

New Product Announcement

NEW-321-6 • 07/2026

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HOLEMAKING

Diameter Range

Inch: 0.1562-0.4688"

Metric: 4.0-12.0 mm

Bodies

Self-Centering

3xD, 5xD, 8xD, **12xD** **NEW**

Flat Bottom

3xD, 5xD

Cylindrical Shank

Geometries

3-Flute

FR (140° Self-Centering)

FF (Flat Bottom)

Grade

IN2205

Materials

Steel

Cast Iron

SOLID DRILL³™

Standard Point
Geometry (FR)

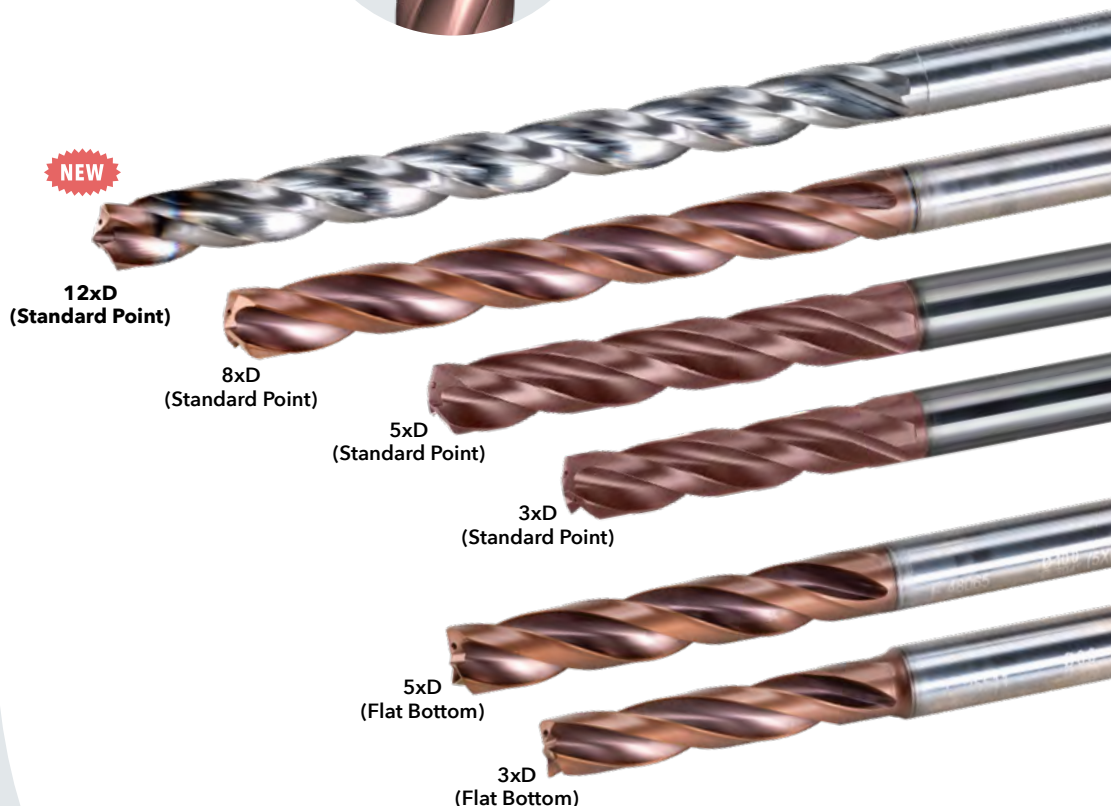


Flat Bottom
Geometry (FF)



3-Flute Solid Drills Expanded to 12xD Depth

- » 3-flute design allows up to 50% higher feed rates.
- » Flat bottom geometry ideal for drilling c'bore in bolt holes.
- » Self-centering geometry eliminates need to pilot up to 12xD.



See it in
action! »



SPEED UP™
HIGH SPEED & FEED
EXPANSION

ingersoll-imc.com



New 12xD Drilling Depth Option for SolidDrill³

As part of the new WinSFeed campaign, Ingersoll is expanding the range and utility of the **SolidDrill³** product line by adding a 12xD option to the available lengths.

The **SolidDrill³** is a 3-flute solid carbide drill capable of 50% higher feed rates compared to conventional 2-flute drills. It also features a unique edge design that improves machining stability needed for the more aggressive cutting conditions and a self-centering geometry to eliminate the need for a pilot hole up to 12xD. **SolidDrill³** is an ideal, high-performance solution for high-production drilling applications, especially in steel and cast iron machining.

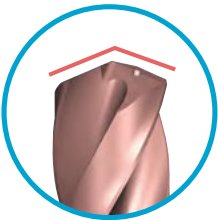
Features & Benefits

- Drill range: .1562-.4688" (.031" increments); 4.0-12.0 mm (0.5 mm increments)
- 3-flute geometry increases productivity by at least 50%
- Self-centering geometry provides precise and accurate holes without a pre-hole
- Very high stability in the cut due to its specially designed edge geometry
 - » Reinforced cutting edge
 - » Side geometry that minimizes heat and reduces cutting forces
- 3 coolant outlet holes to maximize coolant flow and evacuate chips
- PVD coated grade IN2205 in a new bronze color provides consistency and longer life
- Suitable for steel and cast iron drilling

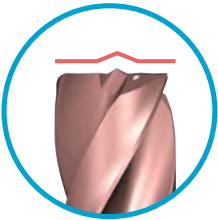


Features & Benefits (continued)

- 3-flute solid carbide drills with coolant hole (FR Series)
 - » Drilling depth: 3xD, 5xD, 8xD and 12xD
 - » Symmetric point design allows drilling without a pilot hole

HEAD SHAPE	DRILL	
FR 	3xD	
	5xD	
	8xD	
	NEW 12xD	

- 3-flute flat bottom solid carbide drills with coolant hole (FF Series)
 - » Drilling depth: 3xD, 5xD
 - » Excellent performance for flat bottom hole applications

