

INSTALLATION GUIDE

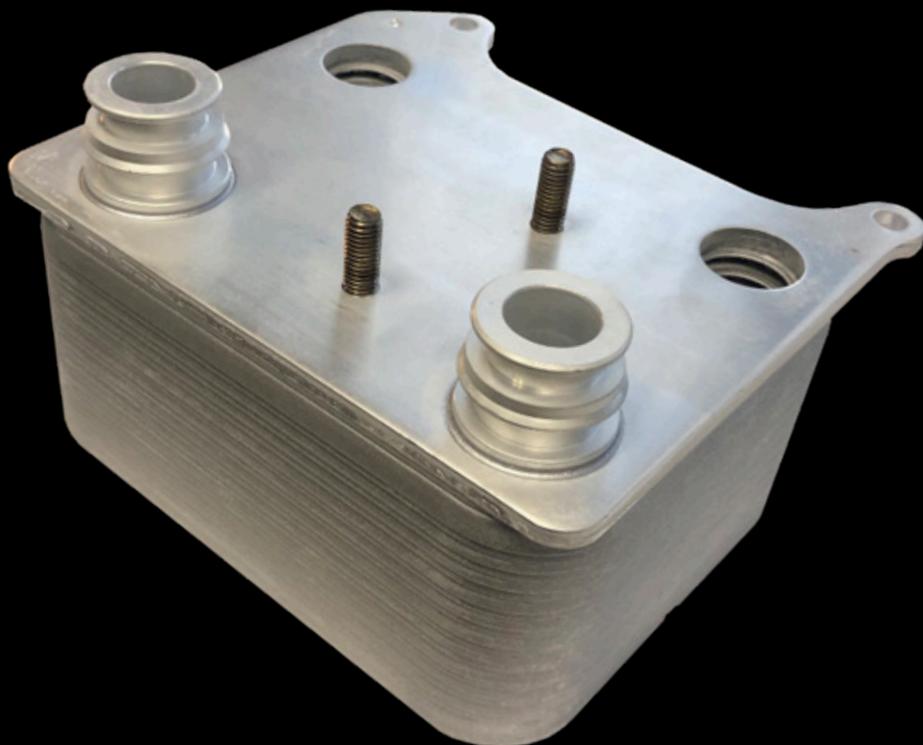


**SINISTER  
DIESEL**

# Oil Cooler

2003-2007 Ford 6.0L Powerstroke

(Install Time: 4 hours)

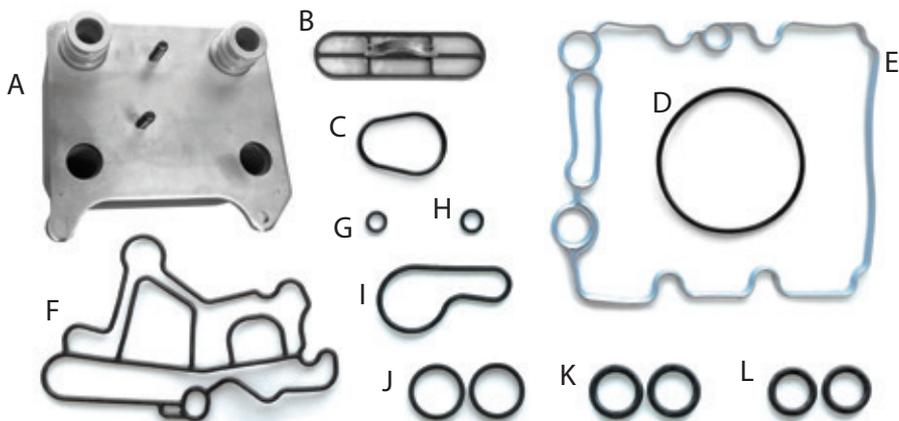




# DISCLAIMER

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- 1) By installing this product onto your vehicle, you assume all risk and liability associated with its use.
  
  - 2) It is your responsibility to make sure your vehicle complies with all federal, state, and local emissions laws. Federal and many state and local laws prohibit the removal, modification or rendering inoperative of any part of the design affecting emissions or safety on motor vehicles used on a public street or highway. Violation may result in a fine of up to \$32,500 per vehicle (or possibly higher depending on changes in the law). All civil penalties and fines for removing your vehicle's emissions equipment are the sole responsibility of the end user.
  
