

Spotting Drill Short Length

Styles

SPS-90, SPS-120

SPSG-90, SPSG-120

	HSS	HSS	HSS	HSS
	1XD	1XD	1XD	1XD
	SPS-90	SPSG-90	SPS-120	SPSG-120
	1/4 - 1"	1/4 - 1"	1/4 - 1"	1/4 - 1"
	188	188	188	188
1.1	115E	115E	115E	115E
1.2	98E	98E	98E	98E
1.3	89C	89C	89C	89C
1.4	69C	69C	69C	69C
1.5	46C	46C	46C	46C
1.6	33B	33B	33B	33B
1.7				
1.8				
2.1	52C	52C	52C	52C
2.2	30D	30D	30D	30D
2.3	33B	33B	33B	33B
2.4				
3.1	105E	105E	105E	105E
3.2	89C	89C	89C	89C
3.3	66C	66C	66C	66C
3.4	52B	52B	52B	52B
4.1	89C	89C	89C	89C
4.2	39B	39B	39B	39B
4.3	23A	23A	23A	23A
5.1	43D	43D	43D	43D
5.2	26C	26C	26C	26C
5.3	13A	13A	13A	13A
6.1	89D	89D	89D	89D
6.2	108E	108E	108E	108E
6.3	89D	89D	89D	89D
6.4	52D	52D	52D	52D
7.1	108E	108E	108E	108E
7.2	98E	98E	98E	98E
7.3	98D	98D	98D	98D
7.4	82D	82D	82D	82D
8.1	98F	98F	98F	98F
8.2	115E	115E	115E	115E
8.3	56D	56D	56D	56D
9.1	39A	39A	39A	39A
10.1				

How To Use This Chart:

1. Determine your Workpiece Material from the Application Material Groups (AMG) below.
2. Use the Icons to find Product Features.
3. Find the Surface Feet Per Minute (SFM) and Alpha Code
 example: 361W
 361 = SFM
 W = Alpha Code used to find your Feed Rate

Feed Rate Chart

Alpha Code	Feed in Inches per Revolution (IPR) ± 25%															Ø Diameter				
	1mm/ 1/32"	2mm/ 3/32"	3mm/ 1/8"	4mm/ 5/32"	5mm/ 3/16"	6mm/ 1/4"	8mm/ 5/16"	10mm/ 3/8"	12mm/ 1/2"	15mm/ 9/16"	16mm/ 5/8"	20mm/ 3/4"	25mm/ 1"	30mm/ 1.1/8"	40mm/ 1.5/8"	50mm/ 2"				
A	0.0004	0.0009	0.0011	0.0013	0.0014	0.0017	0.0021	0.0024	0.0027	0.0032	0.0034	0.0043	0.0049	0.0053	0.0061	0.0069				
B	0.0006	0.0011	0.0015	0.0016	0.0018	0.0021	0.0026	0.0031	0.0035	0.0041	0.0043	0.0053	0.0060	0.0065	0.0074	0.0082				
C	0.0006	0.0013	0.0017	0.0020	0.0022	0.0025	0.0031	0.0039	0.0043	0.0049	0.0051	0.0063	0.0071	0.0077	0.0087	0.0094				
D	0.0006	0.0015	0.0021	0.0024	0.0027	0.0031	0.0039	0.0047	0.0051	0.0059	0.0061	0.0074	0.0083	0.0090	0.0100	0.0108				
E	0.0007	0.0017	0.0024	0.0028	0.0031	0.0037	0.0045	0.0055	0.0059	0.0068	0.0071	0.0085	0.0094	0.0102	0.0112	0.0122				
F	0.0007	0.0020	0.0029	0.0033	0.0037	0.0043	0.0054	0.0065	0.0070	0.0080	0.0083	0.0098	0.0108	0.0116	0.0126	0.0135				
G	0.0007	0.0022	0.0033	0.0038	0.0043	0.0050	0.0063	0.0075	0.0081	0.0091	0.0094	0.0110	0.0122	0.0130	0.0140	0.0148				
H	0.0008	0.0026	0.0040	0.0046	0.0051	0.0059	0.0075	0.0090	0.0096	0.0107	0.0110	0.0126	0.0140	0.0148	0.0157	0.0165				
I	0.0008	0.0030	0.0047	0.0053	0.0059	0.0068	0.0087	0.0104	0.0110	0.0122	0.0126	0.0142	0.0157	0.0165	0.0173	0.0181				
J	0.0009	0.0033	0.0053	0.0060	0.0067	0.0078	0.0098	0.0117	0.0124	0.0137	0.0142	0.0159	0.0175	0.0183	0.0191	0.0198				
K	0.0010	0.0036	0.0059	0.0067	0.0075	0.0087	0.0110	0.0130	0.0138	0.0153	0.0157	0.0177	0.0193	0.0201	0.0209	0.0215				
L	0.0011	0.0040	0.0065	0.0073	0.0082	0.0094	0.0120	0.0142	0.0152	0.0165	0.0169	0.0191	0.0207	0.0215	0.0224	0.0231				
M	0.0012	0.0043	0.0071	0.0080	0.0089	0.0102	0.0130	0.0154	0.0165	0.0177	0.0181	0.0205	0.0220	0.0228	0.0238	0.0248				
N	0.0013	0.0047	0.0077	0.0086	0.0095	0.0110	0.0140	0.0165	0.0179	0.0189	0.0193	0.0219	0.0234	0.0242	0.0253	0.0265				
S	0.0003	0.0006	0.0008	0.0010	0.0012	0.0015	0.0020	0.0031	0.0039	0.0048	0.0051	0.0059	0.0070	0.0070	0.0090					
T	0.0006	0.0011	0.0016	0.0020	0.0024	0.0028	0.0035	0.0043	0.0051	0.0063	0.0067	0.0075	0.0080	0.0090	0.0100					
U	0.0010	0.0019	0.0028	0.0031	0.0035	0.0042	0.0055	0.0067	0.0079	0.0088	0.0091	0.0094	0.0110	0.0120	0.0140					
V	0.0015	0.0027	0.0039	0.0045	0.0051	0.0060	0.0079	0.0098	0.0110	0.0122	0.0126	0.0134	0.0160	0.0170	0.0200					
W	0.0019	0.0035	0.0051	0.0059	0.0067	0.0079	0.0102	0.0130	0.0150	0.0165	0.0169	0.0177	0.0190	0.0190	0.0200					
X	0.0022	0.0041	0.0059	0.0071	0.0083	0.0098	0.0130	0.0165	0.0189	0.0210	0.0217	0.0228								
Y	0.0027	0.0049	0.0071	0.0087	0.0102	0.0125	0.0169	0.0217	0.0276	0.0276	0.0276	0.0291								
Z	0.0037	0.0068	0.0098	0.0128	0.0157	0.0210	0.0315	0.0394	0.0433	0.0463	0.0472	0.0472								

