

# ADVECO

HOT WATER SPECIALISTS

## AD Water Heater Range



[www.adveco.co](http://www.adveco.co)

# Adveco AD Floor-Standing Water Heaters

The Adveco AD offers a range of floor-standing, high-efficiency condensing gas water heaters designed to provide a reliable way to meet large capacity, semi-instantaneous commercial domestic hot water (DHW) demands.

The AD range is ideal for soft water areas, providing quality and reliability you can trust for all your commercial DHW projects.

AD models are perfect for new building works as well as refurbishment projects from hotels and restaurants, to schools, hospitals, residential flats, leisure and wellness centres.

**Able to work in direct contact with mains water**

**Modern, innovative and attractive design**

**Appliances range from 70 kW to 280 kW**

**H2O%**



## FEATURE & BENEFITS

- High capacity semi-instantaneous and instantaneous production of domestic hot water
- Modern, compact floor standing arrangement
- Extremely high quality AISI 316Ti heat exchangers for lasting reliability and efficiency
- Multiple heat engines for improved efficiency and built-in redundancy (AD 140T, 210T, and 280T)
- High efficiency pre-mix burner provides large modulation range
- High maximum run pressure up to 11 bar
- Turndown ratio up to 1:20
- Low emissions, built with Class 6 technology for NO<sub>x</sub> at 27mg kWh
- Supports natural gas or LPG
- Acid condensate neutraliser included
- Integrated flue back preventer
- Flue gas non-return valve for overpressure cascade flue systems
- Standard flue systems using low cost 110-160 mm diameter PP
- 20% hydrogen blend compatible



## High Quality Manufacture

### Multiple heat exchangers from AD 140T and up

Combining two, three, or four load-balanced 70 kW heat engines within a single floor standing chassis ensures uniform wear and built-in redundancy as standard.

### Continuous non-welded run and large bore, three-pass design

Durable and corrosion resistant titanium-stabilised stainless steel construction provides high-capacity heat transfer, high flow rates, with minimal pressure loss and corrosion resistance. The unique, efficient three-pass design uses large bore, circular cross sections to reduce scale formation.

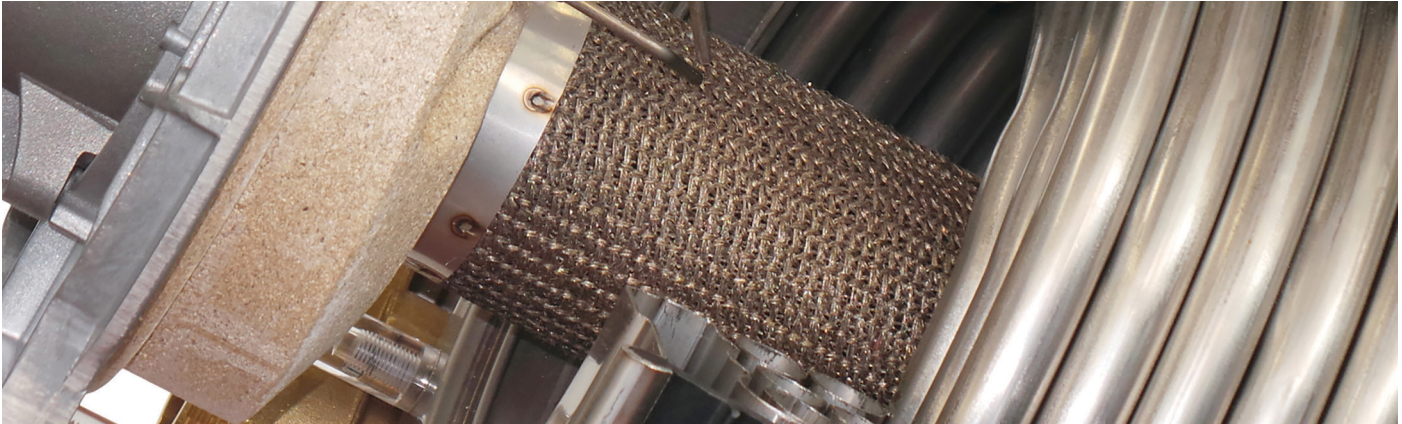
### Five-year heat exchanger and burner warranty

Peace of mind with long-term warranty from failure or manufacturing defect. Includes two year warranty for all parts and labour.



