

Repair Bulletin

6/20/22

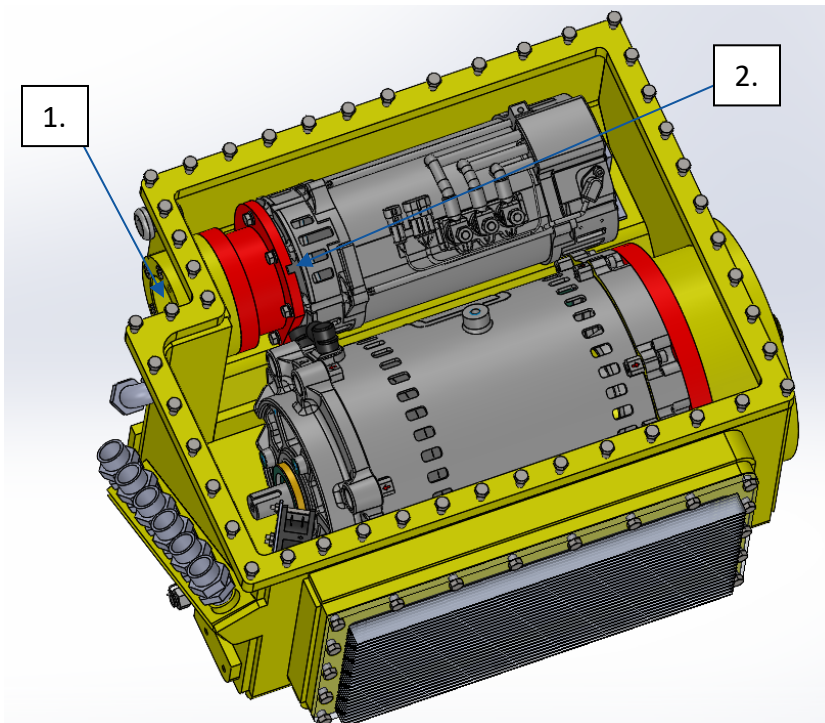
Affected Truck: HSD-EX-60

Background:

It is possible to have interference between the enclosure wall and the pump motor. This will cause binding of the pump motor shaft and results in a tight spot in the rotation of the pump adapter shaft or failure of the motor shaft. This can be diagnosed by removing the pump and enclosure lid for inspection.

Repair shall be undertaken if:

1. Turning the coupling by hand detects a tight spot in the rotation. Or is tight to turn all the way around.
2. The motor shaft and coupling adapter shaft spin independently as viewed from above the enclosure, indicating a broken motor shaft.



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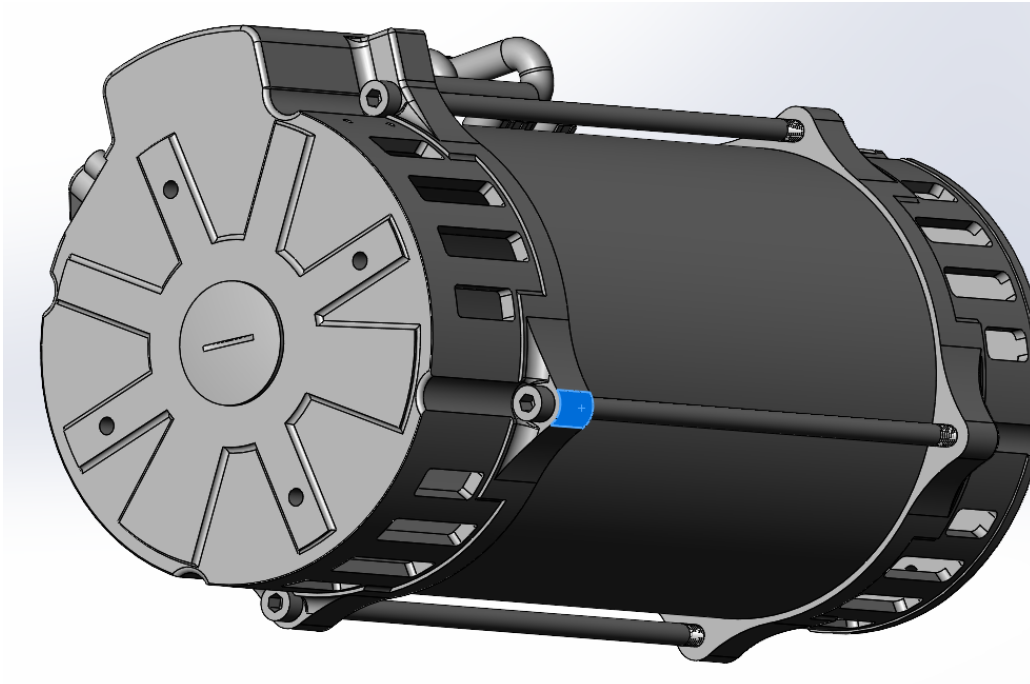
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Corrective Action:

Perform this repair by carefully removing material from the specific areas where the interference occurs.

1. Remove the pump motor from the enclosure with the end bell and adapter shaft assembly still attached. First remove pipe plugs, then remove SHCS from the outside of the enclosure. Lift motor out of the enclosure.
2. If the motor shaft is not broken the coupling adapter shaft should spin freely once removed from the enclosure. If it is verified that the motor shaft is broken disassemble the end bell and prepare to replace the motor. (see appendix A for assembly after motor replacement).
3. On the back of the motor, the aluminum boss for the tie bolts is the area of interference. (see highlighted blue in picture below). Clearance can be made by carefully grinding around this surface. A max of 1/8" of material can be removed making sure not to undermine the head of the bolt.

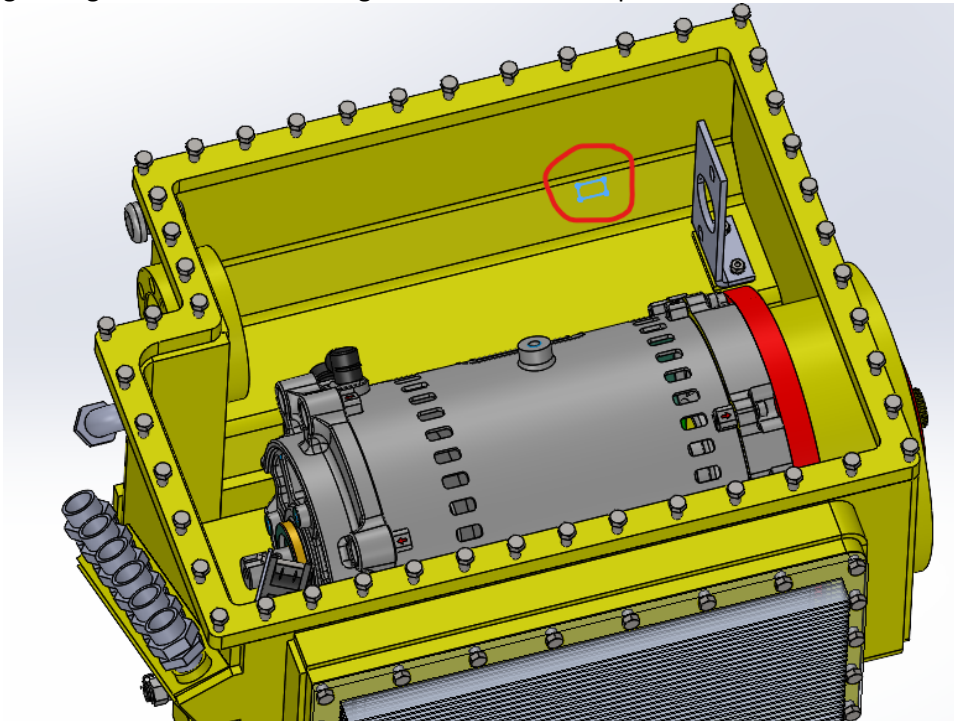


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4. The area of contact on the enclosure is the inside wall after the first bend where the motor boss is located. This area is roughly 14.5" to 15.5" from the face of the pump end bell mounting ring. Contact may be seen here by scratched paint. Light grinding only in the contact area on the angled face below the first bend. A max of 0.040" can be removed here by grinding. Measure from an unground face with a depth mic.



