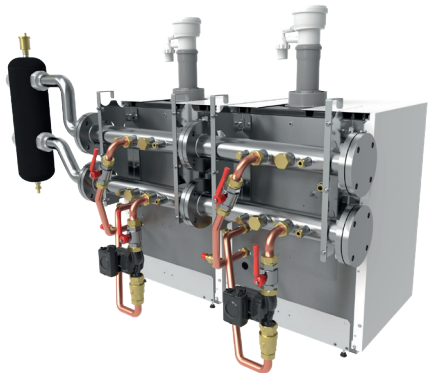
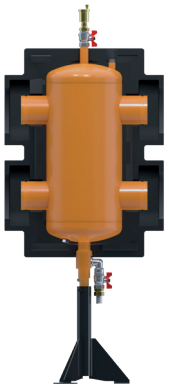
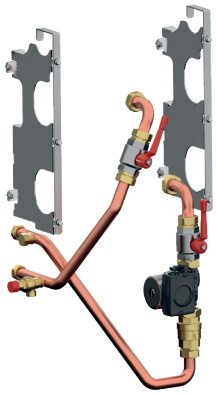
IX145 AND IX245 CASCADES

GAS CONDENSING BOILERS FOR A CASCADE SOLUTION







- **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

(output modulation range for a temperature of 80/60°C)

Heating only

Condensation

GAS P All natural gas
Propane

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

B_{23} - B_{23P} for cascade installation

gas category

II2ESi3P
NOx class: 6

IX gas condensing boilers can be connected in cascades of 2 to 16 boilers (this document presents cascades of 2 to 4 boilers in detail). Cascade installation of IX boilers offers high outputs with a low space requirements, and a wide output modulation range.

- Complete pre-dimensioned cascade systems (boilers, water connections with modulating pumps, collectors, insulated low-loss header, control system, flow/return sensors) comprising 2 boilers are available with all IX models.
- A complete individual cascade kit equipped with a boiler and all the components required for connection makes it possible to expand by one unit the existing 2-unit module.
- All the hydraulic systems in the cascade are also available separately, so as to make up cascades with an output of up to 1000 kW.
- The cascade can be controlled autonomously by the boiler control system, or by a single 0-10V signal (or each boiler with a 0-10V control signal).
- With its own control system, each boiler in the cascade can control up to 3 heating circuits according to the outdoor temperature and a DHW circuit.

CE IX 145/245 Identification no.: 0085CP0089

De Dietrich
SUSTAINABLE COMFORT®

PRESENTATION OF THE IX 145/245 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.

HIGH LEVELS OF PERFORMANCE

- Annual operating efficiency up to 109.5 %
- Output modulation rate of 11-25 to 100% (depending on models - see page 4 for details).
- 2 temperature sensors, flow and return (for ΔT° management of the 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 (316L) 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).
- Continuously modulating gas valve (in heating mode and DHW production mode).
- 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 % (for details see table on page 4), 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 mode.
- 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 integrable into 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 manages 2 to 16 boilers in cascade configuration.
- The front access to the boiler enables easy maintenance, with minimal work on the rear of the boiler.
- IX 245-200 and 250 are equipped with a pallet unloading rail and wheels for easy installation in the boiler room.
- Numerous accessories such as condensates neutralisation stations, pressure regulators, propane conversion kits, etc. are also available.

CASCADES

The control system can manage up to 16 boilers in cascade configuration*:

- **Complete 2-boiler cascades are available with all IX models**. These systems comprise: 2 boilers, the water collector with its support and mounting system on the rear of the boiler (flow/return), water connection kits (modulating primary injection pumps + connection pipes on the rear of the boilers with return valve, multifunction flow valve, equipped with: a filling and drain valve, an isolation valve, a non-return valve, a safety valve and a port for connecting an expansion vessel), blind flanges (ends), the insulated low-loss header dimensioned with its connection, mounting brackets, flue gas non-return valves with siphons, 2 BUS communication modules linking the boilers, and flow and return temperature sensors.
- **An individual cascade kit enables one or more additional boilers to be added to the 2-boiler cascade system**. This kit comprises: 1 boiler, the water collector with its support and mounting system on the rear of the boiler (flow/return), the water connections kit (pump + connection pipes on the rear of the boiler), mounting brackets, the flue gas non-return valve with siphon, and a BUS communication module.

* The size of the cascades is limited by the dimensioning of the pumps present in the water kits, and by the connection collectors:
  - With IX145 boilers, the maximum possible cascade output is 550 kW.
  - With IX245 boilers, the maximum possible cascade output is 1000 kW.

For bigger cascades, all of the various components are also available separately.

MODELS AVAILABLE

IX 145/245 2-BOILER CASCADE SYSTEMS

The cascade system comprises:
2 boilers, the water collector (flow/return), connection kits (pump + connection pipe to boilers), blind flanges (ends), the low-loss header with its connection, the mounting brackets, non-return flue gas valves with siphon, 2 BUS OCI 345 communication modules (package SA50), a flow sensor and a return sensor.

		2-BOILER CASCADE
	MODULATION RANGE AT 80/60°C (KW)	REFERENCE
IX145 - 50	5-90	7713924
IX145 - 70	7.2-130	7713925
IX145 - 90	9.4-170	7713926
IX145 - 110	11 .4-204	7713927
IX 245 - 130	24.3-243	7713928
IX 245 - 150	28.1-280.6	7713929
IX 245 - 200	31-371 .8	7713930
IX 245 - 250	38.8-465.6	7713931

INDIVIDUAL CASCADE KIT FOR 1 ADDITIONAL BOILER

The individual cascade kit comprises:
1 boiler, the water collector (flow/return), the connection kit (pump + connection pipe to the boiler), mounting brackets, flue gas non-return valve with siphon, and a BUS OCI 345 communication module (package SA50).

		COMPLETE CASCADE KIT
	MODULATION RANGE AT 80/60 °C (KW)	REFERENCE
IX 145 - 50	5-45	7713896
IX 145 - 70	7.2-65	7713897
IX 145 - 90	9.4-85	7713898
IX 145 - 110	11 .4-102	7713899
IX 245 - 130	24.3-121 .5	7713920
IX 245 - 150	28.1-140.3	7713921
IX 245 - 200	31-185.9	7713922
IX 245 - 250	38.8-232.8	7713923

IX 145/245 3 AND 4-BOILER CASCADE SYSTEMS



	2-BOILER CASCADE		3-BOILER CASCADE		4-BOILER CASCADE	
	MODULATION RANGE AT 80/60°C (KW)	REFERENCE	MODULATION RANGE AT 80/60°C (KW)	REFERENCE	MODULATION RANGE AT 80/60°C (KW)	REFERENCE
IX145 - 50	5-90	7713924	5-135	7713924 + 1x7713896	5-180	7713924 + 2x7713896
IX145 - 70	7.2-130	7713925	7.2-195	7713925 + 1x7713897	7.2-260	7713925 + 2x7713897
IX145 - 90	9.4-170	7713926	9.4-255	7713926 + 1x7713898	9.4-340	7713926 + 2x7713898
IX145 - 110	11 .4-204	7713927	11 .4-306	7713927 + 1x7713899	11 .4-408	7713927 + 2x7713899
IX 245 - 130	24.3-243	7713928	24.3-364.5	7713928 + 1x7713920	24.3-486	7713928 + 2x7713920
IX 245 - 150	28.1-280.6	7713929	28.1-420.9	7713929 + 1x7713921	28.1-561 .2	7713929 + 2x7713921
IX 245 - 200	31-371 .8	7713930	31-557.7	7713930 + 1x7713922	31-743.6	- *
IX 245 - 250	38.8-465.6	7713931	38.8-698.4	- *	38.8-931 .2	- *

* Cannot be created with assemblies. To be made up separately by package, see page 21, hydraulic separator to be redimensioned.

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: $B_{33}/B_{23(P)}$, $C_{13(X)}$, $C_{33(X)}$, $C_{43(X)}$, C_{53}, $C_{63(X)}$, $C_{83(X)}$
- IX 245-200, IX 245-250: $B_{33}/B_{23(P)}$, C_{13}, C_{33}, C_{43}, C_{53}, C_{63}, C_{83}

Gas and pressures :
- Natural gas (G20) - 20 mbar
- Natural gas (G25) - 25 mbar
- Propane gas (G31) - 37 mbar

SPECIFICATIONS

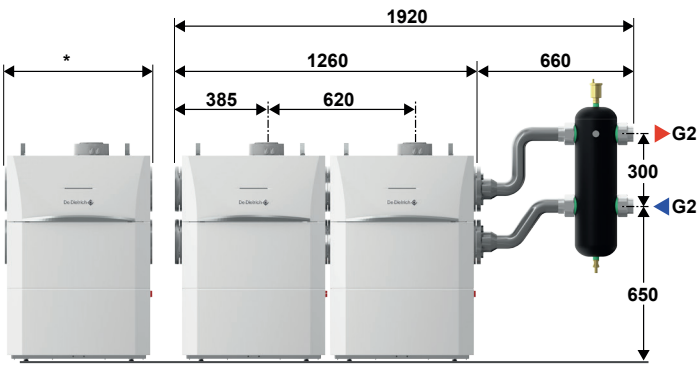
MODELS		IX 145	50	70	90	110
Useful output	• nominal determined at Qnom (1)	kW	45	65	85	102
	• intermediate at 30 % Qnom (1)	kW	15	21 .7	28.4	34
Nominal output Pn at 50/30°C		kW	48.6	70.2	91 .8	110.2
Efficiency in % LHV, load… % and water temp. …°C	• 100 % Pn, at ave. temp. 70 °C	%	97.4	97.2	97.3	97.2
	• 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 (1)		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

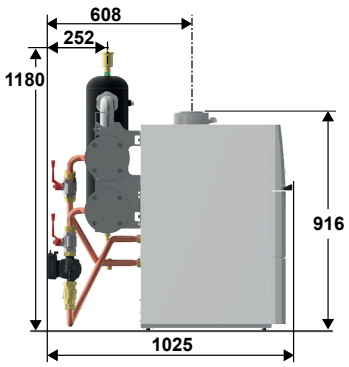
MODELS		IX 245	130	150	200	250
Useful output	• nominal determined at Qnom (1)	kW	122	140	186	233
	• intermediate at 30 % Qnom (1)	kW	40.4	46.5	62.8	78.6
Nominal output Pn at 50/30°C		kW	130.6	150.9	200	250
Efficiency in % LHV, load… % and water temp. …°C	• 100 % Pn, at ave. temp. 70 °C	%	98.1	98.1	97.32	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 (1)		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

(1) Qnom = nominal heat flow rate

MAIN DIMENSIONS (IN mm AND INCHES)

IX 145 - 50/70





IX_FI001

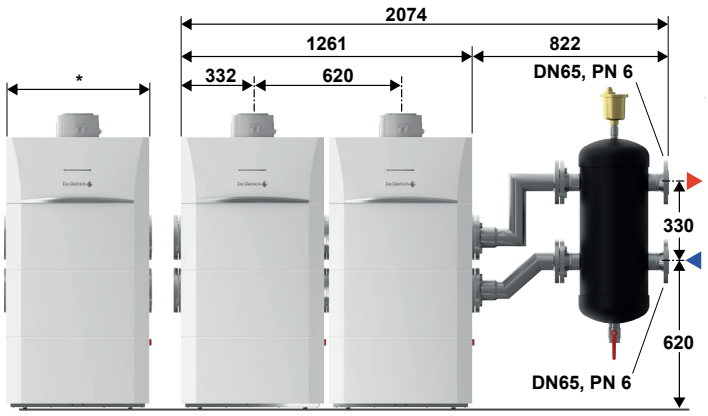
* 620 mm per additional boiler

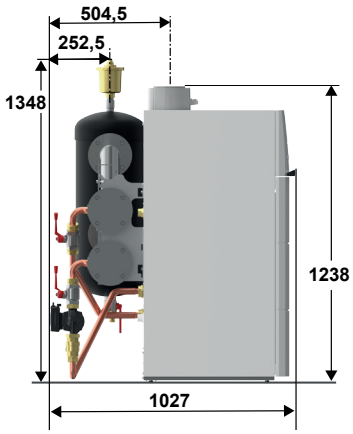
configuration

Cascade (with systems) up to 4 boilers possible.

