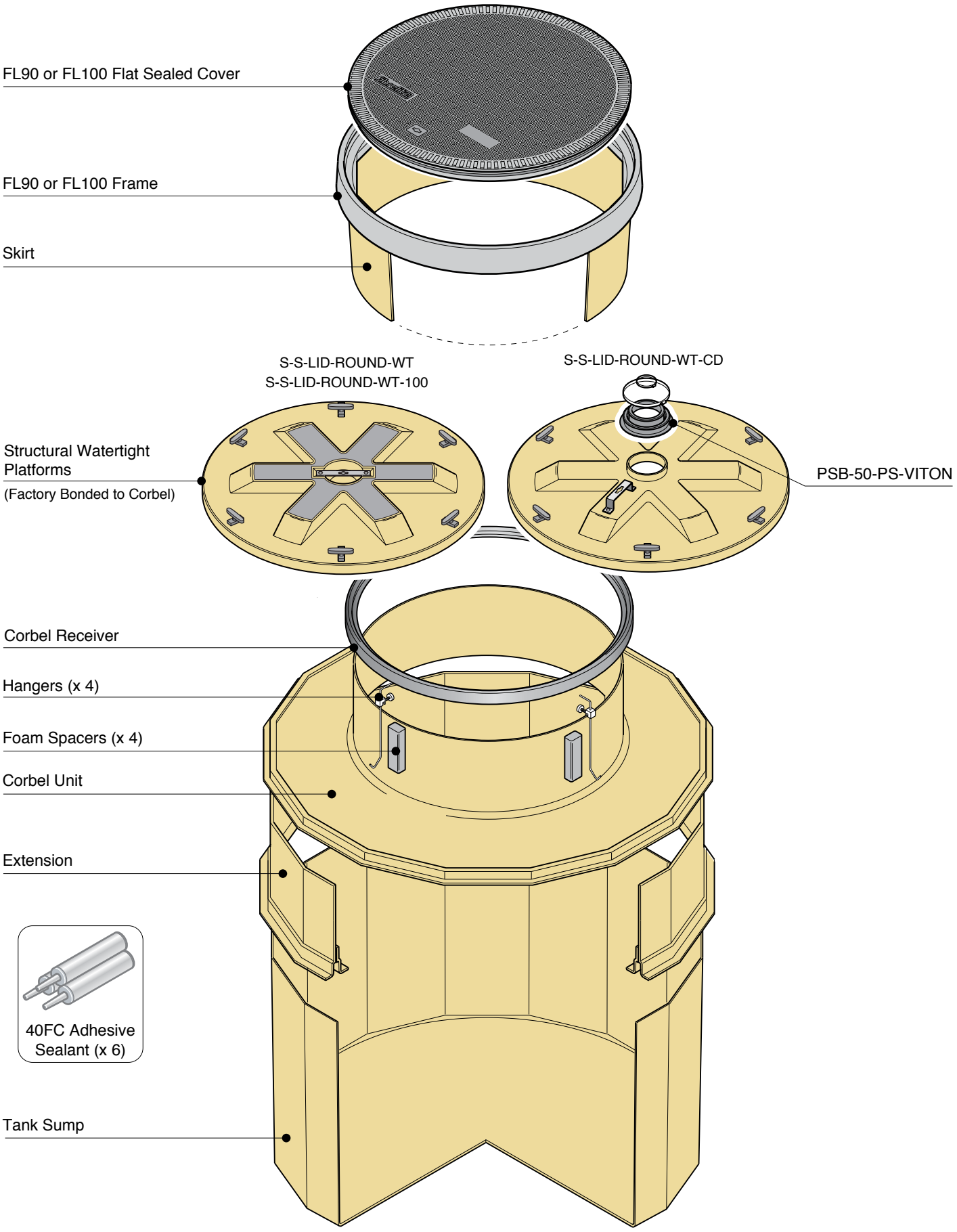
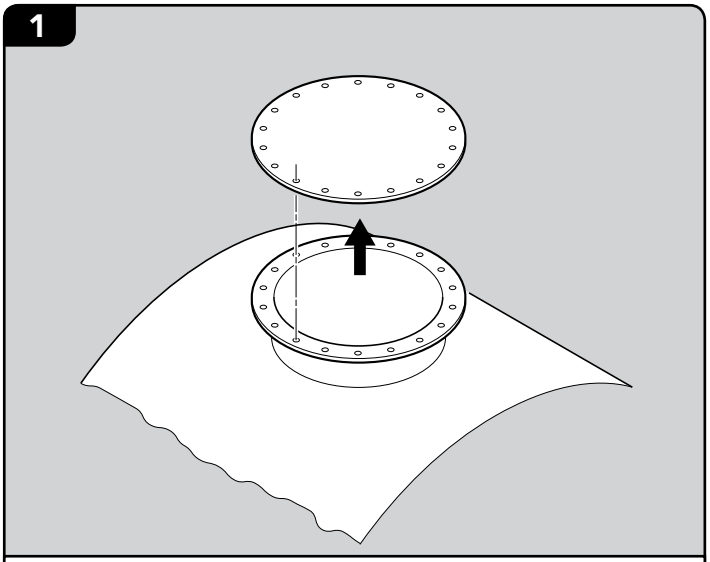

FL90 or FL100 Flat Sealed Cover
FL90 or FL100 Frame
Skirt
S-S-LID-ROUND-WT
S-S-LID-ROUND-WT-100
S-S-LID-ROUND-WT-CD
Structural Watertight Platforms
(Factory Bonded to Corbel)
PSB-50-PS-VITON
Corbel Receiver
Hangers (x 4)
Foam Spacers (x 4)
Corbel Unit
Extension
40FC Adhesive Sealant (x 6)
Tank Sump

INSTALLATION INSTRUCTIONS
(Manway Lid Fitting instructions)

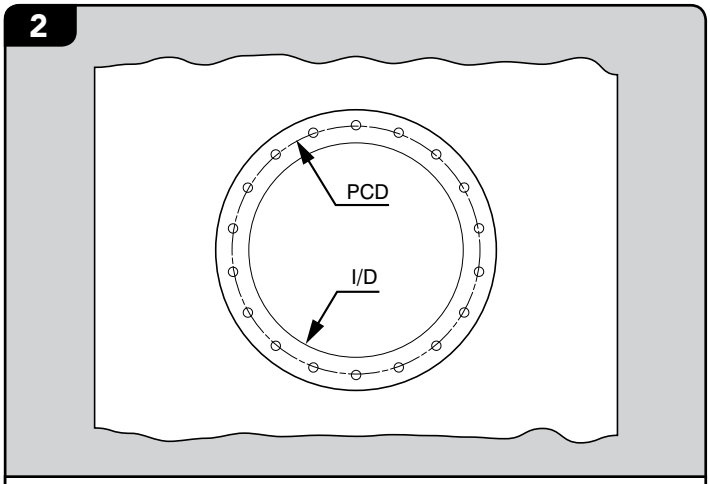
FIBRELITE
PART OF OPW A DOVER COMPANY

1



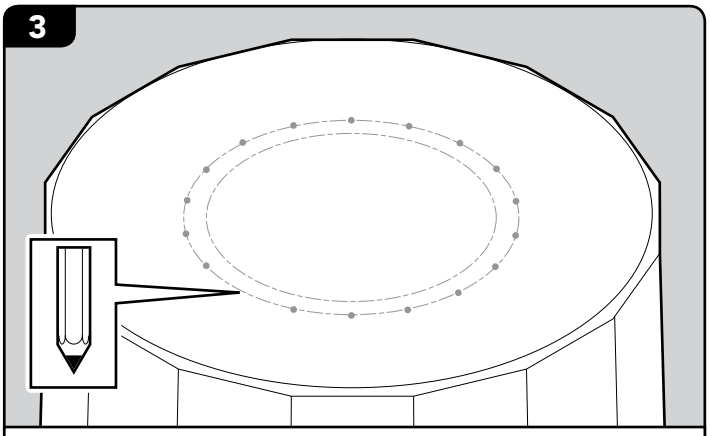
Remove the manway lid.

2



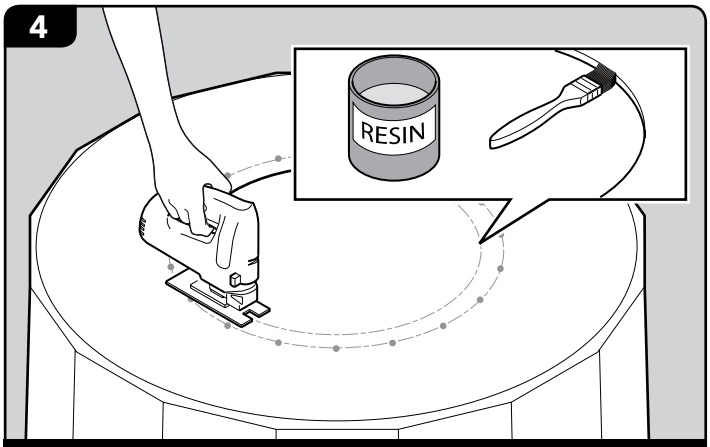
Take the following dimensions from the manway lid: Internal diameter of the tank neck and (I/D) and PCD (pitch circle diameter of the holes) and hole size.

3



Mark out on the base of the sump the internal diameter of the tank neck and the hole pattern ensuring that the facets of the sump are positioned so that all pipe exits are perpendicular to the sump wall. You could use the manway lid or gasket as a template to do this.

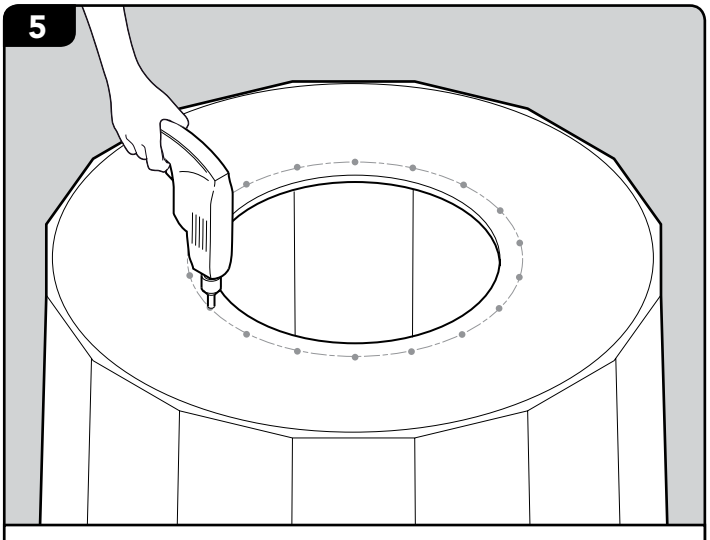
4



NB: It is recommend that the exposed edge of the aperture is sealed with resin

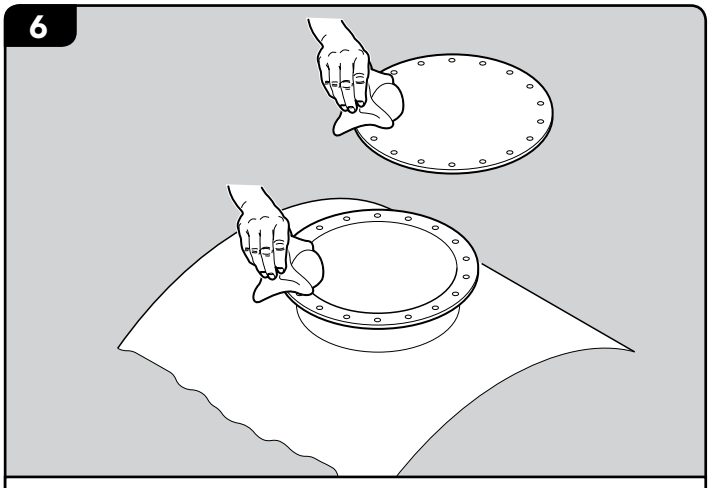
Using a jigsaw cut out the aperture in the base of the sump to represent the internal diameter of the tank neck.

5



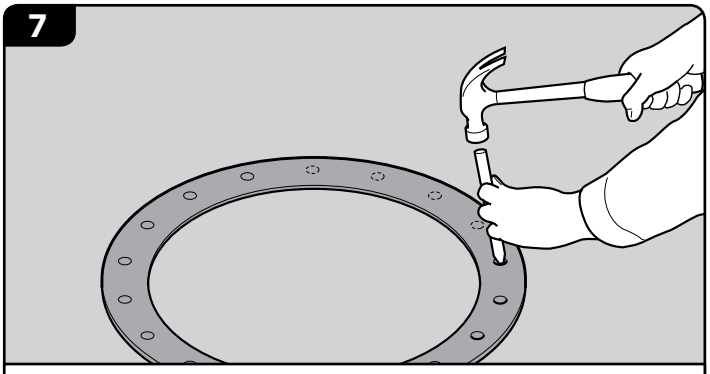
Drill the holes in the base of the sump to represent the hole pattern of the manway lid.

6



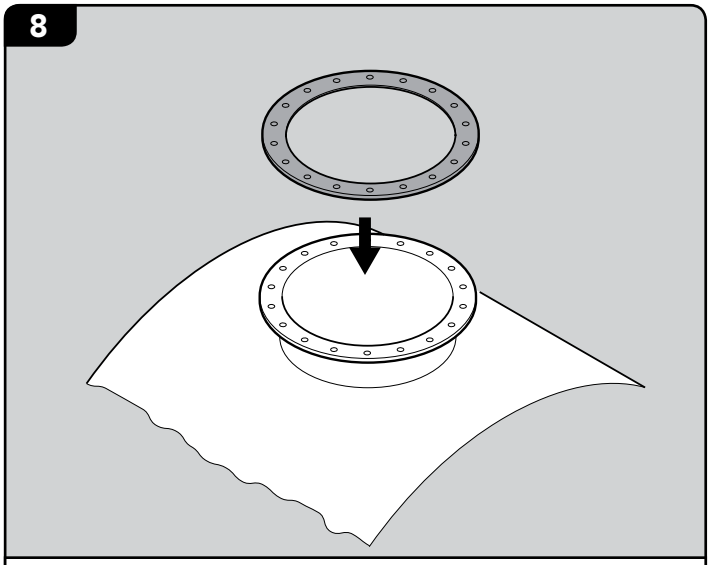
Thoroughly clean the mating faces of the manway lid and manway flange and the underside of the manway flange. Check for any damage and repair as necessary.

