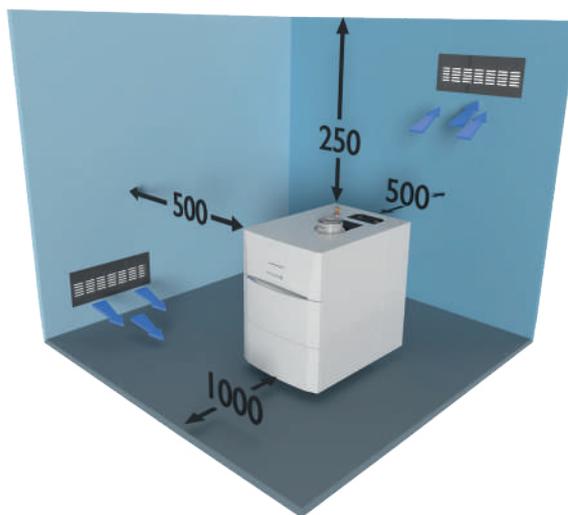
For boilers connected to a concentric forced flue (type C_{13x} or C_{33x} connections) the installation room ventilation must comply with the prevailing standard.

• BOILER ONLY



IX_Q0500

• BOILER VERSIONS SH AND EP (with low-loss header kit on rear)

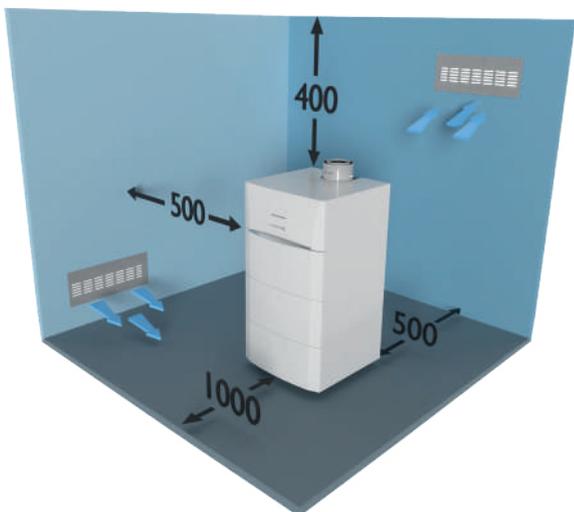


IX_Q0510

NB: The dimensions given are the minimum recommended (in mm) to ensure sufficient access around the boiler.

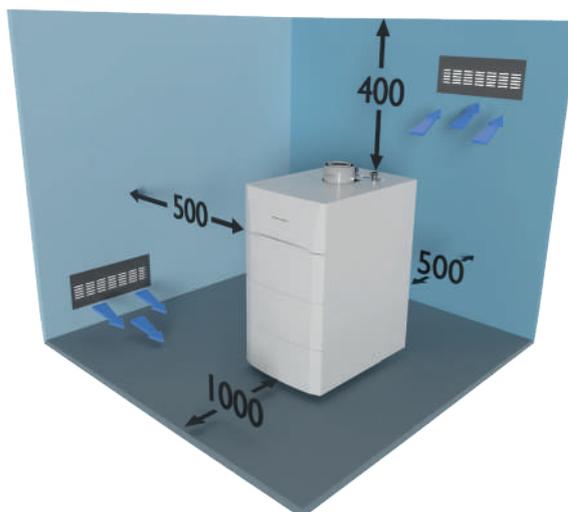
POSITIONING OF IX 145 - 90/110 (BOILERS ONLY, OR SH AND EP VERSIONS)

• BOILER ONLY



IX_Q0501

• BOILER VERSIONS SH AND EP (with low-loss header kit on rear)



IX_Q0511

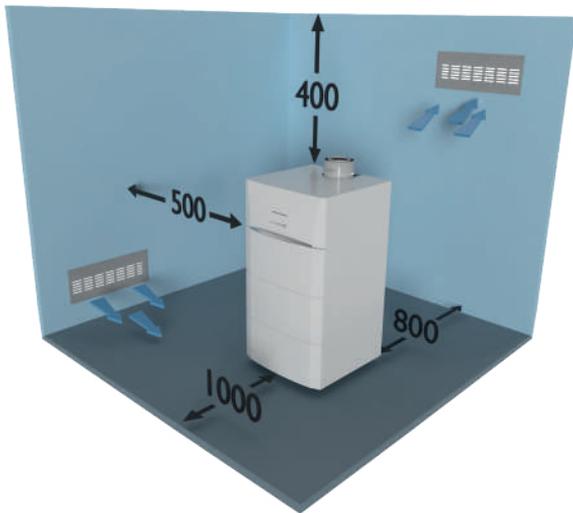
NB: The dimensions given are the minimum recommended (in mm) to ensure sufficient access around the boiler.

INFORMATION REQUIRED

FOR INSTALLATION

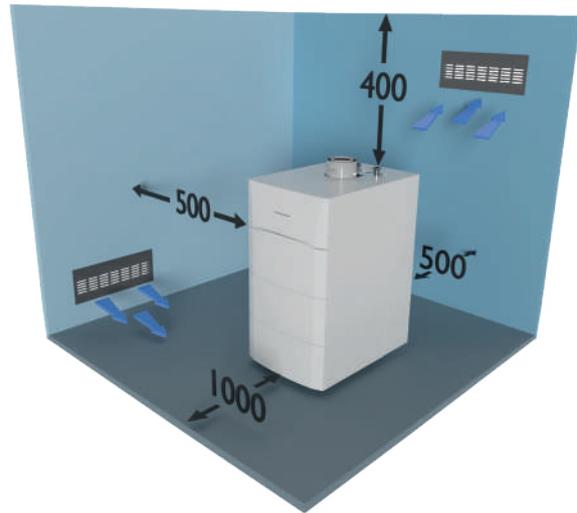
POSITIONING OF IX 245 - 130/150 (BOILERS ONLY, AND SH & EP VERSIONS)

• BOILER ONLY



IX_00502

• BOILER VERSIONS SH AND EP (with low-loss header kit on rear)

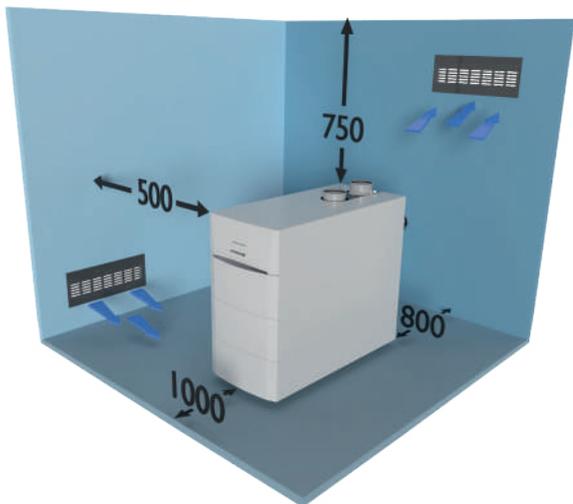


IX_00501

NB: The dimensions given are the minimum recommended (in mm) to ensure sufficient access around the boiler.