CAUTION: The cascades are delivered with a flue gas non-return valve and a duct for each boiler. These components are not shown in the drawing.

IX 145 - 90/110





IX_FI002

* 620 mm per additional boiler

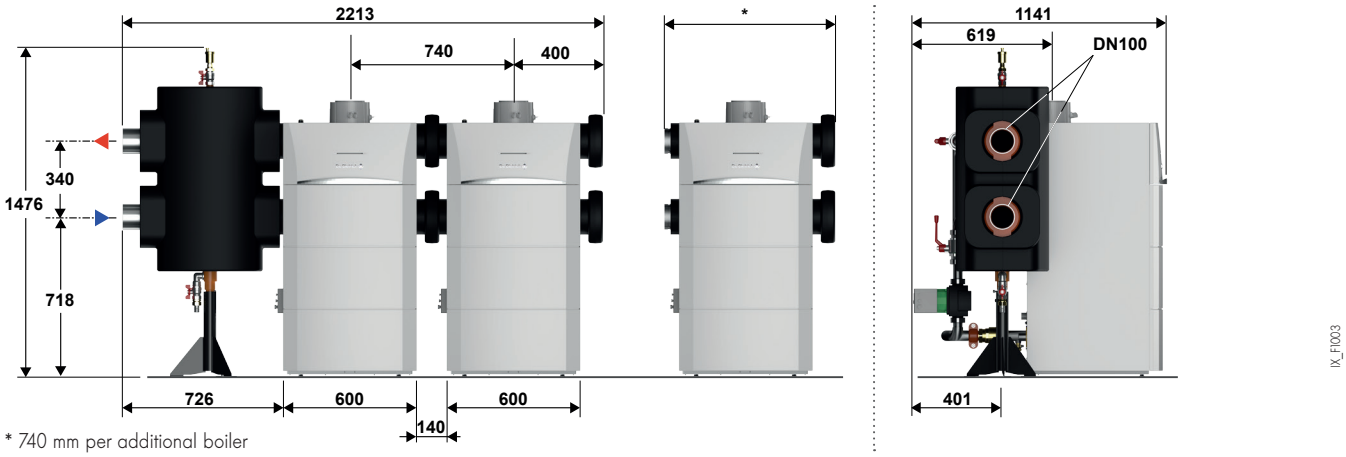
configuration

Cascade (with systems) up to 4 boilers possible.

CAUTION: The cascades are delivered with a flue gas non-return valve and a duct for each boiler. These components are not shown in the drawing.

MAIN DIMENSIONS (IN mm AND INCHES)

IX 245 - 130/150



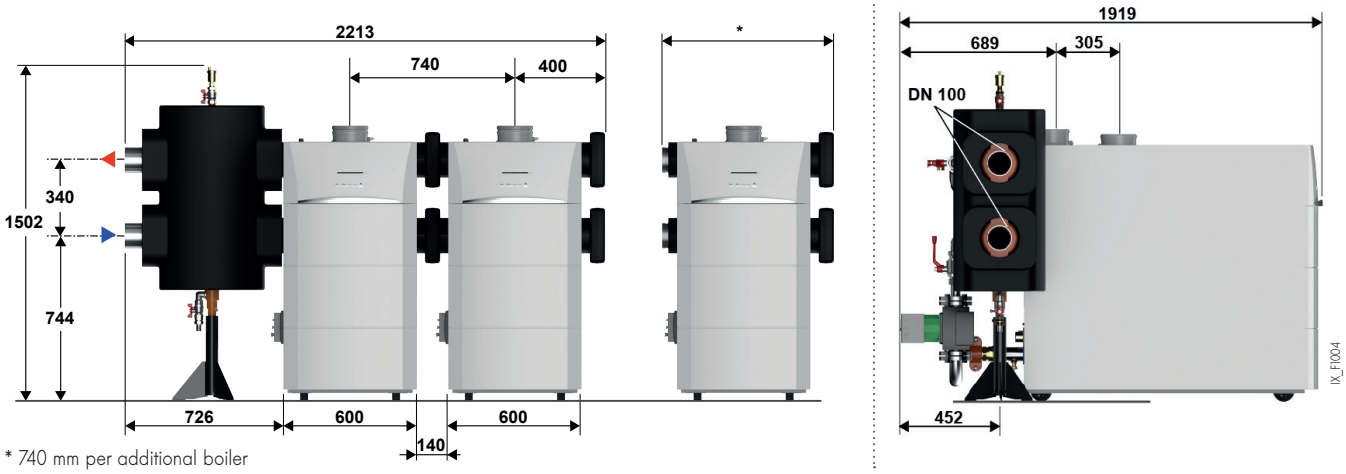
* 740 mm per additional boiler

configuration

Cascade (with systems) up to 4 boilers possible.

CAUTION: The cascades are delivered with a flue gas non-return valve and a duct for each boiler. These components are not shown in the drawing.

IX 245 - 200/250



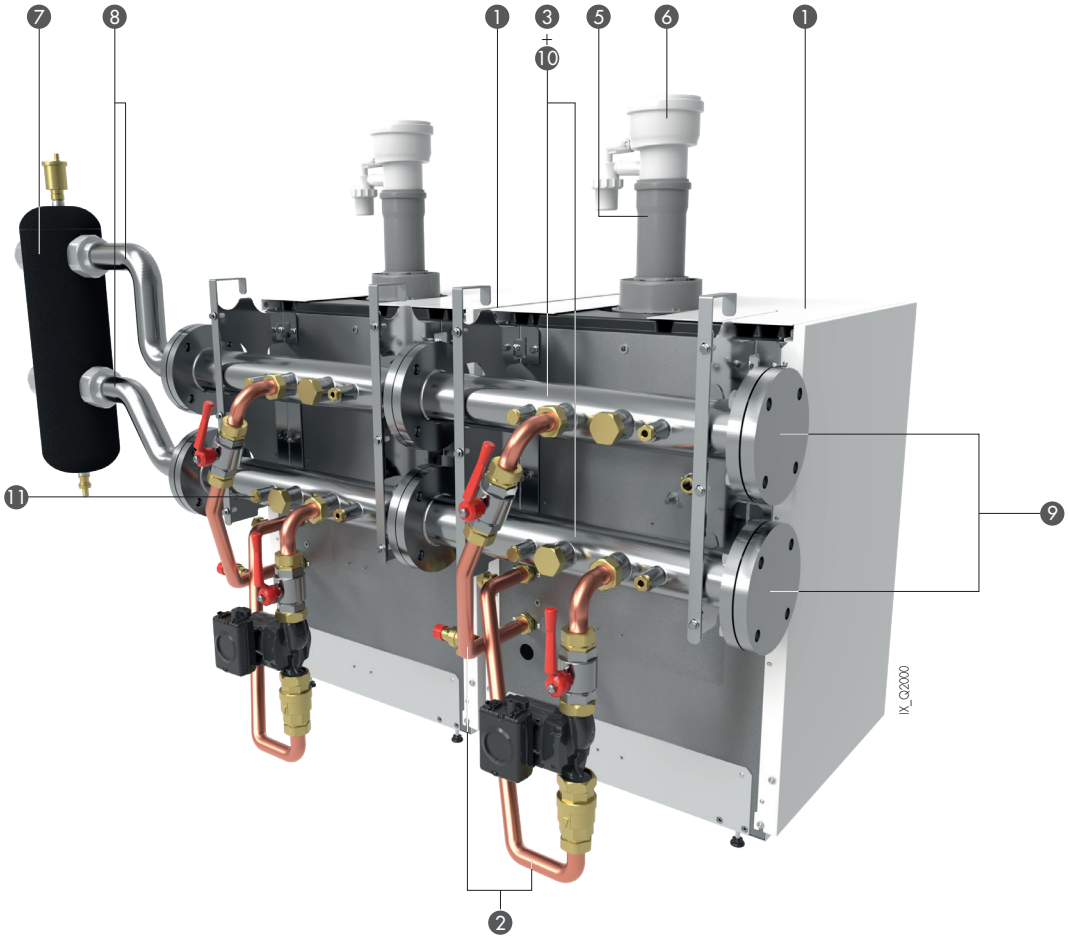
* 740 mm per additional boiler

configuration

Cascade (with systems) up to 3 boilers possible.

