

Safety Defect and Noncompliance Report Guide for Vehicles
PART 573 Defect and Noncompliance Report

On April 22, 2011, Elgin Sweeper Company decided that a defect which relates to motor vehicles exists in the motor vehicles listed below, and is furnishing notification to the National Highway Traffic Safety Administration in accordance with 49 CFR Part 573 Defect and Noncompliance Reports.

Date this report was prepared: April 29th, 2011

Furnish the manufacturer's Identification code for this recall (if applicable): _____

1. Identify the full corporate name of the fabricating manufacturer of the vehicle being recalled. If the recalled vehicle is imported, provide the name and mailing address of the designated agent as prescribed by 49 U.S.C. §30164.

Elgin Sweeper Company
1300 W. Bartlett Road
Elgin, IL, 60120

Identify the corporate official, by name and title, whom the agency should contact with respect to this recall.

William Byrnes
Vice President, Service and Parts Operations

Telephone Number: 847-468-2351 **Fax No.:** 847-622-7077

Name and Title of Person who prepared this report:

William Byrnes
Vice President, Service and Parts Operations
Federal Signal, Environmental Solutions Group



Signed: _____

I. Identify the Vehicle Models Involved in the Recall

2. Identify the Vehicles Involved in the Recall, *for each make and model or applicable vehicle line (provide illustrations or photographs as necessary to describe the vehicle), provide:*

Make(s): Elgin Sweeper **Model Years Involved:** 2010 to 2011 **Model(s):** Megawind-MX

Production Dates: Beginning: February, 2010 **Ending:** April, 2011

VIN Range: Beginning: MX3002D, MX3006 through MX3021, MX3025, and MX3026

Ending: MX3026

Vehicle Type: Street Sweeper **Bodystyle:** N/A

Descriptive information which characterizes/distinguishes the recalled vehicles from those model vehicles not included in the recall:

None

Make(s): _____ **Model Years Involved:** _____ **Model(s):** _____

Production Dates: Beginning: _____ **Ending:** _____

VIN Range: Beginning: _____ **Ending:** _____

Vehicle Type: _____ **Bodystyle:** _____

Descriptive information which characterizes/distinguishes the recalled vehicles from those model vehicles not included in the recall:

Make(s): _____ **Model Years Involved:** _____ **Model(s):** _____

Production Dates: Beginning: _____ **Ending:** _____

VIN Range: Beginning: _____ **Ending:** _____

Vehicle Type: _____ **Bodystyle:** _____

Descriptive information which characterizes/distinguishes the recalled vehicles from those model vehicles not included in the recall:

Identify the approximate percentage of the production of all the recalled models manufactured by your company between the inclusive dates of manufacture provided above, that the recalled model population represents. For example, if the recall involved Widgets equipped with certain items for equipment from January 1, 1996 through April 1, 1997, then what was the percentage of the recalled Widgets of all Widgets manufactured during that time period. 100%

II. Identify the Recall Population

3. Furnish the total number of vehicles recalled potentially containing the defect or noncompliance.

Model	Year	Number of Vehicles Potentially Involved
Elgin Megawind Sweeper	2010	17
Elgin Megawind Sweeper	2011	2

Total Number Potentially Affected by the Recall: 19

4. Furnish the approximate percentage of the total number of vehicles estimated to actually contain the defect or noncompliance: 100%

Identify and describe how the recall population was determined—in particular how the recalled models were selected and the basis for the beginning and final dates of manufacture of the recalled vehicles:

Elgin Sweeper Company began production of the Megawind-MX street sweeper, utilizing a Tier-3 John Deere auxiliary engine, in May of 2009 starting with unit serial number MX3002. The Megawind-MX production serial number range is from MX3002 to MX3026. The unit with serial number MX3004 was a special unit with a Tier-2 auxiliary engine and is not subject to the recall. Units with serial numbers MX3023 and MX3022 are special units with a different auxiliary engine configuration and not subject to the recall. Serial number MX3003 will not be built. As of the date of this report, units MX3005 and MX3024 have the update and are no longer subject to the recall. Units affected are MX3002D, MX3006-MX3021, MX3025, and MX3026.

III. Describe the Defect or Noncompliance

5. Describe the defect or noncompliance. The description should address the nature and physical location of the defect or noncompliance. Illustrations should be provided as appropriate.

The radiator fan is mounted to the crankshaft of the John Deere Tier-3 auxiliary engine that powers the sweeper system. Technical analysis indicated the fan is susceptible to the torsional vibration of the crankshaft. Under heavy operating conditions and high auxiliary engine speed,

the fan blades could separate from the fan. If this condition occurs, fan blades or debris from the failed fan blades can leave the fan housing on the passenger side of the sweeper.

Describe the cause(s) of the defect or noncompliance condition.

The failure is caused by the fan being mounted to the crankshaft of the engine and resultant exposure to the torsional vibration from the crankshaft, which subjects the base of the fan blade to elevated strain. This condition may cause the fan blades to separate from the fan hub under heavy operating conditions and high engine speed.

Describe the consequence(s) of the defect or noncompliance condition.

There is a remote possibility that the fan blades could separate from the base of the fan and the blades or debris from the blades could leave the fan housing. If this condition occurs, there is a slight possibility that a person performing a repair could be injured. There is a very remote possibility that a small piece of fan debris could exit the vehicle in 2 openings in the exterior of the vehicle. Elgin Sweeper has no reports of any injuries due to this operating condition.

