

Heat Pump Unvented Cylinder Brochure

2023

Pioneering the future of renewable heating technologies





Exceptional Efficiency



Unrivalled Performance

The Tiger Heat Pumps brand means quality. Our ethos is to partner with best-in-class suppliers to provide customers with peace of mind when installing our products.

Tiger Heat Pumps is dealing with the plumbing and heating sector differently. Being independently-owned and based in Harrogate, this means that we can provide a more personalised service to our customers, with a greater focus on understanding individual needs and requirements.

Join the Tiger family today! Contact us with any enquiries at info@tigerheatpumps.co.uk











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Model shown here is a 150/30L slim Heat Pump Buffer Combo cylinder.

INTRODUCTION





Unrivalled Performance



Exceptional Efficiency



Tiger Heat Pumps is a new, innovative brand bringing you the best in air source heating technology. Our passion for providing sustainable, energy-efficient heating solutions is at the core of our ethos, and we're committed to delivering top-quality products to our customers at a fairer price. Tiger Heat Pumps is a dynamic and fast-evolving company, dealing with the plumbing and heating sector differently, providing better benefits for the installer and for the end user of our goods.

Our team of experts is dedicated to staying ahead of the curve in air source heating technology. We're constantly researching and testing the latest products to ensure that we're bringing you the very best that manufacturers can offer. Our commitment to innovation means that we're always looking for ways to improve our products and services, and our reputation is only as good as what goes out the door to every customer.

At Tiger Heat Pumps, we believe that investing in the right heating solution can make all the difference. That's why we source only the best products from trusted, market-leading manufacturers and badge them as our own. This means you can trust that our portfolio of products is of the highest quality and will deliver reliable, long-lasting performance. With a wide array of products to suit any application, from circulating pumps to air source heat pump packages, you can cater from apartments to small commercial properties, and are guaranteed the reliability and performance that you expect.

We pride ourselves on our outstanding customer service, and our team is always on hand to answer any questions you may have. We also offer FAQs, installation tips and troubleshooting via our video resource library online, to help installers on-the-go, and to trust in the knowledge that the Tiger brand means quality of product and peace-of-mind for the homeowner.



OUR PRODUCTS



Our strive for constant product improvement has enabled the team to build an extensive network of strong partnerships with our suppliers, enabling us to drive innovation in the range we offer. Our ever-growing expertise and knowledge of the industry mean that we're able to work closely with our suppliers to identify new opportunities for innovation, and to help guide them in the development of new, cutting-edge products. At Tiger Heat Pumps, we're committed to driving innovation and progress in the industry, and our partnerships with our suppliers are a crucial part of that mission.

All our hot water cylinders are fully tested, WRAS approved, and come with WRAS approved external components from our best-in-class suppliers. All cylinders are manufactured using duplex stainless steel due to its high corrosion resistance, and all of our high-specification heating coils are made from 316L stainless corrugated tubing for a superior reheat performance.

We offer an industry-leading portfolio of cylinders for use with air source heat pumps, providing unbeatable performance at a fairer price.

Our reputation is only as good as the next cylinder that bears our branding. We settle for nothing less. That is why, at Tiger Heat Pumps, we are proud to offer all of our domestic cylinders with a 25-year warranty.

We ensure that all our products are sourced from ISO 9001 certified suppliers, compliant to UK standards and adhere to building regulations, meaning they're all safe to use off-the-shelf. Quality and details as standard.

RENEWABLES & ERP DIRECTIVE

All of our hot water cylinders have been selected from our suppliers with renewable technologies in mind. We have specified performance requirements for use with air source heat pumps, and both thermal and PV solar panels.

Our cylinders have also have been chosen by us to help reduce energy consumption and meet standards for product performance as detailed in the ERP directive. Tiger Heat Pumps products come supplied with all appropriate labels to detail their energy performance.

HEAT PUMP CYLINDERS

An increasingly popular heating solution, air source and ground source heat pumps work by producing high flow rates at lower temperature than a traditional condensing boiler. As a result, any cylinder that is teamed up with a heat pump needs to have a coil or heat exchanger with a large surface area sized to maximise the efficiency of the system, and keep any reheat times as low as possible.

