



**TPM 400 MANHOLE COVER
INSTRUCTION & MAINTENANCE MANUAL**



**TPM400-IM
September 2008**

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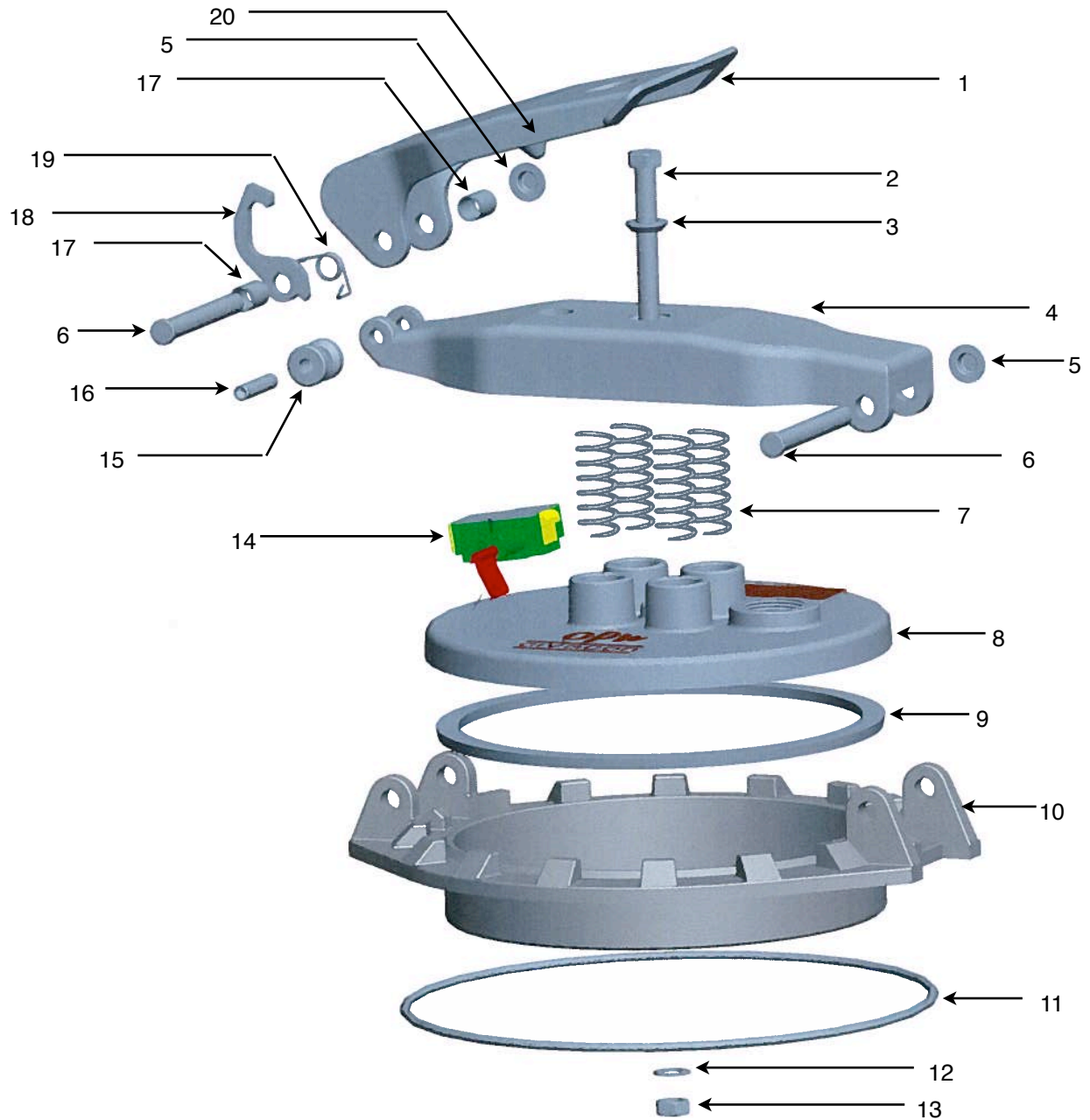
Product Description

The TPM400 is designed for use on petroleum cargo tanks that meet U.S. Department of Transportation 49 CFR 178.345-10 and 178.346-10 for DOT 406 emergency venting and 4 CFR 178.345-5 for manhole strength requirements. The TPM400 has an optional security lock. The TPM400 is shown in this manual without a manhole cover plate.

