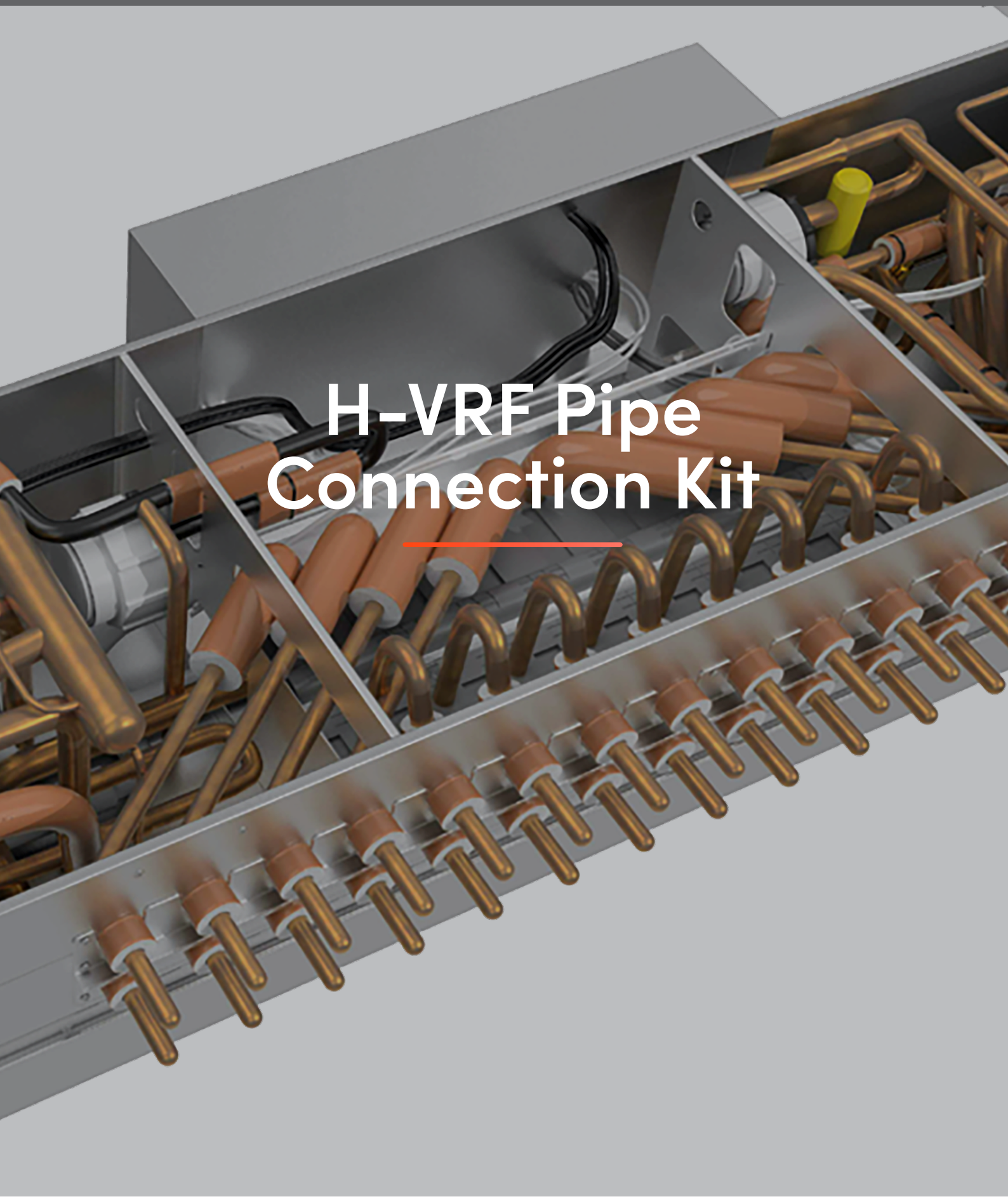
Central Heating
COMMERCIAL



H-VRF Pipe Connection Kit

FAR multitubo systems FERNOX MAKES WATER WORK

System Overview

The Mitsubishi Electric H-VRF system uses water as the heat transfer medium between the HBC box and terminal units. This achieves a significant reduction in the amount of refrigerant charge required, reducing the need for refrigerant leak detection systems. Lower refrigerant volumes are also better for the environment.

The system comprises of a wide range of terminal units and these have specific requirements for the pipe size that must be run to these units. There are 3 ranges;

- 20mm ID single port connection for units Model sizes 10-50
- 32mm ID single port connection for units Model sizes 63-80
- 32mm ID twin port connection for units Model sizes 100-125

The German manufactured Multitubo pipe system supplied by Central Heating New Zealand is an ideal solution for these projects, the Multitubo Composite pipe system is a multi-layer pipe comprising of internal and external PE-RT (Polyethylene Raised Temperature) layers with an internal layer of aluminum. This is a BRANZ appraised (appraisal No. 740) pipe system designed to last in excess of 50 years and is suitable for a wide range of applications, temperatures, and pressures.

Multitubo is widely available in New Zealand from all good plumbing merchants as well as direct from Central Heating New Zealand.

0800 357 1233

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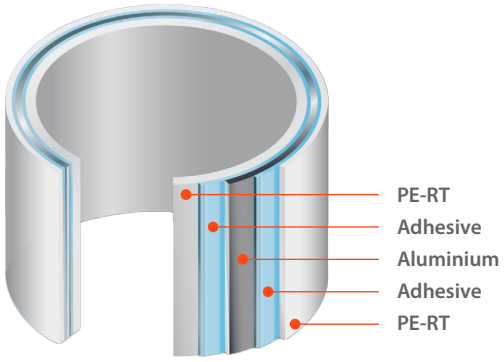


Multitubo Composite Pipe System Advantages:

- No snap-back when bending
- 100% Oxygen-tight
- Low heat expansion
- Form stable (advantage of a metal pipe which Multitubo achieves with the overlapped aluminium layer)
- Easy to form
- Low weight
- No corrosion
- No deposit build-up (advantage of a plastic pipe which Multitubo achieves with the inner layer of PE-RT)

Pipe Techincal Data

The Multitubo pipe system is named and marked by its **outside diameter**, the H-VRF system specifies the **internal diameter** required and we have named our kits using both Multitubo OD sizing and mm internal diameters. The 2 diameters required for the H-VRF system are the MT25 (20mm ID) and MT40 (32mm ID).
The technical data for these pipes is below:

Detail	Unit	MT25	MT40
Pipe dimension (Outside Diameter)	mm	25 x 2.5	40 x 4
Inner dimension (Inner Diameter)	mm	20	32
Material		PE-RT/AL/PE-RT	
Fire classification		Normally inflammable B2 according to DIN 4102 / Euroclass E	
Length, coil (standard)	m	50	25
Straight length (standard)	m	5	5
Weight of pipe	kg/m	0.215	0.507
Water volume	l/m	0.314	0.803
Weight of pipe (filled with water)	kg/m	0.529	1.310
Roughness of surface (inner pipe)	mm	0.0004	
Heat conductivity	W/m x K	0.4	
Expansion coefficient	mm/m x K	0.025	
Min. bending radius (by hand)	mm	125 (5 x d)	-
Min. bending radius (by bending spring)	mm	100 (4 x d)	-
Min. bending radius (by bending tool)	mm	90	160

Non H1/VM3 compliant solution: The MT25 pipe is available in pre-insulated coils with an insulation thickness of 13mm and the MT40 pipe is available in pre-insulated coils with an insulation thickness of 26mm. These are complete with an outer moisture resistant layer creating a vapor proof barrier. This also provides a level of mechanical protection to the pipe and reducing the likelihood of damage to the insulation.
The specifications of the insulation are:

- **MT25 Pipe R value** = 13mm and 0.039W/mK = 0.5m^{2}K/W
- **MT40 Pipe R value** = 26mm and 0.039W/mK = 1.0m^{2}K/W

R value calculated for radial surface not flat sheet.

