



# INSULATION FRAME & HEADER

## **EVOMAX**

30 - 150

30P - 80P

## **EVOMAX 2**

30 - 150

30P - 120P

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.

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

This kit is suitable for the following boilers:

**Evomax 30, 40, 60, 80, 100, 120, 150, 30P, 40P, 60P 80P**

**Evomax 2 30, 40, 60, 80, 100, 120, 150, 30P, 40P, 60P 80P, 100P, 120P**

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## **IMPORTANT**

**THESE INSTRUCTIONS MUST BE USED IN CONJUNCTION WITH THE  
LOW OR STANDARD HEIGHT FRAME & HEADER KIT INSTRUCTIONS  
SUPPLIED WITH THE EVOMAX HEADERS**

# 1 INTRODUCTION

This technical data contains information for dimensioning & assembly of a cascade system kit for the Evomax and Evomax 2 ranges.

Standard Height Frame & Header kits are available in both 'in line' (6 boilers wide) and back to back options (3 boilers wide). Low Height Frame & Header kits available 'in line' (4 boilers wide).

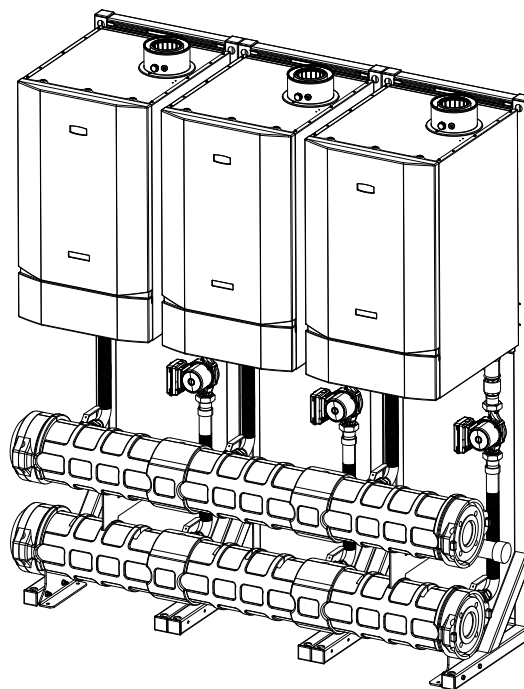
## GENERAL DESCRIPTION OF FRAME & HEADER KITS

A requirement to spread the total required heat output over several boilers can be accommodated by the use of the Evomax multiple boiler frame & header kit options.

The Varican optional accessory can be installed (1 per boiler) for cascade control, see Varican Installation Instructions for further information.

The flue configurations for the range of appliances using these system kits are C13, C33 & B23 (See appliance manual). *Note. In the case of the 150kW boiler, this must be flued in accordance to 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

## FRAME AND HEADER KIT DESIGN OPTIONS

The Evomax boilers are suitable for use in a multiple boiler configuration. The Evomax multiple boiler system is available in both in-line (low and standard height) and back to back options giving the opportunity to choose the optimum footprint size or wall space for a given output.

Standard height kits do not include the support frame as the boilers can be wall mounted but a frame kit is available if wall space etc. does not facilitate boiler/header wall mounting.

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

Available Evomax 2 Appliances	
kW (NG)	Product No.
Ideal Evomax 2 30	220814
Ideal Evomax 2 40	220815
Ideal Evomax 2 60	220816
Ideal Evomax 2 80	220817
Ideal Evomax 2 100	220818
Ideal Evomax 2 120	220919
Ideal Evomax 2 150	220820
kW (Propane)	Product No.
Ideal Evomax 2 30 Propane	220823
Ideal Evomax 2 40 Propane	220824
Ideal Evomax 2 60 Propane	220825
Ideal Evomax 2 80 Propane	220826
Ideal Evomax 2 100 Propane	220827
Ideal Evomax 2 120 Propane	220828

continued . . . . .

### 3 HEADER INSULATION

#### 3.1 INSULATION KITS

The insulation system is made from Expanded Polypropylene and consist of modular insulation sections, which are combined to encase a range of headers. These sections are secured together by coupling together the corresponding interlock features.

The insulation system is supplied in a range of kits (shown in Table 1 and 2) which cover multiple installation sizes and configurations, supporting both side by side (low and standard height) and back to back options.

**Table 1**

<b>Low Height Header Insulation Kit</b>			
Low Height Kit	DN50	DN65	DN80 / DN100
Low Height Insulation Starter Kit	223032	223035	223038
Low Height Insulation Continuation Kit	N/A	223036	223039
Low Height Insulation Joined Header Kit	N/A	N/A	220340

**Table 2**

<b>Standard Height Header Insulation Kit</b>	
Standard Height Kit	DN80 / DN100
Standard Height Insulation Starter Kit	222960
Standard Height Insulation Continuation Kit	222961
Standard Height Insulation Joined Header Kit	222962

Additional kits (shown in Table 3) are available for Low Loss Header and Magnetic Low Loss Header.

**Table 3**

<b>(Low Loss Header / Magnetic Low Loss Header) Insulation Kit</b>	
(LLH / MLLH) Insulation Kit	Product No.
DN50 (LLH / MLLH) Insulation Kit	222963
DN65 (LLH / MLLH) Insulation Kit	222964
DN80/100 (LLH / MLLH) Insulation Kit	222965

**Table 4**

<b>Pump Insulation Kit</b>	
Pump Insulation Kit	Product No.
Grundfos UPML Insulation Kit (LLH / MLLH Installations only)	222894



### 3.2 INSULATION COMPONENTS

#### STANDARD HEIGHT INSTALLATIONS

Both the top header (Flow) and bottom header (Return) are fitted with Standard Height Components.

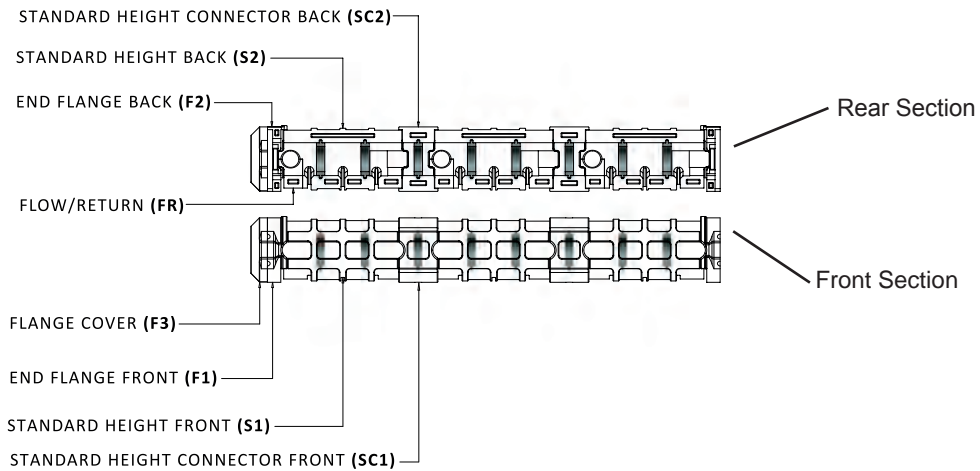
#### LOW HEIGHT INSTALLATIONS

The top header (Flow) are fitted with Standard Height Components.

