

Pivot Stove
Hydronic
Installation
Guide

Install Location

- When installing the header tank - install directly above the appliance.
- There needs to be a continual rise between the appliance and the header tank.

Spill Tray

- Both formats Header Tank & Hot Water Service, spill tray is a mandatory requirement.

Pipe Flow & Return

- From the appliance, YOU CAN NOT RESTRICT the pipe size leaving the appliance.
- The flow & return pipe work should always be installed on a rise to allow the water to thermosiphon
- Note that on the flow line (no pumps or valves) that will isolate or restrict the flow to be installed.
- Minimum 1" copper to be used between the header tank and appliance.
- Flow Line going into the header tank is to be submerged below the water line to avoid oxidization if boiling occurs.
- Recommended to lag copper with Armaflex

Connection To The Appliance

- The connection between the Appliance and copper should always be made with "Hemp & Paste"

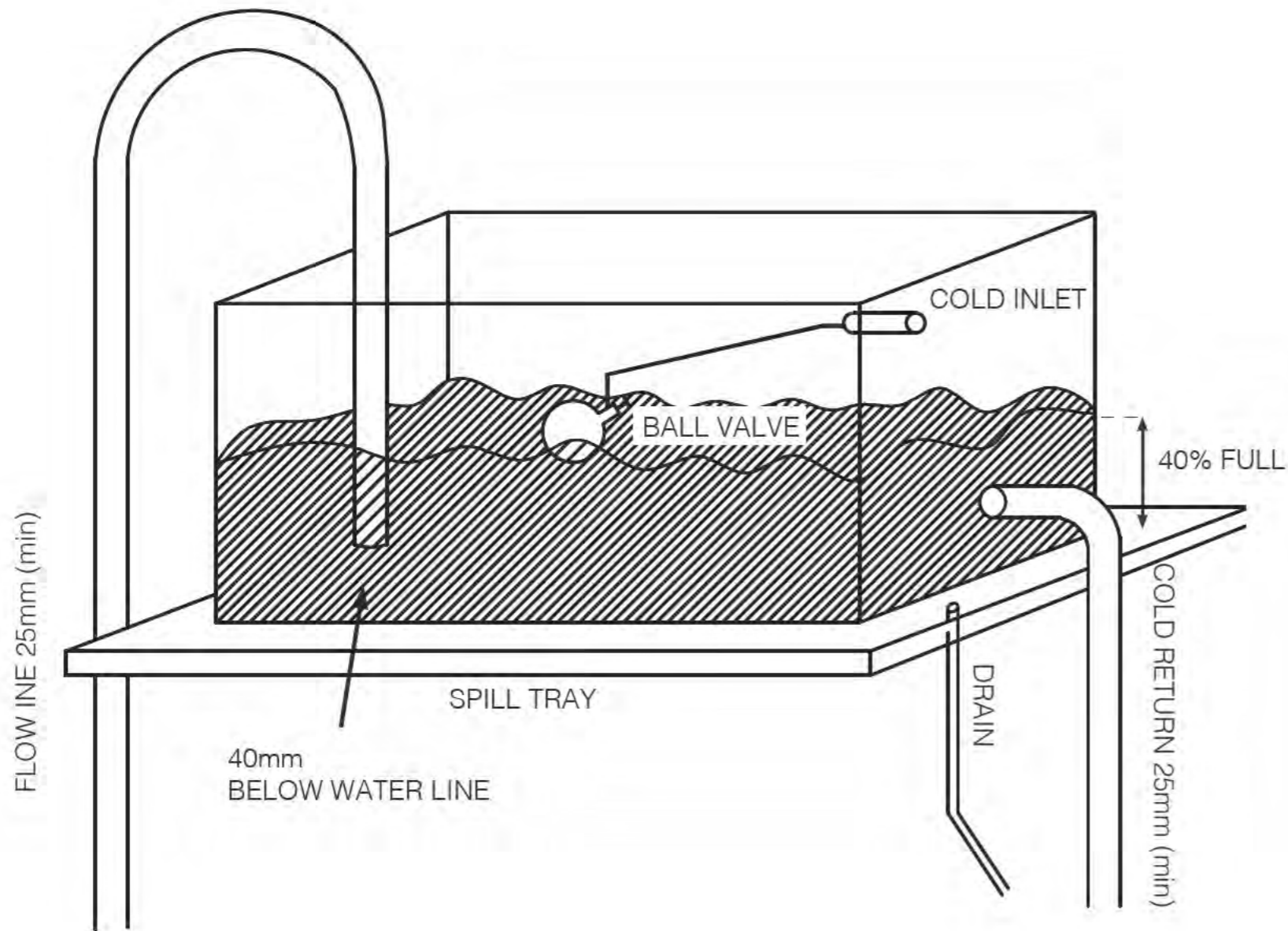
Water Level In Header Tank

- The water level is recommended in the header tank to be filled to 40% capacity.
- Require ½" cold water supply.

Header Tank

- Flow to be 40mm below water level
- Flow line 25mm min used
- Drip tray required
- Cold inlet feed required
- Drain point required
- Header tank must be 40% full

Header Tank Set Up



- Notes:
- Flow level to be 40mm below water level
 - Flow line 25mm min used
 - Drip tray required
 - Cold inlet feed required
 - Drain point required
 - Header tank must be 40% full.

