



## Void Repair Procedure, Five Star® LV Adhesive

Void repair in either baseplates or soleplates is a time for minimum pressure and maximum patience. The voids should be carefully "sounded out" with a small ball-peen hammer. This small hammer will give a better ring than larger hammers, bolts, or some other metal object. Carefully scribe the void area so that properly positioned vent holes can be located. It will be important to keep the vent holes inside the void area but close to the bond interface. The sounding procedure should be after the grout has cured for 12 hours minimum.

When tapping the baseplate/soleplate with the ball-peen hammer, a definite ring will be heard where a void is present. The areas where the baseplate is in full contact with the grout will have a solid sound. There will be other times when the sound will not be so definite. Caution should be taken not to assume there is a void at these locations. Sometimes the cross bracing under the baseplate will give a different sound than in the center of the steel plate. Vertical gusset reinforcement near motor or driven mounts will sometimes ring as you tap the base. Do not confuse these sounds as voids.

**IT IS BETTER TO NOT DRILL AND PUMP AN AREA IF YOU ARE NOT SURE THERE IS A VOID.** If the grout is properly bonded to the steel plate and the cross members under the baseplate, there is an excellent possibility that you will dis-bond the baseplate/soleplate by over pressuring the area and causing more voids.

### **DRILLING HOLES:**

Vent holes should be drilled in the void area and as close to the bonded interface as possible. With the vent holes at the perimeter of the void, there is little chance of pressurizing the void. Injection port holes will be drilled in the center of the void. Grease gun zerk fittings are placed in the injection ports to allow for placing Five Star® LV Adhesive. Do not use thread lubricant when placing the zerk fittings.

### **NUMBER OF HOLES:**

For each injection port, there should be at least three (3) vent holes. Injection ports should not be more than 12 inches (305 mm) from the vent holes. Because you are always working "blind", it is imperative to have more than one injection port and vent in any void larger than 12 inches (305 mm) diameter.

### **DIAL INDICATING:**

The coupling should always be dial indicated to be assured there is no movement at the coupling. A dial indicator should be located within 6 inches (150 mm) of the injection ports. A thin plate of ¼ - ½ inches (6 - 13 mm) thick can be lifted when the grout is being pumped. 3-5 mils positive deflection at the injection port does not mean the coupling has been affected. The dial indicator at the injection port will indicate that the rate of injection is too fast or that pressure is developing under the plate.



### INJECTION OF REPAIR GROUT LIQUID:

During the injection process, there should be no external pressure on the baseplate. Do not stand or lean on the baseplate.

Five Star® LV Adhesive should be pumped slowly with minimal pressure on the grease gun. The only pressure required should be enough to pump through the gun and zerk fitting. **THIS PROCEDURE IS NOT INTENDED TO DEVELOP PRESSURE UNDER THE BASEPLATE.** The only purpose for using a grease gun is to provide a method of placing the LV Adhesive. Over pressuring the void will lift the baseplate and create more voids.

The dial indicator will move when too much pressure is used, or the rate of injection is too fast. When the dial indicator moves (a maximum of 3 mils) stop pumping and allow the pressure to dissipate the injection liquid and allow the dial indicator to zero again. If the dial indicator does not zero, that injection port should be abandoned. Be careful not to bump the dial indicator because this will give you a false reading. Injection should stop when clear epoxy liquid is evacuated at each air vent hole.

During the injection process, the epoxy liquid will evacuate from the vent holes at different intervals. When the grout starts to evacuate out one hole temporarily plug the hole until all the vents are voiding epoxy resin. There will be times when one vent will not void. In these cases, your vent may be in the bonded area and you should discontinue the pumping.

It is possible to lightly tap the baseplate after injection to determine if the void is full. Do not tap the plate during injection as this will affect the dial indicator. Cure rate of the Five Star® LV Adhesive will depend on the temperature of the baseplate and the steel. Typically, the resin will cure in 24 hours at 75°F (24°C).