



**PROCO INCORPORATED  
AUGER OPERATION  
Manual**

**Bobtail  
DOT 407 / 412  
Vacuum**

# Vacuum Tank Operation

This vacuum tank has been built for Dot work. Extreme care must be exercised regarding product handling. The unit is equipped with a 4" pressure relief valve located near the internal scrubber dome or portal shutoff, and should always remain in good operating condition.

## **VACUUM PUMP OPERATION:**

1. Place 3" fourway valve on vacuum pump in proper position for vacuum or pressure **(NOTE WARNING ON FLAMMABLE / COMBUSTIBLE MATERIALS) be aware of fumes.**

Make sure external scrubber blow-down valve is closed (outside scrubber valve located on front fender beneath scrubber).

2. Check Oil level in vacuum pump. Oil catch muffler should be drained daily. If foreign material is found preform a through tank scrubber system inspection. Inspect pump for any physical damage.

3. Push selector valve in on driver's side of fender from vacuum pump operation.

4. Start vacuum pump by slowly engaging PTO on truck and set at proper RPM (see decal on truck dash). Pump will start either pulling a vacuum or pressuring the tank depending on location of pump valve setting. Upon reaching the desired pressure or vacuum, open the rear 4" valves thus allowing fluid to flow. Continue until operation is complete.

NOTE: Rotary vane pumps have a minimum and maximum RPM.

Always read pump manufacturers manual for operation procedures and safety warnings.

## **SCRUBBER OPERATION:**

The trailer is equipped with an inside shutoff and an external scrubber. These scrubbers are there to prevent liquid from entering the vacuum pump. The scrubber & shutoff have a 6" stainless steel float ball, and a 3" Buna seat. Both must be in good condition to protect the vacuum pump. Any liquid entering the external scrubber will be caught and must be drained out the blow down valve. A sizable amount drained (quart or more) indicates a problem with the float ball or seat in the inside shutoff and should be corrected. External scrubber should be drained daily in the pre- trip inspection. Any liquid drained from the scrubber is tank product and must be handled accordingly. Remember the vacuum pump is an air compressor & not a liquid pump. Liquid will do major damage.

## **PUMP TROUBLE SHOOTING:**

1. UNIT WILL NOT PULL VACUUM - Check 4 way valve for proper position. Check liquid level in tank, float balls will shutoff airflow on high level. Check vacuum pump valves. Check manway lids and gaskets for air leaks. Inspect for collapsed internal hose liners.
2. PRODUCT WILL NOT DISCHARGE FROM TANK - Check position of rear 4" valve. Check for obstructions down stream of vacuum tank and in outlet valve. Follow your company procedures for clearing solids from valves.

## **Safety:**

1. Your unit is equipped with a relief valve set at the working pressure of the tank. This valve is never to be removed, plugged or reset unless performed by a qualified shop.
2. DO NOT release suction or discharge until all personnel are in a safe position i.e. not directly behind outlets or near hoses.
3. DO NOT exceed maximum rpm, or go lower than the minimum rpm on the vacuum pump.
4. DO NOT load unit in excess of maximum carrying capacity of truck.
5. Suction / discharge valve(s) to remain closed at all times except while loading or unloading.

6. Whenever entering tank be aware of most recent commodity hauled, check for toxic fumes and always have adequate ventilation. Never enter a tank without proper protective clothing and breathing air. If vapors inside tank are combustible, do not enter tank with ignition source this will cause an explosion. Always follow your company "Confined Space Procedures".

7. Never place hand in proximity of suction or discharge line on pump or vacuum tank.

8. Do not release hatch bolts/ wingnuts until all pressure has been removed, i.e. open blow down lines. Loosen four of six wingnuts without moving wingnuts to clear lid. Should lid stick to gasket and tank be pressurized, this should prevent lid from blowing open. With no pressure, loosen all wingnuts, slightly move lid to ensure it is free and there is no pressure in the tank. Swing wingnuts out of lid and open lid. Always keep your body (face and limbs) free from lid while opening lid to prevent injury in case of lid blowing open.

9. Your vacuum pump oil catch muffler is equipped with a cam fitting allowing you to hose the exhaust gases into a low-pressure recovery system or down wind & away from the equipment and personnel. Remember the gases could be combustible or harmful if breathed.

## **Tank Tilt Operation:**

1. Pull selector valve out on driver's side of fender for tank tilt operation.
2. Make sure all obstructions and hazards are removed from tanks tilt up or downward path.
3. Slowly engaging PTO on truck and set at proper RPM (see decal on truck dash).
4. Use tank tilt valve to either raise or lower tank.
5. Do not release rear cleanout hatch bolts/ wingnuts until all pressure has been removed, i.e. open blow down lines. Loosen four of six wingnuts without moving wingnuts to clear lid. Should lid stick to gasket and tank be pressurized, this should prevent lid from blowing open. With no pressure, loosen all wingnuts, slightly move lid to ensure it is free and there is no pressure in the tank. Swing wingnuts out of lid and open lid. Always keep your body (face and limbs) free from lid while opening lid to prevent injury in case of lid blowing open.

# Auger Operation:

The Auger controls consist of 2 main hydraulic controls:

1. Directional control is a three position lever which will control the rotation of the auger. Engage the lever in the furthest up position will push the product to the front of the trailer usually used for loading and transporting the product. The middle position is used for startup and is used no auger rotation is desired. The lowest position pushes product to the back, usually used for unloading.
2. Swing control is a 2 position push pull valve to engage swing. It will stop the swing, or will engage swing.

## Startup:

1. Check engine oil and hydraulic fluid levels
2. Make sure all obstructions and hazards are removed from auger path.
3. In Auger control box, place directional control valve in neutral position, and push auger swing valve in.
4. Turn ignition key on diesel engine to start
5. Check engine gages have reached operating conditions (about 5 seconds)
6. Engine rpm should be 1300 rpm's.
7. In Auger control box, engage swing and rotation and begin loading product into tank.
8. Auger hydraulic pressures should show 1200psi on both the swing and auger gauges.

## Operating:

1. When operating under normal conditions the auger should rotate at approximately 60 rpm and the swing should take 50 to 60 seconds to complete one full cycle.
2. If the rotation stops and will run momentarily if you change rotation before locking up again, the chain box is worn and must be serviced.
3. If the swing oscillates rapidly across a short section of the tank either the product has solidified, or hydraulics are out of adjustment and need servicing.

## **Caution and Warning Decals:**

Always follow all caution and warning decals.

## **Parts and Service:**

### **Contact**

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