ZENA

WALL-HUNG GAS BOILERS

- MS 24 (FF): from 9.3 to 24 kW for heating only
- MS 24 BIC (FF): from 10.4 to 24 kW for heating and DHW produced by a 40-litre tank integrated in the boiler
- MS 24 (FF) + BMR 80 and MS 24 (FF) + SR 130: from 9.3 to 24 kW for heating and DHW produced by an 80-litre tank placed beside the boiler, or a 130-litre tank placed under the boiler
- MS 24 MI (FF): from 9.3 to 24 kW for heating and micro-storage DHW

ZENA MS 24 FF, MS 24 MI FF

ZENA MS 24 BIC

ZENA MS 24 FF + BMR 80

MS 24:
Heating only

MS 24 BIC, MS 24 + BMR 80 or SR 130 or MS 24 MI Heating and domestic hot water produced by an integrated or independent tank or micro-storage DHW

Low temperature

All natural gases
Propane

EC identification No.:
MS…: 51BT3644/45DR/ED03
MS… FF: 51BT3642/43DR/ED03

Boilers available:
- For connection to a chimney:
  MS 24, MS 24 MI, MS 24 BIC, MS 24 + BMR 80 or SR 130
- For connection to a horizontal or vertical forced flue:
  MS 24 FF, MS 24 MI FF, MS 24 BIC FF, MS 24 FF + BMR 80 or SR 130

Fully equipped boilers, including an easy-to-use, functional electronic control panel as standard to control a direct circuit and a DHW circuit. As optional equipment, this panel can be completed with a control system offering two comfort levels: either by room temperature thermostat and/or by outside sensor.

Operating conditions

Max. operating pressure: 3 bar
Max. operating temp.: 85°C
Safety thermostat: 105°C
Thermostat adjustable from 30 to 85°C
Protection rating: IPX5D

Homologation

- MS 24, 24 MI, 24 BIC: B_{11BS}
- MS 24 FF, 24 MI FF, 24 BIC FF: C_{12x} - C_{32x} - C_{42x} - C_{52} - C_{82x} - B_{22}

Gas category

All models except MS 24 BIC (FF): II_{2E+3P}, Class NOx 3
MS 24 BIC (FF): II_{2E+3+}, Class NOx 3

EASYLIFE

De Dietrich

PRESENTATION OF THE BOILERS

MS 24, MS 24 BIC and MS 24 MI… boilers are delivered fully assembled and factory tested. They are pre-fitted to run on natural gases and can be converted to propane using a conversion kit (optional); they are available for various types of connection: chimney, forced flue (FF) (see next page).

MS 24 (FF) boilers are small-scale boilers (730 x 400 x 299 mm) for heating only, equipped as standard with a heating/DHW reversal valve allowing the connection of an independent domestic hot water tank; two types of tank are available:

- 80-litre BMR 80 tank to be juxtaposed to the right or left of the boiler: MS 24… + BMR 80 versions
- 130-litre SR 130 tank to be placed on the floor under the boiler: MS 24… + SR 130 versions

MS 24 MI (FF) boilers are mixed small-scale boilers (730 x 400 x 299 mm) with production of 3-star performance DHW in accordance with EN 13203 thanks to a large stainless steel plate exchanger. An optional hydraulic connection kit to connect a solar tank can also be delivered for these boilers.

MS 24 BIC (FF) boilers are compact (950 x 600 x 466 mm) and efficient: the production of 3-star performance DHW in accordance with EN 13203 is handled by a 40-litre stainless steel storage tank, combined with a plate exchanger, a DHW pump and a heating/DHW reversal valve

High performance:

- 3-star efficiency rating for the forced flue versions, 2-star for the chimney versions
- NOx class 3 in accordance with pr EN 297 A3 for the chimney versions, EN 483 the forced flue versions (FF)

Their strong points:

- Primary exchanger in copper coated with aluminium silicone paint increasing its heat resistance;
- Gas valve with external modulator and double safety solenoid valve;
- Atmospheric burner with stainless steel burner trains;
- Electronic ignition and ionisation flame check
- Digital display direct access electronic control panel used as standard to control a direct circuit and a DHW circuit (optional sensor for MS 24 (FF) models).

Possibility of controlling circuits by adding a room temperature thermostat and/or an outside sensor (options);

- Hydroblock in composite material for MS 24 MI (FF) and MS 24 BIC (FF) or in brass for MS 24 (FF) incorporating the 2-speed heating pump with automatic vent, the automatic by-pass, the heating/DHW reversal valve fitted to the return, the water pressure switch, the drain cock, the disconnector, the 3-bar heating safety valve (or 7-bar for MS 24 BIC (FF)), the pressure gauge, the stainless steel plate exchanger and the turbine flow detector for measuring the DHW flow rate on MS 24 MI (FF) versions, detachable filters on the heating and DHW circuits;
- Anti-overflow thermostat on "chimney" versions;
- Extraction fan and air pressure switch on FF models;
- 6-litre heating expansion vessel (7.5-litre for MS 24 BIC (FF));
- Wall-hanging rail provided;
- Pre-fitted with mains connection cable.

MODELS AVAILABLE

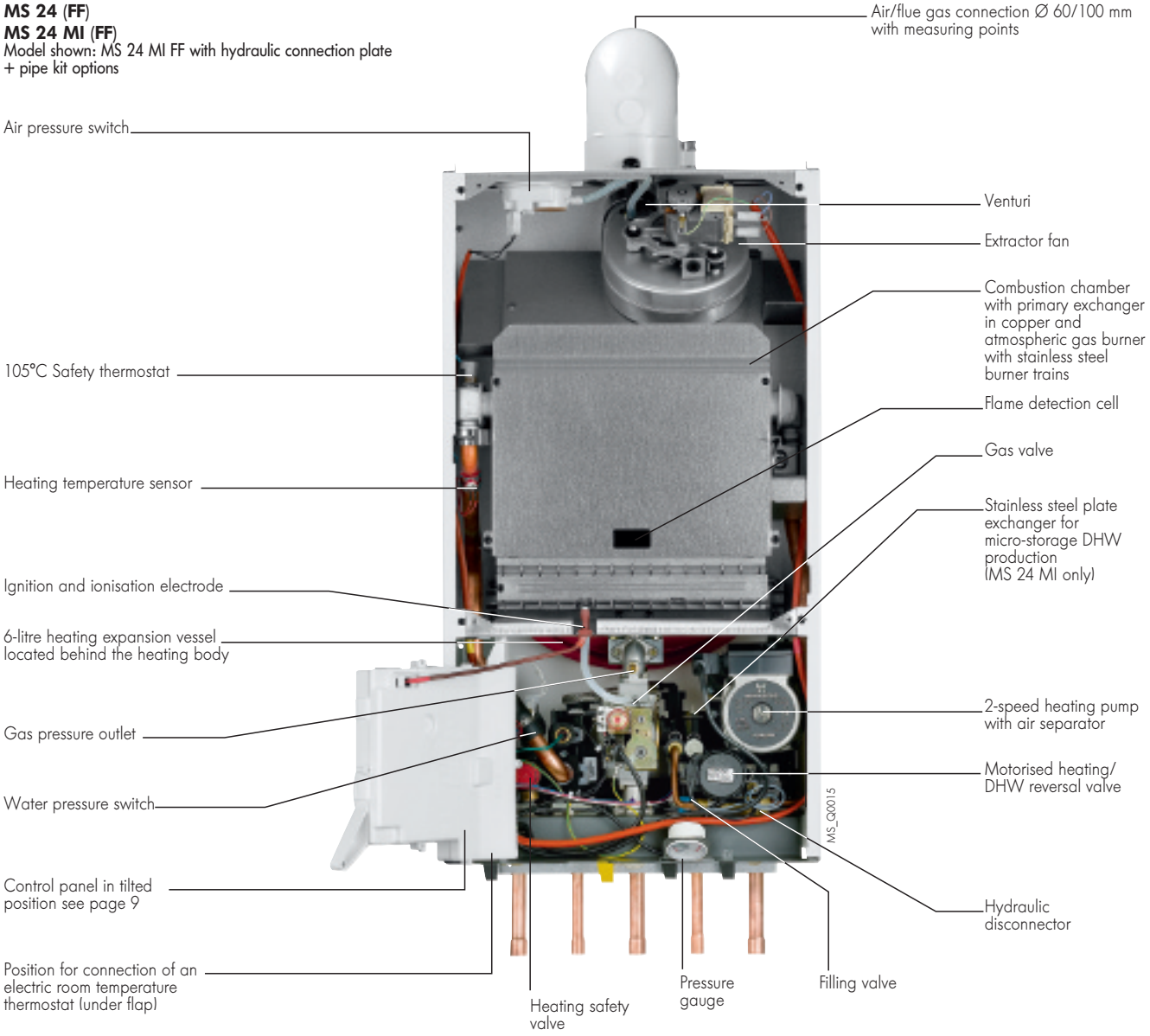
Boiler		Connection type	Model	Useful output range (kW)
 MS_Q0025	For heating only	Chimney	MS 24	9.3-24
 MS_Q0013		Forced flue	MS 24 FF	9.3-24
 MS_Q0025	For heating and micro-storage domestic hot water	Chimney	MS 24 MI	9.3-24
 MS_Q0013		Forced flue	MS 24 MI FF	9.3-24
 MS_Q0022	For heating and domestic hot water preparation by integrated 40-litre tank	Chimney	MS 24 BIC	10.4-23.3
 MS_Q0008		Forced flue	MS 24 BIC FF	10.4-24
 MS_Q0042	For heating and domestic hot water preparation by 80-litre tank positioned to the right or left of the boiler	Chimney	MS 24 + BMR 80	9.3-24
 MS_Q0041		Forced flue	MS 24 FF + BMR 80	9.3-24
 MS_Q0043	For heating and domestic hot water preparation by 130-litre tank placed under the boiler	Chimney	MS 24 + SR 130	9.3-24
 MS_Q0044		Forced flue	MS 24 FF + SR 130	9.3-24