H1/VM3 compliant solution: The Multitubo pipe is available in bare coils with separate insulation with a thickness of 40mm. These are complete with an outer reinforced foil layer creating a vapor proof barrier. This also provides a level of mechanical protection to the pipe and reducing the likelihood of damage to the insulation.
The specifications of the insulation are:

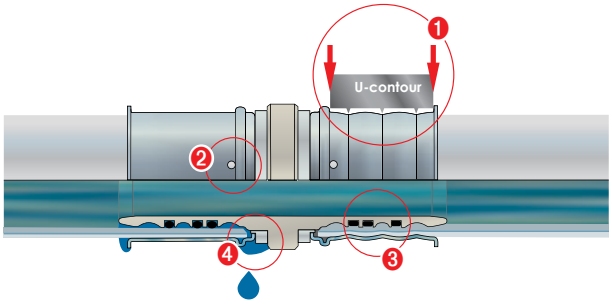
- **MT25 Pipe R value** = 40mm and 0.032W/mK = 2.1m^{2}K/W
- **MT40 Pipe R value** = 40mm and 0.032W/mK = 1.8m^{2}K/W

R value calculated for radial surface not flat sheet.

Pipe Fittings

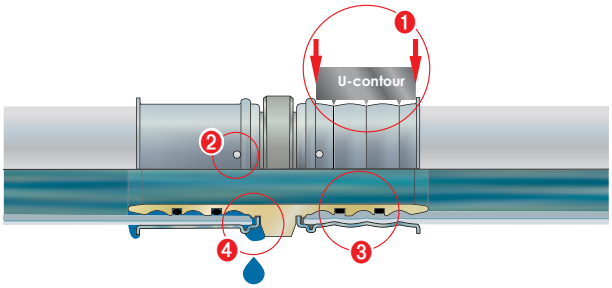
The Multitubo pipe system has 3 fitting options available;

- PPSU - Plastic Press Fittings for MT16 to MT40 (Used as low cost):



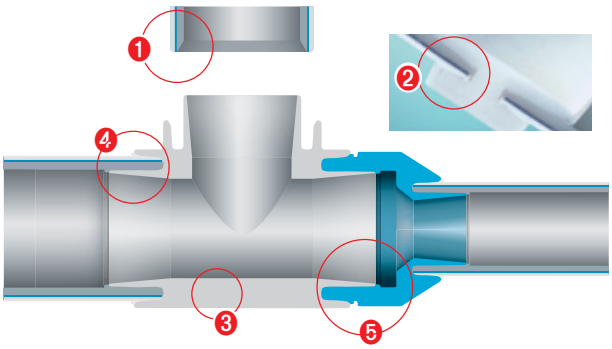
1 – Double pressing jaw guide
2 – Inspection Window for easy check of insertion depth of pipe
3 – Special profile geometry with O-rings made of EPDM
4 – Additional test safety

- Nickle Plated Brass Press Fittings for MT16 to MT40 (Also used for threaded connections):



1 – Double pressing jaw guide 16 mm - 32 mm
2 – Inspection window for easy check of insertion depth of pipe
3 – Special profile geometry with O-rings made of EPDM
4 – Additional test safety

- Fusion Welded Fittings for MT40 to MT63 (Used for larger sizes):



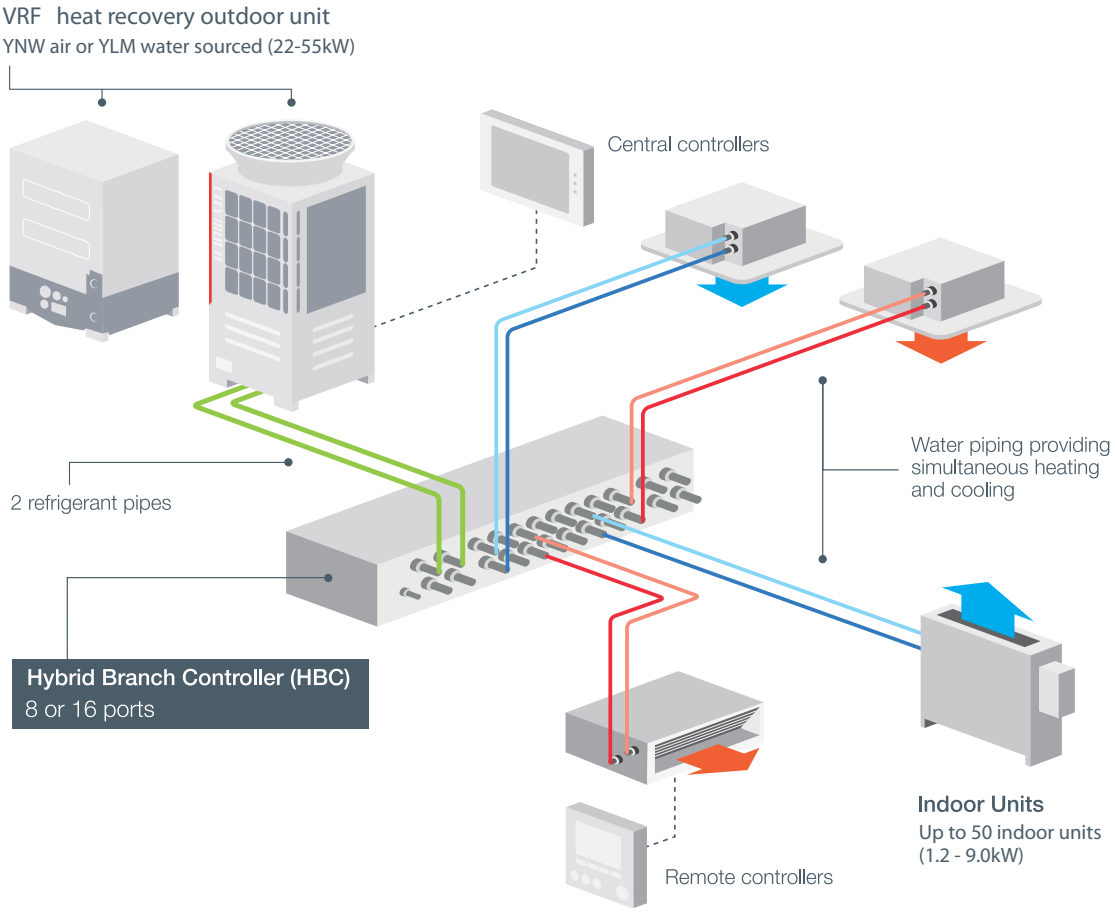
1 – De-burred pipe for optimal flow of material
2 – The pipe holding fully covers the pipe´s end
3 – Fitting body made of PE-RT
4 – Homogenous, hermetic connection
5 – Adaptors are welded in the same way as pipes

In the following pages you will find proposed material lists for each of the connection options.