Manual

The TPM400 Manhole Cover manual contains inspection schedules and maintenance procedures. It does not cover any normal vent that might be mounted on the cover. The following schedule, based on environmental conditions in the northeastern United States, is only a recommendation. Inspection and maintenance intervals should be based on local use and environmental conditions. If any parts are damaged, refer to the *Annual Inspection and Maintenance* section.

**Figure 1:
TPM400 MANHOLE COVER EXPLODED VIEW**



MANHOLE COVER PARTS LIST

ITEM	PART NUMBER	DESCRIPTION
1	11733	LATCH
2	11735	SCREW
3	11737	SWIVEL PLUG
4	11731	STRONG BACK
5	1020	PAL NUT
6	4679	HINGE PIN
7	11728	SPRING
8	11682	FILL LID
9	6252	COVER SEAL
10	11680	FRAME
11	11740	O-RING
12	9874	SEAL WASHER
13	1926	NUT
14		LOCK ASSEMBLY (OPTIONAL)
15	11730	LATCH ROLLER
16	11732	ROLLER PIN
17	11743	LATCH BUSHING
18	11736	LATCH HOOK
19	11729	LATCH SPRING
20		LOCK PIN (OPTIONAL)

Quarterly Inspection

Refer to Figure 1, page 3 for the quarterly inspection instructions. If the product fails any part of the quarterly inspection, it must be fully inspected immediately. Refer to the *Annual Inspection* section below.

NOTE: In severe environments (corrosive, wet or cold) the interval between inspections may need to be shortened. If snow, ice or other debris is on the manhole cover, it must be cleaned and dried prior to inspection.

This manhole cover must be maintained on a regular basis to ensure proper operation. Failure to do so will shorten the life of the product.

WARNING: ALL INTERNAL TANK PRESSURE OR VACUUM MUST BE RELIEVED BEFORE SERVICING TO PREVENT DAMAGE TO THE TANK.

1. If the optional lock (#14) is installed, verify that it engages the lock pin (#20).
2. Open the latch (#1).
3. Pull the latch hook (#18) away from the latch roller (#15) and open the fill lid (#8).

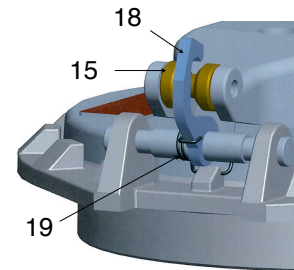


Figure 2

- 3.1. When the latch hook is released, it should freely spring back to its original position. If it does not, inspect the latch spring (#19) for proper position around the latch hook and frame (see Figure 2). Reposition as needed.
- 3.2. If the latch spring is broken, replace it. See *Disassembly* below.
- 3.3. Inspect cover seal (#9) for wear or damage. Replace as needed. Do not damage the seal groove when removing the seal.
- 3.4. Remove any water or debris in the spring wells of the fill lid. Inspect for signs of rust or corrosion of the springs (#7) such as rusty water in the well.
- 3.5. Inspect the swivel plug (#3) for signs of damage or wear. Replace as needed.
- 3.6. If installed, inspect the normal vent for debris and gasket integrity according to the manufacturer's instructions.
- 3.7. Inspect the sealing surface of frame (#10) for debris or wear. Clean or grind smooth as needed. See Figure 3.
- 3.8. Inspect beneath the frame for o-ring wear (#11). Refer to the *Disassembly* section below if the o-ring is worn.