MS 24 BIC (FF)
AVAILABLE MAY 2011

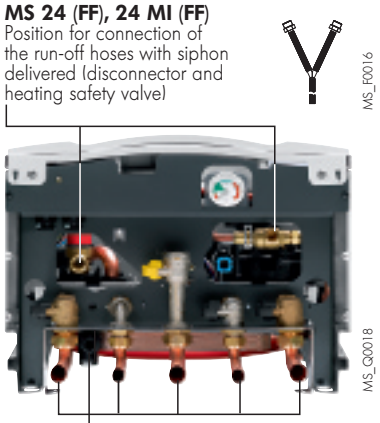
TECHNICAL SPECIFICATIONS OF THE BOILERS

Description

MS 24 (FF)
MS 24 MI (FF)
Model shown: MS 24 MI FF with hydraulic connection plate + pipe kit options



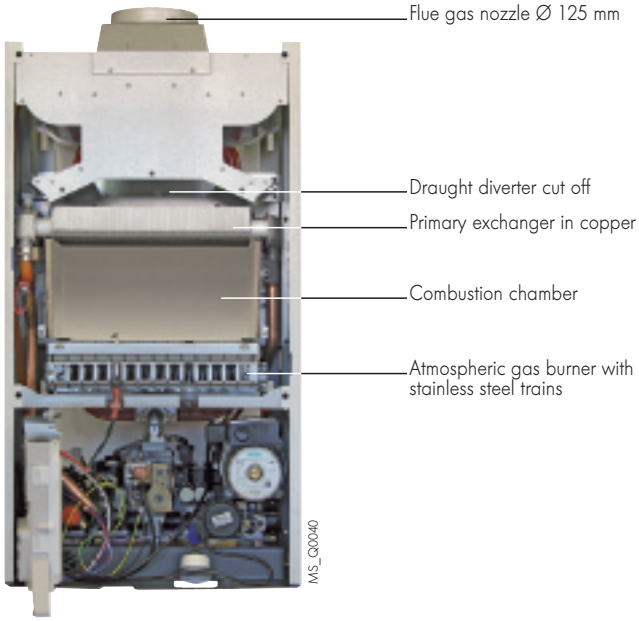
Bottom view
MS 24 (FF), 24 MI (FF)
Position for connection of the run-off hoses with siphon delivered (disconnector and heating safety valve)



Options:
Connection plate with water and gas plumbing fixtures and connection pipes:
- Package HX 8 for MS 24, 24 FF
- Package HX 9 + HX 11 for MS 24 MI, 24 MI FF

Other options:
See page 10

MS 24 (chimney version)



TECHNICAL SPECIFICATIONS OF THE BOILERS

TECHNICAL SPECIFICATIONS

Boiler

Boiler type: low temperature
Ref. EC certificate:
- MS…: 51BT3644/45DR/ED03
- MS… FF: 51BT3642/43DR/ED03

Energy used:
natural gas or propane

Burner:
- MS 24, MS 24 MI, MS 24 BIC: atmospheric without fan
- MS 24 FF, MS 24 MI FF, MS 24 BIC FF: atmospheric with fan

Evacuation:
- MS 24, 24 MI, 24 BIC: chimney
- MS 24 FF, 24 MI FF, 24 BIC FF: forced flue

Minimum flow temp.: 30°C
Minimum return temp.: 20°C

Model		MS MS MS	24 24 + BMR 80 24 + SR 130	24 FF 24 FF + BMR 80 24 FF + SR 130	24 MI	24 MI FF	24 BIC	24 BIC FF
Nominal useful output Pn (heating and DHW mode)		kW	24	24	24	24	23.3	24
Efficiency in % PCI, at load… % Pn and average temp… °C	100 % Pn - 70 °C	%	91.2	92.9	91.2	92.9	91.0	92.9
	30 % Pn - 40 °C	%	90.2	90.4	90.2	90.4	89.8	90.6
Nominal water flow rate at Pn, Δt = 20 K		m^3/h	1.03	1.03	1.03	1.03	1.00	1.03
Standing losses at Δt = 30 K		W	183	59	183	59	199	99
Min. useful output (heating and DHW modes)		kW	9.3	9.3	9.3	9.3	10.4	10.4
Aux. electrical output (ex circulating pump) at Pn		W	5	55	5	55	5	60
Electrical output circulating pump at Pn/Pmin		W	75/75	75/75	75/75	75/75	75/75	75/75
Manometric height available heating circuit		mbar	175	175	175	175	230	220
Water content		l	3	3	3.5	3.5	5	5
Gas flow rate	- Natural gas H/L	m^3/h	2.78/3.23	2.73/3.17	2.78/3.23	2.73/3.17	2.73/3.17	2.73/3.17
at Pn	- Propane	kg/h	2.04	2.00	2.04	2.00	2.00	2.00
Draught required at the nozzle		mbar	0.5	-	0.5	-	0.5	-
Mass flue gas flow rate at Pn		kg/s	0.014	0.020	0.014	0.020	0.021	0.017
Weight empty		kg	28	32	29	33	51	61

Domestic hot water production

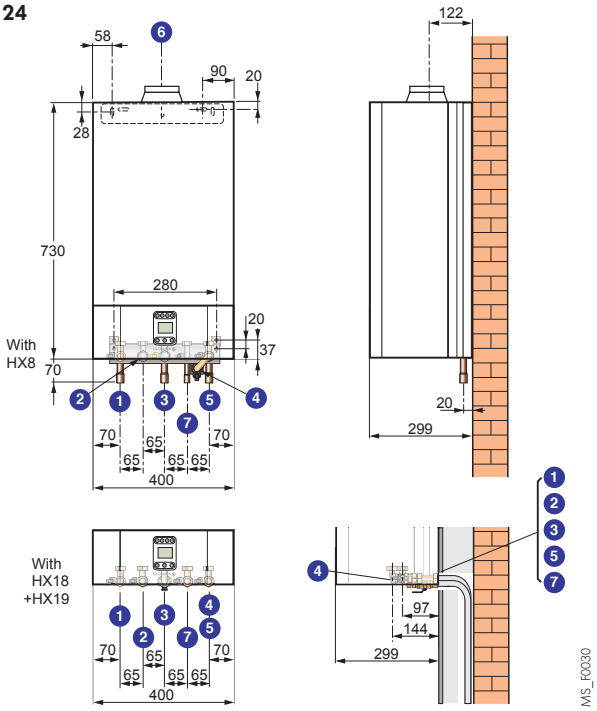
Model	MS	24 MI (FF)	24 BIC	24 BIC FF	24 (FF) + BMR 80	24 (FF) + SR 130
DHW tank capacity	l	-	40	40	80	130
Exchanged output	kW	24	23.3	24	24	24
Flow rate over 10 min at Δt = 30 K	l/10 min	-	180	180	210	260
Flow rate per hour at Δt = 35 K	l/h	590	573	590	590	590
Specific flow rate at Δt = 30 K (in accordance with EN 13203)	l/min	12.0	17.7	17.7	21.0	26.0
Aux. electrical output in DHW mode	W	80	80	80	80	80
Losses through the DHW casing at Δt: 45 K	W	-	69	69	62	73
Cooling constant	Wh/24hl.K.	-	0.67	0.67	-	0.27

MS 24 MI (FF): DHW performance at room temp. 20°C, cold water temp. 10°C, primary hot water temp. 85°C.
MS 24 (FF), MS 24 BIC (FF): DHW performance at room temp. 20°C, cold water temp. 10°C, primary hot water temp. 80°C, storage temp. 60°C.

