

STUCKI RFE-18 AND RFE-26 RESILIENT FRICTION ELEMENT INSTALLATION INSTRUCTIONS

The Stucki RFE-18 and RFE-26 Resilient Friction Elements are column friction snubbing assemblies that replace conventional ASF Ride Control™ or Super Service Ride Control™ friction wedges in 6 X 11, 6-1/2 X 12, and 7 X 12 journal freight car trucks. The primary and essential difference between the RFE-18 and RFE-26 is the wider wings of the RFE-26 for compatibility with the "Super Service" feature of that version of the Ride Control™ truck.

The purpose of the RFE-18 or RFE-26 system is to reduce the wear that normally occurs on the sloped surfaces of the friction wedge pockets in the truck bolster. Friction snubbing forces are equivalent to those of the Ride Control™ or Super Service Ride Control™ systems.

I. NOMENCLATURE AND PARTS DESCRIPTION

The RFE-18 assembly, shown in Figure 1, consists of an austempered ductile iron heat-treated wedge element ① with a pair of resilient urethane pads ② affixed to the sloped wings of the wedge. The resilient pads are interlocked to the iron wedge by means of transverse ribs ③ and tapered posts ④ that are tightly retained by tapered holes ⑤ on the wedge slopes. Along each edge of the vertical (wearing) face of the wedge are indicator grooves ⑥, to indicate the allowable wear limit. The components of the RFE-26 element are virtually identical except for the wider casting wings and wider resilient pads.

Other parts of the RFE-18 and RFE-26 friction snubbing systems include one or two wedge biasing springs and a hardened wear plate attached to the side frame column. These components are identical to the wedge springs and column wear plates used in a conventional constant friction snubbing system, and in the case of a retrofit application, existing springs and wear plates need not be replaced if in satisfactory condition. Drawings showing the arrangement of either system can be obtained from the Stucki web site, www.stucki.com.

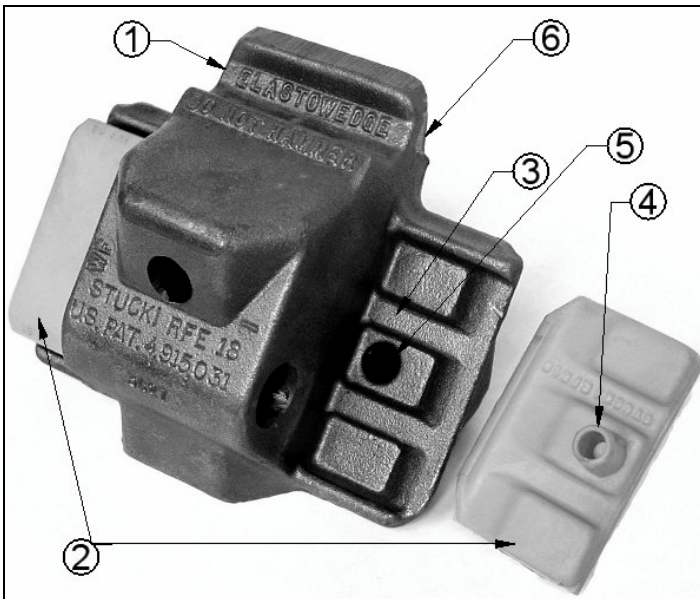


Figure 1

II. INSTALLATION INSTRUCTIONS

The following instructions A, B, and C apply generally to retrofit applications. For new car applications, proceed to instruction D, *Assembly into Truck*. To achieve the longest possible service life and

most efficient performance of the RFE-18 or RFE-26 friction elements in retrofit applications, it is important that the following instructions are followed carefully:

A. TRUCK BOLSTER PREPARATION

Although no bolster modification is required for Stucki RFE-18 or RFE-26 installation, it is essential that wedge pocket conditions be inspected for compliance with the following requirements:

If bolster pocket slopes exhibit more than 3/32" wear at any point from the extreme top edge when referenced to an ASF angle gage No. 1-7927, slope surfaces must be restored by rebuilding up with weld in accordance with conventional practice. Hard-faced weld rebuild is not recommended for RFE-18 or RFE-26 applications.

