Convert manual rotary table to cnc

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Book Descriptions:

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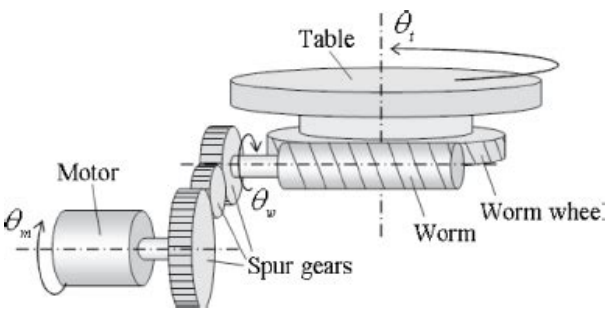
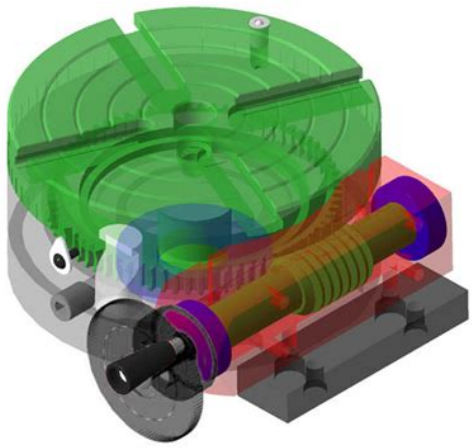
Im not planning on doing this since my old Hurco KM1 couldnt handle it, but if I were to convert it to Mach 3 it would be possible to add this as a 4th axis, right. With the high cost of servo controlled rotary tables, wouldnt it be possible to fabricate a servo mount for a standard manual rotary table. Then it would just be a matter of calibrating it, right MichaelSome of the little toy mill guys do just what youre talkin about tho. No idea how effective it is.They use a hardened steel worm and wheel tho. Think Snow Eh! OxNow that you guys mention it though, I can see how you would need one. If someone is inventive enough to mount a servo to a standard rotary table, certainly some type of brake could be built too. Maybe some type of solenoid actuated friction brake MichaelAny sort of continuous contouring type work would cause problems with backlash. Most of the early 4th axis indexers were set up for rotation in one direction only to counter the effects of backlash on positioning accuracy. Never have taken one apart, but Id imagine they were built more like a conventional rotary table than like the typical 4th axis suitable for continuous contouring. Most of the current 4th axis devices have separate torque ratings for contouring and for operation with brake applied, and, quite predictably, the rating for locked operation is substantially higher.They have adjustable backlash, a big spindle bore, and seem to be well made. I am planning to convert an 8 inch model into a homemade four sided rotary pallet driver. I mostly do plastics that are easy on the ems and I would like to be able to let the machine run all night long without having to get up and reload it. Because it also has a big hole in the middle, it opens the door to some gunsmithing work. Saw a bull barrel that had been milled to look like twisted wraught iron at a show recently. The guy who made it said that it shot better than he could see, so it should work for me.http://dumainfotech.com/userfiles/ferno-model-28-manual(1).xml

- **convert manual rotary table to cnc, convert manual rotary table to cnc table, convert manual rotary table to cnc machine, convert manual rotary table to cnc tools, convert manual rotary table to cnc parts.**



