

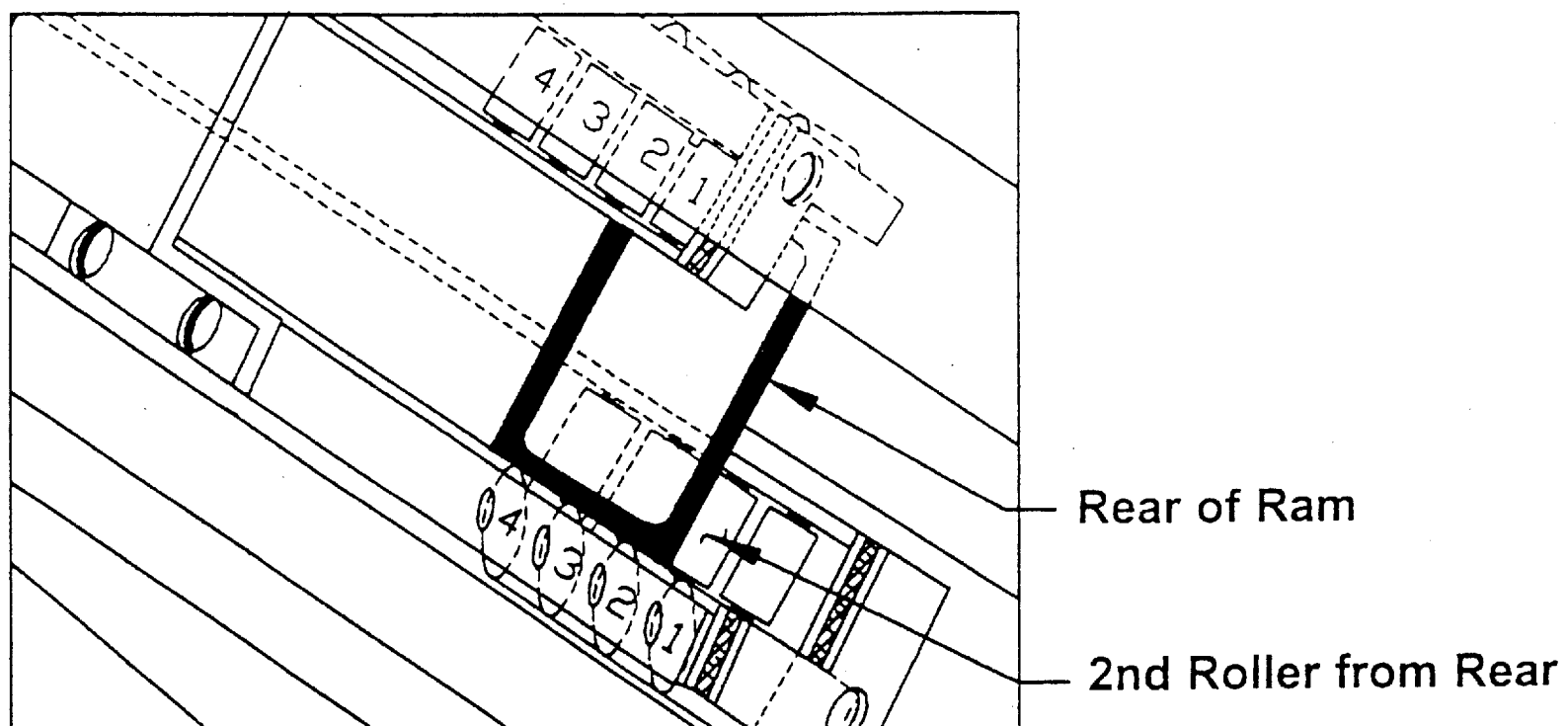
ADJUSTING LADDER ROLLER BEARINGS IN THE TELESCOPIC RAM ASSEMBLY

Proper adjustment of the D-1383 Ladder Roller Bearings includes three steps:

1. Synchronizing the travel of the D-1360 Ram is in relation to the position of the Ladder Bearings.
2. Setting the 711-N Cap crush onto the ladder roller bearings.
3. Setting the angle of the 711-N cap to get full roller contact with the D-1360 Ram and the D-1359 Bearing Strips.

SYNCHRONIZING THE RAM TO THE LADDER ROLLER BEARINGS

If the D-1360 Ram is not positioned properly in relation to the position of the D-1383 Ladder Roller Bearings riding in the 710-N Column, shortening of available stroke and damage to the D-1395 Bearing Tie can result. The travel of the ram, being telescopic in nature, can occasionally get out of adjustment due to dust and chip build-up in the 710-N way area. When this happens you do not get full stroke from the ram because the D-1395 Tie collides with the D-1405 and D-1392 Spacers that support the D-1408 Dust Guard. In extreme cases, the D-1395 Tie gets torn in half allowing the top and bottom D-1383 Ladder Bearing sections to not roll in unison. To synchronize the ram, ladder bearing and column assembly, remove the D-1408 Dust Guard and loosen the 732-N Front Stop and slide it forward out of the way. Pull the ram all the way toward the operator until the D-1381 Felt Wiper Keepers come in contact with the 10-24 Round Head Machine Screws that hold the D-1359 Bearing Strips in place. With the D-1383 Ladder Bearings in this position, the rear of the D-1360 Ram should be positioned on the center-line of the second roller from the rear of the D-1383 Ladder Bearings assembly. When the ram is positioned like this, full travel will be assured and the D-1395 Tie will not hit any of the Dust Guard spacers. To slide the ram through the Ladder Bearing assembly to get the rear positioned, you may have to loosen the 1/2-13 SHCS that hold the 711-N Cap casting to the 710-N Column.