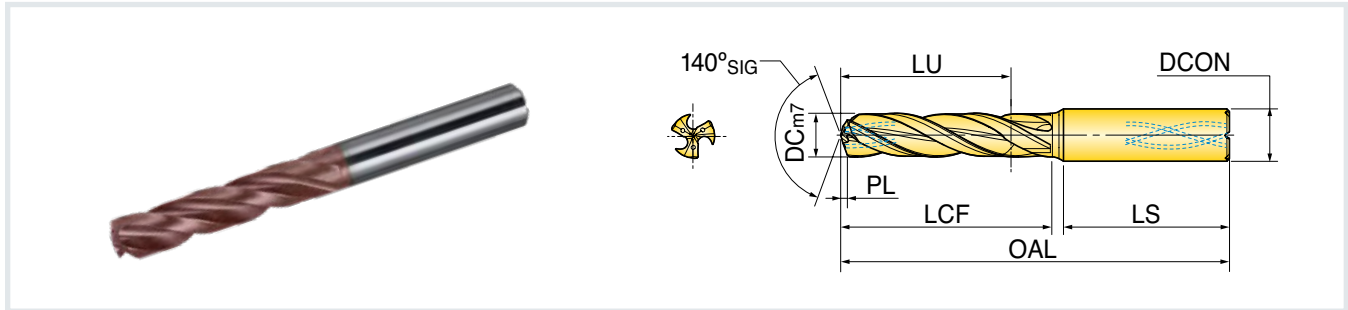
HEAD SHAPE	DRILL	
FF 	3xD	
	5xD	

Drilling Coolant



3xD • Series FR

3-FLUTE SOLID CARBIDE DRILLS WITH COOLANT HOLES



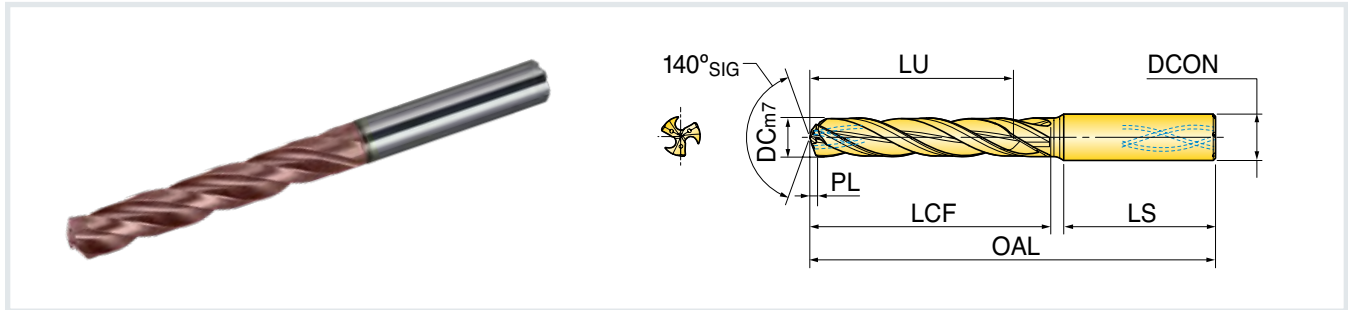
Part Number	DC Cutting Diameter		PL Point Length	LU Usable Length	LCF Chip Flute Length	LS Shank Length	OAL Overall Length	DCON Shank Diameter
	INCH	MM						
FR0397017T7R01	0.1563	3.97	0.80	17	25	35	66	6
FR0400017T7R01	0.1575	4.00	0.82	17	25	35	66	6
FR0450017T7R01	0.1772	4.50	0.88	17	25	35	66	6
FR0476017T7R01	0.1875	4.76	0.90	17	25	35	66	6
FR0500020T7R01	0.1969	5.00	0.96	20	29	36	66	6
FR0510020T7R01	0.2008	5.10	0.98	20	29	36	66	6
FR0550020T7R01	0.2165	5.50	1.08	20	29	36	66	6
FR0556020T7R01	0.2188	5.56	1.09	20	29	36	66	6
FR0600020T7R01	0.2362	6.00	1.17	20	29	36	66	6
FR0635024T0R01	0.2500	6.35	1.20	24	35	36	79	8
FR0650024T0R01	0.2559	6.50	1.26	24	35	36	79	8
FR0680024T0R01	0.2677	6.80	1.29	24	35	36	79	8
FR0700024T0R01	0.2756	7.00	1.35	24	35	36	79	8
FR0714024T0R01	0.2813	7.15	1.38	29	42	36	79	8
FR0750029T0R01	0.2953	7.50	1.40	29	42	36	79	8
FR0794029T0R01	0.3125	7.94	1.48	29	42	36	79	8
FR0800029T0R01	0.3150	8.00	1.49	29	42	36	79	8
FR0850035T1R01	0.3346	8.50	1.63	35	48	40	89	10
FR0860035T1R01	0.3386	8.60	1.64	35	48	40	89	10
FR0873035T1R01	0.3438	8.73	1.65	35	48	40	89	10
FR0900035T1R01	0.3543	9.00	1.72	35	48	40	89	10
FR0950035T1R01	0.3740	9.50	1.75	35	48	40	89	10
FR0953035T1R01	0.3750	9.53	1.76	35	48	40	89	10
FR1000035T1R01	0.3937	10.00	1.85	35	48	40	89	10
FR1030040T2R01	0.4063	10.32	1.88	40	55	45	102	12
FR1050040T2R01	0.4134	10.50	1.98	40	55	45	102	12
FR1100040T2R01	0.4331	11.00	2.07	40	55	45	102	12
FR1111040T2R01	0.4375	11.11	2.08	40	56	45	102	12
FR1150040T2R01	0.4528	11.50	2.12	40	56	45	102	12
FR1191040T2R01	0.4688	11.91	2.20	40	56	45	102	12
FR1200040T2R01	0.4724	12.00	2.21	40	56	45	102	12

