



# HEADER KITS

**IMAX XTRA 2**  
**80 120 160 200 240 280**  
**80P 120P 160P 200P 240P**

When replacing any part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by Ideal Heating.

For the very latest copy of literature for specification and maintenance practices visit our website [idealheating.com](http://idealheating.com) where you can download the relevant information in PDF format.



This kit is suitable for the following boilers:

**Imax Xtra 2      80, 120, 160, 200, 240 & 280**  
**80P, 120P, 160P, 200P & 240P**

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## **IMPORTANT**

**PLEASE READ THIS MANUAL ALONGSIDE THE IMAX XTRA 2 INSTALLATION MANUAL  
THESE KITS CAN BE USED IN CONJUNCTION WITH LOW LOSS HEADERS & PLATE  
HEAT EXCHANGERS SUPPLIED AS PART OF THE IMAX XTRA 2 OPTIONS RANGE**

# 1 INTRODUCTION

This technical data contains information for dimensioning & assembly of a cascade system kit for the Imax Xtra 2 range.

Header kits are available 'in line' (4 boilers long).

## GENERAL DESCRIPTION OF HEADER KITS

A requirement to spread the total required heat output over more than one boiler can be accommodated by the use of the Imax Xtra 2 multiple boiler header kit options.

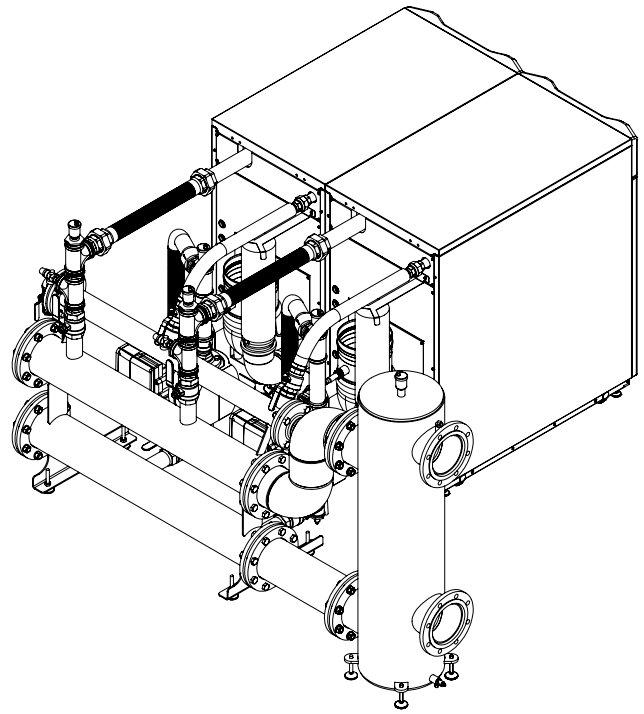
The OCI345 can be installed (1 per boiler) for cascade control, see Imax Xtra 2 cascade kit instructions for further information.

The flue configurations for the range of appliances using these system kits are B23, C53 & C63 (See appliance manual).

**Note.** Particular care should be taken in the case of large output boiler installations, complying with the requirements of the Clean Air Act.

All headers and pipe work should be insulated in accordance with the Non Domestic Building Services Compliance Guide.

To ensure compliance with the maximum heat loss criteria, insulation thickness should be calculated according to BS EN ISO 12241 using standardised assumptions.



# 2 GENERAL DESCRIPTION OF CASCADE SYSTEMS

## 2.1 FRAME AND HEADER KIT DESIGN OPTIONS

The Imax Xtra 2 boilers are suitable for use in a multiple boiler configuration. The Imax Xtra 2 multiple boiler system is available in side 1 and 2 kit options giving the opportunity to choose the optimum footprint size for a given output. Frame 5 states available and gives the minimum number of appliances required, the appropriate floor space & the kit product number (N.B. The kits do not include the boilers).

Available Imax Xtra 2 Appliances	
kW (NG)	Product No.
Ideal Imax Xtra 2 80	225464
Ideal Imax Xtra 2 120	225465
Ideal Imax Xtra 2 160	225466
Ideal Imax Xtra 2 200	225467
Ideal Imax Xtra 2 240	225468
Ideal Imax Xtra 2 280	225469
kW (Propane)	Product No.
Ideal Imax Xtra 2 80P	225464 + 226434
Ideal Imax Xtra 2 120P	225465 + 226435
Ideal Imax Xtra 2 160P	225466 + 226436
Ideal Imax Xtra 2 200P	225467 + 226437
Ideal Imax Xtra 2 240P	225468 + 226438

**Note.**

All boilers need to be sized in accordance to the total required heat load and the modulation capabilities of the appliances.

Boilers operating with Propane must have the dedicated conversation kit installed.

Low Loss Header Accessories (Mixing Header)		
DN80	DN100	DN150
219552	219553	226426

continued . . . . .

## 2.2 MULTIPLE BOILER INSTALLATIONS

For installing 1 to 4 boilers, the product range includes water and gas headers capable of assembly using threaded socket and PN6 flange connections.

## 2.3 HYDRONIC ISOLATION: LOW LOSS HEADER & PLATE HEAT EXCHANGER

A low loss header or plate heat exchanger allows flow separation within a hydronic system.

This allows two flow circuits to operate with their own flow and pressure drop environments whilst effectively transferring heat to its adjoined water circuit.

This enables the modern high resistant, high efficiency boilers to operate under their optimum conditions, while the main heating circuit operates to its own controlled optimum requirements. A plate heat exchanger will allow primary and secondary circuits to operate at different system pressures.

## 2.4 OUTPUT CONTROL

All boiler pumps are designed to be wired to the appliance to allow a controlled pump over run.

If using an external pump control system the capability of a timed pump over run signal provided by the appliance must be maintained at all times.

The optional OCI 345 accessory control can be installed (1 per boiler) to enable cascade control upto a maximum of 4 boilers.

## 2.5 GAS SUPPLY

For Imax Xtra 2 the 80, 120, 160, 200, 240, 280 boilers are configured for use with natural gas. The 80P, 120P, 160P, 200P, 240P boilers are configured for use with LPG.

Connection to the gas supply must be in accordance to with all the applicable regulations.

GAS HEADERS	
Water Header Size	NG / LPG Header
DN150	DN80 (3")
DN80 / DN100	DN65 (2 1/2")

**Note.** Boilers operating with Propane must have the dedicated conversation kit installed.

Test and purge point is provided in the header blanking flange and is intended to check the total installation pressure drop.

**Note:** Option Kit DN65 flange 2" threaded comes as standard with the DN80 water header

## 2.6 ASSEMBLY

The header kits must be located in a suitable place that affords a flat and level floor-area of suitable load bearing capacity. Care must be taken when locating the kits that space is available for the servicing, installation and maintenance of the appliance and all of the associated connections and equipment. (See Appliance manuals and drawing with this manual).

## 2.7 SAFE HANDLING

Installation may require 2 or more operatives to move it to its installation site, remove it from its packaging base and during movement into its installation location. Manoeuvring may include the use of a sack truck and involve lifting, pushing and pulling.

Caution should be exercised during these operations.

