Precision 4" Rotary Table

USING THE ROTARY TABLE

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The Rotary Table

When a rotary table is put on a vertical mill you end up with a machine that is theoretically capable of reproducing itself. This means the capabilities of your mill are governed by the size of the part and the ingenuity of the operator.
The purpose of these instructions is to give an insight into properly using this amazing accessory.

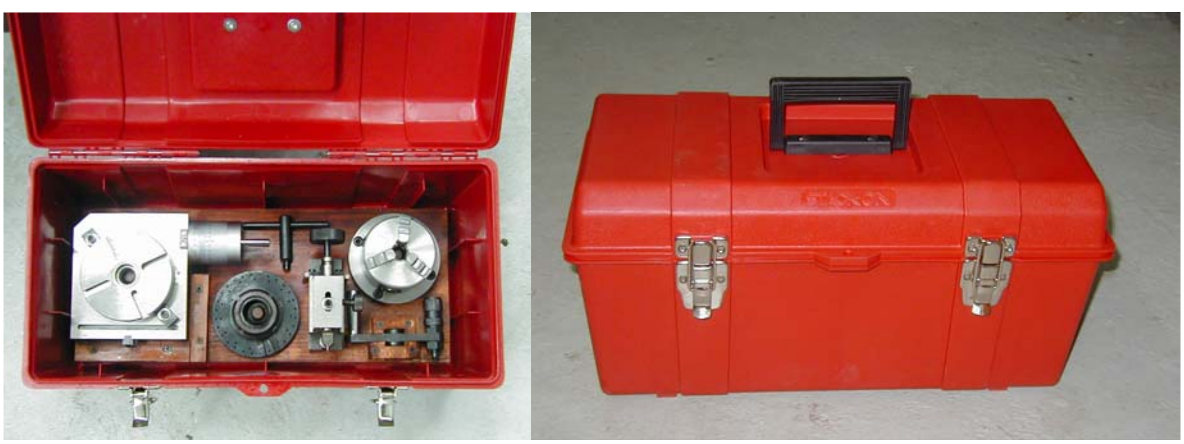
Equipment used in this discussion:

MODEL: 1810 Rotary Table, 4” Precision
MODEL: 1811 Dividing Plate Set, 15 & 28-Hole
MODEL: 1812 Tailstock
MODEL: 1187 Lathe Chuck, 3-Jaw 3”

As sold by : littlemachineshop.com

Specifications

Diameter of Table:	100mm (4”)
Center Height (Horizontal Mounting):	73mm (2.874”)
Bore Taper:	MT2
T-Slot Width:	8mm (0.315”)
Locating Key Width:	8mm and 10mm (0.315” and 0.394”)
Angle of T-Slot:	90-deg.
Height to top of table (Vertical Mounting):	68mm (2.677”)
Worm Ratio:	1:72
Worm Gear Module:	1
Table Circumference Graduation:	360-deg.
Handwheel Indication:	2-minutes each division
Min. Vernier Collar Graduation:	10-seconds each division
Flatness of clamping surface:	0.0012".
Parallelism of clamping surface to base:	0.0008".
Squareness of clamping surface to angle face:	0.0012".
Squareness of clamping surface to center slot:	0.0012".
Concentricity of center bore:	0.0008" TIR.



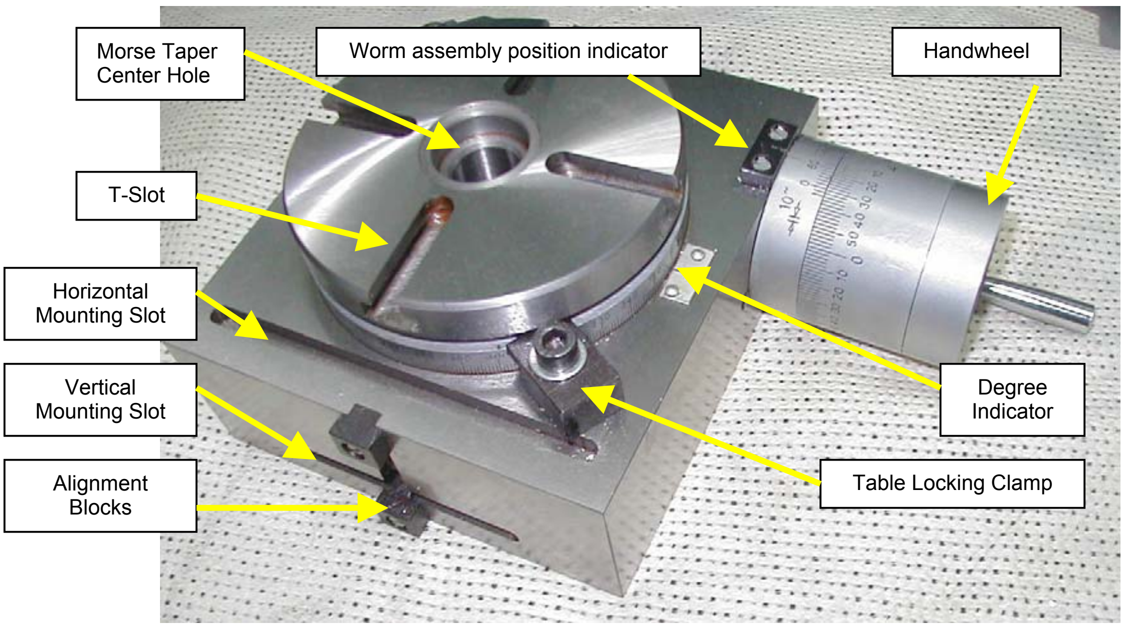
Note: STACK-ON Plastic Tool-box, a pine floor and some pine strips make the ideal storage chest for this set.