7



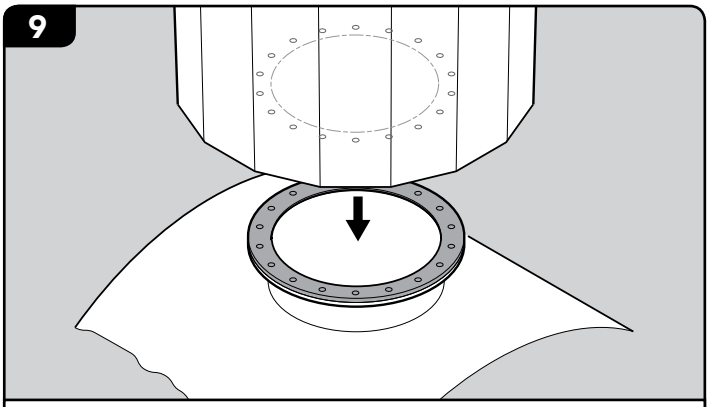
If necessary trim the outside and inside diameter of the supplied gasket with a Stanley knife to represent the outside diameter of the manway lid and inside diameter of the tank neck. Using the manway lid as a template mark the position of the hole pattern onto the gasket. Using the supplied 18 mm diameter hole punch and a hammer punch out the required number of holes.

8



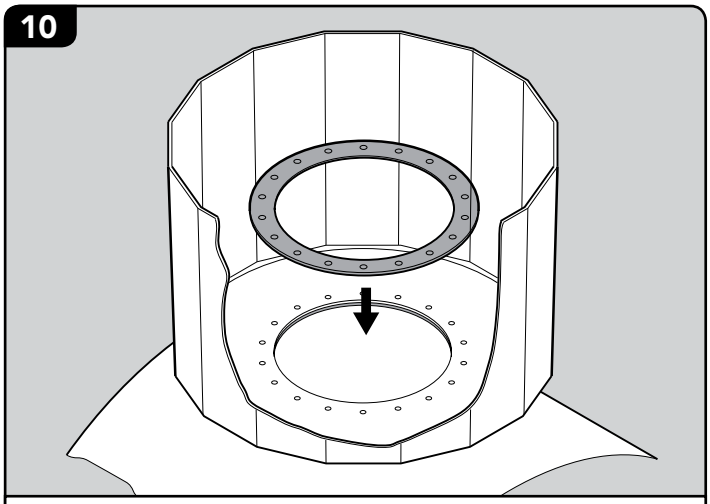
Place the bottom gasket onto the manway flange.

9



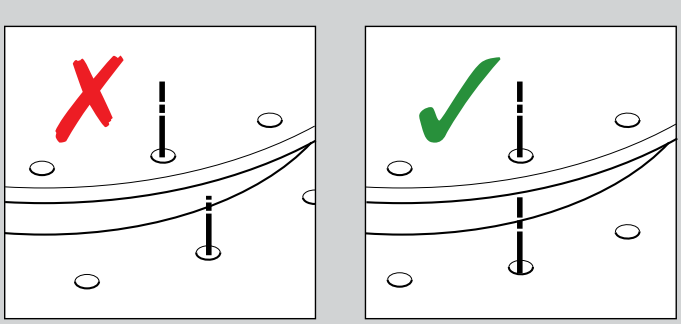
Place the sump onto the gasketed manway flange ensuring that the holes in the sump base align with the holes in the manway flange and that the sump is positioned correctly for the pipe runs.

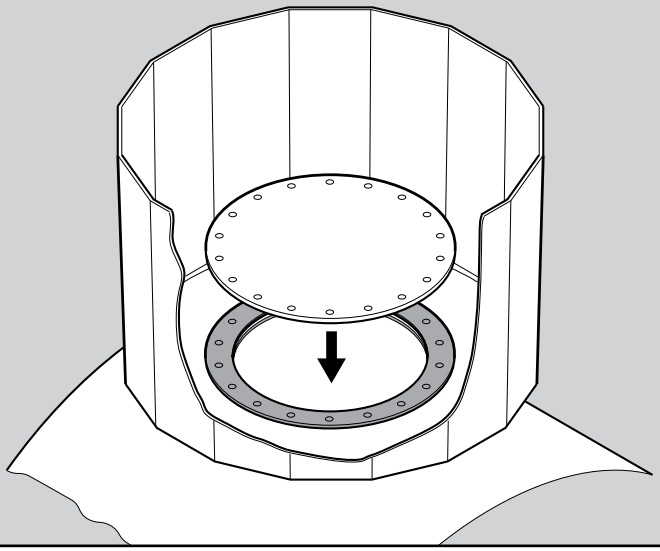
10



Place the top gasket onto the sump base.

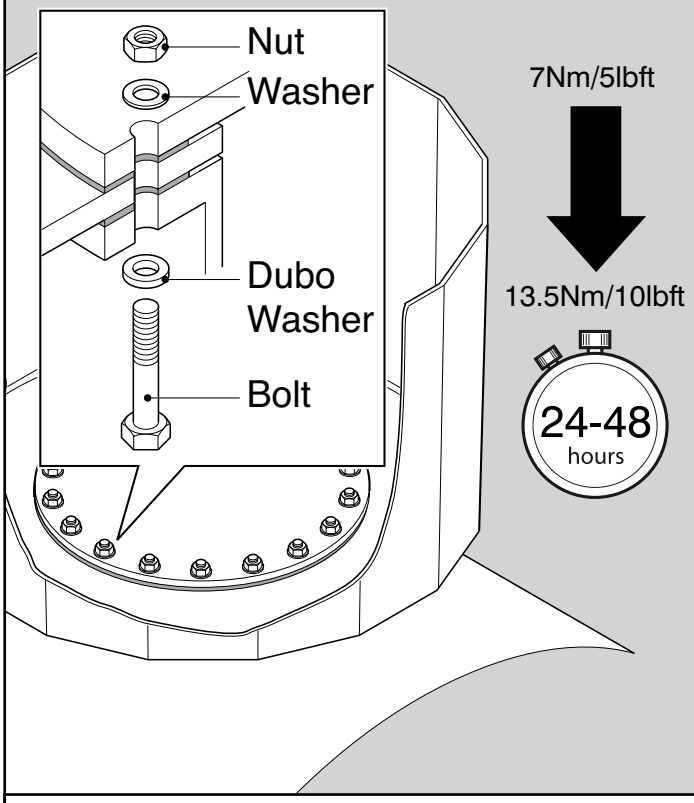
11





Position the manway lid on to the gasketed sump base ensuring that the holes in the manway lid align with the holes in the sump based and that the manway lid is positioned correctly for the pipe penetrations.

12

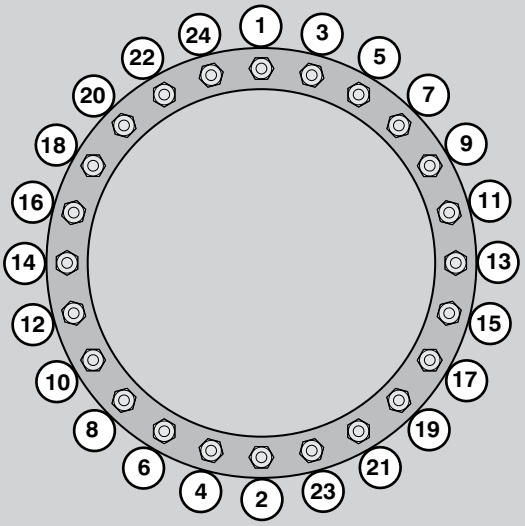


Fit all the bolts through the holes in the above arrangement: Bolt head to be on the underside of the manway flange with a Dubo sealing washer "sandwiched" between the head of the bolt and the underside of the manway flange (no other washer is to be used at the bolt head or the Dubo washer won't work). Fit a steel washer and nut on the manway lid side.

Tighten each bolt to 13.5Nm/10lbft torque, employing the following method, to avoid distortion of chamber.

As the nuts and bolts are stainless steel "thread galling" maybe experienced. To overcome this we recommend Lubricating the internal and/or external threads. The suggested lubricants should contain substantial amounts of molybdenum disulfide (moly), graphite, mica, or talc. Some proprietary, extreme pressure waxes may also be effective. Slowing down the installation RPM speed will also reduce thread galling

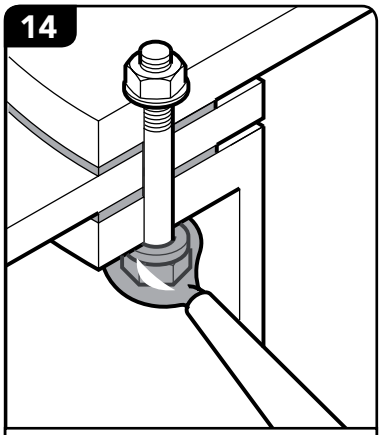
13



Starting with any bolt tighten to 7Nm/5lbfft torque. Move to the bolt positioned at 180° and tighten to 7Nm/5lbffttorque. 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.

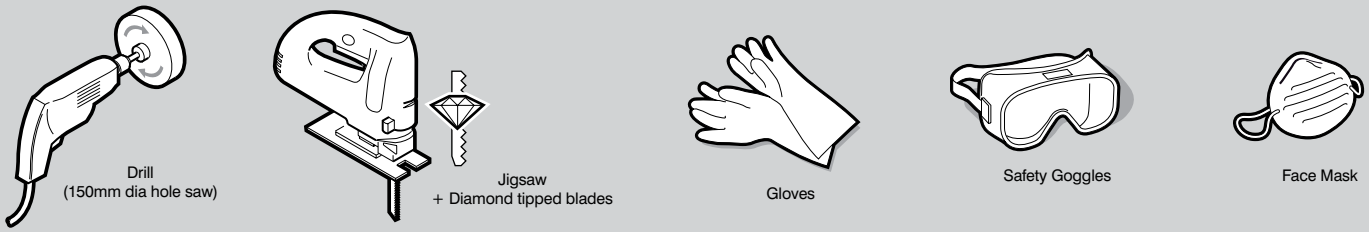
14



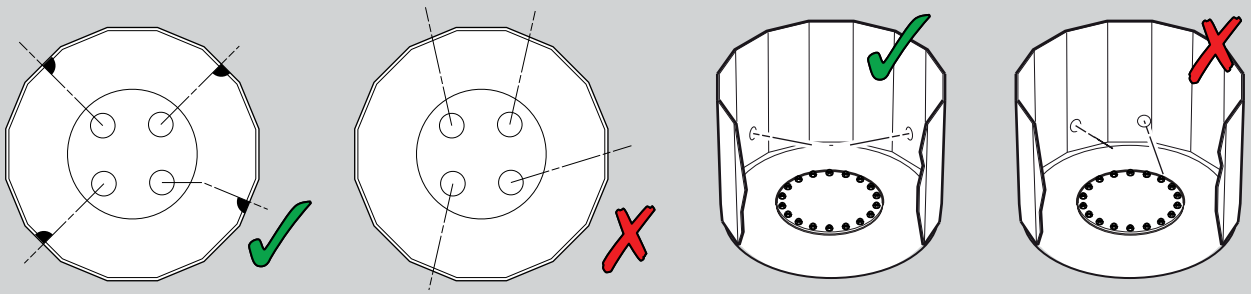
As an added precaution you could also entomb the bolt head and Dubo washer in Soudaflex.

INSTALLATION INSTRUCTIONS
(Pipework and Entry Seal Kits)

FIBRELITE
PART OF OPW A DOVER COMPANY



15

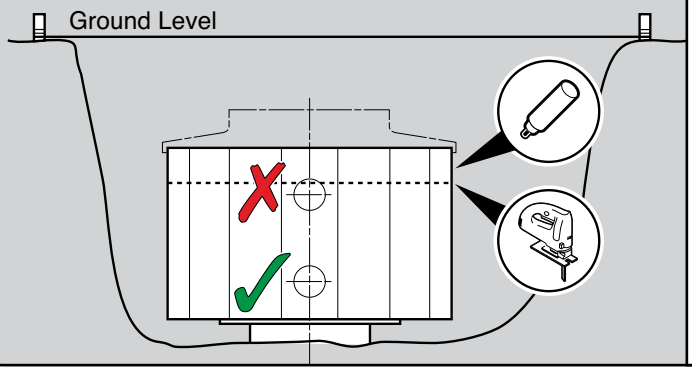


Position pipeway at 90º angles to the sump wall.

Ensure pipe entry boot is positioned away from the joints.

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.

16



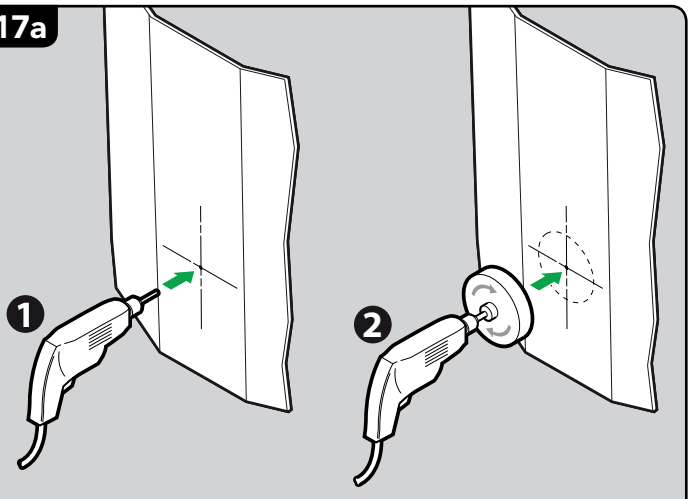
Before installing pipework, fix a string line at ground level across the sump to check if material needs to be cut off the sump. If so, mark the sump with a line along the cut mark.