Operatives should be knowledgeable in handling techniques when performing these tasks and the following precautions should be considered:

- Be physically capable
- Use personal protective equipment as appropriate, e.g. gloves, safety footwear

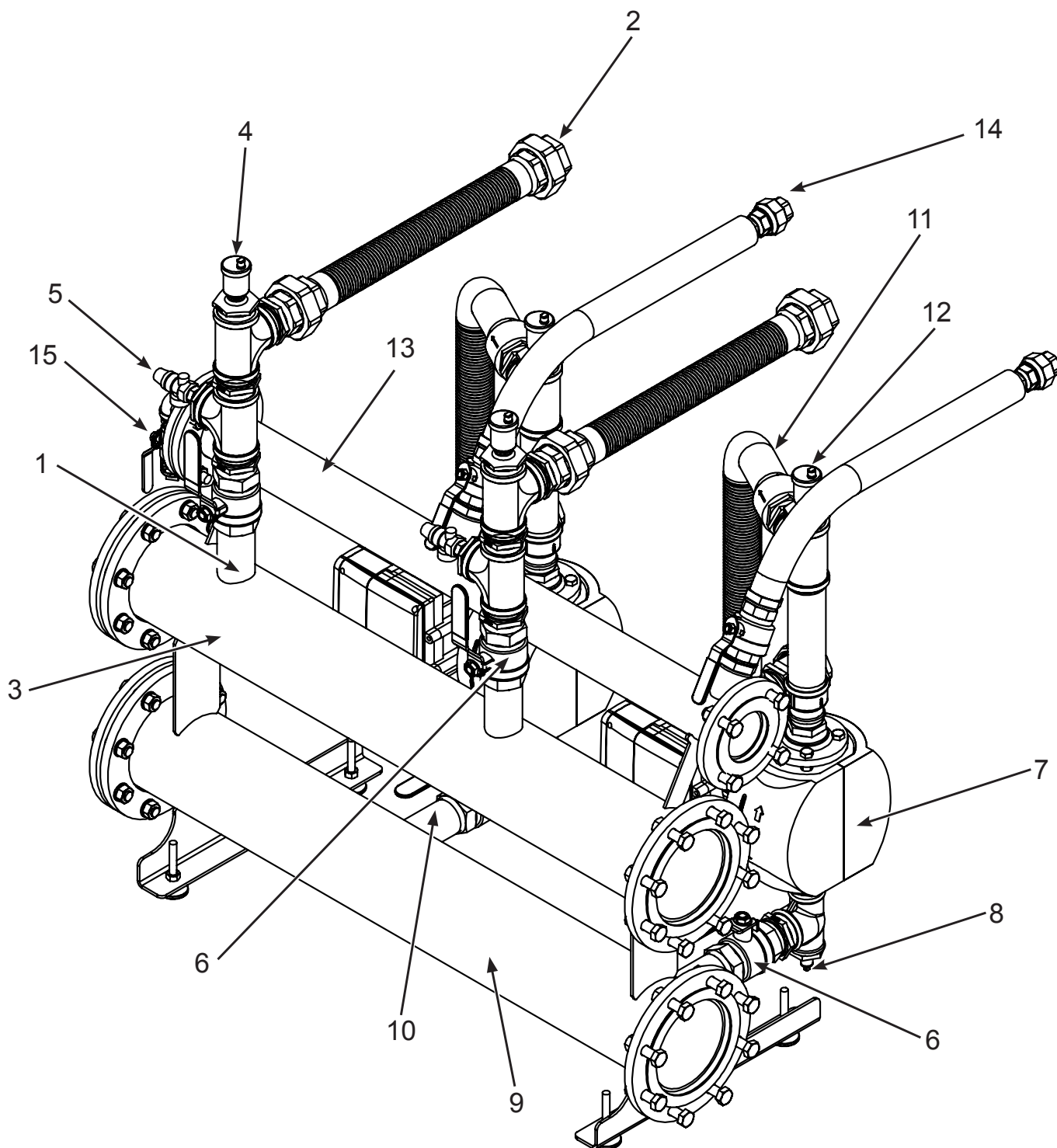
During all manoeuvres and handling actions, every attempt should be made to ensure the following unless unavoidable and/or the weight is light.

- Keep back straight
- Avoid twisting at the waist
- Avoid upper body/top heavy bending
- Always grip with the palm of the hand
- Use designated hand holds
- Keep load as close to the body as possible
- Always use assistance if required

Full stability is achieved when complete, ensure support where necessary during assembly.

## 2.8 HEADER ASSEMBLY

1. Flow Pipework
2. Flow Connection
3. Flow Header
4. Auto Air Vent
5. Pressure Relief Valve
6. Isolation Valve
7. Pump
8. Drain Cock
9. Return Header
10. Return Pipework
11. Return to Boiler
12. Auto Air Vent
13. Gas Header
14. Gas Connection
15. Gas Header Test & Purge Point



## 3 MULTIPLE BOILER SYSTEM COMPONENTS

### 3.1 GENERAL

The boiler kit system consist of the following components:

- Gas header.
- Boiler flow and return headers supported on mounting skid
- Low loss mixing header (optional)
- Hardware pack (includes essential connection and valve components)
- Plate Heat exchanger kit (optional)
- Boiler Shunt pump (MUST be used, sold separately to match boiler)

### 3.2 MAIN WATER HEADERS

The main water headers consist of: water flow, water return headers custom sized for all boilers. It is possible to extend the system to a maximum of 4 boilers in a linear configuration.

Each header kit provides water flow and return headers sized either DN80, DN100 or DN150 dependent on total maximum combined heating output required.

Water Header Size	Max Combined Output (kW)
DN150	1120
DN100	640
DN80	360

### 3.3 GAS HEADER

The Gas header consists of a custom manufactured manifold. This is located in a cradle incorporated within the header mounting skid.

Up to 640kW DN65, 720kW to 1120kW DN80.

### 3.4 LOW LOSS HEADERS (MIXING HEADER) OPTION

The mixing headers are supplied with an auto air vent and drain point as standard.

### 3.5 BOILER SHUNT PUMP

Pump kits and External pump controls (**sold separately**) are designed to provide the optimum flow around the appliance water circuit ensuring the maximum flow rates are contained within the design constrains of the appliance.

It is not recommended to fit additional pumps directly to the appliance circuit unless they have been designed to ensure the maximum permissible appliance flow rate is not exceeded.

### 3.6 HEADER SPACER

When installing more than 2 boilers, an optional header spacer 450mm long, can be supplied to allow further access for maintenance.

Water Header Size	Header Spacer Product No.
DN80	226418
DN100	226419
DN150	226420

### 3.7 INSTALLATION AREA AND DIMENSIONS

Care must be taken to ensure adequate access for boiler / cascade system installation and servicing.

A minimum of 600mm and a maximum of 1000mm clearance must be provided from the front of the installed boilers in cascade to facilitate boiler servicing. Additional clearance must also be considered in the event of boiler replacement.

Consideration to connecting heating flow and return pipework, gas supply and condensate drainage must be given. Routing of the condensate drain must be made to allow a minimum fall of 1 in 20 away from the installed boilers in cascade, throughout its length. Adequate room above the boilers must be provided to install and service the boiler flue system. Further information with respect to flue and condensate drain connection is provided in the installation and servicing instructions provided within the boilers packaging carton.

### 3.8 BOILER CONNECTION KITS

The connection kit contains the following components:

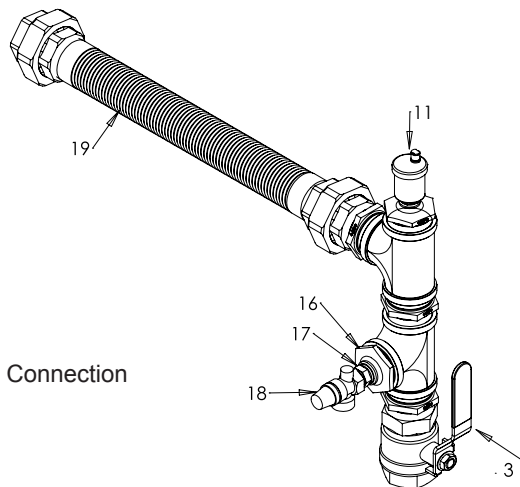
- Boiler return leg complete with isolating valve, pump, non return valve, drain cock and fibre seals
- Boiler flow leg complete with isolating valve, pressure relief valve and fibre seals
- Header blanking flanges, fasteners and gaskets
- Mixing header fasteners and gasket

