

SUBJECT: Elgin Megawind MX Radiator Fan Recall

DATE: 05/20/2010

NUMBER: SB-0086

TO: All Dealer Principals, Service Managers, Parts Managers and Regional Managers

PURPOSE:

The crankshaft mounted cooling fan used on Elgin Megawind (MX) sweepers may fail when operated at high engine RPM.

All MX units must be removed from service and fitted with FSO 1104590 which includes a new belt-driven cooling fan and radiator. This bulletin contains instructions for installing the kit.

Drawing P/N 1104590 is included with the kit parts and must be used for component identification and location during this installation.

Discard the original cooling fan.

UNITS TO SERVICE:

MX3002, MX3006-MX3021, MX3025-MX3026

WARRANTY COVERAGE:

See Attached Warranty Chart

SPECIAL TOOLS:

Overhead hoist, Cut-off wheel or saw suitable for steel and fiberglass, 1-5/8" Crow-foot wrench (optional), Adjustable Torque Wrench

PARTS REQUIRED:

Part No.	Qty.	Description
1104590	1	FSO-MX Cooling Package

PROCEDURE:

Complete the installation of FSO 1104590 using the drawings supplied with the kit. This bulletin describes additional pictorial detail for the installation.

IMPORTANT: Install FSO 1104590 with the impeller belt installed and properly tensioned.

Remove Original Fan, Cooler Assembly and Components

1. Remove existing right side fiberglass door (FIGURE 1) and hinge assembly (FIGURE 2).



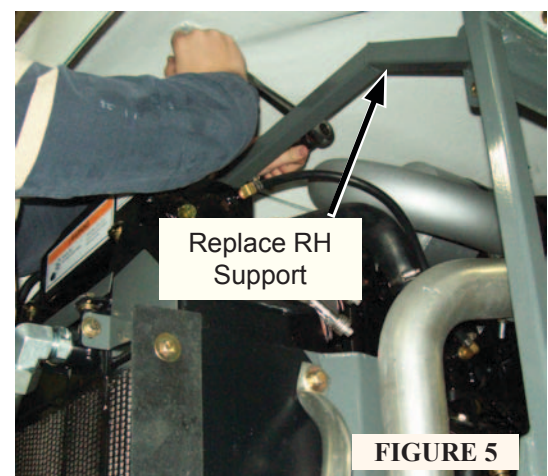
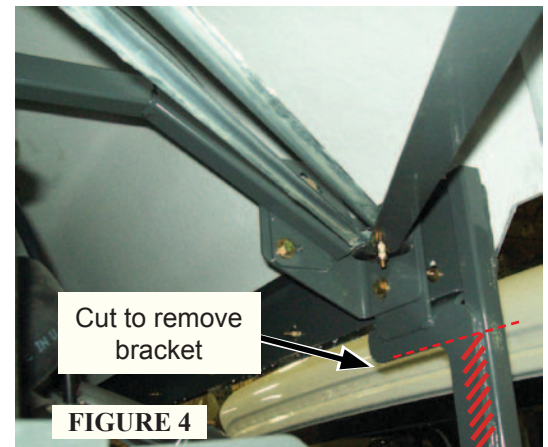
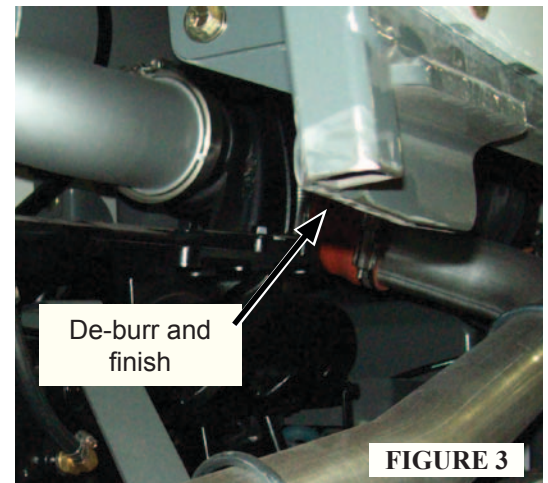
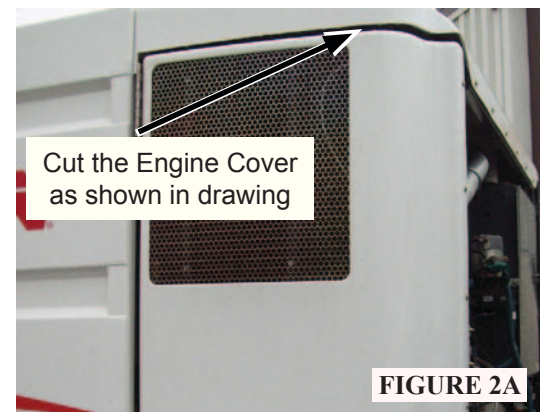
FIGURE 1