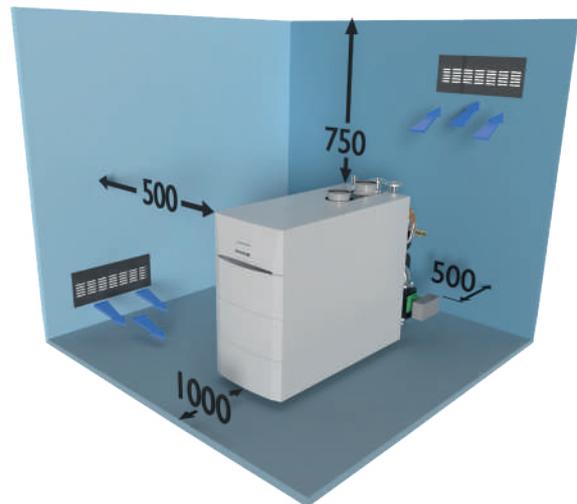
POSITIONING OF IX 245 - 200/250 (BOILERS ONLY, OR SH AND EP VERSIONS)

• BOILER ONLY



IX_00503

• BOILER VERSIONS SH AND EP (with low-loss header kit on rear)



IX_00502

NB: The dimensions given are the minimum recommended (in mm) to ensure sufficient access around the boiler.



In order to avoid damage to the boilers, it is necessary to prevent the contamination of combustion air by chlorine and/or fluorine compounds, which are particularly corrosive. These compounds are present, for example, in aerosol sprays, paints, solvents, cleaning products, washing products, detergents, glues, road grit, etc. The following must therefore be ensured:

- Prevent the intake of air expelled by premises using such products: hairdressing salons, dry cleaners, industrial premises (solvents), premises containing refrigeration systems (risk of refrigerant leakage), etc.
- Avoid storing such products close to boilers.

We would like to underline that, should the boiler and/or peripheral equipment be corroded by chlorine and/or fluorine compounds, the contractual guarantee will be invalidated.

INFORMATION REQUIRED

FOR INSTALLATION

GAS CONNECTION

The applicable regulations and provisions must be complied with. In all cases, a shut-off valve must be placed as close to the boiler as possible. A filter must be provided on the gas supply immediately downstream of the shut-off valve.

The diameters of the pipes must be defined in accordance with the prevailing standard.

Gas supply pressure:

- 20 mbar for H natural gas,
- 25 mbar for L natural gas,
- 300 mbar for H or L natural gas, with pressure regulator available as an option.

NOTE: In a boiler room with a total output > 300 kW, the pressure regulator must be fitted outside of the building.

GAS BUFFER TANKS

Gas buffer tanks is one of the solutions used to resolve the issue of accidental triggering of the "min." or "max." pressure switches fitted to gas burners.

Triggering is linked to the inertia of the fluid-expansion system which causes pressure drops and surges in the gas supply line when burners are started up and shut down. The volume of a buffer tank can be calculated using our software offering, in particular DIEMATOOLS, which can be accessed from our specific website for industry professionals.

ELECTRICAL CONNECTION

This must comply with the prevailing standard.

The boiler must be supplied via an electrical circuit which includes an omnipolar switch with an opening gap distance of > 3 mm. Protect the network connection using a 6A fuse.

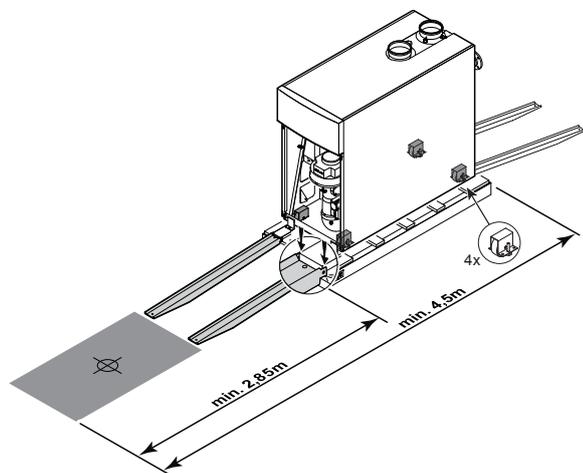
NOTE

- the sensor cables must be separated from the 230 V circuits by at least 10 cm,
- to help maintain the frost protection and anti-blocking functions of the pumps, we recommend that the boiler is not powered off using the mains switch.
- Depending on the quality of the power supply network, we recommend using an isolation transformer.

INSTALLATION

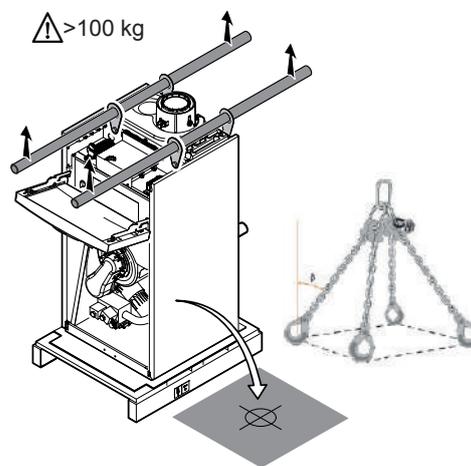
If possible, the boiler's protective packaging must only be removed once the boiler has reached its final installation location. Without packaging, the boiler measures 60 cm in width, and can fit through all standard doors. The weight of the boiler exceeds the maximum weight which can be lifted by one person; use of lifting equipment is recommended.

To facilitate fitting the IX 245-200/250 boiler, it is equipped with wheels built into the chassis and with unloading ramps.



IX_F0108

IX 245... boilers are equipped with lifting rings to facilitate installing the boiler.



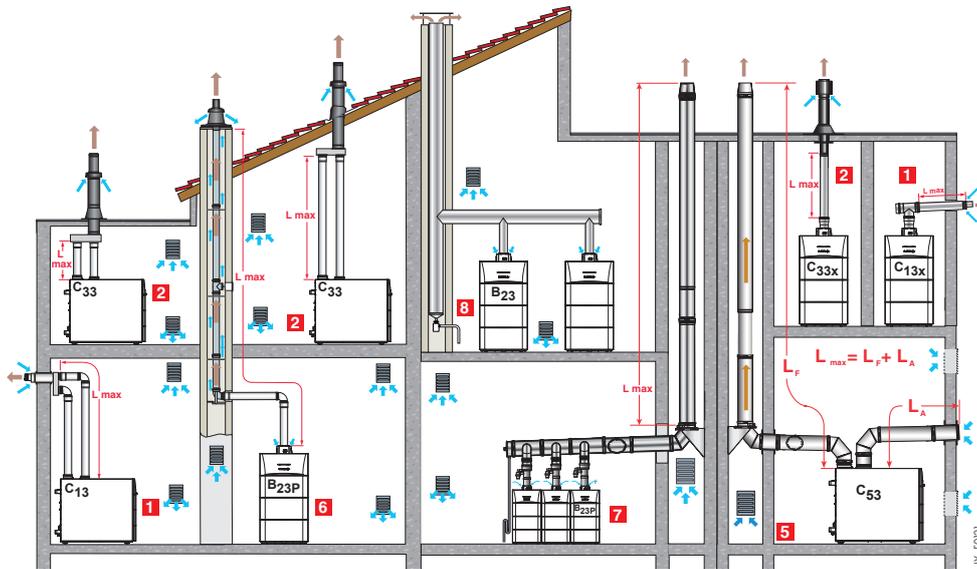
IX_F0109

INFORMATION REQUIRED

FOR INSTALLATION

AIR/FLUE GAS CONNECTION FOR IX 145 - 50/70 AND IX 245 - 130/150

For information on how to set up the air/flue gas connection ducts and the installation rules, see the De Dietrich "Flue system" brochure. For details of the various configurations, see the special "Flue system" brochure or the current Product Catalogue.



