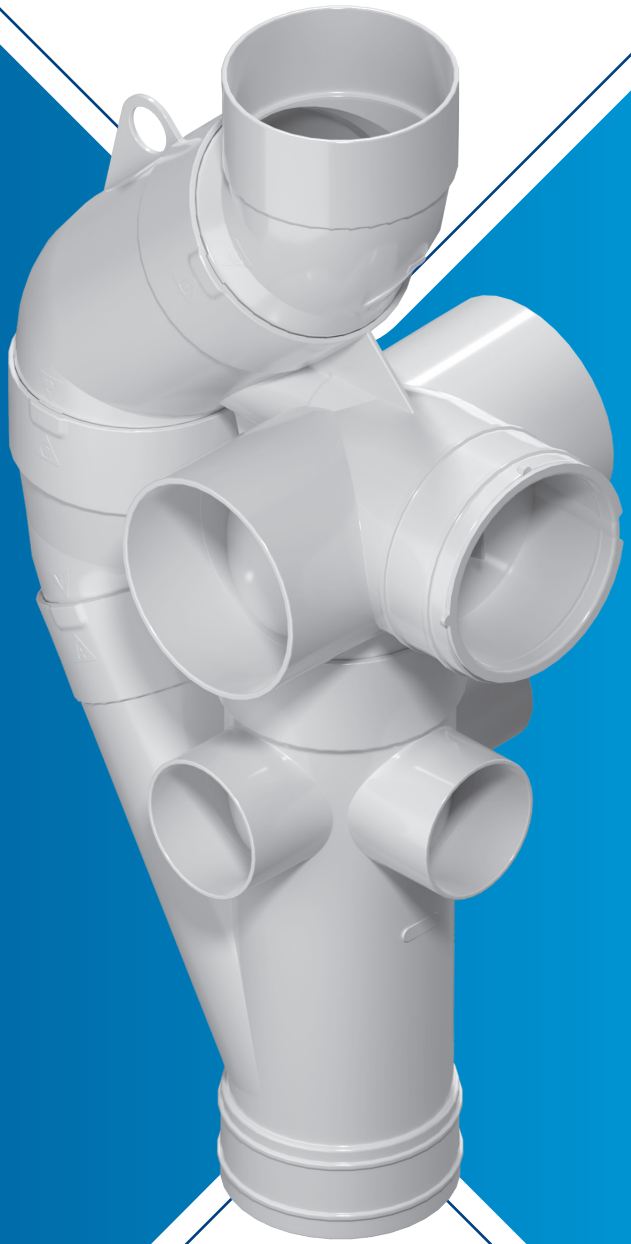
conVerge™

Converge

Reduced Velocity Aerator Stack System

PVC aerator for single stack system applications.

- **Saves space in service risers with integrated vent tube = more usable floor area**
- **Less pipework = less penetrations, less time, less cost**
- **Design flexibility - a single aerator fitting offers 6 branch connection options**