  - 3) Due to its high performance nature, this product may void vehicle manufacturer's warranty.
  
  - 4) Sinister Mfg Company, Inc. is not responsible for misuse of its products. By installing this product, you release Sinister Mfg Company, Inc. of any and all liability associated with its use.
  
  - 5) Depending on where you live, restrictions may apply. Check all applicable laws before installing or using!
  
  - 6) The purchaser and end user releases, indemnifies, discharges and holds harmless Sinister Mfg Company, Inc. from any and all claims, damages, causes of action, injuries, or expenses resulting from or relating to the use or installation of this product that is in violation of the terms and conditions on this page, the product disclaimer, and/or the product installation instructions. Sinister Mfg Company, Inc. will not be liable for any direct, indirect, consequential, punitive, statutory, or incidental damages or fines caused by the use or installation of this product.
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PART:	DESCRIPTION:	QTY:
<b>A</b>	Oil Cooler	<b>1</b>
<b>B</b>	Pump inlet strainer	<b>1</b>
<b>C</b>	EGR coolant supply cover seal	<b>1</b>
<b>D</b>	O-ring seal (Size 241)	<b>1</b>
<b>E</b>	Reservoir cover gasket	<b>1</b>
<b>F</b>	Oil filter mount gasket	<b>1</b>
<b>G</b>	O-ring (threaded insert)	<b>1</b>
<b>H</b>	O-ring (Size 112)	<b>1</b>
<b>I</b>	Coolant inlet gasket	<b>1</b>
<b>J</b>	O-ring (Size 218)	<b>2</b>
<b>K</b>	O-ring (Large)	<b>2</b>
<b>L</b>	O-ring (Small)	<b>2</b>

***If you have any issues regarding this product, or if it arrives with missing parts please contact Sinister Diesel directly at (888) 966-6543. Thank you.***

IMPORTANT: READ ALL INSTRUCTIONS PRIOR TO INSTALL. Prior to installation, please compare the parts that you have received with the bill of materials provided on this page to assure that you have all the parts necessary for the installation.



**CAUTION!!!** Never work on a hot vehicle. Serious injury in the form of burns can result if the vehicle has been in use. Allow vehicle to cool prior to installation. Always wear eye protection when working on or under any vehicle.

**IMPORTANT:** For your safety, we recommend disconnecting any negative battery terminals whenever working on any vehicle. Use caution not to get any dust, debris, or leave tools where they may enter the system.

## REMOVAL

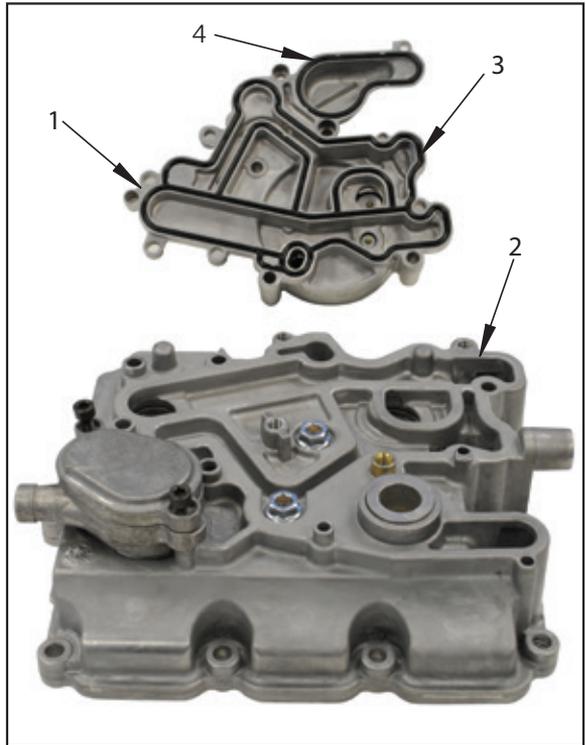
- 1** Disconnect negative terminals on both batteries.
- 2** For removal of the oil cooler assembly refer to vehicle specific Engine Service Manual.
- 3** Remove the oil pump inlet strainer. (Image 1)



**Image 1** Oil Pump inlet strainer

**4** Remove the eight bolts that secure the oil filter mounting assembly to the oil cooler cover. (Save the eight bolts for reuse during installation.) (Image 2)

