

**DRILLING DATA FOR E J COMPANY DTS (424.6) & STS (420.6) DRILLS**

ISO	Material Description	HB	Condition	CMC#	Specific Cutting Force kc lbs/sq in	Cutting Speed ft / min	Drill Diameter (inches)					
							.312-.495	.496-.614	.615-.787	.788-1.220	1.221-1.692	1.693-2.559
							Feed in. / rev.					
P	Unalloyed Steel	90-200 125-225 150-225 180-225	Non-hardened 0.05-0.25% C	1.1 1.2 1.3 1.4	290,000 304,500 316,100 .	230 - 395 230 - 295	.003-.006 .003-.006	.004-.007 .004-.007	.006-.008 .006-.008	.006-.008 .007-.010	.006-.010 .008-.012	.007-.011 .009-.013
			Non-hardened									
			0.25-0.55% C									
			Non-hardened 0.55-0.80% C High Carbon & Carbon Tool Steel									
Low Alloy Steel	150-260 220-400	Non-hardened Hardened and Tempered	2.1	304,500 402,400	230 - 330 180 - 330	.003-.006 .003-.006	.004-.007 .004-.007	.006-.008 .006-.008	.007-.010 .007-.010	.008-.012 .008-.012	.009-.013 .009-.013	
			2.2									
High Alloy Steel	150-250 150-250 250-350 250-400	Annealed Annealed HSS Hardened Tool Steel Hardened Steel, Others	3.11	362,500 543,700	230 - 330 180 - 330	.003-.006 .003-.006	.004-.007 .004-.007	.006-.008 .006-.008	.007-.010 .007-.010	.008-.012 .008-.012	.009-.013 .009-.013	
			3.13									
			3.21									
			3.22									
Steel Castings	90-225 150-250	Unalloyed Low Alloyed (alloying elements < 5%)	6.1	261,000 394,500	160 - 330	.003-.006 .003-.006	.003-.007 .003-.007	.005-.007 .005-.007	.006-.009 .006-.009	.008-.011 .008-.011	.010-.013 .010-.013	
			6.2									
M	Stainless Steel	150-270 150-275	Ferritic, Martensitic 13-25% Cr	5.11	333,500 355,200	130-280 180-280	.003-.006 .003-.006	.006-.008 .006-.008	.006-.008 .006-.008	.007-.010 .007-.010	.009-.012 .009-.012	.009-.014 .010-.014
			Austenitic Ni >8%, 18-25% Cr	5.21								
	Stainless Steel - Cast	150-180	Austenitic	15.21	333,500	150-280	.003-.006 .003-.006	.004-.007 .004-.007	.006-.008 .006-.008	.007-.010 .007-.010	.009-.012 .009-.012	.010-.014 .010-.014
Heat Resistant Alloys	180-300 220-300 220-300 220-300	Fe-based Ni-based Co-based	20.1	435,000 481,400 507,500	30-165	.003-.005 .003-.005	.004-.006 .004-.006	.004-.007 .004-.007	.006-.008 .006-.008	.007-.010 .007-.010	.008-.012 .008-.012	
			20.2									
			20.3									
			20.3									

		300-450	(Wrought or cast) Alpha and Alpha-beta Alloys	23.1	221,800	100-165	.003-.005	.004-.006	.005-.006	.006-.009	.007-.010	.008-.012
K	Extra Hard Steel	250	Manganese 12-14% Mn	6.33	522,000	100-230	.003-.006	.004-.007	.006-.008	.007-.010	.009-.012	.010-.012
	Malleable Cast Iron	110-145 150-270	Ferritic (short chipping) Pearlitic (long chipping)	7.1	137,700	260-330	.003-.005	.004-.006	.006-.007	.007-.010	.008-.012	.009-.013
				7.2	159,500							
	Grey Cast Iron	150-220 200-330	Low Tensile Strength High Tensile Strength	8.1	159,500	200-330	.003-.006	.003-.007	.005-.007	.006-.009	.008-.011	.009-.013
				8.2	203,000							
	Nodular Cast Iron	125-230 200-300	Ferritic Pearlitic	9.1 9.2	150,200 253,700	165-330	.003-.006	.003-.007	.005-.007	.006-.009	.008-.011	.009-.013
Aluminum Alloys	30-80 75-150 40-100 70-125	Wrought and cold drawn Wrought solution treated & aged Cast Cast solution treated & aged	30.11	72,500	210-430	.003-.006	.004-.008	.004-.008	.006-.010	.007-.012	.008-.018	
			30.12	116,000								
			30.21	108,700								
			30.22	130,500								
Copper and Copper Alloys	50-160 -130	Free Cutting Alloys (Pb ≥1%) Brass & Leaded Bronzes (Pb ≥1%)	33.1 33.2	101,500	210-430	.003-.006	.004-.008	.004-.008	.006-.010	.007-.012	.008-.018	