

FLEET FLOOR STANDING
VERTICAL SERIES BOILER
PIPE KITS

**Installation & Commissioning
Instructions**

**Boiler Models: F40V, F50V, F60V, F70V, F85V, F100V,
F125V, F150V, F175V, F200V, F250V, F300V & F350V**

IMPORTANT NOTE

**THESE INSTRUCTIONS MUST BE READ
AND UNDERSTOOD BEFORE INSTALLING
AND COMMISSIONING THESE PIPE KITS.**



Heating *at work.*

Customer After Sales Services

Telephone: **0845 450 2866** E-mail: **aftersales@hamworthy-heating.com** Fax: **01202 662522**

Technical Enquiries

To supplement the detailed technical brochures, technical advice on the application and use of products in the Hamworthy Heating range is available from our technical team in Poole and our accredited agents.

Site Assembly

Hamworthy offer a service of site assembly for many of our products in instances where plant room area is restricted. Using our trained staff we offer a higher quality of build and assurance of a boiler built and tested by the manufacturer.

Commissioning

Commissioning of equipment by our own engineers, accredited agents or specialist sub – contractors will ensure the equipment is operating safely and efficiently.

Maintenance Agreements

Regular routine servicing of equipment by Hamworthy service engineers inspects the safety and integrity of the plant, reducing the risk of failure and improving performance and efficiency. Maintenance agreements enable our customers to plan and budget more efficiently.

Breakdown service, repair, replacement

Hamworthy provide a rapid response breakdown, repair or replacement service through head office at Poole and accredited agents throughout the UK.

Spare Parts

A comprehensive spare parts service is operated from our factory in Poole, providing replacement parts for both current and discontinued products. Delivery of parts and components is normally from stock within seven days. However, a next day delivery service is available for breakdowns and emergencies.

FLEET FLOOR STANDING VERTICAL SERIES BOILER PIPE KITS

**Suitable for Models F40V To F350V
two & three high module
boiler installation configurations**

INSTALLATION & COMMISSIONING INSTRUCTIONS

**NOTE: THESE INSTRUCTIONS MUST BE READ AND UNDERSTOOD BEFORE
ATTEMPTING TO INSTALL & COMMISSION THESE PIPE KITS.**

**THESE INSTRUCTIONS MUST BE READ IN CONJUNCTION WITH THE FLEET
FLOOR STANDING VERTICAL SERIES BOILER INSTRUCTIONS :-
HHL Part No. 500001213 (F40V-F150V) & 500001217 (F175V-F350V).**

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1.0 GENERAL INSTRUCTIONS

These instructions MUST be read in conjunction with the Fleet Floor Standing Vertical Boiler Series Installer's Guides HHL Part No. 500001213 (F40-F150) & 500001217 (F175-F350).

SAFETY NOTE: All safety instructions referred to in the Installer's Guide must be adhered to, and a competent person must carry out all works referred to in this instruction.

The Fleet Vertical Boiler Pipe Kits comprise water & gas manifold pipe work specifically for use with Fleet Floor Standing Vertical Series boilers for hot water heating systems.

The kits also come with pipes & fittings for connection to the discharge of the pressure relief valve & condensate drain from each boiler module.

Additional Sensor Spool Kits with temperature sensor pockets for 3 off, Ø6mm Sensors are available for assembly to the flow & return pipes of the water manifold of the pipe kits.

Boiler flue kits are also available - refer to boiler instructions for details.

All pipe kit components are pressure tested prior to despatch.

There are eight models of pipe kit & four models of Sensor Spool Kit suitable for the Fleet Floor Standing Vertical Boilers of 2 & 3 modules high.

The manifolds are available in four pipe sizes DN80, DN125, DN150 & DN200. EN 1092-1 Type 1 B1 flanges rated to PN16 are used on the pipe kits .

The DN80 manifold is sized on a maximum power output of 900kW (3 boilers of three 100kW modules High).

The DN125 manifold is sized on a maximum power output of 1.35MW (3 boilers of three 150kW modules high).

The DN150 manifold is sized on a maximum power output of 2.25MW (3 boilers of three 250kW modules high).

The DN200 manifold is sized on a maximum power output of 3.15MW (3 boilers of three 350kW modules high).

See Table No. 1 Which defines what pipe kits is suitable for use with each boiler.

The pipe kits are located behind the boiler at low level & designed to bolt together in a row when the boilers are spaced 50mm apart.

The range of Fleet Pipe Kits are suitable for:

**80kW, 100kW, 120kW, 140kW, 150kW,
160kW, 170kW, 180kW, 200kW, 210kW,
240kW, 250kW, 255kW, 280kW, 300kW,
320kW, 340kW, 350kW, 360kW, 375kW,
400kW, 420kW, 450kW, 480kW, 490kW,
500kW, 510kW, 525kW, 540kW, 560kW,
595kW, 600kW, 625kW, 630kW, 680kW,
700kW, 750kW, 765kW, 800kW, 875kW,
900kW, 1MW, 1.05MW, 1.125MW, 1.225MW,
1.25MW, 1.35MW, 1.4MW, 1.5MW, 1.575MW,
1.6MW, 1.75MW, 1.8MW, 2MW, 2.1MW,
2.25MW, 2.4MW, 2.45MW, 2.7MW, 2.8MW,
3.15MW**

boiler configurations.

Table No. 1 – Pipe Kit Selection Table (Read Across The Row For Suitable Pipe / Spool Kit)

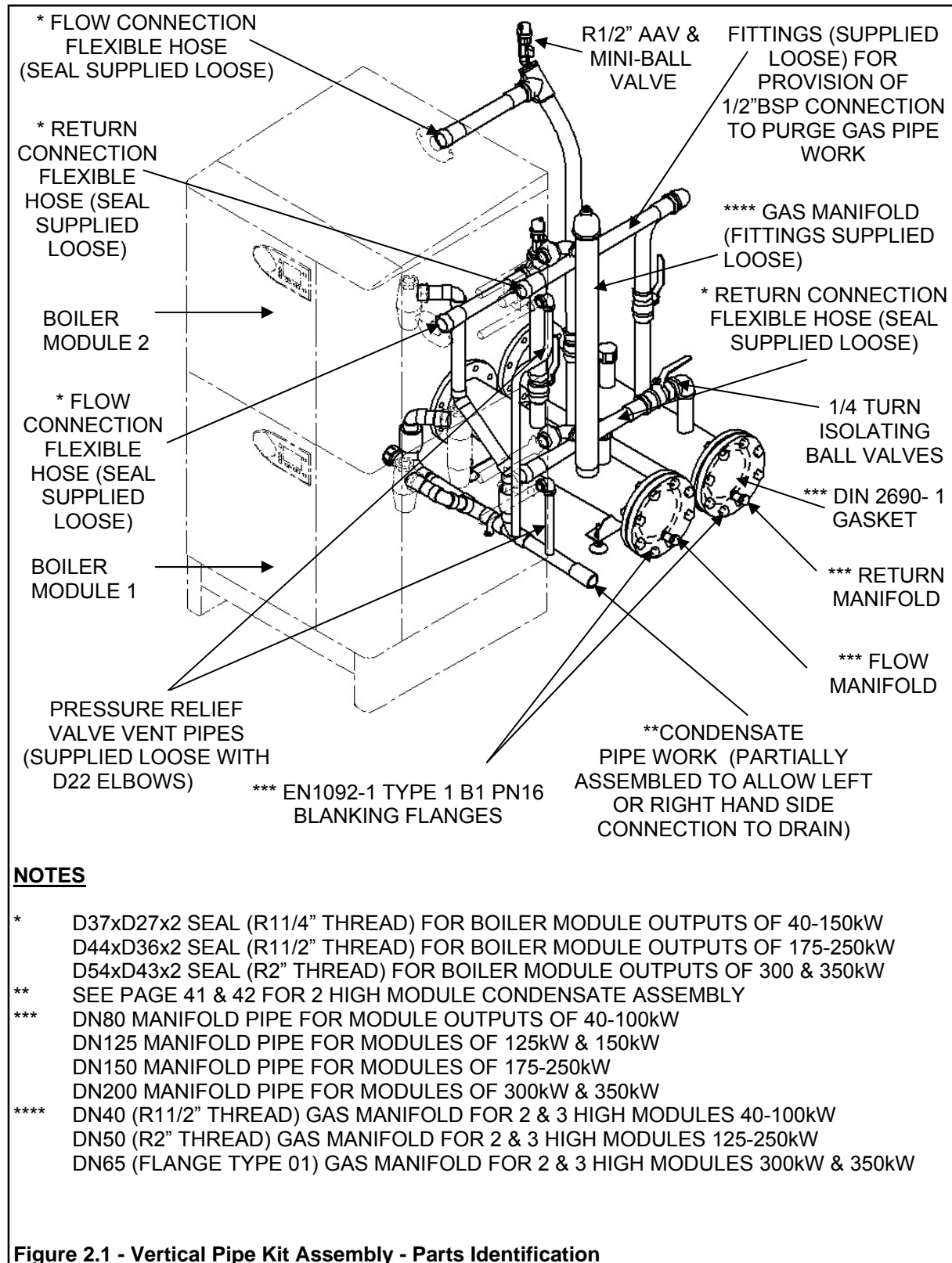
FLEET VERTICAL BOILER MODEL	FLEET VERTICAL BOILER PIPE KIT (1 OFF PER BOILER)	SENSOR SPOOL KIT (1 OFF NEEDED PER BANK OF BOILERS)	MANIFOLD PIPE SIZE NOMINAL BORE (mm)
F40V-80	562702282	562702225	DN80
F40V-120	562702283	562702225	DN80
F50V-100	562702282	562702225	DN80
F50V-150	562702283	562702225	DN80
F60V-120	562702282	562702225	DN80
F60V-180	562702283	562702225	DN80
F70V-140	562702282	562702225	DN80
F70V-210	562702283	562702225	DN80
F85V-170	562702282	562702225	DN80
F85V-255	562702283	562702225	DN80
F100V-200	562702282	562702225	DN80
F100V-300	562702283	562702225	DN80
F125V-250	562702197	562702227	DN125
F125V-375	562702201	562702227	DN125
F150V-300	562702197	562702227	DN125
F150V-450	562702201	562702227	DN125
F175V-350	562702198	562702228	DN150
F175V-525	562702202	562702228	DN150
F200V-400	562702198	562702228	DN150
F200V-600	562702202	562702228	DN150
F250V-500	562702198	562702228	DN150
F250V-750	562702202	562702228	DN150
F300V-600	562702199	562702229	DN200
F300V-900	562702203	562702229	DN200
F350V-700	562702199	562702229	DN200
F350V-1050	562702203	562702229	DN200

1.1 Delivery

Remove all packing material and, referring to Figures 2.2 to 3.4 & Tables 2 to 13 inspect the pipe kits to ensure that all parts are present and undamaged.

If any items are missing, use the delivery note & picking list supplied with the pipe kit & fax these back to Hamworthy Heating Ltd. Fax No. 01202 665111.

SECTION 2 – PARTS IDENTIFICATION



2.1 Pipe Kit Boiler Models: F40V-80, F50V-100, F60V-120, F70V-140, F85V-170 & F100V- 200.

Table No. 2 - List Of Parts Received When Pipe Kit 562702282 Is Delivered

DESCRIPTION	QTY	FIGURE	PAGE
2 High DN80 Hydraulic Manifold Assembly	1	2.2	5
R1/2" (1/2" BSP) Automatic Air Vent (AAV)	2		
2 High R 1 1/2"(DN40) Gas Manifold Kit (For Assembly To Boiler) Comprising	1	2.3	5
R1 1/2" 2 High Gas Pipe Fabrication Assembled With R1/8" Test Point	1		
Rc3/4" MAC Union	2		
RC3/4 Male/Female Elbow	2		
Rc1 1/2"xRc1/2" Reducing Socket	1		
Rc1/2" Taper Plug	1		
DN80 PN16 Blind Flange Kit (For Assembly To 562702282); Comprising of;	1		
M16 Spring Washers	8		
M16 x 70 Hex Hd Bolts	8		
M16 Hex Hd Full Nuts	8		
DN80 PN16 DIN2690 Flange Gaskets	4		
DN80 PN16 Blind Flange Tapped Rc1/2" & Assembled With R1/2" Taper Drain Cock	2		
2 High Vent Pipe Assembly (To Assemble To PRV Pipe On Module 2) ; Comprising;	1	2.4	6
2 High Drain Pipe (827mm Long)	1		
22mm Compression Elbow	1		
1 High Vent Pipe Assembly (To Assemble To PRV Pipe On Module1) ; Comprising;	1	2.4	6
1 High Drain Pipe (200mm Long)	1		
22mm Compression Elbow	1		
2 High Condensate Pipe Kit (To Assemble To Condensate Traps Fitted To Boiler & Condensate Trap Fitted To Base Of Vertical Flue); Comprises;	1	2.5	6
32mm ABS Fitting & Pipe Sub-Assemblies.	17		
R1 1/4" (1 1/4" BSP) D39xD30x2 Seal	4		

Pipe Kit For Boiler Models: F40V-80, F50V-100, F60V-120, F70V-140, F85V-170 & F100V- 200.

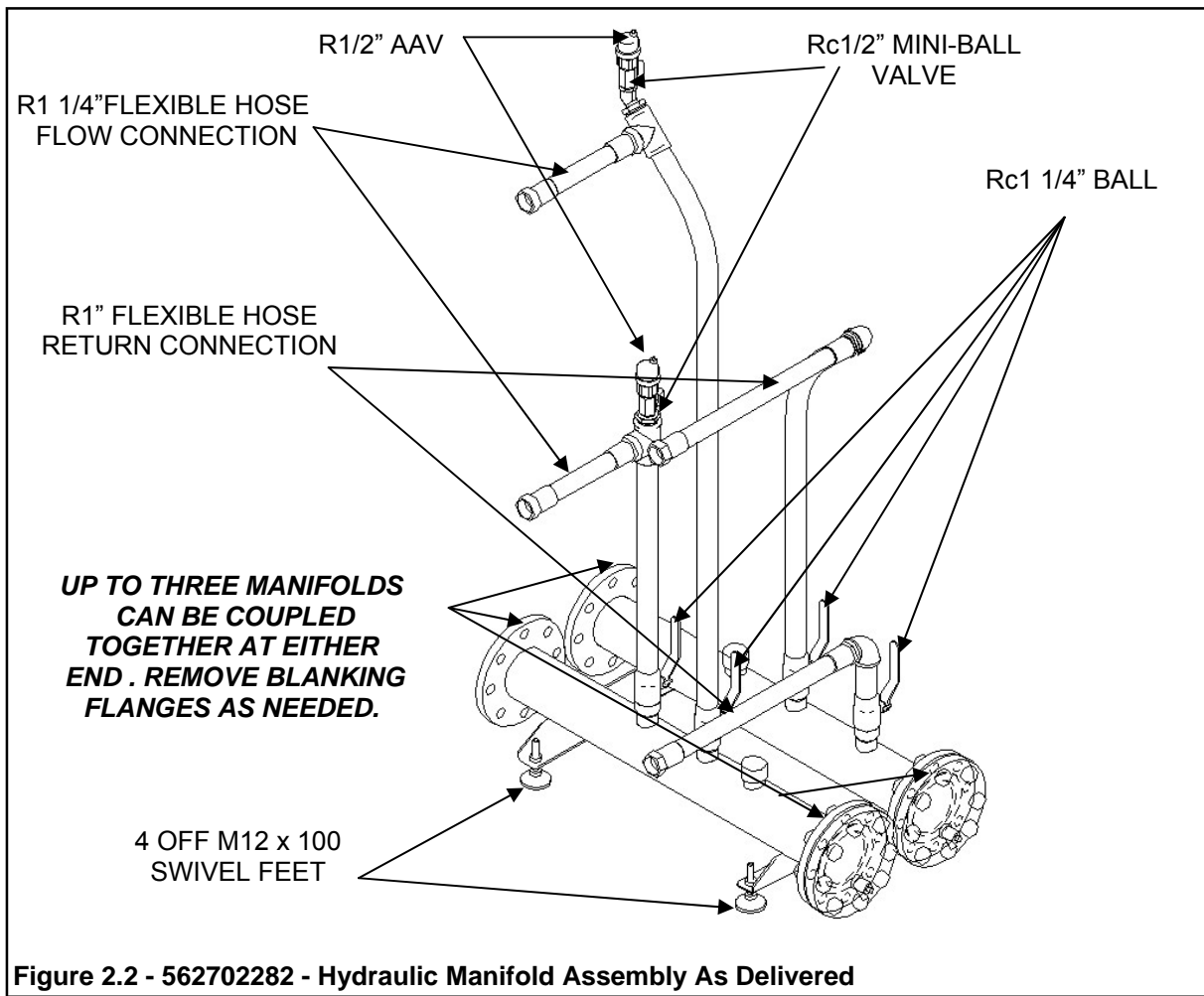


Figure 2.2 - 562702282 - Hydraulic Manifold Assembly As Delivered

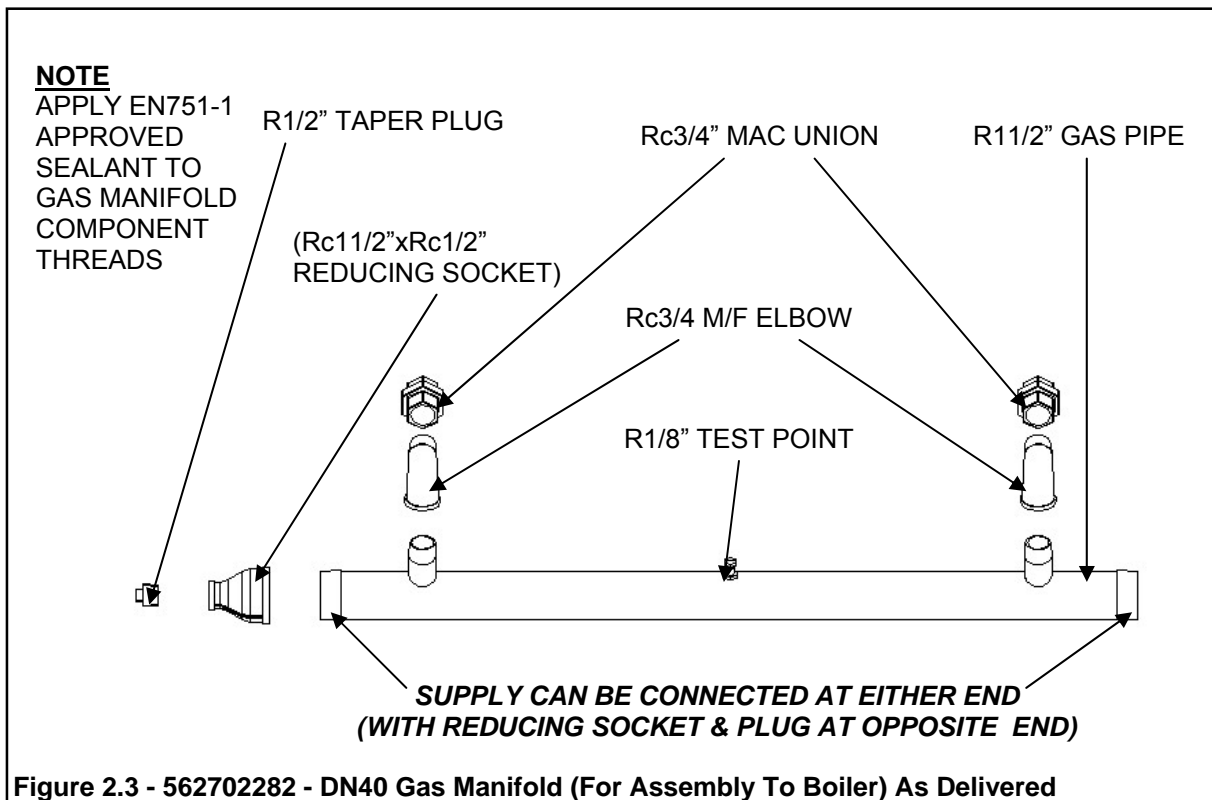
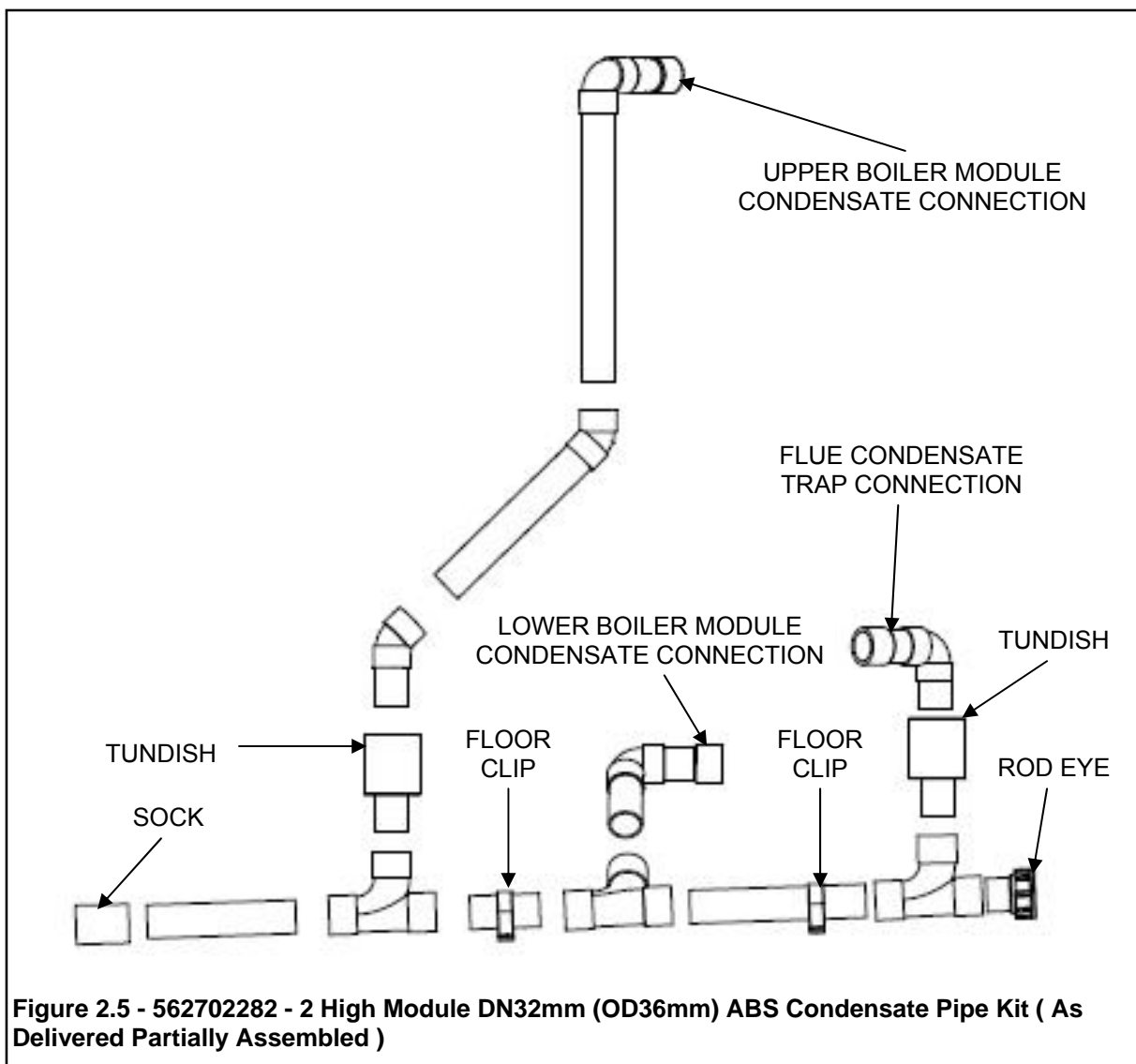
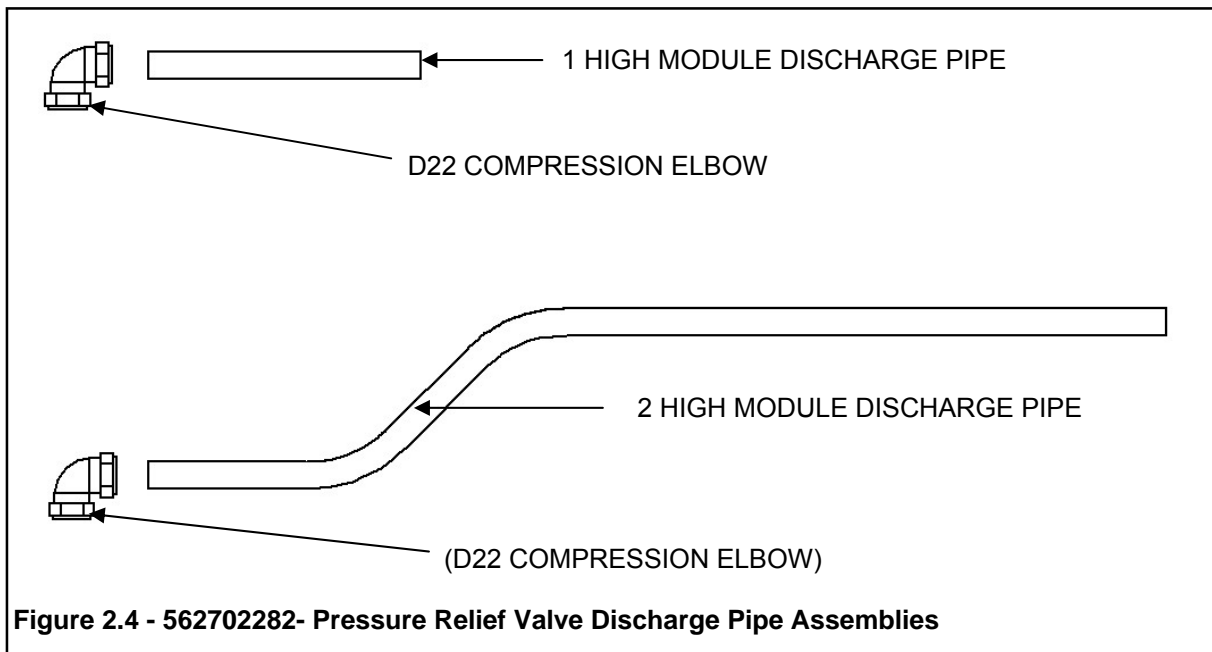


Figure 2.3 - 562702282 - DN40 Gas Manifold (For Assembly To Boiler) As Delivered

Pipe Kit For Boiler Models: F40V-80, F50V-100, F60V-120, F70V-140, F85V-170 & F100V- 200.

