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Coding Information

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Title: Prelubing An I6 Engine With Engine Oil After Engine Rebuild

Applies To: All 2004 through 2006 DT 466, 570, HT 570 and 2007 through 2009 MaxxForce DT, 9 and 10 Engines

I6 Prelubrication after Major Engine Repair

Following a major engine repair, such as an in-frame overhaul, many bearing surfaces might be dry of lubricant. Consequently, there can be metal to metal contact when the engine is first started, causing damage that can lead to accelerated component wear and shortened life. Therefore, Navistar recommends that the following process be used to prelubricate the engine bearing surfaces following major engine repair, before the engine is started for the first time.



Figure 1: Prelubrication Service Tool iOTC6492

Figure 1 shows the tool iOTC6492 that can be used to prelubricate an engine after repair. This tool is available through the PDC. The plastic tank holds two gallons of oil, and the hand pump (red T-handle) feeds oil from the tank, through the clear plastic hose, to the shut-off valve at the hydraulic hose fitting.



Figure 2: Oil Filter – Oil Cooler Assembly

Figure 2 shows the oil filter-oil cooler assembly and the plug in the oil filter header on the dirty oil side of the filter. The plug is to be removed and the appropriate service fitting (ZTSE4594) from the VT 365 tool storage case (ZTSE4579-1) installed to make the oil supply hose connection from the hand pump.

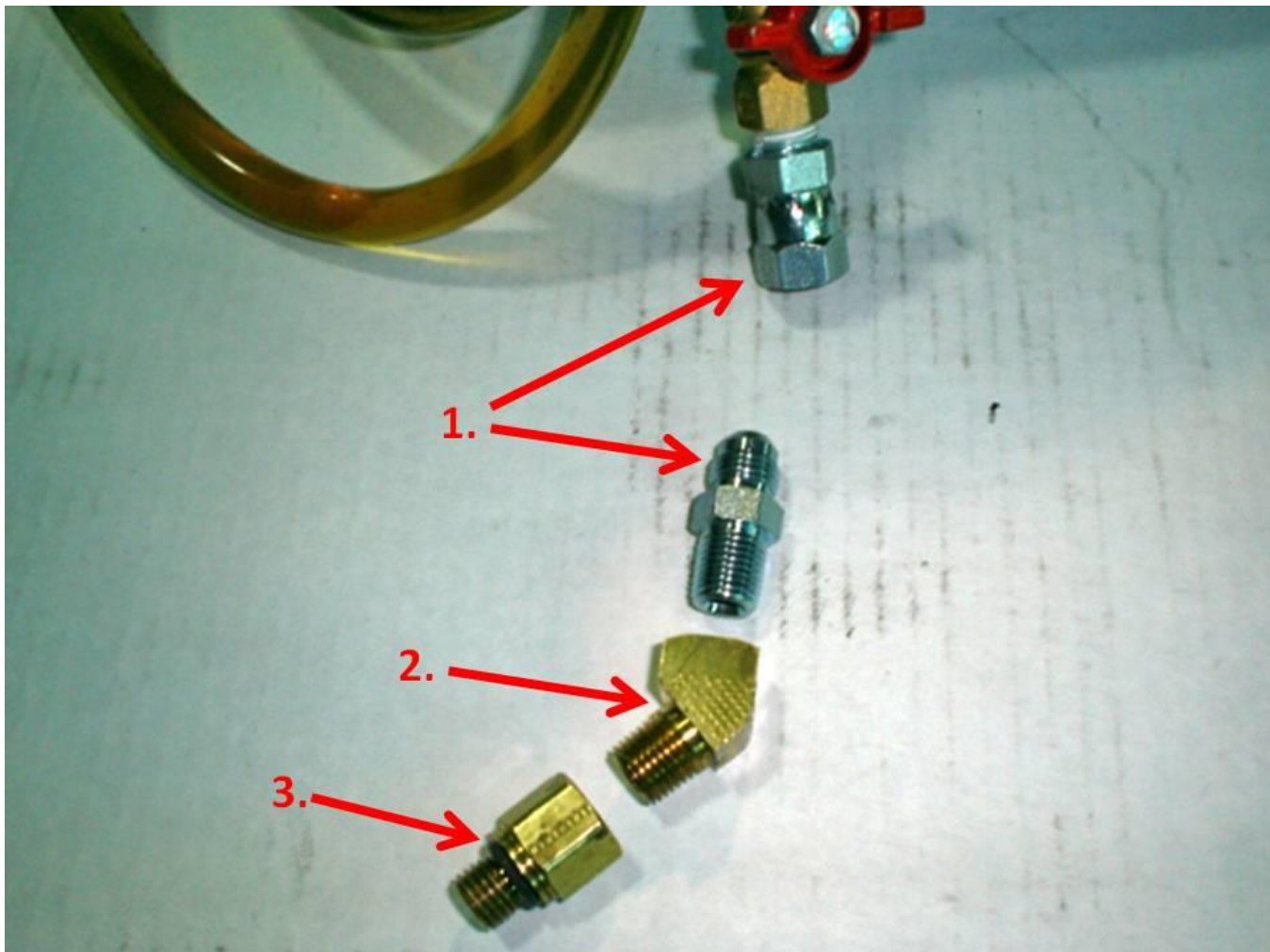


Figure 3: Hose Fittings Used to Attach Oil Feed Line to Engine Oil Filter Header

Three fittings are used to adapt the oil feed line to the oil filter header.

- 1) 1/4 inch male hydraulic hose fitting connects to the female hydraulic hose coupling on the oil feed line. The other end of the fitting is 1/4 inch NPT. This fitting is part of the prelube kit iOTC6492.
- 2) The service technician needs to acquire a standard 45 deg fitting that goes from a 1/4 inch NPT female connection to a 1/4 inch NPT male connection.
- 3) ZTSE4594 fitting fits into the oil filter header port, and it provides a 1/4 inch NPT female connection to take the male connection in fitting (2).



Figure 4: Truck Cab with Fender Removed

Figure 4 shows the truck frame and engine installation with the truck fender removed. Fender removal allows for convenient access to the plug in the oil filter header for removal and installation of the oil supply feed line. The oil supply feed line shown runs vertically over the frame in the approximate center of the picture. The oil supply feed line and red shut off valve are seen in the center of the picture above the black frame and against the blue engine background.



Figure 5: Oil Supply Feed Line connected to Oil Filter Header

Figure 5 shows the connection of the oil supply feed line to the oil filter header at the port to the dirty oil side of the filter. This method of oil supply provides for oil filtration before it is passed into the engine and its bearing surfaces. The picture clearly shows the fitting ZTSE4594 into the filter header, the 45 degree elbow fitting that has a $\frac{1}{4}$ inch NPT male connection and a $\frac{1}{4}$ inch NPT female connection, and the iOTC6492 service tool kit supplied fitting that has a $\frac{1}{4}$ inch NPT male connection and a $\frac{1}{4}$ hydraulic hose male connection that fits into the female hydraulic hose connection on the oil supply feed line.

This arrangement with the iOTC6492 service tool allows approximately two gallons of engine oil to be pumped into the engine. Two gallons of oil will fill the oil filter, oil cooler, turbocharger, and the entire engine lubrication system. The prelubing action will only serve to lubricate the engine and will not have any impact on filling the high pressure pump or high pressure oil rail. At this point, the oil pan can be filled with the appropriate amount of oil.

Other pressure bleeder service tools exist and may be used to prelubricate the engine with a minimum of 2 gallons of oil as long as it is introduced through the oil filter header as described. If desired, the complete service quantity of oil required by the engine may be added using this procedure.

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