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

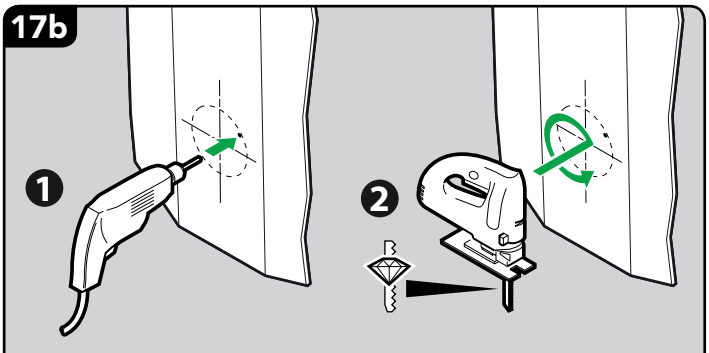
For shallow burials, it may be necessary to cut less material off the sump, and cut the remainder off the corbel and skirt to allow pipe entry boots to be fitted. **PLAN THIS CAREFULLY.**

17a



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.

17b

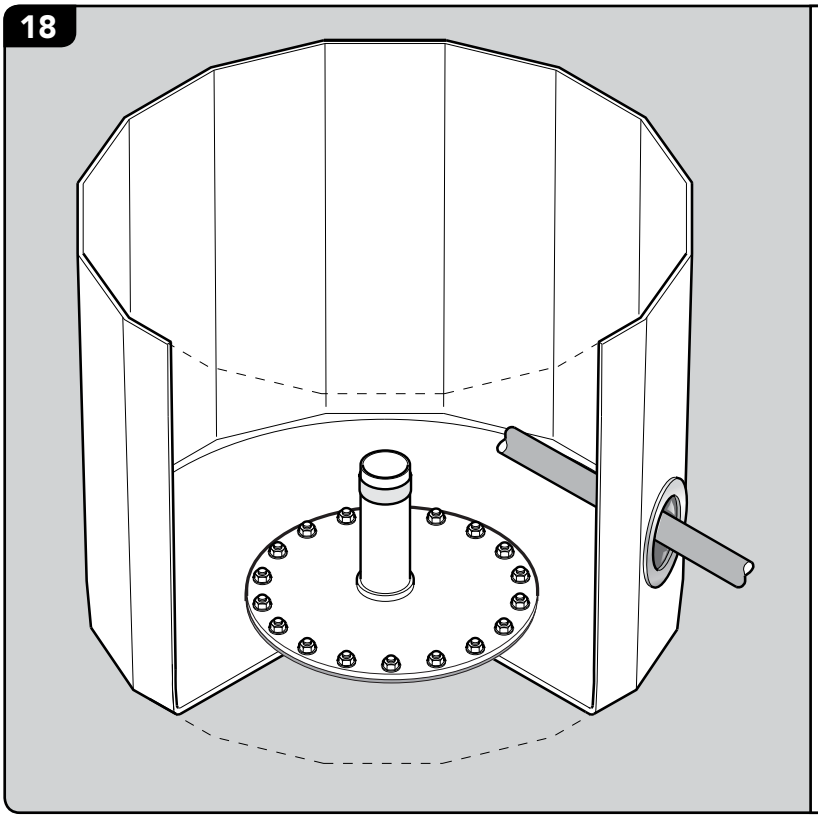


For larger holes (190mm) we recommend that the hole is marked and jigsaw is used to cut the hole. Drill a hole through the wall, so the jigsaw can be inserted and used easily and safely.

(Fibreglass will blunt normal blades very quickly, we recommend diamond tipped blades or blades to cut ceramics).

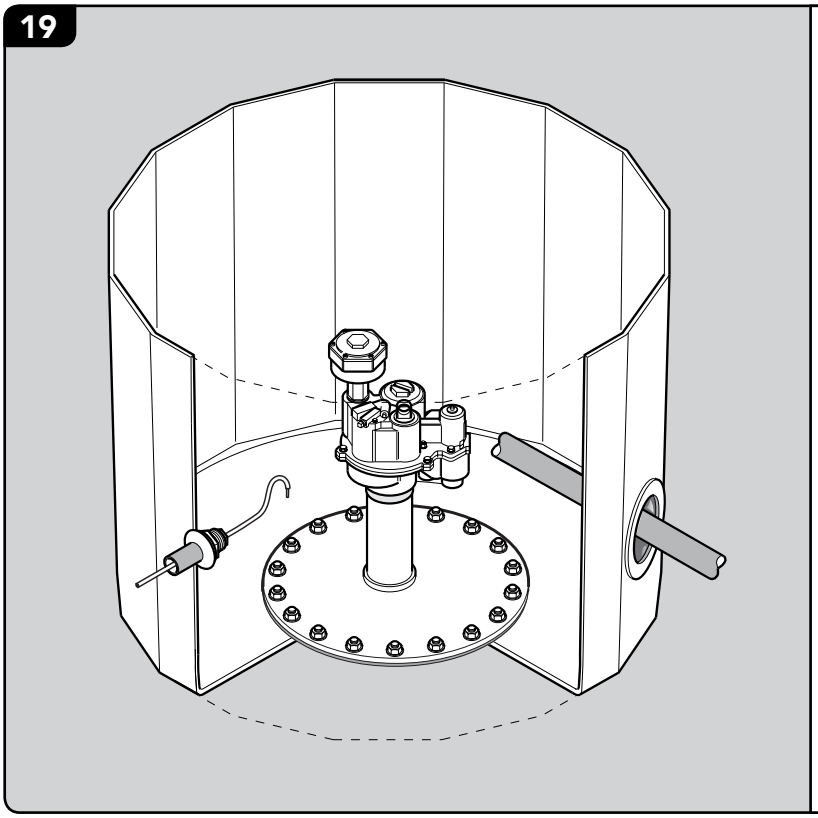
NOTE : When backfilling ensure the pipework is not disturbed.
WARNING : Do not backfill until the sump has been vacuum tested.

18



Install piping.

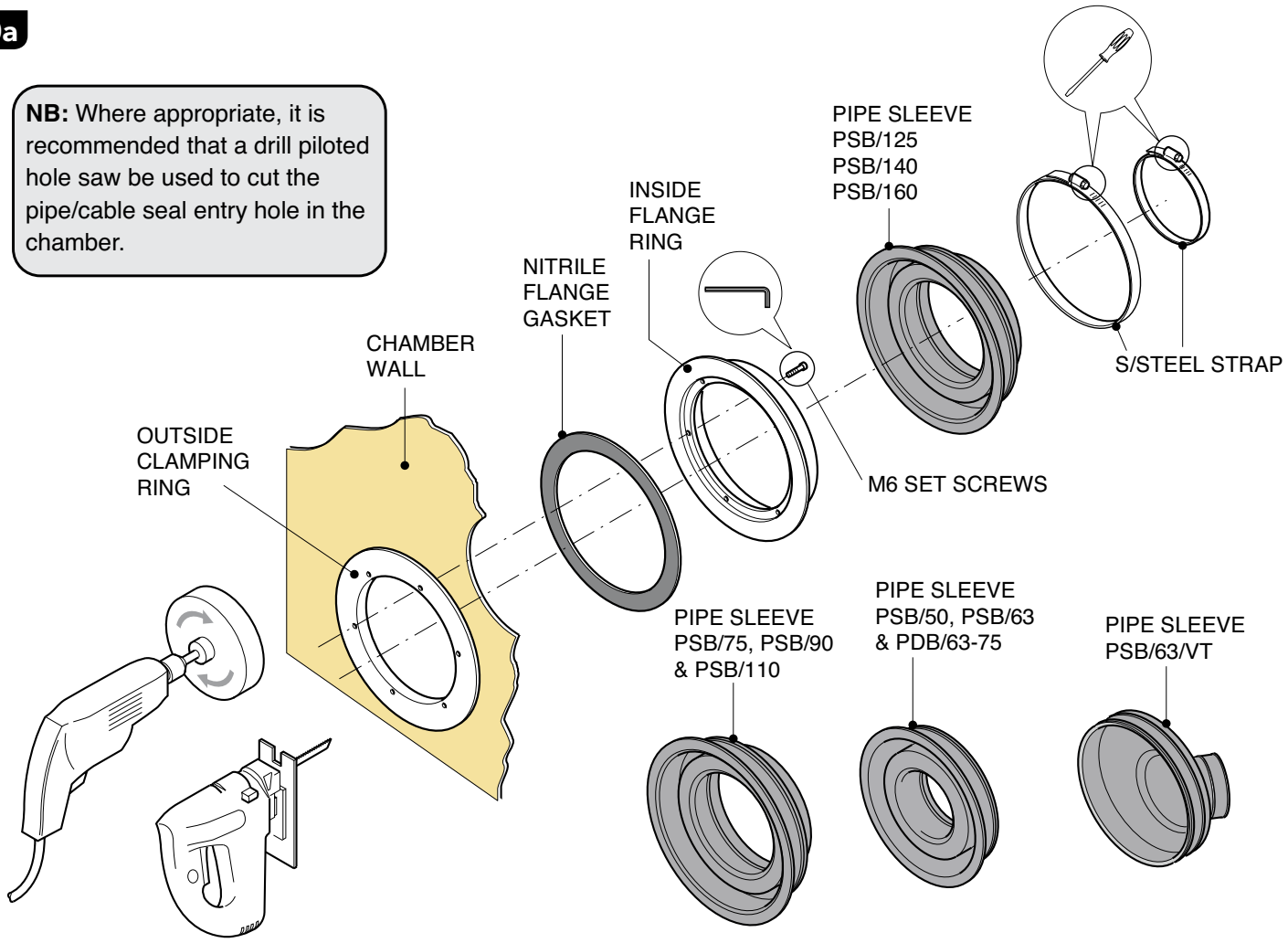
19



Install turbine and conduits.

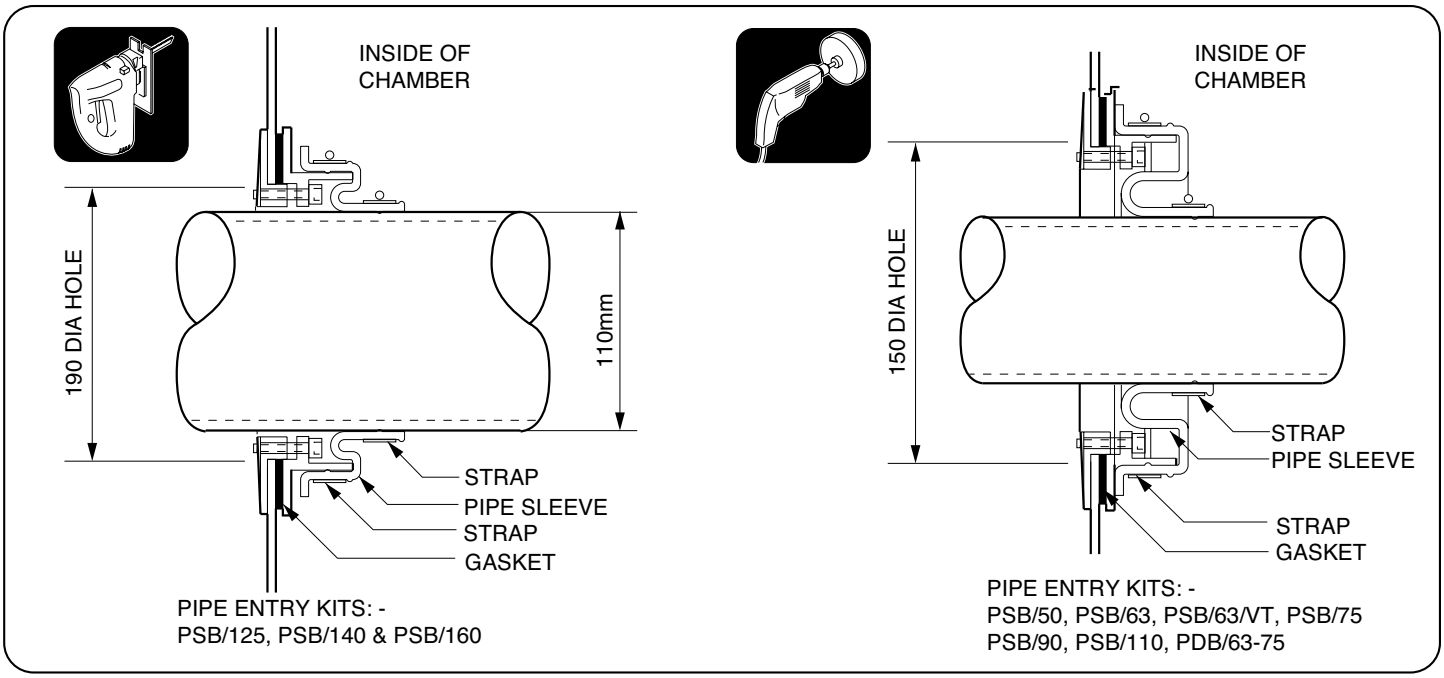
20a

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.