- 1** CONFIGURATION C_{13(x)}: Air-flue gas connection via concentric ducts to a horizontal terminal (so-called forced flue)
- 2** CONFIGURATION C_{33(x)}: Air/flue gas connection via concentric ducts to a vertical terminal (roof outlet)
- 5** CONFIGURATION C₅₃: Separate air and flue gas connection, single ducts (combustion air taken from outside)
- 6** CONFIGURATION B_{23P}/B₃₃: Connection to a chimney (combustion air taken from within the boiler room). $L_{max} = L_f + L_A$
- 7** CONFIGURATION B_{23P}: for cascade installations
- 8** CONFIGURATION B₂₃: Connecting a boiler only or cascade boilers to a negative pressure flue gas pipe, not sensitive to humidity, with the combustion air taken from within the boiler room

IMPORTANT REMARK: The compliance of the different configurations with prevailing standards has to be checked.

TABLE OF MAXIMUM PERMISSIBLE AIR/FLUE GAS DUCT LENGTHS BASED ON THE BOILER MODEL

TYPE OF AIR-FLUE GAS CONNECTION			L _{MAX} : MAXIMUM EQUIVALENT LENGTH OF CONNECTION DUCTS IN METRES							
			IX 145				IX 245			
			50	70	90	110	130	150	200	250
Concentric ducts connected to a horizontal terminal (PPs)	C _{13(x)}	Ø 80/125 mm	10	10	-	-	-	-	-	-
		Ø 110/160 mm	-	-	10	10	8	8	-	-
		Ø 160/220 mm	-	-	-	-	-	-	45	22
Concentric ducts connected to a vertical terminal (PPs)	C _{33(x)}	Ø 80/125 mm	10	10	-	-	-	-	-	-
		Ø 110/160 mm	-	-	10	10	8	8	-	-
		Ø 160/220 mm	-	-	-	-	-	-	20	11
Single separate air/flue gas ducts (combustion air taken from outside) (Alu)	C ₅₃	Ø 160 mm (rigid)	-	-	-	-	-	-	42	21
In chimney (rigid or flex.) (combustion air taken from inside the room) (PPs)	B _{23P} /B ₃₃	Ø 80 mm (rigid)	20	8	-	-	-	-	-	-
		Ø 110 mm (rigid)	56	56	20	56	20	27	-	-
		Ø 80 mm (flex.)	15	6	-	-	-	-	-	-
		Ø 110 mm (flex.)	56	38	-	15	7	9	-	-
		Ø 160 mm (rigid)	-	-	-	-	-	-	39	23

(1)Ⓢ: The max. height in the flue gas pipe (Configuration B_{23P}/B₃₃) from the support elbow to the outlet must not exceed 25 m for the flex. PPS. If longer lengths are employed, mounting collars must be added every 25-metre section.

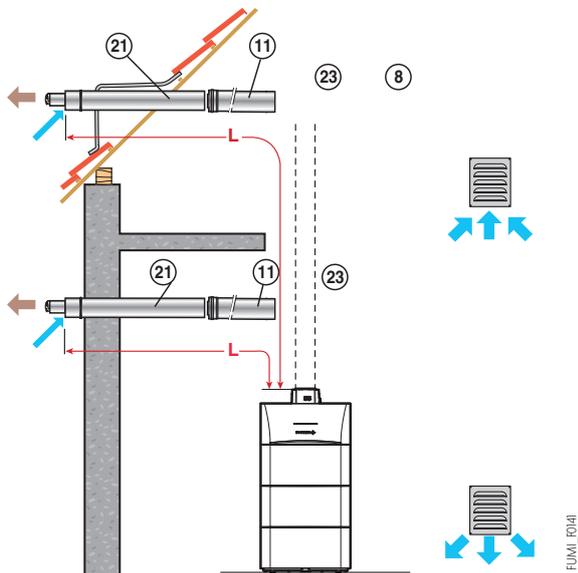
IMPORTANT

- Reminder: For type B₂₃ and B_{23P} configurations, mixed use of materials is prohibited.
- Please be reminded that page 32 gives the installation rules for sealed appliance terminals (type C) with total output 70 kW installed in a boiler room and using gas type fuels

FLUE GAS CONNECTION

FOR IX 145 - 50/70/90/110 AND IX 245 - 130/150 BOILERS

1 CONFIGURATION C_{13X} - CONCENTRIC HORIZONTAL FORCED FLUE (connection to outside wall or with roof outlet)



BOILER TYPE	L _{MAX} (m)	
	Ø 80/125 mm	Ø 110/160 mm
IX 145 - 50/70	10	-
IX 145 - 90/110	-	10
IX 245 - 130/150	-	8

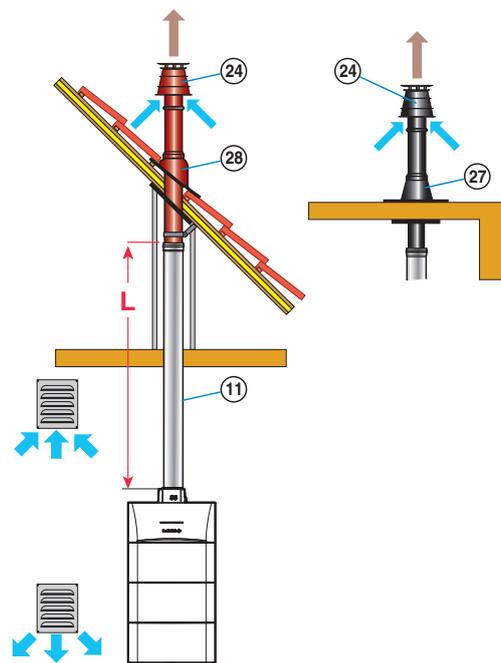
PPs FLUE SYSTEM ACCESSORIES

Ø 80/125 mm horizontal forced flue	Package no.	DY882
	Ref.	100011365
Ø 110/160 mm horizontal forced flue	Package no.	DY428
	Ref.	7715069

Ø 110/160 mm FLUE SYSTEM COMPONENTS

	REFERENCE
Ø 110/160 mm adapter	DY434
Ø 110/160 mm concentric tube, l. 500 mm	DY421
Ø 110/160 mm concentric tube, l. 1000 mm	DY422
Ø 110/160 mm concentric tube, l. 2000 mm	DY423
Elbow Ø 110/160 mm, 90°	DY425
Elbow Ø 110/160 mm, 45°	DY424
Ø 110/160 mm inspection hatch	DY426
Ø 110/160 mm inspection h.	DY427
Ø 160 mm escutcheon plate	DY431

