MPS Loading Rods/Cables

Purpose

Alert customers to inspect the loading rods/cables on MPS mills.

Problem

Several MPS pulverizers have experienced load rod/cable stud bolt failures (fatigue) at the base of the pull down eye. The stud bolt connects the loading rod/cable to the pull down eye. A failed stud bolt unloads the pressure frame, allowing it to rise. If two studs fail, it is possible for a roll wheel to fall onto the grinding table. Major damage can result from such a failure.

WARNING

Failure of the loading rods/cables could cause danger to personnel during pulverizer maintenance if the loading rod/cable studs fail with a person inside the pulverizer.

Recommendations

The loading rods/cables should be inspected annually to ensure that the loading rod/cable is tight against the pull down eye. The following should be checked and corrected if found to be loose:

1. Check to ensure the pull down eye is tight against the loading rod/cable. The side-to-side (contacting surface) difference should be equal to or less than 0.001″ (see Figure 1 and Figure 2).
2. Check the threads, especially if the clearance in Item 1 is excessive, to ensure they are perpendicular to the pull down eye (see Figure 2).

If the stud is not perpendicular to the pull down eye, machine the pull down eye until the surfaces in Figure 2 are less than 0.001″ difference. Retighten the stud.

When making up the assembly, using a feeler gauge, check the clearance at approximately 0.015″ to see that it is even all the way around. The side-to-side difference should be equal to or less than 0.001″. After making this check, tighten to zero clearance between loading rod/cable and pull down eye.

The procedure above is not necessary with the newly designed studs. They should be torqued to 1850 ft-lbs (± 150 ft-lbs) and should be installed with Grade 277 "Loctite". The stud could be bent if torqued over 2000 ft-lbs. Newly designed studs have rolled threads and are stamped 4340 on one end.

(continued on reverse side)

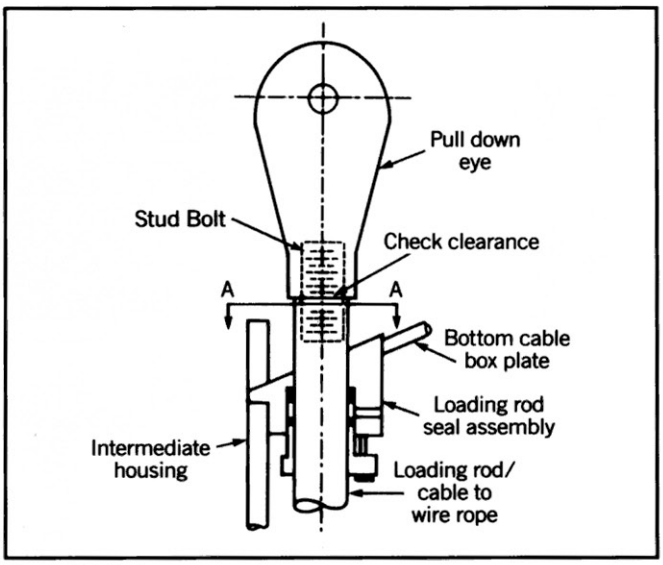

Figure 1 *Pull down eye and loading rod assembly*

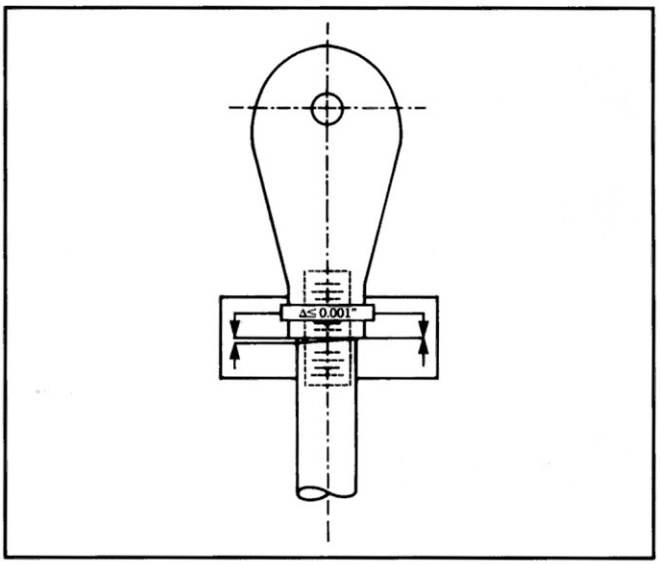

Figure 2 *Pull down eye loading rod.*

In order to facilitate torquing the loading rod/ cable and pull down eye; a) two flats may be ground on the top end of the rod/cable, adjacent to the pull down eye. The distance between these flats should be 2-1/2" to 3" (see Figure 3). b) From a hand tight condition the pull down eye will rotate approximately 11½° with respect to the loading rods/cables when 1850 ft-lbs of torque is applied.

Support

Contact B&W Field Service Engineering if you have any questions or require assistance in performing this inspections

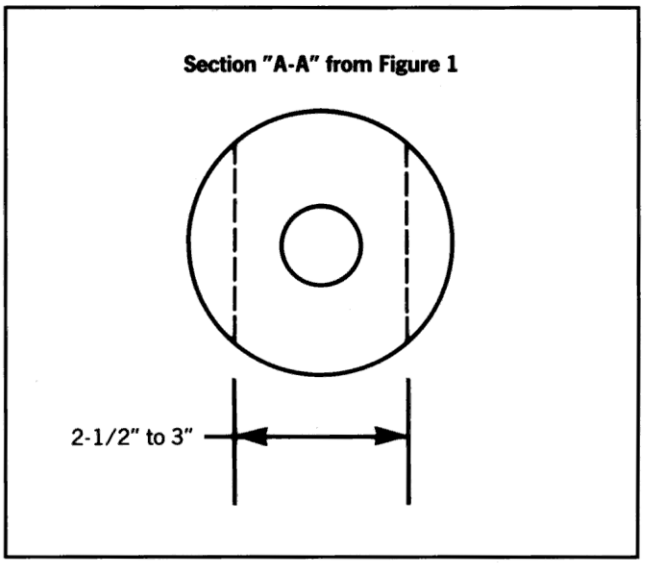

Figure 3 *Top view of loading rod.*

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