



INSTRUCTIONS

-J03010

REV. 07-15-2004

Kit Numbers 62985-04 (Chrome) and 62989-04 (Silver)

DYNA OIL COOLER AND THERMOSTAT KIT

General

These oil cooler kits feature a thermostat built-in to the oil filter mount.

These kits are designed for installation on all 1999 and later FXD/L/X/XT/WG/S-Conv. model motorcycles.

See the Service Parts listings on the last page of these instructions for kit contents.

⚠ WARNING

The rider's safety depends upon the correct installation of this kit. Use the appropriate Service Manual procedures. If the procedure is not within your capabilities or you do not have the correct tools, have a Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury. (00333a)

NOTE

A Service Manual for your model motorcycle is available from any Harley-Davidson dealer.

⚠ WARNING

Immediately after installing oil cooler, check to be sure there is adequate clearance between oil cooler and hoses and front fender when front suspension is fully compressed. If oil cooler or oil cooler hoses should contact front fender during motorcycle operation, rider could lose control which could result in death or serious injury.

CAUTION

Installing oil cooler system will require adding one-half to one pint of oil. Check oil supply before operating motorcycle. Fill up to, but not above, upper mark on dipstick. Inadequate oil supply can result in loss of oil pressure leading to severe engine damage.

CAUTION

Take care that the hoses do not become crimped during installation. A crimped hose will restrict oil flow, which can result in engine damage.

Installation

1. Run the motorcycle until the engine is at normal operating temperature.

⚠ WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect battery cables (negative (-) cable first) before proceeding. (00307a)

⚠ WARNING

Disconnect negative (-) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00049a)

2. Refer to the Service Manual and follow the instructions given to remove the seat and disconnect the battery cables, negative cable first.

Remove the Engine Oil and Filter

3. Locate the oil filler plug/dipstick on the right side of the vehicle at the top of the transmission case. To remove the oil filler plug, pull steadily while moving back and forth.
4. Locate the oil drain plug at the front left side of the oil pan. Place a suitable container under the drain plug. Remove the oil drain plug and allow the oil to drain completely.
Inspect the drain plug "O"-ring for cuts, tears or signs of deterioration, and replace if necessary.
5. Position a suitable container under the oil filter.
6. Bend a cardboard funnel and fit to the motorcycle to route the draining oil away from the voltage regulator and lower frame carriage into the container.
7. Remove the oil filter. Place the jaws of an OIL FILTER WRENCH (HD-42311) over the oil filter with the jaws oriented vertically. Using a 3/8 inch drive with a 4 inch extension, turn the wrench counterclockwise. Do not use an air tool.

NOTE

Dispose of engine oil according to local regulations.

For 2004 and later models: See Figure 1. Disconnect the crank position sensor connector [79], and remove and discard the "T"-stud clip from the connector.

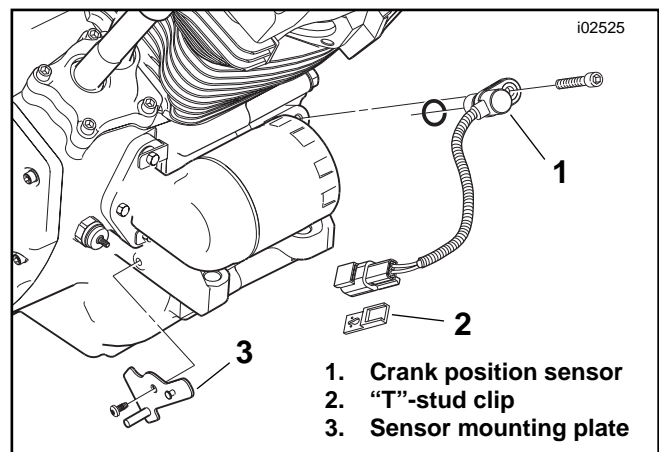


Figure 1. Crank Position Sensor Connector and Clip

Remove the Existing Engine Oil Filter Mount

8. See Figure 2. Bend the corners of the oil filter lockplate (3) away from the heads of the top and bottom oil filter mount attaching screws (4). Remove and discard the top and bottom screws, lockplate and flat washers (2).
9. Remove the middle screw (6) and flat washer to free the oil filter mount from the crankcase. Discard the hardware and the oil filter mount.
10. Thoroughly clean the crankcase mounting surface of oil and debris.