Our range of heat pump cylinders are equipped to provide market leading performance. All of our heatpump cylinders come fitted with 1" coil connections suitable for high flow rates, and utilise a unique design of heat pump coil that ensures quick reheat times essential for any low temperature systems.

Tiger Heat Pump cylinders are available in 545mm diameter, in capacities of 150-300L as standard, and 120-200L in slimline 475mm diameter. In addition, we provide a number of options for more complex heating systems such as twin coil solar models, and horizontals for attic-sited units. Larger capacity calorifier cylinders are available up to 600L, with coil surface areas increasing up to 4m² for more commercial reheat requirements. We also provide a portfolios of models with buffer vessels incorporated into a single-cased unit where space saving is as important a requirement as the system performance.

Please note that all of our cylinders are subject to colour and small design changes depending on the manufacturer the units are being sourced from.

Diagrams of the buffers used in our buffer combo units are detailed below.



Connections for the integrated buffer are connected as follows:-

- A Heat Pump Flow
- B Heat Pump Return
- C Heating Flow & **Air Release** D - Heating Return

In addition, a probe pocket is provided in the middle of the buffer for temperature monitoring/control on the standard diameter 545mm units

SLIM DIAMETER BUFFER



Connections for the integrated buffer are connected as follows:-

- A Heat Pump Flow
- B Heat Pump Return

C - Heating Flow & Air Release

D - Heating Return

HEAT PUMP INDIRECT



Standard Diameter - 545mm								
Product Code	THP150HPI	THP170HPI	THP200HPI					
Capacity (L)	150	170	200					
Height	1100	1224	1414					
Cold Inlet	180	180	180					
Heating Flow	660	660	865					
Return	250	250	250					
Control Stat	457.5	457.5	465					
Immersion	190	190	190					
Sec. Return	N/A	N/A	1043					
T&P Valve	881	1009	1195					
High Limit Stat	881	1009	1195					

Standard Diameter - 545mm					
Product Code	THP250HPI	THP300HPI			
Capacity (L)	250	300			
Height	1722	1945			
Cold Inlet	180	180			
Heating Flow	865	865			
Return	250	250			
Control Stat	465	465			
Immersion	190	190			
Sec. Return	1384	1557			
T&P Valve	1507	1724			
High Limit Stat	1507	1724			

Calorifier - 690mm Diameter								
Product Code THP400HPI THP500HPII THP0HPI								
Capacity (L)	400	500	600					
Height	1580	1910	2175					

The Tiger Heat Pumps standard diameter heat pump indirect cylinders have been specified to work with our signature range of air source heat pumps, and all other major manufacturers' heat pump models, with the use of either anti-frost valves, or glycol heat transfer media.

The wide-diameter corrugated coils are designed to provide minimal pressure drop, while the waveform of the tube encourages turbulence in the flow, increasing heat transfer in the coil, and increasing the COP in your chosen heat pump. Our cylinders are then foamed with CFC/HCFC-free polyurethane insulation, for superior heat loss performance, combining to create a top of the line product at an unbeatable price.

HEAT PUMP BUFFER COMBO



Standard Diameter - 545mm							
Product Code	THP170HPBC	THP200HPBC	THP225HPBC				
Capacity (L)/Buffer Capacity (L)	170/50	200/50	225/50				
Height	1630	1805	1966				
Buffer Connections	180/242	180/242	180/242				
Buffer Air Release	242	242	242				
Buffer Stat	265	265	265				
Immersion	190	190	190				
Cold Inlet	180	180	180				
Heating Flow	1066	1271	1271				
Return	656	656	656				
Control Stat	863.5	871	871				
Sec. Return	N/A	1449	1449				
High Limit Stat	1415	1601	1755				
T&P Valve	1415	1601	1755				

Our standard diameter heat pump buffer combo units provide a 50L buffer below your chosen capacity heat pump cylinder, in a single compact unit, where space is a premium requirement.

Utilising a buffer with your choice of air source heat pump ensures that your heating and hot water supply remains stable. This is because the heat pump can continue operating over a longer period of time, crucially, using the buffer as a bypass in times of low air temperature, such as in the winter. Using the buffer as a free store of primary water eases performance requirement on the unit, and therefore generates a higher COP from the heat pump in colder conditions, reducing energy bills for the end homeowner, when compared with a standalone heat pump.

