

VOH451 Series Manhole Cover

Liquip is excited to release the VOH451 Series manhole cover, which is the first and only double drop tested hatch to meet the newly released Australian Standard AS2809:2020.

The VOH451 manhole cover offers a large easy access 452mm (17.8") diameter Manhole Cover entry which meets AS2809:2020 & AS2865 confined space entry.

Liquip's VOH451 Series manhole covers come standardised in cast aluminium with metric threads. The VOH451 manhole cover is also equipped with four provisions for conveniently mounting additional equipment such as overfill probes, vapour vents, dip & fill tubes and Diptronic® tank gauging.

Australian & CEN drop test approval makes the VOH451 manhole cover ideal for both top and bottom loading. Liquip's VOH Series manhole covers have long been the industry choice for manhole covers due to Liquip's no compromise approach to safety.



Liquip's VOH451 Double Drop Tested Manhole Cover shown

Know Your Drop Tests

AS2809 up until the AS2809:2020 revision required manhole covers to be dropped on a certified drop test apparatus, which simulates a full compartment of product, from a height of 1.2 metres & then a secondary drop from 1 metre.

This double drop replicates a tanker's initial impact and often subsequent secondary impact i.e. rollover. An Australian double drop test approved manhole cover provides the highest level of product containment within the compartment when it's needed most.

Key Features

- Australian double drop tested and CEN drop test compliant to provide additional security in the event of a tanker rollover.
- Cast aluminium lightweight & durable construction.
- Single bolt style clamp band mounting for quick and efficient installation and removal when required.
- Uses the same equipment mounting footprint as VOH410 series for easy retrofits.
- Two stage safety opening mechanism enables internal pressure to be released before completely opening the emergency vent.
- 225mm (9") emergency pressure vent included to enable bulk pressure release in event of a fire or rollover.
- Emergency vent doubles as an easy to open inspection hatch for top loading or visual inspection.
- Configurable for use with aviation hydrocarbons.
- Configurable with a 1" thermal pressure & vacuum vent complying with recognized industry codes (for thermal expansion purposes).
- Additional mounting provisions not utilized can be securely blanked off until required.
- Optional locking mechanism available in either gravity latch or lockable bridge & handle.
- Additional anti-theft security can be achieved with a key locked bridge & handle design.
- Fully metric hatch and accessories for enhanced serviceability.



Adjustment or Service

Please refer to local regulations & standards for minimum testing requirements.

Ordering Information

- **VOH4516A8N0:** Aluminium 483mm manhole cover assembly (metric thread).
- **VOH4516A8N0Z:** VOH4516A8N0 comes with clamp band assembly and PVV blanking plate.
- **VOH4516A8A0Z:** VOH4516A8N0 comes with clamp band assembly and PVV104M (Pressure Vacuum Vent).