FIGURE 2

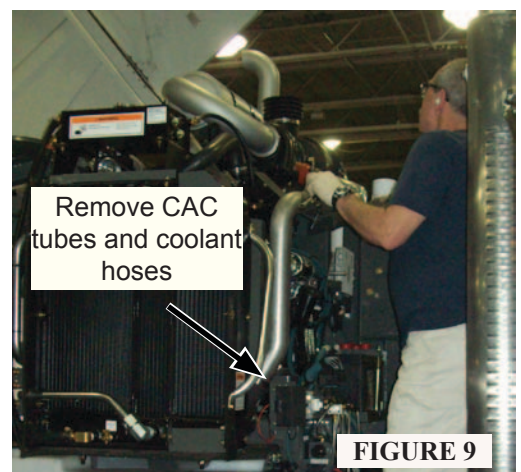
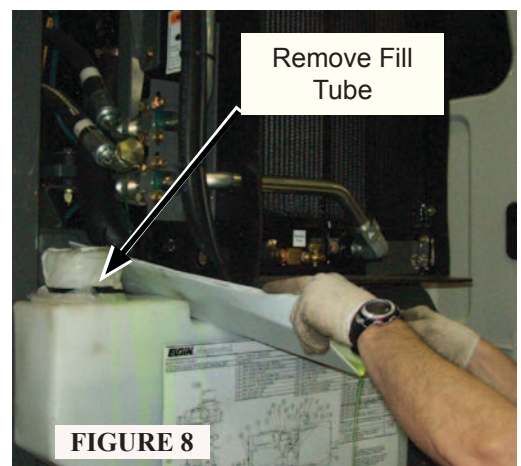
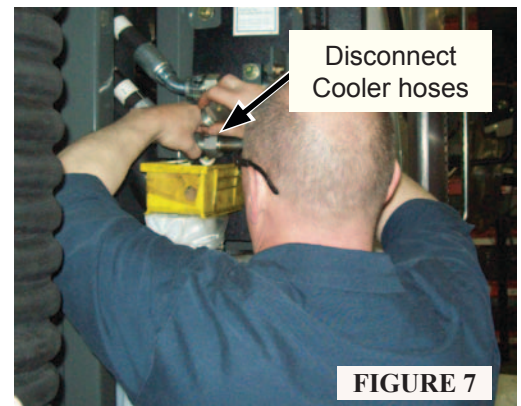
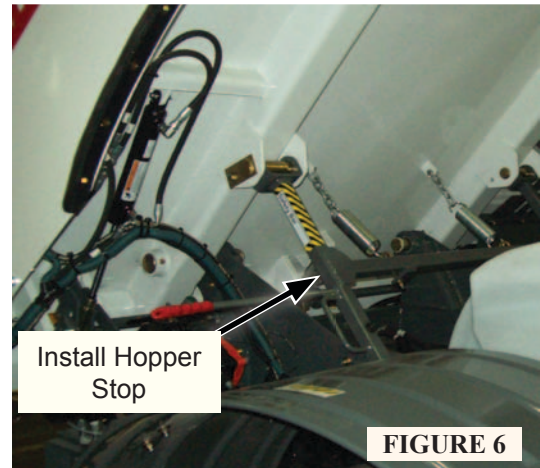
PROCEDURE CONTINUED:

2. Trim the RH end of the engine cover as shown in the assembly drawing supplied with the kit. The new door will be mounted to the cooler frame and the engine cover must be modified to fit. FIGURE 2A (Cut to dimensions shown on the kit drawing.)
3. Remove existing right side support and replace with new support. (FIGURE 4 and FIGURE 5)
4. Use a cut-off wheel or saw to trim the existing RH door latch bracket from the engine cover support. (FIGURE 3 and FIGURE 4)
5. De-burr the trimmed area and re-paint with suitable gray paint to finish.



PROCEDURE CONTINUED:

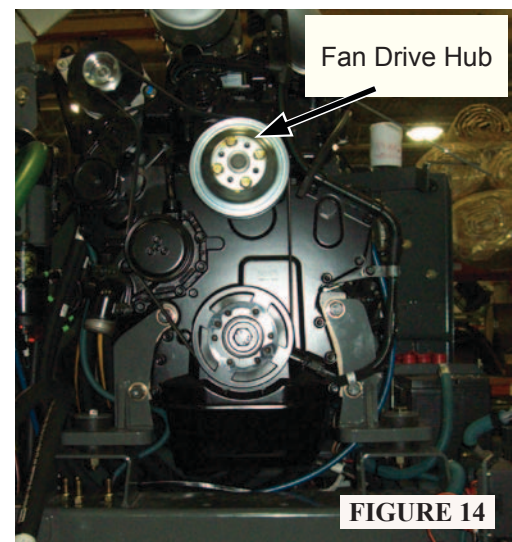
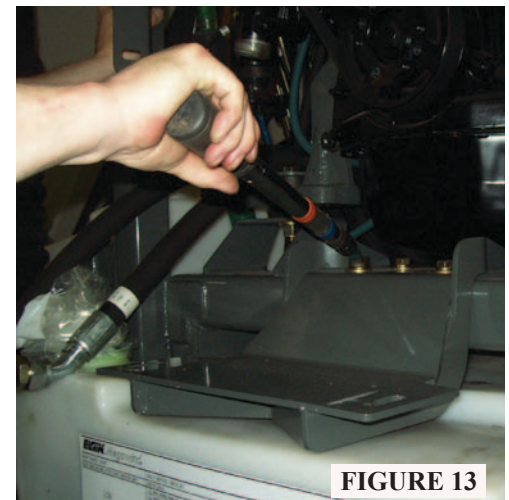
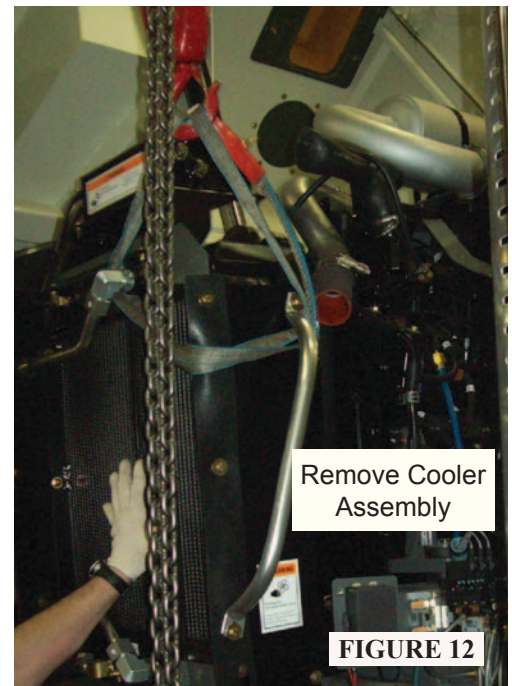
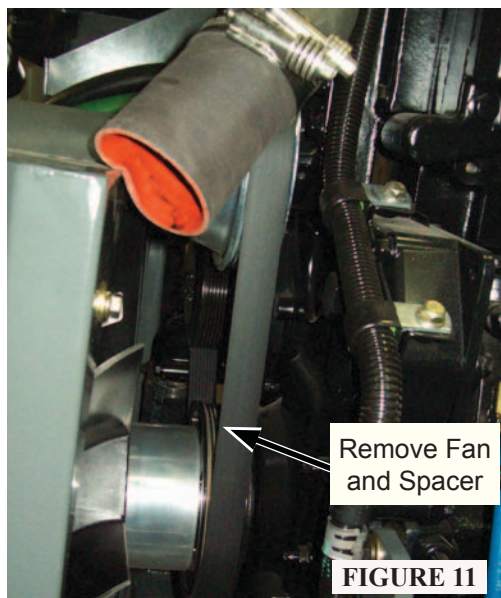
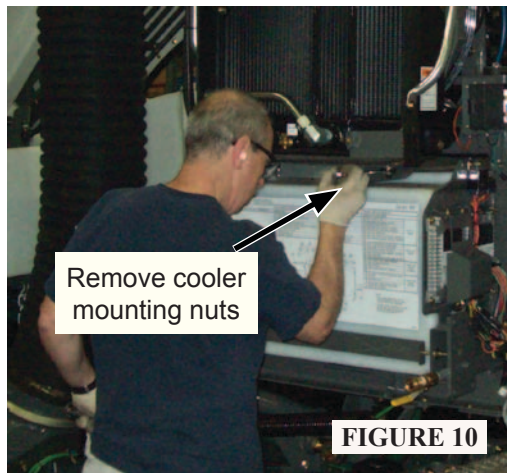
6. Raise hopper for access to work area and install the hopper stop.(FIGURE 6)
7. Disconnect the battery cables from the battery. NOTE: Some photos show the battery in an alternate location. The battery will not be re-located during the installation of the fan kit.
8. Remove the water fill tube from the front tank and cover the tank opening. (FIGURE 8)
9. Disconnect hydraulic hoses from oil cooler and plug with plugs supplied with the kit. Approximately 2 gallons of oil will drain from the oil cooler. Direct the oil draining from the cooler fittings into a container. (FIGURE 7 and 8) Properly dispose of hydraulic oil and other contaminated fluids. Coolant drained from the unit may be re-used if care is taken to prevent contamination. NOTE: Factory fill hydraulic oil contains an additive to assist with leak detection. Replacement oils will not have the color additive. Replacement oils will not have the color additive.
10. Drain coolant and remove radiator hoses. (FIGURE 8)
11. Disconnect Charge-Air-Cooler (CAC) tubes and CAC tube support brackets. (FIGURE 9)