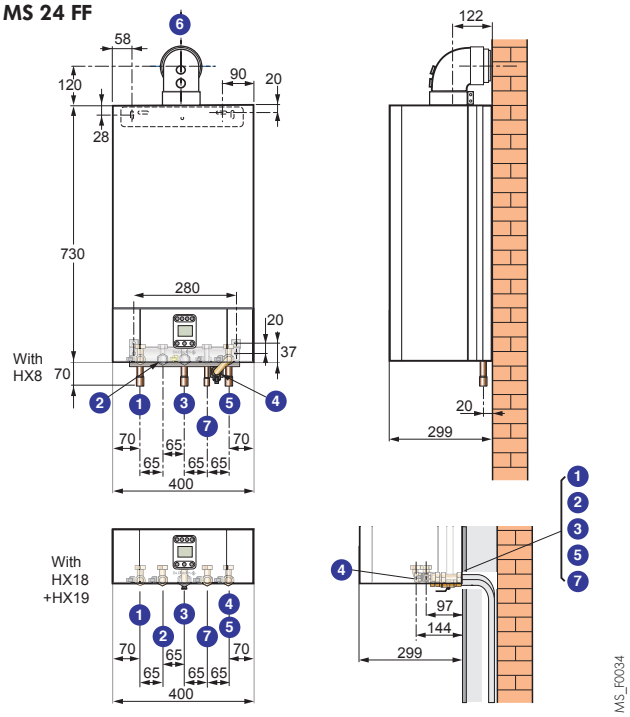
TECHNICAL SPECIFICATIONS OF THE BOILERS

Principal dimensions (in mm and inches)

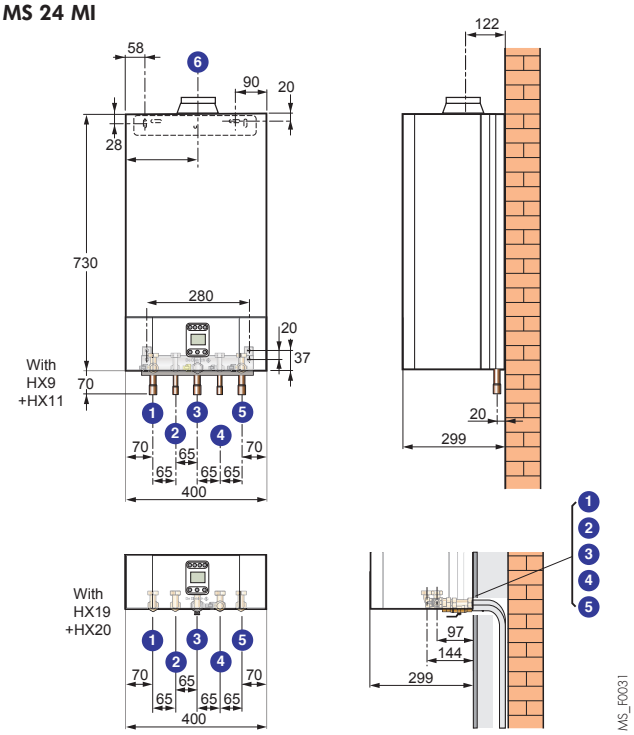
MS 24



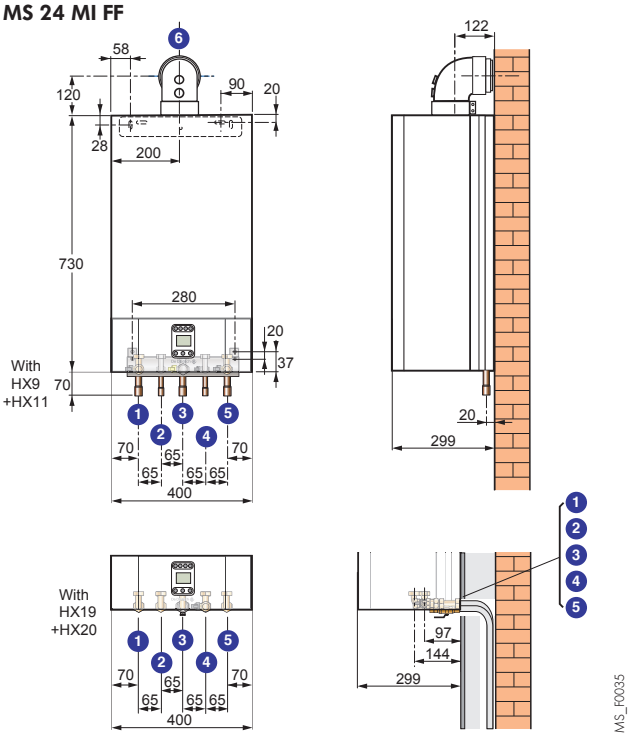
MS 24 FF



MS 24 MI



MS 24 MI FF



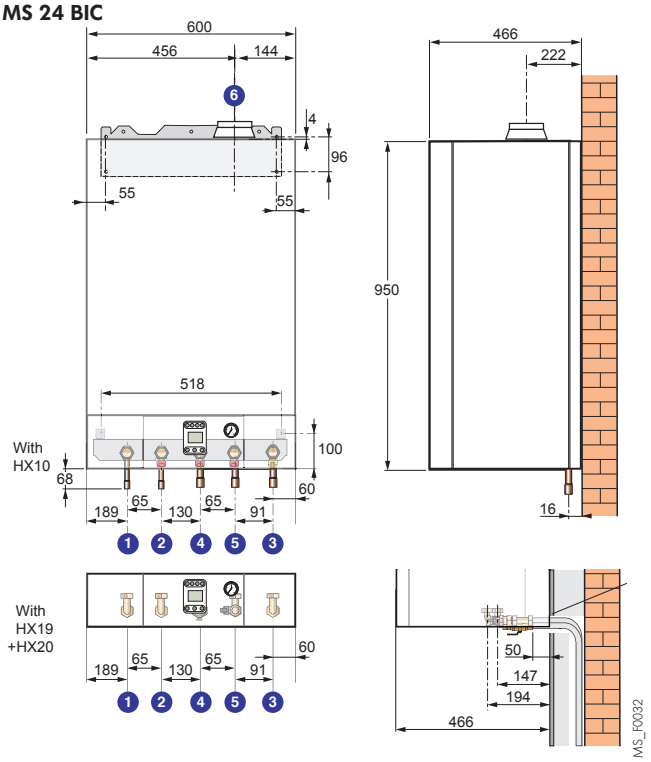
Key

	① Heating flow ③ Gas inlet ⑤ Heating return
MS 24 and MS 24 FF: - With HX8 - With HX18 + HX19	 Ø 18 mm int. G 3/4
MS 24 MI and MS 24 MI FF: - With HX9 + HX11 - With HX19 + HX20	 Ø 18 mm int. G 3/4
	⑥ Flue gas nozzle
MS 24 and MS 24 MI	Ø 125 mm
MS 24 FF and MS 24 MI FF	⑥ Evacuation of combustion products and air inlet pipe (shown with 90° elbow delivered with the horizontal forced flue - Package DY908 - optional) Ø 60/100 mm

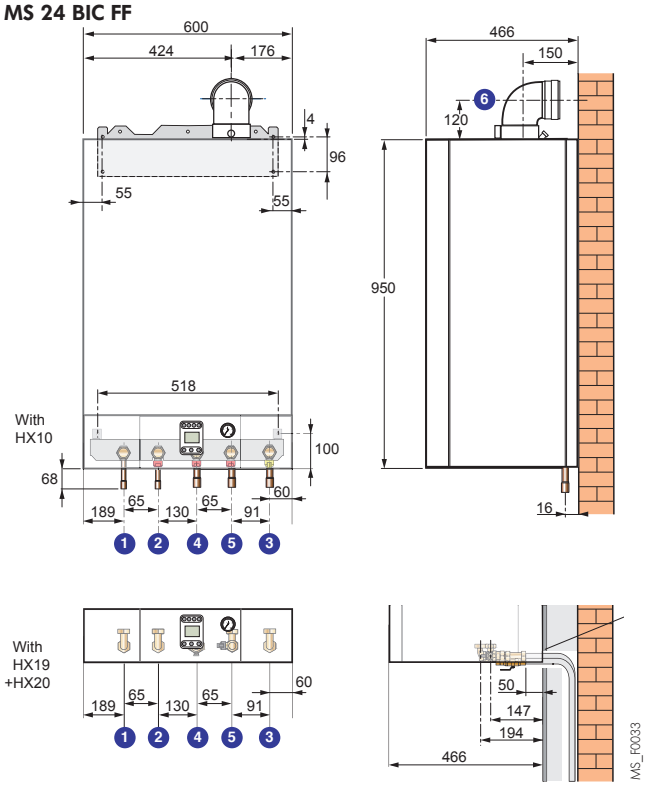
	② Primary tank flow (if one exists) ④ Primary tank return (if one exists)
MS 24 and MS 24 FF	G 3/4
	② Domestic hot water outlet ④ Domestic cold water inlet
MS 24 MI and MS 24 MI FF: - With HX9 + HX11 - With HX19 + HX20	 Ø 16 mm int. G 1/2
	⑦ Cold water inlet (boiler filling)
MS 24 and MS 24 FF: - With HX8 - With HX18 + HX19	 Ø 16 mm int. G 1/2