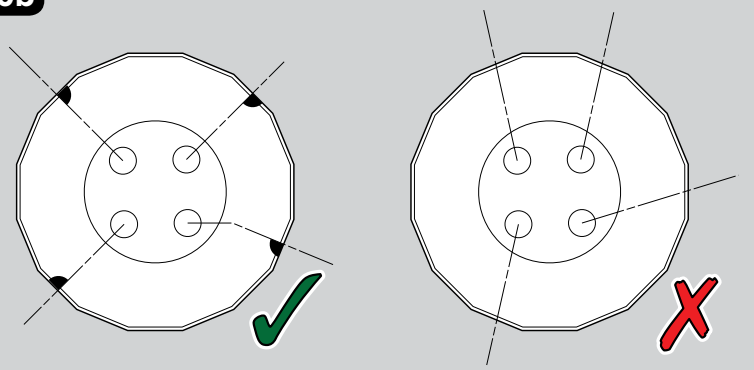
DRILL AND HOLE SAW
ATTACHMENT OR JIGSAW

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.

20b



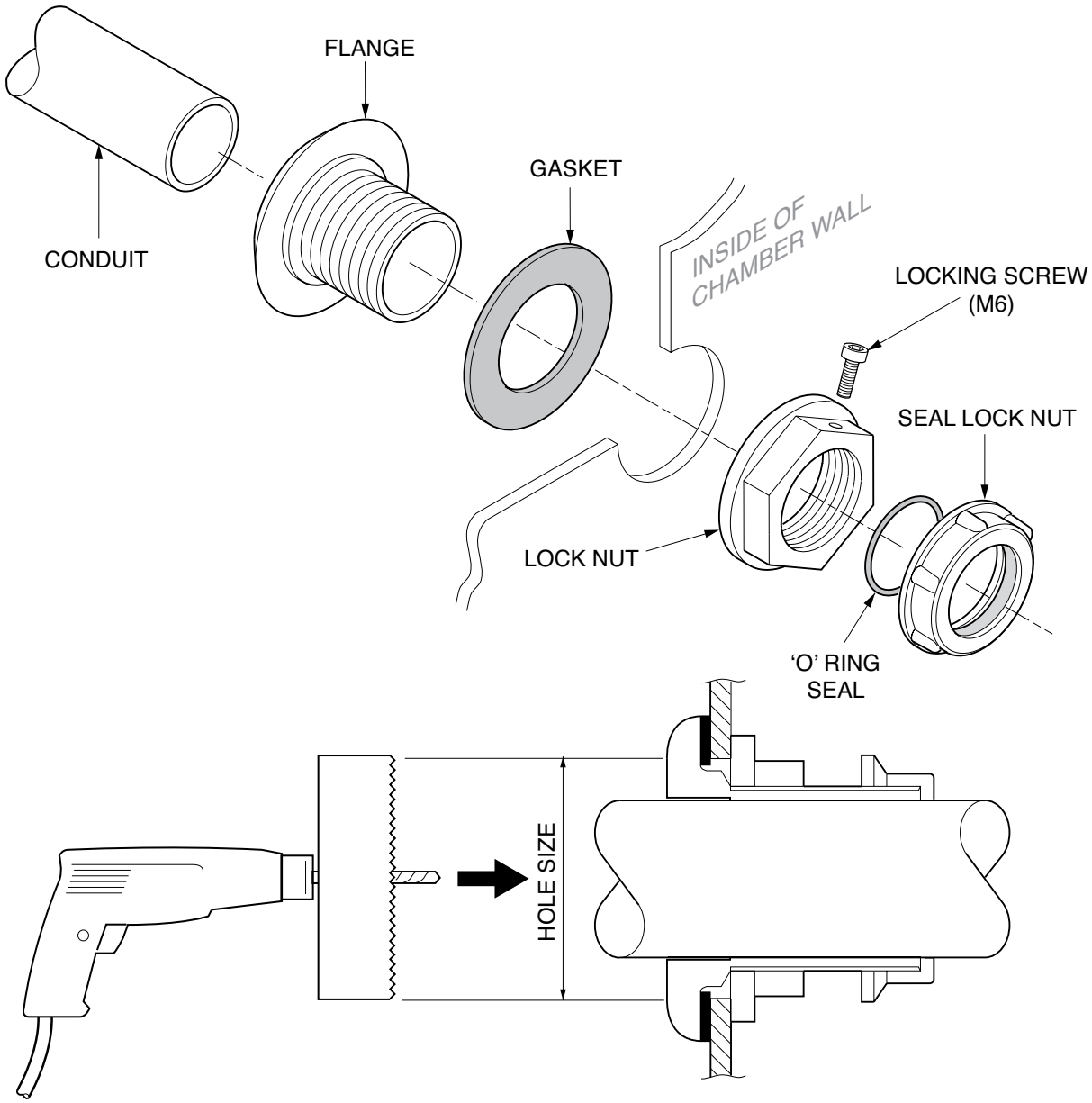
PEC KITS

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.

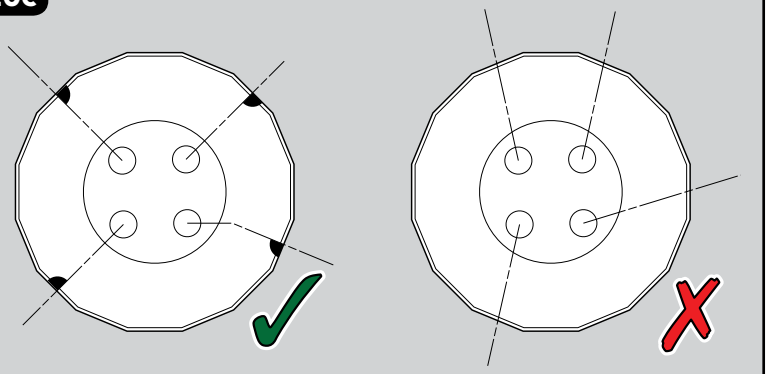
PEC-27, PEC-33, PEC-50 to fit metal conduit sizes ¾", 1" and 1½" respectively.



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

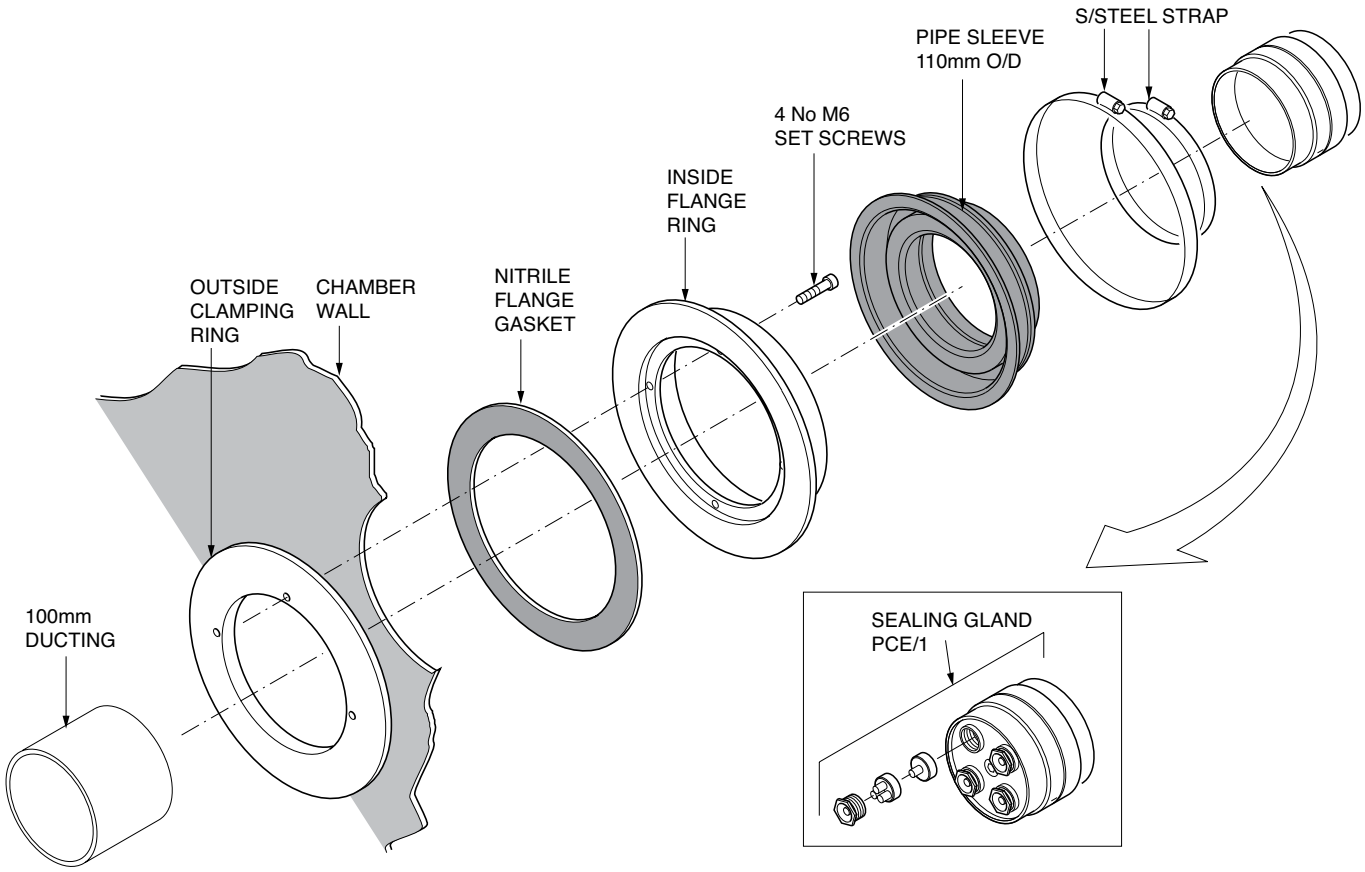
ENTRY KIT	HOLE SIZE
PEC-27	Ø51mm
PEC32	Ø51mm
PEC-33	Ø60mm
PEC-50	Ø73mm

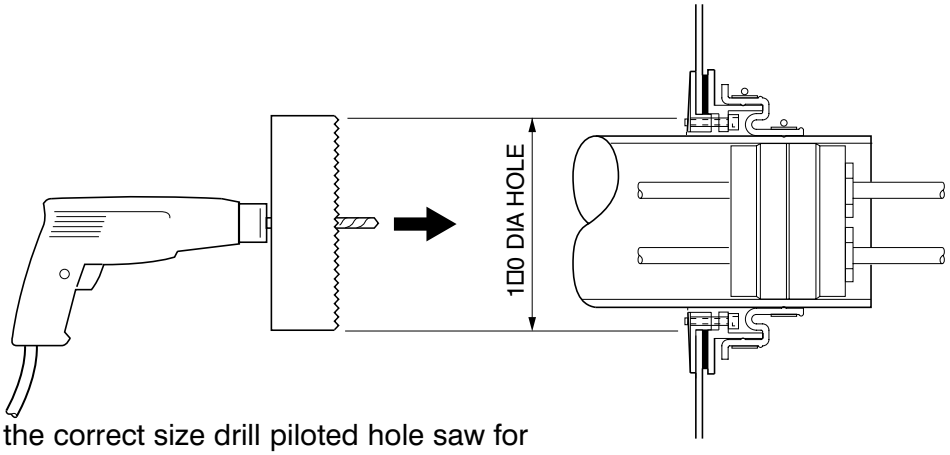
20c



PCE-1-KIT

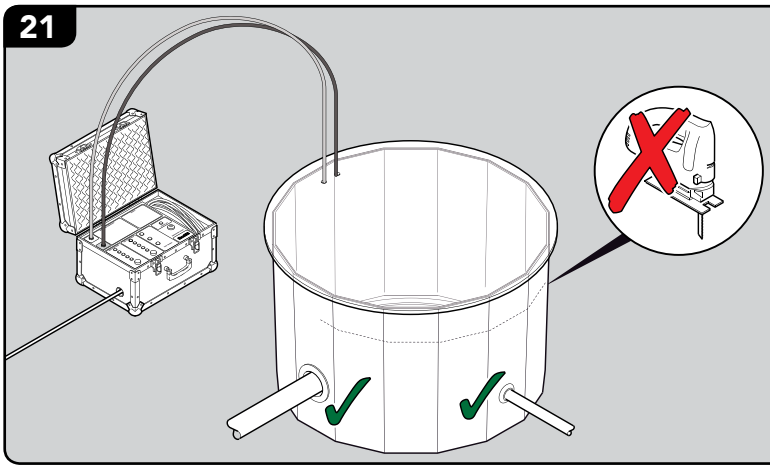
Conduit must be installed at 90° angle to the side wall.





