Wabtec
Cardwell Westinghouse

# SK-3103

Revision: H

## SBX Installation & Maintenance Procedure

| ECRN | DG231010A | DWG: PPG | CHK: ALF | APR: PPG |
|---|---|---|---|---|
| Description: | See ECRN | | | |

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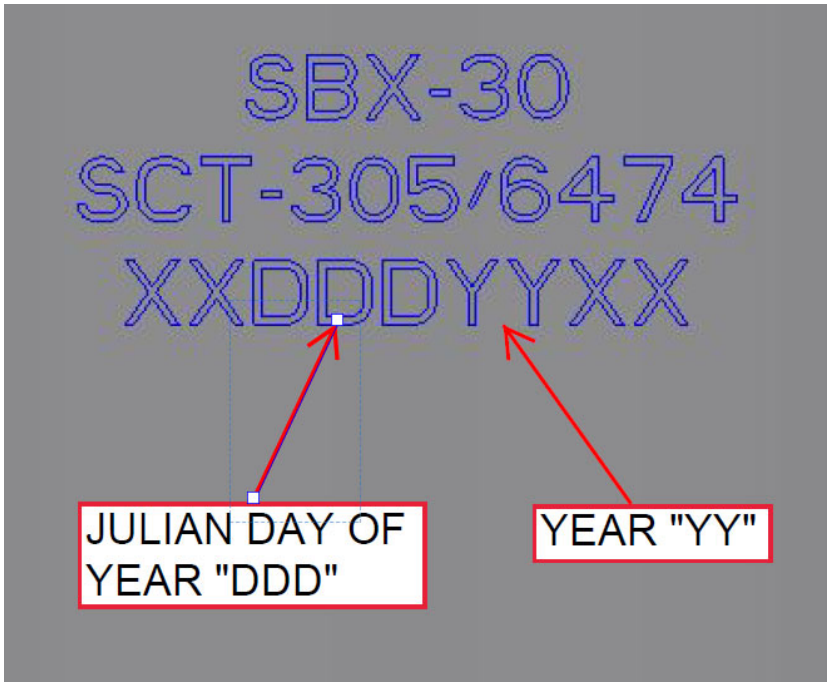
## 1 Scope:

1.1 Installation and maintenance procedures for all Cardwell Westinghouse Long Travel Constant Contact Side Bearings, SBX-30, SBX-4, SBX-45, SBX-60, and SBX-80.

## 2 Storage and Shelf Life

2.1 Side bearing elements should be stored out of direct sunlight. Do not expose elements to 175°F [80°C] or above for an extended time (2+hours).

2.2 The recommended shelf life of the side bearing element is 6 years from the manufacture date.




## 3 Preparation:

3.1 Inspect car body side bearing and body side bearing wear plate to ensure surface uniformity.

3.2 Car body side bearing and body side bearing wear plate plate should be parallel to side bearing pad on bolster.

3.3 Check car body wear plate size and condition. The wear plate surface must be free of pitting, weld spatter, and surface protrusions. Wear plates with surface variation geater than $^{1}/_{16}$" over a 4" space, or $^{1}/_{8}$" between the fasteners holes need to be replaced. Minimum wear plate size shall be 4" wide by 12" long.

3.4 Car body side bearing wear plate application must meet AAR standard S-235.

## 4 Installation:

4.1 The side bearing cage is to be secured to the bolster pad by $^{7}/_{8}$”-9 Grade 5 or better bolts with self locking nuts. Bolts should be torqued to 365-435 ft-lbs if dry and 275-325 ft-lbs if lubricated.

4.2 Check the element markings to see if the model number matches the cage. The side bearing element should fit over the center cross. If the element doesn’t fit over the cross or if the element has greater than $^{1}/_{16}$” side clearance, then the wrong element is being applied.

## 5 Lubrication:

5.1 A one-time lubrication application is required when the side bearing cap and side bearing columns are in the new condition. This will reduce the frictional resistance during the break in period.

5.2 It is recommend to use a No. 2 Lithium grease, do not use molydbenum or graphite type lubrications.

5.3 Lubricant Application Options.

5.3.1 Thin layer applied to cap surface with a brush.

5.3.2 1-1/2”~2” diameter dab applied to center of cap.

5.3.3 1/4 Teaspoon applied to center of cap.