# AD water heaters feature AISI 316Ti titanium-stabilised stainless steel heat exchangers

## Optimal Efficiency For Improved Savings



The Ecologic premix burner, manufactured from high performance Fecralloy to deliver at very high temperatures, spreads short and perfectly nourished flames for high-efficiency combustion. This patented system, optimised through a constant air/gas ratio at each point of the turndown range, provides an exceptional 1:20 ratio (AD 280T).

High efficiency DHW is then maximised by guaranteeing the speed of the inlet water inside the heat exchanger. AD achieves this by regulating the correct water flow in accordance with inlet water hardness.

**106%** combustion efficiency  
Reduced energy costs via efficient use of fuel energy

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## The New Priority - Reducing Energy Used For DHW

Energy saving legislation and commercial building insulation techniques have significantly reduced heating demands, resulting in greater focus on the need to address fuel consumption and emissions generated by the production of hot water.

At the same time the popularity of high performance showers, cascade showers, jacuzzis, wellness and fitness centres, have driven up daily demands for year round hot water within the commercial sector.

The extremely efficient Ecologic pre-mix burner enables the AD range to achieve ideal combustion efficiency (106% net). Optimised burning reduces the amount of fuel consumed and minimises carbon and NO<sub>x</sub> emissions in the atmosphere.

The AD range also offers whisper quiet operation (70dB).

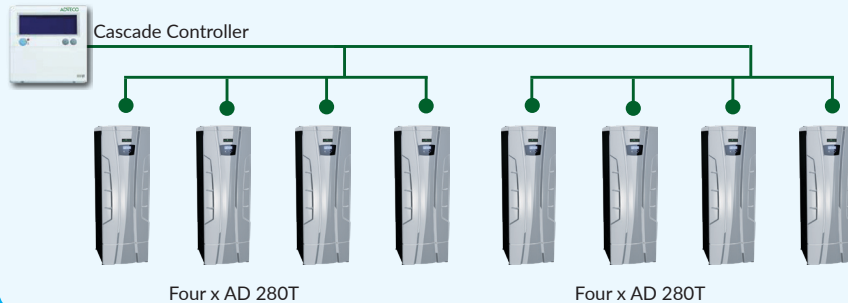


Low NO<sub>x</sub>  
**27**  
mg/kWh

Low CO  
**19**  
ppm

## AD in Cascade

Connect and control up to eight AD 280T units in cascade for 2352 kW



- Up to 1070 l/min of DHW at  $\Delta t$  30°C
- No framework requirement for immediate cost savings. Connect at a minimum of 10cm to occupy less plant room floor space
- Full temperature control and self-check maintenance functions