COMPOSITION OF CASCADE SYSTEMS WITH 2 IX 145 - 50/70/90/110 BOILERS

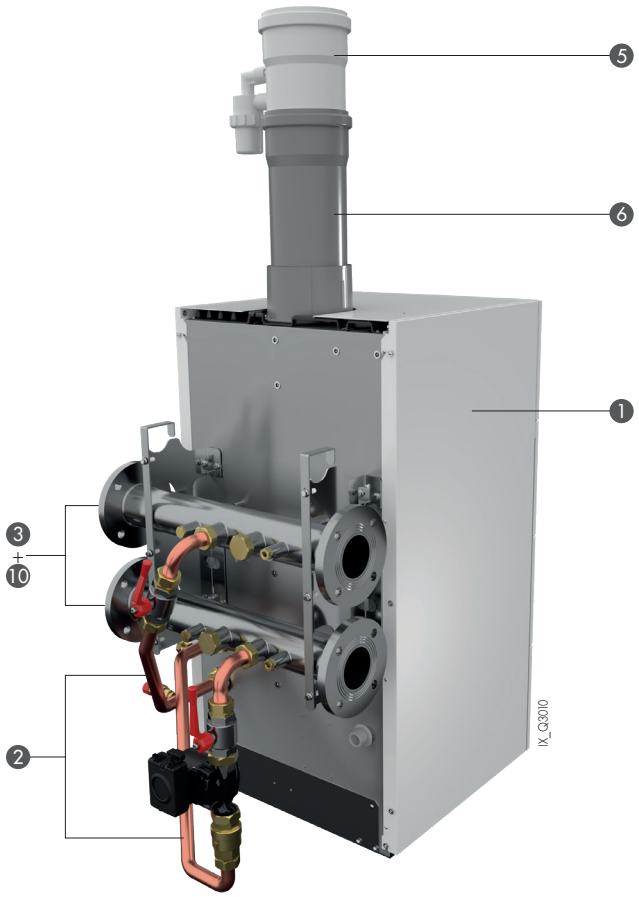
MODEL SHOWN: IX 145-50/70

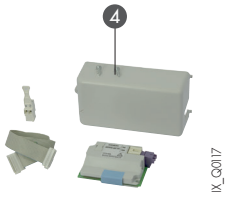


				MODEL ▶	IX 145 - 50	IX 145 - 70	IX 145 - 90	IX 145 -110
				2-BOILER CASCADE SYSTEM REFERENCE ▶	7713924	7713925	7713926	7713927
MARKER	COMPONENTS	PACKAGE	REFERENCE					
1	IX 145 - 50 boiler	JL151	7693900		2			
1	IX 145 - 70 boiler	J1252	7694352			2		
1	IX 145 - 90 boiler	JL153	7689867				2	
1	IX 145 - 110 boiler	JL154	7693601					2
2	Water connection kit between collector and IX 145 - 50/70 boilers	JL207	7702798		2	2		
2	Water connection kit between collector and IX 145 - 90/110 boilers	JL208	7703583				2	2
3	Collector (flow/return) for one boiler (DN80)	JL240	7709439		2	2	2	2
4	BUS OCI 345 LPb communication module	SA50	7709438		2	2	2	2
5	Flue gas non-return valve and Ø 80/110 mm siphon	DY433	7715074		2	2		
5	Flue gas non-return valve and Ø 110/110 mm siphon	DY432	7715073				2	2
6	Ø 80 mm PPs extension (2-part)	DY613	84887613		1	1		
6	Ø 110 mm PPs extension	DY180	84887580				2	2
7	8.5 m^3/h pressure breaker	JL245	7713944		1	1		
7	18 m^3/h pressure breaker	JL246	7713945				1	1
8	8.5 m^3/h pressure breaker connection kit	JL242	7713941		1	1		
8	18 m^3/h pressure breaker connection kit	JL243	7713942				1	1
9	Blind flange kit (DN80, Pn10) for collector	JL241	7713940		1	1	1	1
10	Hardware and flat gaskets kit (8.5 m^3/h)	JL238	7716445		2	2		
10	Hardware and flat gaskets kit (18 m^3/h)	JL239	7716444				1	1
11	UF6C universal return sensor	SA49	7709437		1	1	1	1
12	UAF6C strap-on flow sensor	SA48	7709436		1	1	1	1

COMPOSITION OF INDIVIDUAL CASCADE KIT WITH A IX 145 - 50/70/90/110 BOILER

MODEL SHOWN: IX 145-90/110

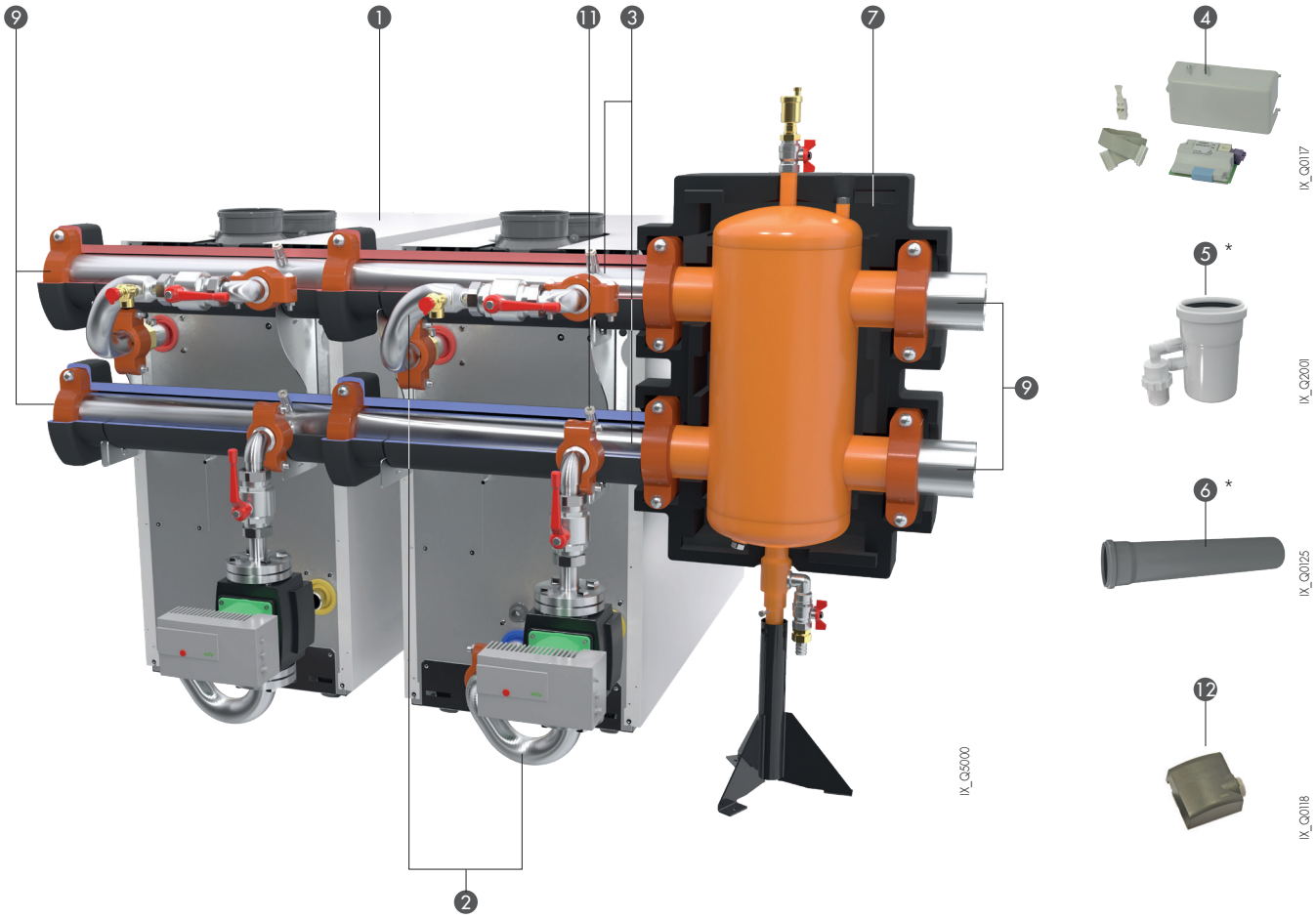




				MODEL ▶	IX 145 - 50	IX 145 - 70	IX 145 - 90	IX 145 -110
				INDIVIDUAL CASCADE KIT REFERENCE ▶	7713896	7713897	7713898	7713899
MARKER	COMPONENTS	PACKAGE	REFERENCE					
1	IX 145 - 50 boiler	JL151	7693900		1			
1	IX 145 - 70 boiler	J1252	7694352			1		
1	IX 145 - 90 boiler	JL153	7689867				1	
1	IX 145 - 110 boiler	JL154	7693601					1
2	Water connection kit between collector and IX 145 - 50/70 boilers	JL207	7702798		1	1		
2	Water connection kit between collector and IX 145 - 90/110 boilers	JL208	7703583				1	1
3	Collector (flow/return) for one boiler (DN80)	JL240	7709439		1	1	1	1
4	BUS OCI 345 LPb communication module	SA50	7709438		1	1	1	1
5	Flue gas non-return valve and Ø 80/110 mm siphon	DY433	7715074		1	1		
5	Flue gas non-return valve and Ø 110/110 mm siphon	DY432	7715073				1	1
6	Ø 80 mm PPs extension (2-part)	DY613	84887613		1	1		
6	Ø 110 mm PPs extension	DY180	84887580				1	1
10	Hardware and gaskets kit (8.5 m^3/h)	JL238	7716445		1	1	1	1

