

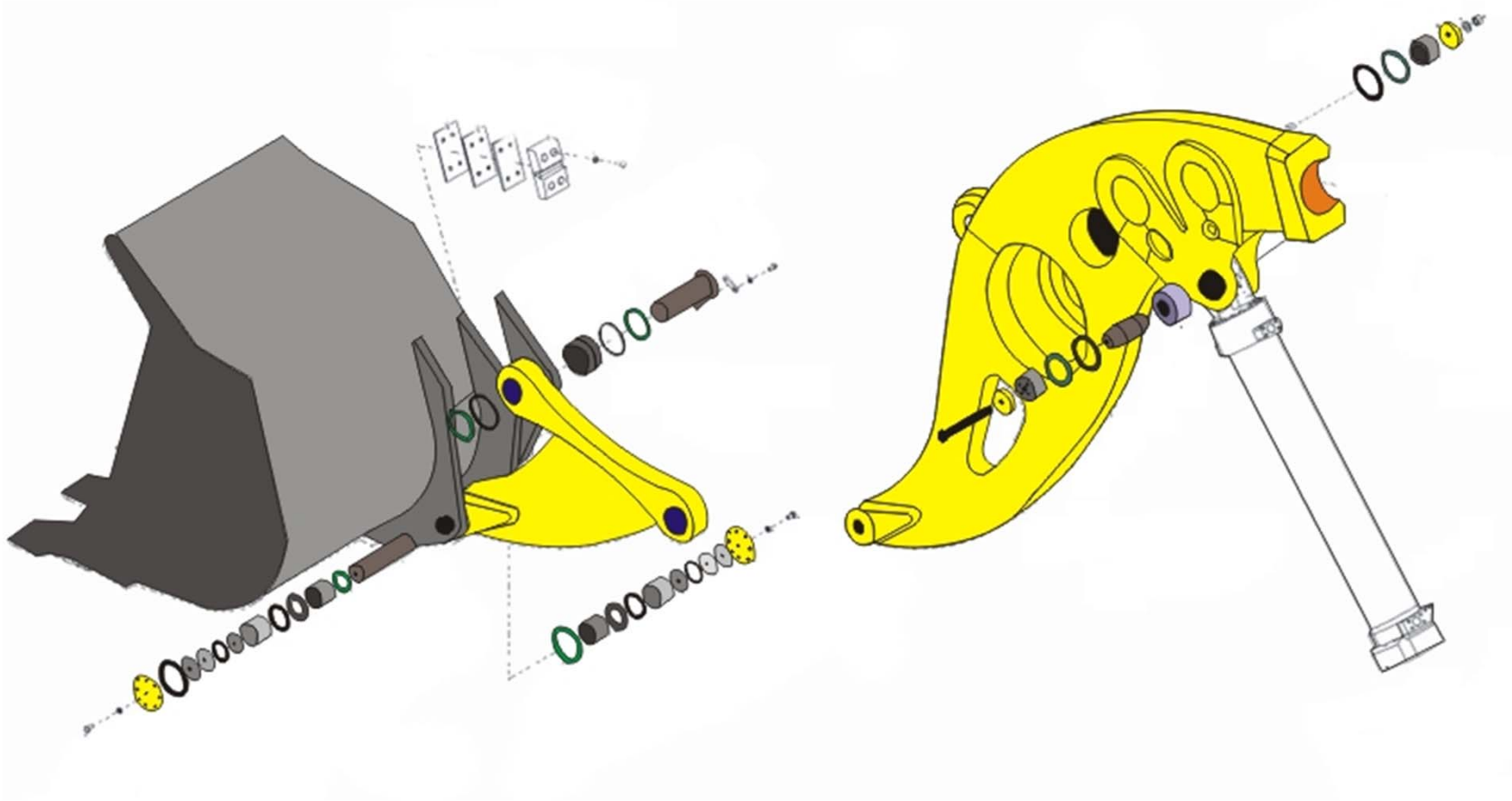


50 SERIES MECHANICAL PINS AND BUSHINGS

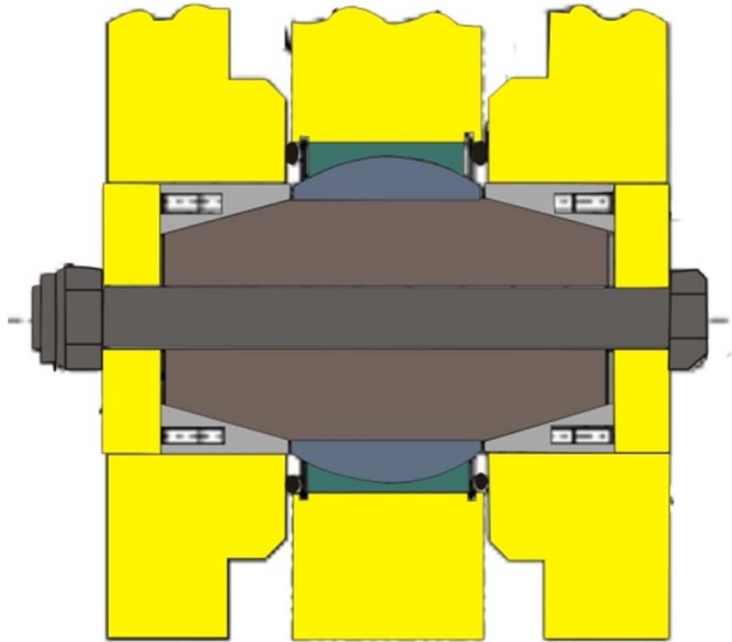
CREATING
VALUE

JOYGLOBAL

SAW-CUT PINS AND BUSHINGS



SAW-CUT PINS AND BUSHINGS



BUCKET CYLINDER

The bolt torque maintains the clamping force that locks the sawcut bushing to the pin and bore.

Why is a re-torque needed?

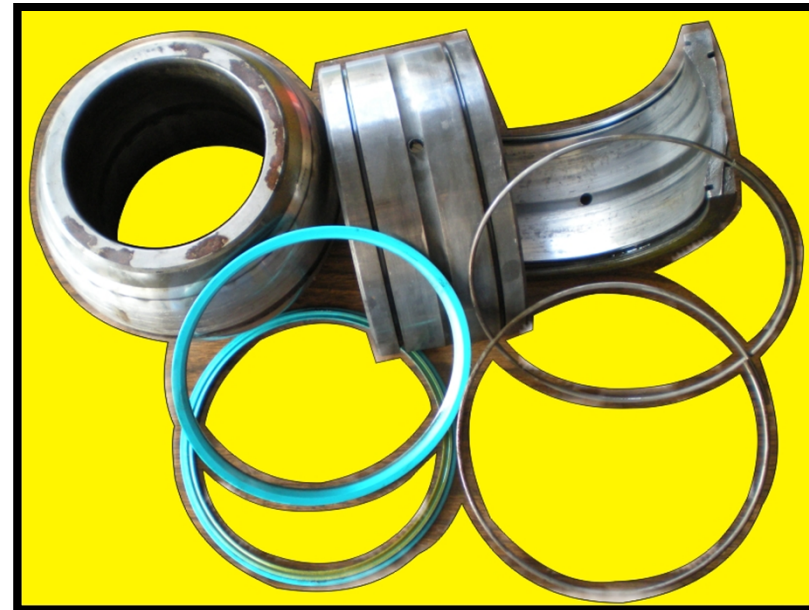
- ❑ To maintain bushing conformation to:
 - ❑ Bore