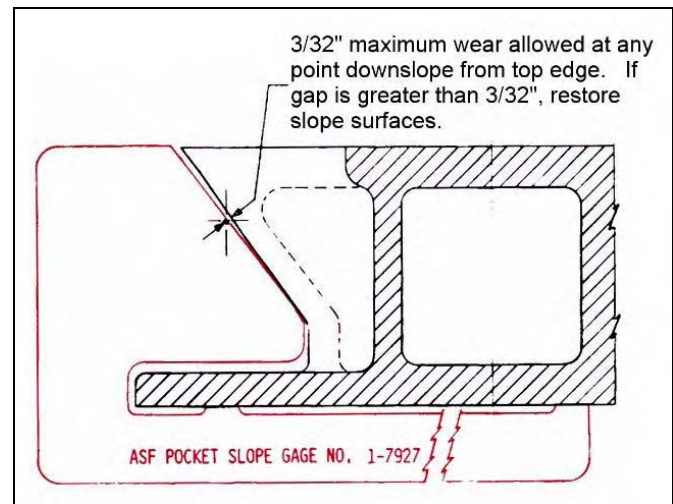


Figure 2

When slope surfaces are rebuilt, the welded areas must be ground reasonably smooth and flat. This must include removal of all significant weld spatter in corners. The top edge must be rounded off by grinding to approximately 1/8" radius (see Fig. 3).

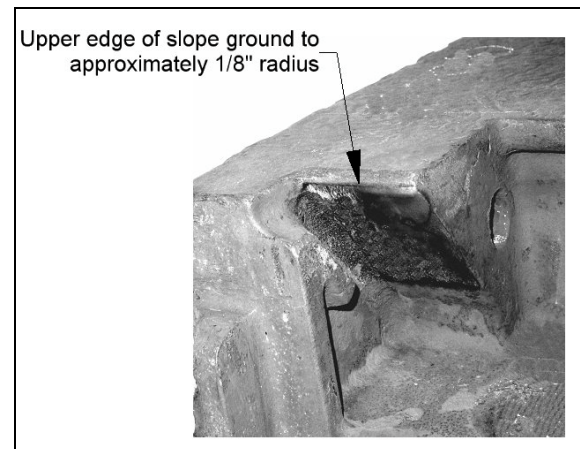


Figure 3. Rounding of Slope Top Edge

If pocket slopes are equipped with separable wear plates, these must be inspected for cracks and heavy wear, and replaced if necessary in accordance with instructions given in the ASF

Maintenance and Repair Manual for 70 and 100 ton Ride Control™ Trucks. However, replacement slope wear plates for use with RFE-18 may be made from mild steel. (These are available from A. Stucki Company. See ASC drawing SA-D-03917-A on Stucki's web site.) If new wear plates are installed, center plug welds must be ground flush with plate surface and the top edge of wear plate must be rounded off by grinding to approximately 1/8" radius.

IMPORTANT: In all cases the bolster surfaces that will be in contact with the elastomer pads on the RFE-18 or RFE-26 wedges must be smooth and free of projections that would gouge the pad surfaces. In no case should RFE 18s or RFE26s be installed unless bolster pocket slopes meet the requirements noted above. Bolster pocket slopes must never be lubricated when applying Stucki wedges.

B. INSPECTION OF FRICTION WEDGE SPRINGS

1. If existing wedge springs are to be reapplied with the RFE-18 or RFE-26 wedges, they should be checked for sufficient free height to insure proper loading of the wedges. Minimum acceptable free heights are 7" for both outer and inner wedge springs on 100 and 125 ton trucks, 7-1/8" for outer wedge springs on 70 ton trucks, and 7" for inner wedge springs on 70 ton trucks.
2. When RFE-18 or RFE-26 applications are made to new cars, or when used wedge springs must be replaced, the following equivalent Stucki RFE wedge springs are available: RFE-18 Outer Spring No. RFE18OUTER100, and RFE-18 Inner Spring No. RFE18INNER100. Note that the springs used with the RFE-26 are the same as those used with the RFE-18.

