

# Colchester Thread Cutting

This page contains a more readable version of the threading, feed, and worm gear cutting charts that are in the manual on page 13.

## Basic change gear information

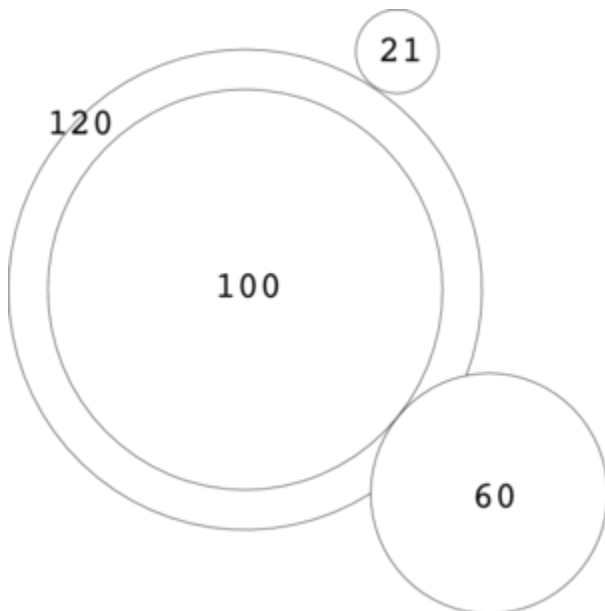
The Colchester's change gears are 16 diametral pitch, with a 14 1/2 degree pressure angle. The stock gears are 0.5" thick and have a octal keyed bore with a primary diameter of 0.8125". The eight keyways are 0.175" wide and 0.03125" deep.

## Standard English Change Gears

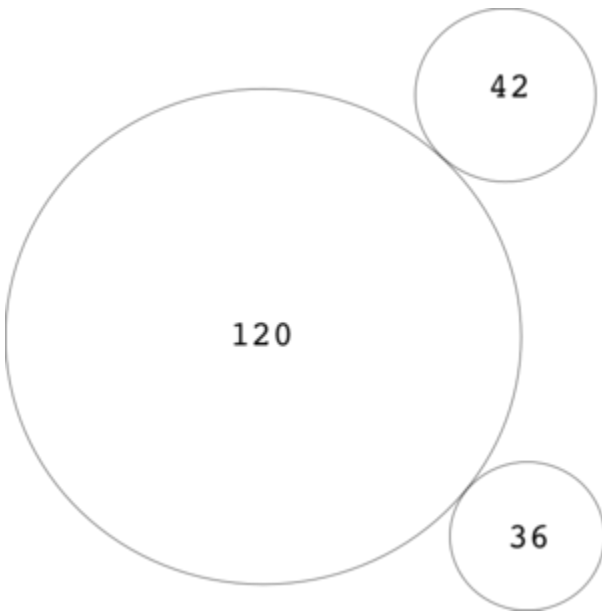
The following table is a list of the standard change gears that were originally supplied with the Colchester Bantum Lathe. Also included are some of the calculations needed to cut these gears.

Number of teeth	Quantity on hand		Outside diameter	Involute cutter number	Maximum Measurement over wires 0.108" wires	0.003" Backlash adjustment
21	1		1.4375"	#4	1.4595"	0.0084"
35	0		2.3125"	#3	2.3387"	0.0092"
36	1		2.3750"	#3	2.4035"	0.0092"
39	0		2.5625"	#3	2.5894"	0.0093"
42	0		2.7500"	#3	2.7792"	0.0093"
49	0		3.1875"	#3	3.2157"	0.0096"
57	0		3.6875"	#2	3.7165"	0.0096"
60	1		3.8750"	#2	3.9055"	0.0096"
66	0		4.2500"	#2	4.2808"	0.0097"
69	0		4.4375"	#2	4.4673"	0.0097"
100	1		6.3750"	#2	6.4070"	0.0105"
120	1		7.625"	#2	7.6574"	0.0106"
127	0		8.0625"	#2	8.0944"	0.0106"

## Feed Rates

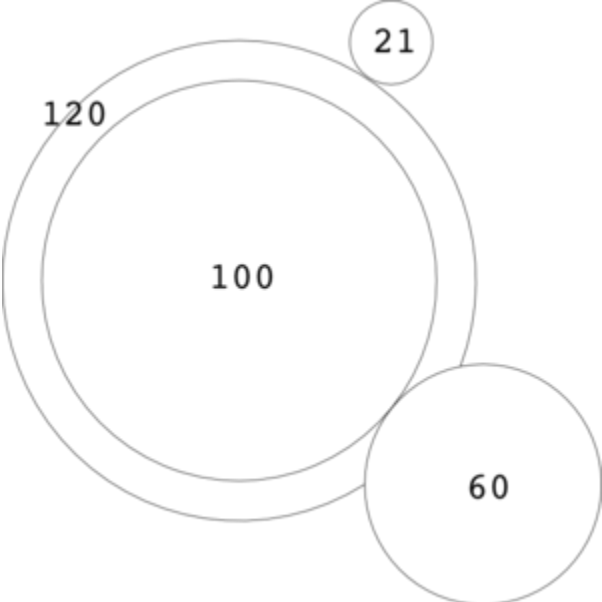


<b>Gear setting</b>	<b>Feed Rate inch per rev</b>
R5	0.001
R2	0.002
S3	0.003
S2	0.004
T5	0.005
T3	0.006
T2	0.008



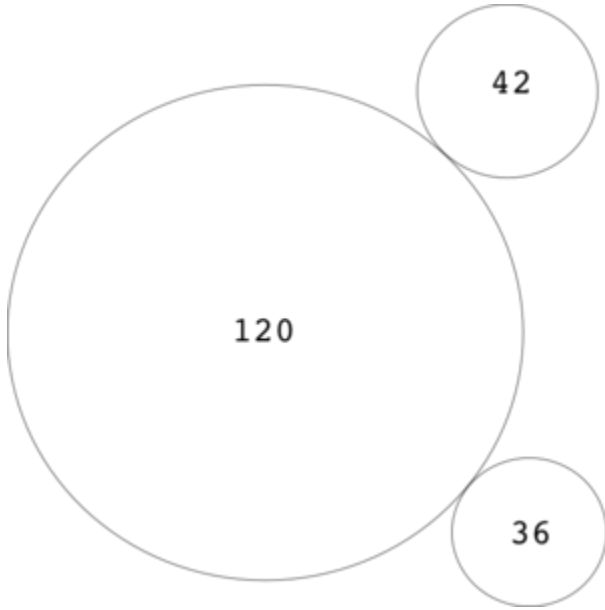
<b>Gear setting</b>	<b>Feed Rate inch per rev</b>
R5	0.005
R4	0.006
R2	0.006
S6	0.010
S4	0.012
S2	0.016
T6	0.020
T4	0.025
T2	0.032

# English Thread Chart



Gear Setting	Threads per Inch
R3	80
R4	72
R1	64
R2	56
S5	48
S6	44
S3	40
S4	36
S1	32
S2	28
T5	24
T6	22
T3	20
T4	18
T1	16

T2	14
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Gear Setting	Threads per Inch
R5	24
R6	22
R3	20
R4	18
R1	16
R2	14
S5	12
S6	11
S2	10
S4	9
S1	8
S2	7
T5	6
T2	5
T4	4 1/2

T1	4
T2	3 1/2