

# TERRAIN



## Terrain Soil and Waste

### Installation Guide



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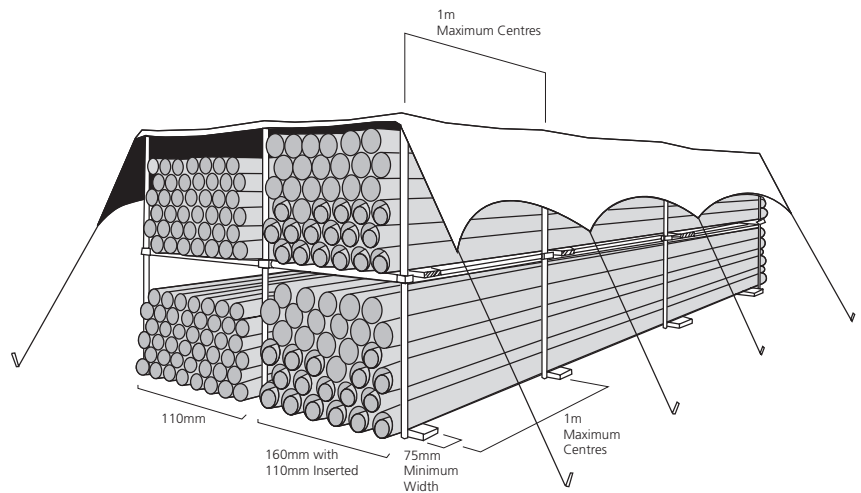
## GOOD SITE PRACTICE

### Handling

- Take all reasonable care when handling PVC-u, particularly in very cold conditions when the impact strength of the material is reduced
- Do not throw or drop pipes, or drag them along hard surfaces
- In case of mechanical handling, use protective slings and padded supports. Metal chains and hooks should not make direct contact with the pipe

### On-site storage

- Stack pipe lengths:
  - either on a flat base
  - or on level ground
  - or on 75mm x 75mm timber at 1 metre maximum centres
- Provide side support with 75mm wide battens at 1m centres (*Fig.1*)
- Maximum stack (normal conditions): seven layers high
- Ideally, stacks should contain one diameter pipe size only. Where this is not possible, stack largest diameter pipes at base of stack. Small pipes may be nested inside larger pipes
- If stored in the open for long periods or exposed to strong sunlight, cover the stack with opaque sheeting
- Store fittings under cover. Do not remove from cartons or packaging until required
- Store solvent cement and cleaning fluid in a cool place out of direct sunlight and away from any heat source



*Fig.1 Pipe stacking*

### Storage in hot climates

- Ultra-violet light can affect pipes and fittings: pipe colour may change and rubber seals may be degraded
- Accordingly:
  - store all materials in well-ventilated, shady conditions
  - do NOT expose to direct sunlight
  - keep fittings in original packaging until required for use
- Maximum stack (hot conditions): six layers high

### Site safety

- The relevant regulations detailed in the Health & Safety at Work Act 1974, and Construction (Design & Management) Regulations 1995, must be adhered to on site
- COSHH data sheets are available on request

## JOINTING TECHNIQUES

### General information

To achieve effective reliable joints

- Ensure that pipes are square cut with a fine-tooth hand saw
- De-burr cut-ends of pipes with a medium file or rasp

#### For solvent-weld joints

- Ensure that all pipes and fittings are cleaned with **9101 Cleaning Fluid** before applying cement
- After applying **9100 Liquid Weld** (solvent cement), initial bonding is achieved within 15 seconds. However, the joint should not be disturbed for 10 minutes

**CAUTION:** Closely follow directions for use of solvent cement as printed on the container label. **ENSURE GOOD VENTILATION OF WORKING AREAS**

#### When forming seal ring joints

- Lubricate pipes and fittings with **9136 Silicone Lubricant** as instructed
- Chamfer cut-ends of pipes to approximately 45° for 2/3 of the pipe wall thickness. (Do not chamfer to a knife edge)

### Solvent cement jointing (liquid weld)

APPLICATION RANGE:

100-Solvent



100P-PushFit



200-Solvent



500-Overflow



Fig.2a Preparing pipe

**Step 1** – Cut pipe square, de-burr and clean mating surfaces with 9101 Cleaning Fluid (Fig.2a) using a dry, clean, natural fibre cloth (NOT synthetic)

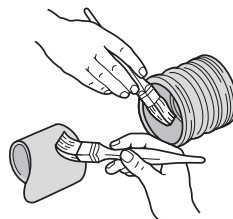


Fig.2b Preparing pipe

**Step 2** – Coat mating surfaces with **9100 Liquid Weld** (solvent cement), using a clean brush (Fig.2b) (Replace lid on container to prevent evaporation of cement)

**NOTE:** Use a 12mm brush (or larger) for pipe sizes over 50mm diameter

**Step 3** – Assemble joint immediately, removing any excess cement with a clean rag. Initial set: 10 minutes. Final set: 12 hours

**CAUTION:** Closely follow directions for use of solvent cement as printed on the container label. **ENSURE GOOD VENTILATION OF WORKING AREAS**

### Conversion of solvent weld socket to seal ring joint

APPLICATION RANGE:

100-Solvent



Under normal use, fit 109 adaptor to upstream socket of fitting only



Fig.3a Cleaning mating surfaces

**Step 1** – Clean mating surfaces with 9101 Cleaning Fluid (Fig.3a) using a dry, clean, natural fibre cloth (NOT synthetic)



Fig.3b Fitting seal ring

**Step 2** – Fit ring seal into 109 collar (Fig.3b)

## ESTIMATING GUIDE: Terrain cleaning fluid, liquid weld, lubricants

		PIPE SIZES & NUMBER OF JOINTS ACHIEVABLE*					
		32mm	40mm	50mm	82mm	110mm	160mm
CONTENTS							
9101 Cleaning Fluid	125ml	80	80	80	30	20	10
	250ml	160	160	160	60	40	20
9100 Liquid Weld <small>solvent cement</small>	30ml	10	10	10	3	2	1
	125ml	27	27	27	10	7	3
	250ml	55	55	55	20	15	7
9136 Lubricant	50gm	80	60	50	40	30	20
	250gm	400	300	250	200	150	100

\*for guidance only: approximate number allowing for wastage

## JOINTING TECHNIQUES *(continued)*

### Conversion of solvent weld socket to seal ring joint *(continued)*

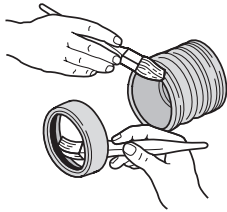


Fig.3c Applying cement

**Step 3** – Carefully apply liquid weld (solvent cement) to mating surfaces (Fig.3c)

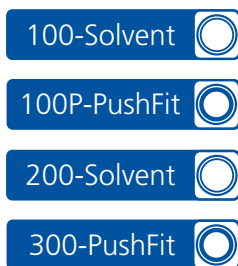


Fig.3d Assembling/applying pressure

**Step 4** – Assemble immediately, applying firm, even pressure until collar is correctly positioned (Fig.3d)

### Seal ring jointing

#### APPLICATION RANGE:



**REQUIREMENT:** To create an expansion gap at a pipe joint (12mm for soil; 6mm for waste sizes) to allow pipes to expand without stressing the pipework

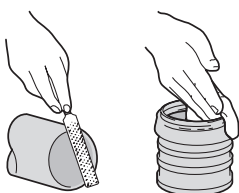


Fig.4a Filing pipe/lubricating seal

**Step 1** – File square cut pipe to provide 45° chamfer. (Do not chamfer to a knife edge.) Lubricate rubber seal with 9136 Silicone Lubricant (Fig.4a)

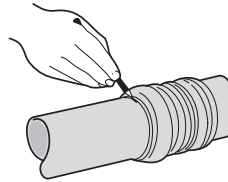


Fig.4b Pushing in pipe/marking pipe

**Step 2** – Push pipe fully into socket. Mark pipe along edge of socket (Fig.4b)

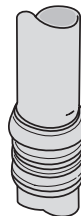


Fig.4c Pipe withdrawn by 12mm

**Step 3** – Withdraw pipe until mark is 12mm from socket (6mm for waste sizes) to provide required expansion gap (Fig.4c)

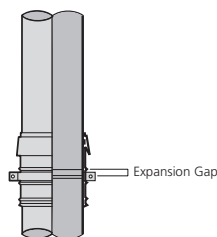
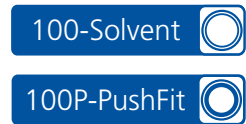


Fig.4d Expansion gap

**Step 4** – Anchor the expansion joint with a pipe fixing bracket OR (if not practical) anchor a fitting within 1 metre of the joint on the downstream side of the expansion fitting (Fig.4d)

### Slip coupling

#### APPLICATION RANGE:



Applicable to: 111.S and 111.SP Slip Coupler

**PURPOSE:** To enable additional fittings to be inserted into existing drainage runs or to insert replacement pipe section(s) where damage has occurred

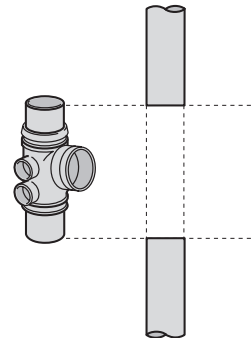


Fig.5a Cut out existing pipe

**Step 1** – Cut out section of existing pipe of sufficient length to allow insertion of new assembly plus 12mm, to allow for a 6mm expansion gap at both joints (Fig.5a)