2 CONFIGURATION C_{33X} - CONCENTRIC VERTICAL FORCED FLUE (connection to sloping or flat roof)



BOILER TYPE	L _{MAX} (m)	
	Ø 80/125 mm	Ø 110/160 mm
IX 145 - 50/70	10	-
IX 145 - 90/110	-	10
IX 245 - 130/150	-	8

PPs FLUE SYSTEM ACCESSORIES

Vertical forced flue Ø 80/125 mm	or	black	Package no.	DY843
			Ref.	100002732
Vertical forced flue Ø 110/160 mm	or	red	Package no.	DY844
			Ref.	100002733
Vertical forced flue Ø 110/160 mm	or	black	Package no.	DY429
			Ref.	7715070
Vertical forced flue Ø 110/160 mm	or	red	Package no.	DY430
			Ref.	7715071

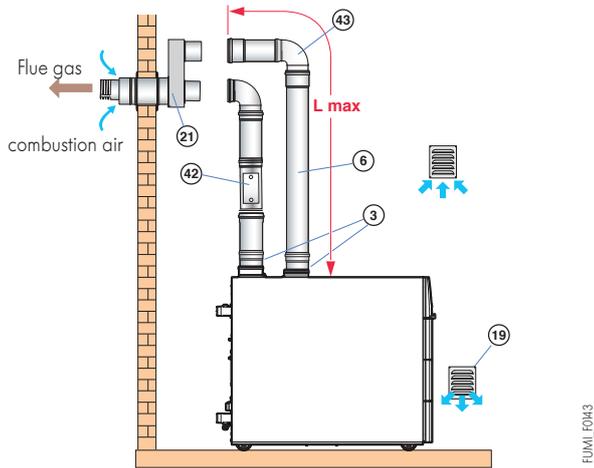
OTHER FLUE SYSTEM ACCESSORIES AVAILABLE

Extensions, tees, elbows, compensation sleeves, flange tiles, etc.): see 2019 Product Catalogue

FLUE GAS CONNECTION

FOR IX 245 - 200/250

1 CONFIGURATION C₁₃ - CONCENTRIC HORIZONTAL FORCED FLUE (connection to outside wall or with roof outlet)



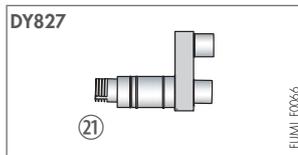
FUJMI_F043

BOILER TYPE	L _{MAX} (m)
IX 245 - 200	45
IX 245 - 250	22

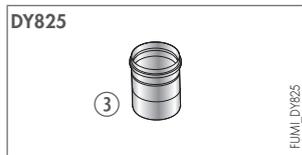
PPs OR ALU FLUE SYSTEM ACCESSORIES required as a minimum for connection to a horizontal forced flue

CONNECTION Ø	HORIZONTAL FORCED FLUE (I)	ADAPTER (mm)
Ø 160/220 mm (PPs)	Package no. DY827 Ref. 100002401	DY825 100002399

(I) For walls > 400 mm, an extension can be supplied as an option

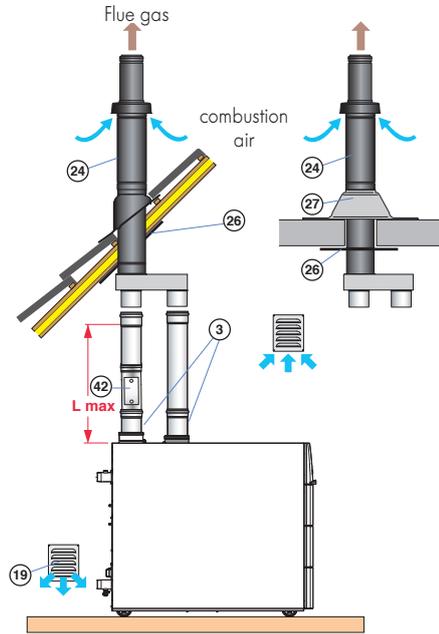


① Ø 150 mm to Ø 160 mm adapter



② Horizontal terminal

2 CONFIGURATION C₃₃ - CONCENTRIC VERTICAL FORCED FLUE (connection to sloping or flat roof)

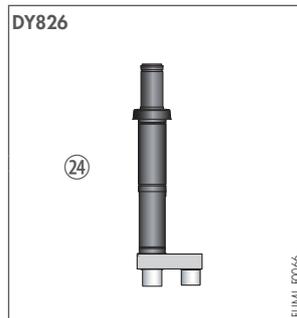


FUJMI_F044

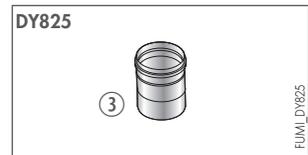
BOILER TYPE	L _{MAX} (m)
IX 245 - 200	20
IX 245 - 250	11

PPs OR ALU FLUE SYSTEM ACCESSORIES required as a minimum for connection to a vertical forced flue

CONNECTION Ø	VERTICAL FORCED FLUE	ADAPTER
Ø 160/220 mm (PPs)	Package no. DY826 Ref. 100002400	DY825 100002399



② Vertical terminal



① Ø 150 mm to Ø 160 mm adapter

OTHER FLUE SYSTEM ACCESSORIES AVAILABLE

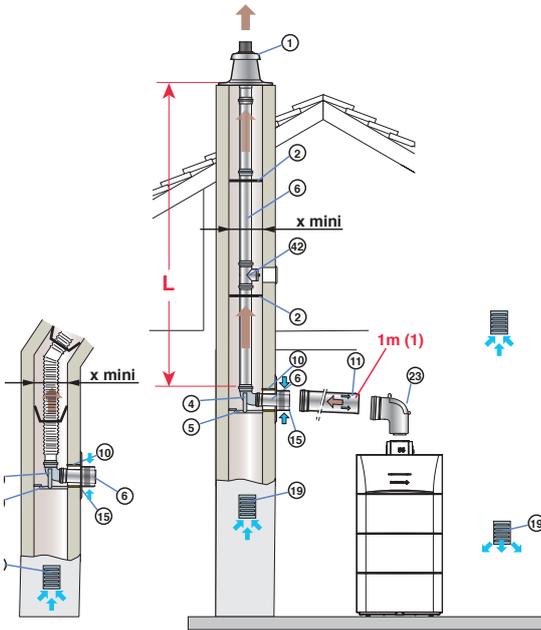
See 2019 Product Catalogue

FLUE GAS CONNECTION

FOR IX 145 - 50/70/90/110 AND IX 245 - 130/150 BOILERS

6 CONFIGURATION B_{23P}/B₃₃ - CONNECTION TO A CHIMNEY

(combustion air taken from the boiler room or from inside the installation room)



FUJML_F0445

BOILER TYPE	L _{MAX} (m)			
	Ø 80 mm (rigid)	Ø 80 mm (flex)	Ø 110 mm (rigid)	Ø 110 mm (flex)
IX 145 - 50	20	15	56	56
IX 145 - 70	8	6	56	38
IX 145 - 90	-	-	20	-
IX 145 - 110	-	-	56	15
IX 245 - 130	-	-	20	7
IX 245 - 150	-	-	27	9
min. x	∅ 140	140	170	170
	∅ 160	160	190	190

BOILER SHOWN: IX 145 - 50/70

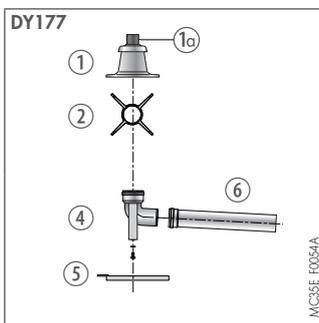
(1) For each additional metre of horizontal duct, subtract 1.2 m from the vertical length L_{max} indicated in the table above.