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

21



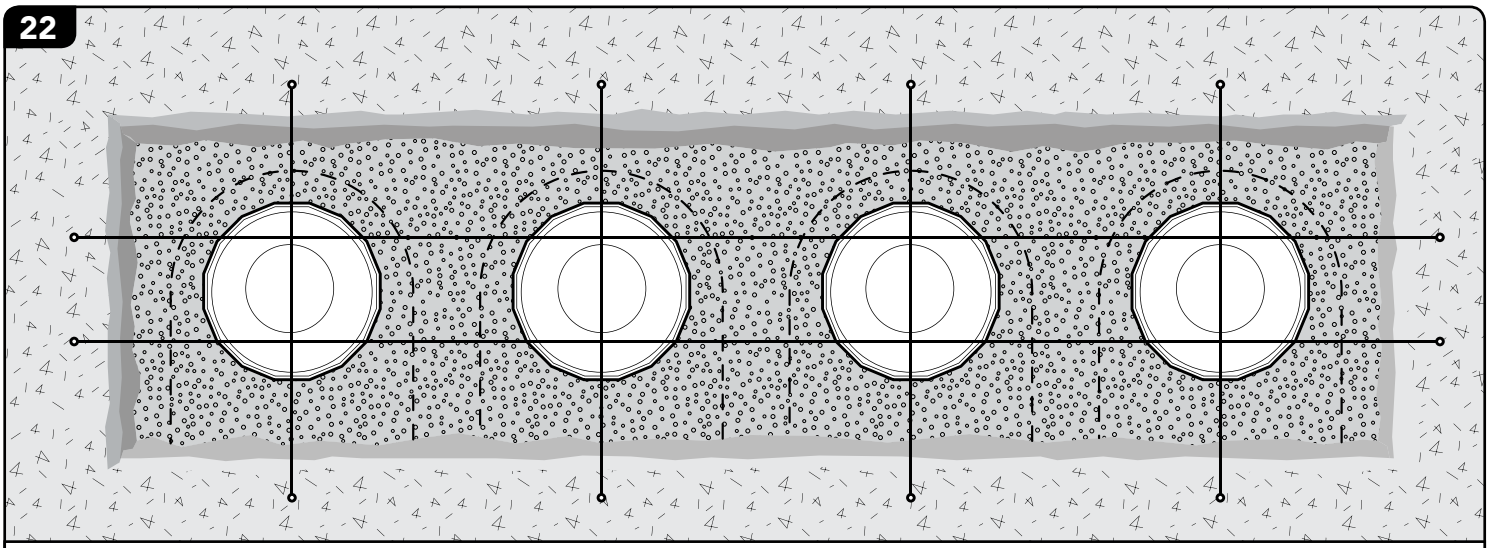
After penetrations have been fitted, ensure all connections on the manway lid are sealed.

Refer to Vacuum test instructions and perform a vacuum test.

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

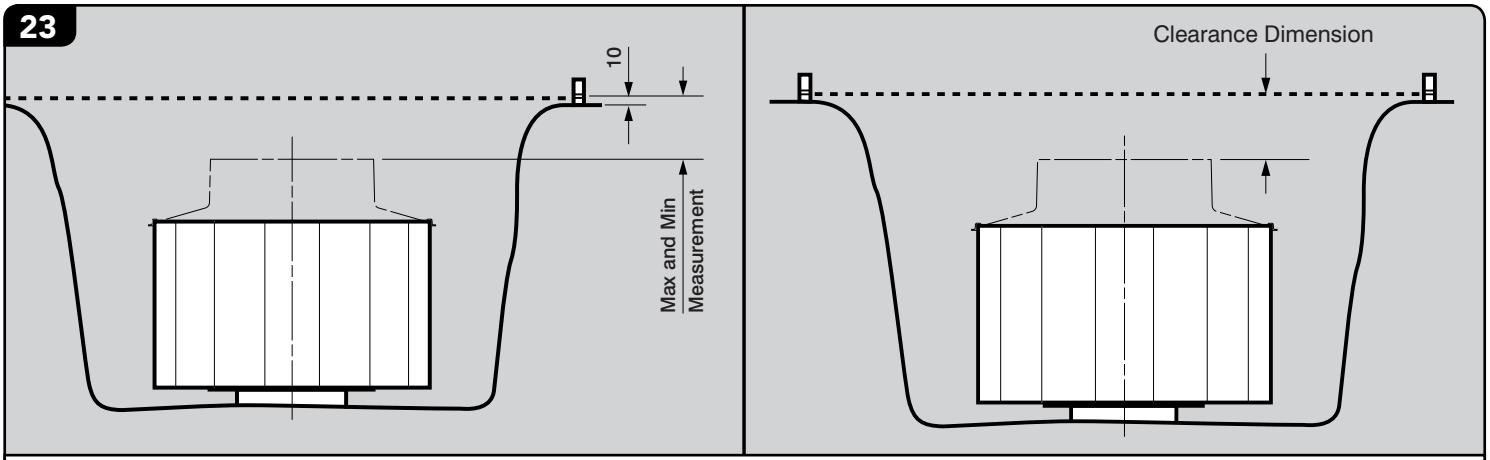
WARNING: Sump to be tested to a depth setting of 0.6 meters only.

22



Fix string lines 10mm above grade level across the sump lengths and widths of the tank farm to highlight any falls.

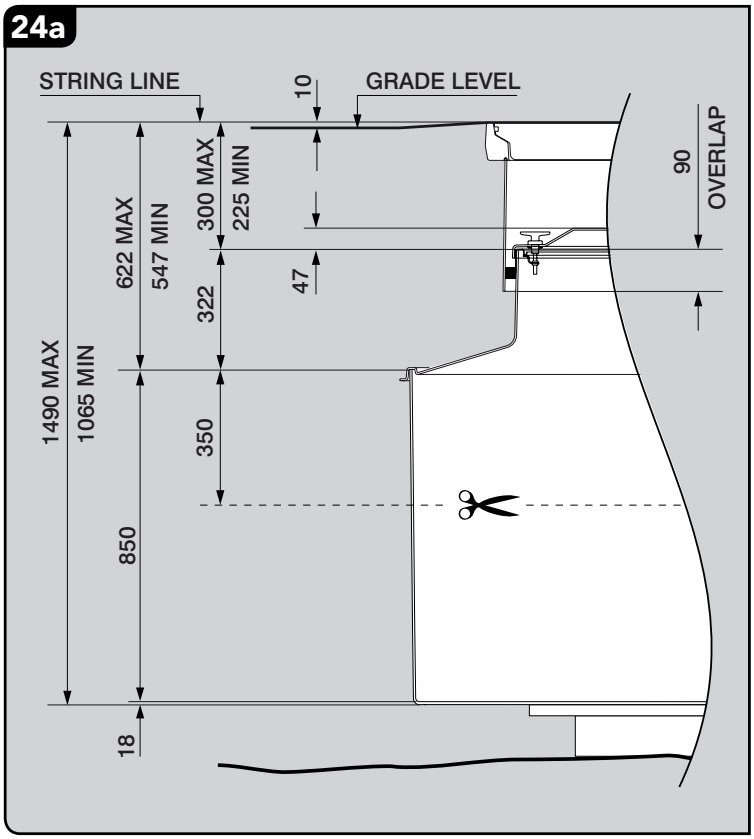
23



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.

S14SB-390-WT and S14SB-390-CD-WT Systems

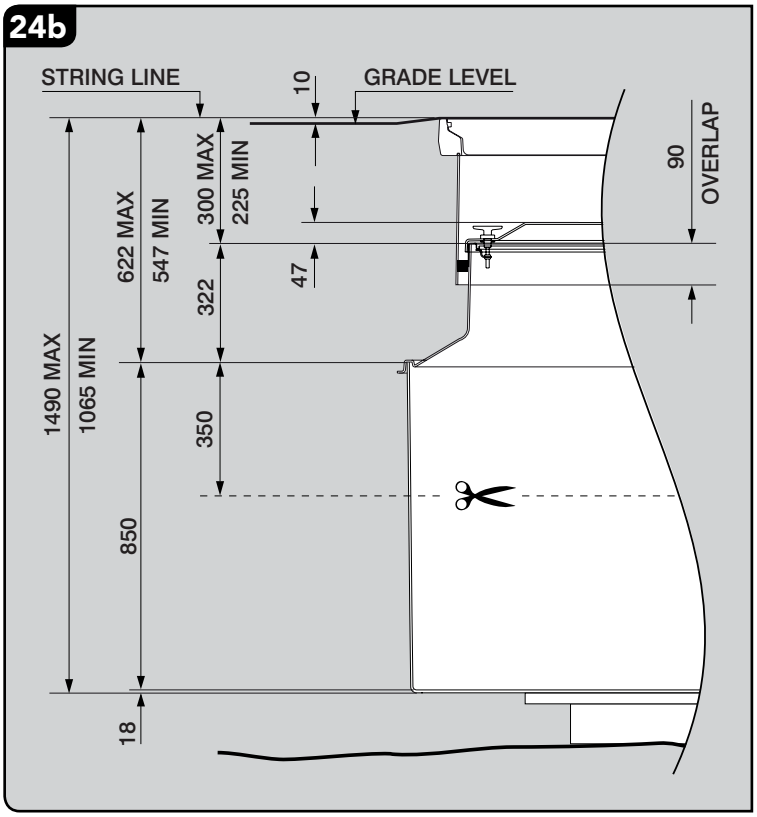
24a



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	Trim the sump so that 'clearance dimension' falls into the 225mm - 300mm range. A maximum of 350mm can be removed from the sump. Trim the skirt so that the overlap between the corbel turret and skirt is between 90 and 120mm.
more than 300mm	The burial depth of the tank is greater than the maximum burial depth of the standard system. Bond a 300mm extension onto the sump. Then proceed as above.

S14SB-3100-WT and S14SB-3100-CD-WT Systems

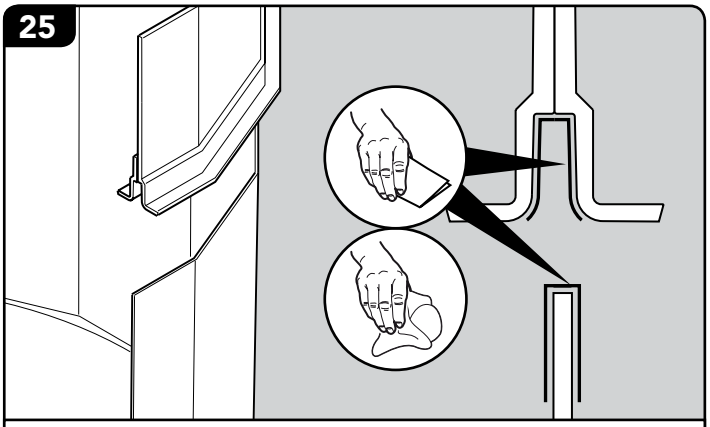
24b



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	Trim the sump so that 'clearance dimension' falls into the 225mm - 300mm range. A maximum of 350mm can be removed from the sump. Trim the skirt so that the overlap between the corbel turret and skirt is between 90 and 120mm.
more than 300mm	The burial depth of the tank is greater than the maximum burial depth of the standard system. Bond a 300mm extension onto the sump. Then proceed as above.

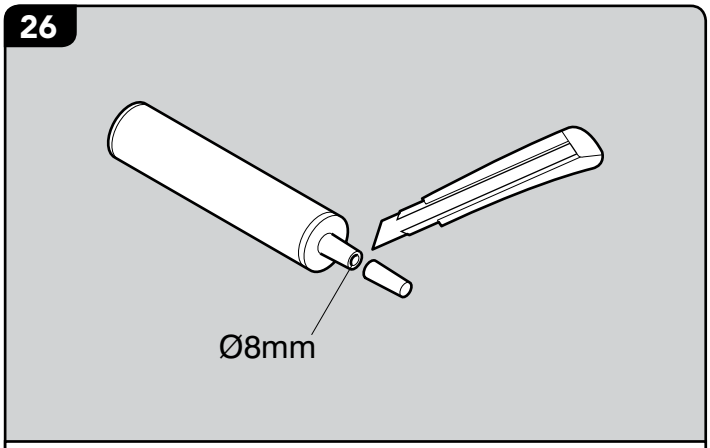
See next page for extension bonding instructions

25



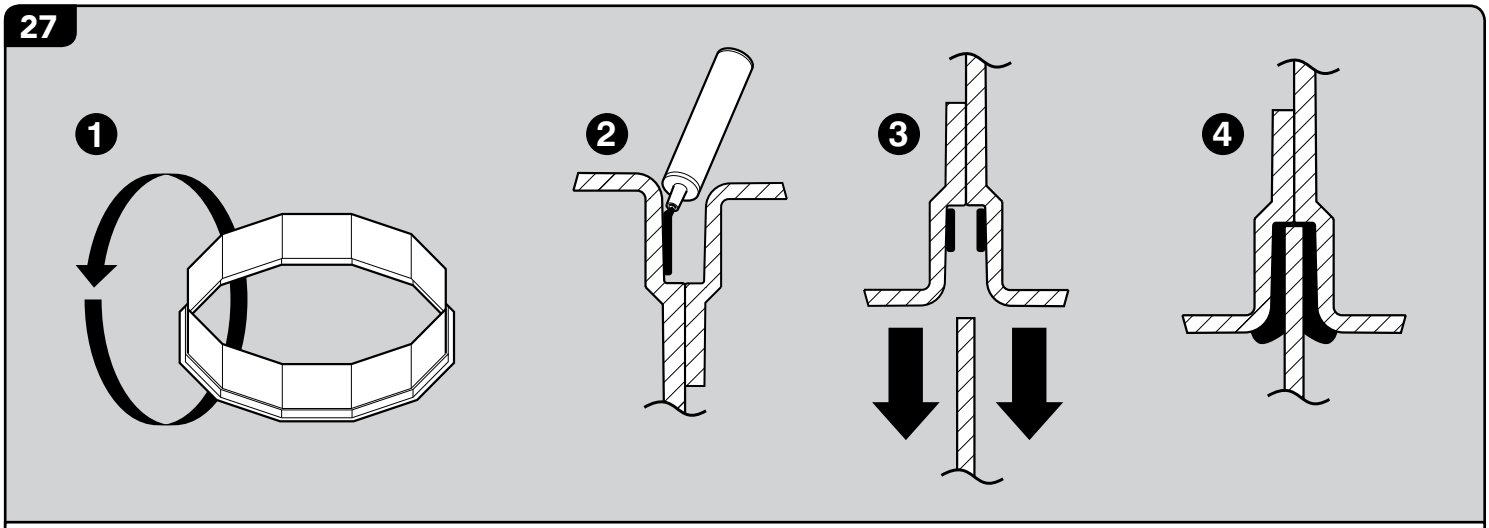
Abrade and wipe with a degreasing solvent the sump top edge / wall and the extension recess shoulder

26



Cut nozzle of the adhesive sealant tube to approx. Ø8mm.

