

INSTALLATION INSTRUCTIONS

S12 Tank Sump Systems

FIBRELITE 

PART OF OPW A DOW COMPANY

Installation Instructions for
the following systems:

Non-Watertight

S12-390

S12SQ-390

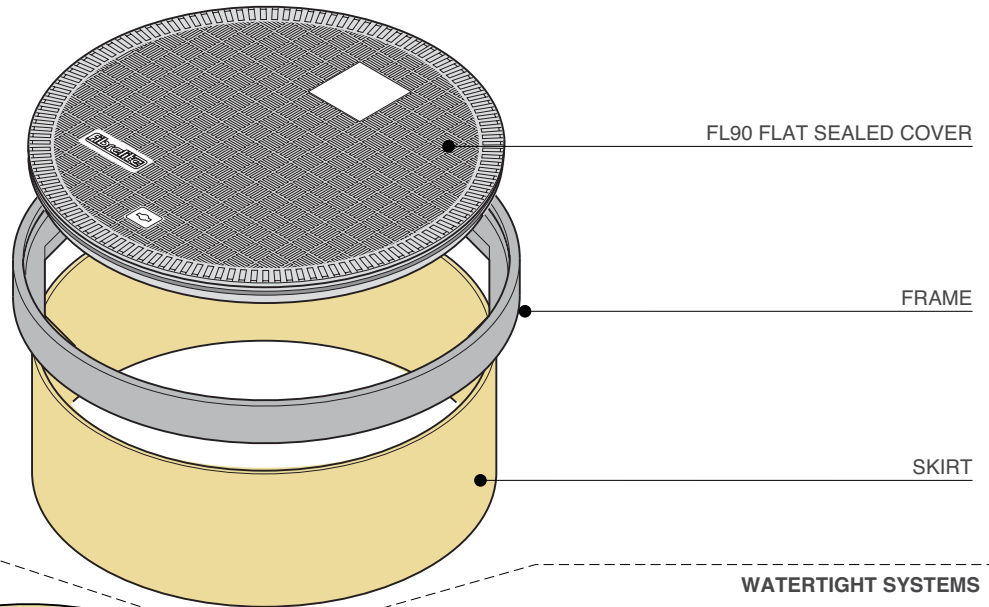
S12SB-390

Watertight

S12-390-WT

S12SQ-390-WT

S12SB-390-WT



NON-WATERTIGHT SYSTEMS

INTERNAL LID
(NON-STRUCTURAL)

SPOUT

CONDENSATION BOTTLE

BOTTLE CARRIER

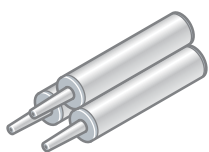
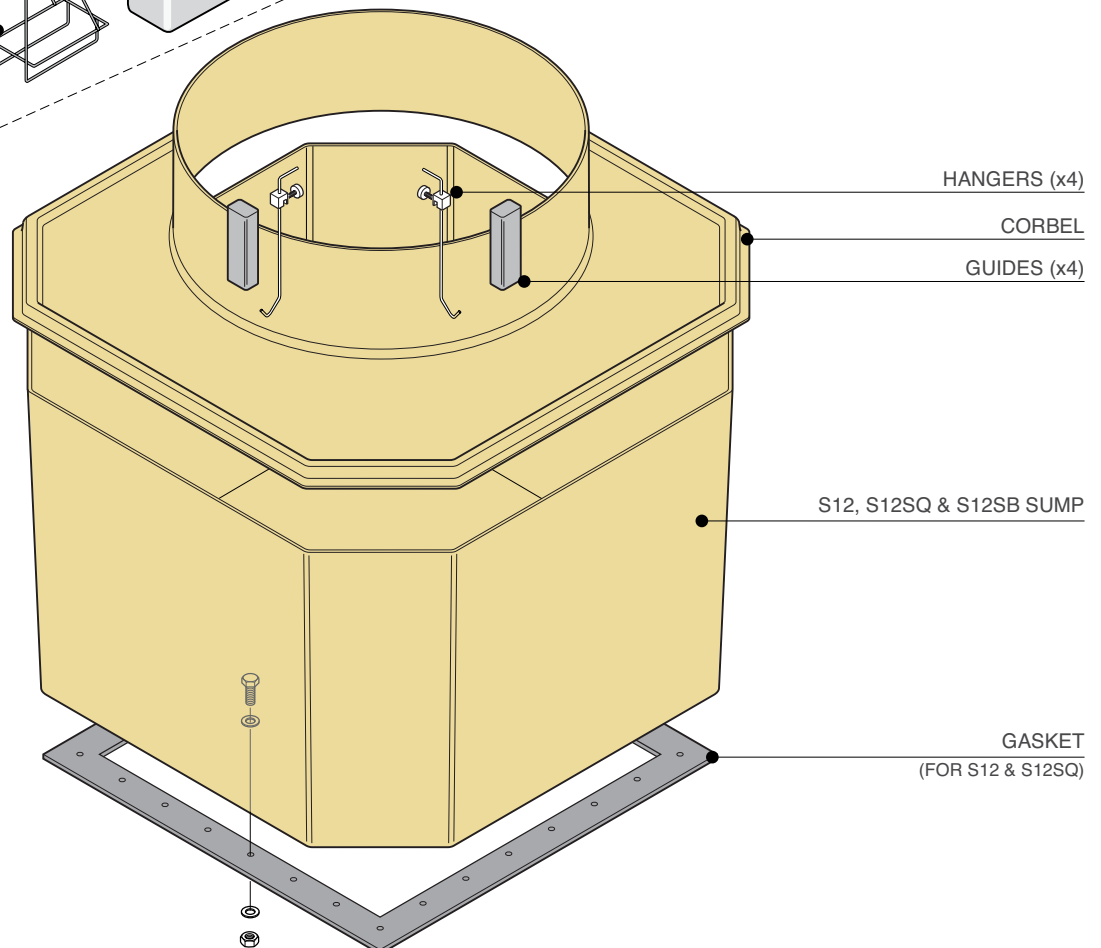
SELF LEVELLING SEALANT
(SEALS GAP BETWEEN
CORBEL & SKIRT)



WATERTIGHT SYSTEMS

WATERTIGHT PLATFORM
(STRUCTURAL)

STAINLESS STEEL RING
(FACTORY INSTALLED
ONTO CORBEL)



40FC SEALANT
TUBES (x 5)

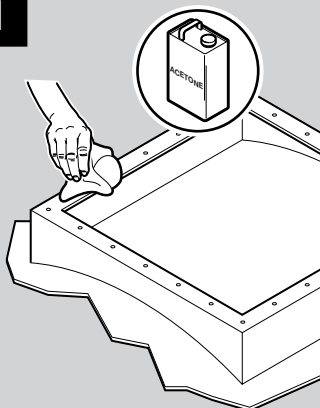
INSTALLATION INSTRUCTIONS

(Sump Installation - S12 and S12SQ)

FIBRELITE

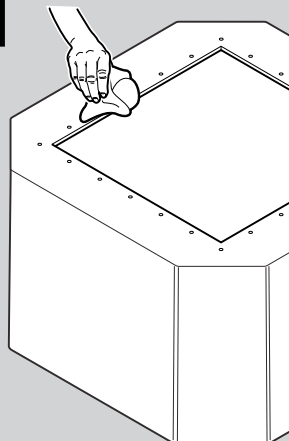
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1



Clean the tank connection flange and ensure it is free of all grit etc. Check for flatness and deformation as this can cause the Chamber to become distorted or fail to seal. If in doubt contact our technical department + 44 (0)1756 799773

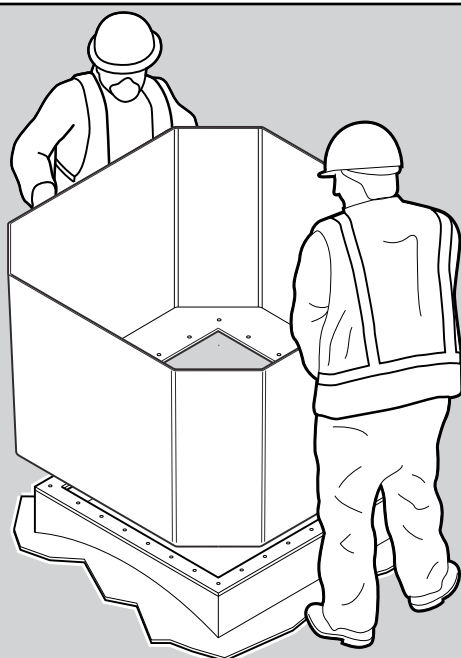
2



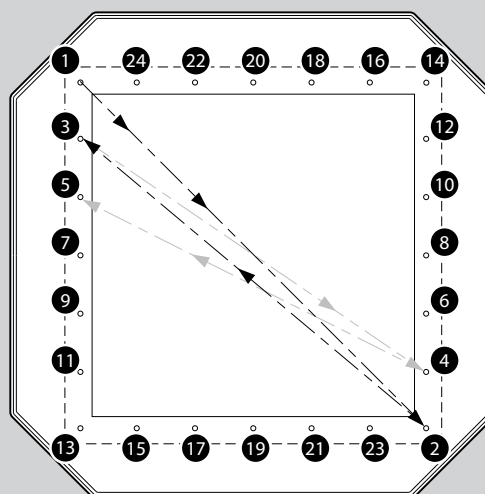
Remove protective cover from base of chamber and position chamber onto tank flange, aligning the holes.

Ensure the seal on the base of chamber is not damaged and is free from grit etc.

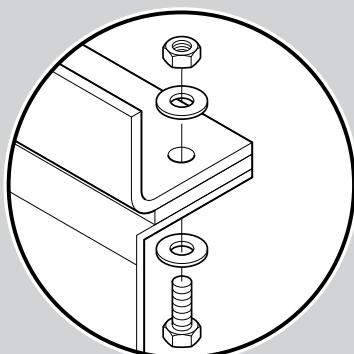
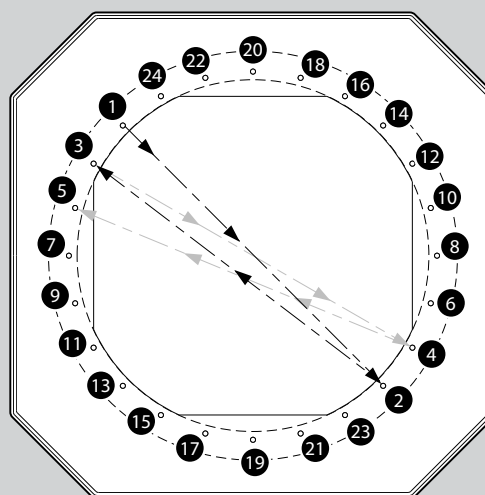
3



S12SQ-390
S12SQ-390-WT



S12-390
S12-390-WT



Fit a bolt and washer into each of the 24 holes (use only those supplied). Fit a washer and nut to each of the bolts. Tighten each bolt to 13.5Nm/10lbfft torque, employing the following method, to avoid distortion of chamber.

Starting with any bolt tighten to 7Nm/5lbfft torque. Move to the bolt positioned at 180° and tighten to 7Nm/5lbfft torque. Move 180° plus one bolt pitch and tighten to 7Nm/5lbfft of torque. Repeat until all bolts are tightened to 7Nm/5lbfft torque.

Now repeat the procedure tightening all bolts to 13.5Nm/10lbfft torque.

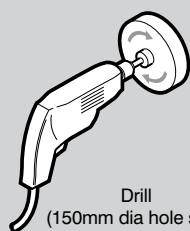
Note: The seal will initially relax and it is an advantage if each bolt is tighten to 13.5Nm/10lbfft torque after a period of 24 to 48 hours after initial assembly.

INSTALLATION INSTRUCTIONS

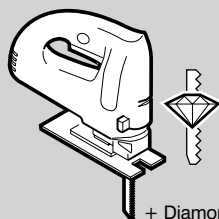
(Pipework and Entry Seal Kits)

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Drill
(150mm dia hole saw)



Jigsaw
+ Diamond tipped blades



Gloves

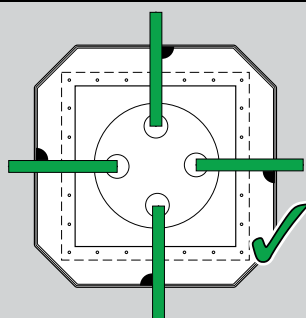


Safety Goggles

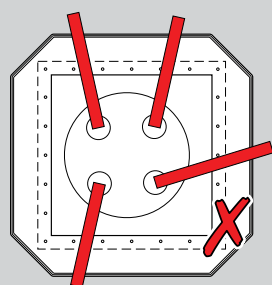


Face Mask

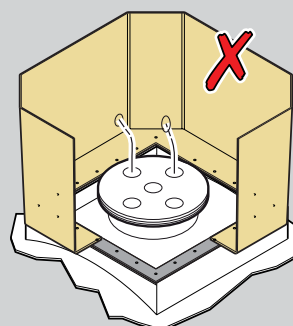
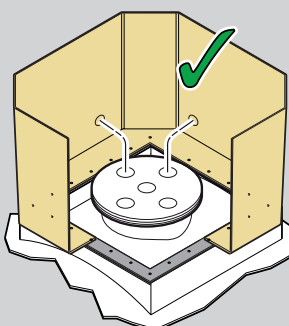
- 4 WARNING** Care must be taken to position the pipework and conduit so it exits the sump at 90° angle to the sump wall. Otherwise undue stress will be placed on the sump wall and entry boot, which may lead to leaks in the future.



