Stratton mk3

Plate Heat Exchanger Kits Manual

40-150 kW Natural Gas and 40-120 kW Propane

IMPORTANT NOTE

THESE INSTRUCTIONS MUST BE READ AND UNDERSTOOD BEFORE INSTALLING, COMMISSIONING, OPERATING OR SERVICING EQUIPMENT

Hamworthy

UIN 233248 A02

CONTENTS

Stratton mk3 - DISCLAIMER
Not all cascades included in this manual are available at initial product launch.
For availability refer to the table below:

Boiler	Water Header Size	Maximum No. Boilers in Cascade	Maximum Output in Cascade (kW)
S3-40	DN50	6	240
S3-60	DN50	5	300
S3-70	DN50	4	280
S3-80	DN80	4	320
S3-100	DN80	4	400
S3-120	DN80	3	360
S3-150	DN100	3	450

Note: This information will be updated in the next revision of this manual.

IMPORTANT

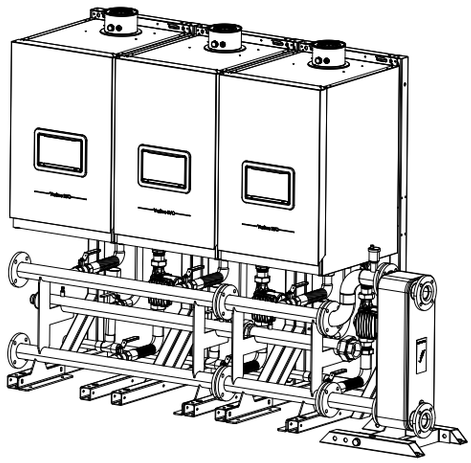
THESE INSTRUCTIONS MUST BE USED IN CONJUNCTION WITH THE FRAME & HEADER KIT INSTRUCTIONS SUPPLIED WITH THE STRATTON MK3 HEADERS

1 INTRODUCTION

This technical data contains information for dimensioning & assembly of a cascade system kit for the Stratton mk3.

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 Stratton mk3 multiple boiler frame & header kit options.



2 GENERAL DESCRIPTION OF CASCADE SYSTEMS

2.1 FRAME AND HEADER KIT DESIGN OPTIONS

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

Table 1 - Cascade Options

		Max Boilers in Cascade @ stated Header Size		PHEX Options
Boiler Type	**Boiler Header Size**	**No**	**Max Output (kW)**	
S3-40	DN50	6	240	60 kW, 150 kW, 300 kW
S3-60	DN50	5	300	
S3-70	DN50	4	280	150 kW, 300 kW
S3-80	DN80	6	480	150 kW, 300 kW, 450 kW, 600 kW
S3-100	DN80	6	600	
S3-120	DN80	5	600	
S3-150	DN100	6	900	300 kW, 450 kW, 600 kW, 750 kW, 900 kW

Table 2 - PHEX Kit Outlet Connection Size

PHE Kits (kW)	Outlet Connection Size
60	DN25 FLANGE
150	
300	DN50 FLANGE
450	
600	
750	DN80 FLANGE
900	

Note: The total system output must not exceed the Plate Heat Exchanger Kit Rating.

One Plate Heat Exchanger Kit required per cascade.

continued . . . . .

2.3 SYSTEM SEPARATION: LOW LOSS HEADER & PLATE HEAT EXCHANGER

A low loss header or plate heat exchanger allows flow separation within a heating 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. Hamworthy's brazed plate heat exchangers ensure optimum heat transfer efficiency and low resistance within a compact footprint. The heat exchanger allows hydraulic segregation between the boiler primary and secondary heating circuits. Used in conjunction with Hamworthy's 40-70 kW and 80-150 kW frame and header kits covering duties from 60kW to 900kW.

The design is based on standard components and a modular brazed concept. Each unit is manufactured to the highest standard and part of the AHRI certified program that ensures thermal performance in accordance with the product specifications.

Benefits

- Compact design
- No gaskets
- Easy install with Hamworthy's Frame and Header Kits
- Low maintenance/ self-cleaning
- All units are pressure tested

2.4 ASSEMBLY

The frames 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 frames that space is available for the servicing, installation and maintenance of the appliance and all of the associated connections and equipment. (See appliance manuals)

When using multiple frames they must be bolted together and where necessary secured to the floor.

2.5 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.

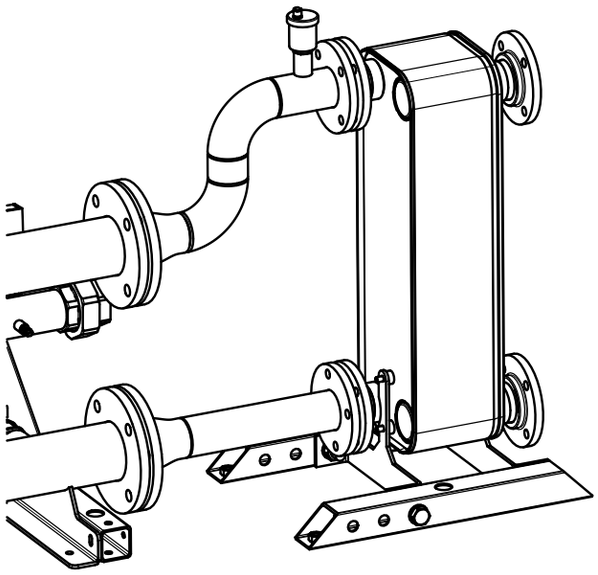
- Keep back straight
- Avoid twisting at the waist
- Avoid upper body/top heavy bending
- Always grip with the palm of the hand
- Use designated hand holds
- Keep load as close to the body as possible
- Always use assistance if required

2.6 KIT CONTENTS

PHEX kit comprises brazed heat exchanger, pipe spools, flanges and fixings to enable direct assembly on to frame and header kit.

3 PLATE HEAT EXCHANGER KIT (OPTIONAL ACCESSORY)

3.1 PLATE HEAT EXCHANGER



3.2 FITTING PLATE HEAT EXCHANGER AND BLANKING FLANGES

1. Fit the Plate Heat Exchanger and blanking flanges in the chosen positions.

   Note: *Plate Heat Exchanger can be located either LHS or RHS of the headers.*

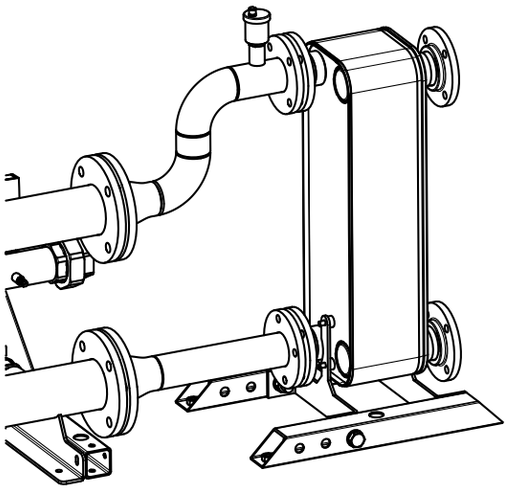
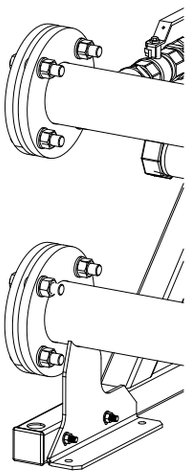


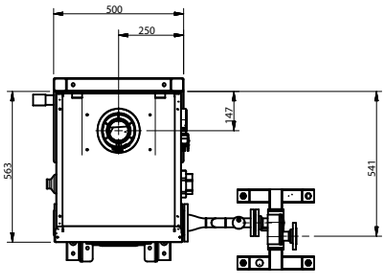
Plate Heat Exchanger

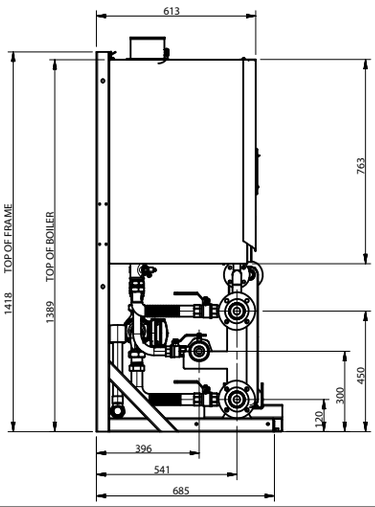


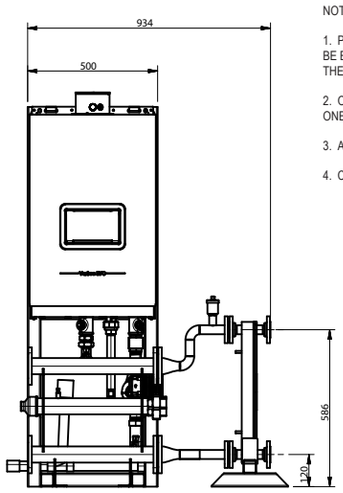
Blanking Flange

4 INSTALLATION DRAWINGS FOR MULTIPLE BOILER SYSTEMS

4.1 INSTALLATION DRAWING OF 1 BOILER ON DN50 FRAME & HEADER KIT WITH 60 kW PLATE HEAT EXCHANGER







NOTES:

