3.31-6 ROTARY TABLE ASSEMBLY (7-1/2")

The 7-1/2" opening Rotary Table, Assembly No. 141F323, has spiral bevel gears mounted on tapered roller bearings throughout, using an oil bath lubrication system.

DISASSEMBLY: To disassemble rotary table, first drain the oil by removing the drain plug. Next, remove the split mud rejector by removing the two Allen capscrews which hold the two halves together. Next, remove the bottom plate. This will let the quill assembly come out of the bottom of the housing. To remove the bevel gear from the drive quill, it will require a press. Before the drive ring can be pressed off, the dust shield must be cut off with a cutting torch and chisel. Care must be taken in order to reuse the dust shield. After the dust shield is removed, the bottom plate and seal slide off the bottom of the quill. Now, the ring gear, ring gear adapter and bearing cup can be pressed off the quill. The ring gear now can be separated from the ring gear adapter by removing twelve capscrews.

INSPECTION: Inspect all bearings for wear. Since this table uses tapered roller bearings, a certain amount of wear in the bearings can be taken out with shims and adjustments. If there is much wear, drag or a rough spot, replace the bearing. Gear wear can easily be observed by inspecting the teeth of pinion and ring gears.

ASSEMBLY OF PINION CAGE: This assembly is to be assembled and adjusted on a work bench and installed as a complete unit.

The 108F853 shim is laminated to facilitate adjustment on the bearings.

To assemble pinion cage, press XTI-4559 on pinion until it comes against its shoulder. Next, slip 108F852 spacer and 108F853 shim on pinion. Before the

shaft can be placed in the bearing carrier, XTI-4536 and XTI-453A bearing cups must be pressed into position in the bearing carrier. Now the pinion, bearing cone, bearing spacer, and shim can be placed inside the carrier. Place XTI-458-S bearing cone on pinion and draw the assembly together with 107F486 nut. Probably the bearings will not tighten up when the nut is tight; therefore, it will be necessary to remove part of the 108F853 shim until there is a very slight drag on the bearings. Shim pinion bearings to provide 10-20 inch lbs. rotating torque when 107F486 is not full torqued.

Before installation of nut 107F486, clean mating threads with non-oil base solvent or use Locquic Primer Grade T. Apply Loctite "nut lock" to threads and torque nut 107F486 to 750 ft. lbs. Upset nut with punch into shaft groo e.

Check seal in the retainer and then place gasket and seal retainer in position and bolt in place. Next, insert key in shaft and mount the flange on pinion shaft, replacing nut and cotter key.

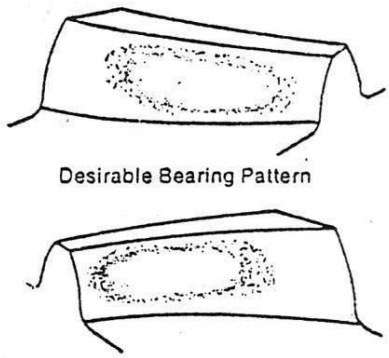
The spiral bevel gears may be adjusted with the adjusting shims 104F937 between table housing and pinion cage. This allows proper adjustment of the pinion in the housing. The shims No. 14006 on the top and bottom plate are for up and down adjustment of the ring gear to the pinion and the adjustment of the two taper roller bearings that carry the quill. These gears should have a backlash of .005". Care should be used in assembling so that seals will not be damaged.

Bearing pattern

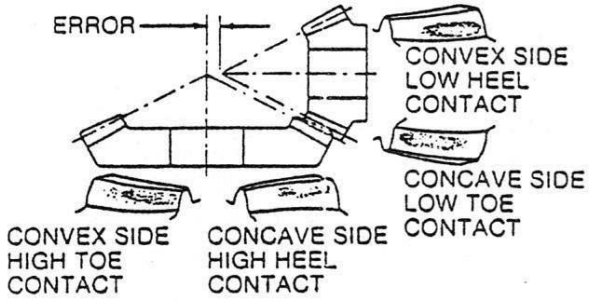
Using a suitable marking compound, check the bearing pattern. If the markings on the gear set have been followed, the pattern will conform to accepted standards.

Gears are cut with a contact pattern about half the length of the tooth, the location slightly favoring the toe end of the tooth. Under load the pattern will shift somewhat toward the heel of the tooth, and will thus become more central. Under no circumstances must the pattern be concentrated on the ends of the teeth.

(Note: Pinion member is left hand in all illustrations, shown below.)



PROFILE ERROR
To correct: decrease mounting distance



PROFILE ERROR
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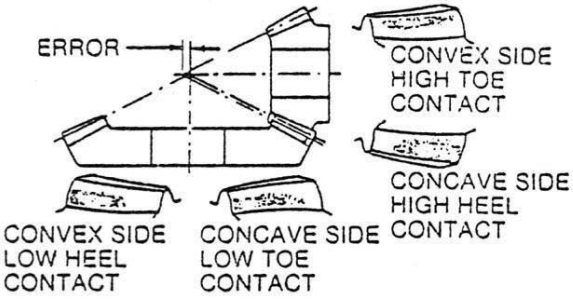
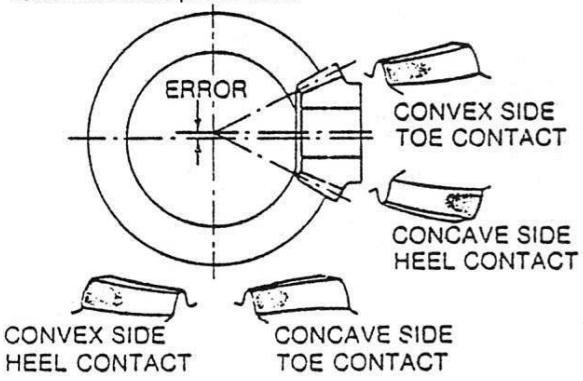
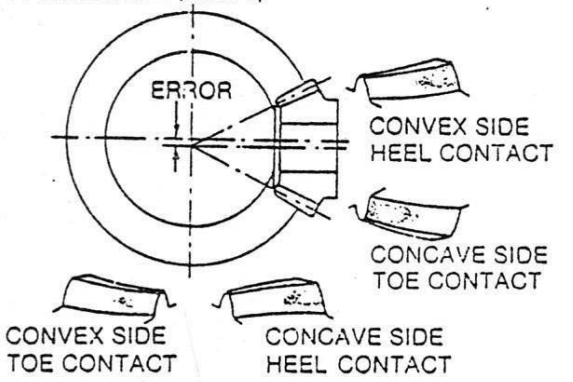


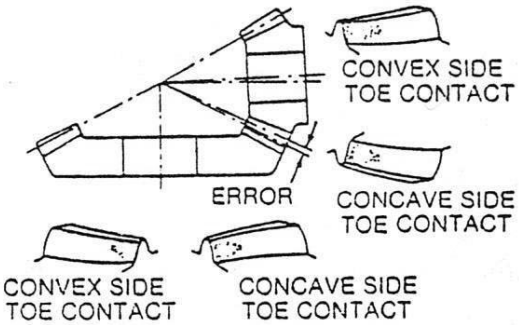
CROSS CONTACT
To correct: move pinion down



CROSS CONTACT
To correct: move pinion up



SHAFT ANGLE ERROR
To correct: decrease shaft angle



SHAFT ANGLE ERROR
To correct: increase shaft angle