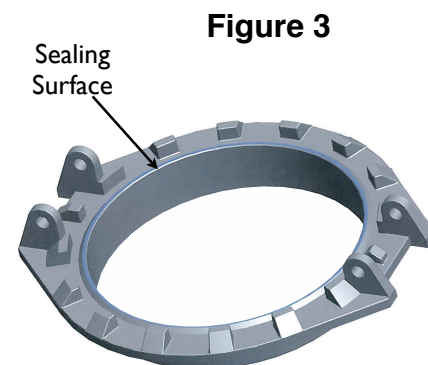


Figure 3

4. Adjust the strong back by tightening the nut (#13) and screw (#2) until the gap between the fill lid and the lower edge of the strong back is 3/4" (see Figure 4). Close the fill lid. *Ensure the latch hook engages the latch roller.*



5. Close the latch.

Figure 4

Annual Inspection

Refer to Figure 1, page 3 for the annual inspection.

WARNING: ALL INTERNAL PRESSURE OR VACUUM MUST BE RELIEVED BEFORE SERVICING TO PREVENT DAMAGE TO THE TANK.

Disassembly

1. If installed, verify that the optional lock (#14) engages the lock pin (#20).
2. Open the latch (#1).
3. Pull the latch hook (#18) away from the latch roller (#15) and open the fill lid (#8).
 - 3.1. When the latch hook is released, it should freely spring back to its original position. If it does not, inspect the latch spring (#19) for proper position around the latch hook and frame (see Figure 2). Reposition as needed.
 - 3.2. Inspect the latch spring for damage.
 - 3.2.1. If the spring needs replacing, remove the pal nut (#5) and the hinge pin (#6).
 - 3.2.2. Slide the hinge pin through the frame (#10), the first latch bushing (#17), latch hook, the new spring and the second latch bushing. Install pal nut. Ensure that the spring is attached as shown in Figure 2.
4. Refer to the manufacturer's suggestions for maintenance of other components: vapor recovery vent, normal vent or liquid level sensors.

NOTE: Complete the remainder of the annual inspection on the bench top. Remove the fill lid/strong back combination from the manhole cover by removing the hinge pin (#6) and pal nut (#5).

5. Inspect the base of the frame for evidence of wear or damage to the o-ring (#11). Replace the o-ring as needed by removing the M8 screws from below the frame.

6. Inspect the strong back (#4) for corrosion.
 - 6.1. Replace strong back as needed .
 - 6.2. If the strong back is corroded, remove the nut and seal washer (#12 & 13) and the screw (#2) and swivel plug (#3).
WARNING: Restrain the strong back when removing the nut and seal washer (#12 & 13) to prevent possible personal injury.
 - 6.3. Inspect the springs (#7) for wear or corrosion. Replace as needed.
7. Inspect the swivel plug (#3) for wear or damage. Replace as needed.
8. Inspect the cover seal (#9) for wear or damage. Replace as needed. *Do not scratch the seal groove when removing the seal.*
9. Inspect the sealing surface of the frame for wear or contamination (See Figure 3). Clean or grind surface smooth as needed.

Assembly

1. If seal cover was removed, install it (#9) in the bottom of the fill lid (#8).
2. If springs were removed, place them (#7) in the spring wells of the fill lid.
3. Install the strong back (#4) over the fill lid and springs.

WARNING: Restrain the strong back while attaching it to the fill lid to prevent possible personal injury.

- 3.1. Insert the screw (#2) and swivel plug (#3) through the strong back and fill lid.
- 3.2. Attach the seal washer (#12) and nut (#13) onto the screw.
- 3.3. Tighten the nut until the gap between the lower edge of the strong back and fill lid is 3/4". See Figure 4.
- 3.4. Insert the hinge pin (#6) through the strong back and frame (#10). Attach pal nut (#5) to the hinge pin.
- 3.5. Close the fill lid. Ensure that the latch roller (#15) is under the latch hook (#18).
4. Close the latch (#1).
5. If installed, verify the operation of the optional lock (#14). It should engage the lock pin (#20) to prevent the latch from being raised.

WARRANTY

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WARNING:

Civacon products should be used in compliance with applicable federal, state and local laws and regulations. Product selection should be based on physical specifications and limitations, compatibility with the environment and the materials to be handled. **CIVA-CON MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR USE.**

TECHNICAL ASSISTANCE

If at any time during the installation a question arises that is not covered in this installation manual, or with any other applicable documents referenced, call the **CUSTOMER SERVICE DEPARTMENT: In the U.S., call 1-888-526-5657. In other countries, call the local Civacon representative.**



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