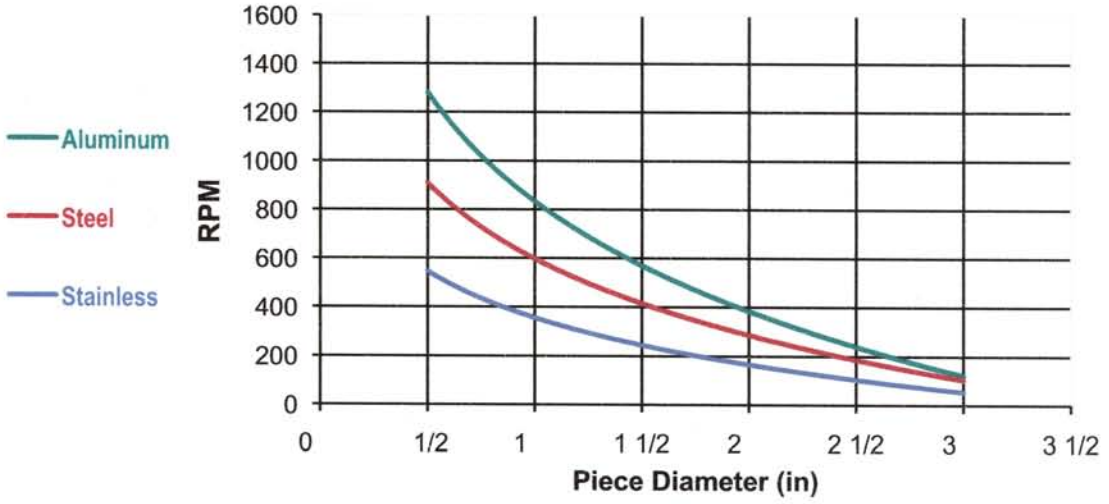
Recommended RPM for the Lathe*

Piece Diameter (inches):	Material: Aluminum	Steel	Stainless
1/2	1400	1000	600
1	700	500	300
1 1/2	500	333	200
2	325	275	150
2 1/2	280	225	120
3	225	166	100



*Knurling & parting tools are run at 100 RPM maximum
*Do not exceed 1200 RPM on the 3 jaw chuck

Depth of Cut for the Lathe

	Aluminum	Steel	Stainless
Rough	0.1	0.08	0.06
Finish	0.005	0.005	0.005

Feed Rate for the Clausing Lathe

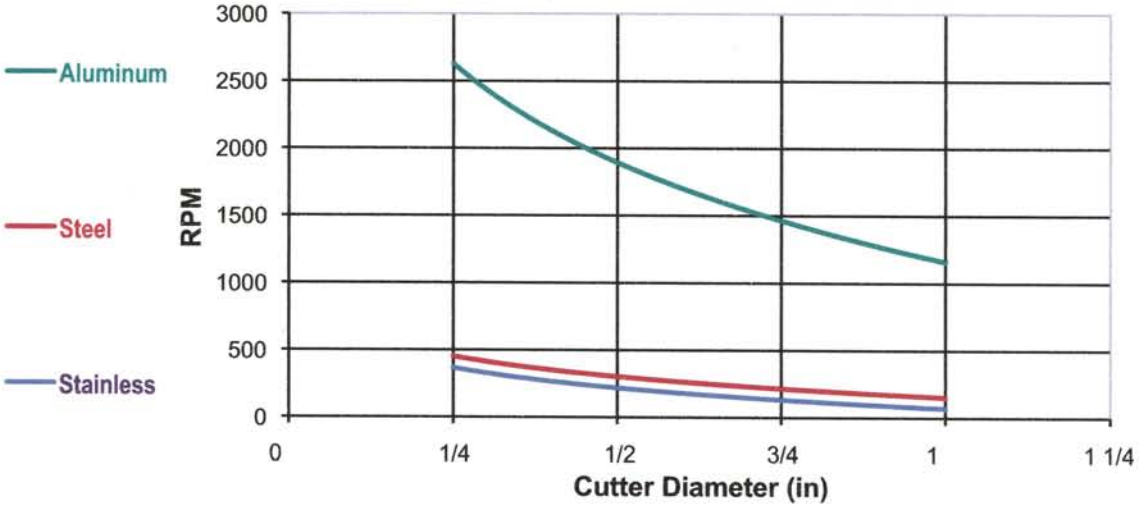
Rough	CRW1
Smooth	CSW1
Finish	CTW1

Feed Rate for the Harrison Lathe

Rough	ARX1
Smooth	ASX1
Finish	ATX1

Recommended RPM for the Mill

Cutter Diameter (inches):	Material: Aluminum	Steel	Stainless
1/4	2500	450	375
3/8	2250	375	300
1/2	2000	300	200
5/8	1750	250	150
3/4	1500	225	120
1	1000	150	100



Depth of Cut for the Mill (in)

