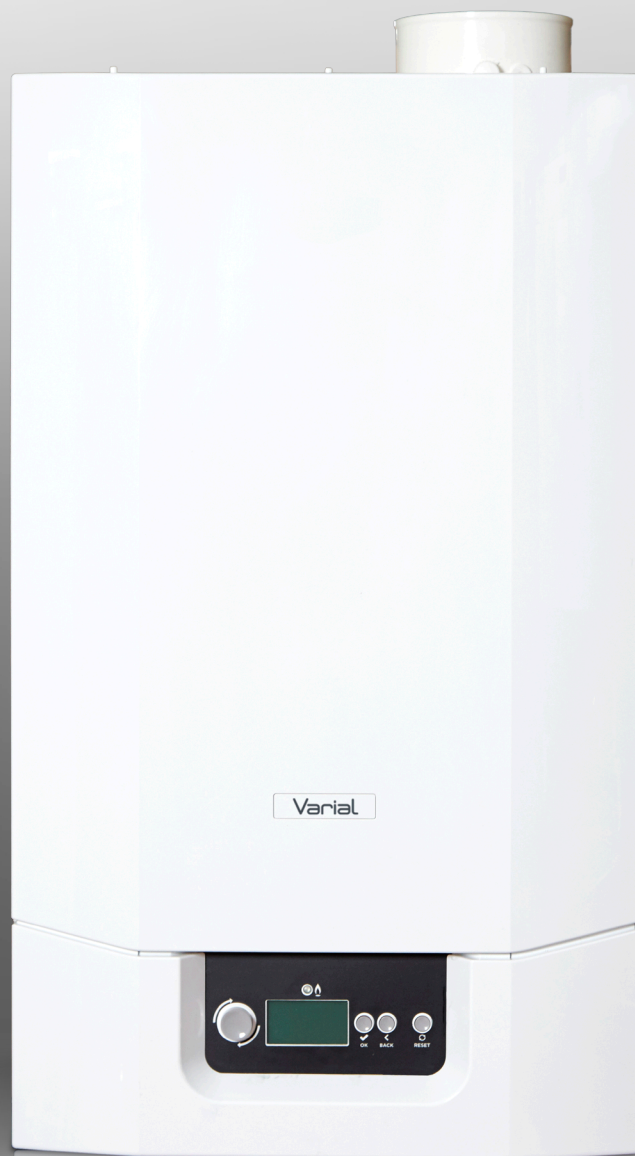


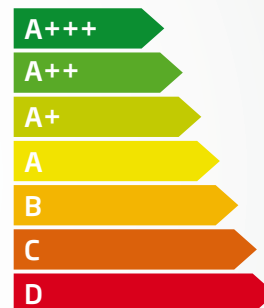
# VARIAL

WALL MOUNTED CONDENSING HOT WATER BOILER



40 - 160 kW

**erensan**<sup>o</sup>



Only for Models 40 and 60

