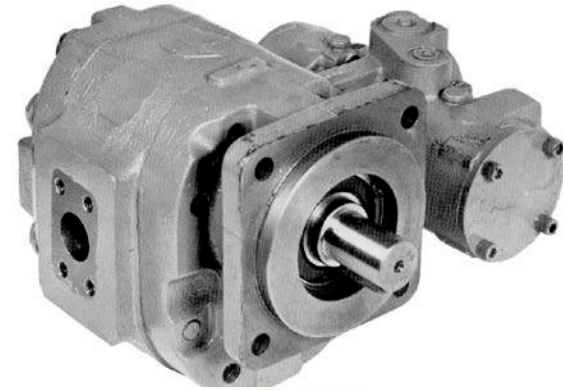
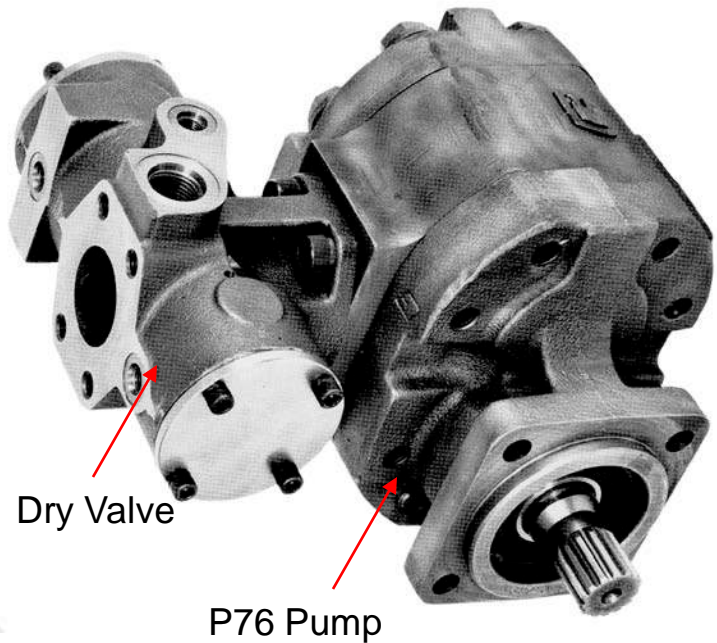


Dynaco Hydraulic Co., Ltd.

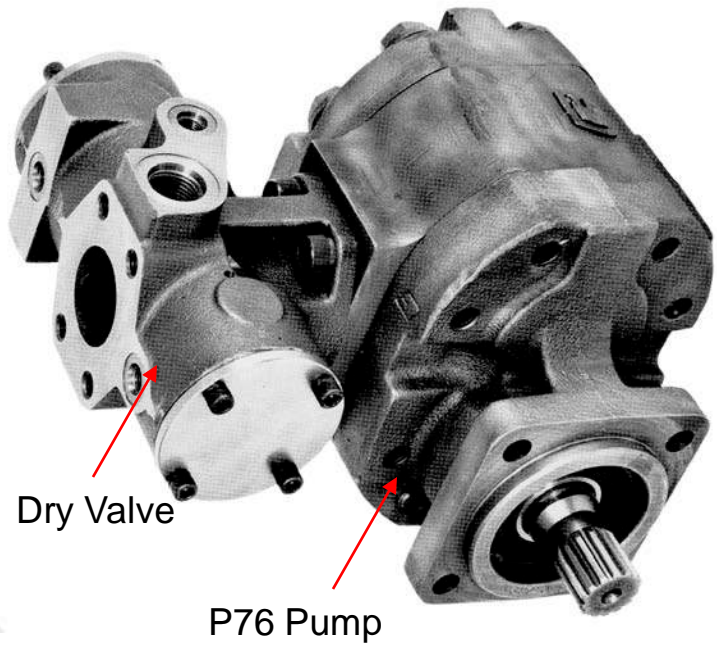
P76 Dry Valve Pump





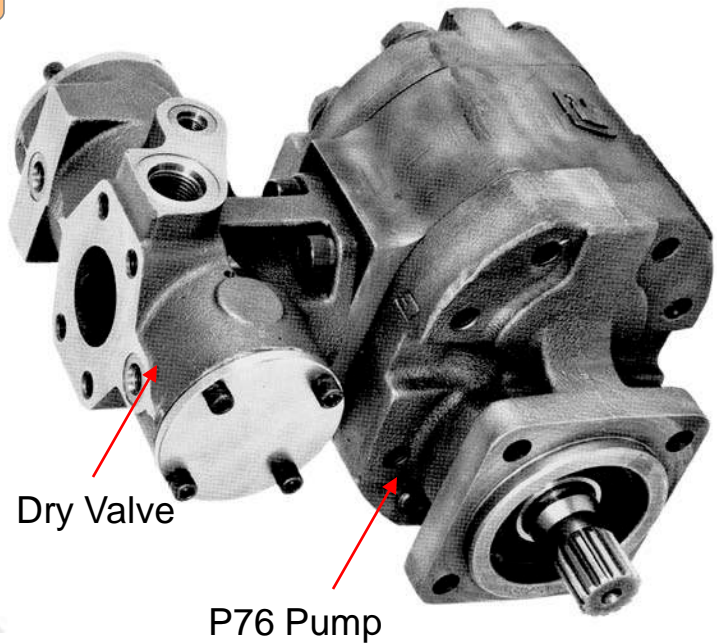
What is a Dry Valve?

A Dry Valve is a two position valve which is mounted directly to the inlet of the pump. In the first position, the dry valve shuts off the inlet flow to the pump while it is running except for about a $\frac{1}{2}$ gpm that moves through the pump to lubricate it and carry away heat. In this position the hydraulic system is said to be in the “dry mode”. In the second position, the valve allows full flow to the pump inlet with out any restriction. In this position the hydraulic system is in the “wet mode” or active.



Why use a Dry Valve?