PROCEDURE CONTINUED:

12. Remove fan guard, remove the shroud mounting bolts and loosen the cooler mounting studs. (FIGURE 10)
13. Support the cooler assembly with a suitable hoist and tip the assembly outward slightly for access to the fan. Remove the fan and drive hub from the engine crankshaft and **discard**. (FIGURE 10 and FIGURE 11)
14. Remove radiator/cooler assembly and discard the cooler assembly. It will not be re-used. (FIGURE 12)
15. Remove lower radiator support bracket and side support bracket and rubber baffles. Do not remove fuel filter bracket. (FIGURE 12)
16. Remove and discard outer VMM cover shown in the assembly drawing.

Engine assembly should be configured as shown in FIGURE 14 once all items have been removed.



PROCEDURE CONTINUED:

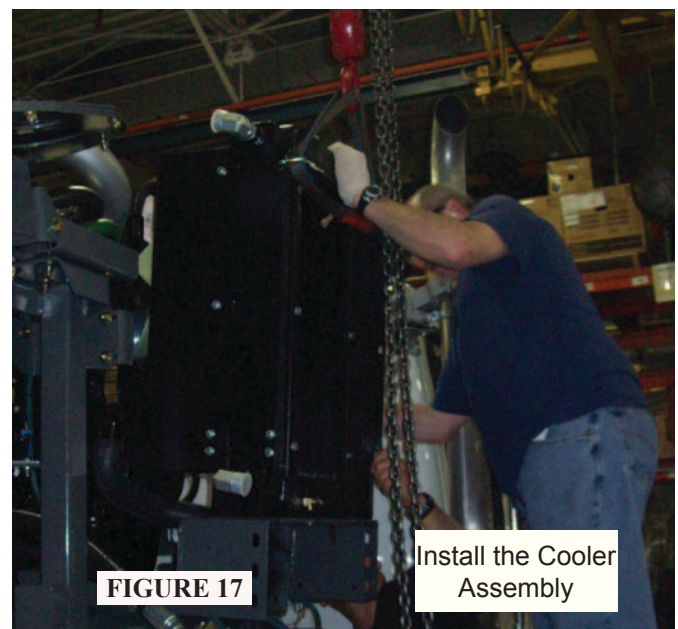
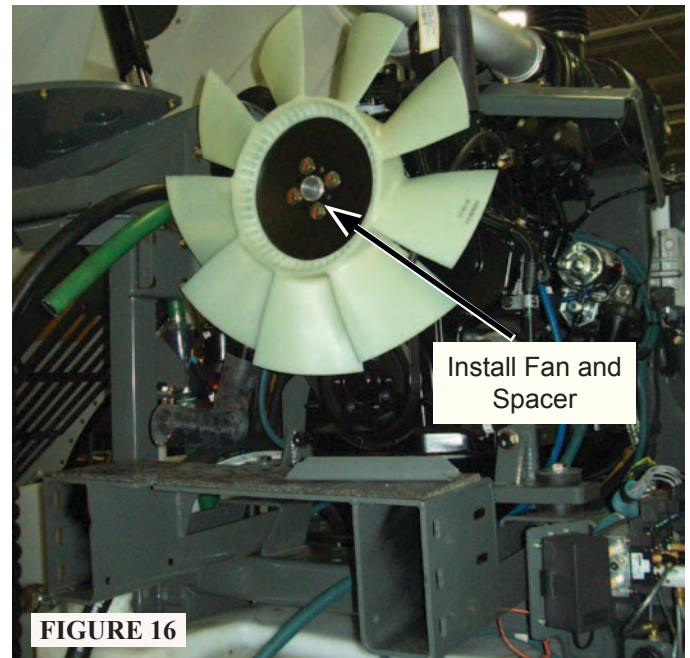
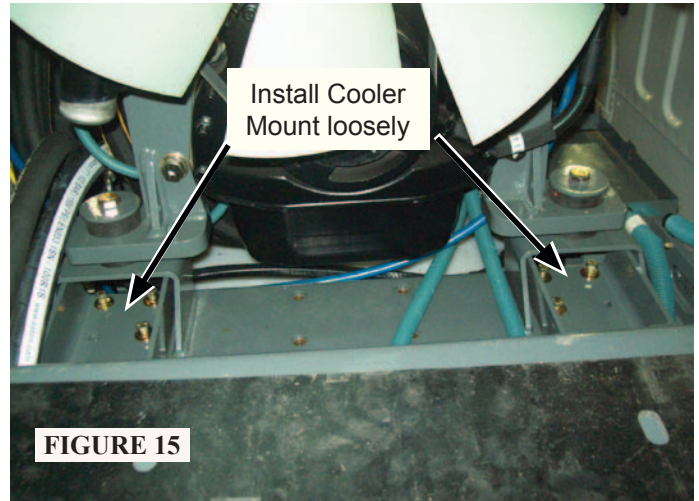
Install New Fan, Cooler Assembly and Components

