

Recertification Instructions

(for Slickline Sheaves)

Receiving and Initial Inspection

- Fill out the customer information section of the recertification form doc. # WTI-89.
- Note and record any apparent damages or problems.
- Find and record the serial number of the sheave e.g. (AA-01), located on the manufacturing tag affixed to the wheel.

Preparation for Testing

- With a 1/8" punch drive the spiral pins[9] out of the axle shaft[24] and remove them.
- Use a 15/16" wrench to remove the front slotted nut[8].
- Remove the front plate[18].
- Remove the wheel assembly[25,26,27,28,29,30,31,32,33,34].
- Note the condition of the grease on the recertification form.
- Replace the wheel assembly with a test wheel assembly, this wheel can be purchase from WTI.
- Replace the axle shaft, front plate, and front slotted nut.

Proof Testing

- Determine the required proof test load. This load will be listed in doc. # WTI-63 Load Rating Chart.
- Proof test the sheave with the approved apparatus, part # TF-203 or similar equipment, If the line load is indicated on the readout stop at ½ of the proof test load, the load on the sheave will be double.
- Document the proof test on the recertification form.
- Remember to keep the parts from this sheave separate from any other parts, as they have now been proof tested.
- Complete and sign the Proof Test Certification, doc. # WTI-90.

Disassembly

- Use a 15/16" wrench to remove the front slotted nut[8].
- Remove the front plate[18].
- Remove the axle shaft[24].
- Remove the test wheel assembly.
- Remove the seal plates[27] and bearings[28] from the hub[29].
- Remove the axle[24] from the rear plate[10].
- Remove the other slotted nut from the axle shaft.
- Remove the cotter pin[35] or spiral pin from the clevis hook[2] or clevis eye[3].
- Remove the slotted nut from the clevis hook or clevis eye.
- Remove the clevis hook or clevis eye and the nylon flat washer[4] from the rear plate.
- Remove the hardened flat washer[7], the nylon flat washer[6], and the shock cushion[5] from the rear plate.
- Use electrical side cutters to pinch and pry the spiral pins[14] from the rear plate.
- Working through the slot in the rear plate, use a hammer and 1/8" punch to drive the spiral pins[15] out of the collars[17].
- Remove the locking pins[11], collars and springs[16] from the rear plate.
- If the locking pins have separate handles, use a 3/16" punch to remove the spiral pins[13] and the handles[12].
- Remove the latch kit[1] from the clevis hook.
- Use a screwdriver to remove the screws[22] and the shrouds[20,21]
- If required by the NDT inspection company, use a hydraulic press to remove the reinforcement rings[23] and bushings[19] from the front and rear plates.

Contact the Customer

- If there are any repairs that need to be made, contact the customer for approval.

Updates

- If the axle shaft has a lot number beginning with something other than PH replace it with a new one.

Non-Destructive Testing

- Visually inspect all load bearing components for cracks or damage.
- Inspect bearings for any damage including but not limited to: wear, discoloration from heat, fretting or flaking, brinelling (indentation of the rollers into the races), pitting, or corrosion. Replace any bearings which have any of these indications.
- Inspect the wheel groove for wear. See figure 1. Insert a radius gauge corresponding to the original groove size listed in doc. # WTI-16. If the groove has worn more than 20% from its original form, recommend wheel re-grooving to the customer. Wheels can be re-grooved up to 0.250" deeper than their original diameter. If the wheel cannot be re-grooved within this depth recommend wheel replacement.

