



**Replacing the Scrubber Material in the Permapure AS-200-08-PS Ammonia Scrubber**

**I. PURPOSE:**

The purpose of this document is to describe the replacement of the scrubber media in the Permapure AS-200-08-PS Ammonia Scrubber.

**II. INFORMATION:**

Ammonia in the gas stream reacts with phosphates in the scrubber material, forming ammonium phosphate that immediately deposits inside the scrubber. Moisture in the gas stream can react with the scrubber material, forming phosphoric acid. As phosphoric acid is a hygroscopic material, it will draw additional water from the gas stream and from a liquid at the bottom of the scrubber. Thus, the dryer the gas stream the less liquid will form at the bottom of the scrubber. The formation of liquid phosphoric acid makes it necessary that the scrubber be used in the upright position with the fittings on top to prevent acids from entering the analyzer, causing damage.

The ammonia scrubber media will degrade over time and must be periodically replaced. The lifespan of the scrubber media is dependent on the ammonia concentration in the gas stream and the rate of flow. When deposits are visible 75% of the way up the housing, the scrubber media must be replaced.

**III. TOOLS:**

None.

**IV. PARTS:**

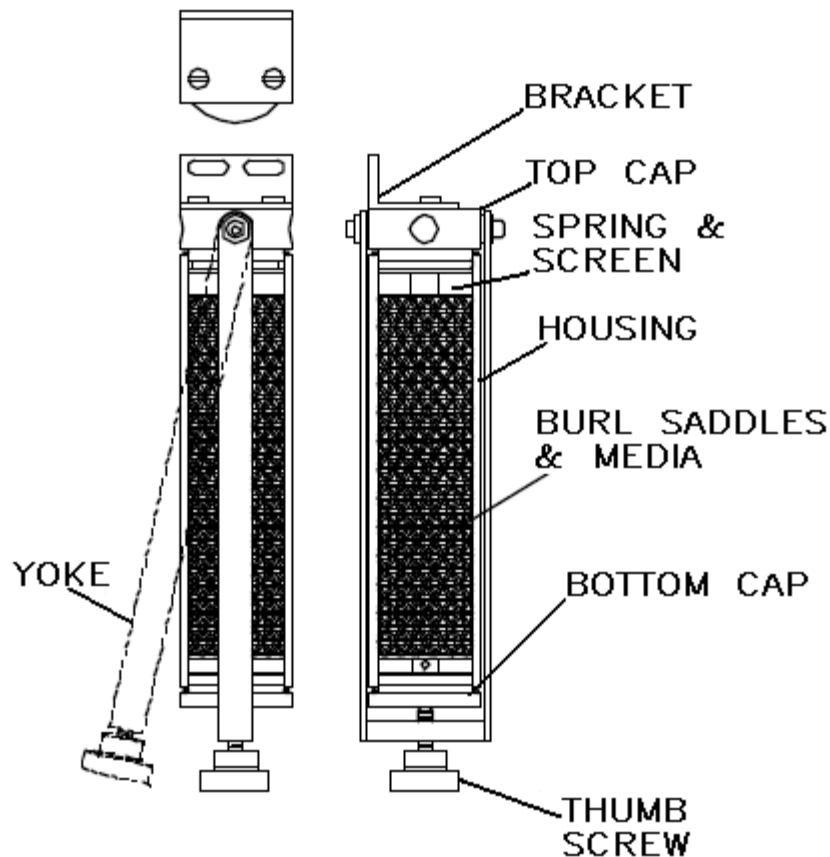
CH0000069, NH<sub>3</sub>, PHOSPHERIC, SCRUBBER MATERIAL



The liquid formed in the scrubber contains phosphoric acid and is corrosive! Please see the Material Safety Data Sheet (MSDS) for precautions and handling. The MSDS is available upon request.

**V. PROCEDURE:**

1. Unscrew the thumbscrew at the bottom of the housing (Figure 1).
2. Swing the yoke to one side (Figure 1).
3. Separate the housing and bottom cap as an assembly from the top cap (Figure 1).
4. Remove the spring and stainless steel screen (Figure 1).
5. Remove the old media and dispose of properly (the housing may be rinsed with soapy water to clean).
6. Fill the housing with 150cc (approximately 9.85grams) of Burl Saddles (tap the housing to allow the material to settle).
7. Add 50cc (approximately 47.5 grams) of Scrubbing Media.
8. Replace the stainless screen on top of the media.
9. Replace the spring.
10. Clean the o-rings on the shell and inside the top manifold (replace is necessary).
11. Place the center tube into the o-ring seal in the top cap.
12. Push and twist to seal the housing around the o-ring.
13. Replace the yoke and tighten the thumbscrew finger-tight (**do not over tighten**).

**Figure 1 Ammonia Scrubber**

Replacing the Scrubber Material in the Permapure AS-200-08-PS Ammonia Scrubber

08-015 Rev A (DCN5136) 10/1/08

Page 2 of 2