Midea®

Freedom Heat Pumps
SALES | SERVICE | SUCCESS

M-thermal Mono ATW Heat Pump

Handover and Maintenance Log Book

Who are Freedom Heat Pumps?

Freedom Heat Pumps is a wholesale distribution company for air source heat pumps.

We offer technical support, training, design and consultancy services Freedom Heat Pumps was founded in 2010 and have been market leaders in this sector with over 7500 units out in the field.

How we work

Our approach is very straightforward. If you have a set of plans or an outline of the requirements for a project, send them to **sales@freedomhp.co.uk.** From there, we will produce a heat loss calculation in line with today's standards, and put together a list of the kit required at your cost price.

Alternatively, if you don't currently have a heat pump project, but would like to become a heat pump installer, and don't know where to start, contact us on **02380 179 121** or email us at **technical@freedomhp.co.uk** and we can set you on the correct course.

@freedomheatpumps

@freedomheatpump

Freedom Heat Pumps Ltd.

freedomheatpumps

www.freedomhp.co.uk

You can now register for the Freedom HP 10 year parts only warranty; the warranty will start from the date of delivery to site. This warranty covers the Midea components only. The warranty does not cover radiators, cylinders, UFH, valves, pumps etc.

In the event of a warranty claim we will supply the parts FOC.

In order to maintain your extended warranty you will need to have a maintenance agreement in place and ensure that required checks are carried out annually.

Your unit is not automatically registered for warranty, Your installer needs to fill in a form Online at:

www.freedomhp.co.uk

Once this is done a certificate and a maintenance book will be emailed to the applicant, please make sure you have a copy of this certificate, and proof of maintenance. Midea may ask for this when a warranty claim is made.

Installation Details

Your Name	
Your email address	
Outdoor model number	
Outdoor serial number	

You will find this on the side of the heat pump

Date commissioned	/ /
Name of Homeowner	
End user email address	

This is where the warranty certificate will be sent

Installation address	
Post code	

Installation Details

Company name	
Engineers name	
Office phone number	
Is this your first Midea install?	YES / NO
Date commissioned	/ /
Will you or your company be maintaining the unit?	YES / NO

If No, Freedom Heat Pumps will advise of an engineer who can do this

Install Photos

Please take at least 6 photos showing the outdoor unit, control box and cylinder cupboard

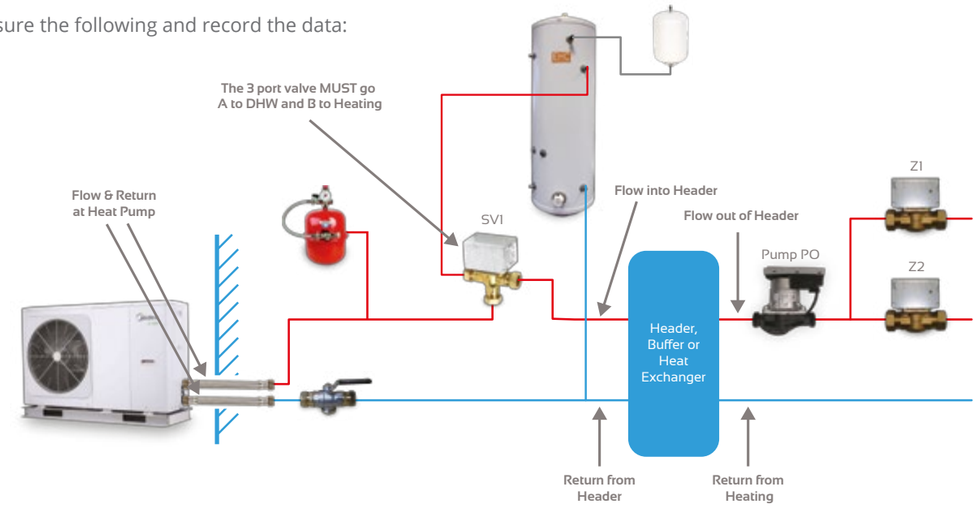
Commissioning Data

It is useful to take these measurements at commissioning and testing. They are for your own records, they are not needed to register the unit for warranty.

What type of system do you have?

Is there a Header, Buffer or Heat Exchanger installed?

Measure the following and record the data:



Flow temperature at Heat Pump
Measure with pipe thermometer

Return temperature at Heat Pump

Flow temp into header / plate

Return from header / plate

Flow temp out of header / plate to heating

Return from Heating into header / plate

Flow rate from flow meter

Air temp at the back of the unit

Ambient air temperature
Measure from the garden

Hot Water Mode Commissioning Data

You must be running the heat pump in hot water mode for this section

Hot water cylinder model No.

Cylinder water temp at start-up
Measure from the remote controller

Cylinder water temp after 30mins
Measure from the remote controller

Water flow temp at cylinder
Measure with pipe thermometer

Water return temp at cylinder
Measure with pipe thermometer

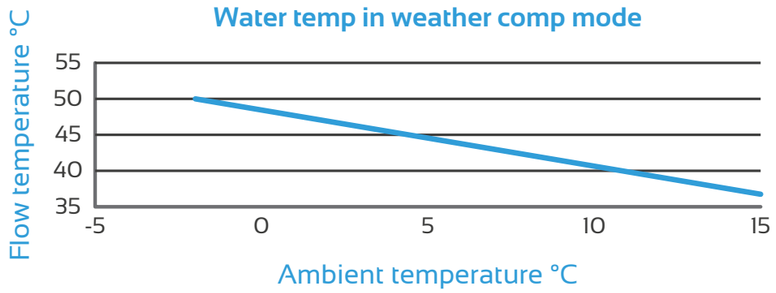
Flow Rate
Measure from the flow meter

Search Freedom heat pumps, Handover video for Midea heat pump on YouTube

Thank you for buying an Midea heat pump system, your Midea heat pump heats the house and hot water cylinder much like a normal fossil fuel boiler, however there are a couple of differences which you should take notice of.

