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Cannondale Motorsports Service Bulletin

BULLETIN : SB02-002

MODELS : All 2002 X440s
2002 E440 See list on page 5.
2002 C440 See list on page 5.

ISSUED : 2/27/02

SUBJECT : Coolant pump impeller

CONDITION : On affected units, the threaded coolant pump impeller P/N 403-5001442 can separate from the threads of the intake camshaft. If this happens, coolant flow can be stopped during engine operation resulting in severe engine damage. Impellers exposed to higher coolant temperatures such as those sustained in extreme or aggressive riding conditions can separate more quickly than under normal operating conditions. This impeller was installed with either threads cut into the material or modified with an aluminum threaded insert. Both are affected by this service bulletin and should be removed.

SOLUTION : The coolant pump impeller P/N 403-5001442 of affected units must be removed and replaced with the coolant pump impeller P/N 403-5001442-05. This replacement impeller has greater heat tolerance.

CAUTION

**Following the impeller replacement, be sure to bleed the coolant system (non-self bleeding covers)
Serious engine damage can result if coolant bleeding is overlooked.**

PARTS : This bulletin includes impeller replacement instructions. Dealerships will receive the necessary replacement kits to perform the service. The removed impeller should be discarded to prevent reuse.

If you have any questions about this service bulletin, call toll free 1-800-MOTO-USA.

INSTRUCTIONS

WARNING

Place the motorcycle on a stable work stand so that there is no danger of it falling over during the procedure.

1. Remove the radiator drain bolt at the bottom of the radiator and allow coolant to drain into a suitable container. Check the O-ring on the drain bolt; apply some O-ring lubricant and reinstall the bolt. Tighten the drain bolt securely.

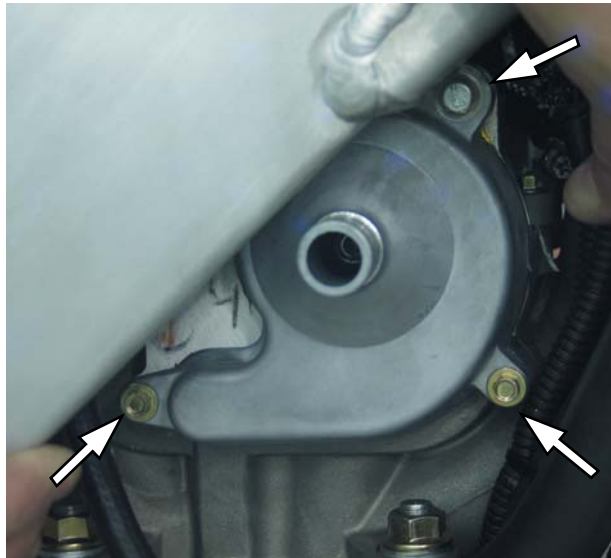
Remove the outlet cover drain bolt and sealing washer, and allow the coolant to drain completely.

Check the condition of the sealing washer and reinstall the sealing washer and drain bolt. Tighten the drain bolt to 3.3 lbf•ft (4.5 N•m).



2. Remove the coolant inlet hose clamps from the radiator inlet and coolant pump cover.

3. There are four bolts securing the coolant pump cover. Remove the three coolant pump cover bolts indicated in the photo first. Be sure to note the sealing washer of the bleed bolt.



4. To access to the fourth bolt, remove the following components:

Left and right number panels
Seat
Main fuse
Fuel tank

Consult the vehicle owner's manual for the correct removal procedures.

5. Remove the engine oil outlet (from scavenge pump) clamp and hose and move the hose out of the way. Disconnect the stator lead from the harness connection and move it out of the way.

Remove the fourth cover bolt. Use a small 6mm box-end wrench.



- Carefully work the cover straight off. Do not use sharp instruments to pry at the cover edges; damage to the mating surfaces will result. When the cover is off, check the condition of the cover seal. If it is damaged, replace it with a new one. Carefully remove any old sealant from the seal. Also, check for the two small hollow locating dowels mounted in the cylinder head. These can come off with the cover and reinsert them into the two lower holes of the cylinder head.