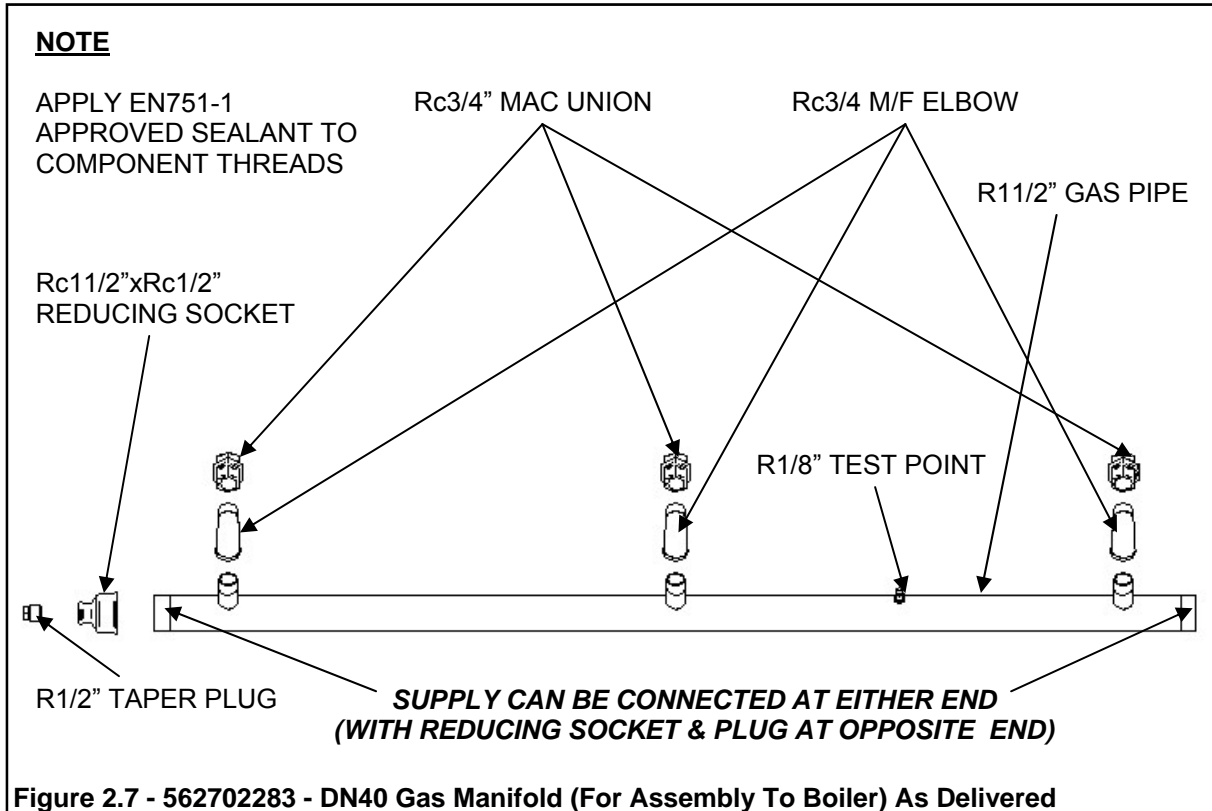
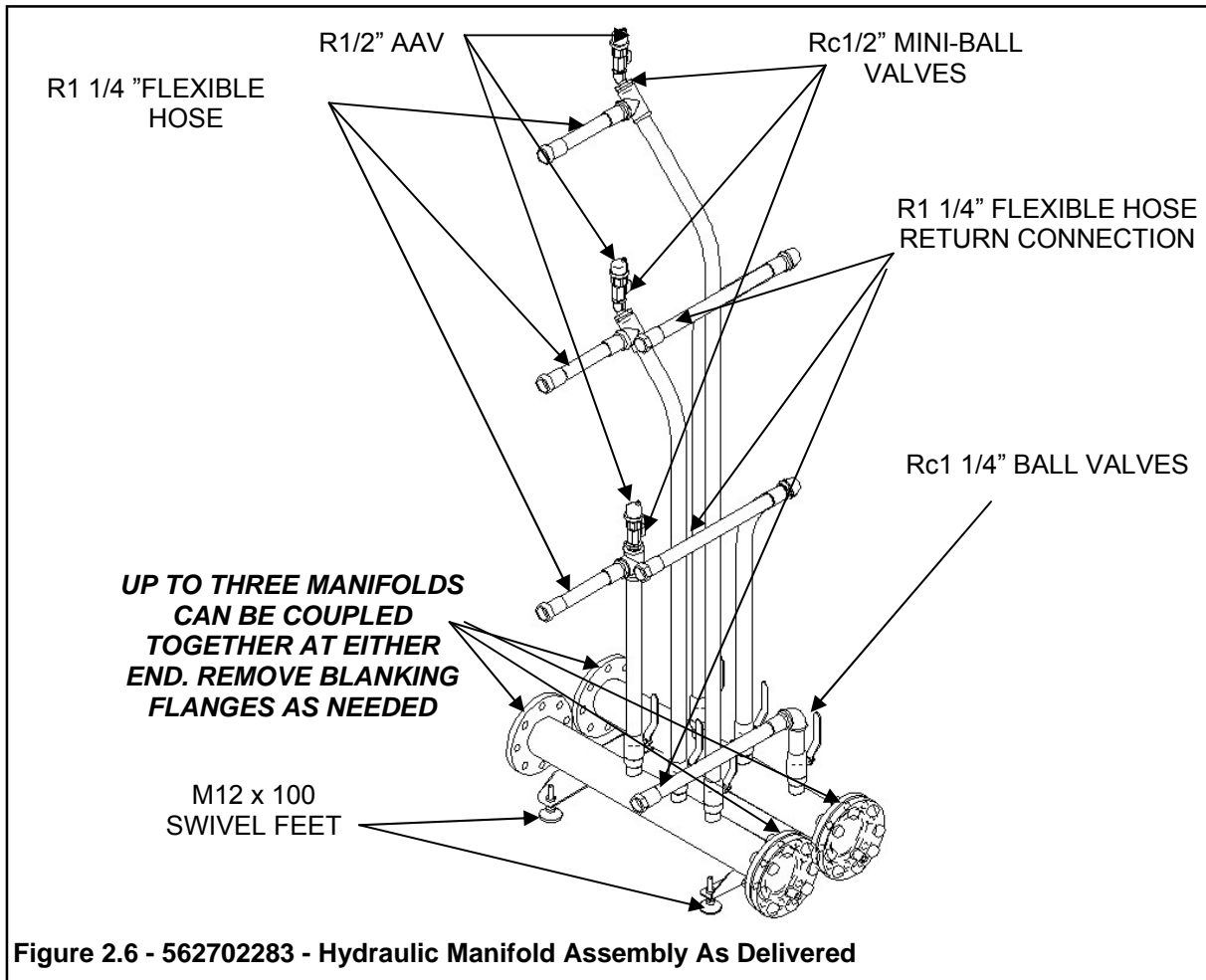


2.2 Pipe Kit Boiler Models:F40V-120, F50V-150, F60V-180, F70V-210, F85V-255 & F100V– 300.

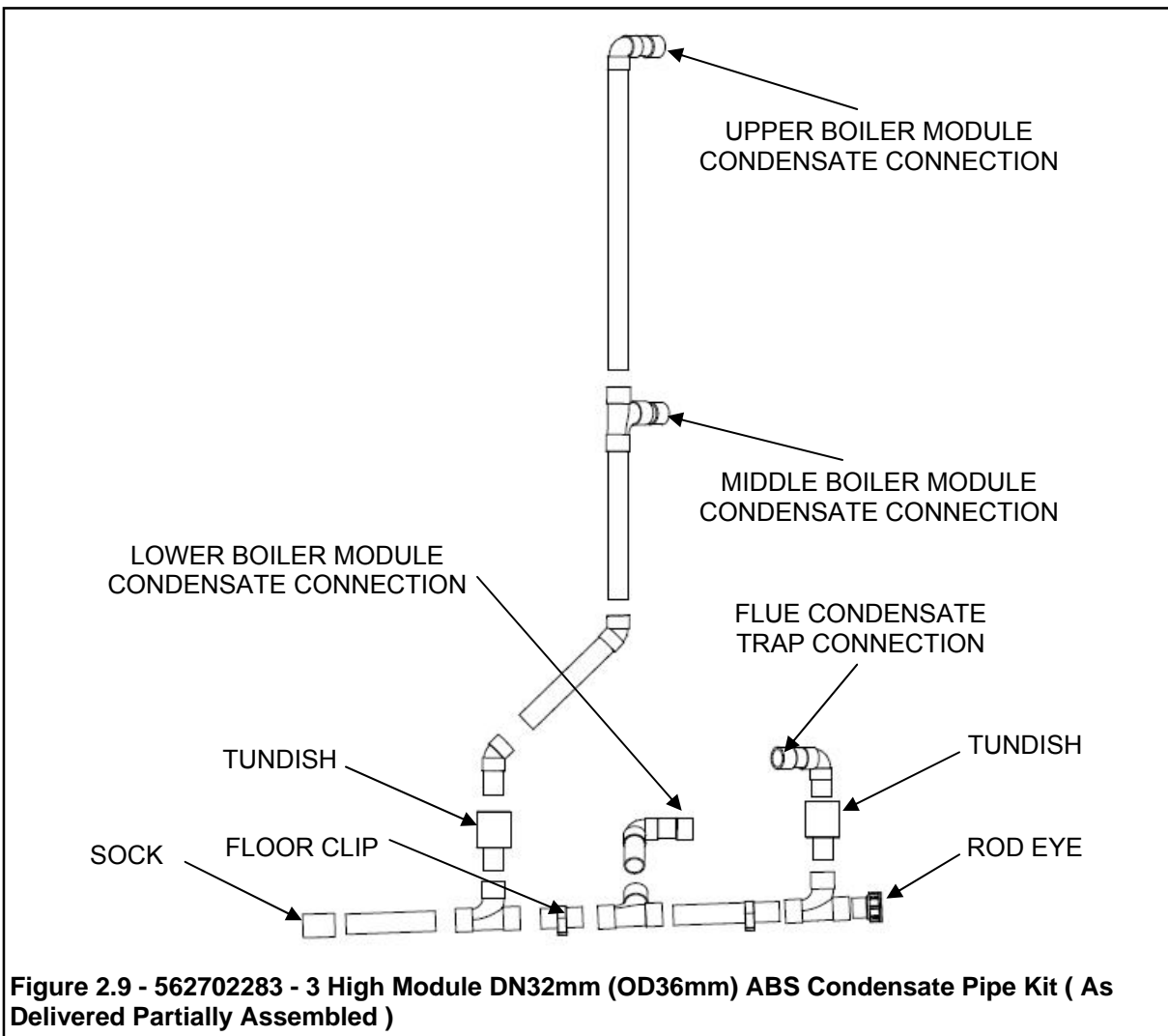
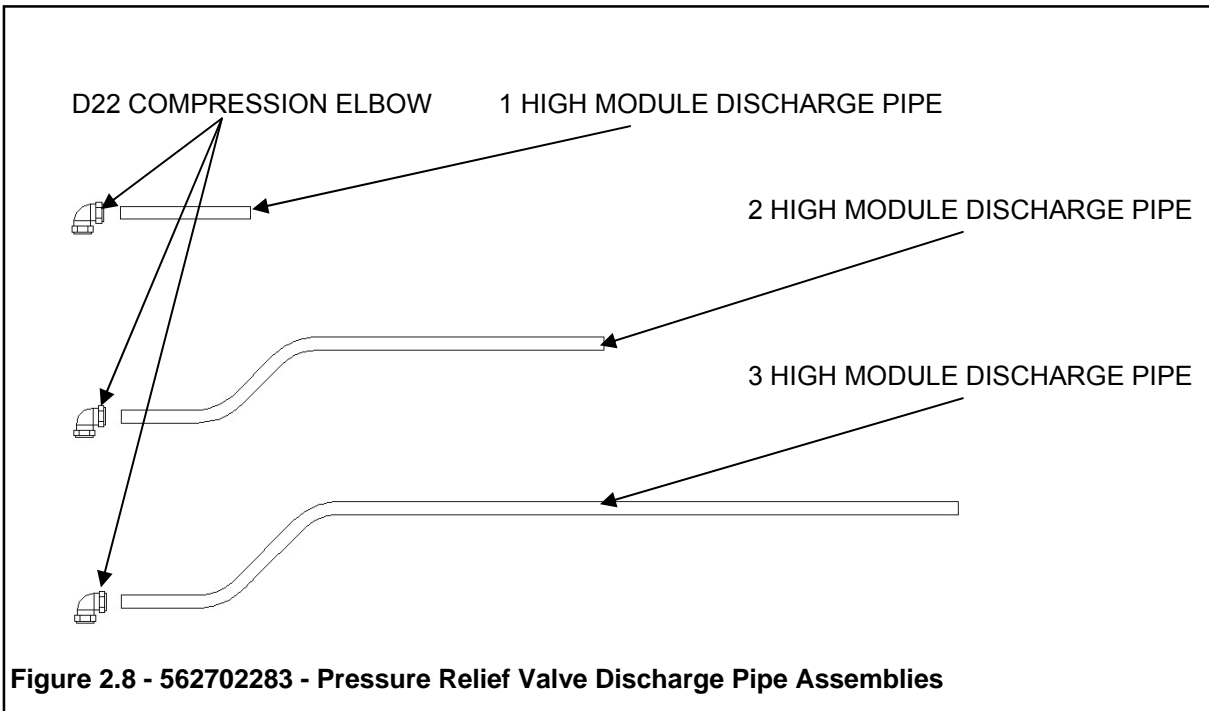
Table No. 3 - List Of Parts Received When Pipe Kit 562702283 Is Delivered

DESCRIPTION	QTY	FIGURE	PAGE
3 High DN80 Hydraulic Manifold Assembly	1	2.6	8
R1/2" (1/2" BSP) AAV	3		
3 High R11/2" (DN40) Gas Manifold Kit (For Assembly To Boiler) Comprising ;	1	2.7	8
R11/2" 3 High Gas Pipe Fabrication Assembled With R1/8" Test Point	1		
Rc3/4" MAC Union	3		
RC3/4 Male/Female Elbow	3		
Rc11/2"xRc1/2" Reducing Socket	1		
Rc1/2" Taper Plug	1		
DN80 PN16 Blind Flange Kit (For Assembly To 562702283); Comprising of;	1		
M16 Spring Washers	8		
M16 x 70 Hex Hd Bolts	8		
M16 Hex Hd Full Nuts	8		
DN80 PN16 DIN2690 Flange Gaskets	4		
DN80 PN16 Blind Flange Tapped Rc1/2" & Assembled With R1/2" Taper Drain Cock	2		
3 High Vent Pipe Assembly (To Assemble To PRV Pipe On Module 3) Comprising ;	1	2.8	9
3 High Drain Pipe (1430mm Long)	1		
22mm Compression Elbow	1		
2 High Vent Pipe Assembly (To Assemble To PRV Pipe On Module 2) Comprising;	1	2.8	9
2 High Drain Pipe (827mm Long)	1		
22mm Compression Elbow	1		
1 High Vent Pipe Assembly (To Assemble To PRV Pipe On Module1) Comprising;	1	2.8	9
1 High Drain Pipe (200mm Long)	1		
22mm Compression Elbow	1		
3 High Condensate Pipe Kit (To Assemble To Condensate Traps Fitted To Boiler & Condensate Trap Fitted To Base Of Vertical Flue); Comprises of;	1	2.9	9
32mm ABS Fitting & Pipe Sub-Assemblies.	18		
R1 1/4" (1 1/4" BSP) D39xD30x2 Seal	6		

Pipe Kit For Boiler Models:F40V-120, F50V-150, F60V-180, F70V-210, F85V-255 & F100V- 300.



Pipe Kit For Boiler Models: F40V-120, F50V-150, F60V-180, F70V-210, F85V-255 & F100V- 300.

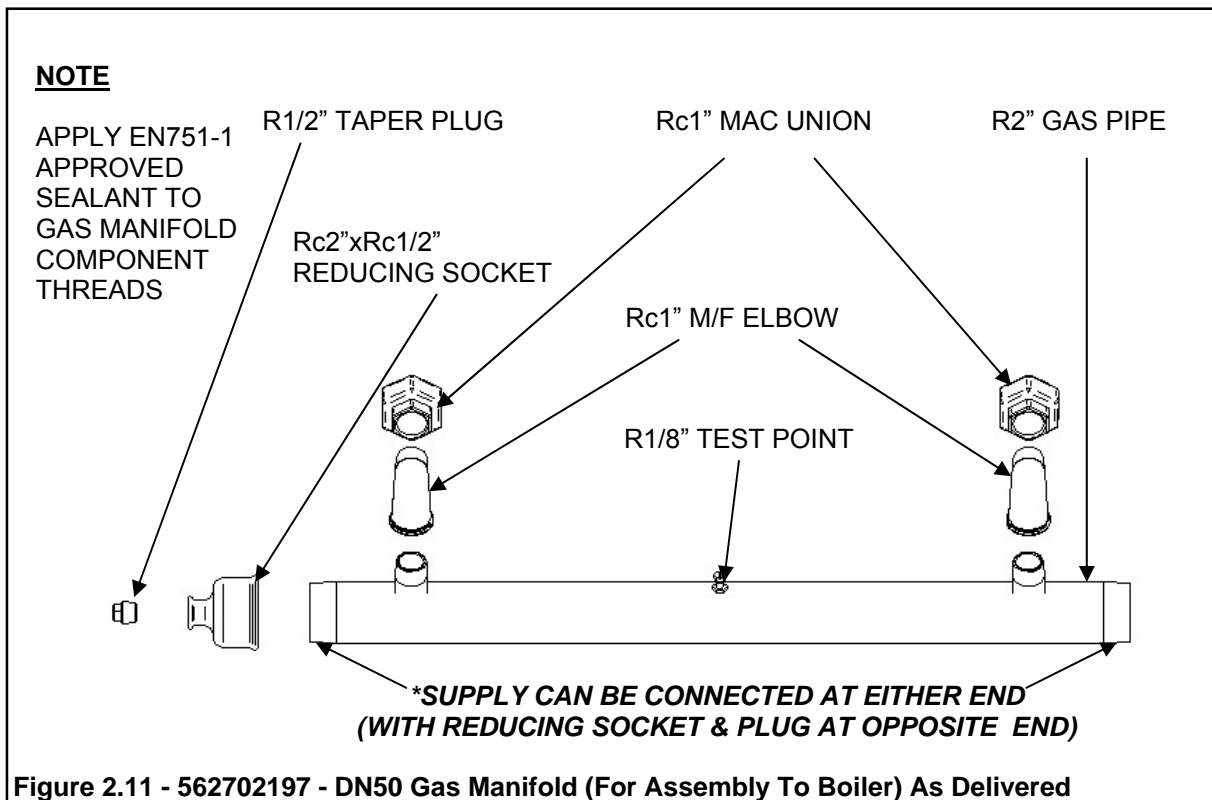
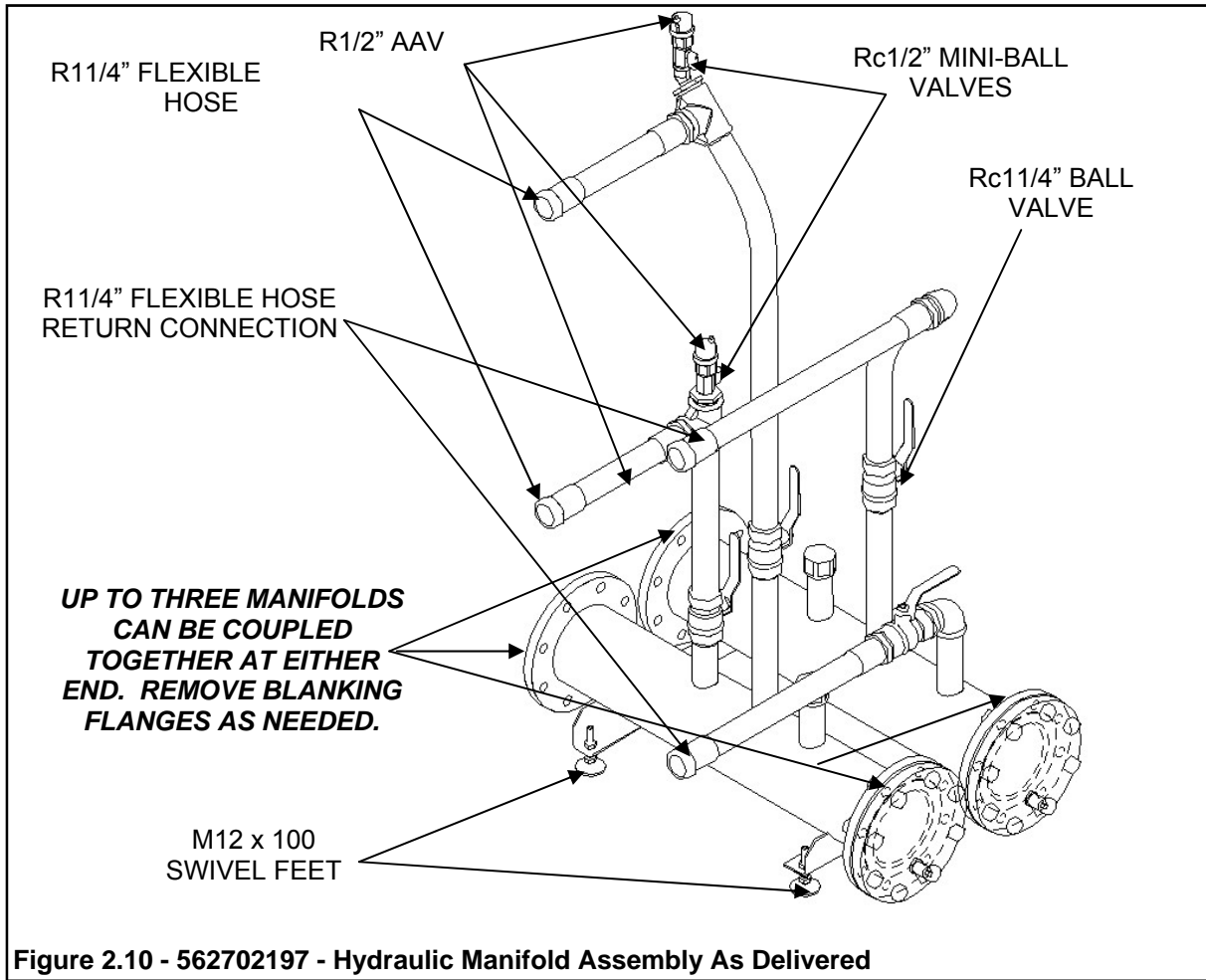