Drilling Coolant



5xD • Series FR

3-FLUTE SOLID CARBIDE DRILLS WITH COOLANT HOLES



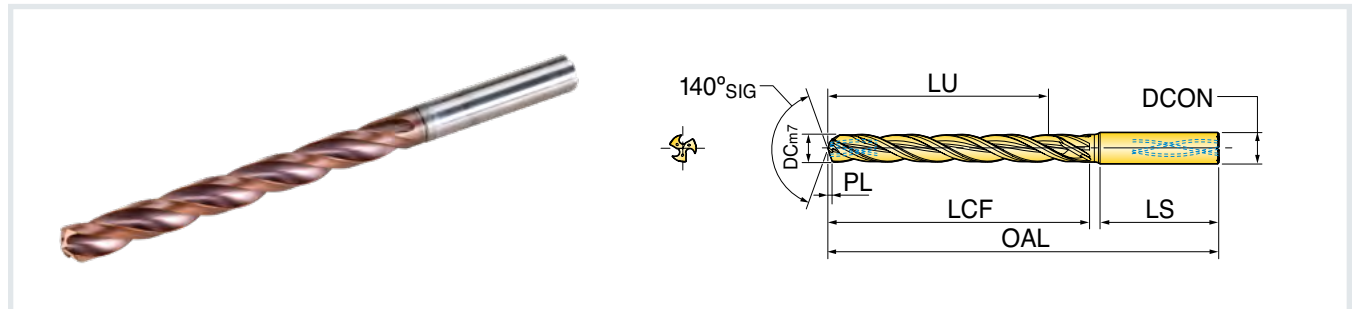
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	INCH	MM						
FR0397029T7R01	0.1563	3.97	0.80	29	37	35	74	6
FR0400029T7R01	0.1575	4.00	0.82	29	37	35	74	6
FR0450029T7R01	0.1772	4.50	0.88	29	37	35	74	6
FR0476029T7R01	0.1875	4.76	0.90	29	37	35	74	6
FR0500035T7R01	0.1969	5.00	0.96	35	45	36	82	6
FR0510035T7R01	0.2008	5.10	0.98	35	45	36	82	6
FR0550035T7R01	0.2165	5.50	1.08	35	45	36	82	6
FR0556035T7R01	0.2188	5.56	1.09	35	45	36	82	6
FR0600035T7R01	0.2362	6.00	1.17	35	45	36	82	6
FR0635043T0R01	0.2500	6.35	1.20	43	54	36	91	8
FR0650043T0R01	0.2559	6.50	1.26	43	54	36	91	8
FR0680043T0R01	0.2677	6.80	1.29	43	54	36	91	8
FR0700043T0R01	0.2756	7.00	1.35	43	54	36	91	8
FR0714043T0R01	0.2813	7.15	1.38	43	54	36	91	8
FR0750043T0R01	0.2953	7.50	1.40	43	54	36	91	8
FR0794043T0R01	0.3125	7.94	1.48	43	54	36	91	8
FR0800043T0R01	0.3150	8.00	1.49	43	54	36	91	8
FR0850049T1R01	0.3346	8.50	1.63	49	62	40	103	10
FR0860049T1R01	0.3386	8.60	1.64	49	62	40	103	10
FR0873049T1R01	0.3438	8.73	1.65	49	62	40	103	10
FR0900049T1R01	0.3543	9.00	1.72	49	62	40	103	10
FR0950049T1R01	0.3740	9.50	1.75	49	62	40	103	10
FR0953049T1R01	0.3750	9.53	1.76	49	62	40	103	10
FR1000049T1R01	0.3937	10.00	1.85	49	62	40	103	10
FR1030056T2R01	0.4063	10.32	1.88	56	71	45	118	12
FR1050056T2R01	0.4134	10.50	1.98	56	71	45	118	12
FR1100056T2R01	0.4331	11.00	2.07	56	71	45	118	12
FR1111056T2R01	0.4375	11.11	2.08	56	72	45	118	12
FR1150056T2R01	0.4528	11.50	2.12	56	72	45	118	12
FR1191056T2R01	0.4688	11.91	2.20	56	72	45	118	12
FR1200056T2R01	0.4724	12.00	2.21	56	72	45	118	12

Drilling Coolant



8xD • Series FR

3-FLUTE SOLID CARBIDE DRILLS WITH COOLANT HOLES



Part Number	DC Cutting Diameter		PL Point Length	LU Usable Length	LCF Chip Flute Length	LS Shank Length	OAL Overall Length	DCON Shank Diameter
	INCH	MM						
FR0397036T7R01	0.1563	3.97	0.82	36	43	35	81	6
FR0400036T7R01	0.1575	4.00	0.82	36	43	35	81	6
FR0450036T7R01	0.1772	4.50	0.88	36	43	35	81	6
FR0476036T7R01	0.1875	4.76	0.95	36	43	35	81	6
FR0500048T7R01	0.1969	5.00	0.96	48	57	36	95	6
FR0550048T7R01	0.2165	5.50	1.08	48	57	36	95	6
FR0556048T7R01	0.2188	5.56	1.12	48	57	36	95	6
FR0600048T7R01	0.2362	6.00	1.17	48	57	36	95	6
FR0635064T0R01	0.2500	6.35	1.25	64	76	36	114	8
FR0650064T0R01	0.2559	6.50	1.26	64	76	36	114	8
FR0700064T0R01	0.2756	7.00	1.35	64	76	36	114	8
FR0714064T0R01	0.2812	7.14	1.35	64	76	36	114	8
FR0750064T0R01	0.2953	7.50	1.40	64	76	36	114	8
FR0794064T0R01	0.3125	7.94	1.49	64	76	36	114	8
FR0800064T0R01	0.3150	8.00	1.49	64	76	36	114	8
FR0850080T1R01	0.3346	8.50	2.04	80	95	40	142	10
FR0873080T1R01	0.3438	8.73	2.09	80	95	40	142	10
FR0900080T1R01	0.3543	9.00	2.16	80	95	40	142	10
FR0950080T1R01	0.3740	9.50	2.29	80	95	40	142	10
FR0953080T1R01	0.3750	9.53	2.29	80	95	40	142	10
FR1000080T1R01	0.3937	10.00	2.33	80	95	40	142	10
FR1030096T2R01	0.4055	10.30	2.45	96	113	45	162	12
FR1050096T2R01	0.4134	10.50	2.50	96	113	45	162	12
FR1100096T2R01	0.4331	11.00	2.61	96	113	45	162	12
FR1111096T2R01	0.4375	11.11	2.58	96	113	45	162	12
FR1150096T2R01	0.4528	11.50	2.67	96	113	45	162	12
FR1191096T2R01	0.4688	11.91	2.77	96	113	45	162	12
FR1200096T2R01	0.4724	12.00	2.80	96	113	45	162	12

