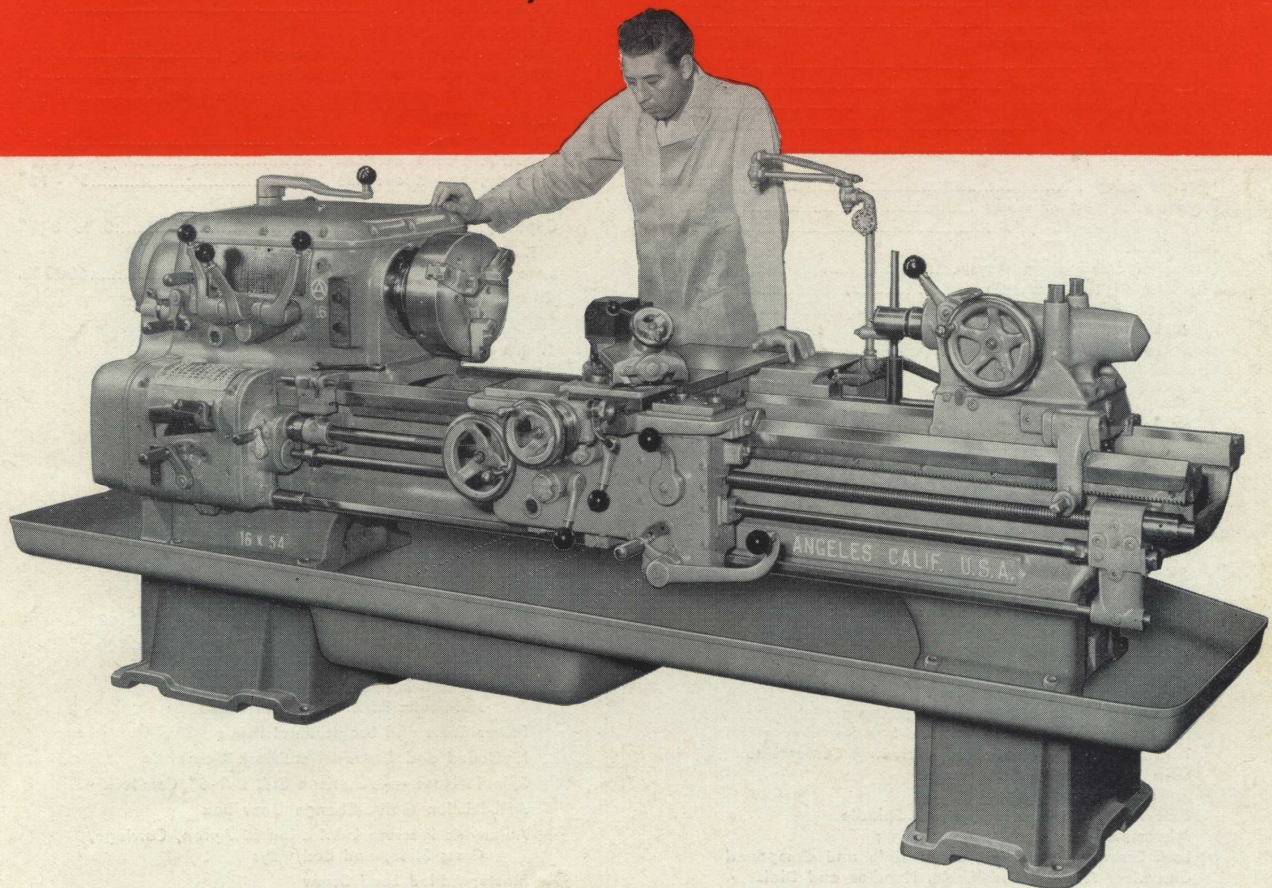


16" AXELSON

PRECISION TOOL ROOM AND HEAVY DUTY

Lathes

Consistent Accuracy Under Continuous Service



Axelson 16" heavy duty engine lathes are built to the same high quality which has made the name Axelson world famous among men who know machine tools and who demand the utmost in accuracy and dependability for every metal turning job.

Castings used in Axelson lathes are designed and produced in Axelson's own foundry, and are subject to the most rigid metallurgical control to assure absolute stabilization of all critical dimensions.

Hardened and precision ground alloy steel gears maintain a smooth flow of power to the cutting tool under the most severe condition.

Flame hardened and accurately ground tool steel carriage bedways offer exceptional wear-resistance despite years of heavy service.