2.3 Pipe Kit For Boiler Models: F125V-250 & F150V-300.

Table No. 4- List Of Loose Parts Received When Pipe Kit 562702197 Is Delivered

DESCRIPTION	QTY	FIGURE	PAGE
2 High DN125 Hydraulic Manifold Assembly	1	2.10	11
R1/2" (1/2" BSP) AAV	2		
2 High R2" (DN50) Gas Manifold Kit (For Assembly To Boiler) Comprising;	1	2.11	11
R2" 2 High Gas Pipe Fabrication Assembled With R1/8" Test Point	1		
Rc1" MAC Union	2		
Rc1" Male/Female Elbow	2		
Rc2"xRc1/2" Reducing Socket	1		
Rc1/2" Taper Plug	1		
DN125 PN16 Blind Flange Kit (For Assembly To 562702197) Comprising ;	1		
M16 Spring Washers	16		
M16 x 70 Hex Hd Bolts	16		
M16 Hex Hd Full Nuts	16		
DN125 PN16 DIN2690 Flange Gaskets	4		
DN125 PN16 Blind Flange Tapped Rc1/2" & Assembled With R1/2" Taper Drain Cock	2		
2 High Vent Pipe Assembly (Assemble To PRV Pipe On Module 2) Comprising;	1	2.4	6
2 High Drain Pipe (827mm Long)	1		
22mm Compression Elbow	1		
1 High Vent Pipe Assembly (Assemble To PRV Pipe On Module1) ; Comprising;	1	2.4	6
1 High Drain Pipe (200mm Long)	1		
22mm Compression Elbow	1		
2 High Condensate Pipe Kit (To Assemble To Condensate Traps Fitted To Boiler & Condensate Trap Fitted To Base Of Vertical Flue); Comprises;	1	2.5	6
32mm ABS Fitting & Pipe Sub-Assemblies.	17		
R1 1/4" (1 1/4" BSP) D39xD30x2 Seal	4		

Pipe Kit For Boiler Models: F125V-250 & F150V-300.



2.4 Pipe Kit For Boiler Models : F125V-375 & F150V-450.

Table No. 5 - List Of Parts Received When Pipe Kit 562702201 Is Delivered

DESCRIPTION	QTY	FIGURE	PAGE
3 High DN125 Hydraulic Manifold Assembly	1	2.12	13
R1/2" (1/2" BSP) AAV	3		
3 High R2" (DN50) Gas Manifold Kit (For Assembly To Boiler); Comprising of;	1	2.13	13
R2" 2 High Gas Pipe Fabrication Assembled With R1/8" Test Point	1		
Rc1" MAC Union	3		
Rc1" Male/Female Elbow	3		
Rc2"xRc1/2" Reducing Socket	1		
Rc1/2" Taper Plug	1		
DN125 PN16 Blind Flange Kit (For Assembly To 562702197); Comprising of;	1		
M16 Spring Washers	16		
M16 x 70 Hex Hd Bolts	16		
M16 Hex Hd Full Nuts	16		
DN125 PN16 DIN2690 Flange Gaskets	4		
DN125 PN16 Blind Flange Tapped Rc1/2" & Assembled With R1/2" Taper Drain Cock	2		
3 High Vent Pipe Assembly (To Assemble To PRV Pipe On Module 3) Comprising ;	1	2.8	9
3 High Drain Pipe (1430mm Long)	1		
22mm Compression Elbow	1		
2 High Vent Pipe Assembly (To Assemble To PRV Pipe On Module 2) ; Comprising;	1	2.8	9
2 High Drain Pipe (827mm Long)	1		
22mm Compression Elbow	1		
1 High Vent Pipe Assembly (To Assemble To PRV Pipe On Module1) ; Comprising;	1	2.8	9
1 High Drain Pipe (200mm Long)	1		
22mm Compression Elbow	1		
2 High Condensate Pipe Kit (To Assemble To Condensate Traps Fitted To Boiler & Condensate Trap Fitted To Base Of Vertical Flue); Comprises;	1	2.9	9
32mm ABS Fitting & Pipe Sub-Assemblies.	18		
R1 1/4" (1 1/4" BSP) D39xD30x2 Seal	6		

Pipe Kit For Boiler Models : F125V-375 & F150V-450.

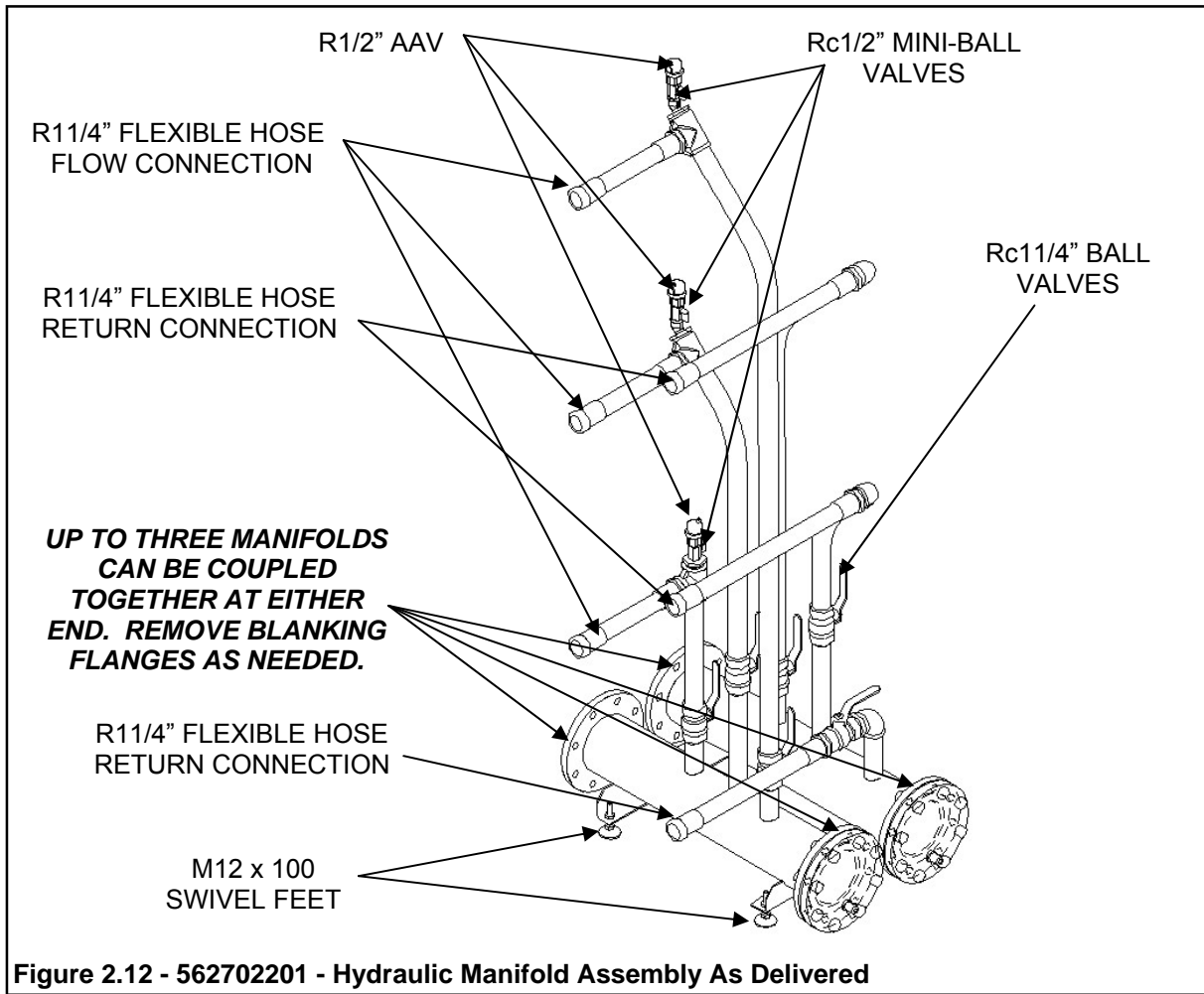


Figure 2.12 - 562702201 - Hydraulic Manifold Assembly As Delivered

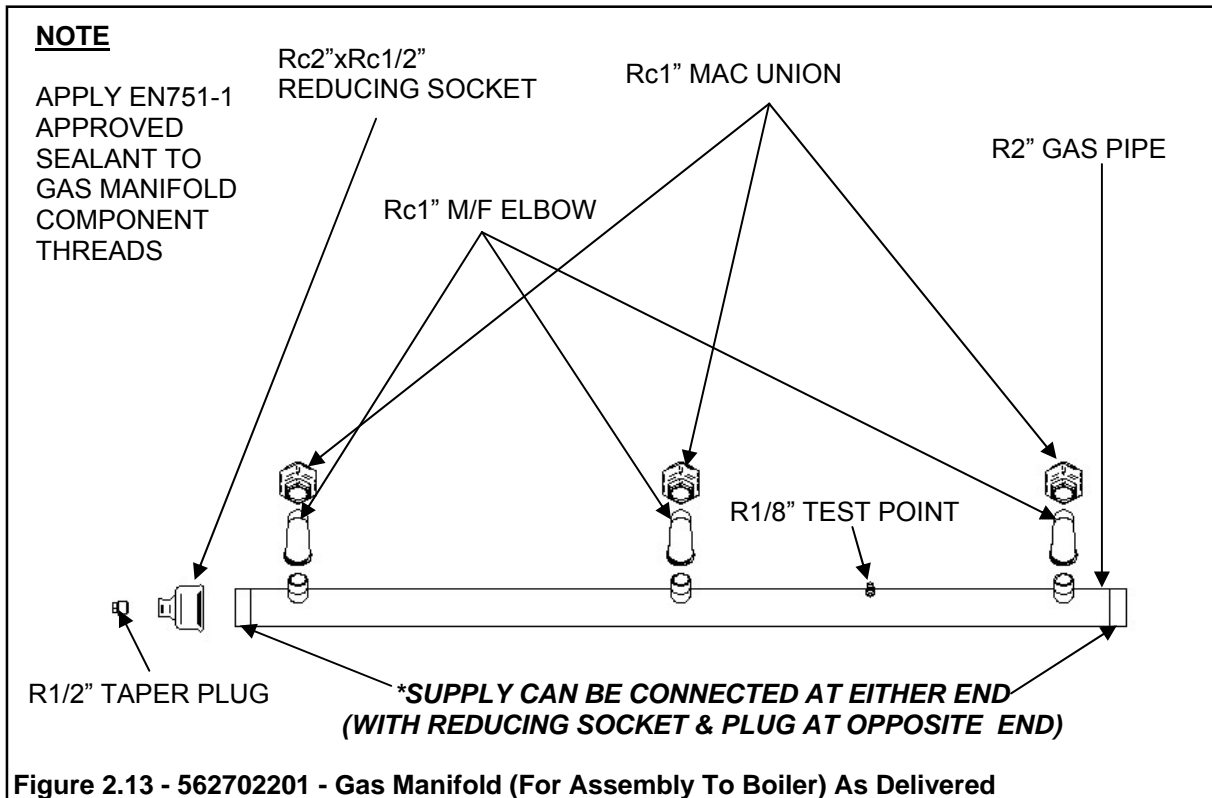


Figure 2.13 - 562702201 - Gas Manifold (For Assembly To Boiler) As Delivered

2.5 Pipe Kit For Boiler Models : F175V-350, F200V-400 & F250V-500.

Table No. 6 - List Of Parts Received When Pipe Kit 562702198 Is Delivered

DESCRIPTION	QTY	FIGURE	PAGE
2 High DN150 Hydraulic Manifold Assembly	1	2.14	15
R1 1/2" (1 1/2" BSP) x 495mm Long Flexible Hose	4		
R1/2" (1/2" BSP) AAV	4		
2 High R2" (DN50) Gas Manifold Kit (For Assembly To Boiler) Comprising ;	1	2.11	11
R2" 2 High Gas Pipe Fabrication Assembled With R1/8" Test Point	1		
Rc1" MAC Union	2		
Rc1" Male/Female Elbow	2		
Rc2"xRc1/2" Reducing Socket	1		
Rc1/2" Taper Plug	1		
DN150 PN16 Blind Flange Kit (For Assembly To 562702198); Comprising :	1		
M20 Spring Washers	32		
M20 x 70 Hex Hd Bolts	32		
M20 Hex Hd Full Nuts	32		
DN150 PN16 DIN2690 Flange Gaskets	4		
DN150 PN16 Blind Flange Tapped Rc1/2" & Assembled With R1/2" Taper Drain Cock	2		
2 High Vent Pipe 490mm long (To Assemble To PRV Pipe On Top Module) . Compression Elbow Not Supplied.	1	2.4	6
1 High Vent Pipe 200mm Long (To Assemble To PRV Pipe On Bottom Module) . Compression Elbow Not Supplied.	1	2.4	6
2 High Condensate Pipe Kit (To Assemble To Condensate Traps Fitted To Boiler & Condensate Trap Fitted To Base Of Vertical Flue); Comprises;	1	2.5	6
32mm ABS Fitting & Pipe Sub-Assemblies.	17		
R1 1/2" (1 1/2" BSP) D44.5xD36x2 Seal	4		

Pipe Kit For Boiler Models: F175V-250, F200V-400 & F250V-500.

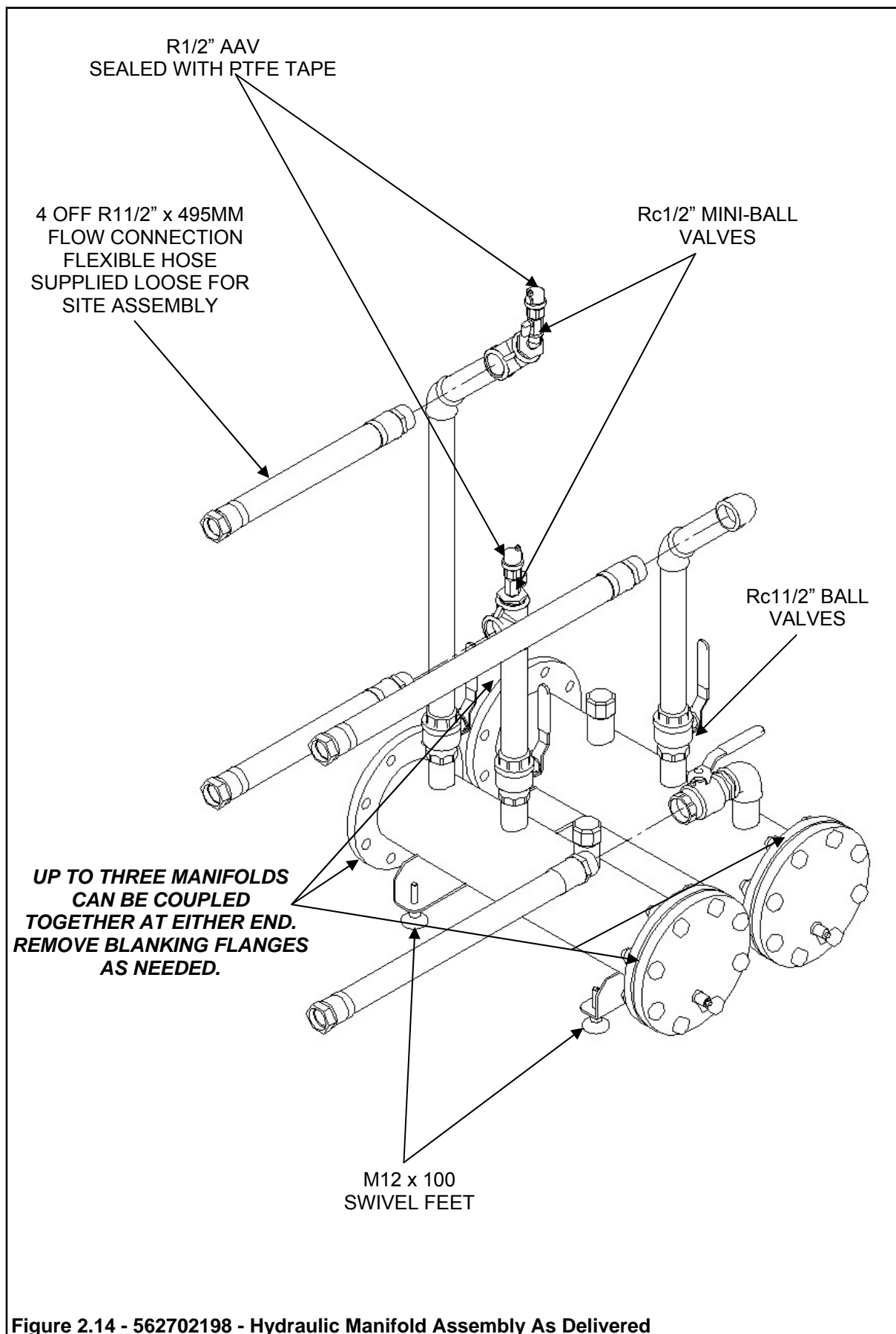


Figure 2.14 - 562702198 - Hydraulic Manifold Assembly As Delivered

2.6 Pipe Kit For Boiler Models : F175V-525, F200V-600 & F250V-750.

Table No. 7 - List Of Parts Received When Pipe Kit 562702202 Is Delivered

DESCRIPTION	QTY	FIGURE	PAGE
3 High DN150 Hydraulic Manifold Assembly	1	2.15	17
R1 1/2" (1 1/2" BSP) x 495mm Long Flexible Hose	6		
R1/2" (1/2" BSP) AAV	3		
3 High R2" (DN50) Gas Manifold Kit (For Assembly To Boiler) Comprising ;	1	2.13	13
R2" 2 High Gas Pipe Fabrication Assembled With R1/8" Test Point	1		
Rc1" MAC Union	3		
Rc1" Male/Female Elbow	3		
Rc2"xRc1/2" Reducing Socket	1		
Rc1/2" Taper Plug	1		
DN150 PN16 Blind Flange Kit (For Assembly To 562702198); Comprising :	1		
M20 Spring Washers	32		
M20 x 70 Hex Hd Bolts	32		
M20 Hex Hd Full Nuts	32		
DN150 PN16 DIN2690 Flange Gaskets	4		
DN150 PN16 Blind Flange Tapped Rc1/2" & Assembled With R1/2" Taper Drain Cock	2		
3 High Vent Pipe 490mm long (To Assemble To PRV Pipe On Top Module) . Compression Elbow Not Supplied.	1	2.8	9
2 High Vent Pipe 490mm long (To Assemble To PRV Pipe On Middle Module) . Compression Elbow Not Supplied.	1	2.8	9
1 High Vent Pipe 200mm Long (To Assemble To PRV Pipe On Bottom Module) . Compression Elbow Not Supplied.	1	2.8	9
2 High Condensate Pipe Kit (To Assemble To Condensate Traps Fitted To Boiler & Condensate Trap Fitted To Base Of Vertical Flue); Comprises;	1	2.9	9
32mm ABS Fitting & Pipe Sub-Assemblies.	17		
R1 1/2" (1 1/2" BSP) D44.5xD36x2 Seal	3		

Pipe Kit For Boiler Models: F175V-250, F200V-400 & F250V-500.