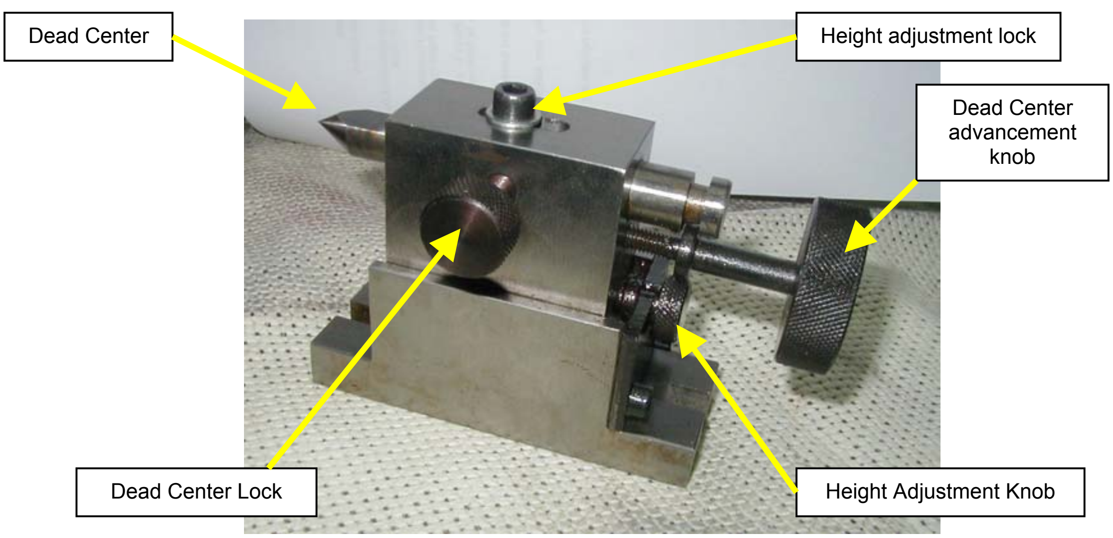
Using a Rotary Table

A rotary table can be used to machine arcs and circles. For example, the circular T-slot in the swivel base for a vise can be made using a rotary table.
Rotary tables can also be used for indexing, where a workpiece must be rotated an exact amount between operations. You can make gears on a milling machine using a rotary table. Dividing plates make indexing with a rotary table easier.

Nomenclature

The following illustrations show the various parts and controls of a rotary table and tailstock.

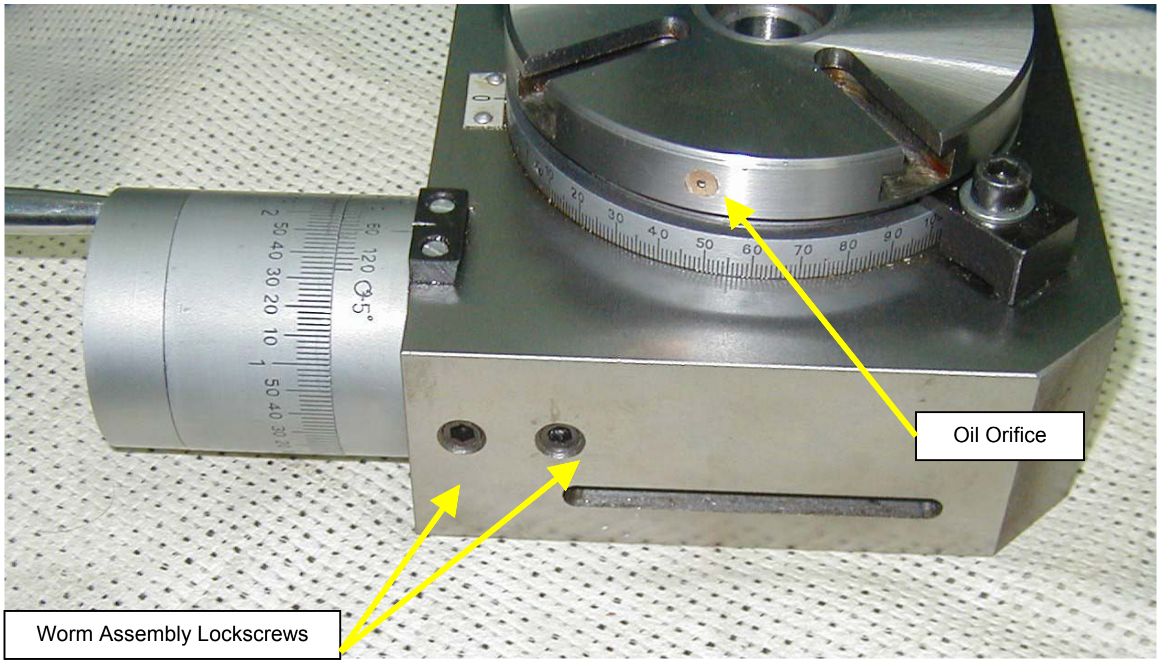


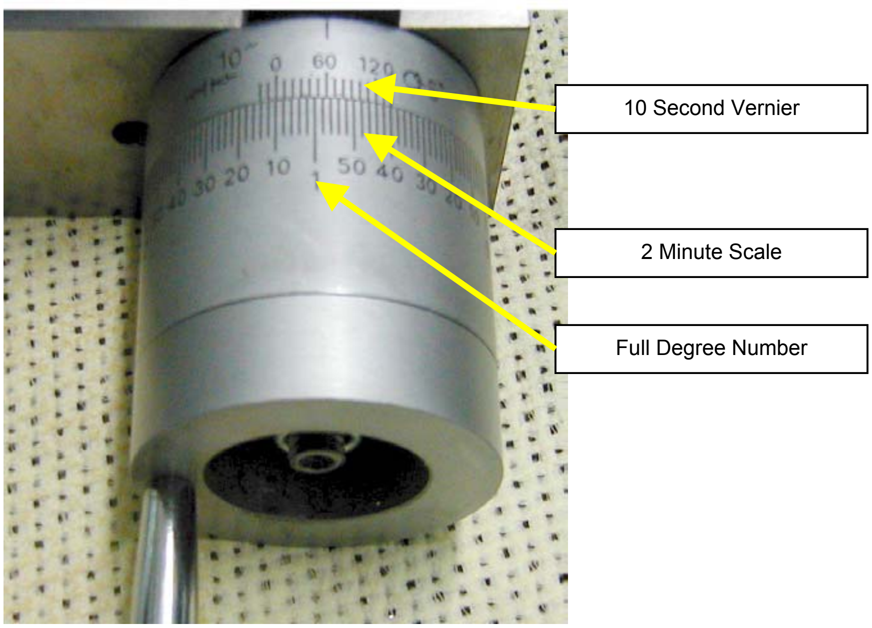


Tailstock

Setup and Adjustment

The rotary table is shipped with a protective coating of grease that must be cleaned off before first use. For removing the grease a rag, small paint brush and WD-40, kerosene or mineral spirit is recommended **(DO NOT USE GASOLENE).**



