



AC Vertical SOAKBACK PUMP – A Superior Solution for Horizontal SOAKBACK PUMP

This document provides a detailed explanation and comparison of the Turbo Soak Back Pump Motor (Part Number 4947308R) used for EMD Diesel Engine classes, along with a recommendation for an alternative vertical model. The original pump motor is a horizontal-mounted DC motor, designed for use with locomotive control systems that supply direct DC power without the need for an inverter. This motor operates at 74 VDC, with a power rating of 3/4 HP and a speed of 1200 RPM.

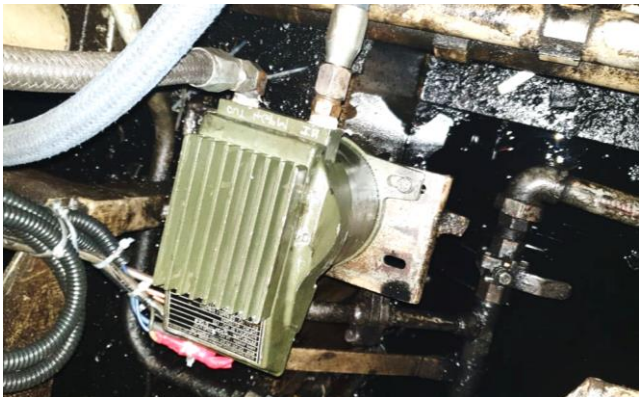

The turbo soak-back pump plays a crucial role in maintaining the turbocharger by ensuring proper lubrication before the engine starts and removing residual heat after engine shutdown. It is powered by a separate oil pressure system that draws oil from the engine sump, filters it, and sends it to the turbocharger. The system features a 40-PSI bypass valve to prevent clogging of the soak-back filter and a 32-PSI relief valve in the filter head to return oil to the engine sump if necessary.

In contrast to the original horizontal model, which relies on DC power, a vertical model with an AC motor and built-in inverter offers significant advantages. These modified vertical AC-lube oil pump motors, like those used in locomotives across Indian Railways, are designed for enhanced durability and performance. The vertical model is a more reliable solution, offering extended lifespan with minimal maintenance. The installation process is simple, requiring only flexible hoses for connections and four mounting bolts to secure the motor.

Unlike the horizontal model, which faces delays in availability of spare parts, the vertical model is readily available and can be supplied promptly when needed. Additionally, the vertical model does not pose any technical issues if the installation and application are handled correctly. For these reasons, we recommend using the vertical model for improved efficiency, reliability, and ease of maintenance.

VERTICAL SOAKBACK PUMP	HORIZONTAL SOAKBACK PUMP
	

Comparison of Vertical type Pump and Horizontal type Pump

Vertical Type	Horizontal Type
3/4 HP 64VDC operating at 1200 RPM 3 Output	3/4 HP 64VDC operating at 1200 RPM
Flow Rate – 3 GPM Minimum 6-7 GPM Maximum	Flow Rate – 3 GPM Minimum 6 GPM Maximum
Working Pressure Minimum 40PSI	Working Pressure Minimum 40PSI
Nominal Current - 4 Amps to 10 Amps	Nominal Current - 4 Amps to 10 Amps
This can be used for both 645 and 710 Engine series with V-16	Only for 645 Engine series
Inbuilt Inverter Design	Additional Inverter Design
Mounting with 4 mounting bolts	Mounting with 4 mounting bolts
Inlet Port – 0.50 – 14 NPT	Inlet Port – 0.50 – 14 NPT
	

Note: The Vertical Type Motor can be replaced with Horizontal Type without any additional operation. Inlet Port Male Nipple will be provided along with Motor. This Vertical Pump can also be used in any class of EMD Diesel Engines.

Advantages of Vertical Type Fuel Pump Motor

1. Better Performance and durability up to 6years
2. Fit and Forget
3. Accurate delivery within the time
4. Smaller size and weightless (30 Lbs)
5. Easy to install.
6. Diesel itself acts as a cooling media (Self-cooling technique)
7. Additional protecting circuitry for Inverter
8. Pure Sinewave Inverter with filtration
9. Brushless AC Motor
10. Gear driven mono pump with accurate delivery pressure.
11. Easy for Maintenance

The Vertical Type FPM is already fitted in Bangladesh Railways (Loco Model GT18LA-2) and is working satisfactorily without any issues till date. Fitment photos shown in above table.