1. Install the Cooler Mount loosely using Grade 8 bolts and place the rubber isolator on the cooler mount. (FIGURE 15) Allow the bracket to tip outward to facilitate the cooler installation.
2. Remove four bolts from the engine accessory drive pulley/hub. (FIGURE 14) Install fan and spacer onto the accessory drive pulley. Apply to loctite 242 to the threads and torque to 35 ft-lbs. (FIGURE 16)
3. Lift the cooler into place using a suitable hoist. Engage the bottom cooler studs in the mounting slots and carefully tip the cooler inward to engage the fan and shroud. (FIGURE 17)

IMPORTANT: Carefully install the cooler assembly to avoid damaging the fan blades or cooler. If the cooler cannot be installed without interference, it may be necessary to remove the cooler shroud and fan to install the fan after the cooler has been positioned.

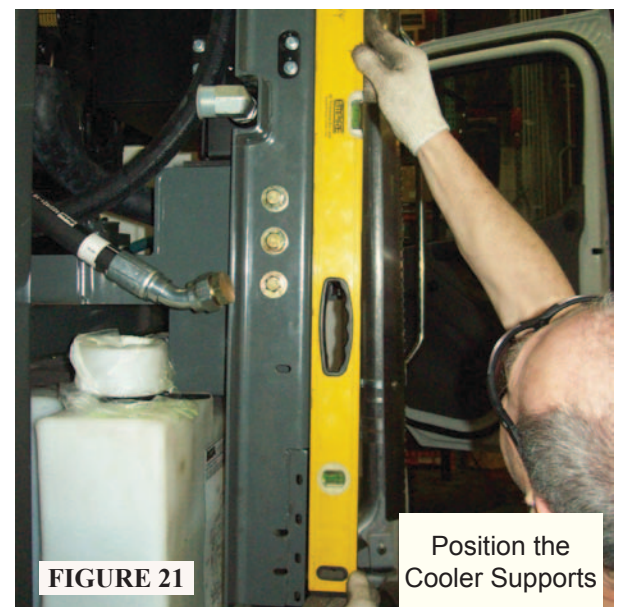
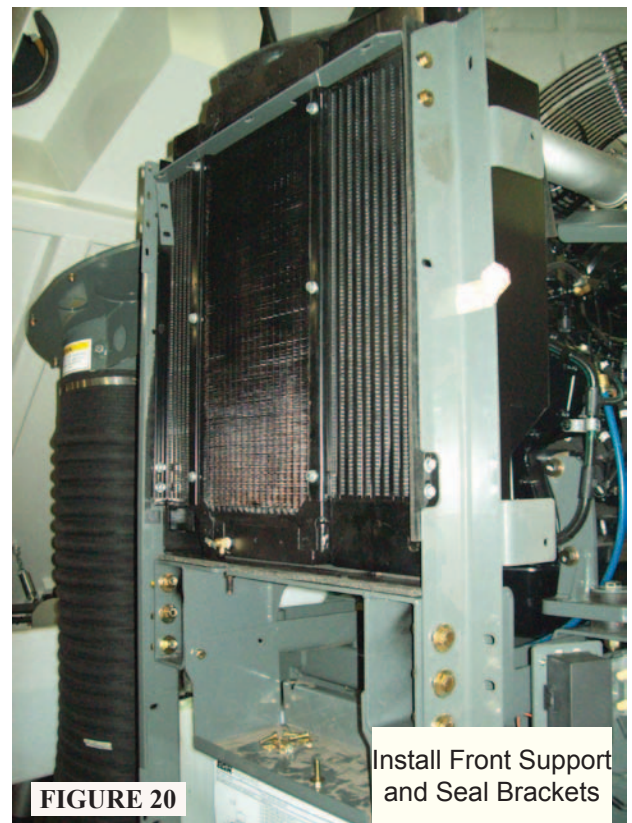
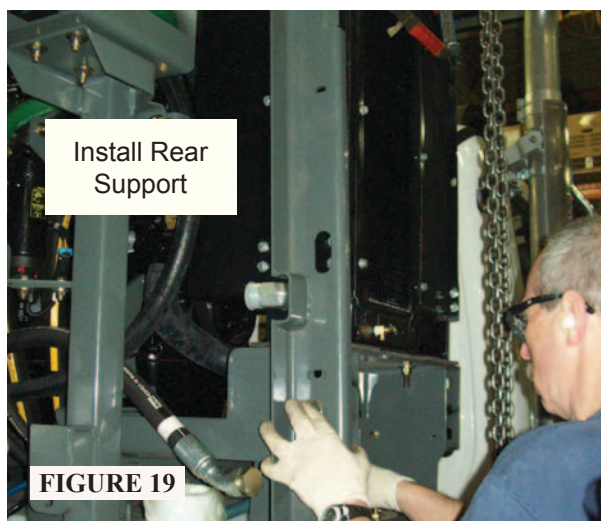
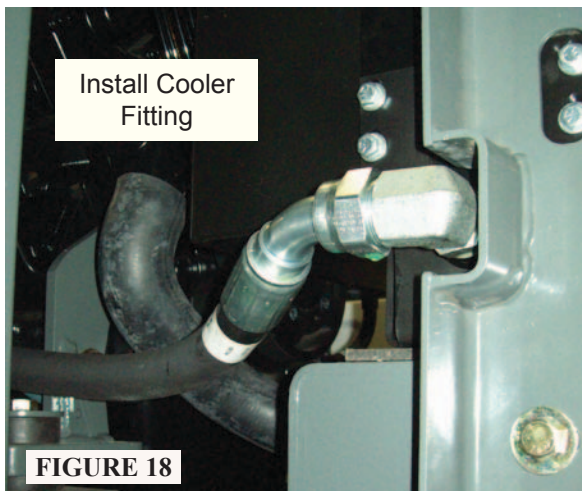
4. Tighten the cooler mounting bracket-to-engine frame bolts to 30 lb-ft after the radiator has been mounted. (FIGURE 15)
5. Center the cooler shroud and fan engagement as close as possible to the specification described in the assembly drawing. Tighten the mounting studs lightly to hold the cooler in position. Use rubber isolator and shim as required to center the fan vertically in the shroud opening.