#### LEGEND

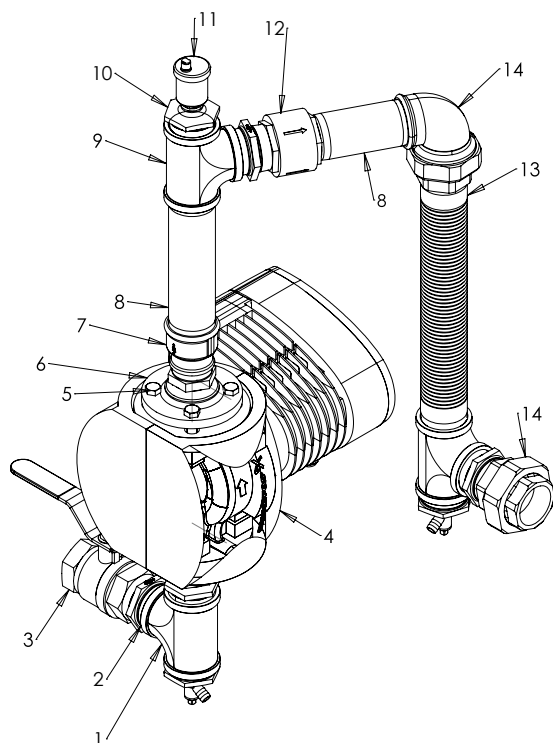
1. 2" x 1 1/4" x 1 1/4" Tee
2. Nipple
3. Isolation Valve
4. Pump inc. Gaskets
5. Pump Fastener Kit
6. Threaded Flange
7. 2" - 1 1/4" Reducing Socket
8. 2" Hard Pipe
9. 2" Equal Tee
10. Reducer

11. Auto Air Vent
  12. Non Return Valve
  13. Boiler Return Flexible Connection from Header
  14. 2" Union
  15. Pump Union
  16. Reducer
  17. Nipple
  18. Safety Relief Valve 6 Bar
  19. Boiler Flexible Connection from Header
- Gas Connection:** Flexi-hose from header

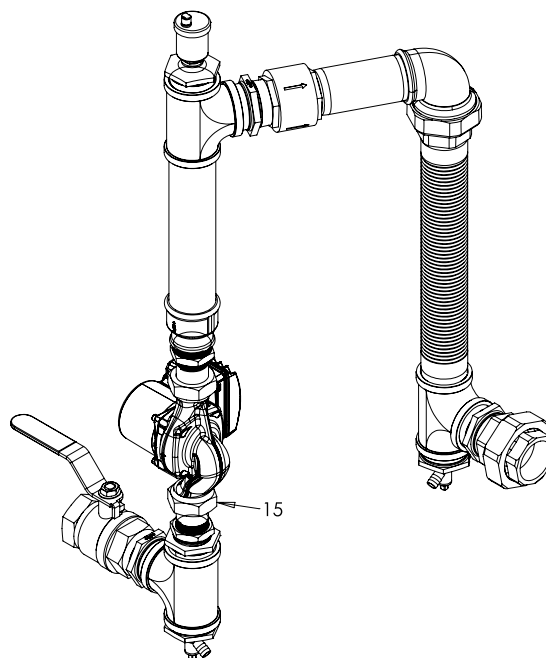
FLOW



#### RETURN - Flanged Pump Variant



#### RETURN - Threaded Pump Variant



## IMPORTANT POINT

### Assembly:

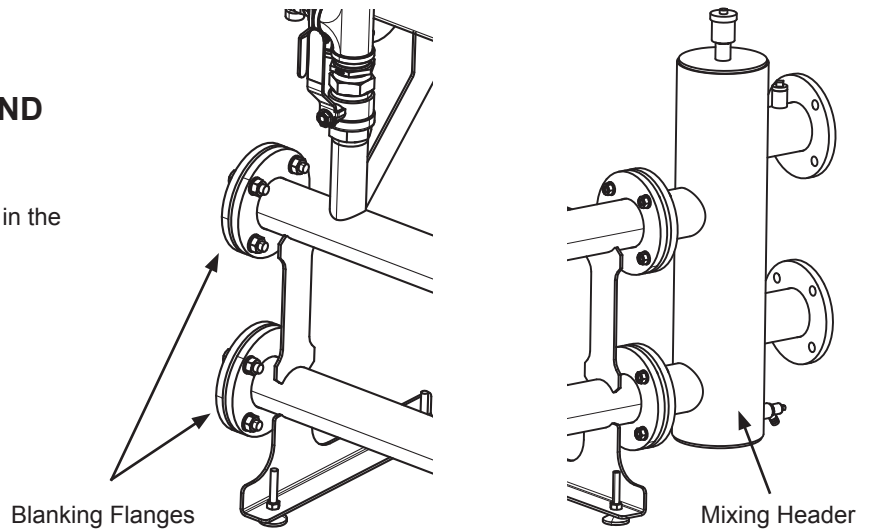
Header kits must stand on a flat and level floor of suitable load bearing capacity. Minimal adjustment/leveling is achieved with adjustable feet.

## 4 HEADER KIT ASSEMBLY (OPTIONAL ACCESSORY)

### 4.1 FITTING MIXING HEADER AND BLANKING FLANGES

1. Fit the mixing header and blanking flanges in the chosen positions.

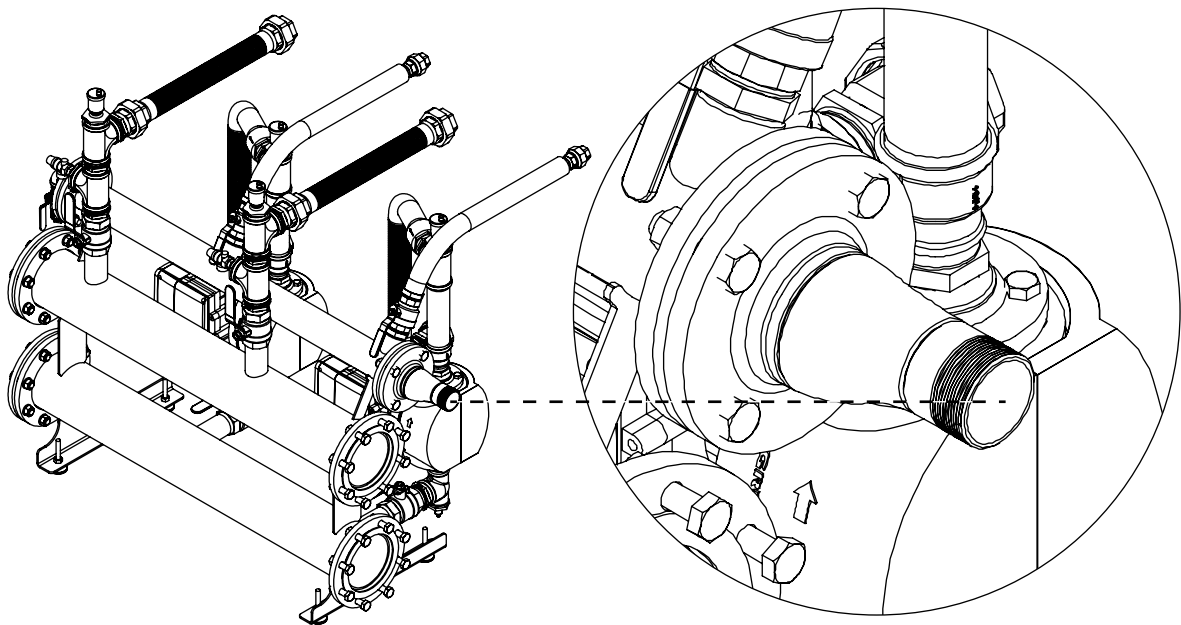
*Note. Mixing header can be located either LHS or RHS of the headers.*



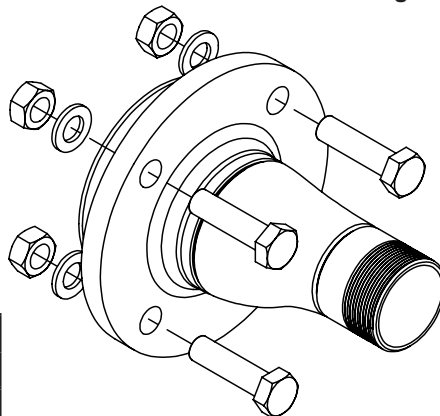
### 4.2 FITTING NG/LPG GAS HEADER REDUCING ADAPTOR

1. Fit the NG/LPG gas header reducing adaptor in the chosen position.

*Note. NG/LPG gas header reducing adaptor can be located either LHS or RHS of the headers.*