Direct drive, 24-speed headstock, together with precision quick change gear box, provides a range of leads and feeds to handle any lathe turning job.

Anti-friction bearings plus automatic forced lubrication, gives Axelson lathes another outstanding advantage in the maintenance of smooth, rapid, trouble-free operation.

Axelson 16" tool room lathes are identical in appearance to the heavy duty models, but the more precise standards established by the American Standards Association for tool room lathes are rigidly maintained to assure the operator of the absolute accuracy in performing delicate tool room work.

Standard equipment furnished with Axelson 16" heavy duty and tool room lathes is shown on reverse side.

COMPLETE SPECIFICATIONS ARE SHOWN ON REVERSE SIDE

SPECIFICATIONS

16" PRECISION TOOL ROOM & HEAVY DUTY LATHES

CAPACITY

Swing over bedways and carriage wings	18 1/2"
Swing over cross slide	11 1/2"
Distance between centers, base machine, tailstock flush	30"
Permissible tailstock overhang	4"
Standard tool shank dimensions	5/8" x 1 3/8"

DIMENSIONS

Bed length, nominal, base machine	6' - 0"
Bed length, actual, base machine	6' - 11"
Bed width	16 7/8"
Bed depth	11 3/4"
Height, floor to center line of spindle	41 1/8"
Headstock ways (center to center)	9 1/8"
Carriage ways (center to center)	14 3/4"

THREADING AND FEED CAPACITY

Number of threads	54
Range of threads per inch	1 1/2 to 92
Number of feeds	54
Range of feed per revolution	0.0027" to
of spindle	0.1665"
Diameter of lead screw	1 1/8"
Lead screw threads per inch (Acme)	4
Diameter of feed rod	7/8"
Width and pitch of rack	1 1/2" - 10

DRIVE

Type of drive	Direct
Recommended hp of motor	10 to 15
RPM of motor, 60-cycle	1800

TAILSTOCK

Length of bearing on ways	12 3/8"
Diameter of tailstock spindle	2 7/8"
Travel of tailstock spindle	9"
Maximum set-over toward operator	1"
Maximum set-over away from operator	1 1/4"

HEADSTOCK

Spindle bearings (Timken Type O - Precision)	2 front; 2 rear
Spindle nose	D-1-6" Camlock
Diameter of hole through spindle	1 9/8"
Spindle speed range, (60-cycle) {	13 to 1127 rpm
.....	13 to 1577 rpm

Number of spindle speeds	24
Centers, Morse taper	No. 4
*Diameter of face plate	18 1/4"
Diameter of drive plate	8 1/2"
Length of bearing on bed	29 3/4"

CARRIAGE

Length of bearing on ways	26 3/4"
Width of cross slide	8 7/8"
Travel of cross slide	10 5/8"
Width of tool slide	6 1/2"
Travel of tool slide	4 3/4"

*TAPER ATTACHMENT

Length of taper turned at one setting	15 1/4"
Maximum taper per foot (included)4"
Maximum taper in degrees (with center line)	9 1/2°

*STEADY REST

Capacity, standard	0 - 5"
Capacity, No. 1 oversize	4 1/2" to 8 3/4"
Capacity, No. 2 oversize	8" - 12"

*FOLLOW REST

Capacity	0 to 3 1/4"
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WEIGHT

Base weight, approximate	6000 lb.
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Complete information on chucks and other accessories available upon request.

*Extra equipment.

STANDARD EQUIPMENT

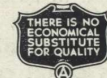
AXELSON 16" TOOL ROOM LATHES

Hardened and Ground Steel Bed Ways for Carriage
 Standard Steady Rest
 Large Face Plate
 Small Face Plate
 Two High Speed Lathe Centers
 Round Tool Post (Less tool holders)
 Thread Chasing Dial
 Forward and Reverse Clutch
 Automatic Hydraulic Brake on Spindle
 Patented Two Speed Tailstock
 Micrometer Cross Feed Threading Stop
 Hardened and Ground Tailstock Spindle
 Tailstock Spindle Graduated, including Center Line
 Chip Pan only
 Steel Compound Rest
 Drill Tank Drift Slot in Tailstock Spindle
 Micrometer Carriage Stop
 Lock Screw on Carriage, Cross Slide and Compound
 Chromium Plated Handwheels, Handles and Dials
 Mechanical Apron Control of Spindle
 Reversible Lead Screw
 Angular Compound Rest
 Visual Oil Gauges
 Automatic Force Feed Lubrication to Main Spindle Bearings, Apron,
 Cross Slide, Bed ways and Split Nut Pair when engaged
 Master Milled Lead Screw suspended between Precision Bearings
 Camlock Spindle Nose (American Standard)
 Anti-Friction bearings throughout
 Tailstock Traverse Bracket and Crank
 Arranged for Axelson Unimount Motor Drive but not including
 Electrical Equipment
 Necessary Wrenches