TECHNICAL SPECIFICATIONS OF THE BOILERS

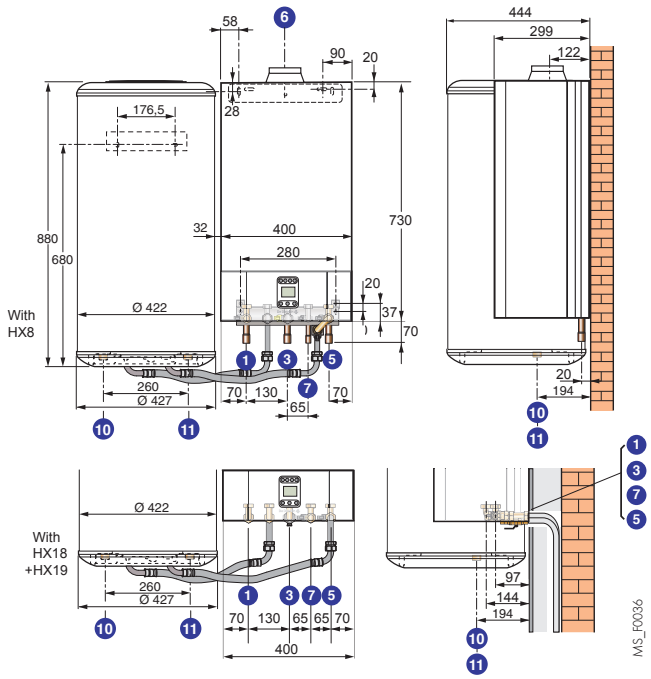
MS 24 BIC



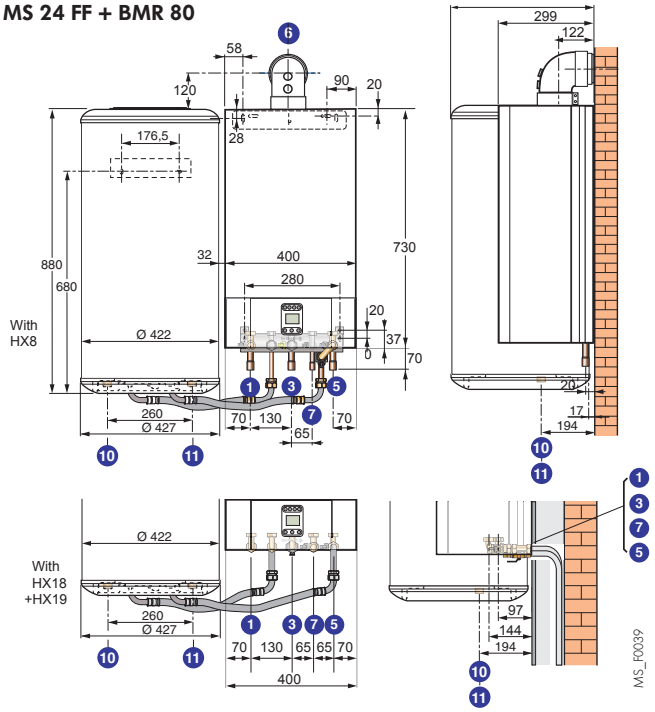
MS 24 BIC FF



MS 24 + BMR 80



MS 24 FF + BMR 80



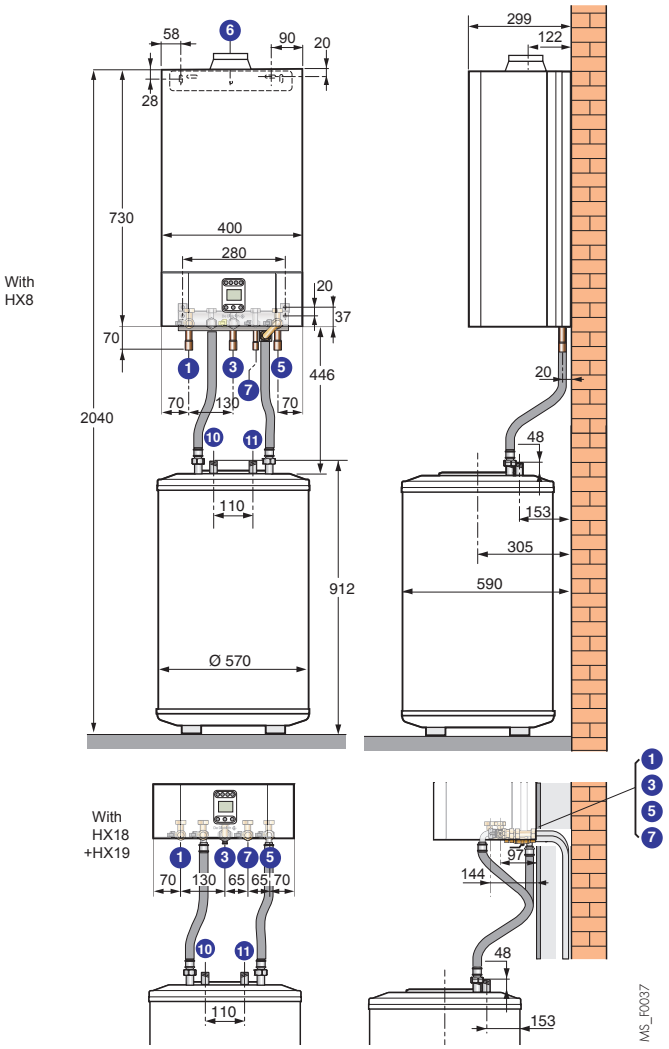
Key

	① Heating flow ③ Gas inlet ⑤ Heating return
MS 24 + BMR 80 and MS 24 FF + BMR 80: - With HX8	Ø 18 mm int.
- With HX18 + HX19	G 3/4
MS 24 BIC and MS 24 BIC FF: - With HX10	Ø 18 mm int.
- With HX19 + HX20	G 3/4
	⑥ Flue gas nozzle
MS 24 BIC and MS 24 + BMR 80	Ø 125 mm
	⑥ Evacuation of combustion products and air inlet pipe (shown with 90° elbow delivered with the horizontal forced flue - Package DY908 - optional)
MS 24 BIC FF and MS 24 FF + BMR 80	Ø 60/100 mm

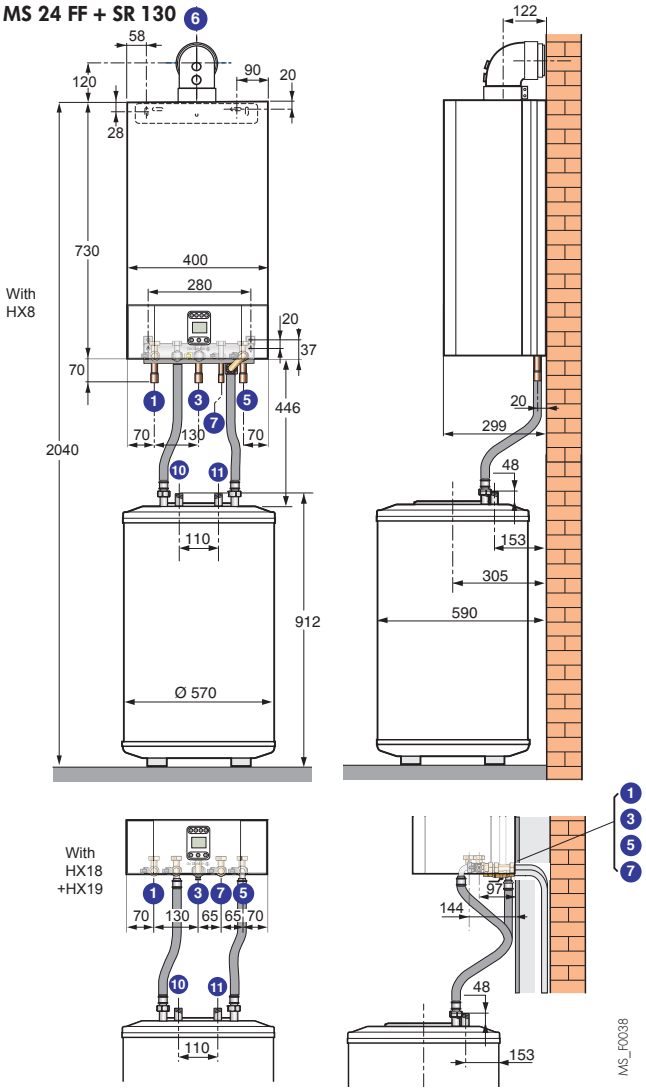
	② Domestic hot water outlet ④ Domestic cold water inlet
MS 24 BIC and MS 24 BIC FF: - With HX10	Ø 16 mm int.
- With HX19 + HX20	G 1/2
	⑦ Cold water inlet (boiler filling)
MS 24 + BMR 80 and MS 24 FF + BMR 80: - With HX8	Ø 16 mm int.
- With HX18 +HX19	G 1/2
	⑩ Domestic hot water outlet ⑪ Domestic cold water inlet
MS 24 + BMR 80 and MS 24 FF + BMR 80	R 3/4

