Style 46A

Manhole Covers

Installation and Maintenance Manual

(Technical Manual No SDM24)

INDEX

1.0 Important Notes

1.1 Regarding Silos

There have been a number of incidents in recent years in which silos have been over-pressurised as a result of the pneumatic filling operation.
It is essential that all constructors and users of silos carry out an assessment into the venting required during pneumatic filling. It should be noted that the operating characteristics of each silo are likely to be different. Therefore the assessment should include all relevant features of each system (eg vessel strength, existence of pressure operated isolation systems, other Pressure Relief Valves, etc).

1.2 Regarding Manlids

WARNING: Dependant upon the product carried, there may be a residual pressure in the tank compartment. Before opening the manhole cover or carrying out any inspection or maintenance, ensure that this pressure has been safely relieved (see operator's maintenance procedure).

1.2.1 The Style 46A manhole cover has been designed for tanks and silos with a maximum working pressure of 0.35 bar (5 psi).

1.2.2 We have used our best endeavours to provide these guidelines for the inspection and replacement of the main operating parts. Please note, it is not possible to quantify exactly the condition of any component of the manhole cover, (in particular the condition of the sealing face), that will guarantee a vapour and liquid tight seal. Therefore if there is any doubt with regard to the condition of any component, in the interest of safety, we would recommend the replacement of that component. Similarly, if there is any doubt with regard to the vapour or liquid tightness of the manhole cover, we would recommend that it must be subjected to a pressure test.

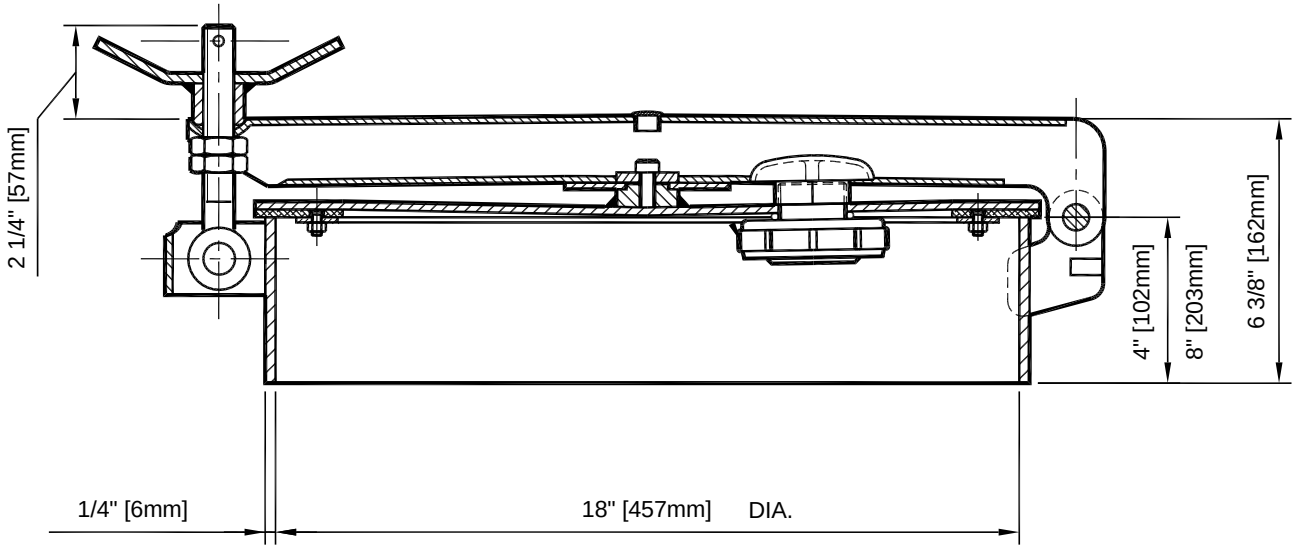
1.2.3 Operators may like to use this manual as a basis for their own written scheme, but should note that it will need to be amended as appropriate to take account of each operator's individual operating conditions.

NOTE 2: This manual covers Style 46A manhole covers. A list of spare parts is shown at appendix 1 of this manual. Please do not hesitate to contact our sales department if you require further information or require guidance on this point.