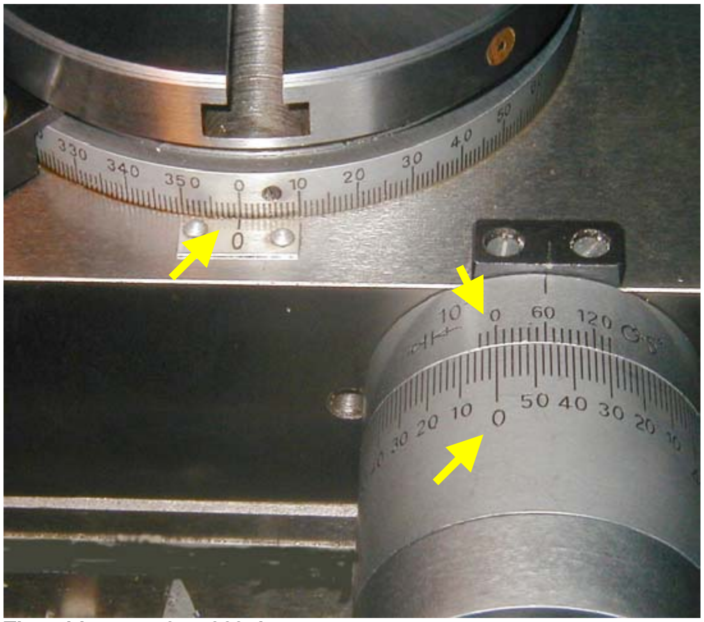


Zero the table

Its good practice to start out at some calibrated reference before using any precision instrument and what better point than to establish machine zero.

1. Turn the handwheel clockwise until the graduations around the table indicate zero.
2. Hold the handwheel steady and rotate the 2-minute scale so that full degree zero aligns with zero on the 10-second vernier.

3. For all intents and purposes you are now set at 0 or 360 degrees (see photo below).



The table set at 0 or 360 degrees

Disengaging the Worm Drive

On this model Rotary Table, the only way to disengage the worm drive and allow the table to freewheel is by loosening the two worm assembly lockscrews and completely removing the worm assembly. The eccentric makeup of the worm assembly only provides a means of "tuning- out" backlash and this is accomplished by the steps outlined below. It does not have enough "throw" in the clockwise direction to disengage the worm completely from the worm-gear.

Eliminating Backlash in the Worm Drive

Normal use of a rotary table <u>does not</u> require all play in the worm Drive be eliminated. If you always rotate the hand wheel in the same direction, play in the worm drive will not affect your work.

However, there are some operations where backlash can affect the work. In these cases, follow this procedure to minimize play in the worm drive.

1. Loosen the worm assembly lock screws.
2. Rotate the vernier color counterclockwise so that the index mark adjacent to the vernier is slightly to the left of the indicator on the rotary table body. If you move it too far, the worm drive will bind. Find the point where there is minimum play yet the worm drive works smoothly and free.
3. Tighten the worm assembly lock screws.

Note: Develop a habit of rotating the handwheel in one direction (clockwise). If you need to turn back some, to catch a point you may have passed, turn back one full revolution of the handwheel, then advance clockwise, stopping at your mark. This would negate any backlash issues.

Locking the Table in Position

When taking a cut, it is wise to lock the position of the table to ensure that the cutting forces do not rotate it. Tighten the socket head cap screws in the two table locking clamps to lock the table in position. Do not forget to loosen the locks before rotating the table. *Note: when the locks are loose and the table rotated, the locks sometimes rotate around their bolts and may bind against the scale at the side of the table.*

Reading the Dials

There are three scales that indicate the position of the table.

a) The scale around the table can be read to one degree.
b) The scale on the hand wheel can be read to two minutes.
c) The vernier scale adjacent to the hand wheel can be read to 10 seconds.