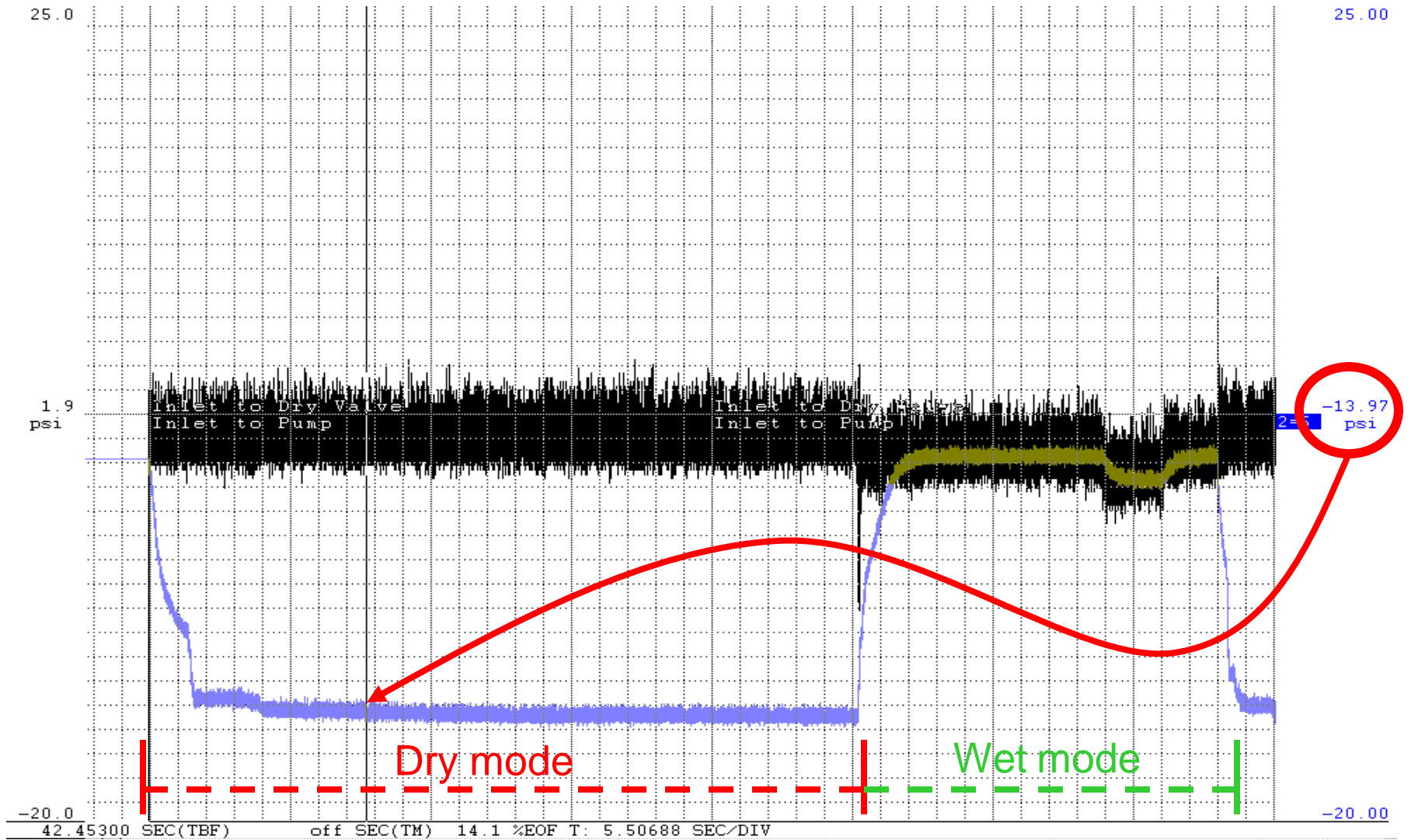
- 1) Cost Savings - A dry valve eliminates the need to use a clutch assembly or PTO (Power Take Off) to disengage the pump from the prime mover.
- 2) Horse Power Savings - A pump with a dry valve uses a very small amount of horse power in the dry mode compared with a direct drive pump sending flow through an inactive open center system.



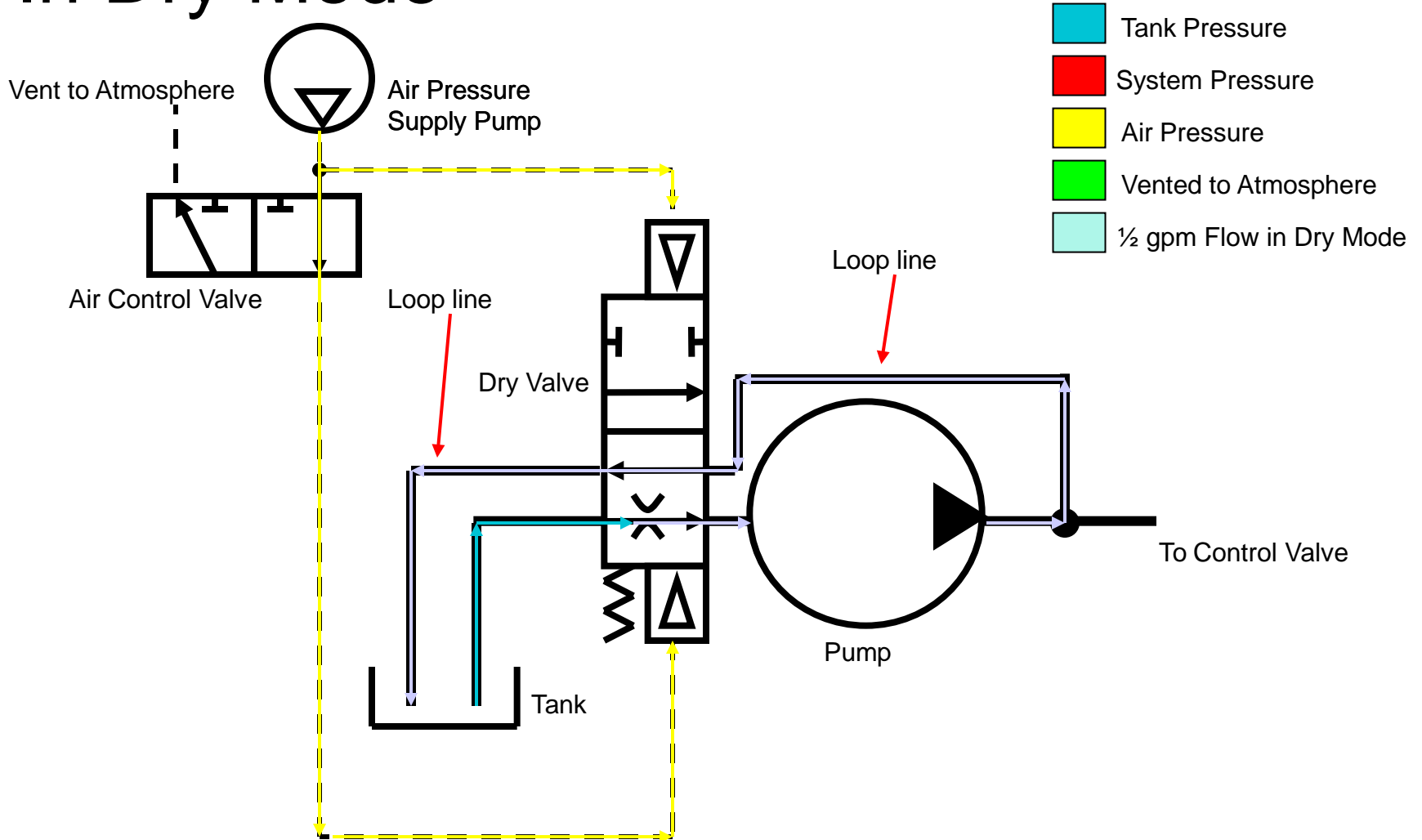
What happens at the inlet of the pump when the system is in the “dry mode”?