Position pipeway at 90° angles to the sump wall.



Ensure pipe entry boot is positioned away from the joints.



- 5** Before installing pipework, fix a string line at ground level across the sump to check if material needs to be cut off the sump. If so, mark the sump with a line along the cut mark.

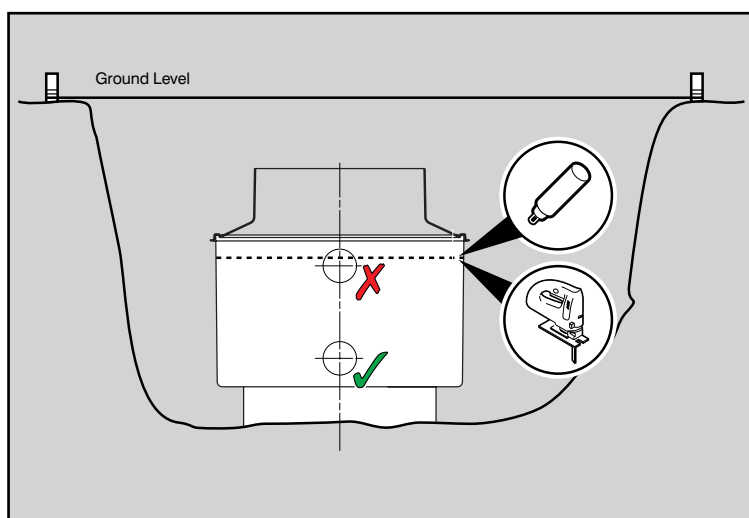
Check to ensure you have the necessary minimum clearance required from the top of the sump to the centreline of the pipework/pipe entry kits.

Standard Entry Kit = 145mm

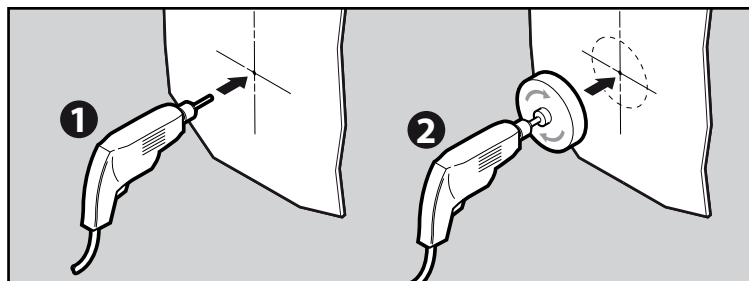
Large Entry Kit = 170mm

For shallow burials, it may be necessary to cut less material off the sump, and cut the remainder off the corbel and skirt to allow pipe entry boots to be fitted. **PLAN THIS CAREFULLY.**

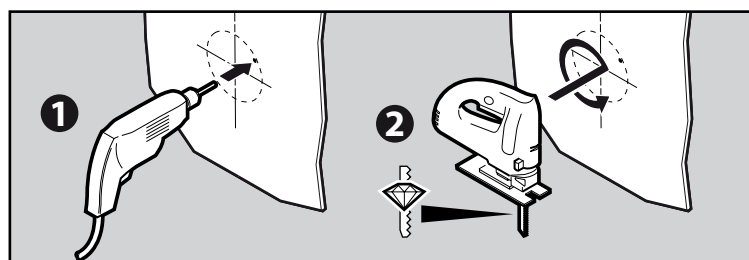
Refer to measurement chart.



- 6** Mark a centre point in the centre of a sump panel. Drill a pilot hole to ensure the hole saw can be positioned and used safely.



- 7** For larger holes (190mm) we recommend that the hole is marked and jigsaw is used to cut the hole. Firstly, drill a hole through the wall, so the jigsaw can be inserted and used easily and safely. (Fibreglass will blunt normal blades very quickly, we recommend diamond tipped blades or blades to cut ceramics).



NOTE : When backfilling ensure the pipework is not disturbed.

WARNING : Do not backfill until the sump has been vacuum tested.

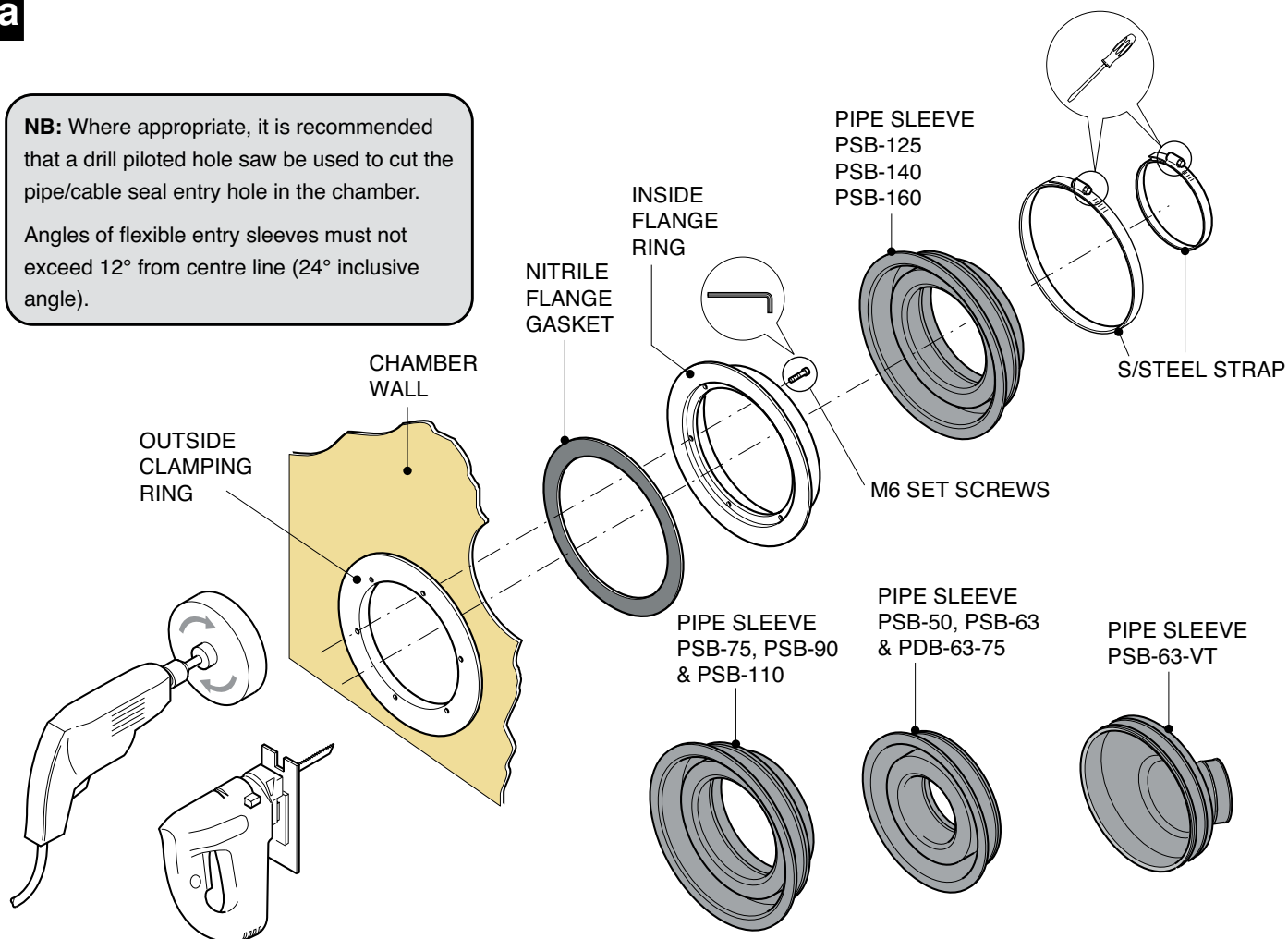
INSTALLATION INSTRUCTIONS

(Pipe Sealkit Fitting Instructions)

8a

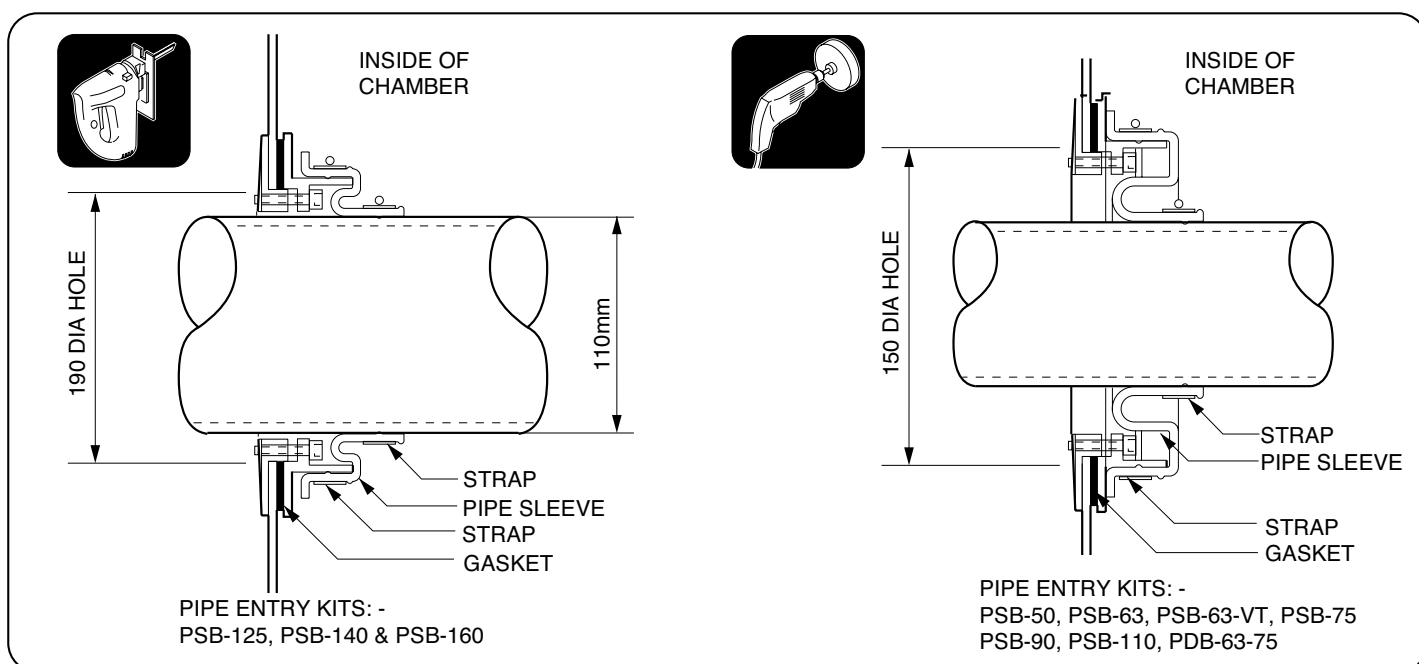
NB: Where appropriate, it is recommended that a drill piloted hole saw be used to cut the pipe/cable seal entry hole in the chamber.

Angles of flexible entry sleeves must not exceed 12° from centre line (24° inclusive angle).



DRILL AND HOLE SAW
ATTACHMENT OR JIGSAW

NB: Straps/clips are to be tightened in accordance with the pipe manufacturers recommendation



The exit position of the pipework through the chamber wall must be as close as possible to 90°. The pipe kit should be fitted so that the pipework is centrally positioned to the seal. When backfilling ensure that the pipework is not disturbed from this central position.

