# INSTALLATION OF

# ENGINE OIL COOLER LINE KITS

# W8000322 OR W8000325

FOR REFERENCE ONLY

**INSTRUCTION NO W8000355**

# 1 Intended Usage

This instruction shows how to install the following kits

| KIT | USAGE |
|---|---|
| W8000322 | Kit GM 94-97 (units with Auxiliary cooler) |
| W8000325 | Kit GM 98-99 / Workhorse 99-2001 (units with Auxiliary cooler) |

These kits are for replacement of engine oil cooler lines (EOC's) on the 6,5L diesel engine application.

# 2. Kit Content

| KIT | PART | DESCRIPTION | QTY |
|---|---|---|---|
| **W8000322** | **HOSE KIT, ENG OIL COOLER, INLET & OUTLET (1994-1997, W/ AUX COOLER)** | | **1** |
| | W0002782 | CLAMP, DUAL TIE 1/4" MOUNTING HOLE | 3 |
| | W8000326 | HOSE ASM, ENG OIL COOLER | 1 |
| | W8000327 | HOSE ASM, ENG OIL AUXILLIARY COOLER | 1 |
| | W8000328 | HOSE ASM, ENG OIL COOLER OUTLET | 1 |
| | W8000329 | O-RING | 6 |
| | W8000330 | FITTING, ENG OIL COOLER HOSE | 2 |
| | W8000355 | INSTRUCTION, FITMENT (KITS W8000322, W8000325) | 1 |
| **W8000325** | **HOSE KIT, ENG OIL COOLER, INLET & OUTLET (1998-2001, W/ AUX COOLER)** | | **1** |
| | W0002782 | CLAMP, DUAL TIE 1/4" MOUNTING HOLE | 3 |
| | W8000336 | HOSE ASM, ENG OIL COOLER INLET | 1 |
| | W8000337 | O-RING (GREEN) (6 PIECE KIT) | 1 |
| | W8000338 | HOSE ASM, AUXILLIARY ENG OIL COOLER INLET | 1 |
| | W8000339 | HOSE ASM, ENG OIL COOLER OUTLET | 1 |
| | W8000341 | FITTING, ENG OIL COOLER HOSE | 6 |
| | W8000355 | INSTRUCTION, FITMENT (KITS W8000322, W8000325) | 1 |

# 3. Important Notes

3.1 The ideal time for fitment of these kits is at a scheduled engine oil change.

3.2 Failure to observe the methods and precautions in this document may result in damage to other components of the unit being repaired.

3.3 Ensure that all required parts are present before removing the old oil cooler lines.

3.4 Procure the required wire ties locally (figure 10).

## 4. Installation

4.1 Soak all threaded fittings with a high quality penetrating oil.

4.2 Cut the existing cooler lines at the auxiliary cooler with a bolt/tubing cutter close to the “quick-connect” fittings (figures 1 and 2).

**Do not attempt to use the quick disconnects as they may be corroded and doing so may cause damage to the auxiliary cooler (figure 3).**

4.3 Let the oil drain into an appropriate container (figure 2).

**Figure 1**

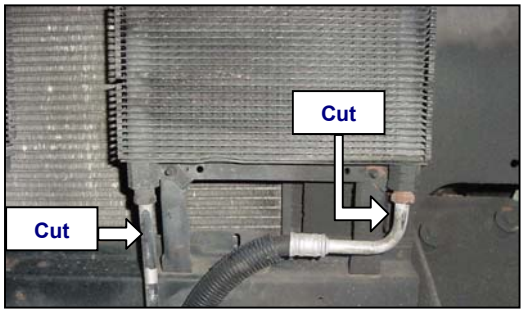
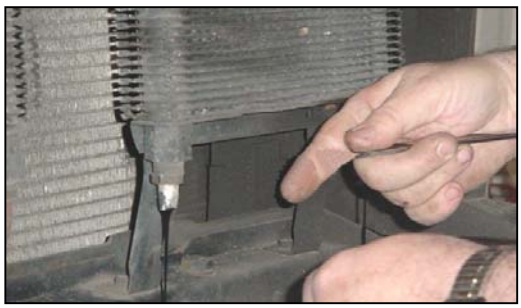