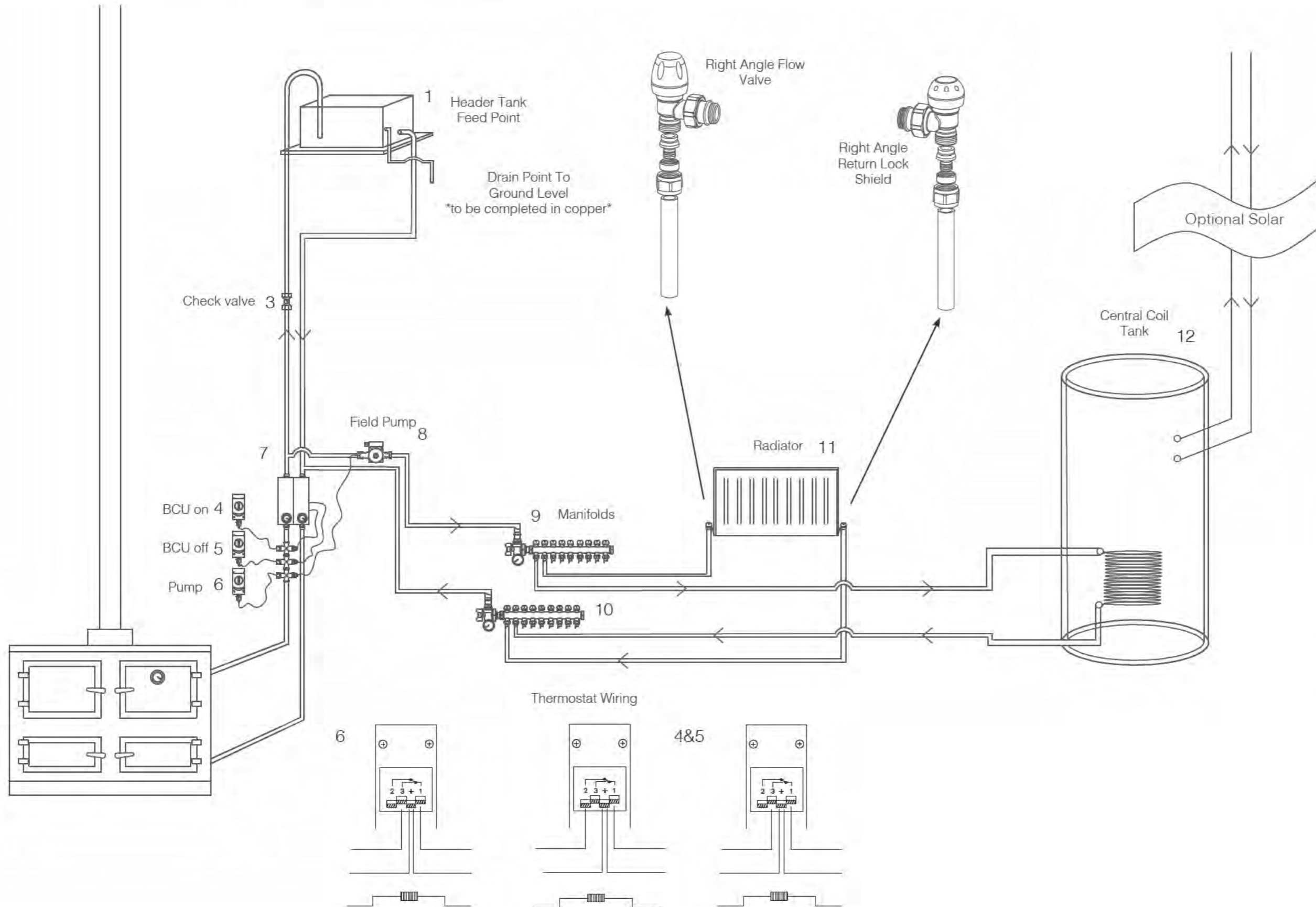
Pivot Stove and Heating	
Hydronic Manual	
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Sheet Number	1
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Radiator / Central Coil Tank Set Up



Notes:

1. Header tank to be located above the height of all services. Flow line to be vertically installed on a rise at all times.
2. Drip tray and over flow to be drained to ground level externally and **not** on the roof.
3. Check valve to be installed as recommended on the flow line of the BCU or pump tee off. This will reduce back flow.
4. BCU thermostat to activate BCU on at 15 degrees.
5. BCU thermostat to turn BCU off at 55 degrees.
6. Field pump thermostat to activate on at 65 degrees.
7. Field pump to be tee'd off above the height of the BCU, minimum 200mm away.
8. Field pump to be installed above BCU and electricals, are to be facing upwards.
- 9 & 10. Flow and return manifolds to be installed horizontally at all times.
11. refer to radiator install guide
 - Flow line on left side
 - Return line on right side
12. Hot Water System flow on top and return on bottom.

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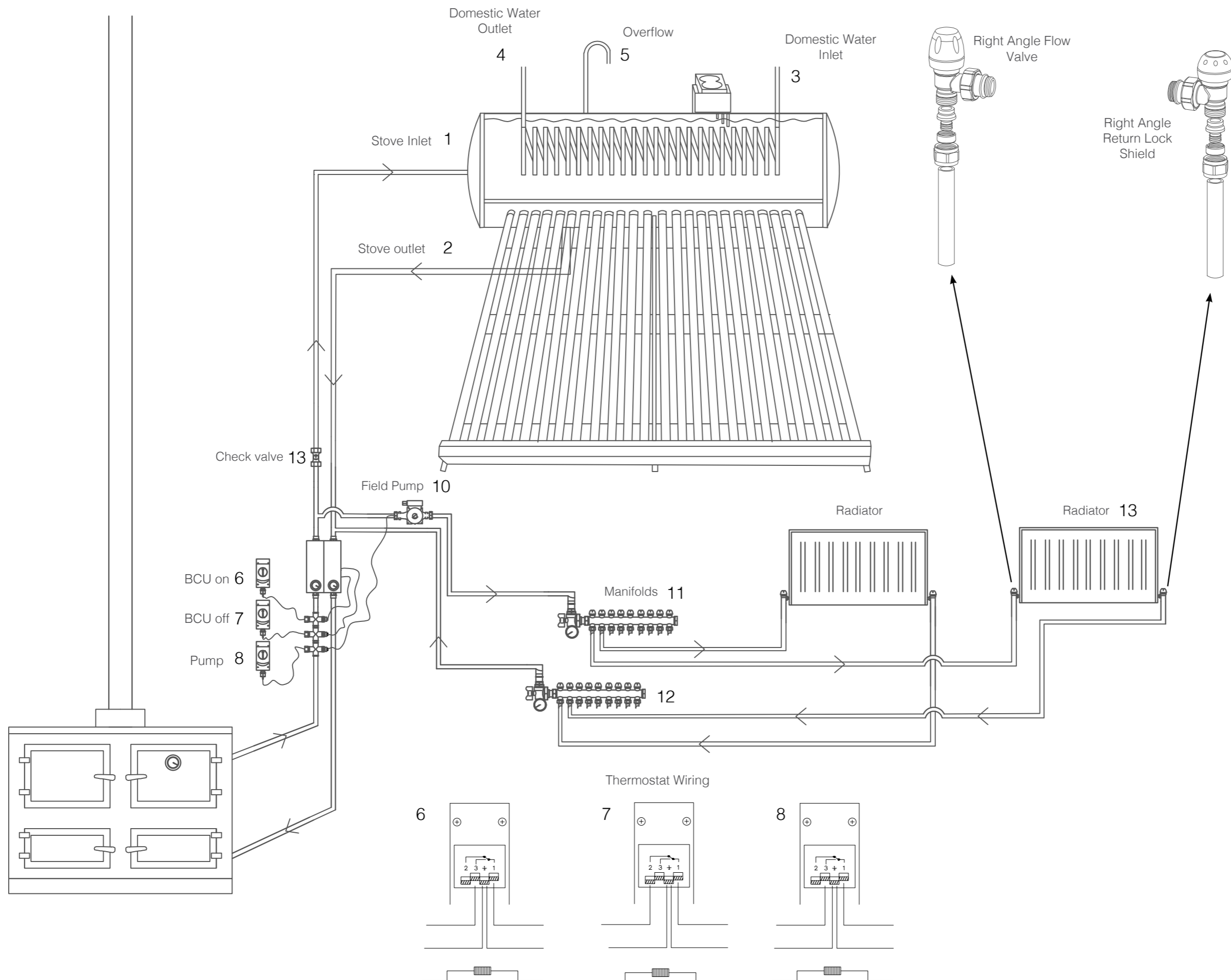
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Sheet Number 2