**5** Separate the oil filter mounting assembly from the oil cooler cover. The gaskets can be removed and discarded. (Image 2)



**Image 2** Oil cooler cover and oil filter mounting assembly

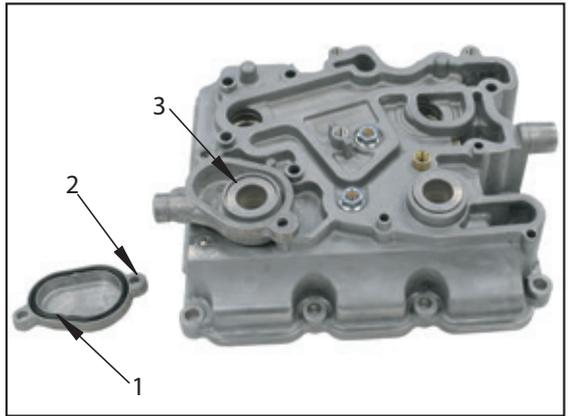
1. Oil filter mounting assembly
2. Oil cooler cover
3. Oil filter mount gasket
4. Coolant inlet gasket

**6** Remove the two bolts that secure the EGR coolant supply cover to the oil cooler. (Save the two bolts for reuse during installation.) (Image 3)

**7** Remove and discard EGR coolant supply cover seal. (Image 3)

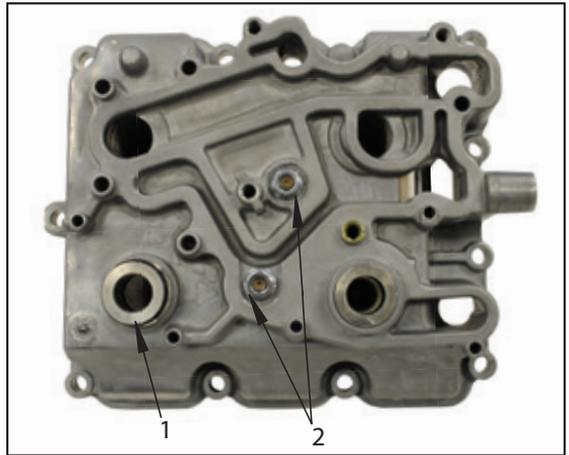
**8** If necessary drain any remaining oil from the oil cooler assembly.

**9** Remove the two flange nuts, that are on the top side of the oil cooler cover. (Save the flange nuts for reuse during installation.) (Image 4)



**Image 3** *EGR coolant supply cover*

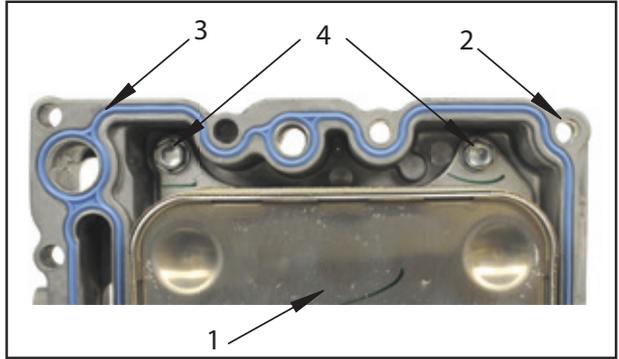
1. EGR coolant supply cover seal
2. EGR coolant supply cover
3. EGR coolant supply port



**Image 4** *Oil cooler cover (Top View)*

1. EGR coolant supply port
2. Oil cooler cover flange nuts

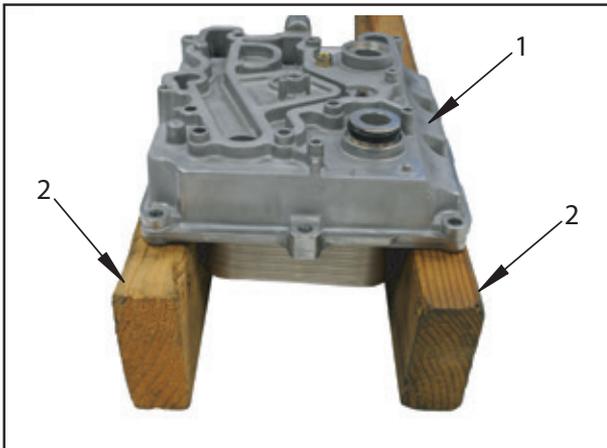
**10** Remove the (2) mounting bolts (M8 x 20) on the under side of the oil cooler cover. (Save the two bolts for reuse during installation.) (Image 5)