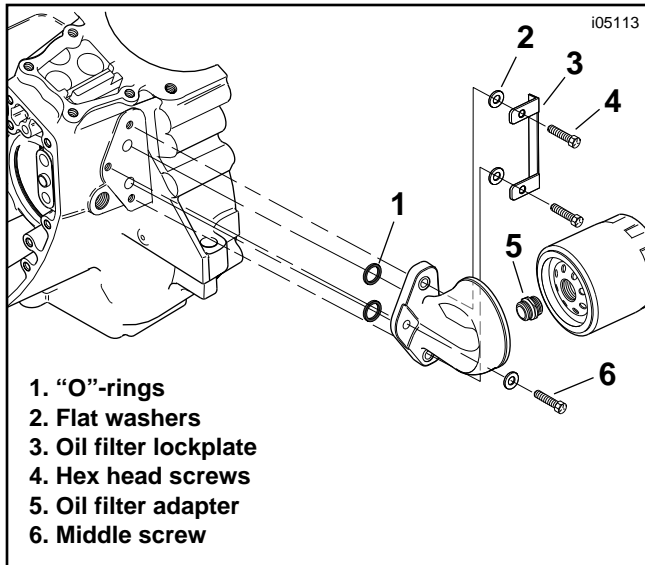


Figure 2. Remove the Existing Oil Filter Mount

Install the New Engine Oil Filter Mount

11. Refer to the Service Parts list. Obtain the new oil filter mount (Item 1) and oil filter adapter (Item 15) from the kit.

NOTE

The new oil filter mount appears slightly different from that shown in Figure 2, but the mounting components are identical.

12. Refer to Figure 2 and the Service Parts list. Apply LOCTITE® 243 (blue, Part Number HD-99642-97, not included in the kit) to the threads of the oil filter adapter. Install the adapter to the oil filter mount and tighten to 12-16 ft-lbs (16-22 Nm).

NOTE

The bottom screw cannot be assembled through the oil filter mount flange hole once the return fitting is installed.

13. Place a small flat washer (Item 15) from the kit into the recessed top and bottom mounting holes of the oil filter mount flange.
14. Align the holes in the lockplate (Item 17) from the kit with the holes in the flat washers.
15. Obtain two 1/4-20 x 1 inch (25.4 mm) long hex head screws (Item 16) from the kit. Slide the screws through the lockplate, flat washers, and the top and bottom holes of the oil filter mount flange.

CAUTION

To avoid cross threading the tapped holes, use care when starting the screws in the crankcase.

16. Making sure the "O"-rings on the oil filter mount remain in place, install the top and bottom screws into the top and bottom holes in the crankcase. Tighten the screws only until snug.
17. Obtain the remaining small flat washer (15) and hex screw (16) from the kit. Place the washer over the screw threads, and install in the middle hole of the oil filter mount flange.