1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

2. OPTIONAL 60 kW PLATE HEAT EXCHANGER (UIN 232889) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 40 kW / 60 kW

4.2 INSTALLATION DRAWING OF 2 BOILER ON DN50 FRAME & HEADER KIT WITH 150 kW PLATE HEAT EXCHANGER

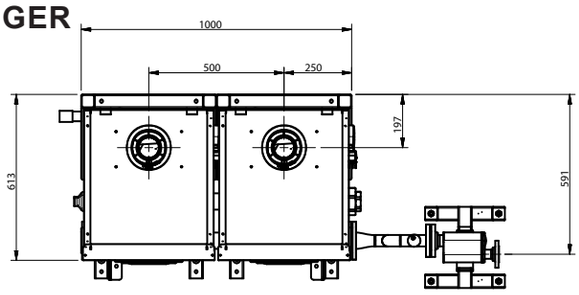
NOTES:

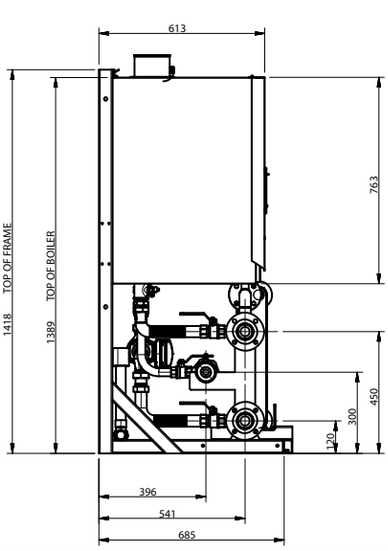
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

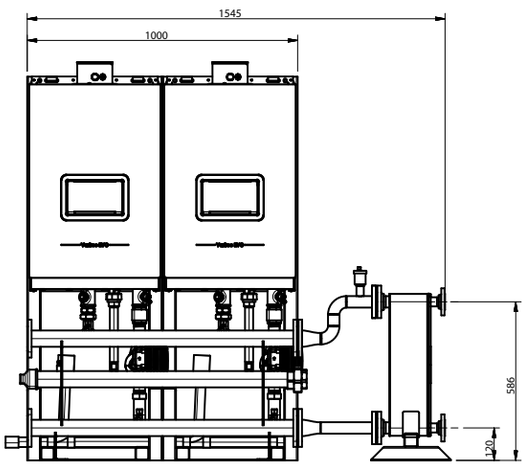
2. OPTIONAL 150 kW PLATE HEAT EXCHANGER (UIN 232890) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 40 kW / 60 kW / 70 kW







4.3 INSTALLATION DRAWING OF 3 BOILERS ON DN50 FRAME & HEADER KIT WITH 150 kW PLATE HEAT EXCHANGER

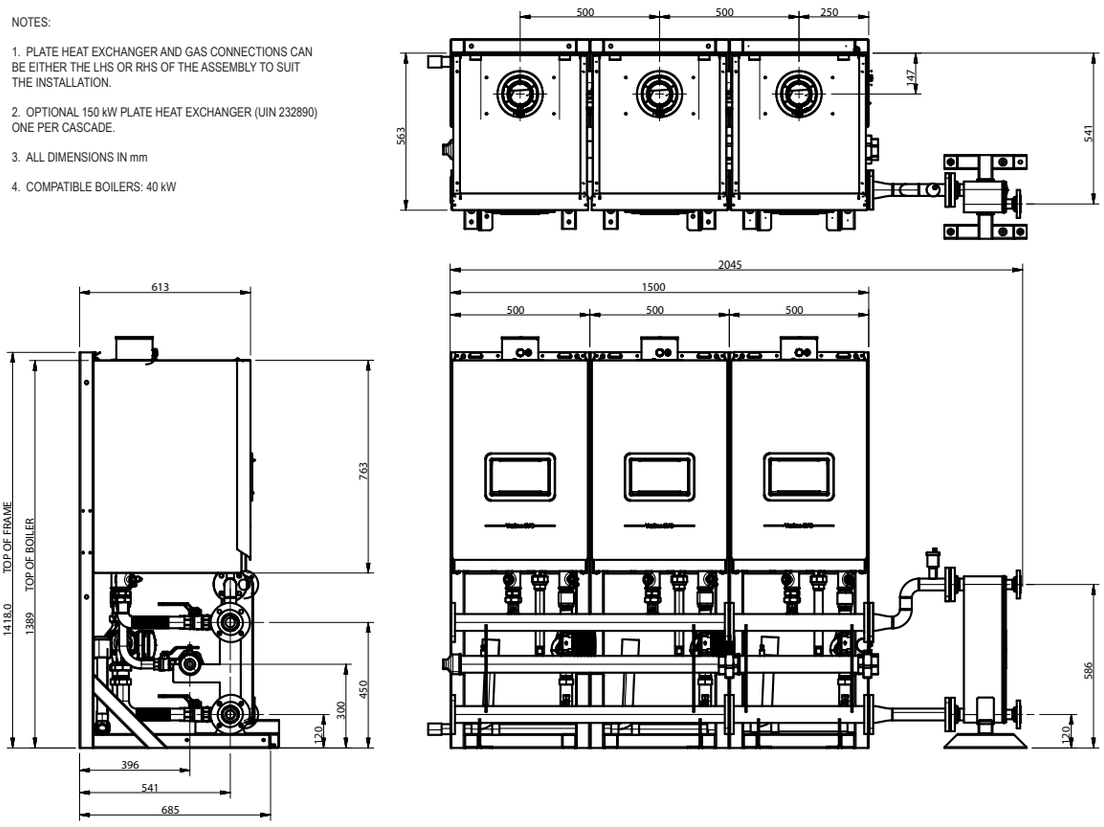
NOTES:

1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

2. OPTIONAL 150 kW PLATE HEAT EXCHANGER (UIN 232890) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 40 kW



4.4 INSTALLATION DRAWING OF 3 BOILERS ON DN50 FRAME & HEADER KIT WITH 300 kW PLATE HEAT EXCHANGER

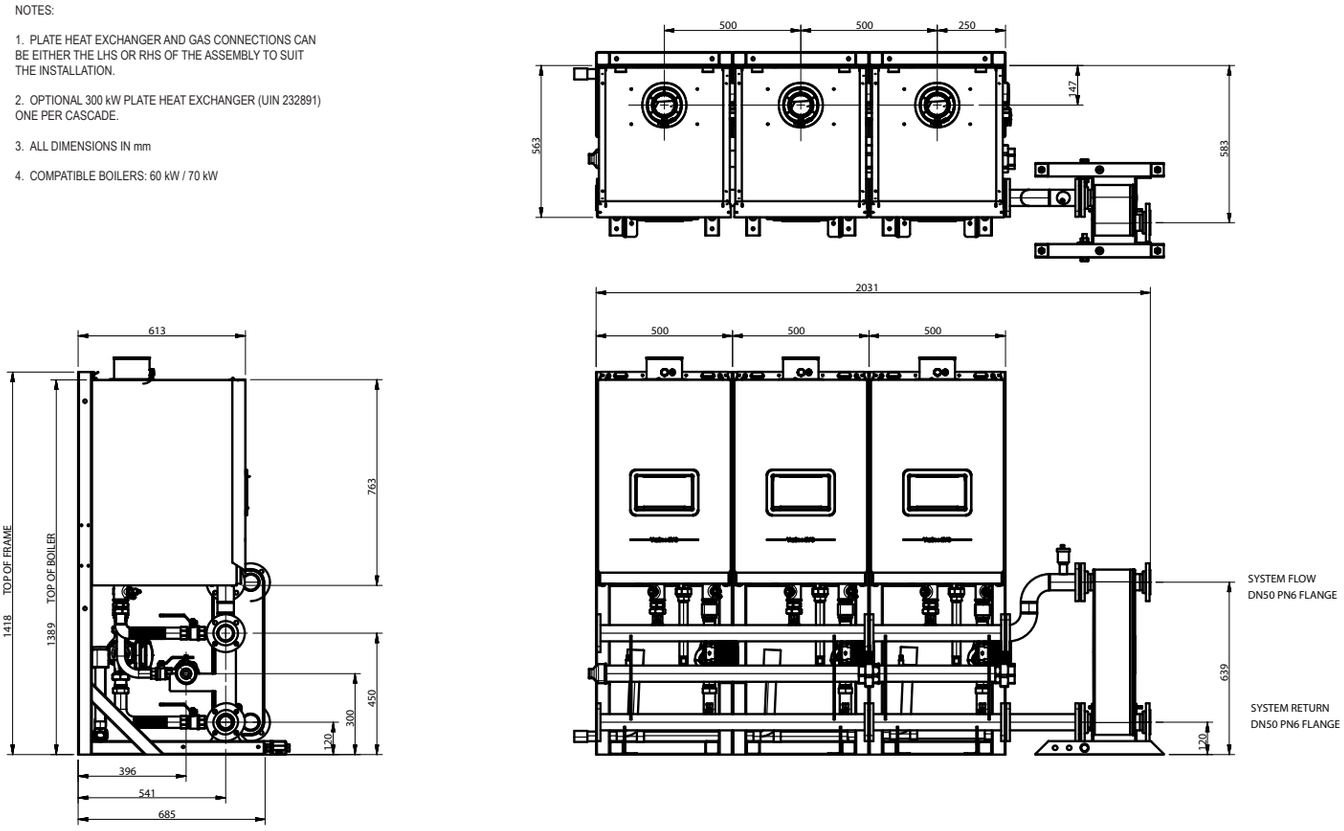
NOTES:

1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

2. OPTIONAL 300 kW PLATE HEAT EXCHANGER (UIN 232891) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 60 kW / 70 kW



4.5 INSTALLATION DRAWING OF 4 BOILERS ON DN50 FRAME & HEADER KIT WITH 300 kW PLATE HEAT EXCHANGER

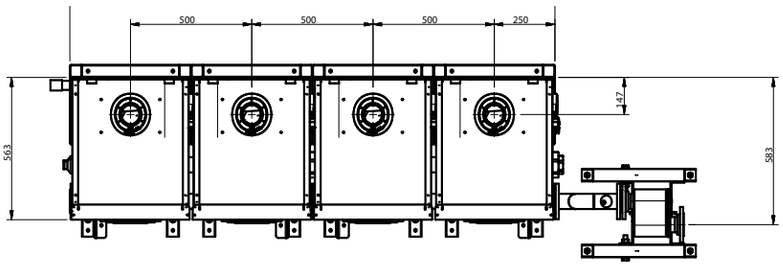
NOTES:

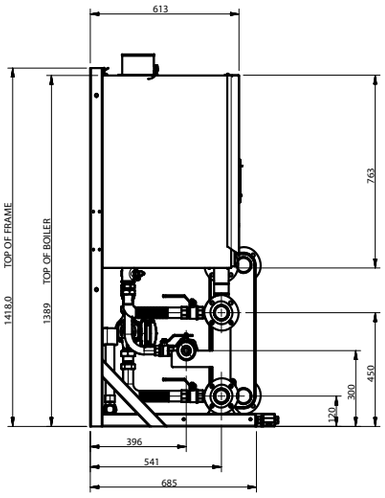
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

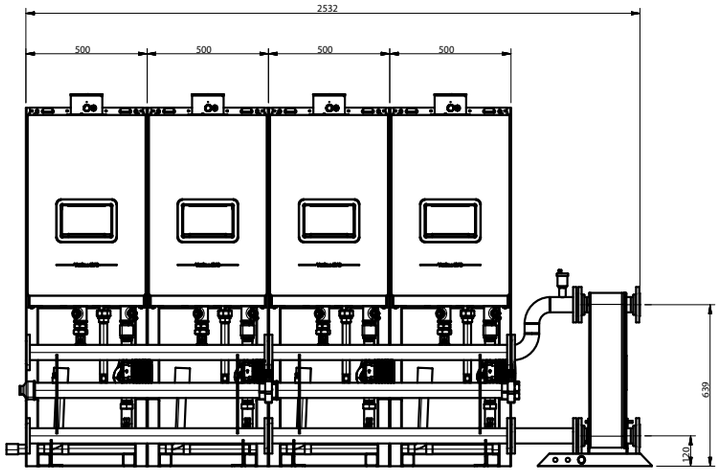
2. OPTIONAL 300 kW PLATE HEAT EXCHANGER (UIN 232891) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 40 kW / 60 kW / 70 kW







4.6 INSTALLATION DRAWING OF 5 BOILERS ON DN50 FRAME & HEADER KIT WITH 300 kW PLATE HEAT EXCHANGER

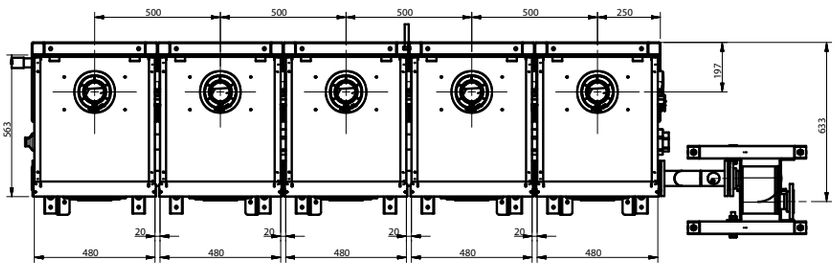
NOTES:

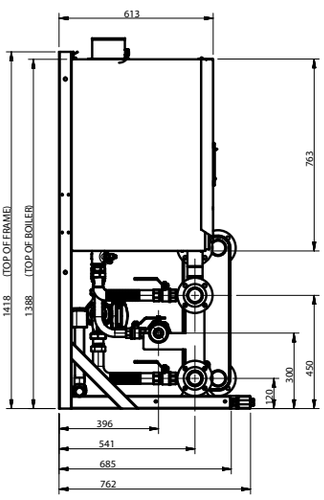
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

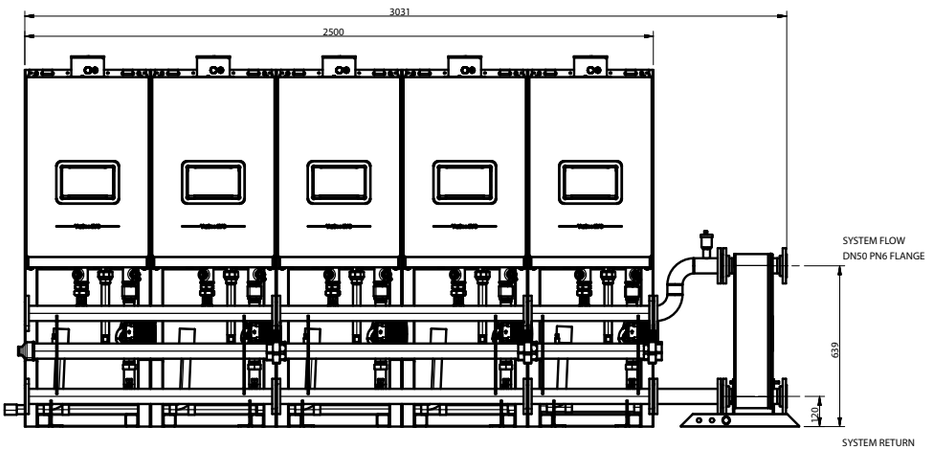
2. OPTIONAL 300 kW PLATE HEAT EXCHANGER (UIN 232891) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 40 kW / 60 kW







4.7 INSTALLATION DRAWING OF 6 BOILERS ON DN50 FRAME & HEADER KIT WITH 300 kW PLATE HEAT EXCHANGER

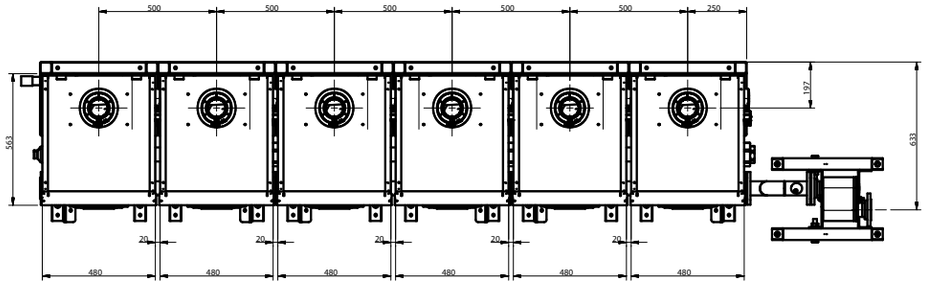
NOTES:

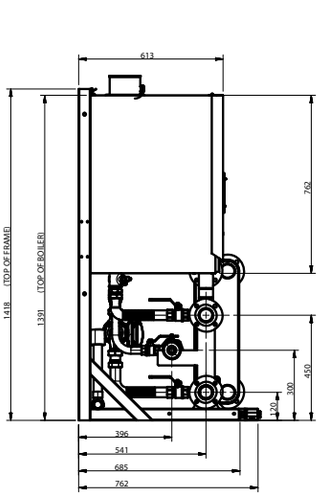
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