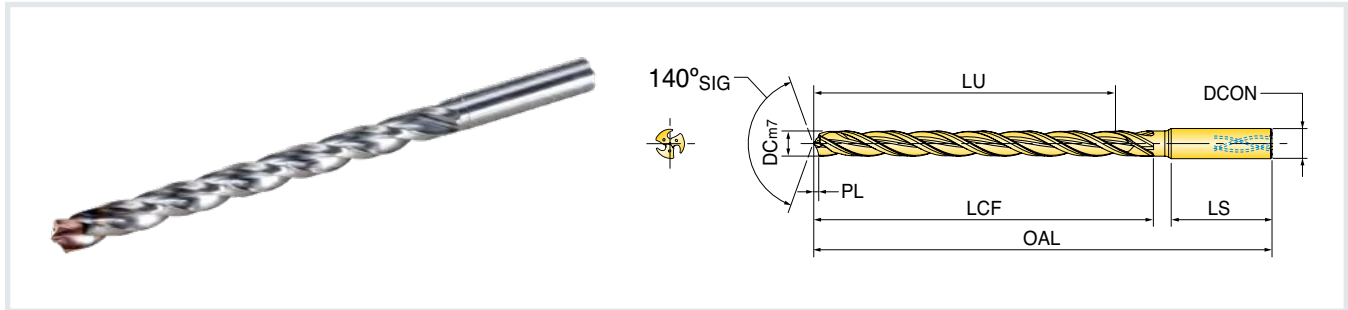
Drilling

Coolant



12xD • Series FR **NEW**

3-FLUTE SOLID CARBIDE DRILLS WITH COOLANT HOLES



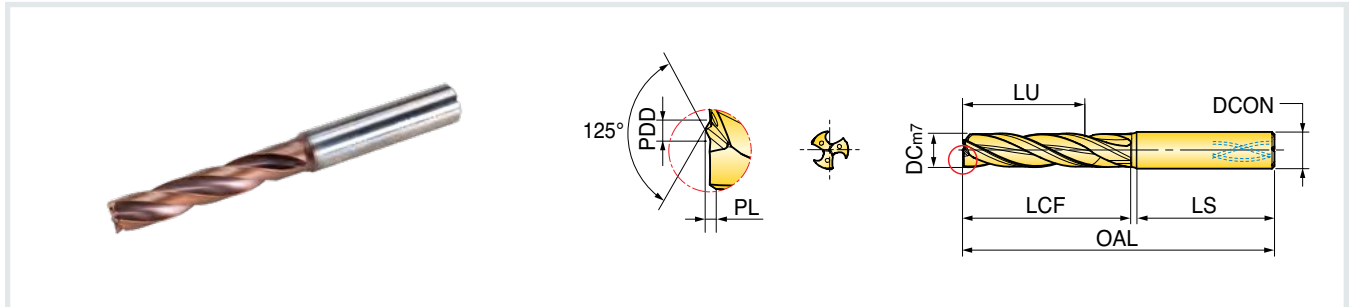
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	INCH	MM						
FR0600069T7R01	0.2362	6.00	1.38	69	78	36	116	6
FR0635096T0R01	0.2500	6.35	1.57	96	108	36	146	8
FR0650096T0R01	0.2559	6.50	1.57	96	108	36	146	8
FR0700096T0R01	0.2756	7.00	1.60	96	108	36	146	8
FR0714096T0R01	0.2811	7.14	1.78	96	108	36	146	8
FR0750096T0R01	0.2953	7.50	1.78	96	108	36	146	8
FR0794096T0R01	0.3125	7.94	1.81	96	108	36	146	8
FR0800096T0R01	0.3150	8.00	1.81	96	108	36	146	8
FR0850105T1R01	0.3346	8.50	2.07	105	120	40	162	10
FR0873105T1R01	0.3437	8.73	2.07	105	120	40	162	10
FR0900105T1R01	0.3543	9.00	2.10	105	120	40	162	10
FR0950105T1R01	0.3740	9.53	2.27	105	120	40	162	10
FR0953105T1R01	0.3752	9.53	2.27	105	120	40	162	10
FR1000105T1R01	0.3937	10.00	2.30	105	120	40	162	10
FR1050139T2R01	0.4134	10.50	2.56	139	156	45	204	12
FR1100139T2R01	0.4331	11.00	2.59	139	156	45	204	12
FR1111139T2R01	0.4375	11.11	2.76	139	156	45	204	12
FR1150139T2R01	0.4528	11.50	2.76	139	156	45	204	12
FR1191139T2R01	0.4689	11.91	2.79	139	156	45	204	12
FR1200139T2R01	0.4724	12.00	2.79	139	156	45	204	12

Drilling Coolant



3xD • Series FF

3-FLUTE FLAT BOTTOM SOLID CARBIDE DRILLS WITH COOLANT HOLES



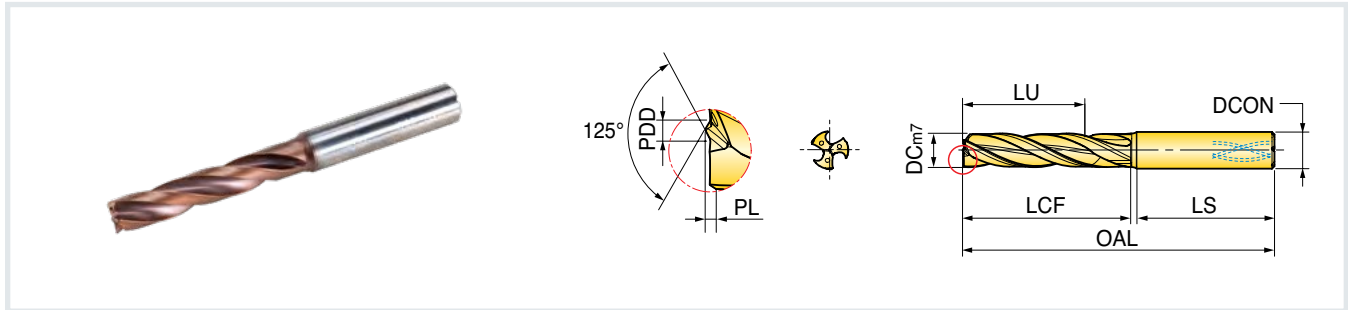
Part Number	DC Cutting Diameter		PL Point Length	LU Usable Length	LCF Chip Flute Length	LS Shank Length	OAL Overall Length	DCON Shank Diameter	PDD Drill Point Diameter
	INCH	MM							
FF0397017T7R01	0.1563	3.97	0.43	17	25	35	66	6	0.77
FF0400017T7R01	0.1575	4.00	0.43	17	25	35	66	6	0.77
FF0410017T7R01	0.1614	4.10	0.43	17	25	35	66	6	0.77
FF0420017T7R01	0.1654	4.20	0.43	17	25	35	66	6	0.77
FF0430017T7R01	0.1693	4.30	0.45	17	25	35	66	6	0.86
FF0440017T7R01	0.1732	4.40	0.45	17	25	35	66	6	0.86
FF0450017T7R01	0.1772	4.50	0.45	17	25	35	66	6	0.86
FF0460017T7R01	0.1811	4.60	0.45	17	25	35	66	6	0.86
FF0470017T7R01	0.1850	4.70	0.45	17	25	35	66	6	0.86
FF0476017T7R01	0.1875	4.76	0.45	17	25	35	66	6	0.86
FF0480020T7R01	0.1890	4.80	0.47	20	29	36	66	6	0.97
FF0490020T7R01	0.1929	4.90	0.47	20	29	36	66	6	0.97
FF0500020T7R01	0.1969	5.00	0.47	20	29	36	66	6	0.97
FF0510020T7R01	0.2008	5.10	0.47	20	29	36	66	6	0.97
FF0520020T7R01	0.2047	5.20	0.47	20	29	36	66	6	0.97
FF0530020T7R01	0.2087	5.30	0.47	20	29	36	66	6	0.97
FF0540020T7R01	0.2126	5.40	0.58	20	29	36	66	6	1.08
FF0550020T7R01	0.2165	5.50	0.58	20	29	36	66	6	1.08
FF0556020T7R01	0.2188	5.56	0.58	20	29	36	66	6	1.08
FF0560020T7R01	0.2205	5.60	0.58	20	29	36	66	6	1.08
FF0570020T7R01	0.2244	5.70	0.58	20	29	36	66	6	1.08
FF0580020T7R01	0.2283	5.80	0.58	20	29	36	66	6	1.08
FF0590020T7R01	0.2323	5.90	0.58	20	29	36	66	6	1.08
FF0600020T7R01	0.2362	6.00	0.58	20	29	36	66	6	1.08
FF0610024T0R01	0.2402	6.10	0.62	24	35	36	79	8	1.26
FF0620024T0R01	0.2441	6.20	0.62	24	35	36	79	8	1.26
FF0630024T0R01	0.2480	6.30	0.62	24	35	36	79	8	1.26
FF0635024T0R01	0.2500	6.35	0.62	24	35	36	79	8	1.26
FF0640024T0R01	0.2520	6.40	0.62	24	35	36	79	8	1.26
FF0650024T0R01	0.2559	6.50	0.62	24	35	36	79	8	1.26
FF0660024T0R01	0.2598	6.60	0.62	24	35	36	79	8	1.26