 - ❑ Tapers
- ❑ Cylinder forces
 - ❑ Cylinder
 - ❑ Bushing
 - ❑ Pin
 - ❑ Saw-cut
 - ❑ Bore (liftarm, bellcrank, level link, bucket)

SAW-CUT PINS AND BUSHINGS

Spherical bearing bushing



- Split outer race
- Spherical inner race
- Outer seal
- Retaining rings



SAW-CUT PINS AND BUSHINGS

Taper Pin

Center area is carburized to 58-64 HRC.

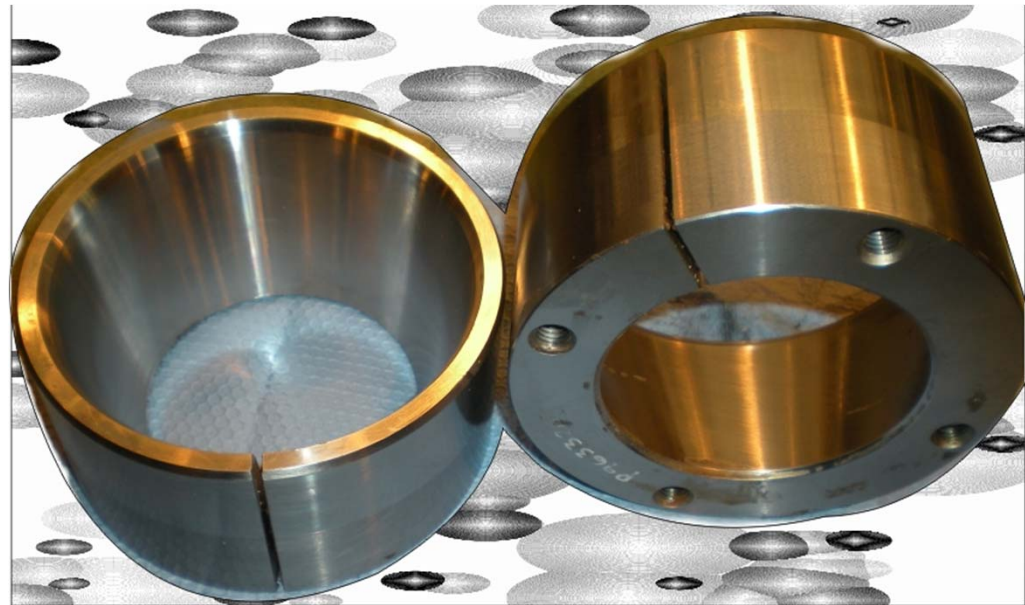
Remainder of surfaces are to be at a minimum 36 HRC.



