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13E-027  
(6 pages)

**Centric Parts**  
14528 Bonelli St.  
Industry, CA 91746  
Phone: (626) 961-5775  
Fax: (626) 961-5877

Defect Information Report  
Pursuant to 49 CFR 573.6(c)

This defect information report is being submitted by Centric Parts (CWD, LLC) pursuant to Part 573.6 (c).

1. Manufacturer's name (573.6 ( c ) ( 1):  
Robert Bosch LLC (distributed by Centric Parts in Centric Parts packaging)
2. Identification of motor vehicle equipment (573.6 ( c ) ( 2):  
Hydro-Mar® mater cylinders with 2.0 inch bore and 84 cubic inch reservoir containing fluid level indication switch and without differential pressure switch manufactured between July 1, 2011 and April 12, 2012. The list of customers and numbers of the subject Hydro-Max® master cylinders purchased by each customer is listed below in section 3.
3. The total number of items of equipment (573.6 ( c ) ( 3):

(c) Centric Parts, located at 14528 Bonelli St., City of Industry, CA 91746 and with a telephone number of (626) 961-5775, purchased 240 of the subject Hydro-Max® master cylinders under customer part numbers BX2234451(130.82004) and BX2239671(130.82007). 62 units were returned to Bosch + 7 units returned from customers.

[REDACTED]	130-82007	[REDACTED]	Jacksonville	FL	32256
[REDACTED]	130-82007	[REDACTED]	Los Angeles	CA	90045
[REDACTED]	130-82007	[REDACTED]	Santa Fe Springs	CA	90670
[REDACTED]	130-82007	[REDACTED]	Carson	CA	90746
[REDACTED]	130-82007	[REDACTED]	Miami	FL	33167
[REDACTED]	130-82007	[REDACTED]	Concord	NH	03301
[REDACTED]	130-82007	[REDACTED]	Surrey	BC	V3T2T1
[REDACTED]	130-82007	[REDACTED]	Bakersfield	CA	93304
[REDACTED]	130-82004	[REDACTED]	Eagan	MN	55121
[REDACTED]	130-82007	[REDACTED]	Eagan	MN	55121
[REDACTED]	130-82007	[REDACTED]	Fontana	CA	92335
[REDACTED]	130-82004	[REDACTED]	Brockton	MA	02301
[REDACTED]	130-82007	[REDACTED]	Houston	TX	77040
[REDACTED]	130-82007	[REDACTED]	Canoga Park	CA	91306
[REDACTED]	130-82004	[REDACTED]	Portland	OR	97217
[REDACTED]	130-82007	[REDACTED]	Portland	OR	97217
[REDACTED]	130-82007	[REDACTED]	Pomona	CA	91767
[REDACTED]	130-82007	[REDACTED]	Queens Village	NY	11427
[REDACTED]	130-82004	[REDACTED]	Santa Clarita	CA	91350
[REDACTED]	130-82007	[REDACTED]	Canoga Park	CA	91304

[REDACTED]	130-82004	[REDACTED]	Santa Rosa	CA	95407
[REDACTED]	130-82007	[REDACTED]	Santa Rosa	CA	95407
[REDACTED]	130-82007	[REDACTED]	Laguna Hills	CA	92653
[REDACTED]	130-82004	[REDACTED]	San Diego	CA	92154
[REDACTED]	130-82004	[REDACTED]	Elk Grove Village	IL	60007
[REDACTED]	130-82007	[REDACTED]	Los Angeles	CA	90007
[REDACTED]	130-82007	[REDACTED]	Honolulu	HI	96819
[REDACTED]	130-82007	[REDACTED]	Santa Ana	CA	92705
[REDACTED]	130-82007	[REDACTED]	Anaheim	CA	92806
[REDACTED]	130-82007	[REDACTED]	Riverside	CA	92507
[REDACTED]	130-82007	[REDACTED]	West Sacramento	CA	95691
[REDACTED]	130-82007	[REDACTED]	San Luis Obispo	CA	93401
[REDACTED]	130-82007	[REDACTED]	San Luis Obispo	CA	93401
[REDACTED]	130-82007	[REDACTED]	Chico	CA	95928
[REDACTED]	130-82007	[REDACTED]	Torrance	CA	90501
[REDACTED]	130-82007	[REDACTED]	Santa Clara	CA	95050
[REDACTED]	130-82007	[REDACTED]	South San Francisco	CA	94080
[REDACTED]	130-82007	4 [REDACTED]	San Marcos	CA	92078
[REDACTED]	130-82007	[REDACTED]	San Diego	CA	92101
[REDACTED]	130-82007	[REDACTED]	Minneapolis	MN	55413
[REDACTED]	130-82007	[REDACTED]	Milwaukee	WI	53214
[REDACTED]	130-82004	[REDACTED]	Rockville Centre	NY	11570
[REDACTED]	130-82007	[REDACTED]	Napa	CA	94559-1499
[REDACTED]	130-82004	[REDACTED]	Phoenix	AZ	85043
[REDACTED]	130-82007	[REDACTED]	Phoenix	AZ	85043
[REDACTED]	130-82004	[REDACTED]	Columbus	OH	43215
[REDACTED]	130-82007	[REDACTED]	Columbus	OH	43215
[REDACTED]	130-82007	[REDACTED]	Montebello	CA	90640
[REDACTED]	130-82004	[REDACTED]	Kansas City	MO	64120
[REDACTED]	130-82007	[REDACTED]	Kansas City	MO	64120
[REDACTED]	130-82007	[REDACTED]	ARVADA	CO	80003
[REDACTED]	130-82007	[REDACTED]	Covina	CA	91723
[REDACTED]	130-82004	[REDACTED]	COMMERCE	CA	90040
[REDACTED]	130-82007	[REDACTED]	COMMERCE	CA	90040
[REDACTED]	130-82004	[REDACTED]	Los Angeles	CA	90021
[REDACTED]	130-82004	[REDACTED]	Florence	KY	41042
[REDACTED]	130-82007	[REDACTED]	Redmond	WA	98052
[REDACTED]	130-82007	[REDACTED]	Upland	CA	91786
[REDACTED]	130-82007	[REDACTED]	Santa Fe Springs	CA	90670
[REDACTED]	130-82004	[REDACTED]	Portland	OR	97213
[REDACTED]	130-82007	[REDACTED]	Bellflower	CA	90706
[REDACTED]	130-82004	[REDACTED]	Elyria	OH	44035
[REDACTED]	130-82004	[REDACTED]	TIJUANA B.C.	MX	MEXICO
[REDACTED]	130-82004	[REDACTED]	MONTERREY	NL	64000
[REDACTED]	130-82004	[REDACTED]	Tucson	AZ	85741