Drilling Coolant



3xD • Series FF (continued)

3-FLUTE FLAT BOTTOM SOLID CARBIDE DRILLS WITH COOLANT HOLES



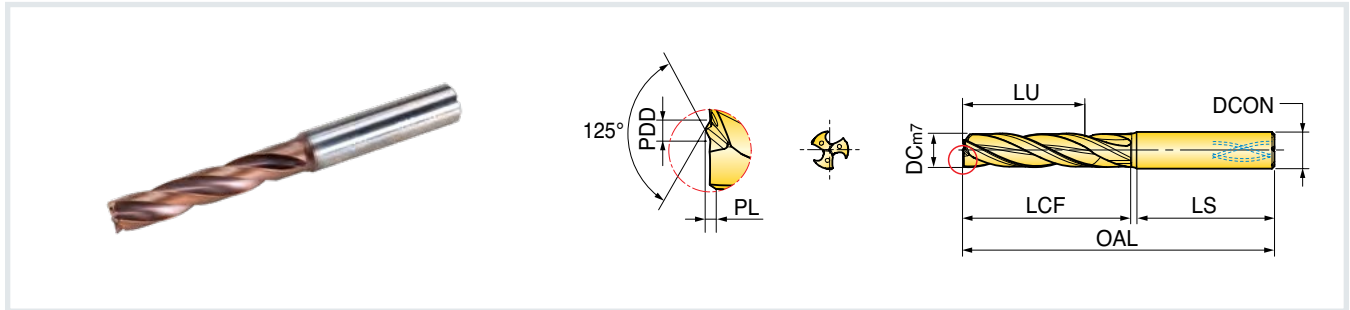
Part Number	DC Cutting Diameter		PL Point Length	LU Usable Length	LCF Chip Flute Length	LS Shank Length	OAL Overall Length	DCON Shank Diameter	PDD Drill Point Diameter
	INCH	MM							
FF0670024TOR01	0.2638	6.70	0.62	24	35	36	79	8	1.26
FF0680024TOR01	0.2677	6.80	0.62	24	35	36	79	8	1.26
FF0690024TOR01	0.2717	6.90	0.62	24	35	36	79	8	1.26
FF0700024TOR01	0.2756	7.00	0.62	24	35	36	79	8	1.26
FF0710024TOR01	0.2795	7.10	0.66	24	42	36	79	8	1.44
FF0714029TOR01	0.2813	7.15	0.66	29	42	36	79	8	1.44
FF0720029TOR01	0.2835	7.20	0.66	29	42	36	79	8	1.44
FF0730029TOR01	0.2874	7.30	0.66	29	42	36	79	8	1.44
FF0740029TOR01	0.2913	7.40	0.66	29	42	36	79	8	1.44
FF0750029TOR01	0.2953	7.50	0.66	29	42	36	79	8	1.44
FF0760029TOR01	0.2992	7.60	0.66	29	42	36	79	8	1.44
FF0770029TOR01	0.3031	7.70	0.66	29	42	36	79	8	1.44
FF0780029TOR01	0.3071	7.80	0.66	29	42	36	79	8	1.44
FF0790029TOR01	0.3110	7.90	0.66	29	42	36	79	8	1.44
FF0794029TOR01	0.3125	7.94	0.66	29	42	36	79	8	1.44
FF0800029TOR01	0.3150	8.00	0.66	29	42	36	79	8	1.44
FF0810035T1R01	0.3189	8.10	0.79	35	48	40	89	10	1.62
FF0820035T1R01	0.3228	8.20	0.79	35	48	40	89	10	1.62
FF0830035T1R01	0.3268	8.30	0.79	35	48	40	89	10	1.62
FF0840035T1R01	0.3307	8.40	0.79	35	48	40	89	10	1.62
FF0850035T1R01	0.3346	8.50	0.79	35	48	40	89	10	1.62
FF0860035T1R01	0.3386	8.60	0.79	35	48	40	89	10	1.62
FF0870035T1R01	0.3425	8.70	0.79	35	48	40	89	10	1.62
FF0873035T1R01	0.3437	8.73	0.79	35	48	40	89	10	1.62
FF0880035T1R01	0.3465	8.80	0.79	35	48	40	89	10	1.62
FF0890035T1R01	0.3504	8.90	0.79	35	48	40	89	10	1.62
FF0900035T1R01	0.3543	9.00	0.79	35	48	40	89	10	1.62
FF0910035T1R01	0.3583	9.10	0.82	35	48	40	89	10	1.80
FF0920035T1R01	0.3622	9.20	0.82	35	48	40	89	10	1.80
FF0930035T1R01	0.3661	9.30	0.82	35	48	40	89	10	1.80

Drilling Coolant



3xD • Series FF (continued)