These combo units can also be provided for twin coil solar models, and in 475mm slimline diameter, where a 30L buffer is sited below the unit.

At Tiger Heat Pumps, we would always recommend the use of a buffer vessel with our air source heat pumps, as it provides improved performance in colder seasonal periods.



HEAT PUMP SLIM INDIRECT

Slimline Diameter - 475mm								
Product Code	THP120HPS	THP150HPS	THP170HPS	THP200HPS				
Capacity (L)	120	150	170	200				
Height	1240	1505	1680	1950				
Cold Inlet	174	174	174	174				
Heating Flow	184	184	184	184				
Return	244	244	244	244				
Control Stat	540	540	537	537				
Immersion	mmersion 184		184	184				
High Limit Stat	1038	1306	1484	1751				
T&P Valve	1038	1306	1484	1751				

Our space saving 475mm diameter slim cylinders provide excellent reheat performance, but in a more compact unit for applications where space is at a premium, such as retrofit system upgrades.

HEAT PUMP SLIM BUFFER COMBO

Slimline Diameter - 475mm						
Product Code	THP150HPBCS	THP170HPBCS				
Capacity (L)/Buffer Capacity (L)	150/30	170/30				
Height	1885	2050				
Buffer Connections	154/229	154/229				
Buffer Air Release	191.5	191.5				
Cold Inlet	524	524				
Heating Flow	1214	1380				
Return	594	594				
Control Stat	890	887				
Immersion	534	534				
High Limit Stat	1656	1834				
T&P Valve	1656	1834				



HEAT PUMP TWIN COIL SOLAR



Standard Diameter - 545mm								
Product Code	THP170HPI	THP200HPI	THP250HPI	THP300HPI				
Capacity (L)	170	200	250	300				
Height	1224	1414	1722	1945				
Cold Inlet	180	180	180	180				
Solar Coil Flow	200	200	200	200				
Solar Coil Return	240	240	240	240				
HP Heating Flow	897	960	1265	1365				
HP Return	487	550	650	750				
HP Control Stat	694	757	865	965				
Solar Control Stat	295	295	295	295				
Sec. Return	N/A	1043	1384	1557				
Immersion	427	490	590	690				
High Limit Stat	n Limit Stat 1009		1507	1724				
T&P Valve	1009	1195	1507	1724				

More and more retrofit and newbuild projects are making use of multiple renewable heat and energy sources to make their heating system and hot water supply more robust, even in the winter months!

Tiger Heat Pumps solar thermal twin coil cylinders are ideal for applications that have a south-facing roof, either with a traditional thermosiphon solar thermal system or a modern pumped application.

Please note, the Tiger Heat Pump twin coil models are also available as buffer combo units on request.

A simplified diagram of a heat pump solar twin coil setup is shown here. Please note, the solar pump indicated is not supplied with our cylinder.



PV SOLAR



An increasing number of applications are making use of a hot water tank in combination with solar PV panels, turning the cylinder into a thermal battery during the daytime, for use in the evening and the following morning.

All of the Tiger Heat Pump range of unvented cylinders are compatible with solar PV units as standard. The immersion heater is sited as low as possible in our hot water tanks to maximise usable hot water from PV diverter-style applications, ensuring the perfect marriage of renewable technologies, and the future-proofing of your home.

HORIZONTAL HEAT PUMP

Produced to the same high standards as the rest of the Tiger Heat Pump range, but allowing for increased siting options; horizontal cylinders enable users to achieve large hot water storage capacities in areas that would not be able to accommodate standard vertical units.

All horizontal units come provided with a secondary return as standard at the end of the cylinder for ease of fitting, and offer a large coil surface area as standard, with a unique probe pocket placement for temperature readings that will maximise the available hot water from your air source or ground source heat pump.

Horizontal cylinders come complete with mounting cradles, and all safety controls as required by the UK Building Regulations and Water Regulations.