**Figure 2**



4.4 Remove “Quick-Connect” Adapter fittings from the Auxiliary Cooler

**READ CAREFULLY: Removal of “Quick-Connect” fittings**

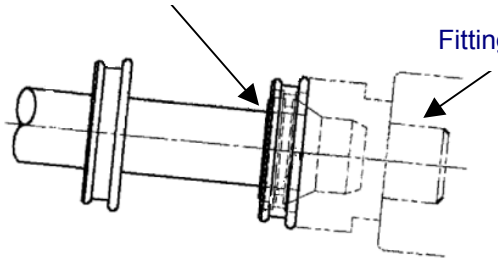
*During original manufacture of the vehicle, the “quick-connect” fittings are coated with LocTite 567 medium strength thread sealing compound before being screwed into the auxiliary oil cooler at 18 to 23Nm.*
*Depending on the age of the vehicle, this compound will have hardened substantially, making the bond between the “quick-connect” fittings and the threads in the auxiliary cooler extremely tight (Figure 3).*
*In this condition, an attempt to force the connection open with torque gradually applied using a hand wrench is likely to tear the auxiliary cooler.*

***It is therefore important to follow the instruction to use an impact wrench to remove these connectors.***

*The effect of the impact wrench is a breaking of the crystalline structure of the aged LocTite 567, greatly reducing the torque required to unscrew the fittings.* ***The impact wrench must be used with care****, applying impact in short bursts until the connection is suitably loosed.*

**Figure 3** “Quick-connect” of hose to fitting (Potential Corrosion locked connection)

Fitting to oil cooler (LocTite sealed connection)



4.5 Coat the male end threads of the new brass fittings (supplied in the kit) with a Teflon thread sealer. **Be sure the sealant is used on threads only. Excessive application could result in sealer entering into the engine oil system and potentially cause damage (Figure 4).**

4.6 Screw the new brass fittings into the auxiliary cooler. Tighten the fittings to 42 lb ft (57N.m).

**Figure 4.**

4.7 Cut the cooler lines at the radiator internal (tank) cooler (left/drivers side) and let the oil drain.

4.8 Remove the retaining clips from the fittings. Loosen and remove the fittings from the radiator tank. **Use an impact wrench in the same manner described in paragraph 4.4 in order to avoid permanent damage to the radiator/cooler tank.**

4.9 Cut the cooler lines at the engine block (left/drivers side), at the engine block cooler housing. Let the oil drain.

4.10 Remove the oil filter if the oil is to be changed.

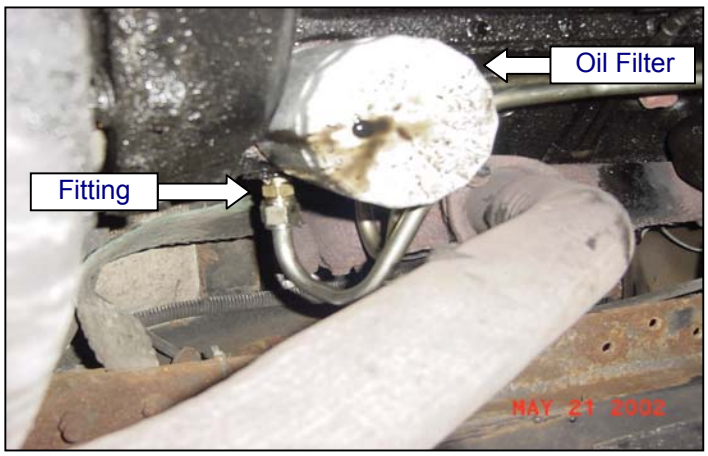
4.11 Loosen the cooler line fittings at the engine block with a 1 ¼" Socket (retaining rings must be removed first). Position the socket drive wrench in between the transmission case and the exhaust pipe. **Engine block fittings may be very tight and require additional coats of penetrating oil. Use extra care not to snap the fittings off in the engine block.**

4.12 Starting at the radiator core support, cut the plastic retaining straps with side cutters. Lower the hoses, allowing them to drain.

4.13 Lower and remove cooler lines, exiting them from the rear of the vehicle.

4.14 Install the new male fittings into the engine block (front and rear), sealing the threads with Teflon sealer. Tighten the forward most fitting first to 42 ft lb (57 Nm).