AXELSON 16" HEAVY DUTY ENGINE LATHES

Hardened and Ground Steel Bed Ways for Carriage
 Small Face Plate
 Two Centers
 Round Tool Post (Less tool holders)
 Thread Chasing Dial
 Micrometer Cross Feed Threading Stop
 Forward and Reverse Clutch with
 Automatic Positive Spindle Brake
 Power Cross and Longitudinal Feeds
 Hardened and Ground Headstock Gears
 Spindle Nose — American Std. D-1-6" Cam-lock
 Anti-Friction Quick Change Gear Box
 Automatic Pressure Lubrication of Apron, Carriage,
 Cross Slide, and Bed ways
 Master Milled Lead Screw
 Two-Speed Tailstock (Patented)
 Unit Mounted Motor Arrangement (Not including
 Motor or Electrical Equipment)
 Angular Compound Rest
 Necessary Wrenches

FOR ACCESSORY
 EQUIPMENT ASK
 FOR BULLETIN 4610.



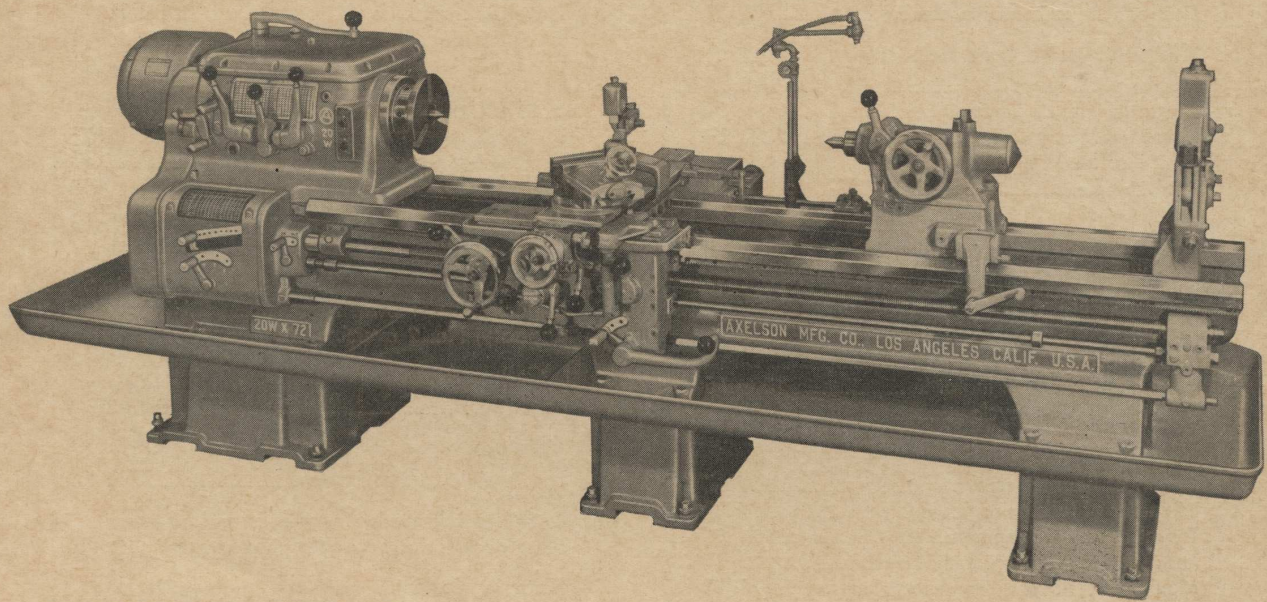
AXELSON MANUFACTURING COMPANY

DIVISION OF PRESSED STEEL CAR COMPANY, INC.

6160 SO. BOYLE AVE., (BOX 15335, VERNON STATION) LOS ANGELES 58, CALIFORNIA

REPRESENTATIVES IN ALL PRINCIPAL CITIES

THE NEW AXELSON 20" MODEL W MEDIUM DUTY ENGINE LATHE



CONSISTENT ACCURACY AND CONTINUOUS SERVICE

The new Axelson 20-inch Model W Medium Duty Engine Lathe is built to the same high standards of quality that have made all Axelson engine lathes world-famous among men who know machine tools and who demand dependability and absolute accuracy under constant heavy service.

