

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	Ultradim, 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		---

Heavy Duty Screw Machine Length (NAS 907 Type C)

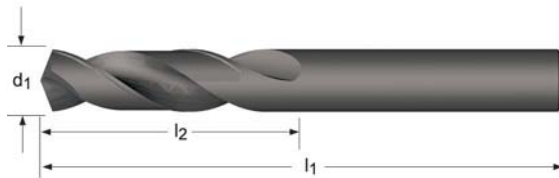
R40C - Fractional Sizes

R41C - Wire Gauge Sizes

R42C - Letter Sizes

A245 - This fractional style is an outgoing product. Limited quantities available. When stock is depleted please use identical style R40C

Low thrust design self centering Split Point for easier penetration. Steam Oxide surface treatment for increased wear resistance and lubricity.



R40C	R41C	R42C	A245
ANSI	ANSI	ANSI	ANSI
2.5XD	2.5XD	2.5XD	2.5XD
HSS	HSS	HSS	HSS
135°	135°	135°	135°
1/16 - 1/2	N60 - N1	A - Z	N40 - 29/64

* Outgoing product

d ₁ Ø Inch	d ₁ Ø Nr.	d ₁ Ø letter	d ₁ decimal Inch	l ₂ Inch	l ₁ Inch	Pack Qty	R40C	R41C	R42C	A245
	60		0.0400	1/2	1.3/8	12	—	041860 ¹⁾	—	—
	59		0.0410	1/2	1.3/8	12	—	041859 ¹⁾	—	—
	58		0.0420	1/2	1.3/8	12	—	041858 ¹⁾	—	—
	57		0.0430	1/2	1.3/8	12	—	041857 ¹⁾	—	—
	56		0.0465	1/2	1.3/8	12	—	041856 ¹⁾	—	—
	55		0.0520	5/8	1.5/8	12	—	041855 ¹⁾	—	—
	54		0.0550	5/8	1.5/8	12	—	041854 ¹⁾	—	—
	53		0.0595	5/8	1.5/8	12	—	041853 ¹⁾	—	—
1/16			0.0625	5/8	1.5/8	12	040804	—	—	—
	52		0.0635	11/16	1.11/16	12	—	041852	—	—
	51		0.0670	11/16	1.11/16	12	—	041851	—	—
	50		0.0700	11/16	1.11/16	12	—	041850	—	—
	49		0.0730	11/16	1.11/16	12	—	041849	—	—
	48		0.0760	11/16	1.11/16	12	—	041848	—	—
5/64			0.0781	11/16	1.11/16	12	040805	—	—	—
	47		0.0785	11/16	1.11/16	12	—	041847	—	—
	46		0.0810	3/4	1.3/4	12	—	041846	—	—
	45		0.0820	3/4	1.3/4	12	—	041845	—	—
	44		0.0860	3/4	1.3/4	12	—	041844	—	—
	43		0.0890	3/4	1.3/4	12	—	041843	—	—
	42		0.0935	3/4	1.3/4	12	—	041842	—	—
3/32			0.0938	3/4	1.3/4	12	040806	—	—	—
	41		0.0960	13/16	1.13/16	12	—	041841	—	—
	40		0.0980	13/16	1.13/16	12	—	041840	—	0234341
	39		0.0995	13/16	1.13/16	12	—	041839	—	—
	38		0.1015	13/16	1.13/16	12	—	041838	—	—
	37		0.1040	13/16	1.13/16	12	—	041837	—	—
	36		0.1065	13/16	1.13/16	12	—	041836	—	—
7/64			0.1094	13/16	1.13/16	12	040807	—	—	—
	35		0.1100	7/8	1.7/8	12	—	041835	—	—
	34		0.1110	7/8	1.7/8	12	—	041834	—	—
	33		0.1130	7/8	1.7/8	12	—	041833	—	—