NG/LPG gas header reducing adaptor

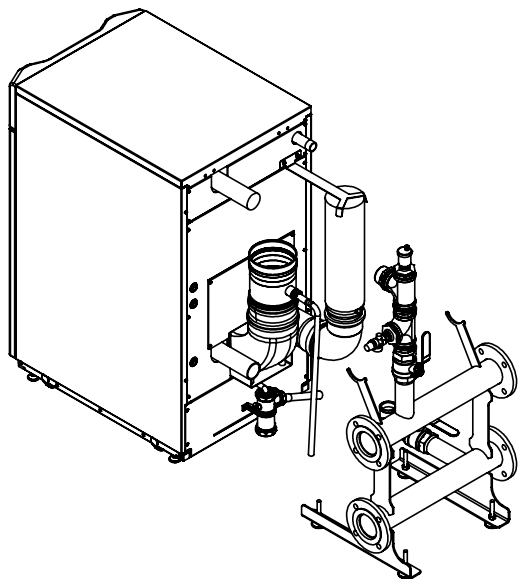


Gas Header	Adaptor
DN65	2"BSPT 226424
DN80	2"BSPT 226425

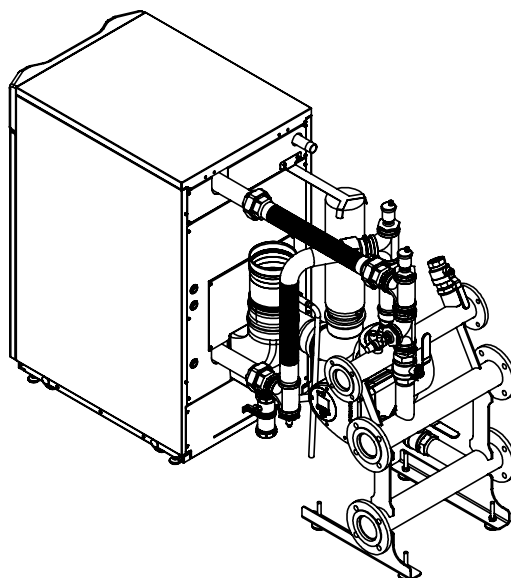


### 4.3 FITTING HEADER KIT ASSEMBLY

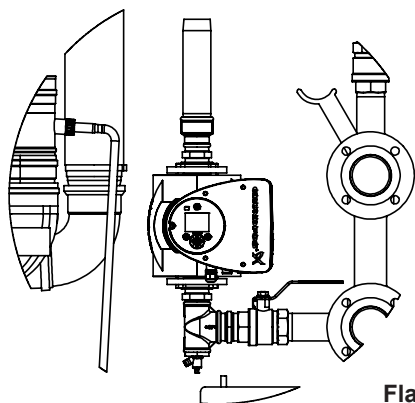
1. Position Header Kit relative to boiler. Adjustable feet are provided to allow for uneven floor surface (minimal adjustment).



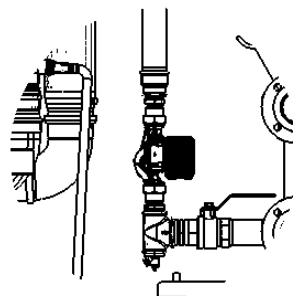
4. Install Gas Header.



2. Install Pump Kit, ensuring gaskets are fitted and correctly seated.

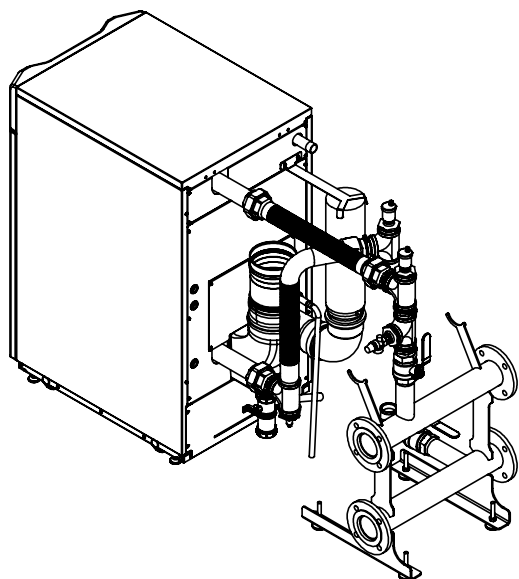


**Flanged Pump**



**Threaded Pump**

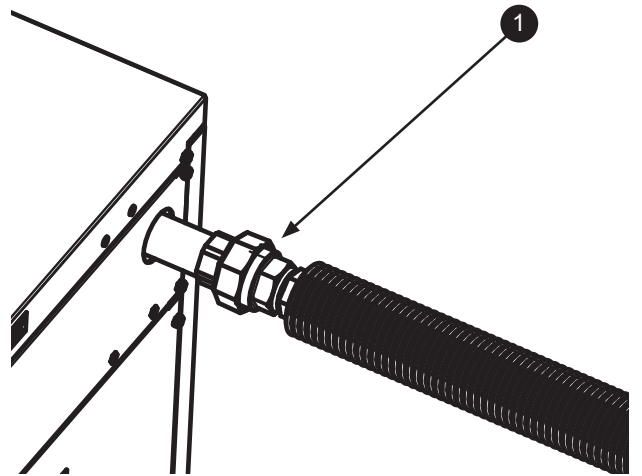
3. Install Flow and Return connections.



## 4.4 FITTING GAS CONNECTION

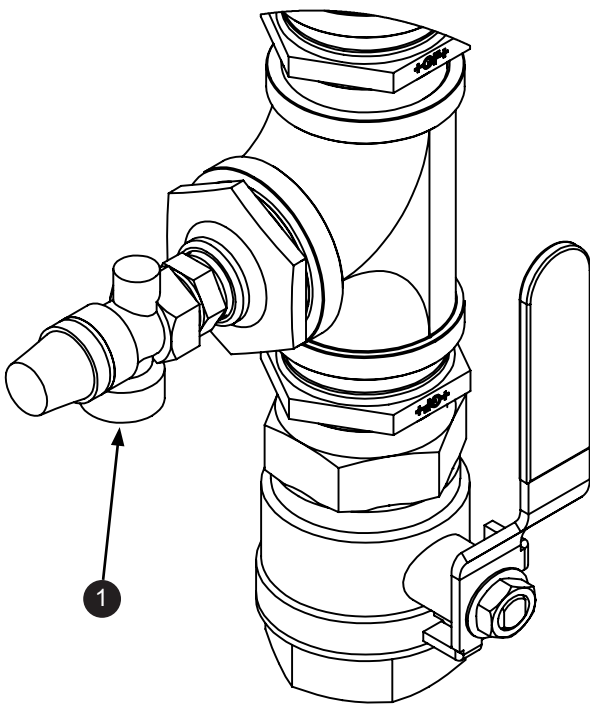
**NOTE:** Gas Isolation Valve is supplied with the Header Kit.

1. Fit the Gas Hose Union to the boiler gas connection.
2. Fit the flexi gas pipe to the header isolation valve.
3. Connect the flexi gas pipe to the union fitted in step 1.



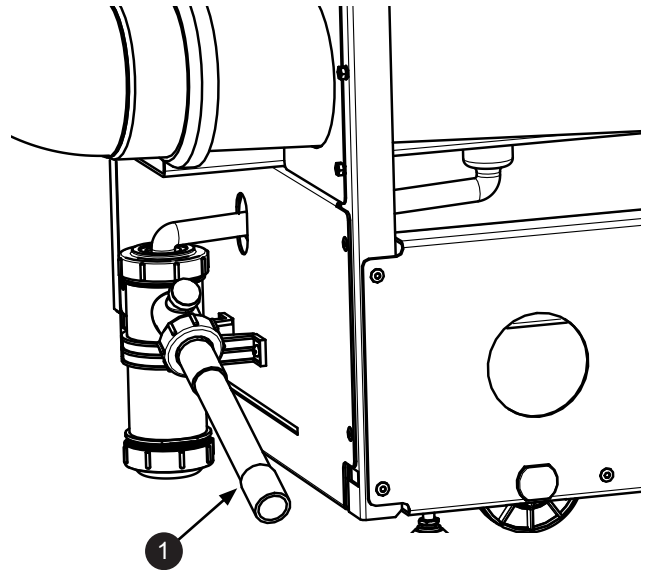
## 4.5 PRESSURE RELIEF VALVE CONNECTION

1. Ensure each boiler pressure relief valve is piped to a suitable location to prevent the discharge of steam/ water causing injury.