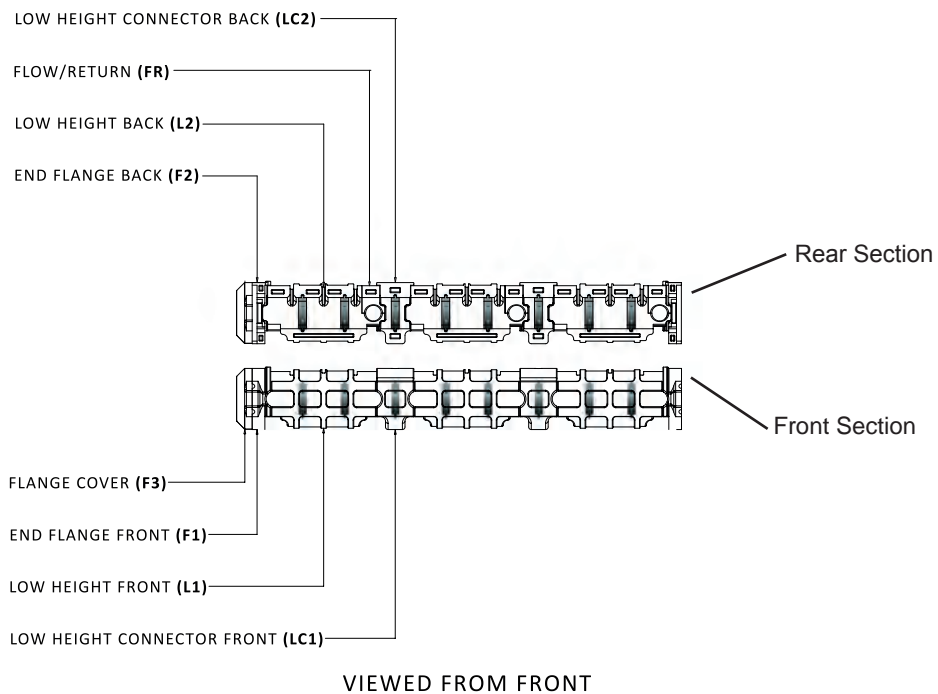
On the bottom header (Return), there are four Low Height specific insulation components highlighted in the diagram below.

The diagram below shows the Standard Height Components.

**NOTE:** For installation on:  
Low Height - Flow Header  
Standard Height - Flow & Return Header



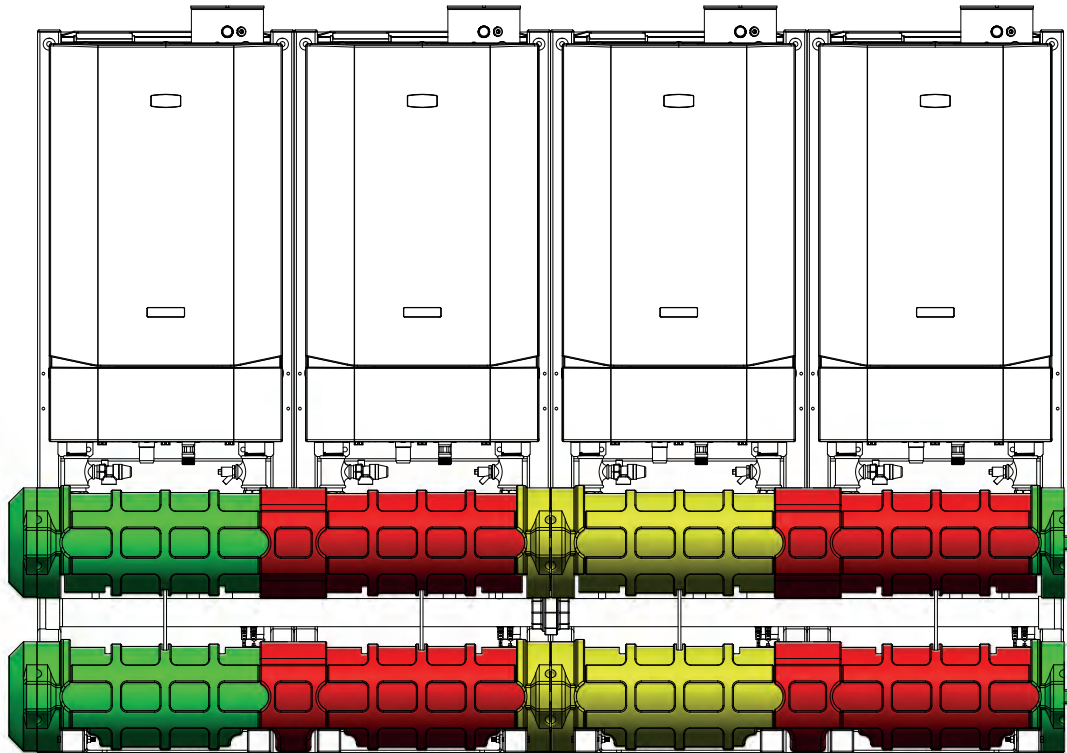
The diagram below shows the Low Height Components.



**NOTE:** For installation on:  
Low Height - Return Header

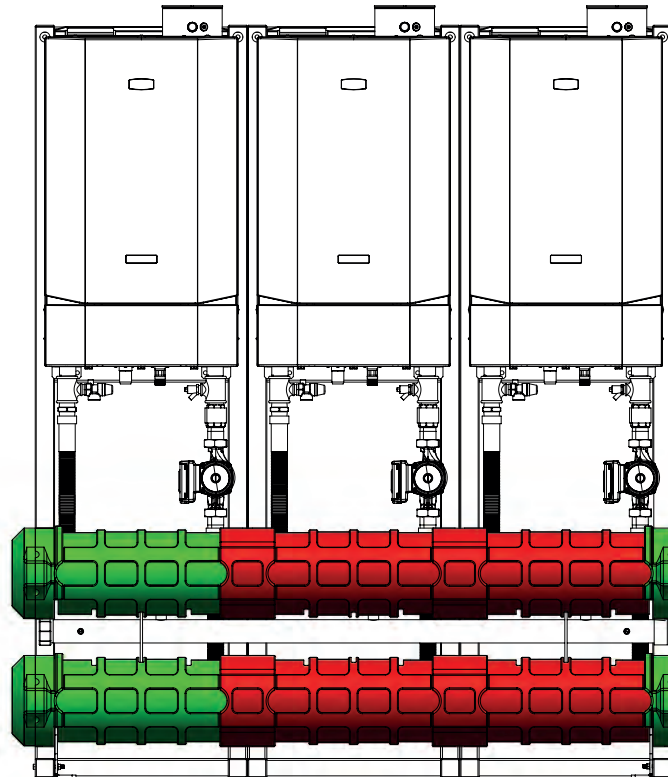
### 3.3 KIT EXAMPLES

#### DN80 LOW HEIGHT 4 IN-LINE HEADER




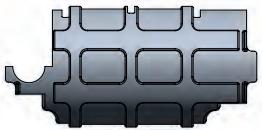
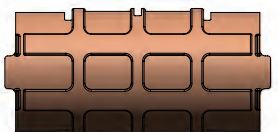




LOW HEIGHT INSULATION STARTER KIT + LOW HEIGHT INSULATION CONTINUATION KIT + LOW HEIGHT INSULATION JOINED HEADER KIT + LOW HEIGHT INSULATION CONTINUATION KIT

#### DN100 STANDARD HEIGHT 3 IN-LINE HEADER




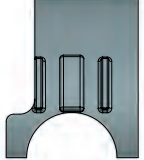





STANDARD HEIGHT INSULATION STARTER KIT + STANDARD HEIGHT INSULATION CONTINUATION KIT + STANDARD HEIGHT INSULATION CONTINUATION KIT

### 3.4 INSULATION KIT BREAKDOWN

FRAME & HEADER INSULATION KITS			Low Height Insulation Starter Kit	Low Height Insulation Continuation Kit	Low Height Insulation Joined Header Kit	Std Height Insulation Starter Kit	Std Height Insulation Continuation Kit	Std Height Insulation Joined Header Kit
PART	PART DESCRIPTION	UIN	Quantity					
	Low Height Front ( <b>L1</b> )	222206	1	1	1			
	Low Height Back ( <b>L2</b> )	222207	1	1	1			
	Standard Height Front ( <b>S1</b> )	222204	1	1	1	2	2	2
	Standard Height Back ( <b>S2</b> )	222205	1	1	1	2	2	2
	Low Height Connector Front ( <b>LC1</b> )	222211		1				
	Low Height Connector Back ( <b>LC2</b> )	222212		1				
	Standard Height Connector Front ( <b>SC1</b> )	222209		1			2	
	Standard Height Connector Back ( <b>SC2</b> )	222210		1			2	

## INSULATION KIT BREAKDOWN CONT'D

FRAME & HEADER INSULATION KITS			Low Height Insulation Starter Kit	Low Height Insulation Continuation Kit	Low Height Insulation Joined Header Kit	Std Height Insulation Starter Kit	Std Height Insulation Continuation Kit	Std Height Insulation Joined Header Kit
PART	PART DESCRIPTION	UIN	Quantity					
	End Flange Front (F1)	222213	4		4	4		4
	End Flange Back (F2)	222214	4		4	4		4
	Flange Cover (F3)	222215	2			2		
	Flow / Return (FR)	222208	2	2	2	2	2	2
	DN50 Spacer	222216	X 8 Spacers to match kit size	X 12 Spacers to match kit size	X 8 Spacers to match kit size	X 8 Spacers to match kit size	X 12 Spacers to match kit size	X 8 Spacers to match kit size
	DN65 Spacer	222217						
	DN80 Spacer	222218						