IMPORTANT: Multiple components will be installed as part of this kit. Assemble the components to maintain alignment and provide for adjustment at the final tightening.



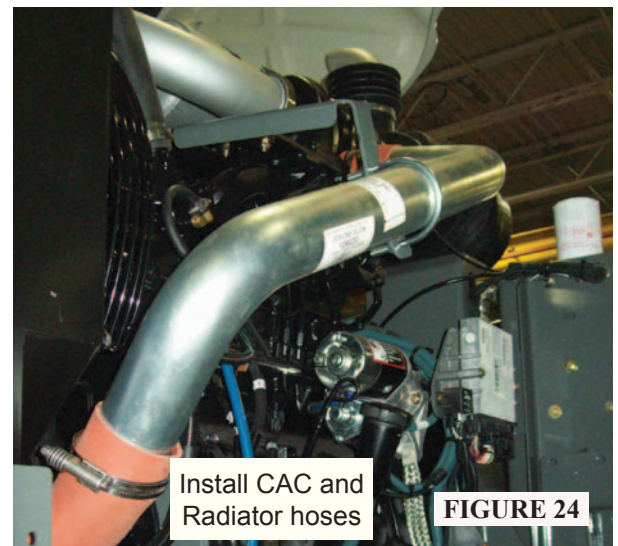
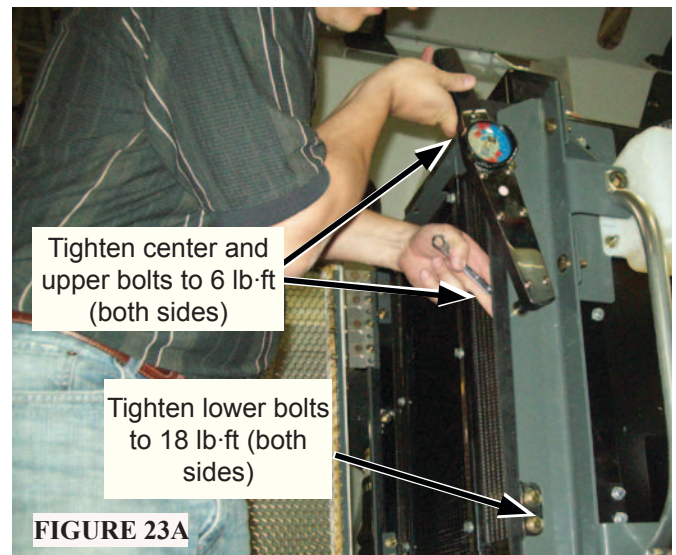
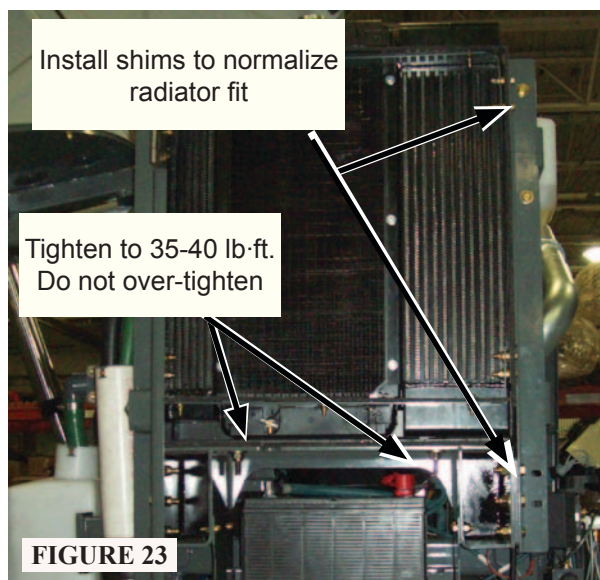
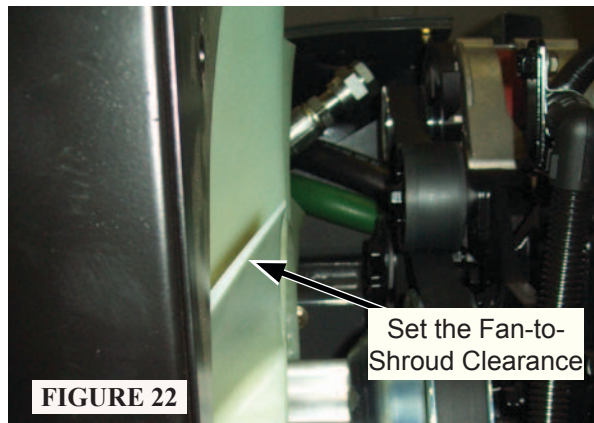
PROCEDURE CONTINUED:

6. Install the lower hydraulic cooler fitting and tighten the lower fitting in horizontal position before installing the rear cooler support. (FIGURE 18) Install the upper fitting in approximately 45 degree downward/inward position. The fitting cannot be turned once the cooler support is in place.
7. Install both front and rear cooler supports with rubber isolators. Shims should not normally be necessary for the rear bracket. Only use shims on the rear bracket as necessary to normalize the radiator fit. (FIGURE 19 and FIGURE 20)
8. Install the upper and lower cooler seal brackets. Seals will be installed and adjusted as part of the door installation. Install the support brackets as vertical as possible to maintain door alignment with the hopper once the hopper is lowered into sweep position. (FIGURE 20 and FIGURE 21)



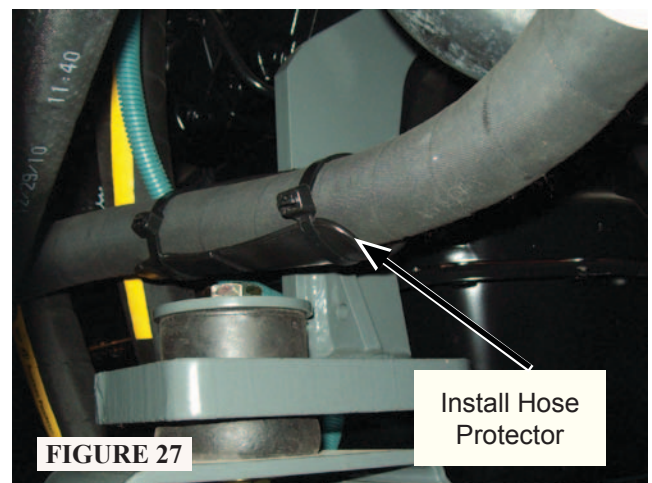
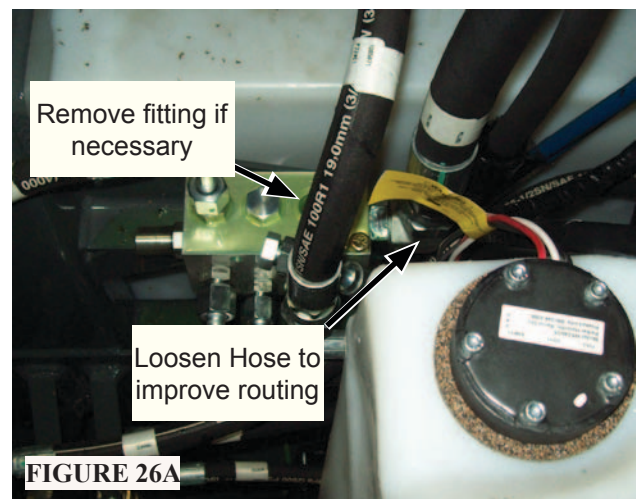
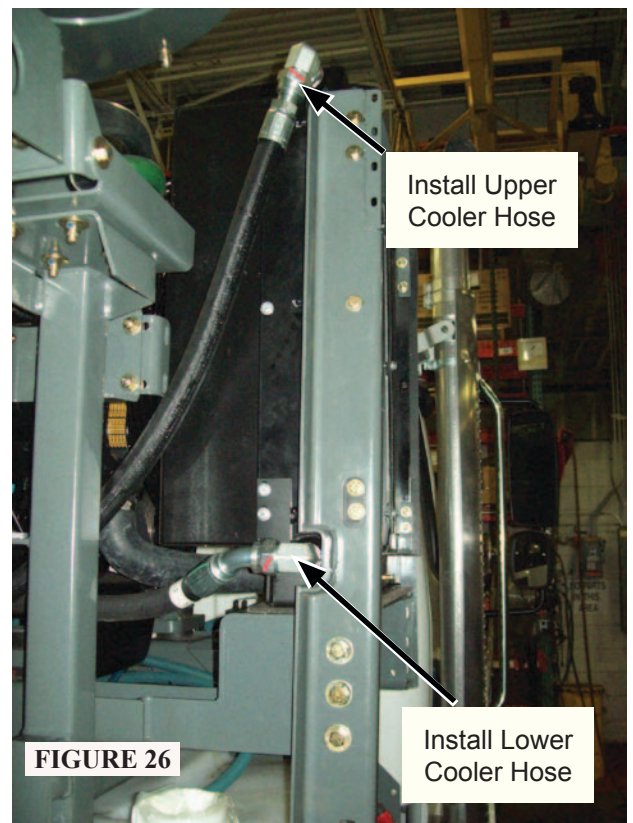
PROCEDURE CONTINUED:

9. Set the fan and shroud engagement as shown in the assembly drawing. Tighten the rear mount in position. Tighten the cooler mounting nuts to the lower support. Mounting nuts for lower cooler mounting studs must be installed to 35-40 ft-lbs. Do not overtighten the cooler mounting nuts of the studs may be damaged. (FIGURE 22 and FIGURE 23)
10. Install shims as necessary to normalize the fit of the front support to the radiator. (Normally one shim is used at the mount attachment.) Install washers between the upper and lower seal brackets as required to normalize the fit. (FIGURE 23 and FIGURE 23A)
11. Tighten the lower side bracket bolts to 18 lb-ft. Tighten the center and upper side mount brackets to 6 lb-ft. (FIGURE 23A) When tightening the brackets to 6 lb-ft, the rubber will compress and the aluminum radiator flanges will dimple slightly. Use caution to not overtighten the brackets and severely dimple the aluminum flanges. The deformation shown in FIGURE 23B is considered normal.
12. Install radiator hoses and CAC tubes. (FIGURE 24)