## 4.6 CONDENSATE TRAP CONNECTION

1. Fit the condensate traps to the boiler and pipe to drain following the recommendations contained in the boiler Installation instructions.



## 5 INSTALLATION DRAWINGS FOR MULTIPLE BOILER SYSTEMS

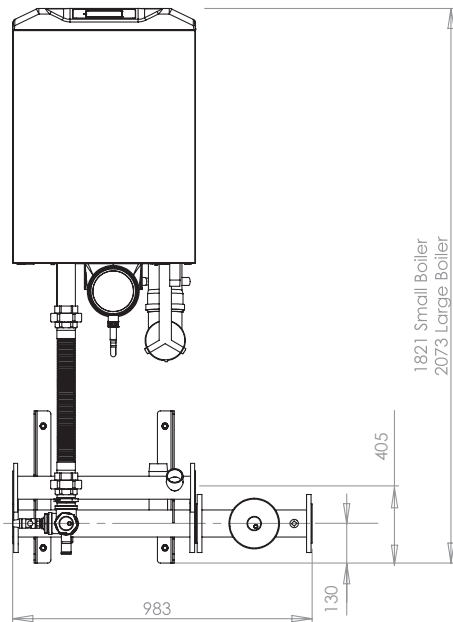
### 5.1 GENERAL DATA

The boiler side of the cascade systems is sized to water flow and return temperature differential 20ΔT.

Boiler Model	Number	Total kW	Water Header Size	Gas Header Size	Pump LLH	Pump PHEX
Imax Xtra 2 (80kW)	1	80	DN80	DN65	UPML 25-105	UPML 25-105
Imax Xtra 2 (120kW)	1	120	DN80	DN65	UPML 25-105	UPML 25-105
Imax Xtra 2 (160kW)	1	160	DN80	DN65	UPMXXL 25-105	UPMXXL 25-105
Imax Xtra 2 (200kW)	1	200	DN80	DN65	Magna3 40-80F	Magna3 40-100F
Imax Xtra 2 (240kW)	1	240	DN80	DN65	Magna3 40-80F	Magna3 40-100F
Imax Xtra 2 (280kW)	1	280	DN80	DN65	Magna3 40-80F	Magna3 40-100F
Imax Xtra 2 (80kW)	2	160	DN80	DN65	UPML 25-105	UPML 25-105
Imax Xtra 2 (120kW)	2	240	DN80	DN65	UPML 25-105	UPML 25-105
Imax Xtra 2 (160kW)	2	320	DN80	DN65	UPMXXL 25-105	UPMXXL 25-105
Imax Xtra 2 (200kW)	2	400	DN100	DN65	Magna3 40-80F	Magna3 40-100F
Imax Xtra 2 (240kW)	2	480	DN100	DN65	Magna3 40-80F	Magna3 40-100F
Imax Xtra 2 (280kW)	2	560	DN100	DN65	Magna3 40-80F	Magna3 40-100F
Imax Xtra 2 (80kW)	3	240	DN80	DN65	UPML 25-105	UPML 25-105
Imax Xtra 2 (120kW)	3	360	DN80	DN65	UPML 25-105	UPML 25-105
Imax Xtra 2 (160kW)	3	480	DN100	DN65	UPMXXL 25-105	UPMXXL 25-105
Imax Xtra 2 (200kW)	3	600	DN100	DN65	Magna3 40-80F	Magna3 40-100F
Imax Xtra 2 (240kW)	3	720	DN150	DN80	Magna3 40-80F	Magna3 40-100F
Imax Xtra 2 (280kW)	3	840	DN150	DN80	Magna3 40-80F	Magna3 40-100F
Imax Xtra 2 (80kW)	4	320	DN80	DN65	UPML 25-105	UPML 25-105
Imax Xtra 2 (120kW)	4	480	DN100	DN65	UPML 25-105	UPML 25-105
Imax Xtra 2 (160kW)	4	640	DN100	DN65	UPMXXL 25-105	UPMXXL 25-105
Imax Xtra 2 (200kW)	4	800	DN150	DN80	Magna3 40-80F	Magna3 40-100F
Imax Xtra 2 (240kW)	4	960	DN150	DN80	Magna3 40-80F	Magna3 40-100F
Imax Xtra 2 (280kW)	4	1120	DN150	DN80	Magna3 40-80F	Magna3 40-100F

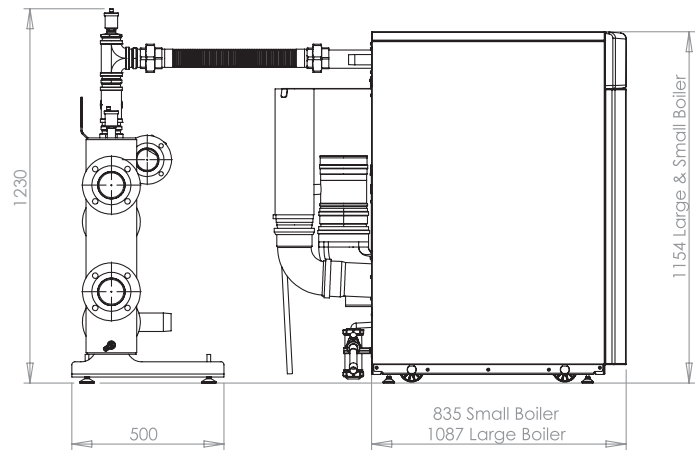
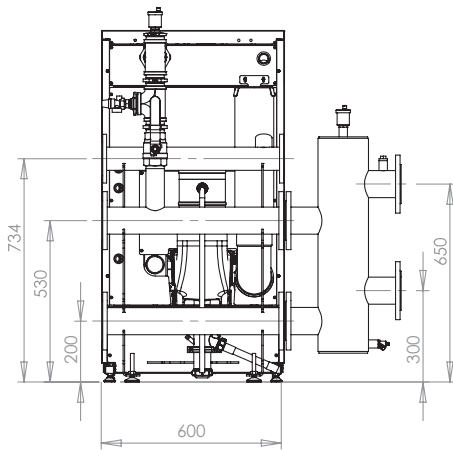
## 5.2 FRAME KIT CONFIGURATION

### 5.2.1 INSTALLATION DRAWING WITH 1 BOILER - DN80 / DN100 KITS

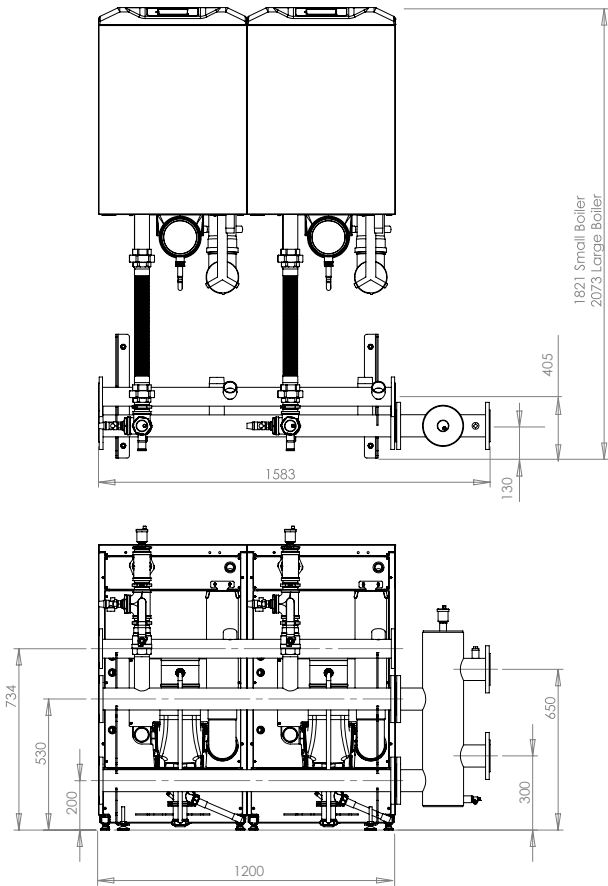


**Note 1:** Mixing header and gas connections can be located either on the LHS or RHS of the assembly to suit needs of each particular system.

