



VT Manhole System Product Guide



Tap, Tap, Done – Push-In Steps



VT Manhole System

The Humes VT Manhole System is manufactured using state of the art Vibration Technology (VT) to give unrivalled strength and consistency. Concrete components are designed and manufactured to meet CPAA's Guidance Note (NZ) "Loads on Circular Precast Concrete Manholes and Access Chambers (March 2016)" while retaining all the features of the traditional Humes Manhole System.

Features	Benefits
<ul style="list-style-type: none"> Designed and manufactured in accordance with the relevant sections of the following standards and specifications where applicable: AS/NZS 4058: 2007, NZS 3101: Part 1: 2006 NZS 3109: 1997, NZS 3114: 1987 NZS 4404: 2010, ASTM C857-14 CPAA Guidance Note (NZ) – March 2016 AS/NZS 1170.0: 2002 Section 4 NZTA, Bridge Manual (SP/M/022) 	<ul style="list-style-type: none"> Complies with New Zealand Territorial Authorities' infrastructure specifications, including Auckland Council and Watercare Service life expectation in excess of 100 years (normal environments as per AS/NZS 4058)
<ul style="list-style-type: none"> Manufactured at Humes' ISO certified Auckland plant 	<ul style="list-style-type: none"> Available through all Humes North Island Sales Centres. Manufactured using a recognised quality management system that is independently audited and certified
<ul style="list-style-type: none"> High tech, automated Vibration Technology (VT) manufacturing process 	<ul style="list-style-type: none"> Flexible production capability to meet customer requirements Excellent dimensional accuracy
<ul style="list-style-type: none"> Suitable for installation depths up to 10 metres 	<ul style="list-style-type: none"> Satisfies the requirements of most practical applications
<ul style="list-style-type: none"> Push-fit plastic encapsulated steps 	<ul style="list-style-type: none"> Comply with European Standard EN13101 Time saving as steps are 'push-in' rather than bolted so no need for holes to be epoxied Receiving plastic sockets are cast into the concrete riser wall ensuring accurate fit every time Step holes do not penetrate the outside of the riser wall, reduced potential for infiltration

VT DN1050 Manhole Riser on Base (Flanged)

Risers on base are supplied in three standard heights and all have 88mm wall thickness and 160mm thick flanged bases to resist flotation.

Item code	Product Marking	Internal Diameter (mm)	Effective Internal Height ¹ (mm)	Overall Height (mm)	Diameter of Base ² (mm)	Wall Thickness (mm)	Base Thickness (mm)	Mass (kg) ³	Lifting Clutches Required (tonnes)	Qty of Steps in the Riser on Base
02915	1050 x 600	1050	510	670	1526	88	160	1125	2 x 2.5t	1
02920	1050 x 900	1050	810	970	1526	88	160	1360	2 x 2.5t	2
02925	1050x1200	1050	1110	1270	1526	88	160	1595	2 x 2.5t	3

1. Inside of base to top of spigot. 2. Includes 160mm flange. 3. Mass calculation based on nominal concrete density of 2500 kg/m³.

VT DN1050 Manhole Risers

The VT Manhole System offers flush jointed riser barrels in four standard lengths 300, 600, 900 and 1200mm.

Item code	Product Marking	Internal Diameter (mm)	Effective Riser Height (mm)	External Diameter (mm)	Wall Thickness (mm)	Mass (kg) ¹	Lifting Clutches Required (tonnes)	Qty of Steps in Riser
32710	1050 x 300	1050	300	1226	88	233	2 x 2.5t	1
32715	1050 x 600	1050	600	1226	88	469	2 x 2.5t	2
32720	1050 x 900	1050	900	1226	88	704	2 x 2.5t	3
32725	1050 x 1200	1050	1200	1226	88	941	2 x 2.5t	4

1. Mass calculation based on a nominal density of 2500 kg/m³.

VT DN1050 Manhole Lids



Concrete lids are designed and manufactured in accordance with CPAA Guidance Note (NZ) – March 2016 to correspond to three load ratings – LD20 for 20 kN light traffic wheel load, HD60 for 60 kN wheel load (equivalent to NZTA Bridge Manual HN Load Component), and NZTA Bridge Manual HN-HO-72.

Humes HD60 Lids have been load tested to AS 4198-1994 and comply with Type H (equivalent to AS 3966 Class D).



Item Codes		Nominal Diameter (mm)	External Diameter (mm)	Thickness (mm)	Opening (mm)	Mass (kg)	Lifting Clutches Required (tonnes)	Load Rating	Design live load
Eccentric Hole	Central Hole								
32679	32676	1050	1242	100	610	225	3 x 2.5t	LD 20	20KN
32680	32677	1050	1249	150	610	335	3 x 2.5t	HD 60	60KN
32681	32678	1050	1258	225	610	500	3 x 2.5t	NZTA.BM	HN-HO-72

Notes:

1. Eccentric Hole:  Central Hole: 
2. Load ratings, recommended use:
 - LD20 – Lightly trafficked areas
 - HD60 – Roads where specific bridge rating design not required (majority of applications)
 - NZTA.BM – Used where compatibility with bridge design is required

Each VT Manhole System concrete lid is supplied with a 610mm clear opening access hole that is either eccentrically or centrally positioned to suit the project specification.