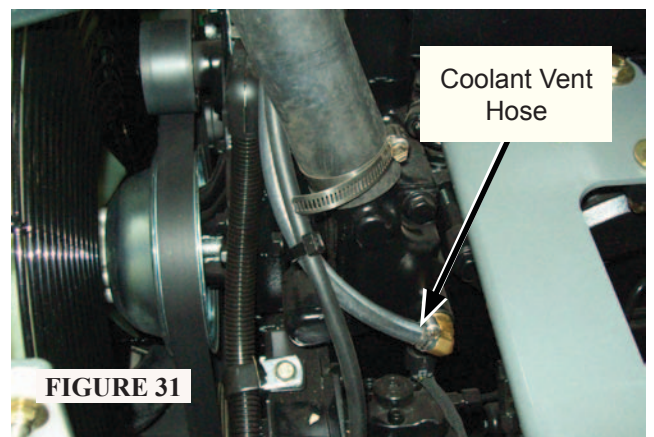
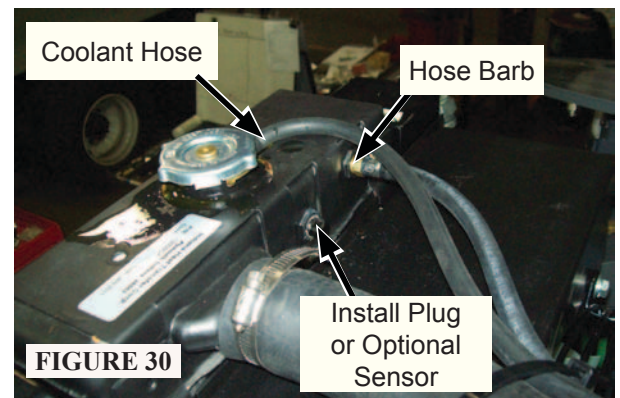
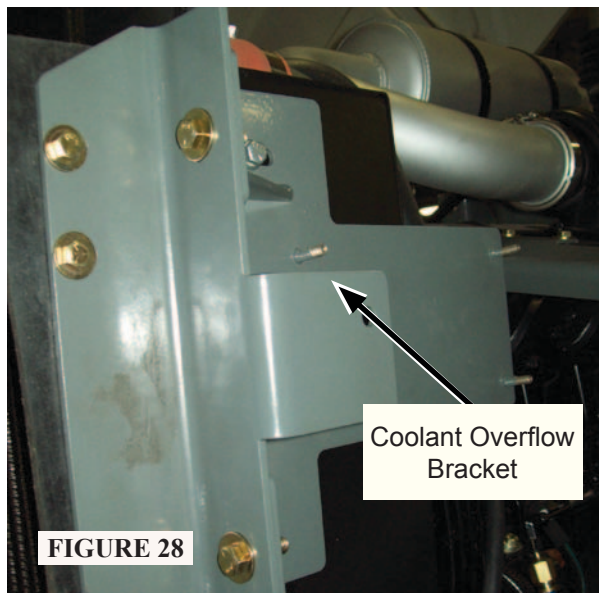
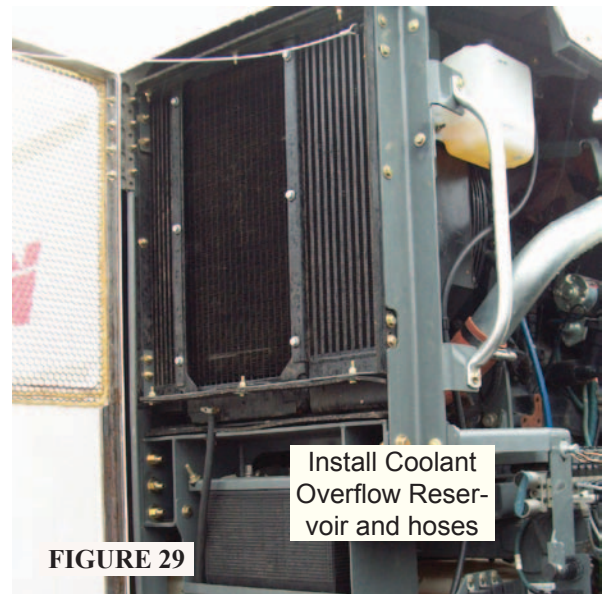
PROCEDURE CONTINUED:

13. Install replacement hydraulic hose routed from the upper cooler fitting to the oil cooler. (FIGURE 25 and FIGURE 26) It may be possible to connect the new hose to the old hose and pull the new one into position after cutting any tie straps that may be present. The upper cooler fitting may be loosened to allow the hose to be positioned as shown in FIGURE 26. Tighten the hydraulic fittings securely once the hoses are positioned.
14. Loosen the lower hydraulic cooler hose at the return manifold and rotate the hose so that the hose-end can be attached as shown in FIGURE 26. NOTE: If 1-5/8" Crow-foot wrench is available, the fitting may be loosened without removing other fittings from the manifold. Alternative procedure is to remove the adjacent fitting and access the cooler hose from under the engine. (FIGURE 26A)
15. Install the hose protector on the lower hose to prevent chafing against the motor mount and retain with tie-straps. (FIGURE 27)



PROCEDURE CONTINUED:

16. Install coolant overflow bracket. (FIGURE 28 and reservoir FIGURE 29)
17. Install 1/4" hose barb fitting in upper radiator port and optional coolant level sensor in the lower port (install pipe plug if not equipped with level sensor.). (FIGURE 30)
18. Use heavy-wall coolant hose and connect the radiator barb fitting to the coolant engine vent. (FIGURE 31) Use thin-wall coolant hose to connect the radiator overflow (cap) to the bottom of the new overflow tank. (FIGURE 31) Route the hoses along the upper radiator hose and use tie straps to fasten. Cut the hoses to length and install hose clamps at the fittings. **IMPORTANT:** Do not over-tighten the tie-straps over thin-wall hose or coolant flow may be restricted.
19. Route thin-wall hose from the overflow reservoir cap to the lower cooler mount and cut to length. Do not tie the hose to the CAC tube. (FIGURE 32)
20. Install the new chamfered cover over the outer VMM.
21. Install the latch bracket to the front radiator support. (FIGURE 32)

