

2012 CATALOG

FEATURING NEW
PRODUCTS AND
ADDITIONAL SIZES!

DRILLING PRODUCTS



BEST VALUE IN THE WORLD OF CUTTING TOOLS

CONTENTS

INSERTED DRILLS



3 – 9

i - DREAM DRILLS

3 – 5

i - Dream Drill Carbide Inserts and Holders

6 – 9

i - Dream Drill Data and Recommended Cutting Conditions



10 – 29

SPADE DRILL INSERTS AND HOLDERS



10 – 12

Super HSS (T15) Spade Drill Inserts

12 – 14

SM Point (T15) Spade Drill Inserts

15

Premium Cobalt (M48) Spade Drill Inserts

16 – 17

HSS (M4) Spade Drill Inserts

NEW SIZES AVAILABLE

17

Super Cobalt Throw Away T-15 Flat Bottom Spade Drill Inserts

18 – 19

Carbide Spade Drill Inserts

20 – 21

SM Point Carbide Spade Drill Inserts

STRAIGHT SHANK SPADE DRILL HOLDERS

22

Short Length – Intermediate Length – Standard Length

23

Extended Length – Long Length – Extra Long Length

TAPER SHANK SPADE DRILL HOLDERS

24

Short Length – Intermediate Length – Standard Length

25

Torx Screws, Drivers and Rotary Coolant Inducer

26 & 27

Selection and Applications
(Speeds, Feeds and Coating Recommendations)

28

Horsepower Consumption & Metal Removal Rates –
Coolant Recommendations

29

Super Cobalt Flat T-15 Bottom Spade Drill Inserts Cutting Conditions

NEW



HIGH PERFORMANCE CARBIDE DRILLS

NEW

30 – 50

DREAM DRILLS



30 – 31

CARBIDE DREAM DRILLS WITH COOLANT HOLES for ALUMINUM
Metric and Inch sizes with Technical Information



32 – 36

CARBIDE DREAM DRILLS INOX WITH COOLANT HOLES for STAINLESS STEEL

INCH SIZES

32

Short and Long Series

METRIC SIZES

33 – 35

Short, Long and Extra Long Series

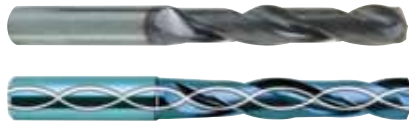
36

Technical Information for Carbide Dream Drills Inox with coolant holes

NEW

LIST PRICES SHOWN IN CATALOG

Contact Your Authorized Dealer For Actual Prices



37 – 42

**TiAlN Coated CARBIDE DREAM DRILLS for STEEL ALLOYS
INCH SIZES**

37

Short Series without Coolant Holes

38

Short and Long Series with Coolant Holes

METRIC SIZES

39

Short Series without Coolant Holes

40 – 42

Short, Long and Extra Long Series with Coolant Holes

43

Micro TiAlN-Carbide Dream Drills,
Long Series with and without Coolant Holes

44 & 45

Technical Information and Coolant Recommendations
for Carbide Dream Drills



46

MQL Type TiAlN-Carbide Dream Drills with Coolant Holes

47

Technical Information and Cutting Conditions for MQL Type



48 & 49

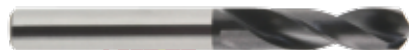
TiAlN-Carbide Dream Drills for High Hardened Steel



50

Technical Information and Cutting Conditions
for Hardened Steel Dream Drills

HIGH PERFORMANCE POWDERED METAL DRILLS



51

Powdered Metal Premium HSS-PM MULTI-1 Drill,
Fractional, Wire Gauge and Letter Sizes



52

Technical Information and Cutting Conditions for
Powdered Metal Premium HSS-PM MULTI-1 Drill

STANDARD CARBIDE DRILLS

53 – 55

STANDARD CARBIDE DRILLS



53 & 54

Carbide Standard Length Twist Drills

55

Technical Information and Cutting Conditions for
Carbide Standard Length Twist Drills

COBALT/HSS DRILLS

56 – 65

GOLD-P COATED



56 & 57

Gold-P Coated HSS Straight Shank Jobber Length

58 & 59

Gold-P Coated HSS-Co 8% Straight Shank Jobber Length

60 & 61

Gold-P Coated HSS-Co 5% Straight Shank Jobber Length –
Metric Sizes

62 & 63

Gold-P Coated HSS-Co 5% Straight Shank Jobber Length
Parabolic Flute for Deep Holes

64 & 65

Gold-P Coated HSS-Co 5% Straight Shank Jobber Length
Parabolic Flute for Deep Holes – Metric sizes

CONTENTS

66 – 76



66 & 67



68 & 69



70 & 71



72 & 73



74



75



76



77 COBALT NC SPOTTING DRILLS



77



77



78 CENTER DRILLS

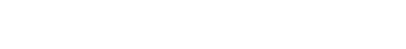
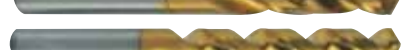
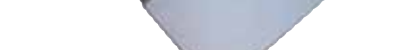
78



79 – 84



79 – 84



SCREW MACHINE DRILLS

HSS Screw Machine Drills

HSS-Co 8% Screw Machine Drills

HSS-Co 8% – Metric Sizes Screw Machine Drills

HSS-Co 5% Parabolic Flute Screw Machine Drills

HSS-Co 5% Straight Shank Taper Length Parabolic Flute

HSS (M2) Morse Taper Shank Twist Drill

HSS (M2) 118° Split Point 3Flat Black&Gold Silver&Deming Drill

NEW SIZES AVAILABLE

COBALT NC SPOTTING DRILLS

90° Standard Length

120° Standard Length

CENTER DRILLS

Regular Length and Long Length (Combined Drill and Counter Sink)

AIRCRAFT EXTENSION DRILLS

Aircraft Extension – 6.00 and 12.00 Length

85 TECHNICAL INFORMATION

86 GOLD-P COATED DRILL SETS

87 & 88

HSS-EX, HPD-SUS TWIST DRILLS

87

Stub Series

88

Jobber Series

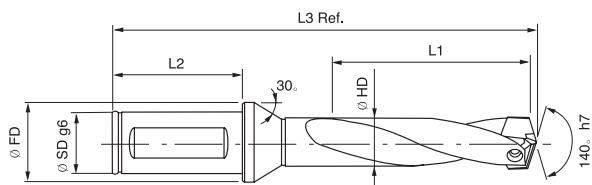
45 SPEED AND FEED DATA

89 RPM SURFACE FOOTAGE CONVERSION CHART

LIST PRICES SHOWN IN CATALOG

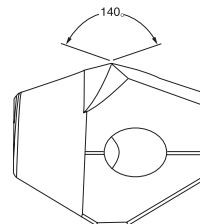
Contact Your Authorized Dealer For Actual Prices

i - Dream Drills: Carbide Inserts & Holders



-Feature of *i*-Dream Drill Holder-

- ▶ Special Alloy Steel that maintains its hardness and toughness under high temperatures.
- ▶ Innovative surface treatment that improves wear resistance and reduces corrosion.
- ▶ High Performance flute design allowing maximum chip evacuation and minimum interference.

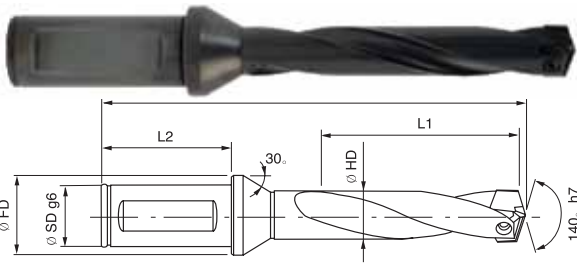


-Feature of *i*-Dream Drill Insert-

- ▶ Secure and accurate seating resulting in accurate repeatability and concentricity.

Series Min. to Max	INSERT				HOLDER											Torx Screw EDP No. List Price			
	Diameter		EDP No.	List Price	Diameter HD	Shank		Flange Diameter	Flute Length (L1)			Overall Length (L3) Ref.			Diameter Range		Drilling Depth	EDP No.	List Price
	Inch	Metric				Diameter	Length		3xD	5xD	7xD	3xD	5xD	7xD					
A 12mm to 13.99mm 3.6mm Thick	12mm	.4724	Y03A01	\$92.30	0.4606"	3/4"	2"	1"	1-13/16"	2-25/32"	3-3/4"	4-3/4"	5-3/4"	6-11/16"	0.4724 - 0.4917	3D	ZA0301	\$293.13	
	12.1mm	.4763	Y03A02	\$92.30					5D	ZA0501	\$380.17								
	12.2mm	.4803	Y03A03	\$92.30					7D	ZA0701	\$391.67								
	31/64"	.4844	Y03A04	\$92.30															
	12.5mm	.4921	Y03A05	\$92.30															
	12.6mm	.4960	Y03A06	\$92.30															
	1/2"	.5000	Y03A07	\$92.30	0.4803"	3/4"	2"	1"	1-7/8"	2-29/32"	3-15/16"	4-13/16"	5-13/16"	6-27/32"	0.4921 - 0.5114	3D	ZA0302	\$297.77	
	12.8mm	.5039	Y03A08	\$92.30					5D	ZA0502	\$391.67								
	12.9mm	.5078	Y03A09	\$92.30					7D	ZA0702	\$412.30								
	13.0mm	.5118	Y03A10	\$92.30															
	33/64"	.5156	Y03A11	\$92.30															
	13.2mm	.5196	Y03A12	\$92.30															
	17/32"	.5313	Y03A13	\$92.30	0.5000"	3/4"	2"	1"	1-31/32"	3-1/32"	4-3/32"	4-7/8"	5-15/16"	7"	0.5118 - 0.5311	3D	ZA0303	\$297.77	
	13.5mm	.5315	Y03A14	\$92.30					5D	ZA0503	\$391.67								
	13.6mm	.5354	Y03A15	\$92.30					7D	ZA0703	\$412.30								
	13.7mm	.5393	Y03A16	\$92.30															
	13.8mm	.5433	Y03A17	\$92.30															
	35/64"	.5469	Y03A18	\$92.30															
B 14mm to 15.99mm 4mm Thick	14mm	.5512	Y03B01	\$93.53	0.5394"	3/4"	2"	1"	2-3/32"	3-7/32"	4-3/8"	4-31/32"	6-3/32"	7-1/4"	0.5512 - 0.5705	3D	ZB0301	\$297.77	
	14.1mm	.5551	Y03B02	\$93.53					5D	ZB0501	\$391.67								
	14.2mm	.5590	Y03B03	\$93.53					7D	ZB0701	\$412.30								
	9/16"	.5625	Y03B04	\$93.53															
	14.3mm	.5629	Y03B05	\$93.53															
	14.4mm	.5669	Y03B06	\$93.53															
	14.5mm	.5709	Y03B07	\$93.53	0.5591"	3/4"	2"	1"	2-5/32"	3-11/32"	4-17/32"	5-1/32"	6-7/32"	7-13/32"	0.5709 - 0.5902	3D	ZB0302	\$297.77	
	14.6mm	.5748	Y03B08	\$93.53					5D	ZB0502	\$412.30								
	37/64"	.5781	Y03B09	\$93.53					7D	ZB0702	\$451.30								
	14.8mm	.5826	Y03B10	\$93.53															
	15mm	.5906	Y03B11	\$93.53															
	19/32"	.5938	Y03B12	\$93.53															
	15.1mm	.5944	Y03B13	\$93.53	0.5787"	3/4"	2"	1"	2-1/4"	3-15/32"	4-11/16"	5-1/8"	6-11/32"	7-9/16"	0.5906 - 0.6098	3D	ZB0303	\$297.77	
	15.2mm	.5984	Y03B14	\$93.53					5D	ZB0503	\$412.30								
	15.3mm	.6023	Y03B15	\$93.53					7D	ZB0703	\$451.30								
	39/64"	.6094	Y03B16	\$93.53															
	15.5mm	.6102	Y03B17	\$93.53															
	15.6mm	.6141	Y03B18	\$93.53															
	15.7mm	.6181	Y03B19	\$93.53	0.5984"	3/4"	2"	1"	2-5/16"	3-19/32"	4-13/16"	5-5/32"	6-13/32"	7-5/8"	0.6102 - 0.6295	3D	ZB0304	\$297.77	
	15.8mm	.6220	Y03B20	\$93.53					5D	ZB0504	\$412.30								
	5/8"	.6250	Y03B21	\$93.53					7D	ZB0704	\$451.30								

i - Dream Drills: Carbide Inserts & Holders

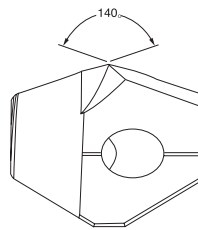


-Feature of i-Dream Drill Holder-

- ▶ Special Alloy Steel that maintains its hardness and toughness under high temperatures.
- ▶ Innovative surface treatment that improves wear resistance and reduces corrosion.
- ▶ High Performance flute design allowing maximum chip evacuation and minimum interference.

INSERT					HOLDER																
Series Min. to Max	Diameter		EDP No.	List Price	Diameter HD	Shank		Flange Diameter	Flute Length (L1)			Overall Length (L3) Ref.			Diameter Range	Drilling Depth	EDP No.	List Price	Torx Screw EDP No. List Price		
	Inch Metric	Decimal Inch				Diameter	Length.		3xD	5xD	7xD	3xD	5xD	7xD							
C 16mm to 17.99mm 4.5mm Thick	16mm	.6299	Y03C01	\$102.23	0.6181"	3/4"	2"	1"	2-5/16"	3-5/8"	4-29/32"	5-5/32"	6-15/32"	7-3/4"	0.6299 - 0.6492	3D	ZC0301	\$297.77	TC1617 \$8.93		
	16.2mm	.6378	Y03C03	\$102.23					5D	ZC0501	\$412.30										
	41/64"	.6406	Y03C04	\$102.23					7D	ZC0701	\$451.30										
	16.3mm	.6417	Y03C05	\$102.23	0.6378"	3/4"	2"	1"	2-13/32"	3-3/4"	5-1/32"	5-1/4"	6-9/16"	7-7/8"	0.6496 - 0.6689	3D	ZC0302	\$298.17			
	16.5mm	.6496	Y03C06	\$102.23					5D	ZC0502	\$426.30										
	21/32"	.6563	Y03C07	\$102.23					7D	ZC0702	\$460.83										
	16.8mm	.6614	Y03C08	\$102.23	0.6575"	3/4"	2"	1"	2-15/32"	3-27/32"	5-1/4"	5-9/32"	6-21/32"	8-1/32"	0.6693 - 0.6886	3D	ZC0303	\$298.17			
	17mm	.6693	Y03C09	\$102.23					5D	ZC0503	\$426.30										
	43/64"	.6719	Y03C10	\$102.23					7D	ZC0703	\$460.83										
	17.5mm	.6890	Y03C12	\$102.23	0.6772"	3/4"	2"	1"	2-17/32"	3-15/16"	5-11/32"	5-5/16"	6-23/32"	8-5/32"	0.6890 - 0.7083	3D	ZC0304	\$298.17			
	17.8mm	.7007	Y03C13	\$102.23					5D	ZC0504	\$426.30										
	45/64"	.7031	Y03C14	\$102.23					7D	ZC0704	\$460.83										
	D 18mm to 19.99mm 5mm Thick	18mm	.7087	Y03D01	\$103.27	0.6969"	1"	2-3/16"	1-1/4"	2-19/32"	4-1/16"	5-8/16"	5-7/8"	7-5/16"	8-25/32"	0.7087 - 0.7280	3D	ZD0301		\$298.17	TD1819 \$8.93
		23/32"	.7188	Y03D02	\$103.27					5D	ZD0501	\$426.30									
7D		ZD0701	\$460.83																		
18.5mm		.7283	Y03D03	\$103.27	0.7165"	1"	2-3/16"	1-1/4"	2-11/16"	4-3/16"	5-21/32"	5-29/32"	7-13/32"	8-29/32"	0.7283 - 0.7476	3D	ZD0302	\$298.17			
47/64"		.7344	Y03D04	\$103.27					5D	ZD0502	\$463.07										
18.8mm		.7401	Y03D05	\$103.27					7D	ZD0702	\$493.27										
19mm		.7480	Y03D06	\$103.27	0.7362"	1"	2-3/16"	1-1/4"	2-3/4"	4-9/32"	5-13/16"	5-31/32"	7-17/32"	9-1/16"	0.7480 - 0.7673	3D	ZD0303	\$298.17			
3/4"		.7500	Y03D07	\$103.27					5D	ZD0503	\$463.07										
49/64"		.7656	Y03D09	\$103.27					7D	ZD0703	\$493.27										
19.5mm		.7677	Y03D10	\$103.27	0.7559"	1"	2-3/16"	1-1/4"	2-25/32"	4-3/8"	5-15/16"	6-1/32"	7-19/32"	9-3/16"	0.7677 - 0.7870	3D	ZD0304	\$298.17			
19.8mm		.7795	Y03D11	\$103.27					5D	ZD0504	\$463.07										
25/32"		.7813	Y03D12	\$103.27					7D	ZD0704	\$493.27										
E 20mm to 21.99mm 5.5mm Thick	20mm	.7874	Y03E01	\$105.13	0.7756	1"	2-3/16"	1-1/4"	2-25/32"	4-13/32"	6-1/32"	5-31/32"	7-19/32"	9-7/32"	0.7874 - 0.8067	3D	ZE0301	\$298.17	TE2021 \$8.93		
	51/64"	.7969	Y03E02	\$105.13					5D	ZE0501	\$463.07										
	7D	ZE0701	\$493.27																		
	20.5mm	.8071	Y03E03	\$105.13	0.7953"	1"	2-3/16"	1-1/4"	2-7/8"	4-17/32"	6-3/16"	6-1/16"	7-23/32"	9-3/8"	0.8071 - 0.8264	3D	ZE0302	\$348.20			
	13/16"	.8125	Y03E04	\$105.13					5D	ZE0502	\$465.70										
	20.7mm	.8149	Y03E05	\$105.13					7D	ZE0702	\$524.47										
	21mm	.8268	Y03E06	\$105.13	0.8150"	1"	2-3/16"	1-1/4"	2-15/16"	4-21/32"	6-11/32"	6-5/32"	7-27/32"	9-17/32"	0.8268 - 0.8461	3D	ZE0303	\$348.20			
	21.03mm	.8385	Y03E07	\$105.13					5D	ZE0503	\$465.70										
	27/32"	.8438	Y03E08	\$105.13					7D	ZE0703	\$524.47										
	21.5mm	.8464	Y03E09	\$105.13	0.8346"	1"	2-3/16"	1-1/4"	3-31/32"	4-23/32"	6-15/32"	6-3/16"	7-7/8"	9-19/32"	0.8465 - 0.8657	3D	ZE0304	\$348.20			
	21.7mm	.8543	Y03E10	\$105.13					5D	ZE0504	\$465.70										
55/64"	.8594	Y03E11	\$105.13	7D					ZE0704	\$524.47											
F 22mm to 23.99mm 6mm Thick	22mm	.8661	Y03F01	\$107.50	0.8543"	1"	2-3/16"	1-1/4"	3-1/8"	4-27/32"	6-5/8"	6-1/4"	8"	9-3/4"	0.8661 - 0.8854	3D	ZF0301	\$348.20	TF2223 \$8.93		
	7/8"	.8750	Y03F02	\$107.50					5D	ZF0501	\$465.70										
	7D	ZF0701	\$524.47																		
	22.5mm	.8858	Y03F03	\$107.50	0.8740"	1"	2-3/16"	1-1/4"	3-5/32"	4-31/32"	6-25/32"	6-1/4"	8-1/16"	9-7/8"	0.8858 - 0.9051	3D	ZF0302	\$348.20			
	57/64"	.8906	Y03F04	\$107.50					5D	ZF0502	\$496.20										
	22.7mm	.8937	Y03F05	\$107.50					7D	ZF0702	\$594.13										
	23mm	.9055	Y03F06	\$107.50	0.8937"	1"	2-3/16"	1-1/4"	3-7/32"	5-3/32"	6-15/16"	6-11/32"	8-3/16"	10-1/32"	0.9055 - 0.9248	3D	ZF0303	\$348.20			
	29/32"	.9063	Y03F07	\$107.50					5D	ZF0503	\$496.20										
	59/64"	.9219	Y03F08	\$107.50					7D	ZF0703	\$594.13										
	23.5mm	.9252	Y03F09	\$107.50	0.9134"	1"	2-3/16"	1-1/4"	3-5/16"	5-5/32"	7-1/16"	6-13/32"	8-9/32"	10-5/32"	0.9252 - 0.9445	3D	ZF0304	\$348.20			
	23.7mm	.9330	Y03F10	\$107.50					5D	ZF0504	\$496.20										
15/16"	.9375	Y03F11	\$107.50	7D					ZF0704	\$594.13											

i - Dream Drills: Carbide Inserts & Holders



-Feature of *i* - Dream Drill Insert-

- ▶ Secure and accurate seating resulting in accurate repeatability and concentricity.

INSERT					HOLDER														
Series Min. to Max	Diameter		EDP No.	List Price	Diameter HD	Shank		Flange Diameter	Flute Length (L1)			Overall Length (L3) Ref.			Diameter Range	Drilling Depth	EDP No.	List Price	Torx Screw EDP No. List Price
	Inch Metric	Decimal Inch				SD g6	L2		FD	3xD	5xD	7xD	3xD	5xD					
G 24mm to 25.99mm 6.5mm Thick	24mm	.9449	Y03G01	\$129.43	0.9331"	1-1/4"	2-3/8"	1-15/32"	3-11/32"	5-9/32"	7-7/32"	6-25/32"	8-11/16"	10-5/8"	0.9449 - 0.9642	3D	ZG0301	\$348.20	TG2425 \$8.93
	24.21mm	.9531	Y03G02	\$129.43					5D	ZG0501	\$496.20								
	24.5mm	.9645	Y03G03	\$129.43					7D	ZG0701	\$594.13								
	31/32"	.9688	Y03G04	\$129.43	0.9528"	1-1/4"	2-3/8"	1-15/32"	3-7/16"	5-13/32"	7-3/8"	6-13/16"	8-25/32"	10-3/4"	0.9646 - 0.9839	3D	ZG0302	\$430.93	
	63/64"	.9843	Y03G06	\$129.43					5D	ZG0502	\$526.70								
	1"	1.0000	Y03G07	\$129.43					7D	ZG0702	\$605.00								
	25.5mm	1.0039	Y03G08	\$129.43	0.9724"	1-1/4"	2-3/8"	1-15/32"	3-1/2"	5-1/2"	7-17/32"	6-7/8"	8-29/32"	10-29/32"	0.9843 - 1.0035	3D	ZG0303	\$430.93	
	25.67	1.0106	Y03G09	\$129.43					5D	ZG0503	\$526.70								
	25.7mm	1.0118	Y03G10	\$129.43					7D	ZG0703	\$605.00								
	1-1/64"	1.0156	Y03G11	\$129.43					3D	ZG0304	\$430.93								
H 26mm to 27.99mm 7.1mm Thick	26mm	1.0236	Y03H01	\$133.03	1.0118"	1-1/4"	2-3/8"	1-15/32"	3-5/8"	5-21/32"	7-23/32"	6-31/32"	9-1/32"	11-1/16"	1.0236 - 1.0429	3D	ZH0301	\$430.93	TH2627 \$8.93
	1-1/32"	1.0313	Y03H02	\$133.03					5D	ZH0501	\$526.70								
	26.5mm	1.0433	Y03H03	\$133.03					7D	ZH0701	\$605.00								
	1-3/64"	1.0469	Y03H04	\$133.03	1.0315"	1-1/4"	2-3/8"	1-15/32"	3-21/32"	5-3/4"	7-27/32"	7"	9-3/32"	11-3/16"	1.0433 - 1.0626	3D	ZH0302	\$430.93	
	1-1/16"	1.0625	Y03H05	\$133.03					5D	ZH0502	\$598.47								
	27mm	1.0630	Y03H06	\$133.03					7D	ZH0702	\$705.07								
	27.5mm	1.0826	Y03H07	\$133.03	1.0512"	1-1/4"	2-3/8"	1-15/32"	3-3/4"	5-7/8"	8"	7-3/32"	9-7/32"	11-11/32"	1.0630 - 1.0823	3D	ZH0303	\$430.93	
	1-3/32"	1.0938	Y03H08	\$133.03					5D	ZH0503	\$598.47								
	27.5mm	1.0826	Y03H07	\$133.03					7D	ZH0703	\$705.07								
	1-3/32"	1.0938	Y03H08	\$133.03					3D	ZH0304	\$430.93								
I 28mm to 29.99mm 7.7mm Thick	28mm	1.1024	Y03I01	\$135.73	1.0906"	1-1/4"	2-3/8"	1-15/32"	3-29/32"	6-3/32"	8-5/16"	7-7/32"	9-13/32"	11-5/8"	1.1024 - 1.1217	3D	ZI0301	\$430.93	TI2829 \$8.93
	1-7/64"	1.1094	Y03I02	\$135.73					5D	ZI0501	\$598.47								
	28.5mm	1.2220	Y03I03	\$135.73					7D	ZI0701	\$705.07								
	1-1/8"	1.1250	Y03I04	\$135.73	1.1102"	1-1/4"	2-3/8"	1-15/32"	3-15/16"	6-3/16"	8-7/16"	7-1/4"	9-1/2"	11-23/32"	1.1220 - 1.1413	3D	ZI0302	\$565.90	
	29mm	1.1417	Y03I05	\$135.73					5D	ZI0502	\$598.47								
	1-5/32"	1.1563	Y03I06	\$135.73					7D	ZI0702	\$709.57								
	29.5mm	1.1614	Y03I07	\$135.73	1.1299"	1-1/4"	2-3/8"	1-15/32"	4-1/16"	6-3/8"	8-21/32"	7-5/16"	9-21/32"	11-15/16"	1.1417 - 1.1610	3D	ZI0303	\$565.90	
	1-5/32"	1.1563	Y03I06	\$135.73					5D	ZI0503	\$598.53								
	29.5mm	1.1614	Y03I07	\$135.73					7D	ZI0703	\$709.57								
	1-5/32"	1.1563	Y03I06	\$135.73					3D	ZI0304	\$565.90								
J 30mm to 31.99mm 8mm Thick	30mm	1.1811	Y03J01	\$139.57	1.1693"	1-1/4"	2-3/8"	1-15/32"	4-3/16"	6-17/32"	8-29/32"	7-7/16"	9-13/16"	12-5/32"	1.1811 - 1.2004	3D	ZJ0301	\$565.90	TJ2831 \$8.93
	1-3/16"	1.1875	Y03J02	\$139.57					5D	ZJ0501	\$598.53								
	30.5mm	1.2007	Y03J03	\$139.57					7D	ZJ0701	\$709.57								
	1-7/32"	1.2188	Y03J05	\$139.57	1.1890"	1-1/4"	2-3/8"	1-15/32"	4-1/4"	6-11/16"	9-1/8"	7-15/32"	9-29/32"	12-3/8"	1.2008 - 1.2201	3D	ZJ0302	\$565.90	
	31mm	1.2205	Y03J06	\$139.57					5D	ZJ0502	\$598.53								
	1-7/32"	1.2188	Y03J05	\$139.57					7D	ZJ0702	\$716.20								
	31.5mm	1.2401	Y03J07	\$139.57	1.2087"	1-1/4"	2-3/8"	1-15/32"	4-9/32"	6-23/32"	9-3/16"	7-17/32"	9-31/32"	12-13/32"	1.2205 - 1.2398	3D	ZJ0303	\$565.90	
	1-1/4"	1.2500	Y03J08	\$139.57					5D	ZJ0503	\$598.53								
1-1/4"	1.2500	Y03J08	\$139.57	1.2283"	1-1/4"	2-3/8"	1-15/32"	4-13/32"	6-15/16"	9-7/16"	7-5/8"	10-5/32"	12-11/16"	1.2402 - 1.2594	3D	ZJ0304	\$565.90		
1-1/4"	1.2500	Y03J08	\$139.57					5D	ZJ0504	\$598.53									
1-1/4"	1.2500	Y03J08	\$139.57	7D	ZJ0704	\$716.20													

Coating: TiN, TiCN & Hardslick not stocked but available on request.

ASSEMBLY



Make sure to clean the insert and insert seat.



Slide the drill insert into the slot of the holder and press down the insert to touch the bottom of the slot.

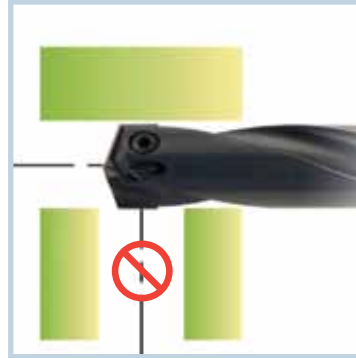


After confirming the insert is pressed down to the bottom of the slot, tighten the screw using anti-seize compound.



Use the wing type or T-type wrench.

CAUTION AND NOT-RECOMMENDED APPLICATION



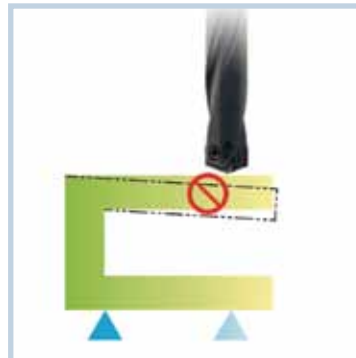
Intersecting cross hole is bigger than the drill insert's Margin Length.



Material with slanting entrance and exit over 7 degree. (If drilling 7 degree or under slanting surface, reduce the feed about 30-50 %)



For drilling stacked plates, minimize the space between the plates. The space stacked plates can cause insert breakage or poor chip control.



The material needs to be fixtured securely before drilling.

TROUBLE SHOOTING



Heavy flank wear / Fast flank wear

- Reduce cutting speed
- Increase feed



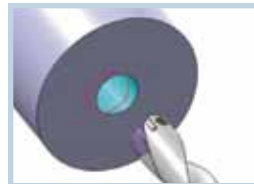
Wear of land margin

- Rigid clamping of workpiece
- Reduce cutting speed
- Increase coolant flow



Chipping on cutting edge

- Reduce feed
- Check the rigidity of spindle and chuck
- Rigid clamping of workpiece



Unsatisfactory positioning of the hole

- Rigid clamping of workpiece
- Reduce feed during entrance or exit



Build up on cutting edge

- Increase cutting speed
- Use a coated insert



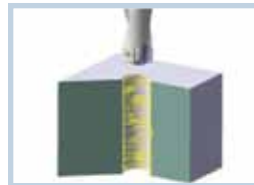
Scratching on holder

- Rigid clamping of workpiece
- Reduce feed
- Increase coolant flow



Chipping or break down on outer corner

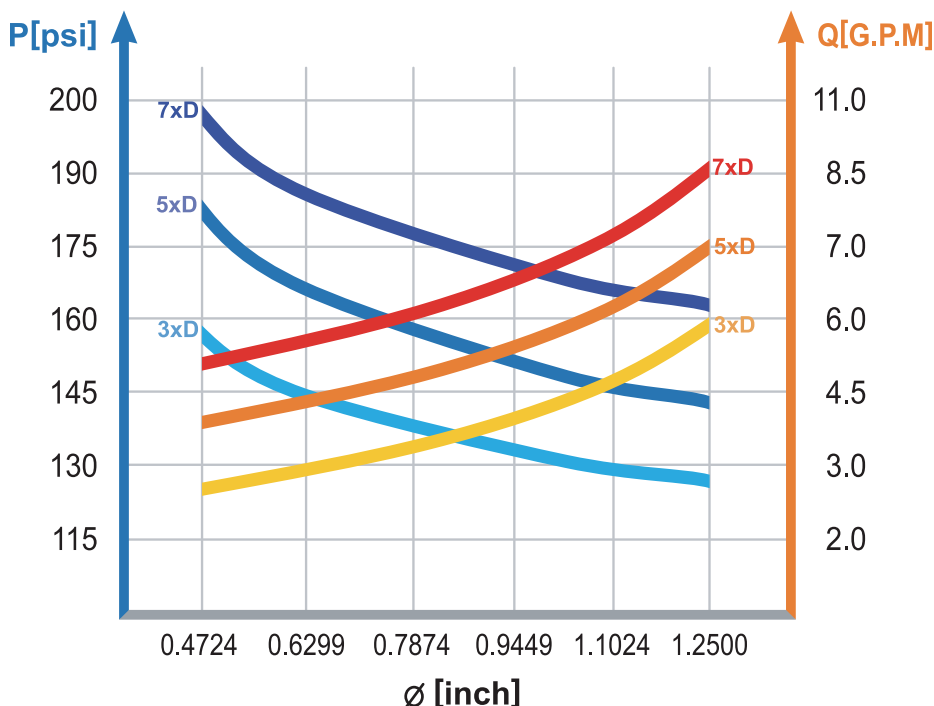
- Reduce feed
- Rigid clamping of workpiece



Unsatisfactory surface finish

- Rigid clamping of workpiece
- Increase coolant flow and pressure

RECOMMENDED COOLANT PRESSURE AND FLOW RATE ON VERTICAL DRILLING



- Recommended emulsion mix is 6% - 8%.
- For Drilling in Stainless and High Strength steels, a mix of 10% is recommended.
- For horizontal drilling, 30% reduction on the coolant pressure and flow rate is possible.
- Dry drilling is possible for 1-2xD drilling. But not recommended.

i - Dream Drills: Recommended Cutting Conditions

i - Dream Drill **METRIC**

Material		Tensile Strength	Hardness		Cutting Speed	Feed [mm/rev]				
		[N/mm ²]	HB	HRc	Vc [M/min]	Ø12.0 ~ Ø14.9	Ø15.0 ~ Ø17.9	Ø18.0 ~ Ø21.9	Ø22.0 ~ Ø26.9	Ø27.0 ~ Ø31.9
Non-alloyed steel, Cast steel Free-machining steel	1213,12L13,1215, 12L14,1118 etc	~ 500	100 ~ 150		95~120	0.16~0.28	0.21~0.35	0.27~0.40	0.34~0.52	0.37~0.55
		500 ~ 850	150 ~ 250	~ 24	80~105	0.14~0.24	0.21~0.35	0.27~0.40	0.34~0.52	0.37~0.55
Low-alloyed steel, Cast steel(less than 5% alloying elements) Carbon steel	1015,1020,1140, 1025, 1035,1050, 1045,1055 etc	~ 450	85 ~ 125		90~115	0.14~0.25	0.20~0.33	0.25~0.39	0.31~0.47	0.34~0.50
		450 ~ 755	125 ~ 225	~ 19	70~90	0.12~0.20	0.17~0.28	0.22~0.32	0.30~0.46	0.33~0.49
		755 ~ 900	225 ~ 265	19 ~ 27	60~80	0.12~0.20	0.17~0.28	0.22~0.32	0.30~0.46	0.33~0.49
		900 ~ 1200	265 ~ 350	27 ~ 37	55~70	0.10~0.16	0.15~0.25	0.21~0.30	0.25~0.38	0.29~0.43
Alloyed steel	1015,1020,1140, 1025, 1035,1050, 1045,1055 etc	~ 600	125 ~ 175	~ 7	80~100	0.14~0.24	0.17~0.28	0.22~0.32	0.30~0.46	0.34~0.50
		600 ~ 800	175 ~ 235	7 ~ 22	70~90	0.12~0.20	0.17~0.28	0.22~0.32	0.30~0.46	0.34~0.50
		800 ~ 950	235 ~ 280	22 ~ 29	60~80	0.12~0.20	0.15~0.25	0.22~0.32	0.30~0.46	0.34~0.50
		950 ~ 1110	280 ~ 330	29 ~ 35	55~70	0.10~0.16	0.13~0.21	0.21~0.30	0.25~0.38	0.29~0.43
		1110 ~ 1230	330 ~ 360	35 ~ 39	45~60	0.08~0.12	0.13~0.21	0.21~0.30	0.25~0.38	0.29~0.43
High-alloyed steel	A355,9840,4340 etc	600 ~ 1020	225 ~ 300	19 ~ 32	45~60	0.12~0.20	0.15~0.25	0.21~0.30	0.20~0.31	0.24~0.35
		1020 ~ 1200	300 ~ 355	32 ~ 38	40~55	0.10~0.16	0.11~0.18	0.21~0.30	0.20~0.31	0.24~0.35
		1200 ~ 1330	355 ~ 390	38 ~ 42	40~50	0.08~0.12	0.09~0.14	0.18~0.26	0.19~0.29	0.23~0.34
Structural steel	A36,A516,A182 etc	350 ~ 500	100 ~ 150		75~95	0.14~0.24	0.21~0.35	0.27~0.39	0.29~0.44	0.32~0.47
		500 ~ 850	150 ~ 250	~ 24	60~75	0.12~0.20	0.20~0.33	0.22~0.32	0.25~0.38	0.29~0.43
		850 ~ 1200	250 ~ 355	24 ~ 38	50~65	0.10~0.16	0.17~0.28	0.21~0.30	0.21~0.32	0.26~0.38
Tool steel	H13,H21,A2,S1 etc	500 ~ 705	150 ~ 210	~ 16	50~65	0.10~0.16	0.13~0.21	0.18~0.26	0.20~0.31	0.24~0.35
		705 ~ 950	210 ~ 280	16 ~ 29	40~50	0.10~0.16	0.13~0.21	0.18~0.26	0.20~0.31	0.24~0.35
Stainless steel	Austenitic and Austenitic/Ferritic SUS304,310,316,410,330 etc	450 ~ 610	135 ~ 185	~ 9	45~60	0.10~0.13	0.16~0.20	0.20~0.24	0.23~0.25	0.27~0.29
		610 ~ 930	185 ~ 275	9 ~ 28	35~45	0.10~0.13	0.14~0.17	0.17~0.20	0.19~0.21	0.23~0.24
Grey cast iron	Pearlitic,Ferritic A48-76, 20B, 25B, 30B etc Pearlitic A48-35B, 40B, 50B, 60B ect	500 ~ 700	150 ~ 210	~ 16	100~125	0.15~0.26	0.20~0.37	0.27~0.42	0.36~0.51	0.40~0.55
		700 ~ 850	210 ~ 250	16 ~ 24	75~95	0.11~0.20	0.16~0.29	0.20~0.30	0.25~0.35	0.29~0.40
Cast iron nodular	Ferritic 60-40-18, 80-55-06 ect Pearlitic 100-70-03 etc	540	165	4	95~120	0.13~0.22	0.17~0.31	0.21~0.32	0.28~0.40	0.32~0.44
		850	250	24	75~95	0.11~0.20	0.14~0.26	0.19~0.29	0.25~0.35	0.29~0.40
Malleable cast iron	Ferritic A48-74, A220-76, 32510 etc Pearlitic 50005, 70003 ect	450	125		100~125	0.13~0.22	0.17~0.31	0.21~0.32	0.28~0.40	0.32~0.44
		780	230	21	75~95	0.11~0.18	0.14~0.26	0.19~0.29	0.25~0.35	0.29~0.40
Aluminum alloy(Wrought)	not heat treatable 1000 etc hardened 2024, 2017, 5052, 7075 etc	200	60		335~420	0.11~0.18	0.17~0.26	0.28~0.35	0.32~0.39	0.36~0.42
		335	100		230~290	0.13~0.22	0.29~0.45	0.38~0.48	0.51~0.61	0.56~0.66
Aluminum alloy(Cast)	<12% Si, not heat treatable 7050, A360, A413 etc <12% Si, hardened 4218B etc >12% Si, not heat treatable 390, 393 etc	250	75		335~420	0.21~0.37	0.31~0.49	0.41~0.52	0.47~0.57	0.50~0.59
		300	90		285~360	0.21~0.37	0.30~0.47	0.41~0.52	0.47~0.57	0.50~0.59
		450	130		205~260	0.19~0.33	0.28~0.44	0.37~0.47	0.45~0.54	0.48~0.57
Copper alloys	Free machining(Pb>1%) C93200, C836000, C9370, C9380 Brass C23000, C26000, 27200, C86200 Electrolytic copper C6300, C90700, C90800, B-148-52	370	110		115~145	0.16~0.28	0.23~0.36	0.29~0.36	0.37~0.45	0.41~0.48
		300	90		145~185	0.17~0.29	0.24~0.37	0.30~0.38	0.38~0.46	0.42~0.49
		200	100		95~120	0.06~0.09	0.09~0.13	0.11~0.13	0.15~0.18	0.19~0.22

RPM = revolution per minute (rev/min)
M/min = surface meter per minute(M/min)
DIA = diameter of drill (mm)
mm/rev = feed rate(mm/rev)

* Formulas :

$$\begin{aligned} \text{M/min} &= \frac{(\text{RPM}) \cdot (\pi) \cdot (\text{DIA.})}{1000} \\ \text{mm/min} &= (\text{RPM}) \cdot (\text{mm/rev}) \\ \text{RPM} &= \frac{(\text{M/min}) \cdot (1000)}{(\pi) \cdot (\text{DIA.})} \end{aligned}$$

- ▶ The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.
- ▶ Recommend you to reduce the feed rate to 85%,70% when you use 5xD,7xD holders.

i - Dream Drills: Recommended Cutting Conditions

i - Dream Drill **INCH**

Material		Tensile Strength	Hardness		Cutting Speed	Feed [IPR]				
			[N/mm ²]	HB		HRc	Vc [SFM]	Ø31/64 ~Ø37/64	Ø19/32 ~Ø45/64	Ø23/32 ~Ø55/64
Non-alloyed steel, Cast steel Free-machining steel	1213,12L13,1215, 12L14,1118 etc	~ 500	100 ~ 150		312-394	0.006~0.011	0.008~0.014	0.011~0.016	0.013~0.020	0.015~0.022
		500 ~ 850	150 ~ 250	~ 24	262-344	0.006~0.009	0.008~0.014	0.011~0.016	0.013~0.020	0.015~0.022
Low-alloyed steel, Cast steel(less than 5% alloying elements) Carbon steel	1015,1020,1140, 1025, 1035,1050, 1045,1055 etc	~ 450	85 ~ 125		295-377	0.006~0.010	0.008~0.013	0.010~0.015	0.012~0.019	0.013~0.020
		450 ~ 755	125 ~ 225	~ 19	230-295	0.005~0.008	0.007~0.011	0.009~0.013	0.012~0.018	0.013~0.019
		755 ~ 900	225 ~ 265	19 ~ 27	197~262	0.005~0.008	0.007~0.011	0.009~0.013	0.012~0.018	0.013~0.019
		900 ~ 1200	265 ~ 350	27 ~ 37	180~230	0.004~0.006	0.006~0.010	0.008~0.012	0.010~0.015	0.011~0.017
Alloyed steel	8620, 4130, 4137, 4140, 6150 etc	~ 600	125 ~ 175	~ 7	262-328	0.006~0.009	0.007~0.011	0.009~0.013	0.012~0.018	0.013~0.020
		600 ~ 800	175 ~ 235	7 ~ 22	230~295	0.005~0.008	0.007~0.011	0.009~0.013	0.012~0.018	0.013~0.020
		800 ~ 950	235 ~ 280	22 ~ 29	197~262	0.005~0.008	0.006~0.010	0.009~0.013	0.012~0.018	0.013~0.020
		950 ~ 1110	280 ~ 330	29 ~ 35	180~230	0.004~0.006	0.005~0.008	0.008~0.012	0.010~0.015	0.011~0.017
		1110 ~ 1230	330 ~ 360	35 ~ 39	148~197	0.003~0.005	0.005~0.008	0.008~0.012	0.010~0.015	0.011~0.017
High-alloyed steel	A355,9840,4340 etc	600 ~ 1020	225 ~ 300	19 ~ 32	148~197	0.005~0.008	0.006~0.010	0.008~0.012	0.008~0.012	0.009~0.014
		1020 ~ 1200	300 ~ 355	32 ~ 38	131~180	0.004~0.006	0.004~0.007	0.008~0.012	0.008~0.012	0.009~0.014
		1200 ~ 1330	355 ~ 390	38 ~ 42	131~164	0.003~0.005	0.004~0.006	0.007~0.010	0.007~0.011	0.009~0.013
Structural steel	A36,A516,A182 etc	350 ~ 500	100 ~ 150		246-312	0.006~0.009	0.008~0.014	0.011~0.015	0.011~0.017	0.013~0.019
		500 ~ 850	150 ~ 250	~ 24	197~246	0.005~0.008	0.008~0.013	0.009~0.013	0.010~0.015	0.011~0.017
		850 ~ 1200	250 ~ 355	24 ~ 38	164~213	0.004~0.006	0.007~0.011	0.008~0.012	0.008~0.013	0.010~0.015
Tool steel	H13,H21,A2,S1 etc	500 ~ 705	150 ~ 210	~ 16	164~213	0.004~0.006	0.005~0.008	0.007~0.010	0.008~0.012	0.009~0.014
		705 ~ 950	210 ~ 280	16 ~ 29	131~164	0.004~0.006	0.005~0.008	0.007~0.010	0.008~0.012	0.009~0.014
Stainless steel	Austenitic and Austenitic/Ferritic SUS304,310,316,410,330 etc	450 ~ 610	135 ~ 185	~ 9	148~197	0.004~0.005	0.006~0.008	0.008~0.009	0.009~0.010	0.011~0.011
		610 ~ 930	185 ~ 275	9 ~ 28	115~148	0.004~0.005	0.006~0.007	0.007~0.008	0.007~0.008	0.009~0.009
Grey cast iron	Pearlitic,Ferritic A48-76, 20B, 25B, 30B etc Pearlitic A48-35B, 40B, 50B, 60B ect	500 ~ 700	150 ~ 210	~ 16	328~410	0.006~0.010	0.008~0.015	0.011~0.017	0.014~0.020	0.016~0.022
		700 ~ 850	210 ~ 250	16 ~ 24	246~312	0.004~0.008	0.006~0.011	0.008~0.012	0.010~0.014	0.011~0.016
Cast iron nodular	Ferritic 60-40-18, 80-55-06 ect Pearlitic 100-70-03 etc	540	165	4	312~394	0.005~0.009	0.007~0.012	0.008~0.013	0.011~0.016	0.013~0.017
		850	250	24	246~312	0.004~0.008	0.006~0.010	0.007~0.011	0.010~0.014	0.011~0.016
Malleable cast iron	Ferritic A48-74, A220-76, 32510 etc Pearlitic 50005, 70003 ect	450	125		328~410	0.005~0.009	0.007~0.012	0.008~0.013	0.011~0.016	0.013~0.017
		780	230	21	246~312	0.004~0.007	0.006~0.010	0.007~0.011	0.010~0.014	0.011~0.016
Aluminum alloy(Wrought)	not heat treatable 1000 etc hardened 2024, 2017, 5052, 7075 etc	200	60		1099~1378	0.004~0.007	0.007~0.010	0.011~0.014	0.013~0.015	0.014~0.017
		335	100		755~951	0.005~0.009	0.011~0.018	0.015~0.019	0.020~0.024	0.022~0.026
Aluminum alloy(Cast)	<12% Si, not heat treatable 7050, A360, A413 etc <12% Si, hardened 4218B etc >12% Si, not heat treatable 390, 393 etc	250	75		1099~1378	0.008~0.015	0.012~0.019	0.016~0.020	0.019~0.022	0.020~0.023
		300	90		935~1181	0.008~0.015	0.012~0.019	0.016~0.020	0.019~0.022	0.020~0.023
		450	130		673~853	0.007~0.013	0.011~0.017	0.015~0.019	0.018~0.021	0.019~0.022
Copper alloys	Free machining(Pb>1%) C93200, C836000, C9370, C9380 Brass C23000, C26000, 27200, C86200 Electrolytic copper C6300, C90700, C90800, B-148-52	370	110		377~476	0.006~0.011	0.009~0.014	0.011~0.014	0.015~0.018	0.016~0.019
		300	90		476~607	0.007~0.011	0.009~0.015	0.012~0.015	0.015~0.018	0.017~0.019
		200	100		312~394	0.002~0.004	0.004~0.005	0.004~0.005	0.006~0.007	0.007~0.009

RPM = revolution per minute (rev/min)
SFM = surface feet per minute (ft/min)
DIA = diameter of drill (inch)
IPR = feed rate (inch/rev)
IPM = inch per minute penetration rate

* Formulas :

$$\text{SFM} = \frac{(\text{RPM}) \cdot (\pi) \cdot (\text{DIA.})}{12}$$

$$\text{IPM} = (\text{RPM}) \cdot (\text{IPR})$$

$$\text{RPM} = \frac{(\text{SFM}) \cdot (12)}{(\pi) \cdot (\text{DIA.})}$$

- ▶ The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
- ▶ Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.
- ▶ Recommend you to reduce the feed rate to 85%,70% when you use 5xD,7xD holders.

