

Strebel Plate Heat Exchangers



ThermaFlow & ThermaPak Units

ThermaFlow Units

Packaged plate heat exchanger DHWS units

- **Compact**
- **Flexible**
- **Low maintenance**
- **Instantaneous domestic hot water**

ThermaFlow packaged plate heat exchangers provide temperature controlled, instantaneous domestic hot water (DHW). Complete with plate heat exchanger, control panel, temperature control valve and primary pump, each ThermaFlow unit needs only to be connected to suitable supplies of electricity, primary hot water (eg. a central heating boiler) and the domestic water system to provide all the instantaneous hot water you require. On most systems the existing central heating boiler(s) will be able to meet the demand imposed by the ThermaFlow unit. If DHW demand is temporarily higher than the available boiler power then a ThermaFlow unit, combined with a small storage vessel to form a 'ThermaPak' semi-instantaneous unit (see pages 8 & 9), can provide the ideal solution. Our experienced sales and technical team can advise on the applicability of either system.

Heat Exchanger

Each ThermaFlow unit has a 'ThermaFlex' gasketed plate heat exchanger. Plates and DHW connections are AISI 316 stainless steel, gaskets are NBR or EPDM(S). Each heat exchanger is designed and built for the duty specified. The heat exchanger plates cause high levels of turbulence and heat transfer, minimising scaling. The heat exchanger is easily dismantled and re-assembled for maintenance and, if demand increases at a later date, more plates can be added to increase the output.

Pumps

A built-in pump takes primary water to/from the system "low-loss" header and circulates it around the plate heat exchanger. This pump should not be used as the main boiler circulation pump. Duplex primary pumps are available as an option. (If the unit is to be connected to a primary system which generates a differential pressure higher than 10 kPa across the connections this should be reduced to 10 kPa or less - eg. by using close-coupled primary connections.

Controls

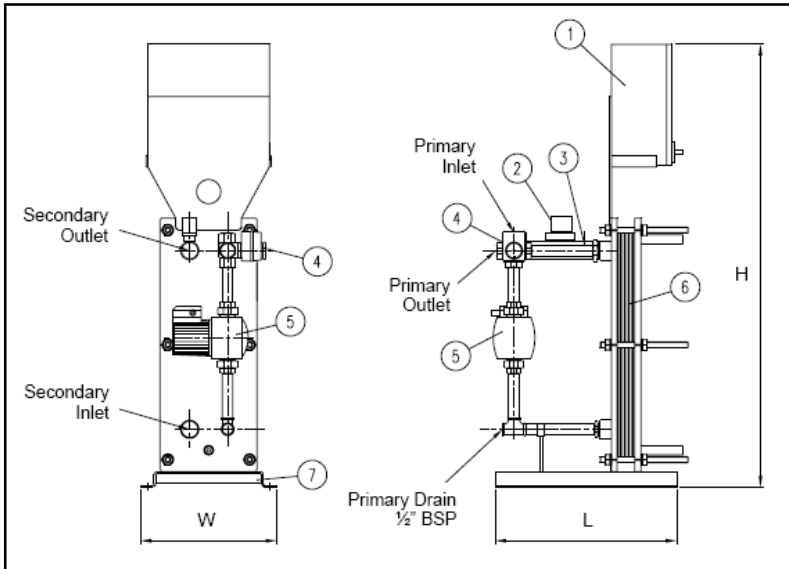
The standard control panel incorporates a digital temperature display and controller, pump contactor (s) and overload(s), power on, pump run, pump trip and high temperature lights, high temperature cut-out (manual reset at the thermostat), Hi Temp. & Pump Trip volt-free contacts, relay for switching unit on/off remotely, Local/Remote/Stand-by selector switch and door interlock isolator.

ThermaFlow units re-start automatically when power is restored after a power cut. For the duplex primary pump option the panel also provides:-

- Pump 1 / Pump 2 / Auto selector switch.
- Auto-change-over on pump trip and with each remote start-up (when 'Auto' selected).

A modulating 4-port control valve regulates the primary heat input. Secondary water outlet temperature is measured accurately by thermo-sensor. An independent 'High Limit' thermostat protects against high temperature fault conditions by shutting down the primary pump. It also overrides the controller and closes the 4-port valve.