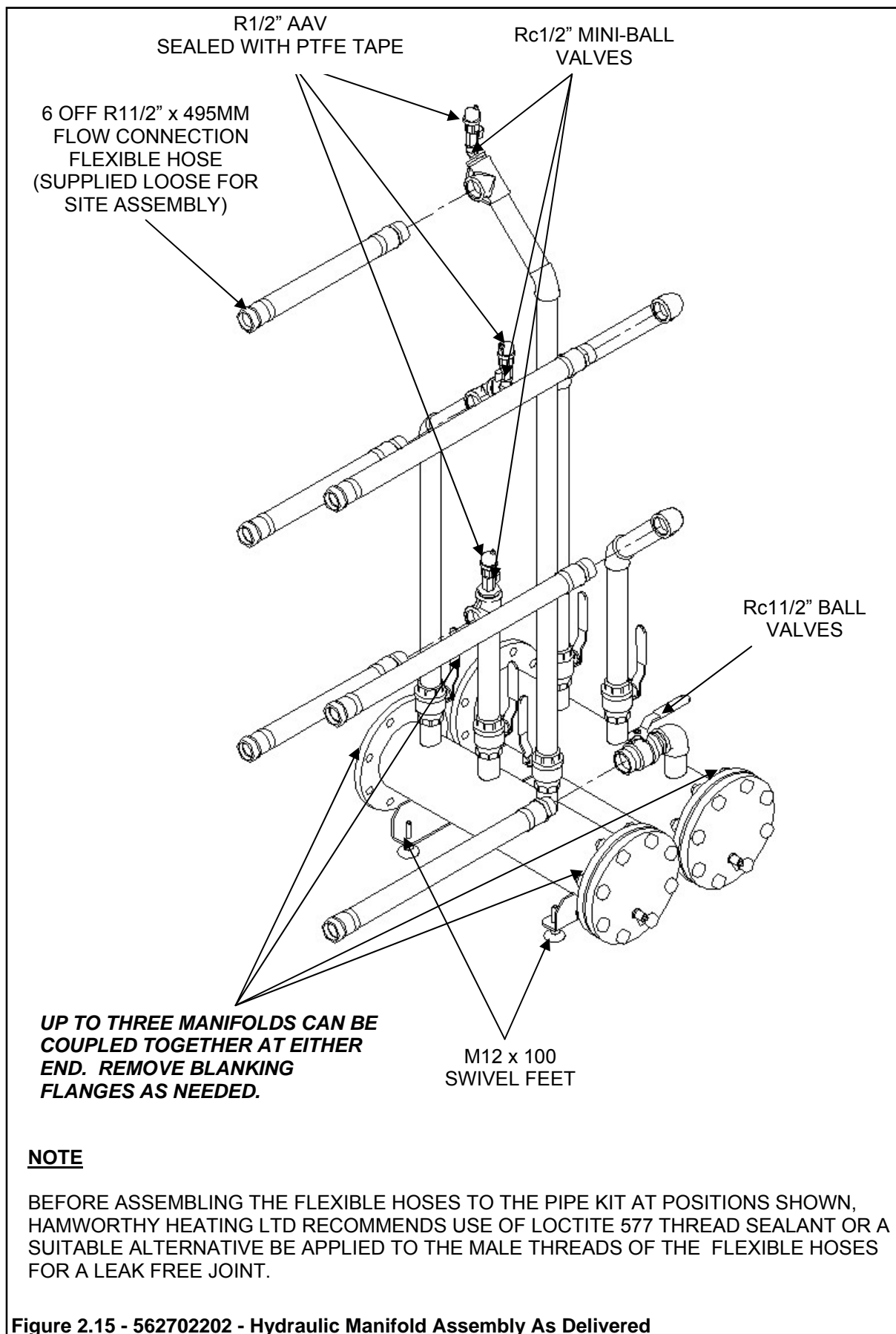


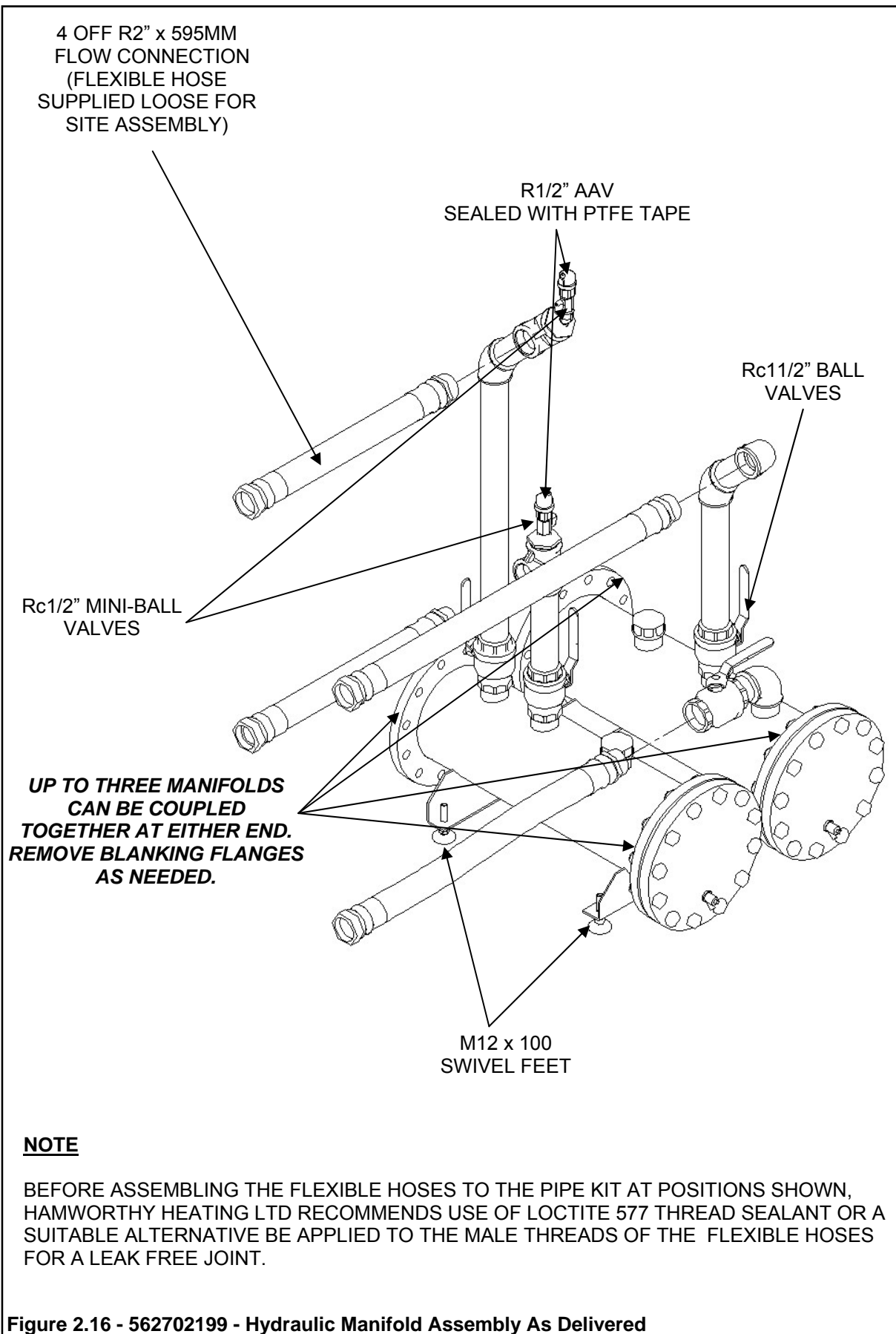
Figure 2.15 - 562702202 - Hydraulic Manifold Assembly As Delivered

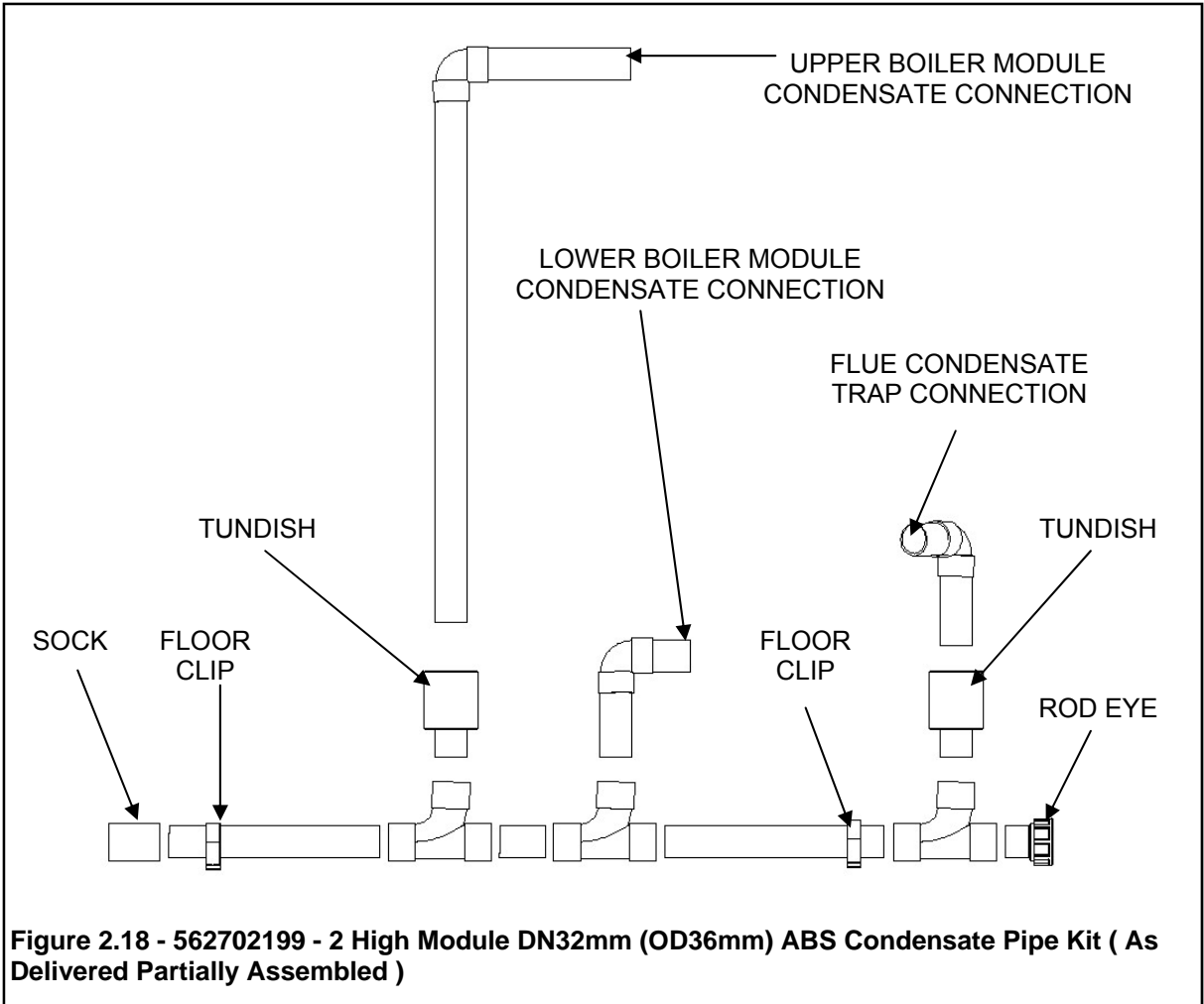
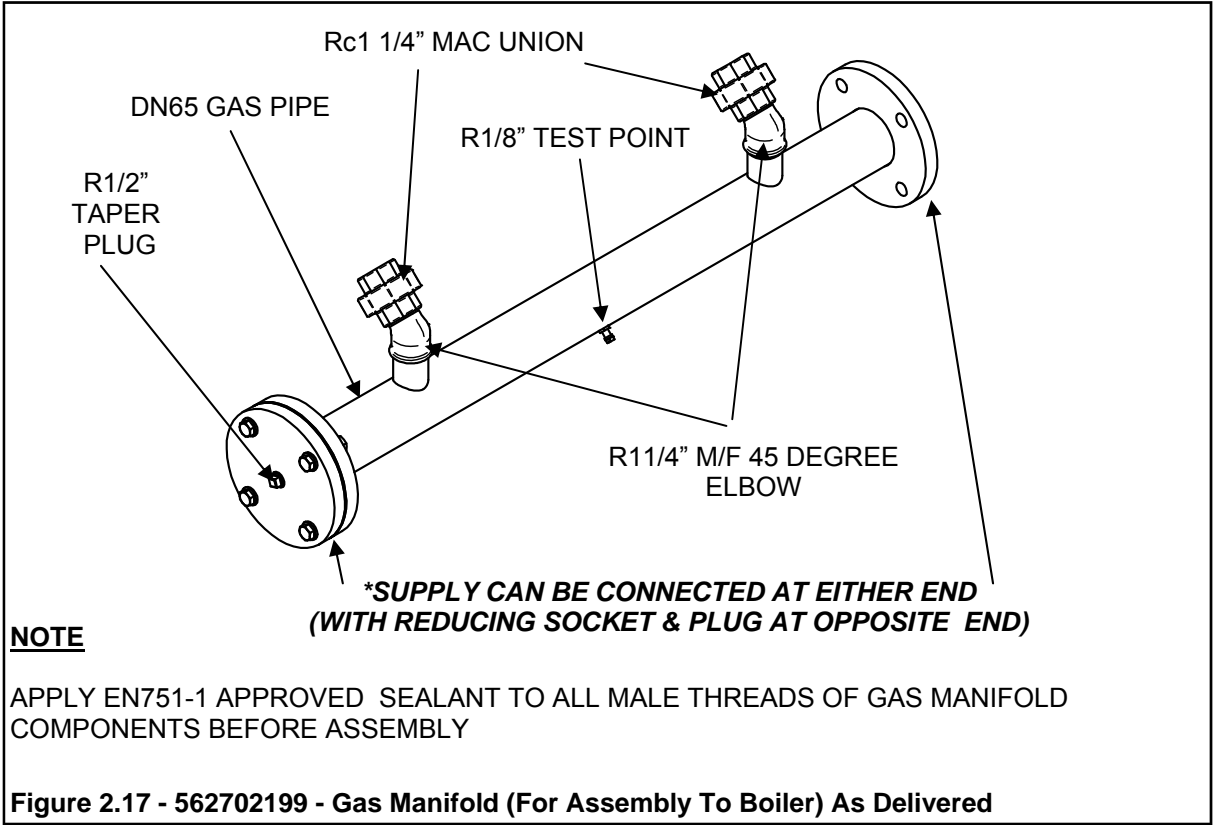
2.7 Pipe Kit For Boiler Models : F300V-600 & F350V-700.

Table No. 8 - List Of Parts Received When Pipe Kit 562702199 Is Delivered

DESCRIPTION	QTY	FIGURE	PAGE
2 High DN200 Hydraulic Manifold Assembly	1	2.16	19
R2" (2" BSP) x 595mm Long Flexible Hose	4		
R1/2" (1/2"BSPT) AAV	3		
2 High DN65 Gas Manifold Kit (For Assembly To Boiler) Comprising ;	1	2.17	20
DN65 GAS PIPE 2 Way Pipe	1		
Flange DN65 PN16 Type 05	1		
Gasket DN65 PN16	2		
Rc1 1/4" MAC Union	2		
Rc1 1/4" Male/Female 45 Elbow	2		
Rc1/2" Taper Plug	1		
M16 X 70 Hex Hd Bolts	8		
M16 Hex Hd Full Nut	8		
M16 Washer	16		
DN200 PN16 Blind Flange Kit (For Assembly To 562702199); Comprising :	1		
M20 Spring Washers	48		
M20 x 70 Hex Hd Bolts	48		
M20 Hex Hd Full Nuts	48		
DN200 PN16 DIN2690 Flange Gaskets	4		
DN200 PN16 Blind Flange Tapped Rc1/2" & Assembled With R1/2" Taper Drain Cock	2		
2 High Vent Pipe 490mm long (To Assemble To PRV Pipe On Middle Module) .Compression Elbow Not Supplied.	1	2.4	6
1 High Vent Pipe 200mm Long (To Assemble To PRV Pipe On Bottom Module) . Compression Elbow Not Supplied.	1	2.4	6
2 High Condensate Pipe Kit (To Assemble To Condensate Traps Fitted To Boiler & Condensate Trap Fitted To Base Of Vertical Flue); Comprises;	1	2.18	20
32mm ABS Fitting & Pipe Sub-Assemblies.	15		
R2 1/2" (2 1/2" BSP) D56xD43x2 Seal	4		

Pipe Kit For Boiler Models: F300V-600 & F350V-700.





1.1.8 Pipe Kit For Boiler Models : F300V-900 & F350V-1050.

Table No. 8 - List Of Parts Received When Pipe Kit 562702203 Is Delivered

DESCRIPTION	QTY	FIGURE	PAGE
3 High DN200 Hydraulic Manifold Assembly	1	2.19	22
R2" (2" BSP) x 595mm Long Flexible Hose	6		
R1/2" (1/2" BSPT) AAV	3		
3 High R2 1/2" (DN65) Gas Manifold Kit (For Assembly To Boiler) Comprising ;	1	2.20	23
R2 1/2" Two High Gas Pipe Fabrication Assembled With R1/8" Test Point	1		
Flange DN65 PN16 Type 05	1		
Gasket DN65 PN65	2		
Rc1 1/4" MAC Union	3		
Rc1 1/4" Male/Female 45 Elbow	3		
Rc1/2" Taper Plug	1		
M16 Hex Hd Bolts	8		
M16 Hex Hd Full Nuts	8		
M16 Washer	16		
DN200 PN16 Blind Flange Kit (For Assembly To 562702203); Comprising :	1		
M20 Spring Washers	32		
M20 x 70 Hex Hd Bolts	32		
M20 Hex Hd Full Nuts	32		
DN200 PN16 DIN2690 Flange Gaskets	4		
DN200 PN16 Blind Flange Tapped Rc1/2" & Assembled With R1/2" Taper Drain Cock	2		
3 High Vent Pipe 490mm long (To Assemble To PRV Pipe On Top Module) . Compression Elbow Not Supplied.	1	2.8	9
2 High Vent Pipe 490mm long (To Assemble To PRV Pipe On Middle Module) . Compression Elbow Not Supplied.	1	2.8	9
1 High Vent Pipe 200mm Long (To Assemble To PRV Pipe On Bottom Module) . Compression Elbow Not Supplied.	1	2.8	9
2 High Condensate Pipe Kit (To Assemble To Condensate Traps Fitted To Boiler & Condensate Trap Fitted To Base Of Vertical Flue); Comprises;	1	2.21	23
32mm ABS Fitting & Pipe Sub-Assemblies.	16		
R2 1/2" (2 1/2" BSP) D56xD43x2 Seal	4		

Pipe Kit For Boiler Models: F300V-900 & F350V-1050.

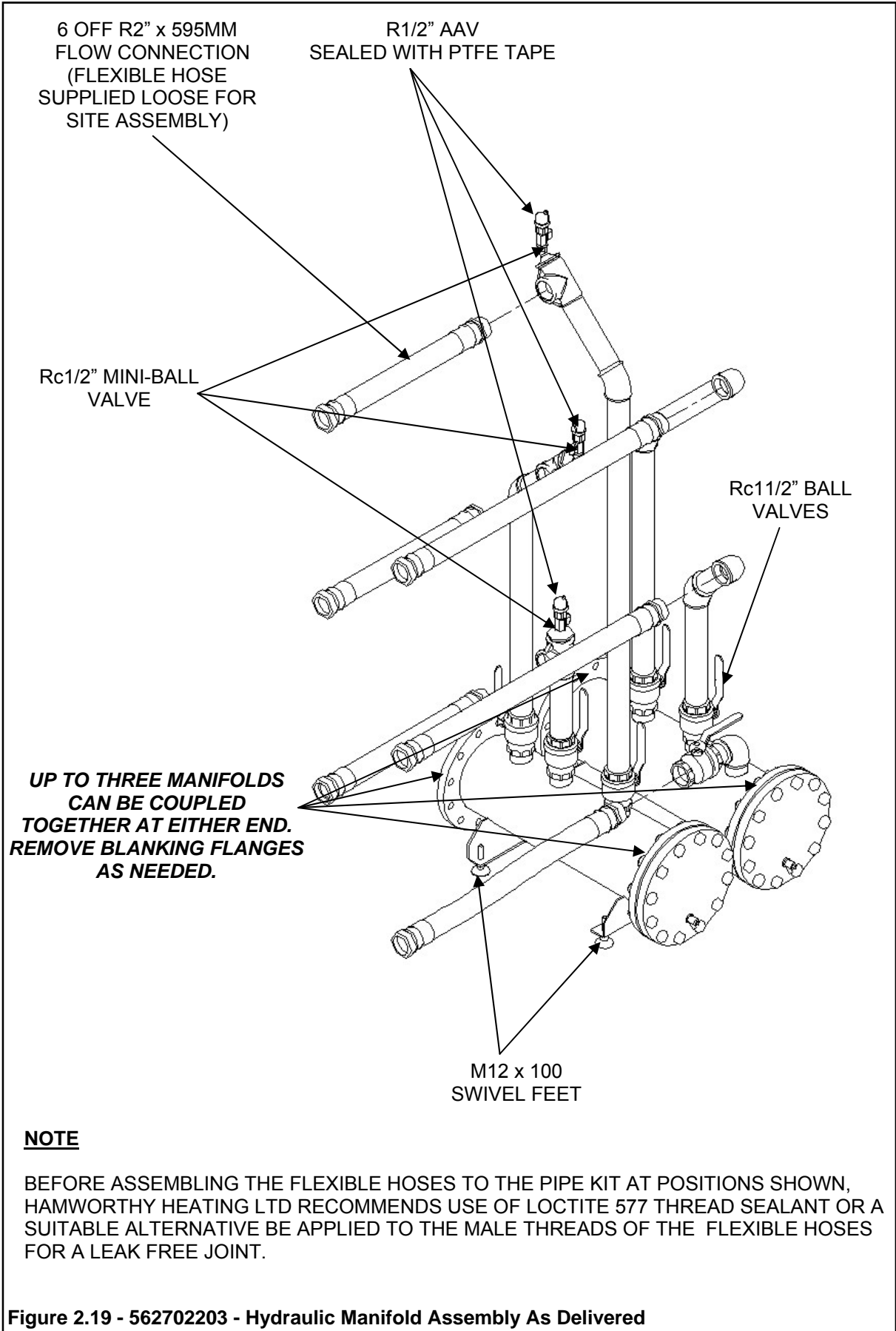
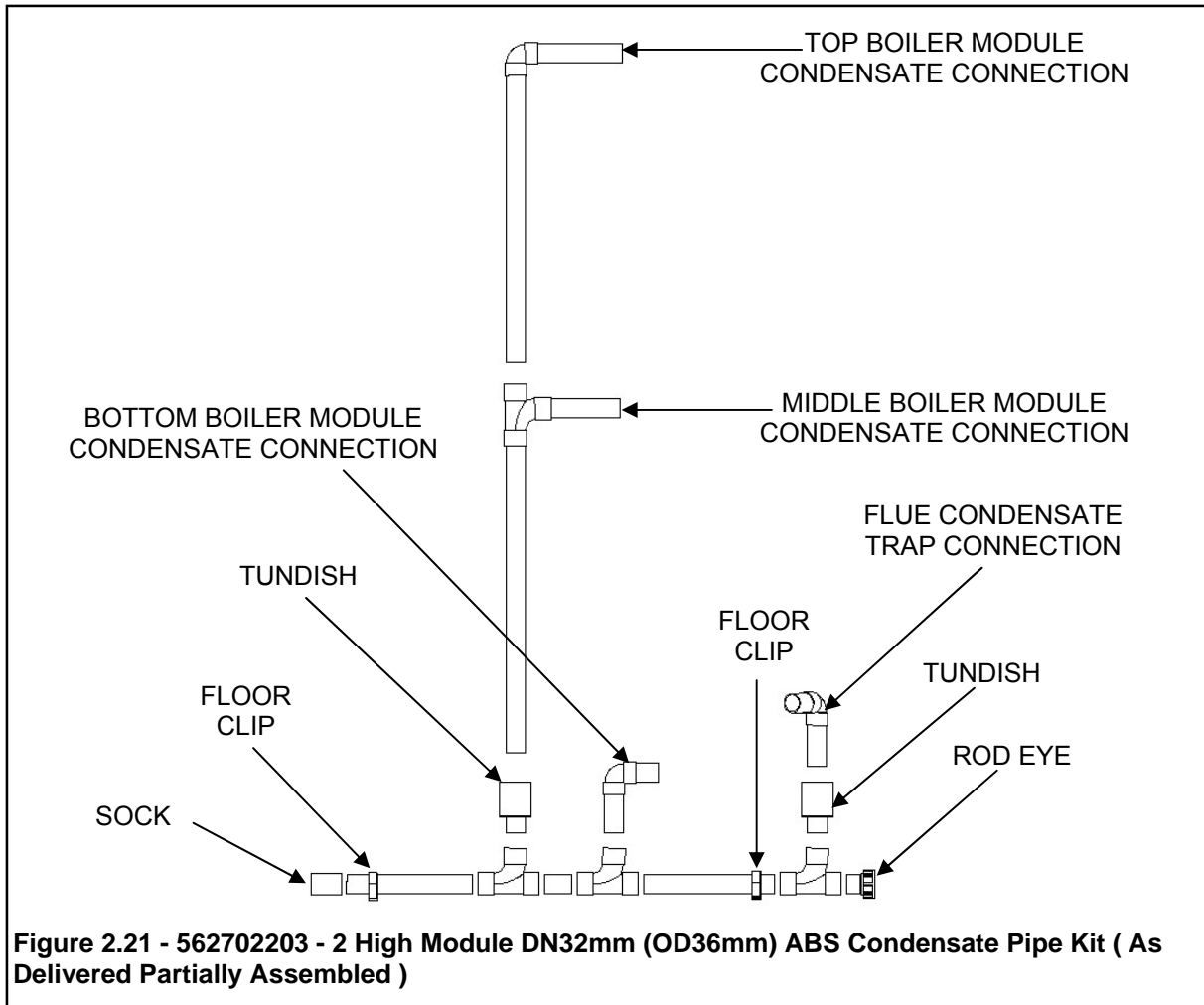
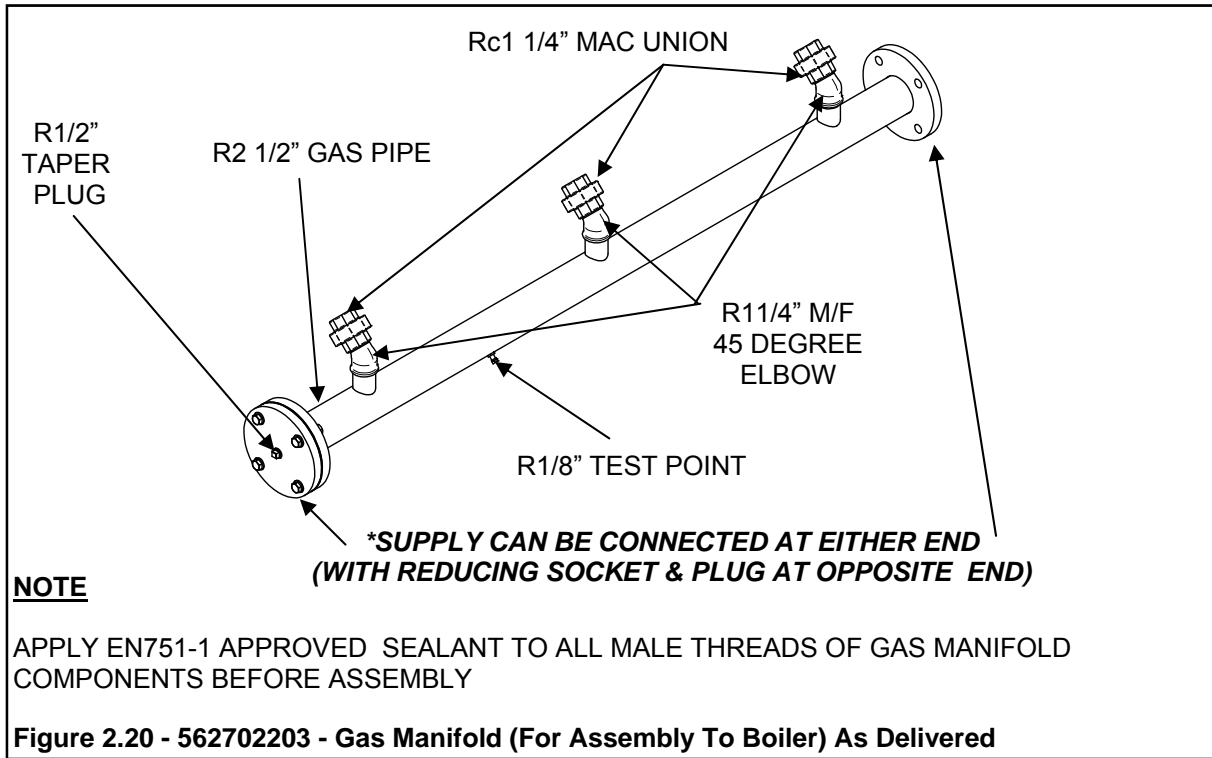


Figure 2.19 - 562702203 - Hydraulic Manifold Assembly As Delivered

Pipe Kit For Boiler Models: F300V-900 & F350V-1050.