Boiler Output (kW)	Chassis Size
80-160	Small
200-280	Large

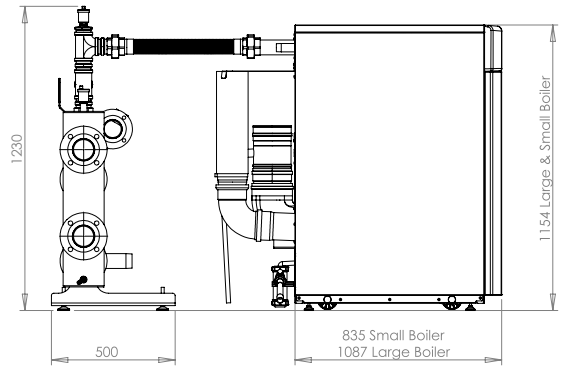


### 5.2.2 INSTALLATION DRAWING WITH 2 BOILERS - DN80 / DN100 KITS

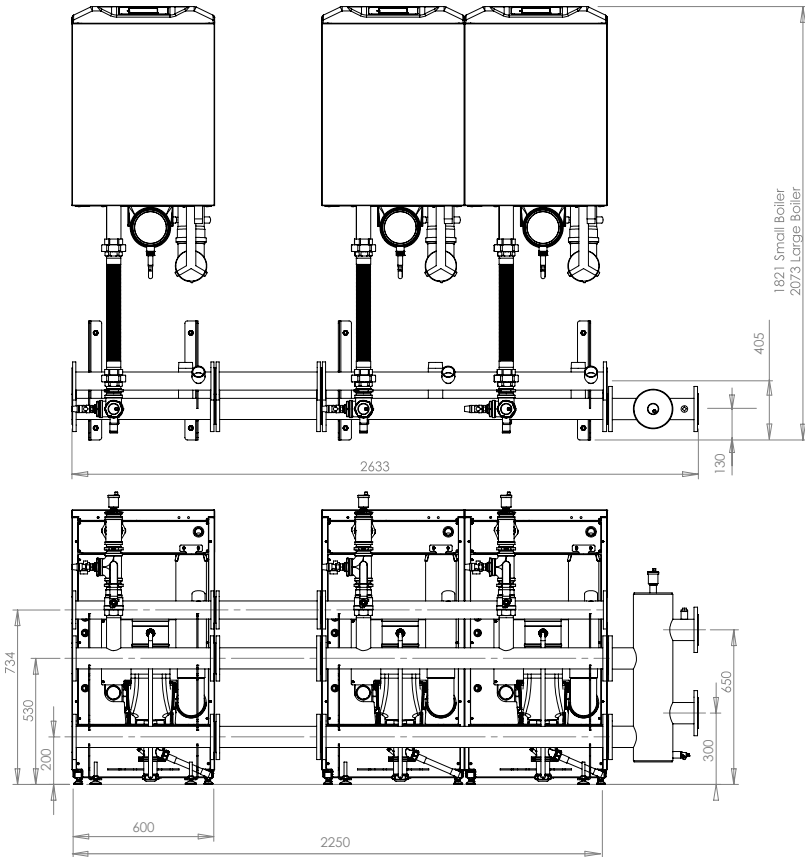


**Note 1:** Mixing header and gas connections can be located either on the LHS or RHS of the assembly to suit needs of each particular system.

Boiler Output (kW)	Chassis Size
80-160	Small
200-280	Large

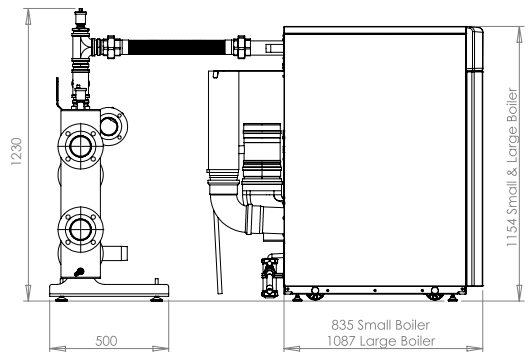


### 5.2.3 INSTALLATION DRAWING WITH 3 BOILERS - DN80 / DN100 KITS AND HEADER SPACER

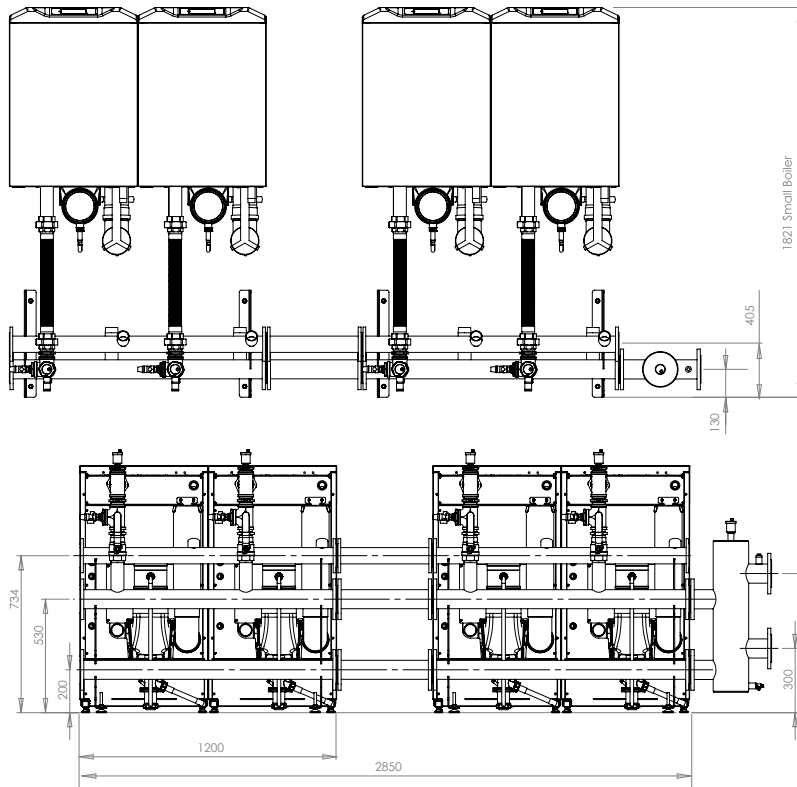


**Note 1:** Mixing header and gas connections can be located either on the LHS or RHS of the assembly to suit needs of each particular system.

