

SPEEDS AND FEEDS

The feed rate is determined entirely by the lead or pitch of the thread. Since the feed of the die head must not be too rapid, the thread lead and pitch limit spindle speed, and therefore the cutting speed. Cutting speed is also affected by the work material, type, and size of thread, thread tolerance, and the finish required. Cutting fluid should be used in most cases, which may also have an effect on cutting speed.

With thread chasers, much slower cutting speeds are recommended as compared to turning. Using thread chasers at a cutting speed that is too fast will reduce tool life and may cause rough or torn threads on the finished part.

Some typical cutting speeds and the feed rate formula for thread chasers are given below. These speeds and feeds are intended to be starting points only and may have to be modified somewhat to suit your particular job.

USE THE FOLLOWING FORMULA FOR SPINDLE SPEED (RPM)

$$N = \frac{12V}{\pi D} \quad \text{where}$$

N = Spindle speed (rpm)

V = Cutting speed (fpm)

D = Diameter (inches)

π = 3.14

CUTTING SPEEDS (FPM) FOR THREADS PER INCH				
MATERIAL	3 - 7½	8 - 15	16 - 24	25 & UP
AISI 1010-1035 STEEL	20	30	40	50
AISI 1112-1340 STEEL	20	30	40	50
AISI 1040-1095 STEEL	15	20	25	30
AISI 4130-4820 STEEL	8	10	15	20
AISI 5120 -52100 STEEL	8	10	15	20
STAINLESS STEEL	8	10	15	20
GRAY CAST IRON	25	40	50	80
ALUMINUM ALLOYS	50	100	150	200
BRASS BAR STOCK	50	100	150	200
PHOSPHOR BRONZE	40	80	100	150
ZINC DIE CASTINGS	50	100	150	200