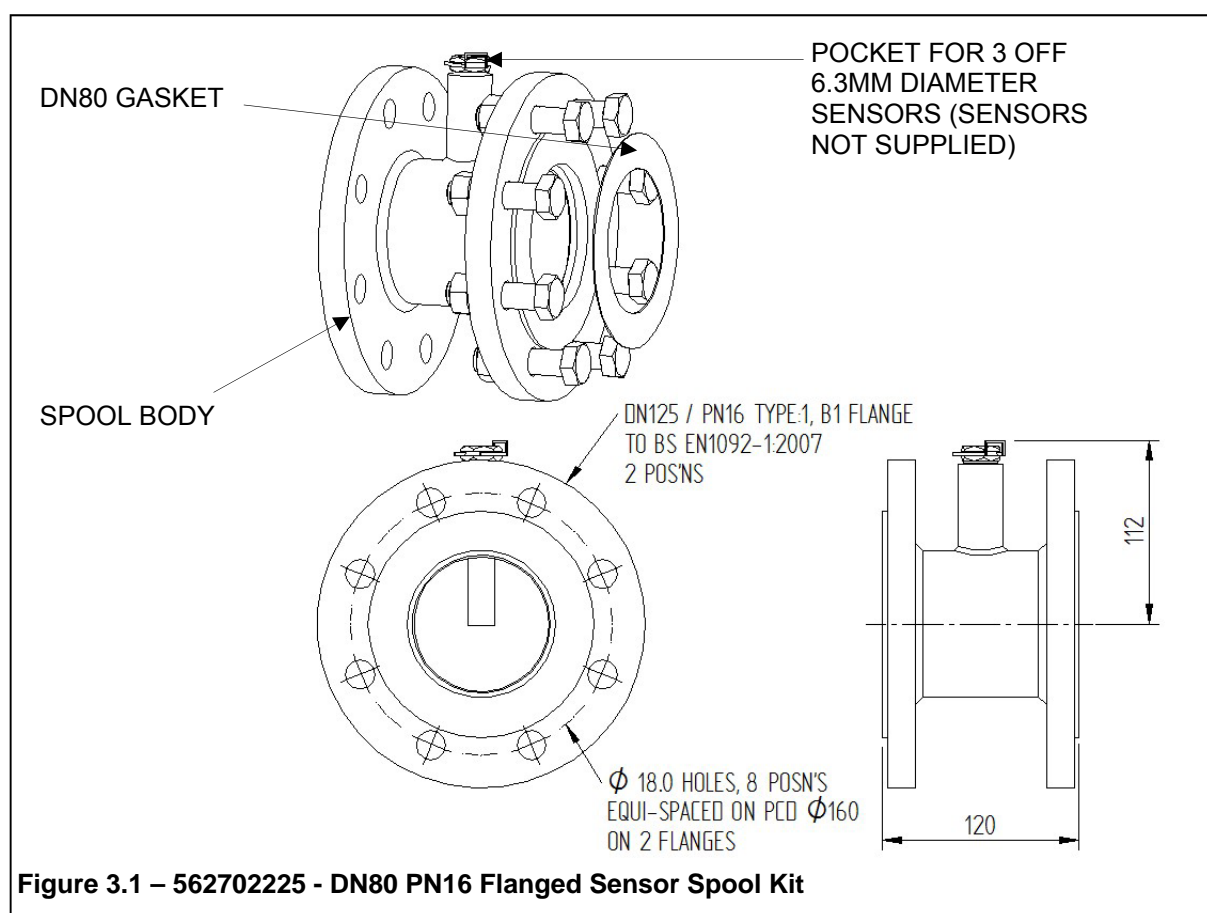


SECTION 3 – OPTIONAL EXTRAS

3.1 Sensor Spool Kit 562702225 For Boiler Models: F40V-80, F40V-120, F50V-100, F50V-150, F60V-120, F60V-180, F70V-140, F70V-210, F85V-170, F85V-255, F100V- 200 & F100V-300.

Table No. 10 - List Of Parts Received When Pipe Kit 562702225 Is Delivered

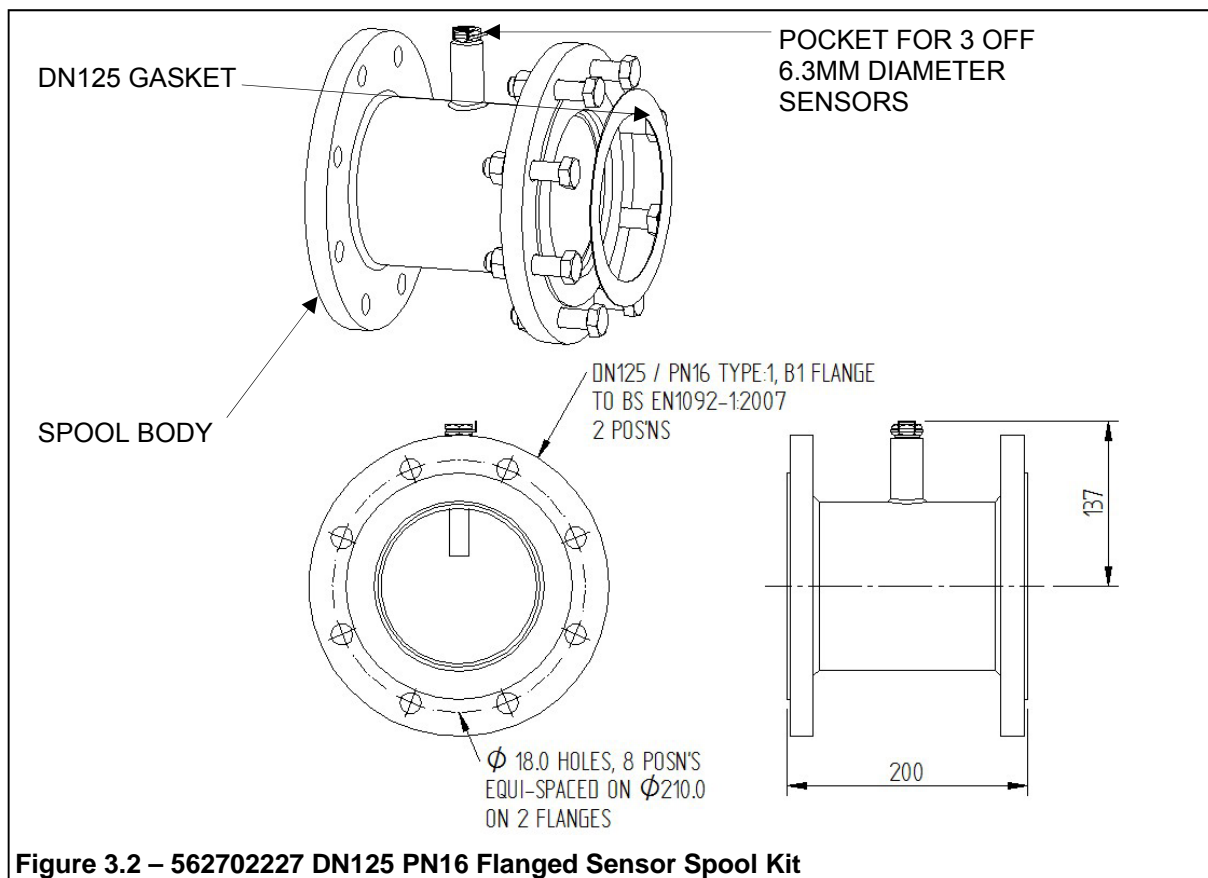
DESCRIPTION	QTY
DN80 Spool Body Fitted With Sensor Pocket	2
DN80 Gasket	4
M16 x 70 Bolt	16
M16 Washer	16
M16 Nut	16



3.2 Sensor Spool Kit 562702227 For Boiler Models : F125V-250, F125V-375, F150V-300 & F150V-450.

Table No. 11 - List Of Parts Received When Pipe Kit 562702227 Is Delivered

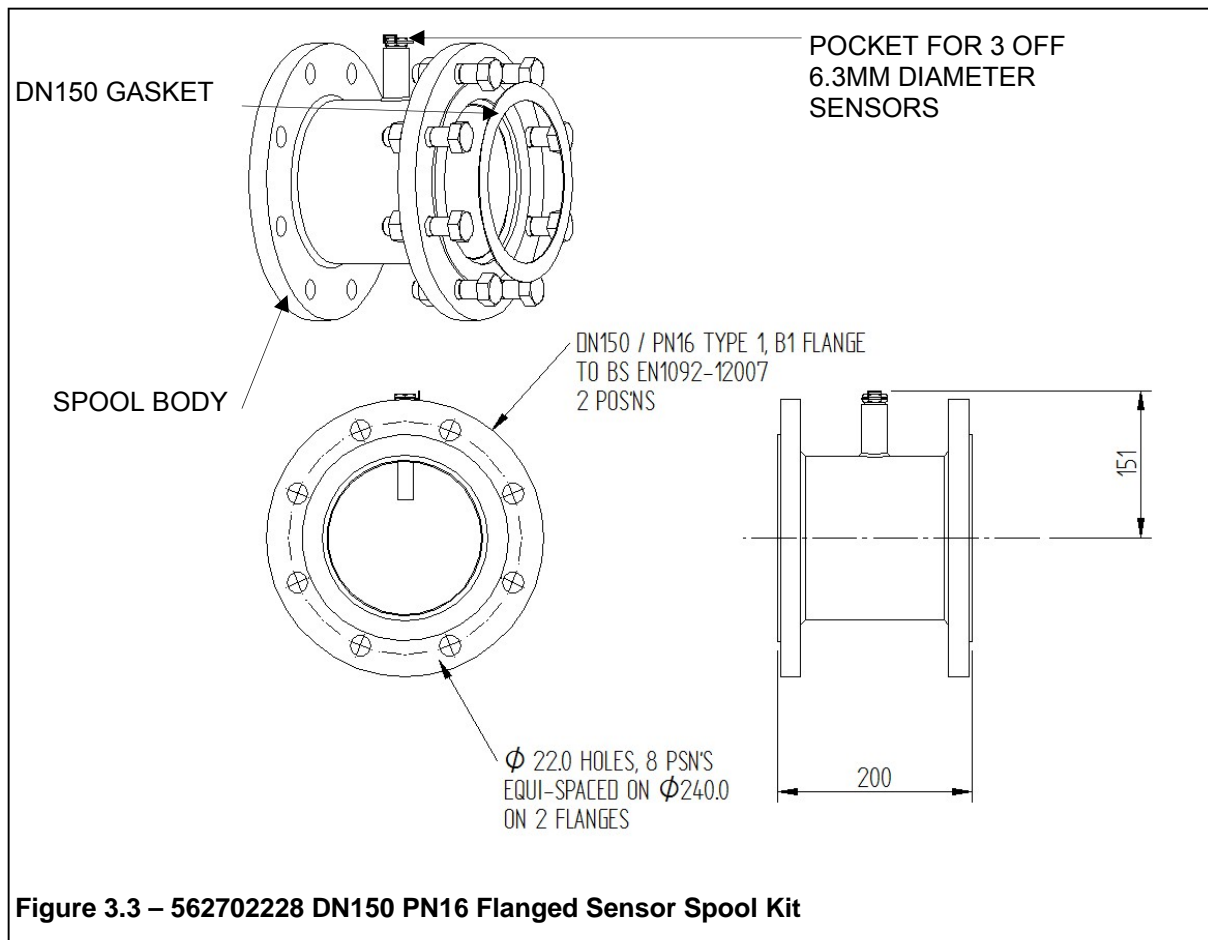
DESCRIPTION	QTY
DN125 Spool Body Fitted With Sensor Pocket	2
DN125 Gasket	4
M16 x 70 Bolt	16
M16 Washer	16
M16 Nut	16



3.3 Sensor Spool Kit For Boiler Models : F175V-350, F175V-525, F200-400, F200V-600, F250V-500 & F250V-750

Table No. 12 - List Of Parts Received When Pipe Kit 562702228 Is Delivered

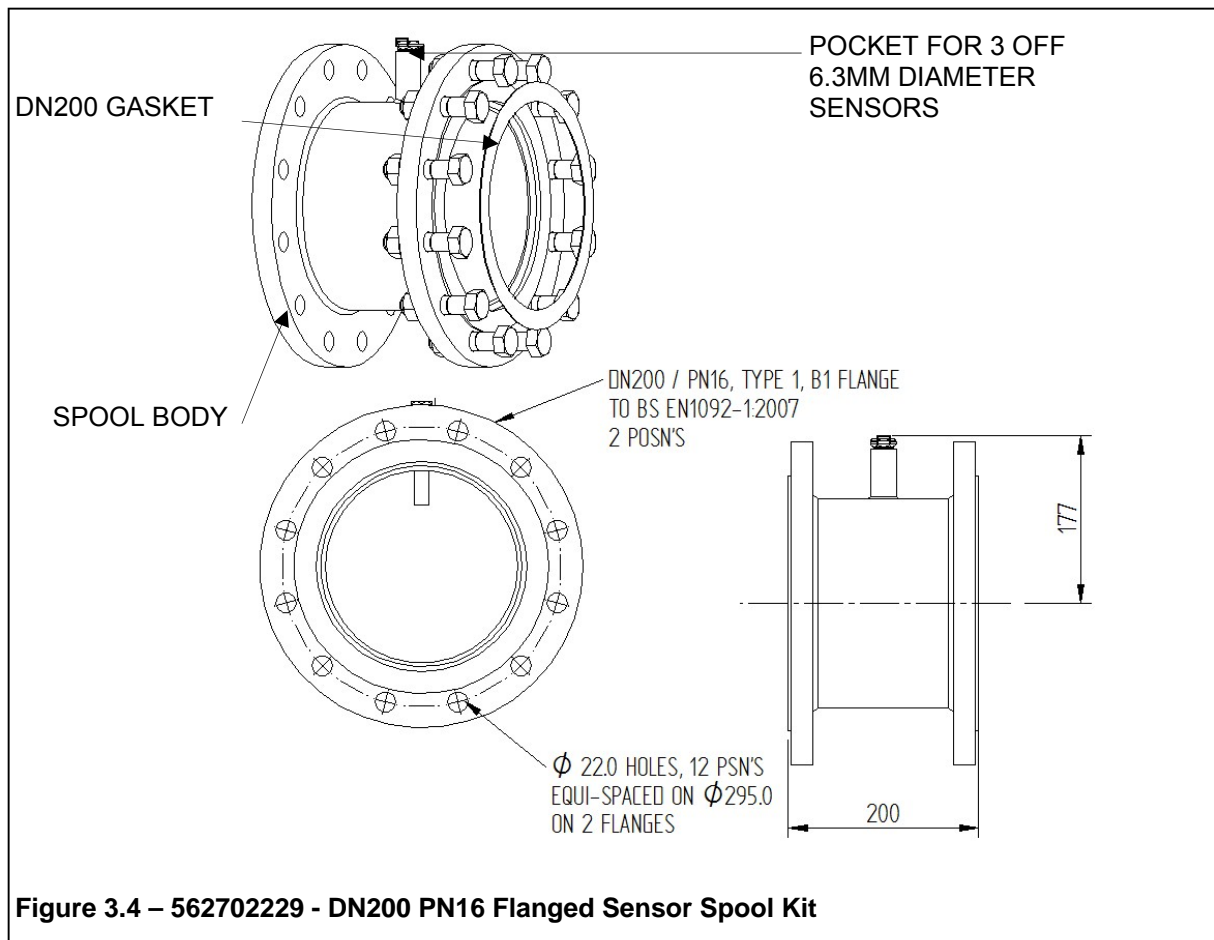
DESCRIPTION	QTY
DN150 Spool Body Fitted With Sensor Pocket	2
DN150 Gasket	4
M20 x 80 Bolt	16
M20 Washer	16
M20 Nut	16



3.4 Sensor Spool Kit For Boiler Models : F300V-600, F300V-900, F350V-700, F350V-1050

Table No. 13 - List Of Parts Received When Pipe Kit 562702229 Is Delivered

DESCRIPTION	QTY
DN200 Spool Body Fitted With Sensor Pocket	2
DN200 Gasket	4
M20 x 80 Bolt	24
M20 Washer	24
M20 Nut	24



4.0 GENERAL REQUIREMENTS PRIOR TO INSTALLATION OF PIPE KITS

4.1 Always use appropriate Personal Protective Equipment when installing pipe kits on site.

4.2 It is best practice to isolate gas supply pipe work, from the manifold by use of a EN331 Approved Isolating valve. The gas supply pipe can be connected to either the top or bottom of the manifold.

4.3 On the opposite end of the vertical gas manifold pipe to the gas supply connection the reducing socket & R1/2" plug is to be fitted. **See Figure 5.2.**

4.3 One instrument spool (pipe with flanges welded at either end & fitted with a sensor pocket for 3 off Ø6.3mm temperature sensors) can be assembled to the flow and one to the return pipes of the pipe kit. **Figures 3.1 To 3.4.**

4.4 Providing the flange & gas pipe size are the same, multiples of 2 high & 3 high module boilers can be assembled together.

4.5 Where pipe kits with different flange & gas pipe sizes are supplied ensure that the different pipe sizes are installed on separate branches.

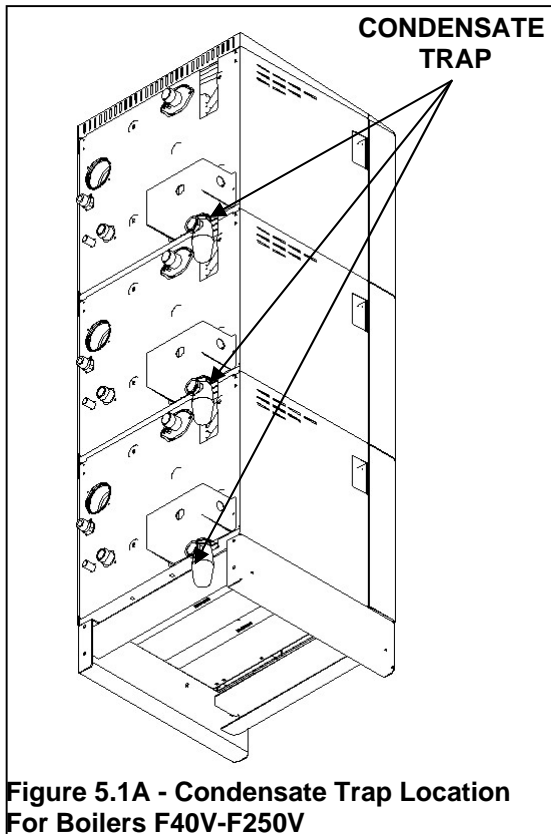
4.6 Use a EN751-1 (gas) approved thread sealant for all gas supply pipe work.

4.7 The condensate pipe work is supplied partially solvent welded. It is not necessary to orientate the swept T's to the desired direction of flow to drain. Where the condensate connection to drain to be on the side of where the rod eye is shown in Figures 5.18 & 5.19 swap pipes of lengths 248mm & 255mm.

4.8 Check local authority requirements with respect to disposal of boiler condensate to the local sewers prior to connecting any condensate pipe work to drain.

4.9 During assembly of pipe kit flanges use best practice & tighten the bolts opposite to one another, working clockwise around the flange for a leak free assembly.

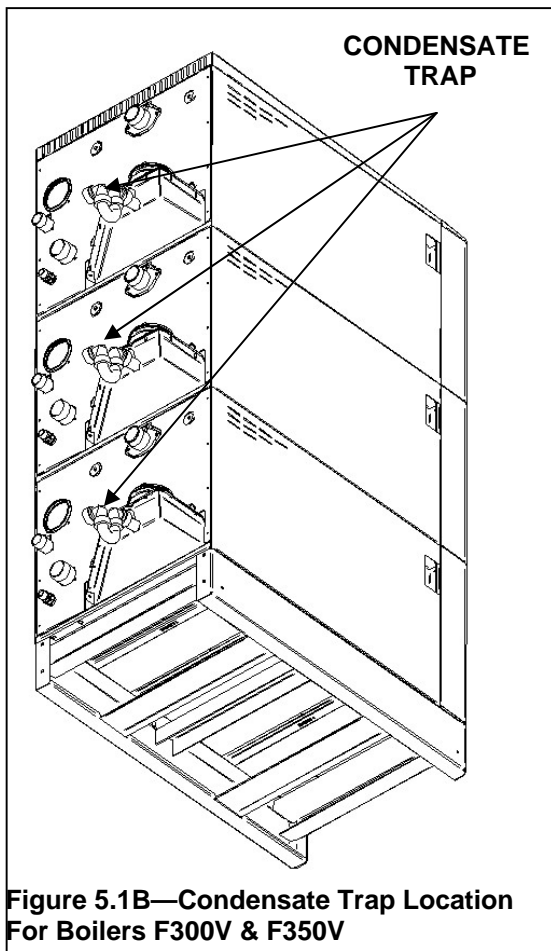
5.0 ASSEMBLY INSTRUCTIONS



**Figure 5.1A - Condensate Trap Location
For Boilers F40V-F250V**

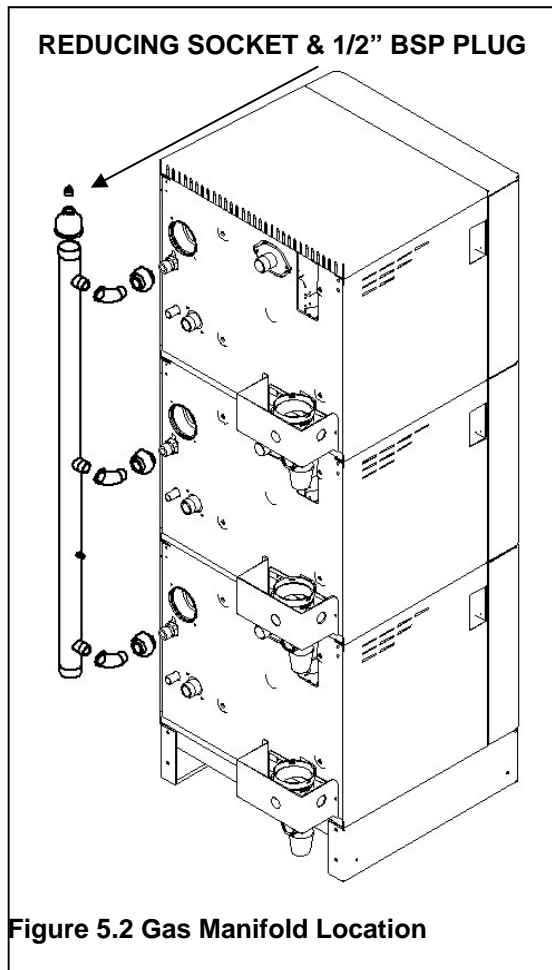
5.1 Unpack each boiler & fit the white plastic condensate trap supplied with each boiler module to the condensate spigot of each boiler module.

