

PROCEDURE FOR REPLACING AERATORS & WEAR PLATES ON A TANKER

When replacing worn aerators from a tanker, think safety first. Always have a spotter available when someone is working inside a tanker. You will also need an extra person to work on the outside of the tanker.

Always keep safety in mind as you are working inside an enclosed space.

SIGNS TO LOOK OUT FOR

There are certain giveaway signs that will indicate that the aerators inside a tanker may be worn:

- One or more cones may not be emptying properly;
- Product may be coming out of the air line, PRV;
- Valves may be crunching or hard to open/close;
- Visible signs of product around the hoses, ball valves, etc.
- Cannot hear the aerators humming when discharging.

INITIAL INSPECTION

First step is to perform a visual inspection around the cones. Inspect the hoses, manifolds, t-handles, gaskets, etc. Look for obvious signs of cracks, wear & tear, etc.



REMOVAL OF OLD

Next, carefully remove the exterior assembly from the tanker. Unscrew all the old T-handles from the manifolds and remove together with the T-handle gaskets and inspect for any damage to either. If there is visible damage or wear, including loss of elasticity replace.



Remove the manifolds and manifold gaskets carefully as they may be re-used if they are not cracked. If they are worn or damaged, replace.



The whole assembly (including the 1.5" hose) should now be removed. Check the hose carefully for any cracks, and ensure clamps are tight around the manifolds (without overtightening).



Once the exterior assembly has been removed, the person on the inside of the tanker can remove the old aerators and stems.

Check all aerators for wear and tear. This may include fluffing around the edges, or in extreme cases of neglect damaged aerators.



Next step is to visually check the old wear plates. If they show any sign of wear, including any roughening around where the aerator touches the wear plate, they should be replaced. To remove the old wear plates, carefully apply pressure with a screwdriver between the wear plate and the tanker cone, to unstick the wear plate from the cone;



Examples of badly worn wear plates. Under normal working conditions, wear plates should not be allowed to get this bad, as the wear can extend to the cone itself.



Once the old wear plates have been removed, inspect the cone inside and out. Ensuring there are no cracks or wear on the cone itself. Clean the area inside and out.



Clean the area on the cone where the old wear plates were, as there may be traces of hardened silicone, etc. This may require the use of a wire brush. Ensure area inside and out is totally dry and clean of any old silicone and product.



ASSEMBLE NEW

Prepare the new wear plates by slightly sanding one side. This will give you a better contact when applying the silicone on to the cone.



Assemble the stems onto the new aerators by pressing the stem through the aerator hole. Use of a jig or clamp will assist



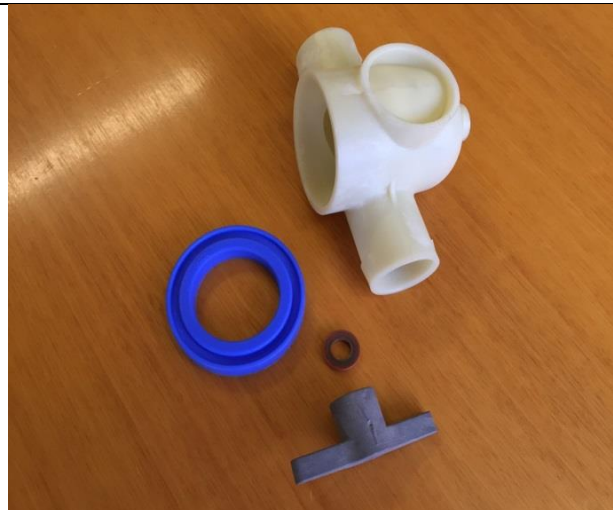
Assembled aerator and stem. It is not advisable to use any lubricant when assembling.



Separate the required parts to two lots: Internally you will need the wear plates, aerators and stems.



Externally you will need the manifolds, t-handles and gaskets.

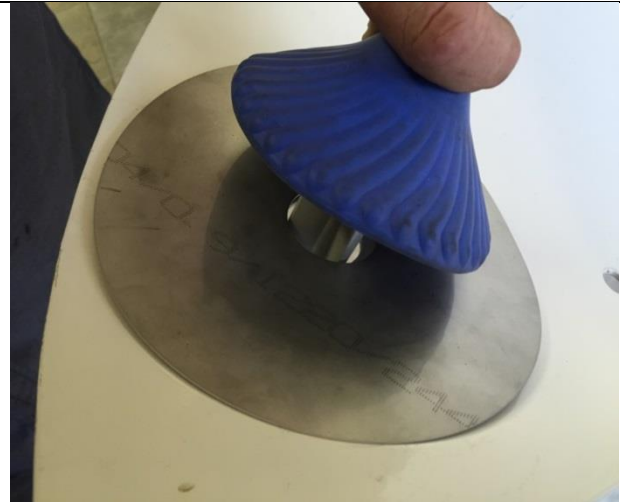


Apply silicone to the brushed side of each wear plate and hold over the hole on the inside of the cone.

There is no need to bend the wear plates prior to installation. They will take on the shape of the cone when in their correct position and stems tightened.



Place the aerator/stem through the inside hole so it protrudes from the outside, and hold in place,



At the same time the person on the outside places the manifold, gasket, t-handle gasket and t-handle over the protruding stem.



Tighten the t-handle and gasket into place. This exercise will shape and hold the wear plate up against the cone. Be careful not to overtighten the t-handle as it may crack the gasket or rip the thread.

Repeat this process for all aerators. Once completed, it is recommended you leave the hatches open overnight to ensure the silicone dries properly.



Assemble the new hose and manifolds to be placed on the cone. Ensure all clamps are done up tight.



TEST

Upon completion, the last step is to check for any leakage:

- Connect a filter bag to the end of the discharge pipe;
- Ensure all hatches are securely shut and all discharge valves closed;
- Open the Boost, Aeration, and Top Air lines;
- Pressurise tanker to about 160 kPa;
- Open the Boost Valve, and shut down the compressor;
- Walk around the tanker and listen out for any air leaks (hatches, valves, gaskets, etc);
- Close all Aeration valves. Then open each valve individually, and once again listen for any air leaks.



Perform a leakage test using soapy water on all new assemblies: around the gaskets, manifolds, clamps, etc.



PROCEDURE COMPLETED