INSTALLATION INSTRUCTIONS

(Conduit Entry Seal Kit Installation Guide)

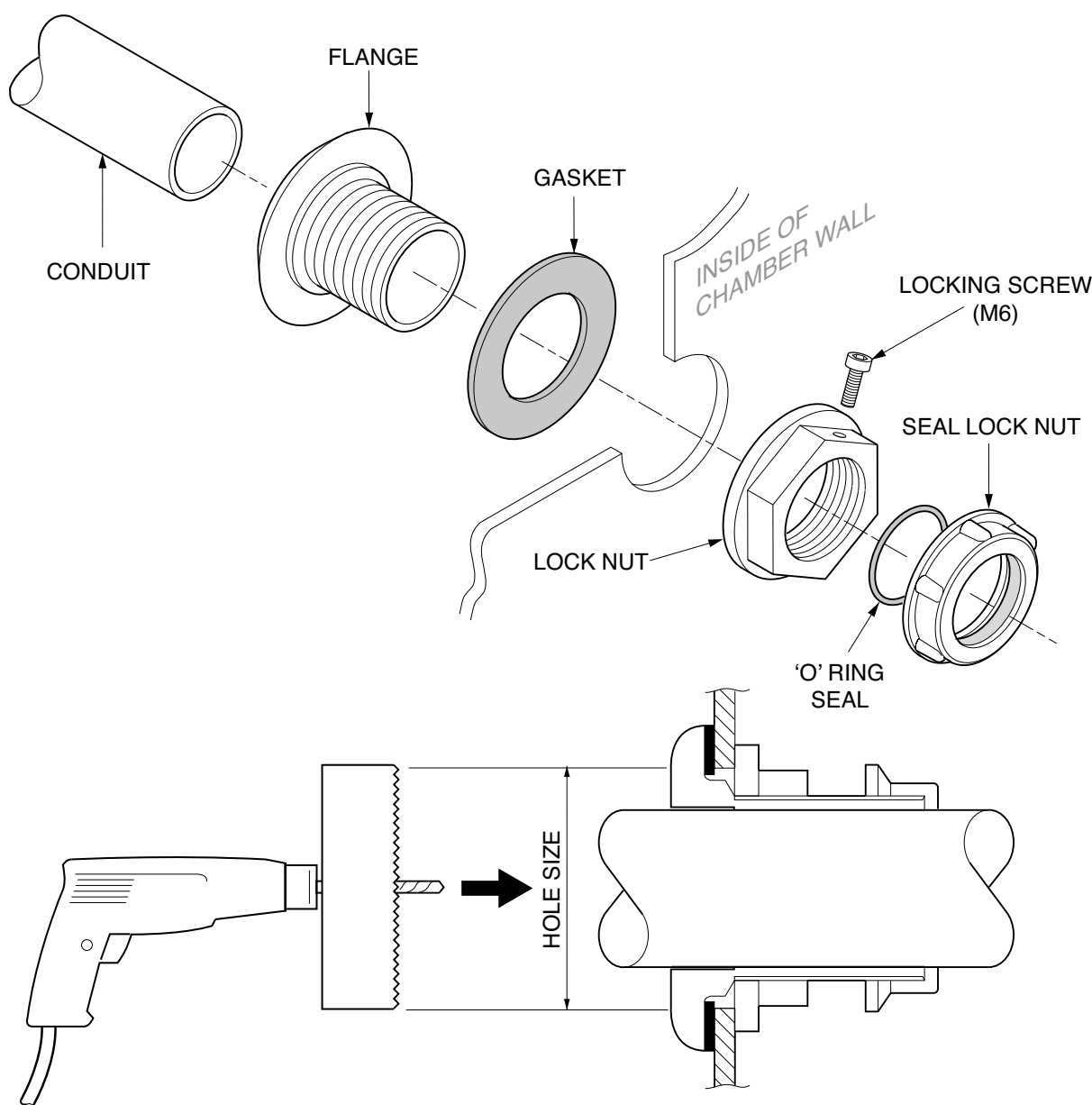
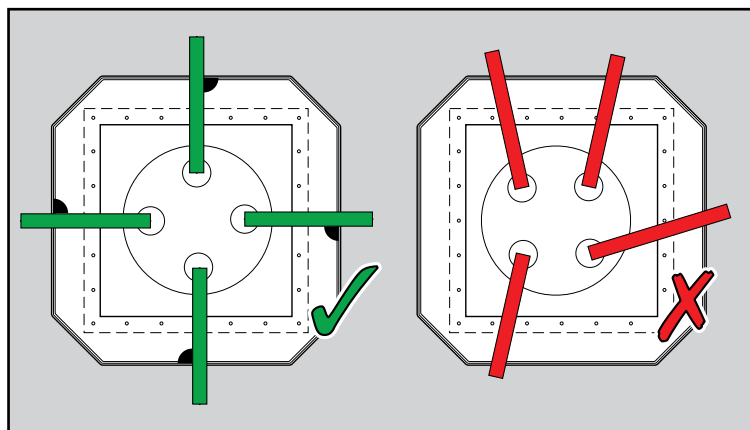
8b PEC KITS

Refer to pipe entry boot instructions on positioning of the hole.

Conduit must be installed at 90° angle to the side wall.

Use Fibrelite entry seal kit model PEC-32 to fit UPP + NUPI 32mm conduit.

PEC-27, PEC/33, PEC-50 to fit metal conduit sizes 3/4", 1" and 1 1/2" respectively.



NB: Use the correct size drill piloted hole saw for each entry kit. The cable entry seal must be fitted perpendicular to the chamber wall and the conduit must enter the entry kit perfectly aligned. When backfilling ensure the conduit is not disturbed.

ENTRY KIT	HOLE SIZE
PEC-27	Ø51mm
PEC-32	Ø51mm
PEC-33	Ø60mm
PEC-50	Ø73mm

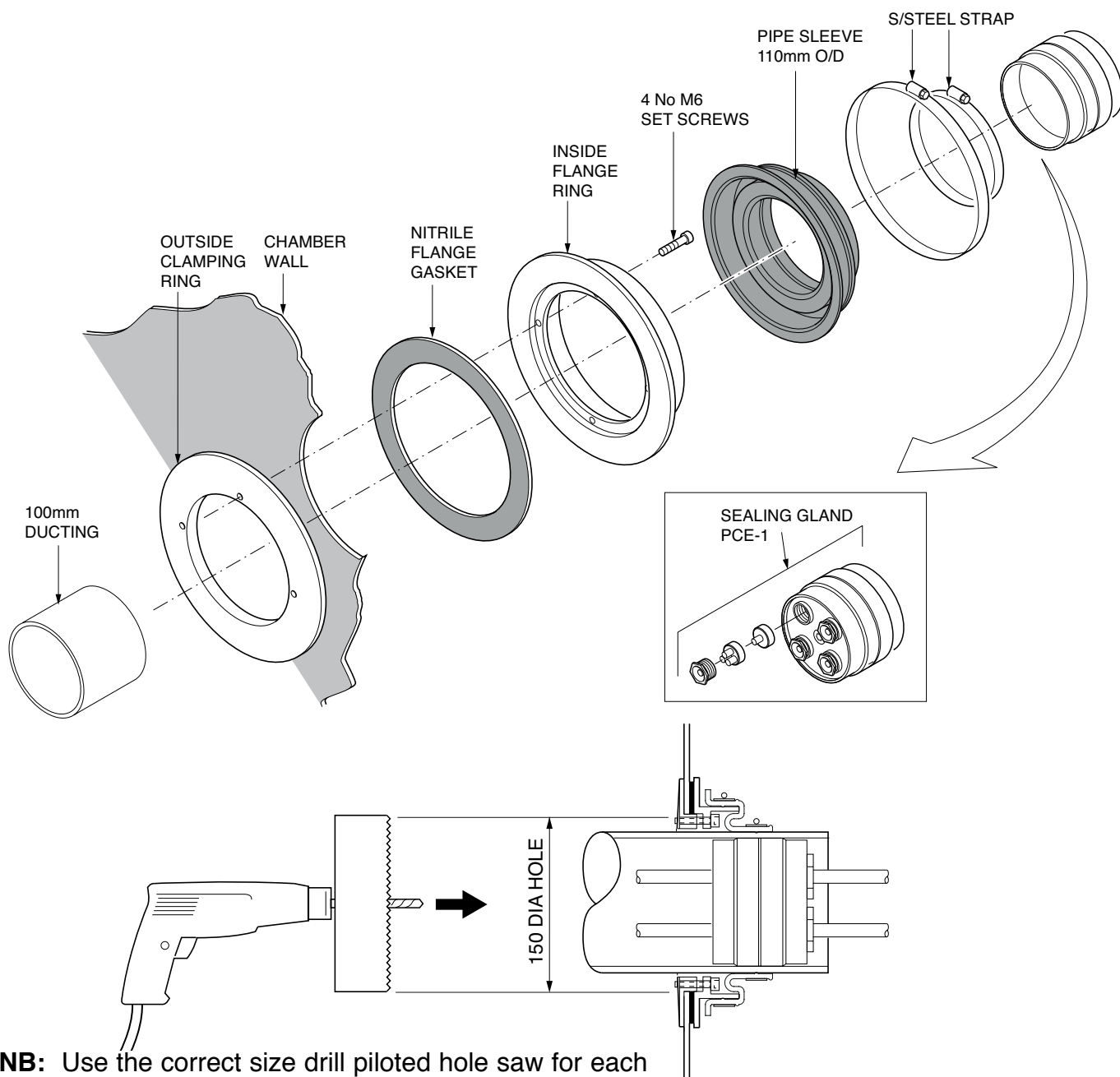
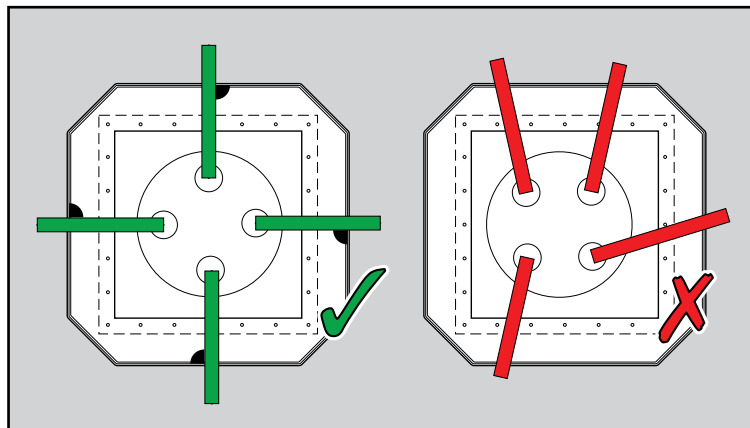
INSTALLATION INSTRUCTIONS

(Conduit Entry Seal Kit Installation Guide)

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8C PCE-1-KIT

Conduit must be installed at 90° angle to the side wall.



NB: Use the correct size drill piloted hole saw for each entry kit. The cable entry seal must be fitted perpendicular to the chamber wall and the conduit must enter the entry kit perfectly aligned. When backfilling ensure the conduit is not disturbed.

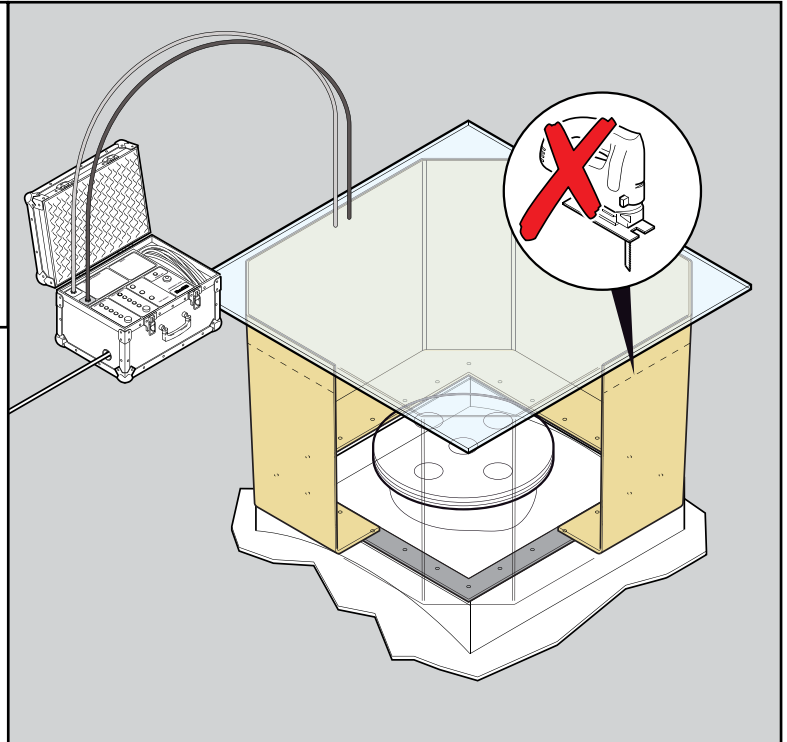
INSTALLATION INSTRUCTIONS

(Sump Vacuum Test & Achieving the Correct Height)

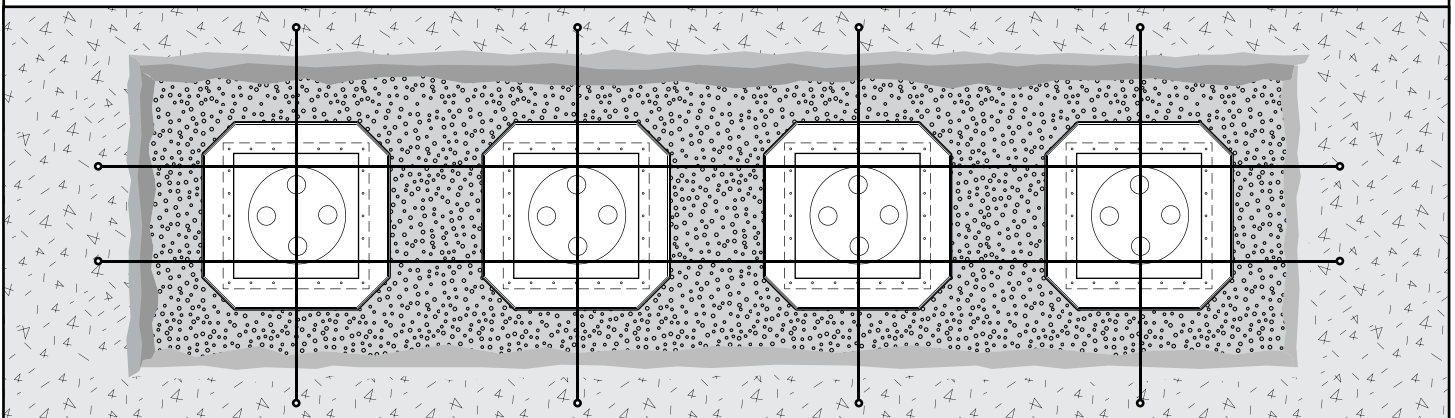
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- 9** After penetrations have been fitted, ensure all connections on the manway lid are sealed. Perform vacuum test. Refer to Vacuum test instructions.