## VARIAL

Natural Gas Fired Models: 40, 60, 80, 100, 120, 160

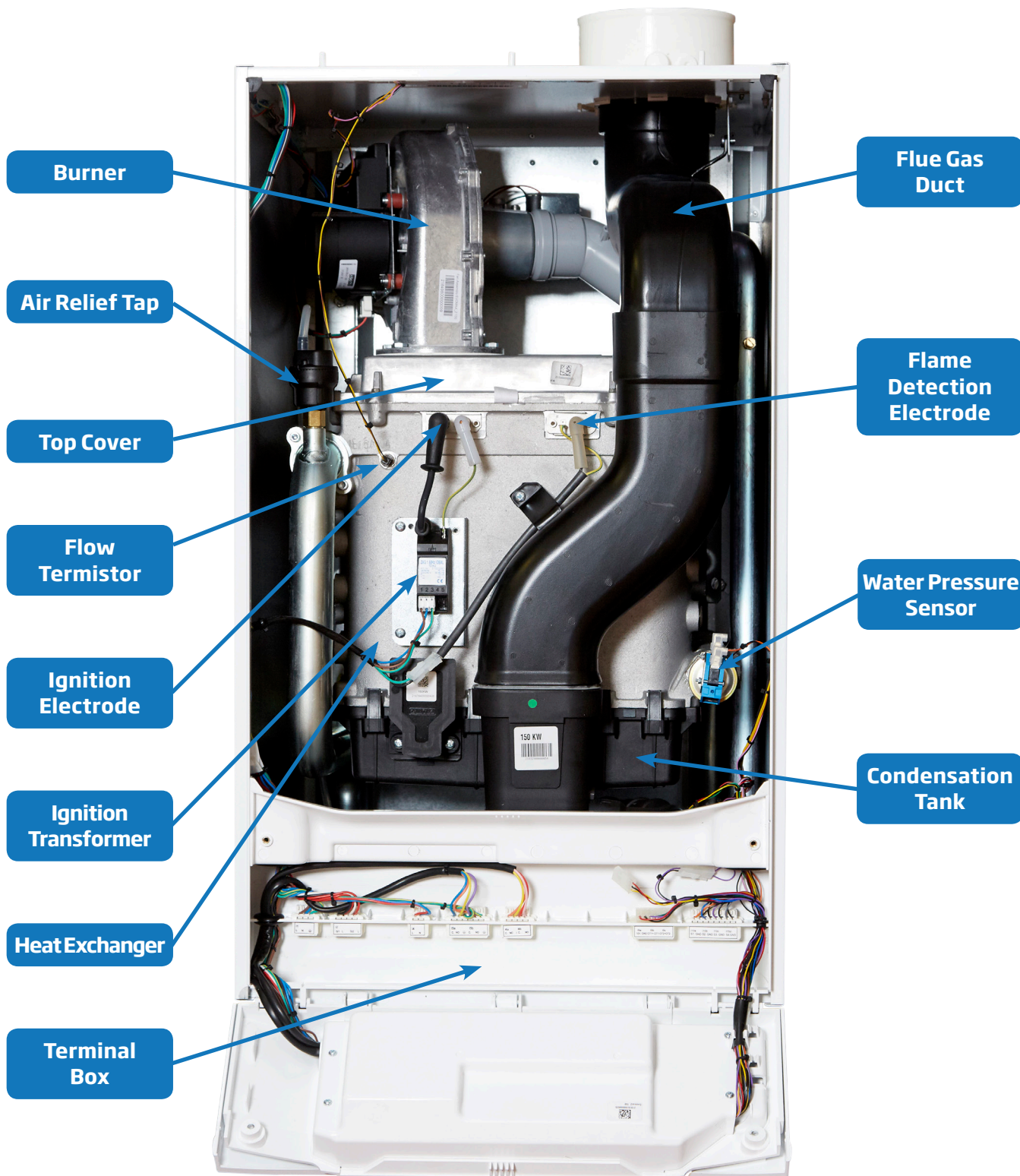
### Gas Fired Wall Mounted Condensing Hot Water Boiler