**Image 5** Oil cooler mounting bolts

1. Oil cooler
2. Oil cooler cover
3. Reservoir cover gasket
4. M8 x 20 mounting bolts

**11** Allowing the oil cooler to hang down, place the oil cooler assembly on two (2" x 4") wood blocks. (Image 6)

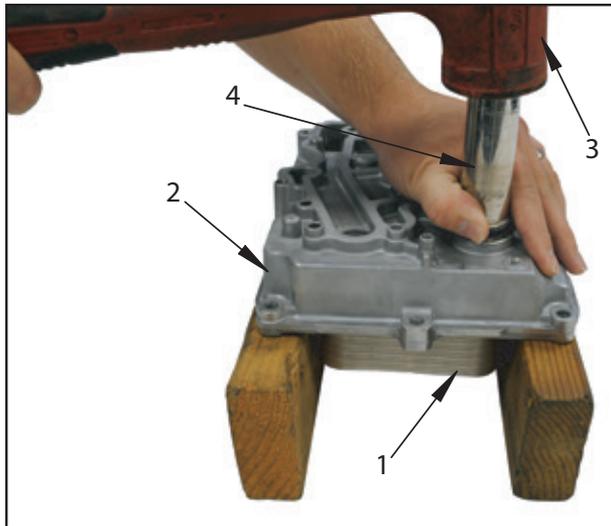


**Image 6** Oil cooler assembly on wood blocks

1. Oil cooler assembly
2. 2" x 4" wood blocks

**12** Using a socket, or driver, and hammer; alternate tapping on the inlet and outlet ports until the oil cooler separates from the cover. (Image 7)

**Note:** Separating the oil cooler from the cover may be difficult. Use caution to not damage the oil cooler cover as it will be reused during installation.



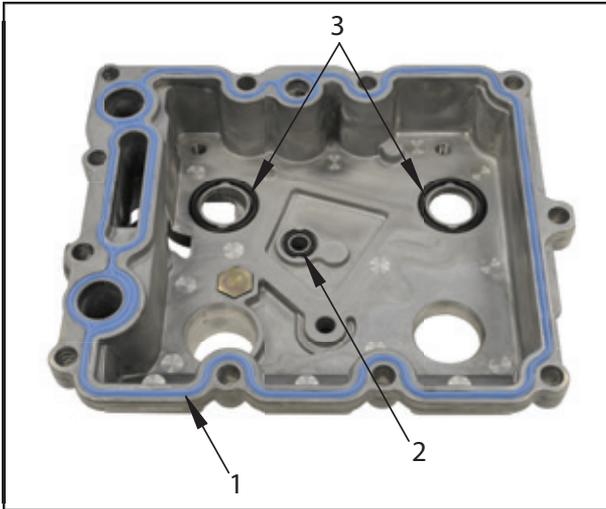
**Image 7** Separating oil cooler from cover

1. Oil cooler
2. Oil cooler cover
3. Hammer
4. Socket

**13** The oil cooler and the four O-rings can be discarded.

**14** Remove the reservoir cover gasket and the three O-rings on the under side of the oil cooler cover. (Image 8)

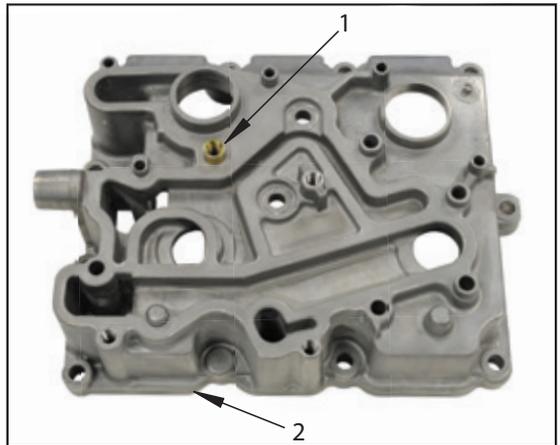
**Note:** Oil cooler covers will have either a threaded insert or a cast boss. It is necessary that the O-ring be replaced on the covers with the threaded insert.