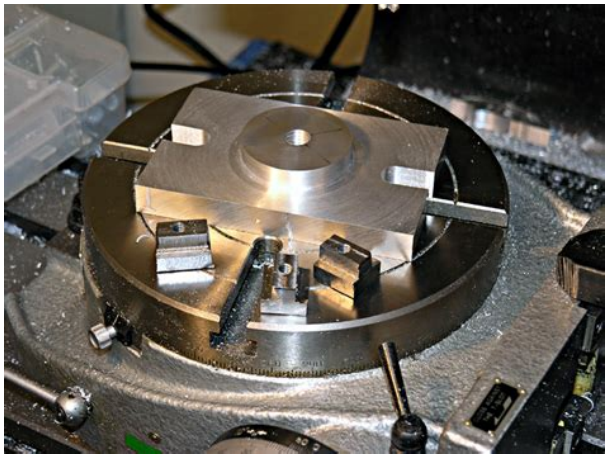
He would not tell me how he made it trade secret, but from a couple of marks on it, must have been a cnc fourth axis.Backlash compensation is often thought to be some magic cure, but in reality, for amounts more than a few tenths, its about as effective as nailing a 2x4 to the pelvis of a onelegged man and declaring him ready for the olympics. In a machine tool, putting the tool where you want it is of low signifigance as compared to keeping it where you want it. Forces are constantly changing direction and this allows the tool to wander within the extremes of whatever backlash is present. When theres backlash or slop between the driver and the feedback device, the situation is made worse instead of better because the system will typically be unstable, particularly during times when cutting forces make the table move. The encoder moves a couple counts, and the motor tries to move it back to position. But, it may have to move thru some of the backlash before the encoder moves. Now the backlash zone has moved from its original position, the force direction from the cutter changes, and the table moves again. This time its changed the encoder by 4 counts. The motor moves the screw, and the backlash zone has moved again. This happens continually during the cut, and the motor is always trying to keep the encoder in the commanded position. It cant do it, but it hunts back and forth in a never ending cycle of trying to keep it in the right place. It hasnt helped or compensated for the backlash in any useful way, and generally serves to make the backlash more evident and the process less controllable than if the encoder was mounted directly to the motor shaft.I didnt fully think it through. My lack of experience is shining bright and clear. So mounting the encoder with the servo or stepper would be the best approach.http://www.simpler-it.pl/ib_pliki/ferno-scoop-exl-stretcher-manual.xml



It seems then that the only functional way to reduce the effects of the backlash would be to use the locks on the rotary table to add enough friction to combat the backlash. You would have to make sure your servo could overpower whatever clamping force you placed on the rotary table. But in the end, you could still only take light cuts since anything heavy would also overpower the table locks and youd be right back where you started. So yes, its feasible to do as long as youre aware of the limitations, but impractical for anything other than light hobby use. MichaelThe cheap rotary table has some adjustment for backlash. I sleeve the worm with a bronze bearing and put needle roller thrust bearings on the end of the worm shaft. I throw away the table assembly when the worm gear gets too worn about once a year in production use in my grinders. When using a worm gear drive you always have at least a couple of thou.This wasnt a full 4th, more of a programmable indexer head. The head was controlled from a PC and triggered via the auxiliary axis Mcode in the CNC. The only time I really used it was to machine male and female bayonet connectors of aluminum. The head has very little backlash, so it worked fine.Although I think Id try to find a cheaper servo to use. Or something. MichaelIf you just want to index, there are pneumatic tables that work well. If youre determined to convert a rotary table, again, consider whether you will do continuous machining or indexing. You can build locks that work for various angle increments, even pretty small ones. The

preferred way to do a lot of increments is with face gears.Because of these features no locks would be needed. Wow those things are expensive! MichaelPractical Machinist is the easiest way to learn new techniques, get answers quickly and discuss common challenges with your peers. Register for the worlds largest manufacturing technology forum for free today to stay in the know. Learn more about us. All rights reserved.

Register today. To learn more, please refer to the cookie policy. Well bring you the most relevant peertopeer conversations happening in the trade and tips and tricks to help you get the job done. You may unsubscribe at any time. For a better experience, please enable JavaScript in your browser before proceeding. It may not display this or other websites correctly. You should upgrade or use an alternative browser. Im told the expensive ones are expensive because they have no backlash issues. I realize that a manual table might have some but since Im not building rocket ships, I can live with some. Most of what I would do is not high tolerance stuff, mostly engraving and the like. I would like to get some feedback from someone who has tried it before I try and do it. Thanks. caddy Back lash can hurt a project if its bad enough while doing the right thing. Try to keep in moving in one direction. If it would even be bad enough to worry about, I dont know The worm is held in cam bushings and can be set further into gear. Mine is an old Yuausa 8 inch and I can adjust it to about 0 lash. Connecting a stepper motor is just a matter of building a bracket, and a connecting coupling. One of these days Im going to convert mine. I want an encoder to read the table position rather than rely on the motor position, so Im still trying to figure out the best way to do that. With the encoder reading the actual table position, there is no backlash issues unless the system is really loose. It got ugly and there wasnt a lot of detail about it. But, mentioned above, adding a stepper is fairly easy. This is the place that the person in the other thread bought his table. Ive got no idea how to use it, but its a pretty nice piece. It leaks oil fairly readily, however. Evidently, this is common, so common that instructions are mentioned in the manual how to handle it. I suppose when buying, it might be a good idea to ask about the backlash, or if its adjustable.