SAW-CUT PINS AND BUSHINGS

Saw-Cut Bushing

- ❑ Inside taper matches the taper on the end of the pin.
- ❑ Locks the pin to the bore.
- ❑ Accommodates removal of the pin.
- ❑ The split should be .118" wide.



SAW-CUT PINS AND BUSHINGS

Retaining Washer

- ❑ Captures the sawcut bushings
- ❑ Applies the clamping force
- ❑ Heat treated



To measure depth
of bucket pin



SAW-CUT PINS AND BUSHINGS

Bolt

1 ¼ - 7tpi torque to 1363 ft lbs

1 ½ - 6tpi torque to 2371 ft lbs

1 ¾ - 5tpi torque to 68 ft lbs (Super nut) Used on L-1850 & L-2350 hoist rod pin

**Follow Re-torque Intervals and
Check at every PM!**

SAW-CUT PINS AND BUSHINGS

Bolt Steering Cylinder

1 – 8tpi torque to 425 ft lbs L-950 – L-1150

1 ¼ - 7tpi torque to 850 ft lbs L-1350 – L-2350

**Follow Re-torque Intervals and
Check at every PM!**

SAW-CUT PINS AND BUSHINGS

Safety

- When installing any pin or bushing, make sure that all local safety regulations and rules are followed.
- Wear any and all PPE required to accomplish the task.
- Use the appropriate lifting practices to maneuver heavy parts into position during installation.

SAW-CUT PINS AND BUSHINGS

Installing Bushing

- When installing bushing into the bore and onto the pin, make sure that the split is positioned 90° to the centerline of the component.
- Opposite saw-cut is positioned 180° in relation.

Recheck bolt torque at every PM.

SAW-CUT PINS AND BUSHINGS

Seating the bushing and pin



When seating the bushing, do not strike the bolt or retaining washer with a metal sledge hammer. Use an appropriate sized mallet on the bore ear to advance the bushing onto the pin and into the bore.

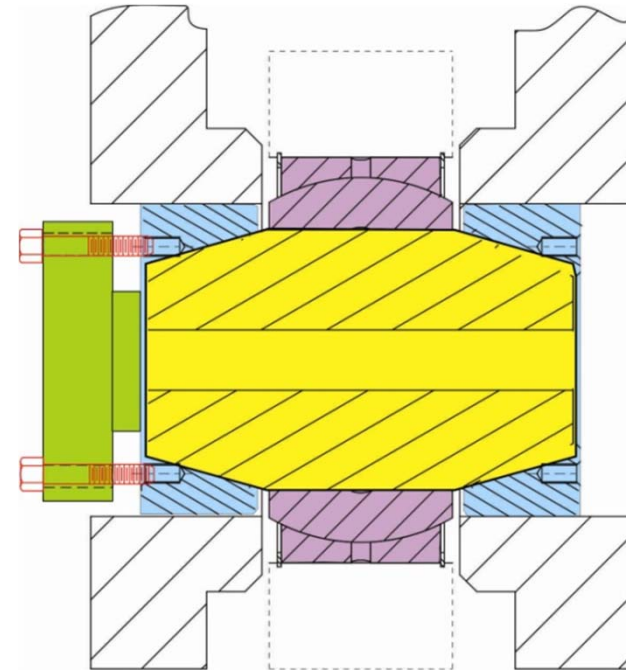
Repeat until the bolt doesn't advance when torque is set.

Recheck torque at every PM.

SAW-CUT PINS AND BUSHINGS

Removal tool

- Remove clamping bolt and capture plate washers.
- Install bushing removal tool using four bolts and the tapped holes in the sawcut.
- Tighten the four bolts evenly.
- Bushing should press off the pin and out of the bore.
- If bushing does not come out, strike the center of the tool with a hammer.