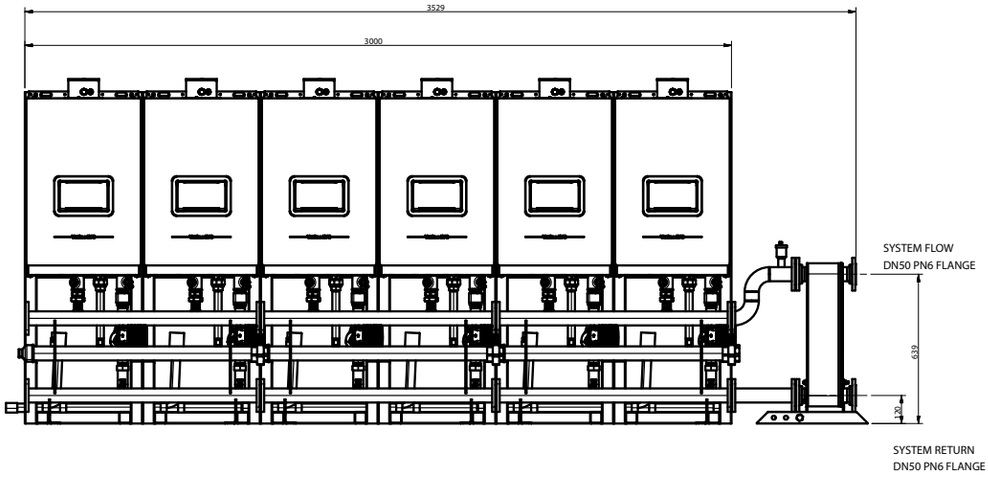
2. OPTIONAL 300 kW PLATE HEAT EXCHANGER (UIN 232891) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 40 kW







4.8 INSTALLATION DRAWING OF 1 BOILER ON DN80 FRAME & HEADER KIT WITH 150 kW PLATE HEAT EXCHANGER

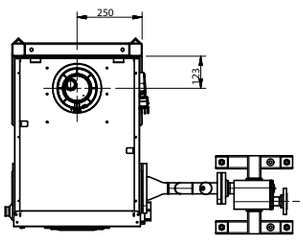
NOTES:

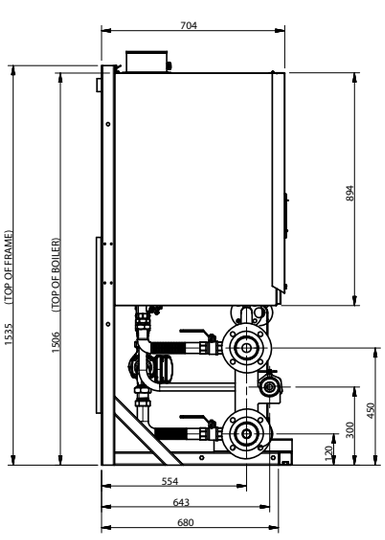
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

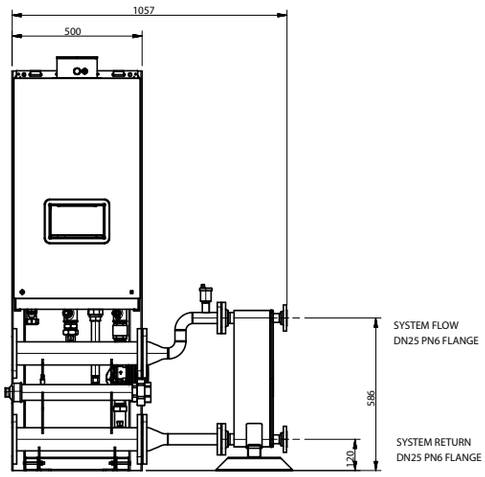
2. OPTIONAL 150 kW PLATE HEAT EXCHANGER (UIN 232893) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 80 kW / 100 kW / 120 kW







4.9 INSTALLATION DRAWING OF 2 BOILERS ON DN80 FRAME & HEADER KIT WITH 300 kW PLATE HEAT EXCHANGER

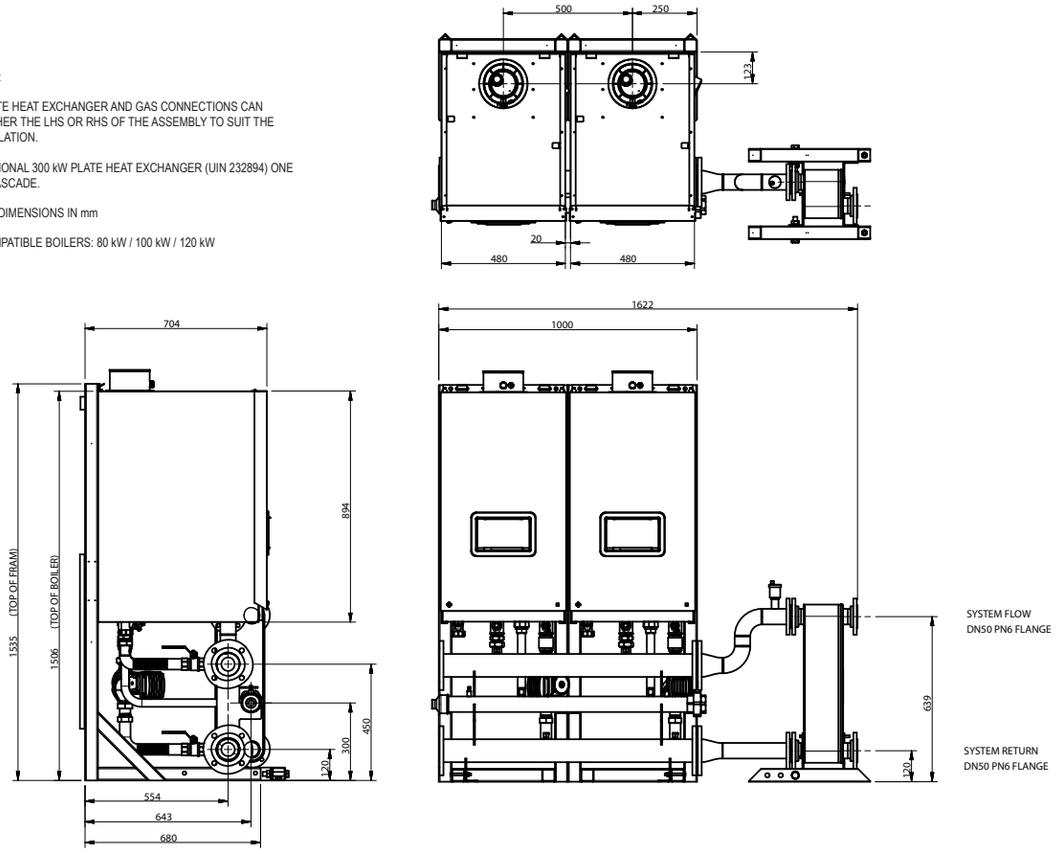
NOTES:

1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

2. OPTIONAL 300 kW PLATE HEAT EXCHANGER (UIN 232894) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 80 kW / 100 kW / 120 kW