20mm ID Single Port

The following equipment offer is to allow you to complete a 20mm ID (MT25) pipe connection between the H-VRF fan coil (Model sizes 10-50) unit and HBC box:

Hybrid VRF System Example

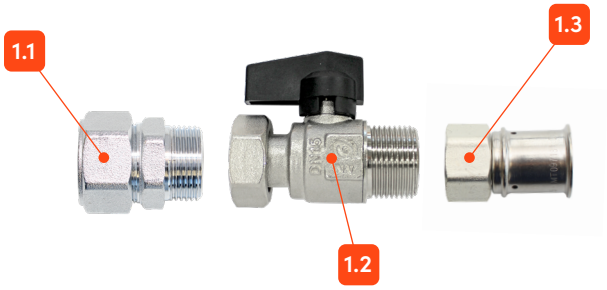


The equipment components suggested will allow you to make the required connections at the HBC box and fan coil.

Pipe - 20mm(MT25) Run

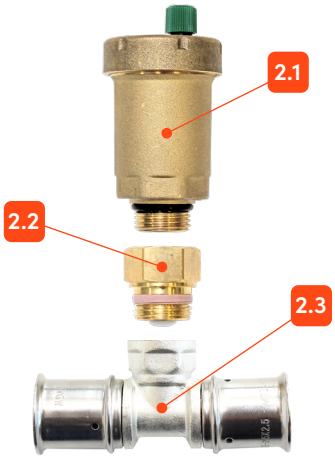
Image	CHNZ Product Code	Description
	MT25IN13-50	MT 25 Composite 13mm Pre-insulated Pipe 50m Coil (20mm id)
	MTPP2525E	MT 25 X 25 Elbow PPSU
	HMHMRF50	Rubber Insulated Munzing Ring 2 Screws
	HMHMRBZ10	Munzing Ring Base Plate ZP 10mm
	STTRM103M	Threaded Rod M10 x 3m Zinc Plated

KIT 1 20mm(MT25) 1 PORT HBC Connection Kit



Ref	CHNZ Product Code	Description	Details	Qty Per Kit
1.1	FAR3422	22mm CU to ¾"	HBC Box Connection	2
1.2	BXCKHT	Isolation Valve ¾" Straight	Straight ¾" isolation valve for HBC box and fan coil end isolation	2
1.3	MT2534FT	MT 25 X 3/4" FT	For connection onto isolation valves at HBC Box end of pipe run	2

KIT 2 20mm(MT25) Air Vent Kit



Ref	CHNZ Product Code	Description	Details	Qty Per Kit
2.1	VAAV	Far Auto Air Vent 1/2"	To be installed at a high point in the pipe work for venting air from the system.	1
2.2	VAAVN	Far Auto Air Vent 1/2" Non-Return Valve	To be installed under the AAV to allow for easy servicing	1
2.3	MT2512FT25	MT 25 X 1 1/2" FT X 25	For the addition of drain and vent points in the pipe work	1

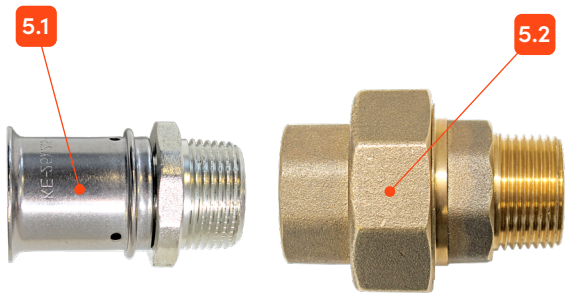
KIT 3 20mm(MT25) Drain Points Kit

Ref	CHNZ Product Code	Description	Details	Qty Per Kit
3.1	MT2512FT25	MT 25 X 1 1/2" FT X 25	For the addition of drain and vent points in the pipe work	1
3.2	DRAINTAP15	Drain/fill Tap 15mm	To be installed at the low point for draining pipe work	1

KIT 4 20mm(MT25) High Wall Connection Kit

Ref	CHNZ Product Code	Description	Details	Qty Per Kit
4.1	MT2534WB	MT 25 X 3/4" Wingback	To fix pipe connection behind unit	2
4.2	TVRT20100-200	Ripple Tube SS 3/4" 100-200mm	For connection onto unit	2
4.3	HMHBN2020	Brass Nipple 20x20mm	For connection onto unit	2

KIT 5 20mm(MT25) Ducted Connection Kit



Ref	CHNZ Product Code	Description	Details	Qty Per Kit
5.1	MT2534MT	MT 25 X 3/4" MT 2	For connection from pipe onto unit	2
5.2	HMHBUMF20	Brass Union Male/Female 20mm 2	To allow pipe break point at unit	2