5.2 For assembly of condensate trap 531955009 to the spigot of the black plastic flue elbow on boilers F40V-F250V See Figure 5.1A.



**Figure 5.1B—Condensate Trap Location
For Boilers F300V & F350V**

5.3 For assembly of condensate trap 530105095 to the spigot of the sump on boilers F300V & F350V See Figure 5.1B.



5.2 Apply EN751-1 Nat Gas Approved thread sealant to the male threads of the gas inlet connection of each boiler module, the gas manifold pipe & fittings supplied.

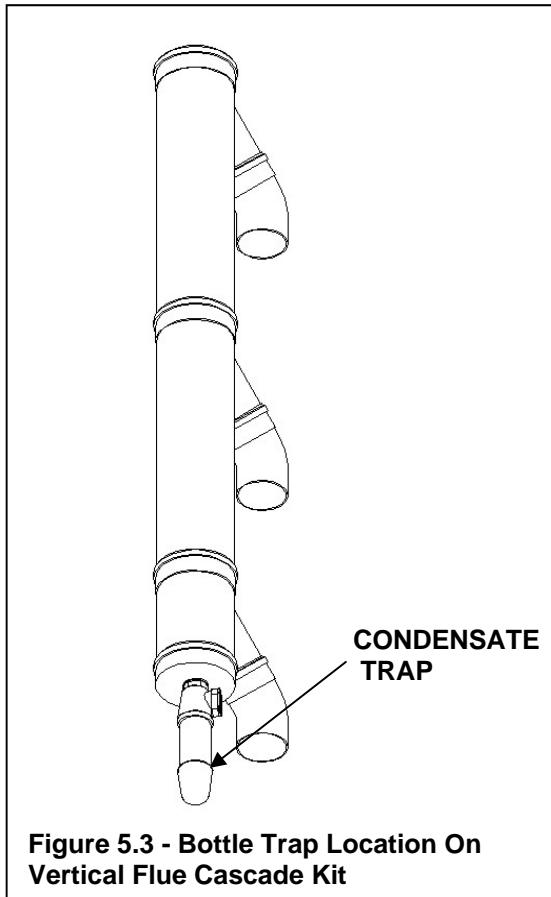
5.3 Assemble one half of each female union to the gas inlet connection on each boiler module at the location shown in figure 5.2. Then assemble the gas manifold together as shown.

5.4 The reducing socket & R1/2" (BSP) plug can be fitted at either end of the gas pipe, depending on the direction of incoming gas supply pipe.

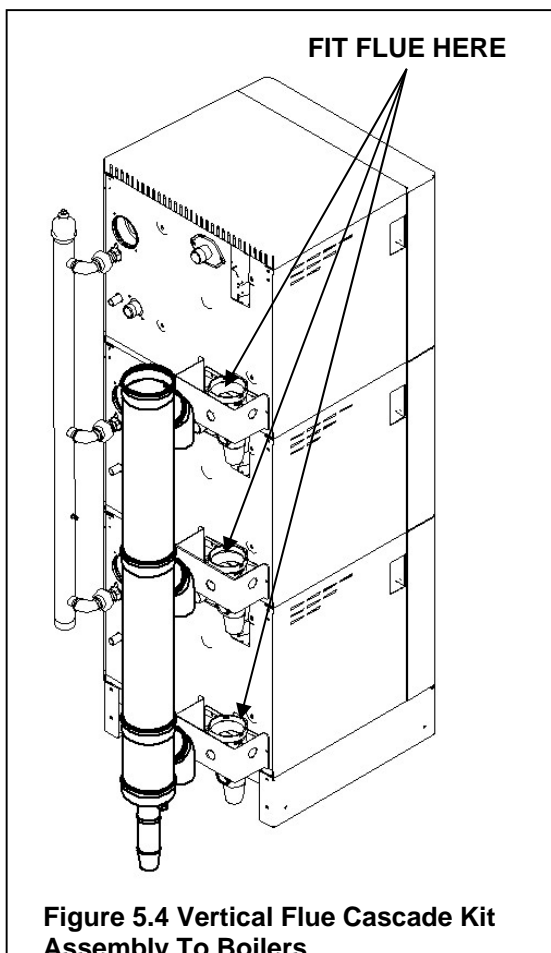
5.5 See Table 14 below for the gas manifold thread & union sizes.

Table 14 - Gas Manifold Size

PIPE KIT PART NO.	GAS MANIFOLD THREAD SIZE TO EN10226 (BS21)		UNION TO BOILER MODULE SIZE ACROSS FLATS (AF) mm	
	MAIN PIPE	BRANCH PIPES (BOILER MODULE)	UNION NUT	UNION END
562702282	R1 1/2"	R3/4"	48	31
562702197	R2"	R1"	55	38
562702198	R2"	R1"	55	38
562702199	R2 1/2"	R1 1/4"	67	48
562702283	R1 1/2"	R3/4"	48	31
562702201	R2"	R1"	55	38
562702202	R2"	R1"	55	38
562702203	R2 1/2"	R1 1/4"	67	48



5.6 Fit long white plastic condensate trap 532511157 supplied with basic vertical flue cascade kit over the spigot of the cap of the cascade kit as shown in **Figure 5.3**.



5.7 Smear a little of Seal lubricant HHL Part No. 573407363 round the inner edge of the sealing ring in the black plastic flue elbow found at the back of each boiler module.

5.8 Push the elbow of each branch of the flue cascade kit into the black plastic flue elbow of each module as shown in figure 5.4.

5.9 Check to ensure proper engagement of the flue cascade kit elbows in each black plastic flue elbow at the back of the boiler. Check the respective seals have not been pushed out the groove in the black plastic elbows during assembly.

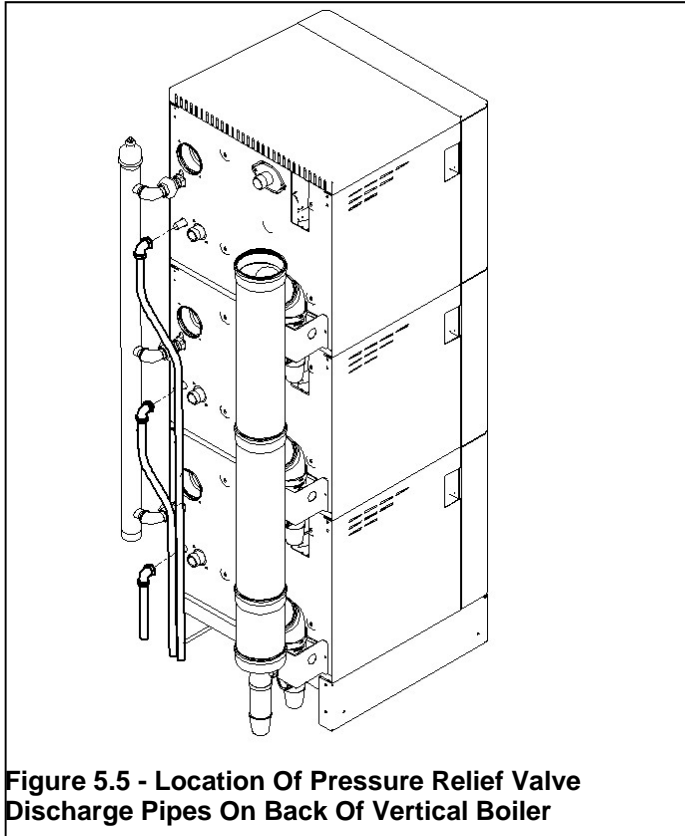


Figure 5.5 - Location Of Pressure Relief Valve Discharge Pipes On Back Of Vertical Boiler

5.10 Assemble the D22 compression elbows supplied over each D22mm pressure relief valve discharge pipe found protruding from the back of each boiler module.

5.11 Assemble the pressure relief discharge pipes supplied in the compression elbow, tightening the nuts of each elbow for a secure leak proof seal.

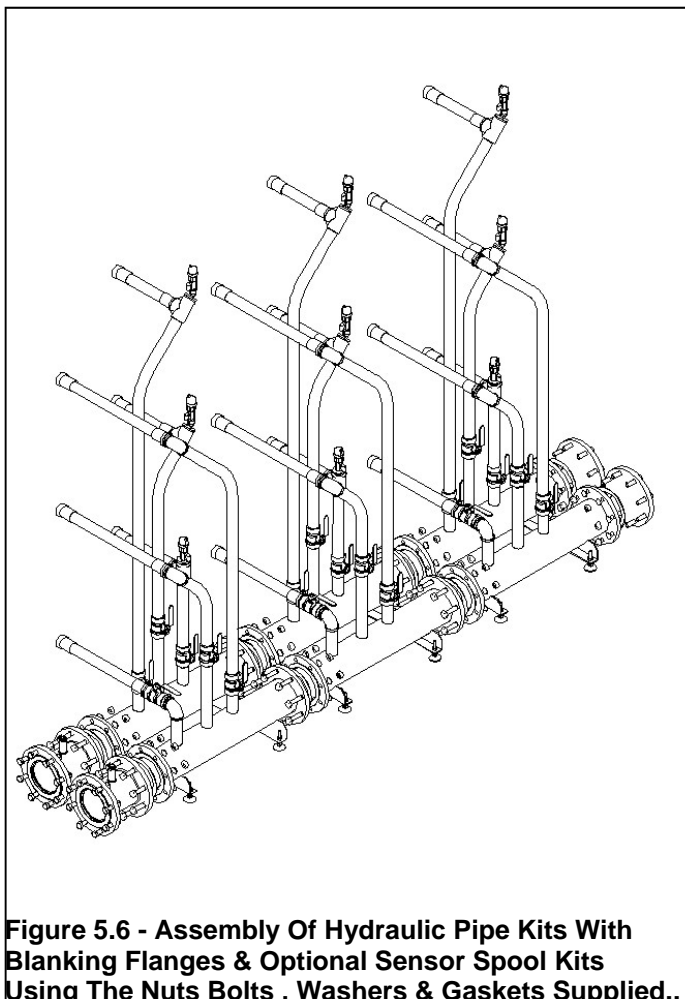


Figure 5.6 - Assembly Of Hydraulic Pipe Kits With Blanking Flanges & Optional Sensor Spool Kits Using The Nuts Bolts , Washers & Gaskets Supplied..

5.12 The hydraulic manifold for pipe kits 562702196, 562702197, 562702200, 562702201 come with flexible hoses pre-assembled at delivery.

5.13 Assemble the hydraulic flexible hoses supplied separately with pipe kits 562702198, 562702199, 562702202, 562702203 to the locations shown in **Figures 2.14 / 2.15 / 2.16 & 2.19** by applying Loctite 577 thread sealant (or suitable alternative) to the male threads of the flexible hoses, prior to making the screwed joint in the malleable iron elbows.

5.14 Increase the height of the hydraulic pipe kit from the floor by adjusting the feet . A standard pallet truck can be pushed underneath & the pipe kit moved round the plant room.

5.15 Once in final position adjust the feet on the pipe kits so the flanges of the pipe kit are at the same height & level. Check using a builders level.

5.16 Assemble the pipe kits together with gaskets supplied between each flange & bolt the flanges of the pipe kits, optional sensor spool kit & blanking flanges together using the M16 Bolts, Washers & nuts provided.



Figure 5.7 - Bolting Method To Assemble Pipe Kit Flanges Together.

5.17 Due to the space available between the pipes use an socket & ratchet on the nut you are tightening. A spanner can be used to hold the bolt in place. Tighten bolt positions opposite to one another, working clockwise round the flange to produce a leak free assembly. Assembly with only spanners is not feasible at the bolt positions closest to the floor.

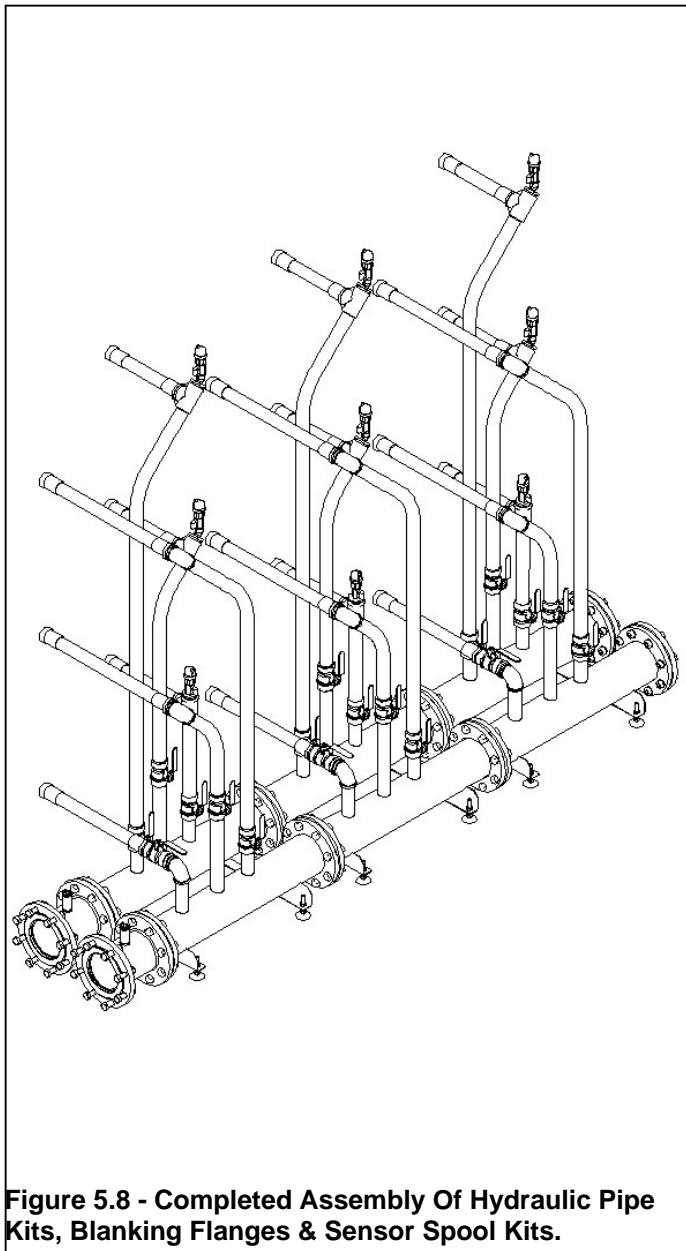


Figure 5.8 - Completed Assembly Of Hydraulic Pipe Kits, Blanking Flanges & Sensor Spool Kits.

5.18 Be careful not to cause the stud of the levelling feet to become bent whilst moving the pipe kit over an uneven floor. Where possible Hamworthy Heating recommends suitable moving equipment to position the pipe kit in it's final location.

- 5.19 The base of the boiler has been purposely designed so that a standard pallet truck can be used for manoeuvring purposes.
- 5.20 Move the boilers to their final location & align the back of the boilers to one another observing the recommended distances behind & to the side of the boilers as shown in **Figures 5.9 To 5.12**.

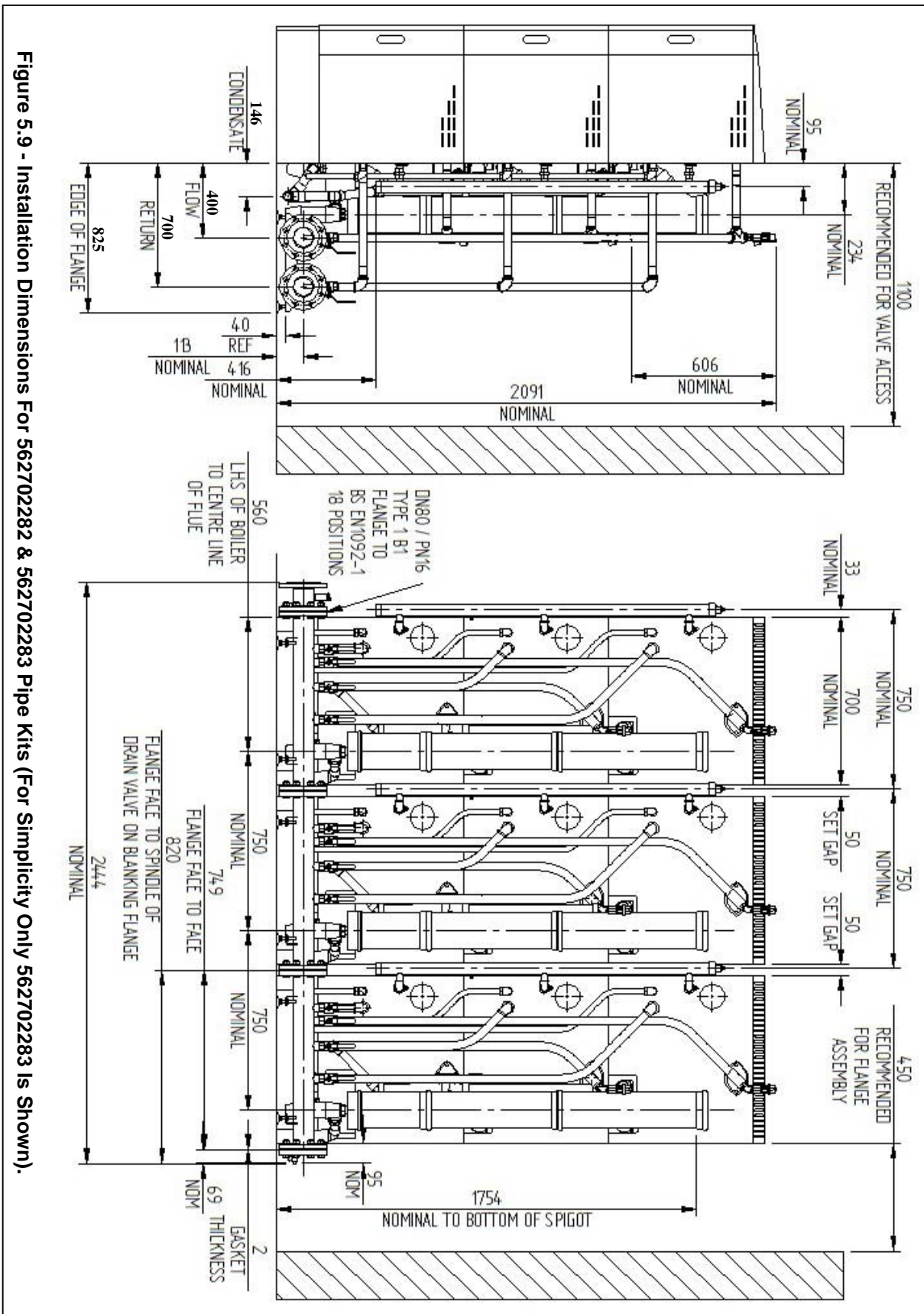
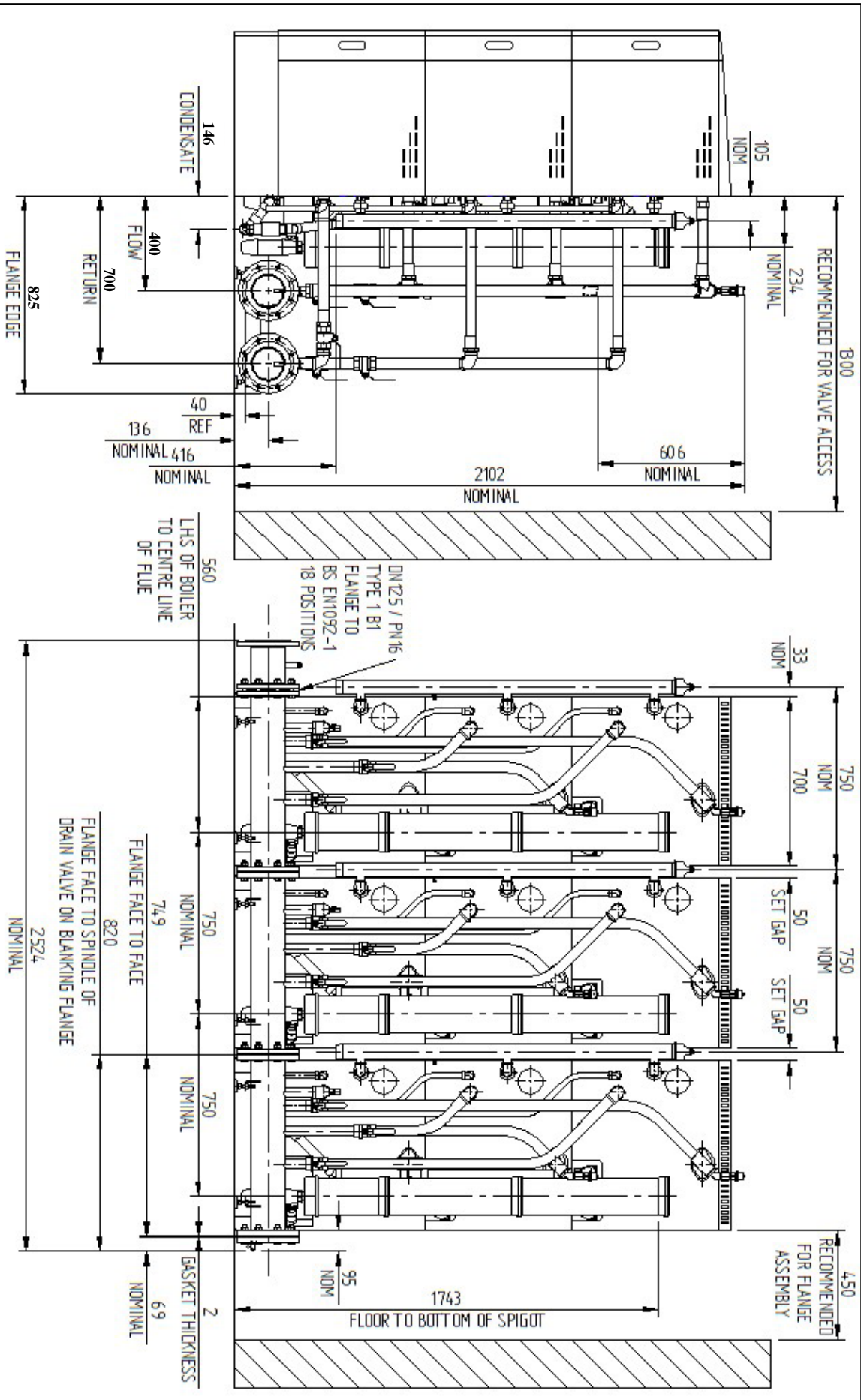


Figure 5.10 - Installation Dimensions For 562702197 & 562702201 Pipe Kits (For Simplicity Only 562702201 Is Shown).