ThermaFlow Units



- 1** Electrical Control Panel
- 2** High Limit Thermostat
- 3** Control Sensor
- 4** 4-Port Control Valve
- 5** Primary Shunt Pump
- 6** Plate Heat Exchanger
- 7** Mild Steel Skid Base

Unit Size	Output kW	DHW output * (L/Min)	DHW Connections BSP/PN16	Primary Connections BSP/PN6	Dry Weight kg	Dimensions (mm)		
						L	W	H
TF35	35	9	1" BSP	1" BSP	87	600	450	1445
TF60	60	16	1" BSP	1" BSP	87	600	450	1445
TF90	90	23	1" BSP	1" BSP	87	600	450	1445
TF120	120	31	1" BSP	1" BSP	87	600	450	1445
TF140	140	37	1" BSP	1" BSP	87	600	450	1445
TF175	175	46	1" BSP	1" BSP	120	600	450	1445
TF210	210	55	1" BSP	1¼" BSP	120	600	450	1445
TF265	265	69	1¼" BSP	1¼" BSP	120	600	450	1445
TF320	320	84	1¼" BSP	1½" BSP	120	600	450	1445
TF365	365	95	1½" BSP	1½" BSP	260	800	625	1530
TF420	420	110	1½" BSP	1½" BSP	260	800	625	1530
TF475	475	124	1½" BSP	1½" BSP	260	800	625	1530
TF530	530	138	1½" BSP	DN50	260	800	625	1530
TF600	600	157	2" BSP	DN50	260	800	625	1530
TF700	700	183	2" BSP	DN50	260	800	625	1530
TF800	800	209	2" BSP	DN50	260	800	625	1530
TF900	900	235	DN65	DN50	480	1320	940	1765
TF1000	1000	261	DN65	DN50	480	1320	940	1765
TF1200	1200	313	DN65	DN65	480	1320	940	1765
TF1400	1400	365	DN65	DN65	480	1320	940	1765
TF1600	1600	418	DN65	DN80	480	1320	940	1765
TF1800	1800	470	DN65	DN80	480	1320	940	1765

* - Flow rates based on 10-65°C

ThermaPak Units

ThermaPak packaged plate heat exchanger & buffer vessel units

- **Compact**
- **Flexible**
- **Low maintenance**
- **Semi-Instantaneous domestic hot water**
- **Extra water for peak periods reducing need for extra boiler power**

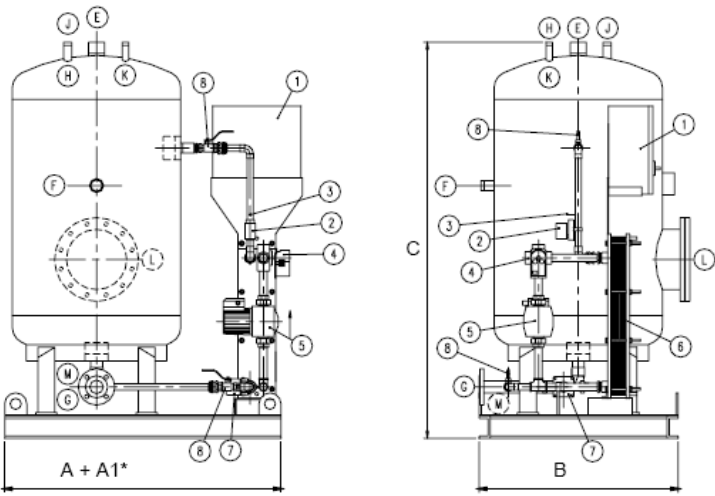
ThermaPak packages provide all the instantaneous hot water you require standard using a ThermaFlow package (see pages 4 & 5) and has an additional supply of water using a buffer vessel. The buffer vessel is 'charged' during period of low demand and used when a peak flow is required. The buffer vessels are sized depending on the application and type of building they are being installed in.

Strebel manufacture buffer vessels using the following standard materials:

- Solid Copper
- Copper-Lined Steel
- Galvanised Steel
- Stainless Steel
- Glass/Polymer Lined Steel



ThermaPak Units



- 1** Electrical Control Panel
- 2** High Limit Thermostat
- 3** Control Sensor
- 4** 4-Port Control Valve
- 5** Primary Shunt Pump
- 6** Plate Heat Exchanger
- 7** Secondary Shunt Pump
- 8** Isolating Valves

* - Dimension 'A1' - refer to page 3 for ThermaFlow unit dimension 'W'