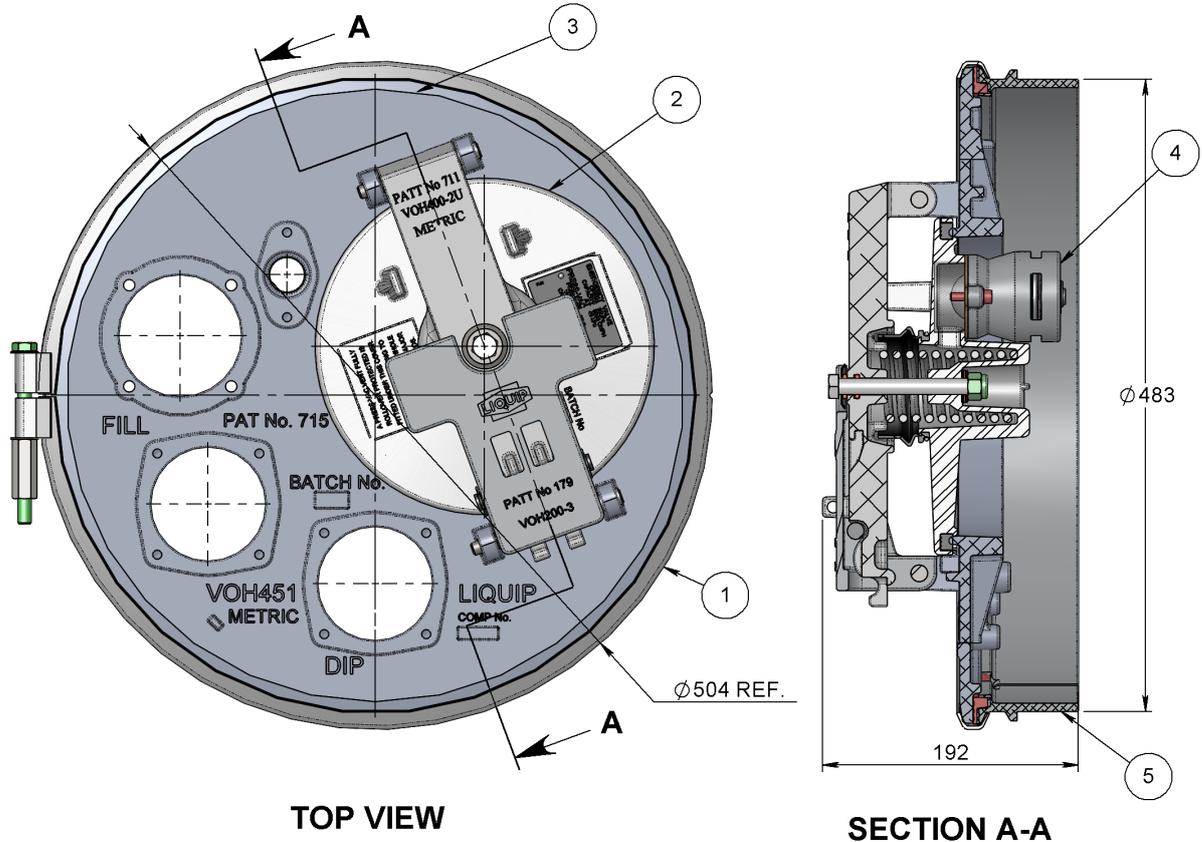
Specifications

Regulations	Passes the Australian & CEN drop tests.
Mounting	A single clampband fits around the circumference of the manhole cover and the corresponding coaming and is tightened using a single bolt. Care must be taken to fit this clampband according to instructions to ensure manhole cover integrity.
Coaming OD	483mm (maximum OD at base of coaming). *Please reference this measurement before cutting tanker walkway*
Weight	8.8kg (without coaming & mounted accessories and PVV104M).
Associated Equipment (Metric threaded parts compatible with VOH451 Hatches)	<p>5288: Z/P flat washer M10 (VOH450U-16 clamp bands). 5385: Z/P screw M10 x 130 (VOH450U-16 clamp bands). 5390: Washer Fibre Red - M8 (VOH200-5M, PVV104MZ, AVV3.0-10M). 5391: Set screw M80 x 30 (VOH22M). AVV3.0-10M: Vapour Recovery Blank Kit (Metric). DFV150M-MOUNTZ: DFV150 level gauge mount kit (Metric). DTA80M: Dip tube adaptor c/w NBR Cork gasket (Metric). DTA80M-1ATZ: Dip tube adaptor c/w Teflon gasket (Metric). DTA80M-1VZ: Dip tube adaptor c/w Viton gasket (Metric). FTA80M: Fill tube adaptor c/w NBR Cork gasket (Metric). FTA80M-1ATZ: Fill tube adaptor c/w Teflon gasket (Metric). PH100-3M: Nut Clampband (VOH450U-16 clamp bands). PVV104M: Pressure Vacuum Vent - Aust Spec (Metric). PVVREPKIT-M: PVV104M repair kit (Metric). PVV104VGM: Pressure Vacuum Vent - Aust Spec. Cold Temp (Metric). PVV104UM: Pressure Vacuum Vent - UK Spec (Metric). UG101: Ullage Gauge. VOH-16M: Dip & Fill Blank Kit (Metric). VOH200-14M: Overfill Probe Blank Kit (Metric). VOH-22M: PVV204 Mount Kit to Dip/Fill point (Metric). VOH200-5M: Overfill Probe Housing assembly c/w NBR Cork gasket (Metric). VOH200-5ATM: Overfill Probe Housing assembly c/w Teflon gasket (Metric). VOH400-10: Lock Key. VOH450-15: Aluminium Coaming, with locating ribbing. VOH450-15P: Aluminium Coaming, without locating ribbing. VOH450-17: Mild Steel Coaming - Not Drop Test Approved. VOH450U-16: Clampband to suit VOH450 hatch. VOH450-7: VOH450 Main Seal (Nitrile).</p>