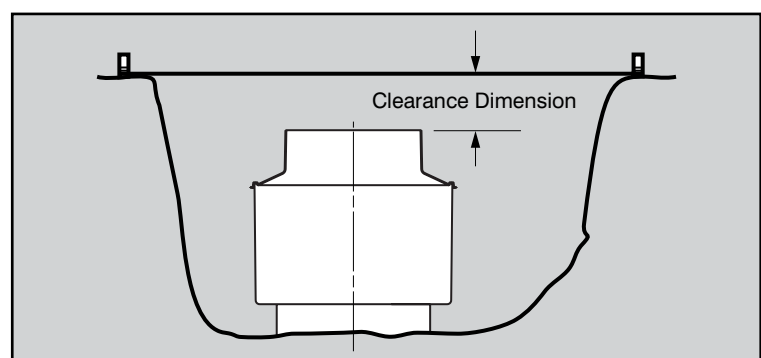
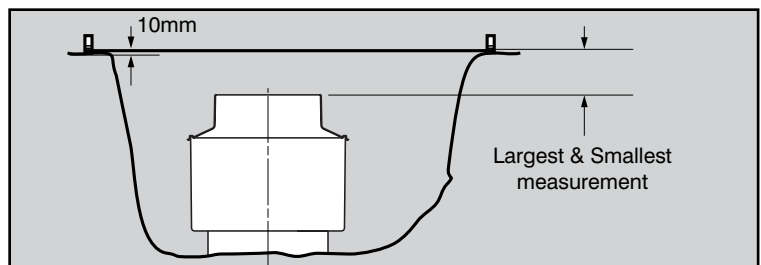
Do not backfill around sump or cut material off the sump until the test has passed successfully.



- 10** Fix string lines 10mm above grade level across the sump - across length and width of the tank farm to highlight any falls.



- 11** Place the corbel onto the sump (only 'dry fit' the corbel do not bond at this stage). Check the measurement from the top of the corbel to the string line, which is set 10mm above the general grade level. Check all sides of the sump and select the largest and smallest measurement to take account of falls across the forecourt.



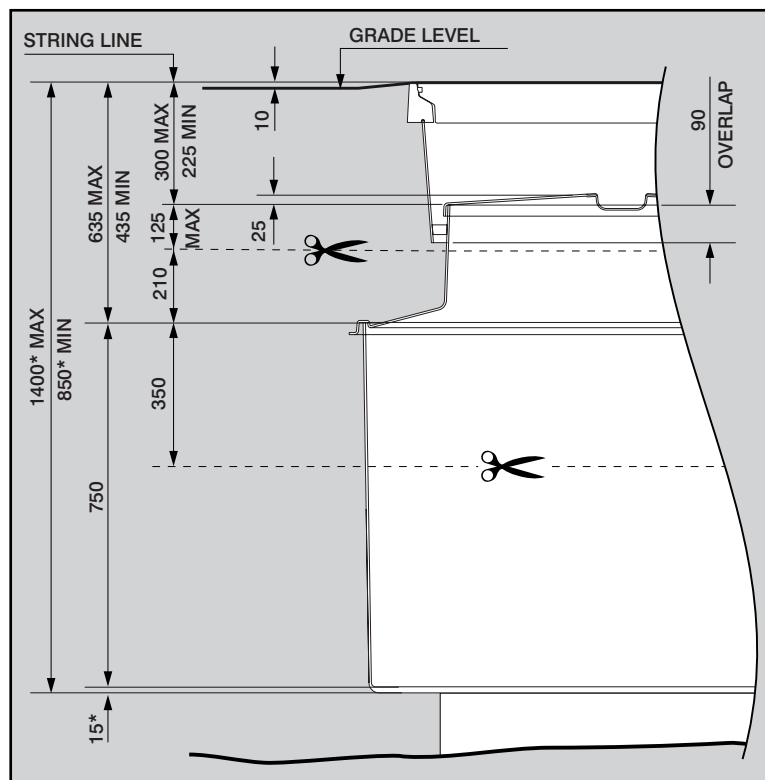
INSTALLATION INSTRUCTIONS

(Achieving the Correct Height)

12a Non-watertight Systems

S12-390, S12SQ-390 and S12SB-390

*Note: S12SB-390 sump base thickness is 16mm instead of 15 so overall max and min changes to 1401mm and 851mm.



IMPORTANT

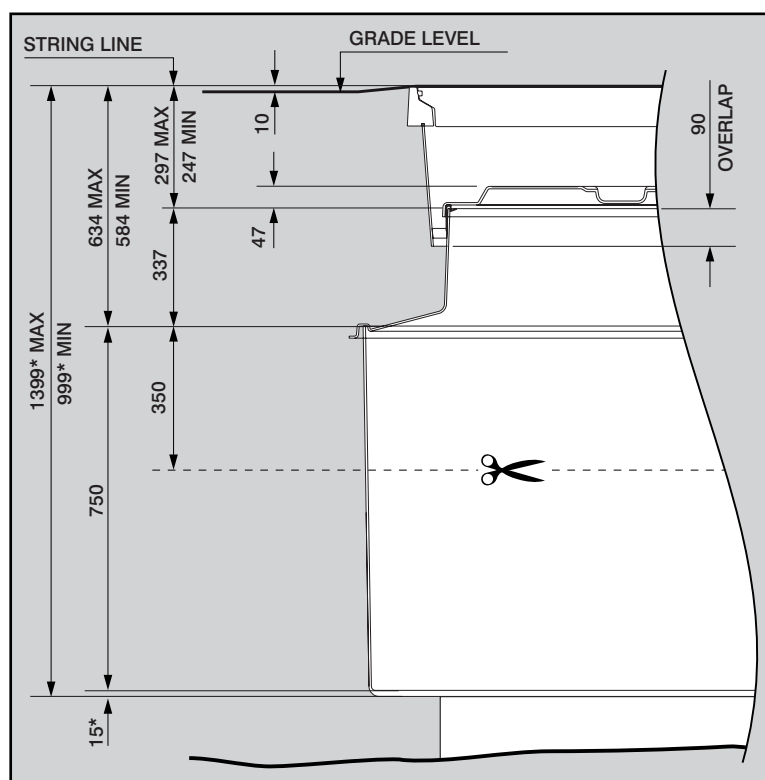
Refer to this measurement chart:

Measurement (clearance dimension)	Action
Max. 300mm Min. 225mm	No trimming required, corbel can be bonded onto the sump. Adjust frame height using hangers.
less than 225mm	Option 1: If by trimming material (max of 125mm) from the corbel turret increases the 'clearance dimension' into the 300 - 225mm range then material only needs to be trimmed from the corbel turret and skirt. Trim the skirt so that the overlap between the corbel turret and skirt is between 90 and 120mm. Option 2: If by trimming 125mm from the corbel turret does not bring the 'clearance dimension' into the 300 - 225mm range then the remaining material must be removed from the sump. A maximum of 350mm can be removed from the sump. Trim the corbel and skirt as described above in option 1.
more than 300mm	The burial depth of the tank is greater than the maximum burial depth of the standard system. Contact our technical department + 44 (0)1756 799773

12b Watertight Systems

S12-390-WT, S12SQ-390-WT and S12SB-390-WT

*Note: S12SB-390-WT sump base thickness is 16mm instead of 15 so overall max and min changes to 1400mm and 1000mm.



IMPORTANT

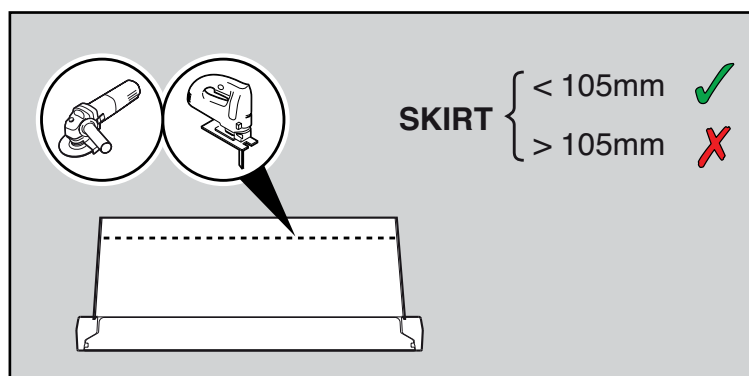
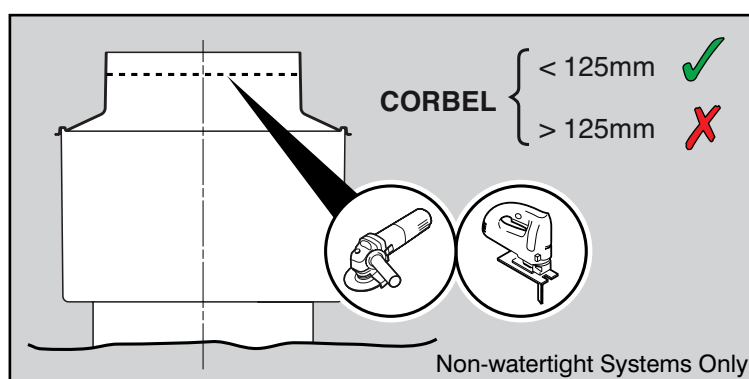
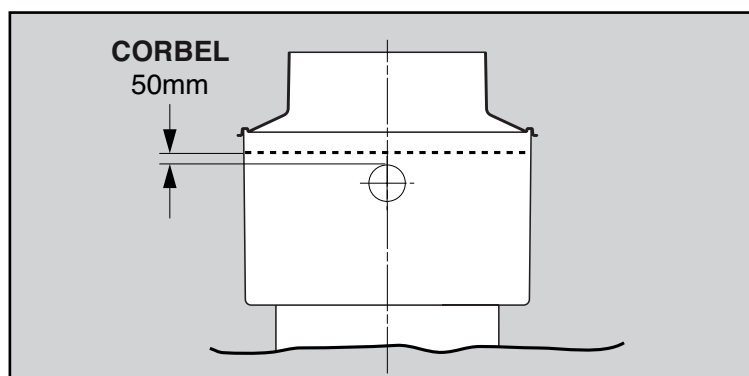
Refer to this measurement chart:

Measurement (clearance dimension)	Action
Max. 297mm Min. 247mm	No trimming required, corbel can be bonded onto the sump. Adjust frame height using hangers.
less than 247mm	Sump base only (do not trim corbel) must be trimmed to allow for minimum 247 to 297mm 'clearance dimension'. The sump base can be trimmed by a maximum of 350mm. Trim the skirt so that the overlap between the corbel turret and skirt is between 90 and 120mm.
more than 297mm	The burial depth of the tank is greater than the maximum burial depth of the standard system. Contact our technical department + 44 (0)1756 799773

- 13** Before trimming the sump check pipe entry positions allow 50mm from the top edge of the pipe entry kit flange to be able to fit the corbel in position.

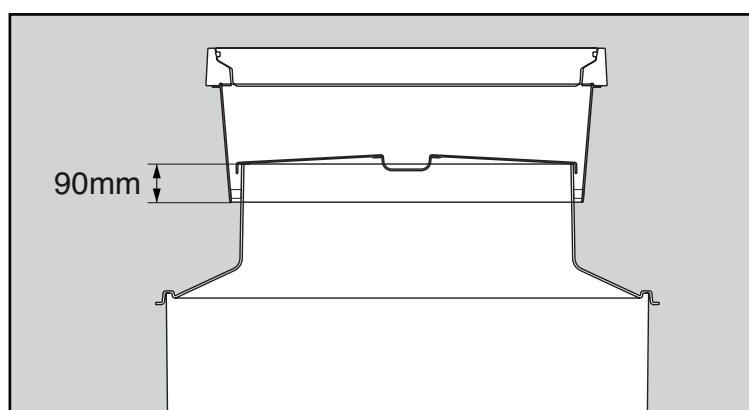
If necessary cut a smaller amount off the sump height, then cut the remaining material from the corbel (non-watertight systems only) and skirt.