Your installer should have provided you with a room thermostat if you have radiators or a thermostat in every room if you have under floor heating. They will tell you how to use these stats. The heat pump will run when it gets a run signal from the thermostat. It is not controlled by the Midea remote controller.

To turn on the heating all you need to do is turn up the thermostats, to turn it off you need to turn them down. The thermostat sends a run signal to the heat pump. Once the unit starts up it will take time to get to temperature, it is not instant. Within 10 minutes you should feel the radiators beginning to warm up



Weather compensation

The radiator temperatures will be lower than you are used to with a gas or oil boiler. To add to this, we run them in a weather compensation mode, this means that the unit measures the outside temperature and adjusts the radiator temperature to suit.

The colder it is outside the warmer the rads will be and vice versa. This function is automatic and is designed to save you money. In very cold weather the radiator will be at their hottest, they will reach 50°C.

Running your machine efficiently

It is very expensive to heat the house up from cold, with a heat pump the best advice is to maintain the house at as close to constant temperature as possible all the time.

Please DON'T set the room temperature too low when you leave the house, ideally drop it 2 degrees below your normal set temperature when you go out or it will take a long time and a lot of money to recover.

To switch off the heating in summer set the thermostats down to 16°C to avoid the heating starting up.

Your radiators will have thermostatic valves on them, you can adjust each room's temperature with these.

General Advice

The heat pump comes with a controller which looks like this, you should not use this or press the buttons, it is used for commissioning and fault diagnosing the system.

On you tube (search for freedom heat pumps) there are videos showing how to use the controller, faults etc.

If the system goes into fault, the screen will show a code and a description of the fault. The engineer will want to know this number when you call.

Most faults clear automatically after the problem is fixed but If not you need to reset the power to the Midea unit for 2 mins to clear it. While the power is off turn off ALL of your room thermostats. After the unit is powered up again turn your stats back up.

The unit likes you to send the a new run signal once the power is restored

Please avoid turning the unit off at the power supply especially in cold weather. If the unit is off and the weather is very cold, it cannot protect itself and your warranty will be at risk.

Hot Water

Scroll right highlight DHW, press power to turn DHW on. Press up to set the temperature of the cylinder typically 55°C.

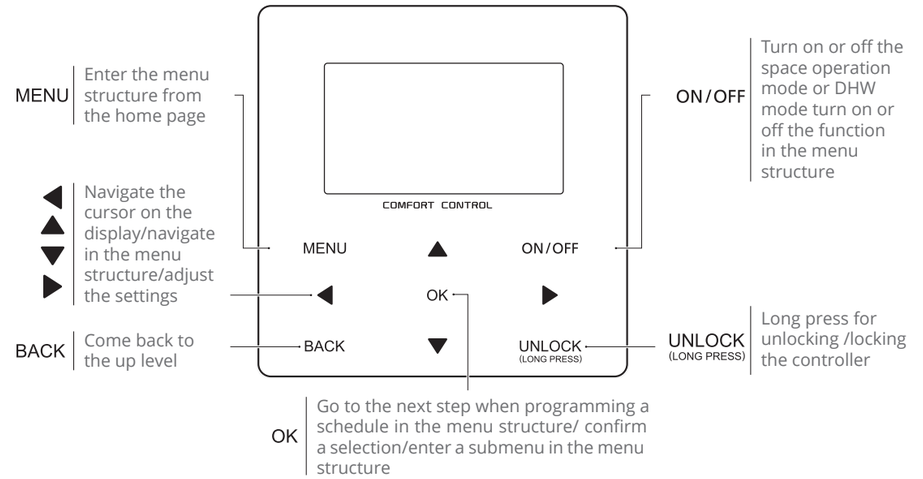
The unit it set up to maintain the water between 43 and 50°C all the time.

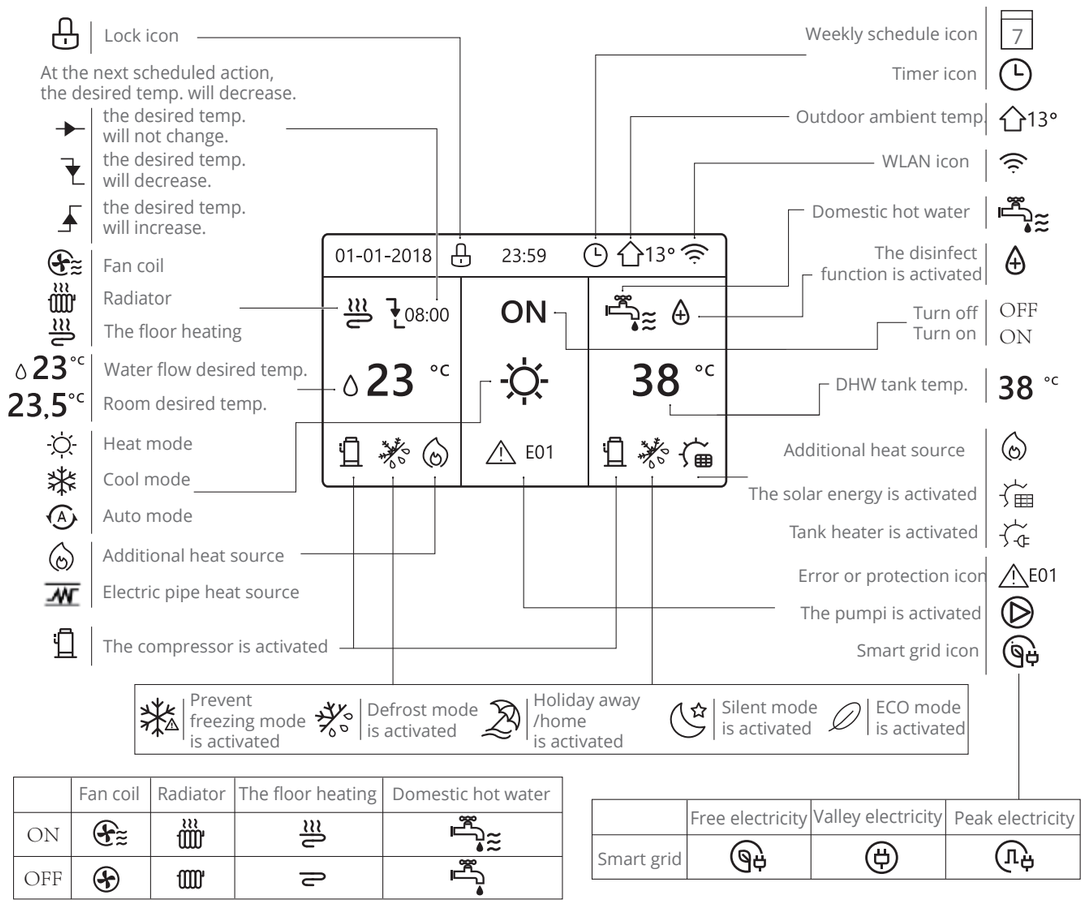
As you use the water the heat pump will constantly top up the cylinder. The hot water cylinder has priority over the heating, if the cylinder temperature falls 5 degrees below its set point the unit will automatically switch to heating the cylinder. This should take less than an hour.

