

PARTS & SERVICE NEWS

REF NO. AA01042A

DATE October 17, 2003

(C)

Page 1 of 5

This Parts & Service News supercedes the previous issuance, AA01042, dated February 15, 2001. AA01042 should be discarded.

SUBJECT: 930E FRAME CRACK REPAIR PROCEDURE

PURPOSE: Inform the field of repair procedure for frame cracks in horsecollar frame area.

APPLICATION: Komatsu Electric Drive Dump Trucks
930E: 32604 - 32816, A30019, A30026 - A30120;
930E-2: A30012, A30098, A30100, A30121 - A30262

FAILURE CODE: 4711HA

DESCRIPTION: Location of frame cracks, welding repair procedure and kit installation.

Some trucks in the field have experienced frame cracking in the weld joint between the lower horsecollar casting and the lower fabricated portion. It is important to include a frame inspection of the front and rear, top and bottom of this area at regular intervals during normal frame inspections. Refer to Figure 1.

If any cracks in the frame exist, gouge out the defects, weld repair the frame. Follow the guidelines that are outlined in Parts and Service News "*FIELD WELDING FOR ASSEMBLY OR REPAIR*" (AA00046C), Welding Manual I (SEBF14001), and Welding Manual II (SEBF15002). It is important that these instructions are read, fully understood, and followed.

Before any weld repairs are performed, ensure that the piston rods on the suspension are not exposed. Wrapping of the front suspension pistons and front tires is mandatory when grinding and welding in this area. Also, be sure to disconnect the battery and any control circuit cards prior to performing the repair process.

Grind lower surfaces for ease of fit up of kit and install Lower Horsecollar Loop Kit (XK0259). Refer to Figure 2 for the installation instructions for the new kit. The contents of the kit are listed in the table below:

LOWER HORSECOLLAR LOOP KIT (XK0259)

Part Number	Description	Quantity
EK8887	Installation Drawing	
EJ3651	Plate, Outside	2
EK8889	Plate, Inside	2

Welding Repair Process

The following instructions are for the welding repairs. Only qualified welders are permitted to do repairs as detailed. Welders are required to follow all instructions as detailed in the published Parts & Service News (AA00046C). During the repair and modification process it is the responsibility of the maintenance crew to contact your Komatsu Area Service Manager if any questions arise. Photographs are required for all welding procedures and inspection processes.

▲ IMPORTANT ▲

Before proceeding, consult your Komatsu Area Service Manager to ensure component Drawings are current.

1. Manufacture kit components (Figures 3 and 4).

Thermal Cutting Requirements

The following thermal cutting requirements are to be used when manufacturing gussets. Material shall conform as follows:

- a. Cut edge roughness to be a maximum of 2000 RMS.
- b. Kerf angle deviation four degrees (4°) maximum.
- c. No micro cracks at cut edge.
- d. Remove slag produced by cutting.
- e. Cut edge imperfections greater than .06 inch (2 mm) in depth must be repaired by welding. Imperfections less than .06 inch (2 mm) in depth are to be removed by grinding. The depth of the conditioning depression prior to welding shall be measured from the edge inward and shall be limited to a maximum depth .500 inch (13 mm).

Thermal Cutting General Data

- a. After removal of any crack-like imperfections and prior to welding, the cavity shall be examined by a magnetic particle method or a liquid penetrant method to ensure that the imperfection has been completely removed. When magnetic particle examination is employed, the cavity shall be examined parallel and normal to the length of the cavity.
- b. All weld repairs and adjacent heat-affected zone shall be sound and free of cracks, the weld metal being thoroughly fused to all surfaces and edges without undercutting or overlap. Any visible cracks, porosity, lack of fusion, or undercut in any layer shall be removed prior to deposition of the succeeding layer. Weld metal shall project at least .06 inch (2 mm) above the milled surface after welding. The projecting metal shall be removed by chipping or grinding. Removing the projecting metal is done in order to make it flush with the rolled surface, and to produce a workmanlike finish (2000 RMS maximum).

2. Using dye penetrant, inspect the entire work area for cracks. Document each step with photographs.
3. If any cracks are found in the weld joint between the lower horsecollar casting and the lower fabricated portion they are to be repaired first. Follow all procedures for crack repairs as detailed in the Parts & Service News (AA00046C).

4. Review Installation Drawing (EK8887). Locate plates on bottom of horsecollar. Additional grinding may be required for proper fit up. Once located, tack into location.
5. Locate bottom rolled plates as shown in Figure 2. Clamp rolled plate tight to insure no gaps in rolled portion.
6. Preheat area and weld as detailed in Parts & Service News (AA00046C).



Plate position and fit up is critical for a good weld joint.