COMPOSITION OF CASCADE SYSTEMS WITH 2 IX 245 - 130/150/200/250 BOILERS

MODEL SHOWN: IX 245-200/250

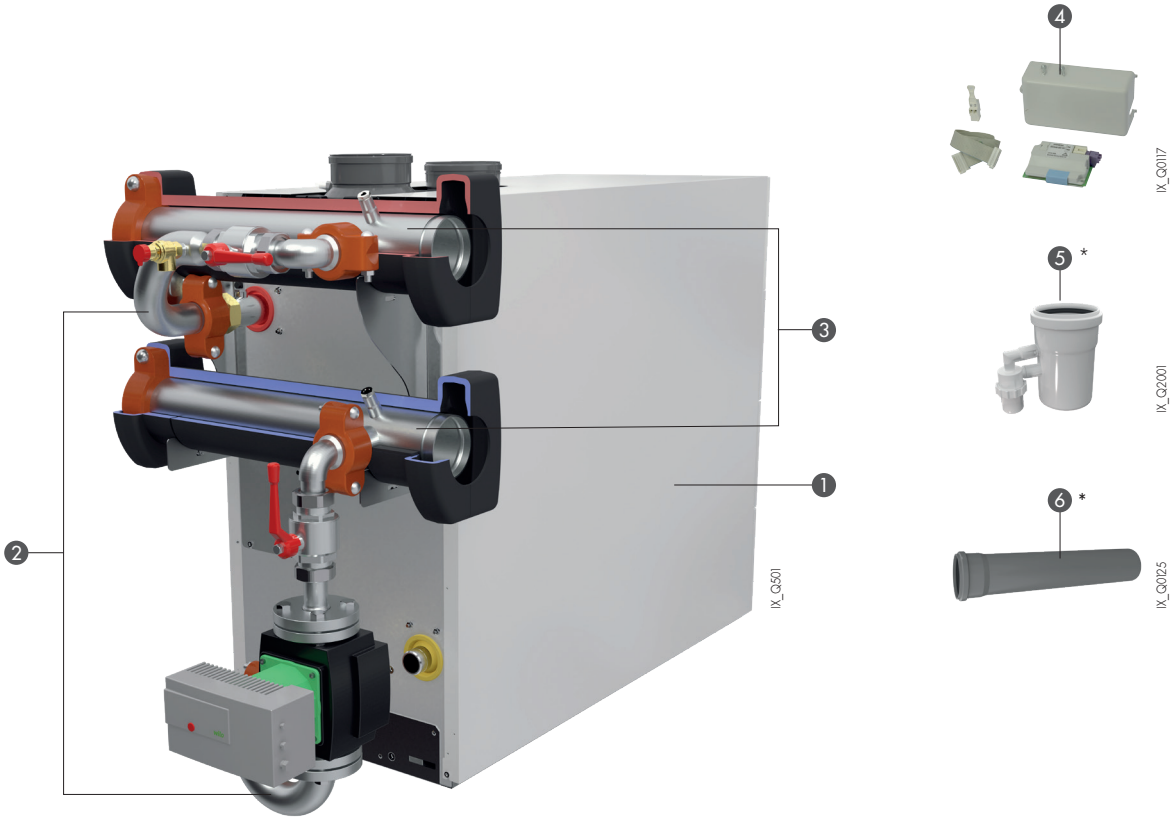


				MODEL ▶	IX 245 - 130	IX 245 - 150	IX 245 - 200	IX 245 - 250
				2-BOILER CASCADE SYSTEM REFERENCE ▶	7713928	7713929	7713930	7713931
MARKER	COMPONENTS	PACKAGE	REFERENCE					
1	IX 245 - 130 boiler	JL155	7695340		2			
1	IX 245 - 150 boiler	J1156	7695343			2		
1	IX 245 - 200 boiler	JL157	7695347				2	
1	IX 245 - 250 boiler	JL158	7695348					2
2	Water connection kit between collector and IX 245 - 130/150 boilers	JL254	7694142		2	2		
2	Water connection kit between collector and IX 245 - 200/250 boilers	JL255	7674803				2	2
3	Insulated collector (flow/return) for one boiler (DN100)	JL250	7694126		2	2	2	2
4	BUS OCI 345 LPb communication module	SA50	7709438		2	2	2	2
5*	Flue gas non-return valve and Ø 110/110 mm siphon	DY432	7715073		2	2		
6*	Ø 110 mm PPs extension	DY180	84887580		2	2		
7	30 m^3/h pressure breaker	JL260	7694133		1	1	1	1
9	Plugs kit for collector and VICTAULIC® connection for pressure breaker	JL261	7694136		1	1	1	1
11	UF6C universal return sensor	SA49	7709437		1	1	1	1
12	UAF6C strap-on flow sensor	SA48	7709436		1	1	1	1

* For IX 245-130/150 boilers only, not shown here.

COMPOSITION OF INDIVIDUAL CASCADE KIT WITH A IX 245 - 130/150/200/250 BOILER

MODEL SHOWN: IX 245-200/250

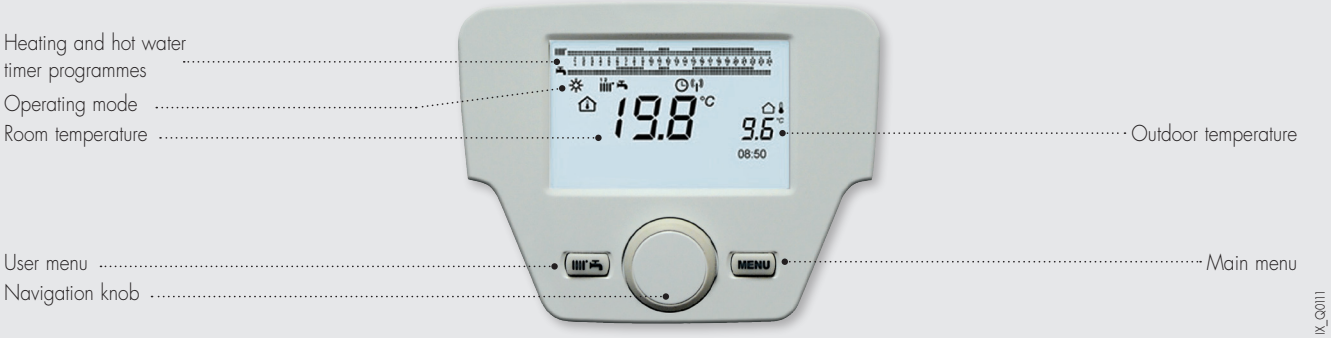


				MODEL ▶	IX 245 - 130	IX 245 - 150	IX 245 - 200	IX 245 - 250
				INDIVIDUAL CASCADE KIT REFERENCE ▶	7713920	7713921	7713922	7713923
MARKER	COMPONENTS	PACKAGE	REFERENCE					
1	IX 245 - 130 boiler	JL155	7695340		1			
1	IX 245 - 150 boiler	J1156	7695343			1		
1	IX 245 - 200 boiler	JL157	7695347				1	
1	IX 245 - 250 boiler	JL158	7695348					1
2	Water connection kit between collector and IX 245 - 130/150 boilers	JL254	7694142		1	1		
2	Water connection kit between collector and IX 245 - 200/250 boilers	JL255	7674803				1	1
3	Insulated collector (flow/return) for one boiler (VICTAULIC® connectors)	JL250	7694126		1	1	1	1
4	BUS OCI 345 LPb communication module	SA50	7709438		1	1	1	1
5*	Flue gas non-return valve and Ø 110/110 mm siphon	DY432	7715073		1	1		
6*	Ø 110 mm PPS extension	DY180	84887580		1	1		

* With IX 245-130/150 boilers only, not shown here.

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 - package SA47).
As standard, the control system is able to automatically run a central heating installation with one direct zone and one DHW circuit (DHW sensor to be ordered as an optional - package 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 also possible to connect to the control system up to 16 boilers in cascade configuration.
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 (package SA45).



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, valve(s), 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.

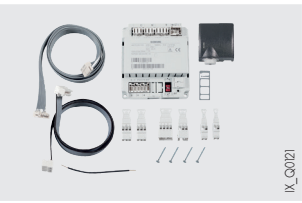
DHW PRODUCTION

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, package 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.

IX CONTROL PANEL OPTIONS

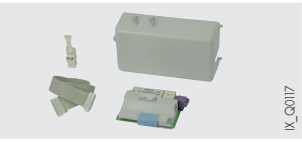
PROGRAMMABLE WIRED ROOM SENSOR - PACKAGE SA47

Room appliance with backlit screen with drop-down menu and clear text
Choice of operating mode: Automatic (three different programs), Manual, Frost protection, Holiday etc.
Access to boiler parameters
Malfunction alerts with fault codes and breakdown history
Management of 2 circuits
Room sensors can be added to the system to increase energy performance.



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.



BUS OCI 345 COMMUNICATION MODULE (LPB MODULE) - PACKAGE SA50

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

CONTROL PANEL

The IX control panel enables up to 16 boilers to be connected in cascade configuration, each of which can house up to 3 heating circuits.
It incorporates all the functions required for a cascade:
- Operating strategy (parallel, series or proportional)
- Generator release /shutdown integral (choice of generator action speed)
- Generator activation /deactivation time delay (adaptation to building heating mode)
- Generator automatic switching, one of the boilers will be designated in turn to control all the boilers. (harmonisation of operating times)
- Choice of cascade master generator.

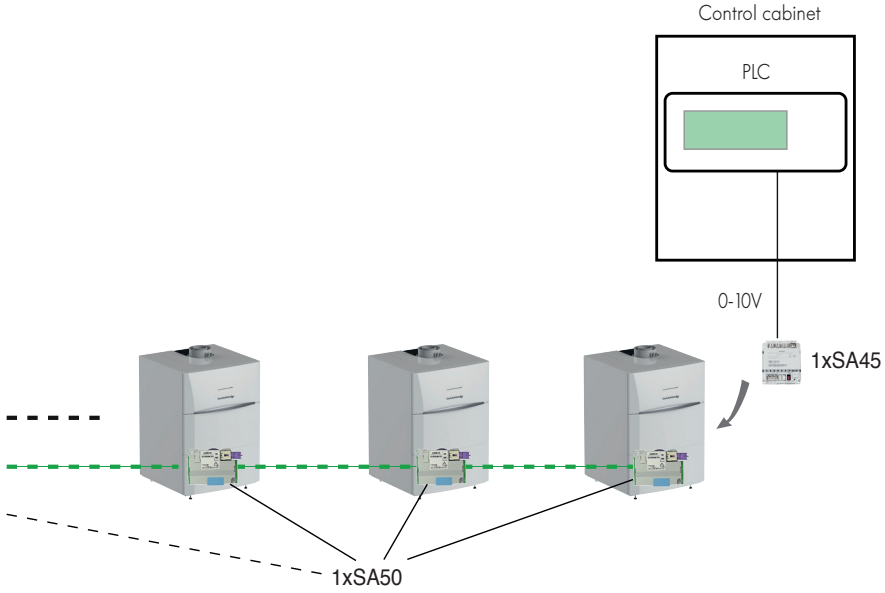
For a cascade installation, each boiler must be equipped with a BUS OCI345 communication module (package SA50) to establish communication between them. Each boiler in the cascade can manage up to 3 circuits (1 direct +2 valves+1 DHW).

The control module can also manage the cascade (without programming) by means of a configurable 0 - 10 V signal (package SA45).

CONTROL OF 2 TO 16 IX... BOILERS IN CASCADE CONFIGURATION USING A 0-10V SIGNAL

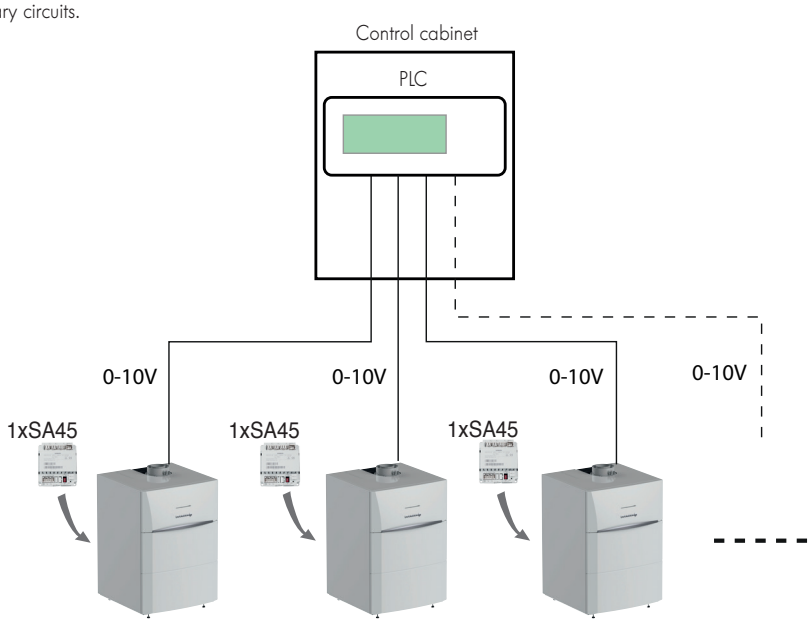
There are 2 possible methods for the 0-10 V cascade control:

- Each boiler is equipped with a BUS OCI345 communication module (package SA50), which connects them to each other. The control cabinet PLC present in the boiler room will control the first boiler using a 0-10V signal (via the MEWM three-way valve circuit control module - package SA45) and all the secondary circuits. Cascade management is provided by the boilers control system.



IX_F0118

- Each boiler has a 0-10V connection by means of the MEWM control module (package SA45) to the PLC in the boiler room. It is the PLC which will manage the cascade, as well as all the secondary circuits.