### 3.5 INSTALLATION PROCEDURE

**Note:** The installation shown throughout this example is a DN80 Low Height 3 in-line header.

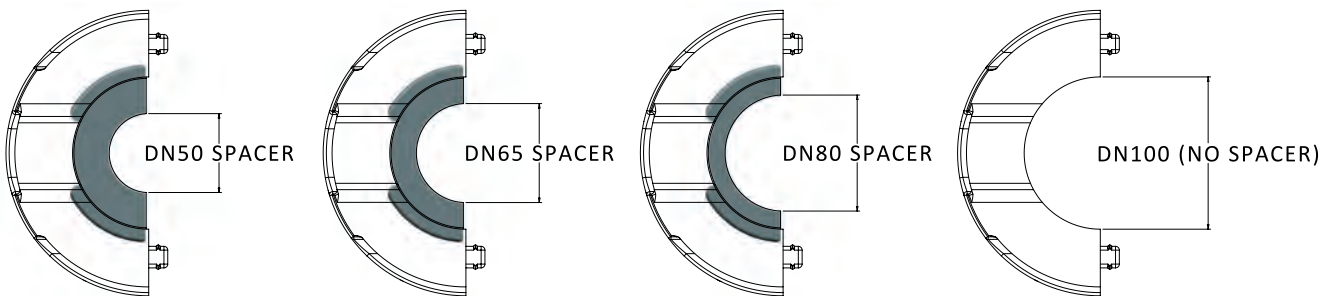
Some components are not shown for clarity.

Instructions applicable to specific configurations are covered in the following section:

- Joined Headers
- Back to Back Insulation

#### INSULATION SPACER

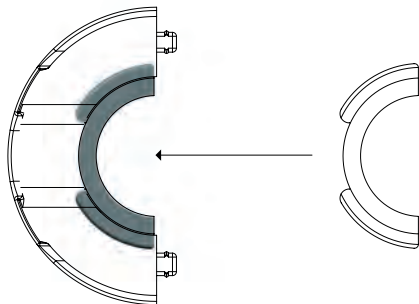
**Note:** Insulation spacers are not required for DN100 installations



1. Align the interlock rib of the spacer to enter the receiving channel and push the spacer until fully engaged in the channel.

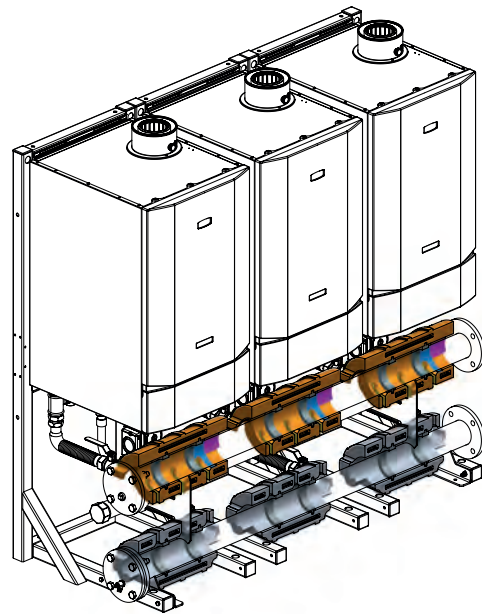
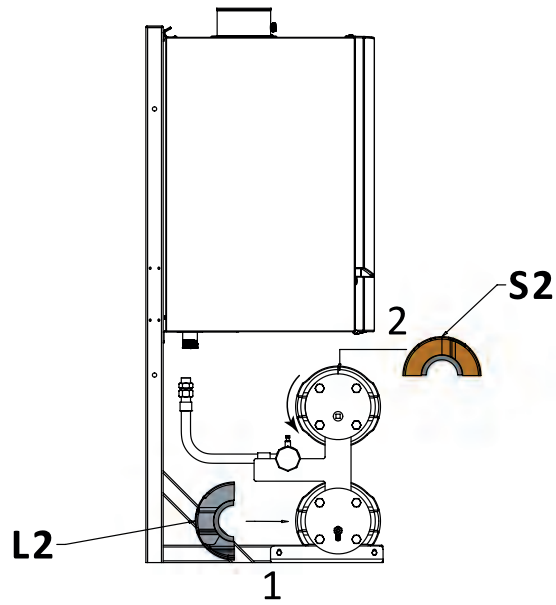
**Note:** The insulation Spacers must be aligned correctly, to ensure it does not protrude above the insulation interlocking face.

**Note:** The required spacers must be inserted into parts prior to installation on the header.

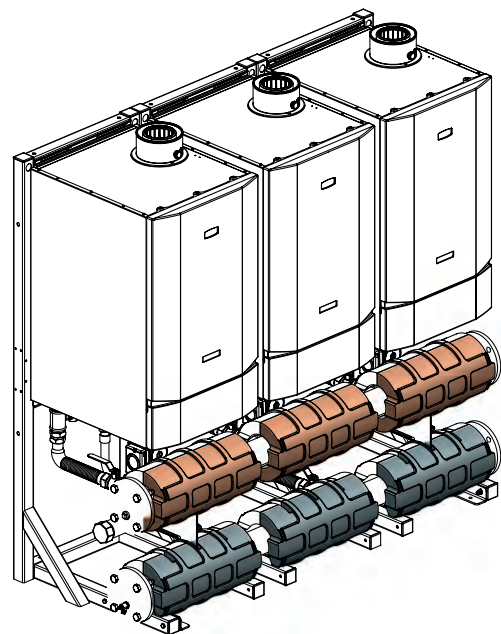
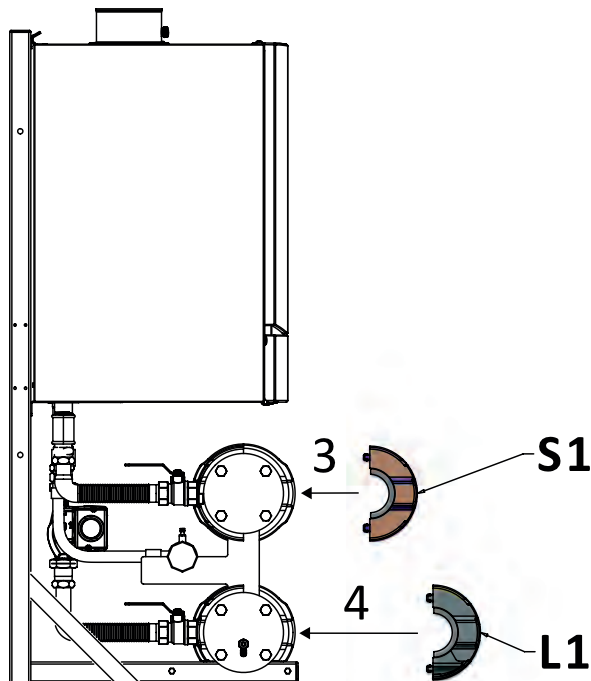


## INSTALLATION

1. Align the **(L2)** and slide to the back of the header to align the cut outs with the header supports and return pipe.



