

Mechanical Alignment 3-1/2" auto index station S machines

Warning: Mechanical dangers are present during this procedure. If at any time you are unsure of this procedure call a qualified technician. Serious bodily harm, and equipment damage can result.

Start by inspecting upper bushing, die shoe, die alignment key for damage or wear. If these components are worn it will do you no good to try to align. Replace worn components as needed. We sell these parts on our website at CNCMachineryLLC.com. 3-1/2" Punch Driven Gear (bushing) CNC 1870, Die Shoe CNC 2222 , 1/2" die key CNC 3333.

Tools; good alignment tool (3-1/2" tool is preferred, 1-1/4" tool with GOOD adapter will work, we sell these please inquire if you don't have one), small pry bar, 1/8" Allen wrench, square scrap of material 6" x 6".

- Remove lifter basket.
- Install alignment tool in the station to be aligned
- Once installed place scrap material square under punch to prevent tools from engaging prior to moving turret. If the turret is spun while tools are engaged you will very likely break the pins on your tool.
- At controller turn the punch OFF to avoid accidentally punching your expensive alignment tool
- At control jog turret to place station under ram and allow shot pins to engage
- Inspect upper and lower auto index couplers to insure they are fully engaged
- Remove scrap square from between top and bottom tools to allow tool to engage die. If the station is aligned the top will drop into the bottom with very little persuasion. This is not time to get a big hammer. (It May help to remove the front cover to allow access to the punch.
- If the tools have engaged then you can assume the station is aligned.
- Pry the top tool from the die, reinstalled the scrap of steel so you can safely jog the tool.
- If the tool didn't freely engage the die then jog the turret until the turret cog is in a spot that you can loosen the 6 SHCS that are retains the center of the coupler. When they are loosened you should be able to hold the belt and turn



the center freely. Use a small screwdriver in the pocket to get the center to turn while holding the belt in place.

- Jog the station back to the ram and drop the top into the alignment die. You should be able to turn the belt until the top drops freely. Remember the motor must be fully engaged in both top and bottom coupler.
- At this time you will note there is some mechanical slop in the belt. Center the belt with the tools engaged to insure centering of tools.
- Verify the top and bottom tools are fully engaged. Tighten the SHCS to lock the coupler. It is very difficult to tighten all the bolts in this position, you should tighten at least 2.
- Pry the top and bottom to separate, Reinstall scrap material between tools.
- Jog the turret until you are able to access the remaining bolts on the coupler and tighten the bolts. Remember the coupler is aluminum so don't strip the threads!
- At this time I typically recheck the alignment at the ram to insure nothing moved while tightening the hardware.
- Jog tools to door and remove them. You should be ready to punch. Install a long rectangle tool and punch a single hole to verify proper alignment. Inspect the edges of the slug to verify consistent shear.
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