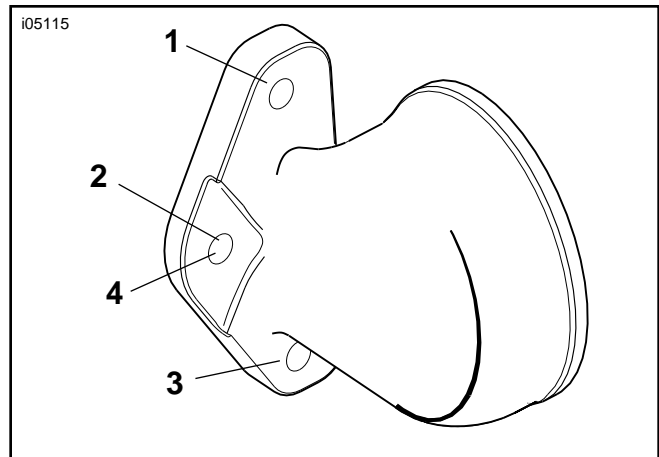


Figure 3. Oil Filter Mount Torque Sequence

18. See Figure 3. Starting at the top, alternately tighten the screws to 130-150 in-lbs (15-17 Nm).
19. Bend the ends of the lockplate to capture the top and bottom screw heads.

IMPORTANT

See Figure 4. When performing Step 20 and when installing hoses at all clamp locations, note the following: with hose (2) pushed to the bottom of the fitting (1), the clamp (3) must be positioned and tightened onto the hose as shown.

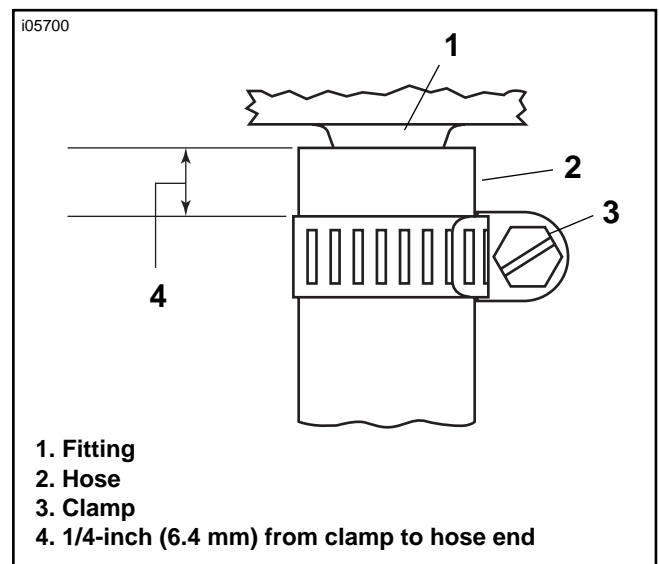


Figure 4. Installing Hoses and Clamps

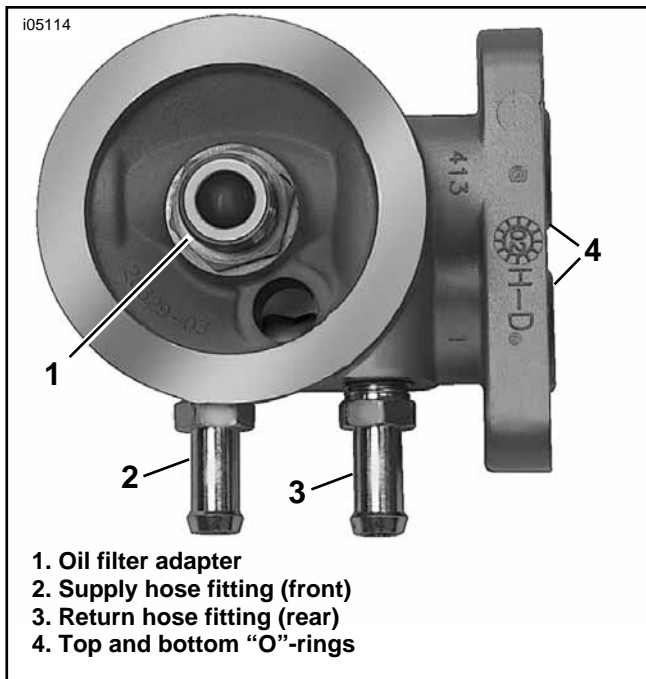


Figure 5. Install Hose Fittings to Oil Filter Mount

20. See Figure 5 and the Service Parts list. With the hardware from Step 15 in place, obtain a hose fitting (Item 13) from the kit. Install the fitting to the rear (return) hole in the oil filter mount.