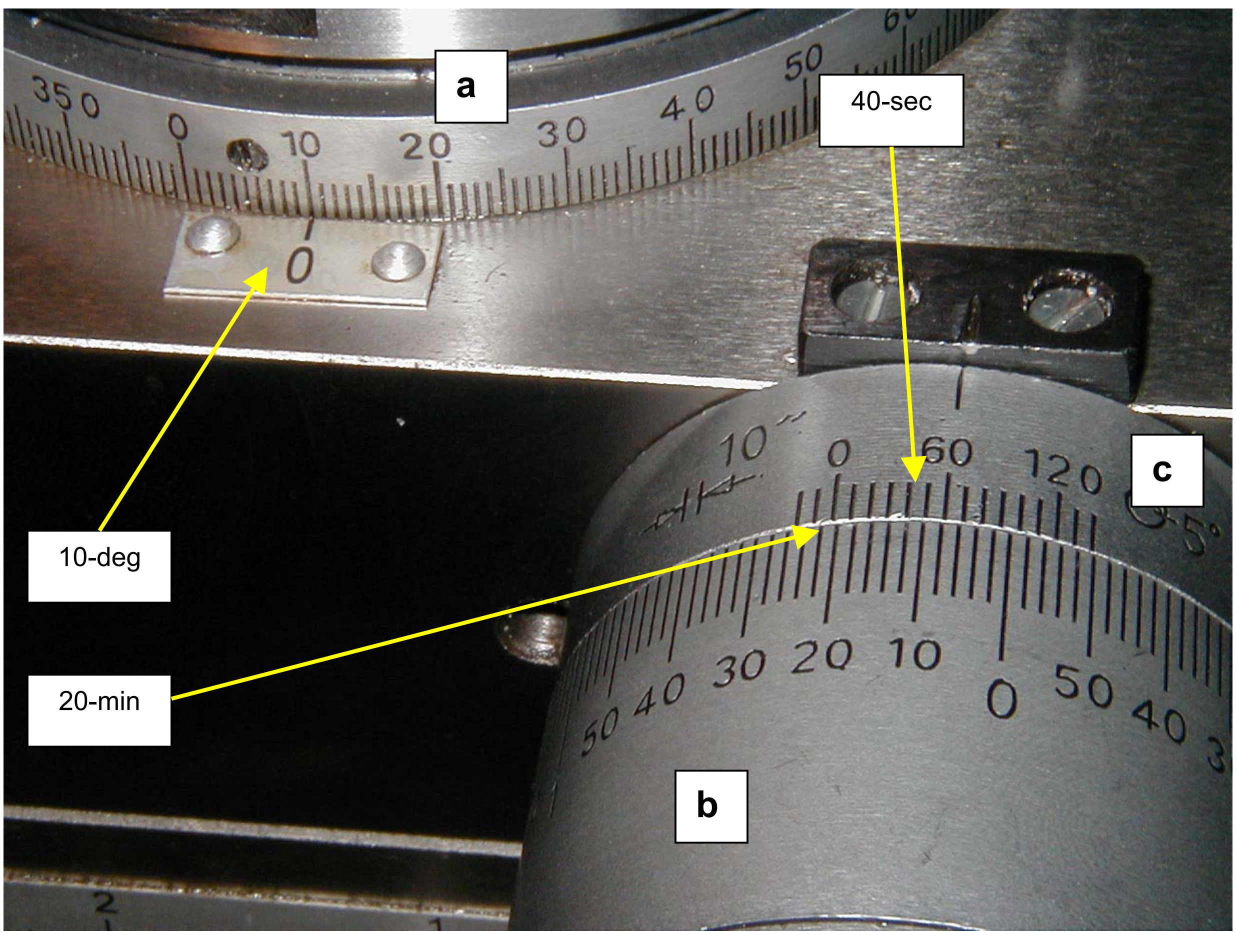
Follow this procedure for reading the position of the rotary table when you are turning the hand wheel clockwise:

Read the number of full degrees off the scale around the table **[a]**. Record this value. The full degree indications on the hand wheel may be used to assist in this reading.

Read the number of minutes on the 2-minute scale **[b]** by identifying the line closest to zero on the 10-second vernier scale **[c]**.

Identify the line on the 10-second vernier scale **[c]** that lines up exactly with a line on the handwheel 2-minute scale.

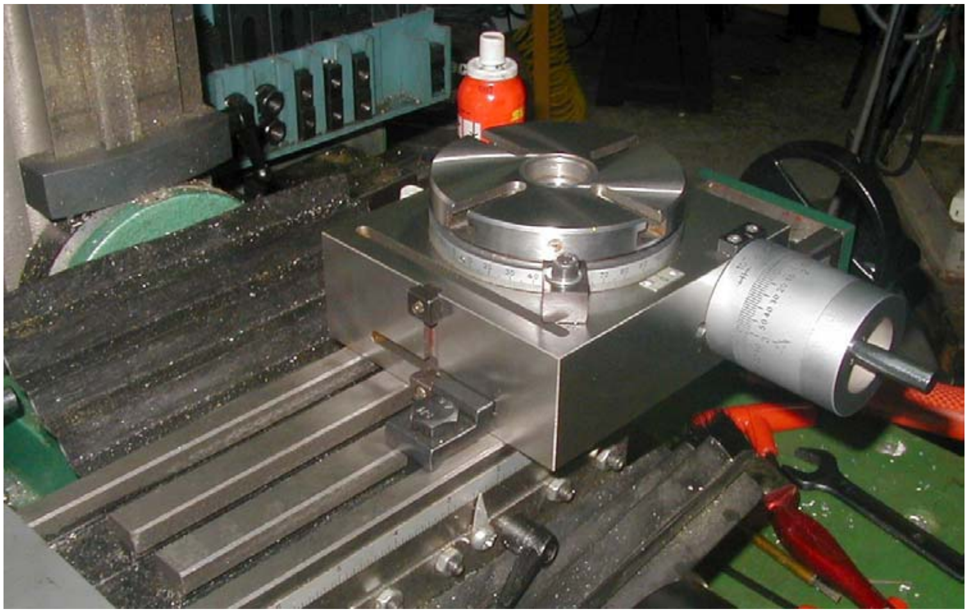
This line identifies the number of seconds. If the value is above 60, add one to the number of minutes and subtract 60 from the number of seconds.



A reading of 10° 20’ 40”

Mounting the Rotary Table

This rotary table may be mounted horizontally or vertically.



The rotary table mounted vertically

The rotary table setup horizontally with 3-jaw chuck and dividing plate.

A Chuck on the Rotary Table

A lathe chuck can be mounted on the rotary table to hold cylindrical objects.

Lathe chuck mounted on a rotary table (mounted vertically)

Chuck Adapter Plate

The chuck adapter plate supplied with the rotary table has on one side a step, turned to mate perfectly with the Morse #2 taper of the table. This ensures perfect concentric alignment with the table. The other side is machined with another step that aligns perfectly with the model: 1187, 3-Jaw 3" Lathe Chuck. No machining is necessary and this fixture ensures near perfect concentricity between the table and chuck. Three short allen bolts fasten the adapter plate to the chuck. Four allen bolts and mating T-nuts fasten the adapter plate/chuck to the table. *Note: the T-nuts sometimes protrude slightly from the table and may foul against the table locking nuts, slight filing of the T-nut edges may be in order.*

3-Jaw Chuck

MODEL: 1187 Lathe Chuck, 3-Jaw 3" is a typical self centering 3-Jaw scroll chuck. When setup on the rotary table and facing upwards, it tends to collect far more crud than when in its normal position as mounted on a lathe spindle. Therefore, much more attention needs to be paid to cleaning. Dry lubricants (not oil or grease) is highly recommended so as not to aid the collection of particulate.