In the “dry mode” the inlet of the pump is subjected to a very high vacuum, as much as 28 in. Hg has been recorded.

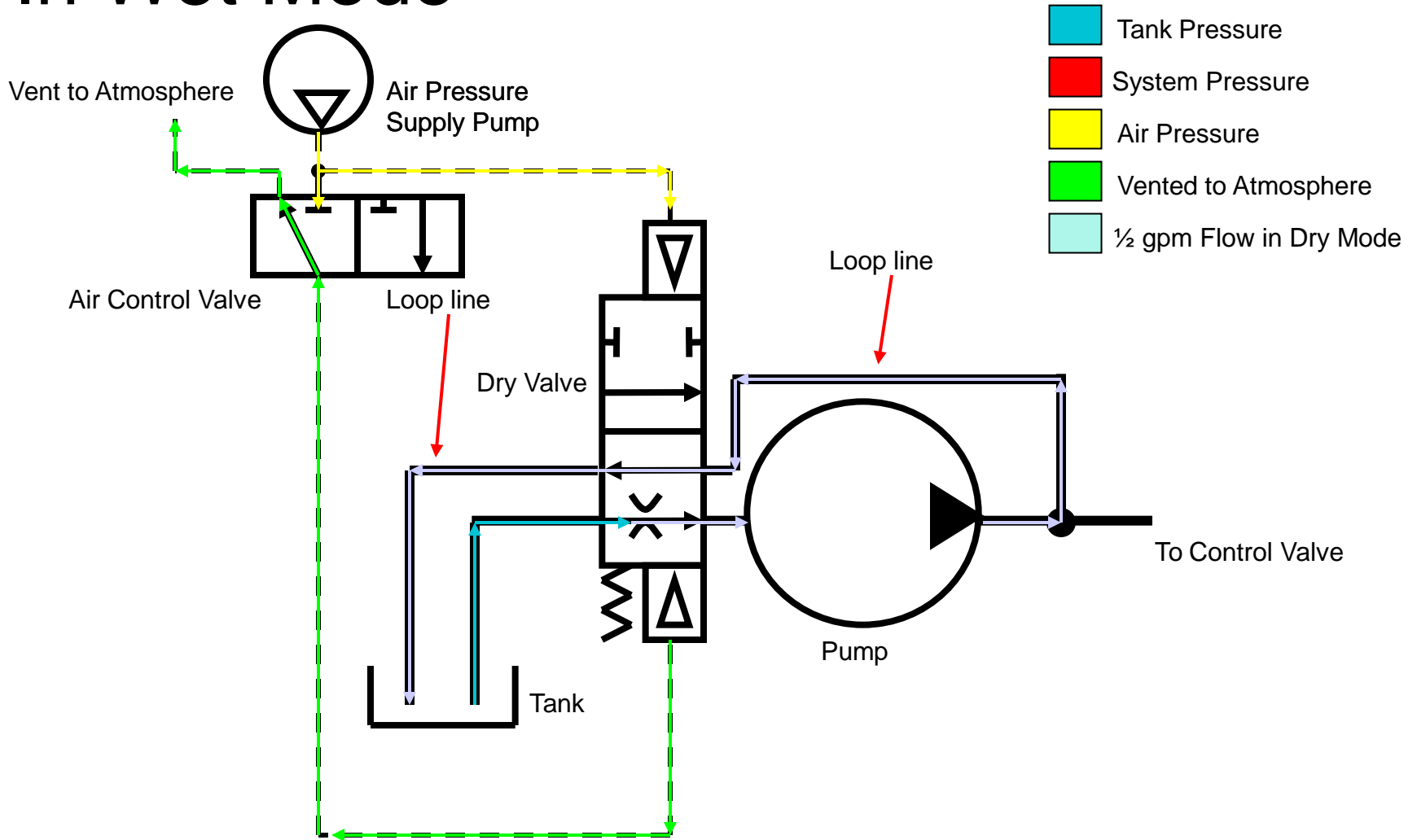
Pressures on Both Sides of Dry Valve In the Dry and Wet Modes