All castings, designed *right* and produced in Axelson's own foundry division, are subjected to rigid metallurgical control to assure complete stability of all critical dimensions.

Hardened and precision ground alloy steel gears maintain a smooth flow of power to the cutting tool.

Flame hardened and precision ground tool steel carriage bedways offer extreme year-after-year resistance to wear.

Direct drive, 24-speed headstock, together with precision quick-change gear box, provides a wide range of leads and feeds for any turning job.

Anti-friction bearings, plus automatic lubrication, give this Axelson lathe another outstanding advantage in the maintenance of smooth, rapid, trouble-free operation.

Contact your nearest Axelson Lathe Dealer for complete price information.

SEE REVERSE SIDE FOR COMPLETE SPECIFICATIONS

SPECIFICATIONS

AXELSON 20-INCH MODEL W MEDIUM DUTY ENGINE LATHE

Capacity

Swing over bedways and carriage wings	22 $\frac{1}{2}$ "
Swing over cross slide	13 $\frac{3}{4}$ "
Distance between centers, base machine, tailstock flush	48"
Permissible tailstock overhang	4"
Standard tool shank dimensions	$\frac{3}{4}$ " x 1 $\frac{5}{8}$ "

Dimensions

Bed length, nominal, base machine	8' - 0"
Bed length, actual, base machine	9' - 4"
Bed width	19 $\frac{1}{2}$ "
Bed depth	11 $\frac{3}{4}$ "
Height, floor to center line of spindle	43 $\frac{1}{8}$ "
Headstock ways (center to center)	10 $\frac{1}{8}$ "
Carriage ways (center to center)	16 $\frac{5}{8}$ "

Threading and Feed Capacity

Number of threads	54
Range of threads per inch	1 $\frac{1}{2}$ to 92
Number of feeds	54
Range of feed per revolution of spindle	0.0027" to 0.1665"
Diameter of lead screw	1 $\frac{5}{8}$ "
Lead screw threads per inch (Acme)	4
Diameter of feed rod	$\frac{7}{8}$ "
Width and pitch of rack	1 $\frac{1}{2}$ " - 10

Drive

Type of drive	Direct
Recommended hp of motor	10 to 15
RPM of motor, 60-cycle	1800

Tailstock

Length of bearing on ways	12 $\frac{3}{8}$ "
Diameter of tailstock spindle	2 $\frac{7}{8}$ "
Travel of tailstock spindle	9"
Maximum set-over toward operator	1"
Maximum set-over away from operator	1 $\frac{1}{4}$ "

Headstock

Spindle bearings (Timken Type O - Precision)	2 front; 2 rear
Spindle nose	D-1, 6" Camlock
Diameter of hole through spindle	1 $\frac{1}{8}$ "
Spindle speed range, std. (60-cycle)	13-1127 rpm
Number of spindle speeds	24
Centers, Morse taper	No. 4
*Diameter of face plate	22"
Diameter of drive plate	8 $\frac{1}{2}$ "
Length of bearing on bed	29 $\frac{3}{4}$ "

Carriage

Length of bearing on ways	26 $\frac{3}{4}$ "
Width of cross slide	8 $\frac{7}{8}$ "
Travel of cross slide	11 $\frac{3}{4}$ "
Width of tool slide	6 $\frac{1}{2}$ "
Travel of tool slide	4 $\frac{3}{4}$ "

*Taper Attachment

Length of taper turned at one setting	15 $\frac{1}{4}$ "
Maximum taper per foot (included)	4"
Maximum taper in degrees (with center line)	9 $\frac{1}{2}$ °

*Steady Rest

Capacity, standard	0 to 5"
Capacity, No. 1 oversize	5 $\frac{1}{2}$ " to 10 $\frac{1}{2}$ "
Capacity, No. 2 oversize	

*Follow Rest

Capacity	0 to 3 $\frac{1}{4}$ "
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Weight

Base weight, approximate	7200 lb.
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Complete information on chucks and other accessories available upon request.

*Extra equipment.