## Easy To Install & Maintain

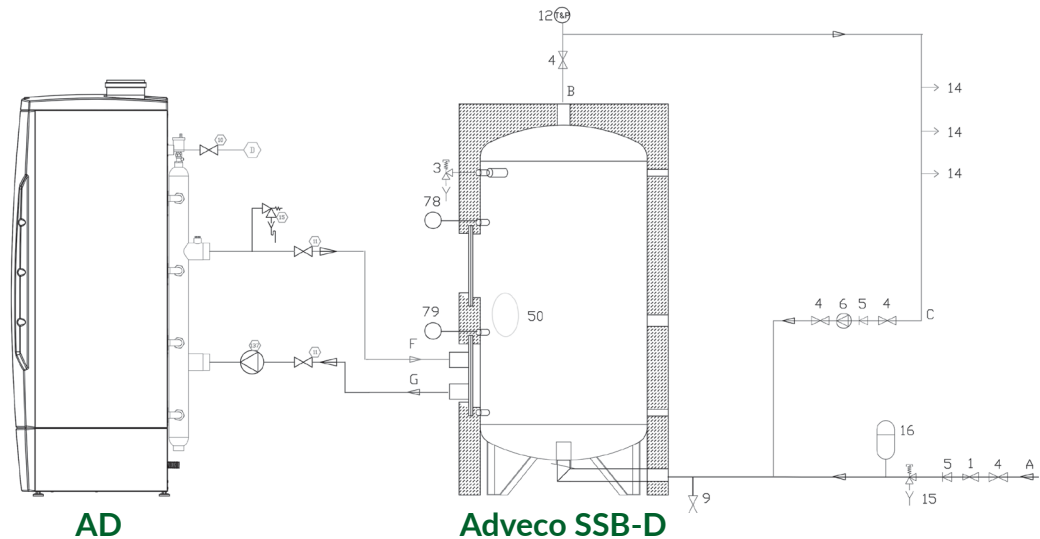
- Compact size and weight that will fit through a standard 65cm wide door
- Floor standing arrangement with adjustable feet
- No need for an expensive frame
- Full access from the front for easy maintenance
- Pre-wired terminal box for easy electrical connection of sensors, pumps and control boards
- Ideal for soft water applications. Hard water areas over 150ppm require use of a water softener down to 100ppm.

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## AD & Adveco SSB-D Buffer System

A system designed with AD and an Adveco 200 - 2500 litres capacity SBB-D buffer storage tank provides optimised DHW direct heating that utilises the AD to its full potential.

- Guarantees constant DHW with stable temperature even when making small withdrawals
- Higher availability of DHW during peak period withdrawals
- Reduces burner ignitions of small withdrawals, saving costs and reducing emissions
- The system satisfies both peak periods and continuous DHW demands

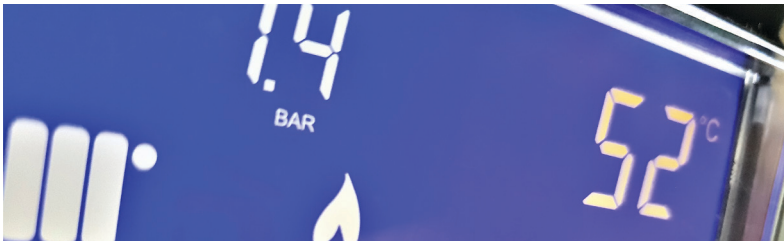




## Take Back Control Of Your Hot Water

The AD range's digital back-lit control panel provides an intuitive electronic temperature control, water flow monitoring and setting of correct water speed according to hardness, prolonging the life of the heat exchanger and efficiency of the system.

The control board also displays boiler phases and error messages.



## Seamless System Integration

With an optional 885IF interface, control of AD water heater is enabled through 0-10V analog signal, MODBUS digital signal or dedicated interface, that can be integrated to all devices with Lon-Works or BACnet protocol.

Perfect for commercial, industrial and apartment systems.

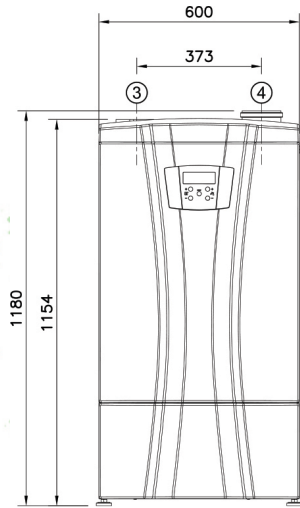
AD can be configured, monitored and remotely controlled to reduce energy consumption and lower the cost and frequency of maintenance visits.