DRILL INSERTS

SUPER HSS (T15) SPADE DRILL								SUPER HSS (T15) SPADE DRILL							
Series Min. to Max (mm/inch)	Diameter		TiN Coated EDP No.	TiN Coated List Price	TiAlN Coated EDP No.	Hardslick Coated EDP No.	TiAlN & Hardslick Coated List Price	Series Min. to Max (mm/inch)	Diameter		TiN Coated EDP No.	TiN Coated List Price	TiAlN Coated EDP No.	Hardslick Coated EDP No.	TiAlN & Hardslick Coated List Price
	Inch Metric	Decimal (inch)							Inch Metric	Decimal (inch)					
Y .374" to .436" (3/32") Thick	9.5mm	.3740"	S06Y01	\$36.00	S08Y01	S09Y01	\$43.23*	1 .690" to .960" (5/32") Thick	19.5mm	.7677"	S06109	\$43.70	S08109	S09109	\$51.80
	3/8"	.3750"	S06Y02	\$36.00	S08Y02	S09Y02	\$43.23*		25/32"	.7813"	S06110	\$43.70	S08110	S09110	\$51.80
	9.8mm	.3860"	S06Y03	\$36.00	S08Y03	S09Y03	\$43.23*		20mm	.7874"	S06111	\$43.70	S08111	S09111	\$51.80
	25/64"	.3906"	S06Y04	\$36.00	S08Y04	S09Y04	\$43.23*		51/64"	.7969"	S06160	\$43.70	S08160	S09160	\$51.80
	10mm	.3937"	S06Y05	\$36.00	S08Y05	S09Y05	\$43.23*		20.5mm	.8071"	S06112	\$43.70	S08112	S09112	\$51.80
	10.2mm	.4016"	S06Y06	\$36.00	S08Y06	S09Y06	\$43.23*		13/16"	.8125"	S06113	\$43.70	S08113	S09113	\$51.80
	13/32"	.4063"	S06Y07	\$36.00	S08Y07	S09Y07	\$43.23*		21mm	.8268"	S06114	\$43.70	S08114	S09114	\$51.80
	10.5mm	.4134"	S06Y08	\$36.00	S08Y08	S09Y08	\$43.23*		27/32"	.8438"	S06115	\$43.70	S08115	S09115	\$51.80
	27/64"	.4219"	S06Y09	\$36.00	S08Y09	S09Y09	\$43.23*		55/64"	.8594"	S06161	\$43.70	S08161	S09161	\$51.80
	10.8mm	.4252"	S06Y10	\$36.00	S08Y10	S09Y10	\$43.23*		22mm	.8661"	S06116	\$43.70	S08116	S09116	\$51.80
	11mm	.4331"	S06Y11	\$36.00	S08Y11	S09Y11	\$43.23*		7/8"	.8750"	S06117	\$43.70	S08117	S09117	\$51.80
Z .437" to .510" (3/32") Thick	7/16"	.4375"	S06Z01	\$36.00	S08Z01	S09Z01	\$43.23*	57/64"	.8906"	S06162	\$43.70	S08162	S09162	\$51.80	
	11.5mm	.4528"	S06Z02	\$36.00	S08Z02	S09Z02	\$43.23*	23mm	.9055"	S06118	\$43.70	S08118	S09118	\$51.80	
	29/64"	.4531"	S06Z03	\$36.00	S08Z03	S09Z03	\$43.23*	29/32"	.9063"	S06119	\$43.70	S08119	S09119	\$51.80	
	15/32"	.4688"	S06Z04	\$36.00	S08Z04	S09Z04	\$43.23*	59/64"	.9219"	S06120	\$43.70	S08120	S09120	\$51.80	
	12mm	.4724"	S06Z05	\$36.00	S08Z05	S09Z05	\$43.23*	15/16"	.9375"	S06121	\$43.70	S08121	S09121	\$51.80	
	31/64"	.4844"	S06Z06	\$36.00	S08Z06	S09Z06	\$43.23*	24mm	.9449"	S06122	\$43.70	S08122	S09122	\$51.80	
	12.5mm	.4921"	S06Z07	\$36.00	S08Z07	S09Z07	\$43.23*	31/32"	.9688"	S06201	\$51.47	S08201	S09201	\$61.07	
	1/2"	.5000"	S06Z08	\$36.00	S08Z08	S09Z08	\$43.23*	63/64"	.9843"	S06202	\$51.47	S08202	S09202	\$61.07	
O .511" to .695" (1/8") Thick	13mm	.5118"	S06001	\$38.83	S08001	S09001	\$46.60*	1"	1.0000"	S06203	\$51.47	S08203	S09203	\$61.07	
	33/64"	.5156"	S06002	\$38.83	S08002	S09002	\$46.60*	1-1/64"	1.0156"	S06204	\$51.47	S08204	S09204	\$61.07	
	17/32"	.5313"	S06003	\$38.83	S08003	S09003	\$46.60*	26mm	1.0236"	S06205	\$51.47	S08205	S09205	\$61.07	
	13.5mm	.5315"	S06004	\$38.83	S08004	S09004	\$46.60*	1-1/32"	1.0313"	S06206	\$51.47	S08206	S09206	\$61.07	
	35/64"	.5469"	S06060	\$38.83	S08060	S09060	\$46.60*	1-3/64"	1.0469"	S06260	\$51.47	S08260	S09260	\$61.07	
	14mm	.5512"	S06005	\$38.83	S08005	S09005	\$46.60*	1-1/16"	1.0625"	S06207	\$51.47	S08207	S09207	\$61.07	
	9/16"	.5625"	S06006	\$38.83	S08006	S09006	\$46.60*	27mm	1.0630"	S06208	\$51.47	S08208	S09208	\$61.07	
	14.5mm	.5709"	S06007	\$38.83	S08007	S09007	\$46.60*	1-3/32"	1.0938"	S06209	\$51.47	S08209	S09209	\$61.07	
	37/64"	.5781"	S06008	\$38.83	S08008	S09008	\$46.60*	28mm	1.1024"	S06210	\$51.47	S08210	S09210	\$61.07	
	15mm	.5906"	S06009	\$38.83	S08009	S09009	\$46.60*	1-7/64"	1.1094"	S06261	\$51.47	S08261	S09261	\$61.07	
	19/32"	.5938"	S06010	\$38.83	S08010	S09010	\$46.60*	1-1/8"	1.1250"	S06211	\$51.47	S08211	S09211	\$61.07	
	39/64"	.6094"	S06061	\$38.83	S08061	S09061	\$46.60*	29mm	1.1417"	S06212	\$51.47	S08212	S09212	\$61.07	
	15.5mm	.6102"	S06011	\$38.83	S08011	S09011	\$46.60*	1-5/32"	1.1563"	S06213	\$51.47	S08213	S09213	\$61.07	
	5/8"	.6250"	S06012	\$38.83	S08012	S09012	\$46.60*	30mm	1.1811"	S06214	\$51.47	S08214	S09214	\$61.07	
	16mm	.6299"	S06013	\$38.83	S08013	S09013	\$46.60*	1-3/16"	1.1875"	S06215	\$51.47	S08215	S09215	\$61.07	
	41/64"	.6406"	S06062	\$38.83	S08062	S09062	\$46.60*	1-7/32"	1.2188"	S06216	\$51.47	S08216	S09216	\$61.07	
	16.5mm	.6496"	S06014	\$38.83	S08014	S09014	\$46.60*	31mm	1.2205"	S06217	\$51.47	S08217	S09217	\$61.07	
	21/32"	.6563"	S06015	\$38.83	S08015	S09015	\$46.60*	1-1/4"	1.2500"	S06218	\$51.47	S08218	S09218	\$61.07	
	17mm	.6693"	S06016	\$38.83	S08016	S09016	\$46.60*	32mm	1.2598"	S06219	\$51.47	S08219	S09219	\$61.07	
	43/64"	.6719"	S06063	\$38.83	S08063	S09063	\$46.60*	1-9/32"	1.2813"	S06220	\$51.47	S08220	S09220	\$61.07	
11/16"	.6875"	S06017	\$38.83	S08017	S09017	\$46.60*	33mm	1.2992"	S06221	\$51.47	S08221	S09221	\$61.07		
17.5mm	.6890"	S06018	\$38.83	S08018	S09018	\$46.60*	1-5/16"	1.3125"	S06222	\$51.47	S08222	S09222	\$61.07		
1 .690" to .960" (5/32") Thick	45/64"	.7031"	S06101	\$43.70	S08101	S09101	\$51.80	34mm	1.3386"	S06223	\$51.47	S08223	S09223	\$61.07	
	18mm	.7087"	S06102	\$43.70	S08102	S09102	\$51.80	1-11/32"	1.3438"	S06224	\$51.47	S08224	S09224	\$61.07	
	23/32"	.7188"	S06103	\$43.70	S08103	S09103	\$51.80	1-3/8"	1.3750"	S06225	\$51.47	S08225	S09225	\$61.07	
	18.5mm	.7283"	S06104	\$43.70	S08104	S09104	\$51.80	35mm	1.3780"	S06226	\$51.47	S08226	S09226	\$61.07	
	47/64"	.7344"	S06105	\$43.70	S08105	S09105	\$51.80	1-13/32"	1.4063"	S06301	\$65.33	S08301	S09301	\$78.33	
	19mm	.7480"	S06106	\$43.70	S08106	S09106	\$51.80	36mm	1.4173"	S06302	\$65.33	S08302	S09302	\$78.33	
	3/4"	.7500"	S06107	\$43.70	S08107	S09107	\$51.80	1-7/16"	1.4375"	S06303	\$65.33	S08303	S09303	\$78.33	
	49/64"	.7656"	S06108	\$43.70	S08108	S09108	\$51.80	37mm	1.4567"	S06304	\$65.33	S08304	S09304	\$78.33	

DRILL INSERTS

SUPER HSS (T15) SPADE DRILL

Series Min. to Max (mm/inch)	Diameter		TiN Coated EDP No.	TiN Coated List Price	TiAlN Coated EDP No.	Hardslick Coated EDP No.	TiAlN & Hardslick Coated List Price
	Inch Metric	Decimal (inch)					
3 1.353" to 1.882" (1/4") Thick	1-15/32"	1.4688"	S06305	\$65.33	S08305	S09305	\$78.33
	38mm	1.4961"	S06306	\$65.33	S08306	S09306	\$78.33
	1-1/2"	1.5000"	S06307	\$65.33	S08307	S09307	\$78.33
	1-17/32"	1.5313"	S06308	\$65.33	S08308	S09308	\$78.33
	39mm	1.5354"	S06309	\$65.33	S08309	S09309	\$78.33
	1-9/16"	1.5625"	S06310	\$65.33	S08310	S09310	\$78.33
	40mm	1.5748"	S06311	\$65.33	S08311	S09311	\$78.33
	1-19/32"	1.5938"	S06312	\$65.33	S08312	S09312	\$78.33
	41mm	1.6142"	S06313	\$65.33	S08313	S09313	\$78.33
	1-5/8"	1.6250"	S06314	\$65.33	S08314	S09314	\$78.33
	42mm	1.6535"	S06315	\$65.33	S08315	S09315	\$78.33
	1-21/32"	1.6563"	S06316	\$65.33	S08316	S09316	\$78.33
	1-11/16"	1.6875"	S06317	\$65.33	S08317	S09317	\$78.33
	43mm	1.6929"	S06318	\$65.33	S08318	S09318	\$78.33
	1-23/32"	1.7188"	S06319	\$65.33	S08319	S09319	\$78.33
	44mm	1.7323"	S06320	\$65.33	S08320	S09320	\$78.33
	1-3/4"	1.7500"	S06321	\$65.33	S08321	S09321	\$78.33
	45mm	1.7717"	S06322	\$65.33	S08322	S09322	\$78.33
	1-25/32"	1.7813"	S06323	\$65.33	S08323	S09323	\$78.33
	46mm	1.8110"	S06324	\$65.33	S08324	S09324	\$78.33
1-13/16"	1.8125"	S06325	\$65.33	S08325	S09325	\$78.33	
1-27/32"	1.8438"	S06326	\$65.33	S08326	S09326	\$78.33	
47mm	1.8504"	S06327	\$65.33	S08327	S09327	\$78.33	
1-7/8"	1.8750"	S06328	\$65.33	S08328	S09328	\$78.33	
4 1.850" to 2.570" (5/16") Thick	1-29/32"	1.9063"	S06402	\$82.67	S08402	S09402	\$99.00
	1-15/16"	1.9375"	S06404	\$82.67	S08404	S09404	\$99.00
	1-31/32"	1.9688"	S06406	\$82.67	S08406	S09406	\$99.00
	2"	2.0000"	S06407	\$82.67	S08407	S09407	\$99.00
	2-1/32"	2.0313"	S06409	\$82.67	S08409	S09409	\$99.00
	2-3/64"	2.0472"	S06410	\$82.67	S08410	S09410	\$99.00
	2-1/16"	2.0625"	S06411	\$82.67	S08411	S09411	\$99.00
	2-3/32"	2.0938"	S06413	\$82.67	S08413	S09413	\$99.00
	2-1/8"	2.1250"	S06414	\$82.67	S08414	S09414	\$99.00
	2-5/32"	2.1563"	S06416	\$82.67	S08416	S09416	\$99.00
	2-3/16"	2.1875"	S06418	\$82.67	S08418	S09418	\$99.00
	2-7/32"	2.2188"	S06420	\$82.67	S08420	S09420	\$99.00
	2-1/4"	2.2500"	S06422	\$82.67	S08422	S09422	\$99.00
	2-9/32"	2.2813"	S06423	\$82.67	S08423	S09423	\$99.00
	2-5/16"	2.3125"	S06425	\$82.67	S08425	S09425	\$99.00
	2-11/32"	2.3438"	S06427	\$82.67	S08427	S09427	\$99.00
	2-3/8"	2.3750"	S06429	\$82.67	S08429	S09429	\$99.00
	2-13/32"	2.4063"	S06431	\$82.67	S08431	S09431	\$99.00
	2-7/16"	2.4375"	S06432	\$82.67	S08432	S09432	\$99.00
	2-15/32"	2.4688"	S06434	\$82.67	S08434	S09434	\$99.00
2-1/2"	2.5000"	S06436	\$82.67	S08436	S09436	\$99.00	
2-17/32"	2.5313"	S06438	\$82.67	S08438	S09438	\$99.00	
2-9/16"	2.5625"	S06440	\$82.67	S08440	S09440	\$99.00	

SUPER HSS (T15) SPADE DRILL

Series Min. to Max. (mm/inch)	Diameter		EDP No.	Hardslick Coated List Price
	Inch Metric	Decimal (inch)		
5 62.38 (2.456") to 76.20 (3.000")	2-1/2"	2.5000"	S09501	\$117.00
	64mm	2.5197"	S09502	\$117.00
	2-17/32"	2.5313"	S09503	\$117.00
	2-9/16"	2.5625"	S09504	\$117.00
	2-19/32"	2.5938"	S09505	\$117.00
	66mm	2.5984"	S09506	\$117.00
	2-5/8"	2.6250"	S09507	\$117.00
	2-21/32"	2.6563"	S09508	\$117.00
	68mm	2.6772"	S09509	\$117.00
	2-11/16"	2.6875"	S09510	\$117.00
	2-23/32"	2.7188"	S09511	\$117.00
	2-3/4"	2.7500"	S09512	\$117.00
	70mm	2.7559"	S09513	\$117.00
	2-25/32"	2.7813"	S09514	\$117.00
	2-13/16"	2.8125"	S09515	\$117.00
	72mm	2.8346"	S09516	\$117.00
	2-27/32"	2.8438"	S09517	\$117.00
	2-7/8"	2.8750"	S09518	\$117.00
	2-29/32"	2.9063"	S09519	\$117.00
	74mm	2.9134"	S09520	\$117.00
2-15/16"	2.9375"	S09521	\$117.00	
2-31/32"	2.9688"	S09522	\$117.00	
76mm	2.9921"	S09523	\$117.00	
3"	3.0000"	S09524	\$117.00	
6 76.23 (3.001") to 89.08 (3.507")	3-1/32"	3.0313"	S09601	\$134.90
	3-1/16"	3.0625"	S09602	\$134.90
	78mm	3.0709"	S09603	\$134.90
	3-3/32"	3.0938"	S09604	\$134.90
	3-1/8"	3.1250"	S09605	\$134.90
	80mm	3.1496"	S09606	\$134.90
	3-5/32"	3.1563"	S09607	\$134.90
	3-3/16"	3.1875"	S09608	\$134.90
	3-7/32"	3.2188"	S09609	\$134.90
	82mm	3.2283"	S09610	\$134.90
	3-1/4"	3.2500"	S09611	\$134.90
	3-9/32"	3.2813"	S09612	\$134.90
	84mm	3.3071"	S09613	\$134.90
	3-5/16"	3.3125"	S09614	\$134.90
	3-11/32"	3.3438"	S09615	\$134.90
	3-3/8"	3.3750"	S09616	\$134.90
	86mm	3.3858"	S09617	\$134.90
	3-13/32"	3.4063"	S09618	\$134.90
	3-7/16"	3.4375"	S09619	\$134.90
	88mm	3.4646"	S09620	\$134.90
3-15/32"	3.4688"	S09621	\$134.90	
3-1/2"	3.5000"	S09622	\$134.90	

Continued on next page

DRILL INSERTS

SUPER HSS (T15) SPADE DRILL

Series Min. to Max. (mm/inch)	Diameter		EDP No.	Hardslick Coated List Price
	Inch Metric	Decimal (inch)		
7 87.76 (3.455") to 101.60 (4.000")	3-17/32"	3.5313"	S09701	\$159.67
	90mm	3.5433"	S09702	\$159.67
	3-9/16"	3.5625"	S09703	\$159.67
	3-19/32"	3.5938"	S09704	\$159.67
	92mm	3.6221"	S09705	\$159.67
	3-5/8"	3.6250"	S09706	\$159.67
	3-21/32"	3.6563"	S09707	\$159.67
	3-11/16"	3.6875"	S09708	\$159.67
	94mm	3.7008"	S09709	\$159.67
	3-23/32"	3.7188"	S09710	\$159.67
	3-3/4"	3.7500"	S09711	\$159.67
	96mm	3.7795"	S09712	\$159.67
	3-25/32"	3.7813"	S09713	\$159.67
	3-13/16"	3.8125"	S09714	\$159.67
	3-27/32"	3.8438"	S09715	\$159.67
	98mm	3.8583"	S09716	\$159.67
	3-7/8"	3.8750"	S09717	\$159.67
	3-29/32"	3.9063"	S09718	\$159.67
	100mm	3.9370"	S09719	\$159.67
	3-15/16"	3.9375"	S09720	\$159.67
3-31/32"	3.9688"	S09721	\$159.67	
4"	4.0000"	S09722	\$159.67	
8 101.63 (4.001") to 114.48 (4.507")	4-1/64"	4.0157"	S09801	\$211.97
	4-1/16"	4.0625"	S09802	\$211.97
	4-3/32"	4.0945"	S09803	\$211.97
	4-1/8"	4.1250"	S09804	\$211.97
	106mm	4.1732"	S09805	\$211.97
	4-3/16"	4.1875"	S09806	\$211.97
	4-1/4"	4.2500"	S09807	\$211.97
	108mm	4.2520"	S09808	\$211.97
	4-5/16"	4.3125"	S09809	\$211.97
	110mm	4.3307"	S09810	\$211.97
	4-3/8"	4.3750"	S09811	\$211.97
	112mm	4.4094"	S09812	\$211.97
	4-7/16"	4.4375"	S09813	\$211.97
	114mm	4.4882"	S09814	\$211.97
	4-1/2"	4.5000"	S09815	\$211.97

SM POINT (T15) SPADE DRILL

Series Min. to Max. (mm/inch)	Diameter		EDP No. TiAIN Coated Super HSS(T15)	List Price
	Inch Metric	Decimal (inch)		
Y .374" to 11.07 (3/32") Thick	9.5mm	.3740"	SM08Y01	\$52.07*
	3/8"	.3750"	SM08Y02	\$52.07*
	9.8mm	.3860"	SM08Y03	\$52.07*
	25/64"	.3906"	SM08Y04	\$52.07*
	10mm	.3937"	SM08Y05	\$52.07*
	10.2mm	.4016"	SM08Y06	\$52.07*
	13/32"	.4063"	SM08Y07	\$52.07*
	10.5mm	.4134"	SM08Y08	\$52.07*
	27/64"	.4219"	SM08Y09	\$52.07*
	10.8mm	.4252"	SM08Y10	\$52.07*
	11mm	.4331"	SM08Y11	\$52.07*
Z .437" to .510" (3/32") Thick	7/16"	.4375"	SM08Z01	\$52.07*
	11.5mm	.4528"	SM08Z02	\$52.07*
	29/64"	.4531"	SM08Z03	\$52.07*
	15/32"	.4688"	SM08Z04	\$52.07*
	12mm	.4724"	SM08Z05	\$52.07*
	31/64"	.4844"	SM08Z06	\$52.07*
	12.5mm	.4921"	SM08Z07	\$52.07*
	1/2"	.5000"	SM08Z08	\$52.07*
O .511" to .695" (1/8") Thick	13mm	.5118"	SM08001	\$56.07*
	33/64"	.5156"	SM08002	\$56.07*
	17/32"	.5313"	SM08003	\$56.07*
	13.5mm	.5315"	SM08004	\$56.07*
	35/64"	.5469"	SM08060	\$56.07*
	14mm	.5512"	SM08005	\$56.07*
	9/16"	.5625"	SM08006	\$56.07*
	14.5mm	.5709"	SM08007	\$56.07*
	37/64"	.5781"	SM08008	\$56.07*
	15mm	.5906"	SM08009	\$56.07*
	19/32"	.5938"	SM08010	\$56.07*
	39/64"	.6094"	SM08061	\$56.07*
	15.5mm	.6102"	SM08011	\$56.07*
	5/8"	.6250"	SM08012	\$56.07*
	16mm	.6299"	SM08013	\$56.07*
	41/64"	.6406"	SM08062	\$56.07*
	16.5mm	.6496"	SM08014	\$56.07*
	21/32"	.6563"	SM08015	\$56.07*
17mm	.6693"	SM08016	\$56.07*	
43/64"	.6719"	SM08063	\$56.07*	
11/16"	.6875"	SM08017	\$56.07*	
17.5mm	.6890"	SM08018	\$56.07*	
1 .690" to .960" (5/32") Thick	45/64"	.7031"	SM08101	\$62.57
	18mm	.7087"	SM08102	\$62.57
	23/32"	.7188"	SM08103	\$62.57
	18.5mm	.7283"	SM08104	\$62.57
	47/64"	.7344"	SM08105	\$62.57
	19mm	.7480"	SM08106	\$62.57
	3/4"	.7500"	SM08107	\$62.57
	49/64"	.7656"	SM08108	\$62.57

Hardslick lowers torque, thrust and horsepower requirements

- 5% Reduction at normal S.F.M.
- 10% Reduction at 10-15% increase of normal S.F.M.

*2 PER PACKAGE

DRILL INSERTS

SM POINT (T15) SPADE DRILL				
Series Min. to Max. (mm/inch)	Diameter		EDP No. TiAIN Coated Super HSS(T15)	List Price
	Inch Metric	Decimal (inch)		
1 .690" to .960" (5/32") Thick	19.5mm	.7677"	SM08109	\$62.57
	25/32"	.7813"	SM08110	\$62.57
	20mm	.7874"	SM08111	\$62.57
	51/64"	.7969"	SM08160	\$62.57
	20.5mm	.8071"	SM08112	\$62.57
	13/16"	.8125"	SM08113	\$62.57
	21mm	.8268"	SM08114	\$62.57
	27/32"	.8438"	SM08115	\$62.57
	55/64"	.8594"	SM08161	\$62.57
	22mm	.8661"	SM08116	\$62.57
	7/8"	.8750"	SM08117	\$62.57
	57/64"	.8906"	SM08162	\$62.57
	23mm	.9055"	SM08118	\$62.57
	29/32"	.9063"	SM08119	\$62.57
	59/64"	.9219"	SM08120	\$62.57
	15/16"	.9375"	SM08121	\$62.57
	24mm	.9449"	SM08122	\$62.57
2 .961" to 1.380" (3/16") Thick	31/32"	.9688"	SM08201	\$73.60
	63/64"	.9843"	SM08202	\$73.60
	1"	1.0000"	SM08203	\$73.60
	1-1/64"	1.0156"	SM08204	\$73.60
	26mm	1.0236"	SM08205	\$73.60
	1-1/32"	1.0313"	SM08206	\$73.60
	1-3/64"	1.0469"	SM08260	\$73.60
	1-1/16"	1.0625"	SM08207	\$73.60
	27mm	1.0630"	SM08208	\$73.60
	1-3/32"	1.0938"	SM08209	\$73.60
	28mm	1.1024"	SM08210	\$73.60
	1-7/64"	1.1094"	SM08261	\$73.60
	1-1/8"	1.1250"	SM08211	\$73.60
	29mm	1.1417"	SM08212	\$73.60
	1-5/32"	1.1563"	SM08213	\$73.60
	30mm	1.1811"	SM08214	\$73.60
	1-3/16"	1.1875"	SM08215	\$73.60
	1-7/32"	1.2188"	SM08216	\$73.60
	31mm	1.2205"	SM08217	\$73.60
	1-1/4"	1.2500"	SM08218	\$73.60
	32mm	1.2598"	SM08219	\$73.60
	1-9/32"	1.2813"	SM08220	\$73.60
	33mm	1.2992"	SM08221	\$73.60
	1-5/16"	1.3125"	SM08222	\$73.60
	34mm	1.3386"	SM08223	\$73.60
	1-11/32"	1.3438"	SM08224	\$73.60
	1-3/8"	1.3750"	SM08225	\$73.60
35mm	1.3780"	SM08226	\$73.60	
3 1.353" to 1.882" (1/4") Thick	1-13/32"	1.4063"	SM08301	\$94.43
	36mm	1.4173"	SM08302	\$94.43
	1-7/16"	1.4375"	SM08303	\$94.43
	37mm	1.4567"	SM08304	\$94.43
	1-15/32"	1.4688"	SM08305	\$94.43

SM POINT (T15) SPADE DRILL				
Series Min. to Max. (mm/inch)	Diameter		EDP No. TiAIN Coated Super HSS(T15)	List Price
	Inch Metric	Decimal (inch)		
3 1.353" to 1.882" (1/4") Thick	38mm	1.4961"	SM08306	\$94.43
	1-1/2"	1.5000"	SM08307	\$94.43
	1-17/32"	1.5313"	SM08308	\$94.43
	39mm	1.5354"	SM08309	\$94.43
	1-9/16"	1.5625"	SM08310	\$94.43
	40mm	1.5748"	SM08311	\$94.43
	1-19/32"	1.5938"	SM08312	\$94.43
	41mm	1.6142"	SM08313	\$94.43
	1-5/8"	1.6250"	SM08314	\$94.43
	42mm	1.6535"	SM08315	\$94.43
	1-21/32"	1.6563"	SM08316	\$94.43
	1-11/16"	1.6875"	SM08317	\$94.43
	43mm	1.6929"	SM08318	\$94.43
	1-23/32"	1.7188"	SM08319	\$94.43
	44mm	1.7323"	SM08320	\$94.43
	1-3/4"	1.7500"	SM08321	\$94.43
	45mm	1.7717"	SM08322	\$94.43
	1-25/32"	1.7813"	SM08323	\$94.43
	46mm	1.8110"	SM08324	\$94.43
	1-13/16"	1.8125"	SM08325	\$94.43
1-27/32"	1.8438"	SM08326	\$94.43	
47mm	1.8504"	SM08327	\$94.43	
1-7/8"	1.8750"	SM08328	\$94.43	
4 1.850" to 2.570" (5/16") Thick	48mm	1.8898"	SM08401	\$119.33
	1-29/32"	1.9063"	SM08402	\$119.33
	49mm	1.9291"	SM08403	\$119.33
	1-15/16"	1.9375"	SM08404	\$119.33
	50mm	1.9685"	SM08405	\$119.33
	1-31/32"	1.9688"	SM08406	\$119.33
	2"	2.0000"	SM08407	\$119.33
	51mm	2.0079"	SM08408	\$119.33
	2-1/32"	2.0313"	SM08409	\$119.33
	2-3/64"	2.0472"	SM08410	\$119.33
	2-1/16"	2.0625"	SM08411	\$119.33
	53mm	2.0866"	SM08412	\$119.33
	2-3/32"	2.0938"	SM08413	\$119.33
	2-1/8"	2.1250"	SM08414	\$119.33
	54mm	2.1260"	SM08415	\$119.33
	2-5/32"	2.1563"	SM08416	\$119.33
	55mm	2.1654"	SM08417	\$119.33
	2-3/16"	2.1875"	SM08418	\$119.33
	56mm	2.2047"	SM08419	\$119.33
	2-7/32"	2.2188"	SM08420	\$119.33
	57mm	2.2441"	SM08421	\$119.33
	2-1/4"	2.2500"	SM08422	\$119.33
	2-9/32"	2.2813"	SM08423	\$119.33
58mm	2.2835"	SM08424	\$119.33	
2-5/16"	2.3125"	SM08425	\$119.33	
59mm	2.3228"	SM08426	\$119.33	
2-11/32"	2.3438"	SM08427	\$119.33	

Continued on next page

DRILL INSERTS

SM POINT (T15) SPADE DRILL				
Series Min. to Max. (mm/inch)	Diameter		EDP No. TiAIN Coated Super HSS(T15)	List Price
	Inch Metric	Decimal (inch)		
4 1.850" to 2.570" (5/16") Thick	60mm	2.3622"	SM08428	\$119.33
	2-3/8"	2.3750"	SM08429	\$119.33
	61mm	2.4016"	SM08430	\$119.33
	2-13/32"	2.4063"	SM08431	\$119.33
	2-7/16"	2.4375"	SM08432	\$119.33
	62mm	2.4409"	SM08433	\$119.33
	2-15/32"	2.4688"	SM08434	\$119.33
	63mm	2.4803"	SM08435	\$119.33
	2-1/2"	2.5000"	SM08436	\$119.33
	64mm	2.5197"	SM08437	\$119.33
	2-17/32"	2.5313"	SM08438	\$119.33
	65mm	2.5591"	SM08439	\$119.33
	2-9/16"	2.5625"	SM08440	\$119.33
5 2.456" to 3.000" (7/16") Thick	2-1/2"	2.5000"	SM08501	\$159.93
	64mm	2.5197"	SM08502	\$159.93
	2-17/32"	2.5313"	SM08503	\$159.93
	2-9/16"	2.5625"	SM08504	\$159.93
	2-19/32"	2.5938"	SM08505	\$159.93
	66mm	2.5984"	SM08506	\$159.93
	2-5/8"	2.6250"	SM08507	\$159.93
	2-21/32"	2.6563"	SM08508	\$159.93
	68mm	2.6772"	SM08509	\$159.93
	2-11/16"	2.6875"	SM08510	\$159.93
	2-23/32"	2.7188"	SM08511	\$159.93
	2-3/4"	2.7500"	SM08512	\$159.93
	70mm	2.7559"	SM08513	\$159.93
	2-25/32"	2.7813"	SM08514	\$159.93
	2-13/16"	2.8125"	SM08515	\$159.93
	72mm	2.8346"	SM08516	\$159.93
	2-27/32"	2.8438"	SM08517	\$159.93
	2-7/8"	2.8750"	SM08518	\$159.93
	2-29/32"	2.9063"	SM08519	\$159.93
	74mm	2.9134"	SM08520	\$159.93
2-15/16"	2.9375"	SM08521	\$159.93	
2-31/32"	2.9688"	SM08522	\$159.93	
76mm	2.9921"	SM08523	\$159.93	
3"	3.0000"	SM08524	\$159.93	
6 3.001" to 3.507" (7/16") Thick	3-1/32"	3.0313"	SM08601	\$184.37
	3-1/16"	3.0625"	SM08602	\$184.37
	78mm	3.0709"	SM08603	\$184.37
	3-3/32"	3.0938"	SM08604	\$184.37
	3-1/8"	3.1250"	SM08605	\$184.37
	80mm	3.1496"	SM08606	\$184.37
	3-5/32"	3.1563"	SM08607	\$184.37
	3-3/16"	3.1875"	SM08608	\$184.37
	3-7/32"	3.2188"	SM08609	\$184.37
	82mm	3.2283"	SM08610	\$184.37
	3-1/4"	3.2500"	SM08611	\$184.37

SM POINT (T15) SPADE DRILL					
Series Min. to Max. (mm/inch)	Diameter		EDP No. TiAIN Coated Super HSS(T15)	List Price	
	Inch Metric	Decimal (inch)			
6 3.001" to 3.507" (7/16") Thick	3-9/32"	3.2813"	SM08612	\$184.37	
	84mm	3.3071"	SM08613	\$184.37	
	3-5/16"	3.3125"	SM08614	\$184.37	
	3-11/32"	3.3438"	SM08615	\$184.37	
	3-3/8"	3.3750"	SM08616	\$184.37	
	86mm	3.3858"	SM08617	\$184.37	
	3-13/32"	3.4063"	SM08618	\$184.37	
	3-7/16"	3.4375"	SM08619	\$184.37	
	88mm	3.4646"	SM08620	\$184.37	
	3-15/32"	3.4688"	SM08621	\$184.37	
	3-1/2"	3.5000"	SM08622	\$184.37	
	7 3.455" to 4.000" (7/16") Thick	3-17/32"	3.5313"	SM08701	\$218.27
		90mm	3.5433"	SM08702	\$218.27
3-9/16"		3.5625"	SM08703	\$218.27	
3-19/32"		3.5938"	SM08704	\$218.27	
92mm		3.6221"	SM08705	\$218.27	
3-5/8"		3.6250"	SM08706	\$218.27	
3-21/32"		3.6563"	SM08707	\$218.27	
3-11/16"		3.6875"	SM08708	\$218.27	
94mm		3.7008"	SM08709	\$218.27	
3-23/32"		3.7188"	SM08710	\$218.27	
3-3/4"		3.7500"	SM08711	\$218.27	
96mm		3.7795"	SM08712	\$218.27	
3-25/32"		3.7813"	SM08713	\$218.27	
3-13/16"		3.8125"	SM08714	\$218.27	
3-27/32"		3.8438"	SM08715	\$218.27	
98mm		3.8583"	SM08716	\$218.27	
3-7/8"		3.8750"	SM08717	\$218.27	
3-29/32"		3.9063"	SM08718	\$218.27	
100mm		3.9370"	SM08719	\$218.27	
3-15/16"		3.9375"	SM08720	\$218.27	
3-31/32"		3.9688"	SM08721	\$218.27	
4"		4.0000"	SM08722	\$218.27	
8 4.001" to 4.507" (7/16") Thick	4-1/64"	4.0157"	SM08801	\$251.60	
	4-1/16"	4.0625"	SM08802	\$251.60	
	4-3/32"	4.0945"	SM08803	\$251.60	
	4-1/8"	4.1250"	SM08804	\$251.60	
	106mm	4.1732"	SM08805	\$251.60	
	4-3/16"	4.1875"	SM08806	\$251.60	
	4-1/4"	4.2500"	SM08807	\$251.60	
	108mm	4.2520"	SM08808	\$251.60	
	4-5/16"	4.3125"	SM08809	\$251.60	
	110mm	4.3307"	SM08810	\$251.60	
	4-3/8"	4.3750"	SM08811	\$251.60	
	112mm	4.4094"	SM08812	\$251.60	
	4-7/16"	4.4375"	SM08813	\$251.60	
114mm	4.4882"	SM08814	\$251.60		
4-1/2"	4.5000"	SM08815	\$251.60		

DRILL INSERTS

PREMIUM COBALT (M48) SPADE DRILL								PREMIUM COBALT (M48) SPADE DRILL							
Series Min. to Max (mm/inch)	Diameter		TiAlN Coated Premium Cobalt (M48) EDP No.	Hardslick Coated Premium Cobalt (M48) EDP No.	TiAlN & Hardslick Coated List Price	TiN Coated Premium Cobalt (M48) EDP No.	TiN Coated List Price	Series Min. to Max (mm/inch)	Diameter		TiAlN Coated Premium Cobalt (M48) EDP No.	Hardslick Coated Premium Cobalt (M48) EDP No.	TiAlN & Hardslick Coated List Price	TiN Coated Premium Cobalt (M48) EDP No.	TiN Coated List Price
	Inch Metric	Decimal (inch)							Inch Metric	Decimal (inch)					
Y .374" to .436" (3/32") Thick	9.5mm	.3740"	S13Y01	S14Y01	\$48.10	S11Y01	\$40.77*	1 .690" to .960" (5/32") Thick	3/4"	.7500"	S13107	S14107	\$57.90	S11107	\$48.53
	3/8"	.3750"	S13Y02	S14Y02	\$48.10	S11Y02	\$40.77*		49/64"	.7656"	S13108	S14108	\$57.90	S11108	\$48.53
	9.8mm	.3860"	S13Y03	S14Y03	\$48.10	S11Y03	\$40.77*		19.5mm	.7677"	S13109	S14109	\$57.90	S11109	\$48.53
	25/64"	.3906"	S13Y04	S14Y04	\$48.10	S11Y04	\$40.77*		25/32"	.7813"	S13110	S14110	\$57.90	S11110	\$48.53
	10mm	.3937"	S13Y05	S14Y05	\$48.10	S11Y05	\$40.77*		20mm	.7874"	S13111	S14111	\$57.90	S11111	\$48.53
	10.2mm	.4016"	S13Y06	S14Y06	\$48.10	S11Y06	\$40.77*		51/64"	.7969"	S13160	S14160	\$57.90	S11160	\$48.53
	13/32"	.4063"	S13Y07	S14Y07	\$48.10	S11Y07	\$40.77*		20.5mm	.8071"	S13112	S14112	\$57.90	S11112	\$48.53
	10.5mm	.4134"	S13Y08	S14Y08	\$48.10	S11Y08	\$40.77*		13/16"	.8125"	S13113	S14113	\$57.90	S11113	\$48.53
	27/64"	.4219"	S13Y09	S14Y09	\$48.10	S11Y09	\$40.77*		21mm	.8268"	S13114	S14114	\$57.90	S11114	\$48.53
	10.8mm	.4252"	S13Y10	S14Y10	\$48.10	S11Y10	\$40.77*		27/32"	.8438"	S13115	S14115	\$57.90	S11115	\$48.53
	11mm	.4331"	S13Y11	S14Y11	\$48.10	S11Y11	\$40.77*		55/64"	.8594"	S13161	S14161	\$57.90	S11161	\$48.53
Z .437" to .510" (3/32") Thick	7/16"	.4375"	S13Z01	S14Z01	\$48.10	S11Z01	\$40.77*	22mm	.8661"	S13116	S14116	\$57.90	S11116	\$48.53	
	11.5mm	.4528"	S13Z02	S14Z02	\$48.10	S11Z02	\$40.77*	7/8"	.8750"	S13117	S14117	\$57.90	S11117	\$48.53	
	29/64"	.4531"	S13Z03	S14Z03	\$48.10	S11Z03	\$40.77*	57/64"	.8906"	S13162	S14162	\$57.90	S11162	\$48.53	
	15/32"	.4688"	S13Z04	S14Z04	\$48.10	S11Z04	\$40.77*	23mm	.9055"	S13118	S14118	\$57.90	S11118	\$48.53	
	12mm	.4724"	S13Z05	S14Z05	\$48.10	S11Z05	\$40.77*	29/32"	.9063"	S13119	S14119	\$57.90	S11119	\$48.53	
	31/64"	.4844"	S13Z06	S14Z06	\$48.10	S11Z06	\$40.77*	59/64"	.9219"	S13120	S14120	\$57.90	S11120	\$48.53	
	12.5mm	.4921"	S13Z07	S14Z07	\$48.10	S11Z07	\$40.77*	15/16"	.9375"	S13121	S14121	\$57.90	S11121	\$48.53	
	1/2"	.5000"	S13Z08	S14Z08	\$48.10	S11Z08	\$40.77*	24mm	.9449"	S13122	S14122	\$57.90	S11122	\$48.53	
O .511" to .695" (1/8") Thick	13mm	.5118"	S13001	S14001	\$52.50	S11001	\$44.20*	31/32"	.9688"	S13201	S14201	\$68.97	S11201	\$57.40	
	33/64"	.5156"	S13002	S14002	\$52.50	S11002	\$44.20*	63/64"	.9843"	S13202	S14202	\$68.97	S11202	\$57.40	
	17/32"	.5313"	S13003	S14003	\$52.50	S11003	\$44.20*	1"	1.0000"	S13203	S14203	\$68.97	S11203	\$57.40	
	13.5mm	.5315"	S13004	S14004	\$52.50	S11004	\$44.20*	1-1/64"	1.0156"	S13204	S14204	\$68.97	S11204	\$57.40	
	35/64"	.5469"	S13060	S14060	\$52.50	S11060	\$44.20*	26mm	1.0236"	S13205	S14205	\$68.97	S11205	\$57.40	
	14mm	.5512"	S13005	S14005	\$52.50	S11005	\$44.20*	1-1/32"	1.0313"	S13206	S14206	\$68.97	S11206	\$57.40	
	9/16"	.5625"	S13006	S14006	\$52.50	S11006	\$44.20*	1-3/64"	1.0469"	S13260	S14260	\$68.97	S11260	\$57.40	
	14.5mm	.5709"	S13007	S14007	\$52.50	S11007	\$44.20*	1-1/16"	1.0625"	S13207	S14207	\$68.97	S11207	\$57.40	
	37/64"	.5781"	S13008	S14008	\$52.50	S11008	\$44.20*	27mm	1.0630"	S13208	S14208	\$68.97	S11208	\$57.40	
	15mm	.5906"	S13009	S14009	\$52.50	S11009	\$44.20*	1-3/32"	1.0938"	S13209	S14209	\$68.97	S11209	\$57.40	
	19/32"	.5938"	S13010	S14010	\$52.50	S11010	\$44.20*	28mm	1.1024"	S13210	S14210	\$68.97	S11210	\$57.40	
	39/64"	.6094"	S13061	S14061	\$52.50	S11061	\$44.20*	1-7/64"	1.1094"	S13261	S14261	\$68.97	S11261	\$57.40	
	15.5mm	.6102"	S13011	S14011	\$52.50	S11011	\$44.20*	1-1/8"	1.1250"	S13211	S14211	\$68.97	S11211	\$57.40	
	5/8"	.6250"	S13012	S14012	\$52.50	S11012	\$44.20*	29mm	1.1417"	S13212	S14212	\$68.97	S11212	\$57.40	
	16mm	.6299"	S13013	S14013	\$52.50	S11013	\$44.20*	1-5/32"	1.1563"	S13213	S14213	\$68.97	S11213	\$57.40	
	41/64"	.6406"	S13062	S14062	\$52.50	S11062	\$44.20*	30mm	1.1811"	S13214	S14214	\$68.97	S11214	\$57.40	
	16.5mm	.6496"	S13014	S14014	\$52.50	S11014	\$44.20*	1-3/16"	1.1875"	S13215	S14215	\$68.97	S11215	\$57.40	
	21/32"	.6563"	S13015	S14015	\$52.50	S11015	\$44.20*	1-7/32"	1.2188"	S13216	S14216	\$68.97	S11216	\$57.40	
17mm	.6693"	S13016	S14016	\$52.50	S11016	\$44.20*	31mm	1.2205"	S13217	S14217	\$68.97	S11217	\$57.40		
43/64"	.6719"	S13063	S14063	\$52.50	S11063	\$44.20*	1-1/4"	1.2500"	S13218	S14218	\$68.97	S11218	\$57.40		
11/16"	.6875"	S13017	S14017	\$52.50	S11017	\$44.20*	32mm	1.2598"	S13219	S14219	\$68.97	S11219	\$57.40		
17.5mm	.6890"	S13018	S14018	\$52.50	S11018	\$44.20*	1-9/32"	1.2813"	S13220	S14220	\$68.97	S11220	\$57.40		
1 .690" to .960" (5/32") Thick	45/64"	.7031"	S13101	S14101	\$57.90	S11101	\$48.53	33mm	1.2992"	S13221	S14221	\$68.97	S11221	\$57.40	
	18mm	.7087"	S13102	S14102	\$57.90	S11102	\$48.53	1-5/16"	1.3125"	S13222	S14222	\$68.97	S11222	\$57.40	
	23/32"	.7188"	S13103	S14103	\$57.90	S11103	\$48.53	34mm	1.3386"	S13223	S14223	\$68.97	S11223	\$57.40	
	18.5mm	.7283"	S13104	S14104	\$57.90	S11104	\$48.53	1-11/32"	1.3438"	S13224	S14224	\$68.97	S11224	\$57.40	
	47/64"	.7344"	S13105	S14105	\$57.90	S11105	\$48.53	1-3/8"	1.3750"	S13225	S14225	\$68.97	S11225	\$57.40	
	19mm	.7480"	S13106	S14106	\$57.90	S11106	\$48.53	35mm	1.3780"	S13226	S14226	\$68.97	S11226	\$57.40	

*2 PER PACKAGE

DRILL INSERTS

HSS (M4) SPADE DRILL								HSS (M4) SPADE DRILL								
Series Min. to Max (mm/inch)	Diameter		TiN Coated EDP No.	TiN Coated List Price	TiAlN Coated EDP No.	Hardslick Coated EDP No.	TiAlN & Hardslick Coated List Price	Series Min. to Max (mm/inch)	Diameter		TiN Coated EDP No.	TiN Coated List Price	TiAlN Coated EDP No.	Hardslick Coated EDP No.	TiAlN & Hardslick Coated List Price	
	Inch Metric	Decimal (inch)							Inch Metric	Decimal (inch)						
1 .690" to .960" (5/32") Thick	45/64"	.7031"	S01101	\$38.83	S03101	S04101	\$46.60	2 .961" to 1.380" (3/16") Thick	33mm	1.2992"	S01221	\$45.67	S03221	S04221	\$54.73	
	18mm	.7087"	S01102	\$38.83	S03102	S04102	\$46.60		1-5/16"	1.3125"	S01222	\$45.67	S03222	S04222	\$54.73	
	23/32"	.7188"	S01103	\$38.83	S03103	S04103	\$46.60		34mm	1.3386"	S01223	\$45.67	S03223	S04223	\$54.73	
	18.5mm	.7283"	S01104	\$38.83	S03104	S04104	\$46.60		1-11/32"	1.3438"	S01224	\$45.67	S03224	S04224	\$54.73	
	47/64"	.7344"	S01105	\$38.83	S03105	S04105	\$46.60		1-3/8"	1.3750"	S01225	\$45.67	S03225	S04225	\$54.73	
	19mm	.7480"	S01106	\$38.83	S03106	S04106	\$46.60		35mm	1.3780"	S01226	\$45.67	S03226	S04226	\$54.73	
	3/4"	.7500"	S01107	\$38.83	S03107	S04107	\$46.60		3 1.353" to 1.882" (1/4") Thick	1-13/32"	1.4063"	S01301	\$56.70	S03301	S04301	\$68.23
	49/64"	.7656"	S01108	\$38.83	S03108	S04108	\$46.60			36mm	1.4173"	S01302	\$56.70	S03302	S04302	\$68.23
	19.5mm	.7677"	S01109	\$38.83	S03109	S04109	\$46.60			1-7/16"	1.4375"	S01303	\$56.70	S03303	S04303	\$68.23
	25/32"	.7813"	S01110	\$38.83	S03110	S04110	\$46.60			37mm	1.4567"	S01304	\$56.70	S03304	S04304	\$68.23
	20mm	.7874"	S01111	\$38.83	S03111	S04111	\$46.60			1-15/32"	1.4688"	S01305	\$56.70	S03305	S04305	\$68.23
	51/64"	.7969"	S01160	\$38.83	S03160	S04160	\$46.60			38mm	1.4961"	S01306	\$56.70	S03306	S04306	\$68.23
	20.5mm	.8071"	S01112	\$38.83	S03112	S04112	\$46.60	1-1/2"		1.5000"	S01307	\$56.70	S03307	S04307	\$68.23	
	13/16"	.8125"	S01113	\$38.83	S03113	S04113	\$46.60	1-17/32"		1.5313"	S01308	\$56.70	S03308	S04308	\$68.23	
	21mm	.8268"	S01114	\$38.83	S03114	S04114	\$46.60	39mm		1.5354"	S01309	\$56.70	S03309	S04309	\$68.23	
	27/32"	.8438"	S01115	\$38.83	S03115	S04115	\$46.60	1-9/16"		1.5625"	S01310	\$56.70	S03310	S04310	\$68.23	
	55/64"	.8594"	S01161	\$38.83	S03161	S04161	\$46.60	40mm		1.5748"	S01311	\$56.70	S03311	S04311	\$68.23	
	22mm	.8661"	S01116	\$38.83	S03116	S04116	\$46.60	1-19/32"		1.5938"	S01312	\$56.70	S03312	S04312	\$68.23	
	7/8"	.8750"	S01117	\$38.83	S03117	S04117	\$46.60	41mm	1.6142"	S01313	\$56.70	S03313	S04313	\$68.23		
	57/64"	.8906"	S01162	\$38.83	S03162	S04162	\$46.60	1-5/8"	1.6250"	S01314	\$56.70	S03314	S04314	\$68.23		
	23mm	.9055"	S01118	\$38.83	S03118	S04118	\$46.60	42mm	1.6535"	S01315	\$56.70	S03315	S04315	\$68.23		
	29/32"	.9063"	S01119	\$38.83	S03119	S04119	\$46.60	1-21/32"	1.6563"	S01316	\$56.70	S03316	S04316	\$68.23		
	59/64"	.9219"	S01120	\$38.83	S03120	S04120	\$46.60	1-11/16"	1.6875"	S01317	\$56.70	S03317	S04317	\$68.23		
	15/16"	.9375"	S01121	\$38.83	S03121	S04121	\$46.60	43mm	1.6929"	S01318	\$56.70	S03318	S04318	\$68.23		
24mm	.9449"	S01122	\$38.83	S03122	S04122	\$46.60	1-23/32"	1.7188"	S01319	\$56.70	S03319	S04319	\$68.23			
2 .961" to 1.380" (3/16") Thick	31/32"	.9688"	S01201	\$45.67	S03201	S04201	\$54.73	44mm	1.7323"	S01320	\$56.70	S03320	S04320	\$68.23		
	63/64"	.9843"	S01202	\$45.67	S03202	S04202	\$54.73	1-3/4"	1.7500"	S01321	\$56.70	S03321	S04321	\$68.23		
	1"	1.0000"	S01203	\$45.67	S03203	S04203	\$54.73	45mm	1.7717"	S01322	\$56.70	S03322	S04322	\$68.23		
	1-1/64"	1.0156"	S01204	\$45.67	S03204	S04204	\$54.73	1-25/32"	1.7813"	S01323	\$56.70	S03323	S04323	\$68.23		
	26mm	1.0236"	S01205	\$45.67	S03205	S04205	\$54.73	46mm	1.8110"	S01324	\$56.70	S03324	S04324	\$68.23		
	1-1/32"	1.0313"	S01206	\$45.67	S03206	S04206	\$54.73	1-13/16"	1.8125"	S01325	\$56.70	S03325	S04325	\$68.23		
	1-3/64"	1.0469"	S01260	\$45.67	S03260	S04260	\$54.73	1-27/32"	1.8438"	S01326	\$56.70	S03326	S04326	\$68.23		
	1-1/16"	1.0625"	S01207	\$45.67	S03207	S04207	\$54.73	47mm	1.8504"	S01327	\$56.70	S03327	S04327	\$68.23		
	27mm	1.0630"	S01208	\$45.67	S03208	S04208	\$54.73	1-7/8"	1.8750"	S01328	\$56.70	S03328	S04328	\$68.23		
	1-3/32"	1.0938"	S01209	\$45.67	S03209	S04209	\$54.73	4 1.850" to 2.570" (5/16") Thick	1-29/32"	1.9063"	S01402	\$67.30	S03402	S04402	\$80.73	
	28mm	1.1024"	S01210	\$45.67	S03210	S04210	\$54.73		1-15/16"	1.9375"	S01404	\$67.30	S03404	S04404	\$80.73	
	1-7/64"	1.1094"	S01261	\$45.67	S03261	S04261	\$54.73		1-31/32"	1.9688"	S01406	\$67.30	S03406	S04406	\$80.73	
	1-1/8"	1.1250"	S01211	\$45.67	S03211	S04211	\$54.73		2"	2.0000"	S01407	\$67.30	S03407	S04407	\$80.73	
	29mm	1.1417"	S01212	\$45.67	S03212	S04212	\$54.73		2-1/32"	2.0313"	S01409	\$67.30	S03409	S04409	\$80.73	
	1-5/32"	1.1563"	S01213	\$45.67	S03213	S04213	\$54.73		2-3/64"	2.0472"	S01410	\$67.30	S03410	S04410	\$80.73	
	30mm	1.1811"	S01214	\$45.67	S03214	S04214	\$54.73		2-1/16"	2.0625"	S01411	\$67.30	S03411	S04411	\$80.73	
	1-3/16"	1.1875"	S01215	\$45.67	S03215	S04215	\$54.73									
	1-7/32"	1.2188"	S01216	\$45.67	S03216	S04216	\$54.73									
	31mm	1.2205"	S01217	\$45.67	S03217	S04217	\$54.73									
	1-1/4"	1.2500"	S01218	\$45.67	S03218	S04218	\$54.73									
	32mm	1.2598"	S01219	\$45.67	S03219	S04219	\$54.73									
	1-9/32"	1.2813"	S01220	\$45.67	S03220	S04220	\$54.73									

DRILL INSERTS

NEW SIZES AVAILABLE

NEW

HSS (M4) SPADE DRILL

Series Min. to Max (mm/inch)	Diameter		TiN Coated EDP No.	TiN Coated List Price	TiAIN Coated EDP No.	Hardslick Coated EDP No.	TiAIN & Hardslick Coated List Price
	Inch Metric	Decimal (inch)					
4 1.850" to 2.570" (5/16") Thick	2-3/32"	2.0938	S01413	\$67.30	S03413	S04413	\$80.73
	2-1/8"	2.1250	S01414	\$67.30	S03414	S04414	\$80.73
	2-5/32"	2.1563	S01416	\$67.30	S03416	S04416	\$80.73
	2-3/16"	2.1875	S01418	\$67.30	S03418	S04418	\$80.73
	2-7/32"	2.2188	S01420	\$67.30	S03420	S04420	\$80.73
	2-1/4"	2.2500	S01422	\$67.30	S03422	S04422	\$80.73
	2-9/32"	2.2813	S01423	\$67.30	S03423	S04423	\$80.73
	2-5/16"	2.3125	S01425	\$67.30	S03425	S04425	\$80.73
	2-11/32"	2.3438	S01427	\$67.30	S03427	S04427	\$80.73
	2-3/8"	2.3750	S01429	\$67.30	S03429	S04429	\$80.73
	2-13/32"	2.4063	S01431	\$67.30	S03431	S04431	\$80.73
	2-7/16"	2.4375	S01432	\$67.30	S03432	S04432	\$80.73
	2-15/32"	2.4688	S01434	\$67.30	S03434	S04434	\$80.73
	2-1/2"	2.5000	S01436	\$67.30	S03436	S04436	\$80.73
	2-17/32"	2.5313	S01438	\$67.30	S03438	S04438	\$80.73
	2-9/16"	2.5625	S01440	\$67.30	S03440	S04440	\$80.73
5 2.456" to 3.000" (7/16") Thick	2-1/2"	2.5000	S01501	\$97.70	S03501	S04501	\$113.43
	2-5/8"	2.6250	S01507	\$97.70	S03507	S04507	\$113.43
	2-3/4"	2.7500	S01512	\$97.70	S03512	S04512	\$113.43
	2-25/32"	2.7813	S01514	\$97.70	S03514	S04514	\$113.43
	2-13/16"	2.8125	S01515	\$97.70	S03515	S04515	\$113.43
	2-27/32"	2.8438	S01517	\$97.70	S03517	S04517	\$113.43
	2-7/8"	2.8750	S01518	\$97.70	S03518	S04518	\$113.43
	2-29/32"	2.9063	S01519	\$97.70	S03519	S04519	\$113.43
	2-15/16"	2.9375	S01521	\$97.70	S03521	S04521	\$113.43
6 3.001" to 3.507" (7/16") Thick	2-31/32"	2.9688	S01522	\$97.70	S03522	S04522	\$113.43
	3"	3.0000	S01524	\$97.70	S03524	S04524	\$113.43
	3-1/16"	3.0625	S01602	\$113.00	S03602	S04602	\$131.93
7 3.455" to 4.000" (7/16") Thick	3-1/8"	3.1250	S01605	\$113.00	S03605	S04605	\$131.93
	3-1/4"	3.2500	S01611	\$113.00	S03611	S04611	\$131.93
	3-3/8"	3.3750	S01616	\$113.00	S03616	S04616	\$131.93
	3-7/16"	3.4375	S01619	\$113.00	S03619	S04619	\$131.93
	3-1/2"	3.5000	S01622	\$113.00	S03622	S04622	\$131.93
8 4.001" to 4.507" (7/16") Thick	3-9/16"	3.5625	S01703	\$135.23	S03703	S04703	\$152.13
	3-5/8"	3.6250	S01706	\$135.23	S03706	S04706	\$152.13
	3-3/4"	3.7500	S01711	\$135.23	S03711	S04711	\$152.13
	3-7/8"	3.8750	S01717	\$135.23	S03717	S04717	\$152.13
	4"	4.0000	S01722	\$135.23	S03722	S04722	\$152.13
8 4.001" to 4.507" (7/16") Thick	4-1/16"	4.0625	S01802	\$157.00	S03802	S04802	\$187.93
	4-1/8"	4.1250	S01804	\$157.00	S03804	S04804	\$187.93
	4-1/4"	4.2500	S01807	\$157.00	S03807	S04807	\$187.93
	4-3/8"	4.3750	S01811	\$157.00	S03811	S04811	\$187.93
	4-1/2"	4.5000	S01815	\$157.00	S03815	S04815	\$187.93

This drill is not suitable for drilling from solid.

