

KSPT Reference Information

ISO H6 SPECIFICATIONS					
DIAMETER	+	–	DIAMETER	+	–
≥ 1/8 - 3/16	0.00000	–0.00032	≤ 3	0,000	0,006
> 3/16 - 7/16	0.00000	–0.00035	> 3 - 6	0,000	0,008
> 7/16 - 5/8	0.00000	–0.00043	> 6 - 10	0,000	0,009
> 5/8 - 1	0.00000	–0.00051	> 10 - 18	0,000	0,011
> 1 - 1-1/4	0.00000	–0.00063	> 18 - 25	0,000	0,013

MACHINING FORMULAS	
INCH FORMULAS	METRIC FORMULAS
sfm = rpm x .262 x cutting diameter	m/min = (3.14 x cutting diameter x rpm) / 1000
rpm = sfm x 3.82 / cutting diameter	rpm = (1000 x m / min) / (3.14 x cutting diameter)
feed (inches per tooth) = ipm / (number of teeth x rpm)	feed (mm per tooth) = millimeters per minute / (number of teeth x rpm)
feed (inches / minute) = inches per tooth x number of teeth x rpm	feed (mm/minute) = feed per tooth x number of teeth x rpm
feed (inches / minute) = ipr x rpm	feed (mm/minute) = mmr x rpm
feed (inches / revolution) = ipm / rpm	feed (mm per revolution) = mmr / rpm
cuspl height* = (tool diameter / 2) – √(tool diameter ² – pitch ²) / 4	cuspl height* = (tool diameter / 2) – √(tool diameter ² – pitch ²) / 4
pitch = √4 x (cuspl height x tool diameter) – 4 x (cuspl height ²)	pitch = √4 x (cuspl height x tool diameter) – 4 x (cuspl height ²)
mrr – milling – (in ³ /min) = width of cut x depth of cut x ipm	mrr – milling – (cm ³ /min) = (width of cut x depth of cut x mm/min) / 1000
cutting time – drilling – (minutes) = length / ipm	cutting time – drilling – (minutes) = length / mm/min

sfm	surface feet per minute
rpm	revolutions per minute
ipm	feed rate in inches per minutes
ipr	inches per revolution
mmr	millimeters per revolution
mm/min	feed rate in millimeters per minute
mrr	material removal rate
*	on flat surface

GENERAL FORMULAS	
coolant pressure: 1 Bar = 14.5 Pounds per Square Inch (PSI)	
calculation of coolant pressure: Pounds Per Square Inch (PSI) = (Horsepower of Pump x 1.460) / Gallons per Minute (GPM)	
1 Liter = 0.254 Gallons	
inch = millimeters / 25.4	millimeters = inch x 25.4
inch tap drill sizes = major diameter – ((1.299 x % of thread) / threads per inch)	
metric tap drill sizes = major diameter – (1.082 x pitch x % of thread)	
inch thread forming drill size: maximum diameter = basic major diameter – (3/8 x number of threads per inch)	
inch thread forming drill size: minimum diameter = basic major diameter – (1/2 x number of threads per inch)	
metric thread forming drill size: maximum diameter = basic major diameter – (.375 x pitch)	
metric thread forming drill size: minimum diameter = basic major diameter – (.500 x pitch)	