	Aluminum	Steel	Stainless
Rough	0.1	0.08	0.06
Finish	0.005	0.005	0.005

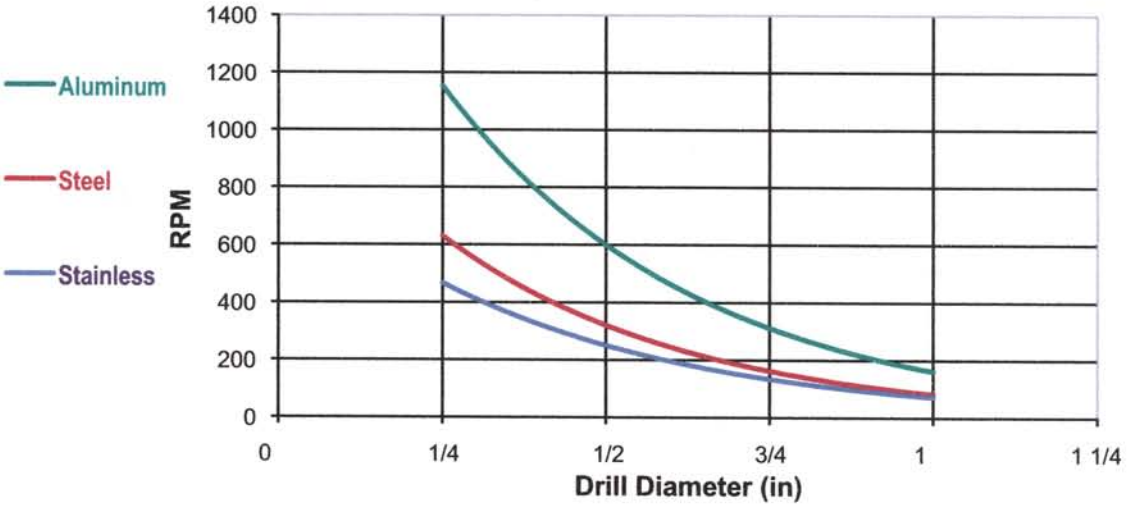
Feed Rate for the Mill (ipm)

	Aluminum	Steel	Stainless
Rough	5	3	1.5
Finish	3	2	0.75

Indexable Cutter: fully raise & lock quill
Aluminum: 3- or 5-bit cutter, 800 RPM, .1" cut, 5 ipm
Steel: 3-bit cutter, 500 RPM, .05" cut, 2 ipm

Recommended RPM for Drilling Operations

Drill Diameter (inches):	Material: Aluminum	Steel	Stainless
1/4	1200	750	500
3/8	900	500	375
1/2	600	250	250
5/8	360	200	150
3/4	300	150	120
1	180	100	85



All holes 1/2" or greater should be drilled in 1/8" increments, starting with 3/8"

Run center drill at speed according to the largest diameter of the center drill

Countersink bits are run at 300 RPM max

Counterbore bits are run at 200 RPM max

To Determine the Size of a Bolt

First measure the diameter.

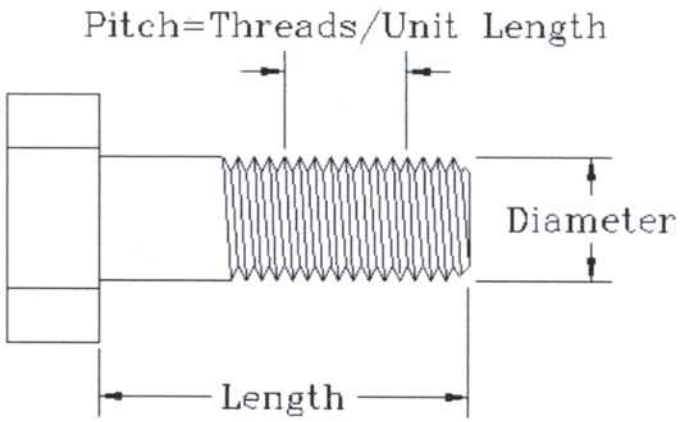
Diameter is in either *Inches* (not decimal) or *Millimeter.*

Second measure the pitch

Pitch is threads / per unit.
Inches are measured threads per inches.
Metric are measured thread per millimeter.

Third measure length

Length is measured from behind the head to end,
(except for flathead is measured total length) .



Example: SAE , 1/4 - 20 X 1 1/2 Metric, M 6 X 1.0 X 35

Notes on SAE bolts:

- Bolt diameters under a 1/4" are in *number* sizes from 0 to 12
  - To find the diameter of these use this formula:
    Number X .013 + .060 = Diameter
- Bolt diameters between 1/4" and 5/8" come in 1/16" increments
- Bolt diameters between 5/8" and 1 1/2" come in 1/8" increments
- The lengths of small bolts (< 1/2") come in 1/8" increments
- The lengths of large bolts (> 1/2") come in 1/4" increments