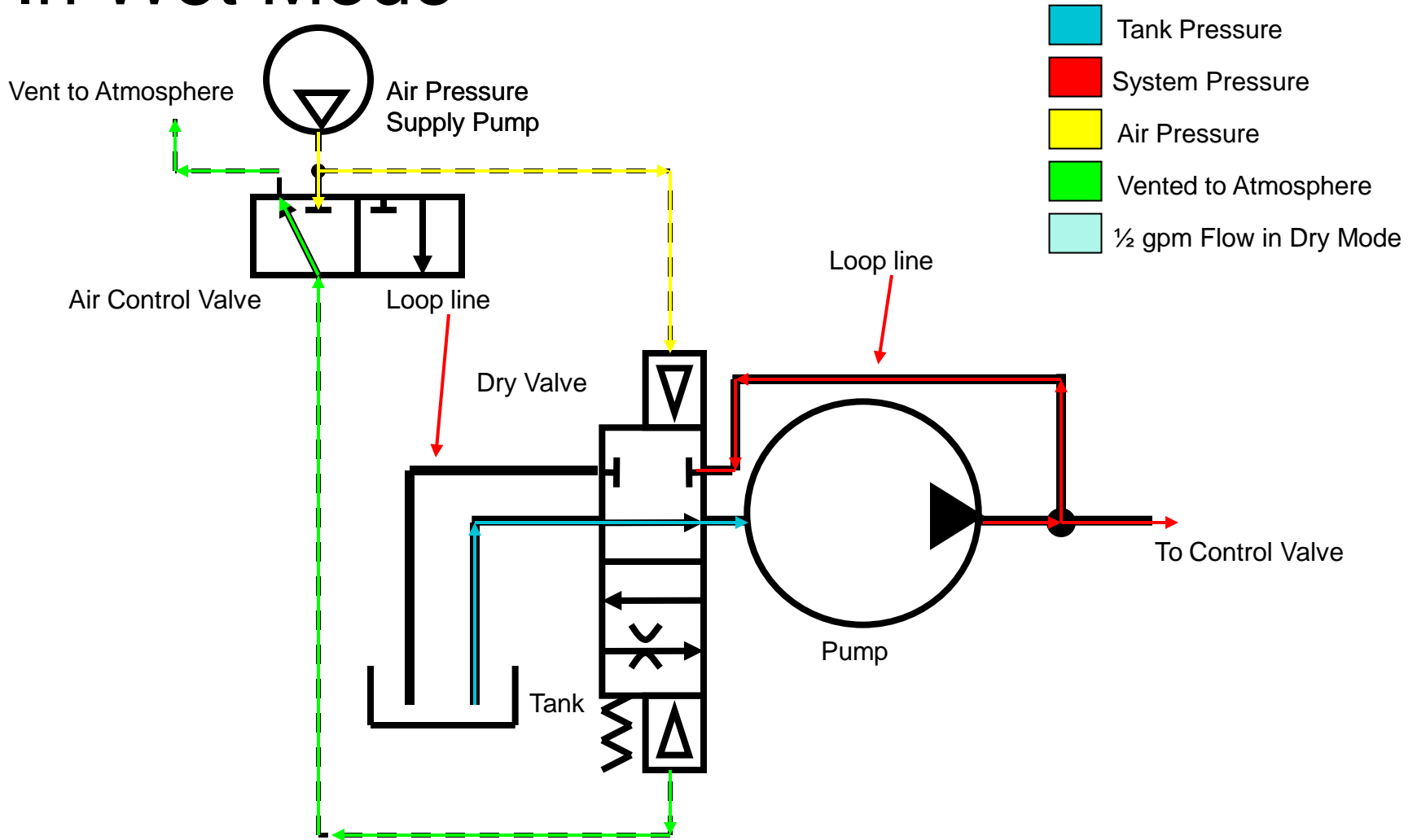
Dry Valve and Pump Schematic In Dry Mode



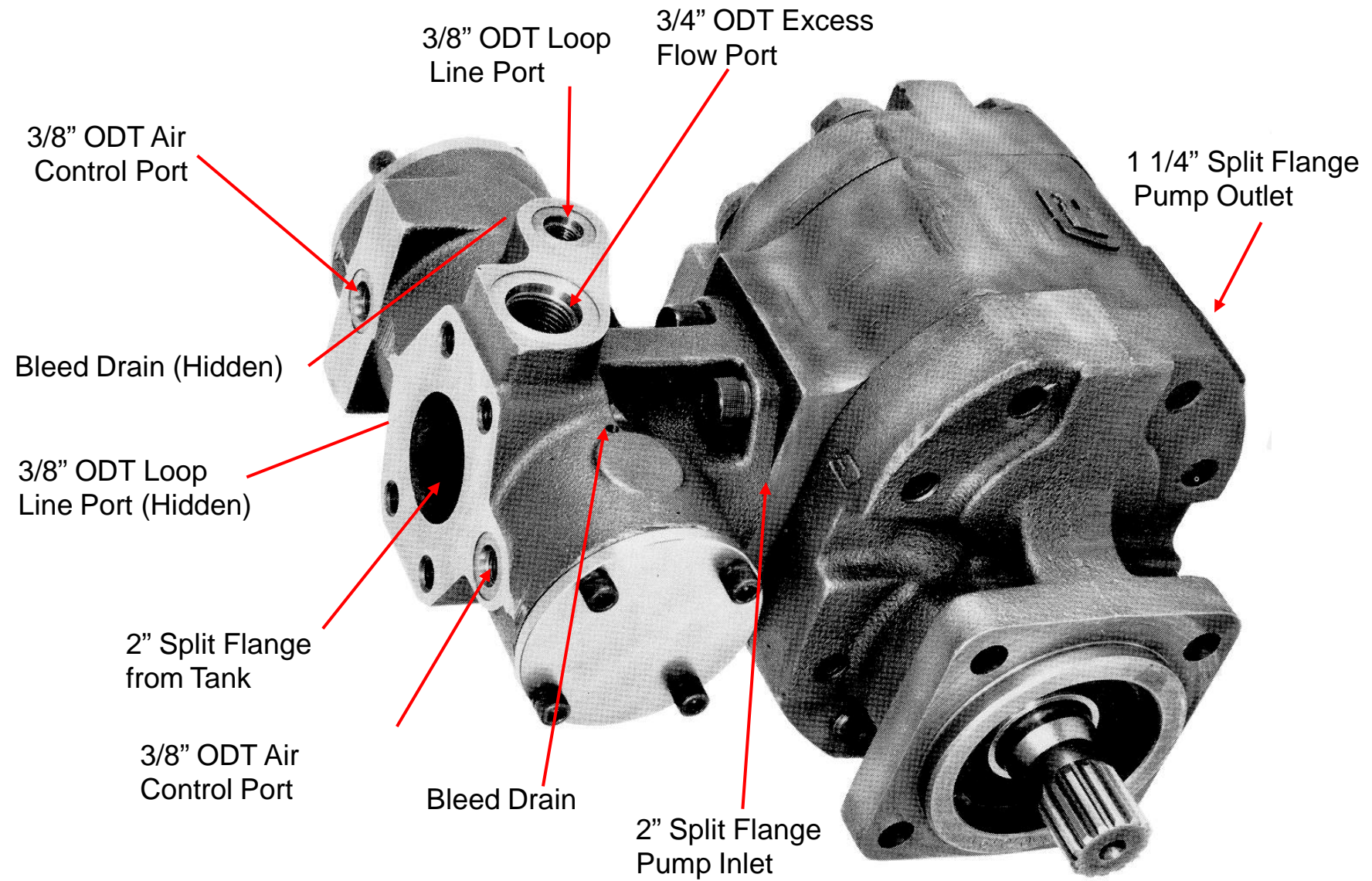
Dry Valve and Pump Schematic In Wet Mode