Decimal Equivalents

Fraction • Number • Letter • Metric Sizes

INCH	METRIC	DECIMAL EQUIVALENT	INCH	METRIC	DECIMAL EQUIVALENT	INCH	METRIC	DECIMAL EQUIVALENT	INCH	METRIC	DECIMAL EQUIVALENT	INCH	METRIC	DECIMAL EQUIVALENT	INCH	METRIC	DECIMAL EQUIVALENT
—	0,10	0.0039	—	1,60	0.0630	9/64	3,57	0.1406	#1	5,79	0.2280	R	8,61	0.3390	—	13,00	0.5118
—	0,20	0.0079	#52	1,61	0.0635	—	3,60	0.1417	—	5,80	0.2283	—	8,70	0.3425	33/64	13,10	0.5156
—	0,25	0.0098	—	1,65	0.0650	#27	3,66	0.1440	—	5,90	0.2323	11/32	8,73	0.3438	17/32	13,49	0.5312
—	0,30	0.0118	#51	1,70	0.0669	—	3,70	0.1457	A	5,94	0.2340	—	8,75	0.3445	—	13,50	0.5315
#80	0,34	0.0135	—	1,75	0.0689	#26	3,73	0.1470	15/64	5,95	0.2344	—	8,80	0.3465	35/64	13,89	0.5469
—	0,35	0.0138	#50	1,78	0.0700	—	3,75	0.1476	—	6,00	0.2362	S	8,84	0.3480	—	14,00	0.5512
#79	0,37	0.0145	—	1,80	0.0709	#25	3,80	0.1495	B	6,05	0.2380	—	8,90	0.3504	9/16	14,29	0.5625
1/64	0,40	0.0156	#49	1,85	0.0728	—	3,80	0.1496	—	6,10	0.2402	—	9,00	0.3543	—	14,50	0.5709
#78	0,41	0.0160	—	1,90	0.0748	#24	3,86	0.1520	C	6,15	0.2420	T	9,09	0.3580	37/64	14,68	0.5781
—	0,45	0.0177	#48	1,93	0.0760	—	3,90	0.1535	—	6,20	0.2441	—	9,10	0.3583	—	15,00	0.5906
#77	0,46	0.0180	—	1,95	0.0768	#23	3,91	0.1540	D	6,25	0.2461	23/64	9,13	0.3594	19/32	15,08	0.5938
—	0,50	0.0197	5/64	1,98	0.0781	5/32	3,97	0.1562	—	6,30	0.2480	—	9,20	0.3622	39/64	15,48	0.6094
#76	0,51	0.0200	#47	1,99	0.0785	#22	3,99	0.1570	E	6,35	0.2500	—	9,25	0.3642	—	15,50	0.6102
#75	0,53	0.0210	—	2,00	0.0787	—	4,00	0.1575	1/4	6,35	0.2500	—	9,30	0.3661	5/8	15,88	0.6250
—	0,55	0.0217	—	2,05	0.0807	#21	4,04	0.1590	—	6,40	0.2520	U	9,35	0.3680	—	16,00	0.6299
#74	0,57	0.0225	#46	2,06	0.0810	#20	4,09	0.1610	—	6,50	0.2559	—	9,40	0.3701	41/64	16,27	0.6406
—	0,60	0.0236	#45	2,08	0.0820	—	4,10	0.1614	F	6,53	0.2570	—	9,50	0.3740	—	16,50	0.6496
#73	0,61	0.0240	—	2,10	0.0827	—	4,20	0.1654	—	6,60	0.2598	3/8	9,53	0.3750	21/32	16,67	0.6562
#72	0,64	0.0250	—	2,15	0.0846	#19	4,22	0.1660	G	6,63	0.2610	V	9,56	0.3770	—	17,00	0.6693
—	0,65	0.0256	#44	2,18	0.0860	—	4,25	0.1673	—	6,70	0.2638	—	9,60	0.3780	43/64	17,07	0.6719
#71	0,66	0.0260	—	2,20	0.0866	—	4,30	0.1693	17/64	6,75	0.2656	—	9,70	0.3819	11/16	17,46	0.6875
—	0,70	0.0276	—	2,25	0.0886	#18	4,31	0.1695	H	6,76	0.2660	—	9,75	0.3839	—	17,50	0.6890
#70	0,71	0.0280	#43	2,26	0.0890	11/64	4,37	0.1719	—	6,80	0.2677	W	9,80	0.3858	45/64	17,86	0.7031
#69	0,74	0.0292	—	2,30	0.0906	#17	4,39	0.1730	—	6,90	0.2717	—	9,90	0.3898	—	18,00	0.7087
—	0,75	0.0295	—	2,35	0.0925	—	4,40	0.1732	I	6,91	0.2720	25/64	9,92	0.3906	23/32	18,26	0.7188
#68	0,79	0.0310	#42	2,37	0.0935	#16	4,50	0.1770	—	7,00	0.2756	—	10,00	0.3937	—	18,50	0.7283
1/32	0,79	0.0313	3/32	2,38	0.0938	—	4,50	0.1772	J	7,04	0.2770	X	10,08	0.3970	47/64	18,65	0.7344