Once set temperature is achieved the unit will go back to heating the house. The hot water cylinder loses almost no heat (1/3 a degree an hour) if no hot water is used.

A time clock by your cylinder will run the immersion every week to complete An anti-legionella / disinfection operation you need to ask your engineer when they have programmed this to happen . The immersion will heat the cylinder with the immersion to 60°C, the hot water than normal after a legionella function. In an emergency you can turn the immersion on yourself with the big switch on the timer. Don't leave it switched on too long, it costs £1 every 2 hours if its left on

If you don't require 24/7 hot water It is possible to time clock the hot water to reduce costs, the timer video on you tube will show you how to do this.





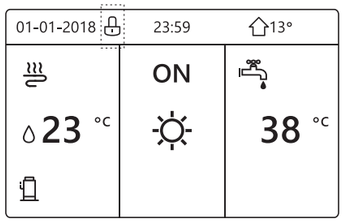
	Fan coil	Radiator	The floor heating	Domestic hot water
ON				
OFF				

	Free electricity	Valley electricity	Peak electricity
Smart grid			

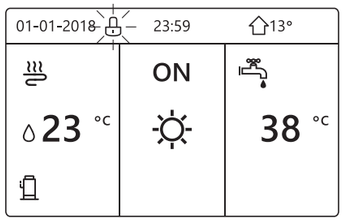
Unlock screen

If the 🔒 icon is on the screen, the controller is locked.

The following page is displayed:



Press any key, the 🔒 icon will flash. Long press the “UNLOCK” key. The 🔒 icon will disappear, the interface can be controlled.



Setting the clock and date

- Press MENU, press ▼ 6 times to SERVICE INFO press OK
- Press ▶ 3 times to DISPLAY press OK
- Go to TIME press ▶ then use ▲ and ▼ to set the time hours and minutes, press OK
- Go to DATE press ▶ then use ▲ and ▼ to set the day and month, press OK
- Go to Buzzer press ON / OFF to silence the noise from the controller.
- Press back a few times to get to the front screen

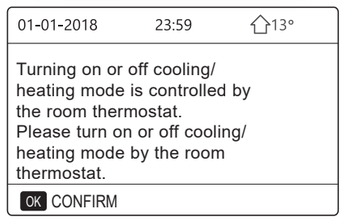
Starting the unit in heating mode

Press ◀ to highlight the left hand side of the controller this is the heating side, press ON / OFF

The middle of the controller tells you what is happening now. In this case heating (the sun) is on, so the thermostats are calling. The unit will start the pump in 2 minutes and the compressor in 5 minutes.

Check the pipework is heating up and the header is getting warm. MAKE SURE there is no hot water going to the cylinder.

Note if you try to change the water temperature or turn the heating off a message shows. This unit is controlled from an external run signal and operates using the water settings for weather compensation you set earlier.



Starting the unit in hot water mode to heat the cylinder

Go back to the front screen, press ▶ to highlight the right side of the controller. This is the hot water setting.

When you highlight the DHW it tells you the DHW set temperature, when it’s not highlighted it shows the current DHW tank temperature. With it highlighted press ON / OFF the unit will start heating the cylinder

Note how the middle of the controller is now showing the tap to indicate its actually heating the tank.

Energy Usage and Running Costs

Your Midea heat pump will use more energy during the winter months when the ambient air temperature is cooler. Don't be alarmed if you see these winter months accounting for a large percentage of your annual heating bill, as illustrated in the chart to the right, the system will use much less energy during the warmer seasons.

You should make a note of your running costs each month from the electricity meter, they are around the same size as a circuit breaker and look like the below image.

Month	% Energy used / month
January	19%
February	17%
March	12%
April	7%
May	4%
June	2%
July	1%
August	1%
September	4%
October	6%
November	12%
December	15%

Each month, make a note of the date, time, each electric meter reading, and the reading of electric meter for the whole house. You may also wish to take a photo of the house meter.

Date	Time	Electric Meter 1 (kWh)	Electric Meter 2 (kWh)	Electric Meter for the whole house (kWh)

The Midea heat pump should be maintained at least once a year to comply with warranty and RHI.
You must log your maintenance at www.freedomhp.co.uk for the 10 year warranty.

Maintenance procedure

Stop the unit, clean the water filters, shut the valve, undo the back and pull the strainer out and replace it.

Test the concentration of the Anti-freeze (glycol) in the system using a Glycol tester the level should be 25%. If you don't have a glycol tester a glycol tester / refractometer can be bought from your heat pump supplier or online.

Refill the unit, pressure should be 0-3 bar.