## Control Board Management

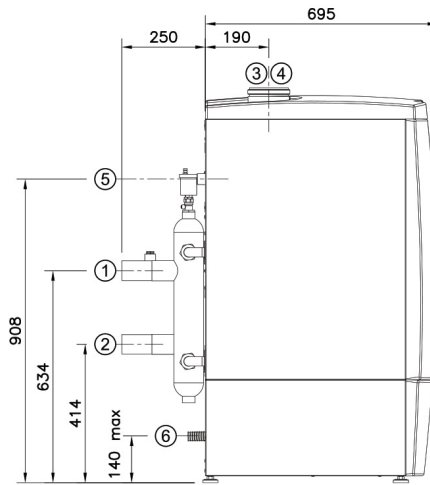
- Sanitary circuit pump
- Output modulation
- Monitor water flow in l/min
- Pump unlock system
- Auto diagnostic of all components and functions: visualisation of errors and lockouts, temperature sensors, ionisation current, fan rotation speed, water flow rate and water pressure
- Anti-freeze device
- Low water flow protection
- Low water pressure protection
- Flue blocked pressure switch

# AD Connections & Dimensions

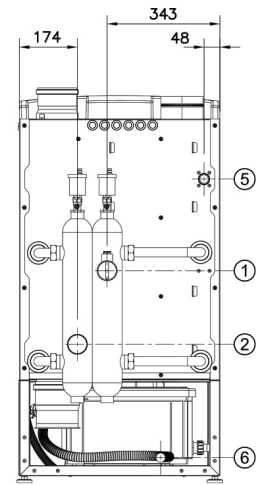
70T & 140T



FRONT VIEW



SIDE VIEW



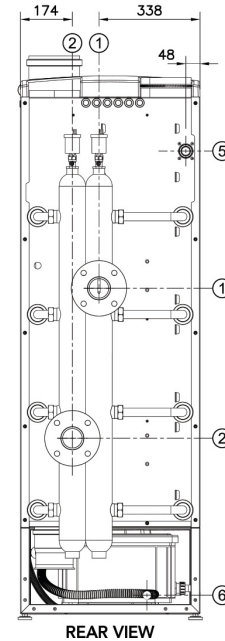
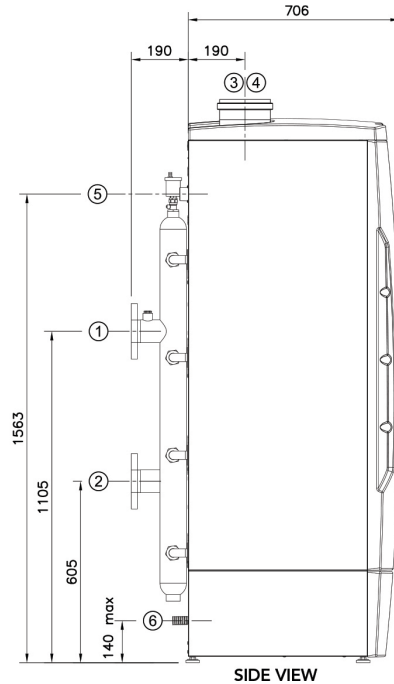
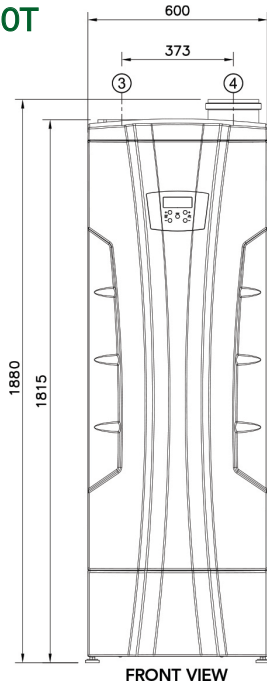
REAR VIEW

## Connections

Model	DHW Supply (1)	Cold Water Inlet (2)	Air Intake (3)	Flue Gas Outlet Exhaust (4)	Gas Inlet (5)	Condensate Drain (6)
70T	1 ½"	1 ½"	n/a	110 mm	1"	28 mm
140T	1 ½"	1 ½"	n/a	110 mm	1"	28 mm
210T	DN 65 PN 16	DN 65 PN 16	n/a	160 mm	1 ¼"	28 mm
280T	DN 65 PN 16	DN 65 PN 16	n/a	160 mm	1 ¼"	28 mm