**Image 8** Under side of oil cooler cover

1. Reservoir cover gasket
2. O-ring (Size 112)
3. (2) O-ring (Size 218)

**15** For the oil cooler covers that have the threaded insert, remove the insert by pushing on the insert from the top side of the cover. Remove and discard the O-ring, but keep the threaded insert for reuse during installation. (Image 9)



**Image 9** Threaded insert removal

1. Threaded insert
2. Oil cooler cover

## INSPECTION

**1** Inspect the oil filter mount assembly for any damage and ensure the mounting surfaces are clean. (Image 10)



**Image 10** Oil filter mount assembly

**2** Inspect the EGR coolant supply cover for any damage and ensure the mounting surfaces are clean. (Image 11)



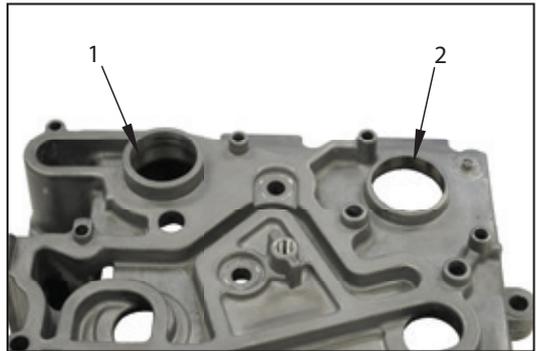
**Image 11** EGR coolant supply cover

**3** Inspect the oil cooler cover for any damage and ensure the mounting surfaces and all threads are clean. Inspect the seal bores on the inlet and outlet ports for any damage that may have occurred during oil cooler removal. Ensure the oil cooler cover is clean and clear of any debris prior to installation. (Image 12)

Note: If damage is found to any of the parts during inspection, replace the corresponding part.

**WARNING:** When using compressed air use the proper safety equipment and proceed with caution; improper use can result in serious injury or death.

**4** Use compressed air to ensure both the drain hole on the top side of the oil cooler cover (Image 13) and the small vent hole on the under side of the oil cooler cover (Image 14) are clear of any debris.



**Image 12** Inspection of oil cooler cover

1. Inlet port
2. Outlet port



**Image 13** Oil cooler cover drain hole

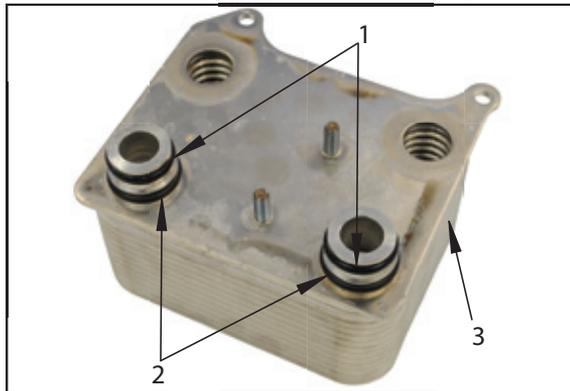
**Image 14** Oil cooler cover vent hole



# INSTALLATION

- 1 Using the new engine coolant, lubricate the four new oil cooler O-rings.

Note: It may be helpful to apply a small amount of assembly lubricant to the remaining O-rings. This will help keep the O-rings in place during assembly.

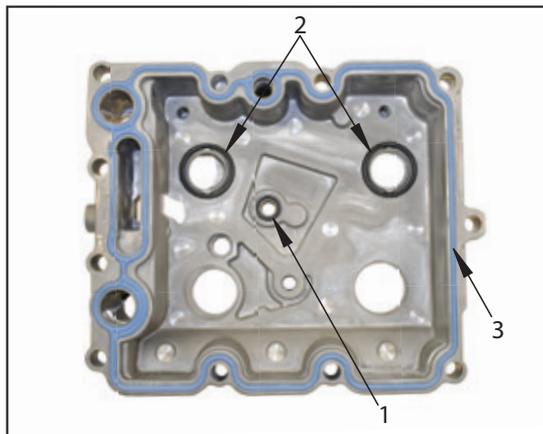


**Image 15** Installations of o-rings on oil cooler

1. (2) Smaller O-ring
2. (2) Larger O-ring
3. Oil Cooler

- 2 Install the new O-rings on the inlet and outlet ports of the new oil cooler. The (2) larger O-rings will be installed on the lower O-ring grooves and the (2) smaller O-rings will be installed on the upper O-ring grooves. (Image 15)