**Step 2** – Chamfer pipe ends over which seal ring of Slip Coupler will be pushed

**Step 3** – Apply 9136 Silicone Lubricant to pipe ends and to seal ring of Slip Coupler

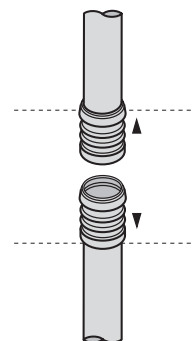


Fig.5b Sliding on the Slip Couplers

**Step 4** – Slide Slip Couplers over spigot ends of the existing pipework (Fig.5b)

## JOINTING TECHNIQUES (continued)

### Slip Coupling (continued)

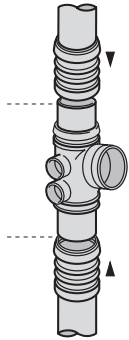


Fig.5c Initial assembly

**Step 5** – Assemble new unit with a short length of pipe in appropriate sockets (Fig.5c)



Fig.5d Placing new fitting in position

**Step 6** – Line up the new fitting in prepared position within existing pipe run. (Fig.5d)

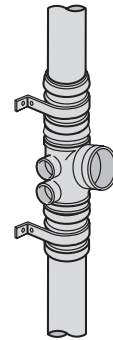


Fig.5e Forming the joints

**Step 7** – Slide back the Slip Couplers to form the joints. Secure each Slip Coupler with a fixing bracket (Fig.5e)

## MAKING OFFSETS

### Offsets on-site

#### APPLICATION RANGE:

100-Solvent 

100P-PushFit 

REQUIREMENT: To offset soil pipe run (e.g. to by-pass a gutter)

- Created on-site with a length of **100 or 100P SOIL pipe** and **101, 101P, 107 & 107P bends**

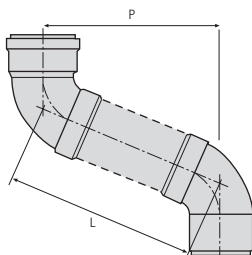


Fig.6a Offset pipe

**Step 1** – Measure projection (P) required to take pipe past obstruction

**Step 2** – Determine length of pipe required, noting minimum offsets possible (Fig.6b)

**Step 3** – Square-cut pipe length and de-burr cut ends

**Step 4** – Solvent-weld into standard bend or offset bend sockets (see solvent cement jointing page 3)

Fig.6b

Minimum offsets possible using standard bends			
Top Part Number	Bottom Part Number	L Overall	P
107.3.92	107.3.92	138	138
107.4.92	107.4.92	167	167
107.4.135	107.4.135	127	90
107.6.135	107.6.135	155	110
101.3.92	101.3.92	200	302
101.4.92	101.4.92	158	260
101.6.92	101.6.92	362	514
101.4.104	101.4.104	156	250
101.4.112	101.4.112	128	118
101.3.135	101.3.135	50	107
101.4.135	101.4.135	51	108
101.6.135	101.6.135	88	170
107P.4.92	107P.4.92	262	262
101P.3.92	101P.3.92	270	270
101P.4.92	101P.4.92	339	339
101P.6.92	101P.6.92	350	350
101P.4.112	101P.4.112	288	266
107P.3.135	107P.3.135	125	88
107P.4.135	107P.4.135	161	114
107P.6.135	107P.6.135	190	134
101P.4T.112	101P.4B.112	146	135



## PIPEWORK SUPPORT AND EXPANSION CONTROL

### General information

- All pipework must be adequately supported whether vertical or horizontal
- Plastic pipework expands and contracts with changes in temperature – whether ambient temperature or from the nature of the discharge through the pipework. Expansion joints must therefore be provided to accommodate such thermal movement (see table below for maximum distances between expansion joints)
- Pipe brackets must be used to anchor expansion joints. Intermediate support must also be provided to steady pipework between these points

- Horizontal pipework requires more frequent support than vertical pipework (for example, soil stacks)
- On long suspended soil pipe runs (e.g. in basement areas), a thermal movement limiter should be installed to control the effects of thermal expansion (see page 10)
- Pipework should always be supported close to any change of direction (e.g. bends or branches)
- In multi-storey buildings, it is recommended that thermal movement is controlled by an expansion joint at each floor level

*NOTE: It is recommended that only steel brackets (i.e. NOT plastic brackets) be used on interior soil stacks which are subject to fire regulations*

- Any point where pipework passes through a floor or wall and is made good or fire stopped must be treated as a fixed point for the purposes of determining positions of expansion joints
- An expansion joint is required between any two fixed points more than 1 metre apart
- Thermal expansion of upper section of soil stack may be allowed through roof to vent cowl (see installation of weathering slate, page 11) provided the stack pipe is allowed to move freely through the roof

### Support and expansion distances

	MAXIMUM SUPPORT DISTANCE		MAXIMUM DISTANCE
	Vertical	Horizontal	Between expansion joints
<b>PIPE SIZE – SOIL</b>			
82mm	2m	0.9m	4m
110mm	2m	1m	4m
160mm	2m	1m	4m
<b>PIPE SIZE – WASTE</b>			
32mm	1.2m	0.5m	2m
40mm	1.2m	0.5m	2m
50mm	1.2m	0.9m	2m

*NOTE: 1 metre maximum between any two fixed points without an expansion joint*

## PIPEWORK SUPPORT AND EXPANSION CONTROL (*continued*)

### Soil pipe brackets

#### APPLICATION RANGE:

100-Solvent 

100P-PushFit 

**PURPOSE:** To support pipework and fittings, create fixed points, and control thermal movement

#### To support pipework

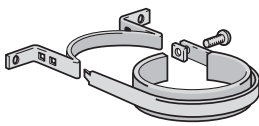


Fig. 7a 140 Bracket components

**Step 1** – Position rear section of bracket at required support position (see recommended distances table, page 6)

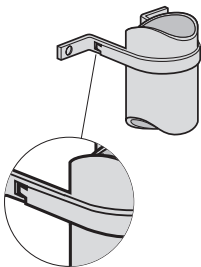


Fig. 7b 140 Bracket on pipe

**Step 2** – Locate strap tongue in back square hole and place bolt in round hole (Fig. 7b)

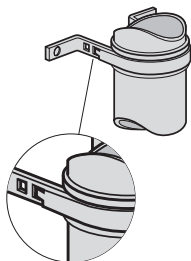


Fig. 7c 140 Bracket on pipe with packing piece

**Step 3** – Tighten nut, ensuring that the pipe is free to move freely through the bracket to allow expansion and contraction

(Alternatively, locate tongue in front square hole and use a 9104 Packing Piece between strap and pipe (Fig. 7c))

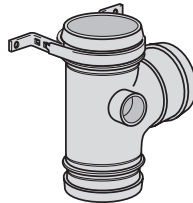


Fig. 7d Bracket anchoring fitting

**Step 4** – Secure rear section of bracket to wall with rust-proof fixings

#### To anchor fittings

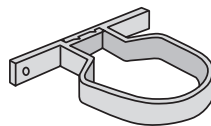


Fig. 8a 143 Bracket (plastic)

**Step 1** – Ensure strap fits snugly round the fitting socket to create a fixed point

**Step 2** – Locate tongue in front square hole and place bolt in round hole

**Step 3** – Tighten nut to achieve secure anchoring of fitting

**Step 4** – Secure rear section of bracket to wall with rust-proof fixings

#### To support pipework

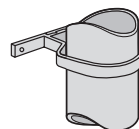


Fig. 8b 143 Bracket on pipe

**Step 1** – Fit bracket round the pipe at required support position (Fig. 8b) (see recommended distances table, page 6)

**Step 2** – Secure bracket to wall with rust-proof fixings

**NOTE:** Ensure that bracket fixing points do not result in clamping pipe, which must be able to move freely through the bracket to allow expansion and contraction

#### To anchor fittings

**Step 1** – Ensure bracket fits snugly round the fitting socket to create a fixed point (see recommended distances table, page 6)

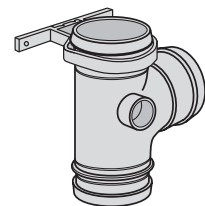


Fig. 8c 143 Bracket anchoring fitting

**Step 2** – Secure bracket to wall with rust-proof fixings so that bracket clamps onto fitting and creates a fixed point (Fig. 8c)

#### To support pipework (82mm and 110mm only)

- Allows horizontal adjustment of holding strap: up to 28mm (for 82mm pipework); up to 26mm (for 110mm pipework)

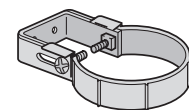


Fig. 9a 144 Bracket (adjustable)

**Step 1** – Secure bracket backplate to wall with rust-proof fixings at required support position (see recommended distances table, page 6)

**Step 2** – Fit bracket strap round the pipe

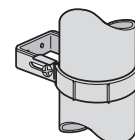


Fig. 9b 144 Bracket on pipe



## PIPEWORK SUPPORT AND EXPANSION CONTROL (continued)

### Soil pipe brackets (continued)

**Step 3** – Locate strap tongues inside backplate (Fig.9b)

**Step 4** – Insert bolts into slot and through holes in strap tongues

**Step 5** – Adjust horizontal position of strap

*NOTE: Ensure that final position of bracket strap allows pipe to move freely through the bracket to allow expansion and contraction*

**Step 6** – Tighten nuts

#### To anchor fittings

**Step 1** – Secure bracket backplate to wall with rust-proof fixings at required support position

**Step 2** – Ensure strap fits snugly round the fitting socket to create a fixed point

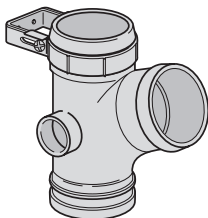


Fig.9c 144 Bracket on fitting

**Step 3** – Locate strap tongues outside backplate (Fig.9c)

**Step 4** – Insert bolts through holes in strap tongues and through slot in backplate

**Step 5** – Adjust horizontal position of strap to achieve secure anchoring of fitting and create a fixed point

**Step 6** – Tighten nuts

#### To support pipework (110mm only)

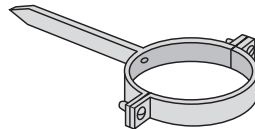


Fig.10 142 Drive-in bracket

**Step 1** – Position back piece of bracket at required support position (see recommended distances table, page 6) and drive into wall to required stand-off distance

**Step 2** – Use a 9104 Packing Piece between strap and pipe

*NOTE: Ensure that bracket is able to move freely through the bracket to allow expansion and contraction*

**Step 3** – Align bolt holes of back piece and strap, insert bolts and tighten nuts

#### To anchor fittings

**Step 1** – Position back piece of bracket at required support position (see recommended distances table, page 6) and drive into wall to required stand-off distance