CALORIFIERS



Standard Diameter - 545mm								
Product Code	THP170H	THP200H	THP250H	THP300H				
Capacity (L)	170	200	250	300				
Length	1224	1414	1722	1945				
Cold Inlet	180	180	180	180				
Coil Flow	881	881	1140	1250				
Coil Return	471	471	525	635				
Immersion	305	305	320	320				
Control Stat	955	955	1230	1340				
T&P Valve	1006	1026	1310	1420				
Hot Outlet	676	1170	1483	1706				
Drain Off	305	305	320	320				

For systems (either commercial or domestic) that require large volumes of water, a full range of heat pump calorifier cylinders are available from Tiger Heat Pumps. All cylinders are made from duplex stainless steel and are pressure tested to 8 bar to ensure they are suitable for lengthy endurance at the heart of a hot water system.

Our calorifiers are available in capacities up to 600L. We provide a standard recommended range of models, which include a 4m² heating coil, but all aspects including coil size and connections are customisable on request. If you have any questions on what capacity calorifier you require, please speak to a heating design engineer.





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Product	Nominal Capacity (L)	Actual Capacity (L)	Weight Empty (kg)	Weight Full (kg)	Coil 1 Rating (kW)	Coil 1 Surface Area (m ²)	Coil 2 Rating (kW)	Coil 2 Surface Area (m ²)	Coil Pressure Drop (Bar)	Heat Loss (kWh/2h)	Heat Loss (W)	ErP Banding
150 Standard Heat Pump	150	142	31	173	23.78	2.03	N/A	N/A	0.13	1.32	55	С
170 Standard Heat Pump	170	159	35	197	23.53	2.03	N/A	N/A	0.13	1.63	68	С
200 Standard Heat Pump	200	189	40	229	27.51	2.96	N/A	N/A	0.19	1.70	71	С
250 Standard Heat Pump	250	239	45	284	27.54	2.96	N/A	N/A	0.19	1.99	83	С
300 Standard Heat Pump	300	279	50	329	27.52	2.96	N/A	N/A	0.19	2.03	94	с
120 Slimline Heat Pump	120	114	30	144	23.54	1.53	N/A	N/A	0.14	1.37	57	с
150 Slimline Heat Pump	150	144	34	178	23.52	1.53	N/A	N/A	0.14	1.60	67	с
170 Slimline Heat Pump	170	162	37	199	23.48	1.93	N/A	N/A	0.20	1.70	71	с
200 Slimline Heat Pump	200	192	41	233	23.46	1.93	N/A	N/A	0.20	1.80	75	с
170 Twin Coil Heat Pump	170	160	39	199	22.14	2.03	18.22	0.49	0.13	1.63	68	с
200 Twin Coil Heat Pump	200	190	44	239	26.64	2.03	19.68	0.49	0.13	1.70	71	с
250 Twin Coil Heat Pump	250	238	48	290	27.52	2.96	20.16	0.49	0.19	1.99	83	с
300 Twin Coil Heat Pump	300	278	51	341	27.52	2.96	20.16	0.49	0.19	2.03	94	с
170 Horizontal Heat Pump	170	162	41	203	23.65	2.03	N/A	N/A	0.13	1.89	79	с
200 Horizontal Heat Pump	200	192	47	239	24.84	2.03	N/A	N/A	0.13	2.01	84	с
250 Horizontal Heat Pump	250	242	51	293	25.08	2.96	N/A	N/A	0.19	2.16	90	с
300 Horizontal Heat Pump	300	279	56	335	25.48	2.96	N/A	N/A	0.19	2.35	98	с
170/50 Heat Pump Combo	170 / 50	159 / 50	45	207	23.53	2.03	N/A	N/A	0.13	1.63	68	с
200/50 Heat Pump Combo	200 / 50	189 / 50	50	239	27.51	2.96	N/A	N/A	0.19	1.70	71	с
225/50 Heat Pump Combo	225 / 50	214 / 50	53	266	27.52	2.96	N/A	N/A	0.19	1.85	77	с
150/30 Slimline Heat Pump Combo	150 / 30	144 / 30	43	189	23.52	1.53	N/A	N/A	0.14	1.60	67	с
170/30 Slimline Heat Pump Combo	170 / 30	159 / 30	45	207	23.48	1.93	N/A	N/A	0.20	1.70	71	с

All coil performance ratings detailed here relate to the tests carried out at 80°C to BS EN 12897:2016.