5. Before re-assembly, paint the ground surface of the enclosure or apply a light coating of rust inhibitor or grease to protect the exposed metal.
6. Place the pump motor assembly into the enclosure. Tighten the bolts from the outside of the enclosure in a star pattern, to a torque of 20lb-ft. It is helpful to tape a piece of paper around the back of the motor. Once all bolts are torqued, remove the tape and pull out the paper. If it can be pulled out without tearing then adequate clearance has been achieved.
7. Verify that the coupling adapter shaft still spins freely before assembling the pump and closing the motor enclosure.

If this repair does not resolve the interference then the truck will have to be returned to Rico for dis-assembly and inspection.

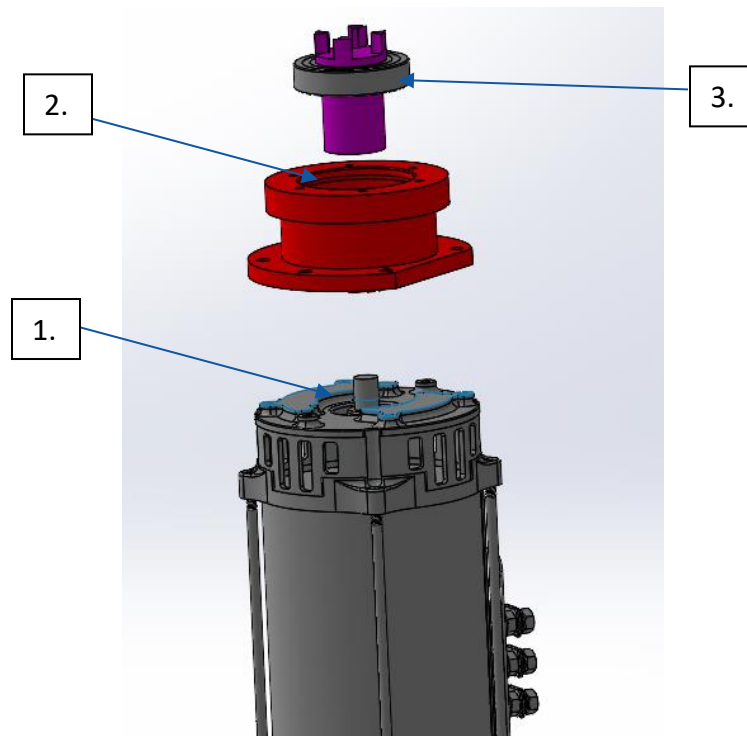
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Appendix A: Assembly of the pump motor end bell assembly.

1. Check motor shroud to motor body using a shaft mounted indicator.
 - a. Torque motor tie bolts to 15-18 lb-ft. Sweep the machined faces of the motor shroud for runout relative to the shaft.
 - b. Target 0.002" runout max. Runout can be corrected by tightening or loosening the tie bolts, maintain 15 lb-ft min.
2. Check end bell to motor shroud using the coupling adapter shaft as the motor shaft extension and an indicator placed on top the adapter shaft.
 - a. Insert adapter shaft into bushing and seat over the key.
 - b. Indicator on shaft adapter sweep to face of end bell. Runout =0.002"
 - c. Do Not use set screw on the woodruff key
 - d. Torque end bell bolts in star pattern, 18 lb-ft
3. Press bearing onto adapter shaft. Assemble the adapter shaft with bearing into the end bell.
 - a. The bearing and shaft adapter should slide in by hand with no hammering or pressing.
 - b. Check for tight spots, rotate by hand.
 - c. Indicator from adapter shaft to end bell face, runout 0.003"



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