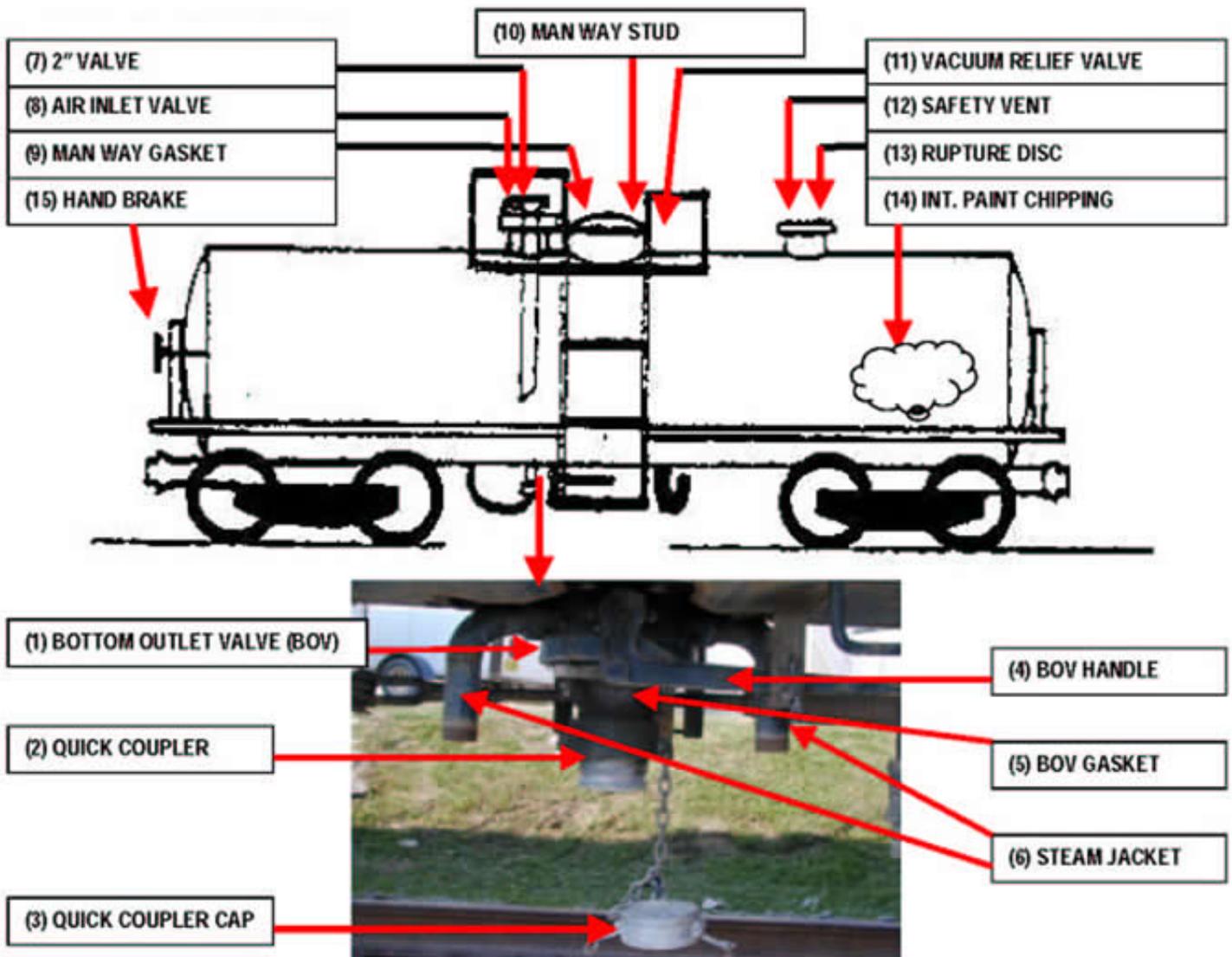


Thiele Kaolin Company Slurry Tank Car Unloading Procedure



A. General Instructions for Loading and Unloading

1. The car must have the hand brakes set and the wheel(s) blocked against movement before any unloading activities are started.
2. When the car is positioned for unloading, securely block access to the track by use of derails, aligned and locked switches, bumper blocks or other such apparatus.