Boiler Output (kW)	Chassis Size
80-160	Small
200-240	Large

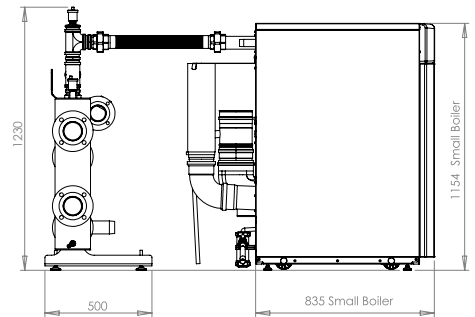


## 5.2.4 INSTALLATION DRAWING WITH 4 BOILERS - DN80 / DN100 KITS AND HEADER SPACER

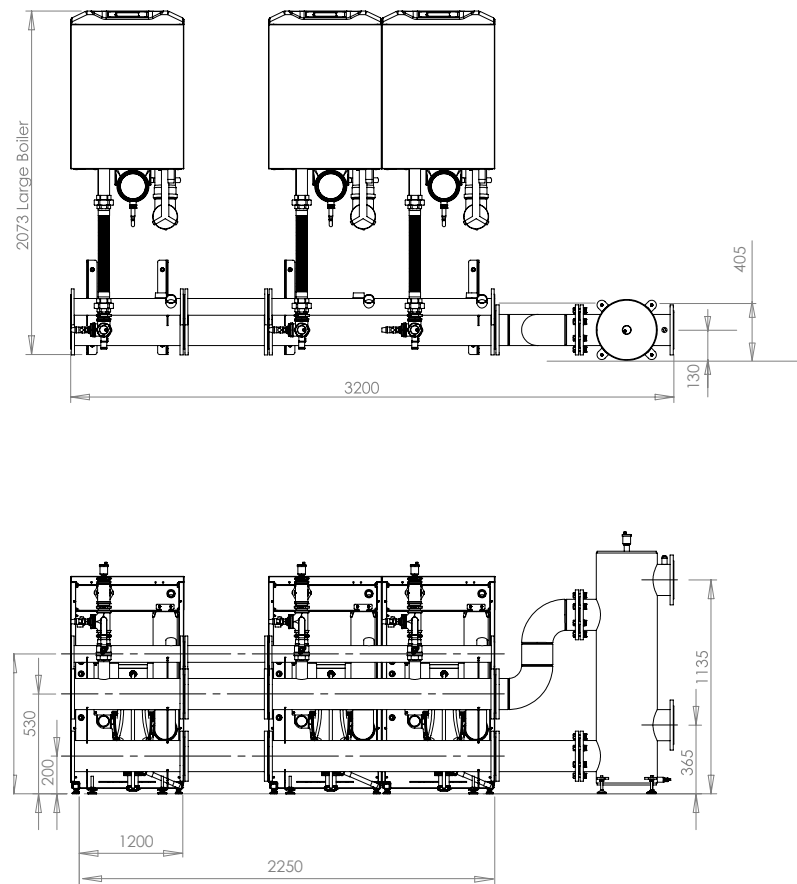


**Note 1:** Mixing header and gas connections can be located either on the LHS or RHS of the assembly to suit needs of each particular system.

Boiler Output (kW)	Chassis Size
80-160	Small



## 5.2.5 INSTALLATION DRAWING WITH 3 BOILERS - DN150 KITS AND HEADER SPACER

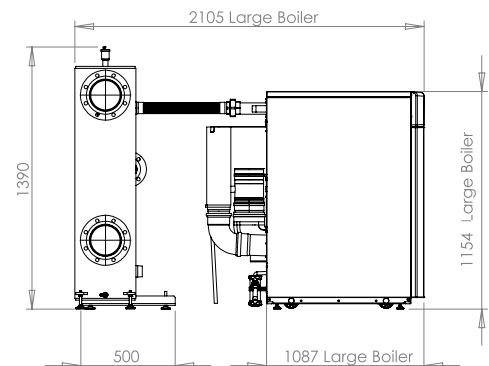


**Note 1:** Mixing header and gas connections can be located either on the LHS or RHS of the assembly to suit needs of each particular system.

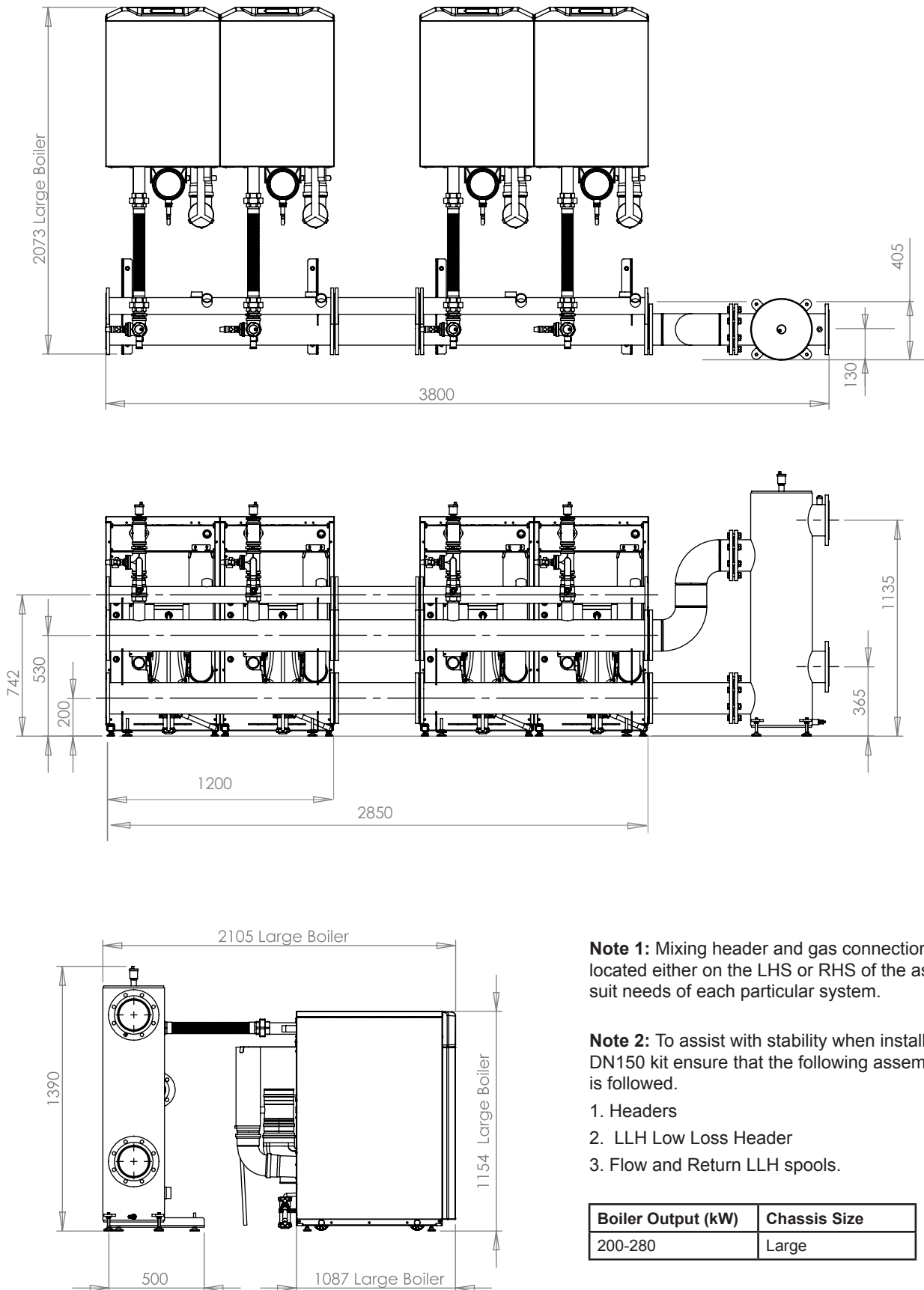
**Note 2:** To assist with stability when installing the DN150 kit ensure that the following assembly order is followed.

1. Headers
2. LLH Low Loss Header
3. Flow and Return LLH spools.

Boiler Output (kW)	Chassis Size
280	Large



## 5.2.6 INSTALLATION DRAWING WITH 4 BOILERS - DN150 KITS AND HEADER SPACER



**Note 1:** Mixing header and gas connections can be located either on the LHS or RHS of the assembly to suit needs of each particular system.