Note fittings and flanges are not factory assembled

# 210T & 280T

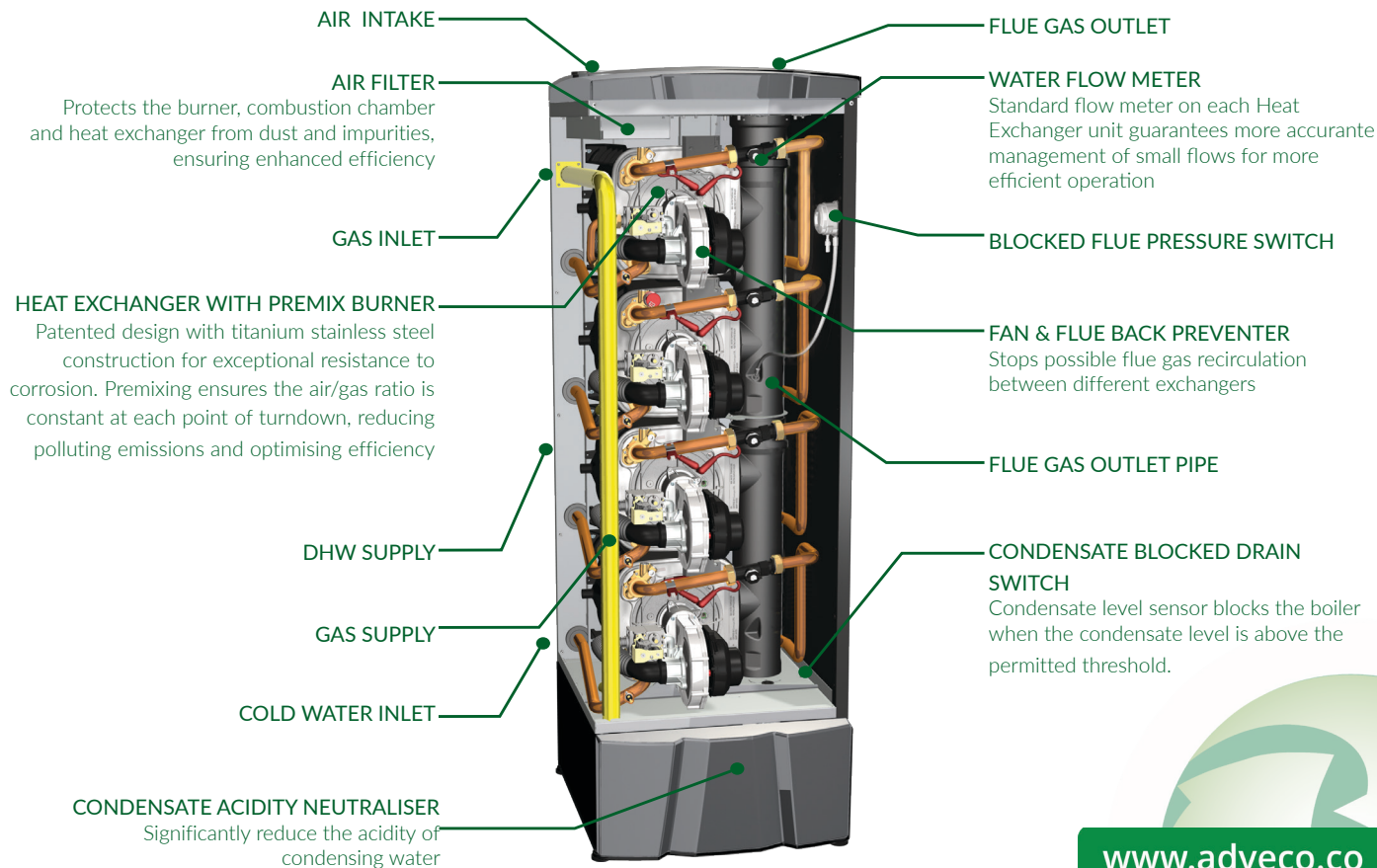


## Dimensions

Model	H x W x D (mm)
70T 140T	1180 x 600 x 945
210T 280T	1880 x 600 x 896

AD Technical Specifications		Units	70T	140T	210T	280T
Gross heat input range	Maximum	kW	77.6	155.4	233.1	310.8
	Minimum		16.3	16.3	16.3	16.3
Heat output range	Maximum	kW	74.0	148.0	222.0	296.0
	Minimum		15.6	15.6	15.6	15.6
Maximum efficiency (net)	At max. output	%	106.0	106.0	106.0	106.0
	At min. output		106.0	106.0	106.0	106.0
DHW Recovery ( $\Delta T$ 50°C)		l/h	1202	2506	3755	5008
Minimum operating water flow rate		l/s	0.45	0.90	1.35	1.80
Gas flow rate	Natural gas	m <sup>3</sup> /h kg/h	7.40	14.80	22.20	29.61
	LPG		5.43	10.87	16.30	21.73
Heat exchanger water capacity		l	7.57	15.14	22.71	30.28
DHW temperature Range		°C	20 - 80	20 - 80	20 - 80	20 - 80
System pressure range		bar	1 - 11	1 - 11	1 - 11	1 - 11
Supply		V / Hz	230 / 50	230 / 50	230 / 50	230 / 50
Electrical consumption	Maximum	W	140	280	420	560
	Minimum		60	60	60	60
CO emissions		ppm	19	19	19	19
NO <sub>x</sub> emissions (0% O <sub>2</sub> with natural gas)		mg / kWh GCV	27	27	27	27
Approved flue types			B23	B23	B23	B23
Flue gas mass flow rate		kg/h	115	230	345	460