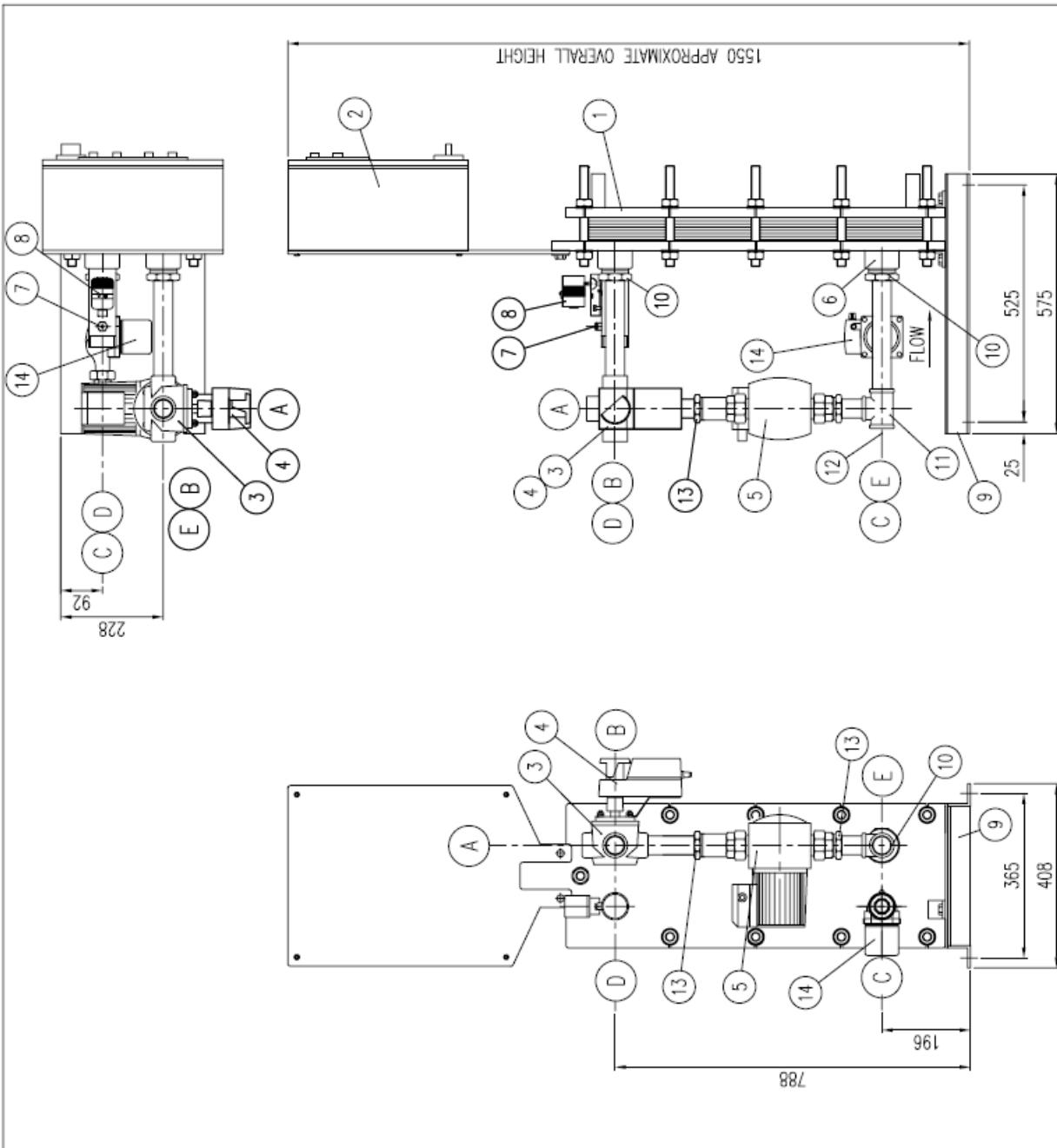
- Connections:**
- | | |
|--------------------|---|
| E Secondary Flow | J Safety Valve (Size To Suit Application) |
| F Secondary Return | K Thermometer |
| G Cold Feed | L Inspection Opening |
| H Pressure Gauge | M Secondary Drain |