**Step 2** – Ensure anchor locates around fitting socket

**Step 3** – Align bolt holes of back piece and strap, insert bolts and tighten nuts



### Waste pipe brackets

#### APPLICATION RANGE:

200-Solvent

300-PushFit

#### To support pipework

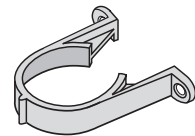


Fig.11 240 Pipe fixing bracket



Fig.12 243 Pipe fixing bracket

**Step 1** – Fit bracket round the pipe at required support position (see recommended distances table, page 6)

**240 Pipe Fixing Bracket (Fig.11) and 243 Pipe and Fitting Bracket (Fig.12) 242 Fitting bracket**

**Step 2** – Secure bracket to wall with rust-proof fixings

*NOTE: Ensure that bracket fixing points do not result in clamping pipe, which must be able to move freely through the bracket to allow expansion and contraction*

#### To anchor fittings

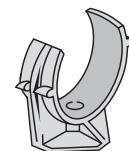


Fig.13 242 Expansion fitting fixing bracket

**Step 1** – Secure bracket to wall with rust-proof fixing

**Step 2** – Ensure strap fits snugly round the fitting socket to create a fixed point (see recommended distances table, page 6)

## SUSPENDED PIPEWORK TO BS EN 1329-1

### General information

#### APPLICATION RANGE:

100-Solvent



100P-PushFit



**PURPOSE:** To ensure that, where soil drainage pipework has to pass through an undercroft or basement area:

- it is properly supported throughout any suspended run
- its integrity is maintained and protected from the consequences of thermal expansion or contraction

### Recommended support centres

- Fit 191 Intermediate Support Brackets\* for suspended pipework at recommended regular intervals (see page 6 and below). These may be attached to 8mm drop rods (supplied by others) fixed into ceiling or soffit above pipework

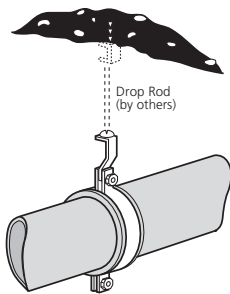


Fig. 15a Horizontal support

- Install expansion joints (see Seal Ring Jointing, page 4) at recommended centres along the suspended pipe run (see below). Where the suspended run is lengthy, the expansion joints must be installed with a 190 Thermal Movement Limiter (this page)

- The following maximum distances apply:

- Pipe support brackets: 1m centres (maximum)
- Expansion joints: 4m centres (maximum)

**NOTE:** If two fixed points are more than 1 metre apart, an expansion joint is also required

**\*82mm pipes must be supported at max. 0.9m centres**

### Installation of 190 Thermal Movement Limiter (TML)

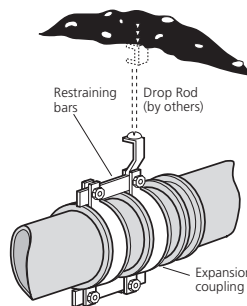


Fig. 15b Thermal Movement Limiter (TML)

**Step 1** – Clean the the surface of the pipe in front of the expansion socket, and the inner surface of the PVC-u split collar, with **9101 Cleaning Fluid** using a dry, clean, natural fibre cloth (NOT synthetic)

**Step 2** – After setting the 12mm expansion gap (see page 4) Solvent-weld split collar to pipe ensuring that when assembled the bolts pass through the centre of restraining the bar slots

**Step 3** – Assemble and locate brackets: one around the split collar, and the other around the expansion socket

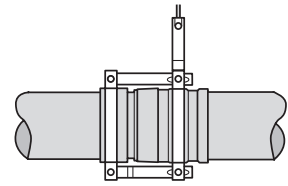


Fig. 15c TML collar and bars in position

**Step 4** – Couple the brackets together with the two slotted restraining bars (which restrict horizontal movement to 25mm). Assemble these so that the slotted ends are above and below the expansion socket (Fig. 15c)

**Step 5** – Incorporate the link eye (for attachment to drop rod or ceiling/soffit fixing) with the upper restraining bar

**Step 6** – Check that the slotted end of each restraining bar is free to move, and tighten brackets so that they achieve a firm grip on the pipework

**Step 7** – Connect assembly to drop rod and ceiling/soffit

### Cross Bracing

When branches enter a main run, cross bracing is necessary to stabilise the system

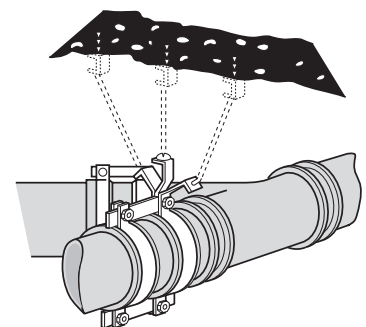


Fig. 15d TML assembly with cross bracing

## HOLE CUTTING/INSTALLING ACCESS DOOR

### Hole cutting

#### APPLICATION RANGE:

100-Solvent 

100P-PushFit 

REQUIREMENT: Creating access to pipework to enable connection of other pipework/systems or for maintenance access e.g

- waste pipe connection to soil pipe or fittings (see pages 14-18)
- installing access door (this page)

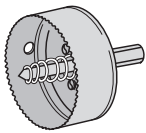


Fig. 16a Hole saw

■ Achieved with fine-tooth **9105 Hole Saw** attached to drill (Fig. 16a)

**Step 1** – Determine aperture size required

**Step 2** – Select appropriate Hole Saw size (see table)

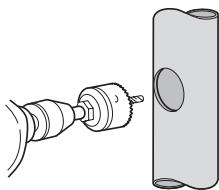


Fig. 16b Cutting hole

**Step 3 – EITHER**

Mark position of waste pipe entry on pipe. Cut out hole (Fig. 16b)

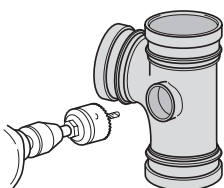


Fig. 16c Cutting out centre of boss horn

**OR (if applicable)**

Cut out centre of boss (Fig. 16c)

### Hole saw sizes

Aperture diameter (mm)	Hole saw reference code	To suit fitting ref
38	9105.15	281.43
48	9105.187	112.125–135.3–112P.4.125
51	9105.2	117*–112P.4.15
57	9105.225	112.15–115P.3–115P.4
60	9105.237	122.125–112P.4.2
64	9105.25	122.15–115
70	9105.275	112.2
73	9105.287	135.4–135.6
75	9105.3	122.2

\*All sizes

**Step 4** – De-burr edge of cut hole and remove swarf before proceeding with connection

### Installing access door

Applicable to: 135 Access Door



Fig. 17a Step 1

**Step 1** – Mark centre lines as described on inside of **135 Access Door**. Check aperture will be parallel with axis of pipe (Fig. 17a)

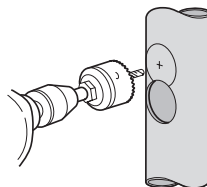


Fig. 17b Step 2

**Step 2** – Drill two overlapping holes of correct size (see table this page) at 45mm centres (Fig. 17b) for 135.4 and 135.6 and 30mm centres for 135.3

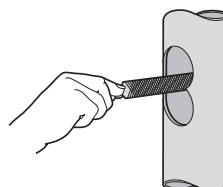


Fig. 17c Step 3

**Step 3** – Remove sides of aperture with a medium file (Fig. 17c)

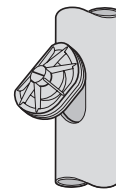


Fig. 17d Step 4

**Step 4** – Slacken door to its fullest extent

**Step 5** – Push inner part of door into hole at a slight angle while turning slightly (Fig. 17d)

**Step 6** – When fully entered, turn door parallel to the axis of the pipe ensuring the inner part locates into the hole

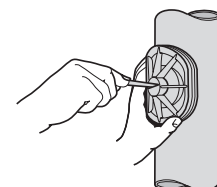


Fig. 17e Step 7

**Step 7** – Tighten the screw while pulling the door outwards (Fig. 17e)

**DO NOT OVERTIGHTEN**

## VENTING

### General Information

#### APPLICATION RANGE:

100-Solvent 

100P-PushFit 

**REQUIREMENT:** To ventilate soil pipe and prevent siphonage of traps on fittings within the system

### External venting of soil stack

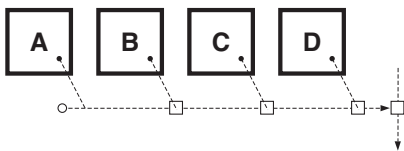


Fig. 18 Plan view of foul drainage

■ Where a typical row of adjacent dwellings is connected to a common drain, up to 9 properties may each be fitted with **153.3.4 Automatic Air Admittance Valve** (see page 13) rather than normal soil and vent pipe (SVP) provided that the property at the head of the drain is open vented with a SVP (Fig. 18)

■ Open-venting through the roof requires installation of an appropriate weathering slate installation with vent cowl (see this page and page 12)

### Weathering slates for pitched roofs

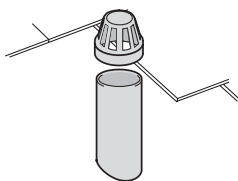


Fig. 19a Step 1

**Step 1** – Place **150 Vent Cowl** on open end of soil stack (do NOT solvent-weld at this stage)

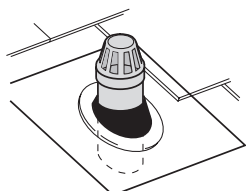


Fig. 19b Steps 2/3

**Step 2** – Slide **149 Weathering Slate** over stack (Fig. 19b)

**Step 3** – Align base plate with lower tiles

#### NOTES:

- On low pitched roofs, optimum weathering may be achieved by making a single weld to the lower edge of the base plate
- In areas subject to high winds, or in difficult tiling situations, use tingles to prevent lower edge lifting away from tiles
- If installing on roof with interlocking tiles, boards or additional battens may be required underneath the weathering slate. The stack must pass through only ONE course (if necessary, the soil stack should be offset beneath the roof)