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Solar / Radiator Set Up



Notes:

1. Flow to enter in side of tank, on rise at all times.
2. Return line to be installed below tank, on gradient at all times
3. Domestic cold water inlet to feed coil.
4. Domestic hot water lead to house.
5. Overflow vent pipe to be drained off the roof externally in copper.
6. Field pump thermostat to activate on at 65 degrees.
7. Field pump to be
8. Field pump to be installed above BCU and electricals, are to be facing upwards.
- 9 & 10. Flow and return manifolds to be installed horizontally at all times.
11. Flow and return manifolds to be installed horizontally at all times.
12. Hot Water System flow on top and return on bottom.

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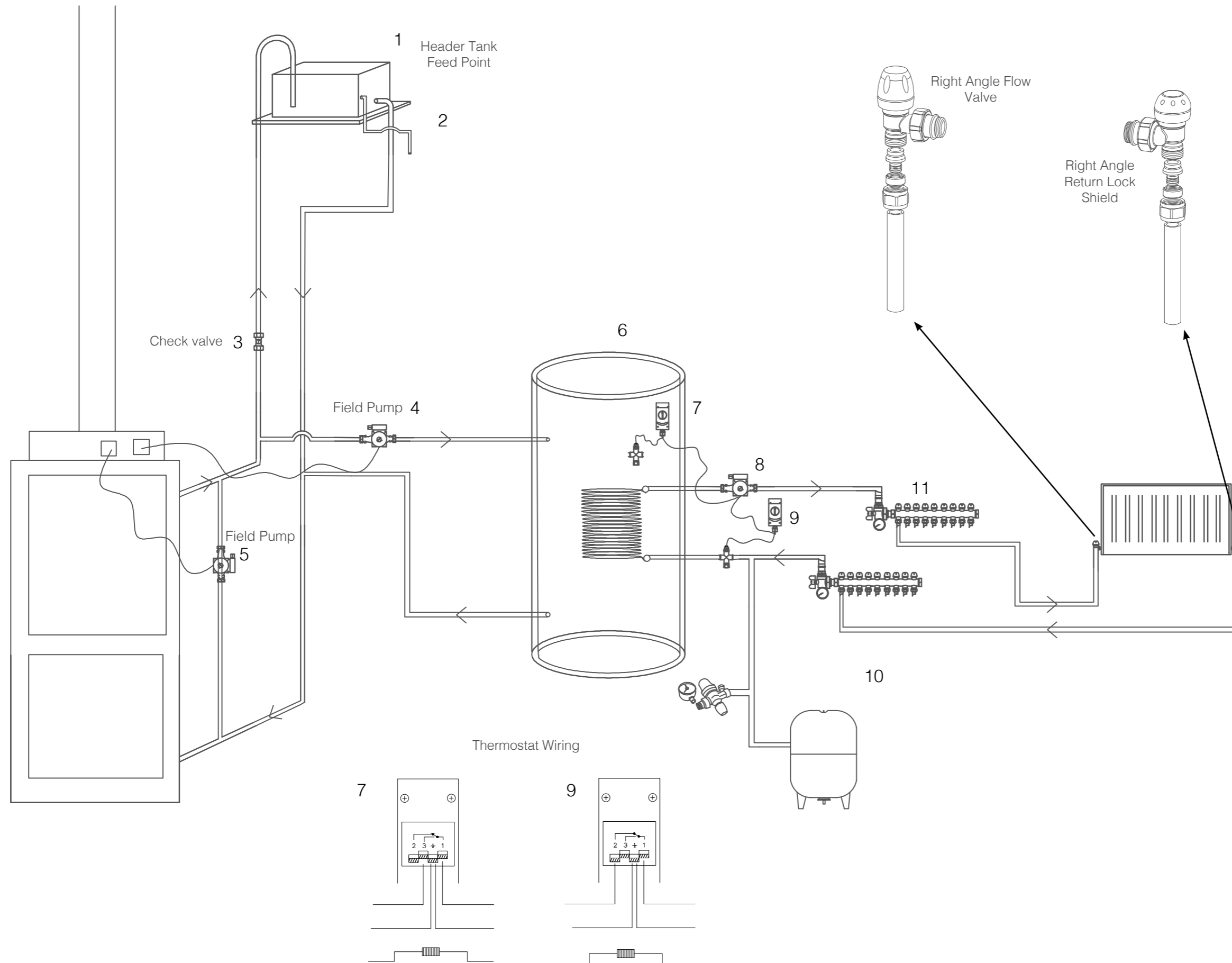
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Sheet Number 3

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Gasification System



Notes:

1. Flow to enter in side of tank.
2. Return line to be installed below tank
3. Domestic cold water inlet to lead coil.
4. Field pump to be wired directly into gasogen boiler to be activated. *see page...*
5. Re-circulation pump to be wired directly to gasogen to be activated. *see page...*
6. Buffer Tank 400ltr.
7. Immersion thermostat to activate field pump on at 70 degrees.
8. Secondary field pump to service hydronics.
9. Thermostat to call pump off when return temperature is reached at 45 degrees.
10. Expansion tank & auto fill system kit to be installed on return line.
11. Manifold arrangement.