ADJUSTING LADDER ROLLER BEARINGS, CAP CRUSH AND ROLLER CONTACT

Adjusting the cap crush and roller contact must be done simultaneously, as adjusting one can affect the other.

Refer to Fig. 9. Dowel pins have been inserted at the factory in holes X and Y. These pins locate the cap horizontally. The other holes A, B, C, D, E and F receive 1/2" and 1-1/4" socket head cap screws for clamping the cap down on the column. Tapped holes 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10 receive 1/2" and 1" socket head set screws which serve as feet for the cap and control the position to which the cap can be drawn by the socket head cap screws. Thus to draw the cap down closer to the ram rollers, loosen set screws 1 thru 10, then tighten cap screws A thru F. To raise the cap, loosen cap screws A thru F and tighten set screws 1 thru 10.

1. You must remove the arbor motor before starting to adjust the ladder roller bearings. The weight of the motor and the fact that it is offset from the telescopic ram, will give a false feel as to how the bearings are set and result in inaccurate cutting. The best way to remove the arbor motor and not disturb existing alignments that affect heeling is to remove the arbor motor and motor plate assembly as a unit. Get a piece of 4 x 6 about 12" long and place on the middle of the wood table. Pull the arbor motor out over the block and lower it down onto the block. Remove the ram return cable and the bolts that attach the motor plate assembly to the 730-N depth slide casting. Slide the arbor motor and block to the right, away from the ram assembly. You must remove the 722-N aluminum nose cap from the front end of the 710-N column and the D-1381 and D-1382 felt wipers and keepers from the ladder roller bearing assembly. Failure to remove these will give you a false feel and will obscure the oil pattern when setting cap angle alignment. Also make sure the ram lock is fully released.
2. Loosen 1/2-13 SHCS A-F and pull the D-1360 ram from the column assembly and remove the ladder bearing assembly. With a rag and solvent, remove any pitch buildup from the D-1359 bearing strips, ram and from the ladder bearing rollers if the bearing assembly is to be reused. Also check that the D-1359 bearing strips lie flat in the column assembly. If they are bowed up between the mounting screws, they should be replaced as that condition will let dust and chips get under the strips making the ram pull harder and get the ladder bearings out of synchronization.
3. Reinstall the ladder bearings into the column assembly and slide the D-1360 ram into the ladder bearings. Lightly retighten the 1/2-13 SHCS A-F and synchronize the ram to the ladder bearings as explained in part 1.
4. Position the ram so that the ladder bearing assembly is in the center of the 711-N top cap.
5. Adjust 1/2-13 set screws 6, 5, 3 and 7 in that order so they just contact the column so as to hold the 711-N cap square onto the ladder bearings and ram.
6. Tighten 1/2-13 SHCS D, C, B and E in that order. If either end of the ram has vertical or horizontal play or clearance, the above screws will have to be readjusted accordingly. If the bearings do not roll freely, loosen 1/2-13 SHCS B, C, D and E and tighten 1/2-13 SHSS 3, 5, 7 and 6. A very small portion of one turn of the allen wrench should be used in making these adjustments.

7. Position the ram so the bearings are positioned at the front of the 711-N cap. Adjust 1/2-13 set screws 1, 2 and 4 so that they just contact the column and tighten 1/2-13 SHCS #A. Repeat the clearance and ease of motion check per step 6.
8. Position the ram so the bearings are positioned at the rear of the 711-N cap. Repeat setting set screws and tightening bolts as in the front. Some advise: when you glide the ram forwards and backwards, and do not encounter tight and loose spots it is probably as good as its going to get. Watch out for having the front and rear crush set too tight. This condition will make the ram slide inside the ladder bearings and cause the ram to get out of synchronization. You can check for being too tight by gliding the ram to the front and rear extremes of travel and feeling if the ram wants to squirt back towards you. If the ram won't stay in position, you will have to loosen the cap crush on the ends.
9. The next step is to check the angle of the cap to get full roller contact on the D-1360 ram and D-1359 Bearing Strips. Be aware that altering the angle of the cap will alter the amount of crush you have set onto the ladder bearings. You will have to reset the crush after you set the cap angle.
10. Spread a light film of SAE30 oil onto the ram where the rollers in the ladder bearings ride. Making a swirl pattern with your fingers makes the oil spread easier to read.
11. Pull the ram through one stroke and observe how the oil has been spread out by the passing rollers. If the cap is sitting cocked in relation to the ladder bearing assembly the oil will not be spread out the full width of the rollers.
12. The 711-N cap hinges or pivots along a line through screws 1, 3, 5, 7 and 10. If the rollers are not smoothing the oil their full width, the cap will have to be pivoted along this line to get the rollers in full contact with the ram. Once again, after you get full roller contact established, you may find that your cap crush has loosened or gotten tighter. This will have to be reset as necessary.
13. Reinstall the felt wipers, dust cap, dust guard, ram return cable, and arbor motor assembly. Test for smoothness of operation and return the saw to service.