PPs FLUE SYSTEM ACCESSORIES

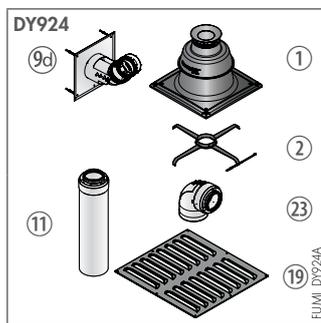
required as a minimum for connection to a chimney

BOILER TYPE	CONNECTION Ø		BOILER CONNECTION KIT	CHIMNEY CONNECTION KIT	ADAPTER	FLEX. DUCT
IX 145 - 50/70/90/110	• Ø 80/125 mm in the room • Ø 80 mm (rigid) in chimney	Package no.	DY913	DY717	-	-
		Ref.	100017527	84887717	-	-
	• Ø 80/125 mm in the room • Ø 80 mm (flex.) in chimney	Quick Kit Package no.	DY924		-	DY897 (l. 12.5 m) (1)
		Ref.	7650956		-	100015327
IX 245 - 130/150	• Ø 110/160 mm in the room • Ø 110 mm (rigid) in chimney	Package no.	DY435	DY177	-	-
		Ref.	7715076	84887577	-	-
	• Ø 110/160 mm in the room • Ø 110 mm (flex.) in chimney	Package no.	DY435	DY888	-	DY889
		Ref.	7715076	100015287	-	100015288

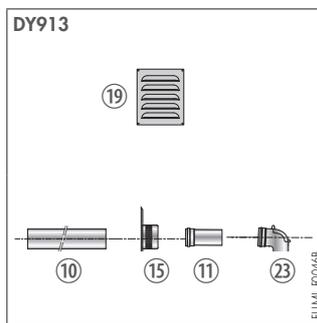
(1) other flex. duct lengths are available



MCS5E_F0054A



FUJML_DY924A



FUJML_F0046B

- ① Terminal with flashing
- ①a Black PPs finishing tube, l. 0.345 m
- ② Centring stars
- ④ 90° single elbow
- ③ Support rail

- ⑥ 0.5 m single extension
- ⑨c Ø 80 mm chimney finishing plate (with elbow) for flex. duct
- ⑩ Galvanised sleeve, L = 0.5 m
- ⑪ 0.5 m concentric extension

- ⑮ Combustion air intake
- ⑲ Ventilation grille
- ⑳ Inspection elbow

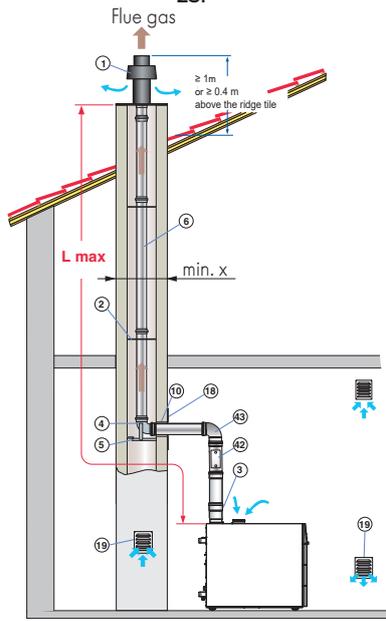
OTHER FLUE SYSTEM ACCESSORIES AVAILABLE

Extensions, tees, elbows, compensation sleeves, flange tiles, etc.): see 2019 Product Catalogue

FLUE GAS CONNECTION

FOR IX 245 - 200/250

7 CONFIGURATION B_{23P} - CHIMNEY



BOILER TYPE	L_{MAX} (m)
IX 245 - 200	39
IX 245 - 250	23
min. x	220
	240

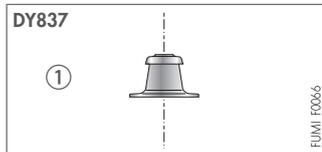
RECALL

For type B₂₃ and B_{23P} configurations, mixed use of materials is prohibited.

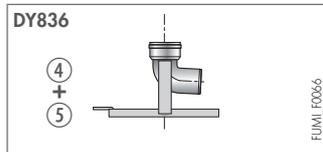
PPs FLUE SYSTEM ACCESSORIES

required as a minimum for connection to a chimney

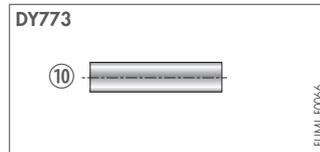
CONNECTION Ø	CHIMNEY CONNECTION KIT		FINISHING PLATE	L. 500 MM SLEEVE	ADAPTER
	TERMINAL WITH FLASHING	OR 87° ELBOW + SUPPORT			
Ø 160 mm (PPs)	Package no. DY837	DY836	DY838	DY773	DY825 Ø 150 over 160 mm
	Ref. 100002475	100002474	100002476	84887773	100002399



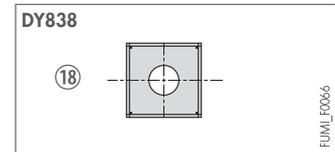
① Terminal with flashing



④ 90° single elbow
⑤ Support rail

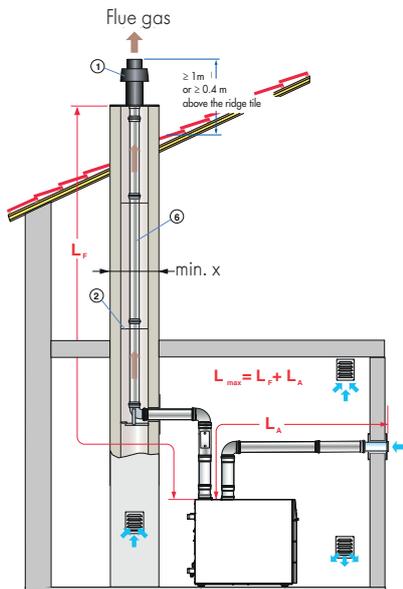


⑩ Galvanised sleeve, L = 0.5 m



⑱ Chimney finishing plate

5 CONFIGURATION C₅₃ - SEPARATE AIR AND FLUE GAS DUCT (combustion air taken from outside)



FLUE SYSTEM ACCESSORIES

CONNECTION Ø	ADAPTER
Ø 160 mm (PPs)	Package no. DY825
	Ref. 100002399

BOILER TYPE	L_{MAX} (m)
IX 245 - 200	42
IX 245 - 250	21

OTHER FLUE SYSTEM ACCESSORIES AVAILABLE

See 2019 Product Catalogue

INFORMATION REQUIRED

FOR INSTALLATION

WATER CONNECTIONS

IMPORTANT

Condensing boilers are based on the principle of recovering the energy contained in the steam from the flue gases (latent heat of vaporisation). As a result, to achieve an annual operating efficiency of around 108%, the heating surfaces must be sized so as to obtain low return temperatures, below the dewpoint (for example, underfloor heating, low temperature radiators, etc.). This must be ensured throughout the heating period.

CONDENSATE DISCHARGE

The installation must be connected to the wastewater drainage system. The connector must be removable, and the flow of condensates must be visible. The connectors and pipes must be made from corrosion-resistant material. A condensate neutralisation system is available as an option.

