



suttontools

E178 -Keyseat - Woodruff Cutters -Sutton Tools

For cutting key seats to suit standard imperial woodruff keys

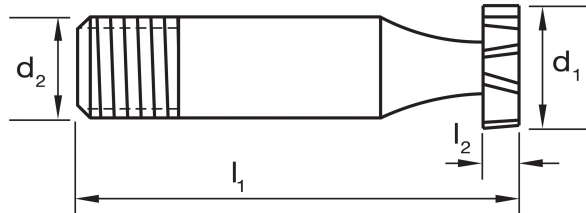
Features:

- -

Specifications:

Designation:	N
Material:	HSS
Finish:	Brt
Shank Form:	D
Shank Tolerance:	h6
Standard:	Sutton

Range:



Item #	Diameter d1 (mm)	Diameter d1 (inch)	Length l1 (mm)	Length l2 (mm)	Diameter d2 (mm)	Diameter d2 (inch)	z
E1780204	12.70	1/2	2	16	-	1/2	-
E1780304	12.70	1/2	2	2.4	-	1/2	-
E1780404	12.70	1/2	2	3.2	-	1/2	-
E1780305	15.88	5/8	2	2.4	-	1/2	-
E1780405	15.88	5/8	2	3.2	-	1/2	-
E1780505	22.23	7/8	2	4	-	1/2	-
E1780406	19.05	3/4	57	3.2	-	1/2	-
E1780506	19.05	3/4	57	4	-	1/2	-
E1780606	19.05	3/4	57	4.75	-	1/2	-
E1780507	22.23	7/8	64	4	-	1/2	-
E1780607	22.23	7/8	64	4.75	-	1/2	-
E1780807	22.23	7/8	64	6.4	-	1/2	-
E1780608	25.40	1	70	4.75	-	1/2	-
E1780808	25.40	1	70	6.4	-	1/2	-
E1781008	25.40	1	70	8	-	1/2	-
E1780609	28.57	1-1/8	70	4.75	-	1/2	-
E1780809	28.57	1-1/8	70	6.4	-	1/2	-
E1781009	28.57	1-1/8	70	8	-	1/2	-
E1780810	31.75	1-1/4	70	6.4	-	1/2	-
E1781010	31.75	1-1/4	70	8	-	1/2	-
E1781210	31.75	1-1/4	70	9.5	-	1/2	-
E1781011	14.00	1-3/8	3	8	-	1/2	-
E1781211	14.00	1-3/8	3	9.5	-	1/2	-
E1780812	38.10	1-1/2	3	6.4	-	1/2	-
E1781012	38.10	1-1/2	3	8	-	1/2	-
E1781212	38.10	1-1/2	3	9.5	-	1/2	-

Applications:

ISO	VDI	Description	Condition	Hardness	Strength	Optimal
P	1	Steel - Non-alloy, cast & free cutting (~ 0.15 %C)	Annealed	125MPa	440MPa	●
P	2	Steel - Non-alloy, cast & free cutting (~ 0.45 %C)	Annealed	190MPa	640MPa	●
P	3	Steel - Non-alloy, cast & free cutting (~ 0.45 %C)	Quenched & Tempered	250MPa	840MPa	○
P	4	Steel - Non-alloy, cast & free cutting (~ 0.75 %C)	Annealed	270MPa	910MPa	○
P	5	Steel - Non-alloy, cast & free cutting (~ 0.75 %C)	Quenched & Tempered	300HB	1010MPa	
P	6	Steel - Low alloy & cast < 5% of alloying elements	Annealed	180MPa	610MPa	●
P	7	Steel - Low alloy & cast < 5% of alloying elements	Quenched & Tempered	275MPa	930MPa	○
P	8	Steel - Low alloy & cast < 5% of alloying elements	Quenched & Tempered	300HB	1010MPa	
P	9	Steel - Low alloy & cast < 5% of alloying elements	Quenched & Tempered	350HB	1180MPa	
P	10	Steel - High alloy, cast & tool	Annealed	200HB	680MPa	
P	11	Steel - High alloy, cast & tool	Hardened & Tempered	325HB	1100MPa	
P	12	Steel - Corrosion resistant & cast - Ferritic / Martensitic	Annealed	200HB	680MPa	
P	13	Steel - Corrosion resistant & cast - Martensitic	Quenched & Tempered	240HB	810MPa	
M	14.1	Stainless Steel - Austenitic	Age Hardened	180HB	610MPa	
M	14.2	Stainless Steel - Duplex		250HB	840MPa	
M	14.3	Stainless Steel - Precipitation Hardening		250HB	840MPa	
K	15	Cast Iron, Grey (GG) - Ferritic / Pearlitic		180MPa	610MPa	○
K	16	Cast Iron, Grey (GG) - Pearlitic		260HB	880MPa	
K	17	Cast Iron, Nodular (GGG) - Ferritic		160MPa	570MPa	○
K	18	Cast Iron, Nodular (GGG) - Pearlitic		250HB	840MPa	
K	19	Cast Iron, Malleable - Ferritic		130MPa	460MPa	○
K	20	Cast Iron, Malleable - Pearlitic		230HB	780MPa	
N	21	Aluminum & Magnesium, wrought alloy - Non Heat Treatable		60MPa	210MPa	●
N	22	Aluminum & Magnesium, wrought alloy - Heat Treatable	Age Hardened	100MPa	360MPa	●
N	23	Aluminum & Magnesium, cast alloy ?12% Si - Non Heat Treatable		75MPa	270MPa	○
N	24	Aluminum & Magnesium, cast alloy ?12% Si - Heat Treatable	Age Hardened	90MPa	320MPa	○
N	25	Aluminum & Magnesium, cast alloy >12% Si - Non Heat Treatabl		130HB	460MPa	
N	26	Copper & Copper alloys (Brass/Bronze) - Free cutting, Pb > 1		110HB	390MPa	
N	27	Copper & Copper alloys (Brass/Bronze) - Brass (CuZn, CuSnZn)		90HB	320MPa	
N	28	Copper & Copper alloys (Brass/Bronze) - Bronze (CuSn)		100HB	360MPa	
N	29	Non-metallic - Thermosetting & fiber-reinforced plastics				
N	30	Non-metallic - Hard rubber, wood etc.				
S	31	High temperature alloys - Fe based	Annealed	200HB	680MPa	
S	32	High temperature alloys - Fe based	Age Hardened	280HB	950MPa	
S	33	High temperature alloys - Ni / Co based	Annealed	250HB	840MPa	
S	34	High temperature alloys - Ni / Co based	Age Hardened	350HB	1180MPa	
S	35	High temperature alloys - Ni / Co based	Cast	320HB	1080MPa	
S	36	Titanium & Titanium alloys - CP Titanium			400MPa	
S	37.1	Titanium & Titanium alloys - Alpha alloys			860MPa	
S	37.2	Titanium & Titanium alloys - Alpha / Beta alloys	Annealed		960MPa	
S	37.3	Titanium & Titanium alloys - Alpha / Beta alloys	Age Hardened		1170MPa	
S	37.4	Titanium & Titanium alloys - Beta alloys	Annealed		830MPa	
S	37.5	Titanium & Titanium alloys - Beta alloys	Age Hardened		1400MPa	
H	38.1	Hardened steel	Hardened & Tempered	45HRC		
H	38.2	Hardened steel	Hardened & Tempered	55HRC		

KEY

● Optimal ○ Effective | **P** Steel **M** Stainless **K** Cast Iron **N** Non-Ferous Metals **S** Titanium & Super Alloys **H** Hard Materials

Applications:

ISO	VDI	Description	Condition	Hardness	Strength	Optimal
H	39.1	Hardened steel	Hardened & Tempered	58HRC		
H	39.2	Hardened steel	Hardened & Tempered	62HRC		
H	40	Cast Iron - Chilled	Cast	400HB	1350MPa	
H	41	Cast Iron	Hardened & Tempered	55HRC		

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