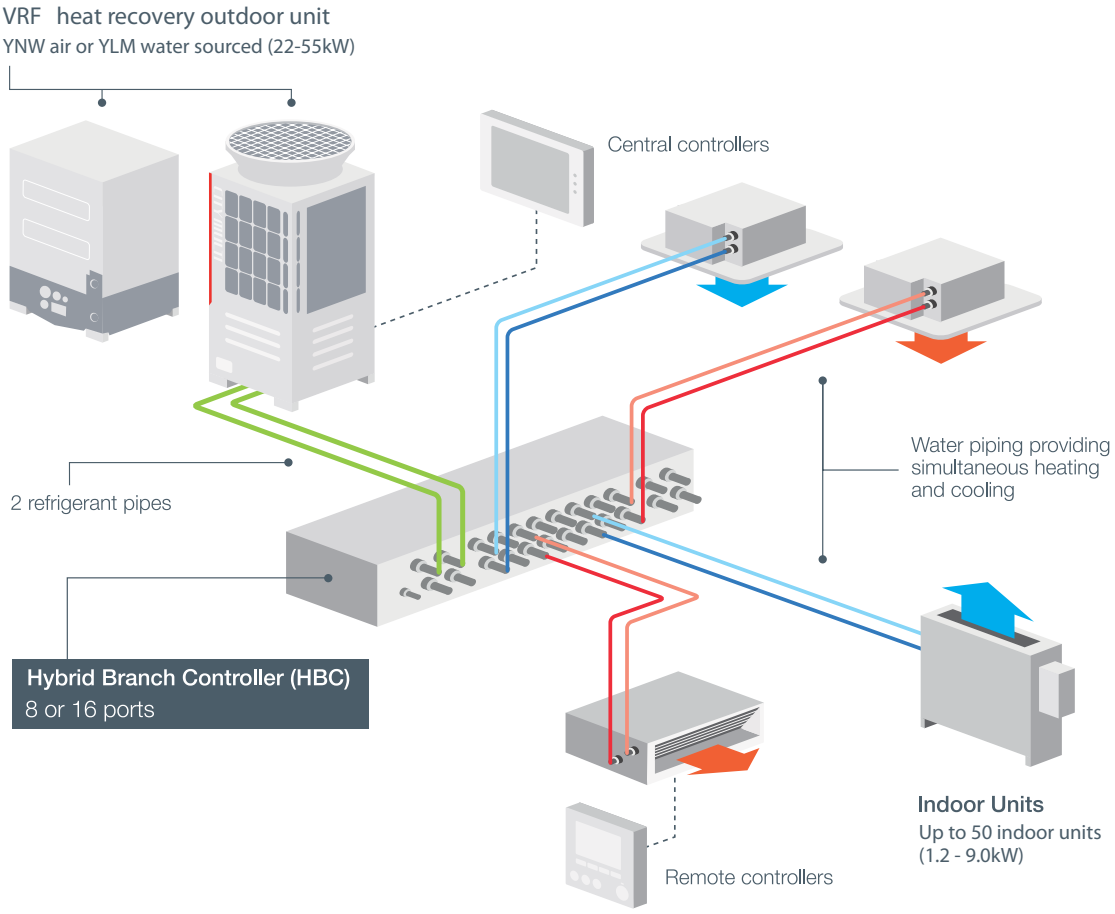
20mm(MT25) Optional Extras

Ref	CHNZ Product Code	Description	Details
	MTPP2525J	MT 25 X 25 Joiner PPSU	For any points where the pipe needs to be cut and joint
	BXCKHT	Isolation Valve ¾" Straight with swivel connection	For isolation of pipe work at Fan Coil
	BXCKHT90	Isolation Valve ¾" 90 Degrees with swivel connection	Angled ¾" isolation valve for HBC box and fan coil end isolation

32mm ID Single Port & 32mm ID Twin Port

The following equipment offer is to allow you to complete a 32mm ID (MT40) single port connection (Model sizes 63-80) or 32mm ID Twin port (Model sizes 100-125) between the H-VRF fan coil unit and HBC box:

Hybrid VRF System Example

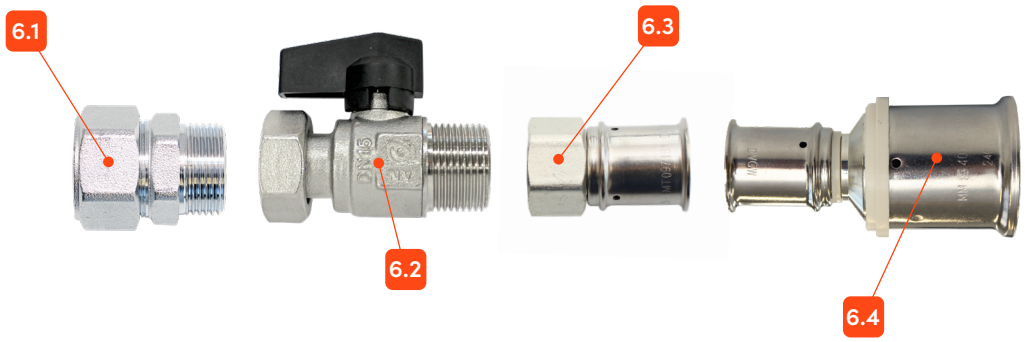


The equipment components suggested will allow you to make the required connections at the HBC box and fan coil.

Pipe - 32mm(MT40) Run

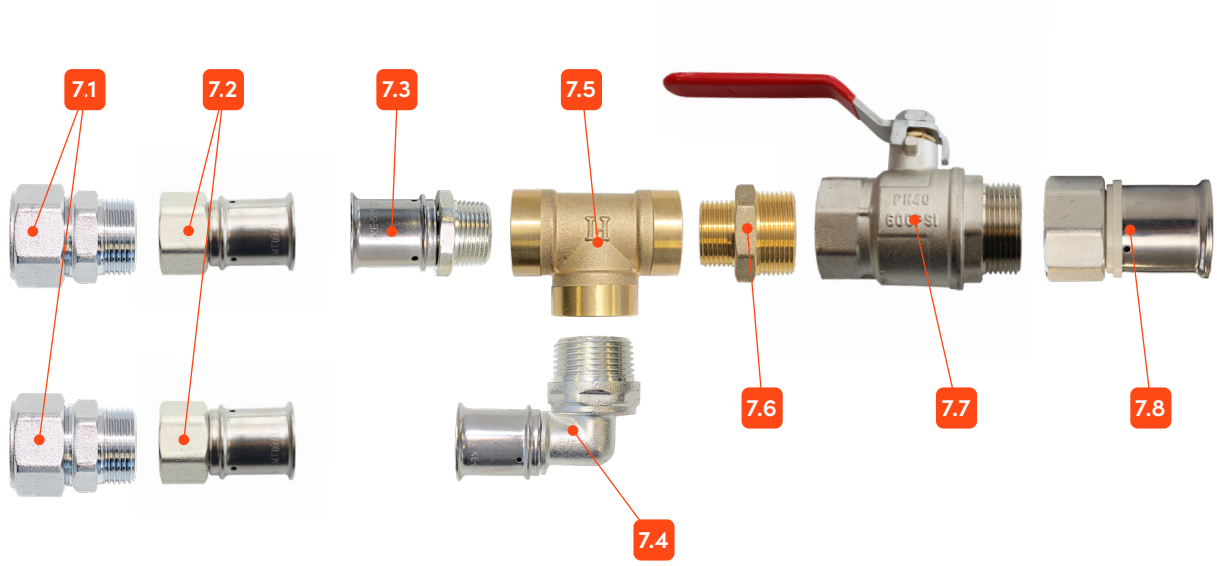
Image	CHNZ Product Code	Description
	MT40IN26-25	MT 40 Composite 26mm Preinsulated Pipe 25m Coil
	MT40-5	Straight lengths of MT40 pipe (Not included as standard)
	MT4040JF	MT 40 X 40 Fusion Joiner
	MTPP4040J	MT 40 x 40 PPSU Joiner
	MT4040EF	MT 40 X 40 Fusion Elbow
	MTPP4040E	MT 40 X 40 PPSU Elbow
	HMHMRF100	Rubber Insulated Munzing Ring 2 Screws
	HMHMRBZ10	Munzing Ring Base Plate ZP 10mm
	STTRM103M	Threaded Rod M10 x 3m Zinc Plated