SUPER COBALT T-15 THROW AWAY FLAT BOTTOM SPADE DRILL INSERTS

Series Min. to Max (inch)	Diameter		TiN Coated		TiAIN Coated	
	Inch Metric	Decimal (inch)	EDP No.	List Price	EDP No.	List Price
Y .374" to .436" (3/32") Thick	3/8"	.3750"	SF05024	\$63.73	SF15024	\$71.23
	13/32"	.4063"	SF05026	\$63.73	SF15026	\$71.23
	7/16"	.4375"	SF05028	\$63.73	SF15028	\$71.23
Z .437" to .510" (3/32") Thick	15/32"	.4688"	SF05030	\$63.73	SF15030	\$71.23
	1/2"	.5000"	SF05032	\$63.73	SF15032	\$71.23
O .511" to .695" (1/8") Thick	17/32"	.5313"	SF05034	\$69.60	SF15034	\$77.37
	9/16"	.5625"	SF05036	\$69.60	SF15036	\$77.37
	19/32"	.5938"	SF05038	\$69.60	SF15038	\$77.37
	5/8"	.6250"	SF05040	\$69.60	SF15040	\$77.37
	21/32"	.6563"	SF05042	\$69.60	SF15042	\$77.37
1 .690" to .960" (5/32") Thick	11/16"	.6875"	SF05044	\$69.60	SF15044	\$77.37
	23/32"	.7188"	SF05046	\$77.60	SF15046	\$86.10
	3/4"	.7500"	SF05048	\$77.60	SF15048	\$86.10
	25/32"	.7813"	SF05050	\$77.60	SF15050	\$86.10
	13/16"	.8125"	SF05052	\$77.60	SF15052	\$86.10
	27/32"	.8438"	SF05054	\$77.60	SF15054	\$86.10
2 .961" to 1.380" (3/16") Thick	7/8"	.8750"	SF05056	\$77.60	SF15056	\$86.10
	29/32"	.9063"	SF05058	\$77.60	SF15058	\$86.10
	15/16"	.9375"	SF05060	\$77.60	SF15060	\$86.10
	31/32"	.9688"	SF05062	\$89.50	SF15062	\$100.90
	1"	1.0000"	SF05100	\$89.50	SF15100	\$100.90
	1-1/32"	1.0313"	SF05102	\$89.50	SF15102	\$100.90
	1-1/16"	1.0625"	SF05104	\$89.50	SF15104	\$100.90
	1-3/32"	1.0938"	SF05106	\$89.50	SF15106	\$100.90
	1-1/8"	1.1250"	SF05108	\$89.50	SF15108	\$100.90
	1-5/32"	1.1563"	SF05110	\$89.50	SF15110	\$100.90
2 .961" to 1.380" (3/16") Thick	1-3/16"	1.1875"	SF05112	\$89.50	SF15112	\$100.90
	1-7/32"	1.2188"	SF05114	\$89.50	SF15114	\$100.90
	1-1/4"	1.2500"	SF05116	\$89.50	SF15116	\$100.90
	1-9/32"	1.2813"	SF05118	\$89.50	SF15118	\$100.90
	1-5/16"	1.3125"	SF05120	\$89.50	SF15120	\$100.90
	1-11/32"	1.3438"	SF05122	\$89.50	SF15122	\$100.90
	1-3/8"	1.3750"	SF05124	\$89.50	SF15124	\$100.90

See Cutting Conditions on Page 29

DRILL INSERTS

CARBIDE SPADE DRILL

Series Min. to Max (mm/inch)	Diameter		MULTIPURPOSE GEOMETRY								CAST IRON GEOMETRY			
			C2				C5				C3			
	Inch Metric	Decimal Inch	TIN Coated EDP No.	TIN Coated List Price	TiAIN Coated EDP No.	TiAIN Coated List Price	TIN Coated EDP No.	TIN Coated List Price	TiAIN Coated EDP No.	TiAIN Coated List Price	TIN Coated EDP No.	TIN Coated List Price	TiAIN Coated EDP No.	TiAIN Coated List Price
Y .374" to .436" (3/32") Thick	9.5mm	.3740"	S21Y01	\$62.00*	S23Y01	\$66.80*	S26Y01	\$62.00*	S28Y01	\$66.80*	S16Y01	\$62.00*	S18Y01	\$66.80*
	3/8"	.3750"	S21Y02	\$62.00*	S23Y02	\$66.80*	S26Y02	\$62.00*	S28Y02	\$66.80*	S16Y02	\$62.00*	S18Y02	\$66.80*
	9.8mm	.3860"	S21Y03	\$62.00*	S23Y03	\$66.80*	S26Y03	\$62.00*	S28Y03	\$66.80*	S16Y03	\$62.00*	S18Y03	\$66.80*
	25/64"	.3906"	S21Y04	\$62.00*	S23Y04	\$66.80*	S26Y04	\$62.00*	S28Y04	\$66.80*	S16Y04	\$62.00*	S18Y04	\$66.80*
	10mm	.3937"	S21Y05	\$62.00*	S23Y05	\$66.80*	S26Y05	\$62.00*	S28Y05	\$66.80*	S16Y05	\$62.00*	S18Y05	\$66.80*
	10.2mm	.4016"	S21Y06	\$62.00*	S23Y06	\$66.80*	S26Y06	\$62.00*	S28Y06	\$66.80*	S16Y06	\$62.00*	S18Y06	\$66.80*
	13/32"	.4063"	S21Y07	\$62.00*	S23Y07	\$66.80*	S26Y07	\$62.00*	S28Y07	\$66.80*	S16Y07	\$62.00*	S18Y07	\$66.80*
	10.5mm	.4134"	S21Y08	\$62.00*	S23Y08	\$66.80*	S26Y08	\$62.00*	S28Y08	\$66.80*	S16Y08	\$62.00*	S18Y08	\$66.80*
	27/64"	.4219"	S21Y09	\$62.00*	S23Y09	\$66.80*	S26Y09	\$62.00*	S28Y09	\$66.80*	S16Y09	\$62.00*	S18Y09	\$66.80*
	10.8mm	.4252"	S21Y10	\$62.00*	S23Y10	\$66.80*	S26Y10	\$62.00*	S28Y10	\$66.80*	S16Y10	\$62.00*	S18Y10	\$66.80*
	11mm	.4331"	S21Y11	\$62.00*	S23Y11	\$66.80*	S26Y11	\$62.00*	S28Y11	\$66.80*	S16Y11	\$62.00*	S18Y11	\$66.80*
Z .437" to .510" (3/32") Thick	7/16"	.4375"	S21Z01	\$62.00*	S23Z01	\$66.80*	S26Z01	\$62.00*	S28Z01	\$66.80*	S16Z01	\$62.00*	S18Z01	\$66.80*
	11.5mm	.4528"	S21Z02	\$62.00*	S23Z02	\$66.80*	S26Z02	\$62.00*	S28Z02	\$66.80*	S16Z02	\$62.00*	S18Z02	\$66.80*
	29/64"	.4531"	S21Z03	\$62.00*	S23Z03	\$66.80*	S26Z03	\$62.00*	S28Z03	\$66.80*	S16Z03	\$62.00*	S18Z03	\$66.80*
	15/32"	.4688"	S21Z04	\$62.00*	S23Z04	\$66.80*	S26Z04	\$62.00*	S28Z04	\$66.80*	S16Z04	\$62.00*	S18Z04	\$66.80*
	12mm	.4724"	S21Z05	\$62.00*	S23Z05	\$66.80*	S26Z05	\$62.00*	S28Z05	\$66.80*	S16Z05	\$62.00*	S18Z05	\$66.80*
	31/64"	.4844"	S21Z06	\$62.00*	S23Z06	\$66.80*	S26Z06	\$62.00*	S28Z06	\$66.80*	S16Z06	\$62.00*	S18Z06	\$66.80*
	12.5mm	.4921"	S21Z07	\$62.00*	S23Z07	\$66.80*	S26Z07	\$62.00*	S28Z07	\$66.80*	S16Z07	\$62.00*	S18Z07	\$66.80*
	1/2"	.5000"	S21Z08	\$62.00*	S23Z08	\$66.80*	S26Z08	\$62.00*	S28Z08	\$66.80*	S16Z08	\$62.00*	S18Z08	\$66.80*
O .511" to .695" (1/8") Thick	13mm	.5118"	S21001	\$68.73*	S23001	\$74.00*	S26001	\$68.73*	S28001	\$74.00*	S16001	\$68.73*	S18001	\$74.00*
	33/64"	.5156"	S21002	\$68.73*	S23002	\$74.00*	S26002	\$68.73*	S28002	\$74.00*	S16002	\$68.73*	S18002	\$74.00*
	17/32"	.5313"	S21003	\$68.73*	S23003	\$74.00*	S26003	\$68.73*	S28003	\$74.00*	S16003	\$68.73*	S18003	\$74.00*
	13.5mm	.5315"	S21004	\$68.73*	S23004	\$74.00*	S26004	\$68.73*	S28004	\$74.00*	S16004	\$68.73*	S18004	\$74.00*
	35/64"	.5469"	S21060	\$68.73*	S23060	\$74.00*	S26060	\$68.73*	S28060	\$74.00*	S16060	\$68.73*	S18060	\$74.00*
	14mm	.5512"	S21005	\$68.73*	S23005	\$74.00*	S26005	\$68.73*	S28005	\$74.00*	S16005	\$68.73*	S18005	\$74.00*
	9/16"	.5625"	S21006	\$68.73*	S23006	\$74.00*	S26006	\$68.73*	S28006	\$74.00*	S16006	\$68.73*	S18006	\$74.00*
	14.5mm	.5709"	S21007	\$68.73*	S23007	\$74.00*	S26007	\$68.73*	S28007	\$74.00*	S16007	\$68.73*	S18007	\$74.00*
	37/64"	.5781"	S21008	\$68.73*	S23008	\$74.00*	S26008	\$68.73*	S28008	\$74.00*	S16008	\$68.73*	S18008	\$74.00*
	15mm	.5906"	S21009	\$68.73*	S23009	\$74.00*	S26009	\$68.73*	S28009	\$74.00*	S16009	\$68.73*	S18009	\$74.00*
	19/32"	.5938"	S21010	\$68.73*	S23010	\$74.00*	S26010	\$68.73*	S28010	\$74.00*	S16010	\$68.73*	S18010	\$74.00*
	39/64"	.6094"	S21061	\$68.73*	S23061	\$74.00*	S26061	\$68.73*	S28061	\$74.00*	S16061	\$68.73*	S18061	\$74.00*
	15.5mm	.6102"	S21011	\$68.73*	S23011	\$74.00*	S26011	\$68.73*	S28011	\$74.00*	S16011	\$68.73*	S18011	\$74.00*
	15.7mm	.6181"	S21064	\$68.73*	S23064	\$74.00*	S26064	\$68.73*	S28064	\$74.00*	S16064	\$68.73*	S18064	\$74.00*
	5/8"	.6250"	S21012	\$68.73*	S23012	\$74.00*	S26012	\$68.73*	S28012	\$74.00*	S16012	\$68.73*	S18012	\$74.00*
	16mm	.6299"	S21013	\$68.73*	S23013	\$74.00*	S26013	\$68.73*	S28013	\$74.00*	S16013	\$68.73*	S18013	\$74.00*
	41/64"	.6406"	S21062	\$68.73*	S23062	\$74.00*	S26062	\$68.73*	S28062	\$74.00*	S16062	\$68.73*	S18062	\$74.00*
	16.5mm	.6496"	S21014	\$68.73*	S23014	\$74.00*	S26014	\$68.73*	S28014	\$74.00*	S16014	\$68.73*	S18014	\$74.00*
	21/32"	.6563"	S21015	\$68.73*	S23015	\$74.00*	S26015	\$68.73*	S28015	\$74.00*	S16015	\$68.73*	S18015	\$74.00*
	17mm	.6693"	S21016	\$68.73*	S23016	\$74.00*	S26016	\$68.73*	S28016	\$74.00*	S16016	\$68.73*	S18016	\$74.00*
43/64"	.6719"	S21063	\$68.73*	S23063	\$74.00*	S26063	\$68.73*	S28063	\$74.00*	S16063	\$68.73*	S18063	\$74.00*	
11/16"	.6875"	S21017	\$68.73*	S23017	\$74.00*	S26017	\$68.73*	S28017	\$74.00*	S16017	\$68.73*	S18017	\$74.00*	
17.5mm	.6890"	S21018	\$68.73*	S23018	\$74.00*	S26018	\$68.73*	S28018	\$74.00*	S16018	\$68.73*	S18018	\$74.00*	
1 .690" to .960" (5/32") Thick	45/64"	.7031"	S21101	\$78.33	S23101	\$84.57	S26101	\$78.33	S28101	\$84.57	S16101	\$78.33	S18101	\$84.57
	18mm	.7087"	S21102	\$78.33	S23102	\$84.57	S26102	\$78.33	S28102	\$84.57	S16102	\$78.33	S18102	\$84.57
	23/32"	.7188"	S21103	\$78.33	S23103	\$84.57	S26103	\$78.33	S28103	\$84.57	S16103	\$78.33	S18103	\$84.57
	18.5mm	.7283"	S21104	\$78.33	S23104	\$84.57	S26104	\$78.33	S28104	\$84.57	S16104	\$78.33	S18104	\$84.57
	47/64"	.7344"	S21105	\$78.33	S23105	\$84.57	S26105	\$78.33	S28105	\$84.57	S16105	\$78.33	S18105	\$84.57
	19mm	.7480"	S21106	\$78.33	S23106	\$84.57	S26106	\$78.33	S28106	\$84.57	S16106	\$78.33	S18106	\$84.57
	3/4"	.7500"	S21107	\$78.33	S23107	\$84.57	S26107	\$78.33	S28107	\$84.57	S16107	\$78.33	S18107	\$84.57
	49/64"	.7656"	S21108	\$78.33	S23108	\$84.57	S26108	\$78.33	S28108	\$84.57	S16108	\$78.33	S18108	\$84.57
	19.5mm	.7677"	S21109	\$78.33	S23109	\$84.57	S26109	\$78.33	S28109	\$84.57	S16109	\$78.33	S18109	\$84.57
	25/32"	.7813"	S21110	\$78.33	S23110	\$84.57	S26110	\$78.33	S28110	\$84.57	S16110	\$78.33	S18110	\$84.57
	20mm	.7874"	S21111	\$78.33	S23111	\$84.57	S26111	\$78.33	S28111	\$84.57	S16111	\$78.33	S18111	\$84.57
	51/64"	.7969"	S21160	\$78.33	S23160	\$84.57	S26160	\$78.33	S28160	\$84.57	S16160	\$78.33	S18160	\$84.57
	20.5mm	.8071"	S21112	\$78.33	S23112	\$84.57	S26112	\$78.33	S28112	\$84.57	S16112	\$78.33	S18112	\$84.57
	13/16"	.8125"	S21113	\$78.33	S23113	\$84.57	S26113	\$78.33	S28113	\$84.57	S16113	\$78.33	S18113	\$84.57
	21mm	.8268"	S21114	\$78.33	S23114	\$84.57	S26114	\$78.33	S28114	\$84.57	S16114	\$78.33	S18114	\$84.57
	27/32"	.8438"	S21115	\$78.33	S23115	\$84.57	S26115	\$78.33	S28115	\$84.57	S16115	\$78.33	S18115	\$84.57
	55/64"	.8594"	S21161	\$78.33	S23161	\$84.57	S26161	\$78.33	S28161	\$84.57	S16161	\$78.33	S18161	\$84.57
	22mm	.8661"	S21116	\$78.33	S23116	\$84.57	S26116	\$78.33	S28116	\$84.57	S16116	\$78.33	S18116	\$84.57
	7/8"	.8750"	S21117	\$78.33	S23117	\$84.57	S26117	\$78.33	S28117	\$84.57	S16117	\$78.33	S18117	\$84.57
	57/64"	.8906"	S21162	\$78.33	S23162	\$84.57	S26162	\$78.33	S28162	\$84.57	S16162	\$78.33	S18162	\$84.57

DRILL INSERTS

SM POINT CARBIDE SPADE DRILL				
Series Min. to Max. (mm/inch)	Diameter		EDP No. TiAIN Coated Carbide C5 (P40)	List Price
	Inch Metric	Decimal (inch)		
Y .374" to 11.07" (3/32") Thick	9.5mm	.3740"	SM28Y01	\$57.57*
	3/8"	.3750"	SM28Y02	\$57.57*
	9.8mm	.3860"	SM28Y03	\$57.57*
	25/64"	.3906"	SM28Y04	\$57.57*
	10mm	.3937"	SM28Y05	\$57.57*
	10.2mm	.4016"	SM28Y06	\$57.57*
	13/32"	.4063"	SM28Y07	\$57.57*
	10.5mm	.4134"	SM28Y08	\$57.57*
	27/64"	.4219"	SM28Y09	\$57.57*
	10.8mm	.4252"	SM28Y10	\$57.57*
	11mm	.4331"	SM28Y11	\$57.57*
Z .437" to .510" (3/32") Thick	7/16"	.4375"	SM28Z01	\$57.57*
	11.5mm	.4528"	SM28Z02	\$57.57*
	29/64"	.4531"	SM28Z03	\$57.57*
	15/32"	.4688"	SM28Z04	\$57.57*
	12mm	.4724"	SM28Z05	\$57.57*
	31/64"	.4844"	SM28Z06	\$57.57*
	12.5mm	.4921"	SM28Z07	\$57.57*
	1/2"	.5000"	SM28Z08	\$57.57*
O .511" to .695" (1/8") Thick	13mm	.5118"	SM28001	\$63.73*
	33/64"	.5156"	SM28002	\$63.73*
	17/32"	.5313"	SM28003	\$63.73*
	13.5mm	.5315"	SM28004	\$63.73*
	35/64"	.5469"	SM28060	\$63.73*
	14mm	.5512"	SM28005	\$63.73*
	9/16"	.5625"	SM28006	\$63.73*
	14.5mm	.5709"	SM28007	\$63.73*
	37/64"	.5781"	SM28008	\$63.73*
	15mm	.5906"	SM28009	\$63.73*
	19/32"	.5938"	SM28010	\$63.73*
	39/64"	.6094"	SM28061	\$63.73*
	15.5mm	.6102"	SM28011	\$63.73*
	5/8"	.6250"	SM28012	\$63.73*
	16mm	.6299"	SM28013	\$63.73*
	41/64"	.6406"	SM28062	\$63.73*
	16.5mm	.6496"	SM28014	\$63.73*
	21/32"	.6563"	SM28015	\$63.73*
	17mm	.6693"	SM28016	\$63.73*
	43/64"	.6719"	SM28063	\$63.73*
11/16"	.6875"	SM28017	\$63.73*	
17.5mm	.6890"	SM28018	\$63.73*	

*2 PER PACKAGE

SM POINT CARBIDE SPADE DRILL				
Series Min. to Max. (mm/inch)	Diameter		EDP No. TiAIN Coated Carbide C5 (P40)	List Price
	Inch Metric	Decimal (inch)		
1 .690" to .960" (5/32") Thick	45/64"	.7031"	SM28101	\$88.23
	18mm	.7087"	SM28102	\$88.23
	23/32"	.7188"	SM28103	\$88.23
	18.5mm	.7283"	SM28104	\$88.23
	47/64"	.7344"	SM28105	\$88.23
	19mm	.7480"	SM28106	\$88.23
	3/4"	.7500"	SM28107	\$88.23
	49/64"	.7656"	SM28108	\$88.23
	19.5mm	.7677"	SM28109	\$88.23
	25/32"	.7813"	SM28110	\$88.23
	20mm	.7874"	SM28111	\$88.23
	51/64"	.7969"	SM28160	\$88.23
	20.5mm	.8071"	SM28112	\$88.23
	13/16"	.8125"	SM28113	\$88.23
	21mm	.8268"	SM28114	\$88.23
	27/32"	.8438"	SM28115	\$88.23
	55/64"	.8594"	SM28161	\$88.23
	22mm	.8661"	SM28116	\$88.23
	7/8"	.8750"	SM28117	\$88.23
	57/64"	.8906"	SM28162	\$88.23
	23mm	.9055"	SM28118	\$88.23
	29/32"	.9063"	SM28119	\$88.23
	59/64"	.9219"	SM28120	\$88.23
	15/16"	.9375"	SM28121	\$88.23
24mm	.9449"	SM28122	\$88.23	

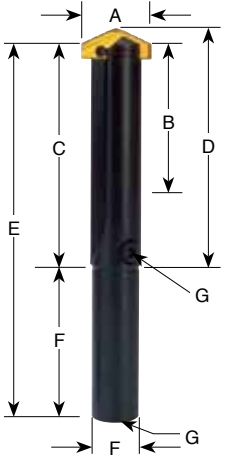
DRILL INSERTS

SM POINT CARBIDE SPADE DRILL				
Series Min. to Max. (mm/inch)	Diameter		EDP No. TiAIN Coated Carbide C5 (P40)	List Price
	Inch Metric	Decimal (inch)		
2 .961" to 1.380" (3/16") Thick	31/32"	.9688"	SM28201	\$104.30
	63/64"	.9843"	SM28202	\$104.30
	1"	1.0000"	SM28203	\$104.30
	1-1/64"	1.0156"	SM28204	\$104.30
	26mm	1.0236"	SM28205	\$104.30
	1-1/32"	1.0313"	SM28206	\$104.30
	1-3/64"	1.0469"	SM28260	\$104.30
	1-1/16"	1.0625"	SM28207	\$104.30
	27mm	1.0630"	SM28208	\$104.30
	1-3/32"	1.0938"	SM28209	\$104.30
	28mm	1.1024"	SM28210	\$104.30
	1-7/64"	1.1094"	SM28261	\$104.30
	1-1/8"	1.1250"	SM28211	\$104.30
	29mm	1.1417"	SM28212	\$104.30
	1-5/32"	1.1563"	SM28213	\$104.30
	30mm	1.1811"	SM28214	\$104.30
	1-3/16"	1.1875"	SM28215	\$104.30
	1-7/32"	1.2188"	SM28216	\$104.30
	31mm	1.2205"	SM28217	\$104.30
	1-1/4"	1.2500"	SM28218	\$104.30
	32mm	1.2598"	SM28219	\$104.30
	1-9/32"	1.2813"	SM28220	\$104.30
	33mm	1.2992"	SM28221	\$104.30
	1-5/16"	1.3125"	SM28222	\$104.30
	34mm	1.3386"	SM28223	\$104.30
	1-11/32"	1.3438"	SM28224	\$104.30
1-3/8"	1.3750"	SM28225	\$104.30	
35mm	1.3780"	SM28226	\$104.30	

SM POINT CARBIDE SPADE DRILL				
Series Min. to Max. (mm/inch)	Diameter		EDP No. TiAIN Coated Carbide C5 (P40)	List Price
	Inch Metric	Decimal (inch)		
3 1.353" to 1.882" (1/4") Thick	1-13/32"	1.4063"	SM28301	\$158.43
	36mm	1.4173"	SM28302	\$158.43
	1-7/316"	1.4375"	SM28303	\$158.43
	37mm	1.4567"	SM28304	\$158.43
	1-15/32"	1.4688"	SM28305	\$158.43
	38mm	1.4961"	SM28306	\$158.43
	1-1/2"	1.5000"	SM28307	\$158.43
	1-17/32"	1.5313"	SM28308	\$158.43
	39mm	1.5354"	SM28309	\$158.43
	1-9/16"	1.5625"	SM28310	\$158.43
	40mm	1.5748"	SM28311	\$158.43
	1-19/32"	1.5938"	SM28312	\$158.43
	41mm	1.6142"	SM28313	\$158.43
	1-5/8"	1.6250"	SM28314	\$158.43
	42mm	1.6535"	SM28315	\$158.43
	1-21/32"	1.6563"	SM28316	\$158.43
	1-11/16"	1.6875"	SM28317	\$158.43
	43mm	1.6929"	SM28318	\$158.43
	1-23/32"	1.7188"	SM28319	\$158.43
	44mm	1.7323"	SM28320	\$158.43
	1-3/4"	1.7500"	SM28321	\$158.43
	45mm	1.7717"	SM28322	\$158.43
	1-25/32"	1.7813"	SM28323	\$158.43
	46mm	1.8110"	SM28324	\$158.43
	1-13/16"	1.8125"	SM28325	\$158.43
	1-27/32"	1.8438"	SM28326	\$158.43
47mm	1.8504"	SM28327	\$158.43	
1-7/8"	1.8750"	SM28328	\$158.43	

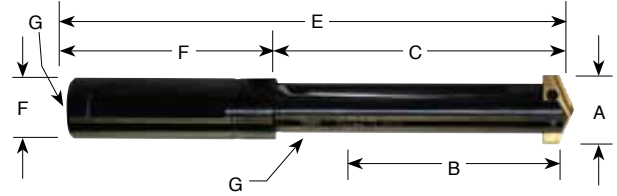
SPADE DRILL HOLDERS

SHORT LENGTH – Straight Shank Holder – Straight Flute



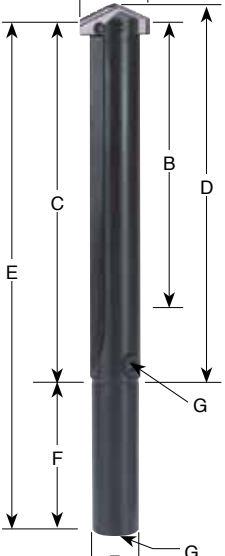
Series	A Drill Insert Range	B Max. Drill Depth	C Flute Length	D Ref. Length	E Overall Length	Shank		G Pipe Tap	EDP Number	List Price
						Dia.	Length			
Y	3/8" – 27/64"	1-1/4"	2-1/32"	2-1/8"	4-13/32"	3/4"	2-3/8"	1/8"	P13Y01	\$285.83
Z	7/16" – 1/2"	1-1/4"	2-1/32"	2-1/8"	4-13/32"	3/4"	2-3/8"	1/8"	P13Z01	\$285.83
0	33/64" – 11/16"	1-3/8"	2-3/16"	2-19/64"	4-9/16"	3/4"	2-3/8"	1/8"	P13001	\$285.83
0.5	39/64" – 11/16"	1-3/8"	2-3/16"	2-19/64"	4-9/16"	3/4"	2-3/8"	1/8"	P13051	\$285.83
1	45/64" – 15/16"	2-5/8"	3-7/8"	4-1/64"	6-7/8"	3/4"	3"	1/8"	P13101	\$296.70
	45/64" – 15/16"	2-5/8"	3-7/8"	4-1/64"	6-7/8"	1"	3"	1/8"	P13102	\$296.70
1.5	55/64" – 15/16"	2-5/8"	3-7/8"	4-1/64"	6-7/8"	3/4"	3"	1/8"	P13151	\$320.73
	55/64" – 15/16"	2-5/8"	3-7/8"	4-1/64"	6-7/8"	1"	3"	1/8"	P13152	\$320.73
2	31/32" – 1-3/8"	3-3/8"	4-1/2"	4-41/64"	8"	1"	3-1/2"	1/8"	P13202	\$320.73
	31/32" – 1-3/8"	3-3/8"	4-1/2"	4-41/64"	8"	1-1/4"	3-1/2"	1/8"	P13203	\$320.73
2.5	1-3/16" – 1-3/8"	3-3/8"	4-1/2"	4-41/64"	8"	1"	3-1/2"	1/8"	P13252	\$360.00
	1-3/16" – 1-3/8"	3-3/8"	4-1/2"	4-41/64"	8"	1-1/4"	3-1/2"	1/8"	P13253	\$360.00
3	1-13/32" – 1-7/8"	4-3/4"	6"	6-3/16"	10"	1-1/4"	4"	1/4"	P13303	\$364.37
	1-13/32" – 1-7/8"	4-3/4"	6"	6-3/16"	10"	1-1/2"	4"	1/4"	P13304	\$364.37
4	1-29/32" – 2-9/16"	5-1/8"	6-1/2"	6-11/16"	10-1/2"	1-1/2"	4"	1/4"	P13404	\$418.87
	1-29/32" – 2-9/16"	5-1/8"	6-1/2"	6-11/16"	10-1/2"	1-3/4"	4"	1/4"	P13405	\$442.90
5-6	2-1/2" – 3-1/2"	6-3/4"	8-1/2"	8-3/4"	12-1/2"	2"	4"	1/2"	P13506	\$665.40
7-8	3-17/32" – 4-1/2"	6-3/4"	8-7/8"	9-1/8"	13-7/8"	3"	5"	1/2"	P13708	\$905.40

INTERMEDIATE LENGTH – Straight Shank Holder - Straight Flute



Series	A Drill Insert Range	B Max. Drill Depth	C Flute Length	E Overall Length	Shank		G Pipe Tap	EDP No.	List Price
					Dia.	Length			
1	45/64" – 15/16"	4-5/8"	5-7/8"	8-7/8"	1"	3"	1/8"	P14102	\$338.80
1.5	55/64" – 15/16"	4-5/8"	5-7/8"	8-7/8"	1"	3"	1/8"	P14152	\$369.60
2	31/32" – 1-3/8"	5-3/8"	6-1/2"	10"	1-1/4"	3-1/2"	1/8"	P14203	\$369.60
2.5	1-3/16" – 1-3/8"	5-3/8"	6-1/2"	10"	1-1/4"	3-1/2"	1/8"	P14253	\$410.67
	1-13/32" – 1-7/8"	6-1/2"	7-3/4"	11-3/4"	1-1/2"	4"	1/4"	P14304	\$436.33

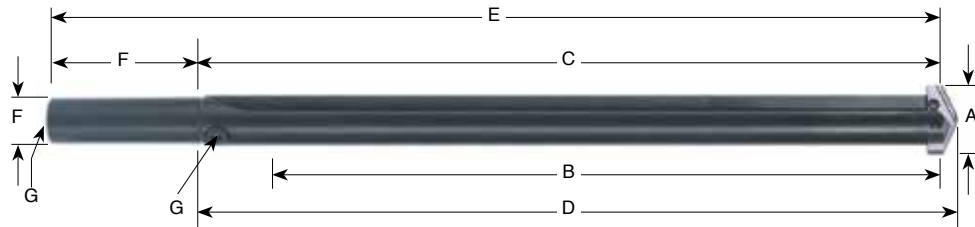
STANDARD LENGTH – Straight Shank Holder – Straight Flute



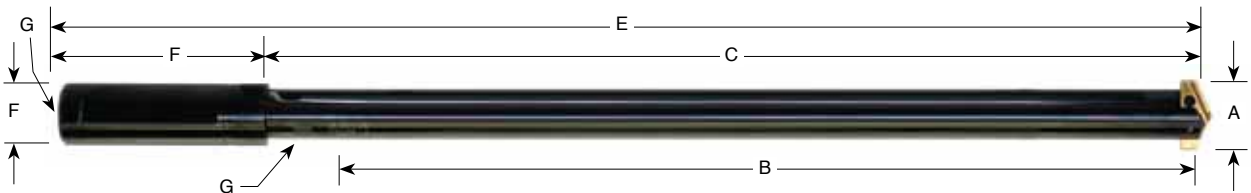
Series	A Drill Insert Range	B Max. Drill Depth	C Flute Length	D Ref. Length	E Overall Length	Shank		G Pipe Tap	EDP Number	List Price
						Dia.	Length			
Y	3/8" – 27/64"	2-3/8"	3-5/32"	3-1/4"	5-17/32"	3/4"	2-3/8"	1/8"	P15Y01	\$292.33
Z	7/16" – 1/2"	2-3/8"	3-5/32"	3-1/4"	5-17/32"	3/4"	2-3/8"	1/8"	P15Z01	\$292.33
0	33/64" – 11/16"	2-1/2"	3-5/16"	3-27/64"	5-11/16"	3/4"	2-3/8"	1/8"	P15001	\$292.33
0.5	39/64" – 11/16"	2-1/2"	3-5/16"	3-27/64"	5-11/16"	3/4"	2-3/8"	1/8"	P15051	\$292.33
1	45/64" – 15/16"	6-5/8"	7-7/8"	8-1/64"	10-7/8"	3/4"	3"	1/8"	P15101	\$320.73
	45/64" – 15/16"	6-5/8"	7-7/8"	8-1/64"	10-7/8"	1"	3"	1/8"	P15102	\$320.73
1.5	55/64" – 15/16"	6-5/8"	7-7/8"	8-1/64"	10-7/8"	3/4"	3"	1/8"	P15151	\$344.70
	55/64" – 15/16"	6-5/8"	7-7/8"	8-1/64"	10-7/8"	1"	3"	1/8"	P15152	\$344.70
2	31/32" – 1-3/8"	7-3/8"	8-1/2"	8-41/64"	12"	1"	3-1/2"	1/8"	P15202	\$344.70
	31/32" – 1-3/8"	7-3/8"	8-1/2"	8-41/64"	12"	1-1/4"	3-1/2"	1/8"	P15203	\$344.70
2.5	1-3/16" – 1-3/8"	7-3/8"	8-1/2"	8-41/64"	12"	1"	3-1/2"	1/8"	P15252	\$381.77
	1-3/16" – 1-3/8"	7-3/8"	8-1/2"	8-41/64"	12"	1-1/4"	3-1/2"	1/8"	P15253	\$381.77
3	1-13/32" – 1-7/8"	8-1/4"	9-1/2"	9-11/16"	13-1/2"	1-1/4"	4"	1/4"	P15303	\$386.17
	1-13/32" – 1-7/8"	8-1/4"	9-1/2"	9-11/16"	13-1/2"	1-1/2"	4"	1/4"	P15304	\$386.17
4	1-29/32" – 2-9/16"	9-1/8"	10-1/2"	10-11/16"	14-1/2"	1-1/2"	4"	1/4"	P15404	\$484.33
	1-29/32" – 2-9/16"	9-1/8"	10-1/2"	10-11/16"	14-1/2"	1-3/4"	4"	1/4"	P15405	\$521.40
5-6	2-1/2" – 3-1/2"	10-3/4"	12-1/2"	12-3/4"	16-1/2"	2"	4"	1/2"	P15506	\$730.87
7-8	3-17/32" – 4-1/2"	10-3/4"	12-7/8"	13-1/8"	17-7/8"	3"	5"	1/2"	P15708	\$1,079.93

STRAIGHT SHANK HOLDER

EXTENDED LENGTH - Straight Shank Holder - Straight Flute



Series	A	B	C	D	E	F		G	EDP Number	List Price
	Drill Insert Range	Max. Drill Depth	Flute Length	Ref. Length	Overall Length	Shank		Pipe Tap		
						Dia.	Length			
Y	3/8" - 27/64"	4-3/8"	5-5/32"	5-1/4"	7-17/32"	3/4"	2-3/8"	1/8"	P16Y01	\$356.00
Z	7/16" - 1/2"	4-3/8"	5-5/32"	5-1/4"	7-17/32"	3/4"	2-3/8"	1/8"	P16Z01	\$356.00
0	33/64" - 11/16"	4-1/2"	5-5/16"	5-27/64"	7-11/16"	3/4"	2-3/8"	1/8"	P16001	\$356.00
0.5	39/64" - 11/16"	4-1/2"	5-5/16"	5-27/64"	7-11/16"	3/4"	2-3/8"	1/8"	P16051	\$356.00
1	45/64" - 15/16"	10-5/8"	11-7/8"	12-1/64"	14-7/8"	1"	3"	1/8"	P16102	\$412.93
1.5	55/64" - 15/16"	10-5/8"	11-7/8"	12-1/64"	14-7/8"	1"	3"	1/8"	P16152	\$436.83
2	31/32" - 1-3/8"	11-3/8"	12-1/2"	12-41/64"	16"	1-1/4"	3-1/2"	1/8"	P16203	\$460.57
2.5	1-3/16" - 1-3/8"	11-3/8"	12-1/2"	12-41/64"	16"	1-1/4"	3-1/2"	1/8"	P16253	\$486.70
3	1-13/32" - 1-7/8"	13-3/4"	15"	15-3/16"	19"	1-1/4"	4"	1/4"	P16303	\$582.13
4	1-29/32" - 2-9/16"	16-5/8"	18"	18-3/16"	22"	1-1/2"	4"	1/4"	P16404	\$642.17
5-6	2-1/2" - 3-1/2"	18-1/4"	20"	20-1/4"	24"	2"	4"	1/2"	P16506	\$1,083.40
7-8	3-17/32" - 4-1/2"	21-7/8"	24"	24-1/4"	29"	3"	5"	1/2"	P16708	\$1,677.07



LONG LENGTH - Straight Shank Holder - Straight Flute

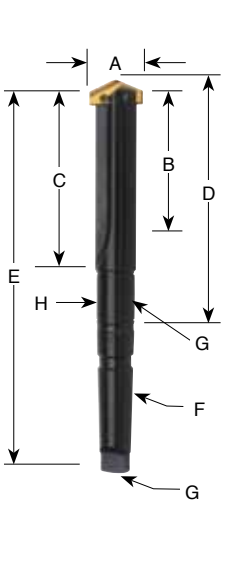
Series	A	B	C	D	E	F		G	EDP Number	List Price
	Drill Insert Range	Max. Drill Depth	Flute Length	Ref. Length	Overall Length	Shank		Pipe Tap		
						Dia.	Length			
0	33/64" - 11/16"	7"	7-13/16"	7-59/64"	10-3/16"	3/4"	2-3/8"	1/8"	P17001	\$413.13
0.5	39/64" - 11/16"	7"	7-13/16"	7-59/64"	10-3/16"	3/4"	2-3/8"	1/8"	P17051	\$413.13

XL LENGTH - Straight Shank Holder - Straight Flute

1	45/64" - 15/16"	18"	19-1/4"	19-25/64"	22-1/4"	1"	3"	1/8"	P17101	\$498.60
2	31/32" - 1-3/8"	20-1/8"	21-1/4"	21-25/64"	24-3/4"	1-1/4"	3-1/2"	1/8"	P17202	\$534.20
3	1-13/32" - 1-7/8"	22"	23-1/4"	23-7/16"	27-1/4"	1-1/2"	4"	1/4"	P17303	\$750.77
4	1-29/32" - 2-9/16"	24-5/8"	26"	26-3/16"	30"	1-1/2"	4"	1/4"	P17404	\$877.80
5-6	2-1/2" - 3-1/2"	26"	27-3/4"	28"	31-3/4"	2"	4"	1/2"	P17506	\$1,270.50
7-8	3-17/32" - 4-1/2"	27"	29-1/8"	29-3/8"	34-1/8"	3"	5"	1/2"	P17708	\$1,905.77

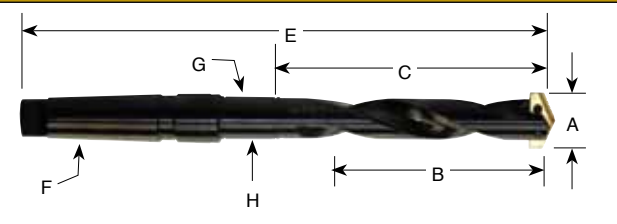
SPADE DRILL HOLDERS

SHORT LENGTH - Taper Shank Holder - Straight Flute



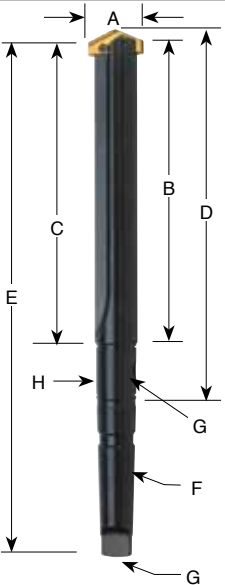
Series	A	B	C	D	E	F	G	H	EDP Number	List Price
	Drill Insert Range	Max. Drill Depth	Flute Length	Ref. Length	Overall Length	MT	Pipe Tap	RCI		
Y	3/8" - 27/64"	1-1/4"	2-1/32"	3-15/32"	6-5/16"	#2	1/16"	PR1030	P01Y02	\$302.60
Z	7/16" - 1/2"	1-1/4"	2-1/32"	3-15/32"	6-5/16"	#2	1/16"	PR1030	P01Z02	\$302.60
0	33/64" - 11/16"	1-3/8"	2-3/16"	3-41/64"	6-15/32"	#2	1/16"	PR1030	P01002	\$302.60
0.5	39/64" - 11/16"	1-3/8"	2-3/16"	3-41/64"	6-15/32"	#2	1/16"	PR1030	P01052	\$302.60
1	45/64" - 15/16"	2-3/4"	3-7/8"	5-39/64"	9-5/32"	#3	1/8"	PR1031	P01103	\$330.33
	45/64" - 15/16"	2-3/4"	3-7/8"	5-43/64"	10-5/32"	#4	1/8"	PR1031	P01104	\$339.57
1.5	55/64" - 15/16"	2-3/4"	3-7/8"	5-39/64"	9-5/32"	#3	1/8"	PR1031	P01153	\$355.73
	55/64" - 15/16"	2-3/4"	3-7/8"	5-43/64"	10-5/32"	#4	1/8"	PR1031	P01154	\$367.30
2	31/32" - 1-3/8"	3-3/8"	4-1/2"	6-15/64"	9-25/32"	#3	1/8"	PR1031	P01203	\$367.30
	31/32" - 1-3/8"	3-3/8"	4-1/2"	6-19/64"	10-25/32"	#4	1/8"	PR1031	P01204	\$381.17
2.5	1-3/16" - 1-3/8"	3-3/8"	4-1/2"	6-15/64"	9-25/32"	#3	1/8"	PR1031	P01253	\$392.70
	1-3/16" - 1-3/8"	3-3/8"	4-1/2"	6-37/64"	11-1/16"	#4	1/4"	PR1042	P01254	\$408.87
3	1-13/32" - 1-7/8"	4-3/4"	6"	8-1/8"	12-9/16"	#4	1/4"	PR1042	P01304	\$408.87
	1-13/32" - 1-7/8"	4-3/4"	6"	8-1/8"	13-13/16"	#5	1/4"	PR1043	P01305	\$431.97
4	1-29/32" - 2-9/16"	5-1/8"	6-1/2"	8-5/8"	13-1/16"	#4	1/4"	PR1042	P01404	\$443.53
	1-29/32" - 2-9/16"	5-1/8"	6-1/2"	8-5/8"	14-5/16"	#5	1/4"	PR1043	P01405	\$485.10
5-6	2-1/2" - 3-1/2"	6-3/4"	8-1/2"	11-5/16"	16-15/16"	#5	1/2"	PR1054	P01505	\$704.57
7-8	3-17/32" - 4-1/2"	6-3/4"	8-7/8"	11-11/16"	17-5/16"	#5	1/2"	PR1054	P01705	\$958.67

INTERMEDIATE LENGTH - Taper Shank Holder - Helical Flute



Series	A	B	C	E	F	G	H	EDP No.	List Price
	Drill Insert Range	Max. Drill Depth	Flute Length	Overall Length	MT	Pipe Tap	RCI		
1	45/64" - 15/16"	4-3/4"	5-7/8"	11-5/32"	#3	1/8"	PR1031	P08103	\$379.87
1.5	55/64" - 15/16"	4-3/4"	5-7/8"	11-5/32"	#3	1/8"	PR1031	P08153	\$410.67
2	31/32" - 1-3/8"	5-3/8"	6-1/2"	12-25/32"	#4	1/8"	PR1031	P08204	\$436.33
2.5	1-3/16" - 1-3/8"	5-3/8"	6-1/2"	13-1/16"	#4	1/4"	PR1042	P08254	\$467.13

STANDARD LENGTH - Taper Shank Holder - Straight Flute



Series	A	B	C	D	E	F	G	H	EDP Number	List Price
	Drill Insert Range	Max. Drill Depth	Flute Length	Ref. Length	Overall Length	MT	Pipe Tap	RCI		
Y	3/8" - 27/64"	2-3/8"	3-5/32"	4-19/32"	7-7/16"	#2	1/16"	PR1030	P03Y02	\$309.53
Z	7/16" - 1/2"	2-3/8"	3-5/32"	4-19/32"	7-7/16"	#2	1/16"	PR1030	P03Z02	\$309.53
0	33/64" - 11/16"	2-1/2"	3-5/16"	4-49/64"	7-19/32"	#2	1/16"	PR1030	P03002	\$309.53
0.5	39/64" - 11/16"	2-1/2"	3-5/16"	4-49/64"	7-19/32"	#2	1/16"	PR1030	P03052	\$309.53
1	45/64" - 15/16"	6-3/4"	7-7/8"	9-39/64"	13-5/32"	#3	1/8"	PR1031	P03103	\$353.43
	45/64" - 15/16"	6-3/4"	7-7/8"	9-43/64"	14-5/32"	#4	1/8"	PR1031	P03104	\$364.97
1.5	55/64" - 15/16"	6-3/4"	7-7/8"	9-39/64"	13-5/32"	#3	1/8"	PR1031	P03153	\$378.83
	55/64" - 15/16"	6-3/4"	7-7/8"	9-43/64"	14-5/32"	#4	1/8"	PR1031	P03154	\$390.40
2	31/32" - 1-3/8"	7-3/8"	8-1/2"	10-15/64"	13-25/32"	#3	1/8"	PR1031	P03203	\$390.40
	31/32" - 1-3/8"	7-3/8"	8-1/2"	10-19/64"	14-25/32"	#4	1/8"	PR1031	P03204	\$401.93
2.5	1-3/16" - 1-3/8"	7-3/8"	8-1/2"	10-15/64"	13-25/32"	#3	1/8"	PR1031	P03253	\$415.80
	1-3/16" - 1-3/8"	7-3/8"	8-1/2"	10-37/64"	15-1/16"	#4	1/4"	PR1042	P03254	\$431.97
3	1-13/32" - 1-7/8"	8-1/4"	9-1/2"	11-5/8"	16-1/16"	#4	1/4"	PR1042	P03304	\$445.83
	1-13/32" - 1-7/8"	8-1/4"	9-1/2"	11-5/8"	17-5/16"	#5	1/4"	PR1043	P03305	\$480.47
4	1-29/32" - 2-9/16"	9-1/8"	10-1/2"	12-5/8"	17-1/16"	#4	1/4"	PR1042	P03404	\$512.82
	1-29/32" - 2-9/16"	9-1/8"	10-1/2"	12-5/8"	18-5/16"	#5	1/4"	PR1043	P03405	\$552.10
5-6	2-1/2" - 3-1/2"	10-3/4"	12-1/2"	15-5/16"	20-15/16"	#5	1/2"	PR1054	P03505	\$773.87
7-8	3-17/32" - 4-1/2"	10-3/4"	12-7/8"	15-11/16"	21-5/16"	#5	1/2"	PR1054	P03705	\$1143.47

SPADE DRILL HOLDERS


TORX SCREWS AND PREMIUM TORX HAND DRIVERS

Series	Torx Screws			Torx Screws (Nylon Locking)			Premium Torx Drivers		Inch/Metric Drill Range		Torque in Lbs. 5.5
	Item	PKG EDP# (10 Screws)	PKG. List Price	Item	PKG EDP# (10 Screws)	PKG. List Price	EDP#	List Price 1 Each			
Y	2XT7	J7Y001	\$31.43	2XT7N	J7Y006	\$36.37	J5Y007	\$12.10	3/8" – 27/64"	9.5mm – 11mm	5.5
Z	2LXT7	J7Z011	\$27.87	2LXT7N	J7Z016	\$36.37	J5Y007	\$12.10	7/16" – 1/2"	11.5mm – 12.5mm	5.5
0	2.5XT8	J80021	\$26.03	2.5XT8N	J80026	\$35.03	J50008	\$12.10	33/64" – 11/16"	13mm – 17.5mm	11.0
0.5	2.5LXT8	J80531	\$26.03	2.5LXT8N	J80536	\$35.93	J50008	\$12.10	39/64" – 11/16"	15.5mm – 17.5mm	11.0
1	3XT9	J91041	\$26.97	3XT9N	J91046	\$35.03	J51009	\$12.10	45/64" – 15/16"	18mm – 24mm	20.0
1.5	3LXT9	J91551	\$26.97	3LXT9N	J91556	\$35.93	J51009	\$12.10	55/64" – 15/16"	22mm – 24mm	20.0
2	4XT15	JB2061	\$26.03	4XT15N	JB2066	\$35.93	J52015	\$12.10	31/32" – 1-3/8"	25mm – 35mm	45.0
2.5	4XT15	JB2061	\$26.03	4XT15N	JB2066	\$35.93	J52015	\$12.10	31/32" – 1-3/8"	30mm – 35mm	45.0
3-4	5XT20	JC3081	\$26.03	5XT20N	JC3086	\$35.93	J53020	\$12.10	1-13/32" – 2-9/16"	36mm – 65mm	90.0
5-8	6XT25	JD5091	\$35.03	6XT25N	JD5096	\$40.73	J55025	\$14.73	2-1/2" – 4-1/2"	64mm – 114mm	155.0

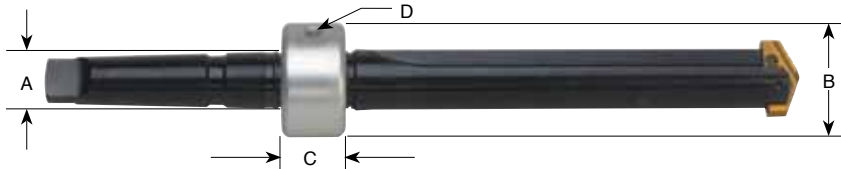
NOTE: Replacement screws sold in packages (10 screws per package)

ROTARY COOLANT INDUCER (RCI) AND ACCESSORIES

	A	B	C	D	Thread for Driving Rod	EDP Number	List Price
	I.D.	Pipe O.D.	Length	Tap			
	3/4"	1-3/4"	7/8"	1/8"	5/16" – NC	PR1030	\$78.97
	1"	2-1/8"	1-1/8"	1/8"	5/16" – NC	PR1031	\$87.27
	1-1/4"	2-1/2"	1-3/8"	1/4"	3/8" – NC	PR1042	\$106.93
	1-3/4"	3"	1-3/8"	1/4"	3/8" – NC	PR1043	\$122.17
	2-1/4"	3-3/4"	1-3/4"	1/2"	1/2" – NC	PR1054	\$148.37



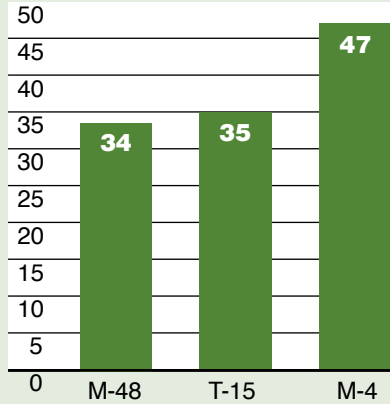
Complete with O'Rings, Flat Washers and Locking Clips.