At Tiger Heat Pumps, our team of experts is dedicated to staying ahead of the curve in air source heating technology. We're constantly researching and testing the latest products to ensure that we're bringing you the very best that manufacturers can offer.

If you have any questions relating to technical information, or do not see information here that you require, please contact us.

Additionally, this list of standardised cylinders is not exhaustive. We also produce units that are available but not part of our standard portfolio, such as calorifiers or twin coil buffers. If you have any enquiries, including for bespoke applications, please get in touch.

Email us at info@tigerheatpumps.co.uk

At Tiger Heat Pumps, our team work tirelessly to provide you with products that demonstrate the perfect mix of performance and reliability.

CE

PRE-PLUMB HEAT PUMP CYLINDERS

We also offer pre-plumbed cylinders that work in combination with our standard heat pumps up to 14kW output. These are as universally spec'd as possible with easy-to-use components for translation across to most manufacturers' range of air source heat pumps. These pre-plumbed cylinders are available as both standalone, and as combo units, in both standard and slimline diameters.

Pre Plumb Component Specification:	22mm 2-port zone valve (combo only)
28mm 10-40L/min flow meter	6m central heating pump (combo only)
28mm 3-port 3-wire diverter valve	28mm magnetic filter (combo only)
Filling loop with 0-6 bar pressure gauge	Robokit expansion vessel (combo only)

BUFFER VESSELS / VOLUMISERS

Tiger Heat Pumps recommends the use of buffer vessels with our air source monobloc heat pumps, and we offer these in a wide portfolio of sizes as standalone units.

Buffer vessels are available in slimline 475mm and standard 545mm diameters from 60-600L. We also offer a 25L and 50L wall-hung unit for more compact installations. All of the buffer vessels supplied by Tiger Heat Pumps maintain a 10-year warranty.

URGENT ORDERS

At Tiger Heat Pumps, customers are our priority, and we understand that not every job goes according to plan. You want a supplier whose duty is go the extra mile when required. That is why we're always striving to try and accommodate speedy/urgent installations by keeping stock in reserve for next-day delivery or same-day collection at small additional charges, to accommodate the jobs that simply cannot wait. Please contact our team at info@tigerheatpumps.co.uk to find out more.



INSTALLATION GUIDANCE

All of our hot water cylinders have been designed with the installer in mind, with all connections accessible from the front of the cylinder. Additionally, all units come provided with an unvented kit that allows the cylinder to operate safely and meet G3 building regulations. All of the accompanying pieces **must** be fitted with the installation to validate our 25-year cylinder warranty, unless agreed in writing beforehand with our specialist team.

A guide for the kit that accompanies each type of cylinder is given in the table below:

	Direct	Indirect	Direct Solar	Twin Coil Solar	Direct Air	Indirect Air	Horizontal	Heat Pumps
3 bar / 6 bar Cold Water Inlet Set	\checkmark	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark
3 bar / 8 bar Cold Water Inlet Set					\checkmark	\checkmark		
15mm x 22mm Tundish	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
90°C / 7 bar Temperature & Pressure Relief Valve	\checkmark	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark
90°C / 10 bar Temperature & Pressure Relief Valve					\checkmark	\checkmark		
Expansion Vessel & Bracket	\checkmark	~	\checkmark	\checkmark			\checkmark	~
22mm 2-port zone valve		\checkmark		\checkmark		\checkmark	\checkmark	
28mm 2-port zone valve								\checkmark
Dual Thermostat		\checkmark		\checkmark		\checkmark	\checkmark	
High Limit Cut-out Thermostat			\checkmark	\checkmark				\checkmark

Expansion Vessels

Expansion vessels are sized accordingly to each hot water cylinder and are given here.

If you have any questions on the sizing of vessels for other provisions in your hot water system, please speak to our team.

	12L	19L	24L	35L	50L
60 - 150L Cylinders	\checkmark				
170 - 250L Cylinders		\checkmark			
300L - 400L Cylinders			\checkmark		
500L Cylinders				\checkmark	
600L Cylinders					\checkmark

Immersion Heaters

Immersions are provided as standard, below the coil for pasteurisation purposes. These are long life incoloy 3kW 1 3/4" BSP, and should be wired according to the latest IEE regulations by a competent installer.