7. Post heat as detailed in Parts & Service News (AA00046C).
8. Inspect, clean, and paint the entire area.

<https://hespareparts.com/>

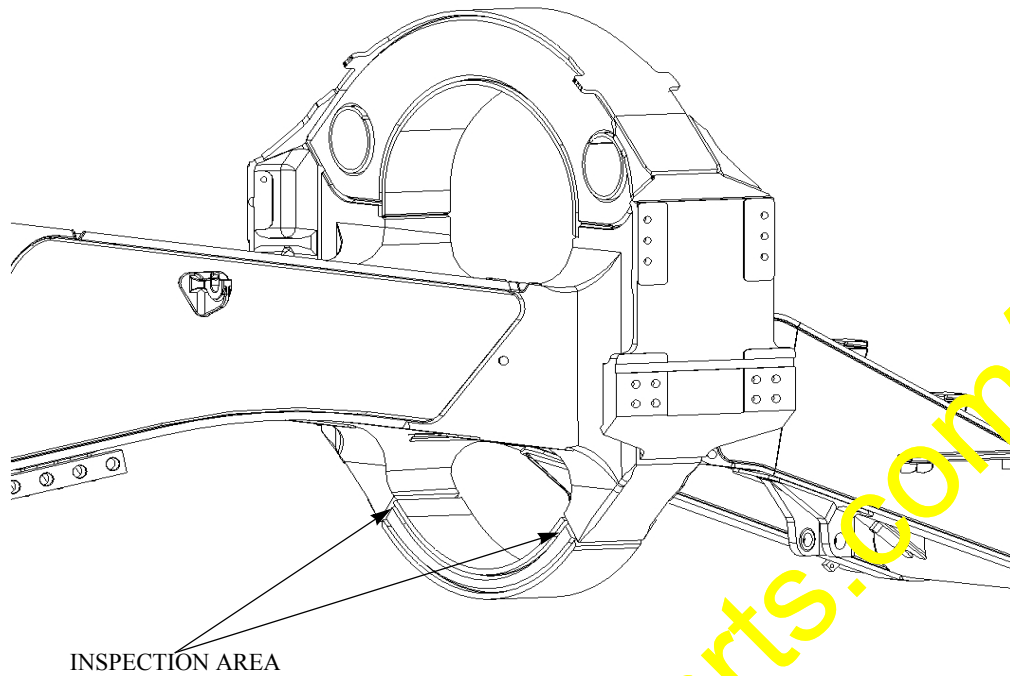


FIGURE 1. HORSECOLLAR FRAME INSPECTION AREA

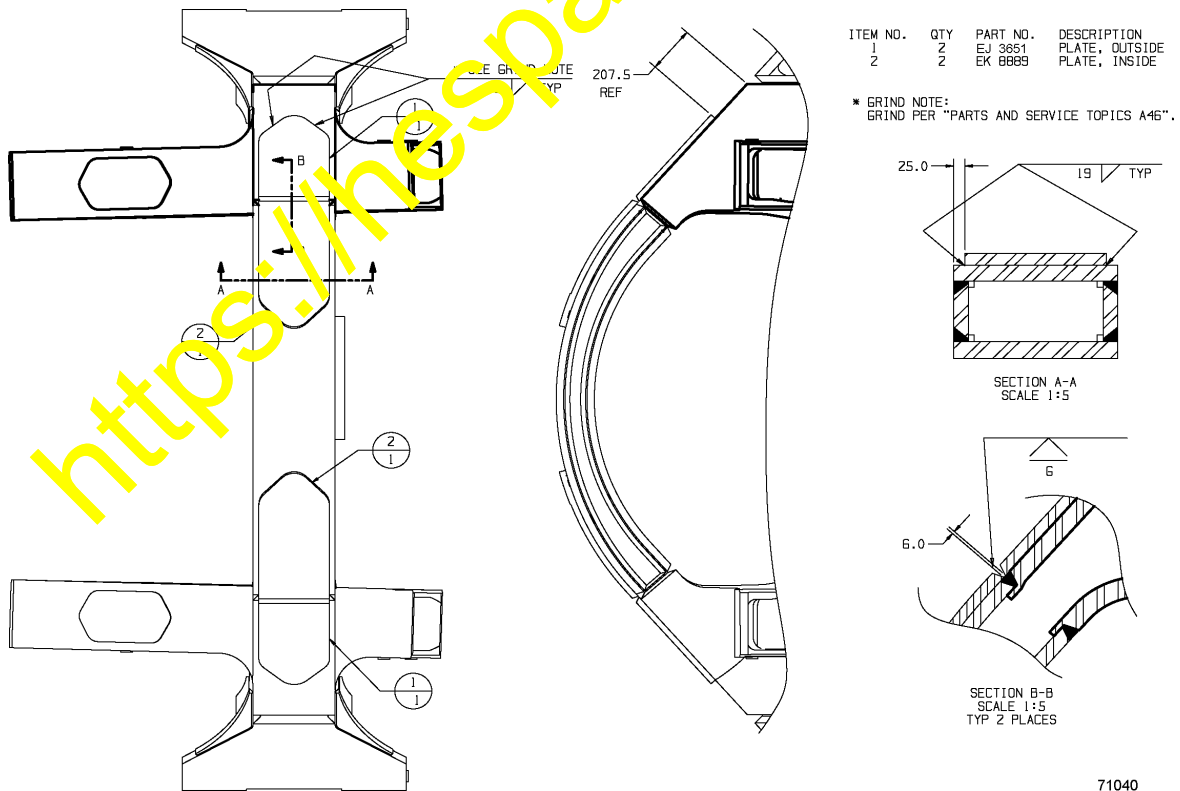
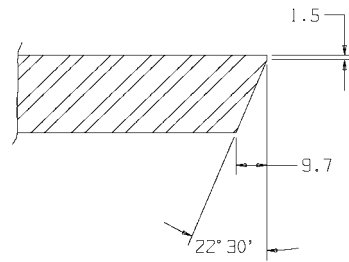
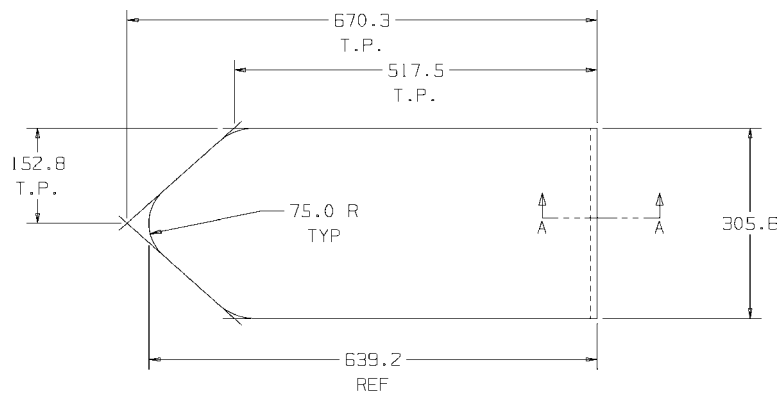