Using the Tailstock

A tailstock helps steady the job when working on relatively long cylindrical objects, you might need to support the end of the workpiece. A tailstock provides the required support. Ensure that the deadcenter of the tailstock is in perfect coaxial alignment with the center of the rotary table. The way I do this is by holding ½" diameter rod which I know to be true, in the chuck one end of the rod has been turned to a point in a lathe (like a deadcenter) I ensure that the points of the deadcenter and the rod align perfectly. Note: The tailstock has a ramp machined into it to provide a height adjustment when the Allen-bolt on the top is loosened and the lower adjusting knob is turned.

Rotary table set up for indexing with a tailstock

Setting up the job

An inexpensive calculator with trig functions is a must for complex jobs. Standard milling machine set-ups usually involve aligning the work with the table and then with the spindle. This is easily accomplished because the table can be accurately moved with the handwheels. Aligning a part on a rotary table however, can be very trying because the work has to be clamped into position. When you consider the fact that the part turns, a .001" (.03mm) error in location gives a .002" True Indicated Run-out (T.I.R.) when checked with a dial indicator.

A quick way to align the milling spindle with the rotary table is by indicating the hole in the center of the rotary table. Next, prick punch or spot drill the center on the work you wish to have line up with the rotary table. Put a pointer in the spindle that runs true. Set the work under the spindle and lower the head until it engages with the center mark, then clamp the part down. You now have the work reasonably aligned with the rotary table and spindle. At this time, rotate the table with the spindle running and the pointer slightly backed off. If the part is properly aligned, the pointer should always line up with the center mark, and you should write down your handwheel settings. It is also advisable to write an "R" or "L" after the handwheel setting to remember which way the backlash was set. Now, if you have a DRO installed on your milling machine life becomes considerably easier as the center of the rotary table becomes the X0, Y0 datum and coordinates can be sought directly from the display.

Maintenance & Lubrication

Note the lubrication points on the rotary table and inject SAE-20 using an oilcan before use. The worm may be lubricated with a small amount of white lithium grease. This is a sterile area, keep debris out. After use clean the rotary table of all debris and wipe with a rag soaked with oil. Store in a clean dry place.

Things to NOT do:

1. **A Rotary table is a heavy hunk of precision crafted, cast iron, instrumentation. DO NOT DROP IT.**
2. **Never hammer the table face or a work-piece thereon.**
3. **Do not run the rotary table without adequate lubrication.**
4. **Do not allow the ingress of debris into the moving parts especially the worm assembly.**
5. **Do not store carelessly or in a damp location, it will rust.**

Using Dividing Plates with the Rotary Table

Dividing plates permit precise division of a circle into a number of divisions or degrees. The indexing feature helps prevent errors during the repetitive adjustments required in indexing work.
Dividing plates can be used to create bolt circles, gears, polygons, and so on.

These instructions are for the 4” Precision Rotary Table part number 1810 and Dividing Plate Set part number 1811.

Installing the Dividing Plate

The dividing plate mounts in place of the hand wheel on the rotary table. Follow these steps to mount the dividing plate.

Remove the Hand Wheel

1. Remove the nut and washer from the center of the hand wheel (13mm).
2. Slide the hand wheel and the center indexing ring off the shaft together. This is to prevent losing the small flat spring that is between these parts.
3. Loosen the setscrew and slide the inner indexing ring off the shaft.

Do not lose the small key that falls out from the shaft.

Note: Looking at the assembly of the handwheel and the smoothness of operation, this Rotary Table lends itself very suitable for CNC retrofitting.

Disassemble the Dividing Plate

1. Remove the retaining nut from the dividing plate.
2. Remove the two sector arms together, being careful to **not lose the small flat spring that falls out or sometimes flies across the shop**.

Install the Dividing Plate

1. Slide the dividing plate onto the shaft.
2. Secure it with two socket head cap screws.
3. Place the flat spring in the groove in the dividing plate hub.
4. Put the two sector arms on the dividing plate.
5. Install the retaining nut.
6. Install the crank handle.
7. Reinstall the washer and nut on the end of the shaft.

Using the Dividing Plate

Once the dividing plate is in place, the next step is to make the calculations for the job at hand.

Principle of Operation

Each complete rotation of the crank moves the table 1/72 of a full rotation (5 degrees). For smaller increments there are two rings of holes on the dividing plate. The outer ring has 28 equally spaced holes and the inner ring has 15 equally spaced holes. Advancing the crank using the outer ring rotates the table 1/28 of 1/72 of a rotation (0.1786 degrees). Advancing the crank using the inner ring rotates the table 1/15 of 1/72 of a rotation (0.3333 degrees). By selecting the appropriate ring of holes and by counting turns and hole advancement, a large number of equal circle divisions may be obtained. The various combinations have been tabulated in the chart below for quick reference.

The sector plates help you count holes. Set them so that they include the starting and ending holes for each increment of crank advancement. Then, lock the setscrew to maintain the setting. Between table advancements, rotate the secrors to the next position. Make sure the indexing pin does not strike the sectors during rotation of the crank.

Calculate for Degrees

If you want to advance a certain number of degrees between divisions, here is how to figure out how many turns of the crank handle are needed.