Mains Supply

All Tiger Heat Pump cylinders require a minimum of 1.5 bar (max 10 bar) mains pressure and 20 litres per minute flow rate to ensure that the cylinder meets its minimum capabilities. Water hardness should also meet the requirements detailed in our installation manual.

Higher pressure and flow rates will result in a higher performance from the cylinder. Per G3 regulations, our cylinders should be fitted with the provided cold water inlet set, to safely balance the mains pressure to 3 bar.

Secondary Return

As standard, a secondary return tapping is only fitted on indirect models of 200L and above. Other sizes and models can be fitted with a secondary return on request.

Connection Sizes

Cold Inlet/Hot Outlet	3/4" BSP
Heat Pump Coils	1" BSP
Secondary Return	3/4" BSP
Safety Valves	15mm Comp.
Inlet Control Set	22mm Comp.

Heat Pump Compatibility

Our range of heat pump unvented cylinders are compatible with any air source or ground source heat pump application, provided that a suitable level of frost protection exists within the system, such as frost prevention valves, or the use of glycol or other suitable heat transfer media. A high limit cut-out thermostat is provided with all models, and should be fitted to the cylinder and connected, to comply with G3 regulations.

Warranty Overview

The Tiger Heat Pump stainless steel inner vessel on our ranges of products carry a 25-year warranty, applicable from the date of purchase. The guarantee covers material defect or manufacturing faults in domestic use only, of products up to capacity of 300L. All components supplied with Tiger Heat Pumps products carry warranty against material defects or manufacturing faults for 1 year from date of purchase.

Full details of terms, conditions and exclusions can be found in the installation manual provided with your cylinder.

SELECTION GUIDANCE

Buffer Vessel Sizing

We would always recommend a buffer vessel to accompany your chosen heat pump, especially one of our own air source Tiger Heat Pump models.

Buffer vessels provide a greater free volume of primary water to the system, and enable a greater stability of heat across the application, as well as extending the life of your air source heat pump by tempering demand in times of cold weather, which will lower your unit COP.

For our single-fan air source heat pump models, we would recommend a useful capacity of primary water up to and including 30L, and for double-fan units, this capacity should increase to 50L or more.

> The selection table here is to be used as a guide only, and full cylinder sizing if unsure for bespoke requirements should be calculated by a domestic heating engineer.

For sizing on commercial units, although we similarly can provide rough guidance on sizing, this should primarily be carried out by a trade professional.

If you have any questions on sizing for unvented cylinders, please speak to our team.



An alternative to large capacity tanks for commercial and/or larger domestic applications is connecting tanks together. This can be done in series or parallel.

For situations requiring higher flowrates, we would recommend units being fitted in parallel.

HOW CAN WE HELP?

Can't immediately find what you're looking for? Need a cylinder urgently? Let our expert team help you with your enquiry, and help create a bespoke solution for you, and for your customer. Please contact us at info@tigerheatpumps.co.uk

Hot Water Demand	Bedrooms	Heat Pump Cylinder
1 Standard Bathroom or Shower	Bedsit / 1 2 - 3 3 - 4	120 150 170
1 Standard Bathroom	2 - 3 3 - 4	150 170
1 Standard Bathroom and En-Suite	2 - 3 3 - 4 4 - 5	170 170 200
2 Standard Bath- rooms	2 - 3 3 - 4 4 - 5	200 225 250
3 Standard Bath- rooms	3 - 4 4 - 5 5 - 6	225 250 300

Series - The hot outlet of one unit

becomes the cold feed for the next.



outlets of all units are connected.









Tiger Heat Pumps The Old Church, 55 Grove Road, Harrogate, HG1 5EP

info@tigerheatpumps.co.uk

Tiger Heat Pumps endeavour to keep the contents of this brochure as up-to-date as possible. However, due to the 3rd party manufacture of products within this brochure, we reserve the right to make changes to all Tiger Heat Pumps products and services at any time. To ensure you have the most up to date information, please contact us directly.