IX_F0117

CONTROL OF 2 TO 16-BOILER CASCADES BY INTEGRATED CONTROL SYSTEM

Boiler no. 1
(master)

OPTIONS REQUIRED FOR CIRCUITS CONNECTED TO THE MASTER BOILER

DHW	direct	valve	direct + 1 valve	2 x valve	direct + 2 x with valve
1 sensor SA49 (Second DHW sensor SA49)	as standard	One 3-way valve control module SA45	One 3-way valve control module SA45	Two 3-way valve control modules SA45	Two 3-way valve control modules SA45

Slave boilers
no. 2 to 16

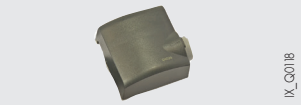
OPTIONS REQUIRED FOR CIRCUITS CONNECTED TO SLAVE BOILERS

DHW	direct	valve	direct + 1 valve	2 x valve	direct + 2 x with valve
1 sensor SA49	as standard	One 3-way valve control module SA45	One 3-way valve control module SA45	Two 3-way valve control modules SA45	Two 3-way valve control modules SA45

IX CONTROL PANEL OPTIONS

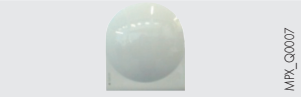
UF6C DHW UNIVERSAL SENSOR FOR SENSOR TUBE (L. 6 M) - PACKAGE SA49

This enables temperature control and programming of DHW production.



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

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



OUTDOOR TEMPERATURE SENSOR, QAC 34 - PACKAGE HX94

Sensor supplied with the boiler.

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 temperature sensors required for implementation.
See technical sheet "VM HSM".

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

Wall-mounted control module, able to manage a circuit with three-way valve (including flow sensor) or a solar DHW tank. Also enables control of an external boiler by means of a 0-10V signal. Has a pump control output via PWM or 0-10V.

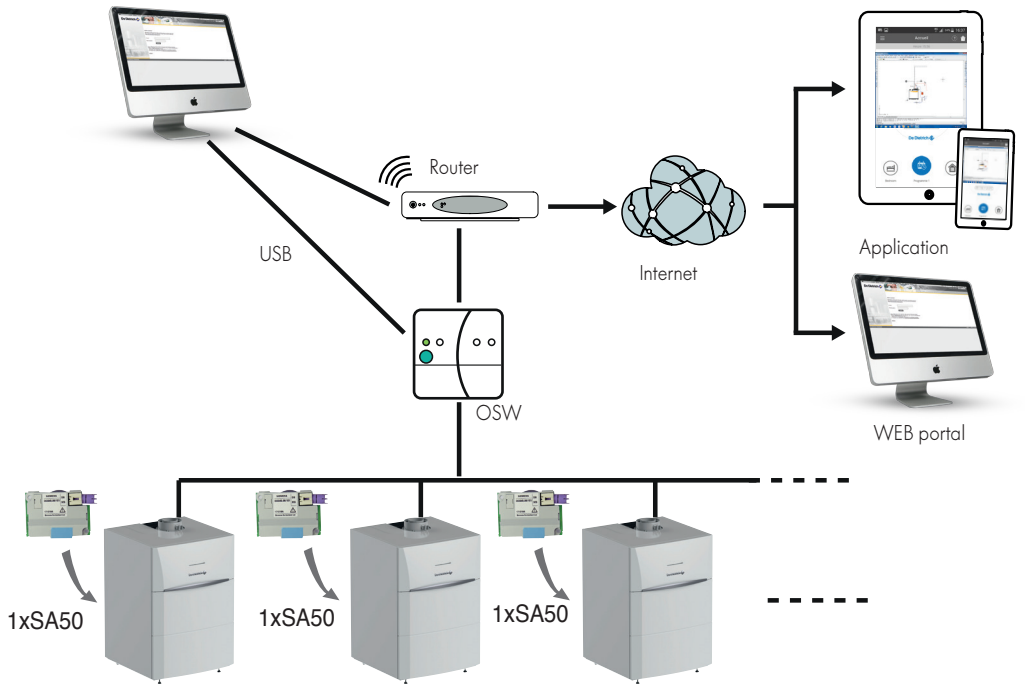
OZW WEB SERVER:

- **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).

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.



SPECIFIC CASCADE **SYSTEMS**

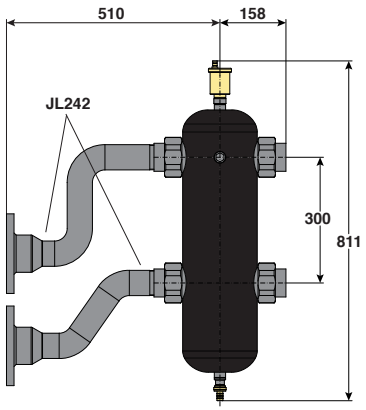
IX cascade systems comprise systems pre-dimensioned for each boiler model, including:
• collectors,
• water connections kits (with pump),
• pressure breakers,
• the various control components required for the operation of the cascade.
So it is possible to put together "ready-to-use" pre-dimensioned cascades.
However, in certain scenarios cascades will need to be put together according to specific requirements and constraints. In this case, each boiler can be combined with a cascade collector, a water connection kit (pump) to a primary tank or a pressure breaker, to put together the desired cascade.
The size of the cascades is limited by the dimensioning of the pumps present in the water kits, and by the connection collectors:
• With IX145 boilers, the maximum possible cascade output is 550 kW.
• With IX245 boilers, the maximum possible cascade output is 1000 kW.

CHOICE OF HYDRAULIC SEPARATORS

• There are 3 models available: 8.5 m^3/h, 18 m^3/h and 28 m^3/h.
• Epoxy painted steel
• Pressure: 10 bar
• Equipped with an automatic bleed and a mud clearing valve.
• Equipped with two 1/2" ports for sensor tubes
• Moulded PPE insulation.

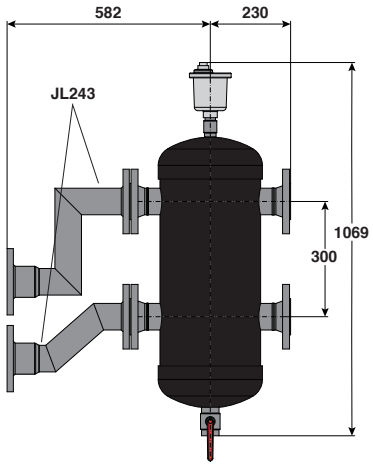
SEPARATORS

· for a flow rate of 8.5 m^3/h



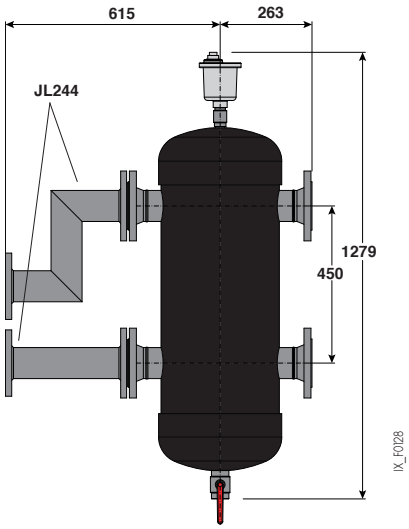
Separator only package	JL245	7713944
Flow rate	m^3/h	8.5
Max. output at $\Delta T° = 20$ K	kW	200
Connection	inch	2
Volume	Litres	13.5

· for a flow rate of 18 m^3/h



Separator only package	JL246	7713945
Flow rate	m^3/h	18
Max. output at $\Delta T° = 20$ K	kW	420
PN6 flange		DN 65
Volume	Litres	15

· for a flow rate of 28 $m^3/h^3/h$

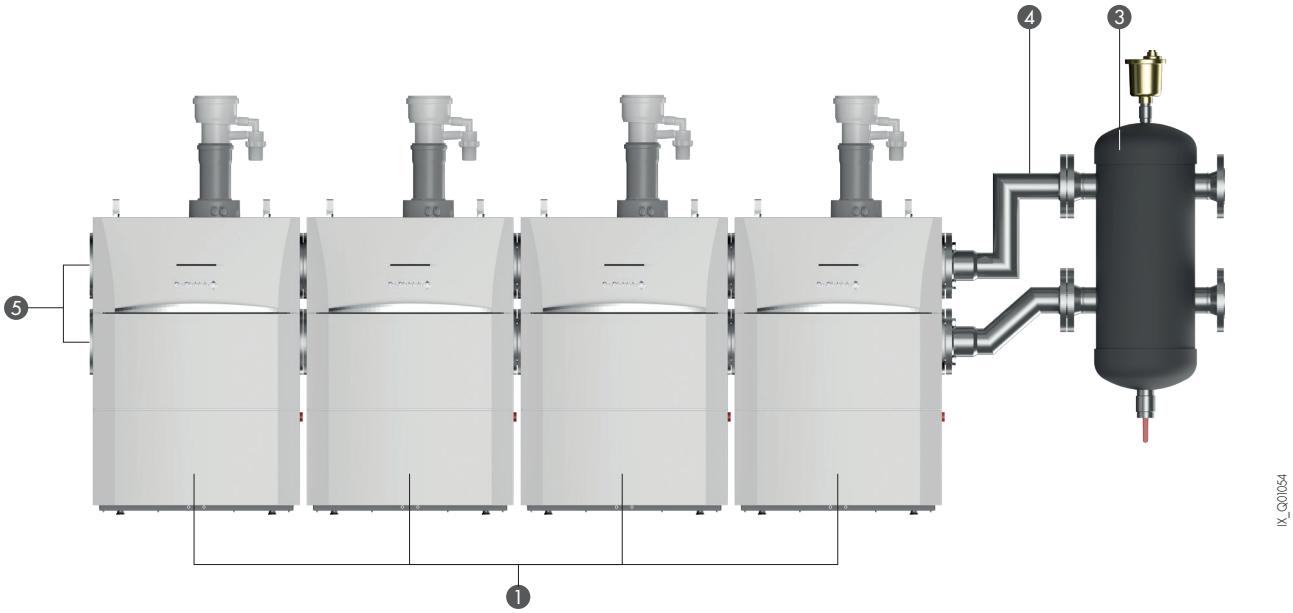


Separator only package	JL247	7713948
Flow rate	m^3/h	28
Max. output at $\Delta T° = 20$ K	kW	550
PN6 flange		DN 80
Volume	Litres	30

INSTALLATION EXAMPLES

INSTALLATION EXAMPLE WITH 4 IX 145-70 BOILERS IN CASCADE CONFIGURATION

Using a predimensioned cascade kit of 2 IX 145-70 boilers as a basic component for putting together this cascade is impossible, since the pressure breaker supplied is under-dimensioned for this scenario. So this cascade must be made from 4 individual cascade kits, plus the components separately.