2.0 Description

Suitable for tanks and silos with a maximum working pressure of 0.35 bar (5 psi)

Figure 1 - Style 46A – sketch showing dimensions



The Style 46A manhole cover, which is suitable for use on non-pressure tanks, has a hinged lid on an 18" inside diameter neckring, which is designed for welding directly into the tank shell, thus ensuring considerable savings for the tank fabricator.

Manufactured in mild steel (zinc electro-plated, except for the neckring) with a nitrile bonded cork gasket, this manlid is available with a 4" or 8" deep neckring and can be fitted with an optional stainless steel breather vent valve – for use with non-hazardous liquids only. Not suitable for use with powders..

The swingbolt is supplied with a hole at the end of the thread in order that a padlock or seal may be fitted if required (not supplied).

To order, please quote part numbers as follows:

	Description	**Part Number**
Style 46A	with 4" deep neckring	1746.40A.M
	with 8" deep neckring	1746.80A.M
Style 46A	with 4" deep neckring and 1-16 vent valve	TBA
	with 8" deep neckring and 1-16 vent valve	TBA

3.0 Installation

Suitable for tanks and silos with a maximum working pressure of 0.35 bar (5 psi)

NOTE 1: *Style 46A manhole covers are supplied assembled for final inspection and to facilitate packing and handling during despatch. The standard gaskets are nitrile bonded cork; before installation, check that this material is compatible with the products to be stored or carried in the tank.*

3.1 Before fitting the neckring to the tank the baseplate assembly should be removed from the neckring. Release the lid clamp. Remove the hinge pin. Separate the neckring from the cover assembly.

3.2 Insert the neckring into the tank aperture; adjust the height as required, and tack-weld into position.

3.3 Check that the top face of the neckring is flat, and that the shape is round before welding.

3.4 After welding, re-assemble the manhole cover as follows.

3.5 Check that the neckring and cover assembly are clean and free from damage. Place the assembly on the neckring with the gasket facing the neckring, and refit the hinge pin.

3.6 New manlids tend to be a little stiff to close when the lid gasket is new, but this will ease off as the gasket 'beds in'.

NOTE 2: *These manhole covers are not tested before despatch. We therefore recommend that a pressure test should be carried out after installation.*
We are unable to advise on the appropriate procedure for this test as these manhole covers are designed for use on a wide variety of tanks.

4.0 Protection against corrosion

Mild steel manlids are zinc electro-plated (except for the neckring) for added protection against rust. The zinc electro-plating provides a sound base on which to apply a protective paint finish.

5.0 Recommended Inspection and Maintenance

WARNING **Dependant upon the product carried, there may be a residual pressure in the tank compartment. Before carrying out any inspection or maintenance on the manhole cover, ensure that this pressure has been safely.**

NOTE: *If at any time there are signs of physical damage, wear, or signs of leakage of product through the manhole cover (or any other tank top fitting) these should be investigated and repaired at the earliest opportunity.*

5.1 Monthly Maintenance

5.1.1 Manhole assemblies should be inspected with sufficient frequency and with due regard to the products carried, to ensure a liquid and vapour tight closure. If the manhole cover is closed, release all tank pressure by unscrewing the wing nut on the swing bolt. Lift the cover to break the seal if necessary, then swing the bolt away in order to open the manhole cover.

5.1.2 Inspect the entire manhole assembly for damage, corrosion or other conditions that could impair its function or product retention capabilities. Check the hinge / hinge pins for wear.

5.1.3 Check the condition of all manhole assembly gaskets and replace if their effectiveness as a seal is impaired in any way. Worn, torn or deteriorated gaskets may result in product or vapour leakage. Seal surfaces must be free of nicks, rust, product deposit or other foreign material. Replacement gaskets must be compatible with the product in the tank. Failure to follow the above procedure can result in liquid or vapour leakage.

5.1.4 Check that the vent valve (if fitted) is screwed in tight, and that the seal between the vent and the lid is in good condition. Check for visual signs of damage to the valve body. Check that the valve is clean.

6.0 Fitting replacement parts

6.1 Removing the lid assembly and lid clamp

6.1.1 If the manhole cover is closed, relieve all tank pressure, see section 5.1.1.

6.1.2 Remove the circlip and washer from one end of the hinge pin, taking care that the circlip and washer do not fall into the tank compartment. Then, whilst holding the lid assembly in one hand, withdraw the hinge pin from the lugs in the baseplate, taking care that the circlip and washer on the other end of the hinge pin do not fall into the tank compartment.