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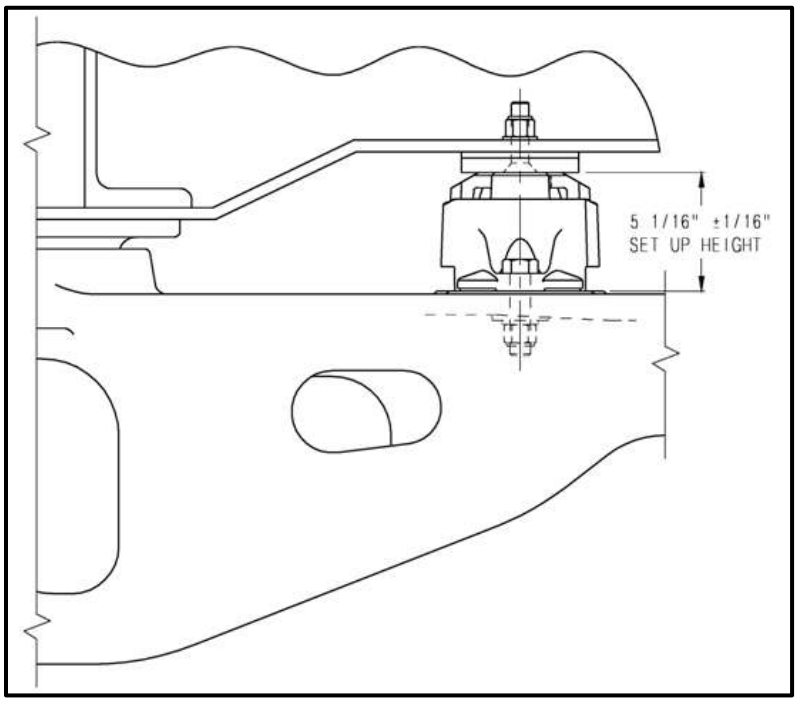
**6 Setup:**

6.1 The distance between the side bearing bolster pad and the car body wear plate (set up height) must be adjusted to 5-$^{1}/_{16}$"± $^{1}/_{16}$". If a new elastomer center bowl liner is used, add 1/16" to the standard set up height and adjust to 5-$^{1}/_{8}$"±$^{1}/_{16}$". This procedure should be performed on an empty car, on level track, without a lube disc, and without the side bearing element installed. It is recommened that inside calipers and steel ruler be used for accurate measurements.




6.2 Add (reduce distance) or remove (increase distance) the necessary amount of shims on the car body wear plate to achieve a 5-$^{1}/_{16}$"± $^{1}/_{16}$" distance between the bottom of the car body wear plate and the bolster side bearing pad using calipers and a steel ruler.

6.2.1 During measurements, make sure the center plate is seated in the bolster center bowl. Do not apply lube disc in center bowl when measuring the set-up height.

6.2.2 If cage is installed, do not apply element while adjusting set up height and measure closest to center of side bearing. If cage is not installed then measure height centered between the fasteners holes.

6.2.3 If new non-metalic horizontal bowl liners used, add $^{1}/_{16}$" to set-up height.

6.2.4 Do not expose side bearings to temperatures higher than 200º F for more than 1-2 hours.

6.3 After the side bearings are installed and car body lowered onto the trucks, the setup height may be greater then the original measured height. The side bearing will take a set and the car will reach the designed set-up height. At temperatures lower then 20ºF the car may require 24 hours or more to settle to correct height. The elements should be stored in a environment at 20ºF or greater for at least 24 hours prior to being installed on the trucks.

## 7 Side Bearing Wear Limits, Gauging, Cause for Renewal or Attention:

7.1 Adapted from the Field Manual of the AAR Interchange Rules, RULE 62 for Cardwell SBX Side Bearings.

7.2 Condemnable at Any Time

7.2.1 Cracked, broken, deformed or missing components.

7.2.2 Side bearing housing fasteners, loose or missing.

7.2.3 Elastomer element, heat damaged or missing.

7.2.4 Side bearing cap having one or more obliterated wear indicators, when the car body is jacked, at that truck location for some other reason.

7.2.5 Constant contact side bearing heights.

7.2.5.1 For cars with a 5-1/16” setup height and 8-1/2” mounting holes. Typically on 4-axle cars and articulated car end trucks.

7.2.5.2 Height adjustment is required at any time, empty, or loaded, when height measured is:

7.2.5.2.1 Sum of the Pairs Measurement (condemning limit):

- Less than 9-3/4”
- Greater than 10-1/2”

NOTE 1: Measure per Figure 1.

NOTE 2: On 4-axle cars, the following pairs must be summed:

- AL+AR
- BL+BR
- AL+BR
- BL+AR

7.2.5.3 All side bearing height measurements must be taken:

- On straight and level track.
- Vertically between the bolster side bearing mounting surface and car body wear plate surface.
- As close to the center of the side bearing as possible.

7.3 Condemnable When Car is in Shop or Repair Track for Any Reason

7.3.1 Constant contact side bearing heights.

7.3.1.1 For cars with a 5-1/16” setup height and 8-1/2” mounting holes. Typically on 4-axle cars and articulated car end trucks.

7.3.1.2 Height adjustment is required, empty or loaded, when at a Repair Shop Facility/Repair Track and height measurement is:
Single side bearing (condemning limit)

- Less than 4-15/16”
- Greater than 5-3/16”

7.3.2 Elastomer elements when removed:

7.3.2.1 Allow elastomer element 1 minute to stabilize. Measure the overall height of element, it is recommended the height should be greater than 3-15/16”.

7.3.2.2 Cuts or splits in the elastomer element. Two or more in the vertical direction each greater than 1/2" in length or one of greater than 1” in length.