Important Note: The corbel and skirt should have a clearance from the top of the frame to the top of the corbel in the range of 300 to 225mm for non-watertight systems and 297mm to 247 for watertight platform systems and the overlap between the skirt and corbel ranges between 90 and 120mm.



- 14** Ensure that you have a min overlap of 90mm between the skirt and corbel.

NB. On installations with very high water tables (up to concrete pad) refer to special instructions, overlap increases to 120mm.



WARNING Do not trim sump until sump has been vacuum tested with pipework installed and completed.

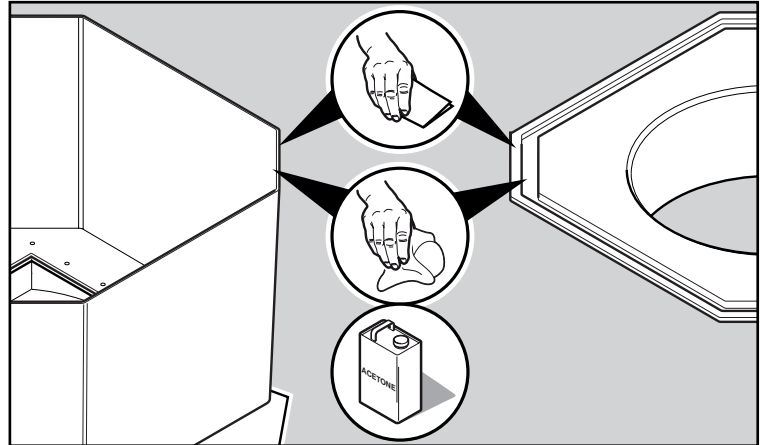
INSTALLATION INSTRUCTIONS

(Bonding the Corbel)

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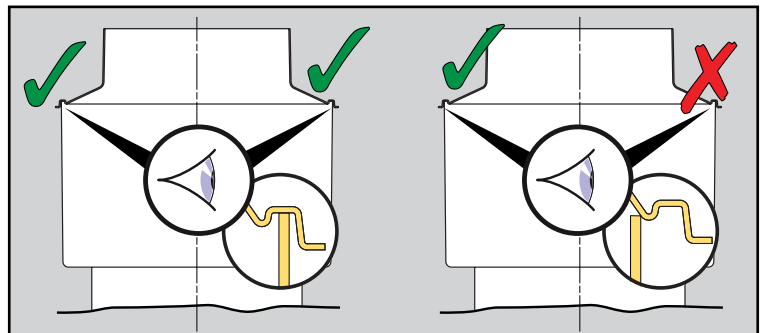
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- 15** Abrade and wipe the chamber edge/wall and the corbel groove. with a degreasing solvent



- 16** Dry fit the corbel on the sump to ensure it fits - push corbel groove onto sump wall.

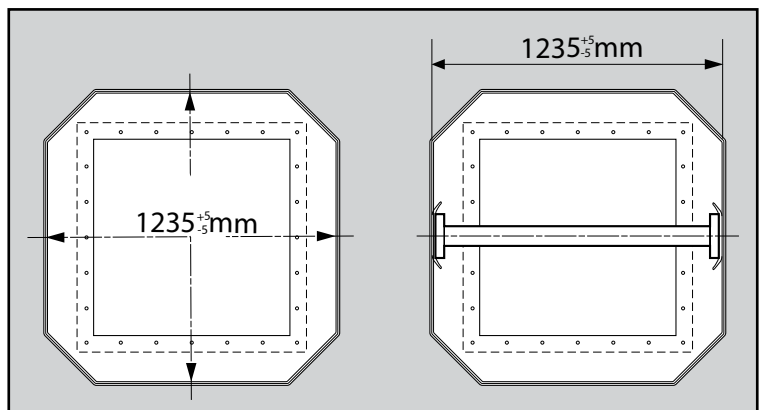
If it does not fit, pipework may have distorted the sump wall shape.



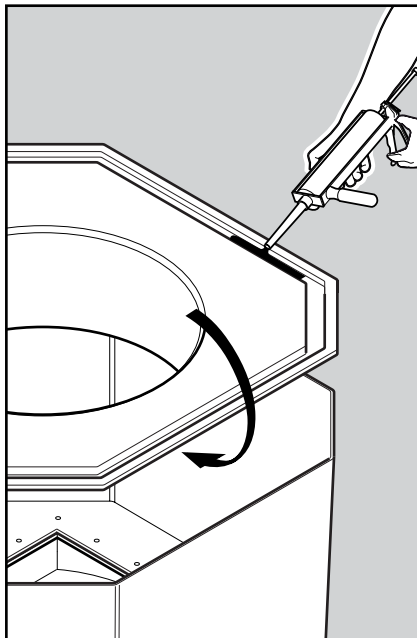
- 17** Measure distance between opposite walls, this should be 1235mm A/F. If it is less than this you will need to brace out the sump.

Using wooden batons (1235 \pm 5mm long) with timber spreader plates (150 x 150) to spread the load, brace out the sump to the correct size.

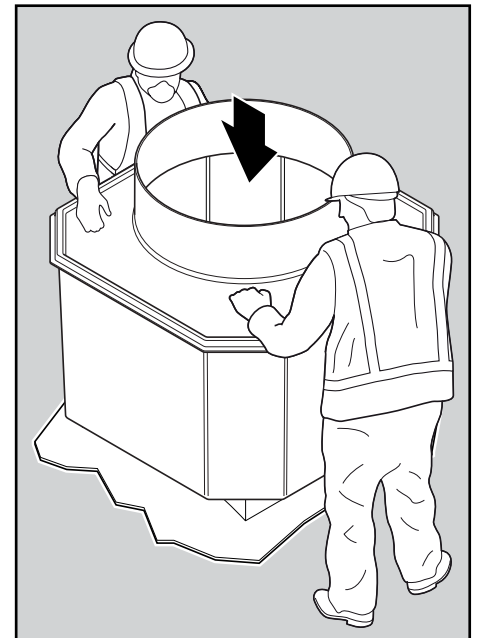
Repeat this process on all walls to get the correct shape.



- 18** Apply 2 tubes of soudaflex 40FC sealant in the groove of the corbel. Sealant should fill 1/2 the groove.



- 19** Place the corbel on the sump using 2 people and push it into position.



INSTALLATION INSTRUCTIONS

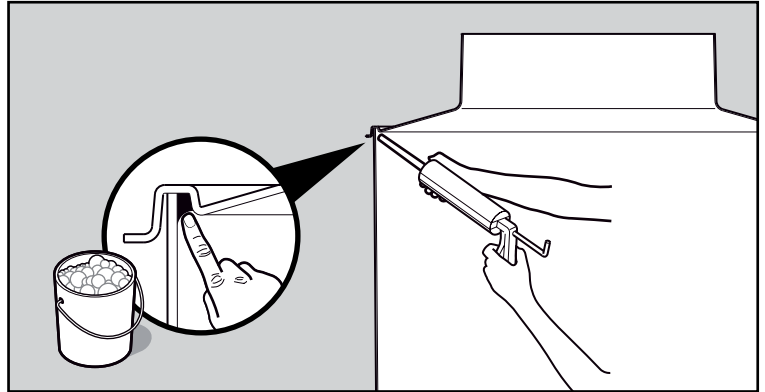
(Bonding the Corbel)

FIBRELITE

PART OF OPW A DOWER COMPANY

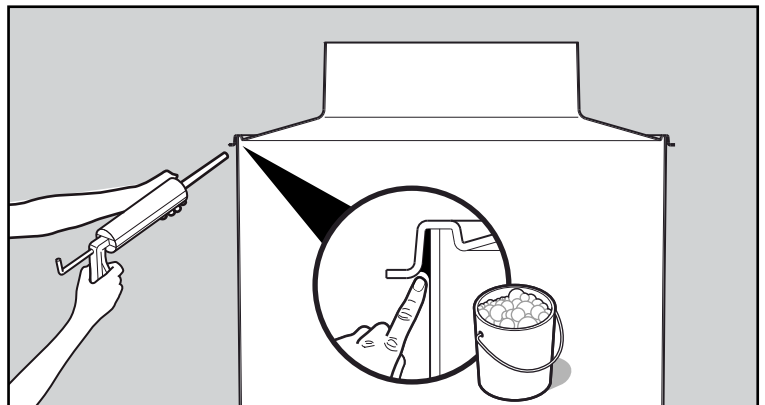
- 20** Seal around the inside edge of the corbel joint from inside the sump. Smooth off the sealant with soapy water.

Use 1.5 tubes of soudaflex 40FC sealant.



- 21** Seal around the outside joint and smooth off sealant with soapy water.

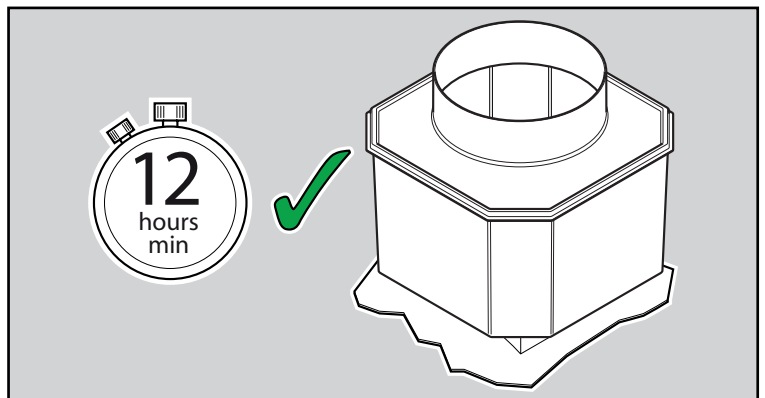
Use 1.5 tubes of 40FC sealant.



(Performing Corbel Vacuum Test)

- 22** Wait a min of 12 hours before vac testing, preferably overnight to allow sealant to set before vacuum testing.

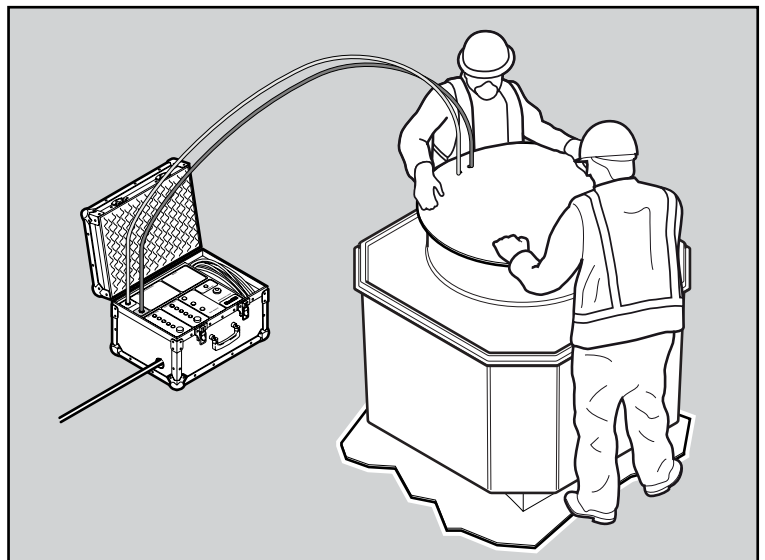
Do not disturb the sump during this time.



- 23** Ensure all pipework and electrical entries have been completed before vacuum testing, this is a final test for all penetrations in the sump.

Warning: Test the corbel at a 0.6m depth setting only or irreparable damage may occur.

Refer to vacuum testing instructions for correct method.