#### FEATURES

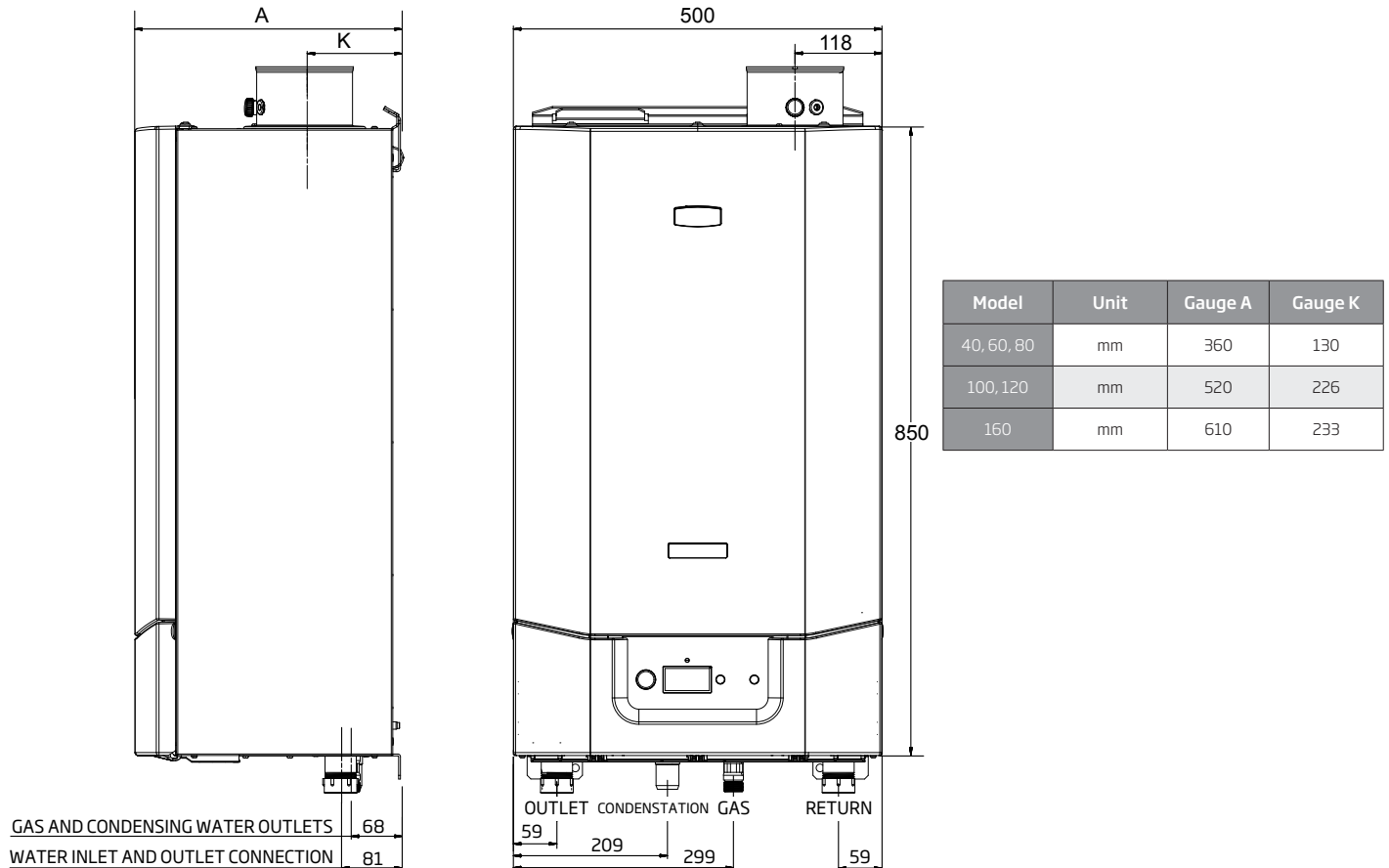
- \* High and fast heat transfer with aluminium cast heat exchanger
- \* Compliant with the energy efficiency directive (ErP)
- \* Wide modulation range (1: 5)
- \* Efficiency up to 99.6% at full load and 110% at partial load
- \* NOx emission class 6 (NOx <40 mg/kWh)
- \* Easy to use Turkish control menu
- \* Possibility of connecting up to 16 boilers in cascade
- \* Easy service and maintenance by removing panels on three sides
- \* Internal flue gas flap
- \* Internal check valve
- \* Suitable for hermetic and ordinary chimneys

**VARIAL** wall-mounted condensing boilers are designed to meet all kinds of heating and hot water preparation demands. High performance and efficiency, economic operation and environmental friendliness of the boiler are the main features of **VARIAL** boiler. Thanks to its physical structure, it saves space and offers both fast and easy assembly with its wide accessories.

## VARIAL Boiler Components



## Dimensions



## Boiler Dismantling

<p><b>1</b></p>	<p><b>2</b></p>	<p><b>3</b></p>	<p>* Easy service and maintenance by removing the front and side panels</p> <p>* Respectively;</p> <p>1- Burner, smoke flue, condensation drain, burning and temperature control elements</p> <p>2- Gas pipe and return sensors</p> <p>3- Heat exchanger and return pipes can be removed</p>
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## Equipment


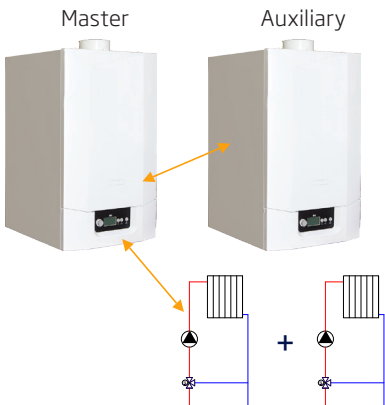

Standard Equipment	
Boiler	VARIAL
Remote monitoring for operation and breakdown reporting	<input checked="" type="checkbox"/>
Running hours	<input checked="" type="checkbox"/>
Temperature request with 0-10 V signal	<input checked="" type="checkbox"/>
Wall mounting apparatus	<input checked="" type="checkbox"/>
Pump overrun protection	<input checked="" type="checkbox"/>
User-friendly panel setting	<input checked="" type="checkbox"/>
Illuminated, easy to understand, 5-line user interface	<input checked="" type="checkbox"/>