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Sheet Number 5

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Installation of BCU, Pump and check valve

Installation of BCU – Boiler Control Unit

- When installing the BCU, recommended 300mm (minimum) higher than the appliance to allow for thermosiphoning.
- Ensure that pump is fitted with 2 sensor tee's and 2 thermostat's: One thermostat to trigger the pump to turn ON at 15°C. The other thermostat to turn the pump OFF at 55°C allowing a consistent circulation between the appliance and the BCU.

Installation of Pump in Field

- Note the field pump is recommended to branch off on the flow line above the location of the sensor tee and BCU, yet below the swing check valve.
- Pump is to be fitted with isolation ball valve unions to allow the pump to be isolated for servicing and general maintenance.
- The correct installation of the pump is to fit the electrical board in a position that it is not facing below the flow line.

Adjustments on ensuring this is achieved can be found in the operational manual of the pump.

- To be installed horizontally.
- As part of the commissioning, ensure that the pump is correctly bled – *Refer to the operation manual.*

Check Valve

- Install check valve 200mm below header tank on flow line
- Ensure that the check valve is after the pump has been teed off

Installation of Thermostat, Sensor Tee and Check Valve

Sensor Tee

- Ensure that the Sensor Tee is fitted on the flow line between the appliance and the header tank.
- This is to be fitted as close to appliance to allow an accurate gauge of the water temperature. *Follow wiring diagram.*
- This should be fitted with “Hemp & Paste”

Thermostat - *Refer to wiring diagram*

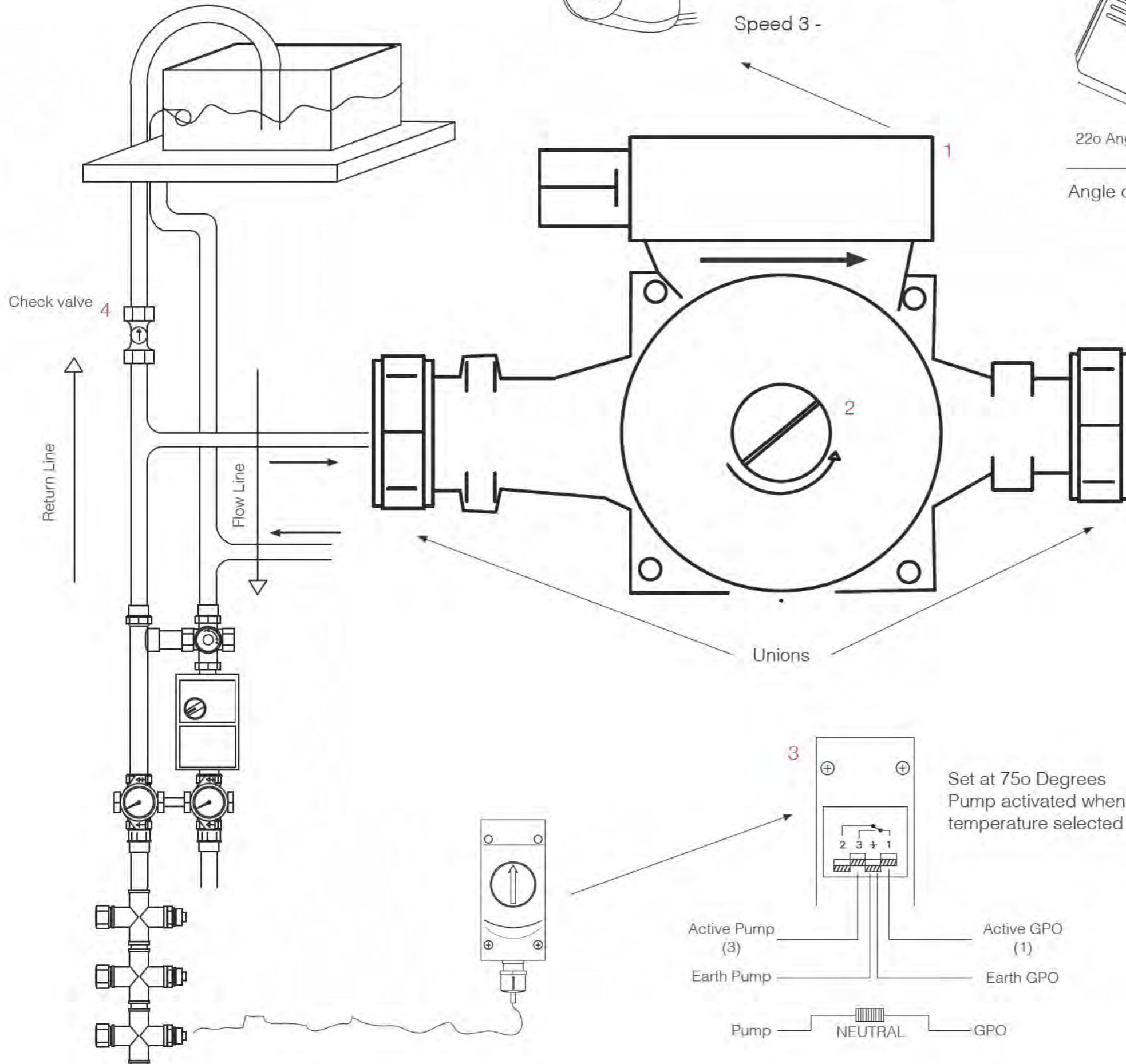
- The thermostat is to be connected to the pump – the pump activated to turn on when the set temperature is reached.
- Ensure that pump is fitted with 2 sensor tee's and 2 thermostat's: One thermostat to trigger the pump to turn ON at 15°C. The other thermostat to turn the pump OFF at 55°C allowing a consistent circulation between the appliance and the BCU.
- BCU is to be fitted with a thermostat that is activated to come on at 15°C. *Follow wiring diagram.*
- The secondary pump in the field, which is branched off the flow line, is ideally set to 65°C to begin with – this can be increased or lowered depending on the application.
- The goal is to pull the water off before boil point in the header tank.