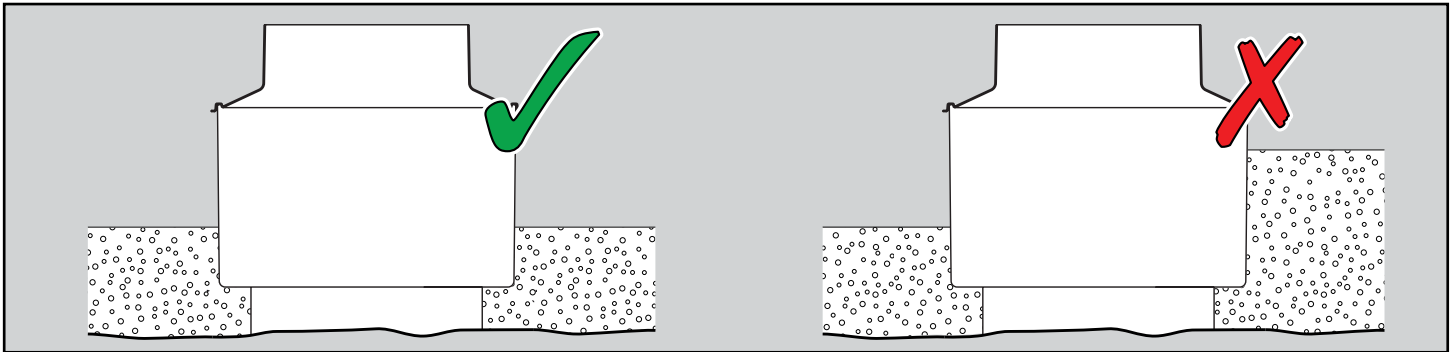


INSTALLATION INSTRUCTIONS

(Backfilling)

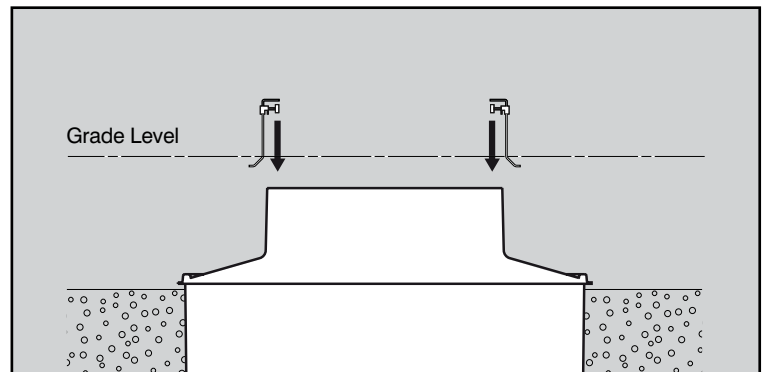
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- 24** Once the corbel test has been performed with a PASS result, the area around the sump can be carefully backfilled with peagravel or sand. Back-fill equally around the sump in layers to prevent damage or deformation.



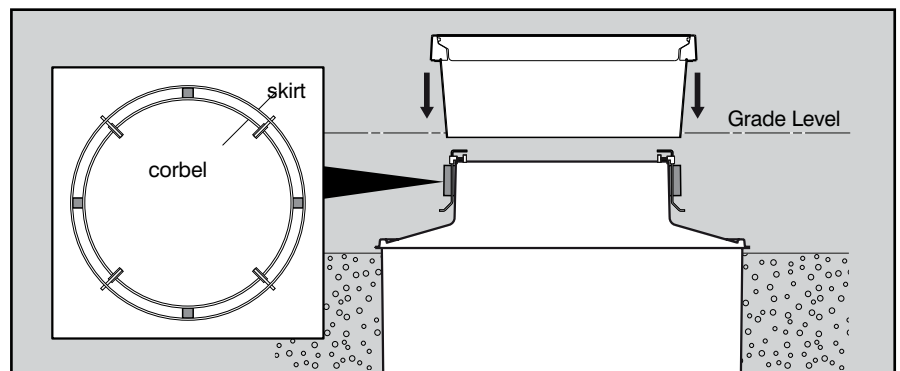
(Concreting)

- 25** Fix a string line 10mm above grade level across the sump, fix 4 hangers on the corbel top with base support facing out.

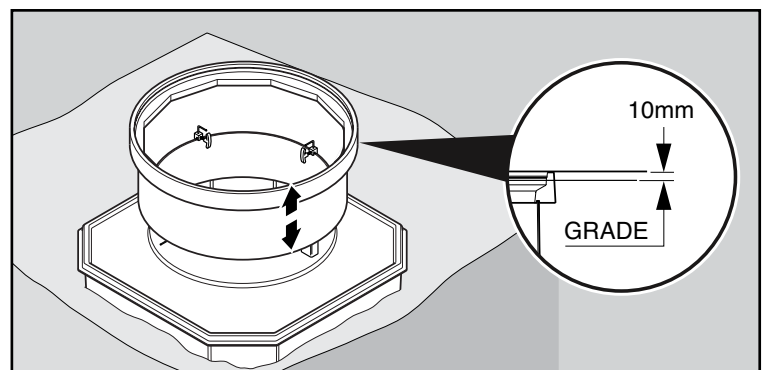


- 26** Put the skirt and frame on the hangers.

Locate the 4 foam blocks supplied between the skirt and corbel turret to centralise the skirt about the corbel. Failure to do this may result in the internal lid fouling.



- 27** Adjust knobs to set the frame to stringline level, adjust for fall in grade. Set the frame 10mm above grade level.



INSTALLATION INSTRUCTIONS

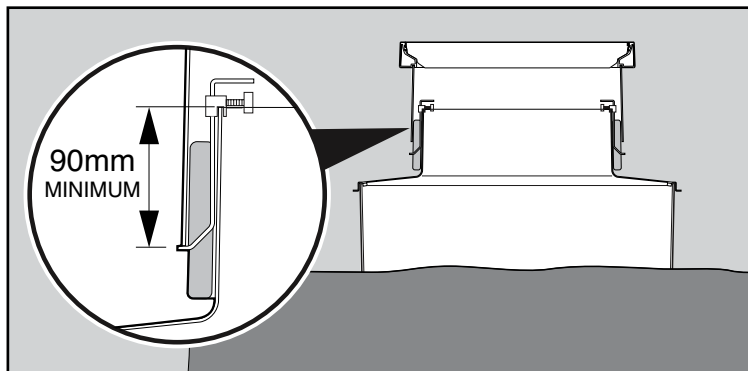
(Concreting)

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- 28** Ensure the void between corbel and skirt is kept free from concrete and a depth of 90mm overlap minimum is maintained, (120mm on high water table installations).

Ensure foam spacers are in position to locate the skirt centrally around the corbel.

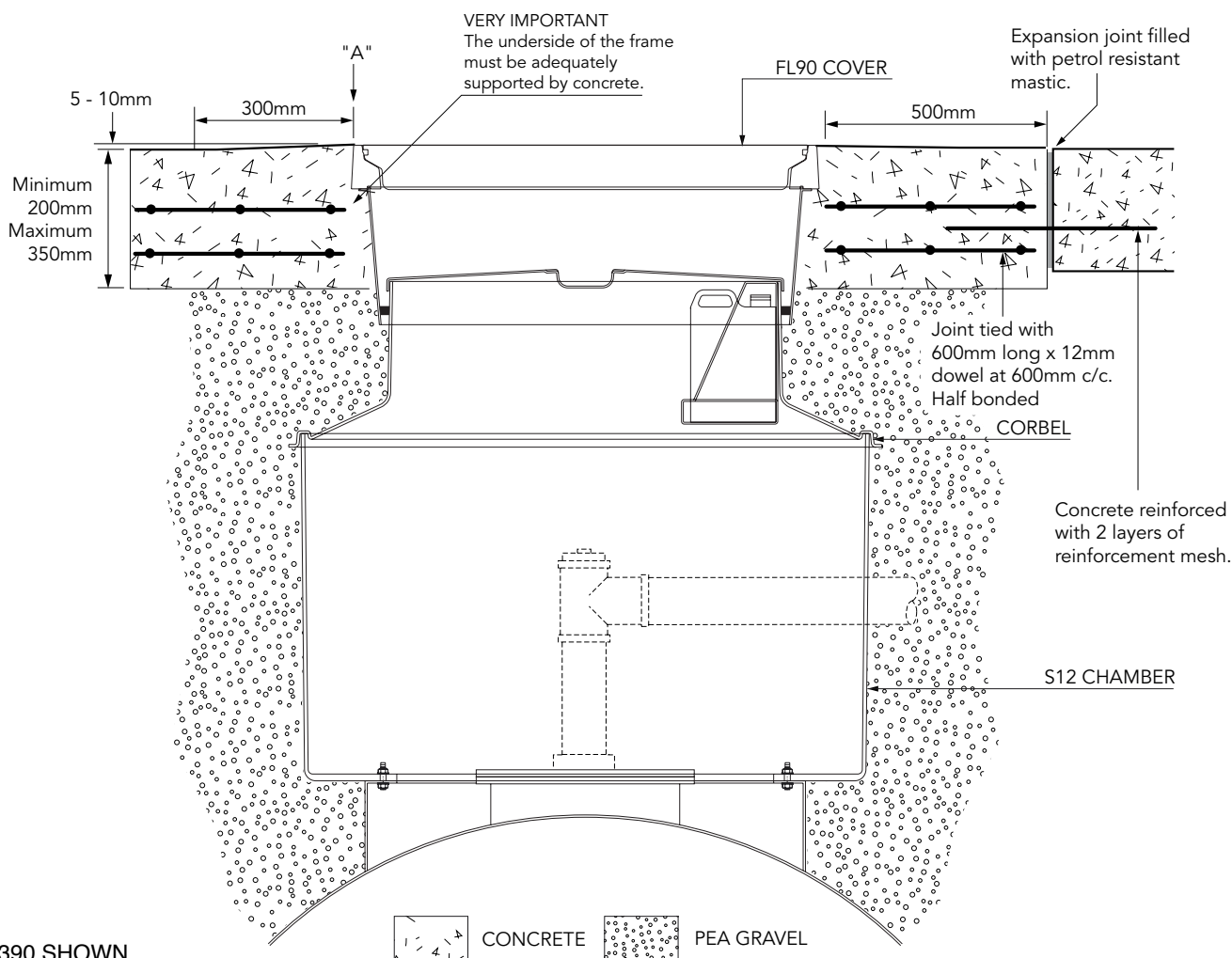


- 29** Complete backfilling to appropriate level. Frame must be supported by a minimum depth of 200mm of concrete. Concrete reinforcement must be positioned as close to the frame as possible. Minimum block of 500mm square around the frame. Joint must be tied as per diagram. Continuous pour preferred if possible.

! VERY IMPORTANT !
OUTER EDGE "A" OF FRAME SET 5 - 10MM ABOVE GENERAL FORECOURT AREA WITH CONCRETE RAMPED AWAY OVER 300MM.

TYPICAL INSTALLATION

CONCRETE



S12SQ-390 SHOWN

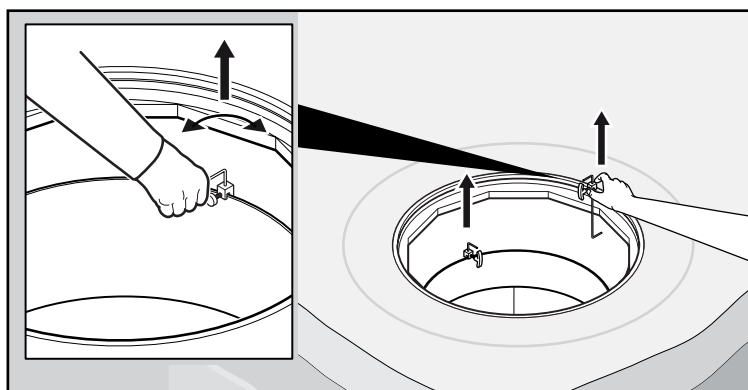
INSTALLATION INSTRUCTIONS

(Concreting)

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30 After minimum concrete cure time, hangers can be removed. Loosen the 'T' knob, push down on the rod, turn the rod through 90° and pull rod up to remove.

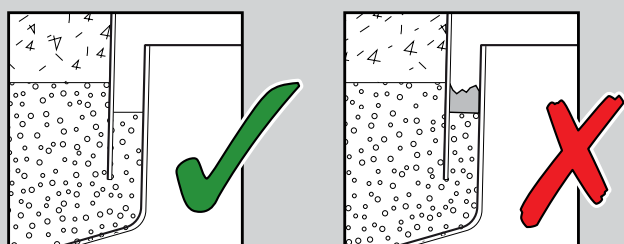
Complete other third party equipment installation inside the sump.



Non-Watertight Systems (Installation of Corbel / Skirt Sealant)

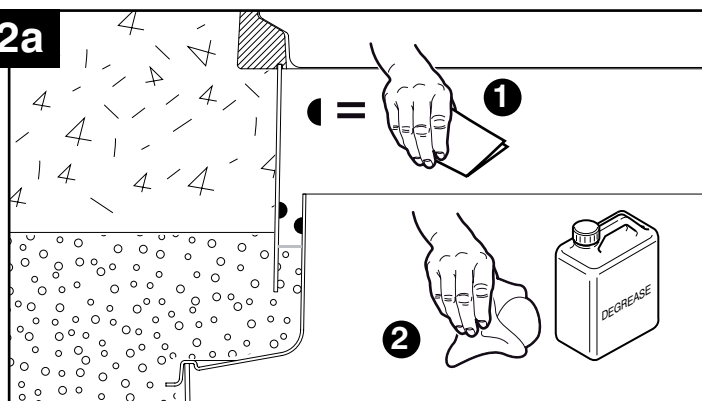
For watertight platform systems continue to Page 16.

31a



Ensure void is free of concrete to a depth of 90mm (120mm on a high water table installation).