KIT 6 32mm(MT40) 1 PORT HBC Connection Kit



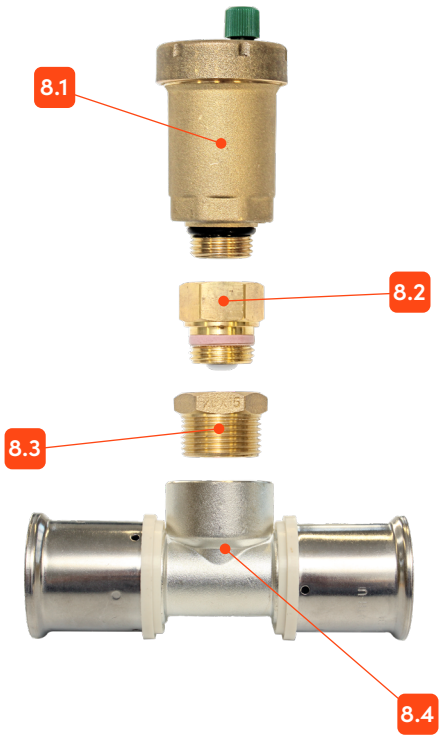
Ref	CHNZ Product Code	Description	Details	Qty Per Kit
6.1	FAR3422	22mm CU to ¾"	HBC Box Connection	2
6.2	BXCKHT	Isolation Valve ¾" Straight	Straight ¾" isolation valve for HBC box and fan coil end isolation	2
6.3	MT2534FT	MT 25 X 3/4" FT	For connection onto isolation valves at HBC Box end of pipe run	2
6.4	MT4025	MT Press-coupling reduced, 40 x 25	For reducing the pipe size	2

KIT 7 32mm(MT40) 2 PORT HBC Connection Kit



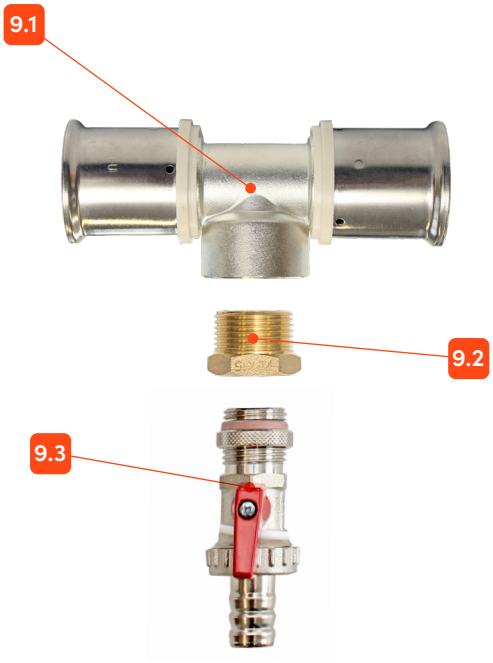
Ref	CHNZ Product Code	Description	Details	Qty Per Kit
7.1	FAR3422	22mm CU to ¾"	HBC Box Connection	4
7.2	MT2534FT	MT 25 X 3/4" FT	For connection onto isolation valves at HBC Box end of pipe run	4
7.3	MT251MT	MT 25 X 1" MT	For connection onto the tee at the HBC box end of the pipe run	2
7.4	MT251MTE	MT 25 X 1" MT Elbow	For connection onto the tee at the HBC box end of the pipe run	2
7.5	HMHBFT25	Brass Female Tee 25mm	To join twin ports into common pipe	2
7.6	HMHBRN3225	Brass Reducing Nipple 32x25mm	To increase ID to 32mm	2
7.7	VB114MF	Isolation Valve G1¼" Straight	For isolation of pipe work at HBC box end of pipe run	2
7.8	MT40114FT	MT Press-coupling 40 114 FT	For connection onto isolation valves at HBC box end of pipe run	2

KIT 8 32mm(MT40) Air Vent Kit



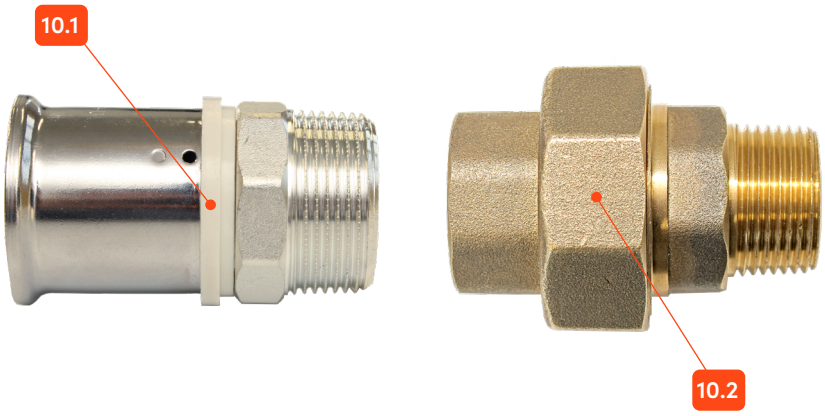
Ref	CHNZ Product Code	Description	Details	Qty Per Kit
8.1	VAAV	Far Auto Air Vent 1/2"	To be installed at a high point in the pipe work for venting air from the system	1
8.2	VAAVN	Far Auto Air Vent 1/2" Non-Return Valve	To be installed under the AAV to allow for easy servicing	1
8.3	HMHBRB2515	Brass Reducing bush 25 x 15mm	For AAV connection into pipe system	1
8.4	MT401FT40	MT Press-coupling Tee 40 1 FT 40	For the addition of the drain and vent points in the pipe work	1

KIT 9 32mm(MT40) Drain Point Kit



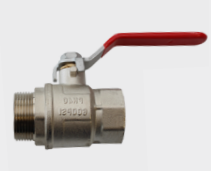
Ref	CHNZ Product Code	Description	Details	Qty Per Kit
9.1	MT401FT40	MT Press-coupling Tee 40 1 FT 40	For the addition of the drain and vent points in the pipe work	1
9.2	HMHBRB2515	Brass Reducing bush 25 x 15mm	For drain connection into pipe system	1
9.3	DRAINTAP15	Drain/fill Tap 15mm	To be installed at the low point for draining pipe work	1

KIT 10 32mm(MT40) Ducted Connection Kit



Ref	CHNZ Product Code	Description	Details	Qty Per Kit
10.1	MT40114MT	MT 40 X 1 1/4" MT	For the connection onto isolation valves at terminal unit end of pipe run	2
10.2	HMHBUMF32	Brass Union Male/Female 32mm	To allow pipe break point at unit	2

