

Vapour Recovery

VAP401C Vapour Coupler



Installation, Maintenance and Operation

Installation

The VAP401C Vapour Recovery Coupler is designed for either gantry arm or loose hose mounting and requires the following to be carefully followed to ensure the best performance is obtained.

Gantry Arm

1. The arm should ideally be counter-balanced to allow easy positioning of the coupler and vertical movement of the vehicle when loading.
2. The coupler should be attached to the flange on the arm, with the arm and coupler in the most commonly used position for attaching to the vehicle adaptor. This will allow the operator to make the connection with the least amount of effort.
3. The coupler should be mounted on the arm with the sight glass vertical and on the right hand side of the unit looking towards the vehicle.

Loose Hose

1. If the coupler is supplied independent of the hose, it should be connected with the sight glass vertical and on the right hand side of the unit when looking towards the vehicle.

It is essential that the coupler be connected to the vehicle in the correct orientation, as any extraneous material may affect the operation of the spring assisted flap valve if wrongly installed.

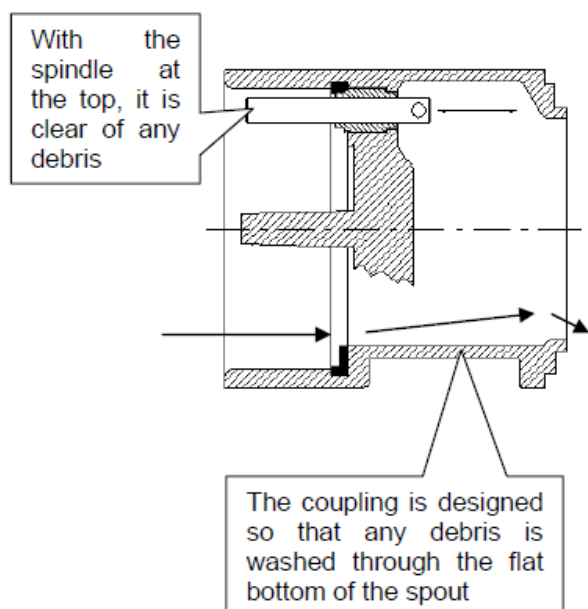
2. Attach the coupler to the hose flange with bolts and screws, placing the handle VAP400H evenly over the top of the assembly if required.
3. Before securing the hose to the gantry, support the coupler in the approximate position for coupling to a tanker.

Make sure the natural lay of the hose is taken up before bolting to the gantry using the nearest available bolt holes.

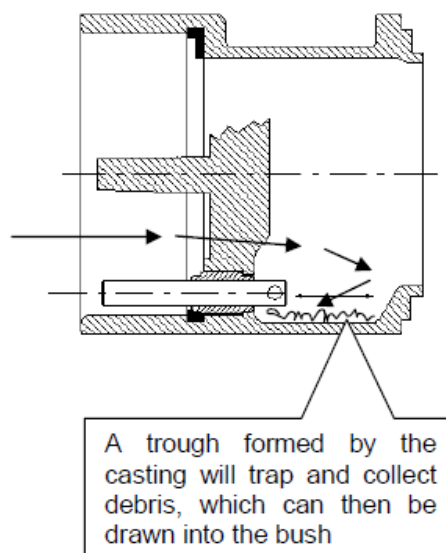
4. The parking arrangement for the coupler is usually decided by the terminal engineers but will ideally be either a rubber lined trough or a substantial hook arrangement constructed at a height that requires minimal lifting of the assembly when parking after use.

Installation of the Vapour Coupler Spout

Correct



Incorrect



Maintenance

Inspection, of the working components at six monthly intervals is recommended to ensure they are working freely and correctly. Terminals with a particularly high throughput are recommended to carry out this inspection more regularly. In addition a **weekly** check for vapour escape is recommended.

Inspection checklist

Item	Inspection Required	OK	Remarks
1	The pin operates freely and smartly returns the flap to the fully closed position.		
2	The inner and outer seals and operating pin bush are clean and clear of debris.		
3	The sight glass is clean and clear enough to see if product or debris is present.		
4	The levers can be operated to the fully closed position when making the connection to the tanker. An Action plug part no DP400-A can be used as a dummy.		

The vapour coupler operating pin should not be lubricated with oil or grease as this may impair the operation of the flap valve. The operating pin is designed to operate in a dry environment similar to a starter motor bendix.

For the coupling to operate correctly, the flap should close quickly with a clean crisp sound. If a dull sound is apparent when the operating mechanism is moving freely, then the inner seal may require attention by cleaning or changing.

If maintenance of the vapour coupler is required

The spares kit part number VAP401C-SPK contains the sight glass, spring and all seals necessary to carry out a full service of the coupler.

- The coupler seal, part number VAP415SEAL, can be changed in situ by depressing the operating spindle to the full extent of its travel and removing the old seal from its recess.
- A new seal can then be inserted into the recess by pressing this spindle again to its full travel and putting the cut-a-way part of the seal in position first. The spindle can then be released and the remainder of the seal fitted into its recess.
- Replacement of the main seat seal, part no SEA0503, is best carried out on the bench and therefore requires the isolation of the loading rack, unless equipped with a non-return valve which will prevent the escape of vapour when the vapour coupler is removed.
- To replace the main seal, remove the four countersunk socket screws retaining the coupler spout.
- Move the spout forward away from the coupler body until the pin securing the operating arms is accessible.
- Remove the split pin that retains the pivot pin on the seal plate and withdraw the pivot pin.
- Before replacing with a new seal, ensure the recess surfaces and the seal plate are clean and free of debris or marks on the sealing faces.
- Place the new seal in position and reconnect the operating arms to the seal plate with the pivot pin.
- Replace the split pin using a new split pin, part no PIN0618 and ensure the ends of the split pin are bent fully round the shaft of the pivot pin.

- Replace the coupler spout and tighten the four countersunk screws.
- Check the coupler for free movement of the spindle before finally tightening the four screws.
- Test the vapour coupler by filling with water at the inlet flange end and standing it vertically.

If satisfactory, re-install on the loading rack ensuring the coupler is mounted in the correct orientation, ie sight-glass vertical and at the bottom.

Note

The replacement of the outer coupler seal VAP415SEAL can be safely carried out in situ if a low-pressure drop non-return valve is installed.

The complete coupler can also be removed without manually isolating the rack if a non-return valve is fitted.

Alpeco can supply a specially designed vapour non-return valve based on the coupler body design, giving virtually no pressure drop penalty.

(An assembly drawing is given on the next page.)



FLAP AND SHAFT ASSEMBLY

4" Vapour Coupler

ALPECO part number VAP401C

[illegible]

4" Vapour Coupler

The VAP401C Vapour recovery coupler is built to EN 13081:2008+A1:2012. The main construction is aluminum and stainless with Viton main seals. The Cams are brass as standard with the option of stainless steel. The valve offers a low pressure drop across the valve due to the flap design of the poppet.

TITLE VAP 400 A/C NEW		REVISE ALL BURS AND SHARP EDGES		FILE	DETAIL OF CHANGES	APPRO	DATE
DRAWN BY - TOM		ALL DIMENSIONS IN MM					
DATE 12/07/2019		UNLESS OTHERWISE SPECIFIED SURFACE FINISH $\sqrt{}$					
SCALE		TOLERANCE UNLESS OTHERWISE SPECIFIED © IMPORTANT THIS DRAWING IS CONFIDENTIAL & IS PROTECTED BY COPYRIGHT OF ALPECO LTD. NO PART OF IT MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, WITHOUT ANY WRITTEN CONSENT.					
DRAWING No. VAP401C							