—	0,80	0.0315	—	2,40	0.0945	#15	4,57	0.1800	—	7,10	0.2795	—	10,10	0.3976	—	19,00	0.7480
#67	0,81	0.0320	#41	2,44	0.0960	—	4,60	0.1811	K	7,14	0.2810	—	10,20	0.4016	3/4	19,05	0.7500
#66	0,84	0.0330	—	2,45	0.0965	#14	4,62	0.1820	9/32	7,14	0.2812	Y	10,26	0.4040	49/64	19,45	0.7656
—	0,85	0.0335	#40	2,50	0.0984	#13	4,70	0.1850	—	7,20	0.2835	—	10,30	0.4055	—	19,50	0.7677
#65	0,89	0.0350	#39	2,53	0.0995	—	4,75	0.1870	—	7,25	0.2854	13/32	10,32	0.4062	25/32	19,84	0.7812
—	0,90	0.0354	#38	2,58	0.1015	3/16	4,76	0.1875	—	7,30	0.2874	—	10,40	0.4094	—	20,00	0.7874
#64	0,91	0.0360	—	2,60	0.1024	#12	4,80	0.1890	L	7,37	0.2900	Z	10,49	0.4130	51/64	20,24	0.7969
#63	0,94	0.0370	#37	2,64	0.1040	#11	4,85	0.1910	—	7,40	0.2913	—	10,50	0.4134	—	20,50	0.8071
—	0,95	0.0374	—	2,70	0.1063	—	4,90	0.1929	M	7,49	0.2950	—	10,60	0.4173	13/16	20,64	0.8125
#62	0,97	0.0380	#36	2,71	0.1065	#10	4,91	0.1935	—	7,50	0.2953	—	10,70	0.4213	—	21,00	0.8268
#61	0,99	0.0390	—	2,75	0.1083	#9	4,98	0.1960	19/64	7,54	0.2969	27/64	10,72	0.4219	53/64	21,03	0.8281
—	1,00	0.0394	7/64	2,78	0.1094	—	5,00	0.1969	—	7,60	0.2992	—	10,80	0.4252	27/32	21,43	0.8438
#60	1,02	0.0400	#35	2,79	0.1100	#8	5,05	0.1990	N	7,67	0.3020	—	10,90	0.4291	—	21,50	0.8465
#59	1,04	0.0410	—	2,80	0.1102	—	5,10	0.2008	—	7,70	0.3031	—	11,00	0.4331	55/64	21,84	0.8594
—	1,05	0.0413	#34	2,82	0.1110	#7	5,11	0.2010	—	7,75	0.3051	—	11,10	0.4370	—	22,00	0.8661
#58	1,07	0.0420	#33	2,87	0.1130	13/64	5,16	0.2031	—	7,80	0.3071	7/16	11,11	0.4375	7/8	22,23	0.8750
#57	1,09	0.0430	—	2,90	0.1142	#6	5,18	0.2040	—	7,90	0.3110	—	11,20	0.4409	—	22,50	0.8858
—	1,10	0.0433	#32	2,95	0.1160	—	5,20	0.2047	5/16	7,94	0.3125	—	11,30	0.4449	57/64	22,62	0.8906
—	1,15	0.0453	—	3,00	0.1181	#5	5,22	0.2055	—	8,00	0.3150	—	11,40	0.4488	—	23,00	0.9055
#56	1,18	0.0465	#31	3,05	0.1200	—	5,25	0.2067	O	8,03	0.3160	—	11,50	0.4528	29/32	23,02	0.9062
3/64	1,19	0.0469	—	3,10	0.1220	—	5,3	0.2087	—	8,10	0.3189	29/64	11,51	0.4531	59/64	23,42	0.9219
—	1,20	0.0472	1/8	3,18	0.1250	#4	5,31	0.2090	—	8,20	0.3228	—	11,60	0.4567	—	23,50	0.9252
—	1,25	0.0492	—	3,20	0.1260	—	5,40	0.2126	P	8,20	0.3230	—	11,70	0.4606	15/16	23,81	0.9375
—	1,30	0.0512	—	3,25	0.1280	#3	5,41	0.2130	—	8,25	0.3248	—	11,80	0.4646	—	24,00	0.9449
#55	1,32	0.0520	#30	3,26	0.1285	—	5,50	0.2165	—	8,30	0.3268	—	11,90	0.4685	61/64	24,21	0.9531
—	1,35	0.0531	—	3,30	0.1299	7/32	5,56	0.2188	21/64	8,33	0.3281	15/32	11,91	0.4688	—	24,50	0.9646
#54	1,40	0.0550	—	3,40	0.1339	—	5,60	0.2205	—	8,40	0.3307	—	12,00	0.4724	31/32	24,61	0.9688
#53	1,51	0.0595	#29	3,45	0.1360	#2	5,61	0.2210	Q	8,43	0.3320	31/64	12,30	0.4844	—	25,00	0.9843
—	1,55	0.0610	—	3,50	0.1378	—	5,70	0.2244	—	8,50	0.3346	—	12,50	0.4921	63/64	25,00	0.9844
1/16	1,59	0.0625	#28	3,57	0.1405	—	5,75	0.2264	—	8,60	0.3386	1/2	12,70	0.5000	1	25,40	1.0000