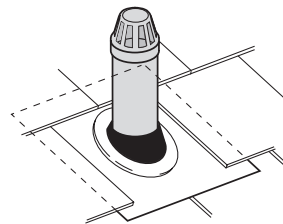


Fig. 19c Steps 4/5

**Step 4** – Dress the base plate to fit the lower tiles (Fig. 19c)

**Step 5** – Lay the side and upper tiles over the base plate

**NOTE:** The lower edge of the base plate may be trimmed PROVIDED THAT a minimum 150mm of weathering remains

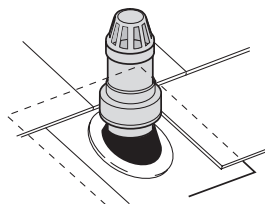


Fig. 19d Steps 6/7

**Step 6** – Slide **131 Weathering Apron** over stack and solvent-weld in position (Fig. 19d)

**Step 7** – Replace vent cowl and solvent-weld into position

### Purpose-made Weathering Slate (e.g. lead)

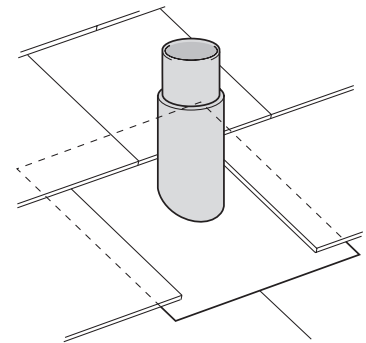


Fig. 20a Step 1

**Step 1** – Position purpose-made weathering slate on open end of soil stack (Fig. 20a)

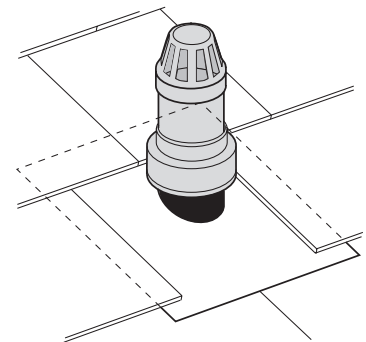


Fig. 20b Steps 2/3

**Step 2** – Remove the vent cowl. Solvent-weld **131 Weathering Apron** to pipe above rubber cone to prevent water ingress (Fig. 20b)

**Step 3** – Place **150 Vent Cowl** onto stack and solvent-weld into position

## VENTING (continued)

### General Information

#### Weathering slates for flat roofs

##### Weathering slate (aluminium) with 3-layer felt roofing

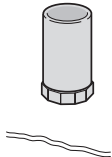


Fig.21a Step 1

**Step 1** – Dress first layer of felt up to pipe (Fig.21a)

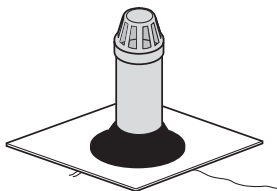


Fig.21b Steps 2/3

**Step 2** – Place **150 Vent Cowl** on open end of soil stack (do NOT solvent-weld at this stage)

**Step 3** – Slide **149 Weathering Slate** over stack. Push slate (and its rubber cone) down onto first layer of felt (Fig.21b)

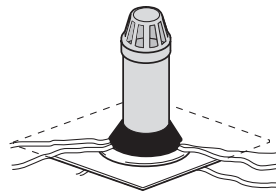


Fig.21c Steps 4-6

**Step 4** – Coat the aluminium baseplate with bitumen

**CAUTION:** Keep hot material away from rubber cone

**Step 5** – Place second layer of felt over baseplate up to the cone. Trim accordingly (Fig.21c)

**Step 6** – Coat felt with bitumen and place third layer of felt as Step 5

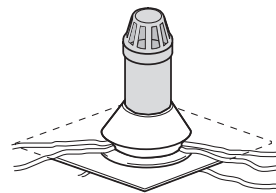


Fig.21d Steps 6/7

**Step 7** – Remove the vent cowl. Solvent-weld **131 Weathering Apron** to pipe above rubber cone to prevent water ingress (Fig.21d)

##### Purpose-made weathering slate (e.g. lead) with asphalt roofing

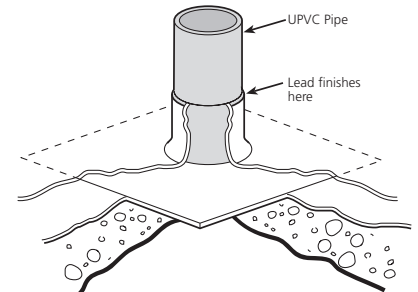


Fig.22a Steps 1/2

**Step 1** – Position purpose-made weathering slate on open end of soil stack (Fig.22a)

**Step 2** – Lay asphalt as normal, over baseplate and to upper rim of lead upstand around pipe. Feather this edge of the asphalt

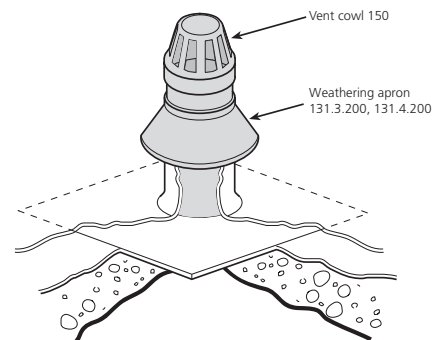


Fig.22b Steps 3/4

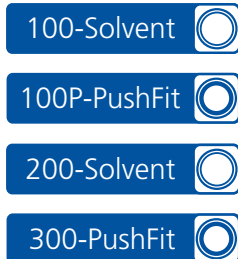
**Step 3** – Slide **131 Weathering Apron** over stack and solvent-weld in position (Fig.22b)

**Step 4** – Place **150 Vent Cowl** onto stack and solvent-weld into position

## VENTING (continued)

### General Information

#### APPLICATION RANGE:



### Automatic Air Admittance Valves (Fig.23a)

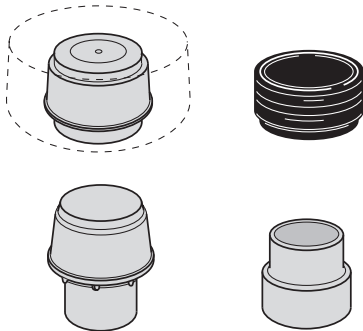


Fig.23a Automatic Air Admittance Valve components

**PURPOSE:** to help prevent siphonage of traps when negative pressure occurs in soil and waste systems

- 153 Automatic Air Admittance Valve allows air into 82mm or 110mm soil stack
- 253 Automatic Air Admittance Valve allows air into 32mm, 40mm or 50mm waste pipework

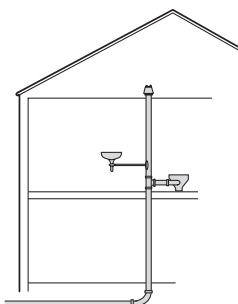


Fig.23b Valve in roof space

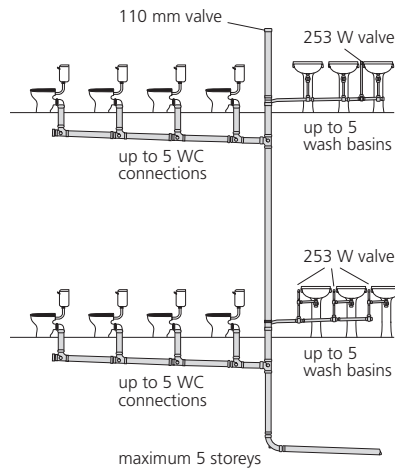


Fig.23c Valve in multi-storey building

- Typically positioned in roof space (Fig.23b) but may also be fitted within a room
- Valves may be used for up to 9 adjacent properties (e.g. a row or terrace of houses) connected to common drainage PROVIDED THAT the property at the head of the drain is open-vented with a standard soil and vent pipe (SVP) (see page 11)
- The 153 82mm and 110mm valve must be fitted above the spillover level of the highest appliance
- The valves may be used on SVP's up to 5 stories maximum

### Installation

#### 153.3.4 to suit 110 and 82mm soil pipe

- If access for rodding is required on 82mm pipe, locate Air Admittance Valve just above a 111.3 or 109.3 Expansion Joint

**Step 1** – Remove lower half of polystyrene cover to reveal finned rubber seal. Leave top half in position

#### For 110mm soil pipe:

**Step 2** – Ensure finned rubber seal is located fully onto 153 Air Admittance Valve (AAV) body

**Step 3** – Lubricate valve spigot with 9136 Lubricant

**Step 4** – Push AAV into vertical pipe end

#### For 82mm soil pipe:

**Step 2** – Remove finned rubber seal to reveal 82mm socket

**Step 3** – Solvent-weld to pipe (see page 3 for jointing method)

**Applies to both 110mm and 82mm pipe:**

If fitting in an environment where condensation could form within the valve body (e.g. in roof space), use the insulating cover provided with the valve

**NOTE:** Valve installation as described, complies with Clause 1.29 Approved Document H of the Building Regulations 1985

**253W to suit 32, 40 and 50mm diameter waste pipe**

#### For 32mm pipe:

**Step 1** – Discard adaptor supplied with 253 Air Admittance Valve (AAV)\*

**Step 2** – Solvent-weld AAV to pipe\*

#### For 40 and 50mm pipe:

**Step 1** – Solvent-weld supplied adaptor between pipe and 253 Air Admittance Valve (AAV)



## CONNECTING WASTE TO SOIL PIPEWORK

### General Information

#### APPLICATION RANGE:

100-Solvent 

100P-PushFit 

200-Solvent 

300-PushFit 

- Connection of waste pipes to soil system pipework can be achieved via one or more of the following:
  - integral moulded boss spigots on soil fittings, plus branch boss adaptors
  - 2-part waste bosses, installed directly into soil pipe
  - adaptors (including clip bosses and saddle adaptors)
  - bossed pipe connectors

- Detailed installation guidance for each method is given in the following sections

### Connection via moulded boss spigot

#### APPLICATION RANGE:

100-Solvent 

100P-PushFit 

Applicable to: 104, 105, 106, 104P, 105P and 106P Branches; 137 Access Pipe Connector; 130 Socket Plug; 123 Bossed Pipe Connectors and 123P Short Boss Pipe

**Step 1** – Cut out centre of boss (for correct Hole Saw size, see table page 10)

**Step 2** – De-burr edge of cut hole and remove swarf

**Step 3** – Select straight or bent 117 Branch Boss Adaptor according to required direction of approach of waste pipework to be connected



Fig.24a Cleaning mating surfaces

**Step 4** – Clean all mating surfaces with **9101 Cleaning Fluid** using a dry, clean, natural fibre cloth (NOT synthetic) (Fig.24a)

