DRYER/ MIXER ASSESMENT FORM

COMPANY: LOCATION:

FRAME/ DRUM MFR: FRAME/ DRUM AGE:

RATED TPH: DRUM DIAMETER: TIRE WIDTH:

DRIVE STYLE: Chain Trunnion Other: FRAME HEIGHT TO GROUND:

TIRES (RIDING RINGS)

SMOOTHNESS: How to check: With the drum turning, (empty and cold) perform inspection on up hill (non-pitch) side. Place leather gloved hand carefully on tire surface so that hand and fingers are in full contact with tire curvature. Vary hand pressure and span across tire face to get a complete and accurate feel for lumps and divots. If defects, as pictured can be felt or seen, resurfacing is required to correct. When divots are in a pattern around the tire, it is referred to as "washboard" wear or "Timing marks".

Why worry? Lumps and divots cause unwanted vibration which well only worsen over time causing trunnion alignment change, shaft and bearing failure, tire mounting failure, frame damage, and a plethora of other problems.

TIRE 1 SMOOTH? **TIRE 2 SMOOTH?**

CONCAVE, CONVEX GROOVES: How to check: With drum locked out, place a reliable straight edge (metal ruler or carpenter square) across tire face as pictured. Estimate the amount of daylight where the straight edge does not touch the surface. Readings of greater than .030" (1/32") indicate that resurfacing is required. Concave wear is when daylight is present and most prevalent in the middle. Groove readings show step offs that vary from closed to daylight.

Why worry: Lack of contact between tire and trunnions cause increased surface wear and decreased flotation. Concave wear changes the angle of reaction between the tire and trunnions causing erratic thrust conditions. (Failed thrust idlers and bearings).

Tire 1 Condition? **Measurement:**

Tire 2 Condition? **Measurement:**

Taper: How to check: Place straight edge across tire face, equalizing daylight on both sides. Use dial calipers or a tape measure to measure from the tire back to the straight edge on both sides and compare. Be sure the tire back surface looks and feels reliable to assess readings. Measure several places at each side of drum and average the readings. Alternate but less reliable methods are to measure from the shell or tire pad surface on each side and compare. A difference in tire thickness is referred to as "taper". Tires with taper wear require resurfacing.

Why worry: Tapered tires can cause the trunnions to wear or adjust in a dovetail fashion which causes extreme thrust, wear, amperage problems and trunnion and idler bearing failures

Tire 1 Taper (AVG) **Tire 2 Taper (AVG)**

TRUNNIONS (ROLLERS)

Smoothness, Roundness, Run –out: How to check: With the drum turning, hold a straight edge on a fixed surface so that the edge nearly touches the trunnion and observe for gap change. Do this in several spots across the trunnion face. Variation of the gap between edge and trunnion indicate an irregular trunnion surface. Resurfacing, machining is required.

Why worry: Varying axel loads from irregular shaped trunnions can break shafts and cause bearings to fail. Vibration from surface defects causes numerous problems.

Trunnnion run-out: **Trunnnion run-out**

Shoulders, Convex, Concave, Grooves: How to check: with the drum locked out, place a straight edge across trunnion face. Observe and estimate the amount of daylight that can be seen. More than .030" (1/32") means the trunnion needs resurfacing, machining or replacement. Typically, trunnnions wear primarily in the middle and less on the ends, thus forming "shoulders"

Why worry: Shoulders inhibit drum floatation by creating a "track" where the tire cannot escape. Convex wear changes the angle of reaction between the tire and trunnions causing erratic thrust conditions. Concave trunnion wear and grooves is uncommon, but when present, can cause many of the aforementioned problems.

Trunnion 1 condition: **Measurement:**

Trunnion 2 condition: **Measurement:**

Trunnion 3 condition: **Measurement:**

Trunnion 4 condition: **Measurement:**

Taper: How to check: With drum locked out, place a straight edge across trunnion face. With a metal ruler, measure from the face of the trunnion shaft, to the trunnion straight edge, on each side. Trunnion surface conditions such as shoulders or convex wear will give false taper results. A different reading from side to side means the trunnion is tapered. Note: Since some manufacturer designs inhibit use of this method, an alternate would be to jack up the drum and tape the circumference on each end of the trunnion.

Why worry: Tapered trunnions are often shimmed improperly to achieve face contact. This causes major thrust problemssimiliar to those described under the taper tire section.

Trunnion 1 taper: **Trunnion2 taper:**

Trunnion 3 taper: **Trunnion 4 taper:**