CONNECTION TO THE HEATING CIRCUIT

The IX boiler must only be used in closed circuit heating installations. Before final filling, new installations must be cleaned to remove debris (copper, caulking, soldering flux) resulting from the set-up of the distribution networks and transmitters to prevent any deposits which could lead to malfunctions (noises in the installation, chemical reaction between the metals). If a new boiler is set up in a renovated boiler room, it is strongly recommended that the installation is cleaned-flushed before it is fitted. It may be necessary to install appropriate filters in some cases (see the leaflet BOILER ROOM EQUIPMENT).

After such interventions, particular attention must be paid to the quality of the water used to fill the installation to ensure the new boiler can produce the expected performances.

REQUIREMENTS RELATING TO HEATING WATER

TOTAL INSTALLATION CALORIFIC OUTPUT (KW)		70	70-200	200-550	550
Degree of acidity (untreated water)	pH	7.5 - 9.5	7.5 - 9.5	7.5 - 9.5	7.5 - 9.5
Degree of acidity (treated water)	pH	7.5 - 9.5	7.5 - 9.5	7.5 - 9.5	7.5 - 9.5
Conductivity at 25°C	µS/cm	800	800	800	800
Chlorides	mg/l	50	50	50	50
Other components	mg/l	1	1	1	1
Total water hardness (l)	°f	1 - 35	1 - 20	1 - 15	1 - 5
	°dH	0.5 - 20.0	0.5 - 1 - 1.2	0.5 - 8.4	0.5 - 2.8
	mmol/l	0.1 - 3.5	0.1 - 2.0	0.1 - 1.5	0.1 - 0.5

(l) For installations heated at constantly high temperatures with a total installed calorific output of up to 200 kW, a maximum total water hardness of 8.4 °dH (1.5 mmol/l, 15°F) applies; for outputs exceeding 200 kW, a maximum total water hardness of 2.8 °dH (0.5 mmol/l, 5°F) applies.

MINIMUM/MAX. WATER FLOW RATE

The maximum temperature difference between the flow water and the return water, and the rate of flow temperature increase are controlled by the boiler's control system; as a result, the boiler requires a flow rate proportional to its output// ΔT° .

The standard ΔT° used is 15 to 30 °C. However, a min. flow rate must be respected.

WORKING FLOW RATE WITH THE LOW-LOSS HEADER KIT		IX 145-				IX 245-			
		50	70	90	110	130	150	200	250
Minimum flow rate	L/h	800	1500	2000	2250	2250	3000	3500	4500
Maximum flow rate	L/h	2450	2500	4600	4800	7500	8610	11480	14350

INSTALLATION EXAMPLES

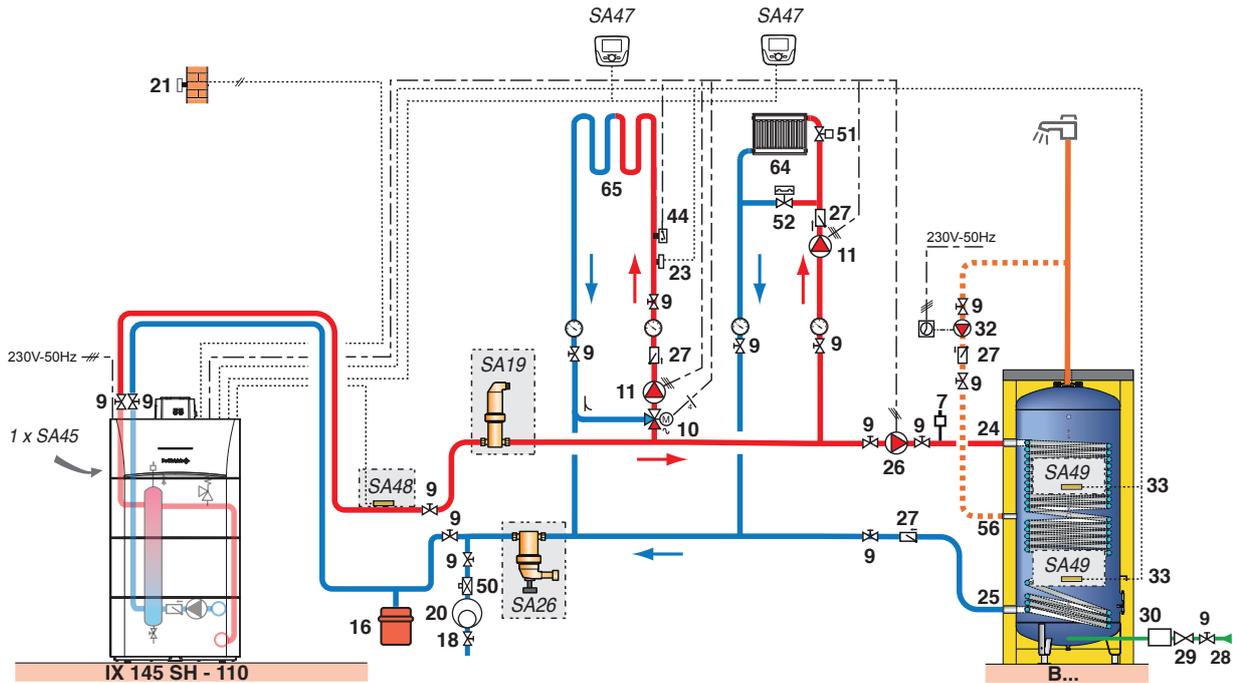
INSTALLATION EXAMPLES

The examples shown opposite cannot include all of the possible installation scenarios that may be encountered. They are intended to draw attention to the basic rules to be respected. A number of safety and control components (including some built into IX boilers as standard) are shown, though ultimate responsibility for providing the final safety and control components in the boiler room, based on its individual requirements, lies with the installers, consultant engineers and design offices. In every case, it is important to comply with the applicable regulations and adhere to good industrial practice.

CAUTION: When connecting on the domestic hot water side, if the distribution pipes are made from copper, a sleeve made from steel, cast iron or any other insulating material must be placed between the hot water outlet and these pipes in order to prevent any corrosion phenomena on the ports.