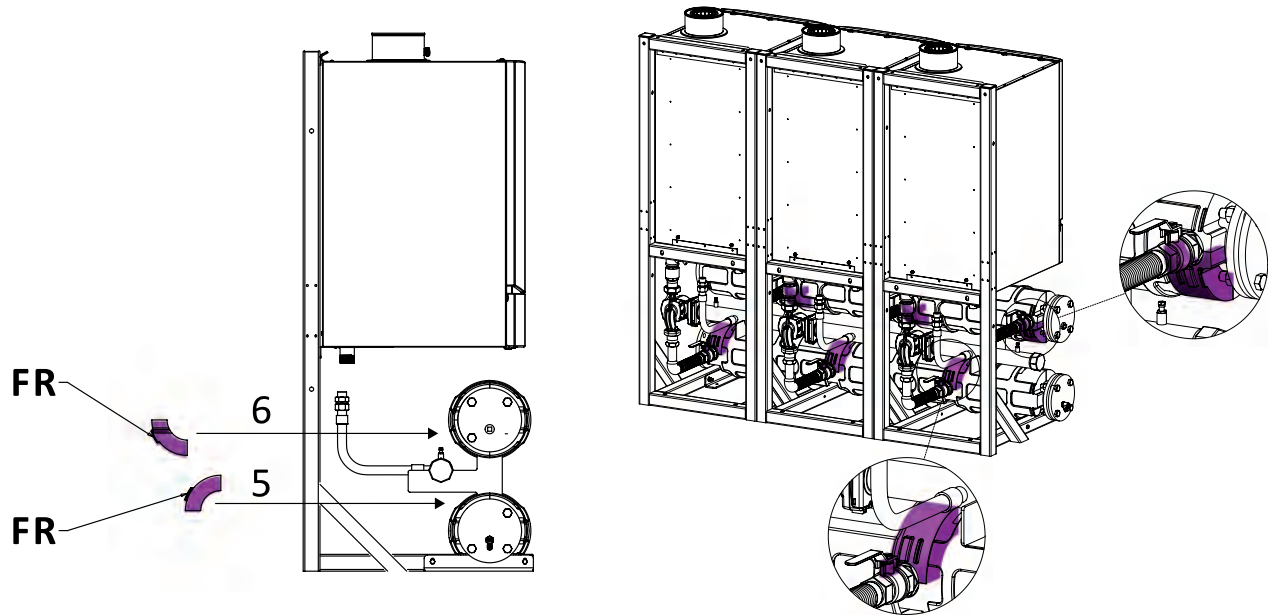
- a. Repeat for each frame / boiler
2. Place **(S2)** onto the top of the boiler.
    - a. Rotate **(S2)** 90° on the pipe to align the cut outs with the header supports and flow pipe.
    - b. Repeat for each frame / boiler.
  3. Position as shown and push **(S1)** with **(S2)** until the interlock rib is fully engaged in the channel.
    - a. Repeat for each frame / boiler.
  4. Position as shown and push **(L1)** with **(L2)** until the interlock rib is fully engaged in the channel.
    - a. Repeat for each frame / boiler.



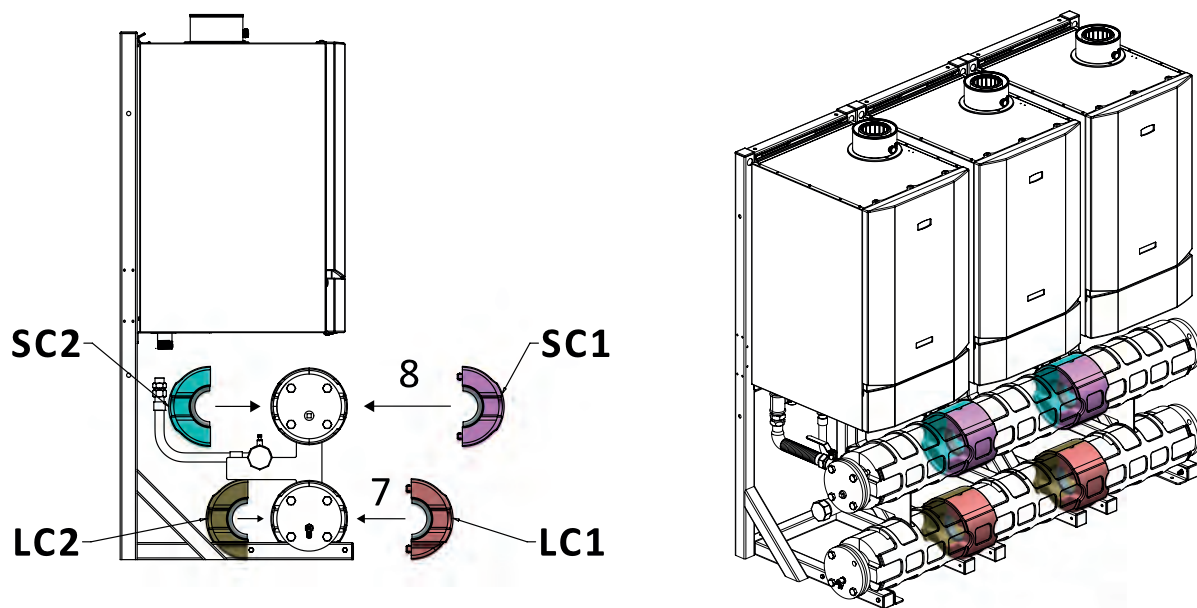
5. Position as shown and push **(FR)** together with **(L1)** until the interlock rib is fully engaged in the channel.
  - a. Repeat for each frame / boiler.

Cont'd...

6. Position as shown and push **(FR)** together with **(S1)** until the interlock rib is fully engaged in the channel.
  - a. Repeat for each frame / boiler.
7. Position as shown and push **(LC1)** and **(LC2)** together until the interlock rib is fully engaged in the channel.
  - a. Repeat between each frame / boiler.



8. Position as shown and push **(SC1)** and **(SC2)** together until the interlock rib is fully engaged in the channel.
  - a. Repeat between each frame / boiler.
9. Position and align the following components as shown on the left side of the return header
  - a. Push **(F1)** and **(F2)** together and ensure the interlock rib is fully engaged in the channel.



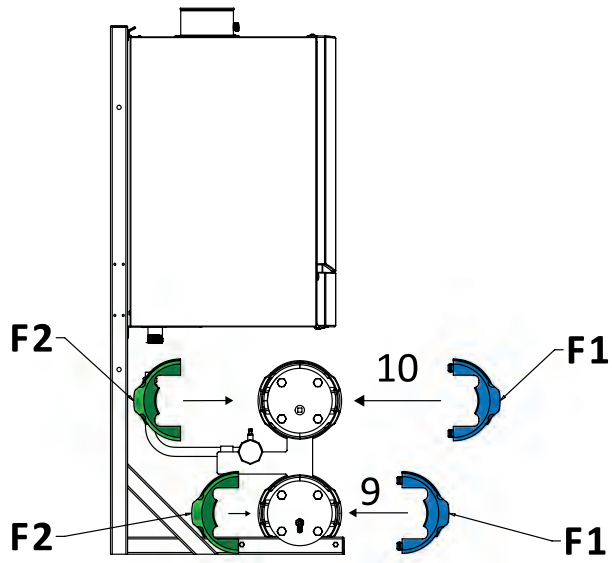
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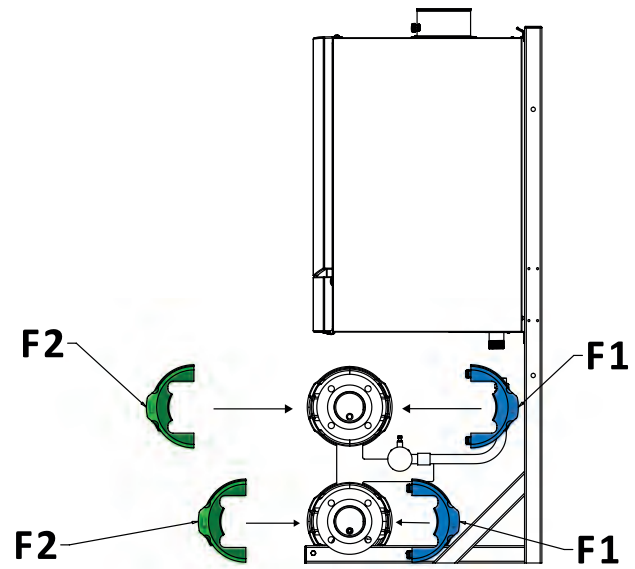
b. Repeat in opposite orientation for right side.

10. Position and align the following components as shown on the left side of the flow header

a. Push (F1) and (F2) together and ensure the interlock rib is fully engaged in the channel.



