



# TECHNICAL SERVICE BULLETIN

TSB 2016-1001 Level: 2

Effective November 1, 2016

<b>Topic</b>	<b>BULLET pumps allowing system vacuum to pull oil out of the pump if proper shut down procedures are not followed.</b>
<b>Affected Units</b>	<b>BULLET vacuum pump, All models</b>
<b>Resolution</b>	<b>Follow proper shut down procedures as shown below.</b>

## ISSUE:

When using the BULLET vacuum pumps, proper shut down procedures must be followed to avoid the potential of oil backup into the charging hoses and contaminating the system, loss of vacuum or damage to the pump due to low oil.

## ROOT CAUSE ANALYSIS:

The BULLET vacuum pumps contain an internal check ball valve which adds a delay in the time it takes for oil to pull out of the pump when it is shut down and left connected to the evacuated system. In testing, it was determined that the BULLET vacuum pumps can potentially start losing oil within seconds after the pump is turned off and **left open to an evacuated system**. By following proper shut down procedures, this problem can be avoided.

**INSTRUCTIONS:** Listed below are the Vacuum Pump Operation Best Practices for proper shut down.

## PROPER SHUT DOWN:

- AFTER THE EVACUATION AND HOLD IS ACHIEVED PERFORM THE FOLLOWING SHUT DOWN IN ORDER:
  1. **DO NOT SHUT THE PUMP OFF BEFORE ISOLATING FROM THE SYSTEM.**
  2. Isolate the system from the vacuum pump by:
    - a) Closing the valve on the attached ball valve hose (See Figure 1) or,
    - b) Closing the valve on the attached ball valve fitting (included in the pump) (See Figure 2)
  3. Break the vacuum at the pump by loosening, but not removing, the hose connector—pump will change sound as vacuum is broken. Completely removing the hose will result in oil mist and splatter from the exhaust port until the pump is turned off.
  4. Shut the pump off after 3-5 seconds and disconnect it from the system.
  5. Continue with the service.

## SHUT DOWN PROCEDURE

- 1) ISOLATE THE SYSTEM FROM THE VACUUM PUMP BY
- a) CLOSING VALVE ON BALL VALVE HOSE (with pump)
  - or
  - b) CLOSING VALVE ON BALL VALVE FITTING (included)



Figure 1

Ball Valve  
Hose fitting



Figure 2

ISOLATION BALL  
VALVE 1/4" - P/N  
98343 or 3/8" - P/N  
93846

- 2) BREAK THE VACUUM AT THE PUMP BY LOOSENING THE HOSE CONNECTOR – PUMP WILL CHANGE SOUND AS VACUUM IS BROKEN



- 3) SHUT THE PUMP OFF AFTER 3-5 SECONDS AND DISCONNECT IT FROM THE SYSTEM



- 4) CONTINUE WITH SERVICE