TECHNICAL SPECIFICATIONS OF THE BOILERS

MS 24 + SR 130



MS 24 FF + SR 130



Key

	① Heating flow ③ Gas inlet ⑤ Heating return
MS 24 + SR 130 and MS 24 FF + SR 130: - With HX8	Ø 18 mm int.
- With HX18 + HX19	G 3/4
	⑥ Flue gas nozzle
MS 24 + SR 130	Ø 125 mm
	⑥ Evacuation of combustion products and air inlet pipe (shown with 90° elbow delivered with the horizontal forced flue – package DY908 – optional)
MS 24 FF + SR 130	Ø 60/100 mm

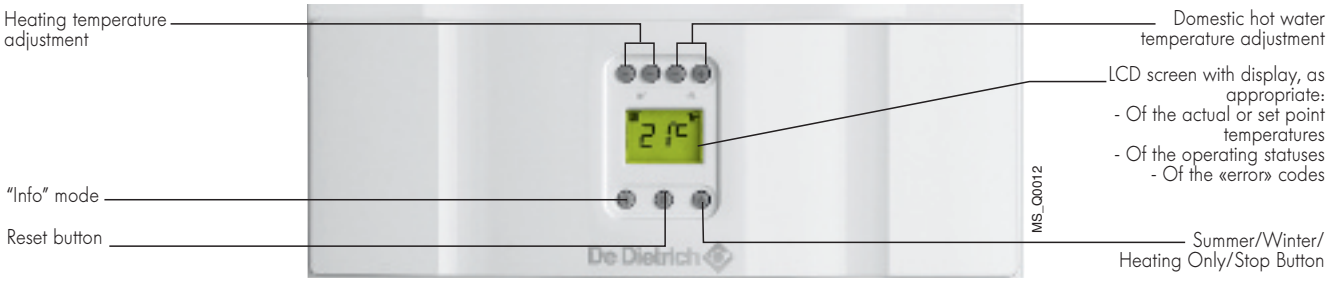
	⑦ Cold water inlet (boiler filling)
MS 24 + SR 130 and MS 24 FF + SR 130: - With HX8	Ø 16 mm int.
- With HX18 +HX19	G 1/2
	⑩ Domestic hot water outlet ⑪ Domestic cold water inlet
MS 24 + SR 130 and MS 24 FF + SR 130:	R 3/4

CONTROL PANEL

The control panel fitted to MS… boilers is an electronic control panel with digital display, which can be accessed directly on the boiler fascia.
It is used as standard for the automatic control of a direct circuit and a DHW circuit, adapting the boiler's output to the user's actual needs thanks to temperature control by two NTC sensors.
It provides antifreeze protection for both circuits below a flow temperature of 5°C.

It can be completed by a control system based on the outside temperature (optional sensor) and/or a room temperature thermostat (options – see below).
Moreover, the control panel incorporates a complete troubleshooting system that can be viewed on the display unit, and a system to prevent gumming of the heating pump and the heating/DHW reversal valve.

MS 24 (FF), MS 24 MI (FF)



MS 24 BIC (FF)

CONTROL PANEL OPTIONS

Package AD 247

8801Q029

Package AD 200

8666Q120A

Package AD 140

8801Q003

Programmable hard-wired digital room temperature thermostat – Package AD 247
Programmable wireless digital room temperature thermostat – Package AD 248
Programmable hard-wired room temperature thermostat – Package AD 137
Programmable wireless room temperature thermostat – Package AD 200
Non-programmable room temperature thermostat – Package AD 140

The programmable thermostats handle the control and weekly programming of the heating by activating the burner in accordance with the various operating modes: «Automatic» according to the programme, «Permanent» at a set temperature or «Holidays».

The «wireless» versions are delivered with a receiver box to be affixed to the wall close to the boiler. The non-programmable thermostat is used to regulate the room temperature according to the instruction given by activating the burner.

MCA_Q0012

Domestic hot water sensor - Package AD 250

The domestic hot water sensor is used to apply priority regulation to DHW production by an independent tank.

MS_Q0005

Outside sensor - Package HX 31

The outside sensor can be used alone or in combination with the room temperature thermostats.

HYDRAULIC CONNECTION ACCESSORIES AND OPTIONS

Below is the list of the hydraulic connection accessories available in the following cases:

NEW INSTALLATION

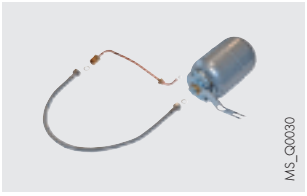
Standard	With mounting column
Package to order: • **For MS 24 (FF):** Hydraulic connection plate: Package HX 8 or Basic kit only HX 19 (1) or Complete hydraulic kit HX 18 + HX 19 (HX 8) MS_Q0052 (HX 18 +19) MS_Q0047 • **For MS 24 MI (FF):** Hydraulic connection plate: Package HX 9 or Basic kit only HX 19 (1) or Complete hydraulic kit HX 20 + HX 19 (HX 9) MS_Q0036 • **For MS 24 BIC (FF):** Hydraulic connection plate: Package HX 10 or Basic kit only HX 19 (1) or Complete hydraulic kit HX 20 + HX 19 The HX 8, HX 9 and HX 10 plates (with pre-fitted water and gas plumbing fixtures and paper mounting template) or the HX 18 kit (with boiler flow/return and tank flow valves), the HX 19 kit (with gas and cold water inlet valves only) or the HX 20 kit (elbow pipes) are delivered with the boiler in separate packages to be pre-installed and thus enable the installer to make all hydraulic connections, prime the installation with water and check for tightness in advance and only put the boiler in place at the last moment. **Attention:** the HX 8 and HX 10 plates incorporate the connecting pipes as standard.	**Package to order:** • **For MS 24 (FF):** Hydraulic connection plate: package HX 8 + height adjustment frame: package HX 21 (HX 8) MS_Q0052 • **For MS 24 MI (FF):** Hydraulic connection plate: package HX 9 + height adjustment frame: package HX 21 (HX 9) MS_Q0036 • **For MS 24 BIC (FF):** Hydraulic connection plate: package HX 10 + height adjustment frame: package HX 22 The height adjustment frame allows the insertion of the water and gas connection pipes behind the boiler (at the top). **Attention:** the HX 21 and HX 22 height adjustment frames incorporate the connecting pipes as standard. (HX 21) MS_Q0038 **Option:** Pipe cover: package HX 25 (for MS 24 (FF) and MS 24 MI (FF))
Hydraulic connection pipe kit: package HX 11 (for MC 24 MI (FF) with HX 9 plate only) This kit includes the copper water and gas connection pipes. The elbow pipes at the bottom are simply screwed onto the plumbing fixtures on the HX 9 hydraulic connection plate. (HX 11) MS_Q0035 **Options:** Pipe cover: package HX 25 (for MS 24 (FF) and 24 MI (FF)) provides a perfectly neat finish under the boiler	**HX 18** MS_Q0051 **HX 19** MS_Q0049 **HX 20** MS_Q0050

(1) In this case, the connection between the boiler and this kit should be done by the installer

REPLACING AN EXISTING BOILER ⚠ Concerns only MS 24 MI (FF) boilers

Packages to order in all cases \ For boiler type	De Dietrich City Aquatronic, Citadine	Other boilers
Replacement kit	**HX 16** Comprising: • The height adjustment frame • The hydraulic connection pipes MS_Q0045B	**HX 17** Comprising: • The water and gas connection hoses MS_Q0027
Options	Pipe cover: package HX 25	

OTHER BOILER OPTIONS

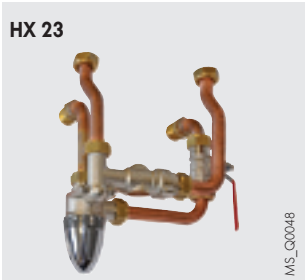


DHW expansion vessel for MS 24 BIC (FF) - Package HX 26

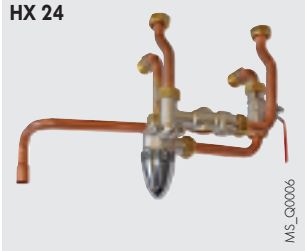
This prevents water losses due to expansion during reheating of the domestic hot water tank.