IX SH

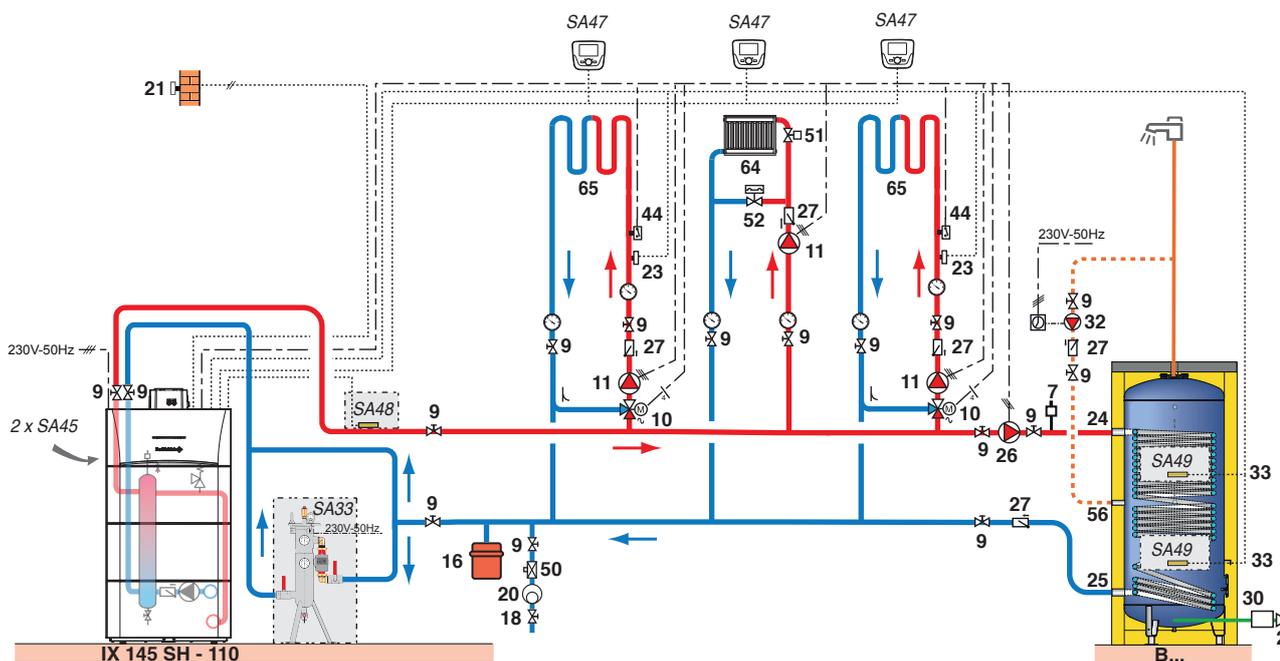
installation of an SH version ix with 2 circuits, 1 of which with a mixing valve (integrable module SA45 for valve control) and DHW production with an independent tank (tank equipped with 2 DHW sensors).



IX_F000

IX SH

installation of an SH version ix with 3 circuits, 2 of which with a mixing valve (2 integrable modules SA45 for controlling 2 valves) and DHW production with an independent tank (tank equipped with 2 DHW sensors), clarifier unit bypassing the heating return, to eliminate the residue in the installation.



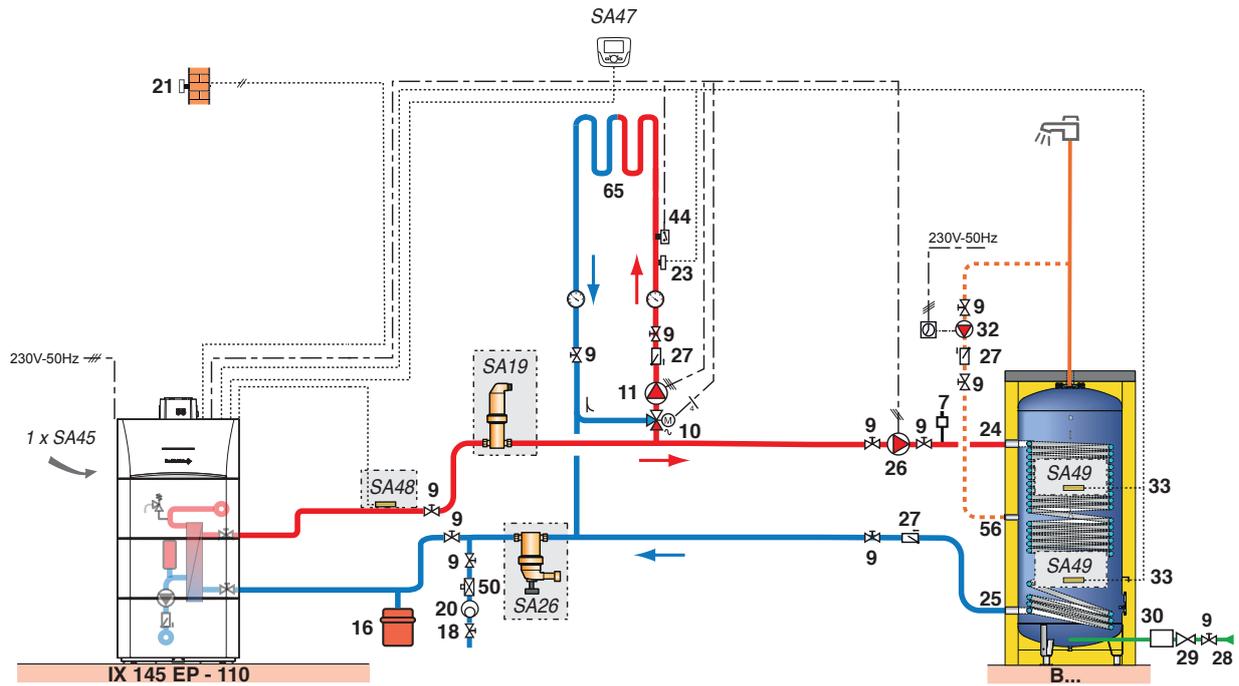
IX_F012

KEY: see page 34

INSTALLATION EXAMPLES

IX EP

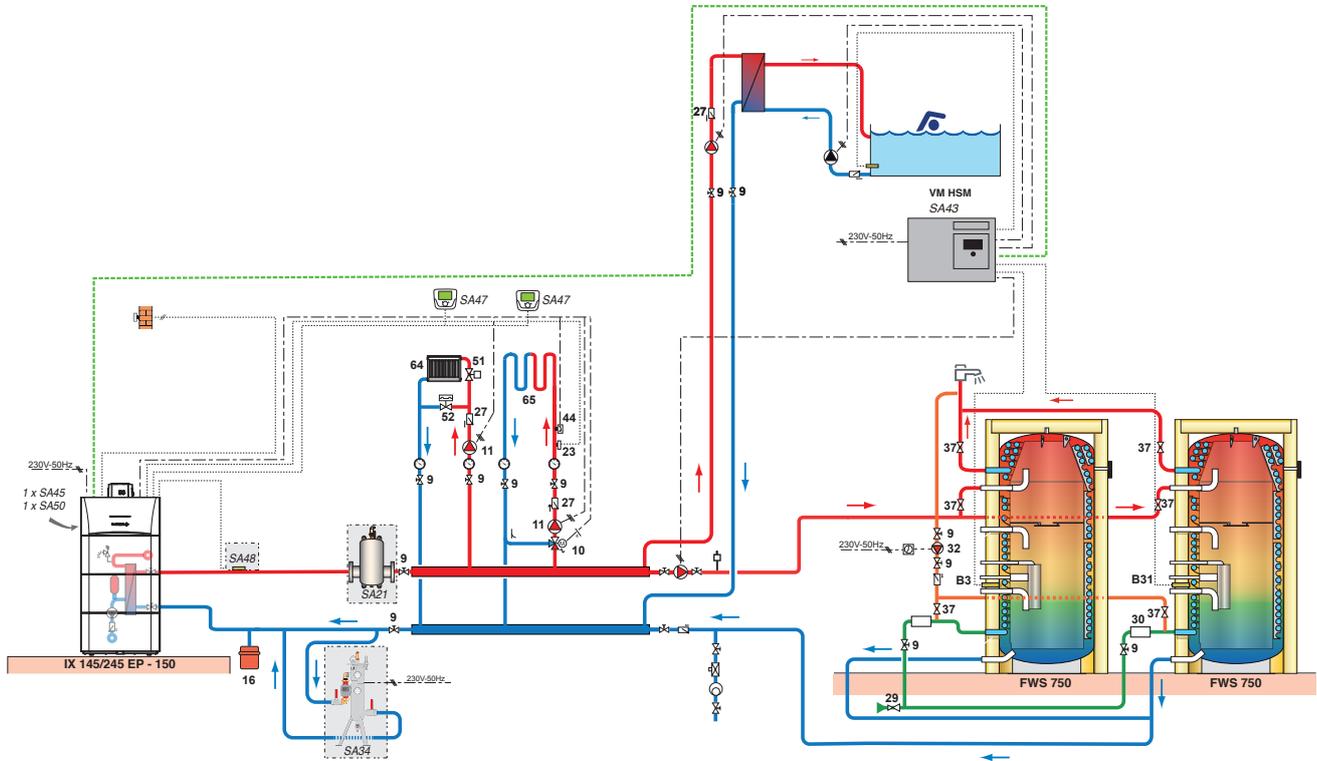
Installation of an EP version IX with 1 mixing zone (integrable module SA45 for valve control) and DHW production with an independent tank (tank equipped with 2 DHW sensors).