Dry Valve and Pump Schematic In Wet Mode

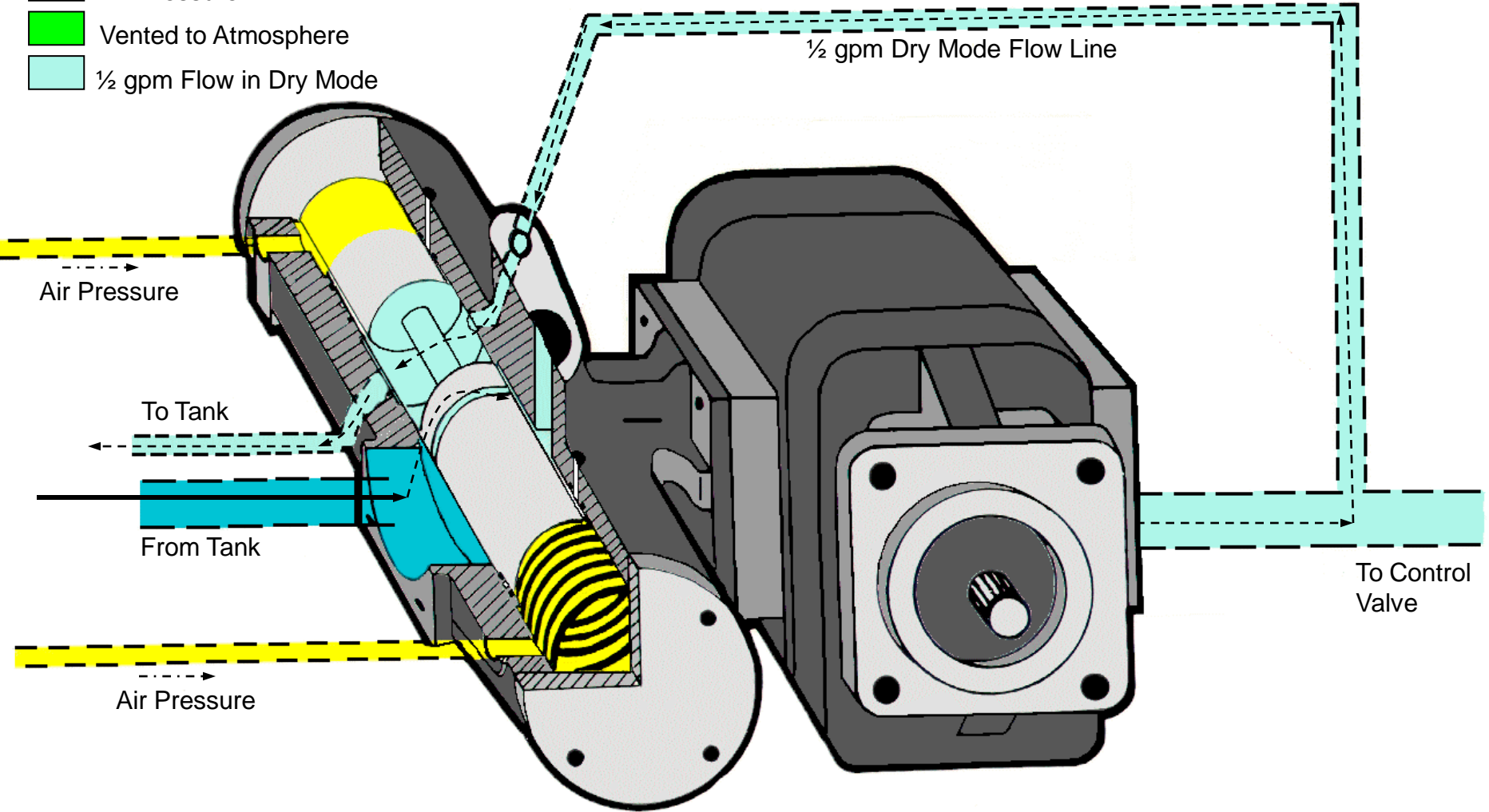


Dry Valve and Pump Porting



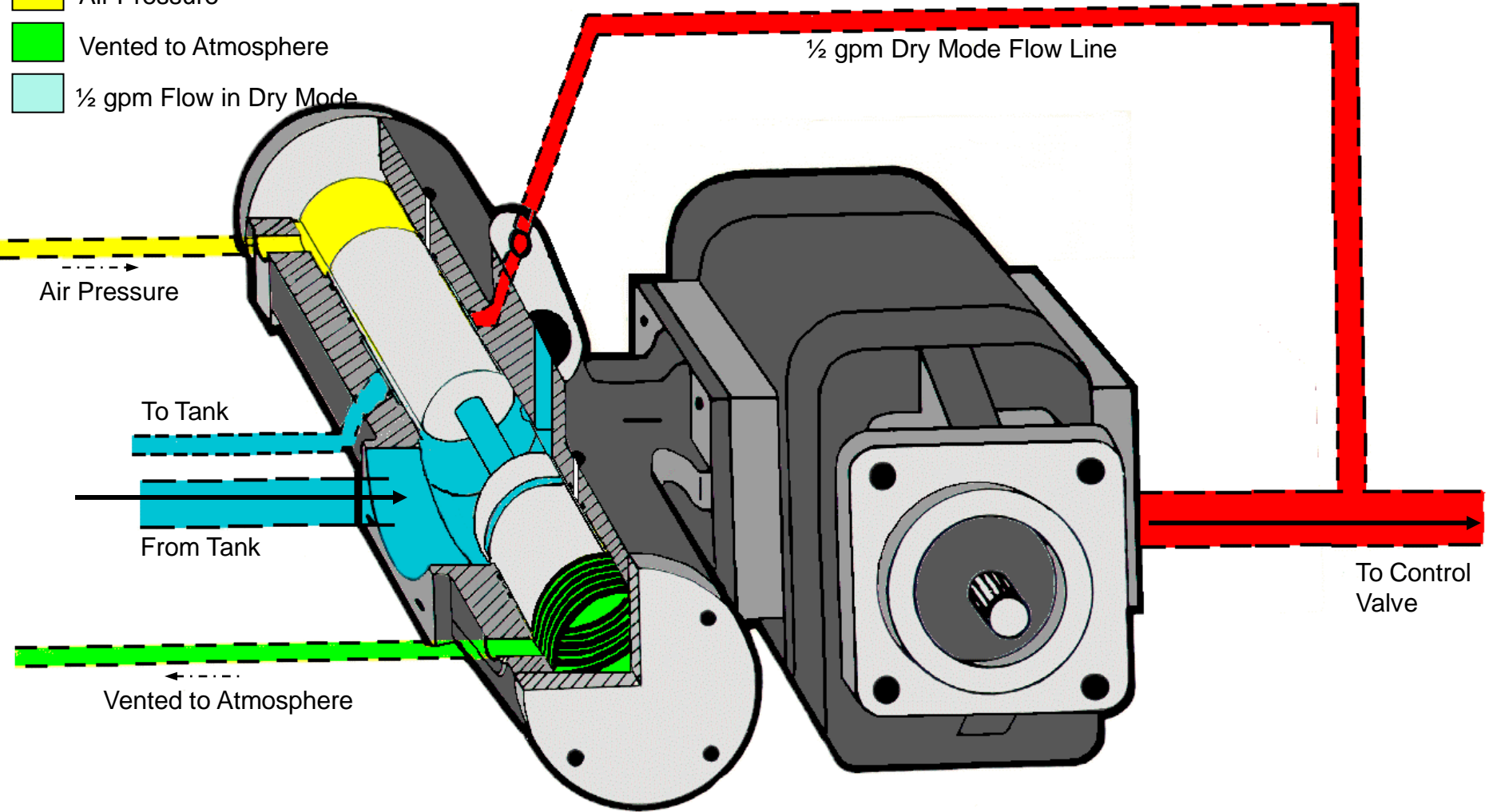
Dry Mode

- Tank Pressure
- System Pressure
- Air Pressure
- Vented to Atmosphere
- 1/2 gpm Flow in Dry Mode



Wet Mode

- Tank Pressure
- System Pressure
- Air Pressure
- Vented to Atmosphere
- ½ gpm Flow in Dry Mode