Capacity: 2 litres

HX 23

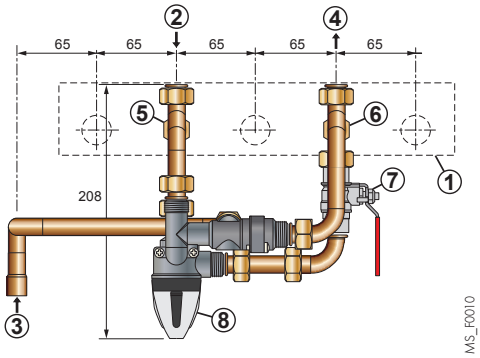


HX 24



Hydraulic connection kit for a solar circuit with directional thermostatic valve
(for MS 24 MI (FF) only)
Package HX 23, for connection to HX 9 plate
Package HX 24, for direct connection to boiler outlets

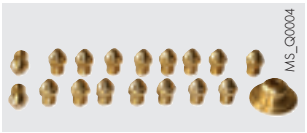
This kit comprises the series of pipes needed to connect the boiler to a solar DHW tank and includes the directional thermostatic valve and the cold water isolating valve. It is used to combine a solar system with a boiler with micro-storage DHW production and, therefore, control of the solar DHW circuit according to the user's needs (see example p. 14).



① Hydraulic connection plate for boiler
② Hot water inlet from the boiler
③ Hot water inlet from the solar tank, int. Ø 16 mm (pipe not provided with HX 23)
④ Cold water inlet from the boiler
⑤ Domestic hot water flow G 1/2
⑥ Domestic hot water inlet G 1/2
⑦ Cold water inlet isolation valve
⑧ Directional thermostatic valve

Filling kit with pressure gauge - Package HX 27

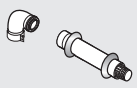
Is connected between the heating flow valve at one end and the domestic cold water inlet on the boiler's hydraulic connection plate.



Propane conversion kit
- For MS 24 (FF) and MS 24 MI (FF) - Package HX 28
- For MS 24 BIC (FF) - Package HX 29

FLUE SYSTEM ACCESSORIES SPECIFIC TO MS... FF (see the various configurations p.13)

DY 908



DY 736

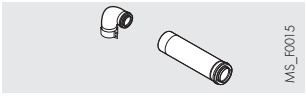
DY 909

DY 910

Aluminium horizontal flue gas terminal Ø 60/100 mm – Package DY 908
Aluminium horizontal flue gas terminal Ø 80/125 mm – Package CX 119
Aluminium vertical flue gas terminal Ø 80/125 mm – Package DY 735 (black) or DY 736 (red)
Aluminium adapter/condensates recuperator Ø 60/100 to 80/125 mm – Package DY 909
Aluminium condensates recuperator Ø 60/100 - Package DY 910

Bi-flow boiler connection kit - Package HX 30

Used to connect the chimney in configuration C_{52}. (see page 13).



Kit for connection to 3 CE pipe Ø 60/100 mm – Package DY 911

If connecting to a 3 CE pipe, use package DY 911 shown opposite.

INFORMATION REQUIRED FOR INSTALLATION

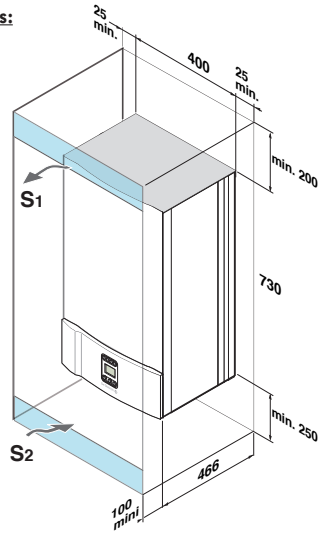
Statutory instructions on installation and maintenance

Installation and maintenance of the appliance, whether in a residential building or in a building open to the public, must be carried out by a qualified professional in compliance with the statutory texts and codes of practice in force.

Implantation

Installation must be done in accordance with the prevailing codes of practice, orders and standards.
MS boilers can be installed at any point in a housing unit (even on a balcony) protected from frost, which can be ventilated. They must in no event be installed above a heat source or a cooking appliance. The IPX5D protection rating means that they can be installed in a kitchen or bathroom. The wall to which the boiler is secured must be capable of bearing the weight of the boiler when full of water. In order to ensure adequate accessibility around the boiler, we recommend that you respect the minimum dimensions given opposite.

Minimum dimensions:



MS_F0007A

Ventilation
(MS 24, MS 24 MI and MS 24 BIC only)

This must comply with prevailing regulations.

In order to avoid damage to boilers, it is necessary to prevent the contamination of combustion air by chloride and/or fluoride compounds, which are particularly corrosive.
These compounds are present, for example, in aerosol spray cans, paints, solvents, cleaning products, washing powders/liquids, detergents, glues, snow clearing salts, etc.

It is therefore necessary:
- To avoid taking in air discharged from premises using such products: hairdressers, dry cleaners, industrial premises (solvents), premises containing refrigeration systems (risk of leaking refrigeration fluid), etc.
- To avoid the storage of such products close to the boiler.

Please note that, if the boiler and/or its peripherals become corroded by chloride and/or fluoride compounds, our contractual warranty cannot be invoked.

Gas connection

Compliance with prevailing instructions and regulations is mandatory. In all cases, a sectional valve is fitted as close as possible to the boiler. This valve is delivered pre-fitted to the hydraulic connection plate delivered with MS boilers. A gas filter must be fitted to the boiler inlet.

Gas supply pressure:
- 20 mbar on natural gas H, 25 mbar on natural gas L,
- 37 mbar on propane.

Electrical connection

MS… boilers are delivered pre-fitted with a mains connection cable. The electrical connection must comply with the relevant standard. The boiler must be powered by an electrical circuit comprising an omnipolar switch with an opening gap > 3 mm. Protect the connection to the mains with a 6A fuse.

Note:
- The sensor cables must be separated from the 230 V circuits by at least 10 cm;
- In order to protect the pump antifreeze and cleaning functions, we recommend not switching off the boiler at the mains switch.

Hydraulic connection

MS boilers must only be used in closed circuit heating installations. The central heating systems must be cleaned to eliminate the debris (copper, strands, brazing flux) linked to the installation of the system and deposits that can cause malfunctions (noise in the system, chemical reaction between metals). More particularly, if a boiler is added to an existing installation, it is necessary to rinse this installation thoroughly to prevent sludge being transferred into the new boiler. Furthermore, it is important to protect central heating systems against corrosion, scaling and microbiological growth by using a corrosion inhibitor suitable for all types of system (steel, cast iron radiators, underfloor heating, PER) The treatment products used in the heating water must be approved.

INFORMATION REQUIRED FOR INSTALLATION

Flue gas duct (MS 24, MS 24 MI, MS 24 BIC chimney version only)

The cross-section of the chimney flue must be at least equal to that of the boiler's flue gas nozzle. The connection between the nozzle on the boiler and the chimney flue must be as short and as direct as possible. Its cross-section must not be smaller than that of the nozzle on the boiler.

Air/flue gas connection (MS 24 FF, MS 24 MI FF and MS 24 BIC FF only)

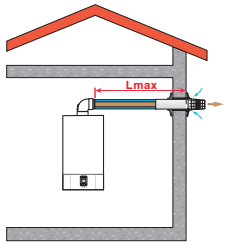
For the installation of the air/flue gas pipes and the rules on installation, see the «Flue Systems» booklet. For details of the various configurations, see the «Flue Systems» booklet or the current Price Catalogue.

Classification

MS... FF wall-hung gas boilers are forced flue appliances to be connected according to one of the following suggested configurations:

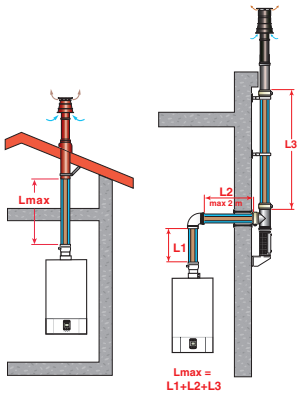
Configuration C_{12x}

Lmax (m)	Ø 60/ 100 mm	Ø 80/ 125 mm
MS... FF	4	10



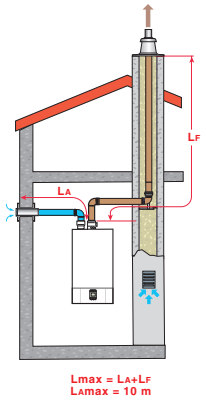
Configuration C_{32x}

Lmax (m)	Ø 80/ 125 mm on roof	Ø 80/ 125 mm moun. outd.
MS... FF	9	7



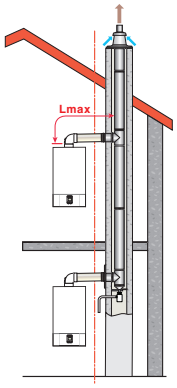
Configuration C_{52}

Lmax (m)	Ø 80 mm
MS... FF	30



Configuration C_{42x}

Lmax (m)	Ø 60/100 mm
MS... FF	4



MS_F0014A

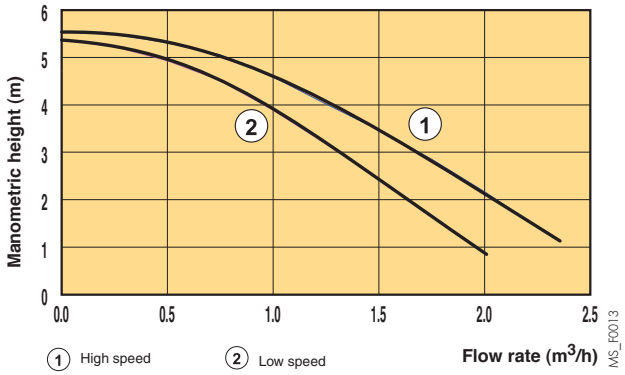
All flue systems accessories

Package No.	Description	Ø (mm)	Material
DY 908	Horizontal forced flue	60/100	Alu
CX 119	Horizontal forced flue L = 730 mm	80/125	Alu/Alu
DY 909	Adapter condensates recuperator	60/100 to 80/125	Alu
DY 746	Extension L = 250 mm	60/100	Alu/Alu
DY 652	Extension L = 500 mm	60/100	Alu/Alu
DY 653	Extension L = 1000 mm	60/100	Alu/Alu
DY 654	Extension L = 1950 mm	60/100	Alu/Alu
DY 655	87° elbow	60/100	Alu/Alu
DY 656	45° elbow (2 pieces)	60/100	Alu/Alu
DY 910	Condensates recuperator	60/100	Alu
DY 659	Compensation sleeve	60/100	Alu/Alu
DY 660	Inspection T	60/100	Alu/Alu
DY 11	Horizontal roof outlet for a slope of 30° to 45° (for mechanical tiles only)	100 to 150	
CX 49	Roof outlet for a slope of 40° to 55° (for mechanical tiles only)	100 to 150	
DY 166	Protection basket	60/100	Stainless steel
DY 865	Protection basket	80/125	Stainless steel
CX 118	Fastening collar short lug	125	
CX 79	Fastening collar long lug	125	
DY 735	Vertical forced flue black	80/125	Alu/Alu
DY 736	Vertical forced flue red	80/125	Alu/Alu
DY 60	Installation kit for external mounting	80/125	Alu/PPS
DY 51	Water tightness clamp for outside mounting	125	
CX 66	Concentric extension L 1000 mm	80/125	Alu/Alu
CX 65	Concentric extension L 500 mm	80/125	Alu/Alu
CX 66	Concentric extension L 1000 mm	80/125	Alu/Alu
CX 93	Concentric extension L 2000 mm	80/125	Alu/Alu

Package No.	Description	Ø (mm)	Material
CX 76	87° elbow	80/125	Alu/Alu
CX 68	45° elbow (2 pieces)	80/125	Alu/Alu
CX 67	Compensation sleeve 50 to 250 mm	80/125	Alu/Alu
CX 120	Flue tile 5 to 25° red	141	
CX 121	Flue tile 5 to 25° black	141	
CX 52	Flue tile 25 to 45° black	141	
CX 63	Flue tile 35 to 55° black	141	
CX 83	Flue tile 25 to 45° red	141	
CX 84	Flue tile 35 to 55° red	141	
CX 51	Water tightness bed plate for flat roof	135	
CX 72	Internal finishing plate		
HX 30	Bi-flow adapter	60/100 to 2 x 80	Alu
DY 38	Outside air intake L = 500 mm	80	Alu
DY 711	Chimney connection kit	80	Alu
DY 604	Extension L = 250 mm (2 pieces)	80	Alu
DY 605	Extension L = 500 mm (2 pieces)	80	Alu
DY 606	Extension L = 1000 mm (2 pieces)	80	Alu
DY 607	Extension L = 1950 mm (2 pieces)	80	Alu
DY 600	Inspection pipe	80	Alu
DY 608	87° elbow	80	Alu
DY 609	45° elbow (2 pieces)	80	Alu
DY 738	Inspection T	80	Alu
DY 151	Centering star (2 pieces)	80	
DY 35	External ventilation screen 175 cm^2		
DY 36	Internal ventilation screen 175 cm^2		
DY 185	Air/flue gas vent with flashing	80	
DY 911	Boiler connection kit on 3CE conduit	60/100	Alu

INFORMATION REQUIRED FOR INSTALLATION

Manometric height of the heating circulator pump fitted to MS boilers (Grundfos UPO 15-50 type pump)



Specifications of the expansion vessel fitted to MS boilers:

• MS 24 (FF), 24 MI (FF): 6-l vessel, initial pressure 1 bar

Vessel pressure (bar)	0.5	0.6	0.7	0.8	0.9	1.0
Volume of the installation (l)	110	105	95	86	78	70

• MS 24 BIC (FF): 7.5-l vessel, initial pressure 1 bar

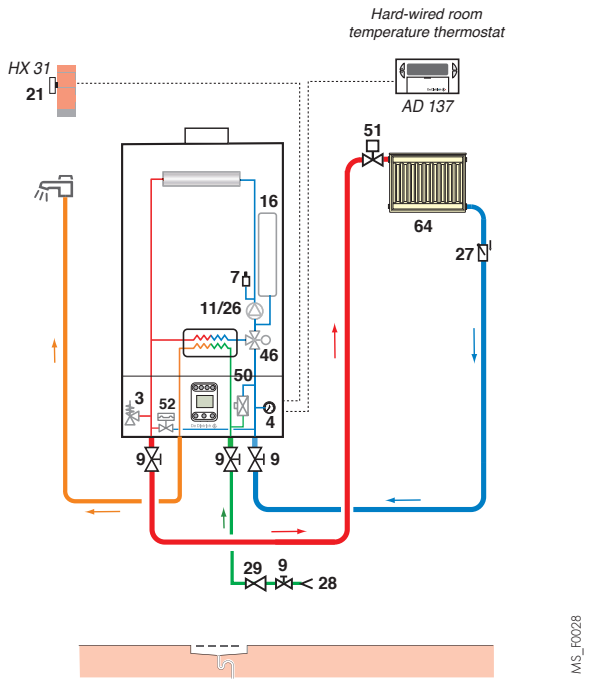
Vessel pressure (bar)	0.5	0.6	0.7	0.8	0.9	1.0
Volume of the installation (l)	135	130	120	105	95	85

INSTALLATION EXAMPLES

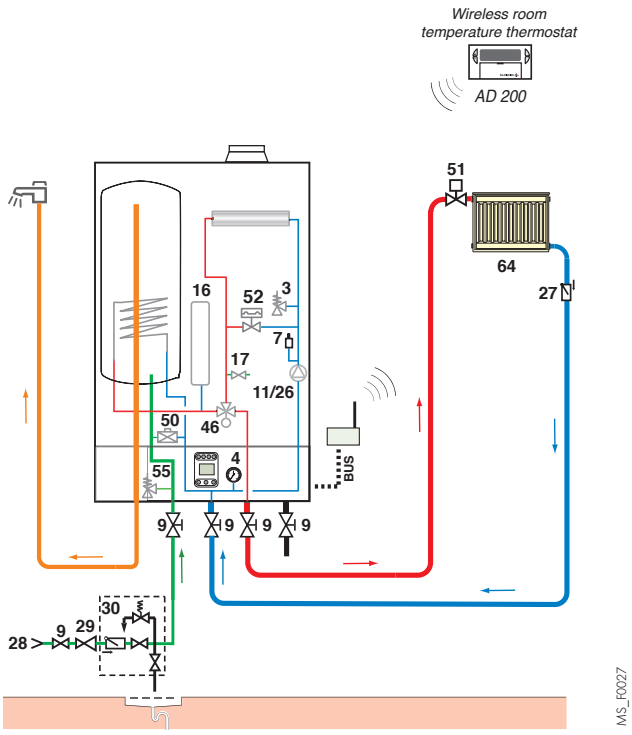
The examples presented below cannot cover the full range of installation scenarios which may be encountered. Their purpose is to draw your attention to the basic rules to be followed. A certain number of control and safety devices (some of which are already integrated as standard in MS boilers) are represented but it is ultimately up to the installers, experts, consultant engineers and design departments to take the final decision on the safety and control devices to be used in the boiler room according to its specificities. In all cases, it is necessary to abide by the codes of practice and prevailing regulations.

Attention: For the connection of domestic hot water, a sleeve made of steel, cast iron or any other insulating material must be interposed between the hot water outlet and these pipes to prevent any corrosion to the connections, if the distribution pipes are made of copper.