1. Look in the Degrees column in the Indexing Table on page 8 for the number of degrees you want to advance. If you find the value you want, read across the line to find the hole circle to use, the number of full turns, and the number of holes beyond the last full turn. Skip the rest of this procedure.
2. Divide the number of degrees per division by 5. Each full turn of the crank handle advances the rotary table 5 degrees.
3. The whole number is the number of full turns of the crank handle.
4. If there is a remainder in step 1, multiply the remainder by 15.
5. If the answer to step 3 is a whole number, it is the number of extra holes on the 15-hole circle to advance the crank handle.
6. If the result of step 3 is not a whole number, multiply the remainder from step 1 by 28.
7. If the answer to step 5 is a whole number, it is the number of extra holes on the 28-hole circle to advance the crank handle.
8. If neither step 3 nor step 5 resulted in a whole number, you can’t advance that number of degrees with this dividing plate.

Here is an example: Suppose you want to create a disk with holes that are 7.5 degrees apart.

Divide the number of degrees per division (7.5) by 5	7.5/5 = 1.5
The whole number part of the answer is the number of full turns	1
Multiply the remainder (0.5) by 15.	0.5 x 15 = 7.5
The result is not a whole number, so the 15-hole circle does not work.	
Multiply the remainder (0.5) by 28	0.5 x 28 = 14
The result (14) gives you the number of extra holes	14

So to advance 7.5 degrees, you make 1 full turn and then advance an extra 14 holes in the 28-hole circle.

Calculate for Number of Divisions

If you know the number of divisions into which you want to divide a circle, follow these steps:

9. Find the number of divisions you want in the Divisions column in the table on page 8.
10. Read across the line to find the hole circle to use, the number of full turns, and the number of holes beyond the last full turn.

Here is an example. Suppose you want to create a circle with 48 holes. Look in the Divisions column in the Indexing Table for 48. Here is that row from the table.

Divisions	Degrees	Circle	Turns	Holes
48	7.500	28-Hole	1	14

So to create 48 divisions, you make 1 full turn and then advance an extra 14 holes in the 28-hole circle.

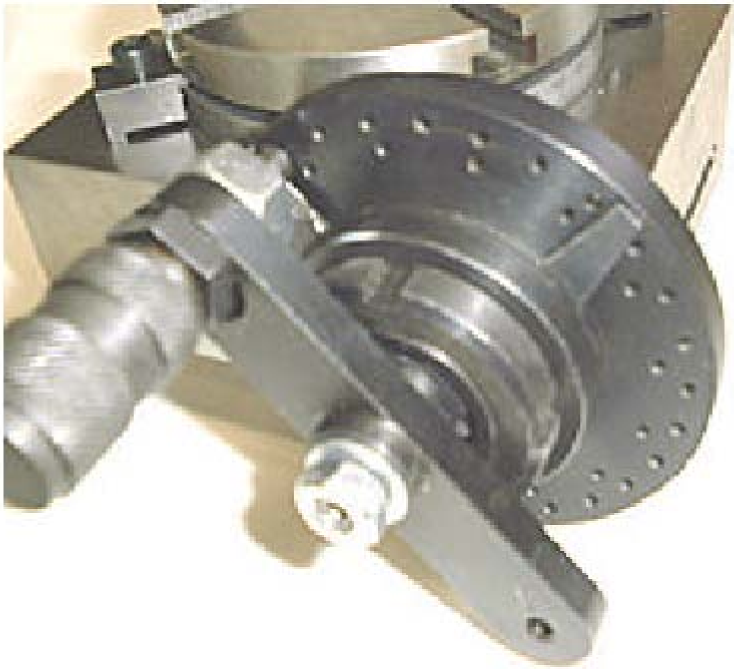
Setting up the Dividing Plate

Once the calculations are done, you are ready to adjust the crank handle and sector arms.

Set the Crank Handle

1. Make sure that the indexing pin assembly is on the correct side of the sector arms so it will contact a tapered edge of the sector arm.
2. Loosen the nut on the indexing pin assembly.
3. Move the indexing pin assembly in or out until the indexing pin fits in the holes in the appropriate hole circle.

4. Tighten the nut on the indexing pin assembly.



Crank handle set for the 28-hole circle with the indexing pin between the sector arms.

Set the Sector Arms

1. Loosen the small setscrew in the outer sector ring.
2. Adjust the sectors until there is the correct number of holes between them.

- If you will be advancing 7 full turns, plus 4 holes, then there should be 5 holes between the sector arms. (The starting hole, plus the number of holes you are advancing.)

Sector arms set to advance 4 extra holes on the 28-hole circle.

- If you will be advancing almost the full number of holes in the circle, then set the sector arms so they enclose the first hole you want and the last hole you want, but none of the intermediate holes.

Sector arms set to advance 27 extra holes on the 28-hole circle.

3. Tighten the small setscrew in the outer sector ring.

Operating the Rotary Table

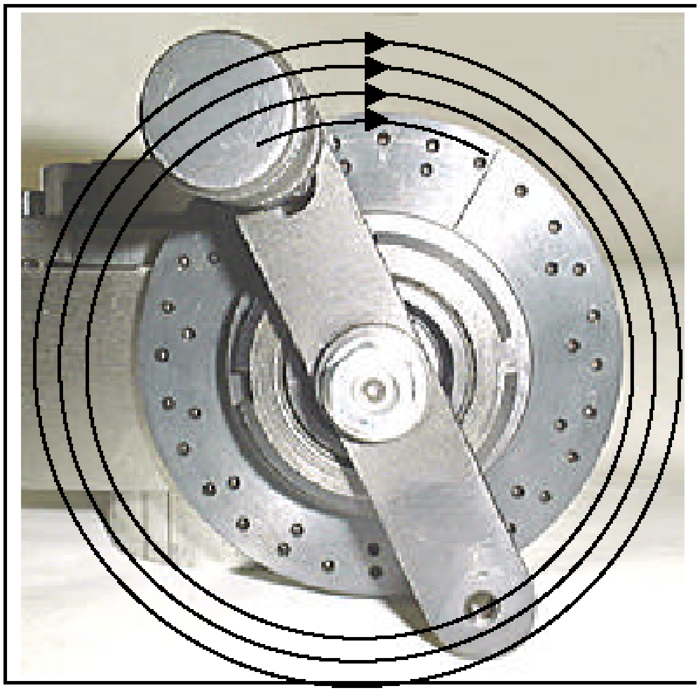
With the dividing plate installed and set up, mount your work piece on the rotary table, and the rotary table on the mill.