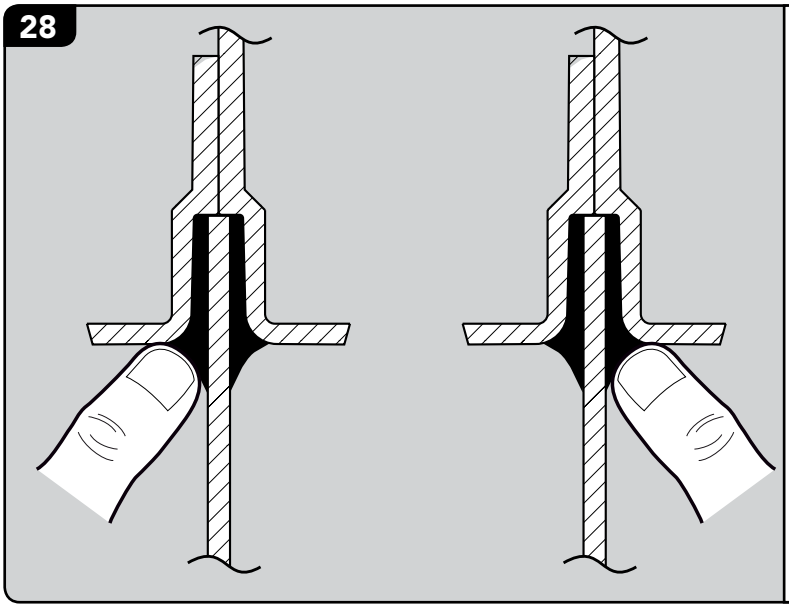
27



To permanently fix the extension, invert the extension and apply a bead of adhesive sealant to the vertical wall of the extension recess.

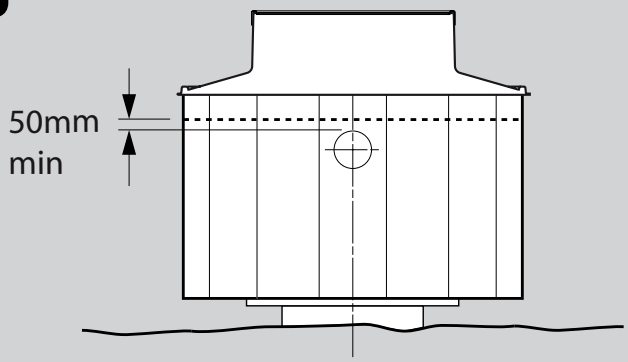
Position the extensions(s) onto the sump, ensure the extension is horizontal and press down uniformly.

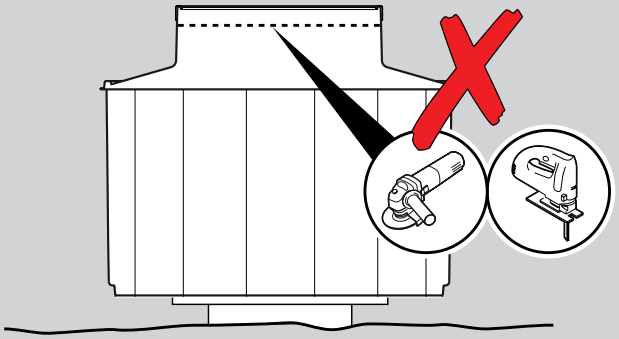
28

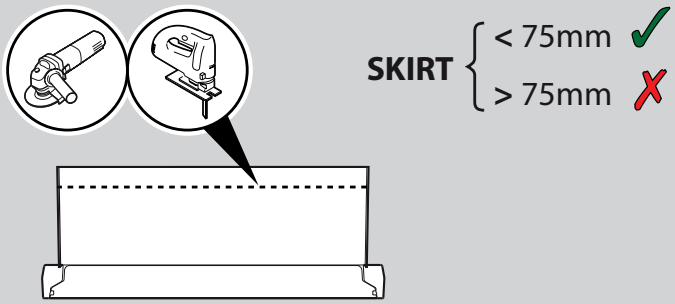


Apply a fillet of adhesive sealant (same nozzle size) to both the internal and external horizontal joint and smooth off.

29





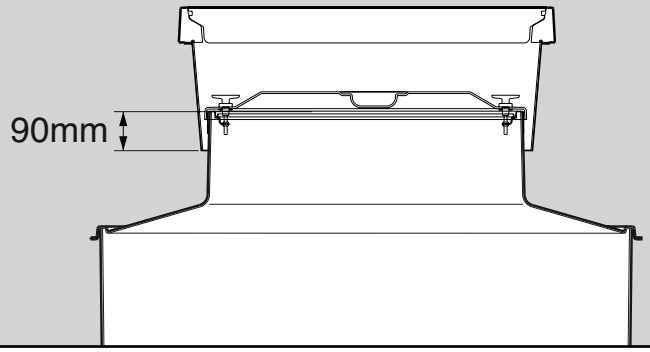


Before trimming the sump check pipe entry positions allow 50mm from top edge to be able to fit the corbel in position.

If necessary cut a smaller amount off the sump height, then cut the remaining material from skirt. Do not trim the corbel as this is fitted with the platform retainer.

Important Note: Trim the skirt so that the clearance from the top of the frame to the top of the corbel falls in the range 225 to 300mm.

30

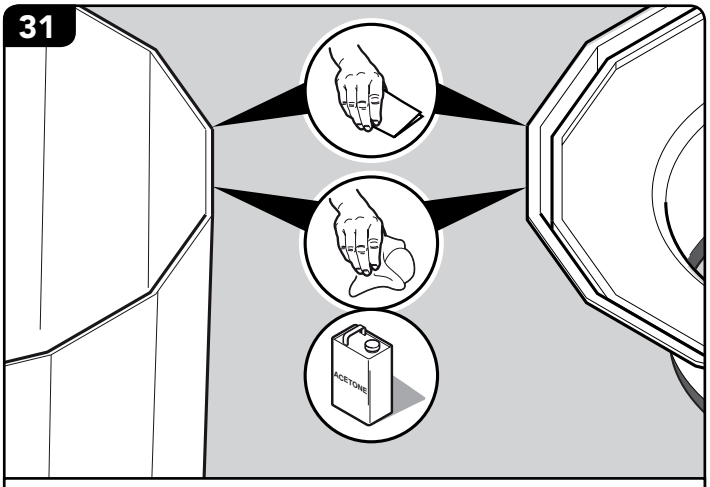


Ensure that you have a min overlap of 90mm between the skirt and corbel, to allow space to install the seal kit.

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

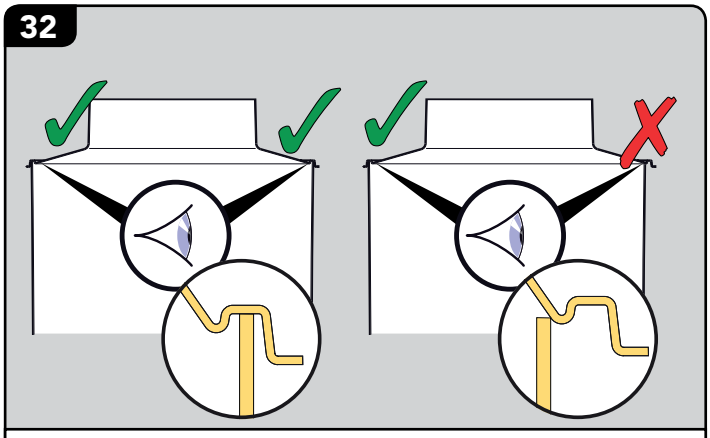
WARNING Do not trim sump until sump has been vacuum tested with pipework installed and completed.

31



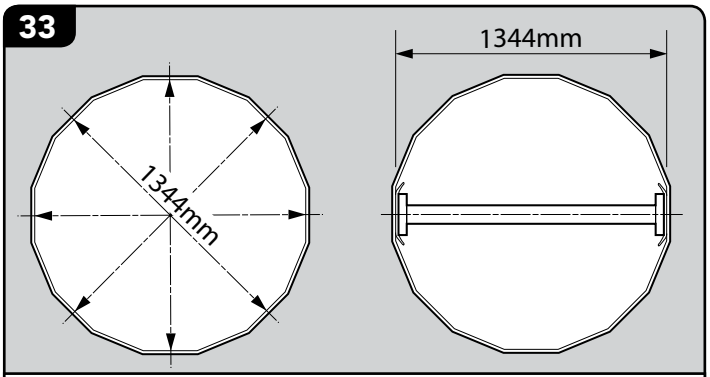
Abrade and wipe with a degreasing solvent the sump or extension top edge/wall and the corbel groove.

32



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.

33

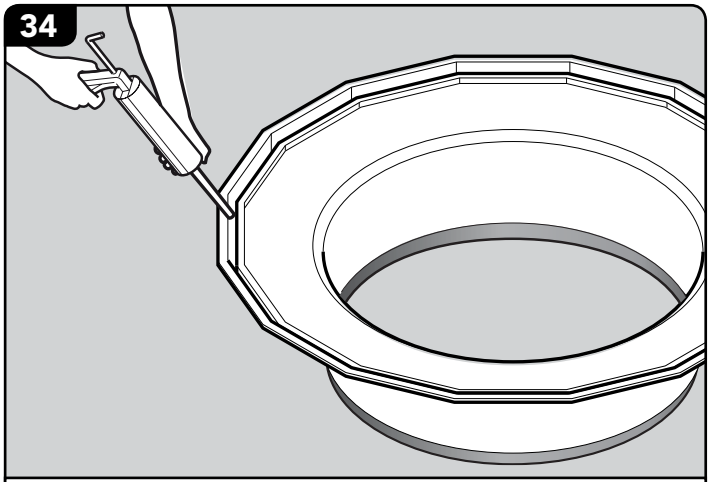


Measure distance between opposite walls, this should be 1425mm. If less than this you will need to brace out the sump.

Using wooden batons (1344mm ±5mm long) with timber spreader plates (150 x 150) to spread the load, brace out the sump to the correct size.

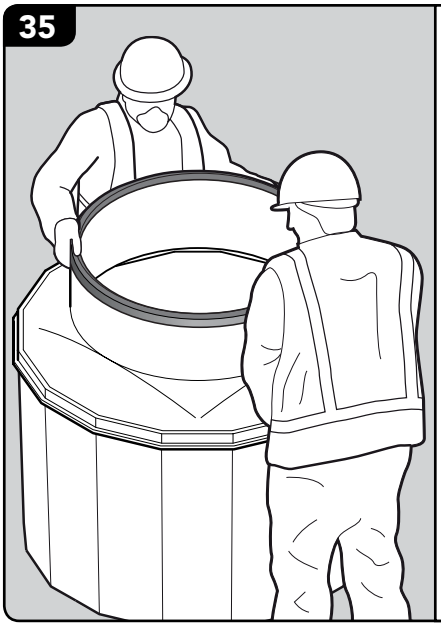
Repeat this process on all walls to get the correct shape.

34



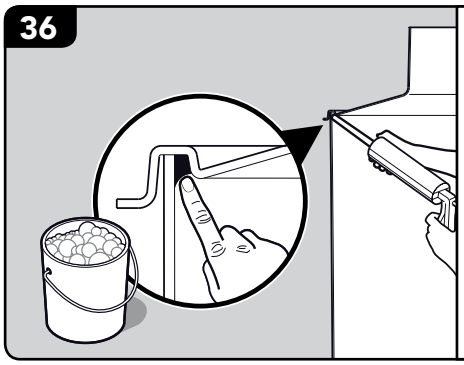
Apply 2 tubes of Soudaflex 40FC sealant in the groove of the corbel. Sealant should fill 1/2 the groove.

35



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

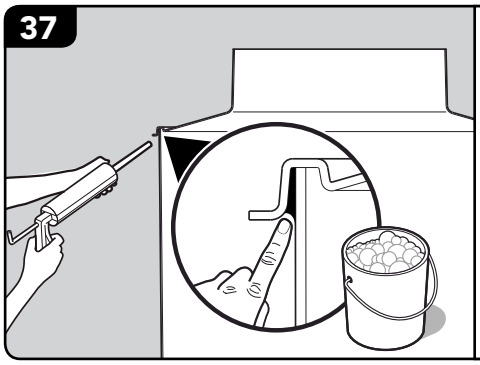
36



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 40FC sealant.

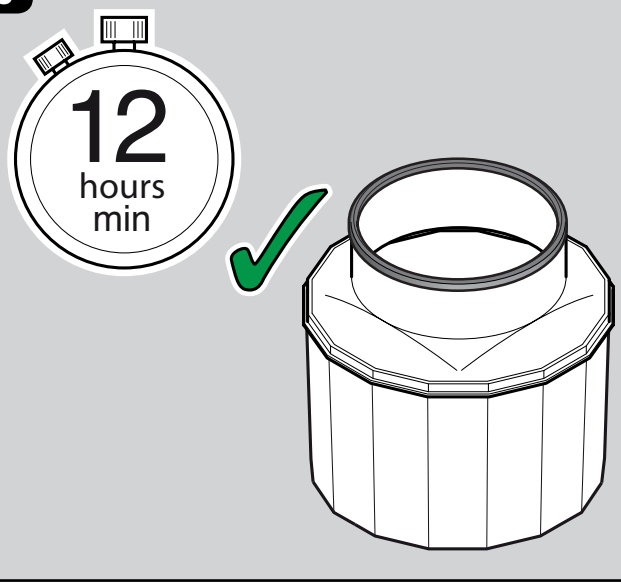
37



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

Use 1.5 tubes of 40FC sealant.