Check Valve

- Check valve to be installed above pump on the flow line, minimum 200mm below header tank.

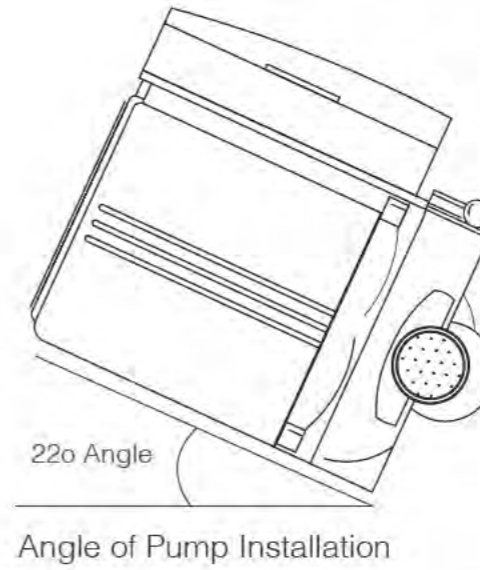
This will reduce thermosiphoning, ensuring heat is pulled off the boiler and not the header tank.

Field Pump Set Up



PUMP SETTINGS

- Speed 1 for 3 radiators
- Speed 2 for 4-7 radiators
- Speed 3 -



Notes:

- 1.** The pumps should be installed with the electrical wiring box installed in the upwards direction so to avoid the electrical terminals from water getting on them. The pump should be installed on a 22o angle as per the manual supplied, so that the paddle is emerged in water.
- 2.** This is the bleed point on the pump which should be bled on install once charged with water to ensure no air is causing the pump to cavitate.
- 3.** Siemens thermostat to be installed so that the pump is activated to come on at 75o
- 4.** Check Valve to be installed on the flow line after BCU and pump as close to the header tank as possible. This will prevent reverse thermosiphoning.

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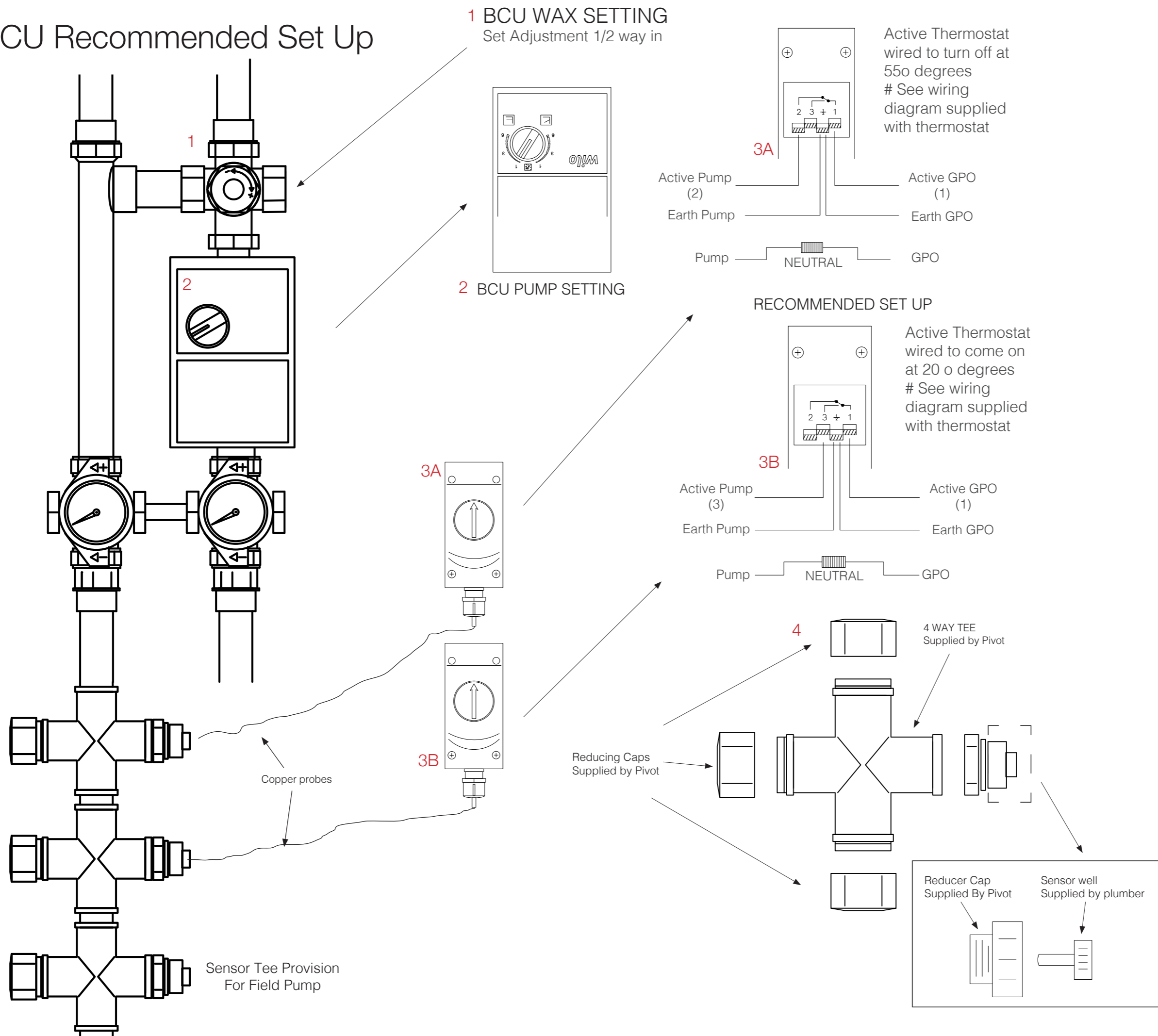
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Sheet Number 4

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BCU Recommended Set Up



Notes:

1. Allen key to be dialled all the way in. And one an a half turns outwards, this is the correct mix of cold and hot water.