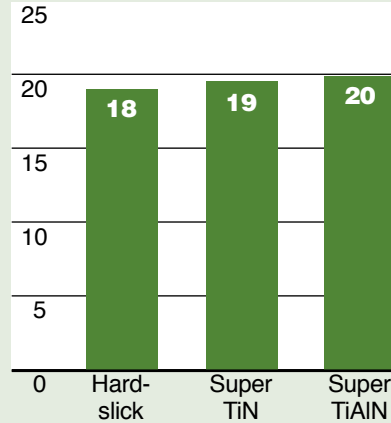
DRILL INSERTS

SPADE DRILL SELECTION & APPLICATIONS HSS

Toughness Values



Wear Values



- **WHEN TO USE M-4**
 - Loose or Manual Machines
 - If T-15 Breaks
- **WHEN TO USE T-15**
 - When M-4 Life needs to be Extended
 - If M-48 Breaks
- **WHEN TO USE M-48**
 - Extend Life of T-15

SPEEDS – FEED RECOMMENDATIONS

Material	Material Hardness (BHN)	SFM Surface Footage	Feed (IPR)						
			3/8" to 1/2"	33/64" to 11/16"	45/64" to 15/16"	31/32" to 1-3/8"	1-13/32" to 1-7/8"	1-29/32" to 2-9/16"	2-19/32" to 4-1/2"
Free Machining Steel 1118, 1215, 12L14, etc.	100 - 150	280	.007	.010	.013	.016	.020	.023	.028
	150 - 200	260	.007	.010	.013	.016	.020	.023	.028
	200 - 250	240	.007	.010	.013	.016	.020	.023	.028
Low & Medium Carbon Steel 1018, 1040, 1140, etc.	125 - 175	240	.006	.009	.012	.015	.019	.023	.027
	175 - 225	225	.005	.008	.010	.014	.018	.021	.024
	225 - 275	210	.005	.008	.010	.014	.018	.021	.024
	275 - 325	195	.004	.007	.009	.012	.016	.019	.022
Alloy Steel 4140, 5140, 8640, etc.	125 - 175	210	.006	.008	.010	.014	.017	.019	.022
	175 - 225	195	.005	.008	.010	.014	.017	.019	.022
	225 - 275	180	.005	.007	.010	.014	.017	.019	.022
	275 - 325	170	.004	.006	.009	.012	.015	.017	.020
	325 - 375	155	.003	.006	.009	.012	.015	.017	.020
High Strength Alloy Steel 4340, 4330V, 300M, etc.	225 - 300	110	.005	.007	.009	.010	.014	.017	.020
	300 - 350	85	.004	.007	.009	.010	.014	.017	.020
	350 - 400	70	.003	.006	.008	.009	.012	.015	.018
Structural Steel A36, A285, A516, etc.	100 - 150	200	.006	.010	.012	.014	.018	.021	.026
	150 - 250	170	.005	.009	.010	.012	.016	.019	.024
	250 - 350	140	.004	.008	.009	.010	.014	.017	.020
High Temp, Alloy Hastelloy B, Inconel 600, etc.	140 - 220	40	.003	.006	.007	.008	.010	.012	.015
	220 - 310	35	.003	.006	.007	.008	.010	.012	.015
Stainless Steel 303, 416, 420, 17-4 PH, etc.	135 - 185	105	.006	.008	.009	.011	.014	.016	.020
	185 - 275	90	.005	.007	.008	.010	.012	.014	.018
Tool Steel H-13, H021, A04, O-2, S-3, etc.	150 - 200	110	.004	.006	.008	.010	.012	.015	.017
	200 - 250	90	.004	.006	.008	.010	.012	.015	.017
Aluminum	30	850	.008	.013	.016	.020	.022	.025	.025
	180	450	.008	.013	.016	.018	.022	.025	.025
Cast Iron Gray, Ductile, Nodular	120 - 150	250	.007	.012	.016	.020	.024	.027	.030
	150 - 200	225	.006	.011	.014	.018	.022	.025	.028
	200 - 220	195	.006	.009	.012	.016	.018	.021	.024
	220 - 260	165	.005	.007	.009	.012	.014	.017	.020
	260 - 320	135	.004	.006	.007	.009	.012	.014	.016

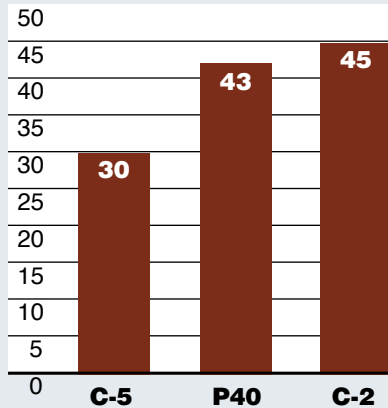
STANDARD GEOMETRY

FOR SM POINT ADD 5% TO 10%

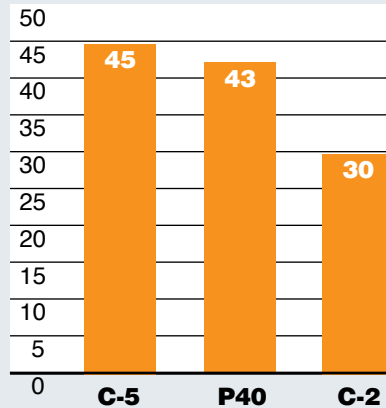
DRILL INSERTS

SPADE DRILL SELECTION & APPLICATIONS CARBIDE

Toughness Values



Wear Values



If C-5 chips try C-2 at 10% – 20% lower S.F.M. than C-5 rating

Grade	Geometry and Application	Stocked Coatings
P40 & C-5	Steel Cutting	Super TiN TiAIN
C-3	Cast Iron	Super TiN TiAIN
P40 & C-2	Ductile Iron Stainless Steel Aluminum Exotic Alloys	Super TiN TiAIN

Note: Carbide has a lower transverse rupture strength than HSS and is prone to chipping and breakage. Recutting of chips or lack of rigidity can cause breakage. Check Coolant Recommendations Chart on Page 15 for flow rates.

SPEEDS – FEED RECOMMENDATIONS

Material	Material Hardness (BHN)	SFM Surface Footage	Feed (IPR)				
			3/8" to 1/2"	33/64" to 11/16"	45/64" to 15/16"	31/32" to 1-3/8"	1-13/32" to 1-7/8"
Free Machining Steel 1118, 1215, 12L14, etc.	100 - 150	420	.006	.009	.012	.015	.019
	150 - 200	360	.006	.008	.011	.013	.017
	200 - 250	340	.005	.008	.010	.012	.015
Medium Carbon Steel 1018, 1040, 1140, etc.	125 - 175	340	.005	.008	.010	.014	.017
	175 - 225	310	.005	.007	.009	.012	.016
	225 - 275	270	.004	.007	.009	.012	.015
	275 - 325	230	.004	.006	.008	.010	.014
Alloy Steel 4140, 5140, 8640, etc.	125 - 175	325	.005	.008	.010	.013	.016
	175 - 225	300	.005	.007	.009	.012	.015
	225 - 275	270	.004	.007	.009	.012	.015
	275 - 325	250	.004	.006	.008	.011	.014
	325 - 375	220	.003	.005	.007	.010	.013
High Strength Alloy Steel 4340, 4330V, 300M, etc.	225 - 300	200	.005	.007	.009	.010	.014
	300 - 350	180	.004	.006	.008	.009	.012
	350 - 400	160	.003	.005	.007	.008	.010
Structural Steel A36, A285, A516, etc.	100 - 150	310	.006	.010	.011	.012	.016
	150 - 250	250	.005	.008	.010	.011	.015
	250 - 350	230	.004	.007	.009	.009	.013
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140 - 220	80	.003	.006	.007	.009	.011
	220 - 310	60	.003	.005	.006	.008	.010
Stainless Steel 303, 416, 420, 17-4 PH, etc.	135 - 185	210	.006	.008	.009	.011	.013
	185 - 275	160	.005	.007	.008	.010	.011
Tool Steel H-13, H021, A04, O-2, S-3, etc.	150 - 200	220	.003	.005	.007	.009	.011
	200 - 250	170	.003	.005	.007	.009	.011
Aluminum	30	1500	.008	.013	.016	.020	.022
	180	1000	.007	.011	.014	.018	.020
Cast Iron Gray, Ductile, Nodular	120 - 150	460	.006	.009	.011	.015	.020
	150 - 200	400	.005	.008	.010	.014	.018
	200 - 220	360	.005	.007	.008	.012	.015
	220 - 260	310	.004	.006	.007	.010	.013
	260 - 320	270	.004	.005	.006	.008	.011

STANDARD GEOMETRY

FOR SM POINT ADD 5% TO 10%

DRILL INSERTS

SPADE DRILL HORSEPOWER CONSUMPTION RATE & METAL REMOVAL RATES (MRR)



Metal Removal Rates (MRR)

Example: 1.50 Dia. Drill @ 6.412 I.P.M.

Volume of Cylinder Method: $D^2 \times .785 \times L$

D = Hole Diameter
L = Length in I.P.M.
.785 is Constant

Material Drilled 4140 250 BHN:

Cutting Data: 180 S.F.M. (458 R.P.M.) x .014 Feed per Rev.

458 R.P.M. x .014 = 6.412 I.P.M. (L)

$D^2 (1.5)^2 \times .785 \times L (6.412) = 11.3 \text{ C.U.In./ Min (MRR)}$

MRR of 11.3 x 1.4 Energy Value = 15.8HP.

- Cubic inches of metal removal per unit of horsepower.
- Unit horsepower (HP_u) is the amount of power to remove a volume of metal in a period of time.
 - HP_u = power to cut 1 cubic inch per minute – found in tables

Average Unit Horsepower Values of Energy Per Unit Volume

Material	BHN	HP_u (HP/(in ³ /min.))
Carbon Steels	150-200	1.0
	200-250	1.4
	250-350	1.6
Leaded Steels	150-175	0.7
Cast Irons	125-190	0.5
	190-250	1.6
Stainless Steels	135-275	1.5
Aluminum Alloys	50-100	0.3
Magnesium Alloys	40-90	0.2
Copper	125-140	0.7
Copper Alloys	100-150	0.7

COOLANT RECOMMENDATIONS

MATERIAL	Material Hardness (BHN)	High Speed Steel (TiN, TiAlN & Hardslick Coated)						
		Coolant Pressure (PSI)						
		Coolant Volumetric Flowrate (GPM)						
		3/8" – 1/2"	33/64" – 11/16"	23/32" – 1"	1" – 1-1/4"	1-1/4" – 2"	2" – 3"	3" – 4"
Free Machining Steel 1118, 1215, 12L14, etc.	100 – 250	175-185 2.5-2.6	100-120 2.8-3.0	105-140 4.4-5.2	80-115 7-8	75-100 12-14	40-50 30-33	65-90 38-44
Low Carbon Steel 1010, 1020, 1025, 1522, etc.	85 – 275	165-170 2.4-2.5	75-90 2.4-2.6	75-95 3.7-4.2	60-80 6-7	55-75 11-12	30-40 26-30	50-65 33-38
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 – 325	160-165 2.3-2.4	70-85 2.3-2.6	70-90 3.6-4.1	55-75 5-6	50-70 10-12	30-40 26-30	50-65 33-38
Alloy Steel 4140, 5140, 8640, etc.	125 – 375	160-165 2.3-2.4	66-75 2.2-2.4	65-80 3.5-3.9	50-70 5-6	45-60 10-11	30-35 26-28	40-50 30-33
High Strength Alloy 4340, 4330V, 300M, etc.	225 – 400	150-155 2.3-2.4	55-60 2.1-2.2	45-50 2.9-3.1	25-30 4-5	25-30 7-8	20-25 21-23	25-30 23-26
Structural Steel A36, A285, A516, etc.	100 – 350	160-165 2.3-2.4	75-85 2.4-2.6	65-80 3.5-3.9	40-55 5-6	40-50 9-10	25-30 23-26	40-50 30-33
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140 – 310	150-155 2.3-2.4	60-65 2.2-2.3	50-55 3.1-3.2	30-35 4-5	25-30 7-8	25-30 23-26	- -
Stainless Steel 301, 316, 330, 17-4PH, etc.	135 – 275	165-170 2.4-2.5	70-85 2.3-2.6	65-75 3.5-3.7	40-55 5-6	40-50 9-10	25-30 23-26	35-45 28-31
Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150 – 250	150-155 2.3-2.4	55-60 2.1-2.2	45-50 2.9-3.1	25-30 4-5	25-30 7-8	20-25 21-23	25-30 23-26
Aluminum	30 – 180	190-210 2.6-2.7	140-180 3.3-3.7	150-200 5.3-6.1	115-160 8-9	90-125 14-16	40-50 30-33	60-80 36-42
Cast Iron	120 – 320	155-160 2.3-2.4	60-65 2.2-2.3	50-60 3.1-3.3	30-40 4-5	30-35 8-9	25-30 23-26	30-35 26-28

DRILL INSERTS

CUTTING CONDITIONS

SUPER COBALT T-15 FLAT BOTTOM SPADE DRILL INSERTS

Material	Material Hardness (Bhn)	Speed (SFM)		Feed			
		TiN	TiAlN	Ø 3/8" ~1/2"	Ø 33/64" ~11/16"	Ø 45/64" ~15/16"	Ø 31/32" ~1*3/8"
Free machining Steel 1213, 12L13, 1215 12L14, 1118 etc	100 - 150	165	220	0.005	0.007	0.010	0.013
	150 - 200	150	215	0.005	0.007	0.010	0.013
	200 - 250	135	190	0.004	0.007	0.010	0.012
Low Carbon Steel 1015, 1020, 1140 1025 etc	85 - 125	140	195	0.005	0.007	0.009	0.012
	125 - 175	135	190	0.005	0.007	0.009	0.012
	175 - 225	125	180	0.004	0.006	0.008	0.011
Medium Carbon Steel 1035, 1050, 1045 1055, 1140 etc	225 - 275	115	175	0.004	0.006	0.008	0.011
	125 - 175	135	195	0.004	0.007	0.009	0.011
	175 - 225	125	180	0.004	0.006	0.007	0.011
Structural Steel A36, A516, A182 etc	225 - 275	115	165	0.004	0.006	0.007	0.011
	275 - 325	105	150	0.003	0.005	0.007	0.009
	100 - 150	115	165	0.004	0.007	0.009	0.011
Cast Iron / S,G Iron A48-76 GR30/GR45 A536-72 60-40-18 A220-76 GR40010 etc	150 - 250	100	140	0.004	0.007	0.008	0.009
	250 - 350	80	115	0.003	0.006	0.007	0.008
	120 - 150	145	215	0.005	0.010	0.014	0.016
Alloy Steel 8620, 4130, 4137 4140, 6150 etc	150 - 200	130	190	0.005	0.008	0.011	0.016
	200 - 220	110	165	0.005	0.008	0.010	0.014
	220 - 260	95	150	0.004	0.006	0.008	0.010
Tool Steel H13, H21, A2, S1 etc	260 - 320	80	120	0.004	0.005	0.006	0.008
	125 - 175	125	165	0.005	0.006	0.008	0.011
	175 - 225	115	150	0.004	0.006	0.008	0.011
High Temp. Alloy Hastelloy B, Inconel etc	225 - 275	105	145	0.004	0.005	0.007	0.011
	275 - 325	100	140	0.003	0.005	0.007	0.009
	325 - 375	90	120	0.003	0.005	0.007	0.009
High Strength Alloy 9840, 4340, 4330V etc	150 - 200	65	90	0.003	0.005	0.006	0.008
	200 - 250	45	75	0.003	0.005	0.006	0.008
	140 - 220	20	30	0.003	0.005	0.006	0.008
Aluminium 2014, 6061, 7075 etc	220 - 310	15	25	0.003	0.004	0.006	0.006
	225 - 300	65	90	0.004	0.006	0.007	0.008
	300 - 350	45	70	0.003	0.006	0.007	0.008
Stainless Steel 310, 316, 410, 330 etc	350 - 400	40	60	0.003	0.005	0.006	0.007
	30	520	700	0.007	0.011	0.014	0.017
	180	255	390	0.007	0.011	0.014	0.016
	135 - 185	60	90	0.005	0.007	0.008	0.009
	185 - 275	50	80	0.004	0.006	0.007	0.009

- RPM** = revolution per minute (rev/min)
SFM = surface feet per minute (ft/min)
DIA = diameter of drill (inch)
IPR = feed rate (in/rev)
IPM = inch per minute penetration rate

*** Formulas :**

$$SFM = (RPM) \cdot (.262) \cdot (DIA.)$$

$$IPM = (RPM) \cdot (IPR)$$

$$RPM = \frac{(SFM) \cdot (3.82)}{(DIA.)}$$



The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points. Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.

CARBIDE DREAM DRILLS FOR ALUMINUM

With coolant holes 5xD – Metric Series



- ▶ The tool has the special flute shape and geometry for suitable machining of aluminum.
- ▶ Excellent chip evacuation due to better surface treatment.
- ▶ Point R-thinning makes the superior centering and chip curl.
- ▶ Pecking not required.

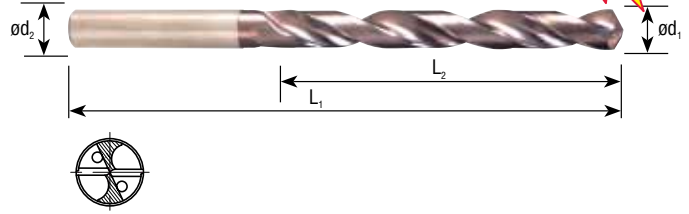
DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30° Point Angle: 118°

Dia. Tolerance ϕd_1 : m7: See page 44

Shank Tolerance ϕd_2 : -.0001 -.0005

Coating: DLC



See Technical Information – Page 31

Diameter		Shank	Overall	Flute	EDP No.	List Price
Metric (ϕd_1)	Inch (ϕd_1)	Diameter (ϕd_2)	Length (L_1)	Length (L_2)		
3.0	.1181	6.0	66	28	DGE433030	\$141.55
3.1	.1220	6.0	66	28	DGE433031	\$141.55
3.2	.1260	6.0	66	28	DGE433032	\$141.55
3.3	.1299	6.0	66	28	DGE433033	\$141.55
3.4	.1339	6.0	66	28	DGE433034	\$141.55
3.5	.1378	6.0	66	28	DGE433035	\$141.55
3.6	.1417	6.0	66	28	DGE433036	\$141.55
3.7	.1457	6.0	66	28	DGE433037	\$141.55
3.8	.1496	6.0	74	36	DGE433038	\$141.55
3.9	.1535	6.0	74	36	DGE433039	\$141.55
4.0	.1575	6.0	74	36	DGE433040	\$141.55
4.1	.1614	6.0	74	36	DGE433041	\$141.55
4.2	.1654	6.0	74	36	DGE433042	\$141.55
4.3	.1693	6.0	74	36	DGE433043	\$141.55
4.4	.1732	6.0	74	36	DGE433044	\$141.55
4.5	.1772	6.0	74	36	DGE433045	\$141.55
4.6	.1811	6.0	74	36	DGE433046	\$141.55
4.7	.1850	6.0	74	36	DGE433047	\$141.55
4.8	.1890	6.0	82	44	DGE433048	\$141.55
4.9	.1929	6.0	82	44	DGE433049	\$141.55
5.0	.1969	6.0	82	44	DGE433050	\$141.55
5.1	.2008	6.0	82	44	DGE433051	\$141.55
5.2	.2047	6.0	82	44	DGE433052	\$141.55
5.3	.2087	6.0	82	44	DGE433053	\$141.55
5.4	.2126	6.0	82	44	DGE433054	\$141.55
5.5	.2165	6.0	82	44	DGE433055	\$141.55
5.6	.2205	6.0	82	44	DGE433056	\$141.55
5.7	.2244	6.0	82	44	DGE433057	\$141.55
5.8	.2283	6.0	82	44	DGE433058	\$141.55
5.9	.2323	6.0	82	44	DGE433059	\$141.55
6.0	.2362	6.0	82	44	DGE433060	\$141.55
6.1	.2402	8.0	91	53	DGE433061	\$167.10
6.2	.2441	8.0	91	53	DGE433062	\$167.10
6.3	.2480	8.0	91	53	DGE433063	\$167.10
6.4	.2520	8.0	91	53	DGE433064	\$167.10
6.5	.2559	8.0	91	53	DGE433065	\$167.10
6.6	.2598	8.0	91	53	DGE433066	\$167.10
6.7	.2638	8.0	91	53	DGE433067	\$167.10
6.8	.2677	8.0	91	53	DGE433068	\$167.10
6.9	.2717	8.0	91	53	DGE433069	\$167.10
7.0	.2756	8.0	91	53	DGE433070	\$167.10
7.1	.2795	8.0	91	53	DGE433071	\$167.10
7.2	.2835	8.0	91	53	DGE433072	\$167.10
7.3	.2874	8.0	91	53	DGE433073	\$167.10
7.4	.2913	8.0	91	53	DGE433074	\$167.10
7.5	.2953	8.0	91	53	DGE433075	\$167.10
7.6	.2992	8.0	91	53	DGE433076	\$167.10
7.7	.3031	8.0	91	53	DGE433077	\$167.10
7.8	.3071	8.0	91	53	DGE433078	\$167.10
7.9	.3110	8.0	91	53	DGE433079	\$167.10
8.0	.3150	8.0	91	53	DGE433080	\$167.10
8.1	.3189	10.0	103	61	DGE433081	\$218.25
8.2	.3228	10.0	103	61	DGE433082	\$218.25
8.3	.3268	10.0	103	61	DGE433083	\$218.25

Diameter		Shank	Overall	Flute	EDP No.	List Price
Metric (ϕd_1)	Inch (ϕd_1)	Diameter (ϕd_2)	Length (L_1)	Length (L_2)		
8.4	.3307	10.0	103	61	DGE433084	\$218.25
8.5	.3346	10.0	103	61	DGE433085	\$218.25
8.6	.3386	10.0	103	61	DGE433086	\$218.25
8.7	.3425	10.0	103	61	DGE433087	\$218.25
8.8	.3465	10.0	103	61	DGE433088	\$218.25
8.9	.3504	10.0	103	61	DGE433089	\$218.25
9.0	.3543	10.0	103	61	DGE433090	\$218.25
9.1	.3583	10.0	103	61	DGE433091	\$218.25
9.2	.3622	10.0	103	61	DGE433092	\$218.25
9.3	.3661	10.0	103	61	DGE433093	\$218.25
9.4	.3701	10.0	103	61	DGE433094	\$218.25
9.5	.3740	10.0	103	61	DGE433095	\$218.25
9.6	.3780	10.0	103	61	DGE433096	\$218.25
9.7	.3819	10.0	103	61	DGE433097	\$218.25
9.8	.3858	10.0	103	61	DGE433098	\$218.25
9.9	.3898	10.0	103	61	DGE433099	\$218.25
10.0	.3937	10.0	103	61	DGE433100	\$218.25
10.1	.3976	12.0	118	71	DGE433101	\$306.10
10.2	.4016	12.0	118	71	DGE433102	\$306.10
10.3	.4055	12.0	118	71	DGE433103	\$306.10
10.4	.4094	12.0	118	71	DGE433104	\$306.10
10.5	.4134	12.0	118	71	DGE433105	\$306.10
10.6	.4173	12.0	118	71	DGE433106	\$306.10
10.7	.4212	12.0	118	71	DGE433107	\$306.10
10.8	.4252	12.0	118	71	DGE433108	\$306.10
10.9	.4291	12.0	118	71	DGE433109	\$306.10
11.0	.4330	12.0	118	71	DGE433110	\$306.10
11.1	.4370	12.0	118	71	DGE433111	\$306.10
11.2	.4409	12.0	118	71	DGE433112	\$306.10
11.3	.4448	12.0	118	71	DGE433113	\$306.10
11.4	.4488	12.0	118	71	DGE433114	\$306.10
11.5	.4527	12.0	118	71	DGE433115	\$306.10
11.6	.4566	12.0	118	71	DGE433116	\$306.10
11.7	.4606	12.0	118	71	DGE433117	\$306.10
11.8	.4645	12.0	118	71	DGE433118	\$306.10
11.9	.4685	12.0	118	71	DGE433119	\$306.10
12.0	.4724	12.0	118	71	DGE433120	\$306.10
12.5	.4921	14.0	124	77	DGE433125	\$392.32
13.0	.5118	14.0	124	77	DGE433130	\$392.32
13.5	.5314	14.0	124	77	DGE433135	\$392.32
14.0	.5511	14.0	124	77	DGE433140	\$392.32
14.5	.5708	16.0	133	83	DGE433145	\$473.52
15.0	.5905	16.0	133	83	DGE433150	\$473.52
15.5	.6102	16.0	133	83	DGE433155	\$473.52
16.0	.6299	16.0	133	83	DGE433160	\$473.52
16.5	.6495	18.0	143	93	DGE433165	\$682.69
17.0	.6692	18.0	143	93	DGE433170	\$682.69
17.5	.6889	18.0	143	93	DGE433175	\$682.69
18.0	.7086	18.0	143	93	DGE433180	\$682.69
18.5	.7283	20.0	153	101	DGE433185	\$762.67
19.0	.7480	20.0	153	101	DGE433190	\$762.67
19.5	.7676	20.0	153	101	DGE433195	\$762.67
20.0	.7874	20.0	153	101	DGE433200	\$756.79

CARBIDE DREAM DRILLS FOR ALUMINUM

With coolant holes 5xD – Inch Series



- ▶ The tool has the special flute shape and geometry for suitable machining of aluminum.
- ▶ Excellent chip evacuation due to better surface treatment.
- ▶ Point R-thinning makes the superior centering and chip curl.
- ▶ Pecking not required.

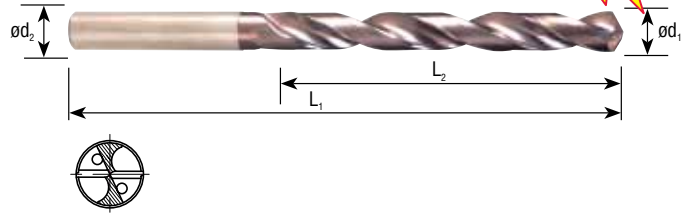
DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30° Point Angle: 118°

Dia. Tolerance ϕd_1 : See page 44

Shank Tolerance ϕd_2 : -.0001 -.0005

Coating: DLC



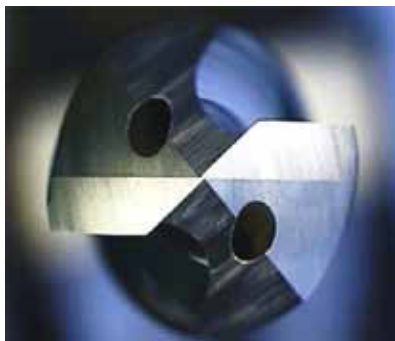
See Technical Information – Below

Diameter		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Fractional	Decimal					
13/64	.2031	15/64	3-15/16	1-3/4	DGE466013	\$153.60
7/32	.2188	15/64	3-15/16	1-57/64	DGE466014	\$153.60
15/64	.2344	15/64	3-15/16	1-57/64	DGE466015	\$153.60
1/4	.2500	17/64	4-19/64	2-3/64	DGE466016	\$179.60
F	.2570	17/64	4-19/64	2-13/64	DGE466206	\$179.60
17/64	.2656	17/64	4-19/64	2-13/64	DGE466017	\$179.60
I	.2720	0.272	4-19/64	2-13/64	DGE466209	\$179.60
9/32	.2812	5/16	4-41/64	2-23/64	DGE466018	\$194.85
19/64	.2969	5/16	4-41/64	2-33/64	DGE466019	\$194.85
5/16	.3125	5/16	4-41/64	2-33/64	DGE466020	\$194.85
21/64	.3281	11/32	5	2-43/64	DGE466021	\$224.95
Q	.3320	11/32	5	2-43/64	DGE466217	\$224.95

Diameter		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Fractional	Decimal					
11/32	.3438	11/32	5	2-27/32	DGE466022	\$224.95
23/64	.3594	25/64	5-23/64	3	DGE466023	\$228.45
U	.3680	25/64	5-23/64	3	DGE466221	\$228.45
3/8	.3750	25/64	5-23/64	3-5/32	DGE466024	\$232.55
25/64	.3906	25/64	5-23/64	3 5/32	DGE466025	\$232.55
13/32	.4062	27/64	5-7/8	3-5/16	DGE466026	\$337.61
27/64	.4219	27/64	5-7/8	3-15/32	DGE466027	\$337.56
7/16	.4375	15/32	6-7/32	3-5/8	DGE466028	\$379.80
29/64	.4531	15/32	6-7/32	3-25/32	DGE466029	\$379.80
15/32	.4688	15/32	6-7/32	3-25/32	DGE466030	\$379.80
31/64	.4844	1/2	6-37/64	3-15/16	DGE466031	\$465.26
1/2	.5000	1/2	6-37/64	4-3/32	DGE466032	\$465.26

Technical Information — Carbide Dream Drills for Aluminum

	$\phi 3.0 \sim \phi 6.0$		$\sim \phi 10.0$		$\sim \phi 14.0$		$\sim \phi 20.0$	
	$\phi .1181 \sim \phi .2362$		$\sim \phi .3937$		$\sim \phi .5512$		$\sim \phi .7874$	
	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)
Aluminium Alloy Casting Aluminium Die Casting	8,000-15,000	.008-.020	6,000-10,500	.012-.039	4,500-5,800	.012-.039	3,200-4,600	.012-.039
Wrought Aluminium Alloy	8,000-15,000	0.006-.012	6,000-10,500	.008-.016	4,500-5,800	.008-.016	3,200-4,600	.008-.016



TiAIN-CARBIDE DREAM DRILLS INOX



INOX | 3xD - Short series with coolant holes for Stainless Steel—DH463 Series

- ▶ The tool has the special flute shape and geometry for suitable machining of stainless steel.
- ▶ Excellent chip evacuation due to better surface treatment.
- ▶ Point R-thinning makes the superior centering and chip curl.

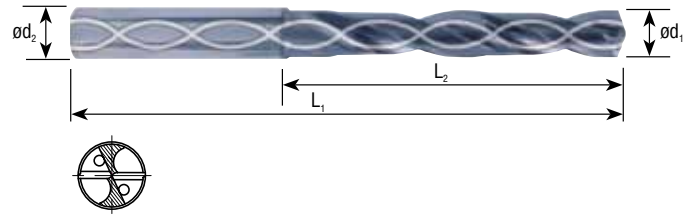
DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30° Point Angle: 140°

Di. Tolerance $\sigma d1$: See page 44

Shank Tolerance $\sigma d2$: -.0001 -.0005

Coating: TiAIN



See Technical Information – Page 36

Diameter (σd_1)		Shank Diameter (σd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Fractional	Decimal					
1/8	0.1250	15/64	2.992	1.102	DH463008	\$128.70
11/64	0.1719	15/64	3.386	1.417	DH463011	\$128.70
3/16	0.1875	15/64	3.543	1.575	DH463012	\$128.70
13/64	0.2031	15/64	3.228	1.082	DH463013	\$125.47
7/32	0.2188	15/64	3.228	1.181	DH463014	\$125.47
15/64	0.2344	15/64	3.228	1.181	DH463015	\$125.47
1/4	0.2500	17/64	3.465	1.279	DH463016	\$129.33
F	0.2570	17/64	3.465	1.279	DH463206	\$129.33
17/64	0.2656	17/64	3.465	1.378	DH463017	\$129.33
I	0.2720	0.2720	3.465	1.378	DH463209	\$129.33
9/32	0.2813	5/16	3.701	1.476	DH463018	\$150.20
19/64	0.2969	5/16	3.701	1.476	DH463019	\$150.20
5/16	0.3125	5/16	3.701	1.575	DH463020	\$150.20
21/64	0.3281	11/32	3.937	1.673	DH463021	\$156.33
Q	0.3320	11/32	3.937	1.673	DH463217	\$156.33
11/32	0.3438	11/32	3.937	1.772	DH463022	\$156.33
23/64	0.3594	25/64	4.174	1.870	DH463023	\$185.40
U	0.3680	25/64	4.174	1.870	DH463221	\$185.40

Diameter (σd_1)		Shank Diameter (σd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Fractional	Decimal					
3/8	0.3750	25/64	4.174	1.969	DH463024	\$185.40
25/64	0.3906	25/64	4.174	1.969	DH463025	\$185.40
13/32	0.4063	27/64	4.567	2.067	DH463026	\$236.43
27/64	0.4219	27/64	4.567	2.165	DH463027	\$236.43
7/16	0.4375	15/32	4.803	2.264	DH463028	\$266.97
29/64	0.4531	15/32	4.803	2.264	DH463029	\$266.97
15/32	0.4688	15/32	4.803	2.362	DH463030	\$266.97
31/64	0.4844	1/2	5.039	2.461	DH463031	\$296.93
1/2	0.5000	1/2	5.039	2.559	DH463032	\$302.23
33/64	0.5156	35/64	5.276	2.657	DH463033	\$330.00
17/32	0.5313	35/64	5.276	2.756	DH463034	\$330.00
35/64	0.5469	35/64	5.276	2.756	DH463035	\$330.00
9/16	0.5625	37/64	5.512	2.854	DH463036	\$355.20
37/64	0.5781	37/64	5.512	2.953	DH463037	\$355.20
19/32	0.5938	5/8	5.709	3.051	DH463038	\$373.50
39/64	0.6094	5/8	5.709	3.051	DH463039	\$373.50
5/8	0.6250	5/8	5.709	3.150	DH463040	\$373.50

INOX | 5xD - Long series with coolant holes for Stainless Steel—DH464 Series

- ▶ The tool has the special flute shape and geometry for suitable machining of stainless steel.
- ▶ Excellent chip evacuation due to better surface treatment.
- ▶ Point R-thinning makes the superior centering and chip curl.

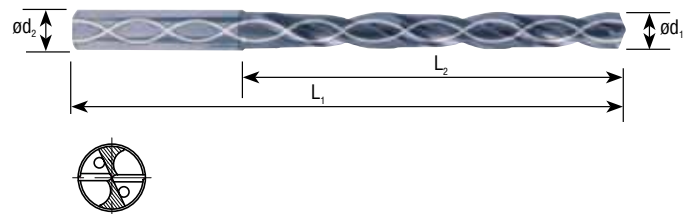
DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30° Point Angle: 140°

Di. Tolerance $\sigma d1$: See page 44

Shank Tolerance $\sigma d2$: -.0001 -.0005

Coating: TiAIN



See Technical Information – Page 36

Diameter (σd_1)		Shank Diameter (σd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Fractional	Decimal					
13/64	0.2031	15/64	3-15/16	1-3/4	DH464013	\$143.80
7/32	0.2188	15/64	3-15/16	1-57/64	DH464014	\$143.80
15/64	0.2344	15/64	3-15/16	1-57/64	DH464015	\$143.80
1/4	0.2500	17/64	4-19/64	2-3/64	DH464016	\$160.27
F	0.2570	17/64	4-19/64	2-13/64	DH464206	\$160.27
17/64	0.2656	17/64	4-19/64	2-13/64	DH464017	\$160.27
I	0.2720	0.2720	4-19/64	2-13/64	DH464209	\$160.27
9/32	0.2813	5/16	4-41/64	2-23/64	DH464018	\$178.57
19/64	0.2969	5/16	4-41/64	2-33/64	DH464019	\$178.57
5/16	0.3125	5/16	4-41/64	2-33/64	DH464020	\$178.57
21/64	0.3281	11/32	5	2-43/64	DH464021	\$184.77
Q	0.3320	11/32	5	2-43/64	DH464217	\$184.77

Diameter (σd_1)		Shank Diameter (σd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Fractional	Decimal					
11/32	0.3438	11/32	5	2-27/32	DH464022	\$184.77
23/64	0.3594	25/64	5-23/64	3	DH464023	\$191.00
U	0.3680	25/64	5-23/64	3	DH464221	\$191.00
3/8	0.3750	25/64	5-23/64	3-5/32	DH464024	\$194.97
25/64	0.3906	25/64	5-23/64	3-5/32	DH464025	\$194.97
13/32	0.4063	27/64	5-7/8	3-5/16	DH464026	\$285.43
27/64	0.4219	27/64	5-7/8	3-15/32	DH464027	\$285.43
7/16	0.4375	15/32	6-7/32	3-5/8	DH464028	\$327.97
29/64	0.4531	15/32	6-7/32	3-25/32	DH464029	\$327.97
15/32	0.4688	15/32	6-7/32	3-25/32	DH464030	\$327.97
31/64	0.4844	1/2	6-37/64	3-15/16	DH464031	\$401.33
1/2	0.5000	1/2	6-37/64	4-3/32	DH464032	\$401.33

INDIVIDUALLY PACKAGED

See Coolant Recommendations on Page 43

TiAIN-CARBIDE DREAM DRILLS INOX



INOX | 3xD - Short series with coolant holes for Stainless Steel—DH451 Series

- The tool has the special flute shape and geometry for suitable machining of stainless steel.
- Excellent chip evacuation due to better surface treatment.
- Point R-thinning makes the superior centering and chip curl.

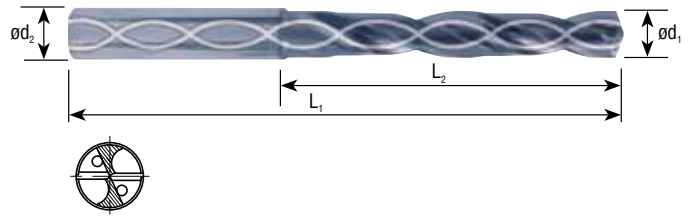
DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30° Point Angle: 140°

Dia. Tolerance ϕd_1 : m7: See page 44

Shank Tolerance ϕd_2 : -.0001 -.0005

Coating: TiAIN



See Technical Information – Page 36

Diameter		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric (ϕd_1)	Inch (ϕd_1)					
3.0	.1181	6.0	62	20	DH451030	\$104.17
3.1	.1220	6.0	62	20	DH451031	\$104.17
3.2	.1260	6.0	62	20	DH451032	\$104.17
3.3	.1299	6.0	62	20	DH451033	\$104.17
3.4	.1339	6.0	62	20	DH451034	\$104.17
3.5	.1378	6.0	62	20	DH451035	\$104.17
3.6	.1417	6.0	62	20	DH451036	\$104.17
3.7	.1457	6.0	62	20	DH451037	\$104.17
3.8	.1496	6.0	66	24	DH451038	\$104.17
3.9	.1535	6.0	66	24	DH451039	\$104.17
4.0	.1575	6.0	66	24	DH451040	\$104.17
4.1	.1614	6.0	66	24	DH451041	\$104.17
4.2	.1654	6.0	66	24	DH451042	\$104.17
4.3	.1693	6.0	66	24	DH451043	\$104.17
4.4	.1732	6.0	66	24	DH451044	\$104.17
4.5	.1772	6.0	66	24	DH451045	\$104.17
4.6	.1811	6.0	66	24	DH451046	\$104.17
4.7	.1850	6.0	66	24	DH451047	\$104.17
4.8	.1890	6.0	66	28	DH451048	\$104.17
4.9	.1929	6.0	66	28	DH451049	\$104.17
5.0	.1969	6.0	66	28	DH451050	\$104.17
5.1	.2008	6.0	66	28	DH451051	\$104.17
5.2	.2047	6.0	66	28	DH451052	\$104.17
5.3	.2087	6.0	66	28	DH451053	\$104.17
5.4	.2126	6.0	66	28	DH451054	\$104.17
5.5	.2165	6.0	66	28	DH451055	\$104.17
5.6	.2205	6.0	66	28	DH451056	\$104.17
5.7	.2244	6.0	66	28	DH451057	\$104.17
5.8	.2283	6.0	66	28	DH451058	\$104.17
5.9	.2323	6.0	66	28	DH451059	\$104.17
6.0	.2362	6.0	66	28	DH451060	\$104.17
6.1	.2402	8.0	79	34	DH451061	\$143.80
6.2	.2441	8.0	79	34	DH451062	\$143.80
6.3	.2480	8.0	79	34	DH451063	\$143.80
6.4	.2520	8.0	79	34	DH451064	\$143.80
6.5	.2559	8.0	79	34	DH451065	\$143.80
6.6	.2598	8.0	79	34	DH451066	\$143.80
6.7	.2638	8.0	79	34	DH451067	\$143.80
6.8	.2677	8.0	79	34	DH451068	\$143.80
6.9	.2717	8.0	79	34	DH451069	\$143.80
7.0	.2756	8.0	79	34	DH451070	\$143.80
7.1	.2795	8.0	79	41	DH451071	\$143.80
7.2	.2835	8.0	79	41	DH451072	\$143.80
7.3	.2874	8.0	79	41	DH451073	\$143.80
7.4	.2913	8.0	79	41	DH451074	\$143.80
7.5	.2953	8.0	79	41	DH451075	\$143.80
7.6	.2992	8.0	79	41	DH451076	\$143.80
7.7	.3031	8.0	79	41	DH451077	\$143.80
7.8	.3071	8.0	79	41	DH451078	\$143.80
7.9	.3110	8.0	79	41	DH451079	\$143.80
8.0	.3150	8.0	79	41	DH451080	\$143.80
8.1	.3189	10.0	89	47	DH451081	\$171.80
8.2	.3228	10.0	89	47	DH451082	\$171.80
8.3	.3268	10.0	89	47	DH451083	\$171.80

Diameter		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric (ϕd_1)	Inch (ϕd_1)					
8.4	.3307	10.0	89	47	DH451084	\$171.80
8.5	.3346	10.0	89	47	DH451085	\$171.80
8.6	.3386	10.0	89	47	DH451086	\$171.80
8.7	.3425	10.0	89	47	DH451087	\$171.80
8.8	.3465	10.0	89	47	DH451088	\$171.80
8.9	.3504	10.0	89	47	DH451089	\$171.80
9.0	.3543	10.0	89	47	DH451090	\$171.80
9.1	.3583	10.0	89	47	DH451091	\$171.80
9.2	.3622	10.0	89	47	DH451092	\$171.80
9.3	.3661	10.0	89	47	DH451093	\$171.80
9.4	.3701	10.0	89	47	DH451094	\$171.80
9.5	.3740	10.0	89	47	DH451095	\$171.80
9.6	.3780	10.0	89	47	DH451096	\$171.80
9.7	.3819	10.0	89	47	DH451097	\$171.80
9.8	.3858	10.0	89	47	DH451098	\$171.80
9.9	.3898	10.0	89	47	DH451099	\$171.80
10.0	.3937	10.0	89	47	DH451100	\$171.80
10.1	.3976	12.0	102	55	DH451101	\$240.93
10.2	.4016	12.0	102	55	DH451102	\$240.93
10.3	.4055	12.0	102	55	DH451103	\$240.93
10.4	.4094	12.0	102	55	DH451104	\$240.93
10.5	.4134	12.0	102	55	DH451105	\$240.93
10.6	.4173	12.0	102	55	DH451106	\$240.93
10.7	.4212	12.0	102	55	DH451107	\$240.93
10.8	.4252	12.0	102	55	DH451108	\$240.93
10.9	.4291	12.0	102	55	DH451109	\$240.93
11.0	.4330	12.0	102	55	DH451110	\$240.93
11.1	.4370	12.0	102	55	DH451111	\$240.93
11.2	.4409	12.0	102	55	DH451112	\$240.93
11.3	.4448	12.0	102	55	DH451113	\$240.93
11.4	.4488	12.0	102	55	DH451114	\$240.93
11.5	.4527	12.0	102	55	DH451115	\$240.93
11.6	.4566	12.0	102	55	DH451116	\$240.93
11.7	.4606	12.0	102	55	DH451117	\$240.93
11.8	.4645	12.0	102	55	DH451118	\$240.93
11.9	.4685	12.0	102	55	DH451119	\$240.93
12.0	.4724	12.0	102	55	DH451120	\$240.93
12.5	.4921	14.0	107	60	DH451125	\$309.87
13.0	.5118	14.0	107	60	DH451130	\$309.87
13.5	.5314	14.0	107	60	DH451135	\$309.87
14.0	.5511	14.0	107	60	DH451140	\$309.87
14.5	.5708	16.0	115	65	DH451145	\$310.60
15.0	.5905	16.0	115	65	DH451150	\$310.60
15.5	.6102	16.0	115	65	DH451155	\$310.60
16.0	.6299	16.0	115	65	DH451160	\$310.60
16.5	.6495	18.0	123	73	DH451165	\$588.57
17.0	.6692	18.0	123	73	DH451170	\$588.57
17.5	.6889	18.0	123	73	DH451175	\$588.57
18.0	.7086	18.0	123	73	DH451180	\$588.57
18.5	.7283	20.0	131	79	DH451185	\$648.50
19.0	.7480	20.0	131	79	DH451190	\$648.50
19.5	.7676	20.0	131	79	DH451195	\$648.50
20.0	.7874	20.0	131	79	DH451200	\$648.50

TiAIN-CARBIDE DREAM DRILLS INOX



INOX | 5xD - Long series with coolant holes for Stainless Steel—DH452 Series

- The tool has the special flute shape and geometry for suitable machining of stainless steel.
- Excellent chip evacuation due to better surface treatment.
- Point R-thinning makes the superior centering and chip curl.