The position of the crank handle when you start is not important as long as the indexing pin is in a hole. Make sure it is on the correct side of the sector arms, so it will contact a tapered edge of the sector arm.

Each time you make a cut, you advance the work piece to the next position.

Advance the Work Piece

1. Pull the handle on the indexing pin assembly to disengage the indexing pin. Pull it far enough so the indexing pin clears the sector arms.
2. Turn the crank handle the number of full turns required, stopping at the position from which you started.
3. Release the indexing pin partially so that the end is at the surface of the dividing plate.
4. Advance the crank handle to the next sector arm. (If you need to pass the sector arms, you will need to retract the pin more to clear the sector arms again.)
5. Release the indexing pin so that it engages the correct hole.
6. Rotate the two sector arms to the next starting position.



This shows rotating three complete turns, plus advancing 4 additional holes to the right sector arm.

You are now ready to make your next cut. Repeat this process for each division.

Indexing Table

This indexing table is for a rotary table with a 72-to-1 ratio and a dividing plate with 15- and 28-hole circles.

Divisions	Degrees	Circle	Turns	Holes
2	180	Either	36	
3	120	Either	24	
4	90	Either	18	
5	72	15-Hole	14	6
6	60	Either	12	
7	51.429	28-Hole	10	8
8	45	Either	9	
9	40	Either	8	
10	36	15-Hole	7	3
12	30	Either	6	
14	25.714	28-Hole	5	4
14.4	25	Either	5	
15	24	15-Hole	4	12
16	22.500	28-Hole	4	14
18	20	Either	4	
20	18	15-Hole	3	9
21	17.143	28-Hole	3	12
22.5	16	15-Hole	3	3
24	15	Either	3	
27	13.333	15-Hole	2	10
28	12.857	28-Hole	2	16
30	12	15-Hole	2	6
32	11.250	28-Hole	2	7

Divisions	Degrees	Circle	Turns	Holes
36	10	Either	2	
40	9	15-Hole	1	12
42	8.571	28-Hole	1	20
45	8	15-Hole	1	9
48	7.500	28-Hole	1	14
54	6.667	15-Hole	1	5
56	6.429	28-Hole	1	8
60	6	15-Hole	1	3
72	5	Either	1	
84	4.286	28-Hole		24
90	4	15-Hole		12
96	3.750	28-Hole		21
108	3.333	15-Hole		10
120	3	15-Hole		9
135	2.667	15-Hole		8
144	2.500	28-Hole		14
180	2	15-Hole		6
216	1.667	15-Hole		5
270	1.333	15-Hole		4
288	1.250	28-Hole		7
360	1	15-Hole		3
540	0.667	15-Hole		2
1080	0.333	15-Hole		1

Table for a 72-to-1 ratio Rotary Table and a dividing plate with 15- and 28-hole circles.

Note: It may be useful to keep a laminated copy of the following table with the dividing plate kit, or posted near the milling machine.

Indexing Table

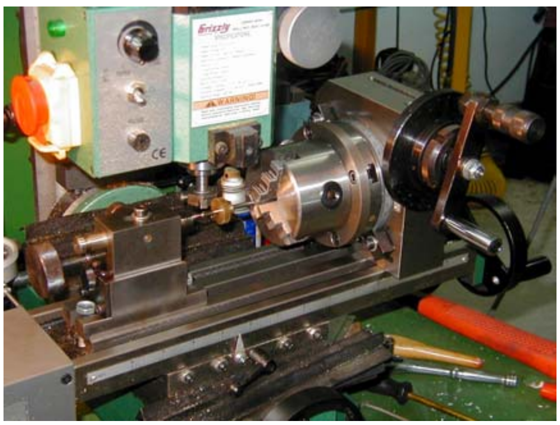
This indexing table is for rotary tables with a 72-to-1ratio and a dividing plate with 15- and 28-hole circles.

Divisions	Degrees	Circle	Turns	Holes
2	180.000	Either	36	
3	120.000	Either	24	
4	90.000	Either	18	
5	72.000	15-Hole	14	6
6	60.000	Either	12	
7	51.429	28-Hole	10	8
8	45.000	Either	9	
9	40.000	Either	8	
10	36.000	15-Hole	7	3
12	30.000	Either	6	
14	25.714	28-Hole	5	4
14.4	25.000	Either	5	
15	24.000	15-Hole	5	12
16	22.500	28-Hole	5	14
18	20.000	Either	4	
20	18.000	15-Hole	4	9
21	17.143	28-Hole	3	12
22.5	16.000	15-Hole	3	3
24	15.000	Either	3	
27	13.333	15-Hole	3	10
28	12.857	28-Hole	3	16
30	12.000	15-Hole	2	6
32	11.250	28-Hole	2	7
36	10.000	Either	2	
40	9.000	15-Hole	2	12
42	8.571	28-Hole	2	20
45	8.000	15-Hole	2	9
48	7.500	28-Hole	2	14
54	6.667	15-Hole	1	5
56	6.429	28-Hole	1	8
60	6.000	15-Hole	1	3
72	5.000	Either	1	
84	4.286	28-Hole	1	24
90	4.000	15-Hole	1	12
96	3.750	28-Hole	1	21
108	3.333	15-Hole	1	10
120	3.000	15-Hole	1	9
135	2.667	15-Hole	1	8
144	2.500	28-Hole	1	17
180	2.000	15-Hole	0	6
216	1.667	15-Hole	0	5
270	1.333	15-Hole	0	4
288	1.250	28-Hole	0	7
360	1.000	15-Hole	0	3
540	0.667	15-Hole	0	2
1080	0.333	15-Hole	0	1

Cutting Gears on a rotary table

Machinery's Handbook is one of the best sources for information on gears. Gears are built to a rigid set of rules, and they are much more complex than you might at first imagine.