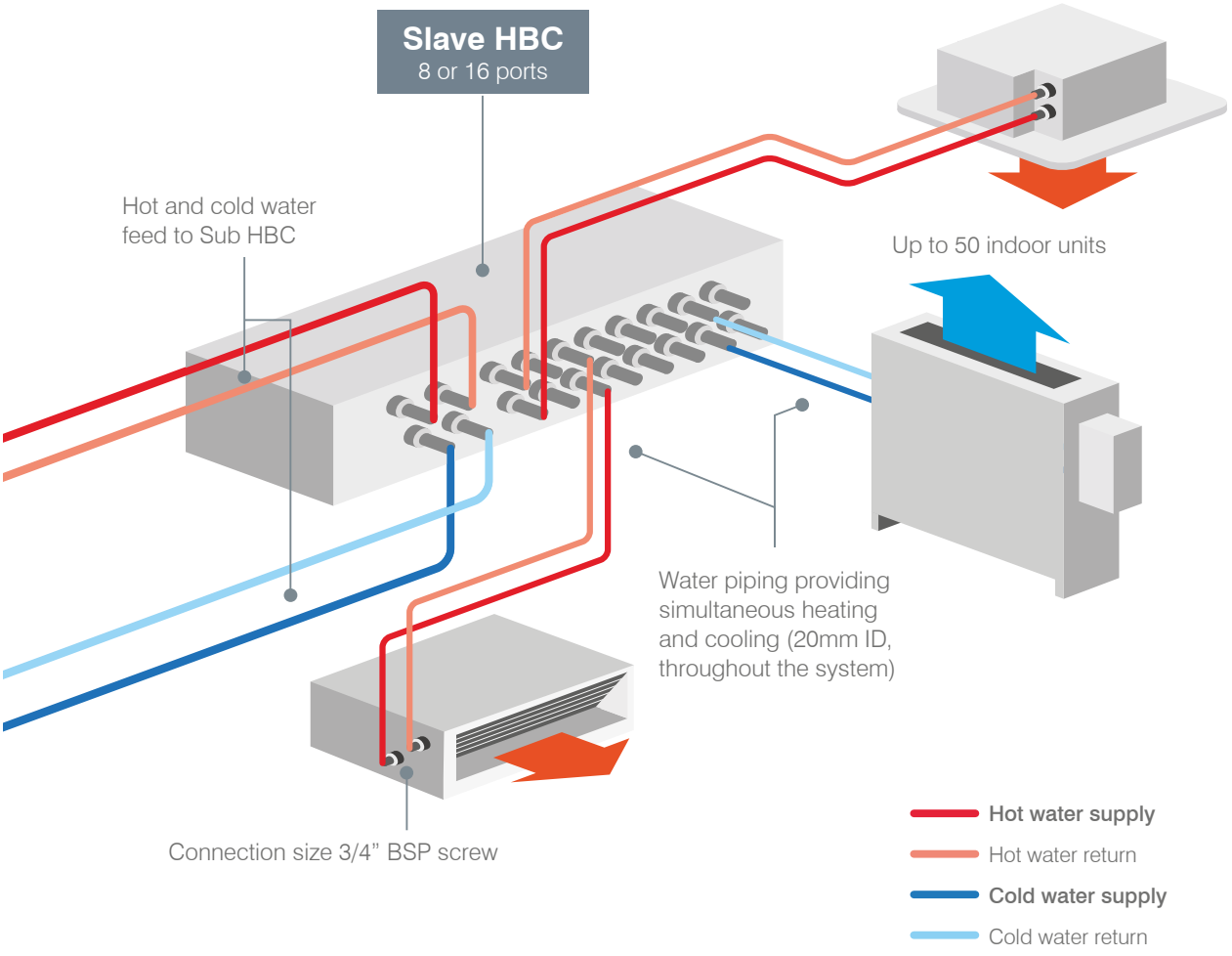
32mm(MT40) Optional Extras

Ref	CHNZ Product Code	Description	Details
	MT4040JF	MT 40 X 40 Fusion Joiner	For any points where the pipe needs to be cut and joint
	MTPP4040J	MT 40 X 40 Joiner	For any points where the pipe needs to be cut and joint
	VB114MF	Isolation Valve G1¼" Straight	For isolation of pipe work at HBC box end of pipe run

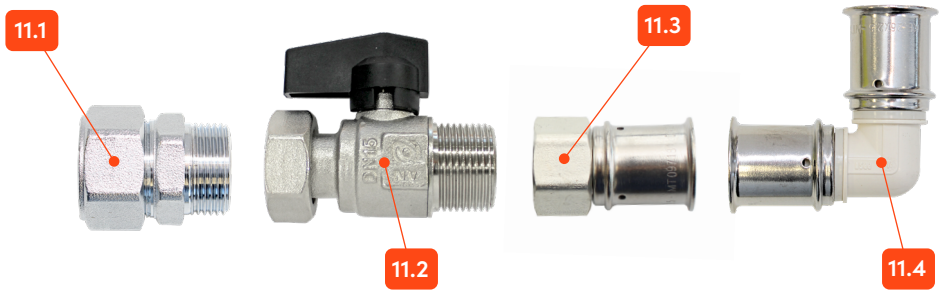
SLAVE HBC BOX

The following equipment offer is to allow you to complete a 20mm ID (MT25) twin port connection between the main HBC box and Slave HBC box:

Slave System Example



KIT 11 20mm(MT25) Sub-HBC Connection Kit

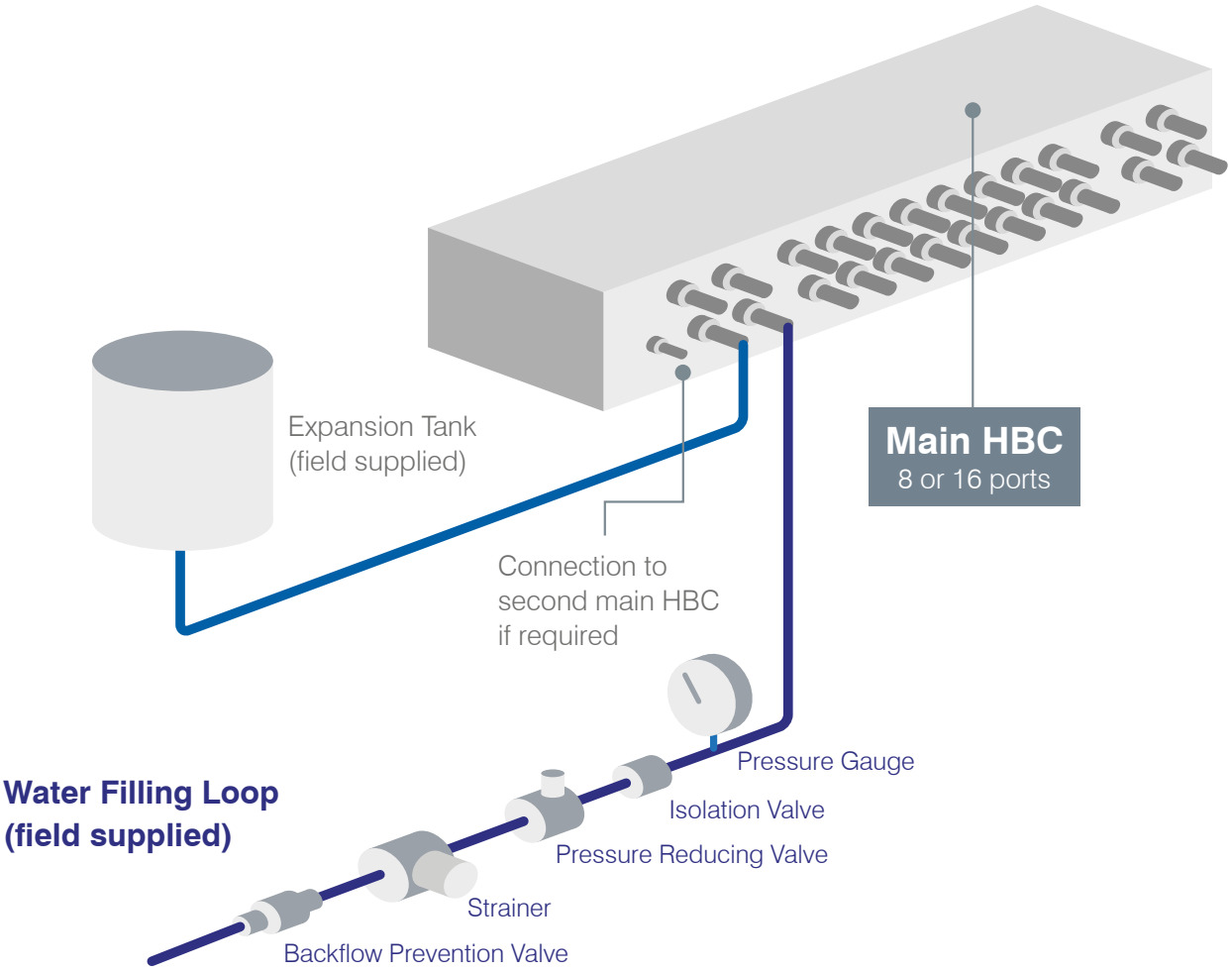


Ref	CHNZ Product Code	Description	Details	Qty Per Kit
11.1	FAR3422	22mm CU to ¾"	HBC Box Connection	8
11.2	BXCKHT	Isolation Valve ¾" Straight	Straight ¾" isolation valve for HBC box and fan coil end isolation	8
11.3	MT2534FT	MT 25 X 3/4" FT	For connection onto isolation valves at HBC Box end of pipe run	8
11.4	MTPP2525E	MT 25 X 25 Elbow PPSU	For any tight bends in the pipe route	8

FILLING AND EXPANSION

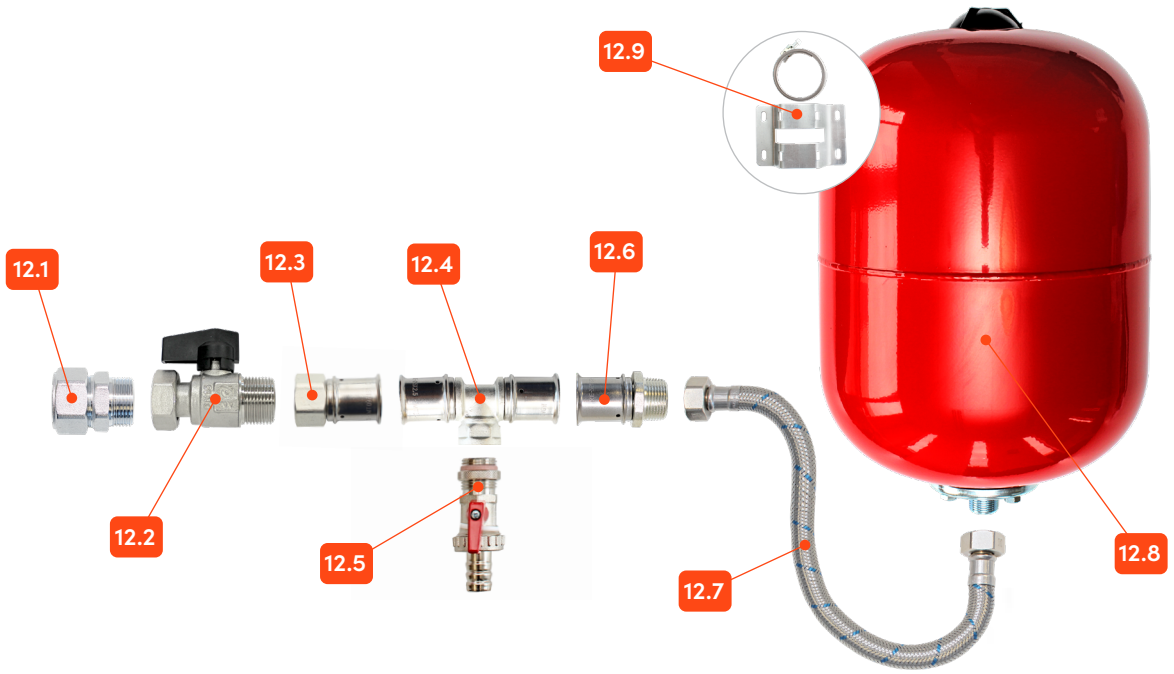
The following equipment offer is for the filling and expansion vessel options for a H-VRF fan coil and HBC box system:

Water Filling Loop Example



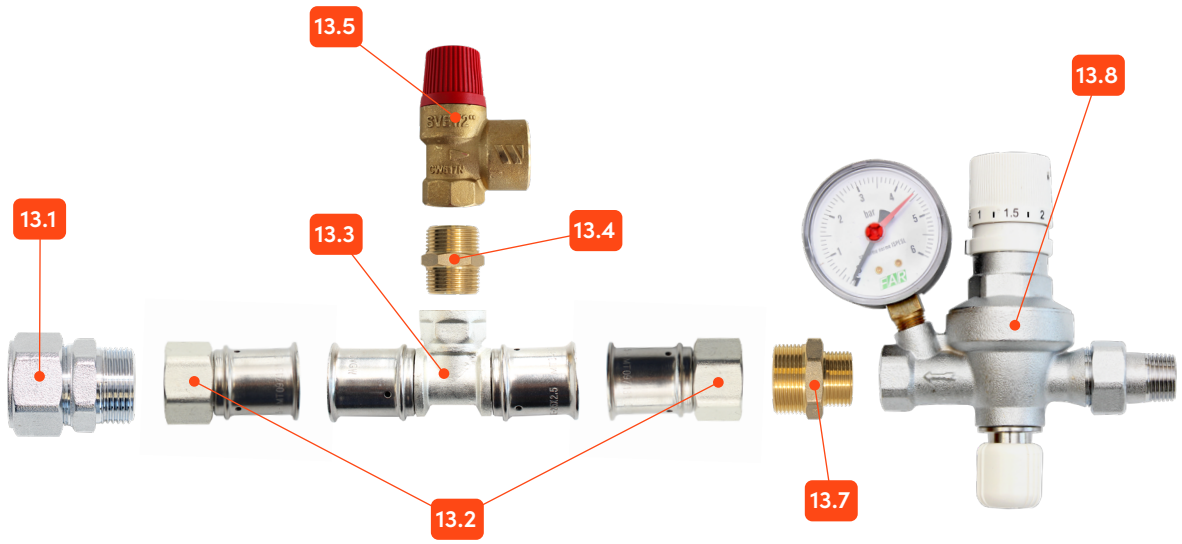
The equipment components suggested will allow you to complete and commission an H-VRF system.