MS 24 MI (FF) with 1 direct circuit, controlled by 1 room temperature thermostat + outside sensor

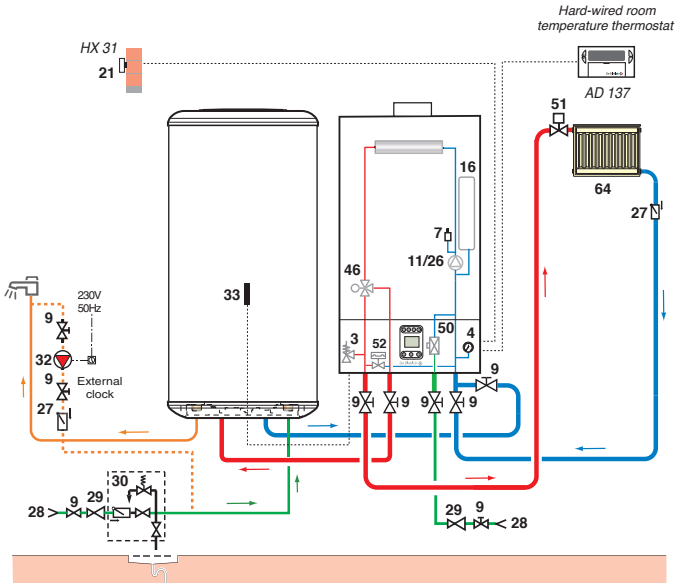


MS 24 BIC with 1 direct circuit, controlled by a wireless room temperature thermostat



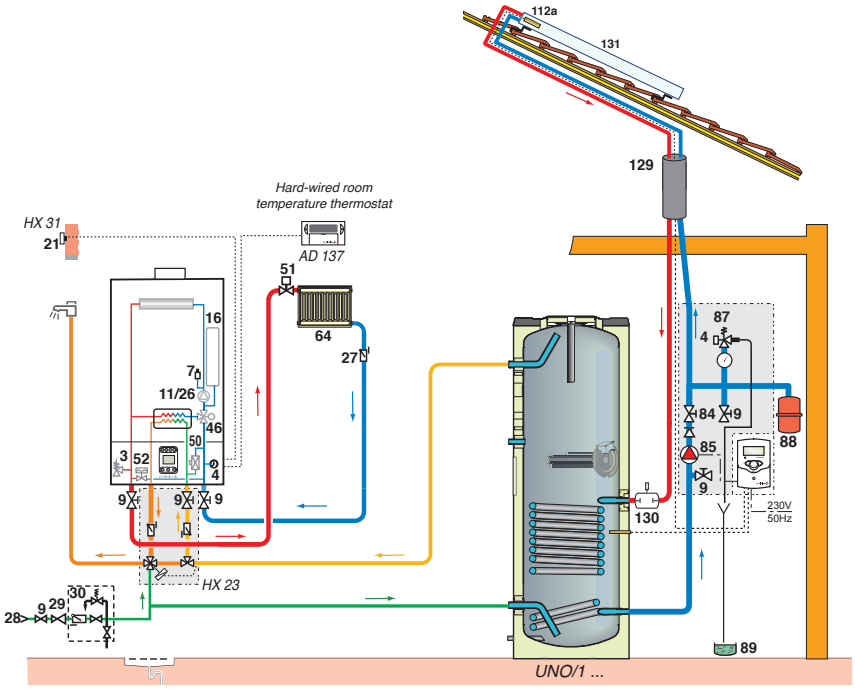
INFORMATION REQUIRED FOR INSTALLATION

MS 24 (FF) + BMR 80 with 1 direct circuit + 1 domestic hot water circuit, controlled by a hard-wired room temperature thermostat + outside sensor



MS_F0025

MS 24 MI (FF) with 1 direct circuit, connected to a solar system, controlled by a hard-wired room temperature thermostat + outside sensor



MS_F0026

3 3-bar heating safety valve
4 Pressure gauge
7 Automatic air vent
8 Manual air vent
9 Isolation valve
10 3-way mixing valve
11 Heating pump
16 Expansion vessel
17 Drain cock
21 Outside sensor
26 Domestic water load pump
27 Non-return valve
28 Domestic cold water inlet
29 Pressure reducer
30 Sealed safety device calibrated to 7 bar
32 (Optional) DHW looping pump
33 DHW temperature sensor
46 2-position 3-way directional valve
50 Disconnector
51 Thermostatic valve
52 Differential safety valve
55 DHW safety valve calibrated and sealed to 7 bar
64 Radiator circuit
(gentle heat radiators, for example)
84 Stop cock with unlockable non-return valve
85 Primary solar circuit pump
87 Safety valve calibrated to 6 bar
88 Expansion vessel solar circuit
89 Container for heat-carrying fluid
112a Solar collector sensor
129 Duo-tubes
130 Degasser with manual vent (Airstop)
131 Collector field

TECHNICAL DESCRIPTION

ZENA MS...

Brand: De Dietrich
Gamme: ZENA
Range:
- MS 24 (FF) for heating only with integrated heating/DHW reversal valve
- MS 24 MI (FF) for heating and micro-storage DHW
- MS 24 BIC (FF) for heating and DHW by integrated 40-l tank
- MS 24 (FF) + BMR 80 / + SR 130 for heating and DHW by 80-l juxtaposed tank / 130-l tank placed under the boiler

Nominal heating output at 80/60°C: 24 kW
Min. heating output at 80/60°C: 9.3 kW (10.4 kW BIC)
Gas used: Natural gas L - H, propane
Gas pressure: _____ mbar
Gas flow rate: _____ m^3/h
Max. operating temperature: 85°C
Max. operating pressure: 3 bar
Water content: 3.5 litres
Safety thermostat: 105°C
Dimensions: L x W x D
- MS 24 (FF), MS 24 MI (FF): 400 x 730 x 299 mm
- MS 24 BIC (FF): 600 x 950 x 466 mm

Gas inlet: int. ø 18 mm or G 3/4*
ø Heating flow/return: int. ø 18 mm or G 3/4*
ø DHW flow/return: int. ø 16 mm or G 1/2*
ø chimney flue gas nozzle: 125 mm
ø air/flue gas FF: 60/100 mm
Shipping weight: _____kg

* Depending on the type of hydraulic connection kit

DESCRIPTION

- Complies with the requirements of European Directives
- Homologation: B_{22}-C_{12x}-C_{32x}-C_{42x}-C_{52}-C_{82x} (FF versions)
- Type: B_{11BS} («chimney» versions)
- Chimney and forced flue model
- Protection rating IPX5D
- 3-star efficiency level (93%) in accordance with 92/42/EEC for the FF versions
- Heating body in finned copper
- Modulation from 9.3 (10.4) to 24 kW
- 6-litre expansion vessel (7.5-litre for BIC)
- Integrated flow/return by-pass
- Ignition and flame monitoring by ionisation electrode
- LCD control panel, troubleshooting system
- Mechanical pressure gauge and low water pressure switch
- Control according to outside conditions available as optional
- Hydroblock in brass (MS 24 (FF)), composite material (MS 24 MI (FF) and MS 24 BIC (FF))
- Full equipment: safety valve, 2-speed circulating pump, disconnector, automatic vent
- MS 24 MI (FF):
  - Over-sized plate exchanger for the preparation of domestic hot water
  - 3-star DHW performance in accordance with EN 13 203
  - Specific flow rate at Δt 30 K: 12 l/min
- MS 24 BIC (FF):
  - Stainless steel 40-litre stratification tank combined with a plate exchanger, a DHW pump and a heating/DHW reversal valve
  - 3-star DHW performance in accordance with EN 13 203
  - Specific flow rate at Δt 30 K: 17.7 l/min

Hydraulic connection accessories and options

(to be chosen depending on whether it is a standard new installation, with mounting column, or replacement of an existing boiler (only for MS 24 MI (FF)):
- Complete hydraulic connection plate
- Complete hydraulic connection kit
- Basic hydraulic kit
- Height adjustment frame
- Pipe cover
- Replacement kit

Boiler options

- Propane conversion kit
- Filling kit with pressure gauge
- DHW expansion vessel (for MS 24 BIC (FF))
- Kit for hydraulic connection to a solar circuit with directional thermostatic valve (for MS 24 MI (FF))

Flue system options for MS... FF

- Aluminium horizontal flue gas terminal ø 60/100 mm
- Aluminium horizontal flue gas terminal ø 80/125 mm
- Aluminium vertical flue gas terminal ø 80/125 mm
- Aluminium adapter/condensates recuperator ø 60/100 to 80/125 mm
- Condensates recuperator ø 60/100 mm
- Bi-flow connection kit
- Kit for connection to 3 CE pipe ø 60/100 mm

Control system options

- Non-programmable room temperature thermostat
- Programmable hard-wired or radio-controlled room temperature thermostats
- Outside sensor
- DHW sensor

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