INDIVIDUALLY TESTED

SMK1246

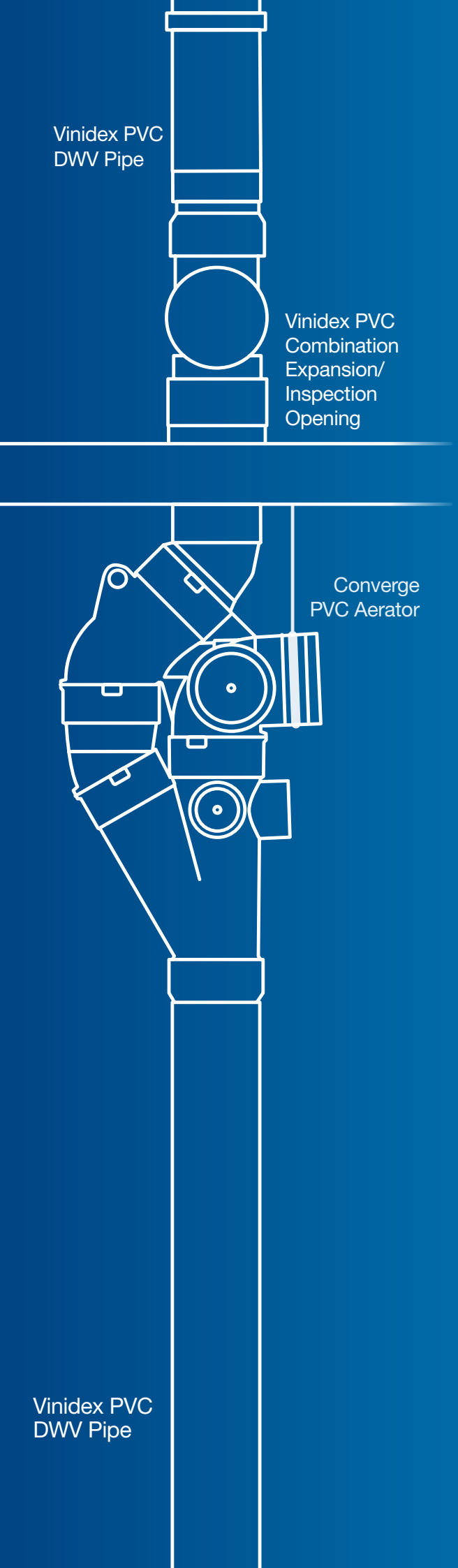
WaterMark WMKA1246

100% RECYCLABLE

AUSTRALIAN MADE

Vinidex by aliaxis

Scan the QR code to learn more about Converge, or call customer service today on 13 11 69.



The newest addition to Vinidex's RVASS range, Converge is a unique PVC aerator perfect for single stack system applications.

- **Saves space in service risers with integrated vent tube = more usable floor area**
- **Less pipework = less penetrations, less time, less cost**
- **Limits excessive pressure differentials by slowing stack flow and maintaining the core column of air**
- **Ensures trap seal integrity thereby protecting building occupant health**
- **Seamless integration with other Vinidex PVC DWV piping solutions**
- **Design flexibility - a single aerator fitting offers 6 branch connection options**

Vinidex
by aliaxis

A traditional Fully Vented Modified (FVM) stack system has separate foul water and vent pipes. Vinidex Converge is a key component of Reduced Velocity Aerator Stack System (RVASS) design which allows for a single stack system thus removing the need for a separate vent pipe. This gives building designers the flexibility to reduce the size of service ducts and create more usable floor space.

Manufactured in Australia from PVC to AS/NZS1260, Converge is WaterMark (WMKA1246) and StandardsMark (SMK1246) certified and integrates seamlessly with Vinidex's PVC DWV system. As such, no additional tools or installation techniques are required to fit the Converge aerator, significantly reducing material and labour costs.

1.0 Building Stack

An RVASS System is a sanitary drainage stack system that uses aerator fittings such as Converge at each floor level to connect the branch lines where sanitary fixtures are installed to the vertical building stacks. The unique shape of the Converge PVC stack-aerator fitting reduces the speed of the falling effluent and smoothly converges the horizontal entry flow with the flow from higher floors. The vent opening between the offset chamber and the entry chamber in Converge keeps the horizontal pipe ventilated. This maintains the core of air inside the stack and keeps the positive and negative pressures within the required limits to prevent trap seal breach, without the requirement of an additional vent pipe. If the water flow wasn't controlled by the Converge aerator it would increase in speed until air resistance would fatten out the water and form a complete blockage of the tube (terminal velocity).

Fully Vented Modified (FVM) System

Horizontal water feeding into the vertical pipe at speed disrupts annular flow and creates turbulence. The subsequent negative pressure sucks water out of traps releasing sewer gas into the environment. A second vent stack is required to relieve the pressure differential and preserve the trap seals

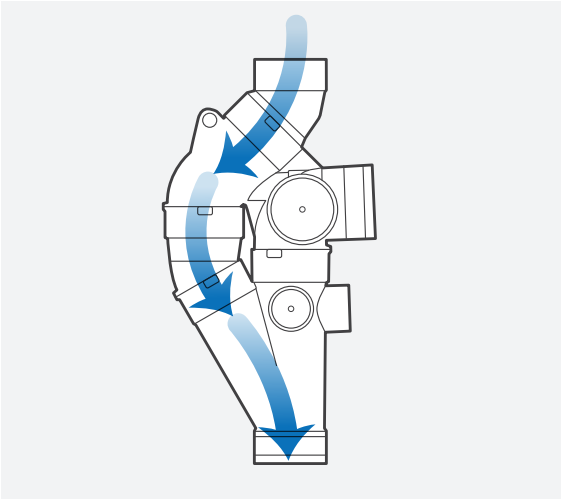
Reduced Velocity Aerator Stack System (RVASS) / Single Stack System

