COUNTERSINKING RECOMMENDATIONS

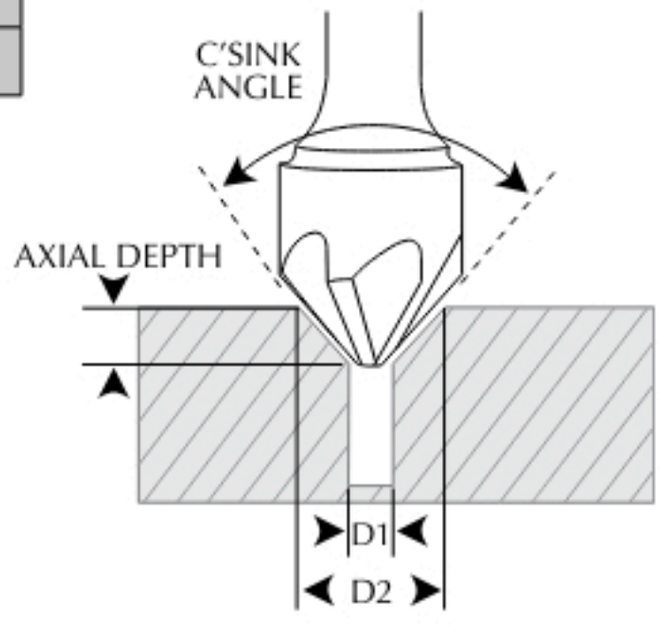
Surface Feet Per Minute (SFM)

Workpiece Material Group			SFM
Steel	Mild (.2 - .3 carbon)	P	120-170
	Mild (.4 - .5 carbon)		80-150
	Forgings		50-80
	Alloys (300 - 400 Brinnell)		30-50
Tool & Die Steels			60-100
Stainless Steels	Free Machining	M	80-125
	Work Hardening		50-75
Super Alloys	Inconel	S	23-35
	High Temp, Nimonics, Monel, Hastelloy		50-75
	Titanium		60-90
Hardened Materials	High Tensile (35 - 40 Rc)	H	40-60
	High Tensile (40 - 45 Rc)		35-55
	High Tensile (45 - 50 Rc)		25-40
	High Tensile (50 - 55 Rc)		15-20
Cast-Iron	Gray	K	125-225
	Ductile & Malleable		100-175
	Hard Chilled		20-35
Non-Ferrous	Aluminum / Aluminum Alloys	N	300-500
	Brass / Bronze		150-250
	Magnesium / Magnesium Alloys & Plastics		250-400

Screw Size		Screw Head Diameter	Screw Head Height	Countersink Diameter		Clearance Close		Clearance Free	
#2	0.086	0.168	0.064	3/16	0.214	3/32	0.094	# 36	0.106
#4	0.112	0.218	0.083	1/4	0.272	1/8	0.125	# 29	0.136
#6	0.138	0.263	0.097	5/16	0.324	# 23	0.154	# 18	0.170
#8	0.164	0.311	0.112	3/8	0.376	#15	0.180	# 9	0.196
#10	0.190	0.359	0.127	3/8	0.428	# 5	0.206	# 2	0.221
1/4	0.250	0.480	0.161	1/2	0.548	17/64	0.266	9/32	0.281
5/16	0.313	0.600	0.198	5/8	0.673	21/64	0.328	11/32	0.344
3/8	0.375	0.720	0.234	3/4	0.798	25/64	0.391	13/32	0.406
7/16	0.438	0.781	0.234	7/8	0.861	29/64	0.453	15/32	0.469
1/2	0.500	0.872	0.251	1	1.000	33/64	0.516	17/32	0.531
5/8	0.625	1.112	0.324	1-1/4	1.250	41/64	0.641	21/32	0.656
3/4	0.750	1.355	0.396	1-1/2	1.500	49/64	0.766	25/32	0.781
7/8	0.875	1.604	0.468	1-3/4	1.750	57/64	0.891	29/32	0.906
1	1.000	1.841	0.540	2	2.000	1-1/64	1.016	1-1/32	1.031

DIAMETER GAIN FOR AXIAL DEPTH .001"

Included Angle	Diameter Gain
30°	0.0005"
45°	0.0008"
60°	0.0010"
82°	0.0017"
90°	0.0020"
100°	0.0028"
120°	0.0034"



D2-D1 = Diameter Gain