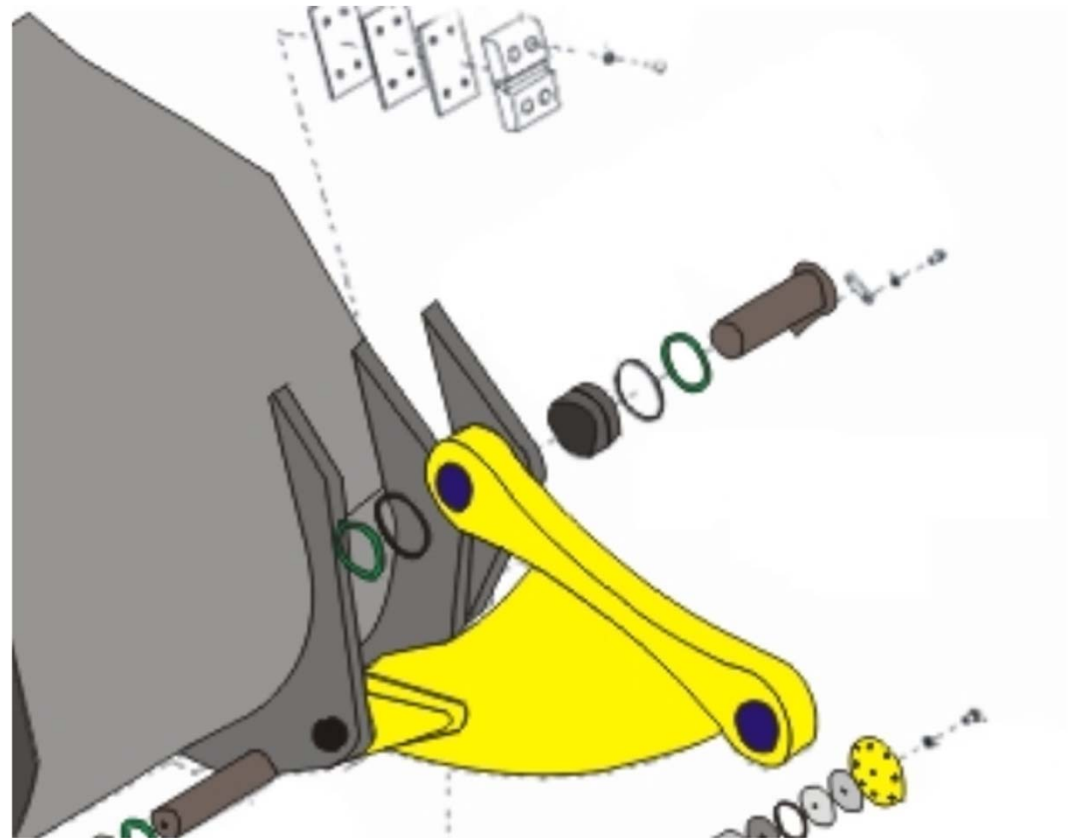
TA15633

STRAIGHT PINS AND BUSHINGS

Level Link to Bucket Pin (L-950 & L-1150)

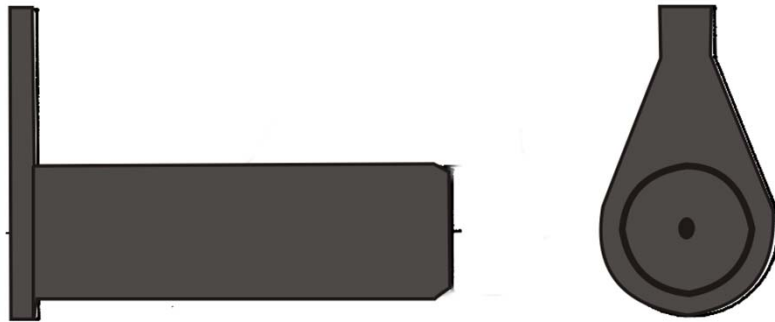
The level link to bucket pivot joint is made up of:

- The Pin
- Pin Cap Lug
- Bolts
- Lock washers



STRAIGHT PINS AND BUSHINGS

Level Link to Bucket Pin (L-950 & L-1150)



The pin is 4 ½ inch diameter.

One assembly made up of:

- Pin Lug
- Pin Section



STRAIGHT PINS AND BUSHINGS

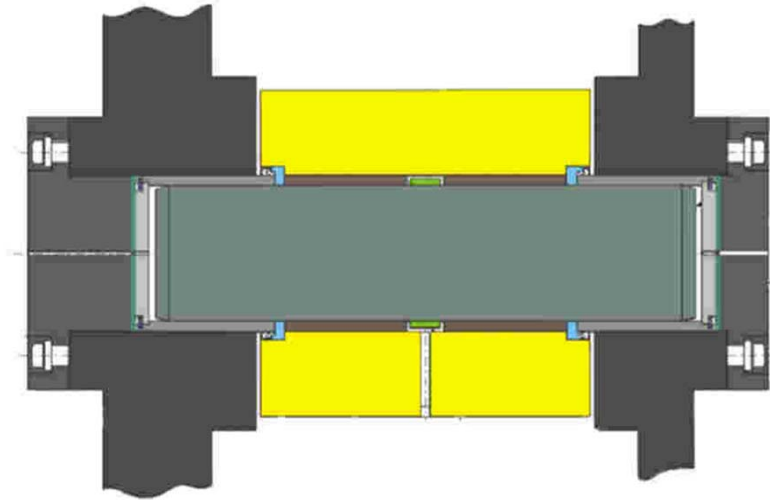
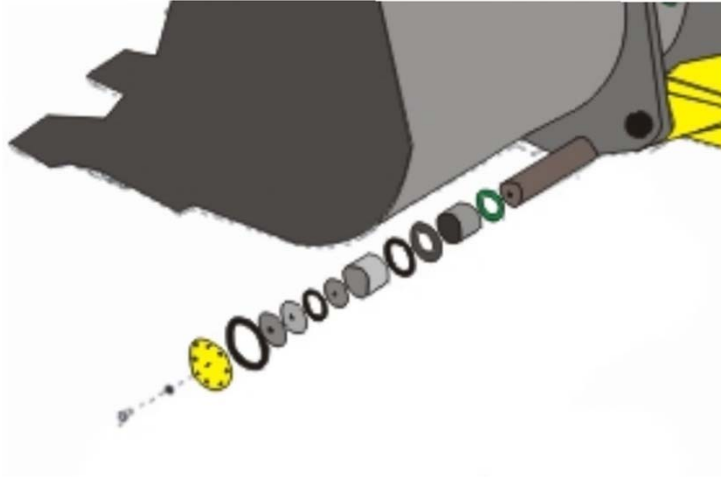
Level Link to Bucket Pin (L-950 & L-1150)

- The pin lug secures the pin in place
- Prevents rotation of the pin independent of the bucket movement
- The bolts and locking tab secures the pin assembly in place



STRAIGHT PINS AND BUSHINGS

Bucket to Liftarm Pin



The joint is made up of:

- Pin
- Pin Retainer Caps
- Bushings
- Bushing washer
- Seal
- Sleeves
- Pin Puller Caps
- Shims
- Spacer
- Bolts

STRAIGHT PINS AND BUSHINGS

Bucket to Liftarm Pin

Machined to size

Cased harden to a min of 55 Rc



STRAIGHT PINS AND BUSHINGS

Liftarm Bushing

Provides a bearing surface for the joint.

Made of an “nickel-aluminum-bronze alloy.



STRAIGHT PINS AND BUSHINGS

Spacer

Separates the two bushings and allows for flow of grease into the joint.



STRAIGHT PINS AND BUSHINGS

Seal

Keep grease in the joint.



STRAIGHT PINS AND BUSHINGS

Pin sleeve and puller cap assembly

Cap is installed in boss and held in place by snap ring.



STRAIGHT PINS AND BUSHINGS

Thrust bushing washer

Takes the thrust loads applied to the joint during operation.