Optional Equipment	
Boiler	VARIAL
Hydraulic kit	<input checked="" type="checkbox"/>
Cascade control kit	<input checked="" type="checkbox"/>
External module kit	<input checked="" type="checkbox"/>
Room thermostat kit	<input checked="" type="checkbox"/>
Automation sensors (outside air, immersion and surface)	<input checked="" type="checkbox"/>
0-10 V control kit for external pumps	<input checked="" type="checkbox"/>
Neutralization kit	<input checked="" type="checkbox"/>
Chimney connection kits	<input checked="" type="checkbox"/>

## Control Systems

Hydraulic Circuit Configuration	Diagram	Optional Accessories
<p><b>1 x Boiler</b></p> <p><b>1 x Direct Heating circuit and 1 x Hot water preparation circuit</b></p>		<p>1 x outdoor air sensor 1 x immersion sensor (boiler)</p>
<p><b>1 x Boiler</b></p> <p><b>2 x Direct Heating circuit and 1 x Direct Heating circuit and 1 x Hot water preparation circuit 2 x Mixture circuit</b></p>		<p>* 1 x cascade communication module (for the adaptation of external mixture circuit module) * 1 x mixture circuit * 1 x outdoor air sensor * 1 x immersion sensor (boiler) * 2 x mixture circuit</p>

## Control Systems

Hydraulic Circuit Configuration	Diagram	Optional Accessories
<p>Cascade management system</p>		<p>* 1 x cascade communication module per boiler  <b>(Possibility of connecting up to 16 boilers in cascade)</b>                      * 1 x outdoor air sensor                      * 1 x immersion sensor (cascade)</p>
<p>Cascade management system 2 x mixture sensor</p>		<p>* 1 x cascade communication module per boiler  <b>(Possibility of connecting up to 16 boilers in cascade)</b>                      * 1 x mixture sensor</p>
<p>Cascade management system with remote 0-10v signal</p>		<p>* It is not necessary</p>

## Technical Specifications (Natural Gas)

		Models						
		Unit	40	60	80	100	120	160
<b>Thermal Values</b>								
Nominal capacity (80-60 °C)	Maximum	kW	40	60	80	100	120	150
	Minimum		8	12	16	20	24	30
Nominal capacity (50-30 °C)	Maximum	kW	42	63,5	84,4	103,9	124,7	158
	Minimum		8,5	12,7	17,2	21,6	26	32,5
Efficiency (80-60 °C)		%	99,4	99,6	99	98,2	98	98,2
Efficiency (50-30 °C)		%	103,9	104,6	103,1	101,4	101,5	102,3
Efficiency at 30% load (Td***=30 °C)		%	108,5	108,7	110	109,4	109,4	109,4
Seasonal efficiency		%	96,2	96,4	97,2	96,7	96,6	96,7
Maximum operating temperature		°C	85					
ErP class		A, B, C...	A		-			
<b>Combustion values</b>								
Fuel			Natural gas					
Fuel type			2H - G20					
Burner type			Premix					
Gas inlet pressure	Natural gas	mbar	20					
Gas flow rate	Natural gas	m <sup>3</sup> /h	4,3	6,4	8,7	10,8	13,0	16,2
Modulation ratio			1:5					
Flue gas flow rate	Maximum	m <sup>3</sup> /h	54,05	80,65	110,10	140,50	173,33	210,70
Flue gas temperature (80-60 °C)		°C	64,6	58,5	70,50	68,20	55,9	78,10
Flue gas pressure	Nominal/Partial	Pa	319 / 16,5	155 / 16,6	218 / 10,51	192 / 7,6	387 / 19	380 / 16,5
Emission class			6					
NOx		mg/kWh	< 40					
CO <sub>2</sub> (±%0,5)	Maximum	%	10,20	9,40	9,30	9,40	9,62	9,44
	Minimum	%	8,60	8,60	8,70	8,60	8,98	8,51
Chimney type			C23, C23p, C13, C33, C53 *					
Nominal flue gas adapter diameter (concentric)		mm	80/125**			100/150		
<b>Hydraulic and mechanical values</b>								
Operating pressure		bar	6					
Gas inlet adapter diameter		inç	R 3/4"					
Water outlet adapter diameter		inç	R 1 1/4"					
Water return adapter diameter		inç	R 1 1/4"					
Condensate discharge adapter diameter		mm	25					
Water volume		lt	3,0	5,0		7,0		9,2
<b>Electricity values</b>								
Electricity supply		V - Hz.	230 - 50					
Power consumption		W	138	82	149	187	243	240
Electrical protection class			IPX4D					
<b>Volume values</b>								
Width x Height x Depth		mm	500 x 850 x 360			500 x 850 x 520		500 x 850 x 610
Dead weight		kg	47,5	57,5		73,0		81
Packed weight		kg	53,5	63,5		80,0		88