Air Pressure

To Tank

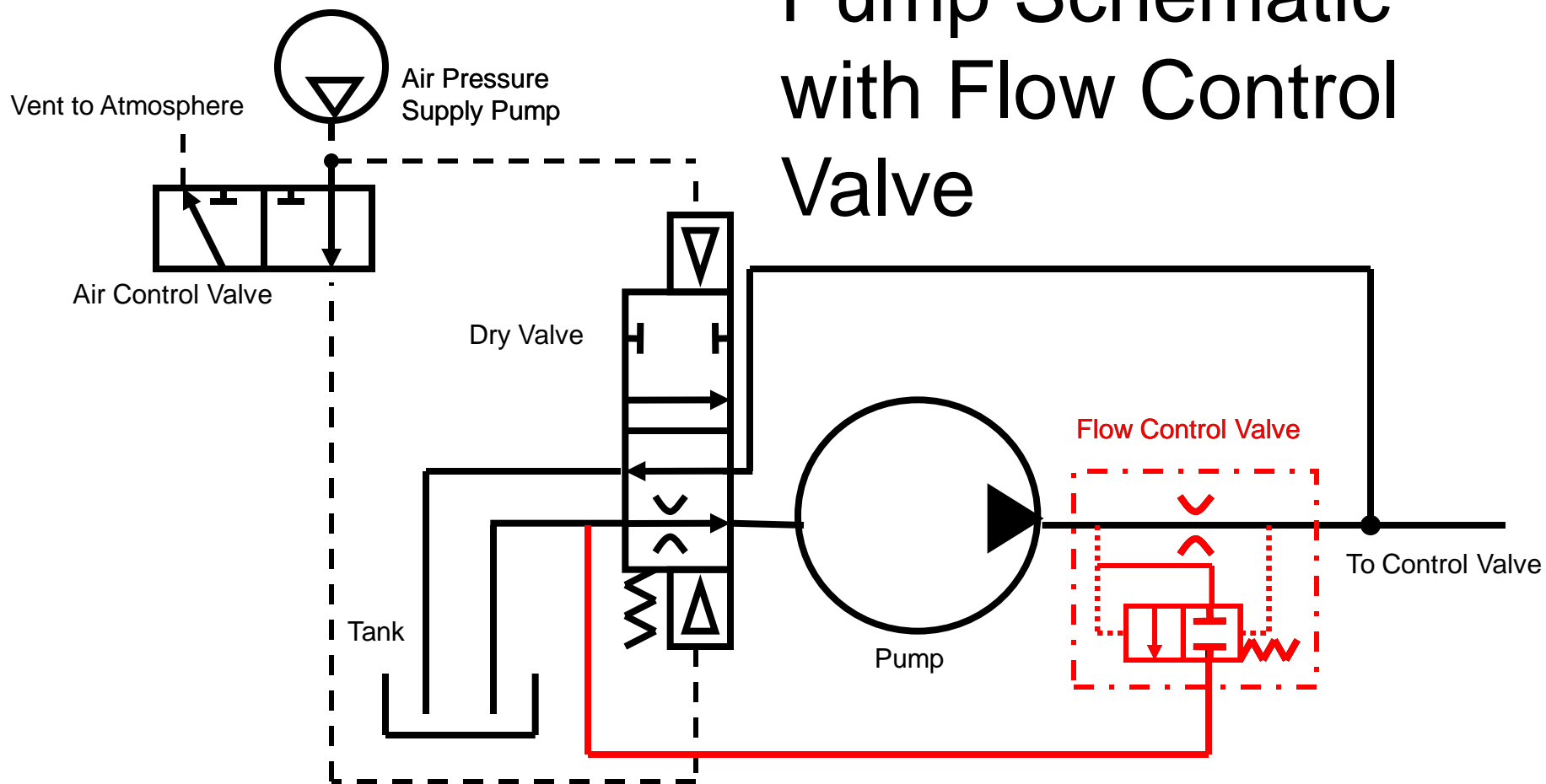
From Tank

Vented to Atmosphere

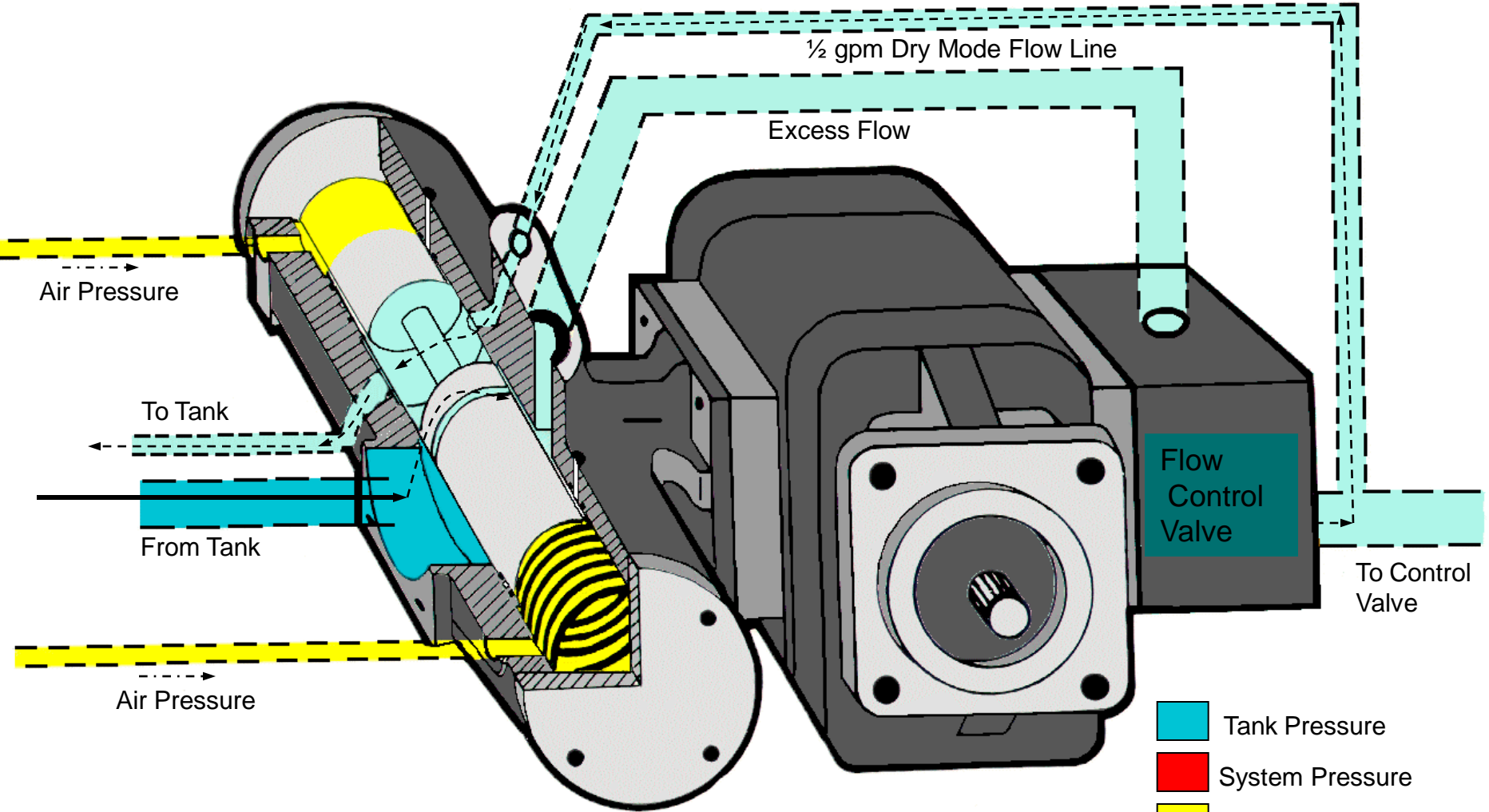
½ gpm Dry Mode Flow Line

To Control Valve

Dry Valve and Pump Schematic with Flow Control Valve

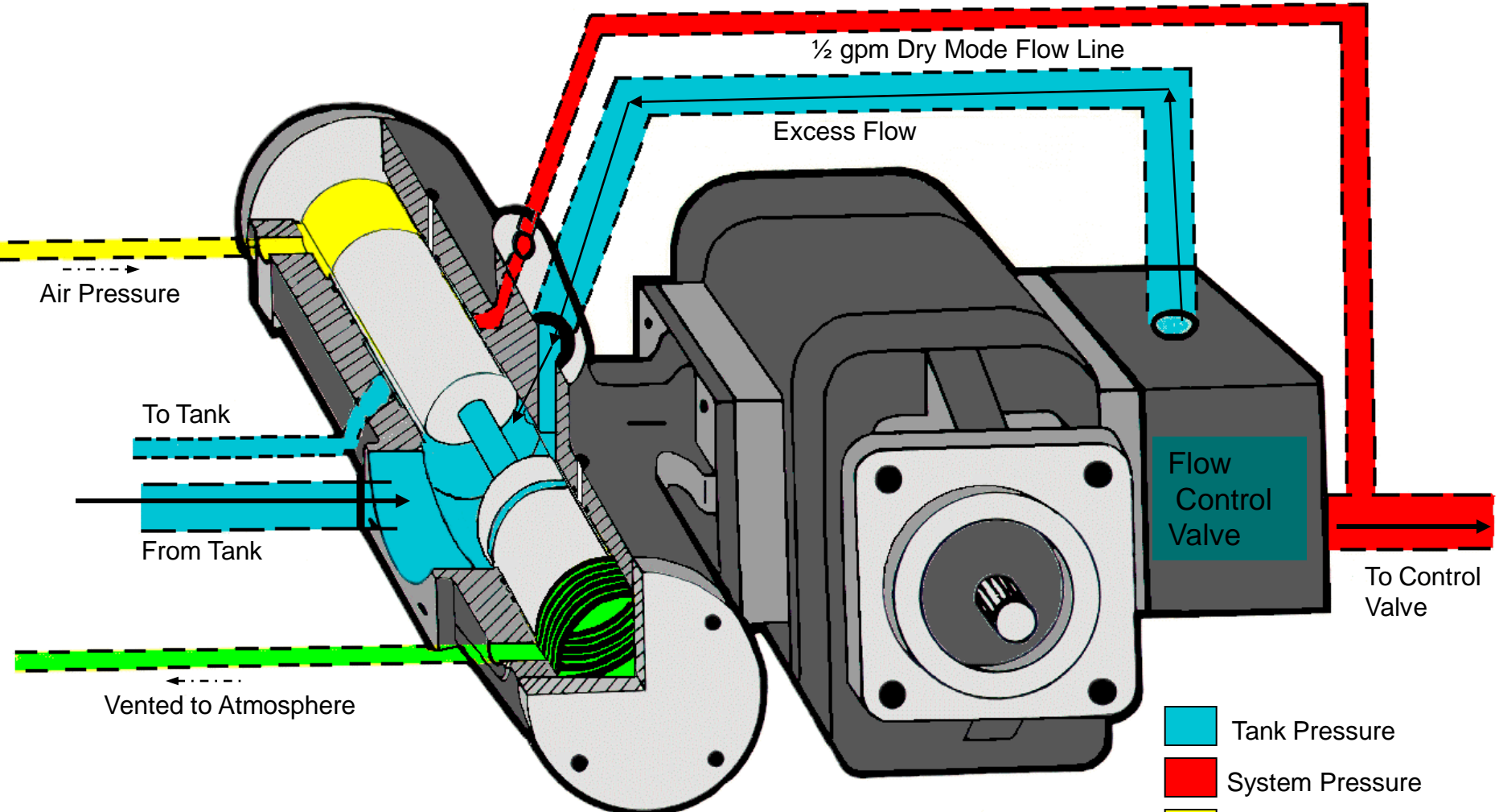







Dry Mode



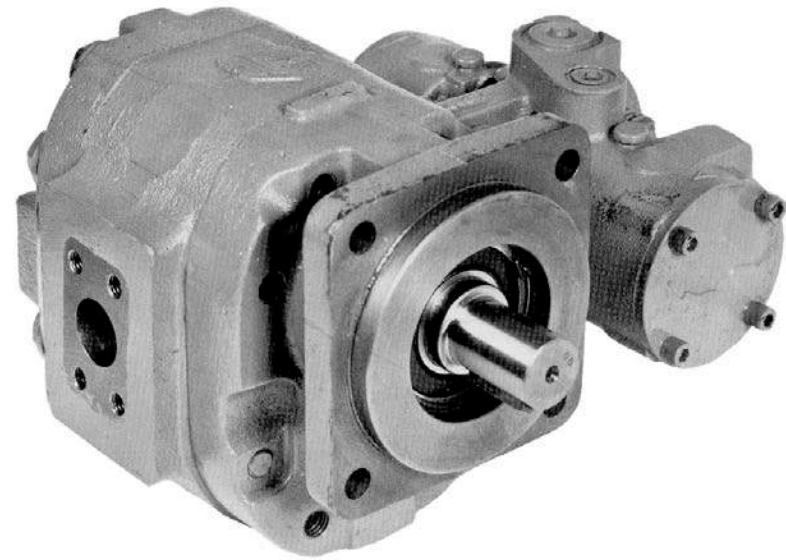
- Tank Pressure
- System Pressure
- Air Pressure
- Vented to Atmosphere
- $\frac{1}{2}$ gpm Flow in Dry Mode

Wet Mode