- 3 On the underside of the oil cooler cover, install the new size 112 O-ring and the (2) new size 218 O-rings. (Image 16)



**Image 16** Installation of O-rings on underside of oil cooler cover

1. O-ring (Size 112)
2. (2) O-ring (Size 218)
3. Oil cooler cover

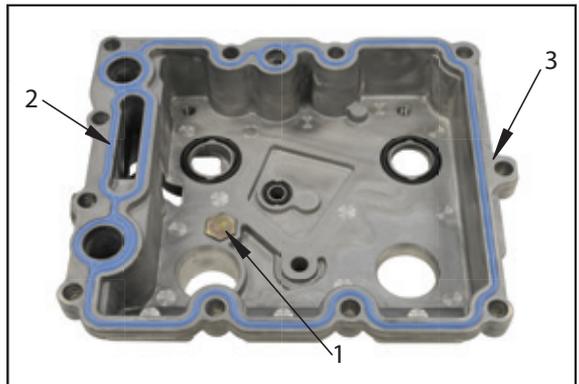
**4** For the oil cooler covers that are equipped with a threaded insert, install the new O-ring onto the threaded insert. (Image 17)



**Image 17** Threaded insert

1. Threaded insert
2. O-ring

**5** Install the threaded insert into the oil cooler cover, by pushing the insert through the underside of the cover. Ensure that the threaded insert is properly seated and stays in place when the oil cooler cover and oil cooler are assembled. (Image 18)



**Image 18** Installation of threaded insert and Reservoir gasket

1. Threaded insert
2. Reservoir cover gasket
3. Oil cooler cover

**Note:** Prior to assembling the oil cooler cover and oil cooler, make sure the threaded insert is properly seated.

**6** Install the reservoir cover gasket into the gasket groove on the underside of the oil cooler cover. (Image 18)

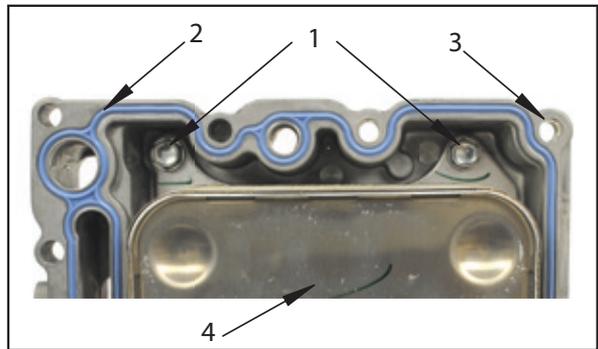
**7** With oil cooler ports facing up, place the new oil cooler on a clean flat surface. With the oil cooler cover and the oil cooler aligned position the cover onto the cooler. On the two corners near the inlet and outlet ports, press down on the cover until the O-rings are properly seated in the cover. (Image 19)

**8** Install and hand tighten the two mounting bolts (M8 x 20) on the bottom side of the oil cooler cover. (Image 20)

**9** Install and hand tighten the two flange nuts on the top side of the oil cooler cover. (Image 21)



**Image 19** Assembling the oil cooler cover and oil cooler



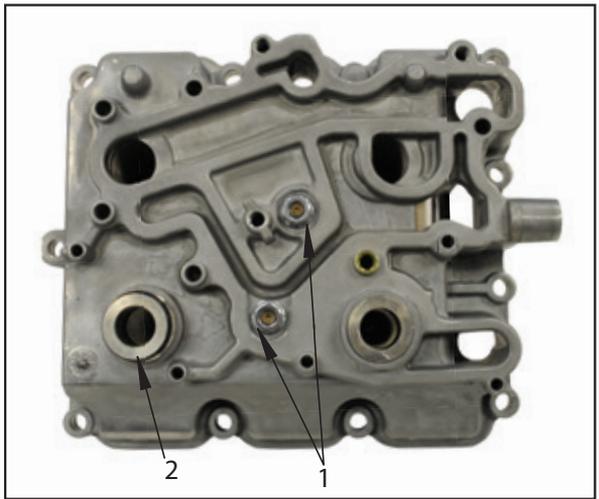
**Image 20** Mounting bolts for the oil cooler