For primary connection sizes, refer to page 7 for ThermaFlow unit details

Vessel Size	Dimensions			Connection Sizes Screwed BSP/Flanged PN16						
	A *	B	C	E	F	G	H	K	L mm	M
200	800	800	1650	2" BSP	1" BSP	DN50	¾" BSP	½" BSP	200	¾" BSP
250	800	800	1950	2" BSP	1" BSP	DN50	¾" BSP	½" BSP	200	¾" BSP
300	900	900	1600	2" BSP	1" BSP	DN50	¾" BSP	½" BSP	250	¾" BSP
350	900	900	1850	2" BSP	1" BSP	DN50	¾" BSP	½" BSP	250	¾" BSP
400	900	900	2050	2" BSP	1" BSP	DN50	¾" BSP	½" BSP	250	¾" BSP
500	1000	1000	1925	2" BSP	1" BSP	DN50	¾" BSP	½" BSP	300	¾" BSP
600	1060	1060	1900	2" BSP	1" BSP	DN50	¾" BSP	½" BSP	300	1" BSP
700	1060	1060	2130	2" BSP	1" BSP	DN50	¾" BSP	½" BSP	300	1" BSP
800	1060	1060	2380	2" BSP	1" BSP	DN50	¾" BSP	½" BSP	300	1" BSP
900	1100	1100	2400	2" BSP	1" BSP	DN50	¾" BSP	½" BSP	300	1" BSP
1000	1200	1200	2200	DN65	1½" BSP	DN65	¾" BSP	½" BSP	300	1" BSP
1200	1200	1200	2535	DN65	1½" BSP	DN65	¾" BSP	½" BSP	300	1" BSP
1500	1350	1350	2400	DN65	1½" BSP	DN65	¾" BSP	½" BSP	380	1" BSP
2000	1350	1350	2850	DN80	1½" BSP	DN80	¾" BSP	½" BSP	380	1½" BSP
2500	1525	1525	2850	DN80	1½" BSP	DN80	¾" BSP	½" BSP	450	1½" BSP
3000	1525	1525	3300	DN100	2" BSP	DN100	¾" BSP	½" BSP	450	1½" BSP
3500	1670	1670	3200	DN100	2" BSP	DN100	¾" BSP	½" BSP	450	1½" BSP
4000	1670	1670	3550	DN100	2" BSP	DN100	¾" BSP	½" BSP	450	1½" BSP
4500	1825	1825	3200	DN100	2" BSP	DN100	¾" BSP	½" BSP	450	1½" BSP
5000	1825	1825	3500	DN100	2" BSP	DN100	¾" BSP	½" BSP	450	1½" BSP

Please note all information shown within this leaflet is subject to change without prior notice.

TECHNICAL DIAGRAMS

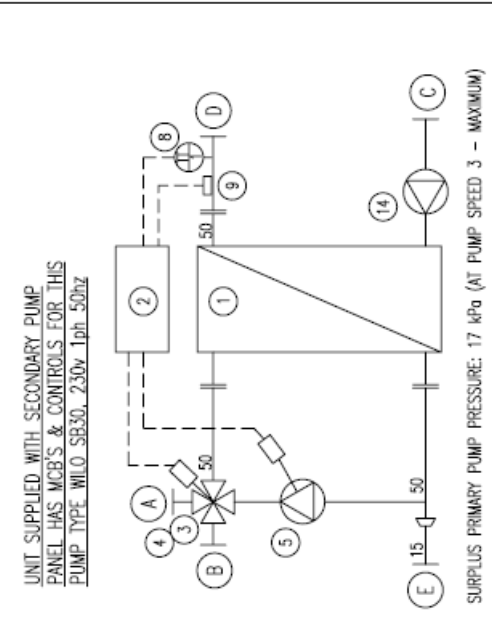


TITLE: GENERAL ASSEMBLY DRAWING OF THERMAFLOW UNIT MODEL TF47.5		Contract Ref. 604776	
Drawing No. 04776-3-GA		Checked By: _____	
Drawn By: NB		Date: 26/01/07	
Scale: MTS		Quantity: 1	
Units: mm			
Design Details		Technical Details	
Max. Working Pressure	6.0 BarG	Unit Output	47.5 kW
Design Pressure	6.0 BarG	Primary Inlet Temperature	82°C
Test Pressure	9.0 BarG	Primary Flowrate	0.38 Litres/Second
Design Temperature	65°C	Secondary temperatures	10/65°C
		Secondary Flowrate	0.21 Litres/Second
Approximate Dry Weight:	130 kg	Electrical Power	240v 1ph 50hz, 2.43 Amps FLC

REF	QTY	PART	SIZE/DWG No.
1	1	PLATE HEAT EXCHANGER	GL-13H46, 316I, NBR, 3M/2M
2	1	ELECTRICAL CONTROL PANEL	TF/1PP-2.02-230/1SP-0.39-230-8R32M
3	1	4-PORT PRIMARY CONTROL VALVE	SAUTER DN25 MH4Z225F200
4	1	CONTROL VALVE ACTUATOR	SAUTER ASM124F130
5	1	PRIMARY SHUNT PUMP	WIL0 TOP S25/7 230v 1ph 50hz
6	4	EXCHANGER CONNS	STAINLESS STEEL ANSI 304L, 2" BSP
7	1	CONTROL THERMOSTAT	6mm O/D x 40mm LONG
8	1	HIGH LIMIT THERMOSTAT (STRAP-OH)	HONEYWELL AQUASTAT L6190C2004
9	1	MILD STEEL SKID BASE	STANDARD
10	2	REDUCING BUSHES	2" BSP x 1" BSP STEEL/IRON
11	1	TEE	1.1/4" BSP MILD STEEL
12	1	REDUCING BUSH	1.1/4" BSP x 1/2" BSP STEEL/IRON
13	2	REDUCING BUSH	1" BSP x 1.1/4" BSP STEEL/IRON
14	1	SECONDARY PUMP	SB30

GENERAL NOTES:
 1. ALL STEEL COMPONENTS TO BE PAINTED GREY EXTERNALLY
 2. ELECTRICAL/FUNCTION TEST: SAFETY, COLD FUNCTION, WARM FUNCTION (CONTROLS)
 3. DO NOT WELD ON ASSEMBLED PHE PACKAGE
 4. CLIENT PRIMARY & SECONDARY PIPEWORK TO BE DESIGNED TO PREVENT STRESSES ON UNIT.