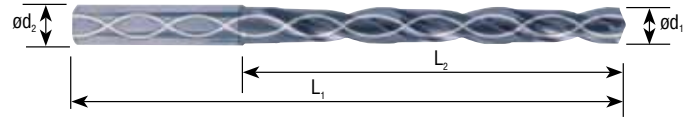
DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30° Point Angle: 140°

Dia. Tolerance ϕd_1 : m7: See page 44

Shank Tolerance ϕd_2 : -.0001 -.0005

Coating: TiAIN



See Technical Information – Page 36

Diameter		Shank	Overall	Flute	EDP No.	List Price
Metric (ϕd_1)	Inch (ϕd_1)	Diameter (ϕd_2)	Length (L ₁)	Length (L ₂)		
3.0	.1181	6.0	66	28	DH452030	\$129.33
3.1	.1220	6.0	66	28	DH452031	\$129.33
3.2	.1260	6.0	66	28	DH452032	\$129.33
3.3	.1299	6.0	66	28	DH452033	\$129.33
3.4	.1339	6.0	66	28	DH452034	\$129.33
3.5	.1378	6.0	66	28	DH452035	\$129.33
3.6	.1417	6.0	66	28	DH452036	\$129.33
3.7	.1457	6.0	66	28	DH452037	\$129.33
3.8	.1496	6.0	74	36	DH452038	\$129.33
3.9	.1535	6.0	74	36	DH452039	\$129.33
4.0	.1575	6.0	74	36	DH452040	\$129.33
4.1	.1614	6.0	74	36	DH452041	\$129.33
4.2	.1654	6.0	74	36	DH452042	\$129.33
4.3	.1693	6.0	74	36	DH452043	\$129.33
4.4	.1732	6.0	74	36	DH452044	\$129.33
4.5	.1772	6.0	74	36	DH452045	\$129.33
4.6	.1811	6.0	74	36	DH452046	\$129.33
4.7	.1850	6.0	74	36	DH452047	\$129.33
4.8	.1890	6.0	82	44	DH452048	\$129.33
4.9	.1929	6.0	82	44	DH452049	\$129.33
5.0	.1969	6.0	82	44	DH452050	\$129.33
5.1	.2008	6.0	82	44	DH452051	\$129.33
5.2	.2047	6.0	82	44	DH452052	\$129.33
5.3	.2087	6.0	82	44	DH452053	\$129.33
5.4	.2126	6.0	82	44	DH452054	\$129.33
5.5	.2165	6.0	82	44	DH452055	\$129.33
5.6	.2205	6.0	82	44	DH452056	\$129.33
5.7	.2244	6.0	82	44	DH452057	\$129.33
5.8	.2283	6.0	82	44	DH452058	\$129.33
5.9	.2323	6.0	82	44	DH452059	\$129.33
6.0	.2362	6.0	82	44	DH452060	\$129.33
6.1	.2402	8.0	91	53	DH452061	\$149.37
6.2	.2441	8.0	91	53	DH452062	\$149.37
6.3	.2480	8.0	91	53	DH452063	\$149.37
6.4	.2520	8.0	91	53	DH452064	\$149.37
6.5	.2559	8.0	91	53	DH452065	\$149.37
6.6	.2598	8.0	91	53	DH452066	\$149.37
6.7	.2638	8.0	91	53	DH452067	\$149.37
6.8	.2677	8.0	91	53	DH452068	\$149.37
6.9	.2717	8.0	91	53	DH452069	\$149.37
7.0	.2756	8.0	91	53	DH452070	\$149.37
7.1	.2795	8.0	91	53	DH452071	\$149.37
7.2	.2835	8.0	91	53	DH452072	\$149.37
7.3	.2874	8.0	91	53	DH452073	\$149.37
7.4	.2913	8.0	91	53	DH452074	\$149.37
7.5	.2953	8.0	91	53	DH452075	\$149.37
7.6	.2992	8.0	91	53	DH452076	\$149.37
7.7	.3031	8.0	91	53	DH452077	\$149.37
7.8	.3071	8.0	91	53	DH452078	\$149.37
7.9	.3110	8.0	91	53	DH452079	\$149.37
8.0	.3150	8.0	91	53	DH452080	\$149.37
8.1	.3189	10.0	103	61	DH452081	\$174.10
8.2	.3228	10.0	103	61	DH452082	\$174.10
8.3	.3268	10.0	103	61	DH452083	\$174.10

Diameter		Shank	Overall	Flute	EDP No.	List Price
Metric (ϕd_1)	Inch (ϕd_1)	Diameter (ϕd_2)	Length (L ₁)	Length (L ₂)		
8.4	.3307	10.0	103	61	DH452084	\$174.10
8.5	.3346	10.0	103	61	DH452085	\$174.10
8.6	.3386	10.0	103	61	DH452086	\$174.10
8.7	.3425	10.0	103	61	DH452087	\$174.10
8.8	.3465	10.0	103	61	DH452088	\$174.10
8.9	.3504	10.0	103	61	DH452089	\$174.10
9.0	.3543	10.0	103	61	DH452090	\$174.10
9.1	.3583	10.0	103	61	DH452091	\$174.10
9.2	.3622	10.0	103	61	DH452092	\$174.10
9.3	.3661	10.0	103	61	DH452093	\$174.10
9.4	.3701	10.0	103	61	DH452094	\$174.10
9.5	.3740	10.0	103	61	DH452095	\$174.10
9.6	.3780	10.0	103	61	DH452096	\$174.10
9.7	.3819	10.0	103	61	DH452097	\$174.10
9.8	.3858	10.0	103	61	DH452098	\$174.10
9.9	.3898	10.0	103	61	DH452099	\$174.10
10.0	.3937	10.0	103	61	DH452100	\$174.10
10.1	.3976	12.0	118	71	DH452101	\$246.73
10.2	.4016	12.0	118	71	DH452102	\$246.73
10.3	.4055	12.0	118	71	DH452103	\$246.73
10.4	.4094	12.0	118	71	DH452104	\$246.73
10.5	.4134	12.0	118	71	DH452105	\$246.73
10.6	.4173	12.0	118	71	DH452106	\$246.73
10.7	.4212	12.0	118	71	DH452107	\$246.73
10.8	.4252	12.0	118	71	DH452108	\$246.73
10.9	.4291	12.0	118	71	DH452109	\$246.73
11.0	.4330	12.0	118	71	DH452110	\$246.73
11.1	.4370	12.0	118	71	DH452111	\$246.73
11.2	.4409	12.0	118	71	DH452112	\$246.73
11.3	.4448	12.0	118	71	DH452113	\$246.73
11.4	.4488	12.0	118	71	DH452114	\$246.73
11.5	.4527	12.0	118	71	DH452115	\$246.73
11.6	.4566	12.0	118	71	DH452116	\$246.73
11.7	.4606	12.0	118	71	DH452117	\$246.73
11.8	.4645	12.0	118	71	DH452118	\$246.73
11.9	.4685	12.0	118	71	DH452119	\$246.73
12.0	.4724	12.0	118	71	DH452120	\$246.73
12.5	.4921	14.0	124	77	DH452125	\$324.60
13.0	.5118	14.0	124	77	DH452130	\$324.60
13.5	.5314	14.0	124	77	DH452135	\$324.60
14.0	.5511	14.0	124	77	DH452140	\$324.60
14.5	.5708	16.0	133	83	DH452145	\$394.27
15.0	.5905	16.0	133	83	DH452150	\$394.27
15.5	.6102	16.0	133	83	DH452155	\$394.27
16.0	.6299	16.0	133	83	DH452160	\$394.27
16.5	.6495	18.0	143	93	DH452165	\$626.80
17.0	.6692	18.0	143	93	DH452170	\$626.80
17.5	.6889	18.0	143	93	DH452175	\$626.80
18.0	.7086	18.0	143	93	DH452180	\$626.80
18.5	.7283	20.0	153	101	DH452185	\$690.47
19.0	.7480	20.0	153	101	DH452190	\$690.47
19.5	.7676	20.0	153	101	DH452195	\$690.47
20.0	.7873	20.0	153	101	DH452200	\$690.47

TiAIN-CARBIDE DREAM DRILLS INOX



INOX | 8xD - Extra Long series with coolant holes for Stainless Steel—DH453 Series

- The tool has the special flute shape and geometry for suitable machining of stainless steel.
- Excellent chip evacuation due to better surface treatment.
- Point R-thinning makes the superior centering and chip curl.

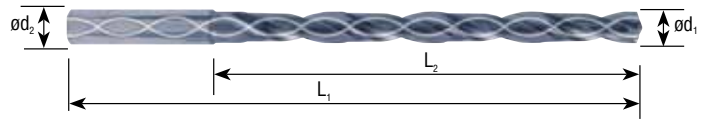
DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30° Point Angle: 140°

Dia. Tolerance ød1: m7: See page 44

Shank Tolerance ød2: -.0001 -.0005

Coating: TiAIN



See Technical Information – Page 36

Diameter		Shank Diameter (ød ₂)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Metric (ød ₁)	Inch (ød ₁)					
3.0	.1181	6.0	72	34	DH453030	\$220.27
3.1	.1220	6.0	72	34	DH453031	\$220.27
3.2	.1260	6.0	72	34	DH453032	\$220.27
3.3	.1299	6.0	72	34	DH453033	\$220.27
3.4	.1339	6.0	72	34	DH453034	\$220.27
3.5	.1378	6.0	72	34	DH453035	\$220.27
3.6	.1417	6.0	72	34	DH453036	\$220.27
3.7	.1457	6.0	72	34	DH453037	\$220.27
3.8	.1496	6.0	81	43	DH453038	\$220.27
3.9	.1535	6.0	81	43	DH453039	\$220.27
4.0	.1575	6.0	81	43	DH453040	\$220.27
4.1	.1614	6.0	81	43	DH453041	\$220.27
4.2	.1654	6.0	81	43	DH453042	\$220.27
4.3	.1693	6.0	81	43	DH453043	\$220.27
4.4	.1732	6.0	81	43	DH453044	\$220.27
4.5	.1772	6.0	81	43	DH453045	\$220.27
4.6	.1811	6.0	81	43	DH453046	\$220.27
4.7	.1850	6.0	81	43	DH453047	\$220.27
4.8	.1890	6.0	95	57	DH453048	\$220.27
4.9	.1929	6.0	95	57	DH453049	\$220.27
5.0	.1969	6.0	95	57	DH453050	\$220.27
5.1	.2008	6.0	95	57	DH453051	\$220.27
5.2	.2047	6.0	95	57	DH453052	\$220.27
5.3	.2087	6.0	95	57	DH453053	\$220.27
5.4	.2126	6.0	95	57	DH453054	\$220.27
5.5	.2165	6.0	95	57	DH453055	\$220.27
5.6	.2205	6.0	95	57	DH453056	\$220.27
5.7	.2244	6.0	95	57	DH453057	\$220.27
5.8	.2283	6.0	95	57	DH453058	\$220.27
5.9	.2323	6.0	95	57	DH453059	\$220.27
6.0	.2362	6.0	95	57	DH453060	\$220.27
6.1	.2402	8.0	114	76	DH453061	\$239.77
6.2	.2441	8.0	114	76	DH453062	\$239.77
6.3	.2480	8.0	114	76	DH453063	\$239.77
6.4	.2520	8.0	114	76	DH453064	\$239.77
6.5	.2559	8.0	114	76	DH453065	\$239.77
6.6	.2598	8.0	114	76	DH453066	\$239.77
6.7	.2638	8.0	114	76	DH453067	\$239.77
6.8	.2677	8.0	114	76	DH453068	\$239.77
6.9	.2717	8.0	114	76	DH453069	\$239.77
7.0	.2756	8.0	114	76	DH453070	\$239.77
7.1	.2795	8.0	114	76	DH453071	\$239.77
7.2	.2835	8.0	114	76	DH453072	\$239.77
7.3	.2874	8.0	114	76	DH453073	\$239.77
7.4	.2913	8.0	114	76	DH453074	\$239.77
7.5	.2953	8.0	114	76	DH453075	\$239.77
7.6	.2992	8.0	114	76	DH453076	\$239.77
7.7	.3031	8.0	114	76	DH453077	\$239.77

Diameter		Shank Diameter (ød ₂)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Metric (ød ₁)	Inch (ød ₁)					
7.8	.3071	8.0	114	76	DH453078	\$239.77
7.9	.3110	8.0	114	76	DH453079	\$239.77
8.0	.3150	8.0	114	76	DH453080	\$239.77
8.1	.3189	10.0	142	95	DH453081	\$328.37
8.2	.3228	10.0	142	95	DH453082	\$328.37
8.3	.3268	10.0	142	95	DH453083	\$328.37
8.4	.3307	10.0	142	95	DH453084	\$328.37
8.5	.3346	10.0	142	95	DH453085	\$328.37
8.6	.3386	10.0	142	95	DH453086	\$328.37
8.7	.3425	10.0	142	95	DH453087	\$328.37
8.8	.3465	10.0	142	95	DH453088	\$328.37
8.9	.3504	10.0	142	95	DH453089	\$328.37
9.0	.3543	10.0	142	95	DH453090	\$328.37
9.1	.3583	10.0	142	95	DH453091	\$328.37
9.2	.3622	10.0	142	95	DH453092	\$328.37
9.3	.3661	10.0	142	95	DH453093	\$328.37
9.4	.3701	10.0	142	95	DH453094	\$328.37
9.5	.3740	10.0	142	95	DH453095	\$328.37
9.6	.3780	10.0	142	95	DH453096	\$328.37
9.7	.3819	10.0	142	95	DH453097	\$328.37
9.8	.3858	10.0	142	95	DH453098	\$328.37
9.9	.3898	10.0	142	95	DH453099	\$328.37
10.0	.3937	10.0	142	95	DH453100	\$328.37
10.1	.3976	12.0	162	114	DH453101	\$435.80
10.2	.4016	12.0	162	114	DH453102	\$435.80
10.3	.4055	12.0	162	114	DH453103	\$435.80
10.4	.4094	12.0	162	114	DH453104	\$435.80
10.5	.4134	12.0	162	114	DH453105	\$435.80
10.6	.4173	12.0	162	114	DH453106	\$435.80
10.7	.4212	12.0	162	114	DH453107	\$435.80
10.8	.4252	12.0	162	114	DH453108	\$435.80
10.9	.4291	12.0	162	114	DH453109	\$435.80
11.0	.4330	12.0	162	114	DH453110	\$435.80
11.1	.4370	12.0	162	114	DH453111	\$435.80
11.2	.4409	12.0	162	114	DH453112	\$435.80
11.3	.4448	12.0	162	114	DH453113	\$435.80
11.4	.4488	12.0	162	114	DH453114	\$435.80
11.5	.4527	12.0	162	114	DH453115	\$435.80
11.6	.4566	12.0	162	114	DH453116	\$435.80
11.7	.4606	12.0	162	114	DH453117	\$435.80
11.8	.4645	12.0	162	114	DH453118	\$435.80
11.9	.4685	12.0	162	114	DH453119	\$435.80
12.0	.4724	12.0	162	114	DH453120	\$435.80
12.5	.4291	14.0	178	133	DH453125	\$510.13
13.0	.5118	14.0	178	133	DH453130	\$510.13
13.5	.5314	14.0	178	133	DH453135	\$510.13
14.0	.5512	14.0	178	133	DH453140	\$510.13

Technical Information for TiAlN-Carbide Dream Drills Inox

CARBIDE DREAM DRILLS - INOX WITH COOLANT HOLES, TiAlN COATED

DH463. DH464. DH451. DH452. DH453 Series

WORK MATERIAL			STAINLESS STEELS 400Series		STAINLESS STEELS 300Series		ALUMINUM		ALUMINUM	
STRENGTH			< 200 BHN		< 200 BHN		< 10% Si		> 10% Si	
DIAMETER			N	S	N	S	N	S	N	S
Metric(mm)	Fractional	Decimal								
3.0	1/8	.1181	7400	0.002	4700	0.001	23000	0.005	18500	0.004
4.0	5/32	.1575	5600	0.002	3600	0.001	17500	0.007	13900	0.006
5.0	13/64	.1969	4400	0.002	2800	0.001	14000	0.008	11000	0.007
6.0	15/64	.2362	3700	0.002	2400	0.002	11700	0.010	9300	0.010
8.0	5/16	.3150	2800	0.003	1800	0.002	8800	0.012	7000	0.012
10.0	25/64	.3937	2200	0.004	1400	0.003	7000	0.016	5600	0.014
12.0	15/32	.4724	1900	0.005	1200	0.004	5800	0.020	4600	0.016
14.0	35/64	.5511	1600	0.006	1000	0.005	5000	0.024	4000	0.020
16.0	5/8	.6299	1400	0.008	900	0.006	4380	0.031	3500	0.024
18.0	45/64	.7086	1250	0.009	800	0.007	3900	0.039	3100	0.028
20.0	25/32	.7873	1120	0.009	720	0.007	3500	0.047	2800	0.031

WORK MATERIAL			TITANIUM Ti Alloy		CARBON STEEL ALLOY STEEL		NON FRERROUS	
STRENGTH			N	S	N	S	N	S
DIAMETER								
Metric(mm)	Fractional	Decimal						
3.0	1/8	.1181	5300	0.001	13000	0.002	16000	0.003
4.0	5/32	.1575	4000	0.002	10000	0.002	11900	0.004
5.0	13/64	.1969	3200	0.002	8000	0.002	9500	0.005
6.0	15/64	.2362	2650	0.002	6600	0.002	8000	0.006
8.0	5/16	.3150	2000	0.003	5000	0.003	6000	0.007
10.0	25/64	.3937	1600	0.003	4000	0.004	4800	0.009
12.0	15/32	.4724	1300	0.004	3300	0.005	4000	0.010
14.0	35/64	.5511	1100	0.005	2800	0.006	3400	0.012
16.0	5/8	.6299	1000	0.006	2500	0.008	3000	0.016
18.0	45/64	.7086	900	0.006	2200	0.009	2650	0.018
20.0	25/32	.7873	800	0.007	2000	0.009	2400	0.020

- Recommend to reduce the feed rate as following.
Feed 100% : DH463, DH451(3xD), DH464, DH452 (5xD)
Feed 85% : DH453 (8xD)

N = R.P.M
 S = Inch per Revolution(inch/rev.)

TiAlN-COATED CARBIDE DREAM DRILLS

Short series without coolant holes

DESIGN AND TECHNICAL SPECIFICATIONS

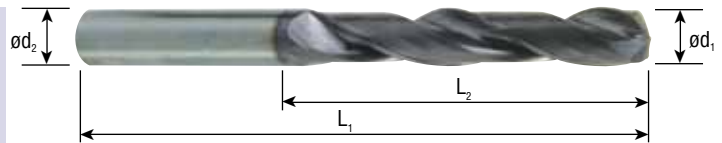
Helix Angle: 30°

Point Angle: 140°

Dia. Tolerance σd_1 : See page 44

Shank Tolerance σd_2 : -.0001 -.0005

Coating: TiAlN



Carbide 3 x D

See Technical Information – Page 44 – 45

Diameter ($\sigma d_1 = \sigma d_2$)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Fractional	Decimal				
1/8	.1250	1-59/64	45/64	0081ATF	\$26.03
9/64	.1406	2-3/64	25/32	0091ATF	\$28.87
5/32	.1562	2-3/16	7/8	0101ATF	\$30.23
11/64	.1719	2-9/32	15/16	0111ATF	\$32.70
3/16	.1875	2-7/16	1	0121ATF	\$34.30
13/64	.2031	2-7/16	1	0131ATF	\$41.20
7/32	.2188	2-5/8	1-1/8	0141ATF	\$43.03
15/64	.2344	2-5/8	1-1/8	0151ATF	\$43.03
1/4	.2500	3-3/16	1-5/8	0161ATF	\$57.43
F	.2570	3-17/64	1-11/16	2061ATF	\$76.30
17/64	.2656	3-17/64	1-11/16	0171ATF	\$77.73
I	.2720	3-17/64	1-11/16	2091ATF	\$77.73
9/32	.2812	3-7/16	1-3/4	0181ATF	\$92.57
19/64	.2969	3-9/16	1-7/8	0191ATF	\$97.17
5/16	.3125	3-9/16	1-7/8	0201ATF	\$98.77
21/64	.3281	3-3/4	2-1/16	0211ATF	\$118.00
Q	.3320	3-3/4	2-1/16	2171ATF	\$118.00

Diameter ($\sigma d_1 = \sigma d_2$)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Fractional	Decimal				
11/32	.3438	3-7/8	2-3/16	0221ATF	\$120.20
23/64	.3594	4	2-9/32	0231ATF	\$129.50
U	.3680	4	2-9/32	2211ATF	\$129.50
3/8	.3750	4-1/8	2-3/8	0241ATF	\$132.70
25/64	.3906	4-1/8	2-3/8	0251ATF	\$140.97
13/32	.4062	4-13/32	2-5/8	0261ATF	\$172.77
27/64	.4219	4-1/2	2-11/16	0271ATF	\$175.13
7/16	.4375	4-5/8	2-13/16	0281ATF	\$192.20
29/64	.4531	4-3/4	2-7/8	0291ATF	\$218.23
15/32	.4688	4-3/4	2-7/8	0301ATF	\$213.77
31/64	.4844	5-5/16	3	0311ATF	\$223.13
1/2	.5000	5-3/8	3-1/16	0321ATF	\$253.97
33/64	.5156	5-11/16	3-11/32	0331ATF	\$263.57
17/32	.5312	5-11/16	3-11/32	0341ATF	\$270.53
9/16	.5625	5-15/16	3-1/2	0361ATF	\$274.07
37/64	.5781	6	3-37/64	0371ATF	\$280.70
5/8	.6250	6-19/64	3-25/32	0401ATF	\$295.40

INDIVIDUALLY PACKAGED

TiAIN-COATED CARBIDE DREAM DRILLS

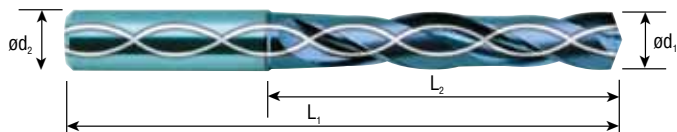
Short series with coolant holes

DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30°
Point Angle: 140°

Dia. Tolerance ϕd_1 : See page 44

Shank Tolerance ϕd_2 : -.0001 -.0005
Plain Shank: DIN6535-HA
Coating: TiAIN



Carbide 3 x D

See Technical Information – Page 44 – 45

Diameter (ϕd_1)		Shank Diameter (ϕd_2)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Fractional	Decimal					
1/8	.1250	15/64	2.992	1.102	0081BTF	\$124.43
11/64	.1719	15/64	3.386	1.417	0111BTF	\$124.43
3/16	.1875	15/64	3.543	1.575	0121BTF	\$124.43
13/64	.2031	15/64	3.228	1.082	0131BTF	\$124.43
7/32	.2188	15/64	3.228	1.181	0141BTF	\$124.43
15/64	.2344	15/64	3.228	1.181	0151BTF	\$124.43
1/4	.2500	17/64	3.465	1.279	0161BTF	\$125.00
F	.2570	17/64	3.465	1.279	2061BTF	\$125.00
17/64	.2656	17/64	3.465	1.378	0171BTF	\$125.00
I	.2720	.2720	3.465	1.378	2091BTF	\$125.00
9/32	.2812	5/16	3.701	1.476	0181BTF	\$145.30
19/64	.2969	5/16	3.701	1.476	0191BTF	\$145.30
5/16	.3125	5/16	3.701	1.575	0201BTF	\$145.30
21/64	.3281	11/32	3.937	1.673	0211BTF	\$151.23
Q	.3320	11/32	3.937	1.673	2171BTF	\$151.23
11/32	.3438	11/32	3.937	1.772	0221BTF	\$151.23
23/64	.3594	25/64	4.174	1.870	0231BTF	\$179.30
U	.3680	25/64	4.174	1.870	2211BTF	\$179.30

Diameter (ϕd_1)		Shank Diameter (ϕd_2)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Fractional	Decimal					
3/8	.3705	25/64	4.174	1.969	0241BTF	\$179.30
25/64	.3906	25/64	4.174	1.969	0251BTF	\$179.30
13/32	.4062	27/64	4.567	2.067	0261BTF	\$228.63
27/64	.4219	27/64	4.567	2.165	0271BTF	\$228.63
7/16	.4375	15/32	4.803	2.264	0281BTF	\$258.23
29/64	.4531	15/32	4.803	2.264	0291BTF	\$258.23
15/32	.4688	15/32	4.803	2.362	0301BTF	\$258.23
31/64	.4844	1/2	5.039	2.461	0311BTF	\$287.13
1/2	.5000	1/2	5.039	2.559	0321BTF	\$292.30
33/64	.5156	35/64	5.276	2.657	0331BTF	\$313.13
17/32	.5312	35/64	5.276	2.756	0341BTF	\$313.13
35/64	.5469	35/64	5.276	2.756	0351BTF	\$313.13
9/16	.5625	37/64	5.512	2.854	0361BTF	\$326.07
37/64	.5781	37/64	5.512	2.953	0371BTF	\$326.07
19/32	.5937	5/8	5.709	3.051	0381BTF	\$342.93
39/64	.6094	5/8	5.709	3.051	0391BTF	\$342.93
5/8	.6250	5/8	5.709	3.150	0401BTF	\$342.93

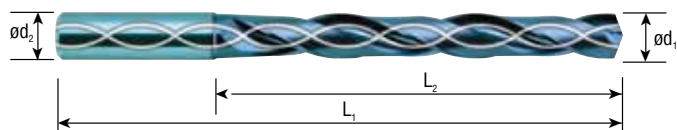
Long series with coolant holes

DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30°
Point Angle: 140°

Dia. Tolerance ϕd_1 : See page 44

Shank Tolerance ϕd_2 : -.0001 -.0005
Plain Shank: DIN6535-HA
Coating: TiAIN



Carbide 5 x D

Technical Information – Page 44 – 45

Diameter (ϕd_1)		Shank Diameter (ϕd_2)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Fractional	Decimal					
13/64	.2031	15/64	3-15/16	1-3/4	0131CTF	\$139.10
7/32	.2188	15/64	3-15/16	1-5/7/64	0141CTF	\$139.10
15/64	.2344	15/64	3-15/16	1-5/7/64	0151CTF	\$139.10
1/4	.2500	17/64	4-19/64	2-3/64	0161CTF	\$155.00
F	.2570	17/64	4-19/64	2-13/64	2061CTF	\$155.00
17/64	.2656	17/64	4-19/64	2-13/64	0171CTF	\$155.00
I	.2720	.2720	4-19/64	2-13/64	2091CTF	\$155.00
9/32	.2812	5/16	4-41/64	2-23/64	0181CTF	\$172.73
19/64	.2969	5/16	4-41/64	2-33/64	0191CTF	\$172.73
5/16	.3125	5/16	4-41/64	2-33/64	0201CTF	\$172.73
21/64	.3281	11/32	5	2-43/64	0211CTF	\$178.73
Q	.3320	11/32	5	2-43/64	2171CTF	\$178.73

Diameter (ϕd_1)		Shank Diameter (ϕd_2)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Fractional	Decimal					
11/32	.3438	11/32	5	2-27/32	0221CTF	\$178.73
23/64	.3594	25/64	5-23/64	3	0231CTF	\$184.63
U	.3680	25/64	5-23/64	3	2211CTF	\$184.63
3/8	.3750	25/64	5-23/64	3-5/32	0241CTF	\$188.60
25/64	.3906	25/64	5-23/64	3-5/32	0251CTF	\$188.60
13/32	.4062	27/64	5-7/8	3-5/16	0261CTF	\$276.07
27/64	.4219	27/64	5-7/8	3-15/32	0271CTF	\$276.07
7/16	.4375	15/32	6-7/32	3-5/8	0281CTF	\$317.20
29/64	.4531	15/32	6-7/32	3-25/32	0291CTF	\$317.20
15/32	.4688	15/32	6-7/32	3-25/32	0301CTF	\$317.20
31/64	.4844	1/2	6-37/64	3-15/16	0311CTF	\$356.20
1/2	.5000	1/2	6-37/64	4-3/32	0321CTF	\$356.20

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See Coolant Recommendations on Page 44

TiAlN-COATED CARBIDE DREAM DRILLS

Short series without coolant holes

DESIGN AND TECHNICAL SPECIFICATIONS

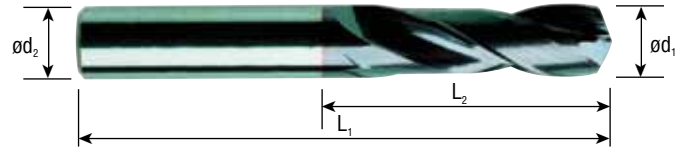
Helix Angle: 30°

Point Angle: 140°

Dia. Tolerance ϕd_1 : h7: See page 44

Shank Tolerance ϕd_2 : h6 =+./-.0003

Coating: TiAlN



Carbide 3 x D

See Technical Information – Page 44 – 45

Diameter ($\phi d_1 = \phi d_2$)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Metric	Inch				
3.0	.1181	46	16	DH404030	\$28.70
3.1	.1220	49	18	DH404031	\$28.93
3.2	.1260	49	18	DH404032	\$28.93
3.3	.1299	49	18	DH404033	\$28.93
3.4	.1339	52	20	DH404034	\$30.23
3.5	.1378	52	20	DH404035	\$30.23
3.6	.1417	52	20	DH404036	\$32.13
3.7	.1457	52	20	DH404037	\$32.13
3.8	.1496	55	22	DH404038	\$33.60
3.9	.1535	55	22	DH404039	\$33.60
4.0	.1575	55	22	DH404040	\$33.60
4.1	.1614	55	22	DH404041	\$34.77
4.2	.1654	55	22	DH404042	\$34.77
4.3	.1693	58	24	DH404043	\$36.40
4.4	.1732	58	24	DH404044	\$36.40
4.5	.1772	58	24	DH404045	\$36.40
4.6	.1811	58	24	DH404046	\$36.40
4.7	.1850	58	24	DH404047	\$38.13
4.8	.1890	62	26	DH404048	\$38.13
4.9	.1929	62	26	DH404049	\$38.13
5.0	.1969	62	26	DH404050	\$38.13
5.1	.2008	62	26	DH404051	\$38.13
5.2	.2047	62	26	DH404052	\$45.77
5.3	.2087	62	26	DH404053	\$45.77
5.4	.2126	66	28	DH404054	\$45.77
5.5	.2165	66	28	DH404055	\$45.77
5.6	.2205	66	28	DH404056	\$47.87
5.7	.2244	66	28	DH404057	\$47.87
5.8	.2283	66	28	DH404058	\$47.87
5.9	.2323	66	28	DH404059	\$47.87
6.0	.2362	66	28	DH404060	\$47.87
6.1	.2402	70	31	DH404061	\$57.17
6.2	.2441	70	31	DH404062	\$57.17
6.3	.2480	70	31	DH404063	\$57.17
6.4	.2520	70	31	DH404064	\$57.17
6.5	.2559	70	31	DH404065	\$63.23
6.6	.2598	70	31	DH404066	\$72.30
6.7	.2638	70	31	DH404067	\$72.30
6.8	.2677	74	34	DH404068	\$72.60
6.9	.2717	74	34	DH404069	\$72.60
7.0	.2756	74	34	DH404070	\$72.03
7.1	.2795	74	34	DH404071	\$83.03
7.2	.2835	74	34	DH404072	\$83.03
7.3	.2874	74	34	DH404073	\$83.03
7.4	.2913	74	34	DH404074	\$83.03
7.5	.2953	74	34	DH404075	\$82.70

Diameter ($\phi d_1 = \phi d_2$)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Metric	Inch				
7.6	.2992	79	37	DH404076	\$91.10
7.7	.3031	79	37	DH404077	\$91.10
7.8	.3071	79	37	DH404078	\$91.10
7.9	.3110	79	37	DH404079	\$91.10
8.0	.3150	79	37	DH404080	\$91.10
8.1	.3189	79	37	DH404081	\$107.40
8.2	.3228	79	37	DH404082	\$107.40
8.3	.3268	79	37	DH404083	\$107.40
8.4	.3307	79	37	DH404084	\$107.40
8.5	.3346	79	37	DH404085	\$110.23
8.6	.3386	84	40	DH404086	\$116.23
8.7	.3425	84	40	DH404087	\$116.23
8.8	.3465	84	40	DH404088	\$116.23
8.9	.3504	84	40	DH404089	\$116.23
9.0	.3543	84	40	DH404090	\$111.17
9.1	.3583	84	40	DH404091	\$125.03
9.2	.3622	84	40	DH404092	\$125.03
9.3	.3661	84	40	DH404093	\$125.03
9.4	.3701	84	40	DH404094	\$125.03
9.5	.3740	84	40	DH404095	\$121.10
9.6	.3780	89	43	DH404096	\$128.77
9.7	.3819	89	43	DH404097	\$128.77
9.8	.3858	89	43	DH404098	\$128.77
9.9	.3898	89	43	DH404099	\$128.77
10.0	.3937	89	43	DH404100	\$124.00
10.2	.4016	89	43	DH404102	\$143.40
10.5	.4134	89	43	DH404105	\$145.47
11.0	.4331	95	47	DH404110	\$158.73
11.5	.4528	95	47	DH404115	\$181.77
12.0	.4724	102	51	DH404120	\$182.10
13.0	.5118	102	51	DH404130	\$216.37
13.5	.5314	107	54	DH404135	\$227.60
14.0	.5511	107	54	DH404140	\$233.23
14.5	.5708	111	56	DH404145	\$240.43
15.0	.5905	111	56	DH404150	\$246.07
15.5	.6102	115	58	DH404155	\$254.03
16.0	.6299	115	58	DH404160	\$259.60
16.5	.6495	119	60	DH404165	\$295.10
17.0	.6692	119	60	DH404170	\$315.70
17.5	.6889	123	62	DH404175	\$335.47
18.0	.7086	123	62	DH404180	\$371.67
18.5	.7283	127	64	DH404185	\$409.93
19.0	.7480	127	64	DH404190	\$421.23
19.5	.7676	131	66	DH404195	\$439.63
20.0	.7873	131	66	DH404200	\$450.93

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TiAIN-COATED CARBIDE DREAM DRILLS

Short series with coolant holes

DESIGN AND TECHNICAL SPECIFICATIONS

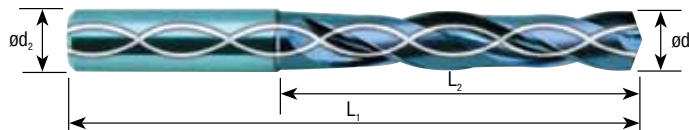
Helix Angle: 30° Point Angle: 140°

Dia. Tolerance ϕd_1 : m7: See page 44

Plain Shank: DIN6535-HA

Shank Tolerance ϕd_2 : -.0001 -.0005

Coating: TiAIN



Carbide 3 x D

See Technical Information – Page 44-45

Diameter		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric (ϕd_1)	Inch (ϕd_1)					
3.0	.1181	6.0	62	20	DH406030	\$102.03
3.1	.1220	6.0	62	20	DH406031	\$102.03
3.2	.1260	6.0	62	20	DH406032	\$102.03
3.3	.1299	6.0	62	20	DH406033	\$102.03
3.4	.1339	6.0	62	20	DH406034	\$102.03
3.5	.1378	6.0	62	20	DH406035	\$102.03
3.6	.1417	6.0	62	20	DH406036	\$102.03
3.7	.1457	6.0	62	20	DH406037	\$102.03
3.8	.1496	6.0	66	24	DH406038	\$102.03
3.9	.1535	6.0	66	24	DH406039	\$102.03
4.0	.1575	6.0	66	24	DH406040	\$102.03
4.1	.1614	6.0	66	24	DH406041	\$102.03
4.2	.1654	6.0	66	24	DH406042	\$102.03
4.3	.1693	6.0	66	24	DH406043	\$102.03
4.4	.1732	6.0	66	24	DH406044	\$102.03
4.5	.1772	6.0	66	24	DH406045	\$102.03
4.6	.1811	6.0	66	24	DH406046	\$102.03
4.7	.1850	6.0	66	24	DH406047	\$102.03
4.8	.1890	6.0	66	28	DH406048	\$102.03
4.9	.1929	6.0	66	28	DH406049	\$102.03
5.0	.1969	6.0	66	28	DH406050	\$102.03
5.1	.2008	6.0	66	28	DH406051	\$102.03
5.2	.2047	6.0	66	28	DH406052	\$102.03
5.3	.2087	6.0	66	28	DH406053	\$102.03
5.4	.2126	6.0	66	28	DH406054	\$102.03
5.5	.2165	6.0	66	28	DH406055	\$102.03
5.6	.2205	6.0	66	28	DH406056	\$102.03
5.7	.2244	6.0	66	28	DH406057	\$102.03
5.8	.2283	6.0	66	28	DH406058	\$102.03
5.9	.2323	6.0	66	28	DH406059	\$102.03
6.0	.2362	6.0	66	28	DH406060	\$102.03
6.1	.2402	8.0	79	34	DH406061	\$140.83
6.2	.2441	8.0	79	34	DH406062	\$140.83
6.3	.2480	8.0	79	34	DH406063	\$140.83
6.4	.2520	8.0	79	34	DH406064	\$140.83
6.5	.2559	8.0	79	34	DH406065	\$140.83
6.6	.2598	8.0	79	34	DH406066	\$140.83
6.7	.2638	8.0	79	34	DH406067	\$140.83
6.8	.2677	8.0	79	34	DH406068	\$140.83
6.9	.2717	8.0	79	34	DH406069	\$140.83
7.0	.2756	8.0	79	34	DH406070	\$140.83
7.1	.2795	8.0	79	41	DH406071	\$140.83
7.2	.2835	8.0	79	41	DH406072	\$140.83
7.3	.2874	8.0	79	41	DH406073	\$140.83
7.4	.2913	8.0	79	41	DH406074	\$140.83
7.5	.2953	8.0	79	41	DH406075	\$140.83
7.6	.2992	8.0	79	41	DH406076	\$140.83
7.7	.3031	8.0	79	41	DH406077	\$140.83
7.8	.3071	8.0	79	41	DH406078	\$140.83
7.9	.3110	8.0	79	41	DH406079	\$140.83
8.0	.3150	8.0	79	41	DH406080	\$140.83
8.1	.3189	10.0	89	47	DH406081	\$168.23
8.2	.3228	10.0	89	47	DH406082	\$168.23
8.3	.3268	10.0	89	47	DH406083	\$168.23

Diameter		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric (ϕd_1)	Inch (ϕd_1)					
8.4	.3307	10.0	89	47	DH406084	\$168.23
8.5	.3346	10.0	89	47	DH406085	\$168.23
8.6	.3386	10.0	89	47	DH406086	\$168.23
8.7	.3425	10.0	89	47	DH406087	\$168.23
8.8	.3465	10.0	89	47	DH406088	\$168.23
8.9	.3504	10.0	89	47	DH406089	\$168.23
9.0	.3543	10.0	89	47	DH406090	\$168.23
9.1	.3583	10.0	89	47	DH406091	\$168.23
9.2	.3622	10.0	89	47	DH406092	\$168.23
9.3	.3661	10.0	89	47	DH406093	\$168.23
9.4	.3701	10.0	89	47	DH406094	\$168.23
9.5	.3740	10.0	89	47	DH406095	\$168.23
9.6	.3780	10.0	89	47	DH406096	\$168.23
9.7	.3819	10.0	89	47	DH406097	\$168.23
9.8	.3858	10.0	89	47	DH406098	\$168.23
9.9	.3898	10.0	89	47	DH406099	\$168.23
10.0	.3937	10.0	89	47	DH406100	\$168.23
10.1	.3976	12.0	102	55	DH406101	\$235.97
10.2	.4016	12.0	102	55	DH406102	\$235.97
10.3	.4055	12.0	102	55	DH406103	\$235.97
10.4	.4094	12.0	102	55	DH406104	\$235.97
10.5	.4134	12.0	102	55	DH406105	\$235.97
10.6	.4173	12.0	102	55	DH406106	\$235.97
10.7	.4212	12.0	102	55	DH406107	\$235.97
10.8	.4252	12.0	102	55	DH406108	\$235.97
10.9	.4291	12.0	102	55	DH406109	\$235.97
11.0	.4330	12.0	102	55	DH406110	\$235.97
11.1	.4370	12.0	102	55	DH406111	\$235.97
11.2	.4409	12.0	102	55	DH406112	\$235.97
11.3	.4448	12.0	102	55	DH406113	\$235.97
11.4	.4488	12.0	102	55	DH406114	\$235.97
11.5	.4527	12.0	102	55	DH406115	\$235.97
11.6	.4566	12.0	102	55	DH406116	\$235.97
11.7	.4606	12.0	102	55	DH406117	\$235.97
11.8	.4645	12.0	102	55	DH406118	\$235.97
11.9	.4685	12.0	102	55	DH406119	\$235.97
12.0	.4724	12.0	102	55	DH406120	\$235.97
12.5	.4921	14.0	107	60	DH406125	\$303.50
13.0	.5118	14.0	107	60	DH406130	\$303.50
13.5	.5314	14.0	107	60	DH406135	\$303.50
14.0	.5511	14.0	107	60	DH406140	\$303.50
14.5	.5708	16.0	115	65	DH406145	\$304.17
15.0	.5905	16.0	115	65	DH406150	\$304.17
15.5	.6102	16.0	115	65	DH406155	\$304.17
16.0	.6299	16.0	115	65	DH406160	\$304.17
16.5	.6495	18.0	123	73	DH406165	\$576.47
17.0	.6692	18.0	123	73	DH406170	\$576.47
17.5	.6889	18.0	123	73	DH406175	\$576.47
18.0	.7086	18.0	123	73	DH406180	\$576.47
18.5	.7283	20.0	131	79	DH406185	\$635.17
19.0	.7480	20.0	131	79	DH406190	\$635.17
19.5	.7676	20.0	131	79	DH406195	\$635.17
20.0	.7873	20.0	131	79	DH406200	\$635.17

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See Coolant Recommendations on Page 44

TiAIN-COATED CARBIDE DREAM DRILLS

Long series with coolant holes

DESIGN AND TECHNICAL SPECIFICATIONS

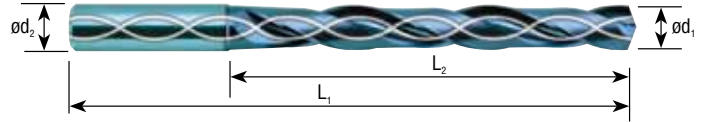
Helix Angle: 30° Point Angle: 140°

Dia. Tolerance ϕd_1 : m7: See page 44

Plain Shank: DIN6535-HA

Shank Tolerance ϕd_2 : -.0001 -.0005

Coating: TiAIN



Carbide 5 x D

See Technical Information – Page 44 – 45

Diameter		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric (ϕd_1)	Inch (ϕd_1)					
3.0	.1181	6.0	66	28	DH408030	\$126.63
3.1	.1220	6.0	66	28	DH408031	\$126.63
3.2	.1260	6.0	66	28	DH408032	\$126.63
3.3	.1299	6.0	66	28	DH408033	\$126.63
3.4	.1339	6.0	66	28	DH408034	\$126.63
3.5	.1378	6.0	66	28	DH408035	\$126.63
3.6	.1417	6.0	66	28	DH408036	\$126.63
3.7	.1457	6.0	66	28	DH408037	\$126.63
3.8	.1496	6.0	74	36	DH408038	\$126.63
3.9	.1535	6.0	74	36	DH408039	\$126.63
4.0	.1575	6.0	74	36	DH408040	\$126.63
4.1	.1614	6.0	74	36	DH408041	\$126.63
4.2	.1654	6.0	74	36	DH408042	\$126.63
4.3	.1693	6.0	74	36	DH408043	\$126.63
4.4	.1732	6.0	74	36	DH408044	\$126.63
4.5	.1772	6.0	74	36	DH408045	\$126.63
4.6	.1811	6.0	74	36	DH408046	\$126.63
4.7	.1850	6.0	74	36	DH408047	\$126.63
4.8	.1890	6.0	82	44	DH408048	\$126.63
4.9	.1929	6.0	82	44	DH408049	\$126.63
5.0	.1969	6.0	82	44	DH408050	\$126.63
5.1	.2008	6.0	82	44	DH408051	\$126.63
5.2	.2047	6.0	82	44	DH408052	\$126.63
5.3	.2087	6.0	82	44	DH408053	\$126.63
5.4	.2126	6.0	82	44	DH408054	\$126.63
5.5	.2165	6.0	82	44	DH408055	\$126.63
5.6	.2205	6.0	82	44	DH408056	\$126.63
5.7	.2244	6.0	82	44	DH408057	\$126.63
5.8	.2283	6.0	82	44	DH408058	\$126.63
5.9	.2323	6.0	82	44	DH408059	\$126.63
6.0	.2362	6.0	82	44	DH408060	\$126.63
6.1	.2402	8.0	91	53	DH408061	\$146.33
6.2	.2441	8.0	91	53	DH408062	\$146.33
6.3	.2480	8.0	91	53	DH408063	\$146.33
6.4	.2520	8.0	91	53	DH408064	\$146.33
6.5	.2559	8.0	91	53	DH408065	\$146.33
6.6	.2598	8.0	91	53	DH408066	\$146.33
6.7	.2638	8.0	91	53	DH408067	\$146.33
6.8	.2677	8.0	91	53	DH408068	\$146.33
6.9	.2717	8.0	91	53	DH408069	\$146.33
7.0	.2756	8.0	91	53	DH408070	\$146.33
7.1	.2795	8.0	91	53	DH408071	\$146.33
7.2	.2835	8.0	91	53	DH408072	\$146.33
7.3	.2874	8.0	91	53	DH408073	\$146.33
7.4	.2913	8.0	91	53	DH408074	\$146.33
7.5	.2953	8.0	91	53	DH408075	\$146.33
7.6	.2992	8.0	91	53	DH408076	\$146.33
7.7	.3031	8.0	91	53	DH408077	\$146.33
7.8	.3071	8.0	91	53	DH408078	\$146.33
7.9	.3110	8.0	91	53	DH408079	\$146.33
8.0	.3150	8.0	91	53	DH408080	\$146.33
8.1	.3189	10.0	103	61	DH408081	\$170.53
8.2	.3228	10.0	103	61	DH408082	\$170.53
8.3	.3268	10.0	103	61	DH408083	\$170.53

Diameter		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric (ϕd_1)	Inch (ϕd_1)					
8.4	.3307	10.0	103	61	DH408084	\$170.53
8.5	.3346	10.0	103	61	DH408085	\$170.53
8.6	.3386	10.0	103	61	DH408086	\$170.53
8.7	.3425	10.0	103	61	DH408087	\$170.53
8.8	.3465	10.0	103	61	DH408088	\$170.53
8.9	.3504	10.0	103	61	DH408089	\$170.53
9.0	.3543	10.0	103	61	DH408090	\$170.53
9.1	.3583	10.0	103	61	DH408091	\$170.53
9.2	.3622	10.0	103	61	DH408092	\$170.53
9.3	.3661	10.0	103	61	DH408093	\$170.53
9.4	.3701	10.0	103	61	DH408094	\$170.53
9.5	.3740	10.0	103	61	DH408095	\$170.53
9.6	.3780	10.0	103	61	DH408096	\$170.53
9.7	.3819	10.0	103	61	DH408097	\$170.53
9.8	.3858	10.0	103	61	DH408098	\$170.53
9.9	.3898	10.0	103	61	DH408099	\$170.53
10.0	.3937	10.0	103	61	DH408100	\$170.53
10.1	.3976	12.0	118	71	DH408101	\$241.67
10.2	.4016	12.0	118	71	DH408102	\$241.67
10.3	.4055	12.0	118	71	DH408103	\$241.67
10.4	.4094	12.0	118	71	DH408104	\$241.67
10.5	.4134	12.0	118	71	DH408105	\$241.67
10.6	.4173	12.0	118	71	DH408106	\$241.67
10.7	.4212	12.0	118	71	DH408107	\$241.67
10.8	.4252	12.0	118	71	DH408108	\$241.67
10.9	.4291	12.0	118	71	DH408109	\$241.67
11.0	.4330	12.0	118	71	DH408110	\$241.67
11.1	.4370	12.0	118	71	DH408111	\$241.67
11.2	.4409	12.0	118	71	DH408112	\$241.67
11.3	.4448	12.0	118	71	DH408113	\$241.67
11.4	.4488	12.0	118	71	DH408114	\$241.67
11.5	.4527	12.0	118	71	DH408115	\$241.67
11.6	.4566	12.0	118	71	DH408116	\$241.67
11.7	.4606	12.0	118	71	DH408117	\$241.67
11.8	.4645	12.0	118	71	DH408118	\$241.67
11.9	.4685	12.0	118	71	DH408119	\$241.67
12.0	.4724	12.0	118	71	DH408120	\$241.67
12.5	.4921	14.0	124	77	DH408125	\$317.93
13.0	.5118	14.0	124	77	DH408130	\$317.93
13.5	.5314	14.0	124	77	DH408135	\$317.93
14.0	.5511	14.0	124	77	DH408140	\$317.93
14.5	.5708	16.0	133	83	DH408145	\$386.13
15.0	.5905	16.0	133	83	DH408150	\$386.13
15.5	.6102	16.0	133	83	DH408155	\$386.13
16.0	.6299	16.0	133	83	DH408160	\$386.13
16.5	.6495	18.0	143	93	DH408165	\$613.93
17.0	.6692	18.0	143	93	DH408170	\$613.93
17.5	.6889	18.0	143	93	DH408175	\$613.93
18.0	.7086	18.0	143	93	DH408180	\$613.93
18.5	.7283	20.0	153	101	DH408185	\$676.33
19.0	.7480	20.0	153	101	DH408190	\$676.33
19.5	.7676	20.0	153	101	DH408195	\$676.33
20.0	.7873	20.0	153	101	DH408200	\$676.33

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See Coolant Recommendations on Page 44