2. Pump setting to be set to number 1 towards the left hand side on the constant setting, as indicated.

3A. Siemens thermostat to activate the BCU to come on at 20 degrees, this is wired into terminal 3 and 1.

3B. Siemens thermostat to be wired to turn the pump of one to temperatures reach 55o. This is wired to terminal 2 &2.

4. Sensor Tee's one to be installed below the BCU on the flow line. Two thermostats required for the BCU.

* It is recommended to operate the BCU with two thermostats, one activating the pump at a lower temperature and to shut off at a higher temperature.

* Typical install requires only one thermostat to shut off at a higher temperature.

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Sheet Number 8

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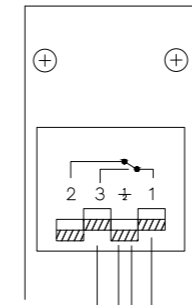
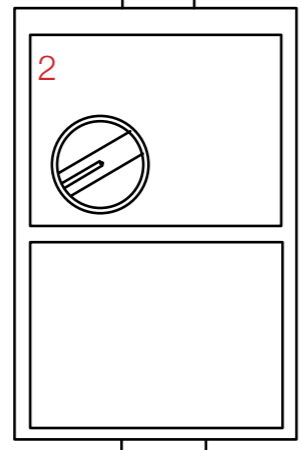
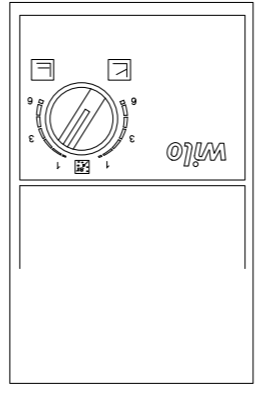
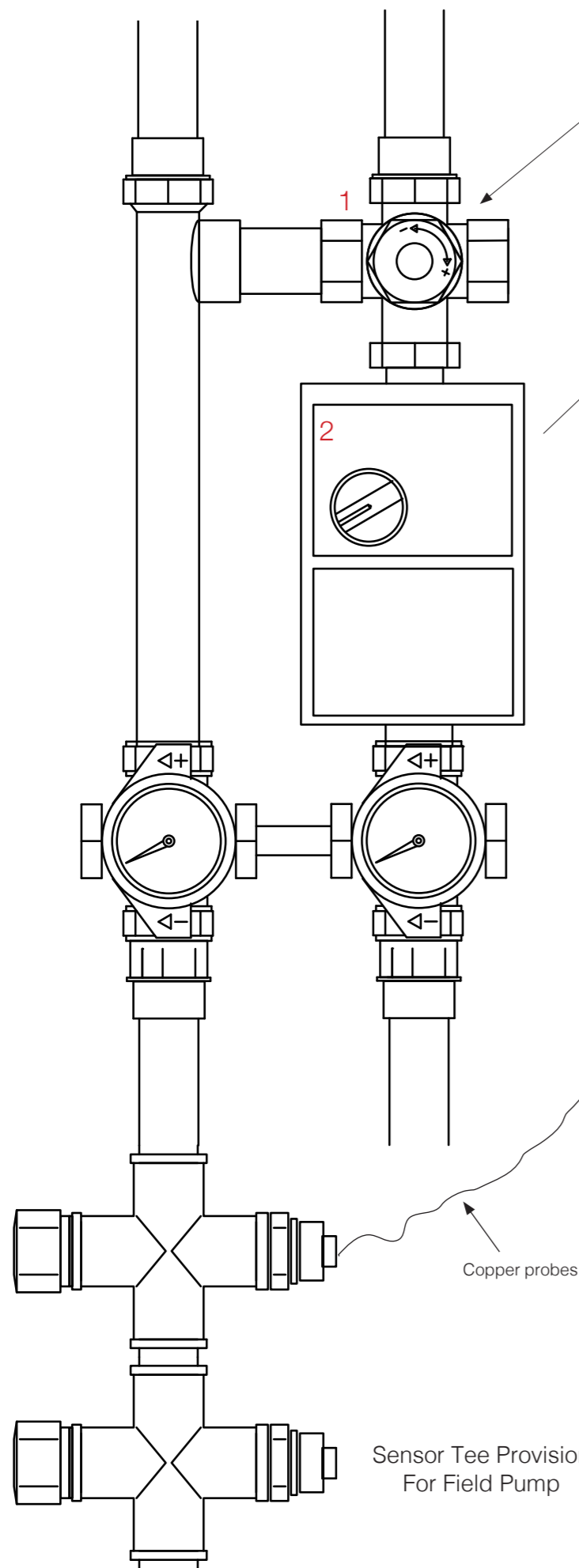
BCU Basic Set Up