STANDARD EQUIPMENT

- Hardened and ground tool steel bedways for carriage
- Hardened and ground headstock gears
- Anti-friction quick change gear box
- Forward and reverse clutch, with automatic hydraulic multiple disc spindle brake
- Unit motor-mounting arrangement (not including motor or electrical equipment)
- Tailstock: two spindle speeds; side handwheel, hardened and ground spindle
- Master milled lead screw
- Power cross and longitudinal feeds
- Angular steel compound rest (flat compound rest: 32" only)
- Automatic pressure lubrication of apron, carriage, cross slide, bedways

- Thread chasing dial
- Micrometer cross feed threading stop
- Spindle nose: American Standard, D-1, 6" Camlock
- Small face plate
- Two centers
- Standard tool post
- Necessary wrenches
- Service manual
- Drill tang drift slot in tailstock spindle
- Lock screw on carriage, cross slide and compound
- Mechanical apron control of spindle
- Visual oil gages
- Tailstock traverse bracket and crank
- Oil and grease gun
- 24 speeds in both forward and reverse

SPECIAL EQUIPMENT

Axelson manufactures the full range of accessory equipment for use with engine lathes. Axelson bulletin No. 4610, which describes the various accessories, is available on request.

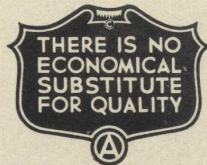


AXELSON MANUFACTURING COMPANY

6160 SO. BOYLE AVE. (BOX 15335, VERNON STATION) LOS ANGELES 58, CALIF.

AXELSON LATHE SPECIFICATION CHART

**SPINDLE RPM
THREADS PER INCH
FEED PER SPINDLE REVOLUTION**



AXELSON MANUFACTURING COMPANY

DIVISION OF PRESSED STEEL CAR COMPANY, INC.

6160 So. Boyle Ave., (Box 15335, Vernon Station)

LOS ANGELES 58, CALIFORNIA

16" MODEL "B"

20" MODEL "W"

20" MODEL "D"

**25" MODEL "E"
32" MODEL "F"
32"/100 & 125 GAP**

AXELSON LATHE SPINDLE RPM SPECIFICATIONS

LOW SPEED

Using an 1800 RPM motor, the following spindle speeds are obtainable:

13	17	23	31	42	48	55	63
73	84	96	112	130	151	171	201
232	264	308	351	473	628	849	1127

HIGH SPEED with a 1800 RPM motor:

13	17	23	31	42	55	67	73
88	96	118	130	157	171	211	232
281	308	370	491	662	879	1189	1577

LOW SPEED

Using an 1800 RPM motor, the following spindle speeds are obtainable:

13	17	23	31	42	48	55	63
73	84	96	112	130	151	171	201
232	264	308	351	473	628	849	1127

HIGH SPEED with a 1800 RPM motor:

13	17	23	31	42	55	67	73
88	96	118	130	157	171	211	232
281	308	370	491	662	879	1189	1577

LOW SPEED

Using an 1800 RPM motor, the following spindle speeds are obtainable:

9.5	13	19	25	33	36	44	48
59	68	78	90	113	119	150	158
199	214	264	287	408	545	719	961

HIGH SPEED with a 1800 RPM motor:

9.5	13	19	25	33	44	48	59
64	78	91	113	121	150	159	199
212	264	287	385	547	730	963	1288

LOW SPEED

Using an 1800 RPM motor, the following spindle speeds are obtainable:

6	8	11	14	16	20	23	28
30	37	45	56	59	75	84	108
114	146	170	212	218	274	432	555

HIGH SPEED with a 1800 RPM motor:

6	8	11	14	22	23	27	30
38	45	50	56	80	84	101	108
154	170	198	218	287	371	584	750

AXELSON THREADS PER INCH SPECIFICATIONS

QUICK-CHANGE GEAR BOX — Cuts all standard threads, including 11 1/2 and 27.

The following chart shows range of threads per inch obtainable from standard quick-change gear box:

1 1/2	1 3/8	1 1/4	1 1/8	1 1/16	1 1/32	2	2 1/4
2 1/2	2 3/4	2 1/2	2 1/8	2 1/16	2 1/32	3	3 1/4
3 1/2	4	4 1/2	5	5 1/2	5 3/4	6	6 3/4
6	6 1/2	6 3/4	7	8	9	10	11
10	11	11 1/2	12	13	13 1/2	14	16
14	16	18	20	22	23	24	26
24	26	27	28	32	36	40	44
40	44	46	48	52	54	56	64
56	64	72	80	88	92		

QUICK-CHANGE GEAR BOX — Cuts all standard threads, including 11 1/2 and 27.