TiAIN-COATED CARBIDE DREAM DRILLS

Extra Long series with coolant holes

DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30°

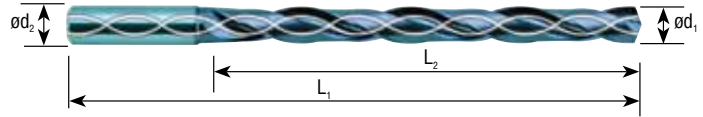
Point Angle: 140°

Dia. Tolerance σd_1 : m7: See page 44

Shank Tolerance σd_2 : h6 =+./-.0003

Plain Shank: DIN6535-HA

Coating: TiAIN



Carbide 8 x D

See Technical Information – Page 44 – 45

Diameter		Shank Diameter (σd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric (σd_1)	Inch (σd_1)					
3.0	.1181	6.0	72	34	DH421030	\$215.80
3.1	.1220	6.0	72	34	DH421031	\$215.80
3.2	.1260	6.0	72	34	DH421032	\$215.80
3.3	.1299	6.0	72	34	DH421033	\$215.80
3.4	.1339	6.0	72	34	DH421034	\$215.80
3.5	.1378	6.0	72	34	DH421035	\$215.80
3.6	.1417	6.0	72	34	DH421036	\$215.80
3.7	.1457	6.0	72	34	DH421037	\$215.80
3.8	.1496	6.0	81	43	DH421038	\$215.80
3.9	.1535	6.0	81	43	DH421039	\$215.80
4.0	.1575	6.0	81	43	DH421040	\$215.80
4.1	.1614	6.0	81	43	DH421041	\$215.80
4.2	.1654	6.0	81	43	DH421042	\$215.80
4.3	.1693	6.0	81	43	DH421043	\$215.80
4.4	.1732	6.0	81	43	DH421044	\$215.80
4.5	.1772	6.0	81	43	DH421045	\$215.80
4.6	.1811	6.0	81	43	DH421046	\$215.80
4.7	.1850	6.0	81	43	DH421047	\$215.80
4.8	.1890	6.0	95	57	DH421048	\$215.80
4.9	.1929	6.0	95	57	DH421049	\$215.80
5.0	.1969	6.0	95	57	DH421050	\$215.80
5.1	.2008	6.0	95	57	DH421051	\$215.80
5.2	.2047	6.0	95	57	DH421052	\$215.80
5.3	.2087	6.0	95	57	DH421053	\$215.80
5.4	.2126	6.0	95	57	DH421054	\$215.80
5.5	.2165	6.0	95	57	DH421055	\$215.80
5.6	.2205	6.0	95	57	DH421056	\$215.80
5.7	.2244	6.0	95	57	DH421057	\$215.80
5.8	.2283	6.0	95	57	DH421058	\$215.80
5.9	.2323	6.0	95	57	DH421059	\$215.80
6.0	.2362	6.0	95	57	DH421060	\$215.80
6.1	.2402	8.0	114	76	DH421061	\$234.83
6.2	.2441	8.0	114	76	DH421062	\$234.83
6.3	.2480	8.0	114	76	DH421063	\$234.83
6.4	.2520	8.0	114	76	DH421064	\$234.83
6.5	.2559	8.0	114	76	DH421065	\$234.83
6.6	.2598	8.0	114	76	DH421066	\$234.83
6.7	.2638	8.0	114	76	DH421067	\$234.83
6.8	.2677	8.0	114	76	DH421068	\$234.83
6.9	.2717	8.0	114	76	DH421069	\$234.83
7.0	.2756	8.0	114	76	DH421070	\$234.83
7.1	.2795	8.0	114	76	DH421071	\$234.83
7.2	.2835	8.0	114	76	DH421072	\$234.83
7.3	.2874	8.0	114	76	DH421073	\$234.83
7.4	.2913	8.0	114	76	DH421074	\$234.83
7.5	.2953	8.0	114	76	DH421075	\$234.83
7.6	.2992	8.0	114	76	DH421076	\$234.83
7.7	.3031	8.0	114	76	DH421077	\$234.83

Diameter		Shank Diameter (σd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric (σd_1)	Inch (σd_1)					
7.8	.3071	8.0	114	76	DH421078	\$234.83
7.9	.3110	8.0	114	76	DH421079	\$234.83
8.0	.3150	8.0	114	76	DH421080	\$234.83
8.1	.3189	10.0	142	95	DH421081	\$321.63
8.2	.3228	10.0	142	95	DH421082	\$321.63
8.3	.3268	10.0	142	95	DH421083	\$321.63
8.4	.3307	10.0	142	95	DH421084	\$321.63
8.5	.3346	10.0	142	95	DH421085	\$321.63
8.6	.3386	10.0	142	95	DH421086	\$321.63
8.7	.3425	10.0	142	95	DH421087	\$321.63
8.8	.3465	10.0	142	95	DH421088	\$321.63
8.9	.3504	10.0	142	95	DH421089	\$321.63
9.0	.3543	10.0	142	95	DH421090	\$321.63
9.1	.3583	10.0	142	95	DH421091	\$321.63
9.2	.3622	10.0	142	95	DH421092	\$321.63
9.3	.3661	10.0	142	95	DH421093	\$321.63
9.4	.3701	10.0	142	95	DH421094	\$321.63
9.5	.3740	10.0	142	95	DH421095	\$321.63
9.6	.3780	10.0	142	95	DH421096	\$321.63
9.7	.3819	10.0	142	95	DH421097	\$321.63
9.8	.3858	10.0	142	95	DH421098	\$321.63
9.9	.3898	10.0	142	95	DH421099	\$321.63
10.0	.3937	10.0	142	95	DH421100	\$321.63
10.1	.3976	12.0	162	114	DH421101	\$426.87
10.2	.4016	12.0	162	114	DH421102	\$426.87
10.3	.4055	12.0	162	114	DH421103	\$426.87
10.4	.4094	12.0	162	114	DH421104	\$426.87
10.5	.4134	12.0	162	114	DH421105	\$426.87
10.6	.4173	12.0	162	114	DH421106	\$426.87
10.7	.4212	12.0	162	114	DH421107	\$426.87
10.8	.4252	12.0	162	114	DH421108	\$426.87
10.9	.4291	12.0	162	114	DH421109	\$426.87
11.0	.4330	12.0	162	114	DH421110	\$426.87
11.1	.4370	12.0	162	114	DH421111	\$426.87
11.2	.4409	12.0	162	114	DH421112	\$426.87
11.3	.4448	12.0	162	114	DH421113	\$426.87
11.4	.4488	12.0	162	114	DH421114	\$426.87
11.5	.4527	12.0	162	114	DH421115	\$426.87
11.6	.4566	12.0	162	114	DH421116	\$426.87
11.7	.4606	12.0	162	114	DH421117	\$426.87
11.8	.4645	12.0	162	114	DH421118	\$426.87
11.9	.4685	12.0	162	114	DH421119	\$426.87
12.0	.4724	12.0	162	114	DH421120	\$426.87
12.5	.4291	14.0	178	133	DH421125	\$499.90
13.0	.5118	14.0	178	133	DH421130	\$499.90
13.5	.5314	14.0	178	133	DH421135	\$499.90
14.0	.5512	14.0	178	133	DH421140	\$499.90

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See Coolant Recommendations on Page 44

MICRO TiAIN-CARBIDE DREAM DRILLS



MICRO | 5xD - Long series without coolant holes—DH424 Series

- This tool is for drilling into steel, cast steel, cast iron, chilled cast iron, malleable cast iron, non-ferrous heavy metal, non-ferrous light metal, abrasive plastic.
- **Advantages:** Self centering - Center drilling is not required
Excellent positioning - Bush is not necessary
Special design - Reaming is not required
- Good chip removal
- Powerful drilling

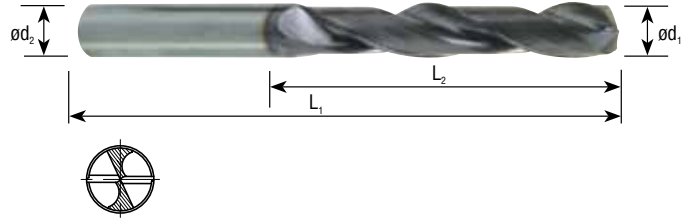
DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30° Point Angle: 140°

Dia. Tolerance ϕd_1 : m7: See page 44

Shank Tolerance ϕd_2 : -.0001 -.0005

Coating: TiAIN



See Technical Information – Page 44-45

Diameter (ϕd_1)		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric	Inch					
1.0	.0394	3.0	55	8	DH424010	\$69.07
1.1	.0433	3.0	55	12	DH424011	\$69.07
1.2	.0472	3.0	55	12	DH424012	\$69.07
1.3	.0512	3.0	55	12	DH424013	\$69.07
1.4	.0551	3.0	55	12	DH424014	\$69.07
1.5	.0591	3.0	55	16	DH424015	\$69.07
1.6	.0630	3.0	55	16	DH424016	\$69.07
1.7	.0669	3.0	55	16	DH424017	\$69.07
1.8	.0709	3.0	55	16	DH424018	\$69.07
1.9	.0748	3.0	55	16	DH424019	\$69.07

Diameter (ϕd_1)		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric	Inch					
2.0	.0787	4.0	57	21	DH424020	\$69.07
2.1	.0827	4.0	57	21	DH424021	\$69.07
2.2	.0866	4.0	57	21	DH424022	\$69.07
2.3	.0906	4.0	57	21	DH424023	\$69.07
2.4	.0945	4.0	57	21	DH424024	\$69.07
2.5	.0984	4.0	57	21	DH424025	\$69.07
2.6	.1024	4.0	57	21	DH424026	\$69.07
2.7	.1063	4.0	57	21	DH424027	\$69.07
2.8	.1102	4.0	57	21	DH424028	\$69.07
2.9	.1142	4.0	57	21	DH424029	\$69.07

MICRO | 5xD - Long series with coolant holes—DH408 Series

- This tool is for drilling into steel, cast steel, cast iron, chilled cast iron, malleable cast iron, non-ferrous heavy metal, non-ferrous light metal, abrasive plastic.
- **Advantages:** Self centering - Center drilling is not required
Excellent positioning - Bush is not necessary
Special design - Reaming is not required
- Good chip removal
- Powerful drilling

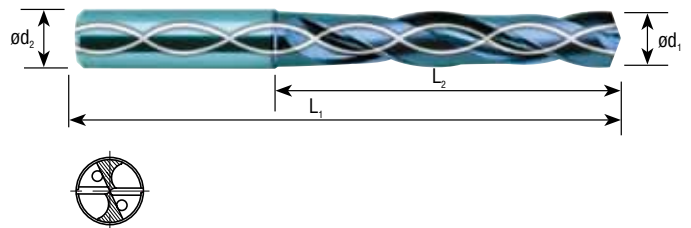
DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30° Point Angle: 140°

Dia. Tolerance ϕd_1 : m7: See page 44

Shank Tolerance ϕd_2 : -.0001 -.0005

Coating: TiAIN



See Technical Information – Page 44-45

Diameter (ϕd_1)		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric	Inch					
1.0	.0394	3.0	55	8	DH408010	\$116.47
1.1	.0433	3.0	55	12	DH408011	\$116.47
1.2	.0472	3.0	55	12	DH408012	\$116.47
1.3	.0512	3.0	55	12	DH408013	\$116.47
1.4	.0551	3.0	55	12	DH408014	\$116.47
1.5	.0591	3.0	55	16	DH408015	\$116.47
1.6	.0630	3.0	55	16	DH408016	\$116.47
1.7	.0669	3.0	55	16	DH408017	\$116.47
1.8	.0709	3.0	55	16	DH408018	\$116.47
1.9	.0748	3.0	55	16	DH408019	\$116.47

Diameter (ϕd_1)		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric	Inch					
2.0	.0787	4.0	57	21	DH408020	\$116.47
2.1	.0827	4.0	57	21	DH408021	\$116.47
2.2	.0866	4.0	57	21	DH408022	\$116.47
2.3	.0906	4.0	57	21	DH408023	\$116.47
2.4	.0945	4.0	57	21	DH408024	\$116.47
2.5	.0984	4.0	57	21	DH408025	\$116.47
2.6	.1024	4.0	57	21	DH408026	\$116.47
2.7	.1063	4.0	57	21	DH408027	\$116.47
2.8	.1102	4.0	57	21	DH408028	\$116.47
2.9	.1142	4.0	57	21	DH408029	\$116.47

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See Coolant Recommendations on Page 44

TECHNICAL INFORMATION FOR CARBIDE DREAM DRILLS

MICRO | 5XD Long Series without coolant holes—DH424 Series, TiAlN Coated

Work Material		Non-Alloy Steels		Alloy Steels		Soft Grey Cast Iron		Hard Grey Cast Iron	
Strength		< HRc 20		> HRc 20		< HB240, GG25		< HB300, GG40	
Diameter		N	S	N	S	N	S	N	S
Metric	Inch								
1.0	.0394	13000	0.002	11250	0.002	21300	0.002	14200	0.002
2.0	.0787	13000	0.002	11250	0.002	21300	0.002	14200	0.002
3.0	.1181	13000	0.005	11000	0.005	21000	0.005	14000	0.005

MICRO | 5XD Long Series with coolant holes—DH408 Series, TiAlN Coated

Work Material		Non-Alloy Steels		Alloy Steels		Soft Grey Cast Iron		Hard Grey Cast Iron	
Strength		< HRc 20		> HRc 20		< HB240, GG25		< HB300, GG40	
Diameter		N	S	N	S	N	S	N	S
Metric	Inch								
1.0	.0394	16250	0.002	14800	0.002	26600	0.002	17300	0.002
2.0	.0787	16250	0.003	14800	0.003	26600	0.003	17300	0.003
3.0	.1181	16000	0.006	14500	0.006	26000	0.006	17000	0.006

3XD Coated Dream Drills without coolant holes

30° Helix - 140° Point

N = R.P.M.
S = Feed per Revolution (inch/rev.)
Kf 3xD 5xD
1.0 0.85

Material	Non Coolant Fed Drills / Inch Diameter											
	1/8-3/16		3/16-5/16		5/16-3/8		3/8-1/2		1/2-9/16		9/16-13/16	
	N	S	N	S	N	S	N	S	N	S	N	S
	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.
Cast Iron <240 BHN	13120	0.006	8200	0.008	5970	0.011	4690	0.014	3860	0.016	2980	0.018
Cast Iron >240 BHN	8750	0.005	5470	0.006	3980	0.009	3120	0.011	2570	0.012	1990	0.014
Carbon Steels <300 BHN	7880	0.005	4920	0.006	3560	0.009	2810	0.011	2310	0.012	1790	0.014
Alloy Steels 300 - 400 BHN	7000	0.005	4370	0.006	3190	0.009	2500	0.011	2060	0.012	1590	0.014
Aluminum, Si <10%	13530	0.008	8450	0.010	6140	0.014	4830	0.017	3960	0.020	3080	0.022
Aluminum, Si >10%	11140	0.006	6960	0.008	5060	0.011	3980	0.014	3270	0.016	2530	0.018
Stainless Steels	3070	0.002	1910	0.003	1400	0.004	1090	0.005	910	0.006	700	0.007

3XD Coated Dream Drills with coolant holes

30° Helix - 140° Point

N = R.P.M.
S = Feed per Revolution (inch/rev.)
Kf 3xD 5xD
1.0 0.85

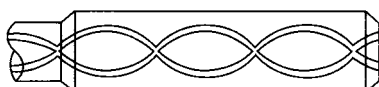
Material	Coolant Fed Drills / Inch Diameter											
	1/8-3/16		3/16-5/16		5/16-3/8		3/8-1/2		1/2-9/16		9/16-13/16	
	N	S	N	S	N	S	N	S	N	S	N	S
	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.
Cast Iron <240 BHN	14870	0.006	8200	0.008	6760	0.011	5310	0.014	4370	0.016	3380	0.018
Cast Iron >240 BHN	9620	0.006	6010	0.008	4370	0.011	3440	0.014	2830	0.016	2190	0.018
Carbon Steels <300 BHN	8750	0.006	5470	0.008	3980	0.011	3120	0.014	2570	0.016	1990	0.018
Alloy Steels 300 - 400 BHN	7880	0.005	4920	0.006	3580	0.009	2810	0.011	2310	0.012	1790	0.014
Aluminum, Si <10%	15910	0.008	9940	0.010	7230	0.014	5680	0.017	4680	0.020	3610	0.022
Aluminum, Si >10%	13530	0.008	8450	0.010	6140	0.014	4830	0.017	3980	0.020	3080	0.022
Stainless Steels	3500	0.002	2190	0.003	1590	0.004	1250	0.005	1030	0.006	800	0.007

► Recommended speed and feed rates for Coated Dream Drills: **3xD 100%, 5xD 85%, 8xD 70%**

DRILL DIAMETER TOLERANCE INCH (σd.)			
up to .118	over .118 up to .236	over .236 up to .394	over .394 up to .709
+0	+0	+0	+0
-0.0055	-0.0071	-0.0087	-0.0106

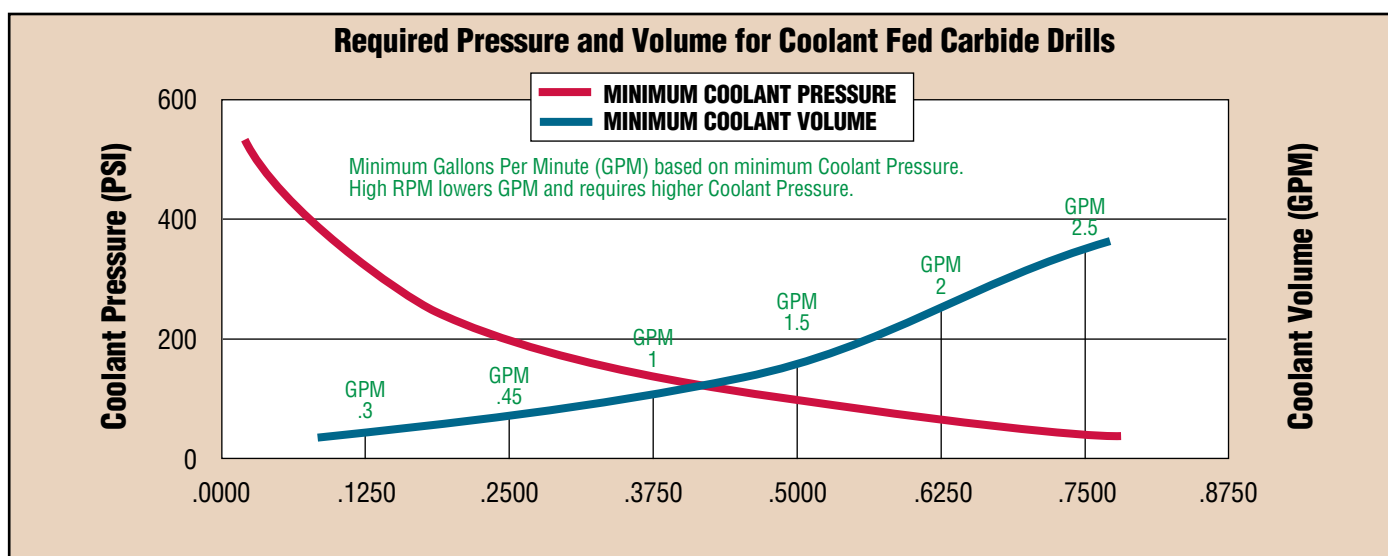
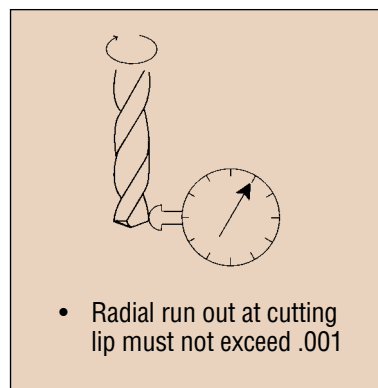
DRILL DIAMETER TOLERANCE METRIC (σd.)					
Diameter Tolerance	1-3 mm	3-6 mm	6-10 mm	10-18 mm	18-30 mm
h6	0 -0.0024	0 -0.0032	0 -0.0036	0 -0.0044	0 -0.0052
h7	0 -0.004	0 -0.0048	0 -0.0059	0 -0.0071	0 -0.0083
h8	0 -0.0056	0 -0.0071	0 -0.0087	0 -0.0107	0 -0.0130
m7	+0.0048 +0.0007	+0.0063 +0.0015	+0.0083 +0.0023	+0.0099 +0.0027	+0.0114 +0.0031

SHANK TYPE – Form HA



COOLANT RECOMMENDATIONS FOR CARBIDE DREAM DRILLS

Drilling Parameters



HSS-EX, HPD-SUS TWIST DRILLS SPEED and FEED DATA

TiN Coated Cobalt Metric

Application:

Designed for drilling in stainless steels, mild steels, aluminum, aluminum alloy, aluminum die cast, copper, copper alloy, etc.

Approx. 60 SFM Stainless
300 SFM Aluminum
130 SFM Mild Steel

30° Helix
130° Point – up to 4mm
120° Point – over 4mm

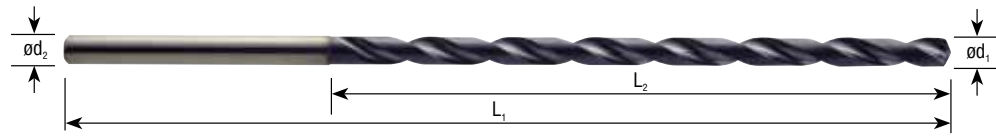
Material	Stainless Steels (SUS304, 200)		Stainless Steels (SUS420, 440)		Aluminum & Aluminum Alloy		Plastics, Copper, Copper Alloys		Mild Steels, Low Carbon Steels	
	N	S	N	S	N	S	N	S	N	S
Diameter (mm)	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.
2	2600	0.003	3100	0.003	11000	0.004	5600	0.002	6300	0.003
3	1800	0.003	2100	0.003	7350	0.005	3750	0.003	4200	0.005
4	1300	0.004	1600	0.004	7050	0.007	2800	0.004	3200	0.006
5	1050	0.006	1250	0.006	5500	0.009	2250	0.005	2500	0.006
6	900	0.007	1050	0.007	4600	0.010	1850	0.006	2100	0.007
8	650	0.009	800	0.009	3500	0.013	1350	0.008	1550	0.009
10	550	0.010	630	0.012	2800	0.016	1100	0.010	1250	0.010
12	450	0.013	530	0.014	2300	0.020	950	0.012	1050	0.013
14	400	0.014	450	0.017	2050	0.022	800	0.013	900	0.014
16	350	0.016	390	0.019	1750	0.024	700	0.014	790	0.016
18	300	0.017	350	0.020	1600	0.028	620	0.016	700	0.018
20	260	0.018	320	0.021	1450	0.030	560	0.016	620	0.019

Please decrease the feed rate 15% in JOBBERS SERIES.
Please decrease the feed and speed 20% for cast surface.

MQL TYPE TiAIN-CARBIDE DREAM DRILLS



MQL Type | 10xD, 15xD, 20xD - with coolant holes



- Non step drilling up to 10 times of drill diameter.
 - Available for processing MQL (Minimum Quantity Lubrication).
 - Excellent positioning – Bush is not necessary.
 - Special design – Good chip removal.
 - Powerful drilling.
- DESIGN AND TECHNICAL SPECIFICATIONS**
Helix Angle: 30° **Point Angle:** 140°
Dia. Tolerance ød1: h7: See page 44
Shank Tolerance ød2: -.0001 -.0005
Coating: TiAIN



10xD

Diameter		Shank Diameter (ød ₂)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Metric (ød ₁)	Inch (ød ₁)					
3.0	.1181	3.0	90	39	DH510030	\$241.07
3.3	.1299	4.0	97	46	DH510033	\$241.07
3.5	.1378	4.0	97	46	DH510035	\$241.07
4.0	.1575	4.0	103	52	DH510040	\$241.07
4.2	.1654	5.0	112	59	DH510042	\$244.80
4.5	.1772	5.0	112	59	DH510045	\$244.80
5.0	.1969	5.0	118	65	DH510050	\$244.80
5.5	.2165	6.0	127	72	DH510055	\$244.80
6.0	.2362	6.0	133	78	DH510060	\$244.80
6.5	.2559	7.0	141	85	DH510065	\$303.17
6.8	.2677	7.0	147	91	DH510068	\$303.17
7.0	.2756	7.0	147	91	DH510070	\$303.17
7.5	.2953	8.0	155	98	DH510075	\$303.17

Diameter		Shank Diameter (ød ₂)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Metric (ød ₁)	Inch (ød ₁)					
8.0	.3150	8.0	161	104	DH510080	\$303.17
8.5	.3346	9.0	169	111	DH510085	\$389.20
9.0	.3543	9.0	175	117	DH510090	\$389.20
9.5	.3740	10.0	182	124	DH510095	\$389.20
10.0	.3937	10.0	188	130	DH510100	\$389.20
10.5	.4134	11.0	201	137	DH510105	\$454.70
11.0	.4330	11.0	207	143	DH510110	\$454.70
11.5	.4527	12.0	215	150	DH510115	\$454.70
12.0	.4724	12.0	221	156	DH510120	\$454.70
12.5	.4921	13.0	229	163	DH510125	\$615.90
13.0	.5118	13.0	235	169	DH510130	\$615.90
13.5	.5314	14.0	243	176	DH510135	\$615.90
14.0	.5511	14.0	249	182	DH510140	\$615.90

15xD

Diameter		Shank Diameter (ød ₂)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Metric (ød ₁)	Inch (ød ₁)					
3.0	.1181	3.0	105	54	DH515030	\$295.00
3.5	.1378	4.0	114	63	DH515035	\$295.00
4.0	.1575	4.0	123	72	DH515040	\$295.00
4.5	.1772	5.0	134	81	DH515045	\$334.77
5.0	.1969	5.0	143	90	DH515050	\$334.77
5.5	.2165	6.0	154	99	DH515055	\$334.77
6.0	.2362	6.0	163	108	DH515060	\$334.77

Diameter		Shank Diameter (ød ₂)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Metric (ød ₁)	Inch (ød ₁)					
7.0	.2756	7.0	182	126	DH515070	\$386.73
8.0	.3150	8.0	201	144	DH515080	\$386.73
9.0	.3543	9.0	220	162	DH515090	\$498.97
10.0	.3937	10.0	238	180	DH515100	\$498.97
11.0	.4330	11.0	262	198	DH515110	\$670.10
12.0	.4724	12.0	281	216	DH515120	\$670.10

20xD

Diameter		Shank Diameter (ød ₂)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Metric (ød ₁)	Inch (ød ₁)					
3.0	.1181	3.0	120	69	DH520030	\$403.53
3.5	.1378	4.0	132	81	DH520035	\$403.53
4.0	.1575	4.0	143	92	DH520040	\$403.53
4.5	.1772	5.0	157	104	DH520045	\$453.67
5.0	.1969	5.0	168	115	DH520050	\$453.67
5.5	.2165	6.0	182	127	DH520055	\$453.67

Diameter		Shank Diameter (ød ₂)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Metric (ød ₁)	Inch (ød ₁)					
6.0	.2362	6.0	193	138	DH520060	\$453.67
7.0	.2756	7.0	217	161	DH520070	\$513.77
8.0	.3150	8.0	241	184	DH520080	\$513.77
9.0	.3543	9.0	265	207	DH520090	\$602.80
10.0	.3937	10.0	288	230	DH520100	\$602.80
12.0	.4724	12.0	341	276	DH520120	\$816.80

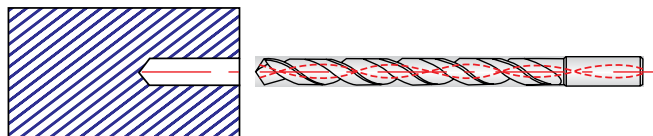
◆ The TiN Coating, TiCN Coating and Hardslick Coating and other shank types are available upon request.

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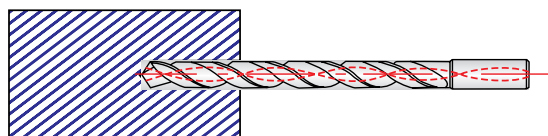
Technical Information for TiAlN-Carbide Dream Drills MQL Type

CARBIDE DREAM DRILLS - MQL TYPE WITH COOLANT HOLES, TiAlN COATED

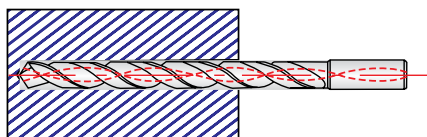
CUTTING CONDITION



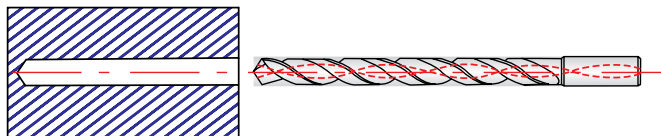
1. Use a YG 3xD Drill to produce a guide hole no larger than .004 over the required drill size. Drill the pilot hole 2xD deep hole.



2. Enter the guide hole at 50 SFM surface and .010 feed rate / per rev.



3. Before hitting the bottom of the guide hole, Increase SFM and feed rate for normal drilling.



4. After drilling, to withdraw drill, reduce SFM to 50 @ 10 inches per minute.

DH510, DH515, DH520 Series

WORK MATERIAL		CARBON STEELS ALLOY STEELS ~ 1060 N/mm ²		CAST IRON 250 ~ 350 N/mm ²		DUCTILE CAST IRON 400 ~ 500 N/mm ²		DUCTILE CAST IRON	
DRILLING SPEED		< HRc 25		< HRc 10		> HRc 10			
DIAMETER		N	S	N	S	N	S	N	S
Metric	Inch								
3.0	.1181	7500	.0023~.0047	7500	.0023~.0047	7500	.0023~.0047	5300	.0023~.0047
4.0	.1575	6400	.0031~.0063	6400	.0031~.0063	5600	.0031~.0063	5000	.0031~.0063
5.0	.1969	5800	.0039~.0078	5800	.0039~.0078	4500	.0039~.0078	4500	.0039~.0078
6.0	.2362	4800	.0047~.0094	4800	.0047~.0094	3800	.0047~.0094	3800	.0047~.0094
8.0	.3150	3600	.0063~.0110	3600	.0063~.0110	2800	.0063~.0110	2800	.0063~.0110
10.0	.3937	2900	.0078~.0137	2900	.0078~.0137	2300	.0078~.0137	2300	.0078~.0137
12.0	.4724	2400	.0094~.0165	2400	.0094~.0165	1900	.0094~.0165	1900	.0094~.0165

➤ Coolant Pressure : Minimum 900 PSI

N = R.P.M
S = Inch per Revolution(inch/rev)

TiAIN-CARBIDE DREAM DRILLS FOR HARDENED STEEL



Carbide Dream Drill for High Hardened Steel (HRc50~70)—DH501 Series

- Drilling for High Hardened Steels[Quenched Steels, Tempered Steels (Under HRc 70)].
- **Advantages:** Special Design
Minimum of cutting load through special thinning.
- Good chip removal
- Powerful drilling

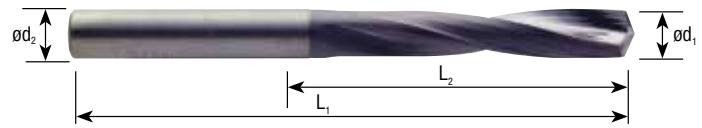
DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30° **Point Angle:** 140°

Dia. Tolerance ϕd_1 : h7: See page 44

Shank Tolerance ϕd_2 : -.0001 -.0005

Coating: TiAIN



See Technical Information – Page 50

Diameter (ϕd_1)		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Fractional	Decimal					
1/8	.125	1/8	2	21/32	DH501001	\$32.47
#30	.1285	3/16	2	23/32	DH501002	\$37.60
#29	.1360	3/16	2	13/16	DH501003	\$37.60
#28	.1405	3/16	2	13/16	DH501004	\$37.60
9/64	.1406	3/16	2	13/16	DH501005	\$37.60
#27	.1440	3/16	2	13/16	DH501006	\$37.60
#26	.1470	3/16	2	13/16	DH501007	\$37.60
#25	.1495	3/16	2-1/16	7/8	DH501008	\$38.93
#24	.1520	3/16	2-1/16	7/8	DH501009	\$38.93
#23	.1540	3/16	2-1/16	7/8	DH501010	\$38.93
5/32	.1562	3/16	2-1/16	7/8	DH501011	\$38.93
#22	.1570	3/16	2-1/16	7/8	DH501012	\$38.93
#21	.1590	3/16	2-1/16	7/8	DH501013	\$38.93
#20	.1610	3/16	2-1/2	1	DH501014	\$43.23
#19	.1660	3/16	2-1/2	1	DH501015	\$43.23
11/64	.1719	3/16	2-3/4	1-1/8	DH501016	\$43.23
#15	.1800	3/16	2-3/4	1-1/8	DH501017	\$43.23
#14	.1820	3/16	2-3/4	1-1/8	DH501018	\$43.23
3/16	.1875	3/16	2-3/4	1-1/8	DH501019	\$43.23
#10	.1935	1/4	2-7/8	1-9/32	DH501020	\$57.57
#9	.1960	1/4	2-7/8	1-9/32	DH501021	\$57.57
#8	.1990	1/4	2-7/8	1-9/32	DH501022	\$57.57
#7	.2010	1/4	2-7/8	1-9/32	DH501023	\$57.57
13/64	.2031	1/4	2-7/8	1-9/32	DH501024	\$57.57
#6	.2040	1/4	2-7/8	1-9/32	DH501025	\$57.57
#5	.2055	1/4	2-7/8	1-9/32	DH501026	\$57.57
#4	.2090	1/4	2-7/8	1-9/32	DH501027	\$57.57
#3	.2130	1/4	3	1-13/32	DH501028	\$57.57
7/32	.2188	1/4	3	1-13/32	DH501029	\$57.57
#2	.2210	1/4	3	1-13/32	DH501030	\$57.57
#1	.2280	1/4	3	1-13/32	DH501031	\$57.57
15/64	.2344	1/4	3	1-13/32	DH501032	\$57.57
B	.2380	1/4	3-1/8	1-19/32	DH501033	\$66.53
C	.2420	1/4	3-1/8	1-19/32	DH501034	\$66.53
D	.2460	1/4	3-1/8	1-19/32	DH501035	\$66.53
1/4	.2500	1/4	3-1/8	1-19/32	DH501036	\$66.53
F	.2570	3/8	3-1/8	1-19/32	DH501037	\$114.27
G	.2610	3/8	3-1/8	1-19/32	DH501038	\$114.27
17/64	.2656	3/8	3-1/8	1-19/32	DH501039	\$114.27
I	.2720	3/8	3-3/8	1-25/32	DH501040	\$120.37
J	.2770	3/8	3-3/8	1-25/32	DH501041	\$120.37
9/32	.2812	3/8	3-3/8	1-25/32	DH501042	\$120.37

Diameter (ϕd_1)		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Fractional	Decimal					
L	.2900	3/8	3-3/8	1-25/32	DH501043	\$120.37
M	.2950	3/8	3-3/8	1-25/32	DH501044	\$120.37
19/64	.2969	3/8	3-3/8	1-25/32	DH501045	\$120.37
N	.3020	3/8	3-7/8	1-31/32	DH501046	\$126.80
5/16	.3125	3/8	3-7/8	1-31/32	DH501047	\$126.80
O	.3160	3/8	3-7/8	1-31/32	DH501048	\$126.80
21/64	.3281	3/8	3-7/8	1-31/32	DH501049	\$126.80
Q	.3320	3/8	3-7/8	1-31/32	DH501050	\$126.80
R	.3390	3/8	4-1/8	2-1/4	DH501051	\$133.77
11/32	.3438	3/8	4-1/8	2-1/4	DH501052	\$133.77
23/64	.3594	3/8	4-1/8	2-1/4	DH501053	\$133.77
U	.3680	3/8	4-1/8	2-1/4	DH501054	\$133.77
3/8	.3750	3/8	4-1/8	2-1/4	DH501055	\$133.77
V	.3770	1/2	4-3/8	2-1/2	DH501056	\$236.80
25/64	.3906	1/2	4-3/8	2-1/2	DH501057	\$236.80
X	.3970	1/2	4-3/8	2-1/2	DH501058	\$236.80
Y	.4040	1/2	4-3/8	2-1/2	DH501059	\$236.80
13/32	.4062	1/2	4-3/8	2-1/2	DH501060	\$236.80
Z	.4130	1/2	4-3/8	2-1/2	DH501061	\$236.80
27/64	.4219	1/2	4-5/8	2-13/16	DH501062	\$236.80
7/16	.4375	1/2	4-5/8	2-13/16	DH501063	\$236.80
29/64	.4531	1/2	4-5/8	2-13/16	DH501064	\$236.80
15/32	.4688	1/2	4-5/8	2-13/16	DH501065	\$236.80
31/64	.4844	1/2	4-5/8	2-13/16	DH501066	\$236.80
1/2	.5000	1/2	5	3-1/16	DH501067	\$236.80
33/64	.5156	5/8	5	3-1/16	DH501068	\$313.27
17/32	.5312	5/8	5	3-1/16	DH501069	\$313.27
35/64	.5469	5/8	5	3-1/16	DH501070	\$313.27
9/16	.5625	5/8	5	3-1/16	DH501071	\$313.27
37/64	.5781	5/8	5-1/4	3-9/32	DH501072	\$313.27
19/32	.5937	5/8	5-1/4	3-9/32	DH501073	\$313.27
39/64	.6094	5/8	5-1/4	3-9/32	DH501074	\$313.27
5/8	.6250	5/8	5-1/4	3-9/32	DH501075	\$313.27
41/64	.6406	3/4	5-1/4	3-9/32	DH501076	\$534.67
21/32	.6563	3/4	5-5/8	3-11/16	DH501077	\$534.67
43/64	.6719	3/4	5-5/8	3-11/16	DH501078	\$534.67
11/16	.6875	3/4	5-5/8	3-11/16	DH501079	\$534.67
45/64	.7031	3/4	5-5/8	3-11/16	DH501080	\$534.67
23/32	.7188	3/4	6	3-3/4	DH501081	\$534.67
47/64	.7344	3/4	6	3-3/4	DH501082	\$534.67
3/4	.7500	3/4	6	3-3/4	DH501083	\$534.67

INDIVIDUALLY PACKAGED

TiAIN-CARBIDE DREAM DRILLS FOR HARDENED STEEL



Carbide Dream Drill for High Hardened Steel (HRc50~70)—DH501 Series

- Drilling for High Hardened Steels[Quenched Steels, Tempered Steels (Under HRc 70)].
- **Advantages:** Special Design
Minimum of cutting load through special thinning
- Good chip removal
- Powerful drilling

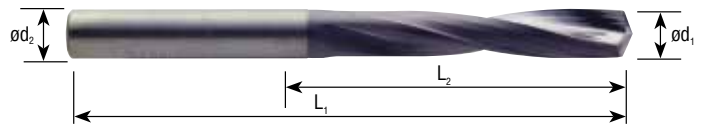
DESIGN AND TECHNICAL SPECIFICATIONS

Helix Angle: 30° **Point Angle:** 140°

Dia. Tolerance ϕd_1 : h7: See page 44

Shank Tolerance ϕd_2 : -.0001 -.0005

Coating: TiAIN



See Technical Information – Page 50

Diameter		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric (ϕd_1)	Inch (ϕd_1)					
3.0	.1181	3.0	46	16	DH500030	\$31.37
3.3	.1299	4.0	48	18	DH500033	\$35.63
3.4	.1339	4.0	50	20	DH500034	\$35.63
3.5	.1378	4.0	50	20	DH500035	\$35.63
4.0	.1575	4.0	52	22	DH500040	\$36.60
4.2	.1654	6.0	65	25	DH500042	\$51.87
4.3	.1693	6.0	68	28	DH500043	\$51.87
4.4	.1732	6.0	68	28	DH500044	\$51.87
4.5	.1772	6.0	68	28	DH500045	\$51.87
5.0	.1969	6.0	72	32	DH500050	\$51.87
5.1	.2008	6.0	72	32	DH500051	\$51.87
5.2	.2047	6.0	72	32	DH500052	\$51.87
5.5	.2165	6.0	75	35	DH500055	\$51.87
6.0	.2362	6.0	75	35	DH500060	\$51.87
6.5	.2559	8.0	80	40	DH500065	\$98.20
6.8	.2677	8.0	85	45	DH500068	\$98.20
6.9	.2717	8.0	85	45	DH500069	\$98.20

Diameter		Shank Diameter (ϕd_2)	Overall Length (L_1)	Flute Length (L_2)	EDP No.	List Price
Metric (ϕd_1)	Inch (ϕd_1)					
7.0	.2756	8.0	85	45	DH500070	\$98.20
7.5	.2953	8.0	85	45	DH500075	\$98.20
8.0	.3150	8.0	98	50	DH500080	\$143.80
8.5	.3346	10.0	98	50	DH500085	\$143.80
8.6	.3386	10.0	105	57	DH500086	\$143.80
8.8	.3465	10.0	105	57	DH500088	\$143.80
9.0	.3543	10.0	105	57	DH500090	\$143.80
9.5	.3740	10.0	105	57	DH500095	\$143.80
10.0	.3937	10.0	111	63	DH500100	\$236.80
10.2	.4016	12.0	111	63	DH500102	\$236.80
10.3	.4055	12.0	111	63	DH500103	\$236.80
10.5	.4134	12.0	111	63	DH500105	\$236.80
10.8	.4252	12.0	119	71	DH500108	\$236.80
11.0	.4330	12.0	119	71	DH500110	\$236.80
11.5	.4527	12.0	119	71	DH500115	\$236.80
12.0	.4724	12.0	119	71	DH500120	\$236.80
14.0	.5511	14.0	125	77	DH500140	\$315.97

INDIVIDUALLY PACKAGED

Technical Information for TiAlN-Carbide Dream Drills for High Hardened Steel

CARBIDE DREAM DRILLS FOR HIGH HARDENED STEEL HRc50~HRc70, TiAlN COATED

DH501 Series

WORK MATERIAL HARDNESS		HRc 50 ~ 55		HRc 55 ~ 60		HRc 60 ~ 70	
Drilling Speed		45 ~ 72 SFM		32 ~ 52 SFM		26 ~ 42 SFM	
Diameter (inch)		N	S	N	S	N	S
5/64		2860	~ .0015	2000	~ .0015	1900	~.0011
1/8		1900	~ .0015	1330	~ .0015	1250	~ .0015
5/32		1430	~ .0015	1000	~ .0015	950	~ .0015
13/64		1150	~ .0015	800	~ .0015	750	~ .0015
15/64		960	~ .0015	670	~ .0015	630	~ .0015
5/16		720	~ .0015	500	~ .0015	480	~ .0015
25/64		570	~ .0015	400	~ .0015	380	~ .0015
15/32		480	~ .0015	330	~ .0015	320	~ .0015
9/16		435	~ .0015	280	~ .0015	270	~ .0015
41/64		380	~ .0015	250	~ .0015	240	~ .0015
11/16		325	~ .0015	235	~ .0015	190	~ .0015
47/64		310	~ .0015	220	~ .0015	180	~ .0015

N = R.P.M
S = Inch per Revolution(inch/rev)

DH500 Series

WORK MATERIAL HARDNESS		HRc 50 ~ 55		HRc 55 ~ 60		HRc 60 ~ 70	
Drilling Speed		45 ~ 72 SFM		32 ~ 52 SFM		26 ~ 42 SFM	
Diameter		N	S	N	S	N	S
Metric	Inch						
3.0	.1181	1900	~ .0015	1330	~ .0015	1250	~ .0015
4.0	.1575	1430	~ .0015	1000	~ .0015	950	~ .0015
5.0	.1969	1150	~ .0015	800	~ .0015	750	~ .0015
6.0	.2362	960	~ .0015	670	~ .0015	630	~ .0015
8.0	.3150	720	~ .0015	500	~ .0015	480	~ .0015
10.0	.3937	570	~ .0015	400	~ .0015	380	~ .0015
12.0	.4724	480	~ .0015	330	~ .0015	320	~ .0015
14.0	.5511	438	~ .0015	282	~ .0015	272	~ .0015

N = R.P.M
S = Inch per Revolution(inch/rev)

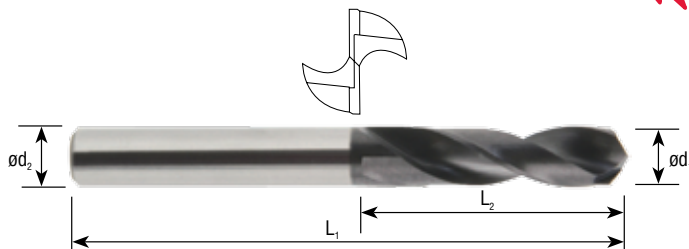
HIGH PERFORMANCE POWDERED METAL DRILL



Premium HSS-PM MULTI-1 Drill

- Excellent wear resistance by using Premium powder metallurgy materials.
- **Advantages:** With special point geometry, no centering required. Minimal drill wandering and improved hole tolerances. Better tool life with excellent coating.
- **Application:** Applicable to various materials including aluminum and stainless, as well as carbon steel and structural steel.