1 BCU WAX SETTING
Set Adjustment 1/2 way in

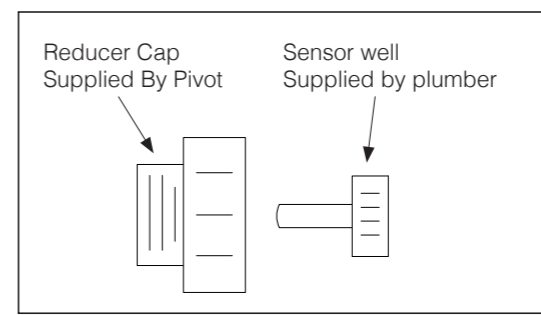
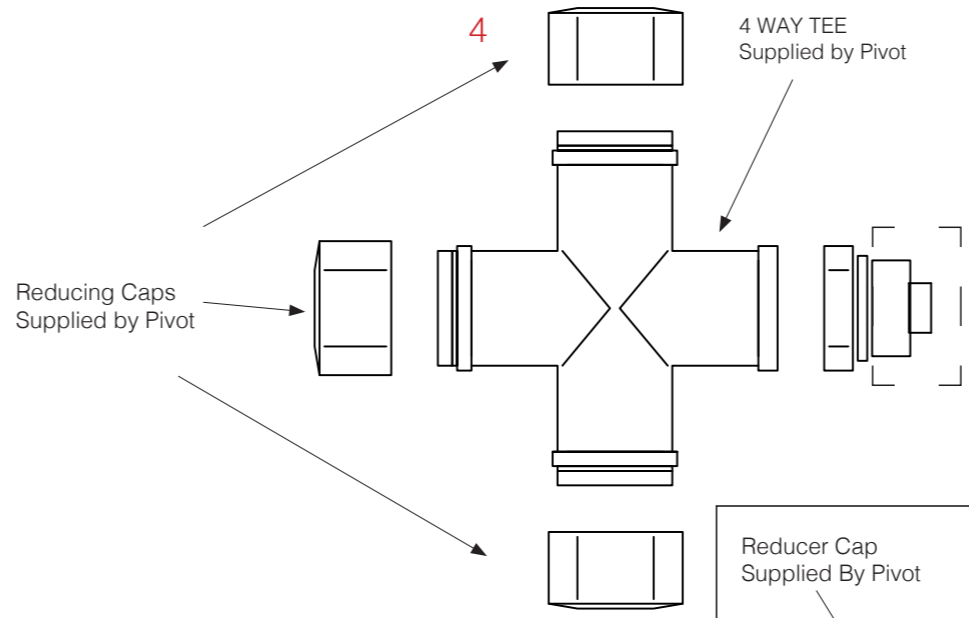
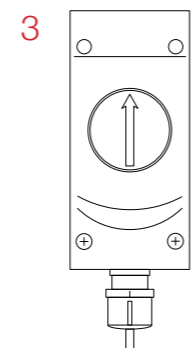
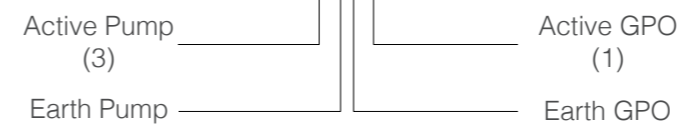
2 BCU PUMP SETTING

3

4



Active Thermostat wired to come on at 20 degrees # See wiring diagram supplied with thermostat



- Notes:
1. Allen key to be dialled all the way in. And one and a half turns outwards, this is the correct mix of cold and hot water.
 2. Pump setting to be set to number 1 towards the left hand side on the constant setting, as indicated.
 3. Siemens thermostat to be wired to turn the pump of one to temperatures reach 55.0. This is wired to terminal 2 & 2.
 4. Sensor Tee's one to be installed below the BCU on the flow line. Two thermostats required for the BCU.

* It is recommended to operate the BCU with two thermostats, one activating the pump at a lower temperature and to shut off at a higher temperature.
* Typical install requires only one thermostat to shut off at a higher temperature.

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Sheet Number 7

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Radiators – Manifold & Pipe

Radiators

- When installing the radiators the recommended size for noggins is 90mm or 40mm. This will ensure that you have suitable fixings for your brackets.
- Bracket locations – *refer to manufactures design*
- The flow line is recommended fitted on the left hand side of the radiator, at the lowest fixing.

Fixing Kit

- When fitting off the radiator, ensure that the lock shield is fitted on the return line (RHS) and is fully opened (turned anticlockwise).
- When fitting off the radiators, ensure the right angle valve fitted on the (LHS) and is fully open to the desired temperature.
- Optional Thermostatic heads are to be fitted on the (LHS) in replacement for the cap on the valve.

Manifold / Pipe

- Between the appliance and the manifold, this should be all installed in copper.
- From the manifold onwards 16mm multilayered insulated pexal pipe should be installed to the radiators.
- Ensure the flow line runs to the top ports and the return line runs the lower ports.
- The auto bleed should be fitted on RHS flow ports
- Drain point fitted to the return port on the LHS
- The manifold is recommended to be **fitted horizontally** and after the pump in the field.
- The distance from the manifold to the secondary pump in the field is recommended to be no more than 15mm away to avoid heat loss.

In-slab – Mixing kit / Pipe / Manifold

Mixing Kit (reference 2)

All In-Slab designs should incorporate a BCU

Mixing kit to be fitted with “Hemp & Paste”

Thermostat fitted on the mixing kit is recommended at maximum to be set at 50°C

This should be fitted after the secondary pump in the field yet as close as possible to the manifold servicing the In-Slab.

Pipe

The pipe used for the In-Slab circuit is recommended to be 16mm oxygen barrier pipe work.

