

Feedrate Q+A

➔ Answers to questions:

1. Metric - machining centers: mm/min *for example ... F250.0*
 Metric - lathes; mm/rev *for example ... F0.025*
 English - machining centers: in/min *for example ... F10.0*
 English - lathes: in/rev *for example ... F0.01*

2. Spindle speed - r/min, Tool diameter or tool nose radius, Surface requirements, Cutting tool geometry, Machining forces, Part setup, Tool extension, Cutting motion length, Depth/Width of cut, Method of milling, Number of cutting edges, Safety considerations - note that some factors are unique to machining centers or lathes only.

3. Feedrate override switch, located on the machine operation panel, is a rotary switch in the range 0-150% or 0-200%. Its purpose is to allow operator to increase or decrease the programmed cutting feedrate, generally on a temporary basis, for example, during program proving.

4. Cutting feedrate is the speed (velocity) at which the cutting tool removes material by cutting action.

5. Control will accept the block, stores the feedrate, but does not act on it, until a cutting motion command is issued. If a new feedrate is specified in such a motion, the new feedrate takes over. If there is no feedrate in such a block, the last feedrate will become effective, which is F0.3 in the example.

6. G09 is a special **Exact Stop** command that prevents corner overshoot, particularly on old or worn-out machines. If used, it will be effective only in the one block - an unmodal command.

 See also G61 description in the chapter

7. M48 - Feedrate override is **active**, and M49 - feedrate override is **inactive**

8. Feedhold switch is a push button switch, located on the machine operation panel. When pressed during an axis motion, it will stop all axis movement, without affecting any other activity. Pressing **Cycle Start** will reactivate the axis motion.

9. The formula to calculate maximum allowed **feedrate per revolution** is:

$$F_{\max} = \frac{R_{\max}}{r/\min} = \frac{400}{2800} = 0.1429$$

In the exercise, the answer is F0.1429 - this calculation generally applies to single point threading - **see Chapter 38**

10. G94 - feedrate per minute, and G95 - feedrate per revolution