NOTE

Dip the end of the hoses into a 50/50 solution of water and isopropyl alcohol to allow easier installation.

The hoses can be installed incorrectly, resulting in hose to radiator fitting mis-alignment. See Figure 5 for the proper oil hose positioning.

21. See Figure 6 and the Service Parts list. Obtain the longer return hose (Item 7) and a hose clamp (Item 2) from the kit. Install the return hose to the fitting installed in Step 20, and tighten the clamp to 6-7 **in-lbs** (0.7-0.8 Nm).

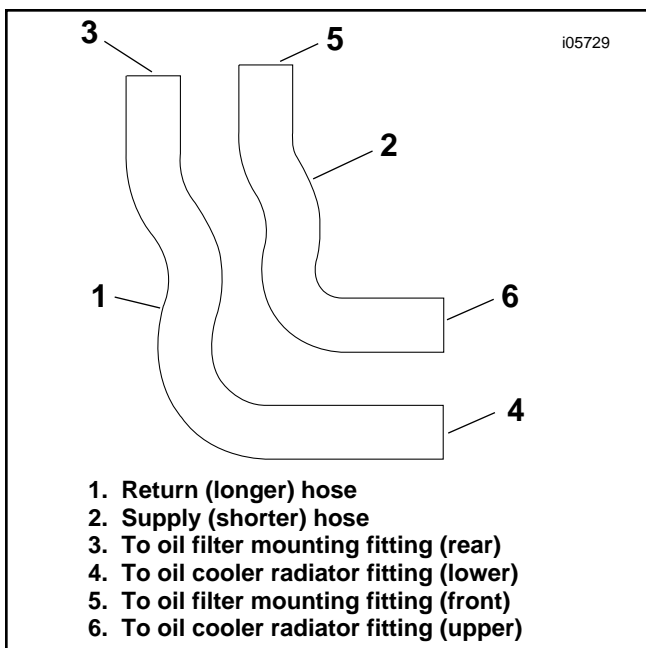


Figure 6. Proper Oil Hose Positioning

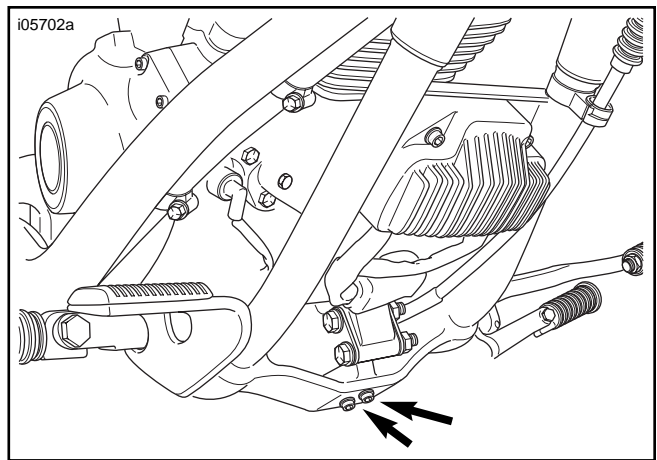


Figure 7. Remove Engine Isolator Bolts

- 22. Refer to the Service Parts list. Obtain the second hose fitting (Item 13) from the kit. Install the fitting to the front (supply) hole in the oil filter mount.
- 23. Obtain the shorter supply hose (Item 8) and a hose clamp (Item 2) from the kit. Install the supply hose to the fitting installed in Step 22, and tighten the clamp to 6-7 **in-lbs** (0.7-0.8 Nm).