Liquip's VOH451 Manhole Cover fitted with Liquip Tank Cover Top Components



VOH451 MANHOLE ASSEMBLY



ITEM 2: MODEL SHOWN WITH PLAIN HANDLE, 30kPa SPRING & LABEL FOR PVV104M (SUB-ASSEMBLY VOH501-32A)
 VARIANTS: PLAIN HANDLE, 24kPa (3 PSI) SPRING & LABEL FOR PVV104UM (SUB-ASSEMBLY VOH501-32B)
 PLAIN HANDLE, 30kPa SPRING & LABEL FOR PVV104UM (SUB-ASSEMBLY VOH501-32U)
 LOCKABLE HANDLE, 30kPa SPRING & LABEL FOR PVV104M (SUB-ASSEMBLY VOH501-33A)
 LOCKABLE HANDLE, 24kPa (3 PSI) SPRING & LABEL FOR PVV104UM (SUB-ASSEMBLY VOH501-33B)
 LOCKABLE HANDLE, 30kPa SPRING & LABEL FOR PVV104UM (SUB-ASSEMBLY VOH501-33U)

ITEM 3: MODEL SHOWN WITH ROLLED ALUMINIUM COAMING VOH450-15
 VARIANTS: ROLLED ALUMINIUM COAMING VOH450-15P (PLAIN FOR CURVED WALKWAYS)
 COAMING SUPPLIED SEPARATELY

ITEM 4: PRESSURE VACUUM VENT REQUIRED IS DETERMINED BY CONFIGURATION OF ITEM 2.

NOT SHOWN: GRAVITY LATCH SUB-ASSEMBLY (ADD IF REQUIRED - VOH501-34Z)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY	MATERIAL
1	VOH451-35Z	CLAMPBAND AND SEAL SUB-ASSEMBLY	1	STEEL & H.A.N
2	VOH501-32A	EMERGENCY VENT PLAIN BRIDGE & HANDLE	1	ALUMINIUM
3	VOH451-1	MANHOLE 450MM TO AS2809 AUST STANDARD	1	ALUMINIUM
4	PVV104M	PRESSURE AND VACUUM VENT	1	ALUMINIUM
5	VOH450-15	COAMING EXTRUDED ALUMINIUM	1	ALUMINIUM

METERS - VALVES - VENTS - MANHOLES - HOSEREELS - OVERFILL PROTECTION - LOADING ARMS - ELECTRONIC DIPSTICKS

LIQUIP
 PART OF OPW a DOVER company

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X1250020

Sheet 1 of 1
 Issue: A

MANHOLE COVER



VOH411 VOH411-1 MANHOLE COVER



VOH451 VOH451-1 MANHOLE COVER



VOH501D VOH501D-1 DIE CAST WITH
 Ø 60.8 PROBE MOUNT



VOH501E VOH501E-1
 WITHOUT PROBE MOUNT



VOH750 VOH750-1 MANHOLE COVER

**EMERGENCY VENT
 AND BRIDGE ARRANGEMENT**

PLAIN HANDLE
 (VOH200-3)

6A
 USE '8A'
 PVV ONLY

30kPa SPRING (6108)
 & LABEL 7321

VOH501-32A
 OPERABLE BRIDGE, PLAIN
 HANDLE AND EMERGENCY
 VENT SUB-ASSEMBLY

6AVG
 USE '8AVG'
 PVV ONLY

30kPa SPRING (6108)
 & LABEL 7321

VOH501-32AVG
 OPERABLE BRIDGE, PLAIN
 HANDLE AND EMERGENCY
 VENT SUB-ASSEMBLY

6B
 USE '8U'
 PVV ONLY

24kPa SPRING (4464)
 & LABEL 7322

VOH501-32B
 OPERABLE BRIDGE, PLAIN
 HANDLE AND EMERGENCY
 VENT SUB-ASSEMBLY

6U
 USE '8U'
 PVV ONLY

30kPa SPRING (6108)
 & LABEL 7324

VOH501-32U
 OPERABLE BRIDGE, PLAIN
 HANDLE AND EMERGENCY
 VENT SUB-ASSEMBLY

LOCKABLE HANDLE
 (VOH400-7)