1. (2) Mounting bolts - M8 x 20
2. Reservoir cover gasket
3. Oil cooler cover
4. Oil cooler

**10** Tighten two mounting bolts (M8 x 20) and the two flange nuts to 22 N·m (16 lb·ft).

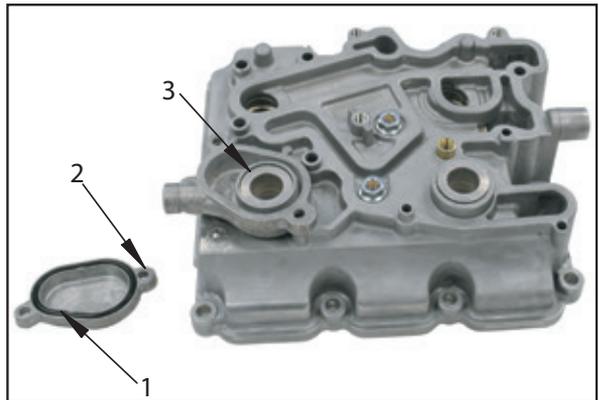
**11** Install a new seal into the groove on the EGR coolant supply cover. (Image 22)

**12** With the oil cooler assembly on a clean flat surface, position the EGR coolant supply cover on the oil cooler cover. The EGR coolant supply cover will be secured by two M6 bolts, tightened to 10 N·m (85 lb·in).



**Image 21** Top side of oil cooler cover assembly

1. (2) Oil cooler cover flange nuts
2. EGR coolant supply port



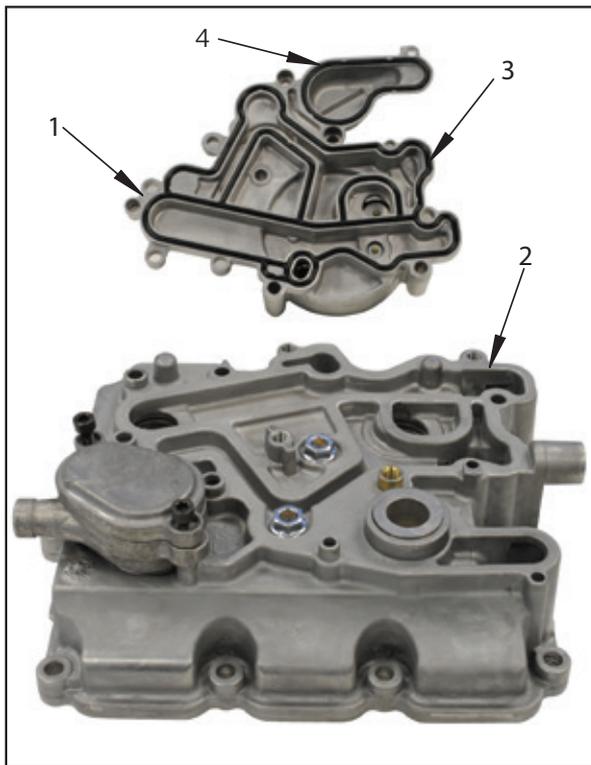
**Image 22** EGR coolant supply cover

1. EGR coolant supply cover seal
2. EGR coolant supply cover

**13** Install a new gasket into the groove on the oil filter mounting assembly and the coolant inlet gasket. (Image 23)

**14** Using the eight bolts removed in step three, secure the oil filter mounting assembly to the oil cooler cover. The M6 bolts should be tightened to 10 N·m (85 lb-in) and M8 to 22 N·m (17 lb-ft). See vehicle specific Engine Service Manual for special torque values.

**15** Using the procedure outlined in the vehicle specific Engine Service Manual, install the oil filter return tube gasket and oil filter return tube.



**Image 23** Oil cooler cover and oil filter mounting assembly

1. Oil filter mounting assembly
2. Oil cooler cover
3. Oil filter mount gasket
4. Coolant inlet gasket

**16** Install new inlet strainer in the oil reservoir. (Image 24)

**17** Using the procedure outlined in the vehicle specific Engine Service Manual, install the oil cooler assembly.



**Image 24** Oil Pump inlet strainer





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