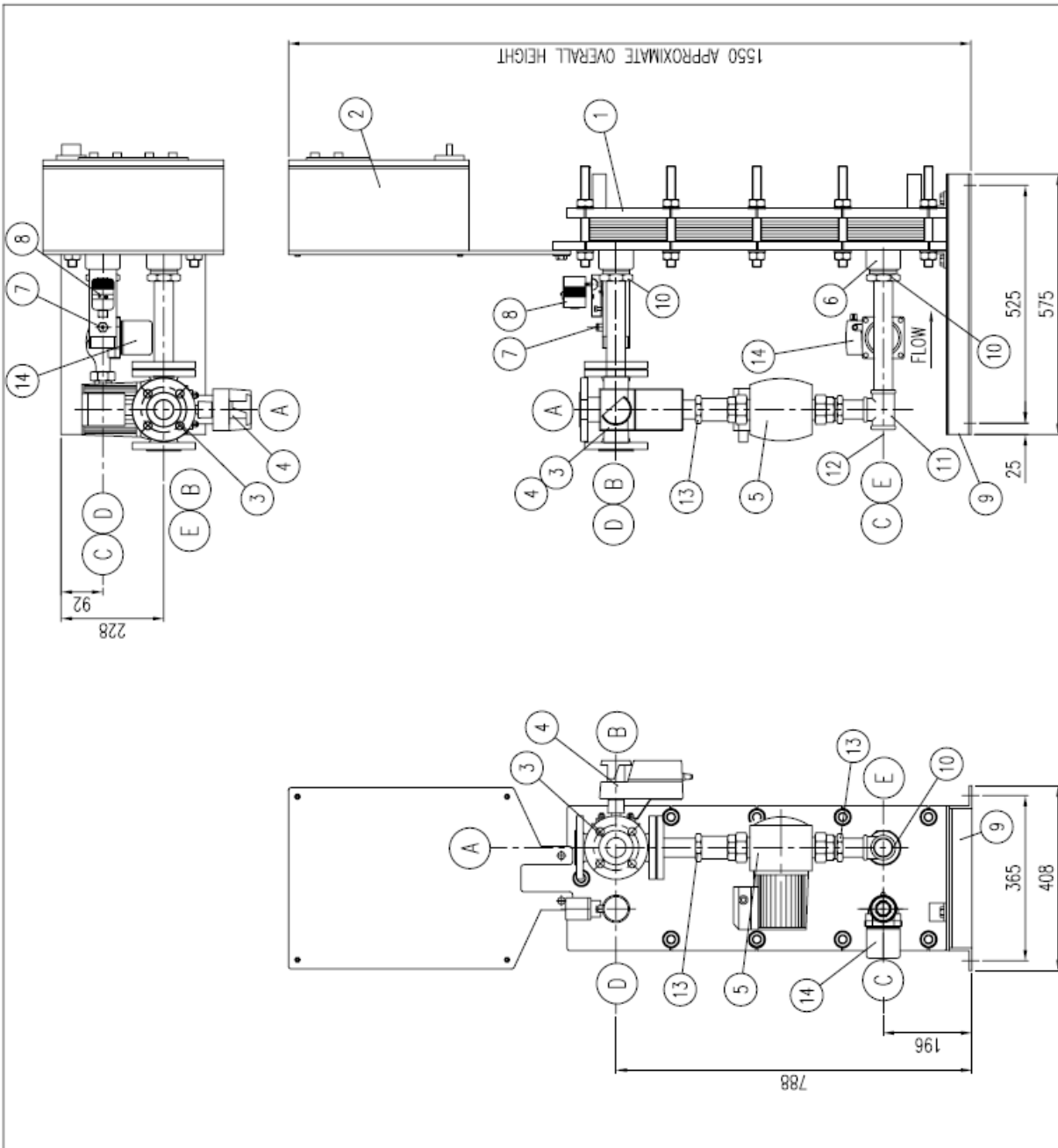
CONNECTION DETAILS
 G 1.1/4 INT (MS)
 A PRIMARY INLET
 B PRIMARY OUTLET
 C SECONDARY INLET
 D SECONDARY OUTLET
 E PRIMARY DRAIN