We need to test the operation of the unit against the hot water cylinder. So first we need to draw off 50 litres of water, run a couple of taps for 5 mins to achieve this. The unit should start up automatically in hot water mode, if it doesn't press scroll right and highlight the hot water on the controller and press the power button. It will start in 6 minutes.

The heat pump should be able to achieve 48°C cylinder temperature without using the immersion heater.

While running, check the outdoor unit for damage & debris, the coil needs washing, we recommend you use an approved heat pump cleaning chemical, your distributor will stock this. Instructions are given on the bottle. You also need to clean and polish the outside casing we recommend car wax to do this.

If you would like to get more information about how the unit is operating, please see ***"Operational data for testing the unit"*** on the next page.

Hot Water Cylinder

Check electrical connections & check the tank temperature sensor is above the immersion heater and fixed properly and the overheat thermostat is set to 70°C. On a Telford cylinder set the stat to 5.

Operational data for testing the unit

This menu is for installer or service engineer reviewing the operation parameters. Here you can see everything the unit is doing with tools.

- At the home page, go to MENU ▸ OPERATION PARAMETER.
- Press OK. There are six pages for the operating parameter as following. Use ▲ and ▼ to scroll.

OPERATION PARAMETER	#01
ONLINE UNITS NUMBER	1
OPERATE MODE	COOL
SV1 STATE	ON
SV2 STATE	OFF
SV3 STATE	OFF
PUMP_I	ON
ADDRESS	1/9

OPERATION PARAMETER	#01
PUMP-O	OFF
PUMP-C	OFF
PUMP-S	OFF
PUMP-D	OFF
PIPE BACKUP HEATER	OFF
TANK BACKUP HEATER	ON
ADDRESS	2/9

OPERATION PARAMETER	#01
GAS BOILER	OFF
T1 LEAVING WATER TEMP.	35°C
WATER FLOW	1.72m3/h
HEAT PUMP CAPACTIY	11.52kW
POWER CONSUM.	1000kWh
Ta ROOM TEMP	25°C
ADDRESS	3/9

OPERATION PARAMETER	#01
T5 WATER TANK TEMP.	53°C
Tw2 CIRCUIT2 WATER TEMP.	35°C
TIS' C1 CLIMATE CURVE TEMP.	35°C
TIS2' C2 CLIMATE CURVE TEMP.	35°C
TW_O PLATE W-OUTLET TEMP.	35°C
TW_I PLATE W-OUTLET TEMP.	30°C
ADDRESS	4/9

OPERATION PARAMETER	#01
Tbt1 BUFFERTANK_UP TEMP.	35°C
Tbt2 BUFFERTANK_LOW TEMP.	35°C
Tsolar	25°C
IDU SOFTWARE	01-09-2019V01
ADDRESS	5/9

OPERATION PARAMETER	#01
ODU MODEL	6kW
COMP.CURRENT	12A
COMP.FREQENCY	24Hz
COMP.RUN TIME	54 MIN
COMP.TOTAL RUN TIME	1000Hrs
EXPANSION VALVE	200P
ADDRESS	6/9

OPERATION PARAMETER	#01
FAN SPEED	600R/MIN
IDU TARGET FREQUENCY	46Hz
FREQUENCY LIMITED TYPE	5
SUPPLY VOLTAGE	230V
DC GENERATRIX VOLTAGE	420V
DC GENERATRIX CURRENT	18A
ADDRESS	7/9

OPERATION PARAMETER	#01
TW_O PLATE W-OUTLET TEMP.	35°C
TW_I PLATE W-INLET TEMP.	30°C
T2 PLATE F-OUT TEMP.	35°C
T2B PLATE F-IN TEMP.	35°C
Th COMP. SUCTION TEMP.	5°C
Tp COMP. DISCHARGE TEMP.	75°C
ADDRESS	8/9

OPERATION PARAMETER	#01
T3 OUTDOOR EXCHARGE TEMP.	5°C
T4 OUTDOOR AIR TEMP.	5°C
TF MODULE TEMP.	55°C
P1 COMP. PRESSURE	2300kPa
ODU SOFTWARE	01-09-2018V01
HMI SOFTWARE	01-09-2018V01
ADDRESS	9/9

Trouble shooting

All error codes are listed in the installation and owners manual at the back pages 70-76.

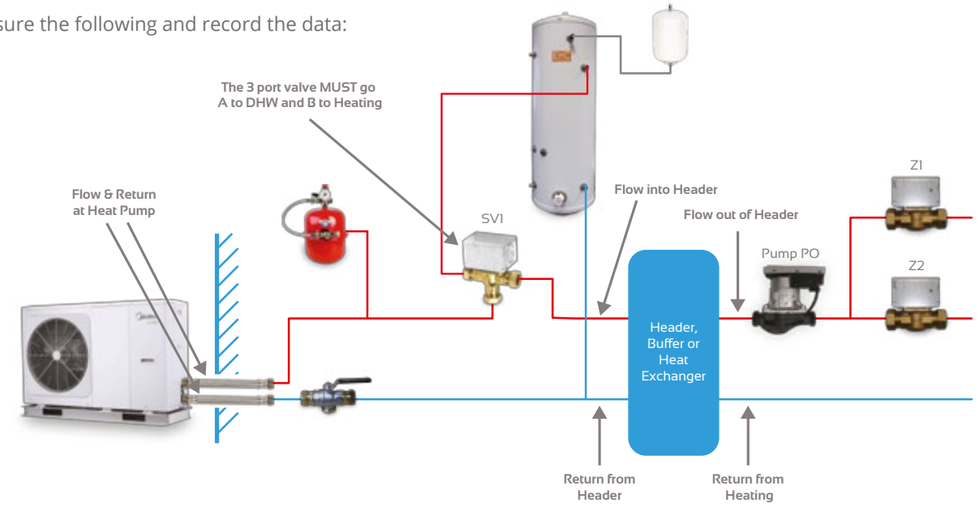
If the remote controller shows “E8” or “E0” as an error code, there is a possibility that there is air in the system, or the water level in the system is less than the required minimum.