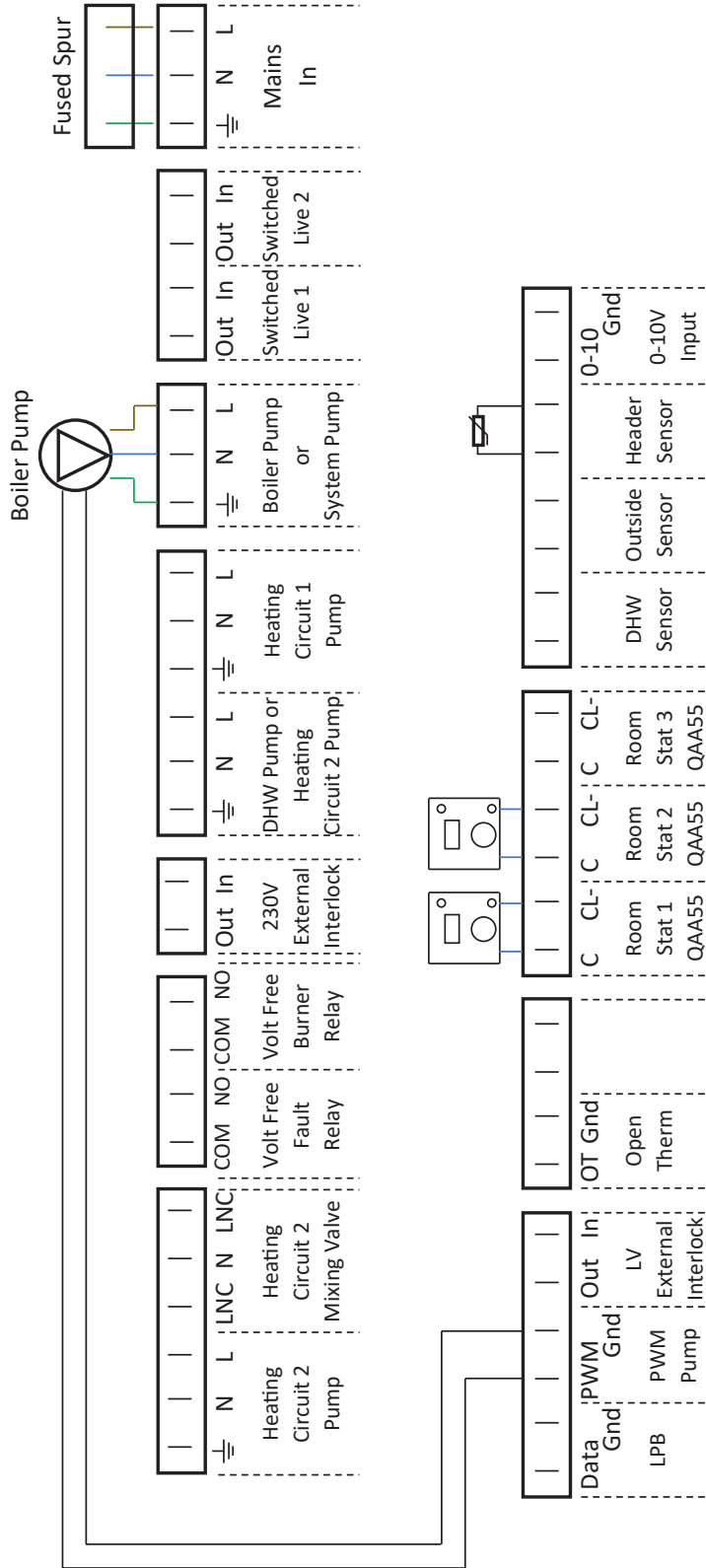
**Note 2:** To assist with stability when installing the DN150 kit ensure that the following assembly order is followed.

1. Headers
2. LLH Low Loss Header
3. Flow and Return LLH spools.

Boiler Output (kW)	Chassis Size
200-280	Large

# 6 ELECTRICAL CONNECTIONS & WIRING DIAGRAM

## Boiler Pump Speed Control via PWM Output



Refer to the Wiring Connection section in the boiler Installation Instructions for wiring details.

**IMPORTANT:** Ensure the boiler pumps are wired to the boiler in order to ensure the boiler pump overrun facility is provided.

For the Imax Xtra 2 80kW and 120kW, it is recommended to use the Grundfos UPML Pump as the boiler pump. This needs to either be controlled by the Boiler/System Pump Connection, for On/Off Control direct from the boiler, or supplied with a permanent live supply on the same phase as the boiler and controlled by the PWM Pump Connection, for Modulation Control.

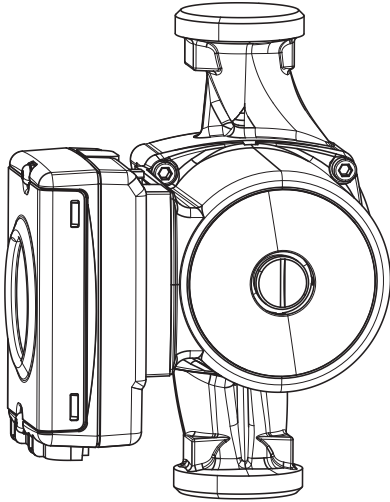
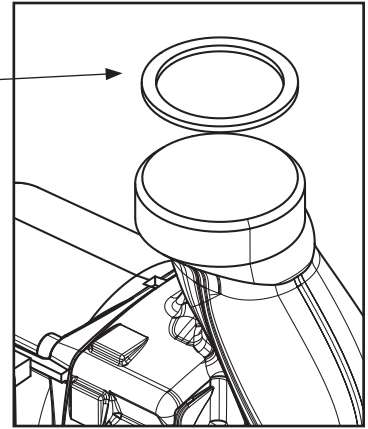
For the Imax Xtra 2 160kW, it is recommended to use the Grundfos UPMXXL Pump as the boiler pump. This needs to either be operated by an external relay, controlled by the Boiler/System Pump Connection, or supplied with a permanent live supply on the same phase as the boiler and controlled by the PWM Pump Connection, for Modulation Control.

For the Imax Xtra 2 200kW, 240kW and 280kW, it is recommended to use the Grundfos Magna 3 Pump as the boiler pump. This needs to either be operated by an external relay, controlled by the Boiler/System Pump Connection, or supplied with a permanent live supply on the same phase as the boiler and controlled by the 0-10V Pump Connection (which requires the optional extra 0-10V Pump Kit), for Modulation Control.

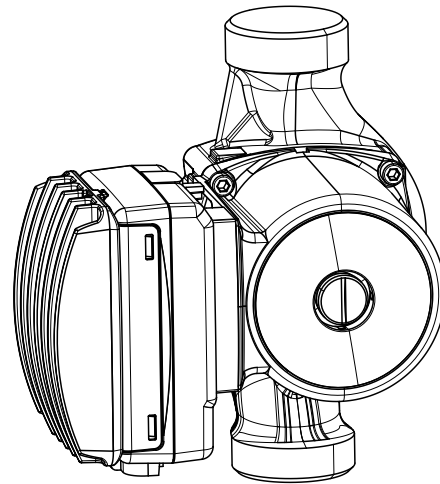


## 7 PUMP OPTIONS

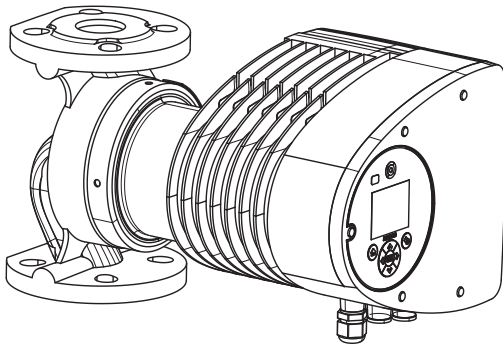
1. On the threaded pumps ensure that the sealing washers are used when connecting either side.
2. Ensure sealing washers/ gaskets are in place on all pumps.



'UPML' for use with Low Loss Headers and on 80 and 120 with plates



'UPMXXL' for use with Plate Heat Exchangers and low loss headers



MAGNA3 40-80 F

**IMPORTANT:** PWM Control to be wired directly to the boiler PCB.  
For pump and external pump control wiring refer to this instruction & the boiler Installation Manual.

## 8 COMMISSIONING AND TESTING

1. Electrical and gas safety checks must be carried out on completion of installation as with individual boiler commissioning.
2. Ensure sealing washers/ gaskets are in place on all pumps.

Refer to the boiler Installation Manual.

## NOTES

## NOTES



FM 59915

Manufactured under  
an ISO 9001  
registered quality  
management system

At Ideal Heating we take our environmental impact seriously, therefore when installing any Ideal Heating product please make sure to dispose of any previous appliance in an environmentally conscious manner. Households can contact their local authority to find out how. See <https://www.gov.uk/managing-your-waste-an-overview> for guidance on how to efficiently recycle your business waste.

#### **Technical Training**

Our Expert Academy offer a range of training options designed and delivered by our experts in heating. For details please contact:  
[expert-academy.co.uk](http://expert-academy.co.uk)

Ideal Boilers Ltd., pursues a policy of continuing improvement in the design and performance of its products. The right is therefore reserved to vary specification without notice.

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