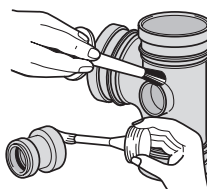


Fig.24b Applying solvent cement

**Step 5** – Apply **9100 Liquid Weld** (solvent cement) to all mating surfaces using a clean brush (Fig.24b)



Fig.24c Positioning adaptor

**Step 6** – Position boss adaptor, twisting to ensure contact. (If fitting bent boss adaptor, ensure correct angle for waste pipe connection.) Hold under pressure for 30 seconds (Fig.24c)



Fig.24d Removing excess cement

**Step 7** – Remove excess cement (Fig.24d)

### Connection via self-locking boss

Applicable to: 122 Self Locking Boss

*NOTE: No access to inside of pipe required*

**Step 1** – Mark position of waste pipe entry on pipe. Cut correct hole size (for correct Hole Saw size, see table page 10)

**Step 2** – De-burr edge of cut hole and remove swarf

**Step 3** – Slacken nut on boss to full extent

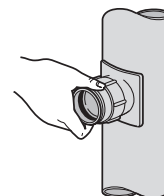


Fig.25a Test fitting boss

**Step 4** – Insert boss into hole. Ensure keyway is last piece to enter hole (Fig.25a)

**Step 5** – Tighten outer locking nut



Fig.25b Cleaning mating surfaces

**Step 6** – When satisfied that boss fits neatly into pipe, remove boss and clean all mating surfaces with **9101 Cleaning Fluid** using a dry, clean, natural fibre cloth (NOT synthetic) (Fig.25b)

## CONNECTING WASTE TO SOIL PIPEWORK (continued)

### Connection via self-locking boss (continued)

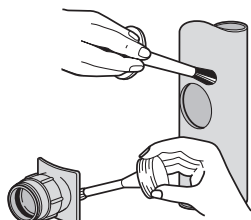


Fig.25c Applying cement

**Step 7** – Apply 9100 Liquid Weld (solvent cement) to all mating surfaces using a clean brush (Fig.25c)

**Step 8** – Re-insert boss through hole and centralise. Tighten outer locking nut

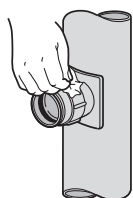


Fig.25d Removing excess cement

**Step 9** – Remove excess cement (Fig.25d)

### Connection via saddle adaptor OR clip boss

**Applicable to:** 115P Saddle Adaptors (for 82mm/110mm/160mm pipe) and 112P Clip Bosses (for 110mm pipe)

**NOTE:** No access to inside of pipe required

**Step 1** – Mark position of waste pipe entry on pipe. Cut correct hole size (see above)

**Step 2** – De-burr edge of cut hole and remove swarf

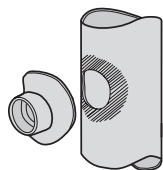


Fig.26a Saddle adaptor

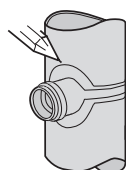


Fig.26b Strap on boss

**Step 3** – Position saddle (Fig.26a) or strap on boss (Fig.26b) and mark outline of saddle or boss flange on pipe

HOLE/HOLE SAW SIZES							
Saddle Adaptor				Strap On Boss			
Size	Code	hole saw ø	hole saw code	Size	Code	hole saw ø	hole saw code
82mm	115P.3	57mm	9105.225	32mm	112P.4.125	*48mm/60mm	9105.187/9105.237
110mm	115P.4	57mm	9105.225	40mm	112P.4.15	*51mm/60mm	9105.2/9105.237
*Note: Due to change of product specification, please ensure you use the correct hole saw ø				50mm	112P.4.2	60mm	9105.237

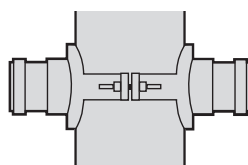


Fig.26c Side elevation

**NOTE:** By removing the rear saddle strap, a second boss connection may be made back-to-back to provide two opposing connections (similar or dissimilar diameters)

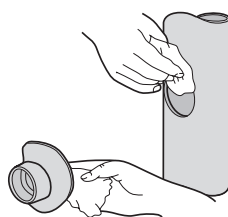


Fig.26d Cleaning mating surfaces

**Step 4** – Clean all mating surfaces with 9101 Cleaning Fluid using a dry, clean, natural fibre cloth (NOT synthetic) (Fig.26d)

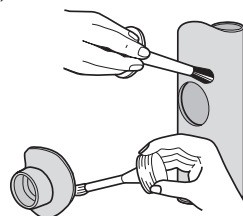


Fig.26e Applying cement

**Step 5** – Apply 9100 Liquid Weld (solvent cement) to all mating surfaces using a clean brush (Fig.26e)

**Step 6** – Fit saddle or clip boss to pipe ensuring "top" marking is uppermost

- (Saddle Adaptor) clamp in position for 30 minutes e.g. with strong rubber band or 9115 Toggle Clamp
- (Clip Boss) lock in position by snap-fixing

**Step 7** – Remove excess cement

**Step 8** – (Saddle Adaptor)

Solvent-weld appropriate 117 Boss Adaptor in position

### Connection via bossed pipe connectors

APPLICATION RANGE:

100-Solvent

100P-PushFit

**Applicable to:** 120, 123, and 121 Bossed Pipe Connectors

- Waste boss(es) open – NO cutting needed for waste access to soil pipe

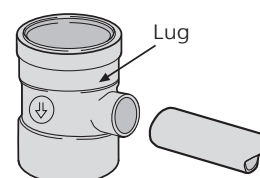


Fig.27a 120.4 Single Bosses Pipe Connector

**For 32mm and 40mm waste connection:**

**120.4 Single Bossed Pipe Connector** (all socket) (Fig.27a)

- (120.4.125) for 32mm waste pipe; (120.4.15 and 120.412.15) for 40mm waste pipe

**NOTE:** Ensure that 120 Bossed Pipe Connector is installed with arrow (engraved on side of fitting) pointing DOWN to ensure built-in fall

**Step 1** – Square-cut pipe-end and de-burr

**Step 2** – Clean all mating surfaces with 9101 Cleaning Fluid using a dry, clean, natural fibre cloth (NOT synthetic)

**Step 3** – Solvent-weld waste pipe direct into boss socket

## CONNECTING WASTE TO SOIL PIPEWORK (continued)

### Connection via bossed pipe connectors (continued)

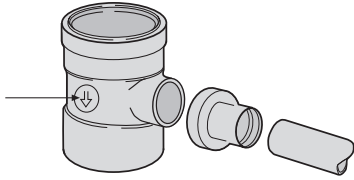


Fig.27b 123.4 Single Bossed Pipe Connector (spigot boss)

#### For 50mm waste connection

#### 123.4 Single Bossed Pipe Connector (spigot boss) (Fig.27b)

- Used with appropriate **117 Branch Boss Adaptor** to connect 32mm, 40mm or 50mm waste pipe

**NOTE:** Ensure that **123 Bossed Pipe Connector** is installed with arrow (engraved on side of fitting) pointing **DOWN** to ensure built-in fall

**Step 1** – Square-cut pipe-end and de-burr

**Step 2** – Clean all mating surfaces with **9101 Cleaning Fluid** using a dry, clean, natural fibre cloth (**NOT synthetic**)

**Step 3** – Solvent-weld **117 Boss Adaptor** direct onto spigot boss

**Step 4** – Push-fit waste pipe into fitting  
Blanking plug

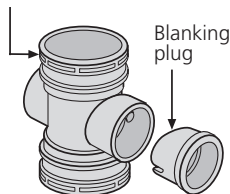


Fig.28 120.3.2 Double Bossed Pipe Connector

#### For 50mm waste connection (also adaptable for 40mm)

#### 120.3.2 Double Bossed Pipe Connector (Fig.28)

- Boss inlets accept 50mm waste pipe – but they can be converted to receive 40mm pipe, using blanking plug (supplied with fitting) as adaptor

**NOTE:** Ensure that **120.3.2 Double Bossed Pipe Connector** is installed with arrow (engraved on side of fitting) pointing **DOWN** to ensure built-in fall

**Step 1** – Square-cut pipe-end and de-burr

**Step 2** – Clean all mating surfaces with **9101 Cleaning Fluid** using a dry, clean, natural fibre cloth (**NOT synthetic**)

#### Step 3a

Solvent-weld 50mm waste pipe into fitting

#### Step 3b

(To convert to receive 40mm waste pipe)  
Cut out centres of blanking plug. Insert plug. Solvent-weld 40mm waste pipe into plug socket

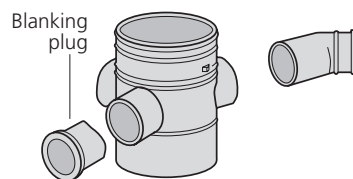


Fig.29a 121.4.15 Triple Bossed Pipe Connector

#### For 40mm waste connection (also adaptable for 32mm)

#### 121.4.15 Triple Bossed Pipe Connector (Fig.29a)

- For connection of waste pipes which run close to walls (at bracket stand-off distance). Used with **207 Spigot Socket Bends**. Avoids need for offsets

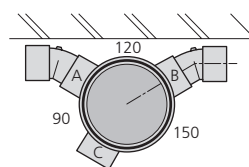


Fig.29b Flat wall layout

- Use bosses **A** and **B** for flat situations (two waste pipes approaching at 180°) (Fig.29b)

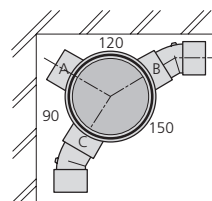


Fig.29c Corner layout

- Use bosses **C** and **B** for corner situations (two waste pipes approaching at 90°) (Fig.29c)

**NOTE:** The letters **A**, **B** or **C** are each engraved above their relevant boss socket

**Step 1** – Solvent-weld blanking plug (supplied with fitting) into socket which is not required

**Step 2** – Clean all mating surfaces with **9101 Cleaning Fluid** using a dry, clean, natural fibre cloth (**NOT synthetic**)

**Step 3** – Square-cut pipe-ends and de-burr

**Step 4a** – (40mm connection) Solvent-weld **207.15.150 Spigot Socket Bend** into each boss socket, positioned to align with pipe end

**OR**

**Step 4b** – (To convert for 32mm connection) Solvent-weld **224.15.125 Socket Reducer** into boss socket. Then solvent-weld **207.125.150 Spigot Socket Bend** into reduced socket, positioned to align with pipe end