FIGURE 2. LOWER HORSECOLLAR LOOP KIT INSTALLATION DRAWING (EK8887)



SECTION A-A
SCALE 1:1

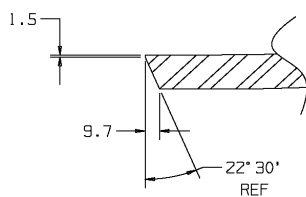
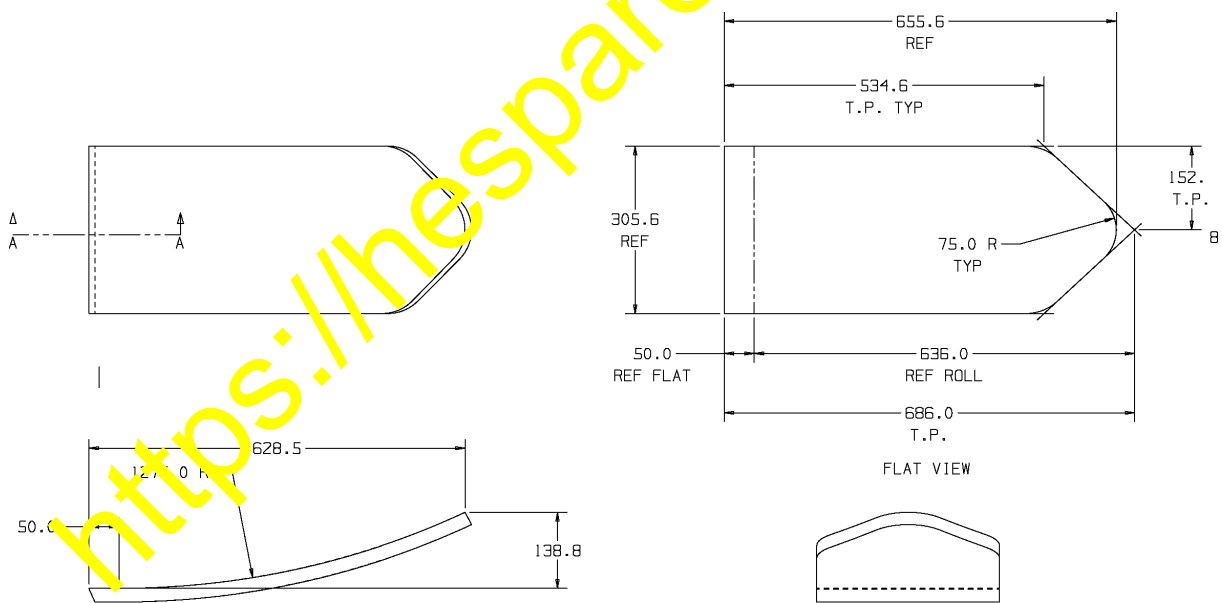
71038

Material Spec.:
ASTM A572
Grade 50

Thermal Cutting Only

Est. Wt. 36.0 kg

FIGURE 3. OUTSIDE PLATE (UJ3351)



SECTION A-A
SCALE 1:2

Material Spec.:
ASTM A572
Grade 50

Thermal Cutting Only

Est. Wt. 35.0 kg

71039

FIGURE 4. INSIDE PLATE (EK8889)