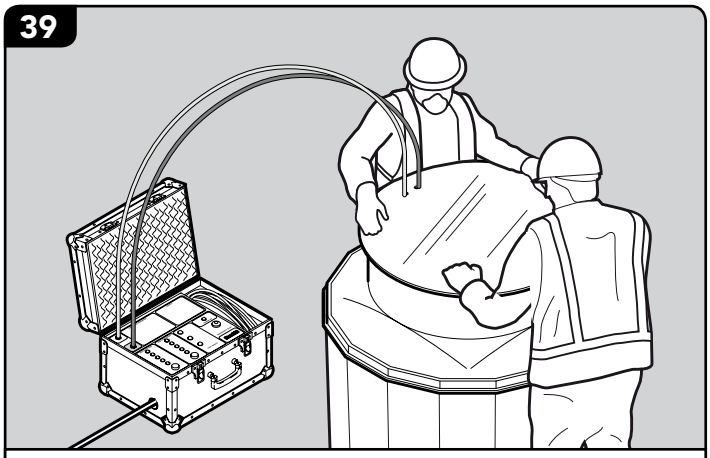
38



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.

39

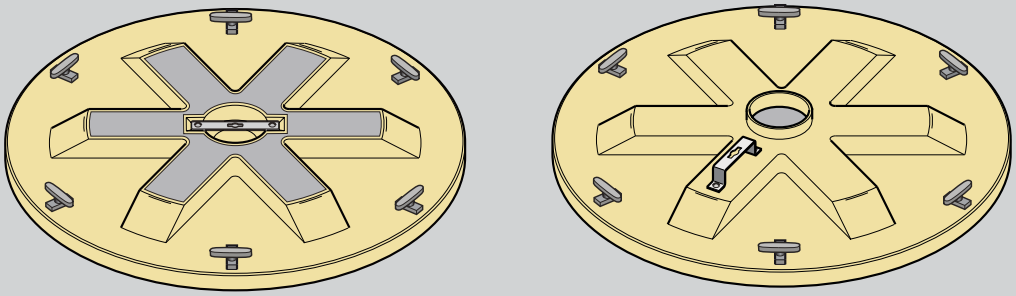


Ensure all pipework and electrical entries have been completed before vacuum testing, this is a final test for all penetrations in the sump.

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

Refer to vacuum testing instructions for correct method.

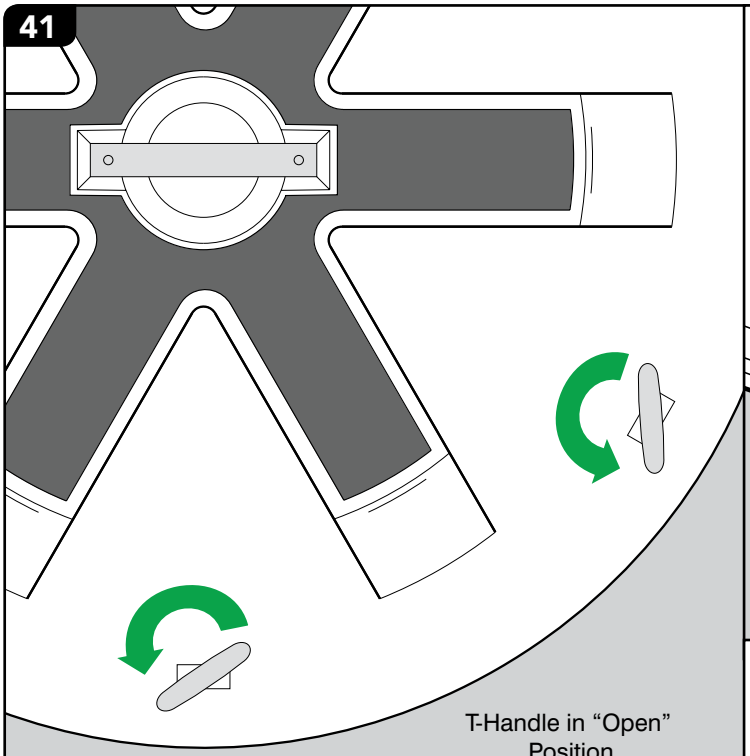
40



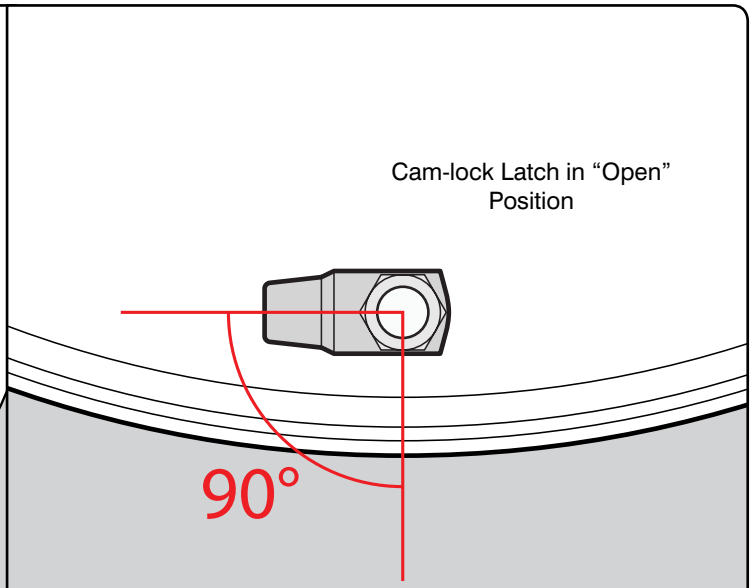
Installation of Watertight Platforms:

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.

41

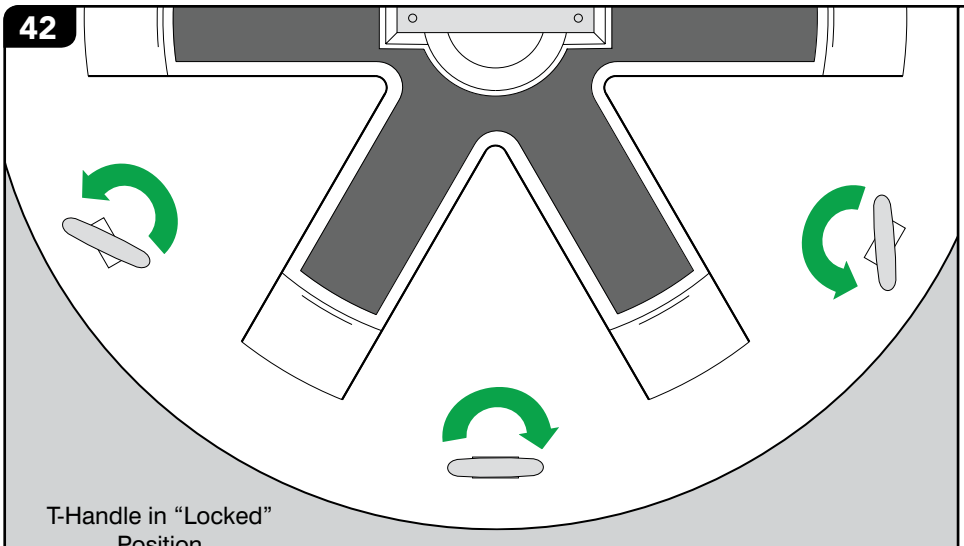


T-Handle in "Open" Position



Turn <u>all</u> T-handles on the top of the platform fully <u>counterclockwise</u> 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).

42



T-Handle in "Locked" Position

Seat the watertight platform on the stainless steel ring. Turn the T-handles fully <u>clockwise</u> 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
(Adjusting the T-handles)

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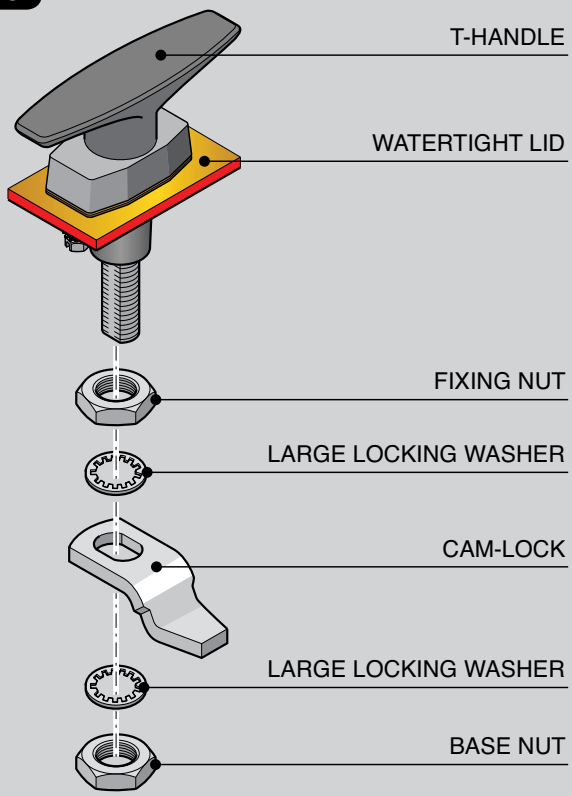
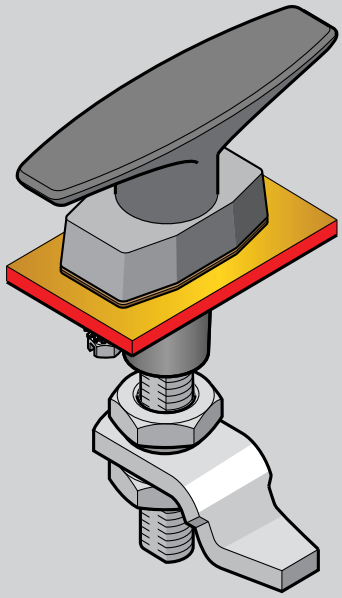
43



The T-handle mechanism consists of the above items.

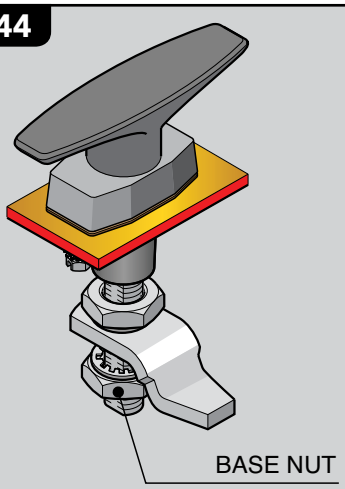
46



Once the cam-lock is secure refit the watertight spill platform as per the steps on the previous page.

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

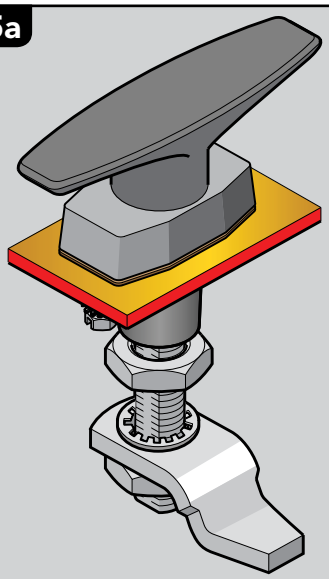
44



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 45a.

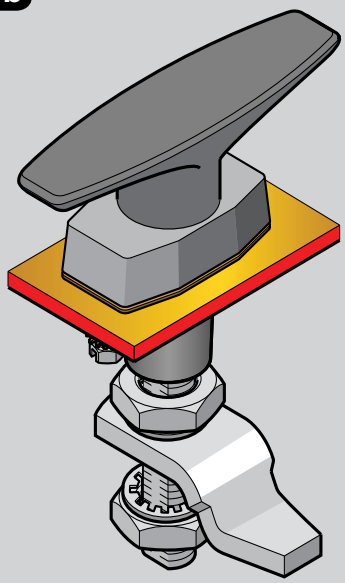
If the platform is not compressing the gasket tightly against the stainless steel ring it means the cam-lock needs to be raised. Loosen the base nut and go to step 45b.

45a



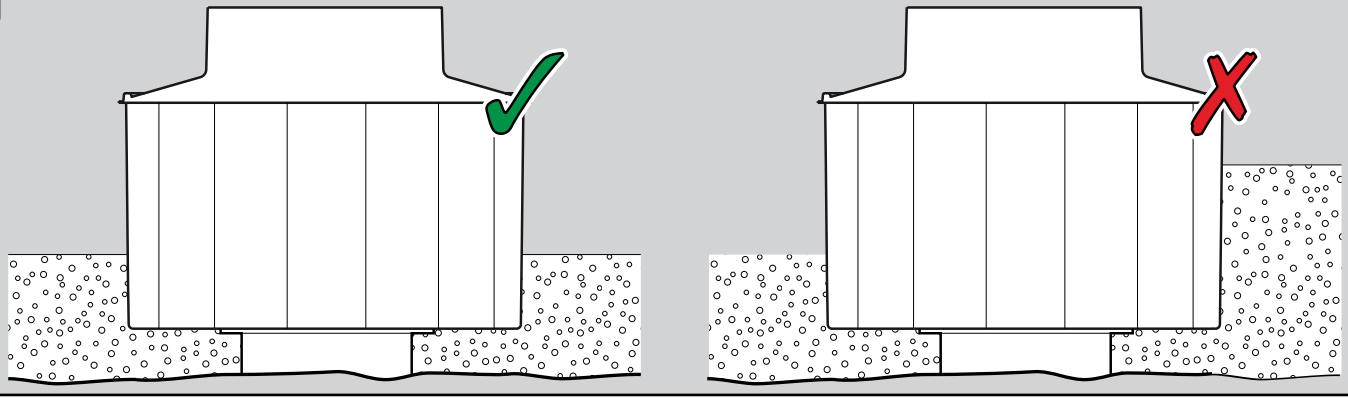
Pull the cam-lock down to rest onto the base nut. Lower and tighten the fixing nut until the cam-lock is secure as per step 46.

45b



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 46.