4.10 INSTALLATION DRAWING OF 3 BOILERS ON DN80 FRAME & HEADER KIT WITH 300 kW PLATE HEAT EXCHANGER

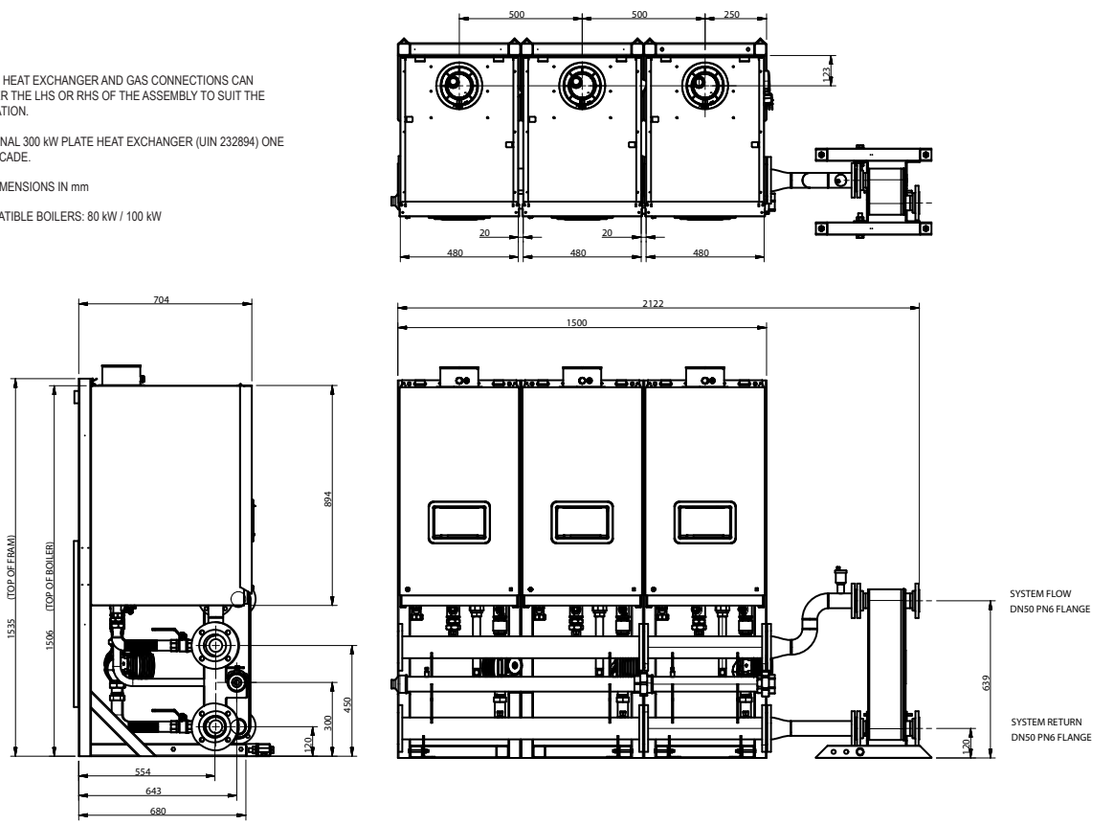
NOTES:

1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

2. OPTIONAL 300 kW PLATE HEAT EXCHANGER (UIN 232894) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 80 kW / 100 kW



4.11 INSTALLATION DRAWING OF 3 BOILERS ON DN80 FRAME & HEADER KIT WITH 450 kW PLATE HEAT EXCHANGER

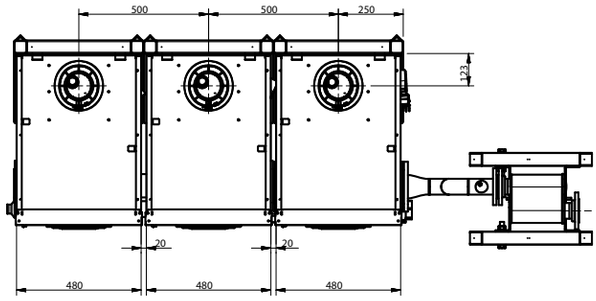
NOTES:

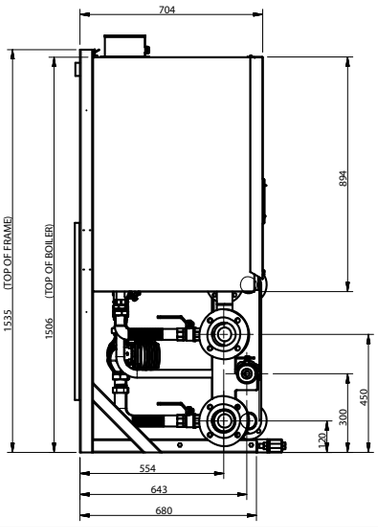
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

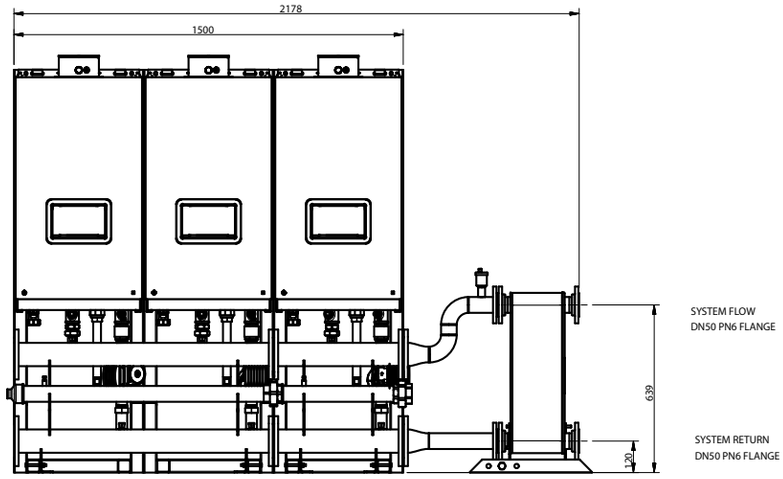
2. OPTIONAL 450 kW PLATE HEAT EXCHANGER (UIN 232895) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 120 kW







4.12 INSTALLATION DRAWING OF 4 BOILERS ON DN80 FRAME & HEADER KIT WITH 450kW PLATE HEAT EXCHANGER

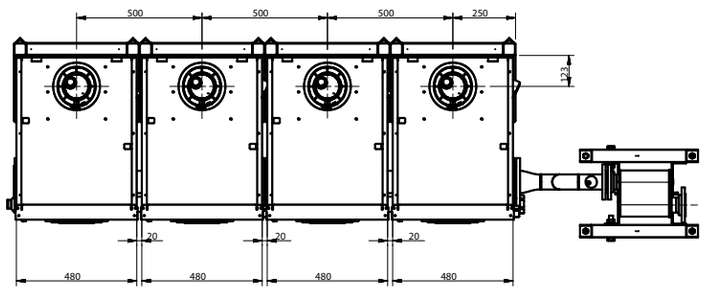
NOTES:

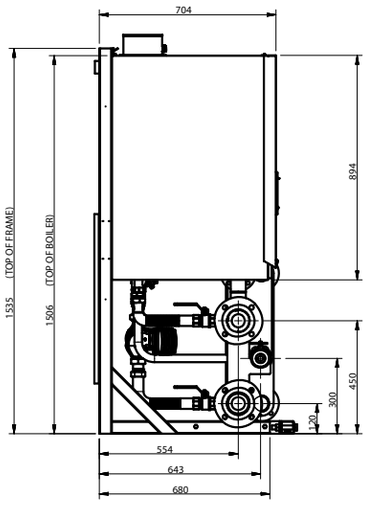
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

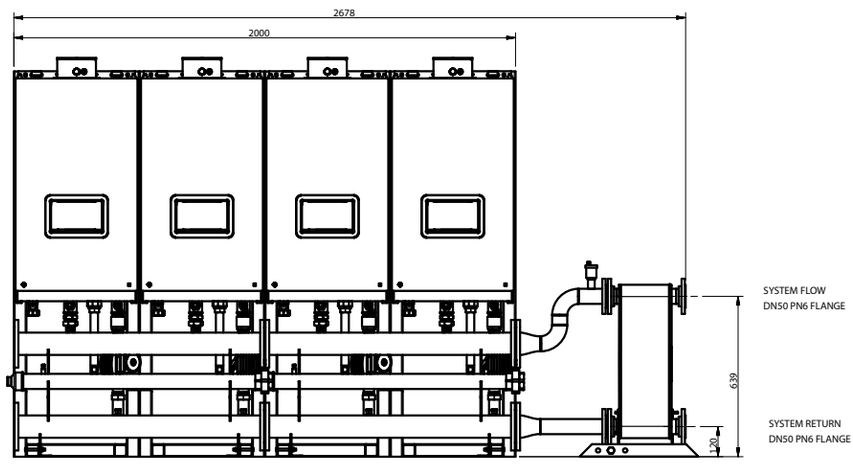
2. OPTIONAL 450 kW PLATE HEAT EXCHANGER (UIN 232895) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 80 kW / 100 kW







4.13 INSTALLATION DRAWING OF 4 BOILERS ON DN80 FRAME & HEADER KIT WITH 600 kW PLATE HEAT EXCHANGER

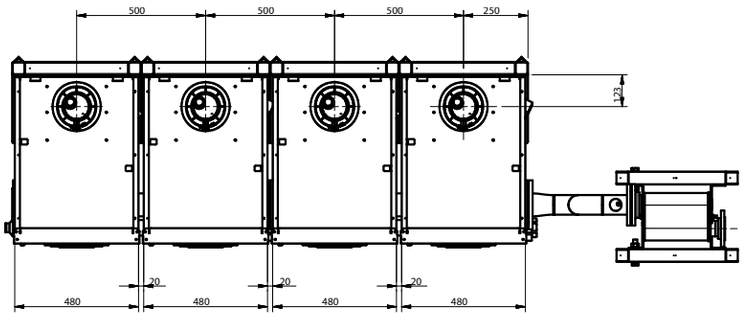
NOTES:

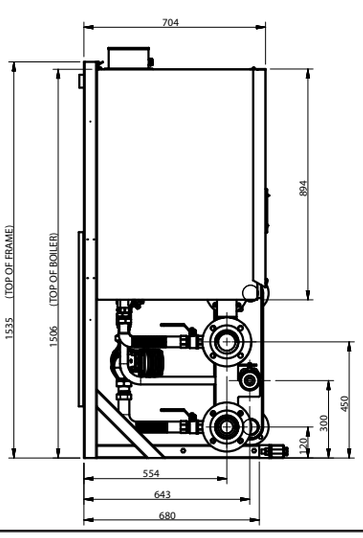
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

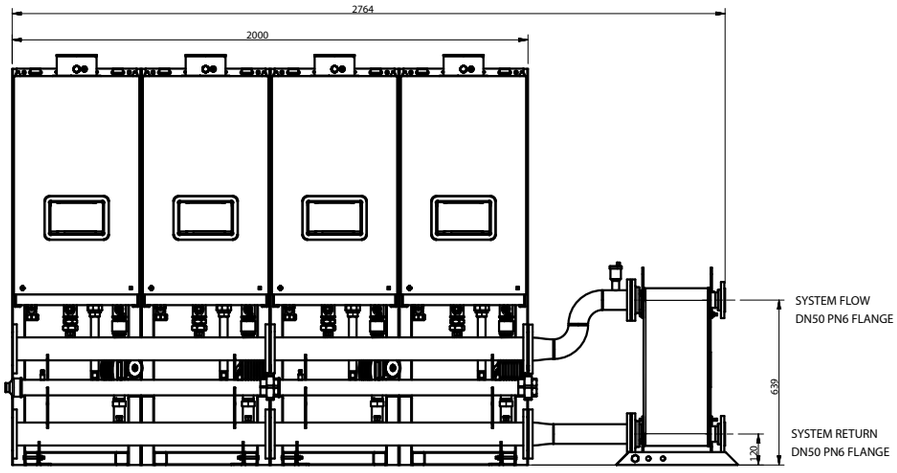
2. OPTIONAL 600 kW PLATE HEAT EXCHANGER (UIN 232896) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 120 kW







4.14 INSTALLATION DRAWING OF 5 BOILERS ON DN80 FRAME & HEADER KIT WITH 450 kW PLATE HEAT EXCHANGER

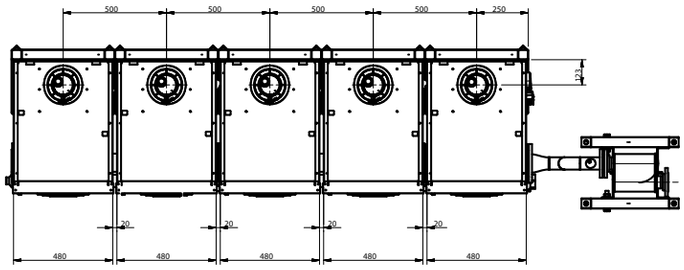
NOTES:

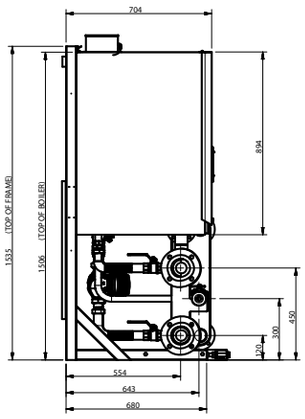
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

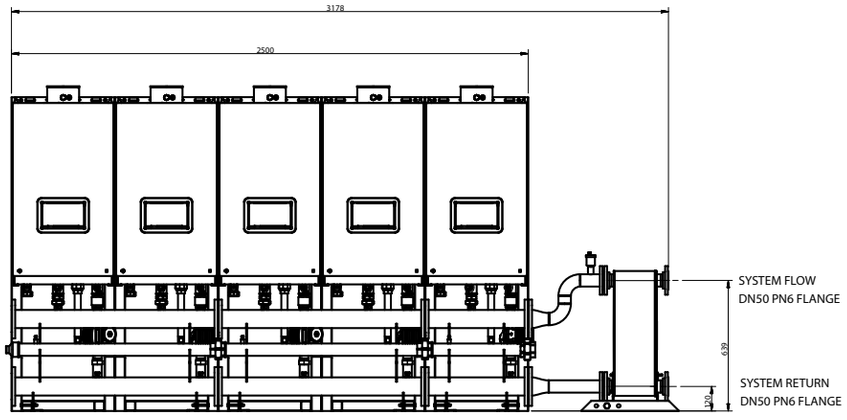
2. OPTIONAL 450 kW PLATE HEAT EXCHANGER (UIN 232895) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 80 kW







4.15 INSTALLATION DRAWING OF 5 BOILERS ON DN80 FRAME & HEADER KIT WITH 600 kW PLATE HEAT EXCHANGER

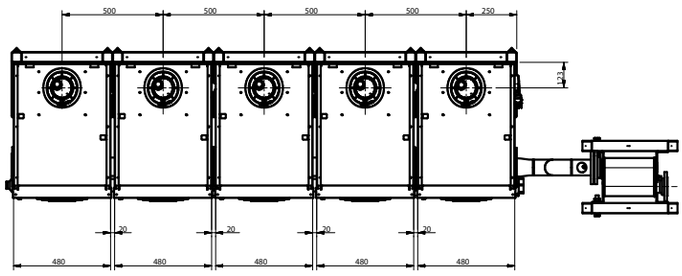
NOTES:

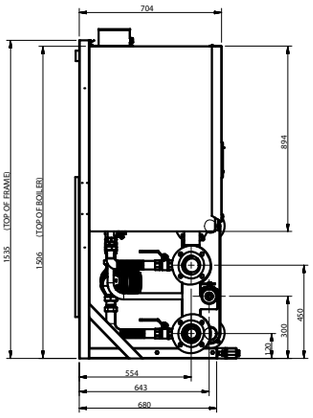
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

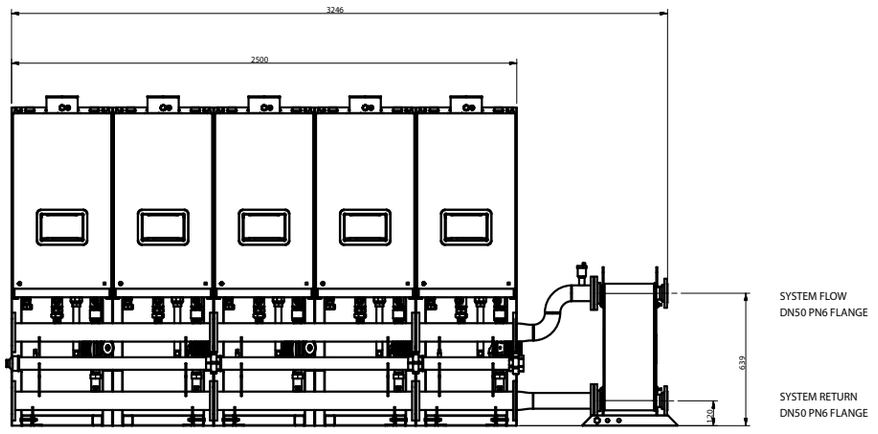
2. OPTIONAL 600 kW PLATE HEAT EXCHANGER (UIN 232896) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 100 kW / 120 kW







4.16 INSTALLATION DRAWING OF 6 BOILERS ON DN80 FRAME & HEADER KIT WITH 600 kW PLATE HEAT EXCHANGER

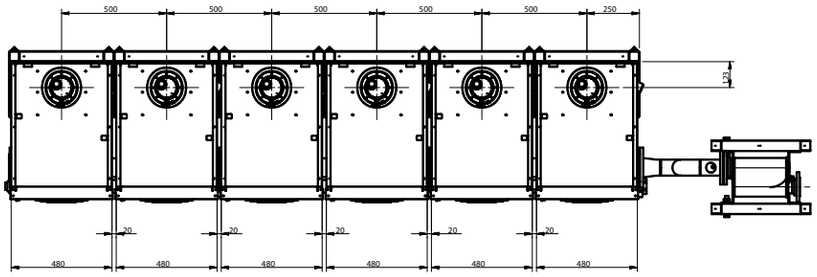
NOTES:

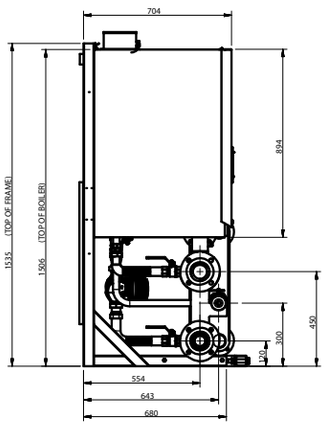
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