Identify any warning which can (a) precede or (b) occur.

Routine inspections of the radiator fan may reveal cracks in the fan blades or base of the fan.

N/A

If the defect or noncompliance is in a component or assembly purchased from a supplier, identify the supplier by corporate name and address.

Identify the name and title of the chief executive officer or knowledgeable representative of the supplier:

N/A

IV. Provide the Chronology in Determining the Defect/Noncompliance

If the recall is for a defect, complete item 6, otherwise item 7.

6. With respect to a defect, furnish a chronological summary (including dates) of all the principle events that were the basis for the determination of the defect. The summary should include, but not be limited to, the number of reports, accidents, injuries, fatalities, and warranty claims.

December, 2010, Elgin Sweeper dealer Standard Equipment Company reported radiator fan failures on Megawind-MX serial number MX3005.

March, 2011, Elgin Sweeper dealer Bell Equipment Company reported a radiator fan failure on Megawind-MX serial number MX3011.

April, 2011, Elgin Sweeper dealer Faris Machinery Company reported a radiator fan failure on Megawind-MX serial number MX3021.

All reported cases had warranty claims filed. There were no reported injuries as a result of these occurrences.

In January of 2011, Elgin Sweeper began conducting a technical evaluation to determine the root cause of the radiator fan failures reported in unit MX3005. Elgin Sweeper conducted internal fan testing on engineering's unit MX3001. The analysis included analyzing the broken fan blades and fan bases, as well as testing the fan at high engine speeds. The radiator fan is mounted to the engine crankshaft and it was determined that the torsional vibration at the engine crankshaft was causing the fans to break. Upon further investigation, it was determined that the torsional vibration was highest during heavy sweeper utilization and high engine speed. The fan design was insufficient to withstand the torsional vibration of the engine crankshaft during heavy sweeper utilization and high engine speed.

In February of 2011, Elgin Sweeper Company began development and testing of an upgrade to fix the problem. Upgrade testing and development were performed on engineering's unit MX3001.

In March of 2011, Elgin Sweeper Company requested the return of unit MX3005 from the field and upgraded the cooling system moving the fan mount from a crankshaft to a belt-driven pulley. This upgrade was performed on unit MX3005.

In April of 2011, Elgin Sweeper Company upgraded the cooling system moving the fan mount from a crankshaft to a belt-driven pulley to a completed, but unshipped, production unit. This upgrade was performed on unit MX3024, which provided for the development of the service bulletin and installation instructions of the recall.

7. With respect to a noncompliance, identify and provide the test results or other data (in chronological order and including dates) on which the noncompliance was determined.

V. Identify the Remedy

8. Furnish a description of the manufacturer's remedy for the defect or noncompliance. Clearly describe the differences between the recall condition and the remedy.

Elgin Sweeper Company's remedy is documented in Elgin's Service Bulletin SB-0086 "Megawind MX Sweeper Radiator Fan Recall" which is attached. The remedy to the recall condition is to change the mounting location of the radiator fan from the crankshaft to a belt-driven pulley. A belt-driven pulley dampens the torsional vibrations transmitted from the sweeper system through the engine crankshaft. The difference between the recall condition and the remedy is the reduction in the torsional vibration transmitted to the radiator fan.

Clearly describe the distinguishing characteristics of the remedy component/assembly versus the recalled component/assembly.

Elgin Sweeper Company's remedy is documented in Elgin's Service Bulletin SB-0086 "Megawind MX Sweeper Radiator Fan Recall" which is attached. The required change between the recall component/assembly and the remedy is the mounting location of the radiator fan. The recalled assembly has the radiator fan mounted on the auxiliary engine crankshaft. The remedy is to mount the radiator fan on a belt-driven pulley. A repair kit, part number 1104590, will contain cooling system parts needed to move the mounting location of the radiator fan from the crankshaft to a belt-driven pulley. The cooling system components provide in the repair kit are visually different from the original design and will distinguish an updated Megawind MX sweeper from the original design. The repair kit will be provided to the Elgin Sweeper Dealer who will install the repair kit on the customer's sweeper free of charge.

Identify and describe how and when the recall condition was corrected in production. If the production remedy was identical to the recall remedy in the field, so state. If the product was discontinued, so state.

The same new design of mounting the radiator fan to a belt-driven pulley, which is being installed on customer's vehicles, will be installed on new Elgin Megawind-MX Street Sweepers with John Deere Tier-3 auxiliary engines. Since units MX3003, MX3004, MX3022, and MX3023 are not subject to the recall, as described in section 4, the next production unit is planned for July of 2011 starting with unit MX3027.

VI. Identify the Recall Schedule

Furnish a schedule or agenda (with specific dates) for notification to other manufacturers, dealers/retailers, and purchasers. Please, identify any foreseeable problems with implementing the recall.

Initial mailing to Elgin Sweeper Dealers: May 19, 2011

Notification to customers: May 26, 2011

VII. Furnish Recall Communications

9. Furnish a final copy of all notices, bulletins, and other communications that relate directly to the defect or noncompliance and which are sent to more than one manufacturer, distributor, or purchaser. This includes all communications (including both original and follow-up) concerning this recall from the time your company determines the defect or noncompliance condition on, not just the initial notification. *A DRAFT copy of the notification documents should be submitted to this office by Fax (202-366-7882) for review prior to mailing.*

Note that these documents are to be submitted separately from those provided in accordance with Part 573.8 requirements.