Install the Oil Cooler Mounting Bracket

- 24. Support the engine with a jack.
- 25. See Figure 7. Remove and discard the two bolts, lock-washers and flat washers from the front engine isolator.
- 26. **For 2003 and earlier models:** Proceed to Step 29.
For 2004 and later models: See Figures 8 and 9. Loosen the nut (2) on the voltage regulator connector [77] cover (3). Rotate the cover and the regulator harness to a horizontal position. Tighten the nut securely.
- 27. Route the crank sensor harness [79B] coming from the main harness underneath the lower oil cooler hose and inboard of the left-side voltage regulator harness [77A] that connects to the main harness.

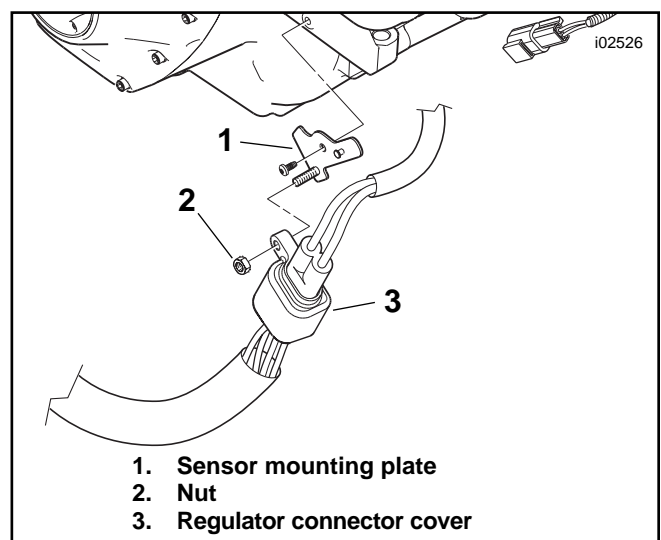
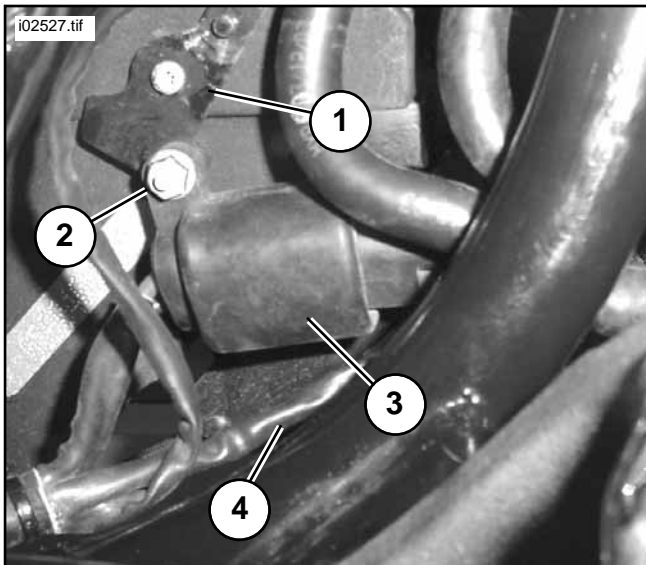


Figure 8. Voltage Regulator to Main Harness Connector



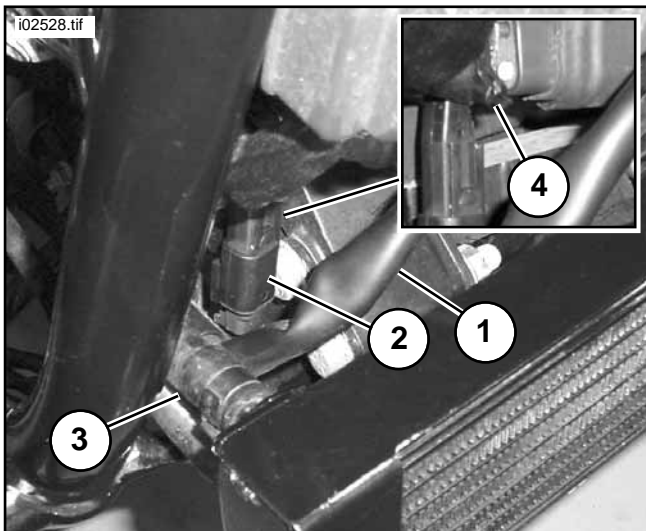
1. Sensor mounting plate
2. Nut
3. Regulator harness
4. Crank sensor harness