The engineer should leave a copy of this form with the home owner as evidence of an annual service to keep up with the warranty.

What type of system do you have?

Is there a Header, Buffer or Heat Exchanger installed?

Measure the following and record the data:



Flow temperature at Heat Pump
Measure with pipe thermometer

Return temperature at Heat Pump

Flow temp into header / plate

Return from header / plate

Flow temp out of header / plate to heating

Return from Heating into header / plate

Flow rate from flow meter

Air temp at the back of the unit

Ambient air temperature
Measure from the garden

Hot Water Mode Commissioning Data

You must be running the heat pump in hot water mode for this section

Hot water cylinder model No.

Cylinder water temp at start-up
Measure from the remote controller

Cylinder water temp after 30mins
Measure from the remote controller

Water flow temp at cylinder
Measure with pipe thermometer

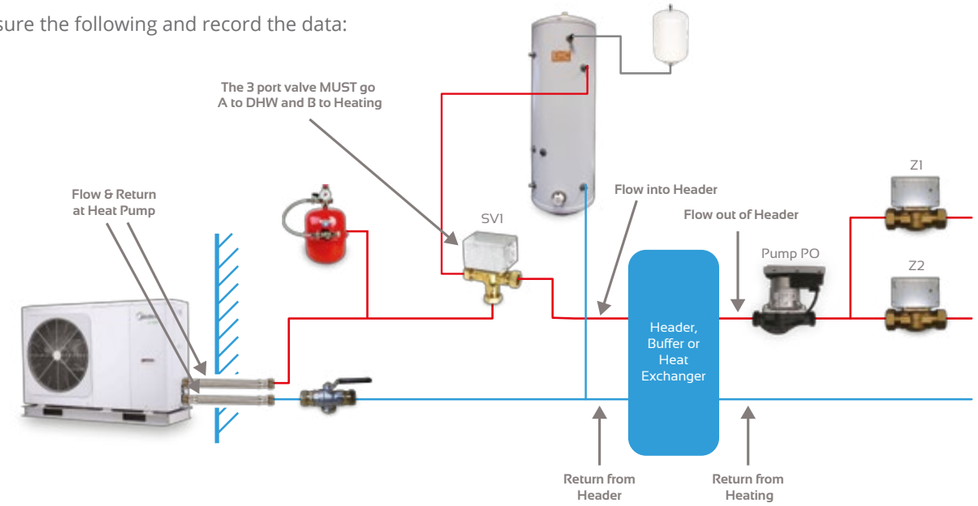
Water return temp at cylinder
Measure with pipe thermometer

Flow Rate
Measure from the flow meter

The engineer should leave a copy of this form with the home owner as evidence of an annual service to keep up with the warranty.

What type of system do you have?	
Is there a Header, Buffer or Heat Exchanger installed?	

Measure the following and record the data:



Flow temperature at Heat Pump Measure with pipe thermometer		**Return from Heating into header / plate**	
Return temperature at Heat Pump		**Flow rate from flow meter**	
Flow temp into header / plate		**Air temp at the back of the unit**	
Return from header / plate		**Ambient air temperature** Measure from the garden	
Flow temp out of header / plate to heating			

Hot Water Mode Commissioning Data

You must be running the heat pump in hot water mode for this section

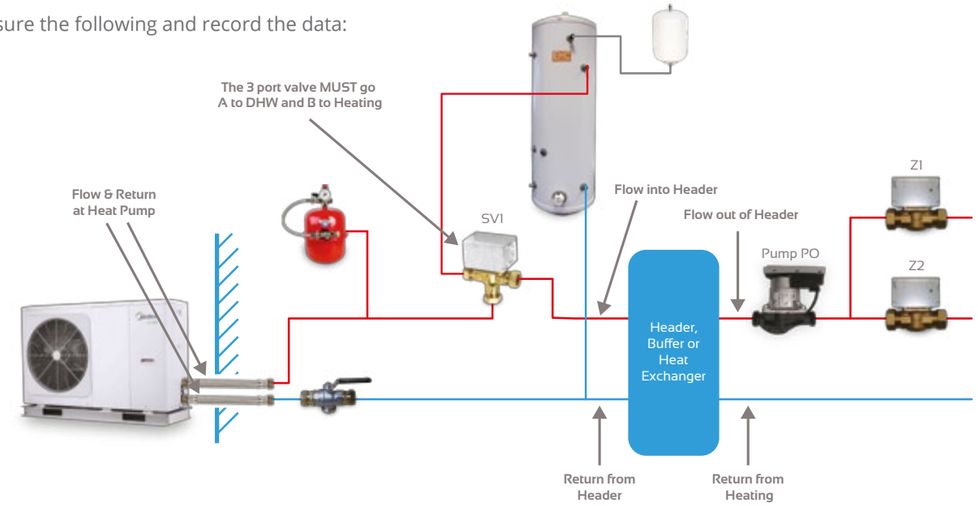
Hot water cylinder model No.		**Water flow temp at cylinder** Measure with pipe thermometer	
Cylinder water temp at start-up Measure from the remote controller		**Water return temp at cylinder** Measure with pipe thermometer	
Cylinder water temp after 30mins Measure from the remote controller		**Flow Rate** Measure from the flow meter	

Maintenance Form: Year 3

The engineer should leave a copy of this form with the home owner as evidence of an annual service to keep up with the warranty.

What type of system do you have?	
Is there a Header, Buffer or Heat Exchanger installed?	