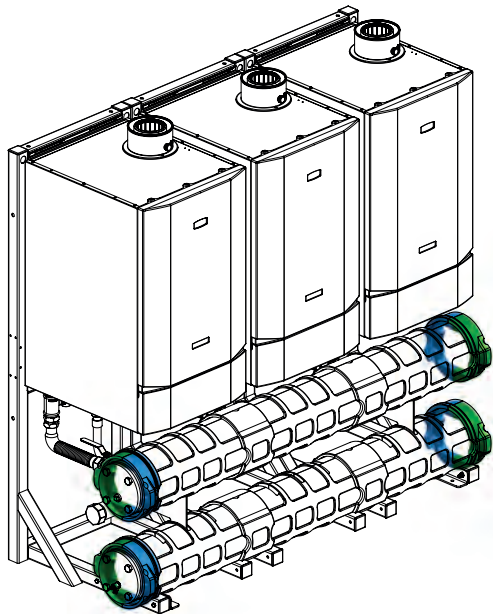
LEFT VIEW



RIGHT VIEW

b. Repeat in opposite orientation for right side.

**For Joined Header Installations - Proceed to the following section 3.6 Joined Header Installations.**





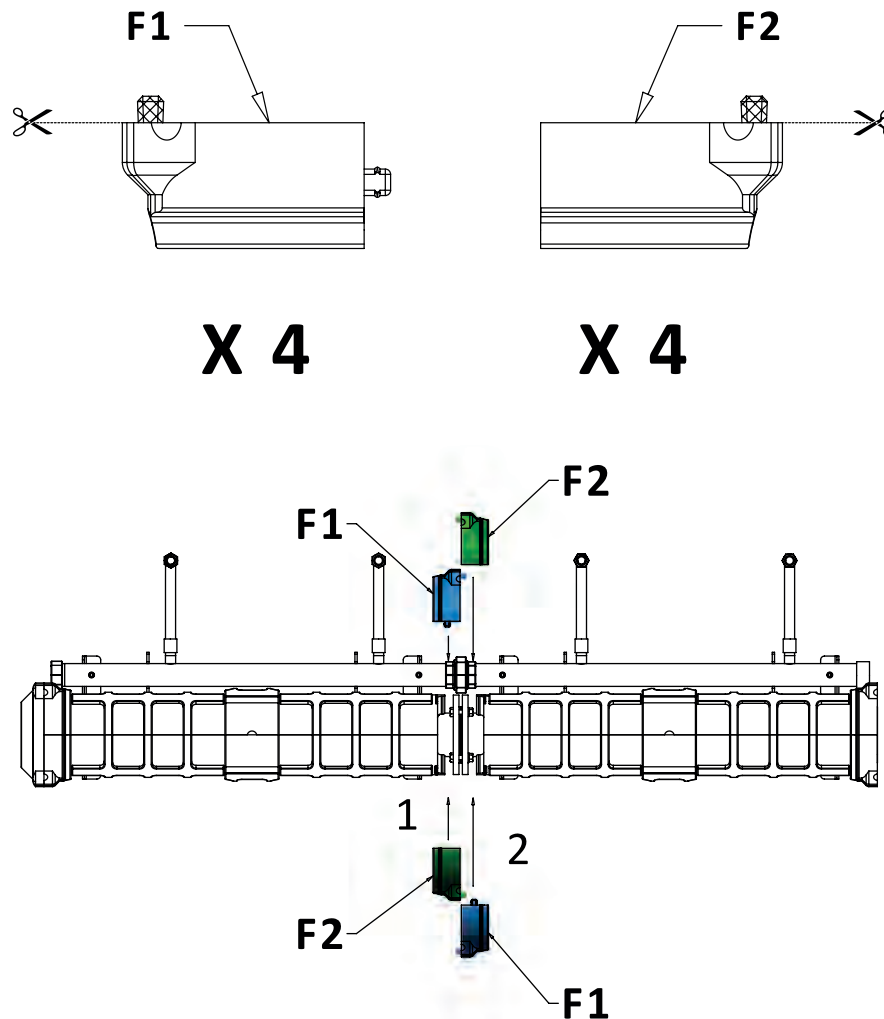
### 3.6 JOINED HEADERS INSTALLATIONS

On installations with joined headers, the flanges are covered with **(F1)** and **(F2)**.

**Note:** Appropriate PPE including safety glasses and gloves must be worn when cutting the insulation.

**Note:** It is recommended to use a Plasterboard / Hack Saw to trim the sections.

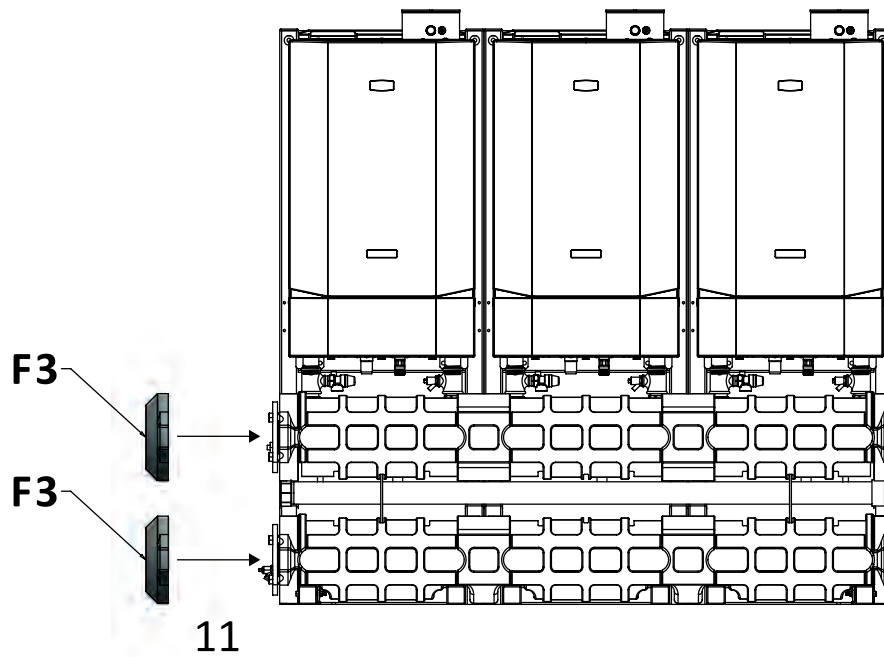
Carefully cut off the interlock rib on **(F1)** and **(F2)** as shown in the diagram.



1. Position and overlap the following components over the insulations in position on the left header
  - a. Position and push **(F1)** and **(F2)** together, until the interlock rib is fully engaged in the channel.
2. Position and overlap the following components over the insulations in position on the right header.
  - a. Position and push **(F1)** and **(F2)** together, until the interlock rib is fully engaged in the channel.
3. Repeat Step 1 and 2 for Flow Header.

**Note:** The flange end cover interlock rib on **(F1)** and **(F2)** must be trimmed off when fitted on joined headers.

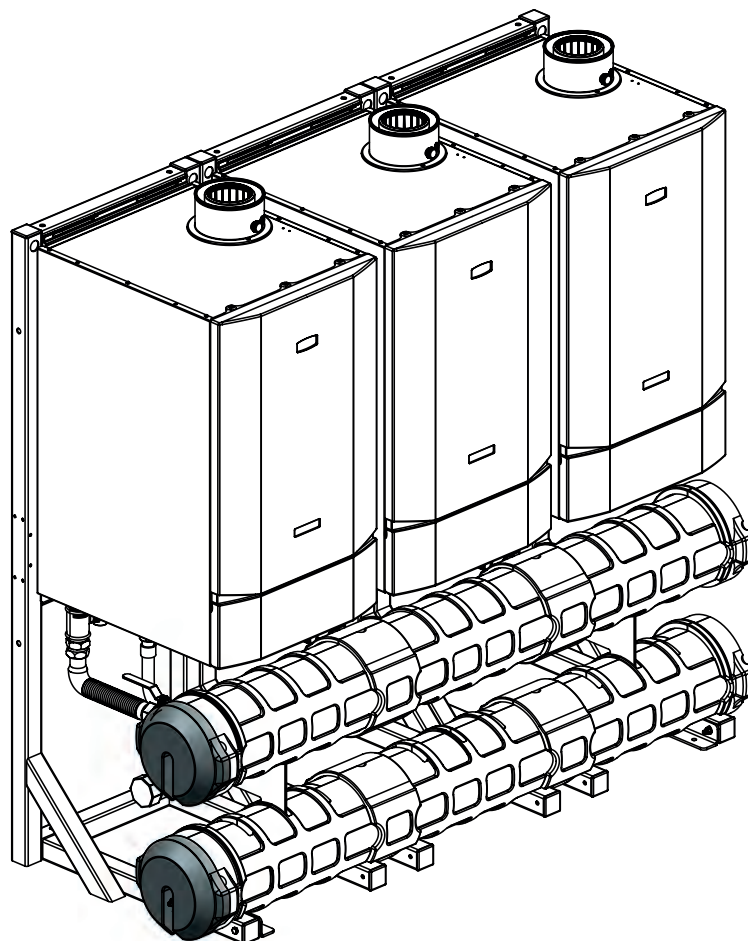
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11. Position **(F3)** on the dead-leg of the installation.