REFER TO CONTROL PANEL WIRING DIAGRAM FOR ALL WIRING DETAILS

Revisions		Date:	By:
A		B	C

STREBEL BOILERS LTD
 Mory Park Industrial Estate, Frimley Road, Camberley, GU15 7PB, UK. (01276) 685422, Fax: (01276) 685405

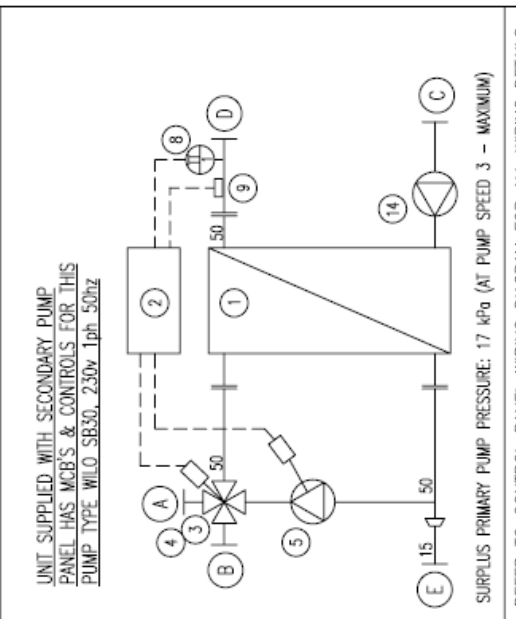


TITLE: GENERAL ASSEMBLY DRAWING OF THERMAFLOW UNIT MODEL TF115.9		Contract Ref. 004776	
Drawing No. 04776-2-GA		Drawn By: NB	
Checked By:		SCALE: NIS	
Date: 26/01/07		Quantity: 4	
UNITS: mm			
Technical Details			
Unit Output	115.9 kW		
Primary Inlet Temperature	82°C		
Primary Flowrate	0.92 Litres/Second		
Secondary Temperatures	10/65°C		
Secondary Flowrate	0.5 Litres/Second		
Electrical Power	240v 1ph 50hz, 2.43 Amps FLC		
Design Details			
Max. Working Pressure	6.0 BarG	Primary	6.0 BarG
Design Pressure	6.0 BarG	Secondary	6.0 BarG
Test Pressure	9.0 BarG	Primary	9.0 BarG
Design Temperature	65°C	Secondary	65°C
Approximate Dry Weight: 130 kg			

REF	QTY	PART	SIZE/DWG No.
1	1	PLATE HEAT EXCHANGER	GL-13HA, 316L/NBR, 3M/2M
2	1	ELECTRICAL CONTROL PANEL	TF/1PP-2.02-230/1SP-0.39-230-R32W
3	1	4-PORT PRIMARY CONTROL VALVE	SAUTER DN32 MH42F32F200
4	1	CONTROL VALVE ACTUATOR	SAUTER ASM124F130
5	1	PRIMARY SHUNT PUMP	WILO TOP SZ5/7 230v 1ph 50hz
6	4	EXCHANGER CONNS	STAINLESS STEEL ASI 304L, 2" BSP
7	1	CONTROL THERMOSTAT	6mm O/D x 40mm LONG
8	1	HIGH LIMIT THERMOSTAT (STRAP-ON)	HONEYWELL ADJUSTAT LB190C2004
9	1	MILD STEEL SKID BASE	STANDARD
10	2	REDUCING BUSHES	2" BSP x 1.1/4" BSP STEEL/IRON
11	1	TEE	1.1/4" BSP MILD STEEL
12	1	REDUCING BUSH	1.1/4" BSP x 1/2" BSP STEEL/IRON
13	2	REDUCING BUSH	1.1/2" BSP x 1.1/4" BSP STEEL/IRON
14	1	SECONDARY PUMP	SB30

GENERAL NOTES:
 1. ALL STEEL COMPONENTS TO BE PAINTED GREY EXTERNALLY
 2. ELECTRICAL/FUNCTION TEST: SAFETY, COLD FUNCTION, WARM FUNCTION (CONTROLS)
 3. DO NOT WELD ON ASSEMBLED PHE PACKAGE
 4. CLIENT PRIMARY & SECONDARY PIPEWORK TO BE DESIGNED TO PREVENT STRESSES ON UNIT.