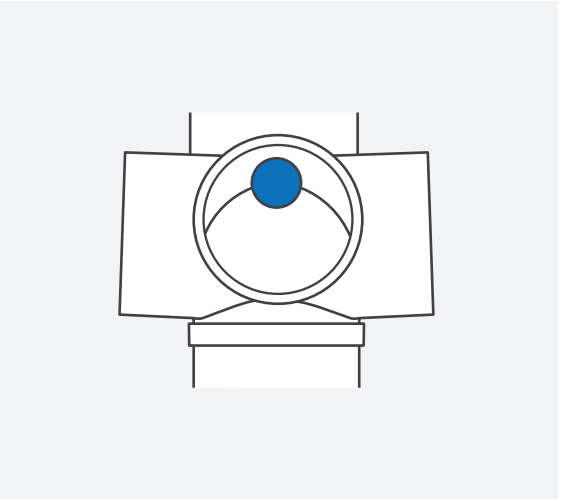
Converge aerator slows water velocity and allows horizontal discharge to gently mix with the vertical flow. This maintains steady water flow and the required core of air, reducing positive and negative pressure fluctuations and maintaining trap seals.

2.0 Converge Reduced Velocity Aerator Stack System (RVASS) Advantage

The Converge stack aerator has been designed to smoothly slow the flow of the effluent in the stack to limit excessive pressure dfferentials while ensuring no dead zones exist where waste particles can collect and build-up over time leading to long-term health concerns.

The vent pipe incorporated into the Converge aerator is designed to ensure the column of air in the core is maintained to reduce the transient air pressures and ensure the integrity of the trap seals.





2.1 No relief vents or cross venting required:

- Saves space within service risers
- Reduces pipework and the number of penetrations, saving time and cost
- Simplifies design and increases design flexibility

2.2 One stack aerator offers six connection points providing flexibility in design and allowing multiple connections to the one junction (refer to AS/NZS3500.2 for connection details and limits)

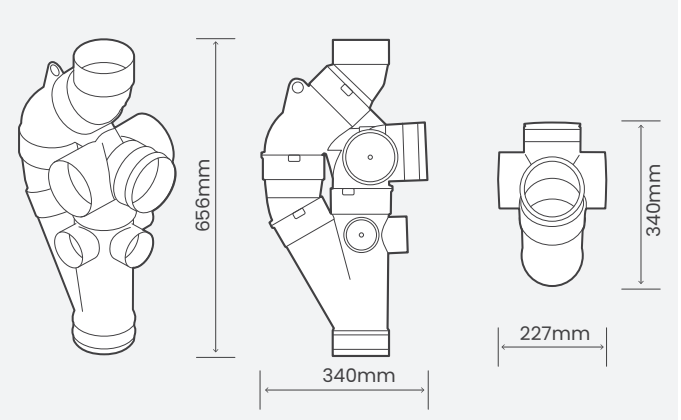
2.3 Manufactured from PVC to AS/NZS1260 – connects with and installed as per the rest of the Vinidex PVC DWV system

2.4 Converge RVASS to be designed according to AS/NZS3500.2 requirements

3.0 Converge Dimensions

Length L (mm)	Width W (mm)	Height H (mm)
340	227	656

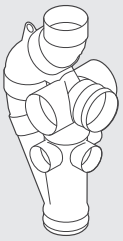
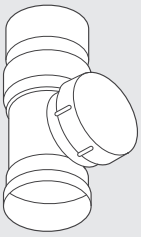
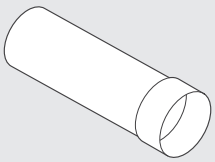
FIG. 1 Converge Dimensions



4.0 Elements of the Converge RVASS

The Vinidex reduced velocity stack system consists of:

1. Converge aerators at each floor where horizontal branches enter the stack (maximum vertical distance between Converge aerators is 5m)
2. Vinidex DN100 combination Expansion Joint and Inspection Opening
3. Vinidex DN100 PVC Pipe

	Converge PVC Aerator	Expansion I/O	Vinidex PVC Pipe
			
OPTION 1			
Vx Item	58293*	57150	18000
			18002
Description	100 DWV Converge Aerator F&F	100 DWV Access Fitt & Expn	100-SN6 SC DWV PVC SCJ GY 6M
			100-SN6 SC DWV PVC SCJ GY 3M
Cartons per Pallet	26	N/A	N/A
OPTION 2			
Vx Item	58301*		18000
			18002
Description	100 DWV Converge + IO Exp Kit		100-SN6 SC DWV PVC SCJ GY 6M
			100-SN6 SC DWV PVC SCJ GY 3M
Cartons per Pallet	20		N/A

*Includes proprietary Converge M10 Nutclip (67424)

Each Converge PVC aerator fitting is individually inspected and pressure tested at the Australian plant before being packaged for sale to ensure peace of mind on the building site.

5.0 Design Considerations for Converge Reduced Velocity Aerated Stack Systems

The following considerations are based on the requirements detailed in AS/NZS3500.2:

5.1 Converge stack sizing and design considerations:

5.1.1 Converge RVASS design must always consider the maximum overall stack capacity in combination with the fixture loads on each individual branch line

5.1.2 The stack must adhere to fixture unit loadings as per tables 6.2(A) and 8.2.2(B) in AS/NZS3500.2

5.1.3 A Converge aerator is required at each floor level that receives a soil or waste branch

5.1.4 A Converge aerator or double inline offset is required to be installed within the first 5 metres from the base of any reduced velocity aerated stack system and / or at a distance of no more than 5m from the last Converge aerator / double inline offset

5.1.5 When connecting more than one branch line to a Converge aerator the connection rules in Section 11 of AS/NZS3500.2 must be followed

5.1.6 A Pressure Relief Loop (PRL) is to be installed at the base of each Converge reduced velocity stack and at each stack offset greater than 45 degrees (layout change) as per Section 11 of AS/NZS3500.2

5.2 Branches lines are to be designed and installed as per Above-Ground (Elevated) Pipework using Drainage Principles (Clause 10.11 in AS/NZS3500.2):

5.3 Unvented branch lines may extend up to 10m from the Converge RVASS stack with the following maximum capacities:

5.3.1 DN65 = 5 x Fixture Units (Table 3.10.2 AS/NZS3500.2)

5.3.2 DN100 = 30 x Fixture Units (Table 3.10.2 AS/NZS3500.2)

5.4 When non-PVC horizontal branch lines such as dBlue or Akatherm HDPE are to be connected to the DN100 Converge inlets an expansion socket (Vinidex item 55780) needs to be added between the Converge inlet and the end of the branch lines.

6.0 Converge Bracketing & Installation

6.1 The Converge aerator must be installed to restrain against any movement that may occur in the building, stack or connected branch lines. The following is therefore recommended:

6.1.1 A single M10 welded Nut Clip (118mm ID) secured tightly to the moulded inlet at position (2) on the Converge aerator when the Converge will be located up to 300mm below the underside of the slab (approximately 450mm from the top of inlet (2) to the underside of the slab) (See Fig. 2); or

6.1.2 When the Converge will be located more than 300mm below the underside of the slab:

6.1.2.1 A 3-way rigid connection secured tightly to the moulded inlet at position (2) on the Converge aerator (See Fig. 3a); or

6.1.2.2 A single M10 welded Nut Clip tightly secured tightly to the moulded inlet at both position (2) and position (7) on the Converge aerator (See Fig. 3b)

Nut Clip bolts should be tightened to form a secure connection (but not overtightened risking damage to the Converge)

6.2 All pipework must be installed and bracketed to AS/NZS3500.2. Branch lines are to be fully supported as per AS/NZS3500.2 and cannot rely on the Converge connection for support or restraint. Fire and Health & Amenity requirements (such as Acoustic amenity) must also comply with the local National Construction Code (NCC) requirements