The following chart shows range of threads per inch obtainable from standard quick-change gear box:

1 1/2	1 3/8	1 1/4	1 1/8	1 1/16	1 1/32	2	2 1/4
2 1/2	2 3/4	2 1/2	2 1/8	2 1/16	2 1/32	3	3 1/4
3 1/2	4	4 1/2	5	5 1/2	5 3/4	6	6 3/4
6	6 1/2	6 3/4	7	8	9	10	11
10	11	11 1/2	12	13	13 1/2	14	16
14	16	18	20	22	23	24	26
24	26	27	28	32	36	40	44
40	44	46	48	52	54	56	64
56	64	72	80	88	92		

QUICK-CHANGE GEAR BOX — Cuts all standard threads, including 11 1/2 and 27.

The following chart shows range of threads per inch obtainable from standard quick-change gear box:

1 1/2	1 3/8	1 1/4	1 1/8	1 1/16	1 1/32	2	2 1/4
2 1/2	2 3/4	2 1/2	2 1/8	2 1/16	2 1/32	3	3 1/4
3 1/2	4	4 1/2	5	5 1/2	5 3/4	6	6 3/4
6	6 1/2	6 3/4	7	8	9	10	11
10	11	11 1/2	12	13	13 1/2	14	16
14	16	18	20	22	23	24	26
24	26	27	28	32	36	40	44
40	44	46	48	52	54	56	64
56	64	72	80	88	92		

QUICK-CHANGE GEAR BOX — Cuts all standard threads, including 11 1/2.

The following chart shows range of threads per inch obtainable from standard quick-change gear box:

1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8
1 1/2	1 3/4	1 7/8	2	2 1/4	2 1/2	2 3/4	2 7/8
2 1/2	2 3/4	2 7/8	3	3 1/4	3 1/2	3 3/4	3 7/8
3 1/2	4	4 1/2	5	5 1/2	5 3/4	6	6 1/2
6 1/2	7	7 1/2	8	9	10	11	11 1/2
11	11 1/2	12	13	14	15	16	18
16	18	20	22	23	24	26	28
26	28	30					

AXELSON FEED PER SPINDLE REVOLUTION SPECIFICATIONS

This table indicates available range of feeds, in inches, per revolution of spindle:

.0027	.0028	.0031	.0035	.0039
.0045	.0046	.0048	.0052	.0054
.0057	.0063	.0069	.0078	.0089
.0092	.0097	.0104	.0109	.0113
.0125	.0138	.0156	.0179	.0185
.0193	.0208	.0217	.0227	.0250
.0277	.0313	.0357	.0371	.0385
.0416	.0436	.0454	.0500	.0556
.0625	.0716	.0741	.0768	.0834
.0870	.0910	.1000	.1110	.1250
.1430	.1482	.1535	.1665	

This table indicates available range of feeds, in inches, per revolution of spindle:

.0027	.0028	.0031	.0035	.0039
.0045	.0046	.0048	.0052	.0054
.0057	.0063	.0069	.0078	.0089
.0092	.0097	.0104	.0109	.0113
.0125	.0138	.0156	.0179	.0185
.0193	.0208	.0217	.0227	.0250
.0277	.0313	.0357	.0371	.0385
.0416	.0436	.0454	.0500	.0556
.0625	.0716	.0741	.0768	.0834
.0870	.0910	.1000	.1110	.1250
.1430	.1482	.1535	.1665	

This table indicates available range of feeds, in inches, per revolution of spindle:

.003	.0035	.004	.0045	.005
.0055	.006	.0065	.007	.008
.009	.010	.011	.0115	.012
.0125	.014	.015	.017	.020
.021	.023	.024	.025	.028
.031	.035	.040	.041	.043
.046	.048	.051	.056	.062
.069	.079	.082	.086	.093
.097	.101	.111	.124	.139
.159	.165	.171	.185	

This table indicates available range of feeds, in inches, per revolution of spindle:

.004	.0045	.005	.0055	.006
.0065	.007	.008	.0085	.009
.010	.0105	.011	.0115	.0125
.013	.0135	.014	.015	.016
.0165	.017	.018	.019	.0195
.020	.021	.0215	.022	.023
.025	.026	.027	.028	.030
.032	.033	.034	.036	.038
.039	.040	.042	.043	.044
.046	.050	.051	.052	.055
.056	.060	.064	.067	.068
.073	.075	.078	.080	.085
.086	.088	.092	.100	.102
.104	.109	.113	.120	.127
.133	.150	.160	.171	.185
.200	.209	.218	.240	.267
.300				