**Figure 5**



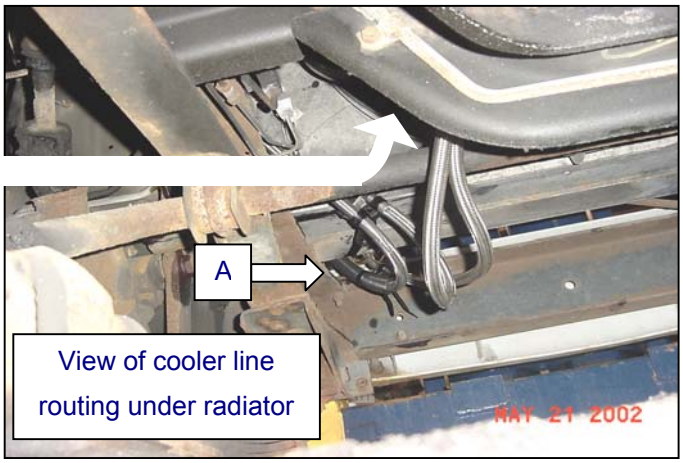
4.15 Install both inlet and outlet cooler hoses, starting at the rear of the vehicle. **Tape the ends of the cooler lines before installing them, in order to keep dirt/debris from entering the lines.** Feed the hoses from the rear to the front of the vehicle.

4.16 Install the engine block (front fitting on block) cooler line to the right (passenger) side fitting on the auxiliary oil cooler. **Be sure to seat the included O-rings fully. Do not tighten the hose fittings at this time.** Route the cooler line between the exhaust Y pipe and engine block, going over the engine crossmember to the auxiliary oil cooler. **Be sure to leave adequate clearance between the engine oil filter and the cooler lines**.

4.17 Install the engine block (rear fitting on block) cooler line to the lower radiator (tank) fitting, which is located on the drivers/left side. **Be sure to seat the included O-rings fully. Do not tighten the hose fittings at this time.** Route the cooler line through the exhaust Y pipe, over the engine crossmember to the lower radiator (tank) fitting (Figure 6). Attach both cooler lines to the bracket located on the engine cross member.

**Figure 6**

The power steering pump drive pulley is in this area. Route the hoses so that they are secure and clear of this pulley.




View of cooler line routing under radiator

4.18 Install/thread the new male ended fittings into the left/drivers side of the radiator coolant tank. Seal the threads with Teflon sealer and torque the fittings to 42 lb ft (57 Nm).

4.19 Install the final (third) cooler hose (cooler to cooler) from the upper radiator (cooler) tank fitting, to the drivers (left) side of the auxiliary oil cooler.

4.20 Leaving the line fittings loose, begin to install wire ties/brackets on the cooler lines, starting at the front of the lines by the auxiliary oil cooler (Figures 7 to 9). **Ensure that the convoluted plastic protection sleeve on the drivers side line is located so that it will protect that line from any damage which may otherwise occur if it were to rub or bump against the chassis (Figure 7 and callout A in Figure 6) or against the power steering pump drive pulley (Figure 6).**