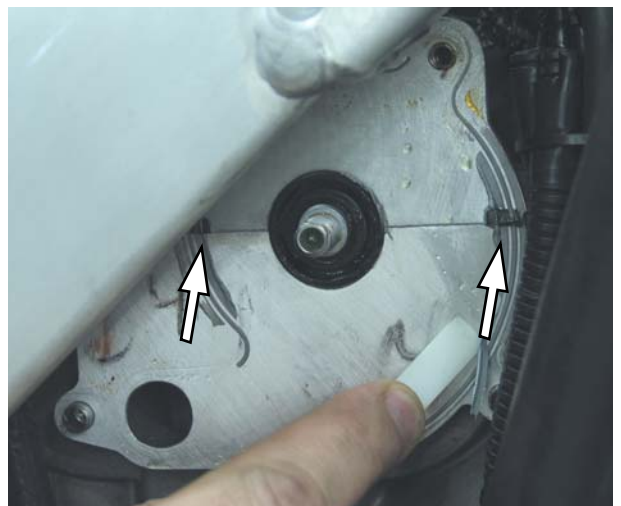
- Turn the impeller clockwise with your hand and remove it. Be sure to note the stainless steel washer behind the impeller. Remove it and save it. It must be reinstalled with the new impeller.



- Carefully remove any old sealant. Do not use metal instruments to scrap off the sealant; damage to the mating surfaces will result. The end of a large plastic zip tie with a fashioned tip (squared off or chiseled end) works well. Inspect the mating surfaces of the camshaft cover and cylinder head for any corrosion or damage. Take corrective action if necessary.

CAUTION

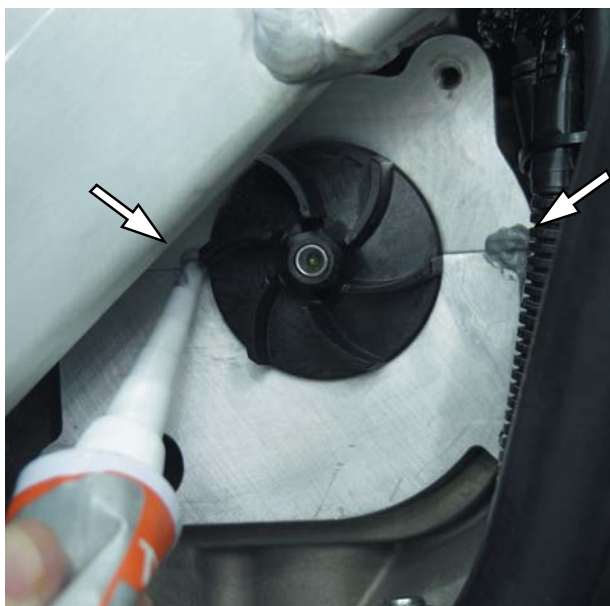
Work very carefully when removing old sealant. Do not damage the two small camshaft cover seal ends.



9. When all the old sealant is removed, wipe the area dry with a clean shop towel.
10. Install the stainless steel washer into the intake camshaft end.



11. To install the new impeller, turn it counter-clockwise with your hand until securely tightened.
12. Apply some silicone sealant (Threebond 1207D) to the two camshaft cover seal ends. Only apply enough to cover the ends.



13. Wipe the cover dry with a clean shop towel, and insert the cover seal into the groove. Apply a thin bead of silicone sealant to the seal.

CAUTION

Do not over apply sealant. Excess sealant, especially in the area of the cover bleed bolt, can obstruct proper coolant bleeding of both the manual and self bleeding covers.



14. Install the cover. Install the cover bolts and tighten evenly to 3.3 lbf•ft (4.5 N•m). Be sure to install the sealing washer on the bleed bolt.
15. For self bleeding covers, install the bleed hose.
16. Install the coolant inlet hose and tighten the clamps securely.
17. Reattach the engine oil outlet hose to the frame fitting; use a small hose clamp and tighten securely. Then, reconnect the stator connector to the harness.
18. Reinstall all removed components.
19. Fill with coolant and bleed the coolant system. Refill as required. Consult the vehicle owner's manual for the correct bleed procedure for the vehicle.
20. Check the entire coolant system for leaks and take corrective action.

MODEL(S) AFFECTED

All 2002 X440s

The following is a list of Vehicle Identification Numbers (VIN) of **E440** and **C440** units affected by this service bulletin:

E440

5B6BC41C02B000004
5B6BC41C02B000018
5B6BC41C02B000021
5B6BC41C02B000035
5B6BC41C02B000049
5B6BC41C02B000052
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5B6BC41C12B000027
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C440

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