C. INSPECTION OF SIDE FRAME COLUMN WEAR PLATES

Column wear plates must be inspected for wear or cracks and replaced as required in accordance with standard practices. If replacement column wear plates are required, refer to A. Stucki Company drawing SA-D-03396-A.

D. ASSEMBLY INTO TRUCK

If the conditions described in the preceding instructions A, B, and C have been met, the RFE-18 or RFE-26 friction wedges may be assembled into the truck bolsters.

Procedure for installing RFE-18 or RFE-26 wedges is virtually identical to that for conventional wedges with the exception that the wedges themselves should never be hammered upon during insertion. Stucki RFE-18 or RFE-26 friction shoes are a special cast iron rather than cast steel material and can crack when impacted with sufficient force.

1. The urethane pads are shipped assembled onto the slope faces of the wedge castings. Any that may have become dislodged during shipping or handling can be reinstalled with a light mallet blow to reseat the retaining post into the hole on the casting wing slope.
2. Insert the wedge springs into the RFE-18 or RFE-26 wedges, then manually set the wedges and springs into the bolster pockets, springs seated on pocket floor.
3. Use a conventional hydraulic or air operated system to drive RFE-18 or RFE-26 wedges and springs into pocket cavities. To reduce friction, it is recommended that the slope surfaces of the truck bolster pockets be wetted with water or liquid soap. It may also be helpful to tap the bolster sharply with a hammer if either wedge tends to "hang-up". Do not strike the wedge itself, however, as this can cause chipping or cracking of the cast iron material.

4. Once the wedge has been driven fully into the pocket, a retaining pin must be inserted through the hole in the outboard sidewall of the pocket (seen from the bolster end). The pin must go through the mating holes in both sides of the wedge, and finally through the corresponding hole in the inboard pocket side wall. In most cases a 5/8" diameter pin can be used. There will be exceptions, however, because of casting variations, when it may be necessary to use a 1/2" diameter pin to properly engage all four holes. Do not use tapered pins or drift pins with a major diameter greater than 5/8".

Caution: If a 5/8" pin goes through the outboard holes but does not align with the inboard holes, a smaller 1/2" pin should be applied. Attempts to force a pin through the inboard holes could result in damage to the wedge. After the retaining pin has been properly inserted, the wedge insertion mechanism may be released. After all four wedges have been inserted and pinned in the bolster pockets, the truck can be reassembled in the conventional manner.

5. After lowering the car body onto the trucks, the pins must be removed from the friction elements. This is done using a conventional shoe retractor ("hockey stick") or other appropriate method.
6. Prior to releasing car to service, all friction element assemblies should be checked to insure that the elastomer pads remained properly seated during installation.

III. IN-SERVICE INSPECTION OF STUCKI RFE-18s or RFE-26s

The Stucki *Yard and Shop Inspection Pocket Guide* provides detailed instructions for in-service inspection of RFE-18 and RFE-26 Friction Elements.

IV. REPLACEMENT OF RFE-18/RFE-26 COMPONENTS

- A. Resilient pads should be replaced on an individual wedge in pairs. Worn or damaged pads can be pried free from a wedge with a large screwdriver. New pads are installed by aligning the tapered post on the back face of the pad with the hole in the slope face of the wedge and striking the pad face with a mallet until pad is seated flush against wedge slope.
- B. If pads have become noticeably melted, it is virtually certain that the subject truck has experienced substantial high-speed hunting. Replacing the pads will not correct the truck deficiency that allowed the hunting to occur. A close inspection of the entire truck, and in particular, the constant contact side bearings, should be made to find the cause of the problem.

If the pad faces exhibit irregular, severe wear, the indication is that the mating bolster pocket slopes have not been properly prepared for the RFE-18 or RFE-26 installation. They should be inspected and reworked as required.

If pads have worn to the extent that the wedge casting has been in contact with the pocket slope surface, there may be gouging of the slope that will require weld restoration and grinding.

- C. RFE-18 or RFE-26 assemblies should be replaced in pairs on a given bolster end.
- D. Conventional all-steel friction wedges and Stucki RFE-18s or RFE-26s should never be combined in the same truck. RFE-18s or RFE-26s must be replaced in kind. An RFE-18 must never be installed in a "Super Service" design truck bolster.