3-FLUTE FLAT BOTTOM SOLID CARBIDE DRILLS WITH COOLANT HOLES



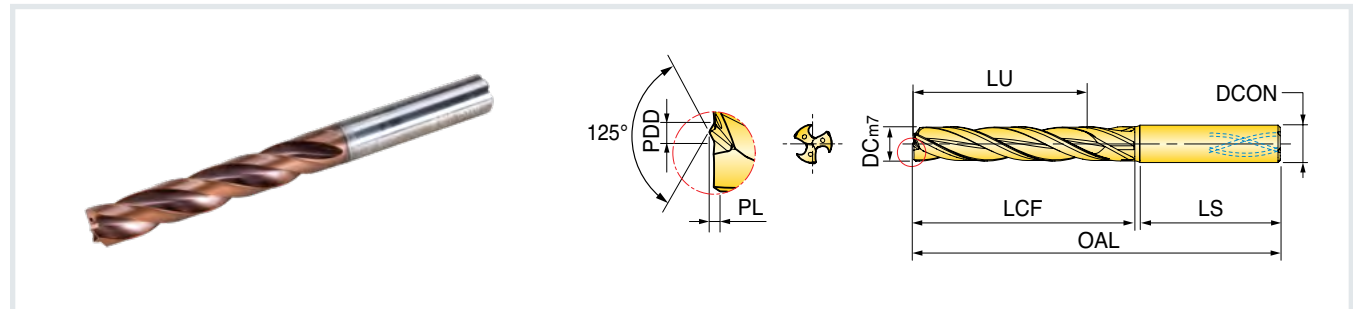
Part Number	DC Cutting Diameter		PL Point Length	LU Usable Length	LCF Chip Flute Length	LS Shank Length	OAL Overall Length	DCON Shank Diameter	PDD Drill Point Diameter
	INCH	MM							
FF0940035T1R01	0.3701	9.40	0.82	35	48	40	89	10	1.80
FF0950035T1R01	0.3740	9.50	0.82	35	48	40	89	10	1.80
FF0953035T1R01	0.3750	9.53	0.82	35	48	40	89	10	1.80
FF0960035T1R01	0.3780	9.60	0.82	35	48	40	89	10	1.80
FF0970035T1R01	0.3819	9.70	0.82	35	48	40	89	10	1.80
FF0980035T1R01	0.3858	9.80	0.82	35	48	40	89	10	1.80
FF0990035T1R01	0.3898	9.90	0.82	35	48	40	89	10	1.80
FF1000035T1R01	0.3937	10.00	0.82	35	48	40	89	10	1.80
FF1010040T2R01	0.3976	10.10	0.95	40	55	45	102	12	1.98
FF1020040T2R01	0.4016	10.20	0.95	40	55	45	102	12	1.98
FF1030040T2R01	0.4055	10.30	0.95	40	55	45	102	12	1.98
FF1040040T2R01	0.4094	10.40	0.95	40	55	45	102	12	1.98
FF1050040T2R01	0.4134	10.50	0.95	40	55	45	102	12	1.98
FF1060040T2R01	0.4173	10.60	0.95	40	55	45	102	12	1.98
FF1070040T2R01	0.4213	10.70	0.95	40	55	45	102	12	1.98
FF1080040T2R01	0.4252	10.80	0.95	40	55	45	102	12	1.98
FF1090040T2R01	0.4291	10.90	0.95	40	55	45	102	12	1.98
FF1100040T2R01	0.4331	11.00	0.95	40	55	45	102	12	1.98
FF111040T2R01	0.4370	11.10	0.98	40	56	45	102	12	2.16
FF1111040T2R01	0.4375	11.11	0.98	40	56	45	102	12	2.16
FF1120040T2R01	0.4409	11.20	0.98	40	56	45	102	12	2.16
FF1130040T2R01	0.4449	11.30	0.98	40	56	45	102	12	2.16
FF1140040T2R01	0.4488	11.40	0.98	40	56	45	102	12	2.16
FF1150040T2R01	0.4528	11.50	0.98	40	56	45	102	12	2.16
FF1160040T2R01	0.4567	11.60	0.98	40	56	45	102	12	2.16
FF1170040T2R01	0.4606	11.70	0.98	40	56	45	102	12	2.16
FF1180040T2R01	0.4646	11.80	0.98	40	56	45	102	12	2.16
FF1190040T2R01	0.4685	11.90	0.98	40	56	45	102	12	2.16
FF1191040T2R01	0.4688	11.91	0.98	40	56	45	102	12	2.16
FF1200040T2R01	0.4724	12.00	0.98	40	56	45	102	12	2.16