CONNECTION DETAILS
 A PRIMARY INLET G 1.1/4 INT (MS)
 B PRIMARY OUTLET G 1.1/4 INT (MS)
 C SECONDARY INLET G 2 INT (SS)
 D SECONDARY OUTLET R 2 EXT (SS)
 E PRIMARY DRAIN G 1/2 INT



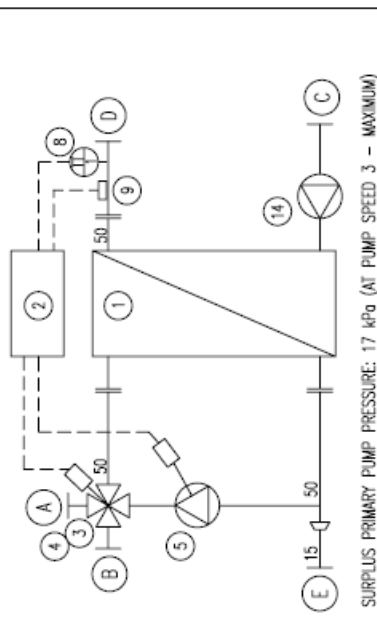
Date:	By:	Date:	By:
A	B	C	C
<p>STREBEL BOILERS LTD</p> <p>Henry Park Industrial Estate, Firnley Road, Connerley, 6216 7PB, Tel. (01276) 58452, Fax. (01276) 685405</p> <p>THIRD ANGLE PROJECTION</p>			

REF	QTY	PART	SIZE/DWG No.
1	1	PLATE HEAT EXCHANGER	GL-13Hx12, 316L/NBR, 3M/2M
2	1	ELECTRICAL CONTROL PANEL	1F/1PP-2.02-230/1SP-0.38-230-R32W
3	1	4-PORT PRIMARY CONTROL VALVE	SAUTER DN32 MH42527200
4	1	CONTROL VALVE ACTUATOR	SAUTER ASM124F130
5	1	PRIMARY SHUNT PUMP	WILLO TOP S30/10 230v 1ph 50hz
6	4	EXCHANGER CORNS	STAINLESS STEEL AISI 304L, 2" BSP 6mm O/D x 40mm LONG
7	1	CONTROL THERMOSTAT	HONEYWELL ADJUSTAT LB190C2004
8	1	HIGH LIMIT THERMOSTAT (STRAP-ON)	STANDARD
9	1	MILD STEEL SKID BASE	2" BSP x 1.1/4" BSP STEEL/IRON
10	2	REDUCING BUSHES	1.1/4" BSP MILD STEEL
11	1	TEE	1.1/4" BSP x 1/2" BSP STEEL/IRON
12	1	REDUCING BUSH	1.1/2" BSP x 1.1/4" BSP STEEL/IRON
13	2	REDUCING BUSH	SB60
14	1	SECONDARY PUMP	

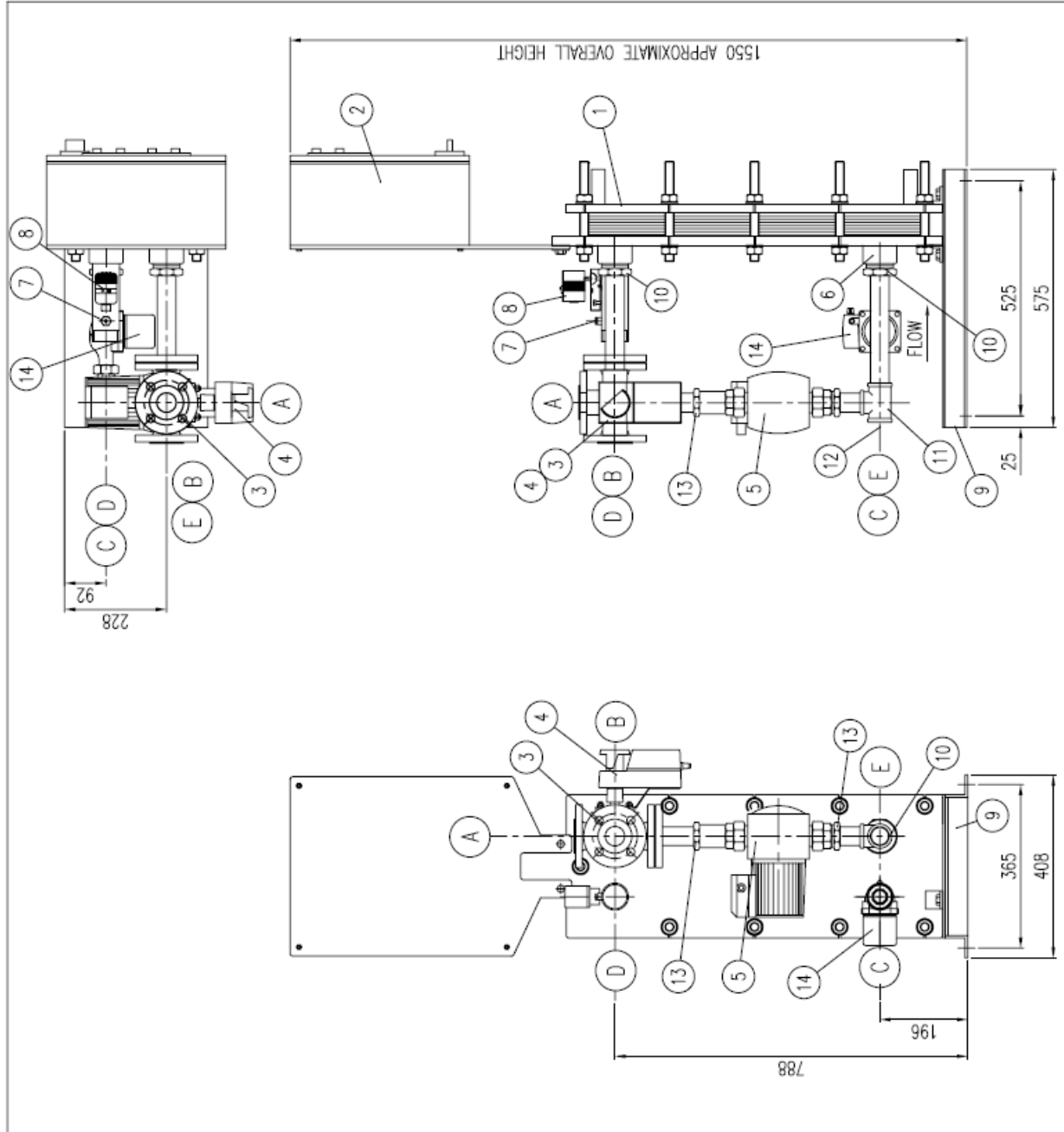
GENERAL NOTES:
 1. ALL STEEL COMPONENTS TO BE PAINTED GREY EXTERNALLY
 2. ELECTRICAL/FUNCTION TEST: SAFETY, COLD FUNCTION, WARM FUNCTION (CONTROLS)
 3. DO NOT WELD ON ASSEMBLED PHE PACKAGE
 4. CLIENT PRIMARY & SECONDARY PIPEWORK TO BE DESIGNED TO PREVENT STRESSES ON UNIT.