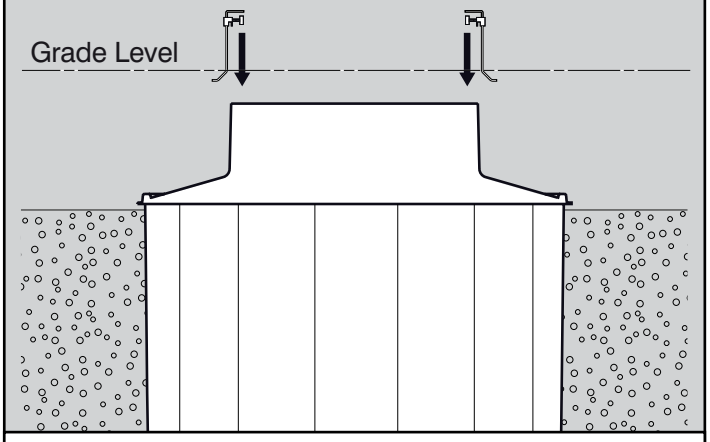
47



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.

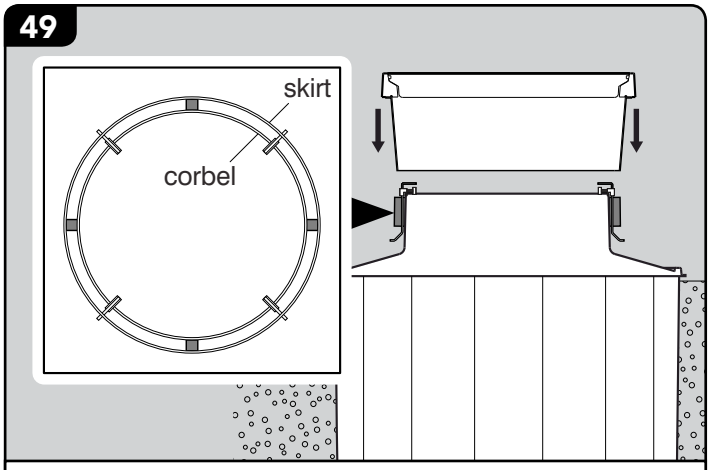
(Adjusting the Skirt & Frame to Grade Level)

48



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

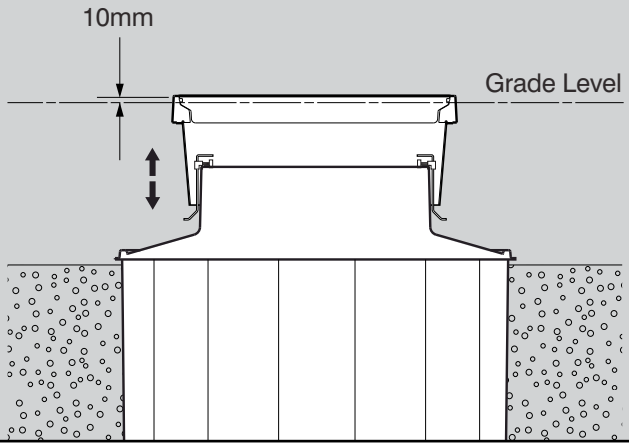
49



Put the skirt and frame on the hangers.

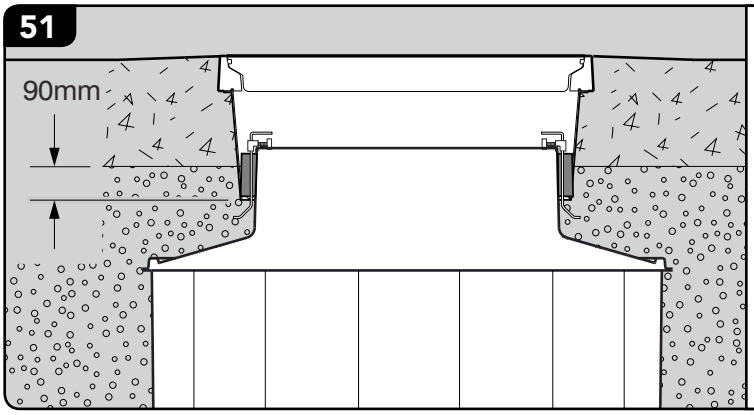
Locate the 4 foam blocks supplied between the skirt and corbel turret to centralise the skirt about the corbel. Failure to do this may result in the platform fouling.

50



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

51



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).

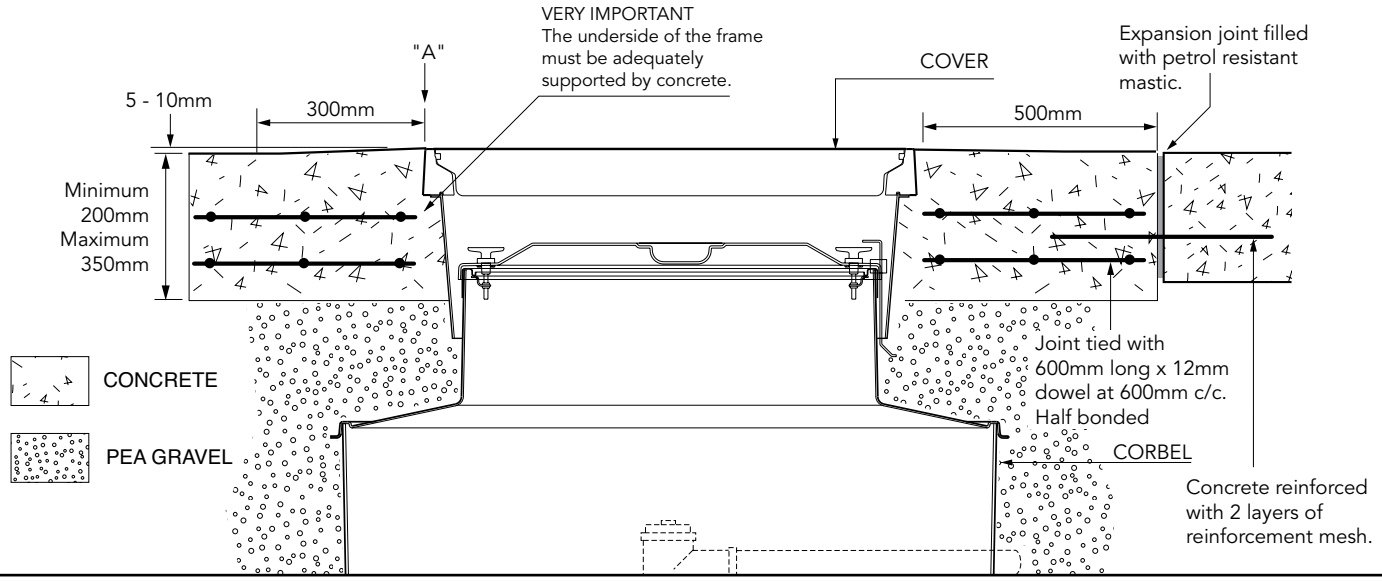
Ensure foam spacers are in position to locate the skirt centrally around the corbel.

52

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

TYPICAL INSTALLATION

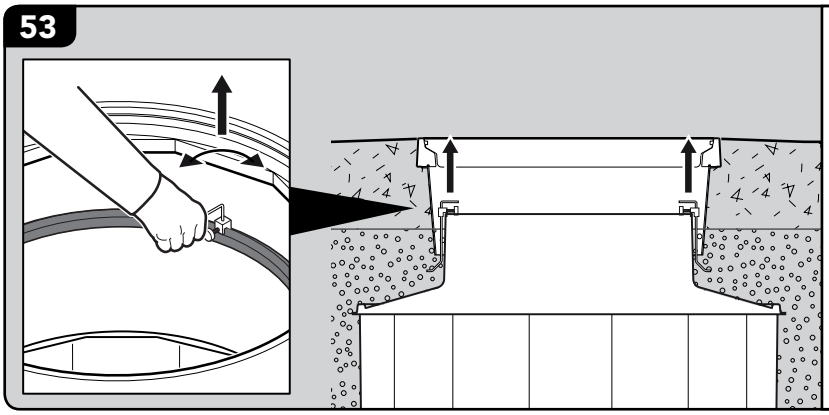
CONCRETE



Complete backfilling to appropriate level. Frame must be supported by a minimum depth of 200mm of concrete

Concrete ties must be inserted 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.

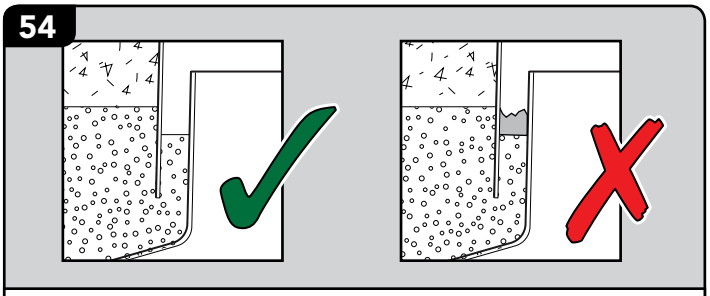
53



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.

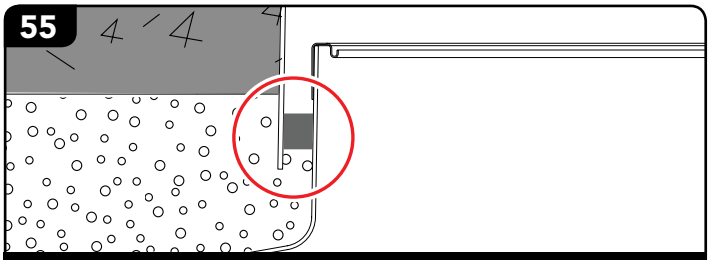
Complete other third party equipment installation inside the sump.

54



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

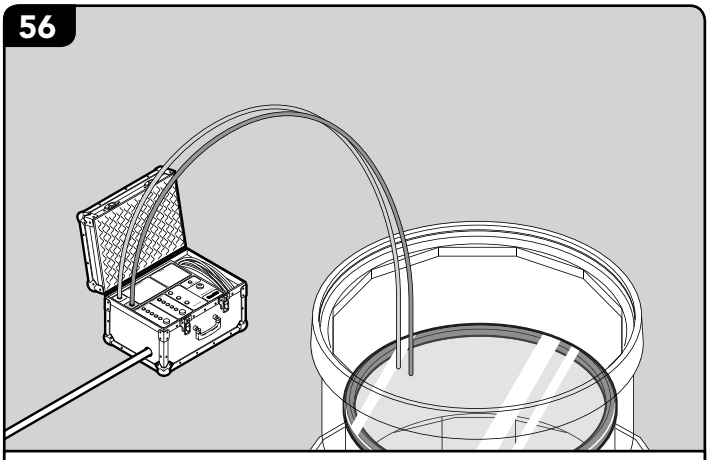
55



NB:- Area must NOT be filled with concrete

Void between corbel and skirt to be filled with pea gravel or sand.

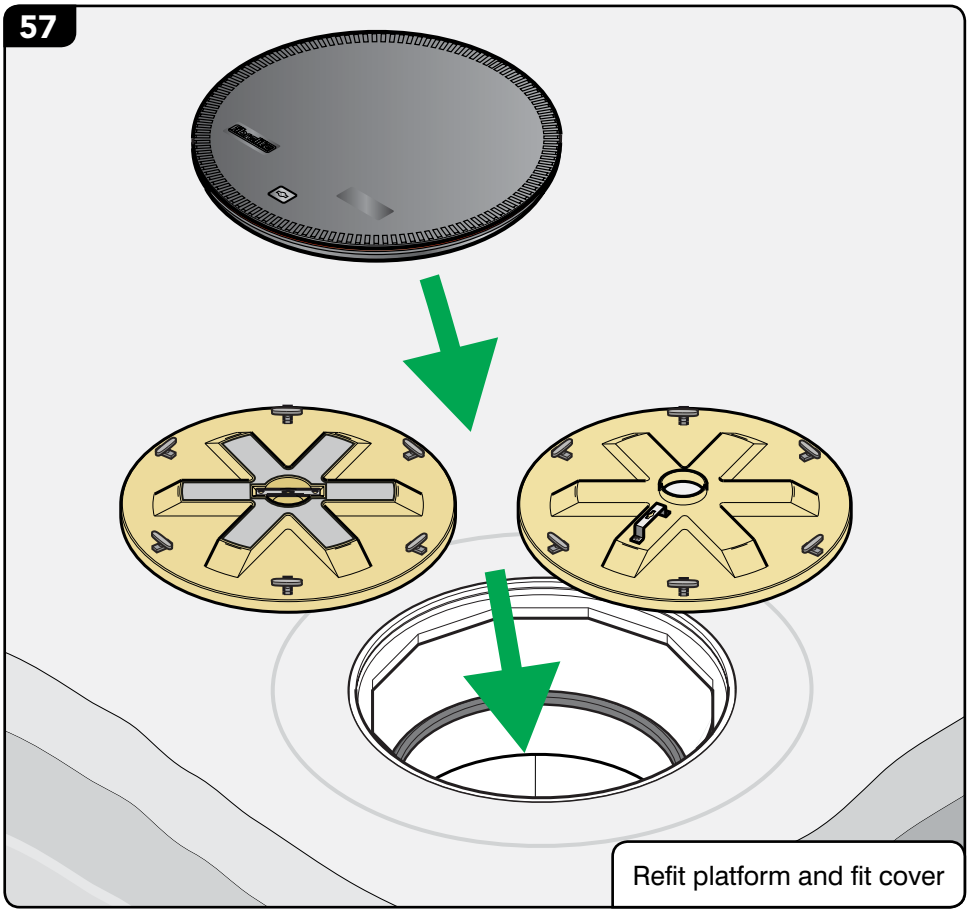
56



Test completed system.

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

57



Refit platform and fit cover