- a. Push to interlock onto **(F1)** and **(F2)**, until the interlock rib is fully engaged in the channel.
- b. Repeat Step 11 for Flow Header

**Note:** **(F3)** can be installed on either the LHS or RHS depending on dead-leg layout in the system.



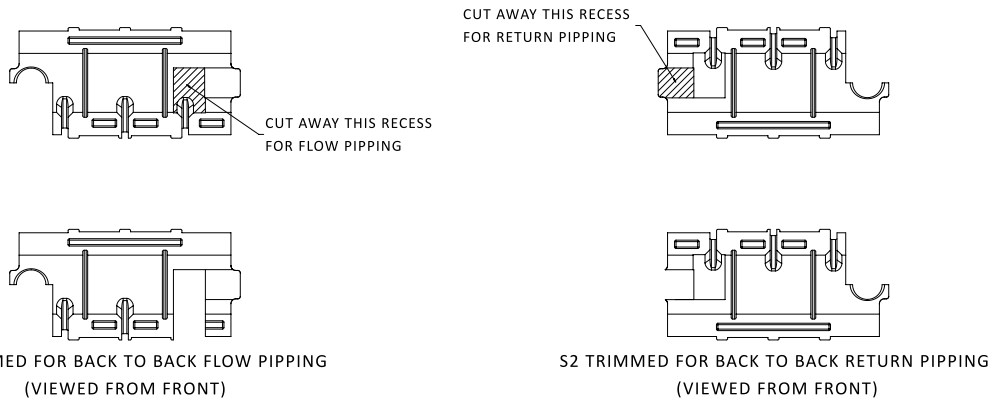
### 3.7 BACK TO BACK INSTALLATIONS

Back to back headers have an extra set of flow/return pipe outlet per frame width. Recessed areas are embossed on the STANDARD HEIGHT BACK (S2).

**Note:** Appropriate PPE including safety glasses and gloves must be worn when cutting the insulation.

**Note:** It is recommended to use a Plasterboard / Hack Saw to trim the sections.

Carefully cut along the recess on the part to use in the following instructions.



#### REMOVAL INSTRUCTIONS








**Note:** The insulation sections must be removed before maintenance work.

**Note:** Allow pipework to cool before removing insulation.

**Perform the assembly procedure in reverse order.**

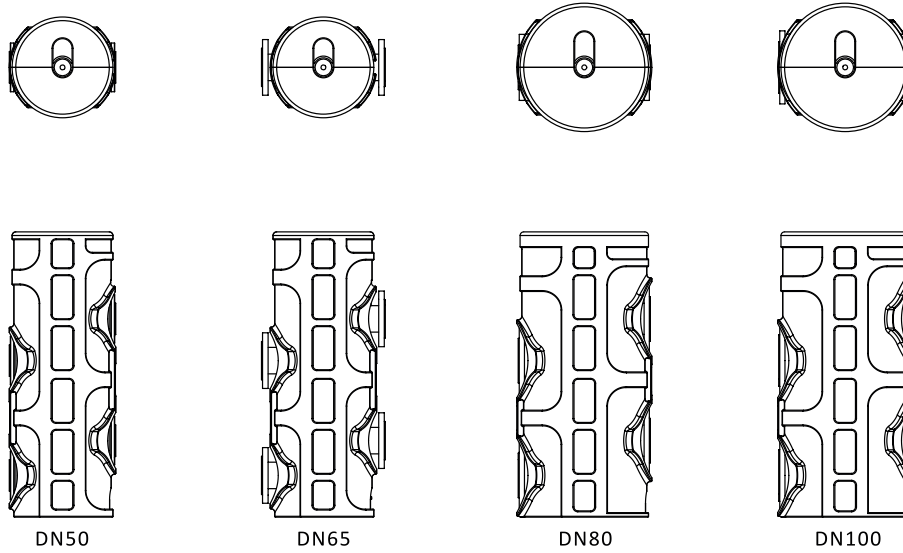
## 4 LOW LOSS HEADER INSTALLATIONS

### 4.1 INSULATION KIT BREAKDOWN

(MAGNETIC) LOW LOSS HEADER INSULATION KITS			DN50 (M)LLH INSULATION KIT	DN65 (M)LLH INSULATION KIT	DN80 / 100 (M)LLH INSULATION KIT
PART	PART DESCRIPTION	UIN	Quantity		
	(M)LLH DN50/65 FRONT (LLH1)	222696	1	1	
	(M)LLH DN50/65 BACK (LLH2)	222697	1	1	
	(M)LLH DN80/100 FRONT (LLH3)	222698			1
	(M)LLH DN80/100 BACK (LLH4)	222699			1
	DN50 Spacer	222216	8		
	DN65 Spacer	222217		8	
	DN80 Spacer	222218			8

## 4.2 INSTALLATION PROCEDURE

The installation shown throughout this example is a DN80 Low Loss Header.



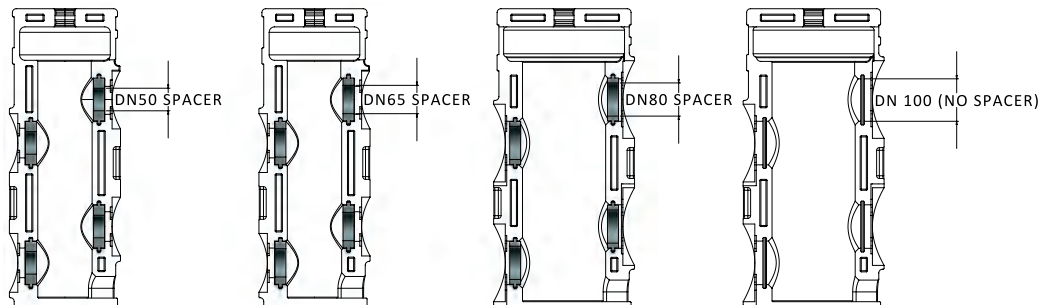
Instructions applicable to specific configurations are covered in the following section:

### DN50 HEADER WITH LOW LOSS HEADER

#### INSULATION SPACER

**Note:** Some components not shown for clarity.

**Note:** Insulation spacers are not required for DN100 installations.



Cont'd...

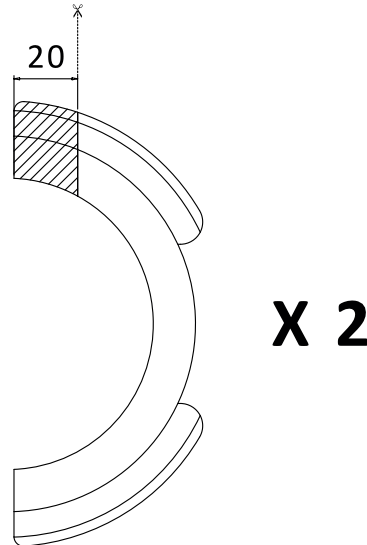
### TRIMMED SPACER

Insulation spacers spaced in the client-side flow output must be trimmed, ensuring it does not protrude past the thermostat pocket sensor recess.