5.21 If necessary re-adjust the feet of the assembled pipe kits so the flexible hoses are roughly in line with the connections on the back of the boiler.

5.22 Place one of each sealing washer (supplied) into the nuts of each of flexible hose as shown in figure 5.13 below.

5.23 Screw the nut of the flexible hoses onto the matching hydraulic connections on the back of the boiler & tighten using a spanner to produce a leak proof seal.

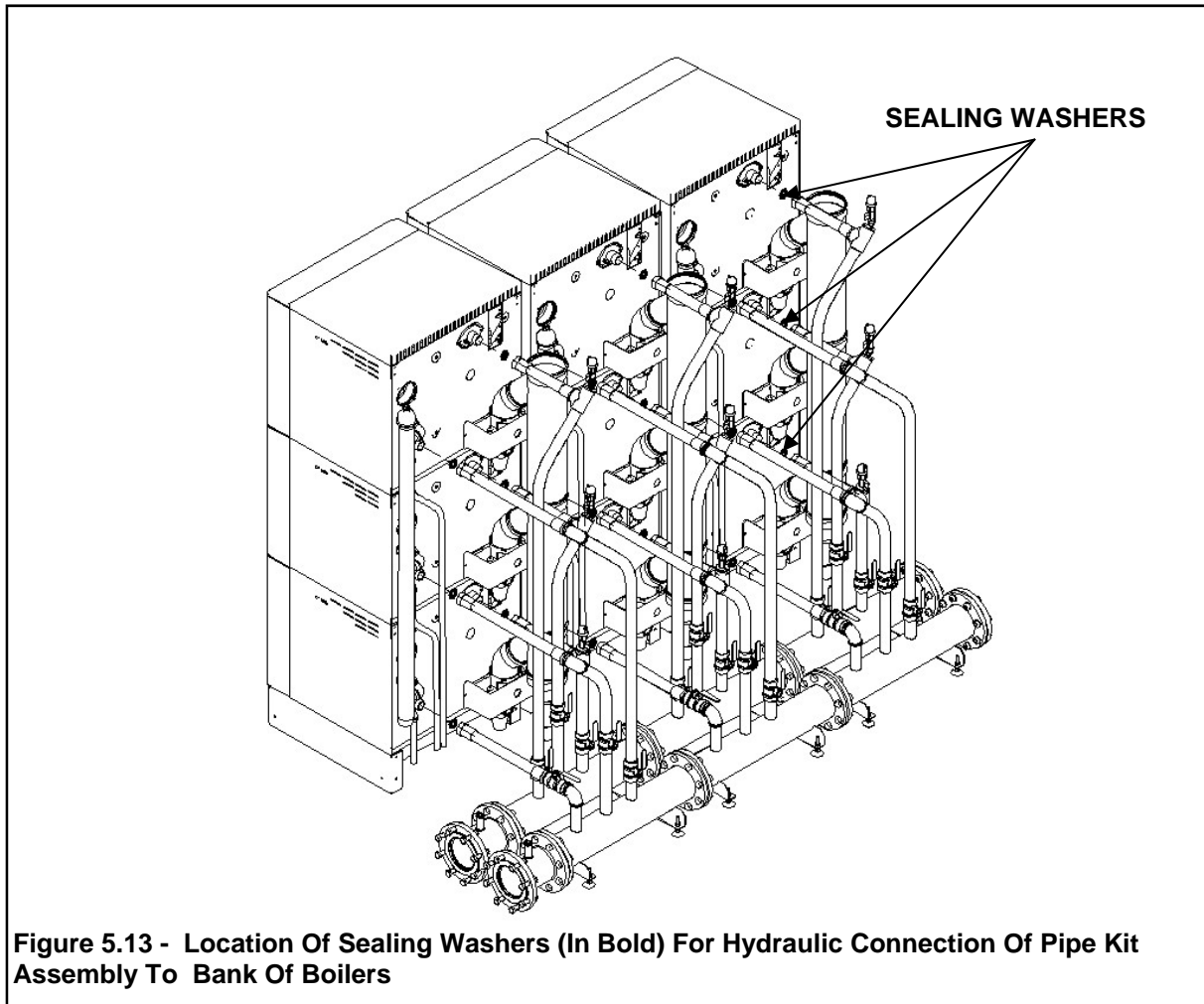


Figure 5.13 - Location Of Sealing Washers (In Bold) For Hydraulic Connection Of Pipe Kit Assembly To Bank Of Boilers

5.24 Refer to Table 15 below for the AF size of the flexible hose nuts on each pipe kit for spanner selection.

Table No. 15 - Flexible Hose Hydraulic Connection Nut Sizes (AF)

PIPE KIT PART NUMBER	HOSE NUT AF (mm)	HOSE NUT THREAD (BSPT)
562702199 / 562702203	66	R2"
562702198 / 562702202	51	R1 1/2"
562702197/ 562702201	47	R1 1/4"
562702282 / 562702283	47	R1 1/4"
562702282 / 562702283 562702197 / 562702201 562702198 / 562702202 562702199 / 562702203	32	D22 Compression

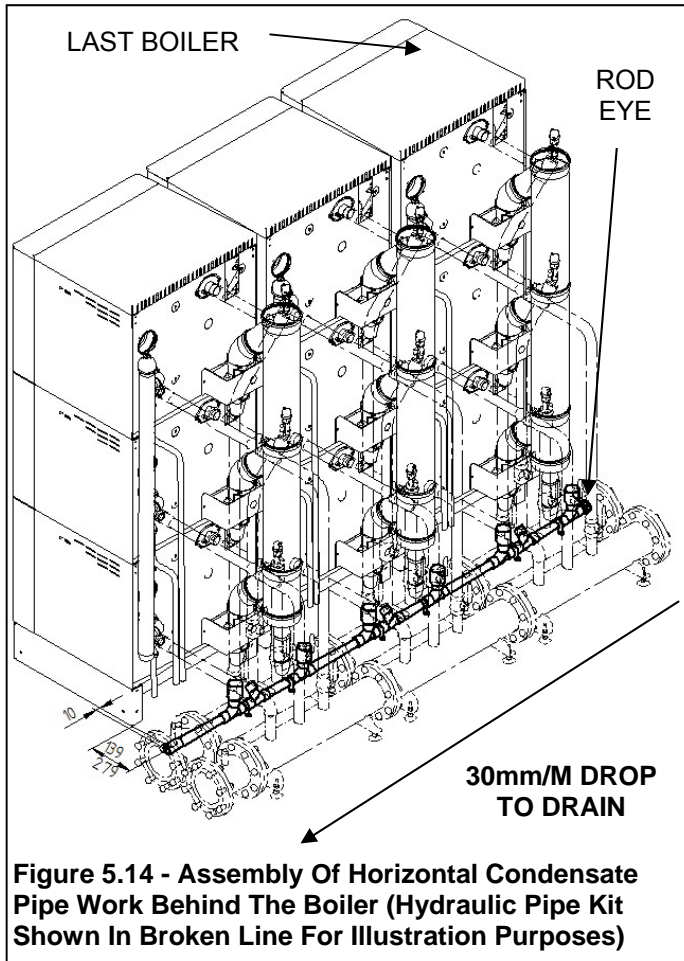


Figure 5.14 - Assembly Of Horizontal Condensate Pipe Work Behind The Boiler (Hydraulic Pipe Kit Shown In Broken Line For Illustration Purposes)

5.25 Assemble the horizontal ABS condensate pipe & fittings for each boiler at ground level in between the hydraulic manifold pipe & the back of the boiler as shown in Figures 5.12, 5.15, & 5.16.

5.26. At this stage **DO NOT** solvent weld the horizontal ABS condensate pipe & fittings together.

5.27 The Piping must fall to the drain from the last boiler with a recommended 30mm / m run, so pack the piping up underneath with batons to generate this incline.

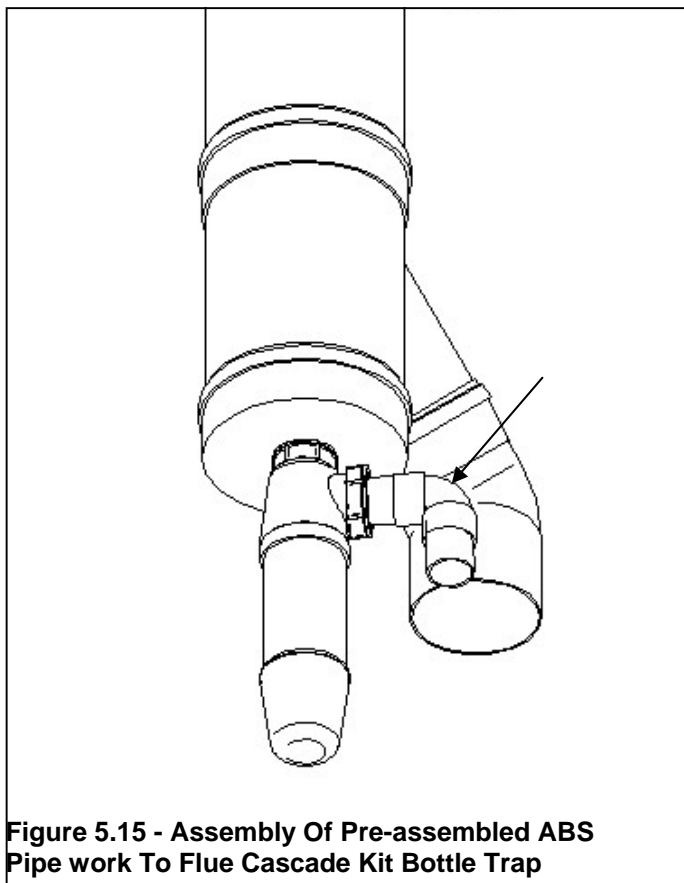
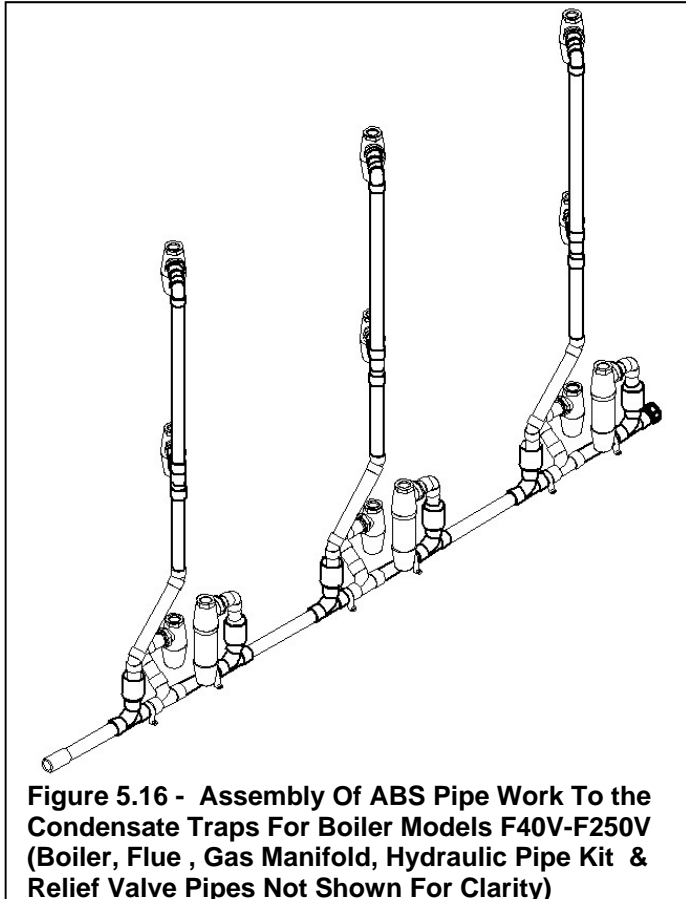


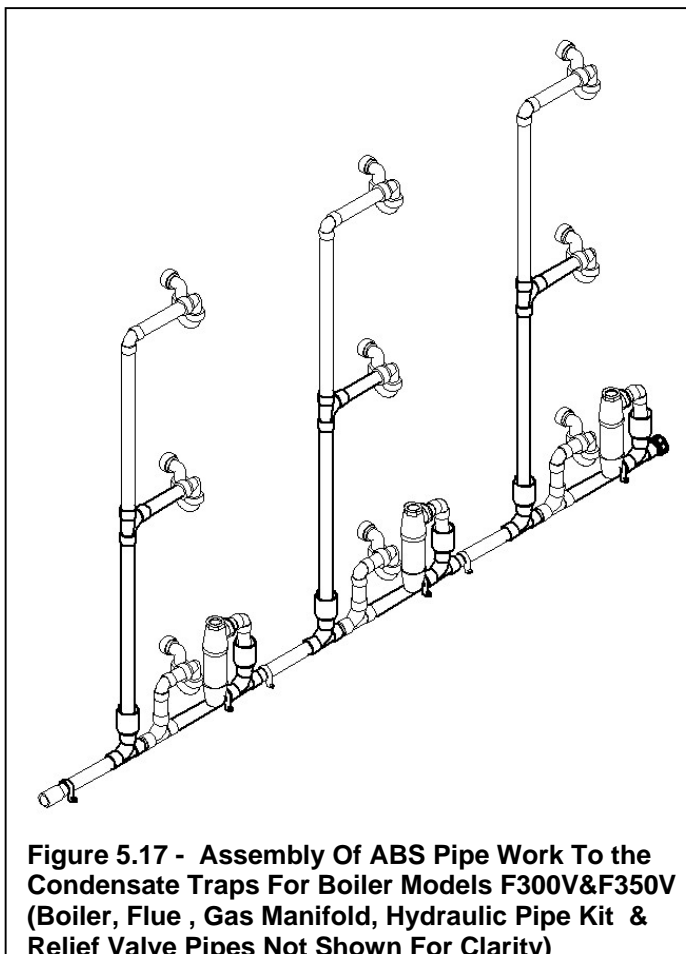
Figure 5.15 - Assembly Of Pre-assembled ABS Pipe work To Flue Cascade Kit Bottle Trap

5.28 Fit the preassembled ABS pipe and elbow (see arrow) to condensate trap assembled on the spigot of the vertical flue cascade kit cap as shown in figure 5.14 & if necessary adjust the ABS tubing to fit.



5.29 Stand behind the boiler & connect the vertical ABS condensate pipe work to the horizontal pipe work with the bottle traps assembled to each boiler module & vertical flue cascade kit. As shown in Figures 5.15 & 5.16.

5.30 Once the position of the pipe work & orientation of bottle traps have been defined, solvent weld the horizontal pipe work shown in bold in Figures 5.15 & 5.16 together.



5.31 Leave the pipe work not in bold in figure 5.15 & 5.16 to be solvent welded second.

5.32 Fix the pipe clips supplied to the floor through the batons.

5.33 Due to slightly acidic content of condensate, HHL recommend that only plastic piping is used for down stream disposal of condensate from the bank of boilers.

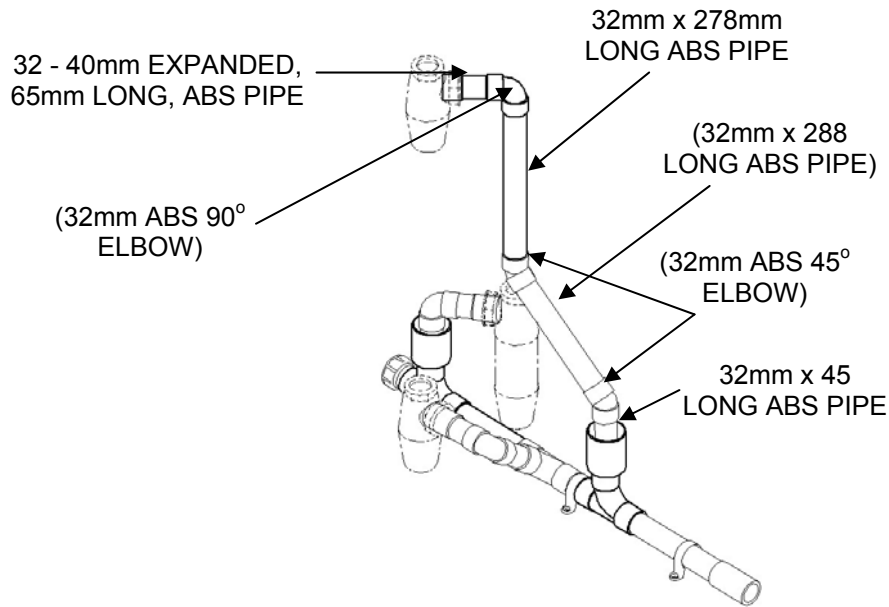


Figure 5.18A - Condensate Pipe Assembly For Pipe Kits 562702282, 562702197 & 562702198

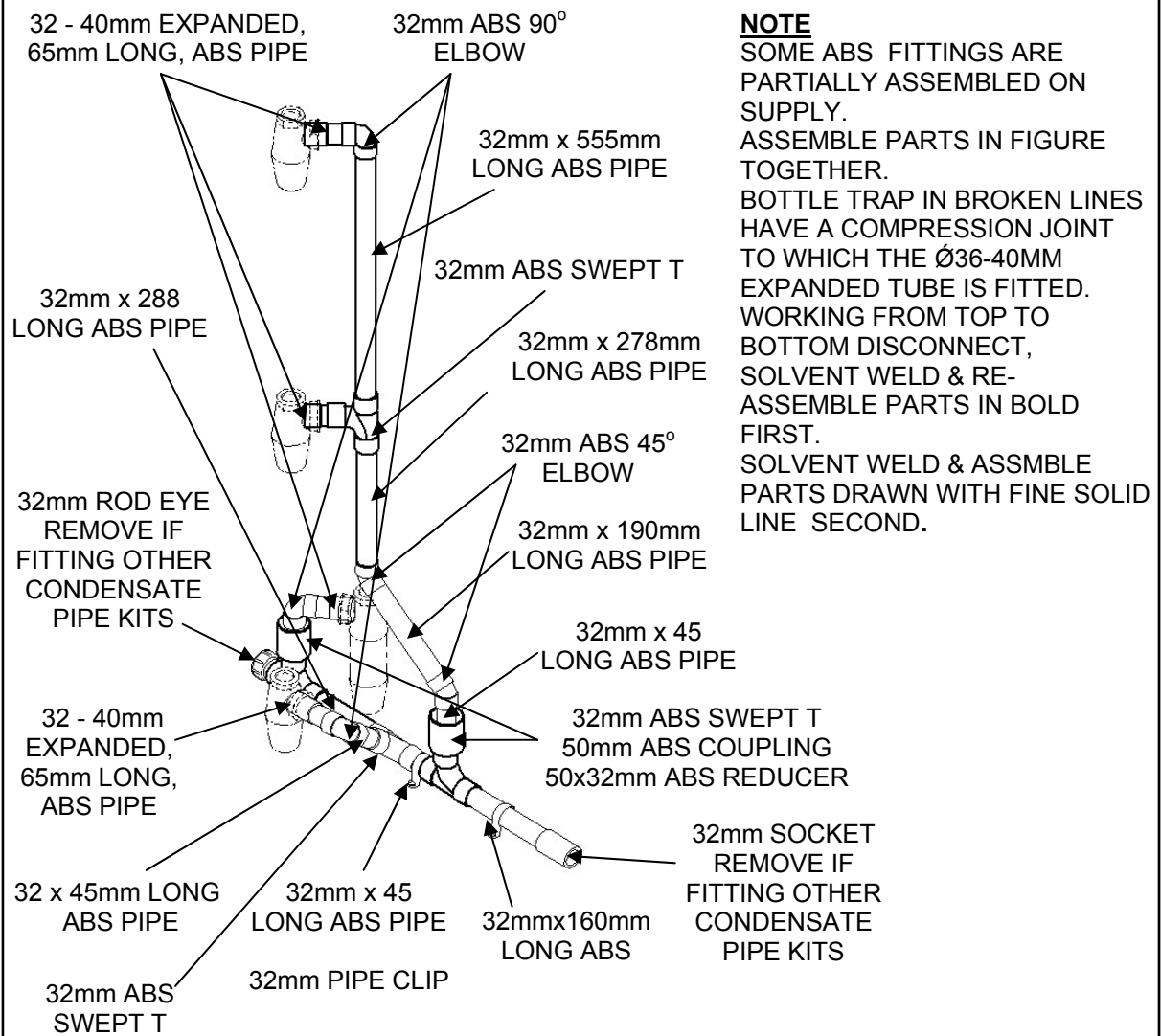


Figure 5.18B - Condensate Pipe Assembly Of Pipe Kits 562702283, 562702201 & 562702202

NOTE
 SOME ABS FITTINGS ARE PARTIALLY ASSEMBLED ON SUPPLY.
 ASSEMBLE PARTS IN FIGURE TOGETHER.
 BOTTLE TRAP IN BROKEN LINES HAVE A COMPRESSION JOINT TO WHICH THE Ø36-40MM EXPANDED TUBE IS FITTED.
 WORKING FROM TOP TO BOTTOM DISCONNECT, SOLVENT WELD & RE-ASSEMBLE PARTS IN BOLD FIRST.
 SOLVENT WELD & ASSMBLE PARTS DRAWN WITH FINE SOLID LINE SECOND.