How To Use This Chart to Find Cutting Feed Rate (IPR):

1. Find your Alpha Code on the AMG Chart (example: 279 U : U is the Alpha Code)
2. Find the closest diameter for your cutting application on the chart to find your IPR

Application Material Groups (AMG)		Hardness HRC	ISO
1. Steel	1.1 Magnetic soft steel	12L14, 12L15	<120 HB P 1
	1.2 Structural Steel/ case carburising steel	1005-1025, 1214, 1215, A36	<200 HB P 1
	1.3 Plain Carbon steel	1030-1060, 1050-1060, 1144-1146	<24 P 2
	1.4 Alloy steel	4140,4340,52100,8620 H11-H41,A2,D2,01,P20,420	<24 P 3
	1.5 Alloy steel/ Hardened and tempered steel	4140,4340,52100,8620 H11-H41,A2,D2,01,P20,420	>24<38 P 4
	1.6 Alloy steel/ Hardened and tempered steel	4140,4340,52100,8620 H11-H41,A2,D2,01,P20,420	>38 H 1
	1.7 Alloy steel Hardened	A2-D2, H10-H41, L1-L6, M1-M42, T1	49-55 H 3
	1.8 Alloy steel Hardened	A2-D2, H10-H41, L1-L6, M1-M42, T1	55-63 H 4
2. Stainless Steel	2.1 Free machining Stainless Steel	200, 303, 416, 420F, 430F, 440	<24 M 1
	2.2 Austenitic	301, 302, 304, 316, 321, 330, CUSTOM 455, AM-350	<24 M 3
	2.3 Ferritic + Austenitic, Martensitic	318-329, 400-446, DUPLEX	<32 M 2
	2.4 Precipitation Hardened	15-5PH, Custom 450 17-4PH	<32 S 2
3. Cast Iron	3.1 Lamellar graphite	Grey, G10, Gg40, J431C, A48 CLASS 20	<150 HB K 1
	3.2 Lamellar graphite	Grey, GG25-Gg40, J158, A48 CLASS 40-60	>150 HB<32 K 2
	3.3 Nodular graphite/ Malleable Cast Iron	A220, A436, A439, A602, Black, GGG40-GGG70	<200 HB K 3
	3.4 Nodular graphite/ Malleable Cast Iron	Black Gts/Gtw, J434C	>200 HB<32 K 4
4. Titanium	4.1 Titanium, unalloyed	Commercially Pure	<200 HB S 1
	4.2 Titanium, alloyed	6Al4V, 6A14V-2Sn, Monel, Monel K	<28 S 2
	4.3 Titanium, alloyed	6Al4V-4Mo, 7A14V-4Mo, 4911-4967	>28<38 S 3
5. Nickel	5.1 Nickel, unalloyed	Commercially Pure, 17644, 200, 5553	<150 HB S 1
	5.2 Nickel, alloyed	Monel 400, Hastelloy C, Inconel 625, Waspaloy	<28 S 2
	5.3 Nickel, alloyed	Inconel 718, Nimonic 75-95, Rene 41, Inconel 825, A286	>28<38 S 3
6. Copper	6.1 Copper	Commercially Pure	<100 HB N 3
	6.2 β-Brass, Bronze	314-340, 350-370	<200 HB N 4
	6.3 α-Brass	Alloyed Cu + Al + Fe, Long Chipping	<200 HB N 3
	6.4 High Strength Bronze	Ampco 18-25	<49 N 4
7. Aluminium Magnesium	7.1 Al, Mg, unalloyed	Commercially Pure	<100 HB N 1
	7.2 Al alloyed, Si<0.5%	6061 T6, 7075, 314-340	<150 HB N 1
	7.3 Al alloyed, Si>0.5%<10%	6061 T6, 380-390	<120 HB N 1
	7.4 Al alloyed, Si>10% Mg alloys	Magnesium Whisker Reinforced	<120 HB N 2
8. Synthetic Materials	8.1 Thermoplastics	Ultradid, Polystrol	---
	8.2 Thermosetting plastics	Bakelit, Pertinax	---
	8.3 Reinforced plastic materials	CFK, GFKAFK	---
9. Hard Mat.	9.1 Cermets (Metal-ceramics)	Ferrotic	<54 H
10. Graphite	10.1 Standard graphite	---	O