\* See the section "Chimney Kits" on page 10 and 11 for details

\*\* Optional kit available for 100 / 150mm on 60 and 80 models

\*\*\* Td= water return temperature

## Water Flow Rate and Hydraulic Resistances

Flow rates and hydraulic losses in the boiler according to the water flow and return temperature differences are given in the following table

ΔT	11 °C	15 °C	20 °C	25 °C	30 °C	11 °C	15 °C	20 °C	25 °C	30 °C
Model	Water Flow Rate (l/min)					Hydraulic Resistance (mbar)				
40	52,1	38,2	28,7	23,9	19,1	875	405	225	163	100
60	78,2	57,3	43,0	35,9	28,7	435	180	83	57	30
80	104,2	76,4	57,3	47,8	38,2	750	420	180	125	70
100	-	95,6	71,7	59,8	47,8	-	315	134	97	60
120	-	-	86,0	71,7	57,3	-	-	218	149	80
160	-	-	107,5	89,6	71,7	-	-	230	158	85

### IMPORTANT NOTE:


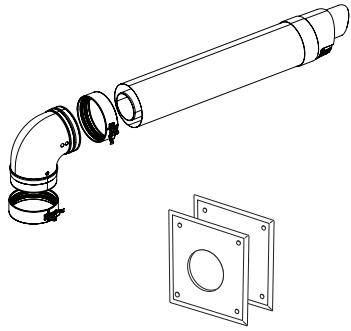
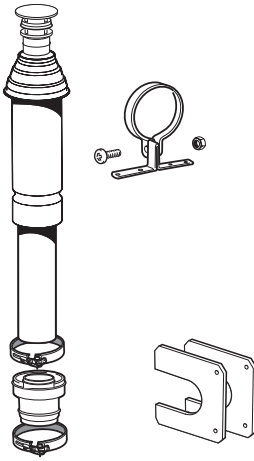
Temperature difference should be 11 °C and 30 °C for Models 40, 60 and 80.

Temperature difference should be 15 °C and 30 °C for Model 100.

Temperature difference should be 20 °C and 30 °C for Models 120 and 160.

## Chimney/Flue Kits

### Individual Chimney/Flue Connection Kits (Optional):

B Type	C Type (C13)	C Type (C33)
		
<p><b>Normal chimney kit (B23/B23P):</b></p> <ul style="list-style-type: none"> <li>* 80 / 125mm for 40-80 models</li> <li>* 100 / 150mm for 100 and 160 models</li> <li>* The kit includes: air inlet grille, 2 x extension pieces - at least 1 extension piece should be used.</li> </ul>	<p><b>Horizontal chimney kit (C13):</b></p> <ul style="list-style-type: none"> <li>* 80/125mm for 40-80 models</li> <li>* 100/150mm for 100 and 160 models</li> <li>* It can be increased to 100 / 150mm for 60 and 80 models.</li> <li>* Kit scope: 1 x 90° elbow, 2 x clamps and 2 x wall plates</li> </ul>	<p><b>Vertical chimney kit (C33):</b></p> <ul style="list-style-type: none"> <li>* 80/125mm for 40-80 models</li> <li>* 100 / 150mm for 100 and 160 models</li> <li>* It can be increased to 100 / 150mm for 60 and 80 models.</li> <li>* Kit scope: clamp, 2 x connection plate and support</li> </ul>



**Cascade Chimney Connection Kits (Optional):**

B Type (B23)	
	<ul style="list-style-type: none"> <li>1- Termination lid</li> <li>2- Siphon / condensate trap</li> <li>3- Collector pipe Ø120mm</li> <li>4- Elbow (90 x 100)</li> <li>5- Adapter (only 80/125 flue gas kit)</li> <li>6- Extension piece (80 or 100)</li> <li>7- Air inlet grille</li> </ul>

<ul style="list-style-type: none"> <li>* B23 flue type</li> <li>* Internal flue gas flap</li> <li>* Cascade connection up to 6 boilers</li> <li>* Maximum total capacity 600 kW</li> <li>* Ø80mm for Models 40-80</li> <li>* Ø80mm for Models 100-150</li> </ul>

# VARIAL

Wall-Mounted Gas Fired  
Condensing Hot Water Boiler

**erensan**<sup>o</sup>