**Figure 7**

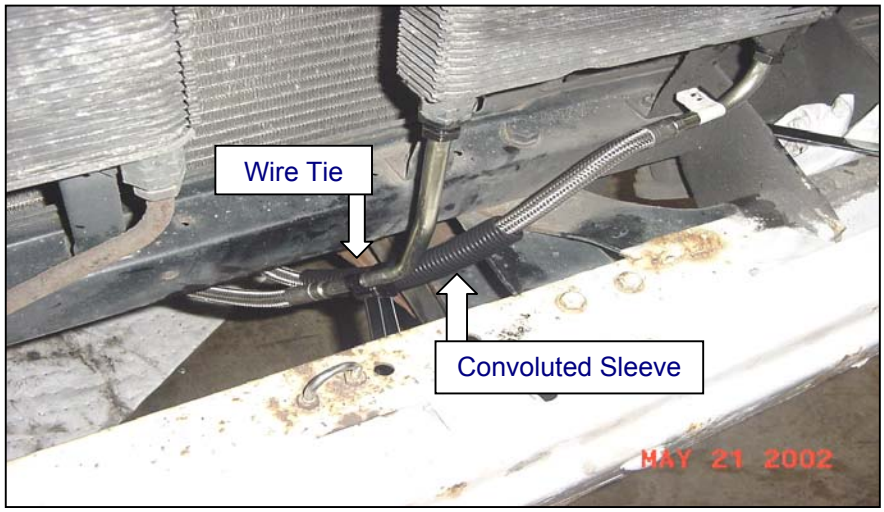



**Figure 8**

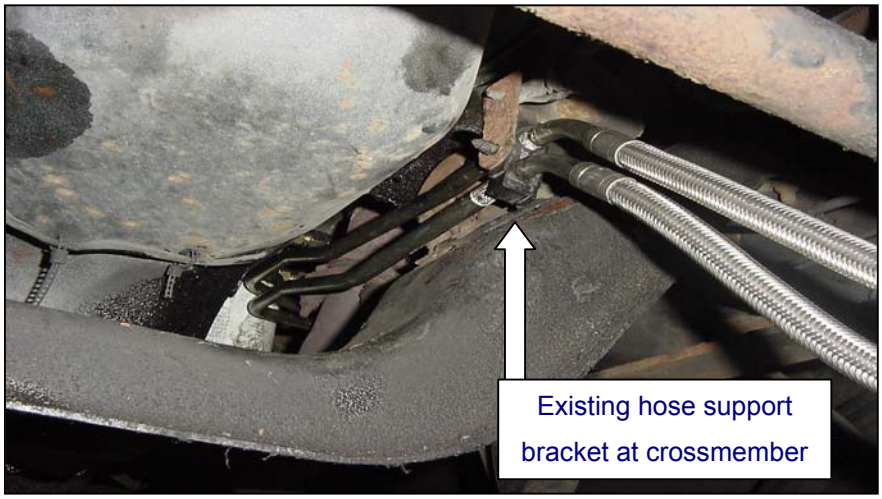
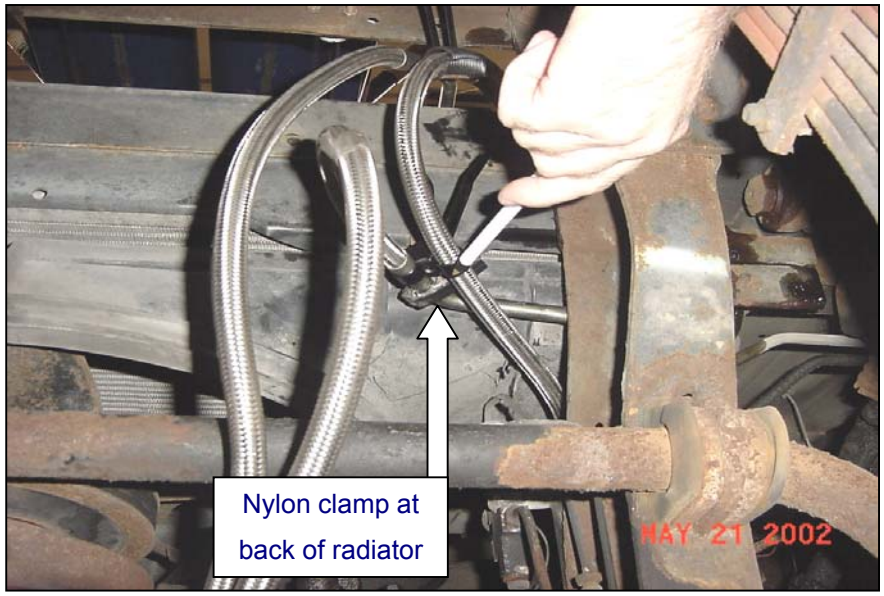