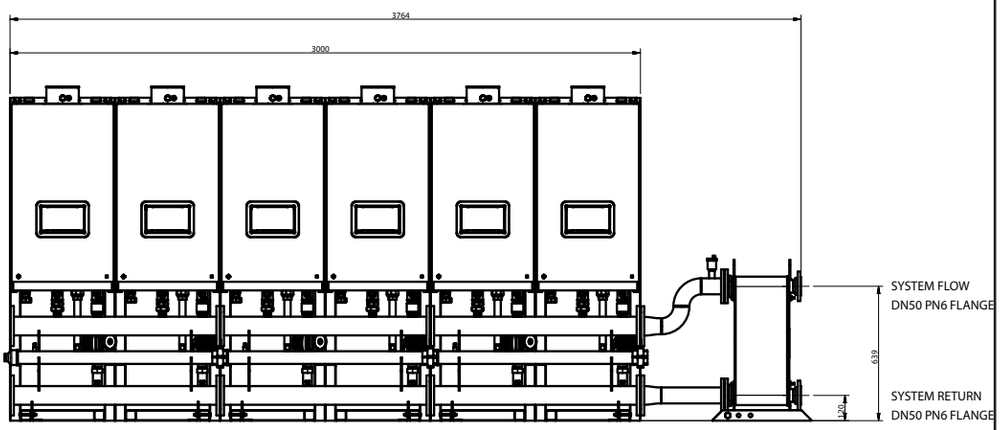
2. OPTIONAL 600 kW PLATE HEAT EXCHANGER (UIN 232896) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 80 kW / 100 kW







4.17 INSTALLATION DRAWING OF 2 BOILERS ON DN100 FRAME & HEADER KIT WITH 300 kW PLATE HEAT EXCHANGER

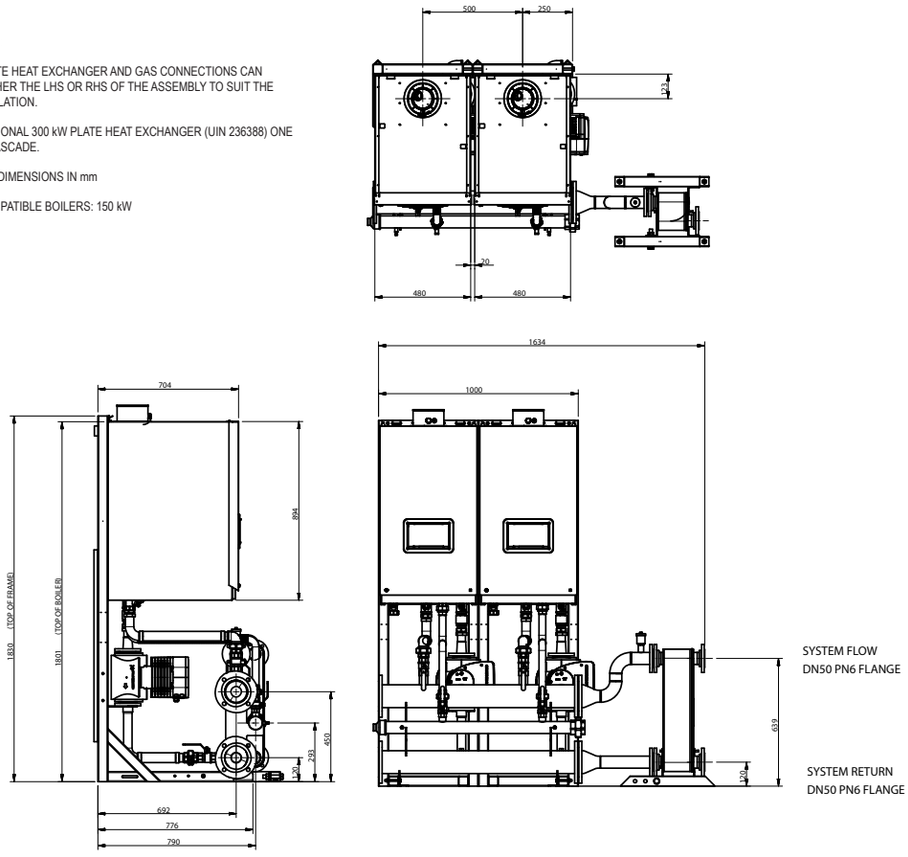
NOTES:

1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

2. OPTIONAL 300 kW PLATE HEAT EXCHANGER (UIN 236388) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 150 kW



4.18 INSTALLATION DRAWING OF 3 BOILERS ON DN100 FRAME & HEADER KIT WITH 450 kW PLATE HEAT EXCHANGER

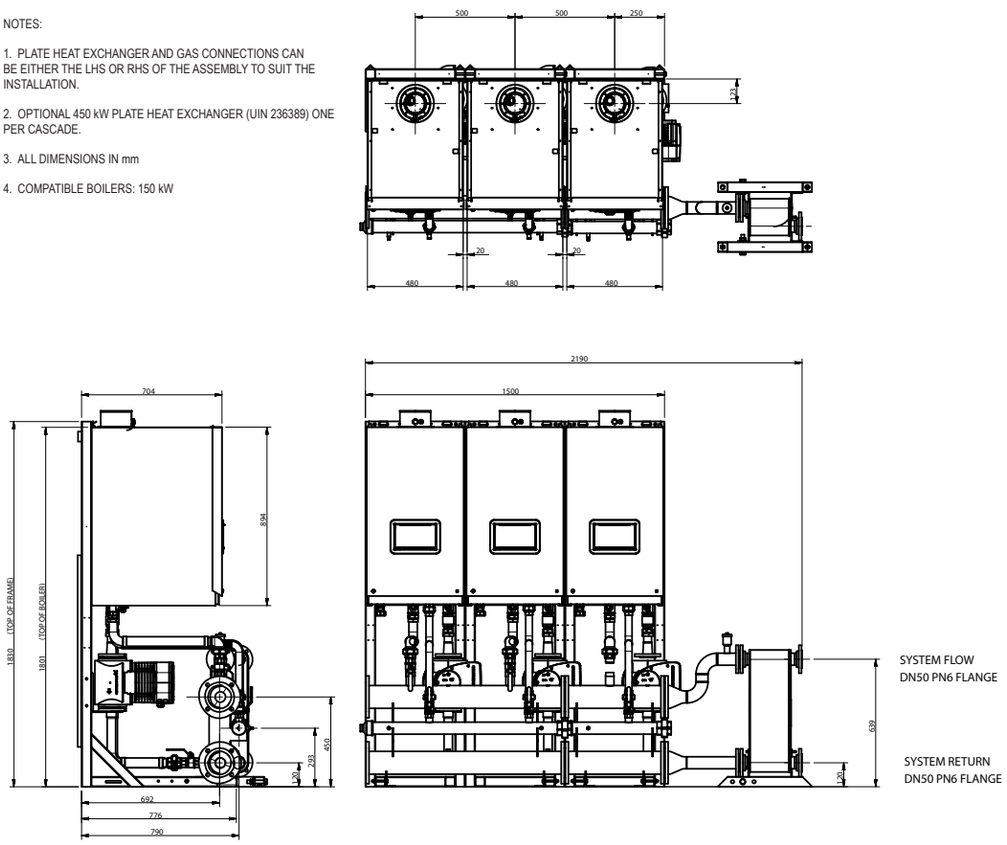
NOTES:

1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

2. OPTIONAL 450 kW PLATE HEAT EXCHANGER (UIN 236389) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 150 kW



4.19 INSTALLATION DRAWING OF 4 BOILERS ON DN100 FRAME & HEADER KIT WITH 600 kW PLATE HEAT EXCHANGER

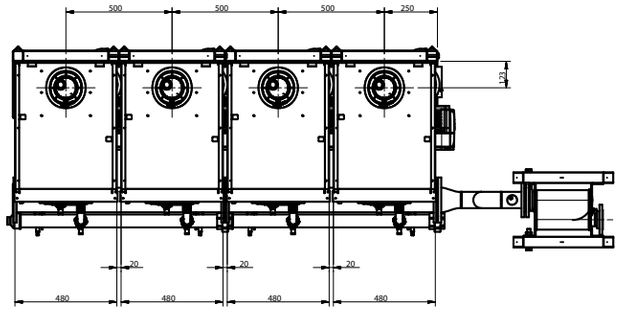
NOTES:

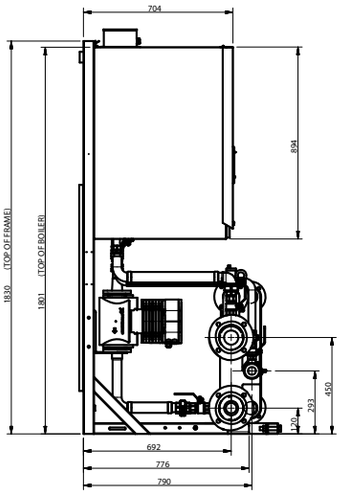
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