Coating: TiAlN **Point Angle:** 135° **Helix Angle:** 30°



M15 - Fractional Sizes

Diameter (od.)		Shank Diameter (od.)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Fractional	Decimal					
3/32	.0938	1/8	1-3/4	1/2	M15006	\$14.97
7/64	.1094	1/8	1-7/8	5/8	M15007	\$15.97
1/8	.1250	1/8	2	3/4	M15008	\$17.40
9/64	.1406	3/16	2-1/8	13/16	M15009	\$19.33
5/32	.1563	3/16	2-1/8	13/16	M15010	\$19.33
11/64	.1719	3/16	2-3/8	1	M15011	\$21.83
3/16	.1875	3/16	2-3/8	1	M15012	\$24.60
13/64	.2031	1/4	2-7/8	1-1/8	M15013	\$28.60
7/32	.2188	1/4	2-7/8	1-1/8	M15014	\$30.97
15/64	.2344	1/4	3	1-1/4	M15015	\$32.97
1/4	.2500	1/4	3	1-1/4	M15016	\$32.97
17/64	.2656	3/8	3-3/16	1-3/8	M15017	\$34.87
9/32	.2813	3/8	3-3/16	1-3/8	M15018	\$36.30
19/64	.2969	3/8	3-3/16	1-3/8	M15019	\$36.30

Diameter (od.)		Shank Diameter (od.)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Fractional	Decimal					
5/16	.3125	3/8	3-3/8	1-1/2	M15020	\$38.80
21/64	.3281	3/8	3-3/8	1-1/2	M15021	\$41.10
11/32	.3438	3/8	3-1/2	1-5/8	M15022	\$44.10
23/64	.3594	3/8	3-1/2	1-5/8	M15023	\$47.37
3/8	.3750	3/8	3-1/2	1-5/8	M15024	\$47.37
25/64	.3906	1/2	3-7/8	1-11/16	M15025	\$50.87
13/32	.4063	1/2	3-7/8	1-11/16	M15026	\$55.50
27/64	.4219	1/2	4-1/8	1-7/8	M15027	\$60.43
7/16	.4375	1/2	4-1/8	1-7/8	M15028	\$68.47
29/64	.4531	1/2	4-1/8	1-7/8	M15029	\$68.47
15/32	.4688	1/2	4-1/4	2	M15030	\$73.40
31/64	.4844	1/2	4-1/4	2	M15031	\$78.67
1/2	.5000	1/2	4-1/4	2	M15032	\$86.17

M16 - Wire Gauge Sizes

Diameter (od.)		Shank Diameter (od.)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Size	Decimal					
1	.2280	1/4	3-1/8	1-5/16	M16001	\$31.10
2	.2210	1/4	3-1/8	1-5/16	M16002	\$31.10
3	.2130	1/4	3-1/16	1-1/4	M16003	\$28.73
4	.2090	1/4	3-1/16	1-1/4	M16004	\$28.73
5	.2055	1/4	3-1/16	1-1/4	M16005	\$28.73
6	.2040	1/4	3-1/16	1-1/4	M16006	\$28.73
7	.2010	1/4	3	1-3/16	M16007	\$28.73
8	.1990	1/4	3	1-3/16	M16008	\$28.73
9	.1960	1/4	3	1-3/16	M16009	\$24.97
10	.1935	1/4	3	1-3/16	M16010	\$24.97
11	.1910	1/4	3	1-3/16	M16011	\$24.97
12	.1890	1/4	3	1-3/16	M16012	\$24.97
13	.1850	3/16	2-9/16	1-1/8	M16013	\$24.60
14	.1820	3/16	2-9/16	1-1/8	M16014	\$24.60
15	.1800	3/16	2-9/16	1-1/8	M16015	\$24.60
16	.1770	3/16	2-9/16	1-1/8	M16016	\$24.60
17	.1730	3/16	2-9/16	1-1/8	M16017	\$24.60
18	.1695	3/16	2-1/2	1-1/16	M16018	\$21.83
19	.1660	3/16	2-1/2	1-1/16	M16019	\$21.83
20	.1610	3/16	2-1/2	1-1/16	M16020	\$21.83
21	.1590	3/16	2-1/2	1-1/16	M16021	\$19.33
22	.1570	3/16	2-1/2	1-1/16	M16022	\$19.33
23	.1540	3/16	2-7/16	1	M16023	\$19.33

Diameter (od.)		Shank Diameter (od.)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Size	Decimal					
24	.1520	3/16	2-7/16	1	M16024	\$19.33
25	.1495	3/16	2-7/16	1	M16025	\$19.33
26	.1470	3/16	2-7/16	1	M16026	\$19.33
27	.1440	3/16	2-7/16	1	M16027	\$19.33
28	.1405	3/16	2-3/8	15/16	M16028	\$19.33
29	.1360	3/16	2-3/8	15/16	M16029	\$17.47
30	.1285	3/16	2-3/8	15/16	M16030	\$17.47
31	.1200	1/8	2-5/16	7/8	M16031	\$15.97
32	.1160	1/8	2-5/16	7/8	M16032	\$15.97
33	.1130	1/8	2-5/16	7/8	M16033	\$15.97
34	.1110	1/8	2-5/16	7/8	M16034	\$15.97
35	.1100	1/8	2-5/16	7/8	M16035	\$15.97
36	.1065	1/8	2-1/4	13/16	M16036	\$15.97
37	.1040	1/8	2-1/4	13/16	M16037	\$15.97
38	.1015	1/8	2-1/4	13/16	M16038	\$15.97
39	.0995	1/8	2-1/4	13/16	M16039	\$14.97
40	.0980	1/8	2-1/16	13/16	M16040	\$14.97
41	.0960	1/8	2-1/16	13/16	M16041	\$14.97
42	.0935	1/8	2	3/4	M16042	\$14.97
43	.0890	1/8	2	3/4	M16043	\$14.97
44	.0860	1/8	2	3/4	M16044	\$14.97
45	.0820	1/8	2	3/4	M16045	\$14.97

M17 - Letter Sizes

Diameter (od.)		Shank Diameter (od.)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Size	Decimal					
B	.2380	1/4	3-3/16	1-3/8	M1700B	\$32.97
C	.2420	1/4	3-3/16	1-3/8	M1700C	\$32.97
D	.2460	1/4	3-3/16	1-3/8	M1700D	\$32.97
F	.2570	3/8	3-1/4	1-7/16	M1700F	\$33.97
G	.2610	3/8	3-1/4	1-7/16	M1700G	\$34.87
I	.2720	3/8	3-5/16	1-1/2	M1700I	\$34.87
J	.2770	3/8	3-5/16	1-1/2	M1700J	\$34.87
L	.2900	3/8	3-3/8	1-9/16	M1700L	\$36.47
M	.2950	3/8	3-3/8	1-9/16	M1700M	\$36.47

Diameter (od.)		Shank Diameter (od.)	Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Size	Decimal					
N	.3020	3/8	3-7/16	1-5/8	M1700N	\$38.80
O	.3160	3/8	3-1/2	1-11/16	M1700O	\$38.80
Q	.3320	3/8	3-1/2	1-11/16	M1700Q	\$41.17
R	.3390	3/8	3-1/2	1-11/16	M1700R	\$44.10
U	.3680	3/8	3-5/8	1-13/16	M1700U	\$47.37
V	.3770	1/2	3-31/32	1-7/8	M1700V	\$50.87
X	.3970	1/2	4-1/32	1-15/16	M1700X	\$55.57
Y	.4040	1/2	4-1/32	1-15/16	M1700Y	\$55.57
Z	.4130	1/2	4-1/32	2	M1700Z	\$55.63

See Technical Information – Page 52

Technical Information for MULTI-1 Drill (Premium HSS-PM)

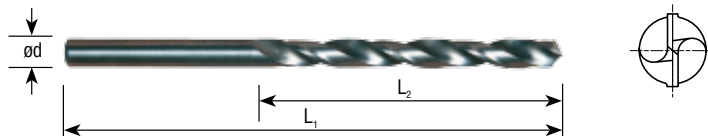
CUTTING CONDITIONS:

WORK MATERIAL	STRUCTURAL STEEL CARBON STEEL			ALLOY STEEL			MOLD STEELS TAINLESS STEEL		
	DIAMETER	RPM	FEED (IPR)	FEED (inch/min)	RPM	FEED (IPR)	FEED (inch/min)	RPM	FEED (IPR)
3/32	5000	.0030	15.00	4000	.0030	12.00	1800	.0030	5.40
1/8	3800	.0050	19.00	3000	.0040	12.00	1400	.0040	5.60
5/32	3000	.0060	18.00	2400	.0050	12.00	1100	.0040	4.40
3/16	2500	.0070	17.50	2000	.0050	10.00	900	.0040	3.60
1/4	1900	.0080	15.20	1500	.0070	10.50	700	.0050	3.50
5/16	1500	.0090	13.50	1200	.0080	9.60	550	.0070	3.85
3/8	1250	.0100	12.50	1000	.0090	9.00	450	.0080	3.60
1/2	950	.0110	10.45	750	.0100	7.50	350	.0090	3.15

WORK MATERIAL	NICKEL ALLOY TITANIUM ALLOY			CAST IRON			ALUMINIUM ALLOY COPPER ALLOY NONFERROUS ALLOY		
	DIAMETER	RPM	FEED (IPR)	FEED (inch/min)	RPM	FEED (IPR)	FEED (inch/min)	RPM	FEED (IPR)
3/32	800	.0010	0.80	5700	.0040	22.80	8700	.0040	34.80
1/8	600	.0020	1.20	4250	.0060	25.50	6500	.0060	39.00
5/32	500	.0020	1.00	3400	.0070	23.80	5200	.0070	36.40
3/16	400	.0020	0.80	2850	.0080	22.80	4300	.0080	34.40
1/4	300	.0030	0.90	2100	.0100	21.00	3200	.0090	28.80
5/16	250	.0030	0.75	1750	.0120	21.00	2600	.0110	28.60
3/8	200	.0040	0.80	1450	.0120	17.40	2200	.0130	28.60
1/2	150	.0050	0.75	1100	.0150	16.50	1650	.0150	24.75



Carbide Standard Length Twist Drill 118° Point



D5412 Series

See Technical Information – Page 55

Diameter (ød)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Size	Decimal				
1	.2280	3	1-3/4	D5412101	\$37.13
2	.2210	3	1-3/4	D5412102	\$36.77
3	.2130	3	1-3/4	D5412103	\$35.40
4	.2090	3	1-3/4	D5412104	\$34.50
5	.2055	3	1-3/4	D5412105	\$33.63
6	.2040	3	1-3/4	D5412106	\$33.07
7	.2010	3	1-3/4	D5412107	\$31.90
8	.1990	3	1-3/4	D5412108	\$31.90
9	.1960	3	1-3/4	D5412109	\$31.90
10	.1935	2-3/4	1-5/8	D5412110	\$30.00
11	.1910	2-3/4	1-5/8	D5412111	\$29.57
12	.1890	2-3/4	1-5/8	D5412112	\$29.17
13	.1850	2-3/4	1-5/8	D5412113	\$28.53
14	.1820	2-3/4	1-5/8	D5412114	\$28.33
15	.1800	2-3/4	1-5/8	D5412115	\$28.17
16	.1770	2-3/4	1-5/8	D5412116	\$27.93
17	.1730	2-3/4	1-5/8	D5412117	\$27.50
18	.1695	2-3/4	1-5/8	D5412118	\$27.17
19	.1660	2-3/4	1-5/8	D5412119	\$26.47
20	.1610	2-1/2	1-3/8	D5412120	\$25.60
21	.1590	2-1/2	1-3/8	D5412121	\$25.40
22	.1570	2-1/2	1-3/8	D5412122	\$24.87
23	.1540	2-1/2	1-3/8	D5412123	\$23.93
24	.1520	2-1/2	1-3/8	D5412124	\$23.47
25	.1495	2-1/2	1-3/8	D5412125	\$23.47
26	.1470	2-1/2	1-3/8	D5412126	\$23.47
27	.1440	2-1/2	1-3/8	D5412127	\$22.00
28	.1405	2-1/2	1-3/8	D5412128	\$22.00

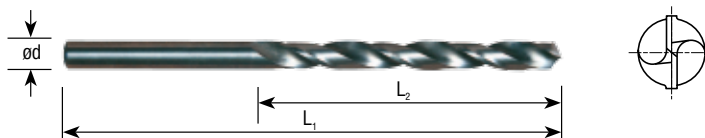
Diameter (ød)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Size	Decimal				
29	.1360	2-1/2	1-3/8	D5412129	\$22.00
30	.1285	2-1/4	1-1/4	D5412130	\$20.37
31	.1200	2-1/4	1-1/4	D5412131	\$19.47
32	.1160	2-1/4	1-1/4	D5412132	\$19.27
33	.1130	2-1/4	1-1/4	D5412133	\$18.97
34	.1110	2-1/4	1-1/4	D5412134	\$18.97
35	.1100	2-1/4	1-1/4	D5412135	\$18.30
36	.1065	2-1/4	1-1/4	D5412136	\$18.10
37	.1040	2-1/4	1-1/4	D5412137	\$18.10
38	.1015	2-1/4	1-1/4	D5412138	\$18.10
39	.0995	2-1/4	1-1/4	D5412139	\$17.43
40	.0980	2	1	D5412140	\$17.23
41	.0960	2	1	D5412141	\$16.63
42	.0935	2	1	D5412142	\$16.53
43	.0890	2	1	D5412143	\$16.13
44	.0860	2	1	D5412144	\$16.13
45	.0820	1-3/4	7/8	D5412145	\$15.73
46	.0810	1-3/4	7/8	D5412146	\$15.37
47	.0785	1-3/4	7/8	D5412147	\$15.37
48	.0760	1-3/4	7/8	D5412148	\$15.37
49	.0730	1-3/4	7/8	D5412149	\$14.87
50	.0700	1-3/4	7/8	D5412150	\$14.60
51	.0670	1-1/2	3/4	D5412151	\$14.50
52	.0635	1-1/2	3/4	D5412152	\$14.50
53	.0595	1-1/2	3/4	D5412153	\$14.50
54	.0550	1-1/2	3/4	D5412154	\$14.50
55	.0520	1-1/2	3/4	D5412155	\$14.37
56	.0465	1-1/2	3/4	D5412156	\$14.37

◆ The TiN Coating, TiCN Coating and Hardslick Coating and other shank types are available upon request.

INDIVIDUALLY PACKAGED



Carbide Standard Length Twist Drill 118° Point



D5413 Series

Diameter (ød)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Size	Decimal				
A	.234	3-1/4	2	D5413201	\$37.13
B	.238	3-1/4	2	D5413202	\$37.13
C	.242	3-1/4	2	D5413203	\$37.13
D	.246	3-1/4	2	D5413204	\$37.13
E	.250	3-1/4	2	D5413205	\$37.13
F	.257	3-1/4	2	D5413206	\$39.00
G	.261	3-1/2	2-1/8	D5413207	\$39.00
H	.266	3-1/2	2-1/8	D5413208	\$39.00
I	.272	3-1/2	2-1/8	D5413209	\$39.30
J	.277	3-1/2	2-1/8	D5413210	\$42.13
K	.281	3-1/2	2-1/8	D5413211	\$42.13
L	.290	3-1/2	2-1/8	D5413212	\$46.63
M	.295	3-3/4	2-3/8	D5413213	\$46.63
N	.302	3-3/4	2-3/8	D5413214	\$49.40
O	.316	3-3/4	2-3/8	D5413215	\$53.87
P	.323	3-3/4	2-3/8	D5413216	\$53.87
Q	.332	4	2-1/2	D5413217	\$53.87
R	.339	4	2-1/2	D5413218	\$59.73
S	.348	4	2-1/2	D5413219	\$59.73
T	.358	4-1/4	2-3/4	D5413220	\$65.23
U	.368	4-1/4	2-3/4	D5413221	\$65.23
V	.377	4-1/4	2-3/4	D5413222	\$70.77
W	.386	4-1/2	2-7/8	D5413223	\$79.90
X	.397	4-1/2	2-7/8	D5413224	\$88.70
Y	.404	4-1/2	2-7/8	D5413225	\$88.70
Z	.413	4-1/2	2-7/8	D5413226	\$88.70

D5417 Series

See Technical Information – Page 55

Diameter (ød)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Fractional	Decimal				
3/64	.0469	1-1/2	3/4	D5417003	\$13.93
1/16	.0625	1-1/2	3/4	D5417004	\$14.03
5/64	.0781	1-3/4	7/8	D5417005	\$14.90
3/32	.0938	2	1	D5417006	\$16.77
7/64	.1094	2-1/4	1-1/4	D5417007	\$18.30
1/8	.1250	2-1/4	1-1/4	D5417008	\$19.20
9/64	.1406	2-1/2	1-3/8	D5417009	\$22.43
5/32	.1563	2-1/2	1-3/8	D5417010	\$23.70
11/64	.1719	2-3/4	1-5/8	D5417011	\$27.80
3/16	.1875	2-3/4	1-5/8	D5417012	\$28.13
13/64	.2031	3	1-3/4	D5417013	\$33.93
7/32	.2188	3	1-3/4	D5417014	\$34.83
15/64	.2344	3-1/4	2	D5417015	\$35.97
1/4	.2500	3-1/4	2	D5417016	\$37.13
17/64	.2656	3-1/2	2-1/8	D5417017	\$39.00
9/32	.2813	3-1/2	2-1/8	D5417018	\$42.13
19/64	.2969	3-3/4	2-3/8	D5417019	\$46.63
5/16	.3125	3-3/4	2-3/8	D5417020	\$49.40
21/64	.3281	4	2-1/2	D5417021	\$53.87
11/32	.3438	4	2-1/2	D5417022	\$59.73
23/64	.3594	4-1/4	2-3/4	D5417023	\$65.23
3/8	.3750	4-1/4	2-3/4	D5417024	\$70.77
25/64	.3906	4-1/2	2-7/8	D5417025	\$79.90
13/32	.4063	4-1/2	2-7/8	D5417026	\$88.70
27/64	.4219	4-1/2	2-7/8	D5417027	\$97.17
7/16	.4375	4-1/2	2-7/8	D5417028	\$97.17
29/64	.4531	4-3/4	3	D5417029	\$105.20
15/32	.4688	4-3/4	3	D5417030	\$105.20
31/64	.4844	4-3/4	3	D5417031	\$108.23
1/2	.5000	4-3/4	3	D5417032	\$108.23

► The TiN Coating, TiCN Coating and Hardslick Coating and other shank types are available upon request.

INDIVIDUALLY PACKAGED

TECHNICAL INFORMATION FOR STANDARD DRILLS

RECOMMENDED CUTTING CONDITIONS:

HSS (M2) Morse Taper Shank Twist Drill and 118° Split Point 3Flat Black&Gold Silver&Deming Drill D1211, D1191

WORK MATERIAL	CARBON STEELS		CARBON STEELS		CARBON STEELS		ALLOY STEELS		ALLOY STEELS		STAINLESS STEELS		TITANIUM ALLOYS	
	N	S	N	S	N	S	N	S	N	S	N	S	N	S
HARDNESS			~ HRC 23		HRC 23 ~ 28		HRC 23 ~ 34		HRC 34 ~ 38		HRC 23			
DIAMETER (inch)	N	S	N	S	N	S	N	S	N	S	N	S	N	S
3/32	3380	.0010	2550	.0010	1900	.0006	2380	.0008	1400	.0006	2550	.0010	1400	.0008
1/8	2700	.0020	2000	.0020	1500	.0010	1880	.0020	1100	.0008	2000	.0020	1100	.0010
13/64	1700	.0025	1280	.0025	960	.0015	1190	.0025	700	.0010	1280	.0025	700	.0015
5/16	1050	.0051	780	.0051	590	.0030	730	.0051	430	.0015	780	.0051	430	.0030
7/16	750	.0059	560	.0059	425	.0030	520	.0071	310	.0020	560	.0059	430	.0030
3/4	440	.0091	330	.0091	255	.0051	300	.0091	180	.0020	330	.0091	180	.0051
1*17/64	260	.0110	195	.0110	145	.0071	180	.0071	107	.0030	195	.0110	107	.0071
1*31/32	165	.0130	125	.0130	93	.0079	115	.0079	68	.0030	125	.0130	68	.0079

WORK MATERIAL	TOOL STEELS		CAST IRON		ALUMINUM ALLOYS		MAGNESIUM ALLOYS		ZINC ALLOYS		PLASTIC	
	N	S	N	S	N	S	N	S	N	S	N	S
HARDNESS												
DIAMETER (inch)	N	S	N	S	N	S	N	S	N	S	N	S
3/32	3180	.0017	2250	.0010	6400	.0015	8600	.0015	6400	.0015	3380	.0010
1/8	2500	.0020	2000	.0020	5000	.0025	6800	.0025	5000	.0025	2700	.0020
13/64	1590	.0025	1280	.0025	3200	.0030	4300	.0030	3200	.0030	1700	.0025
5/16	970	.0051	780	.0051	2000	.0071	2600	.0071	2000	.0071	1050	.0051
7/16	700	.0071	560	.0059	1400	.0079	1900	.0079	1400	.0079	750	.0059
3/4	440	.0091	330	.0091	820	.0118	1100	.0118	820	.0118	440	.0091
1*17/64	240	.0118	195	.0110	490	.0150	660	.0150	490	.0150	260	.0110
1*31/32	150	.0169	125	.0130	310	.0181	415	.0181	310	.0181	165	.0130

N=rev/min
S=inch/rev

Carbide Twist Drill

D5412, D5413, D5417

WORK MATERIAL	NON-ALLOY STEELS		ALLOY STEELS		SOFT GREY CAST IRON		HARD GREY CAST IRON		STAINLESS STEELS		AL-SI ALLOY, SI<10%		AL-SI ALLOY, SI>10%		TI, NI ALLOY STEELS	
	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S
DIAMETER (inch)	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S
3/64	23000	.0012	17200	.0012	32000	.0016	23000	.0016	12000	.0016	54000	.0020	42000	.0020	11800	.0008
5/64	11500	.0016	8600	.0016	16000	.0020	11500	.0020	6000	.0012	27000	.0024	21000	.0024	5900	.0012
1/8	7800	.0020	5750	.0020	10500	.0024	7600	.0024	4000	.0016	18000	.0028	14000	.0028	3900	.0016
5/32	5800	.0024	4300	.0024	7800	.0028	5700	.0028	3000	.0020	13000	.0031	10500	.0031	2950	.0020
13/64	4700	.0028	3450	.0028	6200	.0031	4550	.0031	2400	.0024	10500	.0035	8500	.0035	2350	.0024
15/64	3900	.0031	2850	.0031	5200	.0035	3800	.0035	2000	.0028	8800	.0043	7100	.0043	1950	.0028
9/32	3350	.0035	2450	.0035	4500	.0039	3250	.0039	1700	.0031	7600	.0051	6100	.0051	1700	.0031
5/16	2900	.0039	2150	.0039	3900	.0047	2850	.0047	1500	.0035	6600	.0059	5350	.0059	1450	.0035
23/64	2600	.0043	1900	.0043	3450	.0055	2550	.0055	1350	.0039	5900	.0067	4750	.0067	1300	.0039
25/64	2350	.0047	1700	.0047	3100	.0063	2300	.0063	1200	.0043	5300	.0075	4250	.0075	1200	.0043
7/16	2150	.0051	1600	.0051	2850	.0071	2100	.0071	1100	.0047	4850	.0083	3900	.0083	1050	.0047
15/32	1950	.0055	1450	.0055	2600	.0079	1900	.0079	1000	.0051	4450	.0091	3550	.0091	980	.0051
33/64	1800	.0063	1350	.0063	2400	.0079	1750	.0079	950	.0051	4100	.0098	3300	.0098	905	.0051

N=rev/min
S=inch/rev

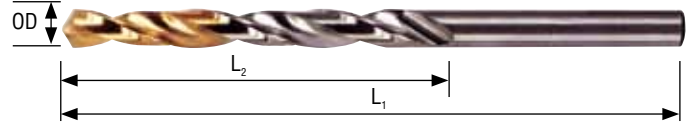
GOLD-P COATED HSS DRILLS

HSS Straight shank Jobber length ANSI

FRACTIONAL SIZE

NEW
NEW SIZES AVAILABLE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
3/64	.0469	3/4	1-3/4	D1GP113003	\$1.50**
1/16	.0625	7/8	1-7/8	D1GP182004	\$1.57**
5/64	.0781	1	2	D1GP182005	\$1.57**
3/32	.0937	1-1/4	2-1/4	D1GP182006	\$1.57**
7/64	.1094	1-1/2	2-5/8	D1GP182007	\$1.57**
1/8	.1250	1-5/8	2-3/4	D1GP182008	\$1.57**
9/64	.1406	1-3/4	2-7/8	D1GP182009	\$1.73**
5/32	.1562	2	3-1/8	D1GP182010	\$1.77**
11/64	.1719	2-1/8	3-1/4	D1GP182011	\$1.90**
3/16	.1875	2-5/16	3-1/2	D1GP182012	\$2.10**
13/64	.2031	2-7/16	3-5/8	D1GP182013	\$2.53**
7/32	.2187	2-1/2	3-3/4	D1GP182014	\$2.67**
15/64	.2344	2-5/8	3-7/8	D1GP182015	\$2.97**
1/4	.2500	2-3/4	4	D1GP182016	\$3.13**
17/64	.2656	2-7/8	4-1/8	D1GP182017	\$3.60**
9/32	.2812	2-15/16	4-1/4	D1GP182018	\$3.93**
19/64	.2969	3-1/16	4-3/8	D1GP182019	\$4.43**
5/16	.3125	3-3/16	4-1/2	D1GP182020	\$4.73**
21/64	.3281	3-5/16	4-5/8	D1GP182021	\$5.40*
11/32	.3437	3-7/16	4-3/4	D1GP182022	\$5.90*
23/64	.3594	3-1/2	4-7/8	D1GP182023	\$6.53*
3/8	.3750	3-5/8	5	D1GP182024	\$6.63*
25/64	.3906	3-3/4	5-1/8	D1GP182025	\$7.53*
13/32	.4062	3-7/8	5-1/4	D1GP182026	\$7.93*
27/64	.4219	3-15/16	5-3/8	D1GP182027	\$8.53*
7/16	.4375	4-1/16	5-1/2	D1GP182028	\$9.30*
29/64	.4531	4-3/16	5-5/8	D1GP182029	\$10.20*
15/32	.4687	4-5/16	5-3/4	D1GP182030	\$10.73*
31/64	.4844	4-3/8	5-7/8	D1GP182031	\$11.60*
1/2	.5000	4-1/2	6	D1GP182032	\$12.03*
33/64	.5156	4-13/16	6-5/8	D8182033	\$30.80*
17/32	.5312	4-13/16	6-5/8	D8182034	\$31.57*
35/64	.5469	4-13/16	6-5/8	D8182035	\$32.97*
9/16	.5625	4-13/16	6-5/8	D8182036	\$33.07*
37/64	.5781	4-13/16	6-5/8	D8182037	\$36.97*
19/32	.5937	5-3/16	7-1/8	D8182038	\$37.87*
39/64	.6094	5-3/16	7-1/8	D8182039	\$39.00*
5/8	.6250	5-3/16	7-1/8	D8182040	\$39.00*
21/32	.6562	5-3/16	7-1/8	D8182042	\$42.67*
11/16	.6875	5-5/8	7-5/8	D8182044	\$48.07*
45/64	.7031	5-5/8	9-1/2	D8182045	\$62.43*
23/32	.7187	5-5/8	9-1/2	D8182046	\$67.47*
47/64	.7344	5-5/8	9-3/4	D8182047	\$71.27*
3/4	.7500	5-7/8	9-3/4	D8182048	\$71.27*



Flute Geometry: Right hand spiral, wider flutes

Point: 135° split point... .059 diameter and over.

Surface treatment: Bright body TiN coating on working part.

Application: Drilling in steel, cast steel, alloyed and non-alloyed, grey cast iron, graphite, malleable cast iron.

See Technical Information – Page 85

LETTER SIZE

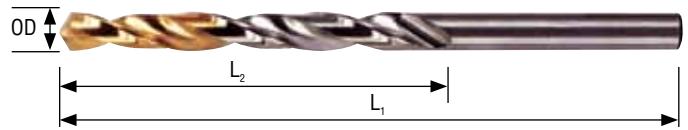
Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
A	.2340	2-5/8	3-7/8	D1GP139101	\$3.37**
B	.2380	2-3/4	4	D1GP139102	\$3.93**
C	.2420	2-3/4	4	D1GP139103	\$3.93**
D	.2460	2-3/4	4	D1GP139104	\$3.93**
E	.2500	2-3/4	4	D1GP139105	\$3.93**
F	.2570	2-7/8	4-1/8	D1GP139106	\$4.17**
G	.2610	2-7/8	4-1/8	D1GP139107	\$4.17**
H	.2660	2-7/8	4-1/8	D1GP139108	\$4.17**
I	.2720	2-7/8	4-1/8	D1GP139109	\$4.53**
J	.2770	2-7/8	4-1/8	D1GP139110	\$4.80**
K	.2810	2-15/16	4-1/4	D1GP139111	\$4.80**
L	.2900	2-15/16	4-1/4	D1GP139112	\$5.40**
M	.2950	3-1/16	4-3/8	D1GP139113	\$5.40**
N	.3020	3-1/16	4-3/8	D1GP139114	\$5.77**
O	.3160	3-3/16	4-1/2	D1GP139115	\$6.33**
P	.3230	3-5/16	4-5/8	D1GP139116	\$6.33**
Q	.3320	3-7/16	4-3/4	D1GP139117	\$6.90*
R	.3390	3-7/16	4-3/4	D1GP139118	\$6.90*
S	.3480	3-1/2	4-7/8	D1GP139119	\$7.73*
T	.3580	3-1/2	4-7/8	D1GP139120	\$7.77*
U	.3680	3-5/8	5	D1GP139121	\$8.17*
V	.3770	3-5/8	5	D1GP139122	\$8.17*
W	.3860	3-3/4	5-1/8	D1GP139123	\$8.90*
X	.3970	3-3/4	5-1/8	D1GP139124	\$9.77*
Y	.4040	3-7/8	5-1/4	D1GP139125	\$9.77*
Z	.4130	3-7/8	5-1/4	D1GP139126	\$10.63*

* 3 PER PACKAGE
* 5 PER PACKAGE
**10 PER PACKAGE

GOLD-P COATED HSS DRILLS

HSS Straight shank Jobber length ANSI

Flute Geometry: Right hand spiral, wider flutes
Point: 135° split point... .059 diameter and over.
Surface treatment: Bright body TiN coating on working part.
Application: Drilling in steel, cast steel, alloyed and non-alloyed, grey cast iron, graphite, malleable cast iron.



See Technical Information – Page 85

WIRE GAUGE SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
1	.2280	2-5/8	3-7/8	D1GP138256	\$3.17**
2	.2210	2-5/8	3-7/8	D1GP138255	\$3.17**
3	.2130	2-1/2	3-3/4	D1GP138254	\$2.93**
4	.2090	2-1/2	3-3/4	D1GP138253	\$2.93**
5	.2055	2-1/2	3-3/4	D1GP138252	\$2.93**
6	.2040	2-1/2	3-3/4	D1GP138251	\$2.93**
7	.2010	2-7/16	3-5/8	D1GP138250	\$2.67**
8	.1990	2-7/16	3-5/8	D1GP138249	\$2.67**
9	.1960	2-7/16	3-5/8	D1GP138248	\$2.67**
10	.1935	2-7/16	3-5/8	D1GP138247	\$2.47**
11	.1910	2-5/16	3-1/2	D1GP138246	\$2.43**
12	.1890	2-5/16	3-1/2	D1GP138245	\$2.43**
13	.1850	2-5/16	3-1/2	D1GP138244	\$2.27**
14	.1820	2-3/16	3-3/8	D1GP138243	\$2.27**
15	.1800	2-3/16	3-3/8	D1GP138242	\$2.27**
16	.1770	2-3/16	3-3/8	D1GP138241	\$2.27**
17	.1730	2-3/16	3-3/8	D1GP138240	\$2.27**
18	.1695	2-1/8	3-1/4	D1GP138239	\$1.90**
19	.1660	2-1/8	3-1/4	D1GP138238	\$1.90**
20	.1610	2-1/8	3-1/4	D1GP138237	\$1.90**
21	.1590	2-1/8	3-1/4	D1GP138236	\$1.83**
22	.1570	2	3-1/8	D1GP138235	\$1.83**
23	.1540	2	3-1/8	D1GP138234	\$1.77**
24	.1520	2	3-1/8	D1GP138233	\$1.77**
25	.1495	1-7/8	3	D1GP138232	\$1.73**
26	.1470	1-7/8	3	D1GP138231	\$1.73**
27	.1440	1-7/8	3	D1GP138230	\$1.73**
28	.1405	1-3/4	2-7/8	D1GP138229	\$1.57**

WIRE GAUGE SIZE

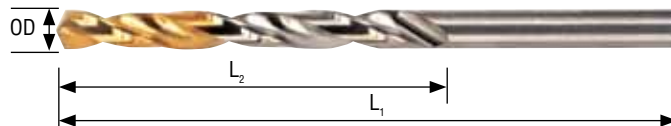
Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
29	.1360	1-3/4	2-7/8	D1GP138228	\$1.57**
30	.1285	1-5/8	2-3/4	D1GP138227	\$1.57**
31	.1200	1-5/8	2-3/4	D1GP138226	\$1.57**
32	.1160	1-5/8	2-3/4	D1GP138225	\$1.57**
33	.1130	1-1/2	2-5/8	D1GP138224	\$1.57**
34	.1110	1-1/2	2-5/8	D1GP138223	\$1.57**
35	.1100	1-1/2	2-5/8	D1GP138222	\$1.57**
36	.1065	1-7/16	2-1/2	D1GP138221	\$1.57**
37	.1040	1-7/16	2-1/2	D1GP138220	\$1.57**
38	.1015	1-7/16	2-1/2	D1GP138219	\$1.57**
39	.0995	1-3/8	2-3/8	D1GP138218	\$1.57**
40	.0980	1-3/8	2-3/8	D1GP138217	\$1.57**
41	.0960	1-3/8	2-3/8	D1GP138216	\$1.57**
42	.0935	1-1/4	2-1/4	D1GP138215	\$1.57**
43	.0890	1-1/4	2-1/4	D1GP138214	\$1.57**
44	.0860	1-1/8	2-1/8	D1GP138213	\$1.57**
45	.0820	1-1/8	2-1/8	D1GP138212	\$1.57**
46	.0810	1-1/8	2-1/8	D1GP138211	\$1.57**
47	.0785	1	2	D1GP138210	\$1.57**
48	.0760	1	2	D1GP138209	\$1.57**
49	.0730	1	2	D1GP138208	\$1.57**
50	.0700	1	2	D1GP138207	\$1.57**
51	.0670	1	2	D1GP138206	\$1.77**
52	.0635	7/8	1-7/8	D1GP138205	\$1.77**
53	.0595	7/8	1-7/8	D1GP134204	\$1.73**
54	.0550	7/8	1-7/8	D1GP134203	\$1.73**
55	.0520	7/8	1-7/8	D1GP134202	\$1.73**
56	.0465	3/4	1-3/4	D1GP134201	\$1.73**

* 5 PER PACKAGE
 **10 PER PACKAGE

GOLD-P COATED HSS DRILLS

HSS-Co8% Straight shank Jobber length ANSI

Flute Geometry: Right hand spiral, wider flutes
Point: 135° split point... .059 diameter and over.
Surface treatment: Bright body TiN coating on working part.
Application: Drilling in steel, cast steel, alloyed and non-alloyed, grey cast iron, graphite, malleable cast iron.



See Technical Information – Page 85

FRACTIONAL SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
3/64	.0469	3/4	1-3/4	D2GP185003	\$1.93**
1/16	.0625	7/8	1-7/8	D2GP185004	\$1.93**
5/64	.0781	1	2	D2GP185005	\$1.93**
3/32	.0937	1-1/4	2-1/4	D2GP185006	\$1.93**
7/64	.1094	1-1/2	2-5/8	D2GP185007	\$2.03**
1/8	.1250	1-5/8	2-3/4	D2GP185008	\$2.43**
9/64	.1406	1-3/4	2-7/8	D2GP185009	\$2.43**
5/32	.1562	2	3-1/8	D2GP185010	\$2.80**
11/64	.1719	2-1/8	3-1/4	D2GP185011	\$2.93**
3/16	.1875	2-5/16	3-1/2	D2GP185012	\$3.17**
13/64	.2031	2-7/16	3-5/8	D2GP185013	\$3.93**
7/32	.2187	2-1/2	3-3/4	D2GP185014	\$4.27**
15/64	.2344	2-5/8	3-7/8	D2GP185015	\$4.63**
1/4	.2500	2-3/4	4	D2GP185016	\$4.87**
17/64	.2656	2-7/8	4-1/8	D2GP185017	\$5.47**
9/32	.2812	2-15/16	4-1/4	D2GP185018	\$5.83**
19/64	.2969	3-1/16	4-3/8	D2GP185019	\$6.90**
5/16	.3125	3-3/16	4-1/2	D2GP185020	\$7.33**
21/64	.3281	3-5/16	4-5/8	D2GP185021	\$8.20*
11/32	.3437	3-7/16	4-3/4	D2GP185022	\$8.80*
23/64	.3594	3-1/2	4-7/8	D2GP185023	\$10.23*
3/8	.3750	3-5/8	5	D2GP185024	\$10.23*
25/64	.3906	3-3/4	5-1/8	D2GP185025	\$11.27*
13/32	.4062	3-7/8	5-1/4	D2GP185026	\$11.87*
27/64	.4219	3-15/16	5-3/8	D2GP185027	\$13.07*
7/16	.4375	4-1/16	5-1/2	D2GP185028	\$13.67*
29/64	.4531	4-3/16	5-5/8	D2GP185029	\$16.07*
15/32	.4687	4-5/16	5-3/4	D2GP185030	\$16.33*
31/64	.4844	4-3/8	5-7/8	D2GP185031	\$17.00*
1/2	.5000	4-1/2	6	D2GP185032	\$17.53*

LETTER SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
A	.2340	2-5/8	3-7/8	D2GP186101	\$4.70**
B	.2380	2-3/4	4	D2GP186102	\$5.47**
C	.2420	2-3/4	4	D2GP186103	\$5.47**
D	.2460	2-3/4	4	D2GP186104	\$6.00**
E	.2500	2-3/4	4	D2GP186105	\$4.97**
F	.2570	2-7/8	4-1/8	D2GP186106	\$5.47**
G	.2610	2-7/8	4-1/8	D2GP186107	\$5.47**
H	.2660	2-7/8	4-1/8	D2GP186108	\$6.00**
I	.2720	2-7/8	4-1/8	D2GP186109	\$5.63**
J	.2770	2-7/8	4-1/8	D2GP186110	\$6.20**
K	.2810	2 15/16	4-1/4	D2GP186111	\$6.20**
L	.2900	2 15/16	4-1/4	D2GP186112	\$6.90**
M	.2950	3-1/16	4-3/8	D2GP186113	\$7.27**
N	.3020	3-1/16	4-3/8	D2GP186114	\$7.27**
O	.3160	3-3/16	4-1/2	D2GP186115	\$8.10**
P	.3230	3-5/16	4-5/8	D2GP186116	\$8.63**
Q	.3320	3-7/16	4-3/4	D2GP186117	\$8.87*
R	.3390	3-7/16	4-3/4	D2GP186118	\$8.87*
S	.3480	3-1/2	4-7/8	D2GP186119	\$10.63*
T	.3580	3-1/2	4-7/8	D2GP186120	\$10.70*
U	.3680	3-5/8	5	D2GP186121	\$10.70*
V	.3770	3-5/8	5	D2GP186122	\$11.63*
W	.3860	3-3/4	5-1/8	D2GP186123	\$11.63*
X	.3970	3-3/4	5-1/8	D2GP186124	\$11.83*
Y	.4040	3-7/8	5-1/4	D2GP186125	\$12.47*
Z	.4130	3-7/8	5-1/4	D2GP186126	\$13.50*

* 5 PER PACKAGE
 **10 PER PACKAGE

GOLD-P COATED HSS DRILLS

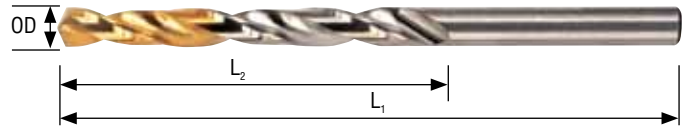
HSS-Co8% Straight shank Jobber length ANSI

Flute Geometry: Right hand spiral, wider flutes.

Point: 135° split point... .059 diameter and over.

Surface treatment: Bright body TiN coating on working part.

Application: Drilling in steel, cast steel, alloyed and non-alloyed, grey cast iron, graphite, malleable cast iron .



See Technical Information – Page 85

WIRE GAUGE SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
1	.2280	2-5/8	3-7/8	D2GP187256	\$4.97**
2	.2210	2-5/8	3-7/8	D2GP187255	\$4.97**
3	.2130	2-1/2	3-3/4	D2GP187254	\$4.63**
4	.2090	2-1/2	3-3/4	D2GP187253	\$4.63**
5	.2055	2-1/2	3-3/4	D2GP187252	\$4.63**
6	.2040	2-1/2	3-3/4	D2GP187251	\$3.73**
7	.2010	2-7/16	3-5/8	D2GP187250	\$3.73**
8	.1990	2-7/16	3-5/8	D2GP187249	\$3.73**
9	.1960	2-7/16	3-5/8	D2GP187248	\$3.73**
10	.1935	2-7/16	3-5/8	D2GP187247	\$3.57**
11	.1910	2-5/16	3-1/2	D2GP187246	\$3.57**
12	.1890	2-5/16	3-1/2	D2GP187245	\$3.57**
13	.1850	2-5/16	3-1/2	D2GP187244	\$3.40**
14	.1820	2-3/16	3-3/8	D2GP187243	\$3.40**
15	.1800	2-3/16	3-3/8	D2GP187242	\$3.40**
16	.1770	2-3/16	3-3/8	D2GP187241	\$3.23**
17	.1730	2-3/16	3-3/8	D2GP187240	\$3.13**
18	.1695	2-1/8	3-1/4	D2GP187239	\$2.93**
19	.1660	2-1/8	3-1/4	D2GP187238	\$2.87**
20	.1610	2-1/8	3-1/4	D2GP187237	\$2.87**
21	.1590	2-1/8	3-1/4	D2GP187236	\$2.87**
22	.1570	2	3-1/8	D2GP187235	\$2.87**
23	.1540	2	3-1/8	D2GP187234	\$2.80**
24	.1520	2	3-1/8	D2GP187233	\$2.80**
25	.1495	1-7/8	3	D2GP187232	\$2.53**
26	.1470	1-7/8	3	D2GP187231	\$2.53**
27	.1440	1-7/8	3	D2GP187230	\$2.53**
28	.1405	1-3/4	2-7/8	D2GP187229	\$2.43**

WIRE GAUGE SIZE

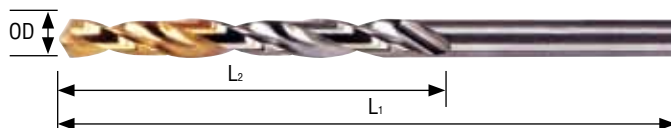
Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
29	.1360	1-3/4	2-7/8	D2GP187228	\$2.33**
30	.1285	1-5/8	2-3/4	D2GP187227	\$2.17**
31	.1200	1-5/8	2-3/4	D2GP187226	\$2.17**
32	.1160	1-5/8	2-3/4	D2GP187225	\$2.17**
33	.1130	1-1/2	2-5/8	D2GP187224	\$2.10**
34	.1110	1-1/2	2-5/8	D2GP187223	\$2.10**
35	.1100	1-1/2	2-5/8	D2GP187222	\$2.10**
36	.1065	1-7/16	2-1/2	D2GP187221	\$2.03**
37	.1040	1-7/16	2-1/2	D2GP187220	\$2.03**
38	.1015	1-7/16	2-1/2	D2GP187219	\$1.90**
39	.0995	1-3/8	2-3/8	D2GP187218	\$1.90**
40	.0980	1-3/8	2-3/8	D2GP187217	\$1.90**
41	.0960	1-3/8	2-3/8	D2GP187216	\$1.90**
42	.0935	1-1/4	2-1/4	D2GP187215	\$1.90**
43	.0890	1-1/4	2-1/4	D2GP187214	\$1.90**
44	.0860	1-1/8	2-1/8	D2GP187213	\$1.90**
45	.0820	1-1/8	2-1/8	D2GP187212	\$1.90**
46	.0810	1-1/8	2-1/8	D2GP187211	\$1.90**
47	.0785	1	2	D2GP187210	\$1.90**
48	.0760	1	2	D2GP187209	\$1.90**
49	.0730	1	2	D2GP187208	\$1.90**
50	.0700	1	2	D2GP187207	\$1.90**
51	.0670	1	2	D2GP187206	\$1.90**
52	.0635	7/8	1-7/8	D2GP187205	\$1.90**
53	.0595	7/8	1-7/8	D2GP187204	\$2.03**
54	.0550	7/8	1-7/8	D2GP187203	\$2.03**
55	.0520	7/8	1-7/8	D2GP187202	\$2.03**
56	.0465	3/4	1-3/4	D2GP187201	\$2.20**

* 5 PER PACKAGE
**10 PER PACKAGE

GOLD-P COATED HSS DRILLS-METRIC SIZES

HSS-Co5% Straight Shank Jobber Length

Flute Geometry: Right hand spiral, wider flutes
Point: 135°, under 1.6mm - Normal point
 from 1.6mm - Split point
Surface Treatment: Bright body TiN coating on working part.
Application: Drilling in steel, cast steel, alloyed and non-alloyed, grey cast iron, graphite, malleable cast iron.



See Technical Information – Page 85

Size OD	Decimal Equiv. OD	Flute Length L ²	Overall Length L ¹	EDP No.	List Price
1	.0394	12	34	DLGP195010	\$1.77**
1.1	.0433	14	36	DLGP195011	\$1.77**
1.2	.0472	16	38	DLGP195012	\$1.77**
1.3	.0512	16	38	DLGP195013	\$1.77**
1.4	.0551	18	40	DLGP195014	\$1.77**
1.5	.0591	18	40	DLGP195015	\$1.77**
1.6	.0630	20	43	DLGP195016	\$1.83**
1.7	.0669	20	43	DLGP195017	\$1.83**
1.8	.0709	22	46	DLGP195018	\$1.83**
1.9	.0748	22	46	DLGP195019	\$1.83**
2	.0787	24	49	DLGP195020	\$1.83**
2.1	.0827	24	49	DLGP195021	\$1.87**
2.2	.0866	27	53	DLGP195022	\$1.87**
2.3	.0906	27	53	DLGP195023	\$1.87**
2.4	.0945	30	57	DLGP195024	\$1.87**
2.5	.0984	30	57	DLGP195025	\$1.87**
2.6	.1024	30	57	DLGP195026	\$2.17**
2.7	.1063	33	61	DLGP195027	\$2.17**
2.8	.1102	33	61	DLGP195028	\$2.17**
2.9	.1142	33	61	DLGP195029	\$2.17**
3	.1181	33	61	DLGP195030	\$2.17**
3.1	.1220	36	65	DLGP195031	\$2.50**
3.2	.1260	36	65	DLGP195032	\$2.50**
3.3	.1299	36	65	DLGP195033	\$2.50**
3.4	.1339	39	70	DLGP195034	\$2.50**
3.5	.1378	39	70	DLGP195035	\$2.50**
3.6	.1417	39	70	DLGP195036	\$2.90**
3.7	.1457	39	70	DLGP195037	\$2.90**
3.8	.1496	43	75	DLGP195038	\$2.90**
3.9	.1535	43	75	DLGP195039	\$2.90**
4	.1575	43	75	DLGP195040	\$2.90**

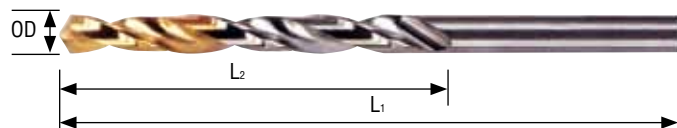
Size OD	Decimal Equiv. OD	Flute Length L ²	Overall Length L ¹	EDP No.	List Price
4.1	.1614	43	75	DLGP195041	\$3.37**
4.2	.1654	43	75	DLGP195042	\$3.37**
4.3	.1693	47	80	DLGP195043	\$3.37**
4.4	.1732	47	80	DLGP195044	\$3.37**
4.5	.1772	47	80	DLGP195045	\$3.37**
4.6	.1811	47	80	DLGP195046	\$3.37**
4.7	.1850	47	80	DLGP195047	\$3.37**
4.8	.1890	52	86	DLGP195048	\$3.37**
4.9	.1929	52	86	DLGP195049	\$3.37**
5	.1969	52	86	DLGP195050	\$3.37**
5.1	.2008	52	86	DLGP195051	\$4.30**
5.2	.2047	52	86	DLGP195052	\$4.30**
5.3	.2087	52	86	DLGP195053	\$4.30**
5.4	.2126	57	93	DLGP195054	\$4.30**
5.5	.2165	57	93	DLGP195055	\$4.30**
5.6	.2205	57	93	DLGP195056	\$4.67**
5.7	.2244	57	93	DLGP195057	\$4.67**
5.8	.2283	57	93	DLGP195058	\$4.67**
5.9	.2323	57	93	DLGP195059	\$4.67**
6	.2362	57	93	DLGP195060	\$4.67**
6.1	.2402	63	101	DLGP195061	\$5.27**
6.2	.2441	63	101	DLGP195062	\$5.27**
6.3	.2480	63	101	DLGP195063	\$5.27**
6.4	.2520	63	101	DLGP195064	\$5.27**
6.5	.2559	63	101	DLGP195065	\$5.27**
6.6	.2598	63	101	DLGP195066	\$5.63**
6.7	.2638	63	101	DLGP195067	\$5.63**
6.8	.2677	69	109	DLGP195068	\$5.63**
6.9	.2717	69	109	DLGP195069	\$5.63**
7	.2756	69	109	DLGP195070	\$5.63**
7.1	.2795	69	109	DLGP195071	\$6.90**

* 5 PER PACKAGE
 **10 PER PACKAGE

GOLD-P COATED HSS DRILLS-METRIC SIZES

HSS-Co5% Straight Shank Jobber Length

Flute Geometry: Right hand spiral, wider flutes
Point: 135°, under 1.6mm - Normal point
 from 1.6mm - Split point
Surface treatment: Bright body TiN coating on working part.
Application: Drilling in steel, cast steel, alloyed and non-alloyed, grey cast iron, graphite, malleable cast iron.



See Technical Information – Page 85

Size OD	Decimal Equiv. OD	Flute Length L ²	Overall Length L ¹	EDP No.	List Price
7.2	.2835	69	109	DLGP195072	\$6.90**
7.3	.2874	69	109	DLGP195073	\$6.90**
7.4	.2913	69	109	DLGP195074	\$6.90**
7.5	.2953	69	109	DLGP195075	\$6.90**
7.6	.2992	75	117	DLGP195076	\$7.57**
7.7	.3031	75	117	DLGP195077	\$7.57**
7.8	.3071	75	117	DLGP195078	\$7.57**
7.9	.3110	75	117	DLGP195079	\$7.57**
8	.3150	75	117	DLGP195080	\$7.57**
8.1	.3189	75	117	DLGP195081	\$8.37**
8.2	.3228	75	117	DLGP195082	\$8.37**
8.3	.3268	75	117	DLGP195083	\$8.37**
8.4	.3307	75	117	DLGP195084	\$8.37*
8.5	.3346	75	117	DLGP195085	\$8.37*
8.6	.3386	81	125	DLGP195086	\$9.43*
8.7	.3425	81	125	DLGP195087	\$9.43*
8.8	.3465	81	125	DLGP195088	\$9.43*
8.9	.3504	81	125	DLGP195089	\$9.43*
9	.3543	81	125	DLGP195090	\$9.43*
9.1	.3583	81	125	DLGP195091	\$11.73*
9.2	.3622	81	125	DLGP195092	\$11.73*
9.3	.3661	81	125	DLGP195093	\$11.73*
9.4	.3701	81	125	DLGP195094	\$11.73*
9.5	.3740	81	125	DLGP195095	\$11.73*
9.6	.3780	87	133	DLGP195096	\$11.73*
9.7	.3819	87	133	DLGP195097	\$11.73*
9.8	.3858	87	133	DLGP195098	\$11.73*
9.9	.3898	87	133	DLGP195099	\$11.73*
10	.3937	87	133	DLGP195100	\$11.73*
10.1	.3976	87	133	DLGP195101	\$13.57*

Size OD	Decimal Equiv. OD	Flute Length L ²	Overall Length L ¹	EDP No.	List Price
10.2	.4016	87	133	DLGP195102	\$13.57*
10.3	.4055	87	133	DLGP195103	\$13.57*
10.4	.4094	87	133	DLGP195104	\$13.57*
10.5	.4134	87	133	DLGP195105	\$13.57*
10.6	.4173	87	133	DLGP195106	\$14.03*
10.7	.4213	94	142	DLGP195107	\$14.03*
10.8	.4252	94	142	DLGP195108	\$14.03*
10.9	.4291	94	142	DLGP195109	\$14.03*
11	.4331	94	142	DLGP195110	\$14.03*
11.1	.4370	94	142	DLGP195111	\$16.77*
11.2	.4409	94	142	DLGP195112	\$16.77*
11.3	.4449	94	142	DLGP195113	\$16.77*
11.4	.4488	94	142	DLGP195114	\$16.77*
11.5	.4528	94	142	DLGP195115	\$16.77*
11.6	.4567	94	142	DLGP195116	\$16.77*
11.7	.4606	94	142	DLGP195117	\$16.77*
11.8	.4646	94	142	DLGP195118	\$16.77*
11.9	.4685	101	151	DLGP195119	\$16.77*
12	.4724	101	151	DLGP195120	\$16.77*
12.1	.4764	101	151	DLGP195121	\$18.70*
12.2	.4803	101	151	DLGP195122	\$18.70*
12.3	.4843	101	151	DLGP195123	\$18.70*
12.4	.4882	101	151	DLGP195124	\$18.70*
12.5	.4921	101	151	DLGP195125	\$19.33*
12.6	.4961	101	151	DLGP195126	\$19.33*
12.7	.5000	101	151	DLGP195127	\$19.33*
12.8	.5039	101	151	DLGP195128	\$19.33*
12.9	.5079	101	151	DLGP195129	\$19.33*
13	.5118	101	151	DLGP195130	\$19.83*

* 5 PER PACKAGE
 **10 PER PACKAGE

GOLD-P COATED HSS DRILLS

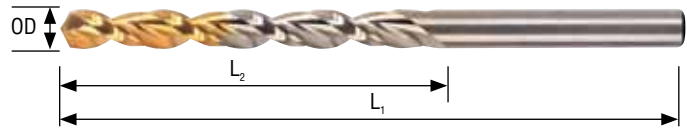
HSS-Co5% Straight shank Jobber length Parabolic Flute for Deep holes ANSI

Flute Geometry: Right hand spiral, 38° helix, Parabolic Flute.

Point: 130° split point.

Surface treatment: Bright body TiN coating on working part.

Application: Improved chip removal in most materials, especially in deep drilling applications.