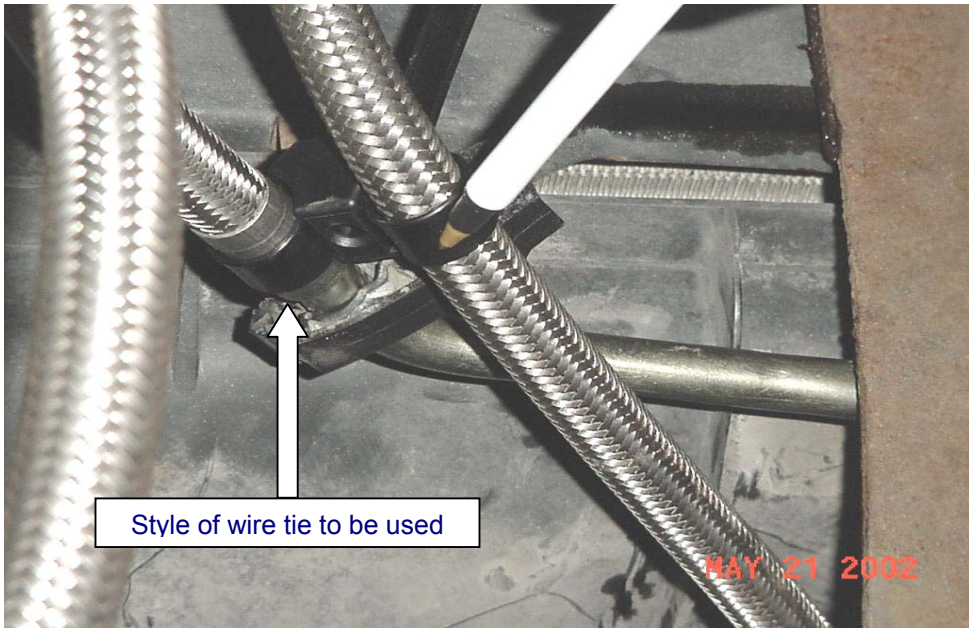

**Figure 9**



4.21 Three large black wire ties are to be used (Figure 10). One is used in the front, where the lines come into a Y, a second is used 16” back from that point, and a third is used at the frame rail in the front.

4.22 **Make sure the upper cooler hose is level with the frame rail behind the radiator.** The upper hose goes through the plastic loop hold down on top of the horizontal (front) frame rail next to the ABS Module.

**Figure 10**




4.23 Tighten all of the line fittings (engine, radiator cooler tank and auxiliary cooler) to 42 lb ft (57 Nm).

4.24 Drain the remaining engine oil through a filter and ensure that all contamination/debris has been removed from the crankcase.

4.25 Install a new oil filter if an oil change interval is being recorded.

4.26 Refill with Appropriate fluids, run the vehicle and check for leaks.

4.27 On completion of the installation, the connection of the installed hoses to the radiator and auxiliary cooler, using the supplied fittings, will look like figures 11 and 12.

**Figure 11**

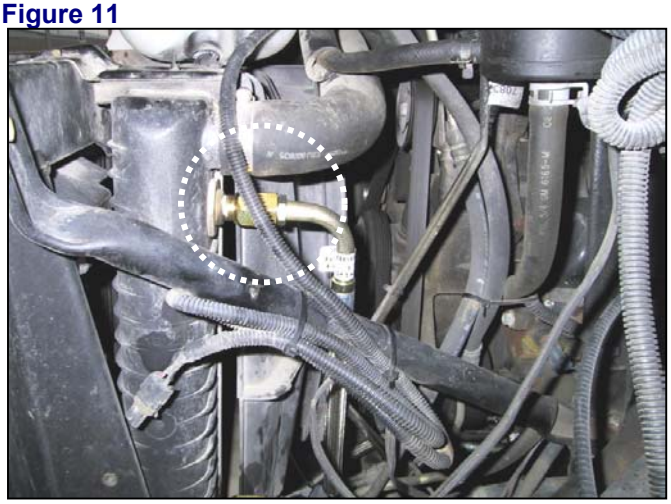
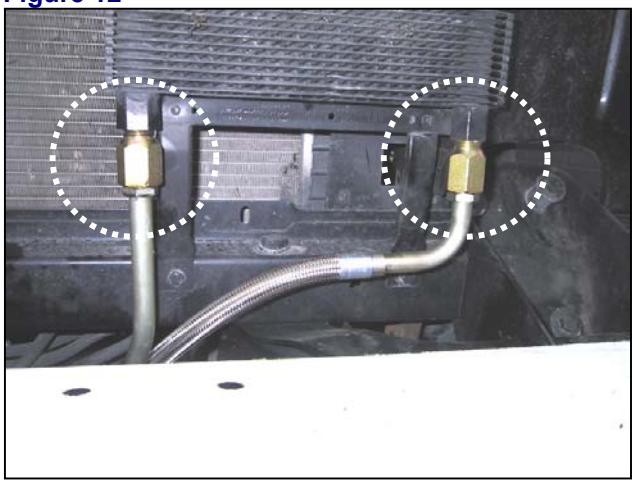


**Figure 12**



**END OF INSTRUCTION**