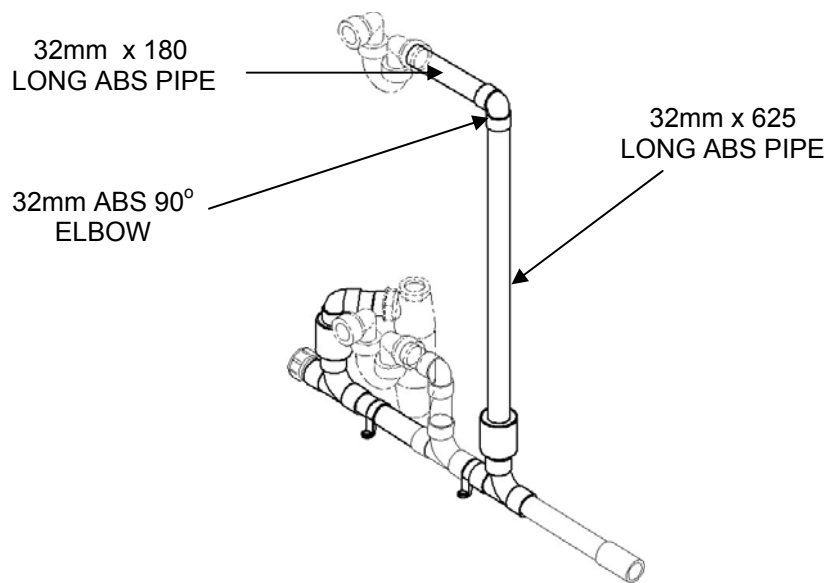
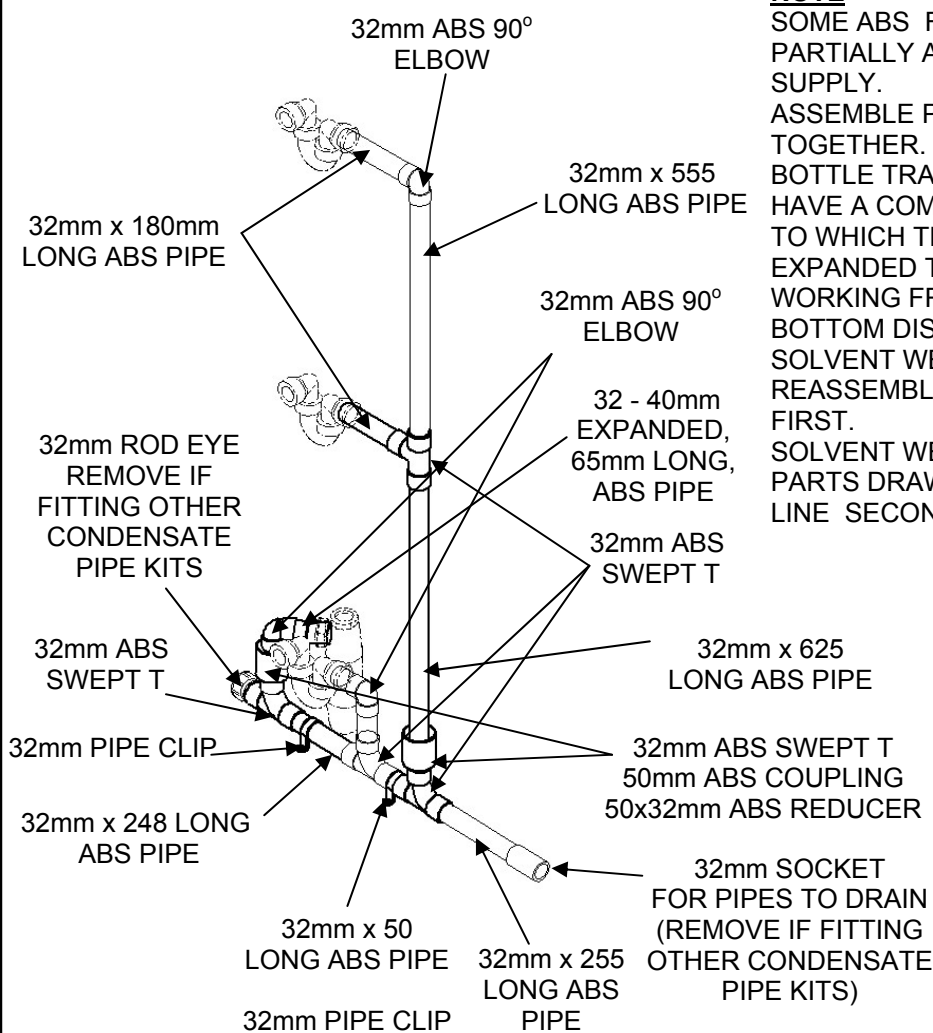


Figure 5.19A - Condensate Pipe Assembly For Pipe Kit 562702199



NOTE
 SOME ABS FITTINGS ARE PARTIALLY ASSEMBLED ON SUPPLY.
 ASSEMBLE PARTS IN FIGURE TOGETHER.
 BOTTLE TRAP IN BROKEN LINES HAVE A COMPRESSION JOINT TO WHICH THE D36-40MM EXPANDED TUBE IS FITTED.
 WORKING FROM TOP TO BOTTOM DISCONNECT, SOLVENT WELD & THEN REASSEMBLE PARTS IN BOLD FIRST.
 SOLVENT WELD & ASSMBLE PARTS DRAWN WITH FINE SOLID LINE SECOND.

Figure 5.19B - Condensate Pipe Assembly Of Pipe Kit 562702203

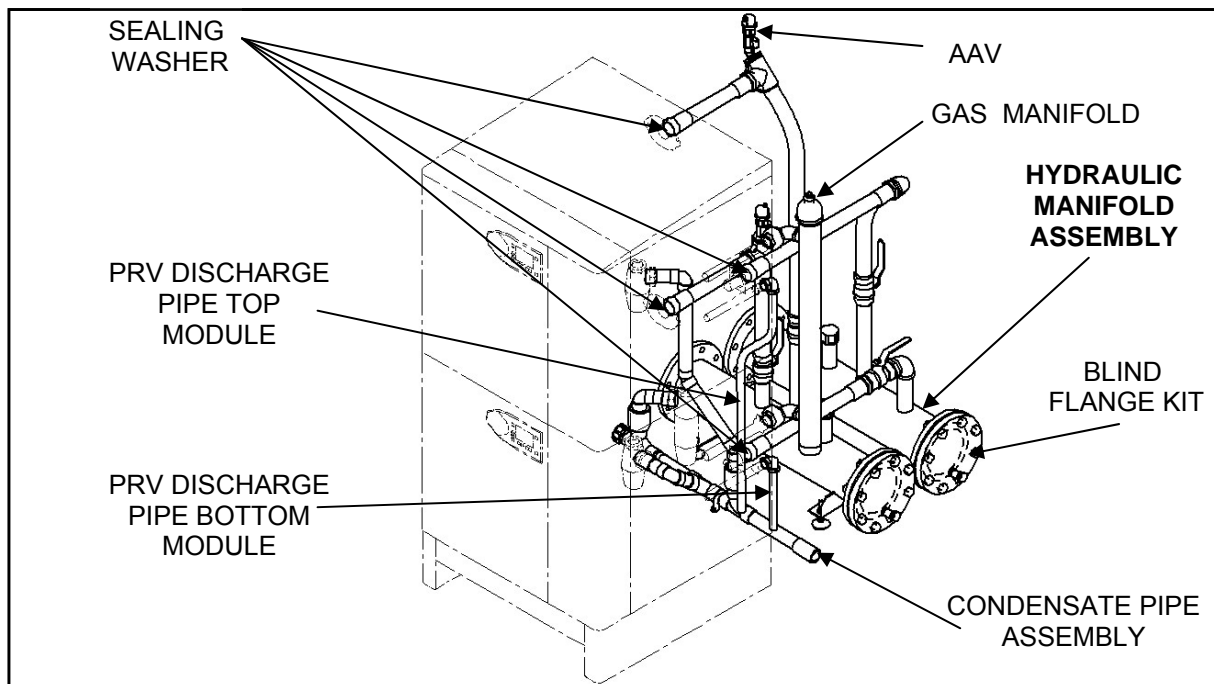
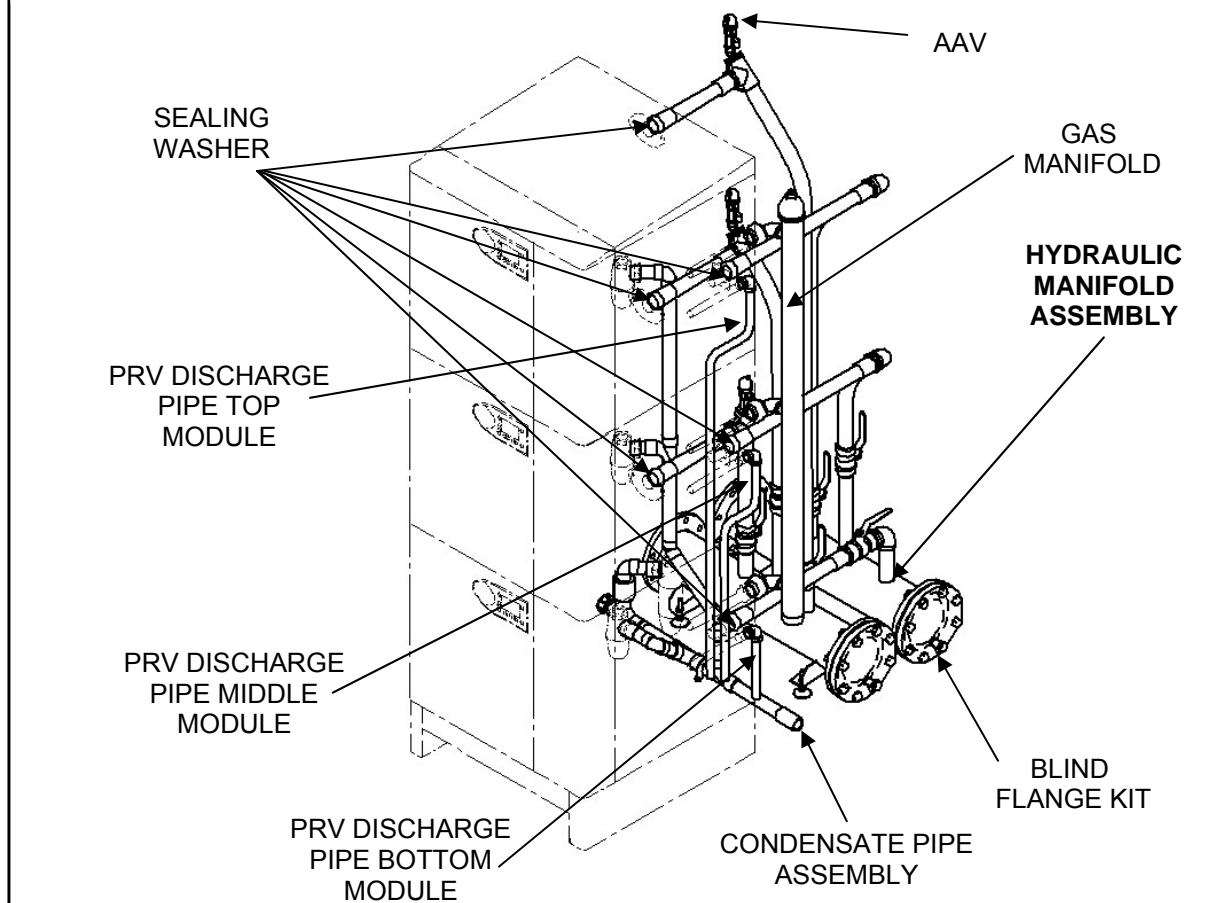


Figure 5.20A - Generic View Of 562702282 / 97 / 98 To F40V-F250V 2 High Module Boilers.



NOTE

APPLY EN751-1 APPROVED THREAD SEALANT TO GAS INLET PIPE THREADS OF EACH MODULE BEFORE FITTING FEMALE PART OF MAC UNION

Figure 5.20 B - Generic View Of 562702283 / 01 / 02 To 40-250kW Three High Module Boilers.

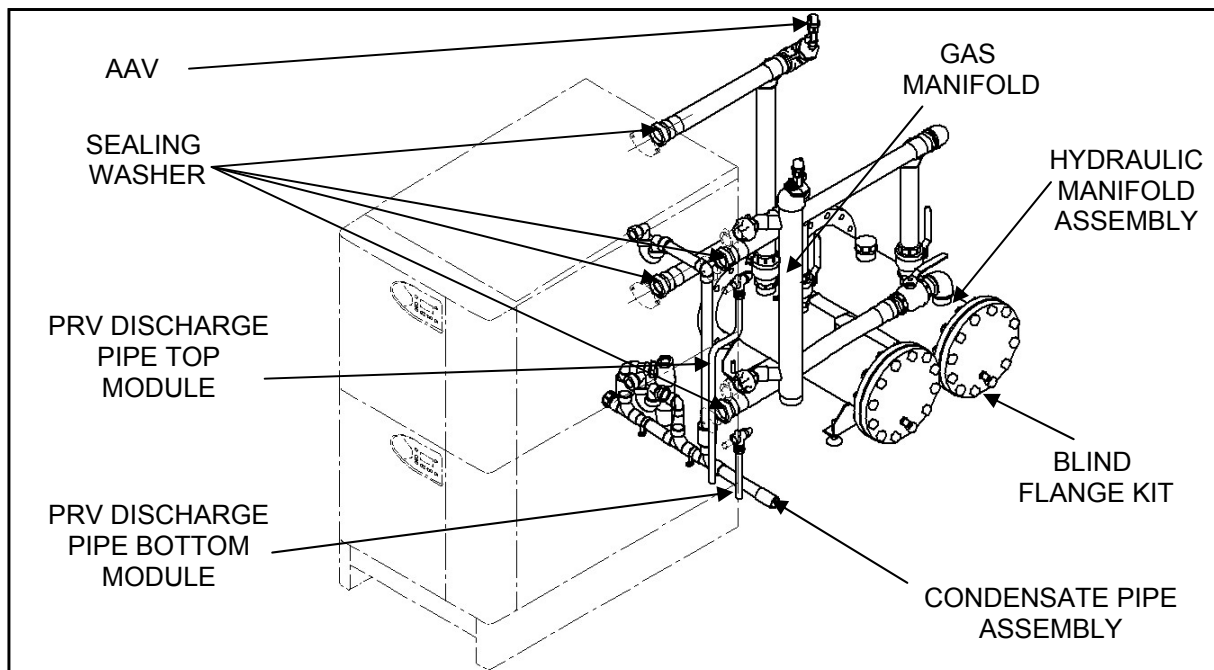
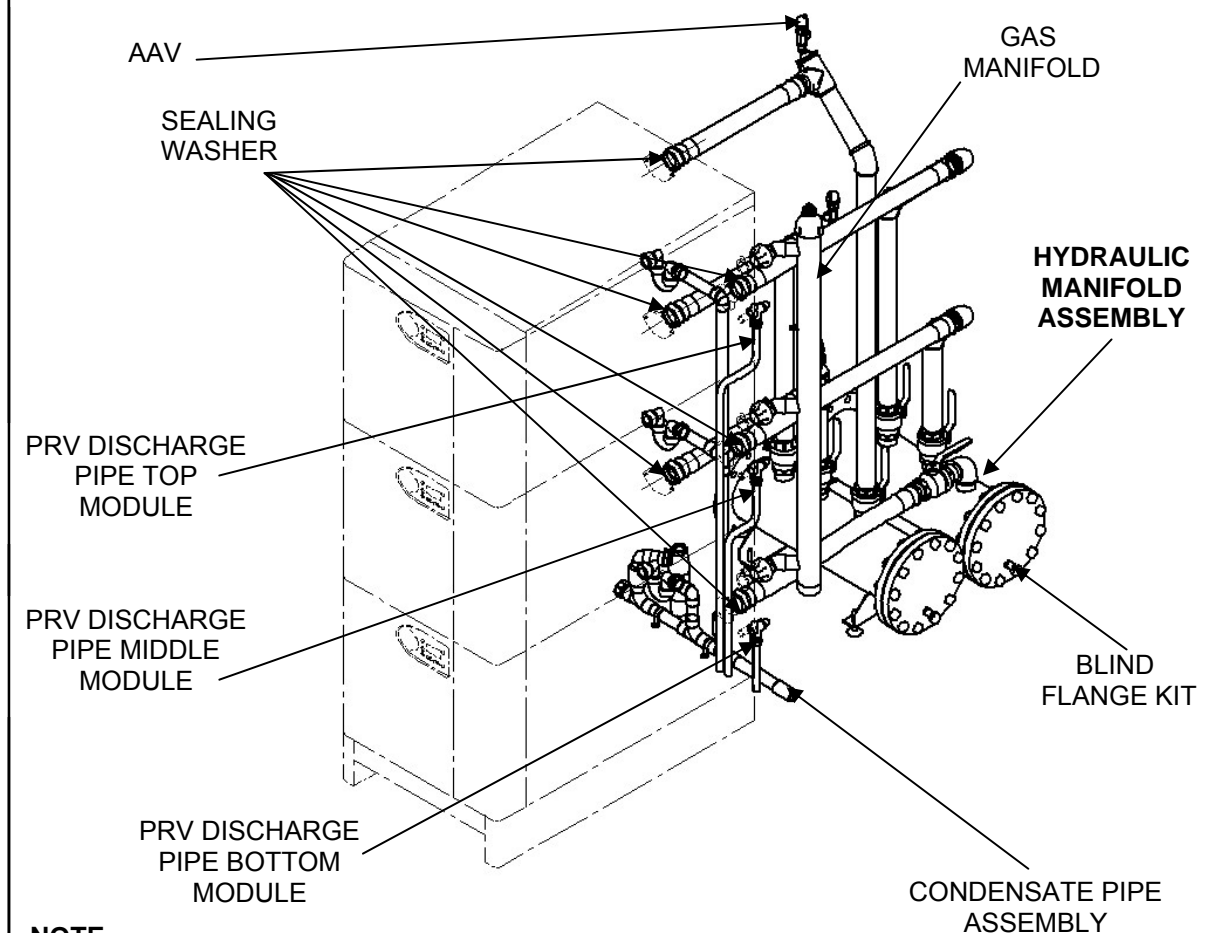


Figure 5.21.A - View Of Pipe Kit 562702199 Assembled To F300V-600 & F350V-700 Boilers



NOTE

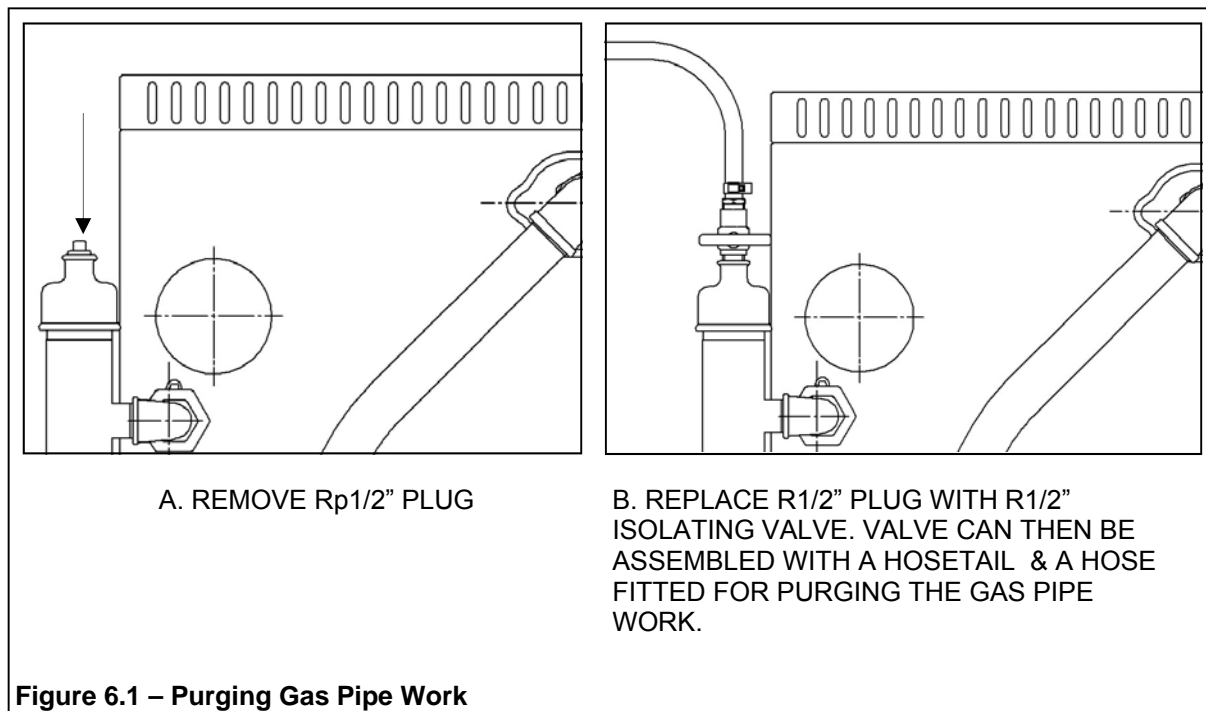
APPLY EN751-1 APPROVED THREAD SEALANT TO GAS INLET PIPE THREADS OF EACH MODULE BEFORE FITTING FEMALE PART OF MAC UNION

Figure 5.21 B - View Of Pipe Kit 562702203 Assembled To F300V-900 & F350V-1050 Boilers.

6.0 TESTING & PURGING GAS PIPE WORK

6.1 Once the gas supply pipe has been connected to the manifold, the gas pipe work must be strength & tightness tested to **IGE/UP/1 & 1A**.

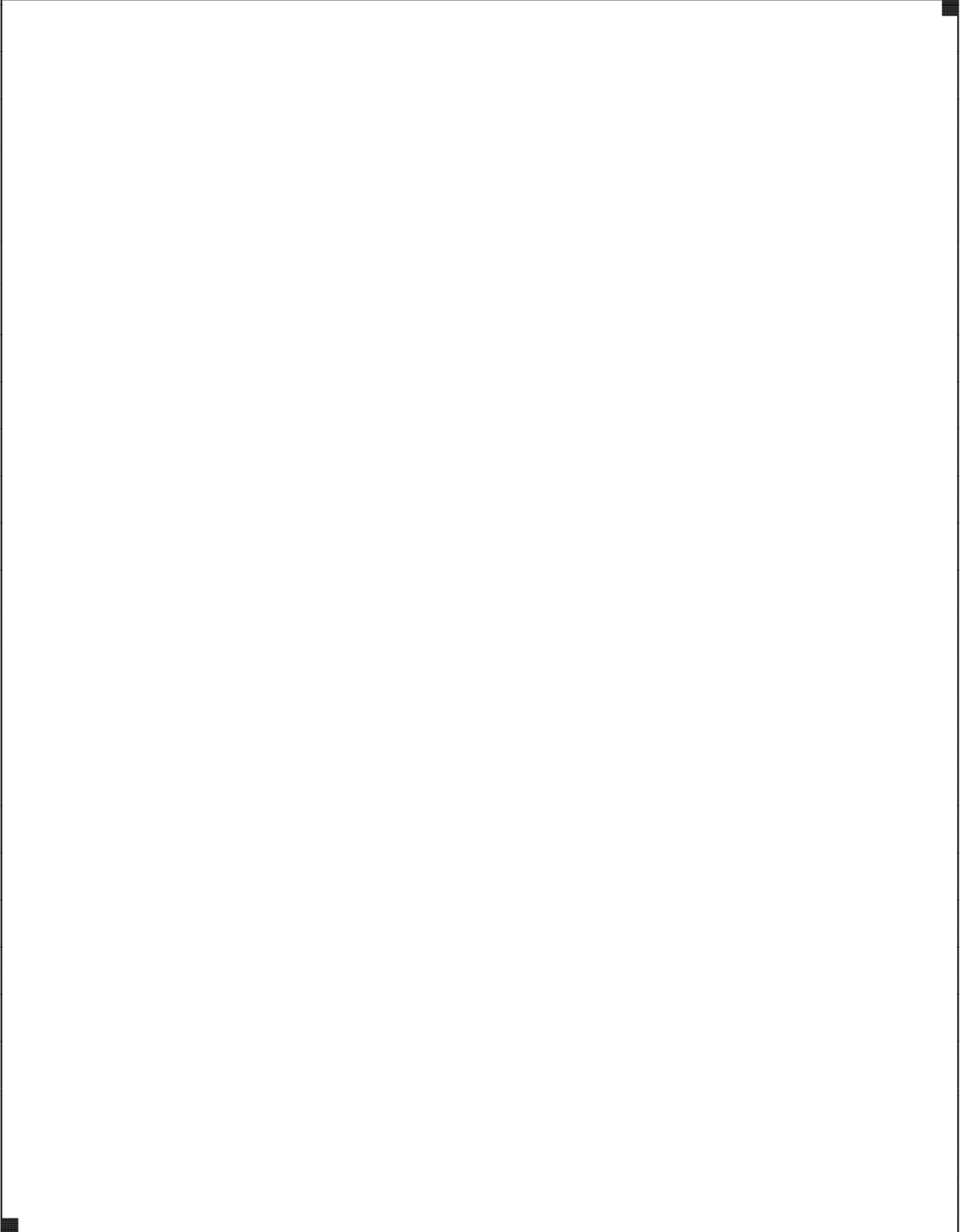
6.2 To purge the gas installation to IGE/UP/1 & 1A an isolating valve (not HHL supply) will need to be fitted instead of the R1/2" plug assembled to the reducing socket at the opposite end to the gas supply pipe. The gas pipe work can then be purged by connecting to this isolating valve. See **Figure 6.1** below.



7.0 FILLING & VENTING HYDRAULIC PIPE WORK

7.1 Pipe kits are pre-assembled with an Automatic Air Vent in line with the flow connection to each boiler module. So that the pipe kit & boilers are vented correctly the system should be filled from the return pipe work. During filling all mini-ball valves on the pipe kits should be open & the AAV vent cap loose. It is recommended that the guidance given in BS6644:2005 is followed & that a check is made with the Local Authority for any specific local requirements.

Notes



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