To accommodate situations where the access cover and frame are required to be secured directly to the top of the concrete lid, four 12mm diameter holes are provided at equal spaced intervals around the 610mm opening to accept M10 sleeve (wedge) anchors.

Adjustment Rings

Humes concrete adjustment rings are steel fibre reinforced, have an internal diameter of 610mm and are available in thicknesses from 30 to 300mm. The rings are placed over the opening in the manhole lid to make the final height adjustment when placing the frame and cover. Adjustment rings are supplied with bolting holes to match streetware and concrete lid holes. A special adjustment ring is also available to reduce the 610mm opening to a 530mm opening where specified.

Manhole Connectors

Pipe to manhole connectors are available to suit a wide range of Territorial Authority specifications.

Resilient (flexible) connectors complying with ASTM C 923M-08 are available for situations where movement due to earthquake or high differential settlement is expected.

Contact your nearest Humes Sales Centre or Sales Representative for details and advice. www.humes.co.nz

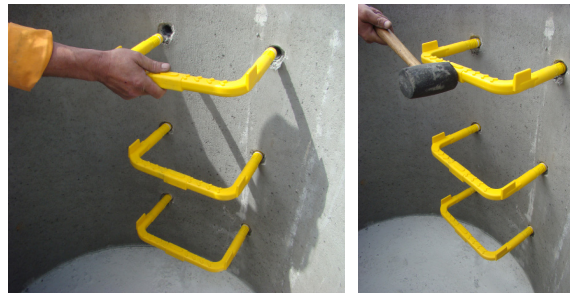
Joint Sealants

The following sealing compounds are available for waterproofing manhole joints where required by specifications:

- 1) Grey butyl rubber sealing tape (Item Code: 75417)
Supplied in 3.8m lengths. Medium tack and no memory, this sealant creates a flexible joint and can be pulled apart if necessary.
- 2) Black butyl mastic manhole sealant (Item Code: 75416)
Supplied in 3.8m lengths. Strong tack and memory, this sealant creates a more resilient, stronger joint that is harder to pull apart. Recommended for installations with high water tables.
- 3) Humebond Epoxy mortar (Item Codes: 75001 (1L), 75002 (2L), 75003 (8L), 75028 (20L))
2-part epoxy mortar commonly used to repair and join concrete components, creates a rigid joint.

Plastic Encapsulated Steps

VT Manhole System utilises Caswick high grip manhole steps that are manufactured and tested in accordance with European Standard EN13101. The metal core is encapsulated in a tough polypropylene coating (> 2.5mm thick) and steps are available in structural carbon steel (Yellow skin, Item code 77462). Features include pre-formed tread and side bars to reduce slip and pull-out test rating of 5.0 kN. Installation is quick and easy as the steps are push-fit into inserts that are cast into the riser wall during the manufacturing process. Because step holes do not penetrate the outside of the riser wall, the riser's leak free integrity is maintained and the need to epoxy mortar penetrations after fitting of steps is also eliminated.

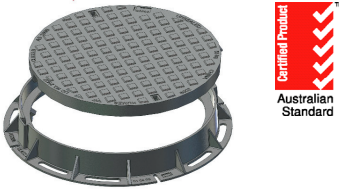

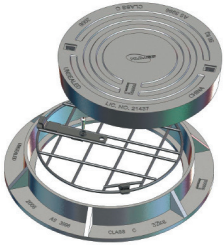


Joint Clamps

In some regions mechanical connections (clamps) are required to join lids to risers and/or join riser barrels together. Galvanised mild steel clamps that meet Local Authority requirements are an optional feature with the VT Manhole System and are available on request.

Standards Marked Streetware

Humes Standards Marked (AS3996) ductile iron lids with cast iron frames are designed for use with the VT Manhole System concrete lids. There are several options to choose from:

Description	Class D Ductile Iron Manhole Cover set	Class D Ductile Iron Locking Manhole Cover set	Manhole Safety Grill
			
Item #	78250	78255	485140 (316SS)
Class	D	D	For complete manhole safety, the Humes Safety Grill prevents falls and unauthorised access to manholes. Available in stainless steel in a 610 mm size with a locking option. Designed to be retrofitted to most manholes, the Safety Grill has been independently tested and complies with AS 3996 Class A.
Clear Opening (mm)	600	600	
Frame Diameter (mm)	810	810	
Lid Diameter (mm)	682	682	
Frame Depth (mm)	102	102	
Lid Depth (mm)	47	47	
Weight (Kg)	80	80	

For further technical details or advice freephone 0800 502 112 or visit humes.co.nz

Buyers and users of the products described in this brochure must make their own assessment of the suitability and appropriateness of the products for their particular use and the conditions in which they will be used. All queries regarding product suitability, purpose or installation should be directed to the nearest Humes Sales Centre for service and assistance. Fletcher Concrete and Infrastructure Limited 2016. Created 03/17.