Cascade flow rate at ΔT 20 °C = 12040 L/h
Beside the standard with an 8.5 m³/h breaker, we use an 18 m³/h breaker

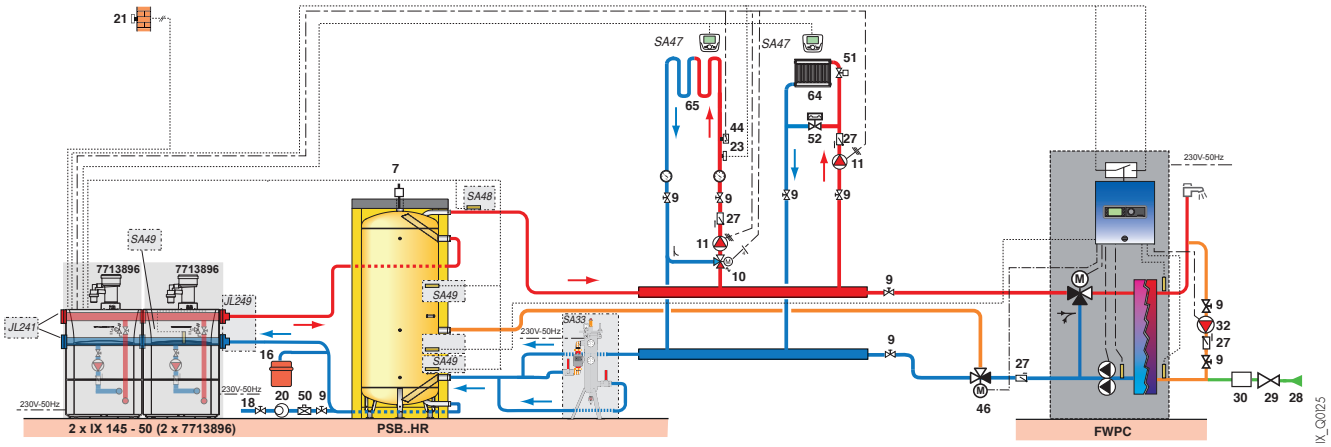
MARKER	SEPARATE COMPONENTS	PACKAGE	REFERENCE	QUANTITY
1	IX 145-70 individual cascade kit		7713897	4
3	18 m³/h pressure breaker	JL246	7713945	1
4	18 m³/h pressure breaker connection kit	JL243	7713942	1
5	DN 80 Pn10 blind flange kit	JL241	7713940	1
	UAF6C Cascade flow sensor	SA48	7709436	1
	UF6C universal return sensor	SA49	7709437	1
	18 m³/h hardware and gasket	JL239	7716444	1

IMPORTANT: Other "cascade systems" are also possible: to help you identify and enter these, an "Diematools" tool can be accessed on our website.

CONTROL SYSTEM: Each cascade kit is delivered with a BUS OCI 345 communication module (package SA50) enabling the boilers to communicate with each other.

INSTALLATION EXAMPLE WITH 2 IX 145-50 BOILERS IN CASCADE CONFIGURATION COMBINED WITH A PRIMARY HEATING WATER STORAGE TANK

In this example, the 2 IX 145-50 boilers in cascade configuration are combined with a tank (PSB) for primary hot water storage. This cascade is made from 2 individual cascade kits plus separate components (see table below).



SEPARATE COMPONENTS	PACKAGE	REFERENCE	QUANTITY
IX 145-50 individual cascade kit		7713896	2
DN 80 Pn10 blind flange kit	JL241	7713940	1
UAF6C Cascade flow sensor	SA48	7709436	1
UF6C universal return sensor	SA49	7709437	1
DN80 counter-flange	JL249	7713948	1

CONTROL SYSTEM

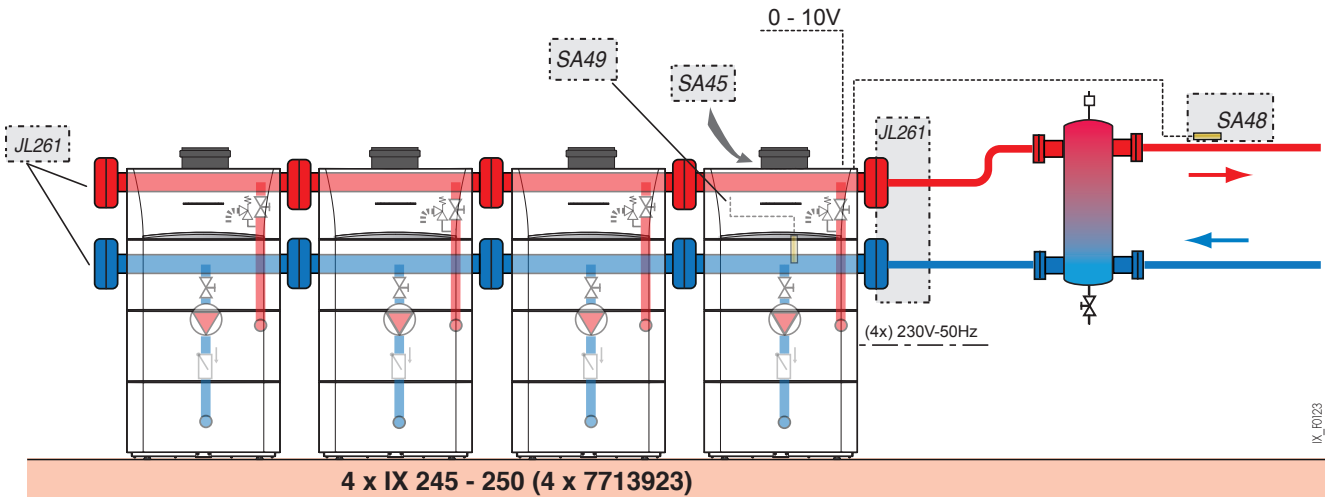
Each cascade kit is delivered with a BUS OCI 345 communication module (SA50) enabling the boilers to communicate with each other.
DHW demand is managed by a dry contact (FWPC)
The master boiler is equipped with:

- 2 SA49 sensors for controlling the hot water storage tank,
- 1 SA49 sensor as a cascade return sensor,
- 1 SA48 cascade flow sensor,
- 1 three-way valve circuit control module SA45 for controlling the mixing zone.

KEY: see page 29

INSTALLATION EXAMPLE WITH 4 IX 245-250 BOILERS IN CASCADE CONFIGURATION, CONNECTED TO A PRESSURE BREAKER

In this example, the pre-dimensioned 2-boiler cascade kits cannot be used since the pressure breaker supplied is not dimensioned for this installation. So the cascade is made from individual cascade kits plus separate options (see table below); the pressure breaker must be dimensioned and supplied by the installer.



The pressure breaker must be supplied and dimensioned by the installer.

SEPARATE COMPONENTS	PACKAGE	REFERENCE	QUANTITY
IX 245-250 individual cascade kit		7713923	4
Plugs kit for collector and VICTAULIC® connection for pressure breaker	JL261	7694136	1
UAF6C Cascade flow sensor	SA48	7709436	1
UF6C universal return sensor	SA49	7709437	1

CONTROL SYSTEM

Each cascade kit is delivered with a BUS OCI 345 communication module (SA50) to enable the boilers to communicate with each other. The cascade is managed by the master boiler's control system, and the energy demand by a 0-10 V signal (package SA 50) from an external controller.

KEY: see page 29

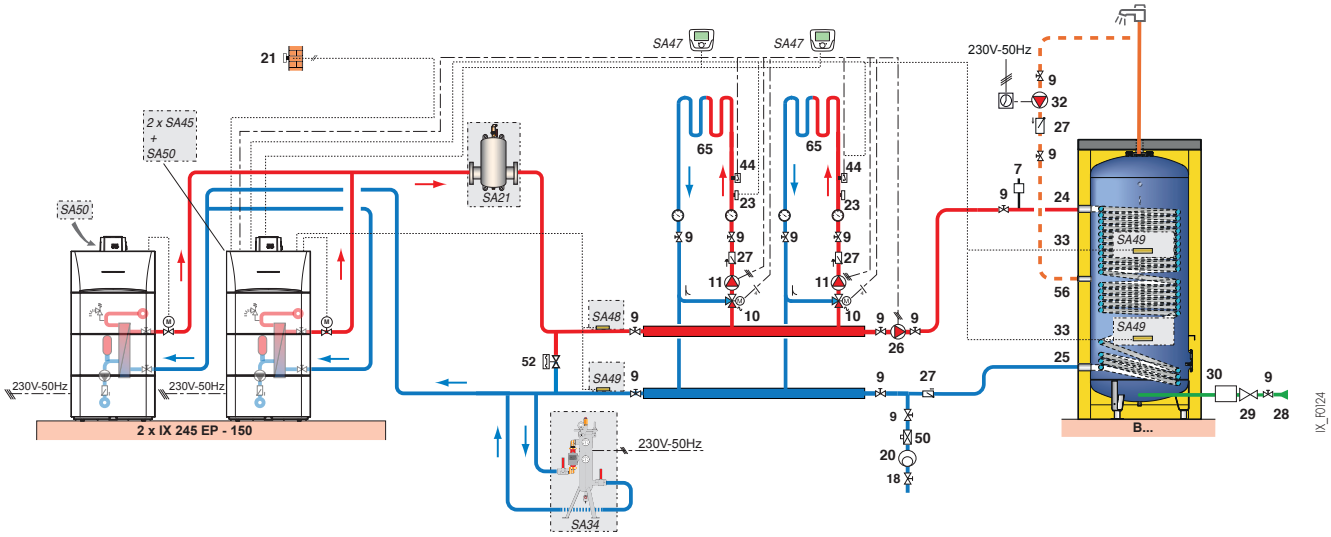
IX 145/245 (SH-EP) BOILERS CASCADE WITH NO OUTPUT LIMIT (UP TO 16 BOILERS)

Each of the IX boiler models has an EP version (with plate heat exchanger) or SH version (with pressure breaker), which we can connect in cascade configuration. These cascades have no flow rate constraint.
IX... SH or EP boilers comprise: heating flow and return connection pipes, modulating primary injection pumps, boiler connections with the return valve, the multifunction flow valve (with filling and drain valve, isolation valve, non-return valve, safety valve).
The IX...EP version also comprises an expansion vessel.

INSTALLATION EXAMPLE WITH 2 IX 245 EP - 150 BOILERS IN CASCADE CONFIGURATION (WITHOUT FLOW RATE CONSTRAINT)

For SH and EP boiler specifications and reference, see "IX 145 - IX 245" leaflet.

In this configuration, the cascade collectors (take care with hydraulic balancing), the differential valve, secondary valves and motorises valves are not supplied.



SEPARATE COMPONENTS	PACKAGE	REFERENCE	QUANTITY
IX 245-130/150 EP or SH boiler (See "IX 145/245" leaflet)		-	x
OCI345 communication module – LPB module	SA50	7709438	1 per boiler
UAF6C Cascade flow sensor	SA48	7709436	2
Ø 110 mm PPS extension (length 500 mm)*	DY180	84887580	1 per boiler
Flue gas valve with siphon, Ø 110/110 mm*	DY432	7715073	1 per boiler

* Not shown on the drawing.

