

INSTRUCTIONS FOR #82793 DIVIDING PLATE for use with Rotary Table #82792

Installation

Remove the two nuts on the end of the rotary table handwheel shaft. Grasp the dial portion of the handwheel and, without separating the crank from the dial, pull the dial and crank off of the shaft as a unit. Capture the shaft key and set it aside.

Loosen the set screw on the side of the remaining vernier collar, then remove the collar from the rotary table also. Do not loosen or remove the small spanner nuts on the end of the shaft.

Now direct your attention to the dividing plate itself. Remove the large spanner nut and the two sector collars from the hub and set them aside. Watch out for the flat spring remaining on the hub...you'll need it in a couple of minutes.

Place the dividing plate over the hub on the rotary table and align the mounting holes. Secure with the two socket-head cap screws. Replace the flat spring, sector plates and large spanner nut on the dividing plate. Install a set screw in the outer sector plate if it not already installed.

Replace the key on the shaft and install the dividing plate crank on the shaft. Secure with one shaft nut. Adjust position of plunger so that indexing pin properly aligns with holes in plate.

Operation

Turning the crank rotates the table. To provide equal amounts of rotation between machining operations, the crank must be turned the same amount each time. This is measured by counting complete turns of the crank plus partial turns indexed by the rings of holes in the dividing plate.

If you're interested in the mathematics: 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. The advance of the crank using the outer ring moves the table 1/28 of 1/72 of a rotation (.1786 degrees). For the inner ring of holes, the increment is 1/15 of 1/72 of a rotation (.333 degrees). By selecting the appropriate ring of holes, and counting turns and hole advancement, a large number of equal circle divisions may be obtained. The various combinations have been listed on the chart below for speedy reference and to save you the trouble of making complicated calculations.

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 set screw to maintain the setting. Between table advancements, rotate the sectors to the next position. Make sure the indexing pin does not strike the sectors during crank rotation.

An example of operation is as follows:

Using the chart: To divide a circle into 14 equal divisions, rotate the crank 5 complete turns plus 4 holes on the outer (28-hole) ring between machining operations. Do this 14 times and you will have completed the circle.

Using math: To divide a circle (360 degrees) into 14 equal divisions (25.714 degrees each), rotate the crank 5 complete turns (5 x 5 = 25 degrees) plus 4 holes on the outer (28-hole) ring (4 x .1786 = .714 degrees) between machining operations. Do this 14 times and you will have completed the circle.

Divisions	Crank Turns	Ring	Holes	Divisions	Crank Turns	Ring	Holes
2	36			42	1	28 (Outer)	20
3	24			45	1	15 (Inner)	9
4	18			48	1	28 (Outer)	14
5	14	15 (Inner)	6	54	1	15 (Inner)	5
6	12			56	1	28 (Outer)	8
7	10	28 (Outer)	8	60	1	15 (Inner)	3
8	9			72	1		
9	8			84		28 (Outer)	24
10	7	15 (Inner)	3	90		15 (Inner)	12
12	6			96		28 (Outer)	21
14	5	28 (Outer)	4	108		15 (Inner)	10
15	4	15 (Inner)	12	120		15 (Inner)	9
16	4	28 (Outer)	14	135		15 (Inner)	8
20	3	15 (Inner)	9	144		28 (Outer)	14
21	3	28 (Outer)	12	180		15 (Inner)	6
24	3			216		15 (Inner)	5
27	2	15 (Inner)	10	270		15 (Inner)	4
28	2	28 (Outer)	16	288		28 (Outer)	7
30	2	15 (Inner)	6	360		15 (Inner)	3
32	2	28 (Outer)	7	540		15 (Inner)	2
36	2			1080		15 (Inner)	1
40	1	15 (Inner)	12	2016		28 (Outer)	1