Indexing Wheel Basic Instructions
By Iron Fire Innovations LLC

IMPORTANT! PLEASE NOTE:
• Obey all manufacturers’ safety rules when using power tools. Please refer to the lathe operation manual supplied by the lathe manufacturer for safety rules related to lathe operation.
• Iron Fire Innovations LLC DOES NOT recommend using your Indexing Wheel while installed on your lathe with the lathe running. However, if you choose to run the lathe with the Indexing Wheel installed, Iron Fire Innovations LLC recommends using 220 grit sandpaper to sand the outer edges before turning on the lathe to smooth all outer edges.
• DO NOT turn in reverse while the Indexing Wheel is installed onto your lathe. Your chuck will turn off the spindle.

Details:
The Indexing Wheel by Iron Fire Innovations is designed to layout evenly spaced lines onto your work piece so that other enhancements may accurately be added to your work piece. With this Indexing Wheel, you now have an innovative design and pattern-making tool that allows endless enhancements in woodworking including: Fluting, wood burning, dyeing, scribing, carving, chip carving, marking, scoring, piercing, inlays and more! Features Include:
• Calculated and engineered 14, 36, 48 and 60-hole patterns allow for 20 obvious, symmetrical evenly spaced layout combinations, as well as hundreds of asymmetrical layout combinations. Total number of combinations available is limited only by your imagination!
• Made from technical plastic resins for strength and durability.
• Standard lathe sizes available: 33mm, 3/4”-16, 1”-8, 1 1/4”-8. Custom sizes available at an additional charge.
• Light colored Indexing Wheels allow markings to be made and for easy hole location.

In addition, the Indexing Wheel by Iron Fire Innovations allows you to:
• Enhance creativity, flexibility and versatility in your woodworking projects.
• Create accurate layouts and consistent, evenly spaced construction lines on two dimensional (2D) and three dimensional (3D) wood turning surfaces.
• Develop a wide variety of design layouts using numbers or degrees. (See Page Two.)
• Save hours of time—No need to build one yourself.
• Quickly and securely install the Indexing Wheel on lathe spindle, behind the standard lathe chuck.
• Normally operate your lathe in forward motion; Indexing Wheel will not interfere with lathe performance. (Requires minimum lathe swing of 10”). PLEASE NOTE: DO NOT run lathe in reverse while Indexing Wheel is installed. Your chuck will turn off the spindle.

Package Includes:
• Indexing Wheel
• Indexing pin
• Basic operating instructions
• Plans for indexing pin lathe mount (required for use)
• Plans for wooden tool rest platform (optional for 3D compass layout only) – (See Image F)

Not included but necessary for operation:
• Indexing Pin support (See Picture). This support will be required to hold your pin firmly while using your Indexing Wheel.

**Added Enhancements:**
• Added 3D Marking Capability by mounting a flat piece of wood onto a dowel that fits your tool rest so that a compass can be used to add curves to your layout work (See Image F).
• A turned knob can be added to the Indexing pin for easier operation (See Image A). A knob has been excluded to keep the cost of the product down.

**Operation:**
• NOTE: Once installed, all layout work must be completed before releasing chuck from Indexing Wheel or accuracy will be lost.
• Turn work piece until ready to layout chosen enhancements. Retain ability to hold work piece in lathe chuck.
• Place Indexing Wheel onto spindle.
• Install chuck firmly against Indexing Wheel so chuck turns when hand turning the wheel.
• Position Indexing Pin Support onto lathe bed with Indexing Pin positioned in front of the hole pattern of choice (Image B).
• Mark work piece as desired.
• Remove Indexing Pin from Indexing Wheel and hand-rotate work piece until pin is aligned with desired hole in chosen pattern.
• Insert Indexing Pin into Indexing Wheel and make additional marks as desired.
• Repeat this “mark and rotate” operation until all marks in pattern are complete.
• When all construction lines are marked, remove chuck and Indexing Wheel from lathe before continuing enhancements.

Make straight construction lines using tool rest as a straight edge. Achieve other geometric shapes by connecting construction line end points. Image C is ready for Chip Carving. Achieve curves using a compass. Image D is being marked for fluting. Tape can be applied to tool rest to provide a cushion for the compass base point or add capability by mounting a flat piece of wood onto a dowel to fit tool rest and use a compass to add curves to layout work (Image D).

**Indexing Pin Support:**
Because it would be impossible to account for the unique configurations of lathes, no Pin Support is offered since this will change per lathe. Construct Indexing Pin support to firmly hold the Indexing Pin in relation to the bed of the lathe. Drill a #31 (.120 diameter) hole or a 3mm hole through the support to hold the pin in place while making construction lines. Notice the shape of the Pin Support shown against the Indexing Wheel holding the Indexing Pin (Image D). The Pin Support can be clamped to the lathe bed; however this is not necessary. Image D shows Indexing Wheel mounted with a 5” diameter chuck with plenty of clearance between the chuck and the hole patterns.

**Indexing Wheel Hole Patterns / Evenly Spaced Layout Options**
**Calculated and engineered**
14, 36, 48 and 60-hole patterns allow for 20 obvious, symmetrical, evenly spaced layout combinations, as well as hundreds of asymmetrical
layout combinations. Total number of combinations is limited only by the imagination!

- 14 Hole pattern makes 2-7-14 evenly spaced layout options
- 36 Hole pattern makes 2-3-4-9-12-18-36 evenly spaced layout options
- 48 Hole pattern makes 2-3-4-6-8-12-16-24-48 evenly spaced layout options
- 60 Hole pattern makes 2-3-4-5-6-10-12-15-20-30-60 evenly spaced layout options

**Index – 20 different Even Combinations by degrees.**

Even more options by skipping holes.

2 hole pattern = 180° between holes
3 hole pattern = 120° between holes
4 hole pattern = 90° between holes
5 hole pattern = 72° between holes
6 hole pattern = 60° between holes
7 hole pattern = 51.4° between holes
8 hole pattern = 45° between holes
9 hole pattern = 40° between holes
10 hole pattern = 36° between holes
12 hole pattern = 30° between holes

14 hole pattern = 25.7° between holes
15 hole pattern = 24° between holes
16 hole pattern = 22.5° between holes
18 hole pattern = 20° between holes
20 hole pattern = 18° between holes
24 hole pattern = 15° between holes
30 hole pattern = 12° between holes
36 hole pattern = 10° between holes
48 hole pattern = 7.5° between holes
60 hole pattern = 6° between holes