Flue gas temperature at outlet	Maximum	°C	90	90	90	90
	Minimum		30	30	30	30
Sound power level (LWA)		dB	70	70	70	70
Maximum water hardness		ppm	150	150	150	150
Appliance mass	Empty	kg	98	147	211	249
	Full		106	162	234	279

# AD Key Components - AD 280T



## Pump Selection

Unit with water supply at 200 ppm*	Pump Selection
70T	M0138
140T	M0140
210T	M0141
280T	M0141

\*If the water supply has a total hardness greater than 150 ppm, it is recommended to soften the water to a maximum of 100 ppm.

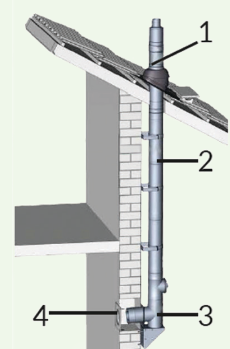
## Flue Connections

Standard flue	Size:	110 mm PP	160 mm PP	200 mm PP
Suitable for:		70T, 140T	70T*,140T*, 210T, 280T	210T*, 280T*
*Requires adaptor to upsize flue				
Adaptor			110-160mm: 0718025	160-200mm: 071823
Flue Terminals	Vertical: Horizontal:	MB0025 MB0028	0718761 100035790094	0718762 100035790004
Flue Extension 1m		0718102	0718122	0718132
Flue Bends	45° Bend: 90° Bend:	0718140 0718141	0718160 0718161	0718170 0718171
Roof Flashings	Flat: 15-55° Pitched:	0146184 MB0033	0746066 100035790099	0146185 100035790003
Flue Bracket		0169158	100035790092	200050718012
Flue Test Point Extensions		<i>Included as standard</i>	<i>Included as standard</i>	<i>Included as standard</i>