Drilling Coolant



5xD • Series FF

3-FLUTE FLAT BOTTOM SOLID CARBIDE DRILLS WITH COOLANT HOLES



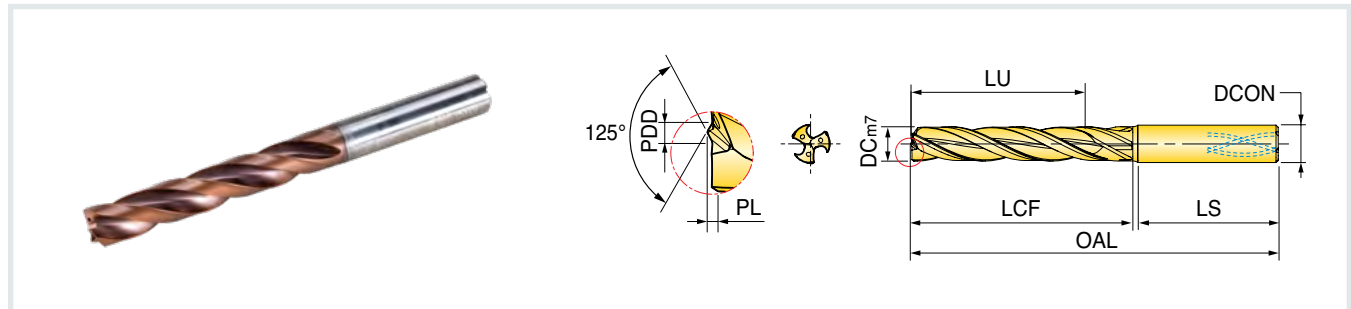
Part Number	DC Cutting Diameter		PL Point Length	LU Usable Length	LCF Chip Flute Length	LS Shank Length	OAL Overall Length	DCON Shank Diameter	PDD Drill Point Diameter
	INCH	MM							
FF0397029T7R01	0.1563	3.97	0.43	29	37	35	74	6	0.77
FF0400029T7R01	0.1575	4.00	0.43	29	37	35	74	6	0.77
FF0410029T7R01	0.1614	4.10	0.43	29	37	35	74	6	0.77
FF0420029T7R01	0.1654	4.20	0.43	29	37	35	74	6	0.77
FF0430029T7R01	0.1693	4.30	0.45	29	37	35	74	6	0.86
FF0440029T7R01	0.1732	4.40	0.45	29	37	35	74	6	0.86
FF0450029T7R01	0.1772	4.50	0.45	29	37	35	74	6	0.86
FF0460029T7R01	0.1811	4.60	0.45	29	45	35	82	6	0.86
FF0470029T7R01	0.1850	4.70	0.45	29	45	35	82	6	0.86
FF0476029T7R01	0.1875	4.76	0.45	29	45	35	82	6	0.86
FF0480035T7R01	0.1890	4.80	0.47	35	45	36	82	6	0.97
FF0490035T7R01	0.1929	4.90	0.47	35	45	36	82	6	0.97
FF0500035T7R01	0.1969	5.00	0.47	35	45	36	82	6	0.97
FF0510035T7R01	0.2008	5.10	0.47	35	45	36	82	6	0.97
FF0520035T7R01	0.2047	5.20	0.47	35	45	36	82	6	0.97
FF0530035T7R01	0.2087	5.30	0.47	35	45	36	82	6	0.97
FF0540035T7R01	0.2126	5.40	0.58	35	45	36	82	6	1.08
FF0550035T7R01	0.2165	5.50	0.58	35	45	36	82	6	1.08
FF0556035T7R01	0.2188	5.56	0.58	35	45	36	82	6	1.08
FF0560035T7R01	0.2205	5.60	0.58	35	45	36	82	6	1.08
FF0570035T7R01	0.2244	5.70	0.58	35	45	36	82	6	1.08
FF0580035T7R01	0.2283	5.80	0.58	35	45	36	82	6	1.08
FF0590035T7R01	0.2323	5.90	0.58	35	45	36	82	6	1.08
FF0600035T7R01	0.2362	6.00	0.58	35	45	36	82	6	1.08
FF0610043T0R01	0.2402	6.10	0.62	43	54	36	91	8	1.26
FF0620043T0R01	0.2441	6.20	0.62	43	54	36	91	8	1.26
FF0630043T0R01	0.2480	6.30	0.62	43	54	36	91	8	1.26
FF0635043T0R01	0.2500	6.35	0.62	43	54	36	91	8	1.26
FF0640043T0R01	0.2520	6.40	0.62	43	54	36	91	8	1.26
FF0650043T0R01	0.2559	6.50	0.62	43	54	36	91	8	1.26
FF0660043T0R01	0.2598	6.60	0.62	43	54	36	91	8	1.26

Drilling Coolant



5xD • Series FF (continued)

3-FLUTE FLAT BOTTOM SOLID CARBIDE DRILLS WITH COOLANT HOLES



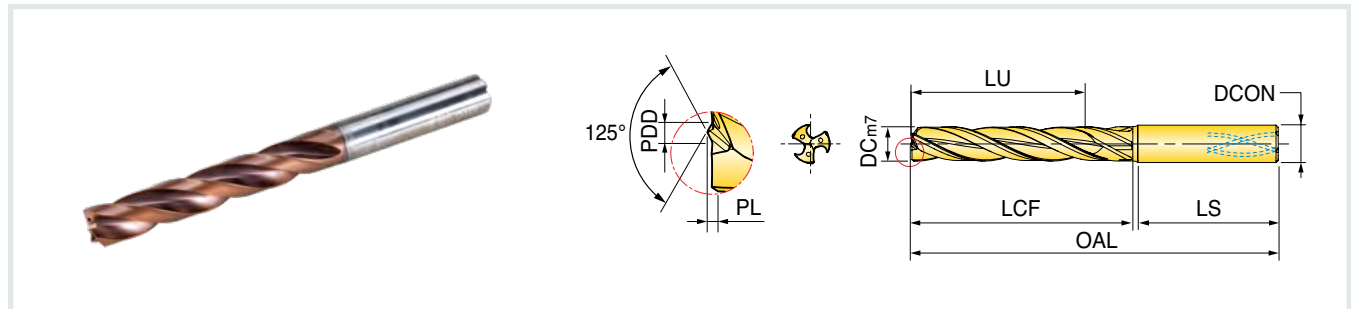
Part Number	DC Cutting Diameter		PL Point Length	LU Usable Length	LCF Chip Flute Length	LS Shank Length	OAL Overall Length	DCON Shank Diameter	PDD Drill Point Diameter
	INCH	MM							
FF0670043TOR01	0.2638	6.70	0.62	43	54	36	91	8	1.26
FF0680043TOR01	0.2677	6.80	0.62	43	54	36	91	8	1.26
FF0690043TOR01	0.2717	6.90	0.62	43	54	36	91	8	1.26
FF0700043TOR01	0.2756	7.00	0.62	43	54	36	91	8	1.26
FF0710043TOR01	0.2795	7.10	0.66	43	54	36	91	8	1.44
FF0714043TOR01	0.2813	7.15	0.66	43	54	36	91	8	1.44
FF0720043TOR01	0.2835	7.20	0.66	43	54	36	91	8	1.44
FF0730043TOR01	0.2874	7.30	0.66	43	54	36	91	8	1.44
FF0740043TOR01	0.2913	7.40	0.66	43	54	36	91	8	1.44
FF0750043TOR01	0.2953	7.50	0.66	43	54	36	91	8	1.44
FF0760043TOR01	0.2992	7.60	0.66	43	54	36	91	8	1.44
FF0770043TOR01	0.3031	7.70	0.66	43	54	36	91	8	1.44
FF0780043TOR01	0.3071	7.80	0.66	43	54	36	91	8	1.44
FF0790043TOR01	0.3110	7.90	0.66	43	54	36	91	8	1.44
FF0794043TOR01	0.3125	7.94	0.66	43	54	36	91	8	1.44
FF0800043TOR01	0.3150	8.00	0.66	43	54	36	91	8	1.44
FF0810049T1R01	0.3189	8.10	0.79	49	62	40	103	10	1.62
FF0820049T1R01	0.3228	8.20	0.79	49	62	40	103	10	1.62
FF0830049T1R01	0.3268	8.30	0.79	49	62	40	103	10	1.62
FF0840049T1R01	0.3307	8.40	0.79	49	62	40	103	10	1.62
FF0850049T1R01	0.3346	8.50	0.79	49	62	40	103	10	1.62
FF0860049T1R01	0.3386	8.60	0.79	49	62	40	103	10	1.62
FF0870049T1R01	0.3425	8.70	0.79	49	62	40	103	10	1.62
FF0873049T1R01	0.3437	8.73	0.79	49	62	40	103	10	1.62
FF0880049T1R01	0.3465	8.80	0.79	49	62	40	103	10	1.62
FF0890049T1R01	0.3504	8.90	0.79	49	62	40	103	10	1.62
FF0900049T1R01	0.3543	9.00	0.79	49	62	40	103	10	1.62
FF0910049T1R01	0.3583	9.10	0.82	49	62	40	103	10	1.80
FF0920049T1R01	0.3622	9.20	0.82	49	62	40	103	10	1.80
FF0930049T1R01	0.3661	9.30	0.82	49	62	40	103	10	1.80