Measure the following and record the data:



Flow temperature at Heat Pump Measure with pipe thermometer		**Return from Heating into header / plate**	
Return temperature at Heat Pump		**Flow rate from flow meter**	
Flow temp into header / plate		**Air temp at the back of the unit**	
Return from header / plate		**Ambient air temperature** Measure from the garden	
Flow temp out of header / plate to heating			

Hot Water Mode Commissioning Data

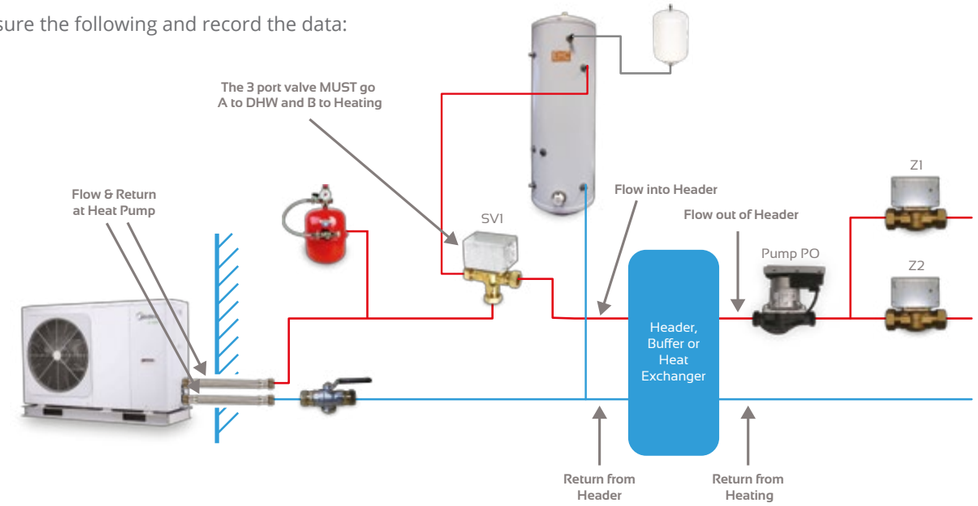
You must be running the heat pump in hot water mode for this section

Hot water cylinder model No.		**Water flow temp at cylinder** Measure with pipe thermometer	
Cylinder water temp at start-up Measure from the remote controller		**Water return temp at cylinder** Measure with pipe thermometer	
Cylinder water temp after 30mins Measure from the remote controller		**Flow Rate** Measure from the flow meter	

The engineer should leave a copy of this form with the home owner as evidence of an annual service to keep up with the warranty.

What type of system do you have?	
Is there a Header, Buffer or Heat Exchanger installed?	

Measure the following and record the data:



Flow temperature at Heat Pump Measure with pipe thermometer		**Return from Heating into header / plate**	
Return temperature at Heat Pump		**Flow rate from flow meter**	
Flow temp into header / plate		**Air temp at the back of the unit**	
Return from header / plate		**Ambient air temperature** Measure from the garden	
Flow temp out of header / plate to heating			

Hot Water Mode Commissioning Data

You must be running the heat pump in hot water mode for this section

Hot water cylinder model No.		**Water flow temp at cylinder** Measure with pipe thermometer	
Cylinder water temp at start-up Measure from the remote controller		**Water return temp at cylinder** Measure with pipe thermometer	
Cylinder water temp after 30mins Measure from the remote controller		**Flow Rate** Measure from the flow meter	

The engineer should leave a copy of this form with the home owner as evidence of an annual service to keep up with the warranty.

What type of system do you have?	
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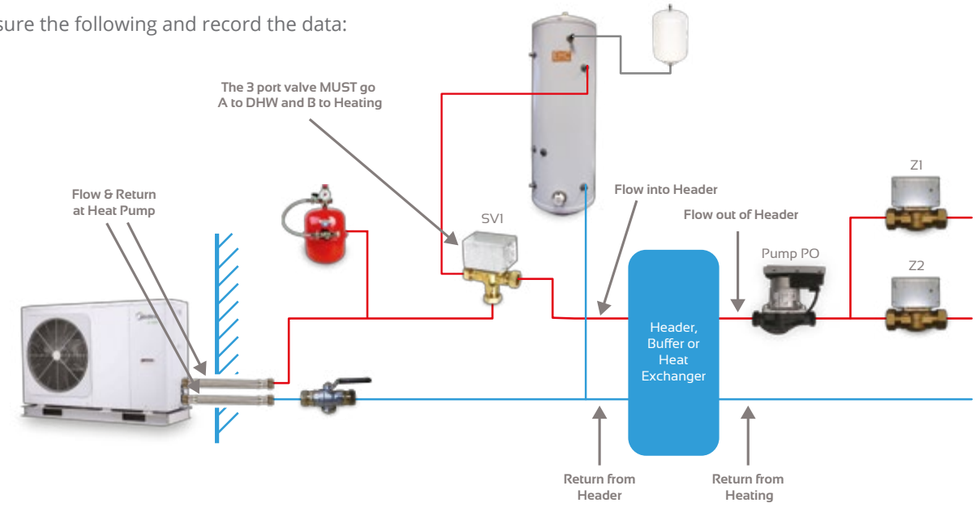
Measure the following and record the data:



Flow temperature at Heat Pump Measure with pipe thermometer		**Return from Heating into header / plate**	
Return temperature at Heat Pump		**Flow rate from flow meter**	
Flow temp into header / plate		**Air temp at the back of the unit**	
Return from header / plate		**Ambient air temperature** Measure from the garden	
Flow temp out of header / plate to heating			

