General Information

The Stucki RetroXT LP (Low Profile) Drop In Side Bearing utilizes an elastomeric material in the form of two cylindrical compression columns to provide the constant contact preload force. The Stucki RetroXT LP Drop In Side Bearing is approved for interchange service under the requirements of AAR Specification M-948. It is available in a convenient 4500 lb. preload. The design allows for 5/8” of vertical travel, meeting the requirements for extended (long) travel side bearings. It is a low profile design with a setup height of 2-9/16” to allow for a simple upgrade from friction blocks.

The Stucki RetroXT LP Drop In Side Bearing consists of a metal base, two elastomeric columns, and a metal cap. It is designed to fit inside a monocast or weld-on side bearing bolster pocket with a minimum pocket size of 4-1/8” wide x 9-5/16” long (Fig. 1).

Figure 1. RetroXT LP Drop In Side Bearing

AAR specifications require that constant contact side bearings support no more than 85% of the static, empty car body weight (less trucks) at the nominal new preload level. Thus, the minimum acceptable car body weight to which this side bearing can be installed is: 21,176 lb. There are no maximum weight limits.

Installation Requirements

1. Level Track
   Tank car must be sitting on reasonably level track.

2. Body Side Bearing Wear Plate
   Existing body side bearing wear plates can be retained for use with the RetroXT LP Drop In side bearing, provided they meet the following requirements:
   1. Must conform to AAR standard S-235.
   2. Fastener heads must be flush with, or recessed from the wearing surface of the wear plates.
   3. Fasteners must be tight and nuts tack welded.

3. Bolster Side Bearing Pockets
   1. The inside footprint of the monocast or weld-on side bearing bolster pocket must be greater than the maximum footprint of the RetroXT LP Drop In Base which is 4-1/8” wide by 9-5/16” long.
   2. The height of the monocast or weld-on side bearing bolster pocket must be less then or equal to the height of the RetroXT LP Drop In Base, which is 1-7/8” high. If not, the bolster pocket rail will have to be lowered to 1-7/8” or the LP Drop In Base will have to be shimmed up so that it sits slightly higher then the top of the bolster pocket rail. The top center engagement surface of the RetroXT Cap is 1/16” higher then the top of the base when the side bearing is at solid height.
   3. The body side bearing wear plate must have enough shim thickness to allow for adjustment to 2-9/16” from the bolster pocket floor to the underside of the body side bearing wear plate (or 11/16” from the top of base to the underside of the body side bearing wear plate).

   If the RetroXT LP Drop In cannot be used, consult Stucki to see if the RetroXT LP Bolt On model is applicable or a thinner wear plate can be used.

Installation Procedures

   Note: All previously stated requirements must be met before the RetroXT LP Drop In Base can be installed.

1. Locate the tank car within the shop on reasonably level track.
2. Jack car body and roll truck out from underneath car body.
3. Remove friction blocks from side bearing bolster pockets.
4. Remove all scale, road debris, and grit from inside of side bearing bolster pocket.
5. Install LP Drop In Base into side bearing bolster pocket with flat side down. Check to make sure base does not rock in pocket.
6. Using a straight edge, check that the top surface of bolster pocket is flush or below the top surface of the LP Drop In Base. If the bolster pocket is too high it will have to be shortened or the LP Drop In Base will have to be shimmed up. If a shim is used, it must cover the entire surface of the bolster pocket floor. The bolster pocket can also be removed entirely and a RetroXT LP Bolt On side bearing can be installed.
7. Install new bowl liners if needed, but do not install solid lube patties or discs at this time.
8. Roll the truck underneath the car body and lower the car body while aligning king pin with king pin hole.
9. Measure the vertical space between the top of the LP Drop In Base and the underside, or wearing surface of the body side bearing wear plate using a caliper, step gauge, or Go-NoGo gage (Refer to Fig. 2). Two measurements should be recorded from each side bearing (one at each end of the side bearing) and averaged.
10. The averaged measurement should be 11/16" +/- 1/16" if metal or used non-metallic horizontal bowl liners were installed. If new non-metallic bowl liners were installed, the averaged measurement should be 3/4" +/- 1/16". The 1/16" is added to allow for permanent set of new non-metallic horizontal bowl liners. If the averaged measurement falls outside of these ranges, shims will have to be added or removed from the body side bearing wear plate until the tolerances are met.

Figure 2. RetroXT LP Drop In Side Bearing Setup

Height Measurement (w/o cap or columns)

11. Make sure the body side bearing wear plate fasteners are tight and nuts are tack welded after all shim adjustments are made.

12. Jack the car body and roll the truck out from underneath the car body.

13. In preparation of the pocket for installation of the side bearing, weld, shims, bar stock, etc. may be used to minimize the longitudinal clearance (common shop securement techniques can be utilized). If no side bearing bolster pocket is present because a new bolster was used, a RetroXT LP Bolt On side bearing should be used instead. Do not use any additional wedges, shims, spacers, or other inserts between the end of the LP Drop In Base and the bolster pocket when securing it to the bolster pocket.

Figure 3. RetroXT LP Drop In Base Installation

14. Using a straight edge, check that no weld or other obstruction is protruding above the top of the RetroXT LP Drop In Base. If there is, it will have to be ground flush with the top of the LP Drop In Base.

15. Install the two cylindrical RB-57 Columns into the RetroXT LP Drop In Base (except for identifying text, top and bottom of columns are identical). Align the holes in the ends of the columns with the cylindrical protrusions in the base (Refer to Fig. 1). There is a slight interference fit, so some force may be required.

16. Install the metal RetroXT Cap by aligning the cylindrical protrusions (same as base) into the holes in the ends of the RB-57 Columns. There is a slight interference fit.

17. Check that the cap & base are pressed into the ends of the two columns by moving the cap from side to side. The cap or columns should not become disengaged from the base. Ensure that the ends of the cap sit below (or into) the top of the base (Refer to Figs. 4 & 5).

18. Lubricant should be applied as a “dab” approximately 1-1/2" to 2" in diameter to the center area of the RetroXT Cap. Recommended lubricant is any lithium-based grease. Do not apply lubricants containing graphite or molybdenum disulphide. This is a one-time only requirement – no further lubrication of the RetroXT cap or body side bearing wear plate is necessary (Fig. 4).

Figure 4. RetroXT Cap Lubrication

19. If lube patties or discs are required they should be installed at this time.

20. Roll the truck underneath the car body and lower the car body while aligning king pin with king pin hole.

21. If possible check setup height indicator between cap and base. Setup height is correct when bottom edge of cap is aligned with base step (Fig. 5).

22. The car is now ready to be released into service.

Figure 5. RetroXT LP Drop In Side Bearing (Shown at Free Height)