Milling Machine Patterns

20-Tooth Full-Scale Pattern
(6\(\frac{1}{2}\)" O.D.)
(NEED ONE)

Drive Gear Full-Scale Pattern
(3\(\frac{3}{4}\)" O.D.)
(NEED ONE)

Lock Gear Full-Scale Pattern
(NEED ONE)

NOTE: USE CENTERLINES TO ALIGN BOTH INDEXING WHEEL HALF-PATTERNS TO FORM A FULL PATTERN

NOTE: USE CENTERLINES TO ALIGN TWO 30-TOOTH HALF-PATTERNS TO FORM A FULL PATTERN

NOTE: USE CENTERLINES TO ALIGN FOUR 40-TOOTH QUARTER-PATTERNS TO FORM A FULL PATTERN
INDEXING WHEEL FULL-SCALE LEFT HALF-PATTERN
(NEED 1)

NOTE: USE CENTERLINES TO ALIGN BOTH INDEXING WHEEL HALF-PATTERNS TO FORM A FULL PATTERN

NOTE: USE CENTERLINES TO ALIGN TWO 30-TOOTH HALF-PATTERNS TO FORM A FULL PATTERN

NOTE: USE CENTERLINES TO ALIGN FOUR 40-TOOTH QUARTER-PATTERNS TO FORM A FULL PATTERN
INDEXING WHEEL
FULL-SCALE
RIGHT HALF-PATTERN
(NEED 1)

NOTE: USE CENTERLINES
TO ALIGN BOTH INDEXING
WHEEL HALF-PATTERNS TO
FORM A FULL PATTERN

INDEXING WHEEL
FULL-SCALE
LEFT HALF-PATTERN
(NEED 1)

NOTE: USE CENTERLINES
TO ALIGN TWO 30-TOOTH
HALF-PATTERNS TO FORM
A FULL PATTERN

NOTE: USE CENTERLINES
TO ALIGN FOUR 40-TOOTH
QUARTER-PATTERNS TO
FORM A FULL PATTERN
NOTE: USE CENTERLINES TO ALIGN TWO 30-TOOTH HALF-PATTERNS TO FORM A FULL PATTERN

30-TOOTH FULL-SCALE HALF-PATTERN (9" O.D) (NEED 2)

1/4"-DIA. HOLE

NOTE: USE CENTERLINES TO ALIGN TWO 30-TOOTH HALF-PATTERNS TO FORM A FULL PATTERN

NOTE: USE CENTERLINES TO ALIGN FOUR 40-TOOTH QUARTER-PATTERNS TO FORM A FULL PATTERN
10-TOOTH FULL-SCALE PATTERN (3¼" O.D.) (NEED THREE)

NOTE: USE CENTERLINES TO ALIGN BOTH INDEXING WHEEL HALF-PATTERNS TO FORM A FULL PATTERN

40-TOOTH FULL-SCALE QUARTER-PATTERN (11⅓₁₆" O.D.) (NEED 4)

NOTE: USE CENTERLINES TO ALIGN FOUR 40-TOOTH QUARTER-PATTERNS TO FORM A FULL PATTERN

NOTE: USE CENTERLINES TO ALIGN TWO 30-TOOTH HALF-PATTERNS TO FORM A FULL PATTERN

NOTE: USE CENTERLINES TO ALIGN FOUR 40-TOOTH QUARTER-PATTERNS TO FORM A FULL PATTERN
Milling Machine
Gear Setups

The router milling machine allows for six different gear setups to create spiral patterns (like flutes and reeds). Depending on the setup, the gear ratio, and therefore the spacing of the spirals changes. The direction of the spiral depends on whether one or two gears are used to connect the drive gear and main gears, as you can see in the drawings below and on the following page.

Each set of drawings below shows the gear setup and resulting spiral pattern. You can use the information to determine what will work best for the type of bit you’re using. It’s always a good idea to try out different gear setups and bit combinations on a practice blank to determine the best spacing and number of spirals.

Over time, you’ll develop a sense for the number of spirals you can use in a design depending on the gear ratio and the size of the bit (or a portion of a bit) you use.

▲ Spiral Pattern. Each specific gear setup results in a particular spiral spacing (left example). The indexing wheel ensures that spirals are evenly spaced for a consistent look once they’re complete (right example).