Hot Water Mode Commissioning Data

You must be running the heat pump in hot water mode for this section

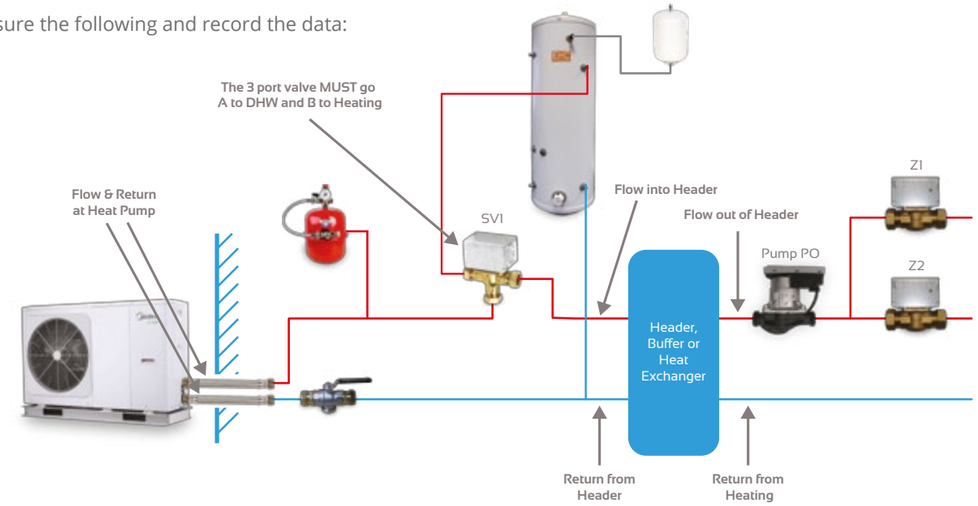
Hot water cylinder model No.		**Water flow temp at cylinder** Measure with pipe thermometer	
Cylinder water temp at start-up Measure from the remote controller		**Water return temp at cylinder** Measure with pipe thermometer	
Cylinder water temp after 30mins Measure from the remote controller		**Flow Rate** Measure from the flow meter	

Maintenance Form: Year 6

The engineer should leave a copy of this form with the home owner as evidence of an annual service to keep up with the warranty.

What type of system do you have?	
Is there a Header, Buffer or Heat Exchanger installed?	

Measure the following and record the data:



Flow temperature at Heat Pump Measure with pipe thermometer		**Return from Heating into header / plate**	
Return temperature at Heat Pump		**Flow rate from flow meter**	
Flow temp into header / plate		**Air temp at the back of the unit**	
Return from header / plate		**Ambient air temperature** Measure from the garden	
Flow temp out of header / plate to heating			

Hot Water Mode Commissioning Data

You must be running the heat pump in hot water mode for this section

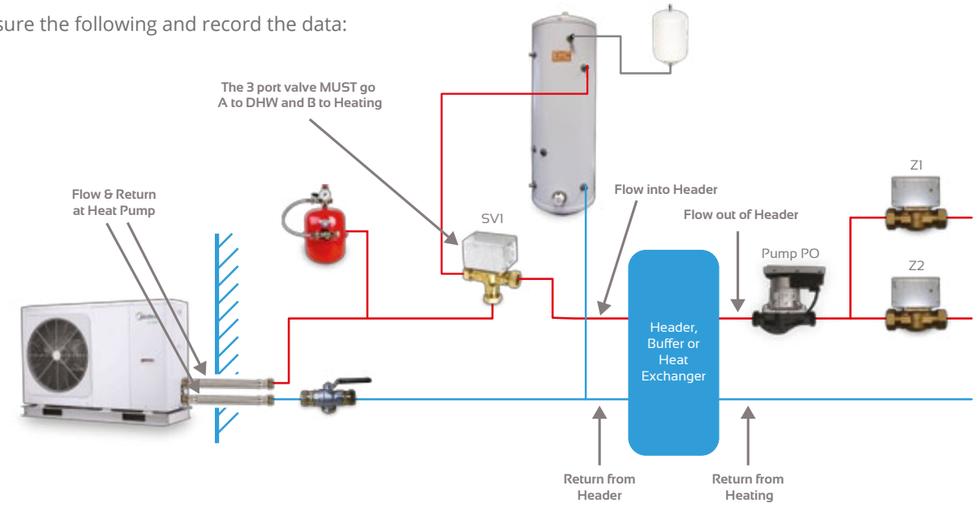
Hot water cylinder model No.		**Water flow temp at cylinder** Measure with pipe thermometer	
Cylinder water temp at start-up Measure from the remote controller		**Water return temp at cylinder** Measure with pipe thermometer	
Cylinder water temp after 30mins Measure from the remote controller		**Flow Rate** Measure from the flow meter	

Maintenance Form: Year 7

The engineer should leave a copy of this form with the home owner as evidence of an annual service to keep up with the warranty.

What type of system do you have?	
Is there a Header, Buffer or Heat Exchanger installed?	

Measure the following and record the data:



Flow temperature at Heat Pump Measure with pipe thermometer		**Return from Heating into header / plate**	
Return temperature at Heat Pump		**Flow rate from flow meter**	
Flow temp into header / plate		**Air temp at the back of the unit**	
Return from header / plate		**Ambient air temperature** Measure from the garden	
Flow temp out of header / plate to heating			

Hot Water Mode Commissioning Data

You must be running the heat pump in hot water mode for this section

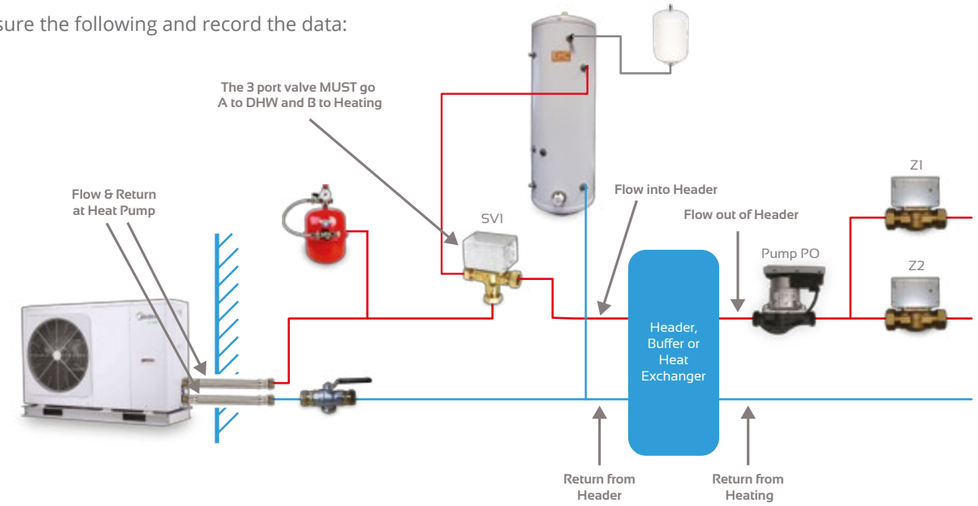
Hot water cylinder model No.		**Water flow temp at cylinder** Measure with pipe thermometer	
Cylinder water temp at start-up Measure from the remote controller		**Water return temp at cylinder** Measure with pipe thermometer	
Cylinder water temp after 30mins Measure from the remote controller		**Flow Rate** Measure from the flow meter	