STRAIGHT PINS AND BUSHINGS

Shim



STRAIGHT PINS AND BUSHINGS

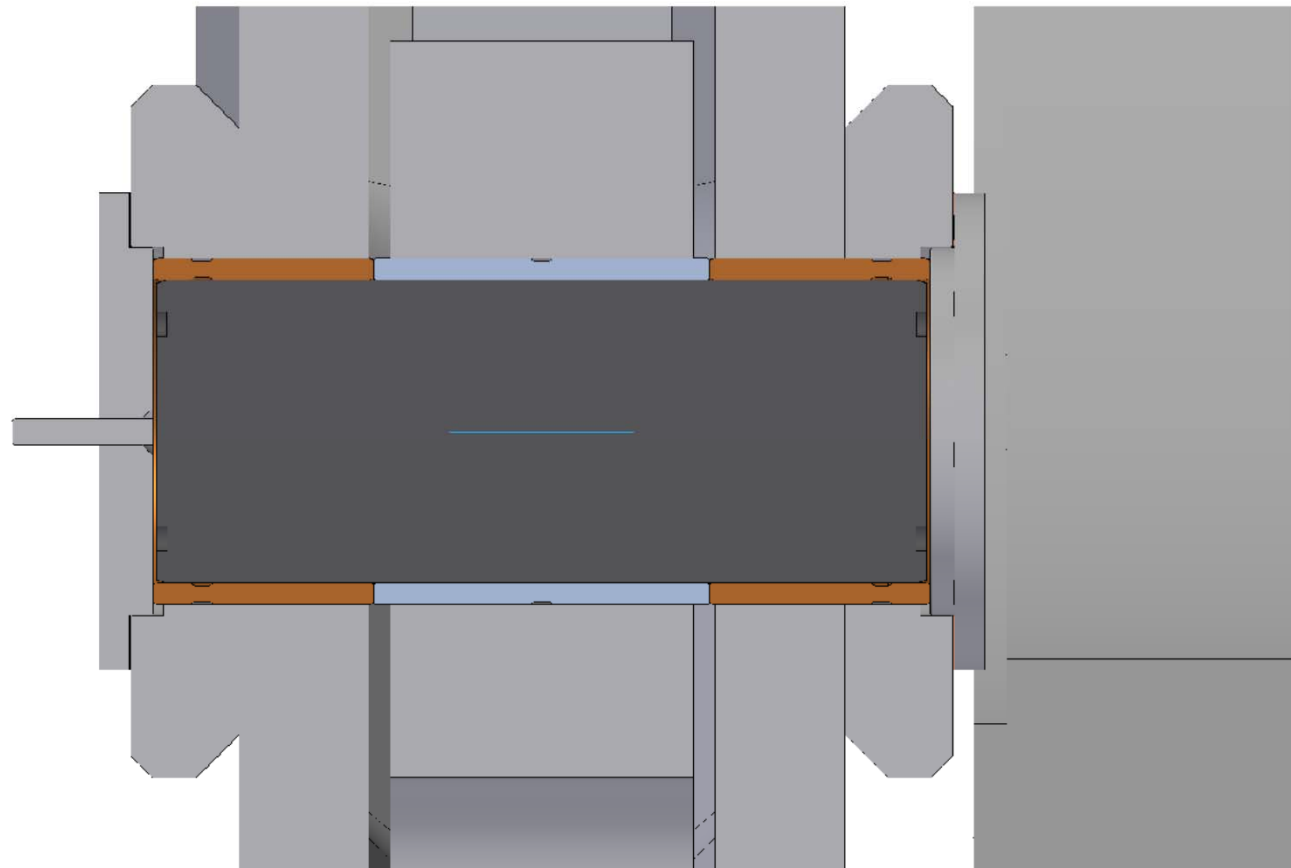
Retainer Cap



STRAIGHT PINS AND BUSHINGS

Bell Crank Pin

- ❑ Pin
- ❑ Sleeve
- ❑ Bushings
- ❑ Capture plates
- ❑ Shims



STRAIGHT PINS AND BUSHINGS

Pin



STRAIGHT PINS AND BUSHINGS

Sleeve



STRAIGHT PINS AND BUSHINGS

Bushings



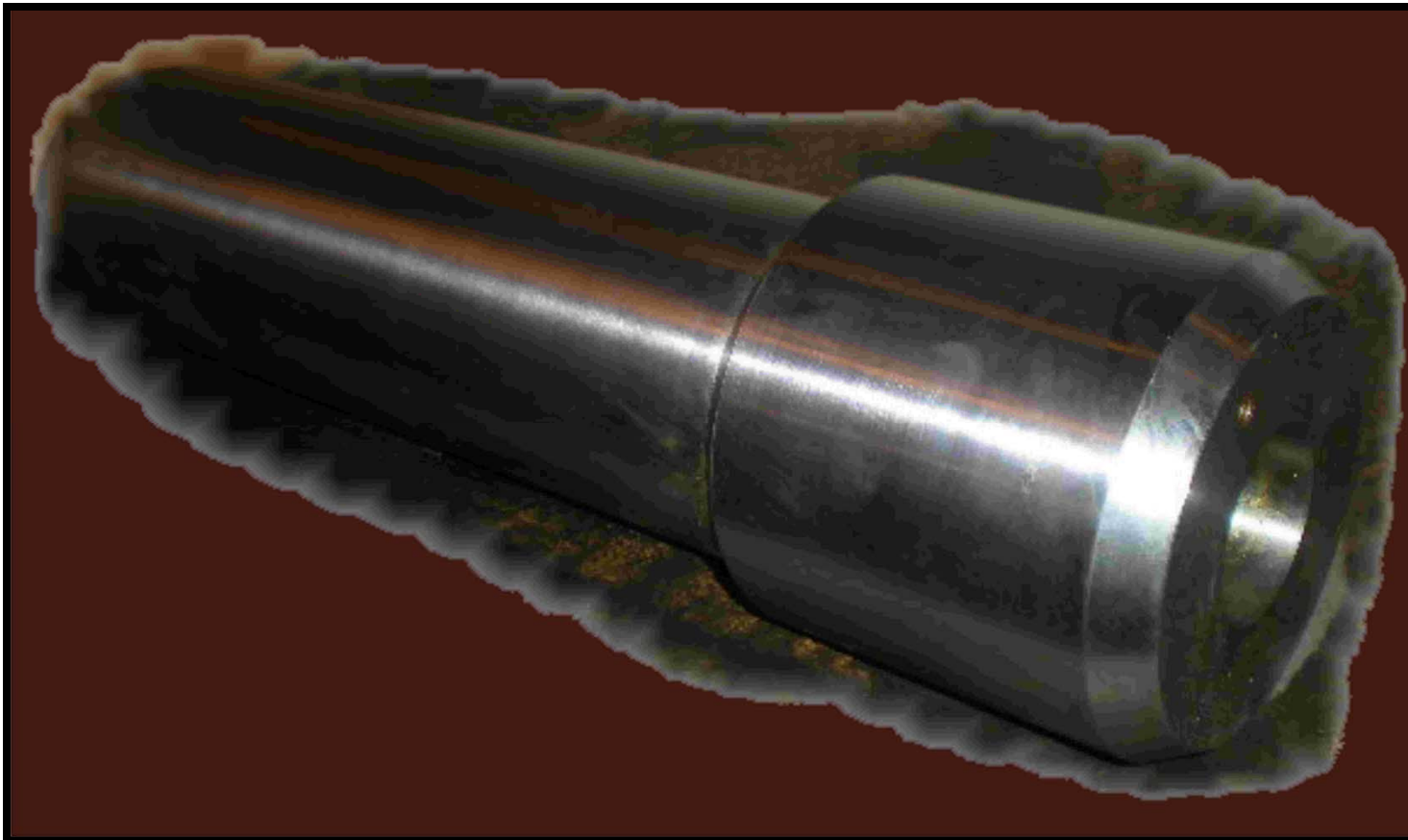