This explanation describes how to cut a simple, low tolerance gear (Meccano gear). You will also have to determine the blank size, depth of cut, RPM of the spindle and so on. Gears can be cut using a rotary table with a reasonable amount of precision. In most cases, gears, even the inexpensive ones, are very precise. Gears are usually produced by "hobbing". This method uses a cutter that is similar to a worm gear. The teeth are generated with both the cutter and the blank turning. The process is very similar to a running worm gear. Hobbing produces perfectly shaped teeth, that are perfectly spaced. It is theoretically possible to produce a perfect gear one tooth at a time, But be prepared to screw-up a few times before getting it right.



Note: Next time I make a gear, I would dispense with the mandrel, if at all possible and make the stepped backside of the blank longer and hold this directly in the chuck. The tailstock would then be employed in steadying the blank directly at the bore. Should make for a more rigid setup.

Setup for simple gear cutting (Meccano gear).

Cutters can be purchased that will produce a fairly good tooth form, but they are extremely expensive and have a very limited range. A cutter can be ground that works like a fly cutter. A 1/4" lathe tool blank fits the pictured homemade (a 9/16 bolt modifies nicely for this) tool holder. Use the damaged gear you are replacing as a shape reference to grind the tip of the cutter. At first it may seem almost impossible to do this, but it is not. Just keep checking the tool to a gear that can be used for a gauge by holding the two up to a light source. You'll find that the final grinding is done by "feel". Lathe tool bits are cheap and available, so it is a process worth learning. When the tool is mounted in the holder, don't allow it to stick out any more than necessary. The picture above shows a typical setup. A tailstock isn't always necessary but in this case it was, and very light cutting passes were made and with a very sharp tool, especially because of the “skinny” mandrel used. Remember, the gear blank must run absolutely true before starting and the tool tip must be dead on centerline.

Calculating Your Cuts
To figure the amount to move between cuts, an electronic pocket calculator can be very helpful. Simply divide 360° by the number of teeth you wish to cut. This will give you an answer in degrees and several decimal places of precision. However, this rotary table is calibrated in degrees, minutes and seconds so some conversion is necessary. Here’s the theory:

There are several ways to measure the size of an angle. One way is to use units of degrees. (Radian measure is another way.)

In a complete circle there are three hundred and sixty (360) degrees.

An angle could have a measurement of 35.75 degrees. That is, the size of the angle in this case would be thirty-five full degrees plus seventy-five hundredths, or three fourths, of an additional degree. Notice that here we are expressing the measurement as a decimal number. Using decimal numbers like this one can express angles to any precision - to hundredths of a degree, to thousandths of a degree, and so on.

There is another way to state the size of an angle, one that subdivides a degree using a system different than the decimal number example given above. The degree is divided into sixty parts called minutes. These minutes are further divided into sixty parts called seconds. The words minute and second used in this context have no immediate connection to how those words are usually used as amounts of time.

- ✓ In a full circle there are 360 degrees.
- ✓ Each degree is split up into 60 parts, each part being 1/60 of a degree. These parts are called minutes.
- ✓ Each minute is split up into 60 parts, each part being 1/60 of a minute. These parts are called seconds.

The size of an angle could be stated this way: 40 degrees, 20 minutes, 50 seconds.

There are symbols that are used when stating angles using degrees, minutes, and seconds. Those symbols are show in the following table.

Symbol for degree: °
Symbol for minute: '
Symbol for second: "

So, the angle of 40 degrees, 20 minutes, 50 seconds is usually written this way:

$$40^\circ\, 20'\, 50''$$

How could you state the above as an angle using common decimal notation? The angle would be this many degrees, (* means times.):

40 + (20 * 1/60) + (50 * 1/60 * 1/60)

That is, we have 40 full degrees, 20 minutes - each 1/60 of a degree, and 50 seconds - each 1/60 of 1/60 of a degree.

Work that out and you will get a decimal number of degrees. It's 40.34722...

Going the other way is a bit more difficult. Suppose we start with 40.3472 degrees. Can we express that in units of degrees, minutes, and seconds?

Well, first of all there are definitely 40 degrees full degrees. That leaves 0.3472 degrees.

So, how many minutes is 0.3472 degrees? Well, how many times can 1/60 go into 0.3472? Here's the same question: What is 60 times 0.3472? It's 20.832. So, there are 20 complete minutes with 0.832 of a minute remaining.

How many seconds are in the last 0.832 minutes. Well, how many times can 1/60 go into 0.832, or what is 60 times 0.832? It's 49.92, or almost 50 seconds.

So, we've figured that 40.3472 degrees is almost exactly equal to 40 degrees, 20 minutes, 50 seconds.

(The only reason we fell a bit short of 50 seconds is that we really used a slightly smaller angle in this second half of the calculation explanation. In the original angle, 40.34722... degrees, the decimal repeats the last digit of 2 infinitely, so, the original angle is a bit bigger than 40.3472.)

Further Reading:

Reading Vernier Scales: http://webphysics.davidson.edu/Applets/TaiwanUniv/ruler/vernier.html
http://dl.clackamas.cc.or.us/ch104-01b/vernier.htm

Footnote

This manual started out as my shop notes for my newly acquired Rotary Table, as I began trying to understand it's setup, I found that there's precious little information relating to the setup and use of the device. I tried to cram as much information into these few pages so as to give a well rounded perspective on the setup and use of a Rotary Table System. As with machining in general, proficiency comes with practice. Be patient, it is not uncommon for >85% of the time taken to do a machining job, to be spent in setting up. Measure twice and cut once! …as it's easier to remove metal that to put it back on.

Thanks to Susan (my wife) for a really neat birthday gift.

Have fun and be safe,
Cletus

Cletus Berkeley is in no way affiliated with Littlemachineshop.com…. just a another satisfied customer.