CONNECTION DETAILS
 A PRIMARY INLET
 B PRIMARY OUTLET
 C SECONDARY INLET
 D SECONDARY OUTLET
 E PRIMARY DRAIN
 G 1.1/4 INT (MS)
 G 1.1/4 INT (SS)
 G 2 INT (SS)
 R 2 EXT (SS)
 G 1/2 INT

UNIT SUPPLIED WITH SECONDARY PUMP
 PANEL HAS MCB'S & CONTROLS FOR THIS
 PUMP TYPE WILLO SB60, 230v, 1ph 50hz



SURPLUS PRIMARY PUMP PRESSURE: 17 kPa (AT PUMP SPEED 3 - MAXIMUM)
 REFER TO CONTROL PANEL WIRING DIAGRAM FOR ALL WIRING DETAILS



Design Details		Primary		Secondary		Technical Details	
Max. Working Pressure	6.0 BarG	6.0 BarG	6.0 BarG	Unit Output	206.9 kW	TITLE: GENERAL ASSEMBLY DRAWING OF THERMIFLOW UNIT MODEL TF206.9	
Design Pressure	6.0 BarG	6.0 BarG	6.0 BarG	Primary Inlet Temperature	82°C	Contract Ref: 604776	
Test Pressure	9.0 BarG	9.0 BarG	9.0 BarG	Primary Flowrate	1.85 Litres/Second	Drawing No. 04776-1-GA	
Design Temperature	82°C	65°C	82°C	Secondary Temperatures	10/65°C	Drawn By: NB	
Approximate Dry Weight:	130 kg			Secondary Flowrate	0.9 Litres/Second	Checked By:	
				Electrical Power	240v 1ph 50hz, 2.43 Amps FLC	Date: 26/01/07	
						Quantity: 6	
						UNITS: mm	

Revisions		Date:		By:	
A	B	C			

The client will be responsible to the full extent of the law for the accuracy of the data provided and for any errors or omissions in the drawings. The client will be responsible for any errors or omissions in the drawings. The client will be responsible for any errors or omissions in the drawings.

STREBEL BOILERS LTD
 Albury Park Industrial Estate, Frimley Road, Camberley, GU15 7JF, Tel: (01276) 686422, Fax: (01276) 686405



Strebel Ltd
1F Albany Park Industrial Estate
Frimley Road
Camberley
Surrey
GU16 7PB

Tel: 01276 685 422
Fax: 01276 685 405
Email: info@strebel.co.uk
Website: www.strebel.co.uk

E&OE - The company reserves the right to change the specification and dimensions without prior notice.

We are pleased to inform you that additional information and literature is also available on our website.