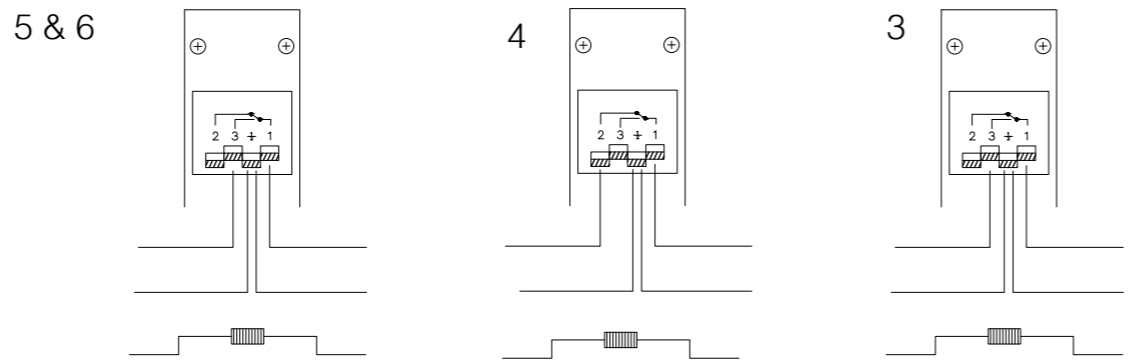
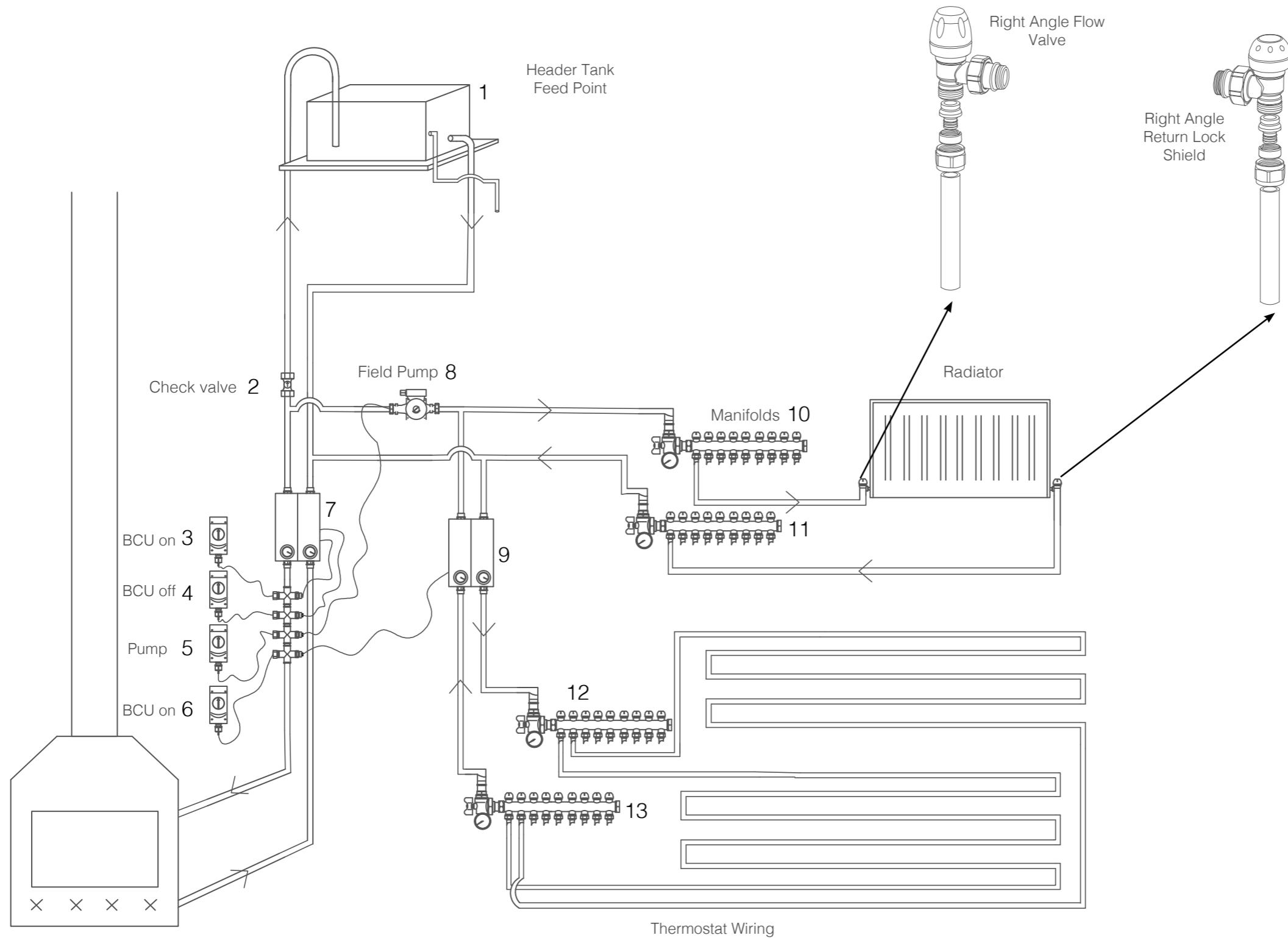
No more than 100m of pipe per circuit is recommended.

This is broken down to a maximum of 50m on the flow and 50m return lines.

No joins or bends to be fitted at any point in the circuit.

This can be installed either tied to the mesh or to the insulated panel (Depending on the set up, *refer to manufactures specification*)

In-slab / Radiator Set Up



- Notes:
1. Flow to enter in side of tank.
 2. Check valve to be installed as recommended on the flow line of the BCU or pump tee off. This will reduce back flow.
 3. Domestic cold water inlet to lead coil.
 4. Domestic hot water lead to house.
 - 5 & 6. Both pumps are to be activated at the same temperature.
 6. Field pump thermostat to activate on at 65 degrees.
 7. Field pump to be ***
 - 8 & 9. Field pump thermostat to activate on at 65 degrees.
 10. Radiator flow
 11. Radiator return
 12. In-slab manifold flow
 13. In-slab manifold return

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Sheet Number 6

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Hydronic Heating Installation Commissioning Procedure

(Note that this is to be completed after every installation of any appliance)

Step 1. Fill & Test for leaks

After the installation is complete and radiators fitted off

Fill the system completely, check over all pipe work and ensure that there are no leaks and the system is sound.

Step 1. Bleeding the air

After the fill test is complete and no leaks found. To correctly bleed each radiator, shut off all isolation valves on the manifold (cold circuit) to restrict flow to the radiators. This will isolate each line, The same can be done for the In-Slab after pressure testing.

Open up the furthest line, which is generally fitted on the LHS of the manifold.

Air will build up at the top of each radiator. Using your bleed key, bleed the system until water is evident, then lock off and begin the next line.

Use a bowl or cup to catch any water that bubbles out – *this water may be black in colour and could stain any surface contacted.*

As soon as air bubbles cease, turn off the air vent.

After this is completed on all circuits, open all valves to allow the system to balance.

Step 3. Adding Inhibitor & Test Dose

Isolate one radiator and fit the inhibitor dose point to the top RHS fitting as per the instructions on the kit.

Add the inhibitor as instructed and check the dosage is sufficient.

Step 4. System Over View & Initial Light

Run through the functions on the appliance and cover what is included in general maintenance to run the system.

Explain the purpose of the thermostat and how this can be changed if boiling occurs if any circuits are isolated in future.

Explain how the radiator valves can be adjusted and if fitted, the thermostatic head.

Explain that the system will make NOISE from expansion.

Light the stove and explain the dampening systems.