¹⁾ Not Split Point



SCREW MACHINE DRILL



d ₁ Ø Inch	d ₁ Ø Nr.	d ₁ Ø letter	d ₁ decimal Inch	l ₂ Inch	l ₁ Inch	Pack Qty	R40C	R41C	R42C	A245
	32		0.1160	7/8	1.7/8	12	—	041832	—	—
	31		0.1200	7/8	1.7/8	12	—	041831	—	0234242
1/8			0.1250	7/8	1.7/8	12	040808	—	—	0234914
	30		0.1285	15/16	1.15/16	12	—	041830	—	0234235
	29		0.1360	15/16	1.15/16	12	—	041829	—	0234211
	28		0.1405	15/16	1.15/16	12	—	041828	—	0234204
9/64			0.1406	15/16	1.15/16	12	040809	—	—	0235386
	27		0.1440	1"	2.1/16	12	—	041827	—	0234198
	26		0.1470	1"	2.1/16	12	—	041826	—	0234181
	25		0.1495	1"	2.1/16	12	—	041825	—	0234174
	24		0.1520	1"	2.1/16	12	—	041824	—	0234167
	23		0.1540	1"	2.1/16	12	—	041823	—	0234150
5/32			0.1563	1"	2.1/16	12	040810	—	—	0235232
	22		0.1570	1.1/16	2.1/8	12	—	041822	—	—
	21		0.1590	1.1/16	2.1/8	12	—	041821	—	0234136
	20		0.1610	1.1/16	2.1/8	12	—	041820	—	0234129
	19		0.1660	1.1/16	2.1/8	12	—	041819	—	0234105
	18		0.1695	1.1/16	2.1/8	12	—	041818	—	0234099
11/64			0.1719	1.1/16	2.1/8	12	040811	—	—	0234792
	17		0.1730	1.1/8	2.3/16	12	—	041817	—	—
	16		0.1770	1.1/8	2.3/16	12	—	041816	—	—
	15		0.1800	1.1/8	2.3/16	12	—	041815	—	—
	14		0.1820	1.1/8	2.3/16	12	—	041814	—	—
	13		0.1850	1.1/8	2.3/16	12	—	041813	—	—
3/16			0.1875	1.1/8	2.3/16	12	040812	—	—	0235065
	12		0.1890	1.3/16	2.1/4	12	—	041812	—	—
	11		0.1910	1.3/16	2.1/4	12	—	041811	—	0234020
	10		0.1935	1.3/16	2.1/4	12	—	041810	—	0234013
	9		0.1960	1.3/16	2.1/4	12	—	041809	—	0234594
	8		0.1990	1.3/16	2.1/4	12	—	041808	—	0234587
	7		0.2010	1.3/16	2.1/4	12	—	041807	—	0234570
13/64			0.2031	1.3/16	2.1/4	12	040813	—	—	0234846
	6		0.2040	1.1/4	2.3/8	12	—	041806	—	—
	5		0.2055	1.1/4	2.3/8	12	—	041805	—	0234440
	4		0.2090	1.1/4	2.3/8	12	—	041804	—	—
	3		0.2130	1.1/4	2.3/8	12	—	041803	—	—
7/32			0.2188	1.1/4	2.3/8	12	040814	—	—	0235331
	2		0.2210	1.5/16	2.7/16	12	—	041802	—	0234112
	1		0.2280	1.5/16	2.7/16	12	—	041801	—	0234006
		A	0.2340	1.5/16	2.7/16	12	—	—	042801	—
15/64			0.2344	1.5/16	2.7/16	12	040815	—	—	—
		B	0.2380	1.3/8	2.1/2	12	—	—	042802	—
		C	0.2420	1.3/8	2.1/2	12	—	—	042803	—
		D	0.2460	1.3/8	2.1/2	12	—	—	042804	—
		E	0.2500	1.3/8	2.1/2	12	—	—	042805	—
1/4			0.2500	1.3/8	2.1/2	12	040816	—	—	0234853
		F	0.2570	1.7/16	2.5/8	12	—	—	042806	0235447
		G	0.2610	1.7/16	2.5/8	12	—	—	042807	—
17/64			0.2656	1.7/16	2.5/8	12	040817	—	—	0234907
		H	0.2660	1.1/2	2.11/16	12	—	—	042808	—
		I	0.2720	1.1/2	2.11/16	12	—	—	042809	—
		J	0.2770	1.1/2	2.11/16	12	—	—	042810	—
		K	0.2810	1.1/2	2.11/16	12	—	—	042811	—
9/32			0.2813	1.1/2	2.11/16	12	040818	—	—	0235379
		L	0.2900	1.9/16	2.3/4	12	—	—	042812	—
		M	0.2950	1.9/16	2.3/4	12	—	—	042813	—
19/64			0.2969	1.9/16	2.3/4	12	040819	—	—	—
		N	0.3020	1.5/8	2.13/16	12	—	—	042814	—
5/16			0.3125	1.5/8	2.13/16	6	040820	—	—	0235218
		O	0.3160	1.11/16	2.15/16	6	—	—	042815	—
		P	0.3230	1.11/16	2.15/16	6	—	—	042816	—
21/64			0.3281	1.11/16	2.15/16	6	040821	—	—	—
		Q	0.3320	1.11/16	3"	6	—	—	042817	—
		R	0.3390	1.11/16	3"	6	—	—	042818	—
11/32			0.3437	1.11/16	3"	6	040822	—	—	—
		S	0.3480	1.3/4	3.1/16	6	—	—	042819	—

d ₁ Ø Inch	d ₁ Ø Nr.	d ₁ Ø letter	d ₁ decimal Inch	l ₂ Inch	l ₁ Inch	Pack Qty	R40C	R41C	R42C	A245
		T	0.3580	1.3/4	3.1/16	6	—	—	042820	—
23/64			0.3594	1.3/4	3.1/16	6	040823	—	—	—
		U	0.3680	1.13/16	3.1/8	6	—	—	042821	—
3/8			0.3750	1.13/16	3.1/8	6	040824	—	—	0235140
		V	0.3770	1.7/8	3.1/4	6	—	—	042822	—
		W	0.3860	1.7/8	3.1/4	6	—	—	042823	—
25/64			0.3906	1.7/8	3.1/4	6	040825	—	—	0235003
		X	0.3970	1.15/16	3.5/16	6	—	—	042824	—
		Y	0.4040	1.15/16	3.5/16	6	—	—	042825	—
13/32			0.4063	1.15/16	3.5/16	6	040826	—	—	—
		Z	0.4130	2"	3.3/8	6	—	—	042826	—
27/64			0.4219	2"	3.3/8	6	040827	—	—	—
7/16			0.4375	2.1/16	3.7/16	6	040828	—	—	—
29/64			0.4531	2.1/8	3.9/16	6	040829	—	—	0235041
15/32			0.4687	2.1/8	3.5/8	6	040830	—	—	—
31/64			0.4844	2.3/16	3.11/16	6	040831	—	—	—
1/2			0.5000	2.1/4	3.3/4	6	040832	—	—	—