EQUIPMENT REQUIRED FOR CASCADE INSTALLATION OF X IX...EP AND SH BOILERS

			EQUIPMENT REQUIRED FOR X IX...EP AND SH BOILERS IN CASCADE CONFIGURATION			
COMPONENTS	PACKAGE	REFERENCE	IX 145 - 50/70	IX 145 - 90/110	IX 245 - 130/150	IX 245 - 200/250
IX.... EP or SH boiler (see "IX 145/245" leaflet)	-	-	X	X	X	X
BUS OCI 345 LPb communication module	SA50	7709438	1 per boiler	1 per boiler	1 per boiler	1 per boiler
UAF6C strap-on flow sensor	SA48	7709436	2	2	2	2
Flue gas non-return valve and Ø 110/110 mm siphon	DY432	7715073	-	1 per boiler	1 per boiler	-
Ø 110 mm PPS extension, L. 500 mm	DY180	84887580	-	1 per boiler	1 per boiler	-
Flue gas non-return valve and siphon, Ø110/80 mm	DY433	7715074	1 per boiler	-	-	-
Ø 80 mm PPS extension, 2-part, L. 250 mm	DY613	84887613	1 per boiler	-	-	-

KEY: see page 29

THE BOILER OPTIONS

JL245

JL246/247

JL260

IX_G9000/IX_G9001/IX_G9002

LOW-LOSS HEADERS:

- FOR A PRIMARY FLOW RATE OF 8.5 m³/h WITH 2" UNION CONNECTORS (200 KW MAX. - 13.5 LITRES) - PACKAGE JL245
- FOR A PRIMARY FLOW RATE OF 18 m³/h WITH DN65 FLANGE CONNECTORS (420 KW MAX. - 15 LITRES) - PACKAGE JL246
- FOR A PRIMARY FLOW RATE OF 28 m³/h WITH DN80 FLANGE CONNECTORS (550 KW MAX. - 30 LITRES) - PACKAGE JL247

Epoxy painted steel breakers (10 bar max.), with moulded PPE insulation.
They are equipped with:
- an automatic bleed and a mud clearing valve,
- two 1/2" ports for sensor tube,

- FOR A PRIMARY FLOW RATE OF 30 m³/h WITH VICTAULIC® CONNECTORS (650 KW MAX. - 67 LITRES) - PACKAGE JL260

It is equipped with:
- VICTAULIC® connections,
- a positioning foot,
- a removable insulating shell.

JL240

JL250

IX_G3011/IX_G3012

FLOW /RETURN COLLECTOR KIT FOR IX 145 - 50/70/90/110 (DN80) - PACKAGE JL240

This kit contains the DN80 flow and return collectors (both parts are equipped with a sensor tube).

FLOW /RETURN COLLECTOR KIT FOR IX 245 - 130/150/200/250 WITH VICTAULIC® CONNECTORS - PACKAGE JL250

This kit contains the flow and return collectors with insulating shells and VICTAULIC® connectors (both parts are equipped with a sensor tube), and the mounting system on the rear of the boiler.

JL207/208

JL254/255

IX_G3012/IX_G2011

WATER CONNECTION KITS FROM BOILER TO COLLECTOR:

- FOR IX 145- 50/70 - PACKAGE JL207*
- FOR IX 145- 90/110 - PACKAGE JL208*
- FOR IX 245- 130/150 - PACKAGE JL254
- FOR IX 245- 200/250 - PACKAGE JL255

These kits are equipped with:
- a modulating primary pump controlled by: PWM (IX 145) and a 0-10V signal (IX 245)
- flow/return connection pipes with isolation valves,
- a non-return valve,
- a safety valve.

* These 2 kits contain collector mounting supports on the rear of the boiler.

JL242 JL243 JL244

IX_G3013/IX_G2012/ IX_G3014

LOW-LOSS HEADER CONNECTIONS KIT:

- FOR A PRIMARY FLOW RATE OF 8.5 m³/h (DN80 - G2") - PACKAGE JL242
- FOR A PRIMARY FLOW RATE OF 18 m³/h (DN80 - DN65) - PACKAGE JL243
- FOR A PRIMARY FLOW RATE OF 28 m³/h (DN80 - DN80) - PACKAGE JL244

SET OF 2 BLIND FLANGES FOR COLLECTORS (WITH GASKETS AND HARDWARE): WITH IX 145 (DN80 - PN10)- PACKAGE JL241

IX_G6000

SET OF 2 VICTAULIC® TERMINATIONS (PLUGS) + 2 WELDED ENDS WITH VICTAULIC® CONNECTOR (BREAKER CONNECTOR):

- WITH IX 245 (VICTAULIC® CONNECTORS) - PACKAGE JL261

Set comprising 2 plugs with VITAULIC® mounting to be installed on the collector kit, and 2 welded connectors with VICTAULIC® mounting to be installed on the low-loss header JL260.

JL248/JL249

IX_G0127

WELDED COUNTER-FLANGE FOR LOW-LOSS HEADER:

- DN65 (WITH GASKETS AND HARDWARE) - PACKAGE JL248
- DN80 (WITH GASKETS AND HARDWARE) - PACKAGE JL249

JL238

JL239

IX_G0123/IX_G0124

HARDWARE (+ GASKETS) FOR COLLECTORS CONNECTION:

- DN80 (8.5 m³/h) - PACKAGE JL238

Kit comprising: 2 flat gaskets, screws, washers and nuts for 2 flanges.

- DN65 (18.5 m³/h) - PACKAGE JL239

Kit comprising: 6 flat gaskets, screws, washers and nuts for 6 flanges (4xDN65, 2xDN80).

BOILER OPTIONS

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.

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.

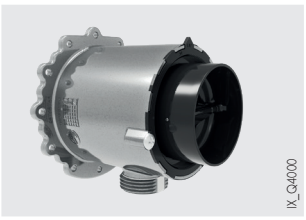
300 MBAR GAS PRESSURE REGULATOR:

- 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"



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

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

DY432

DY433

IX_Q2002/IX_Q2001

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.

DY613

DY180

IX_Q0125/IX_Q0126

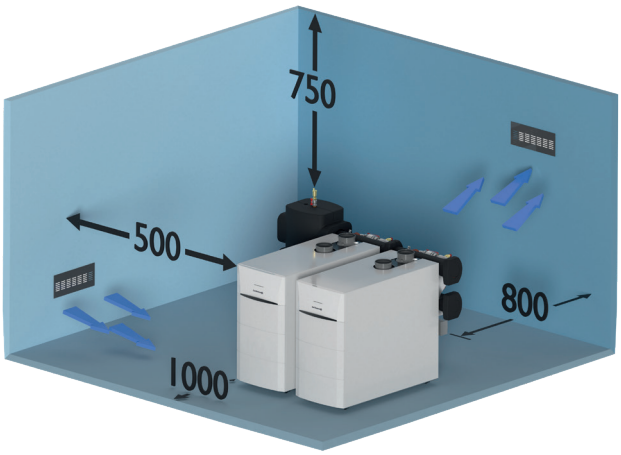
Ø 80 MM PPS EXTENSION (L. 250 MM) (2-PART) - PACKAGE DY613
Ø 110 MM PPS EXTENSION (L. 500 MM) - PACKAGE DY180

STATUTORY GUIDELINES FOR INSTALLATION AND MAINTENANCE

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

POSITION

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



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 standards.
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

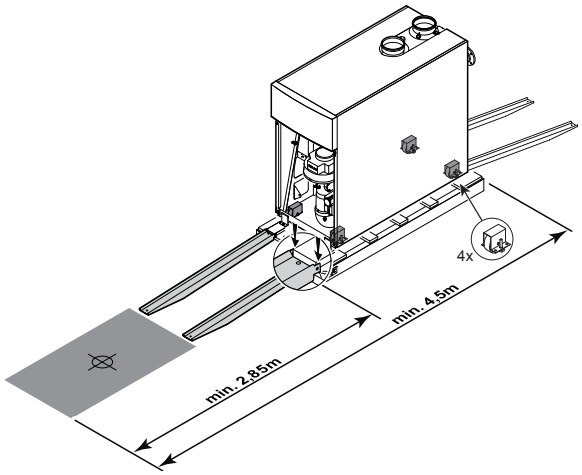
This must comply with the prevailing standard.
The boiler must be supplied via an electrical circuit which includes an omnipolar switch with an opening gap distance of > 3 mm. Protect the network connection using a 6A fuse.

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

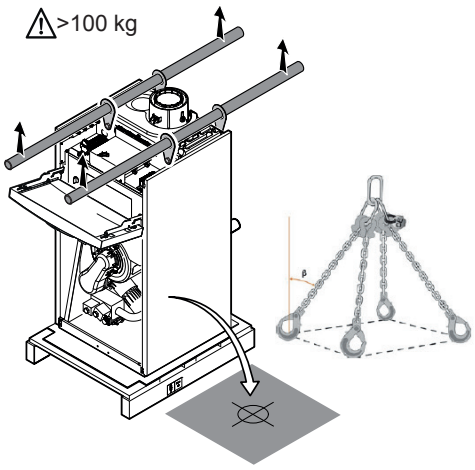
If possible, the boiler's protective packaging must only be removed once the boiler has reached its final installation location. Without packaging, the boiler measures 60 cm in width, and can fit through all standard doors. The weight of the boiler exceeds the maximum weight which can be lifted by one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