KIT 12 Expansion Vessel Kit



Ref	CHNZ Product Code	Description	Details	Qty Per Kit
12.1	FAR3422	22mm CU to ¾"	HBC Box Connection	1
12.2	BXCKHT	Isolation Valve ¾" Straight	Straight ¾" isolation valve for HBC box and fan coil end isolation	1
12.3	MT2534FT	MT 25 X 3/4" FT	For connection onto isolation valves at HBC Box end of pipe run	1
12.4	MT2512FT25	MT 25 X 1 1/2" FT X 25	For the addition of drain and vent points in the pipe work	1
12.5	DRAINTAP15	Drain/fill Tap 15mm	To be installed at the low point for draining pipe work	1
12.6	MT2534MT	MT 25 X 3/4" MT	For connection onto isolation valves at terminal unit end of pipe run	1
12.7	HMHFH20400	Flexible Hose StSt 20x400mm	For connection onto expansion vessel (other lengths on request)	1
12.8	EV5L	Expansion Vessel Pot 5L	**Select a suitable sized expansion vessel for your system** Non-potable expansion vessel to maintain correct system pressure at normal operating conditions	1
	EV8L	Expansion Vessel Pot 8L		
	EV12L	Expansion Vessel Pot 12L		
	EV18L	Expansion Vessel Pot 18L		
	EV24L	Expansion Vessel Pot 24L		
	EV50L	Expansion Vessel Pot 50L		
12.9	EVB	Expansion Vessel Bracket	For mounting of expansion vessel	1

KIT 13 Fill Set Kit

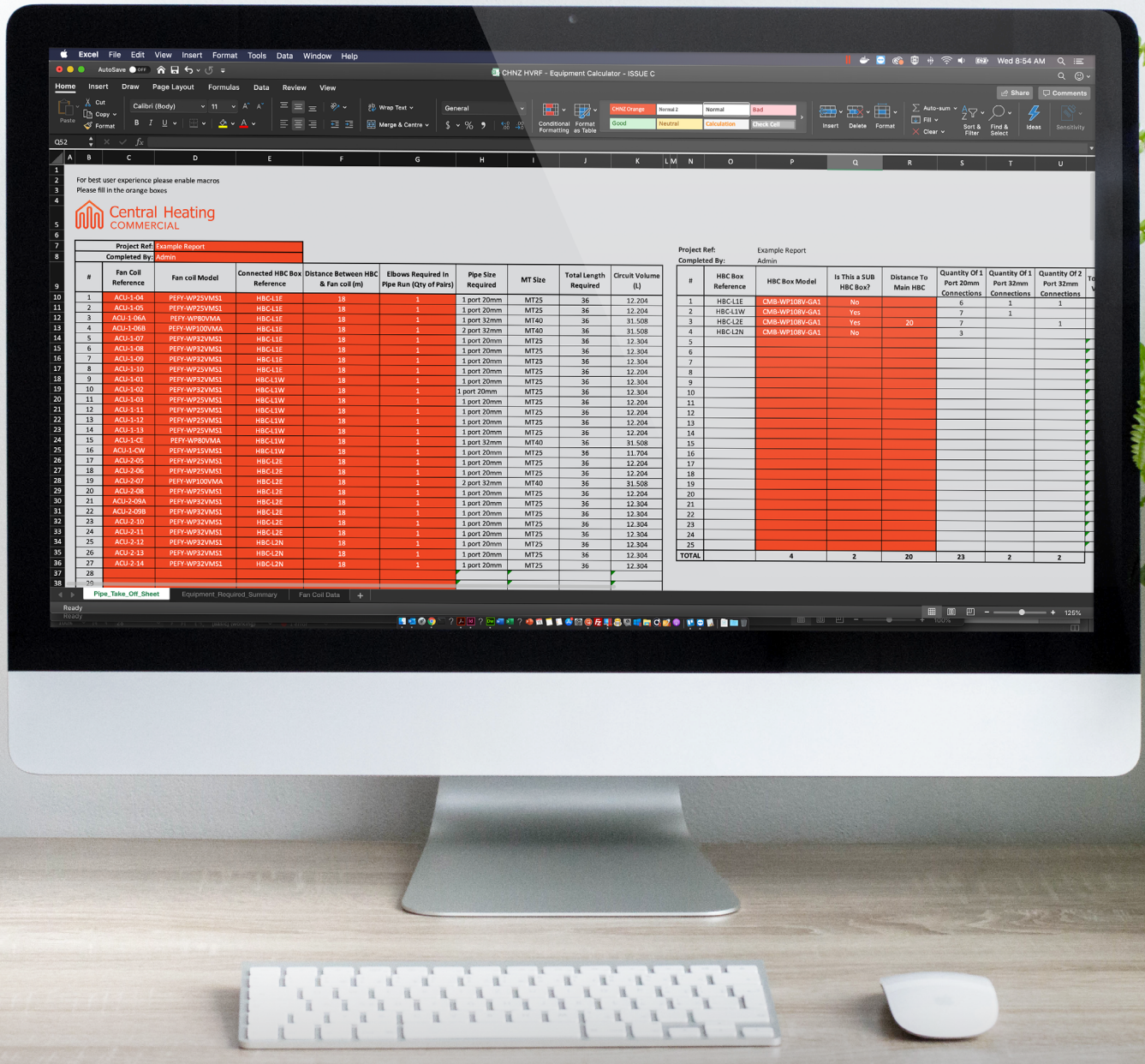


Ref	CHNZ Product Code	Description	Details	Qty Per Kit
13.1	FAR3422	22mm CU to ¾"	HBC Box Connection	1
13.2	MT2534FT	MT 25 X 3/4" FT	For connection onto isolation valves at terminal unit end of pipe run	2
13.3	MT2512FT25	MT 25 X 1 1/2" FT X 25	For the addition of drain and vent points in the pipe work	1
13.4	HMHBHN15	Brass Hex Nipple 15mm	For connection of pressure relief valve	1
13.5	VPRESRELF	Pressure Relief 1/2" x 3/4" 3 Bar	To relive excessive system pressure	1
13.6	HMHBRN2015	Brass Reducing Nipple 20x15mm	for connection of auto fill valve	1
13.7	VFILL	Auto Filling Valve & Gauge 15mm	For filling an maintaining a constant pressure in the system (includes isolation valve, pressure reducing valve, pressure guage, non-return valve and filter)	1

SELECTION SOFTWARE

Central Heating New Zealand have developed an in house selection software so that we can easily and accurately complete a take-off and quote for all of the materials required for these systems, providing you with confidence that you will not run short in the installation.

Please contact us on **0800 357 1233** or at **commercial@centralheating.co.nz** for a quote.



HIRE TOOLS

HIRE

Press Tool Kit

Our Klauke Mini MAP press tool kit is available for hire. This tool is used for the installation for 20mm ID units. The kit is supplied with jaws for 16-32mm OD Multitubo fittings as well as pipe reamers for preparation of the pipe.

HIRE

Press Tool Kit (for larger diameter)

Our Rems Akku press tool kit is available for hire. This tool is used for the installation for both 20mm ID and 40mm ID units. The kit is supplied with jaws for 16-40mm OD Multitubo fittings as well as pipe reamers for preparation of the pipe.

Hire tools are available from Central Heating New Zealand please get in touch with us on **0800 357 1233.**

TERMS OF TRADE

Please visit the link below for our terms of trade:
commercial.centralheating.co.nz/terms

WARRANTY

Please visit the link below for our warranty documentation:
commercial.centralheating.co.nz/warranty

02/25 - V6

Consulting Engineers

Central Heating New Zealand has more than 15 years experience working in close collaboration with engineering consultants, architects and design engineers.

Our draughting, engineering, and technical support teams are on hand to help you solve complex industry problems in a timely and cost-effective manner. They will work closely with you to gain a better understanding of your project to determine how our product range can provide a heating solution that meets your client's requirements.

New Zealand's Experts

Since 2001, Central Heating New Zealand has been raising the standard of heating in Kiwi homes and businesses. We design every central heating system with the unique needs of the customer in mind to achieve the best heating solution possible each and every time.

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