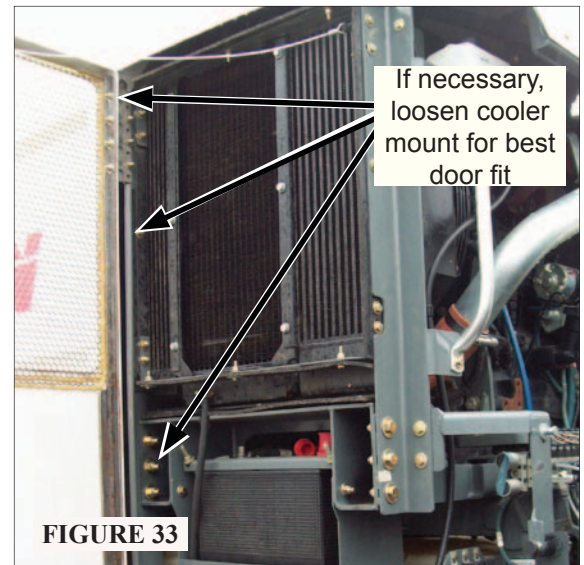
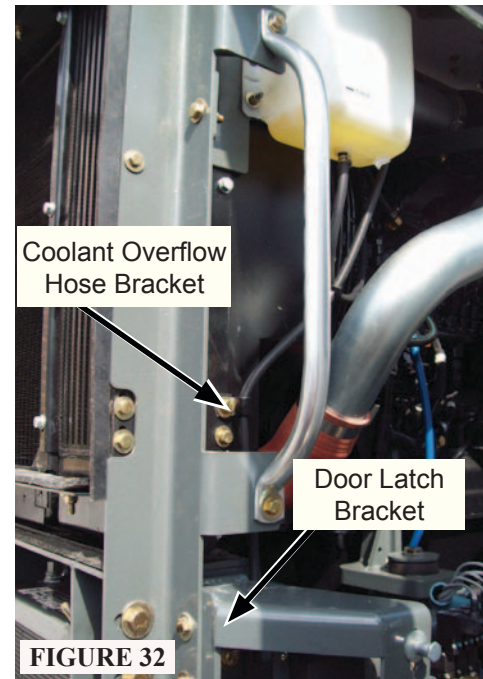


PROCEDURE CONTINUED:

22. Replace coolant and hydraulic oil. Ensure there are no leaks or component interference. Shroud clearance should be as shown in assembly drawing.
23. Reconnect the sweeper battery. NOTE: Some photos show the battery in an alternate location. The battery will not be re-located during the installation of the fan kit.
24. Start the engine at low idle and ensure that no leaks are present and that the fan does not contact the shroud, radiator or other components. Repair any defects that are found during the start-up inspection.
25. Carefully lower the hopper checking for any component interference. Ensure the hopper does not contact the radiator or door hinge. Ensure new RH engine cover support bracket does not contact radiator hose.
26. Assemble new fiberglass door with hinges, latch bracket, and upper door stop as shown in the assembly drawing. (FIGURE 33 and FIGURE 34)
27. Use a suitable hoist to position the assembled door to the radiator support. Attach and adjust the hinges so that the door swings freely. (FIGURE 33)
28. Adjust the hinges and door position to align with the hopper to best possible alignment. It may be necessary to loosen the rear cooler support to align the door to the hopper. (FIGURE 33)

IMPORTANT: Cooler shroud-to-fan clearance must be maintained when adjusting the door position. Confirm that fan engagement is as shown on the assembly drawing after the final door adjustment is complete with the impeller belt installed and properly tensioned.

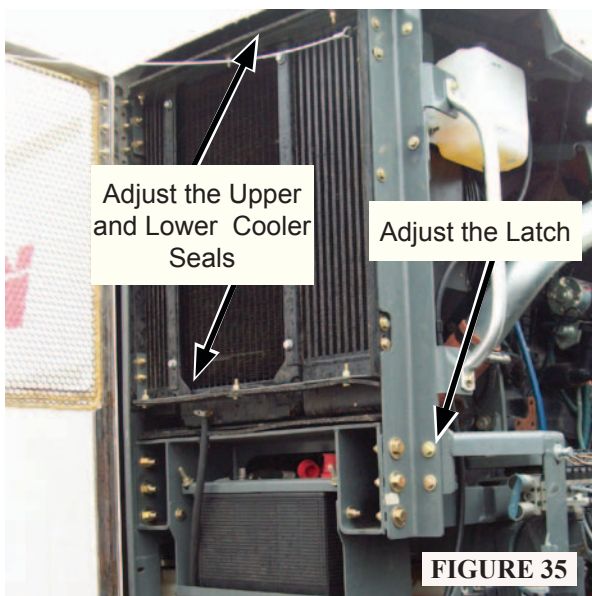
29. Tighten the latch weldment and shim as necessary for proper latch engagement. (FIGURE 34 and FIGURE 35)
30. Install the upper and lower cooler seal rubbers and adjust



PROCEDURE CONTINUED:

to slightly contact the door when fully latched. (FIGURE 35)

31. Install door stop lanyard as shown in the assembly drawing. The eyelet should be firmly tightened to the cooler support and freely positioned to swivel at the door attachment. (FIGURE 36A)
32. Clean the unit of spills and deposits created during the installation. Refinish any areas damaged or modified during the installation.
33. Verify that engine operates through the full rpm range 1000 - 2400 rpm.
34. Operate the unit for at least one hour to ensure that no leaks are present and the unit operates correctly. Service the coolant and oil levels to capacity.



Warranty Coverage and Claim Submittal

The ESG dealer should submit a claim for warranty.

Use the following information when submitting a warranty claim:

CAUSAL PART: **1094334 Cooling Fan**

To create the FAULT CODE, click **Aux Engine (12)**, click **Cooling System (046)**, and then click **FSO 1104590 (145)**.

In the FAULT FOUND dropdown list, select **Excess Vibration**.

In the CAUSED BY dropdown list, select **Design Error**.

To enter the Service procedures, perform the following:

For INSTALLED PART # **1104590**, select **Aux Engine (12)**, select **Cooling System (046)**, select **FSO 1104590 (1045)**, and then select **Install (01)**.

SRT of **24** hrs and **0** min is allowed.