Drilling Coolant



5xD • Series FF (continued)

3-FLUTE FLAT BOTTOM SOLID CARBIDE DRILLS WITH COOLANT HOLES



Part Number	DC Cutting Diameter		PL Point Length	LU Usable Length	LCF Chip Flute Length	LS Shank Length	OAL Overall Length	DCON Shank Diameter	PDD Drill Point Diameter
	INCH	MM							
FF0940049T1R01	0.3701	9.40	0.82	49	62	40	103	10	1.80
FF0950049T1R01	0.3740	9.50	0.82	49	62	40	103	10	1.80
FF0953049T1R01	0.3750	9.53	0.82	49	62	40	103	10	1.80
FF0960049T1R01	0.3780	9.60	0.82	49	62	40	103	10	1.80
FF0970049T1R01	0.3819	9.70	0.82	49	62	40	103	10	1.80
FF0980049T1R01	0.3858	9.80	0.82	49	62	40	103	10	1.80
FF0990049T1R01	0.3898	9.90	0.82	49	62	40	103	10	1.80
FF1000049T1R01	0.3937	10.00	0.82	49	62	40	103	10	1.80
FF1010056T2R01	0.3976	10.10	0.95	56	71	45	118	12	1.98
FF1020056T2R01	0.4016	10.20	0.95	56	71	45	118	12	1.98
FF1030056T2R01	0.4055	10.30	0.95	56	71	45	118	12	1.98
FF1040056T2R01	0.4094	10.40	0.95	56	71	45	118	12	1.98
FF1050056T2R01	0.4134	10.50	0.95	56	71	45	118	12	1.98
FF1060056T2R01	0.4173	10.60	0.95	56	71	45	118	12	1.98
FF1070056T2R01	0.4213	10.70	0.95	56	71	45	118	12	1.98
FF1080056T2R01	0.4252	10.80	0.95	56	71	45	118	12	1.98
FF1090056T2R01	0.4291	10.90	0.95	56	71	45	118	12	1.98
FF1100056T2R01	0.4331	11.00	0.95	56	71	45	118	12	1.98
FF1110056T2R01	0.4370	11.10	0.95	56	72	45	118	12	2.16
FF1111056T2R01	0.4375	11.11	0.98	56	72	45	118	12	2.16
FF1120056T2R01	0.4409	11.20	0.98	56	72	45	118	12	2.16
FF1130056T2R01	0.4449	11.30	0.98	56	72	45	118	12	2.16
FF1140056T2R01	0.4488	11.40	0.98	56	72	45	118	12	2.16
FF1150056T2R01	0.4528	11.50	0.98	56	72	45	118	12	2.16
FF1160056T2R01	0.4567	11.60	0.98	56	72	45	118	12	2.16
FF1170056T2R01	0.4606	11.70	0.98	56	72	45	118	12	2.16
FF1180056T2R01	0.4646	11.80	0.98	56	72	45	118	12	2.16
FF1190056T2R01	0.4685	11.90	0.98	56	72	45	118	12	2.16
FF1191056T2R01	0.4688	11.91	0.98	56	72	45	118	12	2.16
FF1200056T2R01	0.4724	12.00	0.98	56	72	45	118	12	2.16

Operating Guidelines - 3xD, 5xD, 8xD

ISO	Material Group No.	Condition	Hardness HB	Vc Cutting Speed SFM	Feed vs. Drill Diameter mm/rev (inch/rev)				
					4.0-5.0mm	5.1-6.0mm	6.1-8.0mm	8.1-10.0mm	10.1-12.0mm
					(.156-.193")	(.201-.232")	(.250-.313")	(.344-.394")	(.438-.469")
P	1	Low carbon steels (C <0.3)	125	262-459	.006-.010	.008-.014	.010-.018	.012-.022	.014-.024
	2		190	262-427					
	3	Carbon steels (C >0.3)	250	262-294					
	4		220	230-361					
	5		300	154-295					
	6	Low alloy steels	200	262-394			.010-.016	.012-.020	.014-.022
	7		275	230-361					
	8		300	154-295					
	9		350	131-230					
	10	Alloy steels	200	154-295	.006-.008	.008-.012	.010-.014	.012-.018	.014-.020
	11		325	131-262					
K	15	Gray cast iron	160	262-459	.008-.012	.010-.018	.014-.022	.016-.024	.018-.026
	16		250	230-394					
	17	Nodular cast iron	180	262-394		.008-.016	.012-.020	.014-.022	.016-.024
	18		260	230-361					
	19	Malleable cast iron	130	262-394					
	20		230	230-361					

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may cause for reductions in feeds and speed or dramatic increases. Additionally, DOC and WOC may need to be revised to optimize the tools performance.

Operating Guidelines - 12xD

ISO	Material Group No.	Condition	Hardness HB	Vc Cutting Speed SFM	Feed vs. Drill Diameter mm/rev (inch/rev)			
					6.0 mm	6.1-8.0mm	8.1-10.0mm	10.1-12.0mm
					(.236")	(.250-.313")	(.344-.394")	(.438-.469")
P	1	Low carbon steels (C <0.3)	125	131 - 262	.006 - .012	.008 - .016	.010 - .018	.012 - .020
	2		190	131 - 262				
	3	Carbon steels (C >0.3)	250	131 - 262				
	4		220	98 - 230				
	5		300	98 - 230				
	6	Low alloy steels	200	131 - 262		.008 - .014	.010 - .016	.012 - .018
	7		275	98 - 230				
	8		300	98 - 230				
	9		350	66 - 197				
	10	Alloy steels	200	98 - 230		.008 - .012	.010 - .014	.012 - .016
	11		325	66 - 197				
K	15	Gray cast iron	160	131 - 262	.008 - .016	.012 - .020	.014 - .022	.016 - .024
	16		250	131 - 262				
	17	Nodular cast iron	180	131 - 262	.006 - .014	.010 - .018	.012 - .020	.014 - .022
	18		260	98 - 230				
	19	Malleable cast iron	130	131 - 262				
	20		230	98 - 230				

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may cause for reductions in feeds and speed or dramatic increases. Additionally, DOC and WOC may need to be revised to optimize the tools performance.