6.3 Connecting to the top centre DN100 inlet – when connecting to the top centre DN100 inlet (Position (2)) simply remove the DN100 plug that comes with all Converge aerators and form the connection using the standard solvent cement joining procedure. (See Fig. 4)

6.4 Connecting to either the side DN100 inlets and/or the DN65 inlets – when connecting to these inlets (Positions (1), (3), (4), (5) and (6)) the following steps apply:

6.4.1 Primer & Solvent cement join the DN100 plug into the top centre DN100 inlet (Position (2)). (See Fig. 5)

6.4.2 Using a holesaw (105mm holesaw is recommended for DN100 connections or a 65mm holesaw for DN65 connections) gently drill out the correct inlet using the moulded guide points to centre the holesaw. (See Fig. 6)

6.4.3 Solvent cement join the DN100 and/or DN65 pipe into the respective inlets on the Converge aerator as per standard solvent cement joining procedures.

FIG. 2 Converge fixed less than 300mm below underside of slab

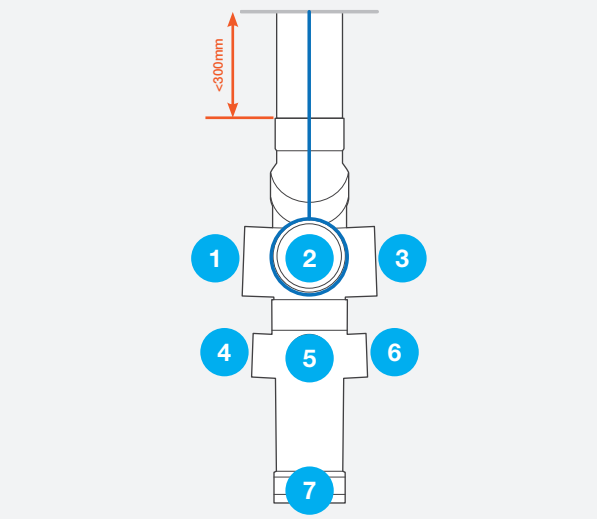


FIG. 3a Option 1 – Converge fixed more than 300mm below underside of slab

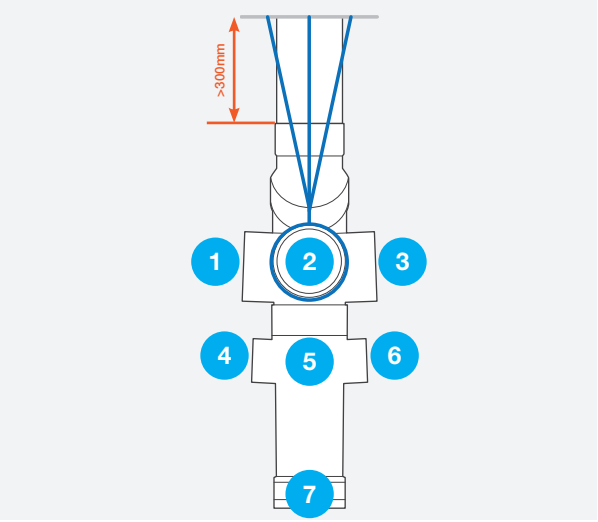


FIG. 3b Option 2 – Converge fixed more than 300mm below underside of slab

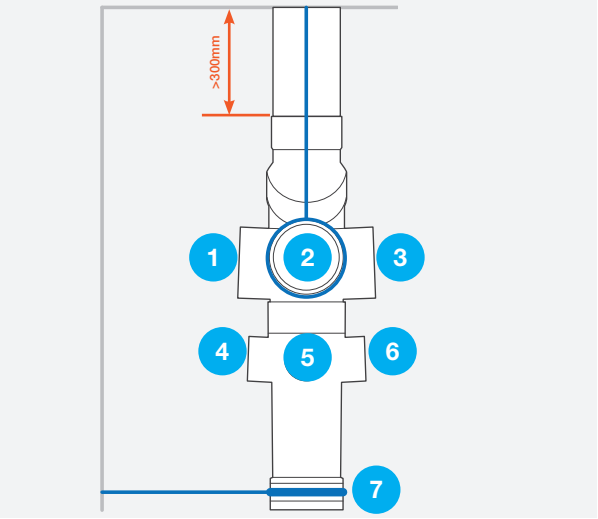


FIG. 4 Primer and solvent cement the spigot end of the DN100 pipe or fitting into the top centre DN100 inlet