SPECIAL PURPOSE DRILL



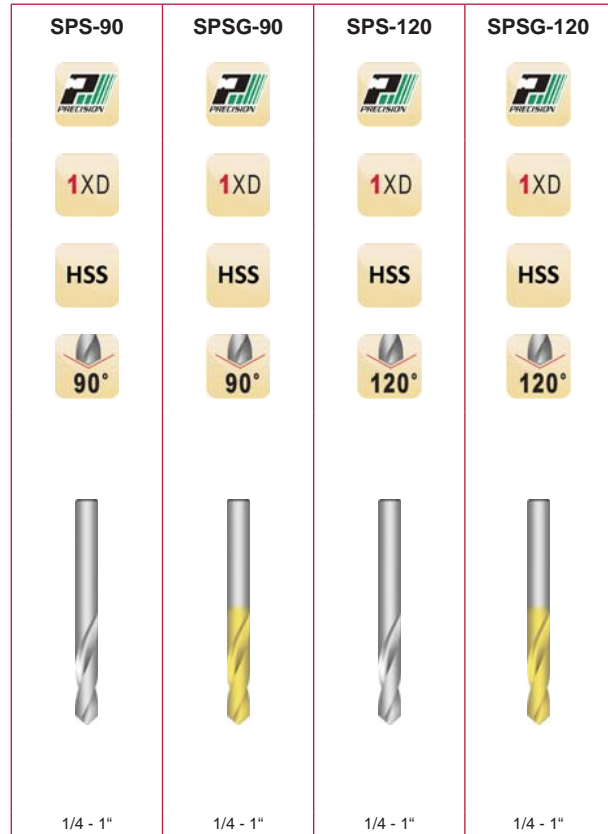
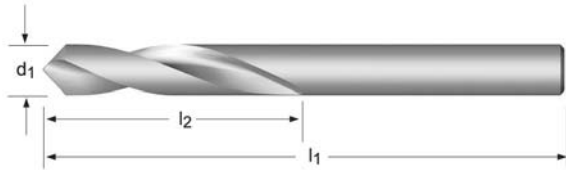
Spotting Drill - Short Length

SPS-90 Bright Finish improves chip flow in soft or non-ferrous materials

SPSG-90 TiN Coating for increased wear resistance and improved tool life.

SPS-120 Bright Finish improves chip flow in soft or non-ferrous materials

SPSG-120 TiN Coating for increased wear resistance and improved tool life.



d_1 Ø Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	Pack Qty	SPS-90	SPSG-90	SPS-120	SPSG-120
1/4	0.2500	3/4	2.1/2	1	087900	087906	087950	087956
3/8	0.3750	1.1/8	3.1/8	1	087901	087907	087951	087957
1/2	0.5000	1.3/8	3.3/4	1	087902	087908	087952	087958
5/8	0.6250	1.5/8	4.3/8	1	087903	087909	087953	087959
3/4	0.7500	1.7/8	5"	1	087904	087910	087954	087960
1"	1.0000	2.1/4	6"	1	087905	087911	087955	087961