Figure 9. Rotate Regulator Harness to Horizontal

28. Join the two halves [79A & 79B] of the crank sensor connector. See Figure 10. Use a cable strap (14) from the kit to tie the crank sensor harness to the right-side voltage regulator harness [46A] that connects to the alternator stator.

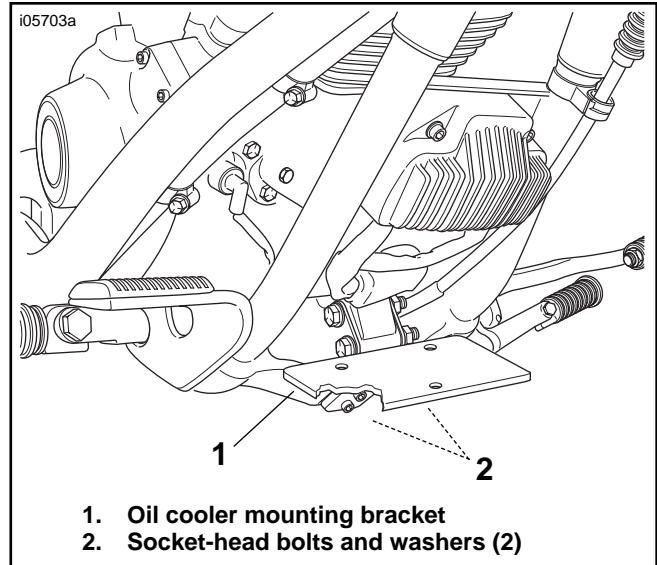
CAUTION

Secure all wires and connectors to prevent contact with oil cooler hoses. Rubbing of components during vehicle operation could cause damage to hose walls or wire insulation, which can result in engine damage.



1. Regulator harness
2. Crank sensor connector
3. Oil cooler supply hose (upper fitting)
4. Cable strap

Figure 10. Voltage Regulator Harness Routing



1. Oil cooler mounting bracket
2. Socket-head bolts and washers (2)

Figure 11. Install Oil Cooler Mounting Bracket

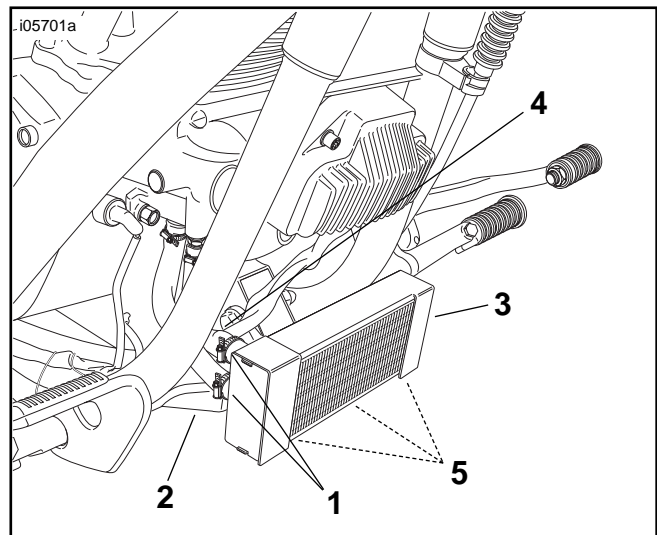
29. See Figure 11. Install the oil cooler mounting bracket (1) using two 3/8-16 x 1-1/2 in. long socket-head bolts (2), lockwashers and flat washers supplied in the kit. Tighten the bolts to 21-27 ft-lbs (28-37 Nm).

