24-01 *Solution*

Dwell Function Q+A

➲ Answers to questions:

1. One - during machining, to clean up the cut, for example, in counterboring, countersinking and spot drilling

   Two - for operation of some accessories, to allow for completion of a certain action

2. There are three formats used for dwell programming with the G04 command (0.75 seconds used in the example):

   `G04 X0.75` `G04 P750` `G04 U0.75` (lathes only)

   In addition, dwell is also programmed in fixed cycles, using the ***P*** address but without the G04

3. A long dwell is usually measured in many seconds, often in minutes.
   Typically, it is not used for machining, but for service, machine warm up, even functions of special accessories

4. Minimum dwell is the time required to complete one revolution of the spindle

5. If the spindle speed is 1200 r/min and the dwell is 0.5 seconds, the spindle will rotate:

   `(1200 x 0.5) / 60 = 10` revolutions

6. The most common address for programming dwell in milliseconds is the P-address,
   but ***X*** or ***U*** can be used as well, without the decimal point. For example,

   `G04 X750` `G04 P750` `G04 U750`

   have the same meaning

7. The minimum dwell for 485 r/min is: `60 / 485 = 0.124` seconds

8. Don't confuse X-motion and X-dwell. There is ***never*** a tool motion during a dwell.
   The purpose of dwell is to pause the tool, not to move it

9. The X-axis is the only axis available on ***all*** CNC machines,
   so it has been selected to decode the dwelling command internally

10. Dwell time that is equivalent to four spindle revolutions at 860 r/min can be calculated:

    `(60 x 4) / 860 = 0.279` seconds