32a

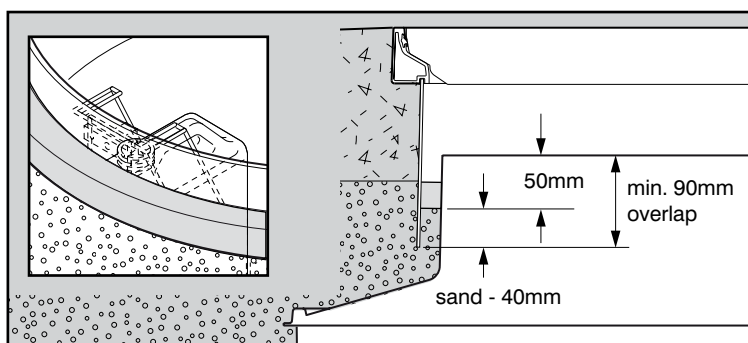


Abrade surface of corbel and skirt with sand paper.

Use acetone to clean surface of corbel and skirt.
Ensure surfaces and channel are dry and free from dirt and grease.

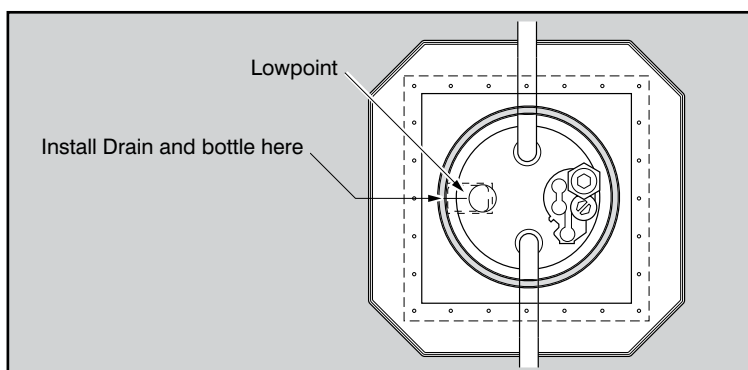
33a

Insert sand in the void to a depth of 50mm from top of corbel. Compact the sand.



34a

Drain and bottle should be positioned away from pipe risers and stp. The drain must be installed at the created low point to do this. Compact the sand in a way to create a low point 10-15mm lower than the surrounding sand.



INSTALLATION INSTRUCTIONS

Non-Watertight Systems (Installation of Corbel / Skirt Sealant)

FIBRELITE 
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35a

Mixing and Application

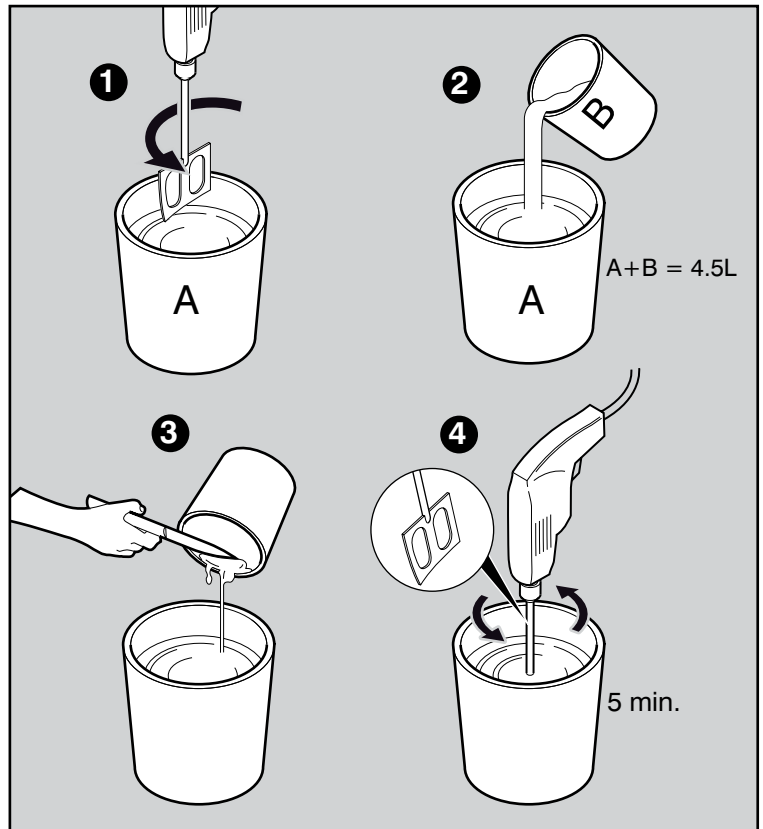
Application Temperature +5 to +45°C

(Do not apply at temperatures below +4 degrees °C)

Pot Life 45 minutes @ 25°C
Cure Times @ 25°C
Tack Free 2 1/2hrs
Full Cure 2 days

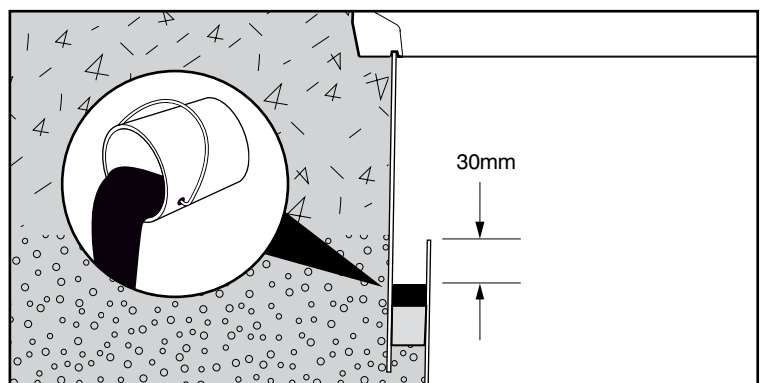
Using a suitable container stir the contents of Pack B and add the entire contents to Pack A to give a combined content of 4.5Ltrs. Ensure white sediment from can B is put into can A before mixing. Stir for a full 5 minutes using a slow speed electric drill (400 -500 rpm) with a mixer paddle until a completely homogeneous mix is obtained. Take care to avoid including excess air. Mixing is made easier if the Pack B is added and mixed in two stages.

WARNING If white sediment is not added to mixture, or contents are not mixed thoroughly using an electric mixer - the sealant will not set and will need replacing

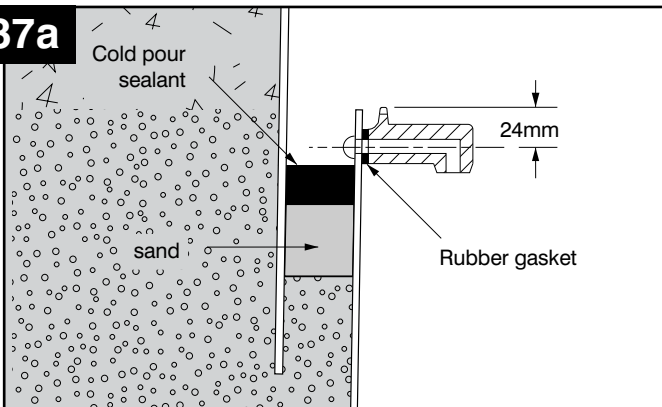


36a

1 set of cans A+B will seal 2 sumps. Decant mixture from can A into can B to have more control when puring the mixture into the void, onto the sand base. Avoid spilling the contents to ensure a clean finish on the side walls of corbel and skirt. The sealant shall be poured to level 30mm below the top edge of the Corbel (the amount of sealant required is dependant on the height of the system but should be between 1.5 and 1.7 Litres).



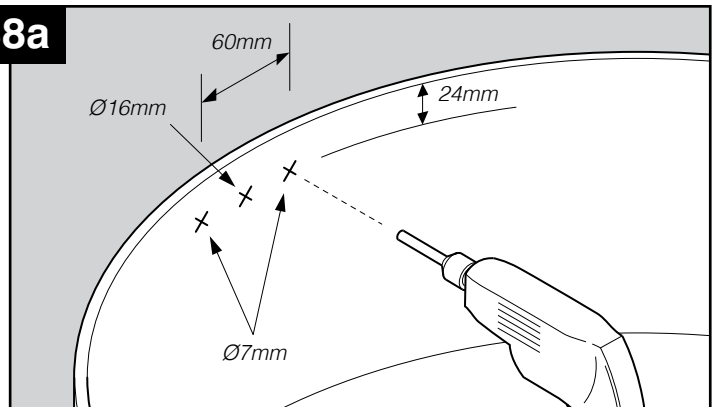
37a



Fitting Bottle Hanger

When the sealant is tack free the bottle hanger may be fitted. Ensure that when the bottle hanger is fitted the water will drain down the spout.

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Mark out the position of the two holes to be drilled 24mm down from the top edge of the Corbel and 60mm cross centre. Drill the two Ø7mm holes into the Corbel walls.

Also mark out the position of the drain hole to align with the hole in the drain spout and drill 1 No. Ø16mm through the corbel wall.

INSTALLATION INSTRUCTIONS

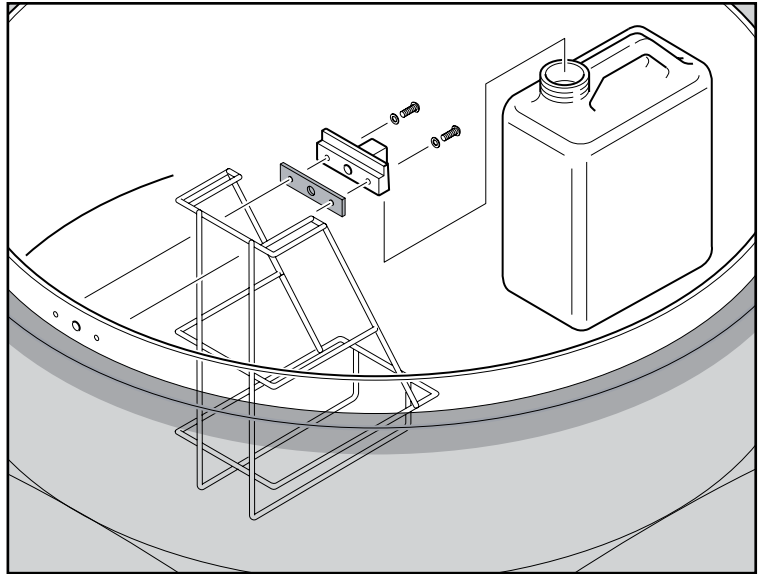
Non-Watertight Systems (Installation of Condensation Bottle)

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39a

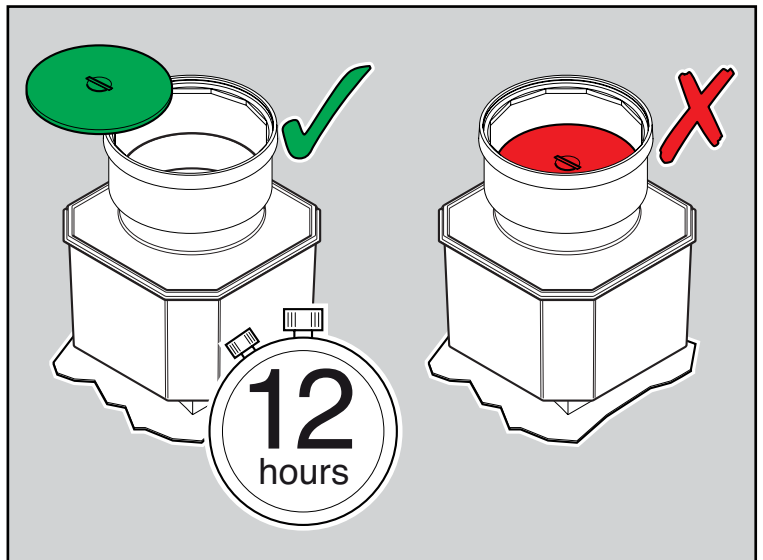
Ensure the rubber gasket is fitted to the mating surface of the bottle hanger. Secure the Bottle Hanger to the Corbel wall with 2 No. M6 x 15 Dome Head Screws and Washers.

Locate the Condensation Bottle into the Bottle carrier and suspend the Bottle Carrier from the Bottle Hanger.



40a

Do not install the internal lid until the sealant has set. Wait overnight and after final vacuum testing.