7A
 USE '8A'
 PVV ONLY

VOH501-33A
 OPERABLE BRIDGE, LOCKABLE
 HANDLE AND EMERGENCY
 VENT SUB-ASSEMBLY

7B
 USE '8U'
 PVV ONLY

VOH501-33B
 OPERABLE BRIDGE, LOCKABLE
 HANDLE AND EMERGENCY
 VENT SUB-ASSEMBLY

7U
 USE '8U'
 PVV ONLY

VOH501-33U
 OPERABLE BRIDGE, LOCKABLE
 HANDLE AND EMERGENCY
 VENT SUB-ASSEMBLY

**PRESSURE / VACUUM
 VENT**

8A
 PVV104M
 TO AS2809
 AUST STANDARD

OPENS AT:
 PRESSURE: 10 TO 17 kPa
 VACUUM: 0 TO -4 kPa VACUUM

MUST BE FITTED TO
 'A' SERIES EMERGENCY
 VENTS

8AVG
 PVV104VGM
 TO AS2809
 AUST STANDARD

8U

PVV104UM
 TO INTERNATIONAL
 REQUIREMENTS

OPENS AT:
 PRESSURE: 8 TO 12 kPa
 VACUUM: -0.4 TO -2.6 kPa VACUUM

MUST BE FITTED TO
 'U' SERIES & 'B' SERIES
 EMERGENCY VENTS

NO PVV104 FITTED

8N

8O

PVV104-2 BLANKING PLATE
 4250 GASKET NBR CORK
 6269 WASHER SPRING
 55024 CAPSCREW M8 x 30

**GRAVITY
 LATCH**



IF GRAVITY LATCH IS REQUIRED
 ADD FOLLOWING PARTS:
 1 x VOH700-12 GRAVITY LATCH
 1 x 0096 E-CLIP 1/2"
 1 x 4446 SPRING f. GRAVITY LATCH

GRAVITY LATCH
 NOT FITTED

VOH 451 6A 8A 0

METRIC ASSEMBLIES

**PART NUMBER EXAMPLE FOR VOH451 SERIES MANHOLE, CLAMPBAND STYLE
 WITH BRIDGE AND PLAIN HANDLE, 30kPa SPRING, PVV104M, NO GRAVITY LATCH.
 COAMINGS, SEAL AND CLAMPBAND ASSEMBLIES TO BE ORDERED SEPARATELY,
 SEE LIQUIP DRAWING V90803 FOR PART NUMBERS.**

A	RELEASED FOR PRODUCTION	DT	26/08/2020	19-027
B	UPDATED PVV SETTINGS AS PER MDC	HT	29-Sep-21	20-022
REV	REVISION DESCRIPTION	BY	DATE	MDC REF

DRAWING TITLE: COVER MANHOLE 20" TO CEN REGULATIONS 24 BOLT CW DIN 80 FLANGE MOUNTS		LIQUIP PART	VOH500D-1
MATERIAL: ALUMINIUM AA601		DRAWN	06/01/03
HEAT TREATMENT: TREAT TO T6		ASSY DWG	VOH500
PROTECTIVE TREATMENT: NONE		PART No.	608A
REMOVE ALL SHARP EDGES AND BARRS		SCALE	1:10
THIS IS CONFIDENTIAL INFORMATION		MASS	6.24
IF IN DOUBT, ASK!		DRAWN BY	DT
THIS DRAWING AND DESIGN IS THE PROPERTY OF LIQUIP INTERNATIONAL PTY LTD. IT MUST NOT BE COPIED OR REPRODUCED IN ANY WAY WHATSOEVER AND/OR PASSED ON TO ANY THIRD PARTY WITHOUT WRITTEN AUTHORITY.		DO NOT SCALE OFF DRAWING	A1 Sheet 1 of 1
DRAWING No. V90803-002 (Cover and gasket not engineering) 8/10/2019 (1/2) CHN Series MANHOLE IS METRIC 100mm		DRAWING NO	V90204
Model File: V90803-002.dwg		ISSUE	B