Install the Oil Cooler Radiator

NOTE

Dip the end of the hoses into a 50/50 solution of water and isopropyl alcohol to allow easier installation.

30. See Figure 12. Obtain a hose clamp (1) from the kit. Locate the oil return (longer) hose (2), and slide the clamp over the end of the hose. Connect the oil return hose to the **lower** oil cooler fitting on the radiator (3). Slide the clamp over the fitting and tighten the clamp to 6-7 in-lbs (0.7-0.8 Nm).



1. Hose clamp (2)
2. Oil return hose
3. Oil cooler radiator
4. Oil supply hose
5. Flat washers and locknuts (3)

Figure 12. Oil Cooler Installed

31. Obtain another hose clamp from the kit. Locate the oil supply (shorter) hose (4), and slide the clamp over the end of the hose. Connect the oil supply hose to the **upper** oil cooler fitting on the radiator (3). Slide the clamp over the fitting and tighten the clamp to 6-7 **in-lbs** (0.7-0.8 Nm).
32. Install the oil cooler radiator (3) on the mounting bracket using three large flat washers and lock nuts (5) supplied in the kit. Tighten the lock nuts to 80-110 **in-lbs** (9-12 Nm).

CAUTION

Installing oil cooler system will require adding one-half to one pint of oil. Check oil supply before operating motorcycle. Fill up to, but not above, upper mark on dipstick. Inadequate oil supply can result in loss of oil pressure leading to severe engine damage.

33. Refer to CHANGING ENGINE OIL AND FILTER in the Service Manual. Install a new oil filter and add the proper amount of oil.

WARNING

Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)

34. Connect the battery cables, positive cable first.
35. Refer to the Service Manual, and follow instructions to install the seat.

WARNING

After installing seat, pull upward on front of seat to be sure it is in locked position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070a)

36. Start the engine. Examine all oil line connections for leaks. If there is no leakage, allow the engine to warm up.
 - Verify that the temperature of the heat exchanger increases as the engine reaches normal operating temperatures.
 - If the heat exchanger remains cool after the engine has warmed up, there may be an oil obstruction. Turn off the engine and check the system for the source of the obstruction.
37. After the engine has cooled, re-tighten all worm drive hose clamps to 6-7 **in-lbs** (0.7-0.8 Nm).



Service Parts

Part Numbers 62985-04, 62989-04 | Date 07/04
Dyna Oil Cooler and Thermostat Kit

Kit Number 62985-04 (Chrome)

Item	Description (Quantity)	Part No.
1	Oil filter mount (chrome)	Not sold separately

Kit Number 62989-04 (Silver)

Item	Description (Quantity)	Part No.
1	Oil filter mount (silver)	Not sold separately

Parts Common to Both Kits:

Item	Description & Quantity	Part No.
2	Clamp, hose, worm drive, #4 (4)	9946
3	Nut, locking, 1/4-20 (3)	7671
4	Lockwasher, split, 3/8 in. (2)	7038
5	Washer, flat, 1/4 I.D., 5/8 O.D. (3)	6703
6	Washer, flat, 3/8 I.D., 13/16 O.D. (2)	6701
7	Hose, bottom	62988-04
8	Hose, top	62987-04
9	Mounting bracket, oil cooler, radiator	62986-04
10	Radiator, oil cooler	62831-03
11	Screw, hex socket cap, 3/8-16 x 1-1/2 in. long (2)	4356
12	Adapter	26352-95A
13	Fitting, straight, with sealant (2)	25259-93A
14	Cable strap (2)	10006

The following items are also available as Lockplate Service Kit 35071-99A:

Item	Description & Quantity	Part No.
15	Washer, flat, 1/4 I.D., 7/16 O.D. (3)	6099
16	Screw, hex socket cap, 1/4-20 x 1 in. long (3)	Not sold separately
17	Lockplate	Not sold separately
18	"O"-ring (2)	11293