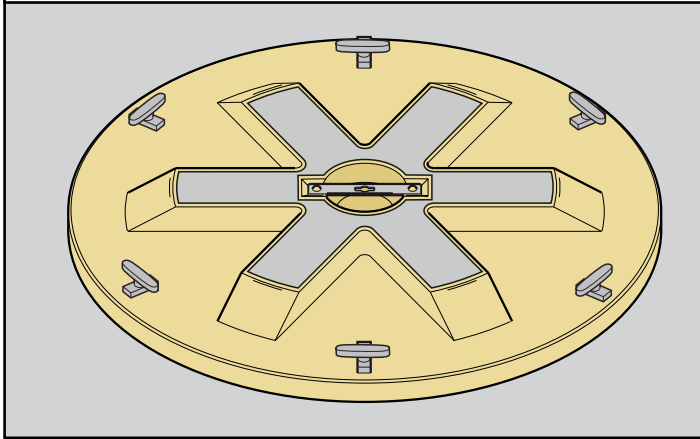


INSTALLATION INSTRUCTIONS

Watertight Systems (Installing Watertight Platforms)

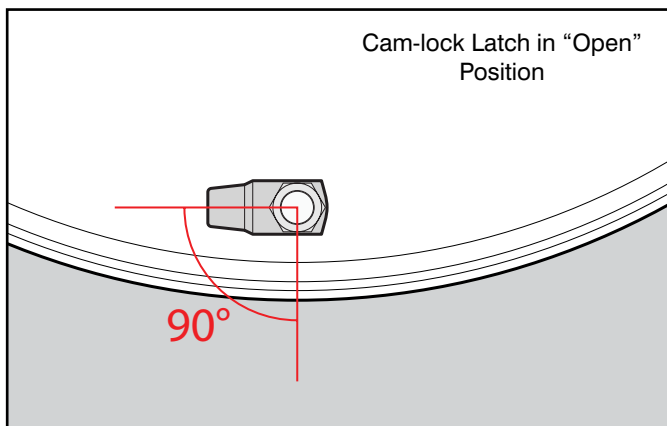
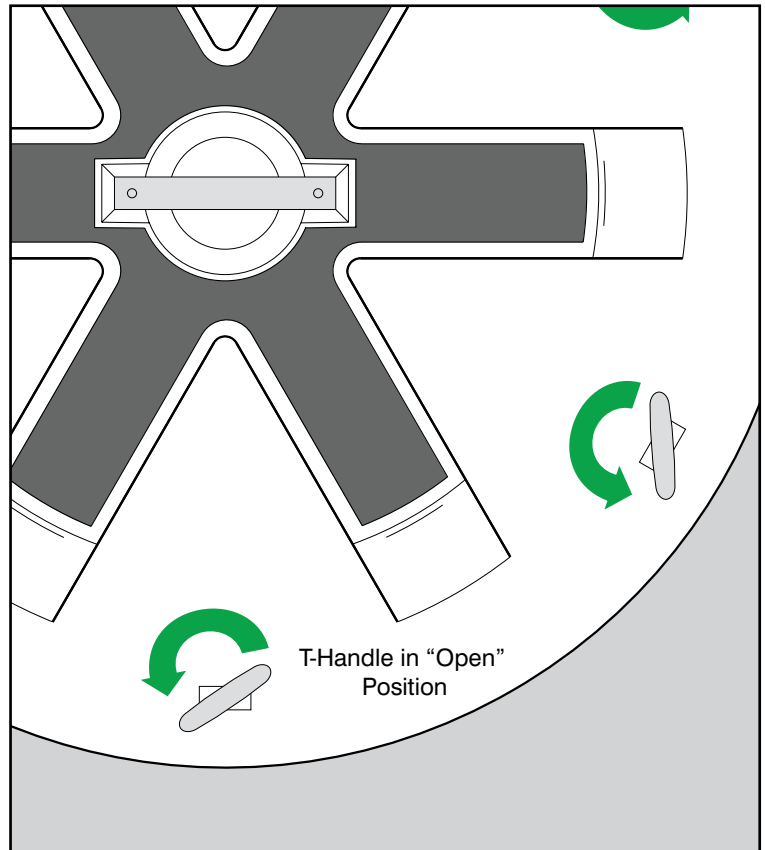
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Installation of Watertight Platforms: Once the sumps are properly installed and tested, the watertight platforms should be installed to ensure that the platforms fit properly onto the stainless steel retaining rings.



31b

Turn all T-handles on the top of the platform fully counterclockwise to the open position (as shown in the drawing to the right) – the cam-lock latches on the underside should be 90 degrees opposed from the edge of the platform (as shown below).

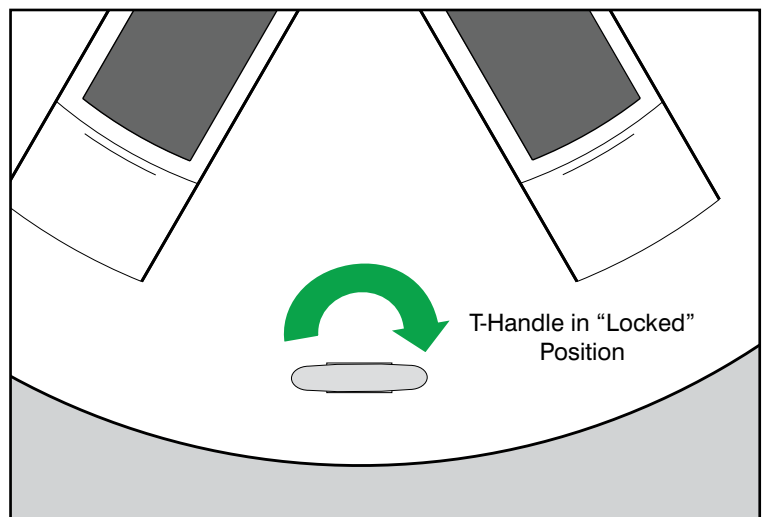


32b

Seat the watertight platform on the stainless steel ring. Turn the T-handles fully clockwise to lock the latch beneath the stainless steel ring (T-handle should be as shown in the drawing to the right).

When turning T-handle into locked position the cam-lock should compress very tightly. It may be necessary to adjust the cam-lock latch. See next page for instructions.

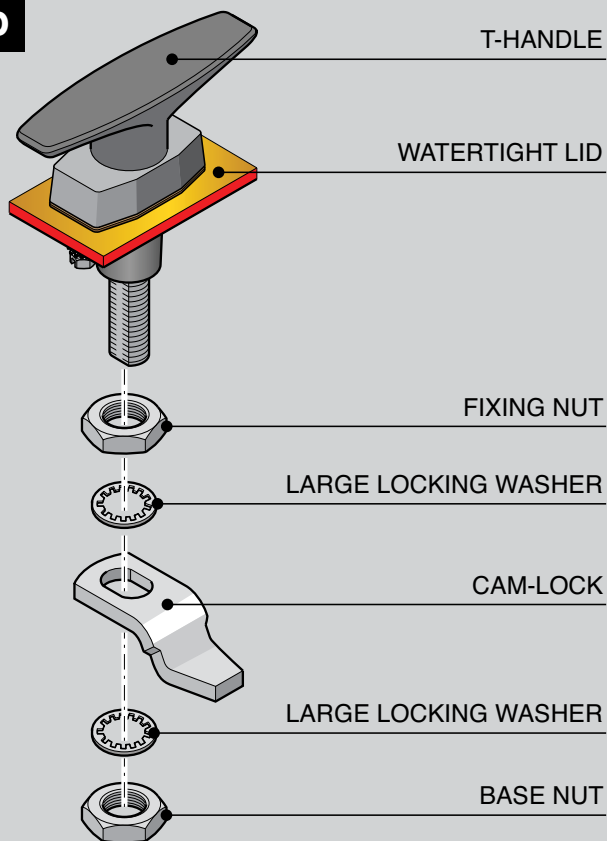
When it is confirmed that the platform seats correctly, removed it for final vacuum testing.



INSTALLATION INSTRUCTIONS

Watertight Systems (Adjusting the T-handles)

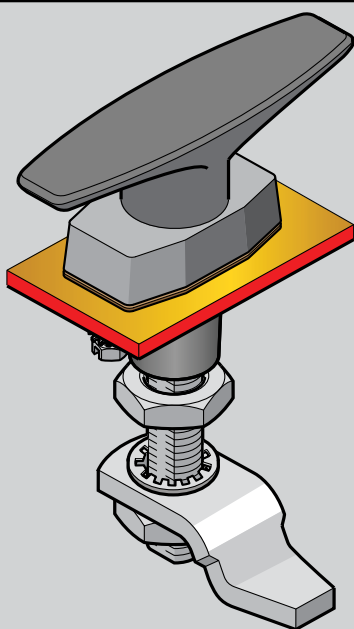
33b



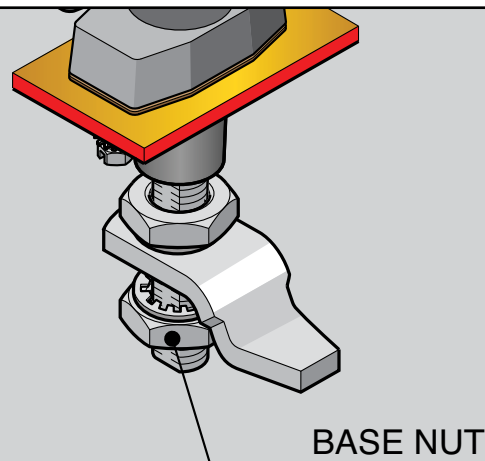
The T-handle mechanism consists of the above items.

35b-1

Pull the cam-lock down to rest onto the base nut. Lower and tighten the fixing nut until the cam-lock is secure as per step 36b.



34b

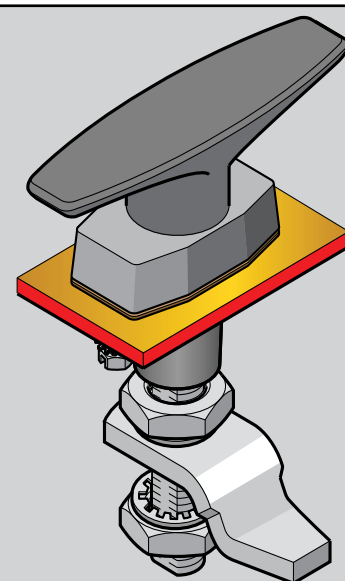


If the T-handle is not fully engaging it means the cam-lock needs to be lowered. Loosen the base nut to a lower position and go to step 35b-1.

If the lid is not compressing the gasket tightly against the stainless steel ring it means the cam-lock needs to be raised. Loosen the base nut and go to step 35b-2.

35b-2

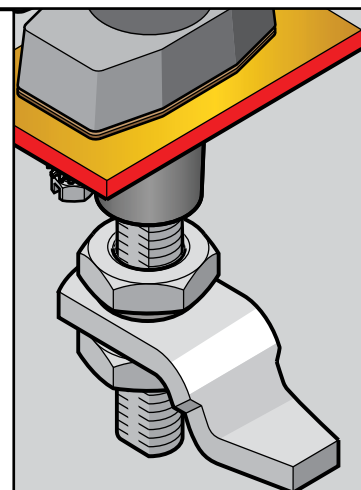
Pull the cam-lock down to rest onto the base nut and raise the fixing nut. Push the cam-lock up to the fixing nut and tighten the base nut until the cam-lock is secure as per step 36b.



36b

Once the cam-lock is secure refit the watertight spill platform as per steps 31b and 32b.

Note: It may be necessary to further adjust the cam-lock height until the optimal position is located.

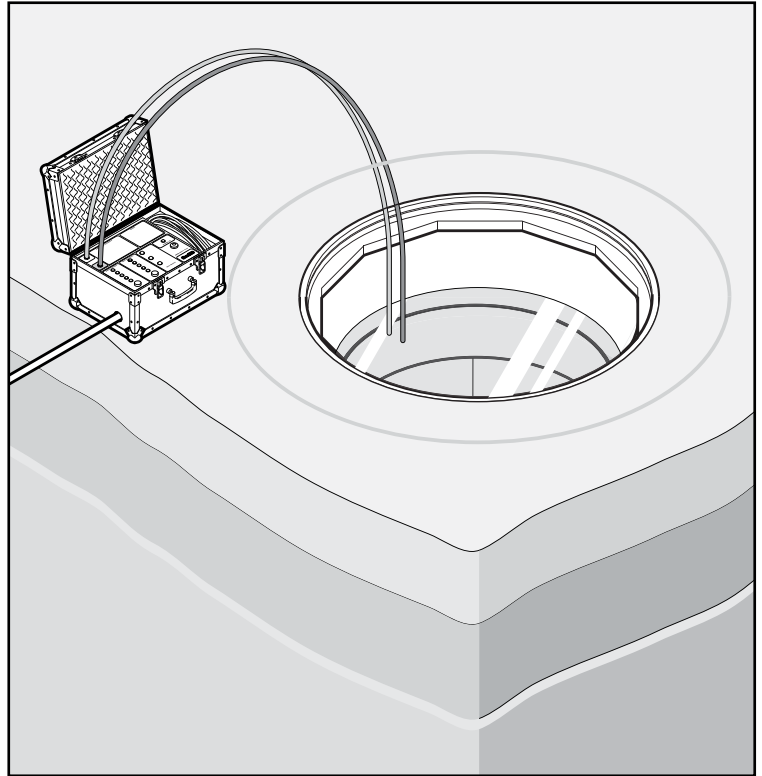


Final Stage - 1

Test completed system.

Warning: Test the corbel at a 0.6m depth setting only or irreparable damage may occur.

When testing at this stage the drain hole which is drilled in the corbel turret for non-watertight systems must be blanked off to achieve a test.



Final Stage - 2

Re-fit platform or internal lid and cover.