**Step 5** – Solvent-weld pipe-ends into each socket

**Applicable to:** **120P.4.15 Triple Bossed Pipe Connector**, and **104** and **106 Boss Branches**

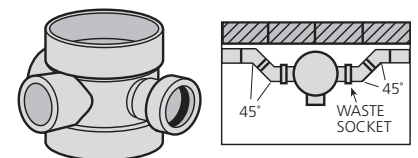


Fig.30 120P.4.15 Triple Bossed Pipe Connector

#### For up to 50mm waste connection in restricted space

#### 120P.4.15 Triple Bossed Pipe Connector (Fig.30)

- Compact fitting for up to three connections of waste pipe in most restricted space situations
- Incorporating:
  - one 40mm waste socket with push-fit EPDM seal to accept BS EN 1329-1/BS EN 1451-1 waste pipe
  - two extra bosses adaptable using appropriate **117 Branch Boss Adaptor** to enable additional push-fit connection of 32mm, 40mm or 50mm waste pipe

## CONNECTING WASTE TO SOIL PIPEWORK (continued)

### Connection via bossed pipe connectors (continued)

**Step 1** – Position collar in stack to suit waste pipe connection

*NOTE: Ensure that 120P.4.15 Triple Bossed Pipe Connector is installed with embossed soil socket uppermost to ensure correct waste pipe fall*

**Step 2** – Clean all mating surfaces with 9101 Cleaning Fluid using a dry, clean, natural fibre cloth (NOT synthetic)

**Step 3** – Solvent-weld soil pipe into upper and lower socket of the fitting

*For 50mm waste connection*

**104.412.92 Variable Boss Branch** (spigot outlet) (Fig.31a-d) OR  
**104.422.92 Variable Boss Branch** (socket outlet)

- At ground floor level: use **104.412.92** (spigot outlet version)
- At first floor level (and above): use **104.422.92** (socket outlet version)  
Soil branch fitting which also allows above-floor level close connection of 50mm waste pipes where space is restricted
- Incorporating rotating, lockable lower unit to assist correct alignment with waste connections. Install fitting as follows:

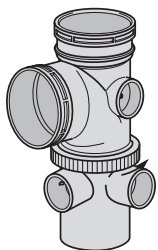


Fig.31a 104.412.92 Variable Boss Branch (spigot outlet) – slackening locking rings

**Step 1** – Slacken locking ring (Fig.31a)

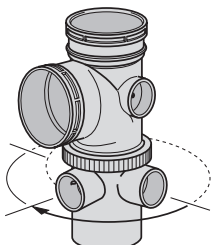


Fig.31b Rotating lower unit

**Step 2** – Rotate lower unit to required position for waste connection

*NOTE: Lower unit rotates through 90° only. Do not force unit past stops (Fig.31b)*

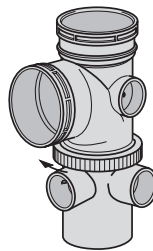


Fig.31c Tightening locking ring

*NOTE: Only tighten locking nut when in final position as this operation cannot be reversed*

**Step 3** – Re-tighten locking ring (Fig.31c)

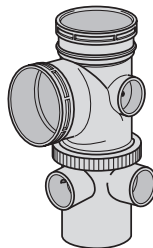


Fig.31d Install into buried drain seal

**Step 4a** – (Ground floor – spigot version) Push into buried drain lip seal (Fig.31d)

**Step 4b** – (First floor and above – socket version) Solvent-weld to stack

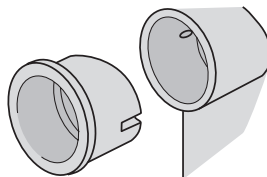


Fig.31e Blanking plug

**Step 5** – (If only one waste socket connection required) Solvent-weld blanking plug into disused socket (Fig.31e)

**Step 6** – Square-cut waste pipe-ends and de-burr

**Step 7** – Solvent-weld waste pipe-end into waste boss

**Step 8** – (To convert waste bosses for 40mm waste connection) cut back off blanking plugs supplied and solvent-weld into socket to use as reducer

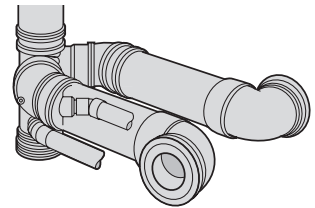


Fig.32a 106.490.12 Corner Boss Branch installation

*For up to 50mm waste connection*

**106.490.22 Corner Boss Branch** (socket outlet) (Fig.32a) OR  
**106.490.12 Corner Boss Branch** (spigot outlet)

- At ground floor level: use **106.490.12** (spigot outlet version)
- At first floor level (and above): use **106.490.22** (socket outlet version)

### Connection via four-way boss pipe

Applicable to: 120.412.2, 120.4.2 and 120P.412.2

**120.4.2** (double solvent socket),  
**120.412.2** (solvent socket/spigot) (Fig.32b),  
**120P.412.2** (pushfit socket/spigot)

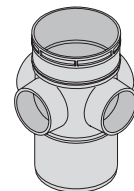


Fig.32b 120.412.2 Four-way Boss Pipe Solvent Socket/Spigot

Socket and boss horn connections common to each version.

Allows direct connection of up to two 50mm waste pipes and two further connections via standard boss horns for 32mm and/or 40mm waste. Supplied with one open socket (50mm).

*For connection to 50mm socket*

As applicable – Using a 9105.225 (57mm) hole saw remove the blanking material within the desired socket/boss horn.

**Step 1** – Cut waste pipe to length

**Step 2** – Remove swarf and clean all mating surfaces with 9101 Cleaning Fluid using a dry, clean, natural fibre cloth (NOT synthetic)



## CONNECTING WASTE TO SOIL PIPEWORK (continued)

### Connection via four-way boss pipe (continued)

**Step 3** – Apply **9100 Liquid Weld** cement to both pipe and socket

**Step 4** – Push pipe into socket with a slow rotating action to ensure an even spread of cement in the joint

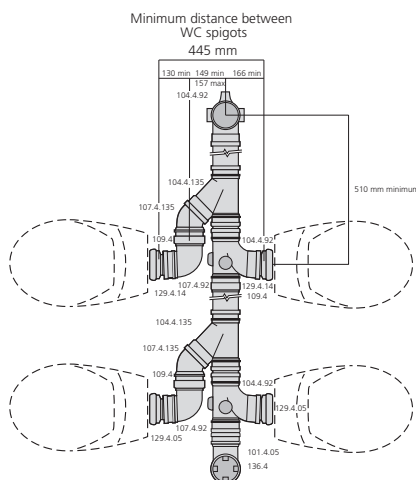
**For connection via boss horn (32mm, 40mm or 50mm)**

**Step 1** – Using a **9105.225** (57mm) hole saw remove the blanking material within the desired socket/boss horn

**Step 2** – Remove swarf and clean all mating surfaces with **9101 Cleaning Fluid** using a dry, clean, natural fibre cloth (**NOT synthetic**)

**Step 3** – Solvent weld **117 Boss Adaptor** (sized as applicable) on to boss horn

**Step 4** – As applicable, solvent weld or push pipe into Boss Adaptor socket



### Connection via universal manifold

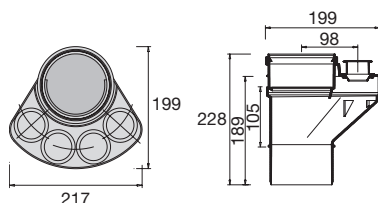


Fig.33a 419.4.15 Universal Soil Manifold

**Applicable to: 119P Universal Soil Manifold (Fig.33a)**

**For 32mm and 40mm waste connection**

- For up to four connections of BS EN 1329-1/BS EN 1451-1 waste pipe at floor level (e.g. in bathroom) without need for adaptors

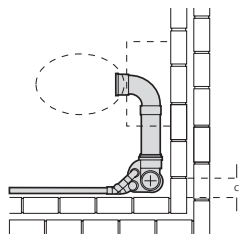


Fig.33b Internal soil stack connection (1st floor) plan

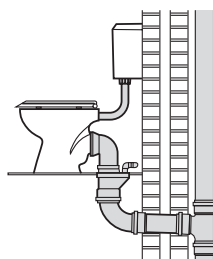


Fig.33c External soil stack connection (1st floor) elevation

- May be positioned neatly in corner of room for connection to internal (Fig.33b) or external (Fig.33c) soil stack

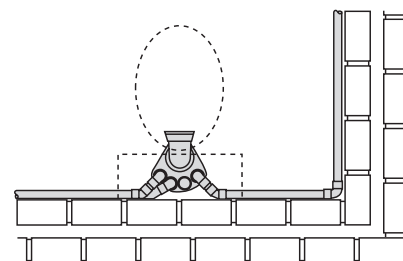


Fig.33d Internal soil stack connection (ground floor) plan

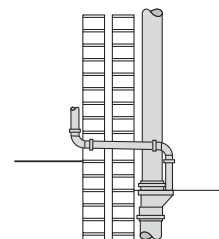


Fig.33e External ground floor connection elevation

### Back to back WC connections

Back-to-back WC's must NEVER be connected using a double branch laid horizontally because cross flow WILL occur

#### EITHER

- Run two separate horizontal floats using a corner branch

#### OR

- Stagger connections on a single float

**Using: 106.490.12, 106.490.22 Corner boss branches**

- Use as Fig.32a with 135° bends. Can connect single or a range of WC's on each 110mm branch. Lower bosses can connect two 50mm waste pipes directly to sockets or 40 and 32mm pipes using appropriate reducers

**Using standard single branches and 129 WC manifold connectors**

See page 20 for details on angles

- Alternatively, use staggered layout, as shown in Fig.32c above
- Use standard boss connection methods as detailed above

- Also illustrated:
  - internal ground floor connection to soil pipe (Fig.33d)
  - external ground floor connection to soil stack (Fig.33e)
- Three of four inlets are blocked off with removeable plugs
- A sealing gasket is supplied for each inlet. Install as follows:

**Step 1** – Mark selected position the manifold will occupy on the floor and cut out shape

**Step 2** – Push-fit soil connections at each end

**Step 3** – Remove plug (if present) from selected waste inlet(s)

**Step 4** – Push-fit waste pipe into the manifold until the stop is reached

**Step 5** – Check that any waste inlet which is not required has plug in place

## CONNECTING WC PANS TO SOIL PIPE

### General Information

#### APPLICATION RANGE:

100-Solvent 

100P-PushFit 

**NOTE:** Direct connection of WC pan to drain is permitted provided that the vertical distance from the crown of the trap to the invert of the drain does not exceed 1.5 metres

### Connection of traditional pans (pre BS 5503)

generally with 14° sloping spigot

**Applicable to:** 102 and 125 WC Connectors

**Step 1** – Ensure that rubber seal is correctly located on rim of connector

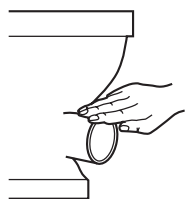


Fig.34a Lubricating pan spigot

**Step 2** – Lubricate WC spigot with 9136 Lubricant (Fig.34a)

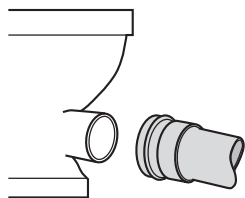


Fig.34b Offering up connector

**Step 3** – Offer up 102 90° WC Turned Connector or 125 WC Straight Connector to WC spigot (Fig.34b)

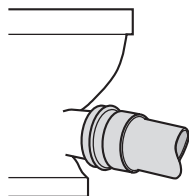


Fig.34c Connecting pan spigot

**Step 4** – Push together (Fig.34c)

**Step 5** – Solvent-weld 100 SOIL Pipe into connector outlet socket

### Connection of BS 5503 horizontal outlet pans

**Applicable to:** 128 and 129 WC Connectors



Fig.35 128.4.02 WC Connector

**For WC connection to soil pipe**

**128.4.02 WC Connector** (single socket) (Fig.35)

- Provides 2½° fall angle (exceeds minimum 1° requirement of BS EN 12056-2)

**Step 1** – Ensure that rubber seal is correctly located on rim of connector

**Step 2** – Lubricate WC spigot with 9136 Lubricant

**Step 3** – Offer up 128.4.02 WC Connector to WC spigot

**Step 4** – Push together

**Step 5** – Solvent-weld 100 SOIL Pipe into connector outlet socket

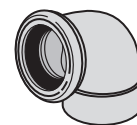


Fig.36 128.4.90 WC Connector

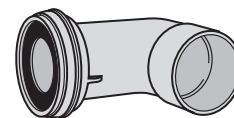


Fig.37 128.405.92 WC Connector

**128.4.90 WC Connector** (single socket) (Fig.36)

**128.405.92 WC Connector** (single socket) (Fig.37)

- Enables conversion to 'S' and turned 'P' modes
- Install as for 128.4.02

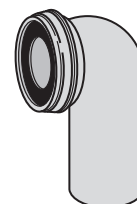


Fig.38 129.4.90 WC Connector

**129.4.90 WC Connector** (spigot outlet) (Fig.38)

- For connection of pan to existing soil pipework previously connected to traditional 'S' mode pan
- Enables conversion of horizontal outlet pan to 'S' and turned 'P' modes

**Step 1** – Ensure that rubber seal is correctly located on rim of connector

**Step 2** – Lubricate WC spigot with 9136 Lubricant

**Step 3** – Offer up 129.4.90 WC Connector to WC spigot

**Step 4** – Push together

**Step 5** – Insert spigot outlet into seal ring or solvent-weld socket



## CONNECTING WC PANS TO SOIL PIPE (continued)

### Multiple connection of BS 5503 WC pans

Applicable to: 129 WC Manifold Connectors

■ Used with 104 Single Branches to connect up to 7 WC pans either side of soil stack. 50mm pipe length supplied with branch to provide sleeve for branch socket

■ Select 129 WC Manifold Connectors variants as shown (Fig.39a) to accommodate fall in float

**Step 1** – For minimum dimensions Solvent-weld 50mm pipe length into branch socket to provide sleeve

*NOTE: To extend distance between WC connector and branch, a longer length of pipe may be used*

**Step 2** – Position and fix branch to wall

**Step 3** – Fit finned rubber seal onto spigot of connector

**Step 4** – Push spigot of connector into sleeved branch socket (DO NOT LUBRICATE)

**Step 5** – Lubricate rubber seal with 9136 Lubricant to accept WC spigot

**Step 6** – Align connector socket so that it is square with WC spigot (finned seal allows up to 5° adjustment)

*NOTE: 14° pans are not covered*

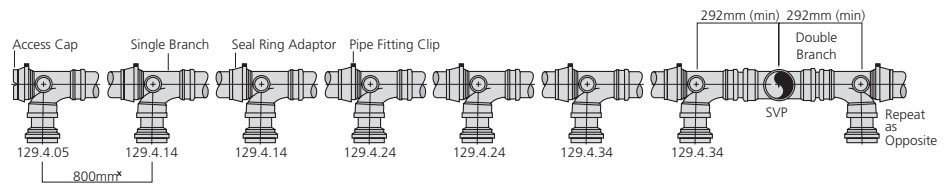


Fig.39a Multiple WC pan connections layout

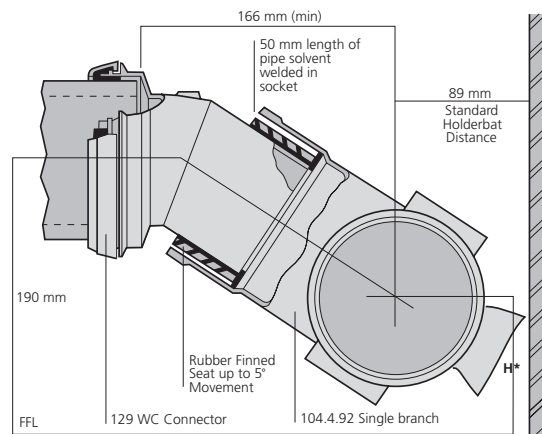


Fig.39b WC Manifold Connector connected to 104 Branch

### Distance from finished floor level (FFL) to centre of float

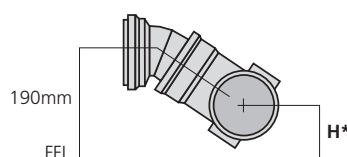


Diagram of distance from FFL to centre of float

Connector type	H mm (min.)	H mm (max.)
129.4.05	166	176
129.4.14	142	162
129.4.24	114	132
129.4.34	80	100

■ Connections to float laid to 1° fall of float (17mm drop per 1 metre run)

■ WC pans positioned at 800mm centres

■ For WC's with 190mm outlet height

*NOTE: For centres greater or less than 800mm, consult Polypipe Terrain Technical Services Department*

## CONNECTING TO OTHER MATERIALS

### Connecting to iron, clay or cement fibre spigot

Applicable to: 126 and 226 Adaptors

*For soil and waste connections*

use with  
**9120 Seal Ring** for 82mm  
**9119 Seal Ring** for 110mm  
**9132.2 Seal Ring** for 50mm

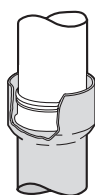


Fig.40a Positioning seal ring in socket

**Step 1** – Place rubber seal ring over spigot to half depth of socket (Fig.40a)

**Step 2** – Position adaptor centrally over joint:

- **126.3.12 Adaptor** (for 82mm soil pipe)
- **126.4.12 Adaptor** (for 110mm soil pipe)
- **226.2 Adaptor** (for waste pipe)

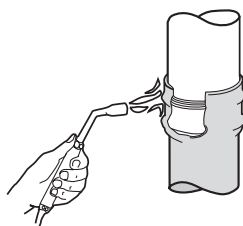


Fig.40b Heating joint

**Step 3** – Heat gently with a gas torch/hot air gun (Fig.40b), all round the socket starting at the base of the socket and working upwards



Fig.40c Finished joint

**Step 4** – When the socket has shrunk down to the adjoining spigot, and the captured seal ring has created a raised ridge, stop applying heat (Fig.40c)

**Step 5** – Leave to cool before moving or applying any pressure

### Connecting to cast iron socket

Applicable to: 232 Caulking Bush

*For PVC-u waste connections to 50mm cast iron sockets*

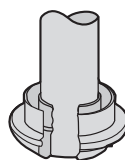


Fig.41a 232 Caulking Bush – for 32mm pipe

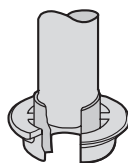


Fig.41b 232 Caulking Bush – for 40mm pipe

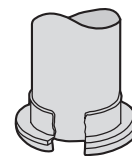


Fig.41c Caulking Bush – for 50mm pipe

**Step 1** – Clean pipe with **9101 Cleaning Fluid**

**Step 2a** – (32mm waste pipe) Apply **9100 Solvent Cement** to the smallest socket of **232 Caulking Bush**. Insert pipe to flush with face of bush

**Step 2b** – (40mm waste pipe) Apply **9100 Solvent Cement** to the intermediate socket of **232 Caulking Bush**. Insert pipe to full depth

**Step 2c** – (50mm waste pipe) Remove two smaller sockets by cutting through radial ribs. De-burr and clean with **9101 Cleaning Fluid**. Then apply **9100 Solvent Cement**. Insert pipe flush with outer ring

**Step 3** – Leave for 10 minutes. Then position in cast iron socket and caulk with suitable caulking material

## CONNECTING TO OTHER MATERIALS (*continued*)

### Connecting to iron, clay or cement fibre spigot

#### 132 Caulking Bush

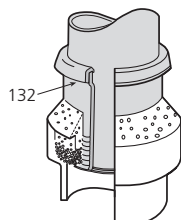


Fig.42a PVC-u/clay socket, *expansion*

**Step 1** – Clean pipe with **9101 Cleaning Fluid**

**Step 2** – Solvent weld **132 Caulking Bush** onto end of PVC-u pipe

**Step 3** – Apply ring of non-setting mastic to underside of caulking ring

**Step 4** – Make yarn and sand and cement joint in the normal way

### Connecting to copper

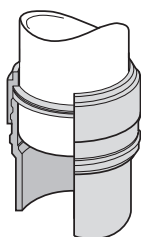


Fig.42b Copper/PVC-u

**Step 1** – Clean pipe with **9101 Cleaning Fluid**

**Step 2** – Replace black seal ring in PVC-u socket with appropriate red seal ring:

**Seal ring ref. 9149** for 108mm metric copper to BS 2871

**Seal ring ref. 9145** for 4" imperial copper to BS 659

**Step 3** – Lubricate seal ring with **9136 Lubricant** and insert copper spigot as for standard PVC/PVC seal ring joint (see page 3)