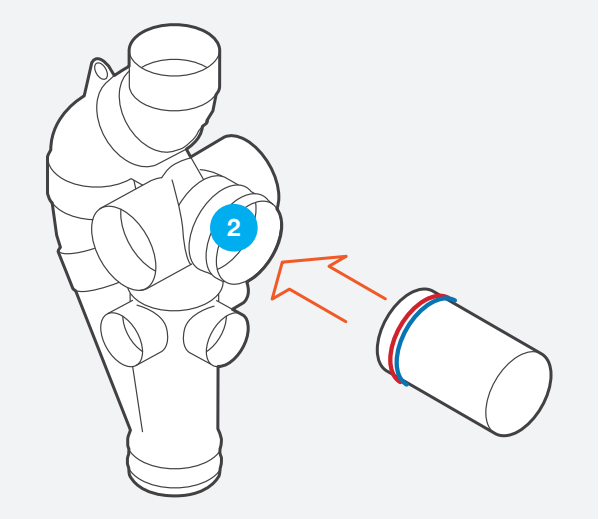


FIG. 5 Primer and solvent cement the DN100 plug into the top centre DN100 inlet

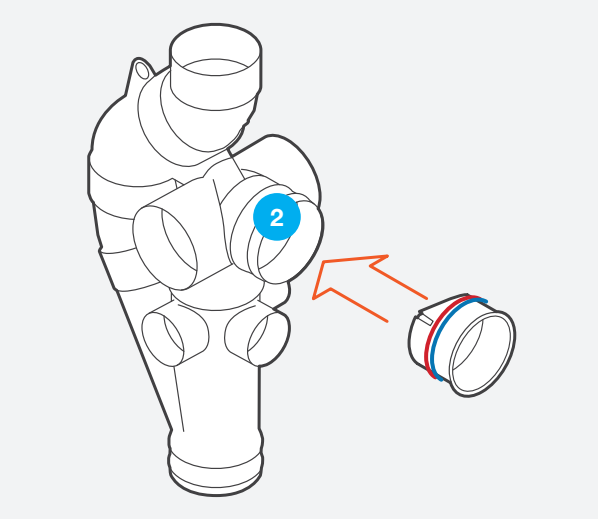
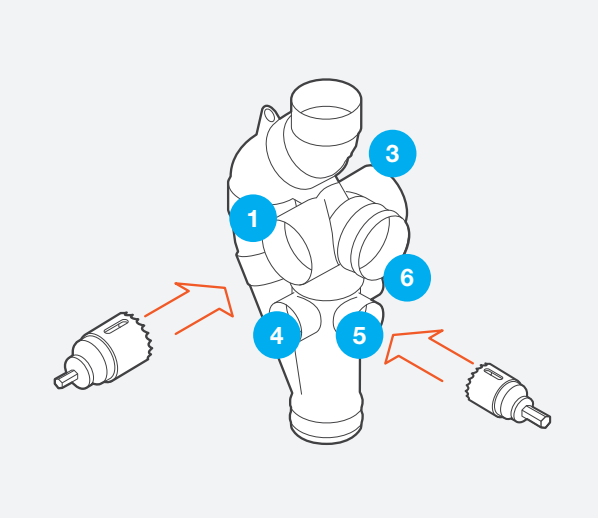


FIG. 6 Using a holesaw drill out the correct inlet

Note* 105mm holesaw for positions 1 & 3. 65mm holesaw for positions 4, 5 & 6



Vinidex – we make life flow

Vinidex is a leader in Australian manufacturing and supply of advanced pipe systems and solutions. We make life flow by connecting Australians with water, energy and communications. Our sustainable, innovative pipe systems and solutions are designed to meet the needs of building, infrastructure, irrigation, rural, mining, industrial, gas and energy customers. Backed with the strength of Aliaxis, a global leader in plastic piping solutions, Vinidex has proudly manufactured in Australia for over 60 years.

We are passionate about what we do and our commitment to safety, health and environmental sustainability is integral to the way we operate.

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