3. While a car is connected for unloading, blue caution signs (sometimes known as “blue flags”) must be placed on the track as required by regulations and company procedures.
4. Before unloading, inspect the car for damage and the presence of a Defect Card. If either is found, contact the car owner for further instructions before loading.
5. Safety equipment such as safety showers and eye wash stations should be verified to be present and operational before conducting loading/unloading activities.
6. Proper tools should be used for unloading operations. They must be clean and in proper condition at all times.
7. All unloading inspections should be properly documented through a check list or similar method.
8. The unloading area should have adequate lighting and be free of obstacles or unnecessary equipment.
9. During the unloading process, cars must be attended by trained personnel or monitored by an approved monitoring system. Do not allow the loading/unloading operation to stand unattended or unmonitored while connections are attached to the car.
10. If necessary to discontinue operations for a period of time, all valves must be closed, all connections removed and the car must be prepared as if ready for transportation.
11. However, operations can be discontinued on an attended or monitored car by closing valves on the car and closing valves at the facility without disconnecting hoses.

B. Unloading a Tank Car

Before Unloading a Tank Car:

1. General procedures in Section A should be followed.
2. All fittings seals should be examined before removing them for evidence of tampering.
3. Verify that valves and fittings are closed before removing plugs, caps and flanges.
4. Any dirt or debris should be removed from the fittings before opening them.
5. Before unloading, verify the contents of the tank car and of the receiving vessel for compatibility.
6. If the tank car is a general service car, relieve tank pressure by one or more of the following methods:
 - a. Slowly opening the vent valve.
 - b. Carefully open the fill-hole cover or hinged manway cover. If using the manway cover for pressure relief, use caution when loosening bolts. The bolt(s) by the

handle are the safety bolt(s). Loosen the safety bolt(s) by one or two turns at a time, and then loosen the remaining bolts.

- c. If necessary, vent to a scrubber or vapor collection system.

NOTE: CAUTION should be exercised because any tank car may be under pressure.

NOTE: The vacuum relief valve should not be used to vent pressure.

NOTE: Atmospheric venting may create a safety and/or environmental hazard.

7. Venting is not necessary if the tank car is to be pressure-unloaded. However, a means to prevent over-pressure (125 psi) must be provided (rupture disc set for 165 psi).

If Heater Coils Are Needed For Unloading:

8. If equipped with interior heater coils, remove heater coil caps and check for leakage before connecting steam hoses.
9. Connect steam hoses to inlet connections of the heating system. Use a shut-off valve to control the steam flow. The tank should be vented before and during steaming to prevent excess pressure build-up.
10. Caution must be taken when applying steam to the system. Apply steam slowly until steam is observed at the heater coil outlet. Rapid expansion of the coils could cause breakage of the steam system. If steam is bubbling in the product, the interior steam coil is broken. Shut off the steam. If there is a dual system on the car, use the other bank. Report defects per company procedures to the shipper of the product and/or to the car owner.
11. Steaming operations should be carefully monitored to ensure the product or container does not become over-heated.
12. If the bottom outlet valve is steam jacketed, steam should be applied to the outlet steam jacket.
DO NOT apply steam directly into the outlet chamber!
13. When unloading general service tank cars with protective linings it is important to remember that steaming of a partially filled tank car may damage the coating due to localized overheating. Once unloading is in process, steam pressure should be reduced or shut off to the car to avoid damaging the protective lining.

Unloading

14. When unloading through the bottom outlet, with the manway open, take care to prevent contamination of the product.

15. Verify that the bottom valve is closed before loosening bottom outlet plug or cap.
16. Be prepared to collect any materials trapped in the bottom outlet leg upon loosening of the cap/plug assembly. Slowly loosen the outlet cap. If more than 2 - 3 quarts are collected in the containment system, there is a probability of bottom outlet valve leakage. Do not remove the cap completely. If the valve continues to leak tighten the cap/plug assembly. Inform the tank car owner of the leaking condition and request what action to take.
17. Before opening the unloading valves, securely attach the transfer system and perform a leakage test, if possible.
18. If a non-pressure tank car is being unloaded by pumping through the bottom outlet valve or top-mounted liquid valve, a means of preventing vacuum (which may cause a collapse of the tank) must be provided. Relieve all pressure used to unload the car.

After Unloading a Tank Car

19. If the steam supply is still active, shut it off and remove connections. Check the heating coils for water removal and check for leaks per company procedures. If leaks are found, notify Thiele.
20. Verify that all valves are closed.
21. Verify that all unloading connections are removed.
22. Secure all fittings, valves and openings in the appropriate manner. (All plugs and outlet caps must be secured with a suitable tool.
NOTE: All valves, fittings, closures, plugs, caps, and fasteners are to be checked for tool tightness even if they were not utilized during the unloading process.
23. If the manway was opened during the operation, be sure to inspect the manway gasket for damage, deterioration and proper alignment. Tighten the manway bolts using the appropriate star pattern and torque values per company procedures.
24. Relieve all pressure used to unload the car.

*** If there are any problems noted with a Thiele car, go to www.thielekaolin.com. In the customer service section there is a form (both on-line and a printable pdf) that should be filled out and sent to Thiele so it can be repaired when returned.**