4. *The percentages of items of equipment estimated to contain the defect (573.6 (c)(4)):*  
The occurrence of the defective condition is dependent upon both the location of the FLI switch and the magnetism of the float magnet. In order for this condition to occur, the FLI switch must have moved into an outward position and the float magnet must be on the lower

level allowed by the specification. The switch is in an inboard position when it leaves the Bosch manufacturing facility. Bosch vehicle testing with the subject Hydro-Max® master cylinder did not result in the FLI switch moving to an outward position and functionality was maintained. Bosch has not received any complaints related to this issue, and does not know the likelihood of the preconditions simultaneously occurring in the field.

5. *A description of the defect (573.6 (c)(5):*

Parts manufactured by Bosch since July 1, 2011 incorporate a reservoir switch pocket with additional clearance to more efficiently install and latch the FLI switch. The added clearance created a condition in which the FLI switch has the potential to move outward, but remain within the reservoir switch pocket. If the FLI switch were to move outward on parts manufactured between July 1, 2011 to April 12, 2012 and the float magnet is on the lower allowed level, the FLI may not be close enough to the float magnet to activate in the event of low brake fluid. If the low brake fluid level is caused by an external leak resulting in the escape of fluid from the brake system, it can result in increased pedal travel. If this condition goes unheeded it can result in a reduction of hydraulic pressure to the disk brake calipers or wheel cylinders and lessen the braking force available. A reduction in braking force can cause an increase in stopping distance and a vehicle crash may occur.

*A chronology of events (573.6 (c)(6):*

Date	Activity
July 1, 2011	Bosch begins using new reservoirs in production with assembly date
April 13, 2012	Bosch discovers during a validation test for a proposed float supplier change that the position of the FLI switch was affecting the test result. The FLI did not function properly when the FLI switch was pulled fully outward.
April 13, 2012	Bosch adds production test to verify proper function if switch is pulled fully outward. A certification mark is applied to reservoir immediately left of FLI switch to identify part passed test.
April 24, 2012	Bosch conducts vehicle level tests on two assemblies to determine if the FLI switch moves during driving. With switch pushed fully in, as it is following assembly, no movement was found. With switch pulled fully out, switch moved inward 0.010 inch
May 2012- Nov 2012	Bosch monitors field and warranty returns. No reports or indications from warranty of field issues. Bosch commences work on product improvement redesign of FLI switch.
Nov 2012	Bosch completes redesign of FLI switch
Dec 2012	Bosch notifies customers of issue and requests inspection and return of non certified material.
Jan 2013	Bosch receives production parts production validation and starts testing of redesigned FLI switch
February 14, 2013	Navistar informs Bosch that it will issue a safety recall
February 19, 2013	Bosch decides to conduct safety recall

*A program to remedy the defect (573.6 (c)(8):*

As a remedy in the field, Bosch is working with its customers to develop a notification process for their customers. An inspection procedure for the subject master cylinders will be provided. If no certification mark is present and the reservoir date code is equal to 1151 or later (higher) the gray colored FLI switch (Bosch P/N 0 204 232 939) would be removed and replaced without charge with a redesigned brown colored FLI switch, (Bosch P/N 0 204 232 107). At this time, the redesigned switch is not available for distribution. Bosch is not aware of any customer complaints or warranty related to the subject issue. However, if a customer has replaced a master cylinder with one involving the subject issue, Bosch will reimburse the customer for the new switch and cost of repair.

8 *Representative copy of all notices and bulletins (573.6 (c)(10):*

A copy of all notices and bulletins will be provided to NHTSA when they become available.

9 *Manufacturer's campaign number (573.6 (c)(11):*

Bosch has not issued a campaign number. Bosch intends to use NHTSA's campaign number.

Sincerely,

A handwritten signature in black ink that reads "Dan Welch". The signature is written in a cursive, slightly slanted style.

President