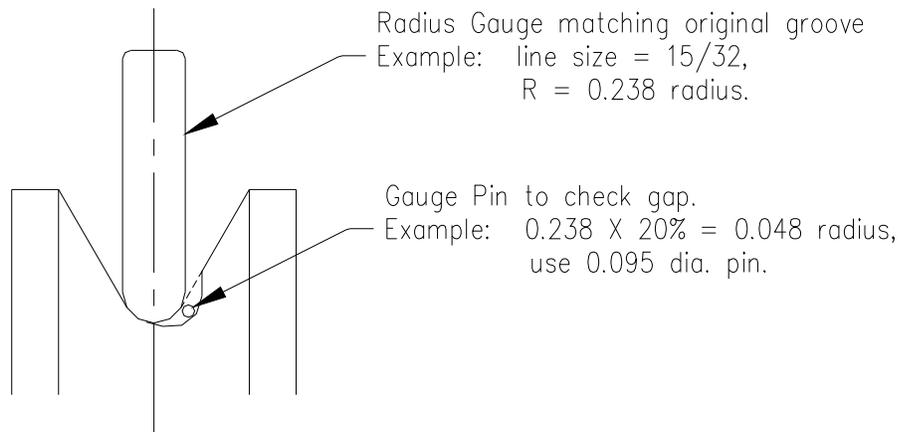


Figure 1. Wheel Groove Inspection

- Inspect the front and rear plates using eddy current testing.
- Check the bushings, if they are not secure or had to be removed for NDT inspection replace them.
- If the shrouds are damaged replace them.
- Perform a magnetic particle inspection on the steel load bearing components (axle shaft). Follow ASTM E 1444 and reject parts that do not meet the grade C quality level as defined in MIL-STD-2175A.
- Inspect the axle shaft to determine that it is still straight and round within 0.015". If not, replacement is recommended.
- Replace any discrepant parts, identify them as scrap, and segregate them from the assembly area.

Contact the Customer

- If there are any repairs that need to be made, contact the customer for approval.

Document Changes

- If proof testing or non-destructive testing has revealed any defects, inform the customer of the need to replace the parts.
- Document the changes to be made and record all lot and serial numbers of the components.

Re-Assembly

- Bolt the disks[14] back onto the side plates[11]. Use permanent thread sealant such as Permatex Locks Studs on the threads.
- Install new o-rings[18,19] in the o-ring seats[20].
- Lubricate the bearings[21] and o-rings by pressure packing or hand packing with No. 2 EPHT grease.
- Assemble the axle shaft[5], bearing cones[21], and o-ring seats[20] into the sheave wheel[26]. Fill the cavity between the bearing full of grease.
- Install the side plates over each end of the axle shaft.
- Place an adjustable axle nut[35] on one end of the axle shaft and tighten it until it is flush with the end of the shaft. Align the holes with the slots in the end of the shaft.
- Install two new spiral pins[34] in this axle nut and drive them flush with the inside of the axle shaft. Always use new spiral pins to ensure secure locking.

- Place the other adjustable axle nut on the other end of the axle shaft. Using a torque wrench attached to an adapter (P/N TF-242) tighten it firmly to seat everything. Loosen the nut then tighten it to 150 in. lbs. If the hole in the axle nut is lined up with the hole in the axle the spiral pin can be installed. If not tighten until the very next set of holes and slots align.
- Install two new spiral pins into these holes and drive them flush with the inside of the axle shaft.
- Verify smooth wheel rotation and easy retaining pin[31] insertion.
- Replace any damage hairpins[7] or lanyards[1].

Final Inspection

- Have someone, other than the person who conducted the recertification or repairs, conduct a final inspection to the sheave, utilizing the Final Inspection Checklist, doc. # WTI-88.

Documentation

- Stamp the date into the inspection tag on the cover of the sheave.
- Make sure the Recertification Form (doc. # WTI-89) is complete, signed, and dated.
- Send a copy of this Recertification Form (doc. # WTI-89), the Proof Test Certification (similar to doc. # WTI-90), the Final Inspection Checklist (doc. # WTI-88), and the Repair Invoice to WTI to be filed with the sheaves permanent records. Return the sheave to the customer along with a copy of the Proof Test Certification and the Recertification Form and an owners manual.
- Remind the customer to return the sheave in one year for its next recertification.