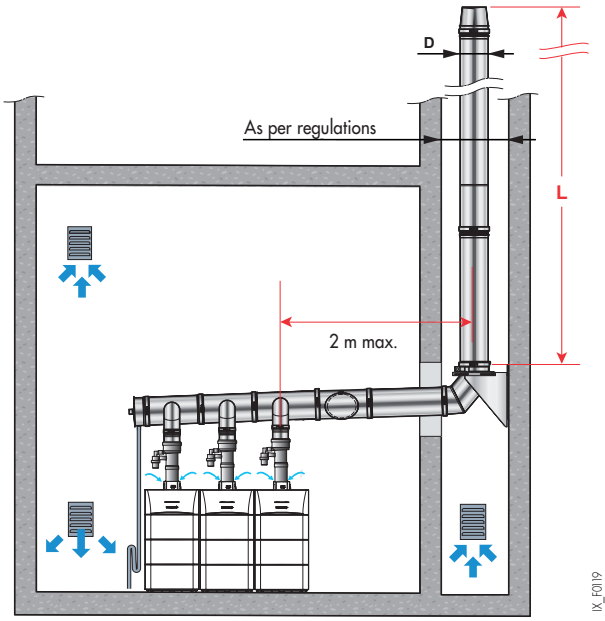
IX_F008

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



IX_F009

CONFIGURATION B_{23P} - FOR CASCADE INSTALLATION



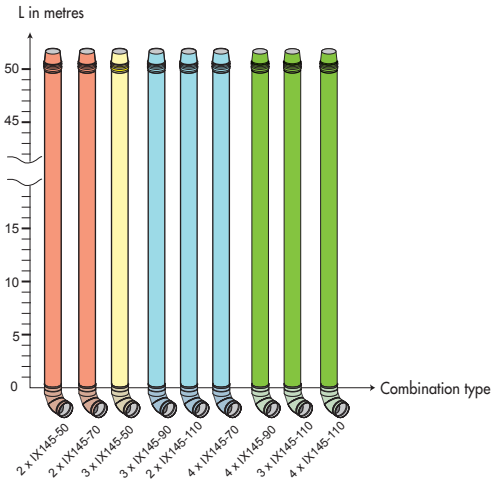
min. x	⍁ (mm)	D + 60
Ø (mm)	D + 80

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

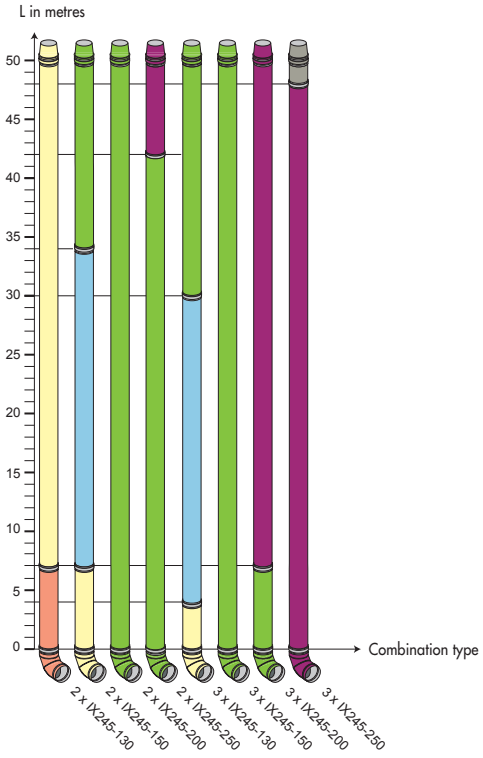
MAXIMUM PERMISSIBLE LENGTH (IN m) ACCORDING TO THE DUCT (IN mm) FOR VARIOUS "CASCADE" COMBINATIONS

These lengths have been defined based on the dimensional constraints given in the diagram above.
For different dimensional constraints, please contact us.

IX 145-50 TO 110



IX 245-130 TO 250



L max as a function of duct Ø D, for various "cascade" combinations

• Boilers operating at 80/60 °C

NOTE: These lengths are given as a guide. De Dietrich cannot be held liable in this matter.
For different configurations, please contact us to receive a specific calculation.

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 (1)	°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

(1) 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 /MAXIMUM 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	1 500	2 000	2 250	2 250	3 000	3 500	4 500
Maximum flow rate	L/h	2 450	2 500	4 600	4 800	7500	8610	11,480	14,350

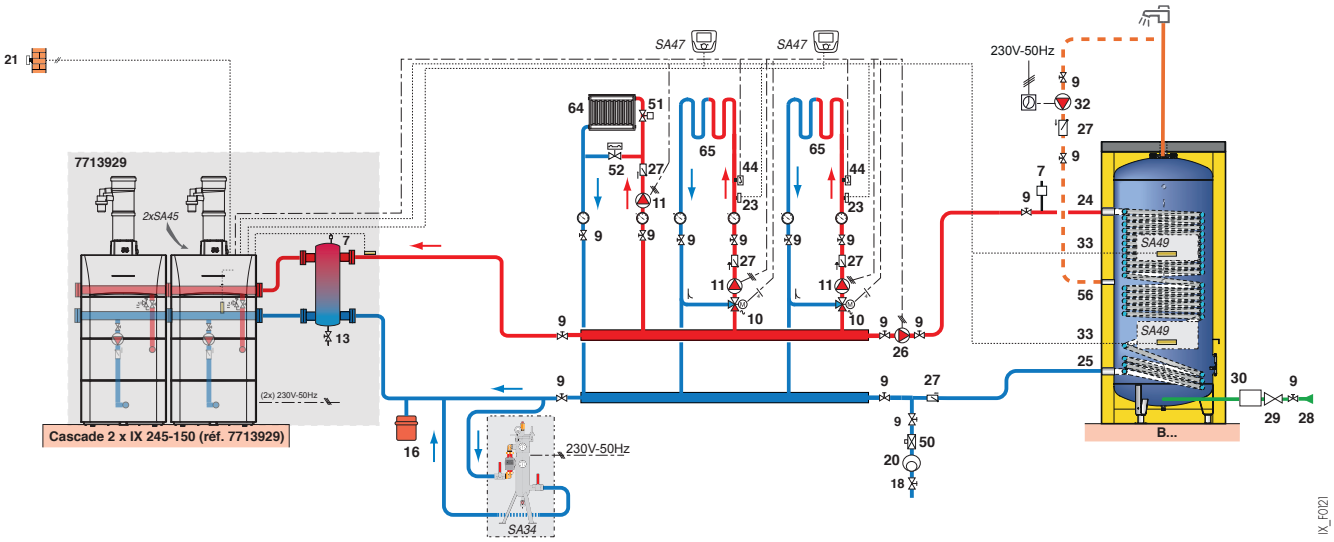
INSTALLATION EXAMPLES

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.

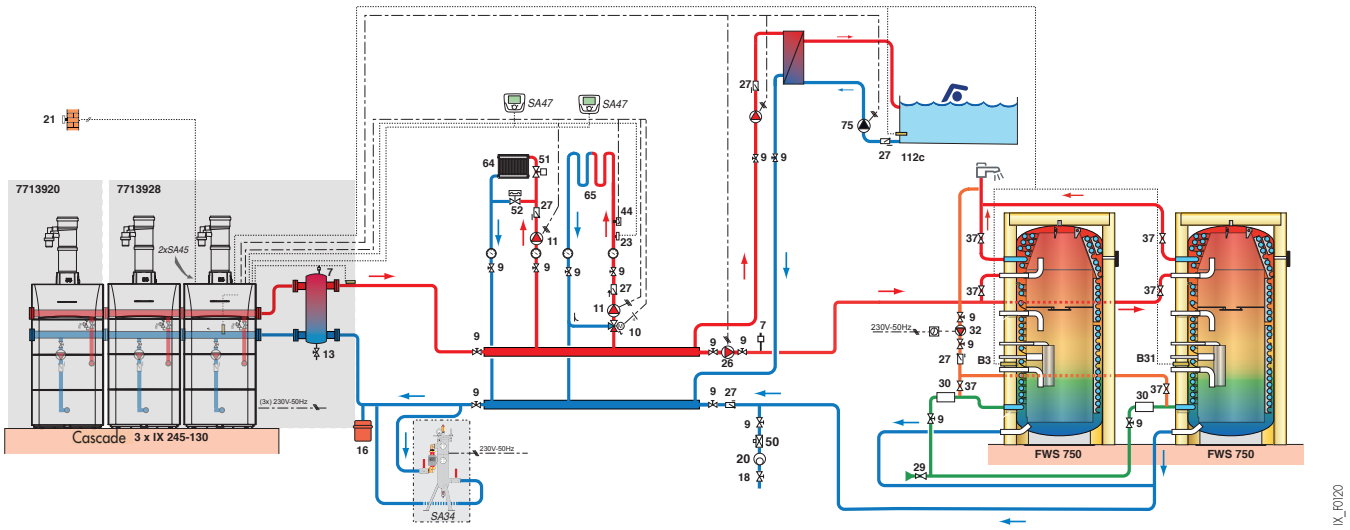
INSTALLATION EXAMPLE WITH 2 IX 245-150 BOILERS IN CASCADE CONFIGURATION

cascade made from the 2-boiler cascade kit.
The pressure breaker and flow/return temperature sensors are part of the kit.



INSTALLATION EXAMPLE WITH 3 IX 245-130 BOILERS IN CASCADE CONFIGURATION

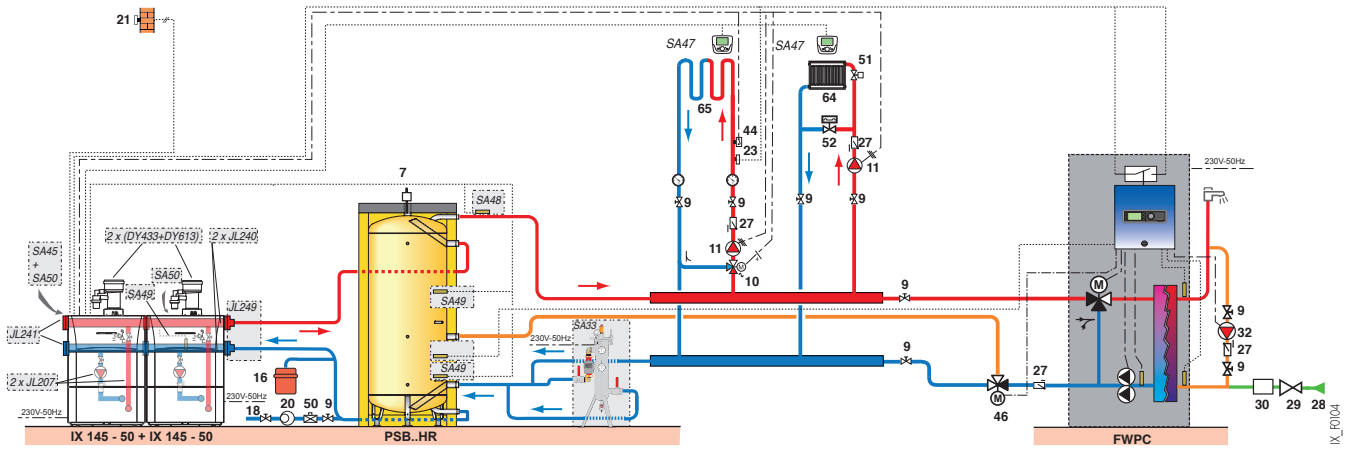
cascade made from the 2-boiler cascade kit, plus the individual cascade kit.



KEY: see page 29

INSTALLATION EXAMPLE WITH 2 IX 145-50 BOILERS IN CASCADE CONFIGURATION

cascade made from 2 IX 145-50 boilers, and all the necessary separate components.



KEY

7	Automatic air vent
9	Isolation valve
10	Mixing valve
11	Electronic heating pump
11d	Swimming pool primary circuit pump
13	Flush valve
16	Expansion vessel
18	Heating circuit filling
20	Water meter
21	Outdoor temperature sensor
23	Flow temperature sensor downstream of mixing valve
24	DHW tank exchanger primary inlet
25	DHW tank exchanger primary outlet
26	Hot water booster pump
27	Non-return valve
28	Domestic cold water inlet
29	Pressure reducer
30	Safety unit calibrated and sealed to 7 bar
32	DHW circulation loop pump
33	Domestic hot water temperature sensor
37	Balancing valve
44	65°C limiter thermostat with manual reset for underfloor heating
46	Three-way directional valve, 2 positions
50	Disconnector
51	Thermostatic valve
52	Differential valve
56	DHW circulation loop return
64	Radiator circuit (e.g. gentle heating radiators)
65	Low temperature circuit (e.g. underfloor heating)
75	Pump for DHW use
109	Thermostatic mixing valve for domestic hot water
112c	2nd circuit sensor

NOTES

NOTES

De Dietrich

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