

PARTS & SERVICE NEWS

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This Parts & Service News supercedes the previous issuance, AA02175, dated July 30, 2002. AA02175 should be discarded.

SUBJECT:	REPAIR PROCEDURE FOR AXLE HOUSING CRACKS
PURPOSE:	To inform the field of a repair procedure for axle housing cracks.
APPLICATION:	Komatsu Mechanical Drive Dump Trucks: 530M: 32628, A30001 - A30038; HD1500: A30039 - A30069
FAILURE CODE:	2B11HC
DESCRIPTION:	Repair procedure for circumferential cracking between the suspension and lower trailing arm.

Some trucks in the field may experience cracks in the axle housing. The circumferential cracks typically appear between the suspension and lower trailing arm. It is important to include an inspection of the axle housing at regular intervals.

Figure 1 illustrates the typical failure location in the axle housing. If cracks exist, gouge out defects and weld repair as described in this Parts & Service News. Follow the guidelines that are outlined in Parts and Service News "FIELD WELDING FOR ASSEMBLY OR REPAIR" (AA00046B), Welding Manual I (SEBF14001), and Welding Manual II (SEBF15002). It is important that these instructions are read, fully understood, and followed.

Part Numbers:	562-22-53110 562-22-53110
Part Description:	Axle Housing
Material Type:	Steel Casting
Preheat Temperature:	150°C (302°F)
Postheat Temperature:	Not Required
Postheat Time:	Not Required
Interpass Temperature (Minimum / Maximum):	150°C / 204°C (302°F / 400°F)
Filler Metal Classification:	GMAW-MIG - ER70-S6 / SMAW - E7016

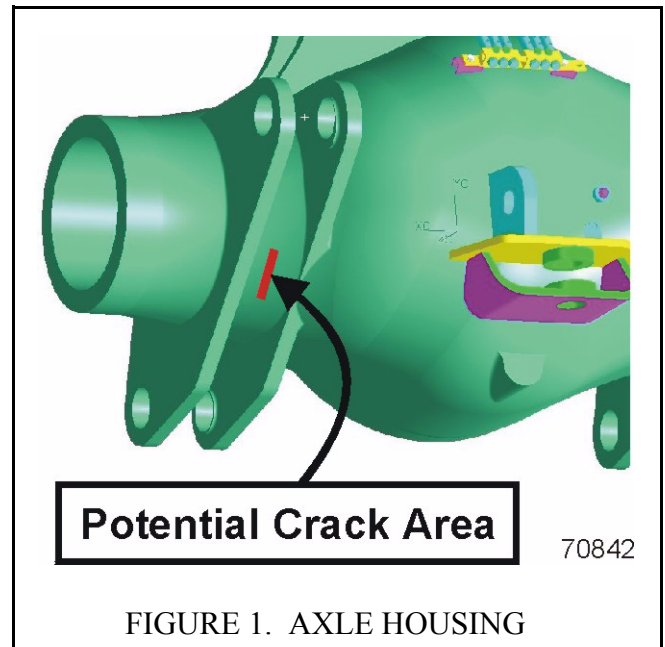


FIGURE 1. AXLE HOUSING

NOTE: The axle housing will be reinforced in production beginning with truck serial number A30070.

NOTE: For reinforcement of the Axle Housing Structure, refer to Parts & Service News AA03041. It is recommended that reinforcement of the axle housing be installed after weld repair has been completed.

Axle Casting Crack Repair Procedure:

All work is to be completed as detailed in this repair procedure. The following instructions are for qualified welders only. If questions arise during the repair process, contact your local Komatsu representative.

▲ IMPORTANT ▲

Before performing any of the outlined instructions, review all safety precautions as outlined in the General Safety section of the appropriate Operation & Maintenance Manual.

1. Park truck on level surface and block front wheels. Repair area must be protected from wind and moisture during the entire procedure. If the repair work is done outside, additional precautions must be taken to protect weld repair process from outside elements. All welding should be done at an ambient temperature of 50°F (10°C) or above. Refer to "Rear Tire Removal", Section G in the appropriate Shop Manual and remove rear tires.
2. Obtain container(s) and prepare to recover 79 gallons of oil from the differential gear case. Remove drain plug and drain differential oil from differential gear case. Clean and grind the entire repair area to remove all grease, oil, paint, and foreign materials that may contaminate the weld.
3. Air arc cracks, leaving a V-shaped joint. The depth of the V (or U shaped) joint will be determined by the depth of the crack. The width to depth ratio should be approximately 1.25:1 and never less than 1:1. All cracks that have gone through the casting will require a slightly wider root opening than the original. This root opening will usually need to be .25 inches (6mm) in order to install backup strips. Backup strips are required for all cracks that have gone through the casting and cannot be welded from both sides.
4. Use dye penetrant to inspect suspect areas and ensure that cracks are completely removed.
5. After completing steps 3 and 4, the entire area that was cut by air arc should be cleaned thoroughly. Use a grinder in order to remove all carbon deposits and dye penetrant.
6. Fill gouges with weld and grind all surfaces smooth to avoid defects in the new weld.

▲ CAUTION

Heating a housing by continuously welding may cause remaining oil in the housing to catch fire. To prevent fire, stop welding to allow time for the housing to cool if necessary.

7. Grind all surfaces that are to be welded to ensure that they are free of slag, rust, and other foreign materials.

8. If backer is required, insert backer through gouged opening and pull backer strip tight against crack opening. Backer size should be at least .25" x 1.25". Tack weld backer in place in an area where the tack weld will be burned away by the first repair weld pass. Before applying the first weld pass, grind tack weld with a smooth transition and both ends of tack, doing so will eliminate any small voids at the start or stop of the tack weld.
9. Preheat the entire weld joint area until the surrounding surface area reaches 300°F (150°C) at a distance of 3 inches (75mm) from all areas to be welded.
10. All welds are to be made with an approved consumable. The SMAW (stick) welding rod must be used within four hours after being removed from a new sealed container or from a 125°F (32°C) minimum drying oven. Any rod that exceeds this exposure time must be re-dried for one hour at 800°F (427°C) before being used. Keep all weld starts and stops to a minimum. Perform peening after every weld layer.
11. When weld is complete, immediately (before weldment cools) post heat the entire area to 400°F (205°C). Post heat even if heat is already over 400°F (205°C), because heat must be applied to maintain this temperature for 15 minutes. Cool entire area slowly. This may require wrapping with insulation blankets.
12. Grind weld smooth with 36 grit or finer grinding material.
13. Inspect repaired areas for surface defects using magnetic particle or dye penetrant inspection procedures. Remove any weld spatter or slag from inside axle housing.
14. If surface defects are found, remove all defects by grinding to a maximum depth of 0.060 inches (1.5mm). Larger defects must be removed as per above mentioned procedures. All spot welding requires preheating and post heating.

Once the entire welding process is completed, inspected and approved begin the reinforcement procedure detailed in AA03041.