IX_F010

IX SH

Installation of an SH version IX with 1 direct zone, a mixing zone (integrable module SA45 for valve control), a swimming pool circuit managed by the wall-mounted module VM HSM and instant DHW production with 2 FWS tanks. Clarifier unit bypassing the heating return, to eliminate the residue in the installation.



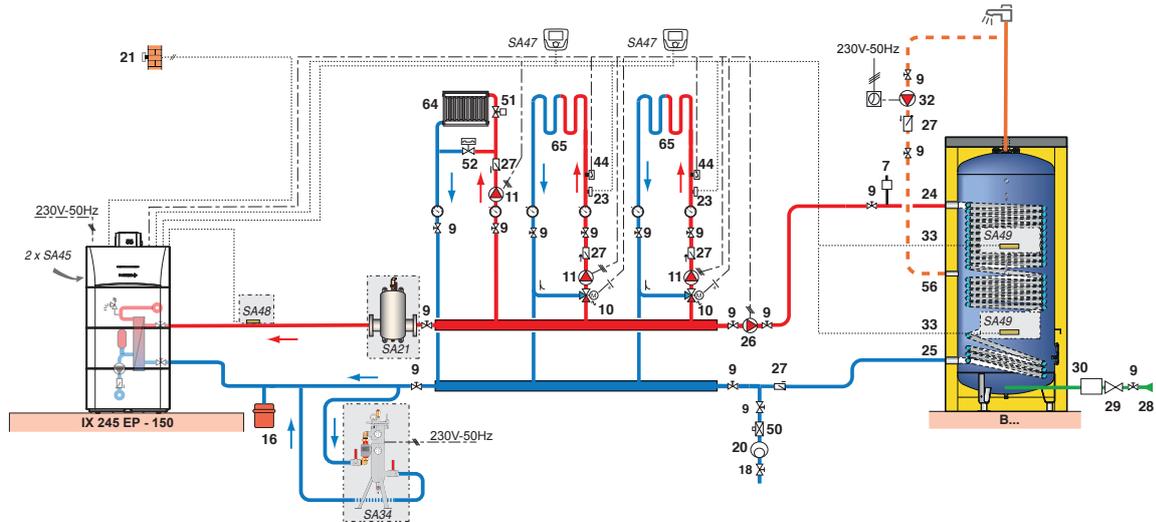
IX_F013

KEY: see page 34

INSTALLATION EXAMPLES

IX EP

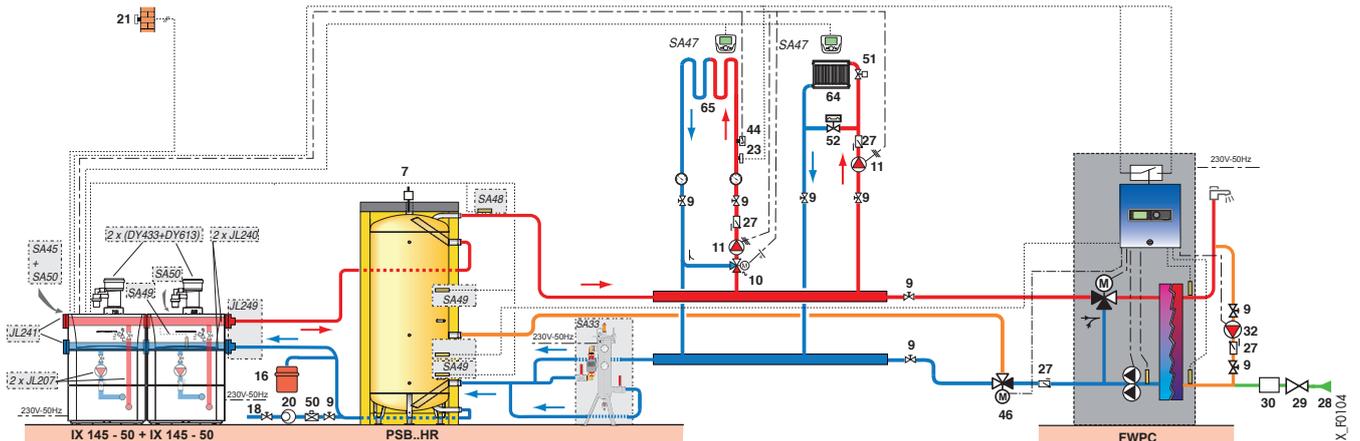
installing an EP version IX with 3 circuits, 2 of which with mixing valve (2 integrable modules SA45 for valve control), DHW production with an independent tank. clarifier unit bypassing the heating return, to eliminate the residue in the installation.



IX_F014

IX WITH 2-BOILER CASCADE

cascade installation of IX boilers. cascade made from separately available components. Heating water storage in a PSB tank. 1 direct zone and a mixing zone (1 integrable module SA45 for valve control), DHW production with an instant DHW tank FWPC. clarifier unit bypassing the heating return, to eliminate the residue in the installation.



IX_F014

KEY

- | | |
|---|---|
| 7 Automatic air vent | 30 Safety unit calibrated and sealed to 7 bar |
| 9 Isolation valve | 32 DHW circulation loop pump |
| 10 Mixing valve | 33 Domestic hot water temperature sensor |
| 11 Electronic heating pump | 37 Balancing valve |
| 16 Expansion vessel | 44 65°C limiter thermostat with manual reset for underfloor heating |
| 18 Heating circuit filling | 46 Three-way directional valve, with two positions |
| 20 Water meter | 50 Disconnecter |
| 23 Flow temperature sensor downstream of mixing valve | 51 Thermostatic valve |
| 24 DHW tank exchanger primary inlet | 52 Differential valve |
| 25 DHW tank exchanger primary outlet | 56 DHW circulation loop return |
| 26 Hot water booster pump | 64 Radiator circuit (e.g. gentle heating radiators) |
| 27 Non-return valve | 65 Low temperature circuit (e.g. underfloor heating) |
| 28 Domestic cold water inlet | 109 Thermostatic mixing valve for domestic hot water |
| 29 Pressure reducer | |

Empty rectangular box for notes.



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