### Connecting to lead

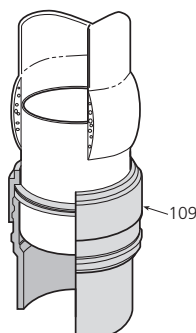


Fig.42c Lead/PVC-u

**Step 1** – Clean pipe with **9101 Cleaning Fluid**

**Step 2** – Wipe or lead weld short length of copper tube onto end of lead pipe

**Step 3** – Follow procedure as for copper (*above*)

### Connecting to underground drain



Fig.42d 4DW200

*For soil and waste connections*

*For 32, 40 and 50mm waste pipe to 110mm underground PVC-u or clay pipework*

Use **4DW200 Adaptor**

**Step 1** – Push adaptor into underground pipe bore

*NOTE: When adapting to clay pipe it may be necessary to remove the plastic outer ring at the top of the adaptor*

**Step 2** – Insert waste pipe carefully

*NOTE: On larger sizes it may be necessary to chamfer the pipe end*

■ Ensure waste pipe is supported

## OVERFLOW CONNECTIONS

### Installing cistern overflow

#### APPLICATION RANGE:

500-Overflow 

Applicable to: 502 Bent Tank Connector and 511 Straight Tank Connectors

- Two connection options: through side-wall or bottom of cistern

**Step 1** – Mark and drill 27mm clearance hole near top of cistern sidewall OR through cistern bottom. De-burr cut edge around hole

**Step 2** – Remove plain nut and one washer from **502 Bent Tank Connector** or **511.75 Straight Tank Connector**

**Step 3** – Insert connector through hole from outside of cistern. Ensure external washer is in place

**Step 4** – Replace internal washer and nut, and tighten nut

#### *Sidewall position:*

**Step 5a** – Solvent-weld external overflow pipe to **511.75 Connector**

#### *Bottom position:*

**Step 5b** – Cut inner overflow pipe to length (upper end to coincide with required maximum water level) and solvent-weld to **512.75 Connector**

**Step 6** – Using joint tape, screw on to thread of **511.75** or **502.75.90** projecting through tank base

**Step 7** – Solvent weld external overflow pipe to Connector

### Installing overflow outlets for bath

#### APPLICATION RANGE:

600-Traps 

Applicable to: 690 and 691 Bath Overflow Outlets

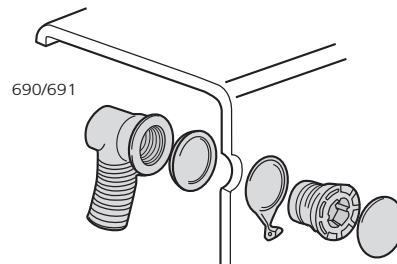


Fig.43 Connecting overflow outlets

**Step 1** – Remove end cap, threaded inlet, chain ring and washer (Fig.43)

**Step 2** – Insert body of overflow through aperture in bath

**Step 3** – Reassemble with washer between body and outside of bath

**Step 4** – Hand tighten threaded assembly

*CAUTION: Do not overtighten. Risk of damaging washer*

**Step 5** – Replace end cap

**Step 6** – Push-fit overflow tube from bath trap onto spigot outlet of assembly

*NOTE: Ensure that tube is fully pushed over bead on spigot*

## TRAP CONNECTIONS

### Connecting bottle traps and tubular traps/bath trays

#### APPLICATION RANGE:

600-Traps



Applicable to: all 600 Bottle Traps, Tubular Traps, Tubular Running Traps and Tubular Lowline Traps

#### Trap inlet

**Step 1** – Connect threaded nut to waste outlet

**Step 2** – Tighten by hand (plus one half-turn)

#### Trap outlet (Fig.44)

*NOTE: Trap described has a universal compression outlet*

**Step 3** – Ensure connecting waste pipe is cut square and de-burred

**Step 4** – Dismantle trap outlet as shown (Fig.44)

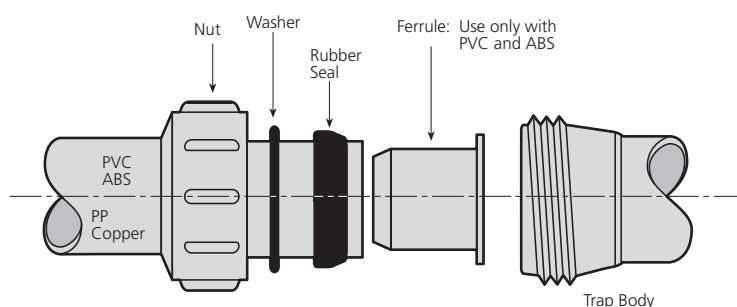


Fig.44 Trap parts

**Step 5** – Place nut, washer and rubber seal on the end of the waste pipe. Ensure sloping face of rubber seal is towards the trap

**Step 6a** – If PVC or ABS waste pipe (BS EN 1329-1): push ferrule into end of waste pipe

**Step 6b** – If polypropylene (BS EN 1451-1) or copper waste pipe: discard ferrule (not required)

**Step 7** – Push waste pipe fully home into trap socket

**Step 8** – Screw nut tight onto trap body

*NOTE: For tubular traps, check that nut between joints is fully tightened after swivelling trap to required position For bottle traps, note that trap bowl has bayonet fixing, detachable by approx. quarter turn. (End-user of fitting should be informed)*

### Fitting resealing insert to bottle trap

Applicable to: 615 Bottle Traps (self-resealing)

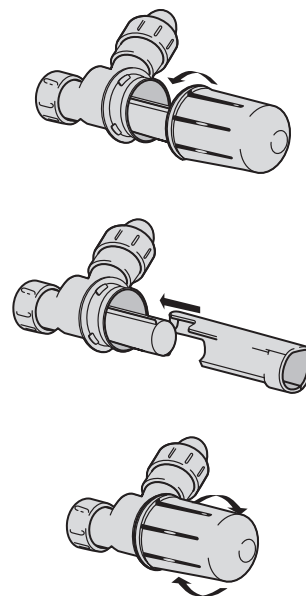


Fig.45 Removing bowl

**Step 1** – Remove bowl of trap by twisting anti-clockwise approx. quarter turn

**Step 2** – Slide adaptor piece over dip tube of trap. Ensure dip tube fins engage in slots, and push home until top of adaptor touches the body of the trap

**Step 3** – Replace bowl of trap by locating it on bayonet lugs. Twist clockwise until tight

## TRAP CONNECTIONS *(continued)*

### Installing washing machine/dishwasher discharge pipe

Applicable to: 633.15 Combined Trap, 631.15 Trap, 213.15 Adaptor and 9250 Washing Machine Standpipe

- Automatic washing machines and dishwashers may be connected to the drain system via

#### **EITHER**

633.15 Combined Trap (Fig.46a)

#### **OR**

213.15 Adaptor, 9250 Standpipe and 631.15 Trap

Applicable to: 633.15 Combined Trap (Fig.46b)

**Step 1** – Cut end off hose connector to obtain required connection:

- Hose clip connection
- $\frac{1}{2}$  BSP male thread
- $\frac{3}{4}$  BSP male thread

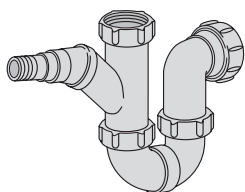


Fig.46a 633.15

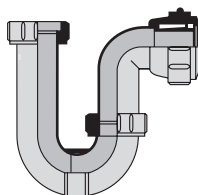
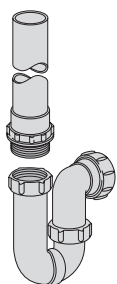


Fig.46b 631.15

**Step 2** – (a) Clamp hose using worm drive clamp or similar

(b) and (c) Make tight screw connection with a female threaded backnut

Applicable to: 213.15 Adaptor, 9250 Standpipe and 631.15 Trap

**Step 1** – Fix **631.15 Trap** to wall using clips provided, at height appropriate for outlet

**Step 2** – Cut length of pipe to provide an inlet at minimum 500mm above finished floor level (see Fig.46b)

**Step 3** – Solvent weld pipe into 213.15 Adaptor

**Step 4** – Using jointing tape, connect 213.15 Adaptor to trap

Alternatively for steps 2 and 3 use pre-assembled 9250 standpipe

## TRAPPED FLOOR GULLIES

### Installing trapped floor gullies

Applicable to: 281 Trapped Floor Gully, and 282 and 283 Floor Gully Inlets

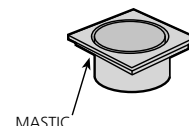


Fig.47a Trapped floor gully inlet

**Step 1** – Check overall height of unit with inlet in position, and adjust to suit installation location. (Do NOT solvent weld inlet at this stage)

**Step 2** – Place gully into position

**Step 3** – Solvent-weld waste pipe to outlet socket

**Step 4** – Bring floor screed up to level with bottom of gully inlet

**Step 5** – Allow screed to set, and remove gully inlet

**Step 6** – Apply waterproof mastic to underside of square flange of gully inlet

**Step 7** – Solvent cement gully inlet into position

**Step 8** – Tile up to inlet, and grout using waterproof grout

1. Fit finned rubber seal over socket of gully outlet
2. Push pipe spigot over fin seal

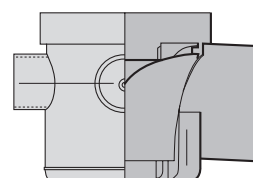
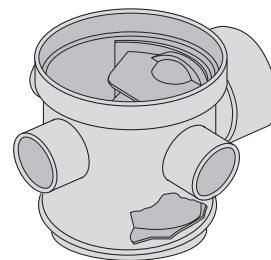


Fig.47b



# Commercial Piping and Sanitary Systems



## Polypipe Terrain



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Plumbing and Heating



Pressure Pipes



Sanitary



Ventilation



Water Management

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