STRAIGHT PINS AND BUSHINGS

Shims Retainer Plates



STRAIGHT PINS AND BUSHINGS

ROPS Pin



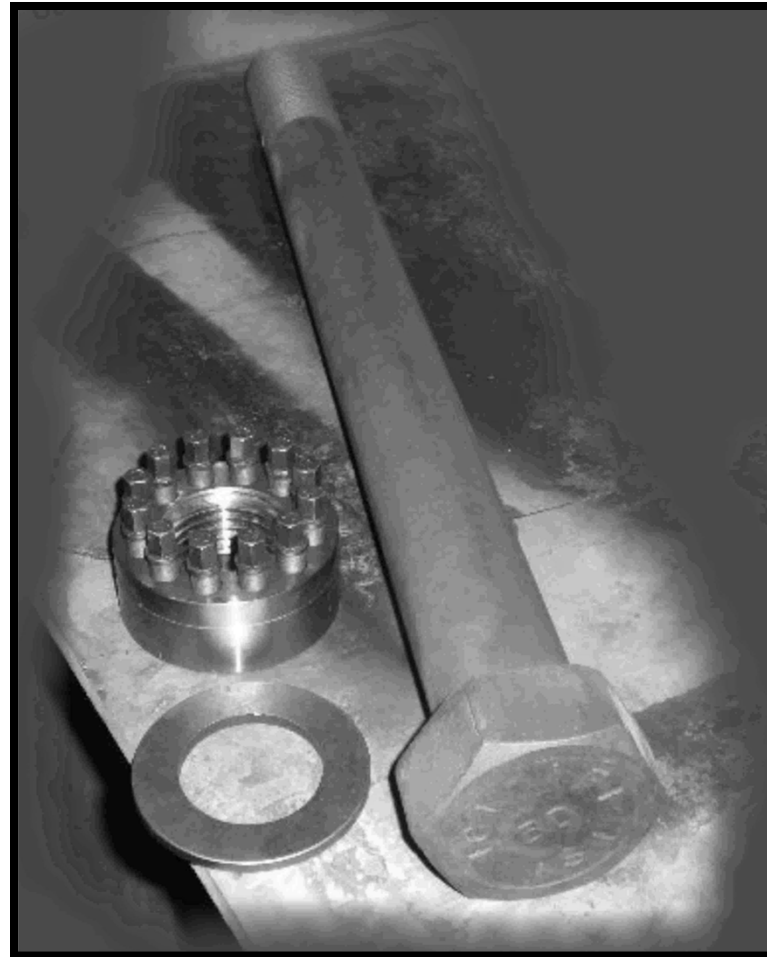
STRAIGHT PINS AND BUSHINGS

Capture sleeve



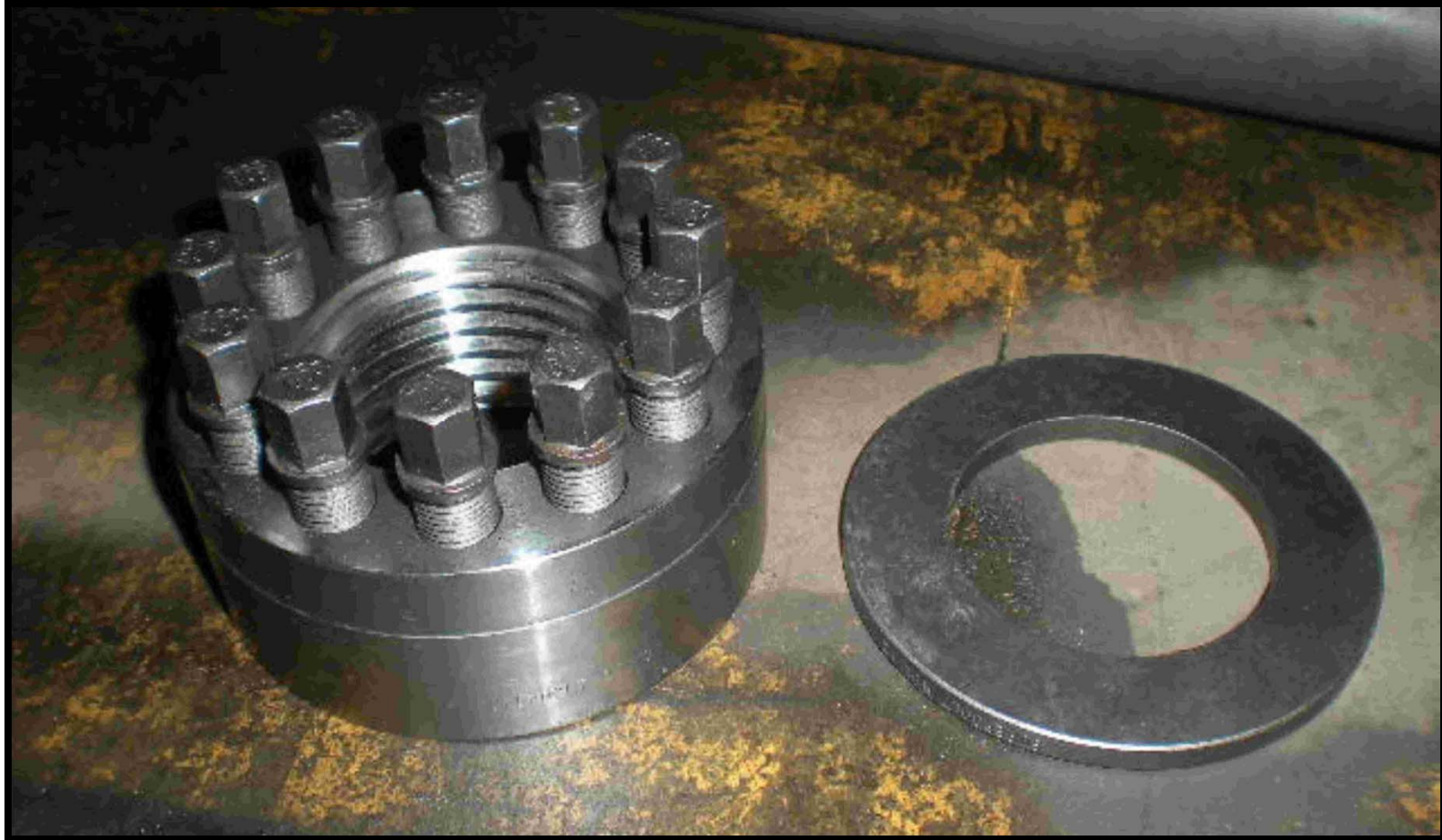
STRAIGHT PINS AND BUSHINGS

Bolt and Super Nut



STRAIGHT PINS AND BUSHINGS

Super Nut and Washer



BUSHINGS AND PINS

Troubleshooting

POSSIBLE PROBLEMS

Loose movement

Causes