Maintenance Form: Year 8

The engineer should leave a copy of this form with the home owner as evidence of an annual service to keep up with the warranty.

What type of system do you have?	
Is there a Header, Buffer or Heat Exchanger installed?	

Measure the following and record the data:



Flow temperature at Heat Pump Measure with pipe thermometer		**Return from Heating into header / plate**	
Return temperature at Heat Pump		**Flow rate from flow meter**	
Flow temp into header / plate		**Air temp at the back of the unit**	
Return from header / plate		**Ambient air temperature** Measure from the garden	
Flow temp out of header / plate to heating			

Hot Water Mode Commissioning Data

You must be running the heat pump in hot water mode for this section

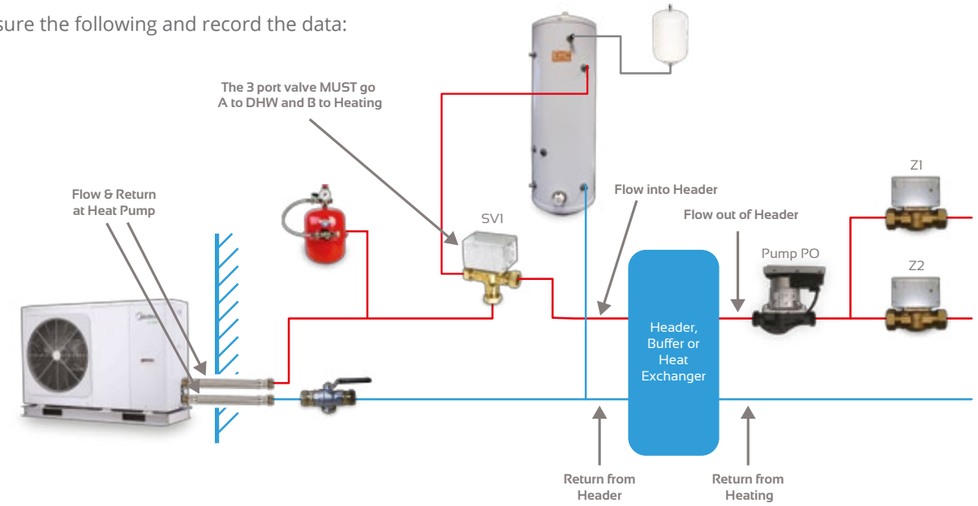
Hot water cylinder model No.		**Water flow temp at cylinder** Measure with pipe thermometer	
Cylinder water temp at start-up Measure from the remote controller		**Water return temp at cylinder** Measure with pipe thermometer	
Cylinder water temp after 30mins Measure from the remote controller		**Flow Rate** Measure from the flow meter	

Maintenance Form: Year 9

The engineer should leave a copy of this form with the home owner as evidence of an annual service to keep up with the warranty.

What type of system do you have?	
Is there a Header, Buffer or Heat Exchanger installed?	

Measure the following and record the data:



Flow temperature at Heat Pump Measure with pipe thermometer		**Return from Heating into header / plate**	
Return temperature at Heat Pump		**Flow rate from flow meter**	
Flow temp into header / plate		**Air temp at the back of the unit**	
Return from header / plate		**Ambient air temperature** Measure from the garden	
Flow temp out of header / plate to heating			

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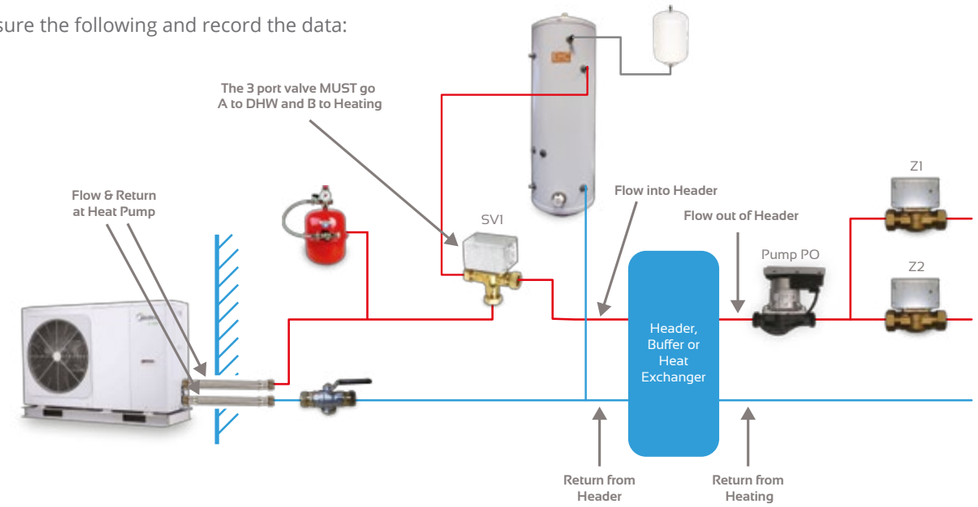

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Hot Water Mode Commissioning Data

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SALES | SERVICE | SUCCESS

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