**Note:** Appropriate PPE including safety glasses and gloves must be worn when cutting the insulation.

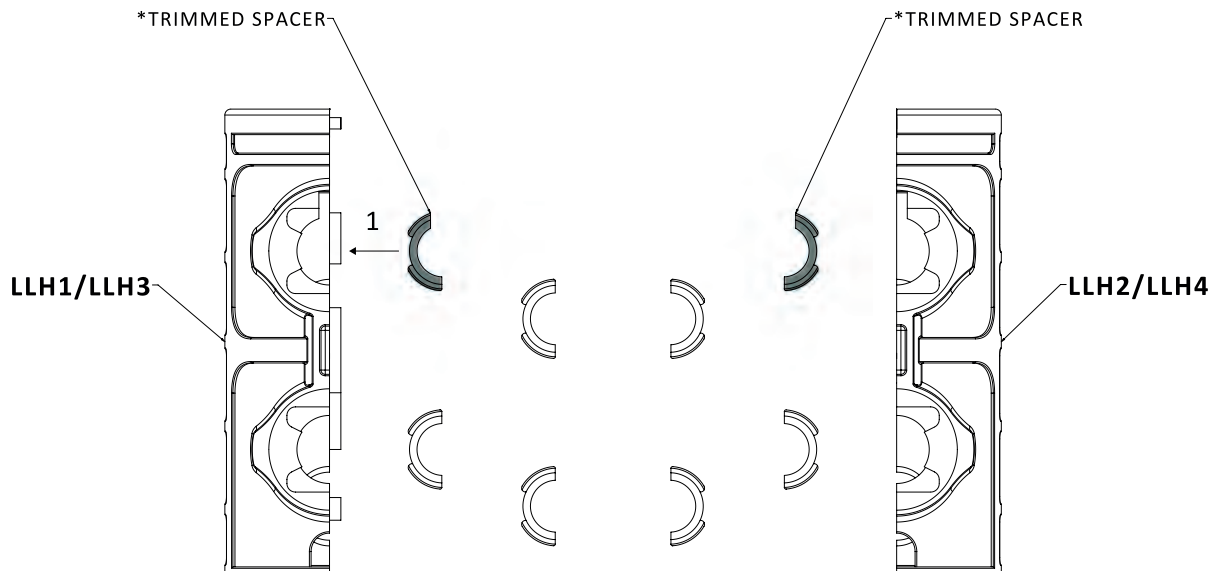
**Note:** It is recommended to use a Plasterboard / Hack Saw to trim the sections.

Carefully cut off a 20mm section from the spacer as shown in the diagram.



**Note:** Trimmed Insulation spacers are to be installed in the highlighted channels in the diagram below.

The diagram below shows the placements of spacers on the insulation sections. The shaded spacer shows the installation position for the trimmed spacers.



1. Align the interlock rib of the spacer to enter the receiving channel and push the spacer until fully engaged in the channel.
2. For Magnetic Low Loss Header Installation – Proceed to the following section 4.3 magnetic Low Loss Header Insulation.

**Note:** The Insulation Spacers must be aligned correctly, to ensure it does not protrude above the insulation interlocking face.

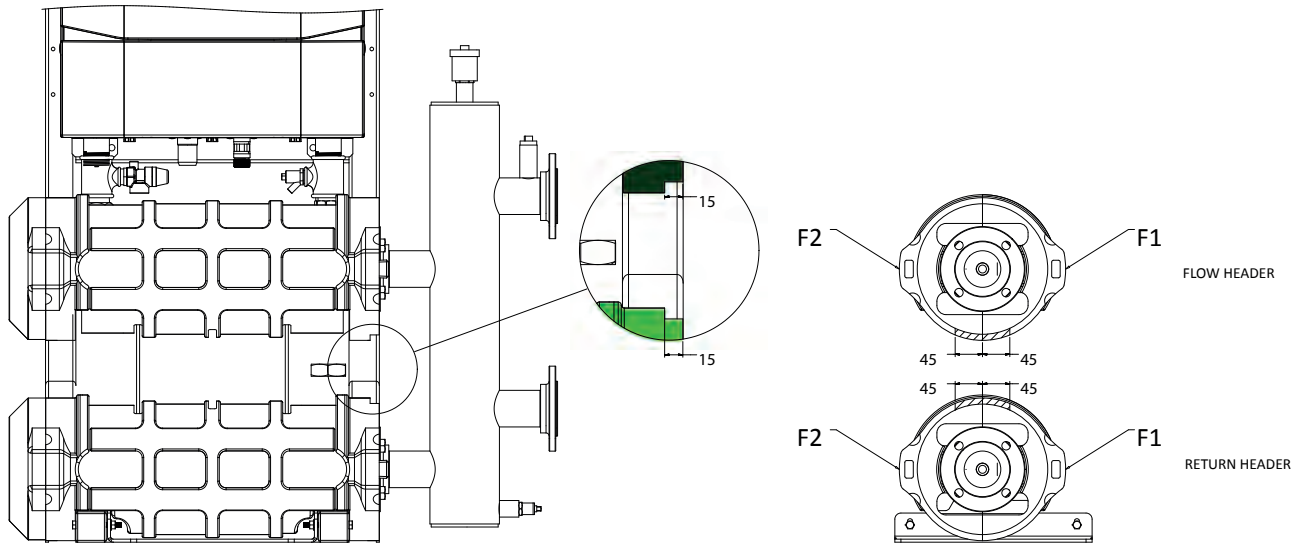
**Note:** The required spacers must be inserted into parts prior to installation onto the magnetic / low loss header.

### DN50 HEADER WITH LOW LOSS HEADER

**Note:** Appropriate PPE including safety glasses and gloves must be worn when cutting the insulation.

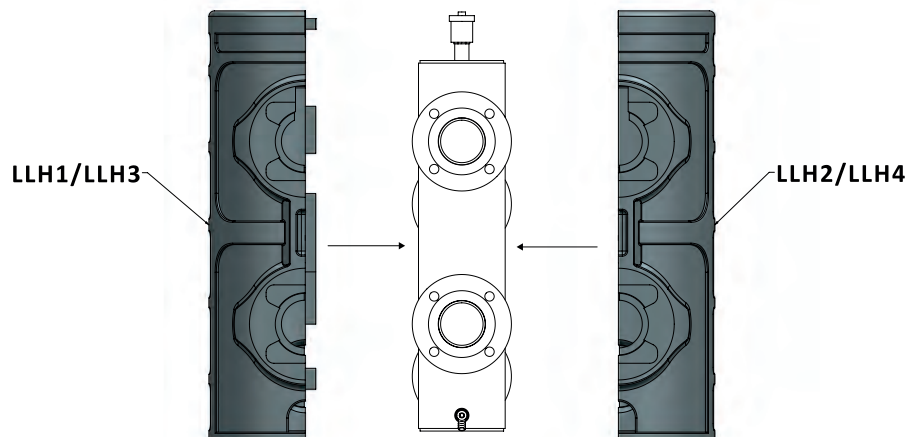
**Note:** It is recommended to use a Plasterboard Saw / Hack Saw to trim the sections.

Carefully trim the slot on the bottom of (F1) and (F2) for the Flow Header and top of (F1) and (F2) for the Return Header to the dimensions shown in the diagram below.



1. Install the Low Loss Header Insulation prior to fitting (F1) and (F2).

**NOTE:** Bolt heads on the primary/secondary flanges must face inwards facing the LLH body.



1. Position and push (LLH1 / LLH3) and (LLH2 / LLH4) together, until the interlock rib is fully engaged in the channel.

### REMOVAL INSTRUCTIONS

**Note:** The insulation sections must be removed before maintenance work.

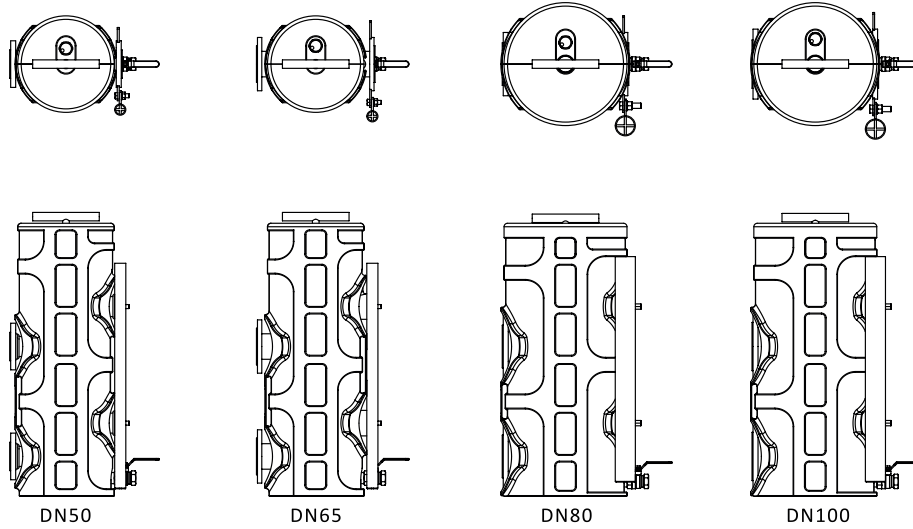
**Note:** Allow pipework to cool before removing insulation.