Loss of clamping force of capture washers.
Loss of bolt torque

Noisy movement

Cause

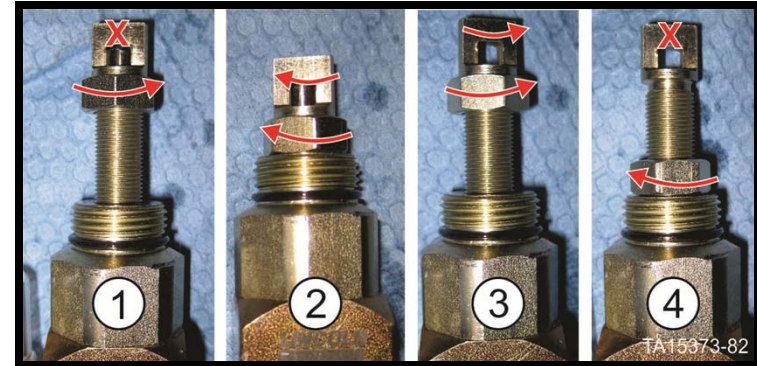
Lack of grease

LUBRICATION

Troubleshooting



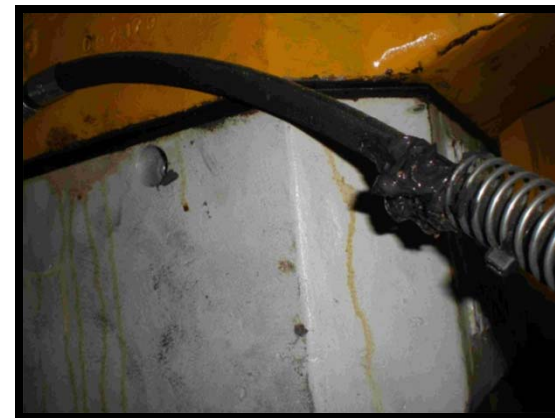
Make sure that there is fresh grease present at the joint.



Check injector settings.



Make sure there is grease in the grease reservoir



Check for broken or loose grease lines.