6.2 Replacing the lid assembly and lid clamp

6.2.1 Before fitting the replacement lid assembly, we recommend that the manhole cover assembly is inspected for signs of damage or wear, particularly on the sealing face.

6.2.2 Using the hinge pin previously removed from the manhole cover; fit the replacement lid assembly to the neckring. Re-fit the washers and circlips to the hinge pin

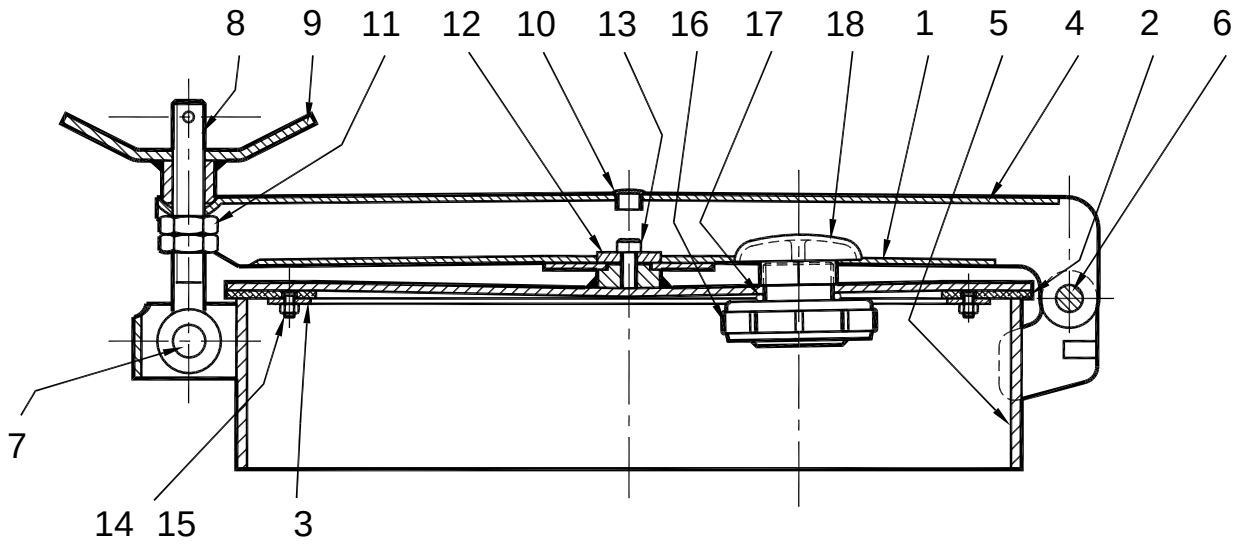
6.3 Changing the gasket

6.3.1 Open the fill cover and unscrew the eight M6 nuts and washers in order to remove the retaining ring and gasket, taking care that they do not fall into the tank compartment. Before re-assembly, wipe all the surfaces clean. The replacement gasket must be compatible with the products carried in the tank.

NOTE: Please do not hesitate to contact our technical staff at any time for assistance

Appendix 1

Style 46A - Parts Breakdown



Item	Description	Part Number	Quantity
1	Lid assembly	1811.00.M	1
2	Gasket - nebar	1810.00.N	1
3	Retaining ring	1809.00.M	1
4	Hinge arm	1808.00.M	1
5a	Neckring assembly - 100mm (4" deep)	1807.04.M	1
5b	Neckring assembly - 200mm (8" deep)	1807.08.M	1
6a	Hinge arm pin	1806.00.M	1
6b	Circlips	FPC.006	2
7	Clevis pin and circlips	5029.03.M	1
8	Swingbolt (with hole for padlock)	5047.01.M	1
9	Wing nut	3091.06.M	1
10	Blanking plug	1808.01.X	1
11	Lock nut ¾" bsw	FPN.346	2
12	Retaining washer	1811.04.M	1
13	Socket head cap screw	FPB.310	1
14	M6 nut	FPN.140	8
15	M6 washer	FPW.139	8