-  Tank Pressure
-  System Pressure
-  Air Pressure
-  Vented to Atmosphere
-  1/2 gpm Flow in Dry Mode

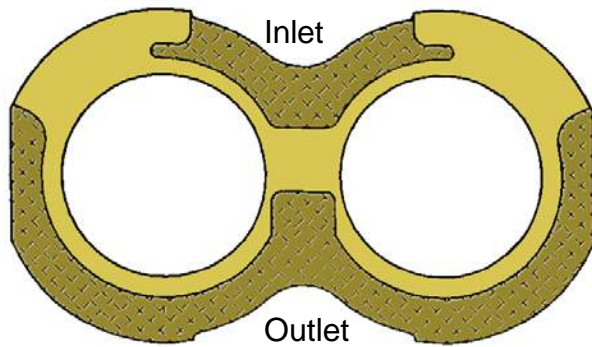
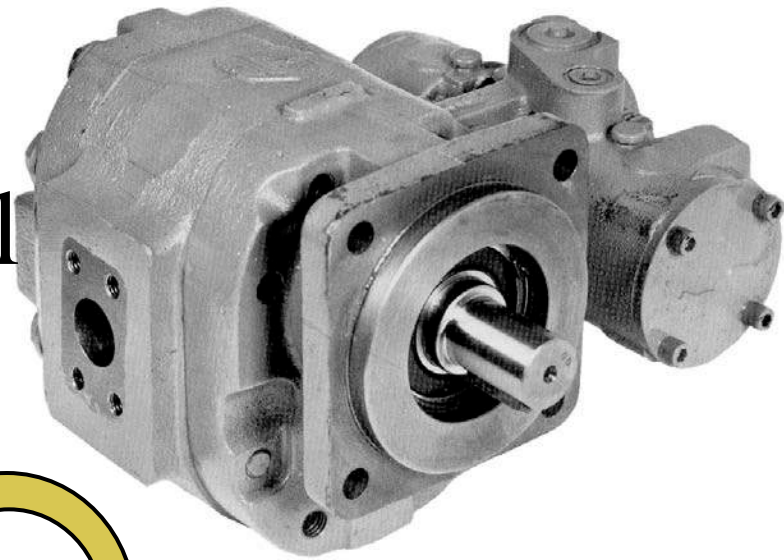
Will a standard roller bearing pump work with a dry valve?



NO - Changes must be made in three areas to get the longest life possible from a pump used in the dry valve system.

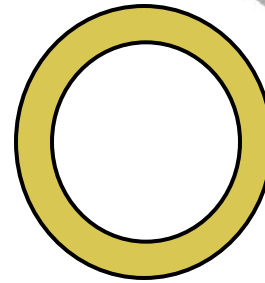
- 1) Low friction, fixed clearance ring seals should be installed
- 2) Special “dry valve” thrust plates must be used
- 3) Special lip seal arrangement must be used

Special Dry Valve Pump Thrust Plates & Ring Seal Parts



P50/51

- Thrust Plate - 391 2185 062
- Thrust Plate Seals - standard pocket seals (6 per thrust plate)
- Ring Seals - 391 2585 022



P75/76

- Thrust Plate - 391 2185 072
- Thrust Plate Seals - 391 2885 040
- Teflon ring (2 per thrust plate)
- Ring Seals - 391 2585 023