External flue size:	110/160 mm PP/SS	160 mm/225 mm PP/SS	200 mm/300 mm PP/SS
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Suitable for:	70T, 140T	70T*; 140T*, 210T, 280T	210T*, 280T*
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*Requires adaptor:		110-160 mm: 0718025	M/F 160-200 mm: 071823
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1, 3, 4: External Riser Kit:	MB0026	MB0029	MB0031
2: 1m Extension Kit:	MB0027	MB0030	MB0032
45° External Bend:	n/a	200075045316	200075045916
90° External Bend:	n/a	200075045326	200075045926

Maximum flue runs		110 mm PP	160 mm PP	200 mm PP
70T	Straight Run:	19.1 m	41.1 m	65.2 m
	Loss Per Bend (45°/90°):	- 1.2 m / - 2.8 m	- 1.2 m / - 2.8 m	- 1.2 m / - 2.8 m
140T	Straight Run:	10.0 m	21.5 m	34.1 m
	Loss Per Bend (45°/90°):	- 2.0 m / - 4.0 m	- 1.2 m / - 2.8 m	- 1.2 m / - 2.8 m
210T 280T	Straight Run:	n/a	10.0 m	15.9 m
	Loss Per Bend (45°/90°):		- 2.0 m / - 4.0 m	- 1.2 m / - 2.8 m

UNI 11528 legislation allows the connection of two appliances with similar characteristics in the same flue system even if they serve different installations. The AD condensing water heater can be combined with an Adveco MD condensing boiler, connecting them in the same flue system. Both appliances can be dimensioned according to real DHW and heating needs with optimised performance and condensing effect.

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AD 16, 22, & 37 Wall-Mounted

# Condensing Instantaneous Water Heaters

The Adveco AD range of high efficiency wall-mounted condensing gas-fired water heaters is designed to provide a compact, high capacity and reliable method for delivering instantaneous hot water to a building

AD wall-mounted is a range of 'A' class energy efficient water heaters available in three rated heat outputs, 27 kW (AD16), 33 kW (AD22) and 61 kW (AD37). When combined with a water cylinder, AD wall-mounted helps meet peak withdrawals without increasing the water heater power. AD wall-mounted can also integrate with solar thermal systems to supply top-up heating when solar radiation during winter months is not enough to guarantee the required temperature for DHW demands.

The water heater features a single high quality patented heat exchanger constructed from a continuous, non-welded run of AISI 316 Ti (Titanium) stabilised stainless steel, providing exceptional construction strength and corrosion resistance. With radial variable circulation, the heat exchanger recovers the latent heat of the flue gas, improving heat transfer for a net efficiency of up to 107% to produce domestic hot water (DHW).



**H2O%**

For Light Commercial Domestic Hot Water Applications



With an efficient pre-mix burner and minimal NO<sub>x</sub> and CO emissions, the AD range is an eco-friendly way to serve a domestic hot water system. The unit additionally features a high 1:8 modulation ratio to ensure maximum efficiency even during periods of low demand.

By reducing energy consumption, AD can deliver operational savings of up to 30% compared to traditional water heaters for a wide range of commercial applications that demand large production of DHW, such as sport facilities, gyms, B&B, cafés, and other light commercial business.

Also included is an inbuilt controller with LCD display that ensures full temperature control and a maintenance self-check of primary components and functions.

## FEATURE & BENEFITS

- Extremely high quality AISI 316Ti heat exchangers for lasting reliability and efficiency
- High efficiency pre-mix burner provides large modulation range
- Built-in circulating pump for instant DHW and reduced scale build-up
- Compact wall-hung arrangement
- Ultra-low NO<sub>x</sub> emissions at 16-29 mg/kWh
- Available using natural gas or LPG
- Supports standard concentric or parallel flue systems using adaptor for low cost 80/125mm diameter PP available on request
- Integrated run/fault signal for connection to BMS
- 20% Hydrogen blend compatible