Perform the assembly procedure in reverse order.

### 4.3 MAGNETIC LOW LOSS HEADER INSULATION

**Note:** The position of the Magnet Holder may vary depending on installation orientation.

The installation shown throughout this example is a DN80 Magnetic Low Loss Header fitted to the RHS of the header.



#### MAGNETIC LOW LOSS HEADER AUTOMATIC AIR VENT

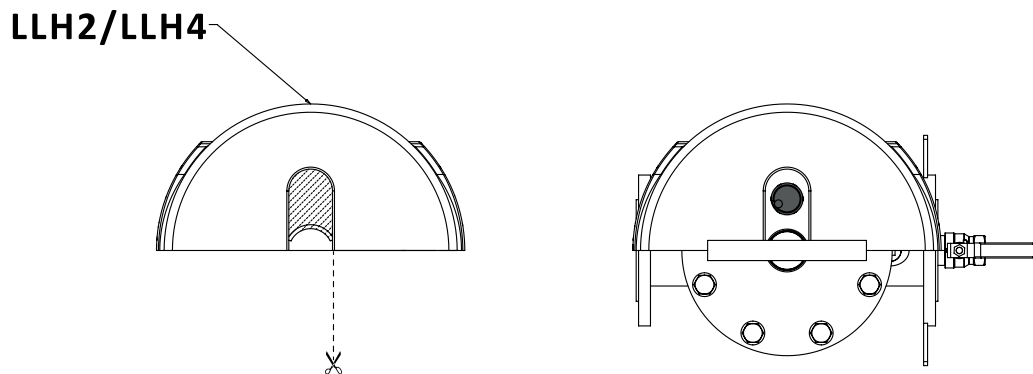
**Note:** For Magnetic Low Loss Header only.

**Note:** Appropriate PPE including safety glasses and gloves must be worn when cutting the insulation.

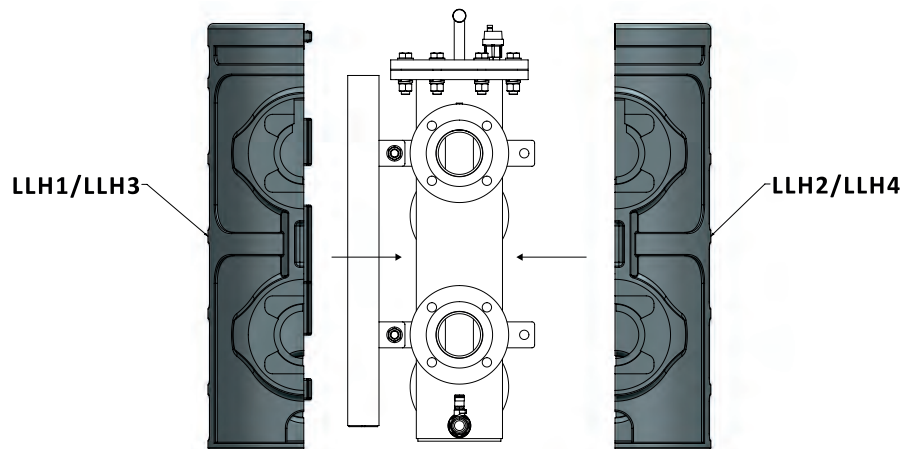
**Note:** It is recommended to use a Plasterboard / Hack Saw to trim the sections.

Carefully cut along the tab marked with for the automatic air vent on the following parts:

- a. (M)LLH DN50/65 BACK - (LLH2)
- a. (M)LLH DN80/100 BACK - (LLH4)

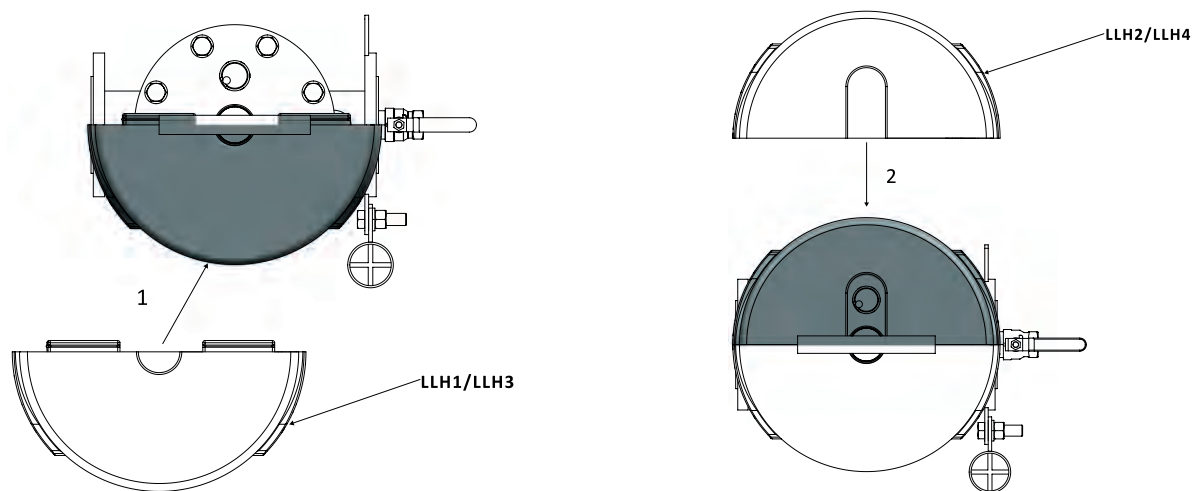






**NOTE:** Bolt heads on the primary/secondary flanges and magnetic holder must face inwards facing the MLLH body.

1. Position and push (LLH2 / LLH4) and (LLH1 / LLH3) together, until the interlock rib is fully engaged in the channel.



#### REMOVAL INSTRUCTIONS

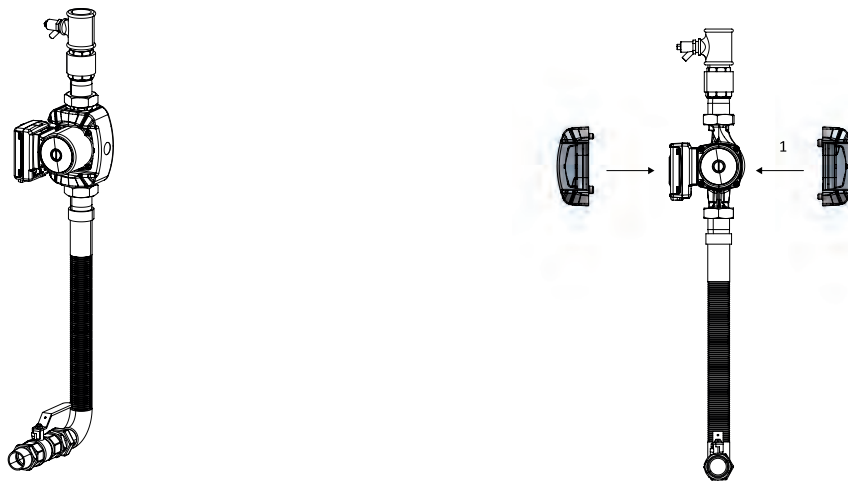
**Note:** The insulation sections must be removed before maintenance work.

**Note:** Allow pipework to cool before removing insulation.

Perform the assembly procedure in reverse order.

## 5 PUMP INSULATION

**Note:** The Pump Insulation Kit is only compatible with the Grundfos UPML for Low Loss Headers and Magnetic Low Loss Headers.



1. Position and overlap the following components over the pump on the return assembly.
  - a. Push the left and right sections together and until the interlock rib is fully engaged in the channel.

### REMOVAL INSTRUCTIONS

**Note:** The insulation sections must be removed before maintenance work.

**Note:** Allow pipework to cool before removing insulation.

Perform the assembly procedure in reverse order.

## NOTES

### **Technical Training**

The Ideal Technical Training Centre offers a series of first class training courses for domestic, commercial and industrial heating installers, engineers and system specifiers.

For details of courses please ring:..... 01482 498432



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