https://www.interactivelearnings.com/forum/selenium-using-c/topic/17081/boss-digital-metalizer-manual

Eric Im sure they just cut the gears and put them in, a little breakin made a big difference. Steve I just made up a block which contains a shaft coupling to go between a convenient flange on the rotab and fits the stepper flange and locating spigot. The screw head on the side is a cover for the Allen key to tighten the grub screws on one end of the coupling. Works brilliantly. This one is a standalone digital divider but can also run continuously at 5 speeds. Seems pretty straightforward to me. Either use a coupler and mounting flange or run a timing belt and fit the motor on the side of the table somehow. Heck, you could interdependently bolt the motor and table down to the mill table as long

as you made sure the belt was tensioned and aligned. Come to think of it, this might actually be the easiest and most flexible approach. See our code implementation guide for more details. If you already have Auto ad code on your pages theres no need to replace it with this code By continuing to use this site, you are consenting to our use of cookies.Sure, adblocking software does a great job at blocking ads, but it also blocks useful features of our website. For the best site experience please disable your AdBlocker. Ive Disabled AdBlock. To start viewing messages,What table is everyone using with good results in the 4 inch size. Similar Threads Discounted laser machine 48 inch x 36 inch. Accepting best offers.Mechanically, how does one increase accuracy and reduce backlash of a gear and worm screw device.What do you do about gear wear. The only thing idea I came up with is to limit the rotational direction to oneway to eliminate the hysteresis, but thats an inconvenient solution at best. It doesnt solve all the backlash issues but it is a good start. It will need a lot of reworking to get it better than this. So my advice is to avoid any rotary table that does not include backlash adjustment. If they cant provide one dont buy it.

https://hund-gerecht.com/images/6va693am-manual.pdf

It might be OK but its kinda to late once it arrives on your door step. Otherwise you may need to send the boys round. Regards Phil Mechanically, how does one increase accuracy and reduce backlash of a gear and worm screw device.What do you do about gear wear. The only thing idea I came up with is to limit the rotational direction to oneway to eliminate the hysteresis, but thats an inconvenient solution at best. It has the adjustment as described for the larger tables, worm in and out of mesh with the wheel. I think it is going to work when I CNC it. I also made the mistake of buying a cheap one to start, but it was pretty poor even used manually. The most annoying thing is it was only about 20 cheaper than the Vertex. I can get the backlash and chatter down by adjusting the cam on the worm drive, but when it is tightened it takes 2 hands to turn the handwheel. Maybe the solution is to add a gearhead to the handwheel before connecting the pully wheel. If the servo cant turn 3 or 4 to 1 ratio, I could just up the ratio to 10 or 20 to 1 and then adjust the software to compensate. Does that sound like a good idea, or should I continue looking for a better rotary table. Just a side note, when I took the rotary table apart, I noticed the manufacturer milled in some runs for bearings, but never put bearings in. The run is only milled on the table it self, not the body, so putting a set of loose bearings in changes the height of the table seat. I was thinking about buying this one after getting enough money for it. Mine does have a couple thousands backlash but works great. I just snug it down so there is some drag. It also has the clamps for the tableI removed mine so you can clamp it if needed. Jon The site is 100% free to join and use, so join today! Obviously we are talking initially about adding a DivisionMaster to an essentially manual workshop, and that may allow work that has become difficult with division plates to be undertaken.

https://duluthtaxiservice.com/images/6vd1-engine-manual.pdf

The tables below should simply be an un bolt and fit option for the adapter that we have available, but ocasionally a little additional machining may be required. Additionally, the NEMA23 mount can often be fitted to a bigger table by the creation of an additional simple adapter plate.

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