## AD 16, 22 & 37 Wall-Mounted

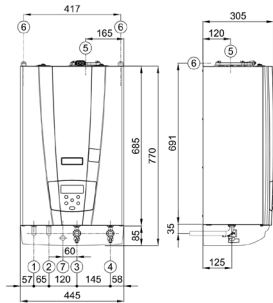


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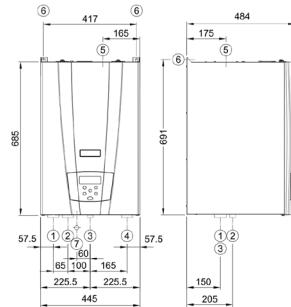
# AD 16, 22 & 37 Technical Specifications & Connections

Technical Specifications			Units	AD16	AD22	AD37
Heat input range	Maximum		kW	28.3	35.5	64.2
	Minimum			3.6	6.7	13.3
Heat output range	Maximum		kW	27.0	33.5	60.9
	Minimum			3.0	6.1	12.8
Net efficiency	Maximum output		%	105.7	104.7	105.3
	Minimum output			103.0	102.4	107.1
Energy efficiency class				A	A	A
Declared load profile				XL	XXL	XXL
Continuous D.H.W. production ( $\Delta T$ 50°C)			l/min.	7.7	9.6	17.5
Gas flow rate	Methane		m <sup>3</sup> /h	2.7	3.4	6.1
	LPG		kg/h	2.0	2.5	4.5
Gas supply pressure	Methane		mbar	20	20	20
	LPG			37	37	37
Minimum water flow rate			l/min	2.5	2.5	2.5
Working pressure range	Maximum		bar	9.5	9.5	9.5
	Minimum			1.0	1.0	1.0
Working temperature range	Maximum		° C	40	40	40
	Minimum			75	75	75
Power supply			V / Hz	230 / 50	230 / 50	230 / 50
Total absorbed power			W	165	165	235
Weighted CO (0% O <sub>2</sub> with methane)			ppm	11	19	10
Weighted NO <sub>x</sub> (0% O <sub>2</sub> with methane)			mg/kWh	20	29	16
Dimensions H × W × D			mm	685 × 445 × 305	685 × 445 × 305	685 × 445 × 484
Indoor sound power level			dB	51	52	58
Empty weight			kg	36	36	48
Maximum flue run	Less 0.5 per 45° bend	Concentric	m	51	52	58
	Less 1.0m per 90° bend	Parallel		36	36	48

## AD 16, AD 22



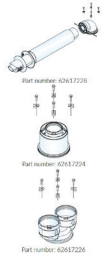
## AD 37



- 1 3/4" recirculation
  - 2 1" D.H.W. outlet
  - 3 3/4" gas inlet
  - 4 cold water inlet  
3/4" (16-22 Models) / 1" (37 Model)
  - 5 Flue outlet / Air intake  
2 x 80 mm parallel (16 -22- 37 Models)  
60/100 mm concentric (16-22 Models)  
80/125 mm concentric (37 Models)
  - 6 Support mounts
  - 7 Ø20 condensation discharge
- A 305 mm (16-22 Models) / 484 mm (37 Model)
  - B 120 mm (16-22 Models) / 175 mm (37 Model)
  - C 125 mm (16-22 Models) / 205 mm (37 Model)

## Ancillaries & Flue Components

Each AD wall-mounted water heater must be equipped with one of the following flue adaptor kits:



### AD 16 / 22 Water Heater Adaptors

- Horizontal Coaxial Vent Kit Ø60/100 PP. Part number: 62617228
- Vertical Coaxial Adaptor Ø60/100 PP. Part number: 62617224
- Split System Vent Adaptor Ø80x2 PP. Part number: 62617226

### AD 37 Water Heater Adaptors

- Horizontal Coaxial Vent Kit Ø80/125 PP. Part number: N/a
- Vertical Coaxial Adaptor Ø80/125 PP. Part number: 62617314
- Split System Vent Adaptor Ø80x2 PP. Part number: 62617315

For further information and specifications on the full range of available flues and ancillaries, please contact the Adveco application design department

# ADVECO

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ADVECO AD WATER HEATER PRODUCT GUIDE SR200100v2

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