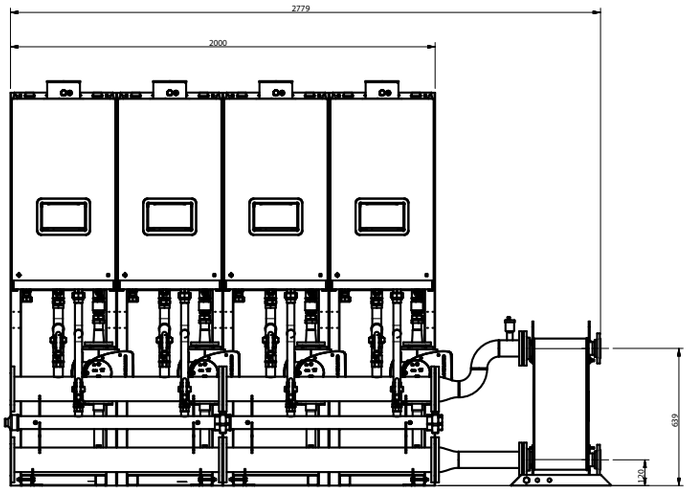
2. OPTIONAL 600 kW PLATE HEAT EXCHANGER (UIN 232902) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 150 kW







SYSTEM FLOW
DN50 PN6 FLANGE

SYSTEM RETURN
DN50 PN6 FLANGE

4.20 INSTALLATION DRAWING OF 5 BOILERS ON DN100 FRAME & HEADER KIT WITH 750 kW PLATE HEAT EXCHANGER

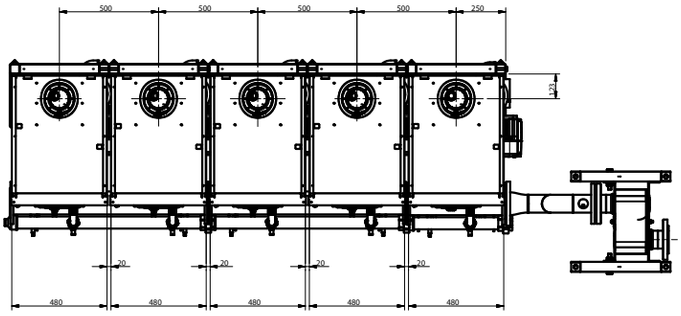
NOTES:

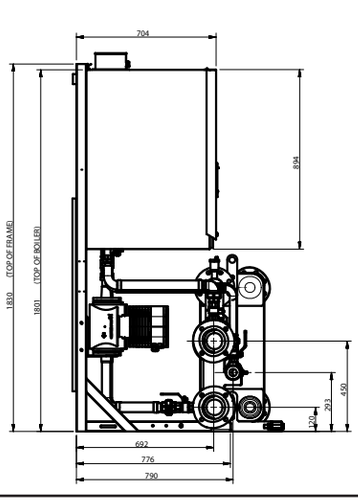
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

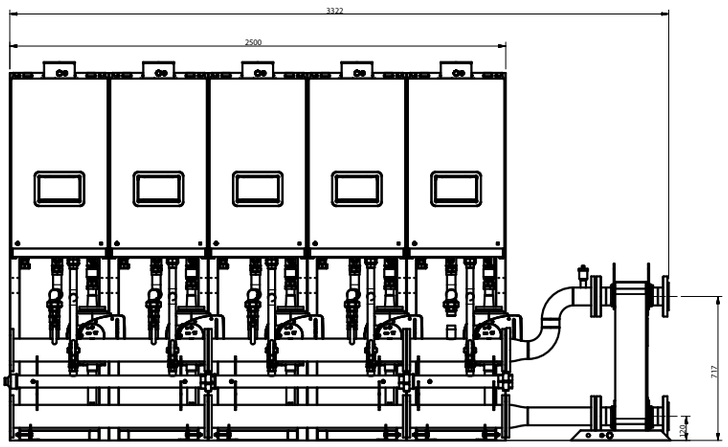
2. OPTIONAL 750 kW PLATE HEAT EXCHANGER (UIN 232897) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 150 kW







SYSTEM FLOW
DN80 PN6 FLANGE

SYSTEM RETURN
DN80 PN6 FLANGE

4.21 INSTALLATION DRAWING OF 6 BOILERS ON DN100 FRAME & HEADER KIT WITH 900 kW PLATE HEAT EXCHANGER

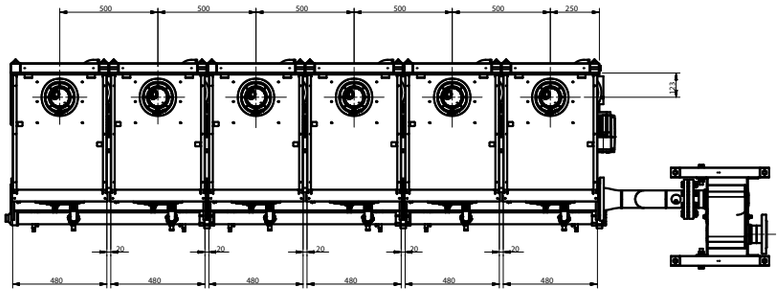
NOTES:

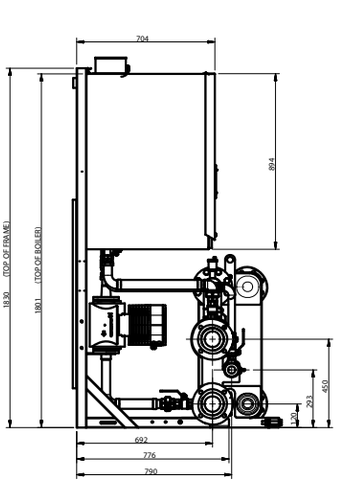
1. PLATE HEAT EXCHANGER AND GAS CONNECTIONS CAN BE EITHER THE LHS OR RHS OF THE ASSEMBLY TO SUIT THE INSTALLATION.

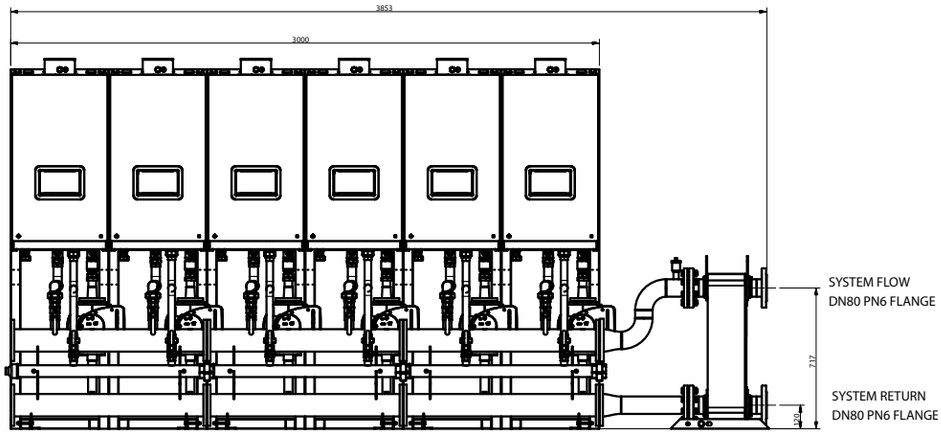
2. OPTIONAL 900 kW PLATE HEAT EXCHANGER (UIN 232904) ONE PER CASCADE.

3. ALL DIMENSIONS IN mm

4. COMPATIBLE BOILERS: 150 kW







NOTES

NOTES

NOTES

Hamworthy Heating Accredited Agents

Southern Ireland (Sales & Service)
HEVAC Limited
Naas Road, Dublin 12, Ireland
tel: **00 353 141 91919 fax: 00 353 145 84806**
email: **info@hevac.ie**

Scotland (Sales & Service)
McDowall Modular Services
2 Penson Road, Queenslie Industrial Estate, Glasgow, G33 4AG
tel: **0141 336 8795** fax: **0141 336 8954**
email: mms@hamworthy-heating.com

Hamworthy Heating Customer Service Centre

Sales
tel: 01202 662552
email: sales@hamworthy-heating.com

Technical Enquiries
tel: 01202 662505
email: technical@hamworthy-heating.com

Servicing
tel: 01202 662555
email: service@hamworthy-heating.com

Spares
tel: 01202 662525
email: spares@hamworthy-heating.com

British engineering excellence from Hamworthy Heating;
the commercial heating and hot water specialists.

Hamworthy

Customer Service Centre
Hamworthy Heating Limited,
Wessex House,
New Fields Business Park,
Stinsford Road,
Poole,
Dorset,
BH17 0NF

Telephone: **01202 662500**
Fax: **01202 662522**
Email: **service@hamworthy-heating.com**
Website: **www.hamworthy-heating.com**