See Technical Information – Page 85

FRACTIONAL SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
5/64	.0781	1	2	DLGP511005	\$1.93**
3/32	.0937	1-1/4	2-1/4	DLGP511006	\$1.93**
7/64	.1094	1-1/2	2-5/8	DLGP511007	\$2.17**
1/8	.1250	1-5/8	2-3/4	DLGP511008	\$2.17**
9/64	.1406	1-3/4	2-7/8	DLGP511009	\$2.20**
5/32	.1562	2	3-1/8	DLGP511010	\$2.33**
11/64	.1719	2-1/8	3-1/4	DLGP511011	\$2.43**
3/16	.1875	2-5/16	3-1/2	DLGP511012	\$2.70**
13/64	.2031	2-7/16	3-5/8	DLGP511013	\$3.13**
7/32	.2187	2-1/2	3-3/4	DLGP511014	\$3.57**
15/64	.2344	2-5/8	3-7/8	DLGP511015	\$3.87**
1/4	.2500	2-3/4	4	DLGP511016	\$4.03**
17/64	.2656	2-7/8	4-1/8	DLGP511017	\$4.53**
9/32	.2812	215/16	4-1/4	DLGP511018	\$4.87**
19/64	.2969	3-1/16	4-3/8	DLGP511019	\$5.57**
5/16	.3125	3-3/16	4-1/2	DLGP511020	\$6.10**
21/64	.3281	3-5/16	4-5/8	DLGP511021	\$6.97*
11/32	.3437	3-7/16	4-3/4	DLGP511022	\$7.47*
23/64	.3594	3-1/2	4-7/8	DLGP511023	\$8.30*
3/8	.3750	3-5/8	5	DLGP511024	\$8.63*
25/64	.3906	3-3/4	5-1/8	DLGP511025	\$9.50*
13/32	.4062	3-7/8	5-1/4	DLGP511026	\$10.00*
27/64	.4219	3-15/16	5-3/8	DLGP511027	\$11.20*
7/16	.4375	4-1/16	5-1/2	DLGP511028	\$11.63*
29/64	.4531	4-3/16	5-5/8	DLGP511029	\$12.90*
15/32	.4687	4-5/16	5-3/4	DLGP511030	\$13.53*
31/64	.4844	4-3/8	5-7/8	DLGP511031	\$14.30*
1/2	.5000	4-1/2	6	DLGP511032	\$15.07*

LETTER SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
A	.2340	2-5/8	3-7/8	DLGP513101	\$4.30**
B	.2380	2-3/4	4	DLGP513102	\$5.07**
C	.2420	2-3/4	4	DLGP513103	\$5.07**
D	.2460	2-3/4	4	DLGP513104	\$5.07**
E	.2500	2-3/4	4	DLGP513105	\$5.07**
F	.2570	2-7/8	4-1/8	DLGP513106	\$5.50**
G	.2610	2-7/8	4-1/8	DLGP513107	\$5.50**
H	.2660	2-7/8	4-1/8	DLGP513108	\$5.50**
I	.2720	2-7/8	4-1/8	DLGP513109	\$5.93**
J	.2770	2-7/8	4-1/8	DLGP513110	\$6.13**
K	.2810	2-15/16	4-1/4	DLGP513111	\$6.13**
L	.2900	2-15/16	4-1/4	DLGP513112	\$7.00**
M	.2950	3-1/16	4-3/8	DLGP513113	\$7.00**
N	.3020	3-1/16	4-3/8	DLGP513114	\$7.60**
O	.3160	3-3/16	4-1/2	DLGP513115	\$8.17**
P	.3230	3-5/16	4-5/8	DLGP513116	\$8.17**
Q	.3320	3-7/16	4-3/4	DLGP513117	\$9.07*
R	.3390	3-7/16	4-3/4	DLGP513118	\$9.07*
S	.3480	3-1/2	4-7/8	DLGP513119	\$10.13*
T	.3580	3-1/2	4-7/8	DLGP513120	\$10.20*
U	.3680	3-5/8	5	DLGP513121	\$10.73*
V	.3770	3-5/8	5	DLGP513122	\$10.73*
W	.3860	3-3/4	5-1/8	DLGP513123	\$11.77*
X	.3970	3-3/4	5-1/8	DLGP513124	\$12.83*
Y	.4040	3-7/8	5-1/4	DLGP513125	\$12.83*
Z	.4130	3-7/8	5-1/4	DLGP513126	\$14.03*

* 5 PER PACKAGE
**10 PER PACKAGE

GOLD-P COATED HSS DRILLS

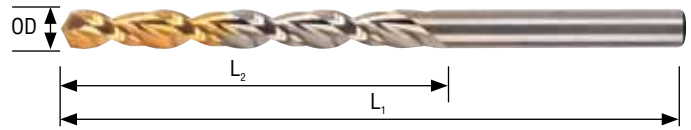
HSS-Co5% Straight shank Jobber length Parabolic Flute for Deep holes ANSI

Flute Geometry: Right hand spiral, 38° helix, Parabolic Flute.

Point: 130° split point.

Surface treatment: Bright body TiN coating on working part.

Application: Improved chip removal in most materials, especially in deep drilling applications.



See Technical Information – Page 85

WIRE GAUGE SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
1	.2280	2-5/8	3-7/8	DLGP512247	\$4.17**
2	.2210	2-5/8	3-7/8	DLGP512246	\$4.17**
3	.2130	2-1/2	3-3/4	DLGP512245	\$3.80**
4	.2090	2-1/2	3-3/4	DLGP512244	\$3.80**
5	.2055	2-1/2	3-3/4	DLGP512243	\$3.80**
6	.2040	2-1/2	3-3/4	DLGP512242	\$3.80**
7	.2010	2-7/16	3-5/8	DLGP512241	\$3.37**
8	.1990	2-7/16	3-5/8	DLGP512240	\$3.37**
9	.1960	2-7/16	3-5/8	DLGP512239	\$3.37**
10	.1935	2-7/16	3-5/8	DLGP512238	\$3.17**
11	.1910	2-5/16	3-1/2	DLGP512237	\$3.13**
12	.1890	2-5/16	3-1/2	DLGP512236	\$3.13**
13	.1850	2-5/16	3-1/2	DLGP512235	\$2.93**
14	.1820	2-3/16	3-3/8	DLGP512234	\$2.93**
15	.1800	2-3/16	3-3/8	DLGP512233	\$2.93**
16	.1770	2-3/16	3-3/8	DLGP512232	\$2.93**
17	.1730	2-3/16	3-3/8	DLGP512231	\$2.93**
18	.1695	2-1/8	3-1/4	DLGP512230	\$2.47**
19	.1660	2-1/8	3-1/4	DLGP512229	\$2.47**
20	.1610	2-1/8	3-1/4	DLGP512228	\$2.47**
21	.1590	2-1/8	3-1/4	DLGP512227	\$2.43**
22	.1570	2	3-1/8	DLGP512226	\$2.43**
23	.1540	2	3-1/8	DLGP512225	\$2.33**
24	.1520	2	3-1/8	DLGP512224	\$2.33**

WIRE GAUGE SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
25	.1495	1-7/8	3	DLGP512223	\$2.20**
26	.1470	1-7/8	3	DLGP512222	\$2.20**
27	.1440	1-7/8	3	DLGP512221	\$2.20**
28	.1405	1-3/4	2-7/8	DLGP512220	\$2.10**
29	.1360	1-3/4	2-7/8	DLGP512219	\$2.10**
30	.1285	1-5/8	2-3/4	DLGP512218	\$2.10**
31	.1200	1-5/8	2-3/4	DLGP512217	\$2.10**
32	.1160	1-5/8	2-3/4	DLGP512216	\$2.10**
33	.1130	1-1/2	2-5/8	DLGP512215	\$2.10**
34	.1110	1-1/2	2-5/8	DLGP512214	\$2.10**
35	.1100	1-1/2	2-5/8	DLGP512213	\$2.10**
36	.1065	1-7/16	2-1/2	DLGP512212	\$2.10**
37	.1040	1-7/16	2-1/2	DLGP512211	\$2.10**
38	.1015	1-7/16	2-1/2	DLGP512210	\$2.10**
39	.0995	1-3/8	2-3/8	DLGP512209	\$2.10**
40	.0980	1-3/8	2-3/8	DLGP512208	\$2.10**
41	.0960	1-3/8	2-3/8	DLGP512207	\$2.10**
42	.0935	1-1/4	2-1/4	DLGP512206	\$2.10**
43	.0890	1-1/4	2-1/4	DLGP512205	\$2.10**
44	.0860	1-1/8	2-1/8	DLGP512204	\$2.10**
45	.0820	1-1/8	2-1/8	DLGP512203	\$2.10**
46	.0810	1-1/8	2-1/8	DLGP512202	\$2.10**
47	.0785	1	2	DLGP512201	\$2.10**

* 5 PER PACKAGE
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GOLD-P COATED HSS DRILLS-METRIC SIZES

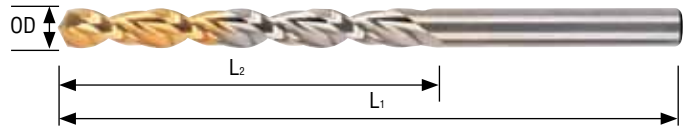
HSS-Co5% Straight Shank Jobber Length Parabolic Flute for Deep Holes

Flute Geometry: Right hand spiral, 38° helix, Parabolic Flute.

Point: 130° Split point.

Surface Treatment: Bright body TiN coating on working part.

Application: Improved chip removal in most materials, especially in deep drilling applications.



See Technical Information – Page 85

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
2.0	.0787	24	49	DLGP506020	\$2.17**
2.1	.0827	24	49	DLGP506021	\$2.30**
2.2	.0866	27	53	DLGP506022	\$2.30**
2.3	.0906	27	53	DLGP506023	\$2.30**
2.4	.0945	30	57	DLGP506024	\$2.30**
2.5	.0984	30	57	DLGP506025	\$2.30**
2.6	.1024	30	57	DLGP506026	\$2.60**
2.7	.1063	33	61	DLGP506027	\$2.60**
2.8	.1102	33	61	DLGP506028	\$2.60**
2.9	.1142	33	61	DLGP506029	\$2.60**
3.0	.1181	33	61	DLGP506030	\$2.60**
3.1	.1220	36	65	DLGP506031	\$2.97**
3.2	.1260	36	65	DLGP506032	\$2.97**
3.3	.1299	36	65	DLGP506033	\$2.97**
3.4	.1339	39	70	DLGP506034	\$2.97**
3.5	.1378	39	70	DLGP506035	\$2.97**
3.6	.1417	39	70	DLGP506036	\$3.43**
3.7	.1457	39	70	DLGP506037	\$3.43**
3.8	.1496	43	75	DLGP506038	\$3.43**
3.9	.1535	43	75	DLGP506039	\$3.43**
4.0	.1575	43	75	DLGP506040	\$3.43**
4.1	.1614	43	75	DLGP506041	\$4.07**
4.2	.1654	43	75	DLGP506042	\$4.07**
4.3	.1693	47	80	DLGP506043	\$4.07**
4.4	.1732	47	80	DLGP506044	\$4.07**
4.5	.1772	47	80	DLGP506045	\$4.07**
4.6	.1811	47	80	DLGP506046	\$4.07**
4.7	.1850	47	80	DLGP506047	\$4.07**
4.8	.1890	52	86	DLGP506048	\$4.07**
4.9	.1929	52	86	DLGP506049	\$4.07**
5.0	.1969	52	86	DLGP506050	\$4.07**

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
5.1	.2008	52	86	DLGP506051	\$5.20**
5.2	.2047	52	86	DLGP506052	\$5.20**
5.3	.2087	52	86	DLGP506053	\$5.20**
5.4	.2126	57	93	DLGP506054	\$5.20**
5.5	.2165	57	93	DLGP506055	\$5.20**
5.6	.2205	57	93	DLGP506056	\$5.50**
5.7	.2244	57	93	DLGP506057	\$5.50**
5.8	.2283	57	93	DLGP506058	\$5.50**
5.9	.2323	57	93	DLGP506059	\$5.50**
6.0	.2362	57	93	DLGP506060	\$5.50**
6.1	.2402	63	101	DLGP506061	\$6.17**
6.2	.2441	63	101	DLGP506062	\$6.17**
6.3	.2480	63	101	DLGP506063	\$6.17**
6.4	.2520	63	101	DLGP506064	\$6.17**
6.5	.2559	63	101	DLGP506065	\$6.17**
6.6	.2598	63	101	DLGP506066	\$6.87**
6.7	.2638	63	101	DLGP506067	\$6.87**
6.8	.2677	69	109	DLGP506068	\$6.87**
6.9	.2717	69	109	DLGP506069	\$6.87**
7.0	.2756	69	109	DLGP506070	\$6.87**
7.1	.2795	69	109	DLGP506071	\$8.30**
7.2	.2835	69	109	DLGP506072	\$8.30**
7.3	.2874	69	109	DLGP506073	\$8.30**
7.4	.2913	69	109	DLGP506074	\$8.30**
7.5	.2953	69	109	DLGP506075	\$8.30**
7.6	.2992	75	117	DLGP506076	\$8.90**
7.7	.3031	75	117	DLGP506077	\$8.90**
7.8	.3071	75	117	DLGP506078	\$8.90**
7.9	.3110	75	117	DLGP506079	\$8.90**
8.0	.3150	75	117	DLGP506080	\$8.90**
8.1	.3189	75	117	DLGP506081	\$10.13**

* 5 PER PACKAGE
**10 PER PACKAGE

GOLD-P COATED HSS DRILLS-METRIC SIZES

HSS-Co5% Straight Shank Jobber Length Parabolic Flute for Deep Holes

Flute Geometry: Right hand spiral, 38° helix, Parabolic Flute.

Point: 130° Split point.

Surface Treatment: Bright body TiN coating on working part.

Application: Improved chip removal in most materials, especially in deep drilling applications.



See Technical Information – Page 85

Size OD	Decimal Equiv. OD	Flute Length L ²	Overall Length L ¹	EDP No.	List Price
8.2	.3228	75	117	DLGP506082	\$10.13**
8.3	.3268	75	117	DLGP506083	\$10.13**
8.4	.3307	75	117	DLGP506084	\$10.13*
8.5	.3346	75	117	DLGP506085	\$10.13*
8.6	.3386	81	125	DLGP506086	\$11.20*
8.7	.3425	81	125	DLGP506087	\$11.20*
8.8	.3465	81	125	DLGP506088	\$11.20*
8.9	.3504	81	125	DLGP506089	\$11.20*
9.0	.3543	81	125	DLGP506090	\$11.20*
9.1	.3583	81	125	DLGP506091	\$14.33*
9.2	.3622	81	125	DLGP506092	\$14.33*
9.3	.3661	81	125	DLGP506093	\$14.33*
9.4	.3701	81	125	DLGP506094	\$14.33*
9.5	.3740	81	125	DLGP506095	\$14.33*
9.6	.3780	87	133	DLGP506096	\$14.33*
9.7	.3819	87	133	DLGP506097	\$14.33*
9.8	.3858	87	133	DLGP506098	\$14.33*
9.9	.3898	87	133	DLGP506099	\$14.33*
10.0	.3937	87	133	DLGP506100	\$14.33*
10.1	.3976	87	133	DLGP506101	\$16.37*
10.2	.4016	87	133	DLGP506102	\$16.37*
10.3	.4055	87	133	DLGP506103	\$16.37*
10.4	.4094	87	133	DLGP506104	\$16.37*
10.5	.4134	87	133	DLGP506105	\$16.37*
10.6	.4173	87	133	DLGP506106	\$16.53*

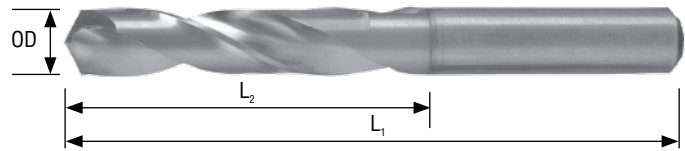
Size OD	Decimal Equiv. OD	Flute Length L ²	Overall Length L ¹	EDP No.	List Price
10.7	.4213	94	142	DLGP506107	\$16.53*
10.8	.4252	94	142	DLGP506108	\$16.53*
10.9	.4291	94	142	DLGP506109	\$16.53*
11.0	.4331	94	142	DLGP506110	\$16.53*
11.1	.4370	94	142	DLGP506111	\$20.47*
11.2	.4409	94	142	DLGP506112	\$20.47*
11.3	.4449	94	142	DLGP506113	\$20.47*
11.4	.4488	94	142	DLGP506114	\$20.47*
11.5	.4528	94	142	DLGP506115	\$20.47*
11.6	.4567	94	142	DLGP506116	\$20.47*
11.7	.4606	94	142	DLGP506117	\$20.47*
11.8	.4646	94	142	DLGP506118	\$20.47*
11.9	.4685	101	151	DLGP506119	\$20.47*
12.0	.4724	101	151	DLGP506120	\$20.47*
12.1	.4764	101	151	DLGP506121	\$22.73*
12.2	.4803	101	151	DLGP506122	\$22.73*
12.3	.4843	101	151	DLGP506123	\$22.73*
12.4	.4882	101	151	DLGP506124	\$22.73*
12.5	.4921	101	151	DLGP506125	\$23.23*
12.6	.4961	101	151	DLGP506126	\$23.23*
12.7	.5000	101	151	DLGP506127	\$23.23*
12.8	.5039	101	151	DLGP506128	\$23.23*
12.9	.5079	101	151	DLGP506129	\$23.23*
13.0	.5118	101	151	DLGP506130	\$23.23*

* 5 PER PACKAGE
**10 PER PACKAGE

YG-HSS SCREW MACHINE DRILLS

HSS Screw Machine Length

Flute Geometry: Right hand spiral, wider flutes.
Point: 135° split point... .059 diameter and over.
Application: Drilling in steel, cast steel, alloyed and non-alloyed, grey cast iron, graphite, malleable cast iron.



See Technical Information – Page 85

FRACTIONAL SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	Uncoated	
				EDP No.	List Price
3/64	.0469	1/2	1-3/8	D1118003	\$1.20**
1/16	.0625	5/8	1-5/8	D1118004	\$1.20**
5/64	.0781	11/16	1-11/16	D1118005	\$1.20**
3/32	.0937	3/4	1-3/4	D1118006	\$1.20**
7/64	.1094	13/16	1-13/16	D1118007	\$1.20**
1/8	.1250	7/8	1-7/8	D1118008	\$1.20**
9/64	.1406	15/16	1-15/16	D1118009	\$1.33**
5/32	.1562	1	2-1/16	D1118010	\$1.33**
11/64	.1719	1-1/16	2-1/8	D1118011	\$1.43**
3/16	.1875	1-1/8	2-3/16	D1118012	\$1.60**
13/64	.2031	1-3/16	2-1/4	D1118013	\$1.83**
7/32	.2187	1-1/4	2-3/8	D1118014	\$1.97**
15/64	.2344	1-5/16	2-7/16	D1118015	\$2.20**
1/4	.2500	1-3/8	2-1/2	D1118016	\$2.30**
17/64	.2652	1-7/16	2-5/8	D1118017	\$2.77**
9/32	.2812	1-1/2	2-11/16	D1118018	\$2.87**
19/64	.2969	1-9/16	2-3/4	D1118019	\$3.40**
5/16	.3125	1-5/8	2-13/16	D1118020	\$3.63**
21/64	.3281	1-11/16	2-15/16	D1118021	\$4.07**
11/32	.3437	1-11/16	3	D1118022	\$4.63*
23/64	.3594	1-3/4	3-1/16	D1118023	\$5.07*
3/8	.3750	1-13/16	3-1/8	D1118024	\$5.23*
25/64	.3906	1-7/8	3-1/4	D1118025	\$6.07*
13/32	.4062	1-15/16	3-5/16	D1118026	\$6.23*
27/64	.4219	2	3-3/8	D1118027	\$6.83*
7/16	.4375	2-1/16	3-7/16	D1118028	\$7.23*
29/64	.4531	2-1/8	3-9/16	D1118029	\$8.00*
15/32	.4687	2-1/8	3-5/8	D1118030	\$8.57*
31/64	.4844	2-3/16	3-11/16	D1118031	\$9.13*
1/2	.5000	2-1/4	3-3/4	D1118032	\$9.13*

LETTER SIZE

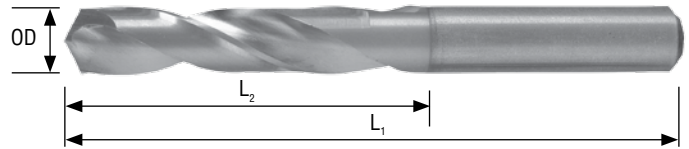
Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	Uncoated	
				EDP No.	List Price
A	.2340	1-5/16	2-7/16	D1115201	\$2.60**
B	.2380	1-3/8	2-1/2	D1115202	\$3.03**
C	.2420	1-3/8	2-1/2	D1115203	\$3.03**
D	.2460	1-3/8	2-1/2	D1115204	\$3.03**
E	.2500	1-3/8	2-1/2	D1115205	\$3.03**
F	.2570	1-7/16	2-5/8	D1115206	\$3.37**
G	.2610	1-7/16	2-5/8	D1115207	\$3.37**
H	.2660	1-1/2	2-11/16	D1115208	\$3.37**
I	.2720	1-1/2	2-11/16	D1115209	\$3.70**
J	.2770	1-1/2	2-11/16	D1115210	\$3.70**
K	.2810	1-1/2	2-11/16	D1115211	\$3.70**
L	.2900	1-9/16	2-3/4	D1115212	\$4.27**
M	.2950	1-9/16	2-3/4	D1115213	\$4.27**
N	.3020	1-5/8	2-13/16	D1115214	\$4.70**
O	.3160	1-11/16	2-15/16	D1115215	\$4.97**
P	.3230	1-11/16	2-15/16	D1115216	\$4.97**
Q	.3320	1-11/16	3	D1115217	\$5.50*
R	.3390	1*11/16	3	D1115218	\$5.50*
S	.3480	1-3/4	3-1/16	D1115219	\$6.27*
T	.3580	1-3/4	3-1/16	D1115220	\$6.27*
U	.3680	1-13/16	3-1/8	D1115221	\$6.67*
V	.3770	1-7/8	3-1/4	D1115222	\$6.67*
W	.3860	1-7/8	3-1/4	D1115223	\$7.37*
X	.3970	1-15/16	3-5/16	D1115224	\$8.00*
Y	.4040	1-15/16	3-5/16	D1115225	\$8.00*
Z	.4130	2	3-3/8	D1115226	\$8.87*

* 5 PER PACKAGE
 **10 PER PACKAGE

YG-HSS SCREW MACHINE DRILLS

HSS Screw Machine Length

Flute Geometry: Right hand spiral, wider flutes.
Point: 135° split point... .059 diameter and over.
Application: Drilling in steel, cast steel, alloyed and non-alloyed, grey cast iron, graphite, malleable cast iron.



See Technical Information – Page 85

WIRE GAUGE SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	Uncoated	
				EDP No.	List Price
1	.2280	1-5/16	2-7/16	D1119201	\$2.50**
2	.2210	1-5/16	2-7/16	D1119202	\$2.50**
3	.2130	1-1/4	2-3/8	D1119203	\$2.27**
4	.2090	1-1/4	2-3/8	D1119204	\$2.27**
5	.2055	1-1/4	2-3/8	D1119205	\$2.27**
6	.2040	1-1/4	2-3/8	D1119206	\$2.27**
7	.2010	1-3/16	2-1/4	D1119207	\$1.97**
8	.1990	1-3/16	2-1/4	D1119208	\$1.97**
9	.1960	1-3/16	2-1/4	D1119209	\$1.97**
10	.1935	1-3/16	2-1/4	D1119210	\$1.97**
11	.1910	1-3/16	2-1/4	D1119211	\$1.93**
12	.1890	1-3/16	2-1/4	D1119212	\$1.93**
13	.1850	1-1/8	2-3/16	D1119213	\$1.77**
14	.1820	1-1/8	2-3/16	D1119214	\$1.77**
15	.1800	1-1/8	2-3/16	D1119215	\$1.77**
16	.1770	1-1/8	2-3/16	D1119216	\$1.77**
17	.1730	1-1/8	2-3/16	D1119217	\$1.77**
18	.1695	1-1/16	2-1/8	D1119218	\$1.43**
19	.1660	1-1/16	2-1/8	D1119219	\$1.43**
20	.1610	1-1/16	2-1/8	D1119220	\$1.43**
21	.1590	1-1/16	2-1/8	D1119221	\$1.40**
22	.1570	1-1/16	2-1/8	D1119222	\$1.40**
23	.1540	1	2-1/16	D1119223	\$1.40**
24	.1520	1	2-1/16	D1119224	\$1.40**
25	.1495	1	2-1/16	D1119225	\$1.33**
26	.1470	1	2-1/16	D1119226	\$1.33**
27	.1440	1	2-1/16	D1119227	\$1.33**
28	.1405	15/16	1-15/16	D1119228	\$1.20**
29	.1360	15/16	1-15/16	D1119229	\$1.20**
30	.1285	15/16	1-15/16	D1119230	\$1.20**

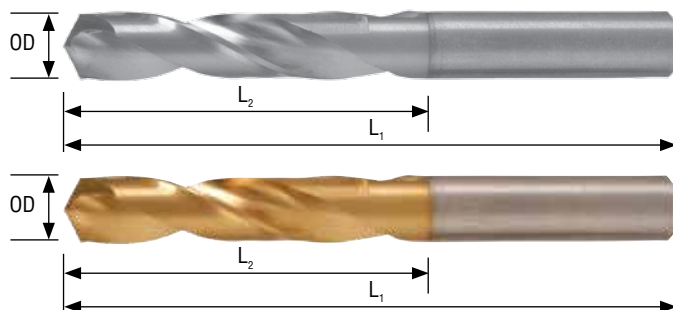
Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	Uncoated	
				EDP No.	List Price
31	.1200	7/8	1-7/8	D1119231	\$1.20**
32	.1160	7/8	1-7/8	D1119232	\$1.20**
33	.1130	7/8	1-7/8	D1119233	\$1.20**
34	.1110	7/8	1-7/8	D1119234	\$1.20**
35	.1100	7/8	1-7/8	D1119235	\$1.20**
36	.1065	13/16	1-13/16	D1119236	\$1.20**
37	.1040	13/16	1-13/16	D1119237	\$1.20**
38	.1015	13/16	1-13/16	D1119238	\$1.20**
39	.0995	13/16	1-13/16	D1119239	\$1.20**
40	.0980	13/16	1-13/16	D1119240	\$1.20**
41	.0960	13/16	1-13/16	D1119241	\$1.20**
42	.0935	3/4	1-3/4	D1119242	\$1.20**
43	.0890	3/4	1-3/4	D1119243	\$1.20**
44	.0860	3/4	1-3/4	D1119244	\$1.20**
45	.0820	3/4	1-3/4	D1119245	\$1.20**
46	.0810	3/4	1-3/4	D1119246	\$1.20**
47	.0785	11/16	1-11/16	D1119247	\$1.20**
48	.0760	11/16	1-11/16	D1119248	\$1.20**
49	.0730	11/16	1-11/16	D1119249	\$1.20**
50	.0700	11/16	1-11/16	D1119250	\$1.20**
51	.0670	11/16	1-11/16	D1119251	\$1.40**
52	.0635	11/16	1-11/16	D1119252	\$1.40**
53	.0595	5/8	1-5/8	D1119253	\$1.40**
54	.0550	5/8	1-5/8	D1119254	\$1.40**
55	.0520	5/8	1-5/8	D1119255	\$1.40**
56	.0465	1/2	1-3/8	D1119256	\$1.40**
57	.0430	1/2	1-3/8	D1119257	\$1.40**
58	.0420	1/2	1-3/8	D1119258	\$1.40**
59	.0410	1/2	1-3/8	D1119259	\$1.40**
60	.0400	1/2	1-3/8	D1119260	\$1.40**

**10 PER PACKAGE

YG-COBALT SCREW MACHINE DRILLS

HSS-Co8%

Flute Geometry: Right hand spiral, wider Flutes.
Point: 135° split point... .059 diameter and over.
Application: Drilling in steel, cast steel, alloyed and non-alloyed, grey cast iron, graphite, malleable cast iron.



See Technical Information – Page 85

FRACTIONAL SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	Uncoated		Tin Coated	
				EDP No.	List Price	EDP No.	List Price
3/64	.0469	1/2	1-3/8	D2146003	\$1.67**	D4146003	\$3.30**
1/16	.0625	5/8	1-5/8	D2146004	\$1.67**	D4146004	\$3.30**
5/64	.0781	11/16	1-11/16	D2146005	\$1.67**	D4146005	\$3.30**
3/32	.0937	3/4	1-3/4	D2146006	\$1.67**	D4146006	\$3.30**
7/64	.1094	13/16	1-13/16	D2146007	\$1.73*	D4146007	\$3.37*
1/8	.1250	7/8	1-7/8	D2146008	\$2.17*	D4146008	\$3.80*
9/64	.1406	15/16	1-15/16	D2146009	\$2.17*	D4146009	\$3.80*
5/32	.1562	1	2-1/16	D2146010	\$2.43*	D4146010	\$4.07*
11/64	.1719	1-1/16	2-1/8	D2146011	\$2.53*	D4146011	\$4.17*
3/16	.1875	1-1/8	2-3/16	D2146012	\$2.83*	D4146012	\$4.60*
13/64	.2031	1-3/16	2-1/4	D2146013	\$3.40*	D4146013	\$5.17*
7/32	.2187	1-1/4	2-3/8	D2146014	\$3.70*	D4146014	\$5.47*
15/64	.2344	1-5/16	2-7/16	D2146015	\$3.97*	D4146015	\$5.73*
1/4	.2500	1-3/8	2-1/2	D2146016	\$4.17*	D4146016	\$6.27*
17/64	.2656	1-7/16	2-5/8	D2146017	\$4.80*	D4146017	\$6.90*
9/32	.2812	1-1/2	2-11/16	D2146018	\$4.97*	D4146018	\$7.03*
19/64	.2969	1-9/16	2-3/4	D2146019	\$6.07*	D4146019	\$8.13*
5/16	.3125	1-5/8	2-13/16	D2146020	\$6.50*	D4146020	\$8.90*
21/64	.3281	1-11/16	2-15/16	D2146021	\$7.23*	D4146021	\$9.63*
11/32	.3437	1-11/16	3	D2146022	\$7.77*	D4146022	\$10.67*
23/64	.3594	1-3/4	3-1/16	D2146023	\$9.00*	D4146023	\$11.87*
3/8	.3750	1-13/16	3-1/8	D2146024	\$9.00*	D4146024	\$11.87*
25/64	.3906	1-7/8	3-1/4	D2146025	\$10.20*	D4146025	\$13.10*
13/32	.4062	1-15/16	3-5/16	D2146026	\$10.63*	D4146026	\$14.20*
27/64	.4219	2	3-3/8	D2146027	\$11.73*	D4146027	\$15.30*
7/16	.4375	2-1/16	3-7/16	D2146028	\$12.00*	D4146028	\$15.73*
29/64	.4531	2-1/8	3-9/16	D2146029	\$14.40*	D4146029	\$18.33*
15/32	.4687	2-1/8	3-5/8	D2146030	\$14.70*	D4146030	\$18.60*
31/64	.4844	2-3/16	3-11/16	D2146031	\$15.17*	D4146031	\$19.13*
1/2	.5000	2-1/4	3-3/4	D2146032	\$15.17*	D4146032	\$19.43*

LETTER SIZE

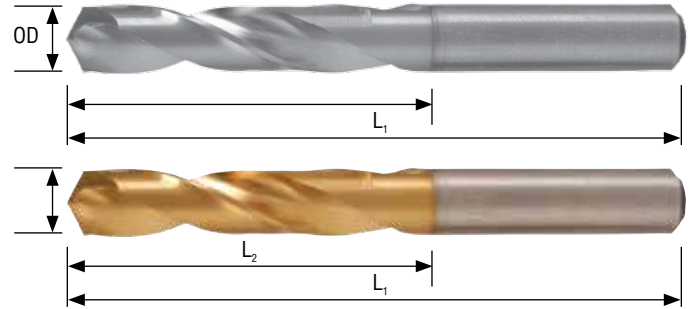
Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	Uncoated		Tin Coated	
				EDP No.	List Price	EDP No.	List Price
A	.2340	1-5/16	2-7/16	D2147201	\$4.13*	D4147201	\$5.90*
B	.2380	1-3/8	2-1/2	D2147202	\$4.80*	D4147202	\$6.90*
C	.2420	1-3/8	2-1/2	D2147203	\$4.80*	D4147203	\$6.90*
D	.2460	1-3/8	2-1/2	D2147204	\$5.37*	D4147204	\$7.43*
E	.2500	1-3/8	2-1/2	D2147205	\$5.37*	D4147205	\$7.43*
F	.2570	1-7/16	2-5/8	D2147206	\$4.80*	D4147206	\$6.90*
G	.2610	1-7/16	2-5/8	D2147207	\$4.80*	D4147207	\$6.90*
H	.2660	1-1/2	2-11/16	D2147208	\$5.37*	D4147208	\$7.43*
I	.2720	1-1/2	2-11/16	D2147209	\$4.97*	D4147209	\$7.03*
J	.2770	1-1/2	2-11/16	D2147210	\$5.37*	D4147210	\$7.43*
K	.2810	1-1/2	2-11/16	D2147211	\$5.37*	D4147211	\$7.43*
L	.2900	1-9/16	2-3/4	D2147212	\$6.07*	D4147212	\$8.13*
M	.2950	1-9/16	2-3/4	D2147213	\$6.47*	D4147213	\$8.53*
N	.3020	1-5/8	2-13/16	D2147214	\$6.47*	D4147214	\$8.87*
O	.3160	1-11/16	2-15/16	D2147215	\$7.10*	D4147215	\$9.53*
P	.3230	1-11/16	2-15/16	D2147216	\$7.60*	D4147216	\$10.00*
Q	.3320	1-11/16	3	D2147217	\$7.80*	D4147217	\$10.73*
R	.3390	1-11/16	3	D2147218	\$7.80*	D4147218	\$10.73*
S	.3480	1-3/4	3-1/16	D2147219	\$9.63*	D4147219	\$12.53*
T	.3580	1-3/4	3-1/16	D2147220	\$9.63*	D4147220	\$12.53*
U	.3680	1-13/16	3-1/8	D2147221	\$9.63*	D4147221	\$12.53*
V	.3770	1-7/8	3-1/4	D2147222	\$10.53*	D4147222	\$13.43*
W	.3860	1-7/8	3-1/4	D2147223	\$10.53*	D4147223	\$13.43*
X	.3970	1-15/16	3-5/16	D2147224	\$10.53*	D4147224	\$14.07*
Y	.4040	1-15/16	3-5/16	D2147225	\$11.23*	D4147225	\$14.80*
Z	.4130	2	3-3/8	D2147226	\$12.20*	D4147226	\$15.80*

* 5 PER PACKAGE
 **10 PER PACKAGE

YG-COBALT SCREW MACHINE DRILLS

HSS-Co8%

Flute Geometry: Right hand spiral, wider Flutes.
Point: 135° split point... .059 diameter and over.
Application: Drilling in steel, cast steel, alloyed and non-alloyed, grey cast iron, graphite, malleable cast iron.



See Technical Information – Page 85

WIRE GAUGE SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	Uncoated		Tin Coated	
				EDP No.	List Price	EDP No.	List Price
1	.2280	1-5/16	2-7/16	D2148101	\$4.37*	D4148101	\$6.13*
2	.2210	1-5/16	2-7/16	D2148102	\$4.37*	D4148102	\$6.13*
3	.2130	1-1/4	2-3/8	D2148103	\$4.07*	D4148103	\$5.83*
4	.2090	1-1/4	2-3/8	D2148104	\$4.07*	D4148104	\$5.83*
5	.2055	1-1/4	2-3/8	D2148105	\$4.07*	D4148105	\$5.83*
6	.2040	1-1/4	2-3/8	D2148106	\$3.20*	D4148106	\$4.97*
7	.2010	1-3/16	2-1/4	D2148107	\$3.20*	D4148107	\$4.97*
8	.1990	1-3/16	2-1/4	D2148108	\$3.20*	D4148108	\$4.97*
9	.1960	1-3/16	2-1/4	D2148109	\$3.20*	D4148109	\$4.97*
10	.1935	1-3/16	2-1/4	D2148110	\$3.20*	D4148110	\$4.97*
11	.1910	1-3/16	2-1/4	D2148111	\$3.20*	D4148111	\$4.97*
12	.1890	1-3/16	2-1/4	D2148112	\$3.20*	D4148112	\$4.97*
13	.1850	1-1/8	2-3/16	D2148113	\$3.03*	D4148113	\$4.80*
14	.1820	1-1/8	2-3/16	D2148114	\$3.03*	D4148114	\$4.80*
15	.1800	1-1/8	2-3/16	D2148115	\$3.03*	D4148115	\$4.80*
16	.1770	1-1/8	2-3/16	D2148116	\$2.87*	D4148116	\$4.63*
17	.1730	1-1/8	2-3/16	D2148117	\$2.77*	D4148117	\$4.50*
18	.1695	1-1/16	2-1/8	D2148118	\$2.53*	D4148118	\$3.80*
19	.1660	1-1/16	2-1/8	D2148119	\$2.50*	D4148119	\$4.13*
20	.1610	1-1/16	2-1/8	D2148120	\$2.50*	D4148120	\$4.13*
21	.1590	1-1/16	2-1/8	D2148121	\$2.50*	D4148121	\$4.13*
22	.1570	1-1/16	2-1/8	D2148122	\$2.50*	D4148122	\$4.13*
23	.1540	1	2-1/16	D2148123	\$2.50*	D4148123	\$4.13*
24	.1520	1	2-1/16	D2148124	\$2.50*	D4148124	\$4.13*
25	.1495	1	2-1/16	D2148125	\$2.27*	D4148125	\$3.93*
26	.1470	1	2-1/16	D2148126	\$2.27*	D4148126	\$3.93*
27	.1440	1	2-1/16	D2148127	\$2.27*	D4148127	\$3.93*
28	.1405	15/16	1-15/16	D2148128	\$2.17*	D4148128	\$3.80*
29	.1360	15/16	1-15/16	D2148129	\$2.07*	D4148129	\$3.70*
30	.1285	15/16	1-15/16	D2148130	\$1.83*	D4148130	\$3.50*

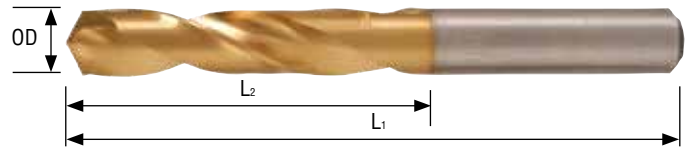
Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	Uncoated		Tin Coated	
				EDP No.	List Price	EDP No.	List Price
31	.1200	7/8	1-7/8	D2148131	\$1.83*	D4148131	\$3.50*
32	.1160	7/8	1-7/8	D2148132	\$1.83*	D4148132	\$3.50*
33	.1130	7/8	1-7/8	D2148133	\$1.77*	D4148133	\$3.40*
34	.1110	7/8	1-7/8	D2148134	\$1.77*	D4148134	\$3.40*
35	.1100	7/8	1-7/8	D2148135	\$1.77*	D4148135	\$3.40*
36	.1065	13/16	1-13/16	D2148136	\$1.73*	D4148136	\$3.37*
37	.1040	13/16	1-13/16	D2148137	\$1.73**	D4148137	\$3.37**
38	.1015	13/16	1-13/16	D2148138	\$1.60**	D4148138	\$3.27**
39	.0995	13/16	1-13/16	D2148139	\$1.60**	D4148139	\$3.27**
40	.0980	13/16	1-13/16	D2148140	\$1.60**	D4148140	\$3.27**
41	.0960	13/16	1-13/16	D2148141	\$1.60**	D4148141	\$3.27**
42	.0935	3/4	1-3/4	D2148142	\$1.60**	D4148142	\$3.27**
43	.0890	3/4	1-3/4	D2148143	\$1.60**	D4148143	\$3.27**
44	.0860	3/4	1-3/4	D2148144	\$1.60**	D4148144	\$3.27**
45	.0820	3/4	1-3/4	D2148145	\$1.60**	D4148145	\$3.27**
46	.0810	3/4	1-3/4	D2148146	\$1.60**	D4148146	\$3.27**
47	.0785	11/16	1-11/16	D2148147	\$1.60**	D4148147	\$3.27**
48	.0760	11/16	1-11/16	D2148148	\$1.60**	D4148148	\$3.27**
49	.0730	11/16	1-11/16	D2148149	\$1.60**	D4148149	\$3.27**
50	.0700	11/16	1-11/16	D2148150	\$1.60**	D4148150	\$3.27**
51	.0670	11/16	1-11/16	D2148151	\$1.60**	D4148151	\$3.27**
52	.0635	11/16	1-11/16	D2148152	\$1.60**	D4148152	\$3.27**
53	.0595	5/8	1-5/8	D2148153	\$1.73**	D4148153	\$3.37**
54	.0550	5/8	1-5/8	D2148154	\$1.73**	D4148154	\$3.37**
55	.0520	5/8	1-5/8	D2148155	\$1.73**	D4148155	\$3.37**
56	.0465	1/2	1-3/8	D2148156	\$1.93**	D4148156	\$3.60**
57	.0430	1/2	1-3/8	D2148157	\$1.93**	D4148157	\$3.60**
58	.0420	1/2	1-3/8	D2148158	\$1.93**	D4148158	\$3.60**
59	.0410	1/2	1-3/8	D2148159	\$1.93**	D4148159	\$3.60**
60	.0400	1/2	1-3/8	D2148160	\$1.93**	D4148160	\$3.60**

* 5 PER PACKAGE
 **10 PER PACKAGE

YG-COBALT SCREW MACHINE DRILLS-METRIC SIZES

HSS-Co8%

Flute Geometry: Right hand spiral, wider flutes
Point: 135°, under 1.6mm - Normal point from 1.6mm - Split point
Surface Treatment: Bright body TiN coating on working part.
Application: Drilling in steel, cast steel, alloyed and non-alloyed, grey cast iron, graphite, malleable cast iron.



See Technical Information – Page 85

NEW SIZES AVAILABLE

Size OD	Decimal Equiv. OD	Flute Length L ²	Overall Length L ¹	TiN Coated	
				EDP No.	List Price
1.0	.0393	6	26	D4107010	\$3.80**
1.1	.04332	7	28	D4107011	\$3.80**
1.2	.0472	8	30	D4107012	\$3.80**
1.3	.0512	8	30	D4107013	\$3.80**
1.4	.0551	9	32	D4107014	\$3.80**
1.5	.0590	9	32	D4107015	\$3.80**
1.6	.0630	10	34	D4107016	\$3.70**
1.7	.0669	10	34	D4107017	\$3.70**
1.8	.0709	11	36	D4107018	\$3.70**
1.9	.0748	11	36	D4107019	\$3.70**
2	.0787	12	38	D4107020	\$3.70**
2.1	.0827	12	38	D4107021	\$3.70**
2.2	.0866	13	40	D4107022	\$3.70**
2.3	.0906	13	40	D4107023	\$3.70**
2.4	.0945	14	43	D4107024	\$3.70**
2.5	.0984	14	43	D4107025	\$3.70**
2.6	.1024	14	43	D4107026	\$3.70**
2.7	.1063	16	46	D4107027	\$3.70**
2.8	.1102	16	46	D4107028	\$4.17*
2.9	.1142	16	46	D4107029	\$4.17*
3	.1181	16	46	D4107030	\$4.17*
3.1	.1220	18	49	D4107031	\$4.17*
3.2	.1260	18	49	D4107032	\$4.17*
3.3	.1299	18	49	D4107033	\$4.17*
3.4	.1339	20	52	D4107034	\$4.17*
3.5	.1378	20	52	D4107035	\$4.17*

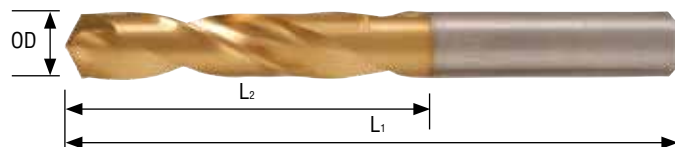
Size OD	Decimal Equiv. OD	Flute Length L ²	Overall Length L ¹	TiN Coated	
				EDP No.	List Price
3.6	.1417	20	52	D4107036	\$4.47*
3.7	.1457	20	52	D4107037	\$4.47*
3.8	.1496	22	55	D4107038	\$4.47*
3.9	.1535	22	55	D4107039	\$4.47*
4	.1575	22	55	D4107040	\$4.73*
4.1	.1614	22	55	D4107041	\$4.73*
4.2	.1654	22	55	D4107042	\$4.73*
4.3	.1693	24	58	D4107043	\$4.73*
4.4	.1732	24	58	D4107044	\$5.03*
4.5	.1772	24	58	D4107045	\$5.03*
4.6	.1811	24	58	D4107046	\$5.03*
4.7	.1850	24	58	D4107047	\$5.03*
4.8	.1890	26	62	D4107048	\$5.60*
4.9	.1929	26	62	D4107049	\$5.60*
5	.1969	26	62	D4107050	\$5.60*
5.1	.2008	26	62	D4107051	\$6.07*
5.2	.2047	26	62	D4107052	\$6.07*
5.3	.2087	26	62	D4107053	\$6.07*
5.4	.2126	28	66	D4107054	\$6.07*
5.5	.2165	28	66	D4107055	\$6.07*
5.6	.2205	28	66	D4107056	\$6.57*
5.7	.2244	28	66	D4107057	\$6.57*
5.8	.2283	28	66	D4107058	\$6.57*
5.9	.2323	28	66	D4107059	\$6.57*
6	.2362	28	66	D4107060	\$6.57*
6.1	.2402	31	70	D4107061	\$6.57*

*5 per package
 **10 per package

YG-COBALT SCREW MACHINE DRILLS-METRIC SIZES

HSS-Co8%

Flute Geometry: Right hand spiral, wider flutes
Point: 135°, under 1.6mm - Normal point
 from 1.6mm - Split point
Surface Treatment: Bright body TiN coating on working part.
Application: Drilling in steel, cast steel, alloyed and non-alloyed, grey cast iron, graphite, malleable cast iron.



See Technical Information – Page 85

Size OD	Decimal Equiv. OD	Flute Length L ²	Overall Length L ¹	TiN Coated	
				EDP No.	List Price
6.2	.2441	31	70	D4107062	\$6.57*
6.3	.2480	31	70	D4107063	\$6.57*
6.4	.2520	31	70	D4107064	\$7.17*
6.5	.2559	31	70	D4107065	\$7.17*
6.6	.2598	31	70	D4107066	\$7.17*
6.7	.2638	31	70	D4107067	\$7.17*
6.8	.2677	34	74	D4107068	\$7.43*
6.9	.2717	34	74	D4107069	\$7.43*
7	.2756	34	74	D4107070	\$7.93*
7.1	.2795	34	74	D4107071	\$7.93*
7.2	.2835	34	74	D4107072	\$9.13*
7.3	.2874	34	74	D4107073	\$9.13*
7.4	.2913	34	74	D4107074	\$9.13*
7.5	.2953	34	74	D4107075	\$9.13*
7.6	.2992	37	79	D4107076	\$9.63*
7.7	.3031	37	79	D4107077	\$9.63*
7.8	.3071	37	79	D4107078	\$9.63*
7.9	.3110	37	79	D4107079	\$9.63*
8	.3150	37	79	D4107080	\$10.63*
8.1	.3189	37	79	D4107081	\$10.63*
8.2	.3228	37	79	D4107082	\$10.63*
8.3	.3268	37	79	D4107083	\$10.63*
8.4	.3307	37	79	D4107084	\$11.40*

Size OD	Decimal Equiv. OD	Flute Length L ²	Overall Length L ¹	TiN Coated	
				EDP No.	List Price
8.5	.3346	37	79	D4107085	\$11.40*
8.6	.3386	40	84	D4107086	\$11.87*
8.7	.3425	40	84	D4107087	\$11.87*
8.8	.3465	40	84	D4107088	\$13.10*
8.9	.3504	40	84	D4107089	\$13.10*
9	.3543	40	84	D4107090	\$13.10*
9.1	.3583	40	84	D4107091	\$13.10*
9.2	.3622	40	84	D4107092	\$13.10*
9.3	.3661	40	84	D4107093	\$13.10*
9.4	.3701	40	84	D4107094	\$13.10*
9.5	.3740	40	84	D4107095	\$13.10*
9.6	.3780	43	89	D4107096	\$14.63*
9.7	.3819	43	89	D4107097	\$14.63*
9.8	.3858	43	89	D4107098	\$14.63*
9.9	.3898	43	89	D4107099	\$14.63*
10	.3937	43	89	D4107100	\$15.17*
10.5	.4134	43	89	D4107105	\$16.47*
11	.4331	47	95	D4107110	\$17.27*
11.5	.4528	47	95	D4107115	\$20.00*
12	.4724	51	102	D4107120	\$21.23*
12.5	.4921	51	102	D4107125	\$21.23*
13	.5118	51	102	D4107130	\$27.47*

* 5 PER PACKAGE
 **10 PER PACKAGE

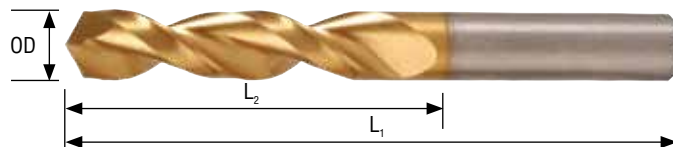
YG-COBALT SCREW MACHINE DRILLS

HSS-Co5% – Parabolic Flute, Tin Coated

Flute Geometry: Right hand spiral, **PARABOLIC FLUTE**
38° helix.

Point: 130° split point... .059 diameter and over.

Application: Improved chip removal in most materials, especially in deep drilling applications.



See Technical Information – Page 85

FRACTIONAL SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	Tin Coated	
				EDP No.	List Price
3/32	.0937	3/4	1-3/4	DN514006	\$3.30**
7/64	.1094	13/16	1-13/16	DN514007	\$3.50*
1/8	.1250	7/8	1-7/8	DN514008	\$3.50*
9/64	.1406	15/16	1-15/16	DN514009	\$3.60*
5/32	.1562	1	2-1/16	DN514010	\$3.63*
11/64	.1719	1-1/16	2-1/8	DN514011	\$3.70*
3/16	.1875	1-1/8	2-3/16	DN514012	\$4.13*
13/64	.2031	1-3/16	2-1/4	DN514013	\$4.30*
7/32	.2187	1-1/4	2-3/8	DN514014	\$4.73*
15/64	.2344	1-5/16	2-7/16	DN514015	\$4.97*
1/4	.2500	1-3/8	2-1/2	DN514016	\$5.50*
17/64	.2656	1-7/16	2-5/8	DN514017	\$5.93*
9/32	.2812	1-1/2	2-11/16	DN514018	\$6.13*
19/64	.2969	1-9/16	2-3/4	DN514019	\$6.83*
5/16	.3125	1-5/8	2-13/16	DN514020	\$7.67*
21/64	.3281	1-11/16	2-15/16	DN514021	\$8.13*
11/32	.3427	1-11/16	3	DN514022	\$9.37*
23/64	.3594	1-3/4	3-1/16	DN514023	\$10.13*
3/8	.3750	1-13/16	3-1/8	DN514024	\$10.40*
25/64	.3906	1-7/8	3-1/4	DN514025	\$11.33*
13/32	.4062	1-15/16	3-5/16	DN514026	\$12.30*
27/64	.4219	2	3-3/8	DN514027	\$13.50*
7/16	.4375	2-1/16	3-7/16	DN514028	\$15.07*
29/64	.4531	2-1/8	3-9/16	DN514029	\$15.17*
15/32	.4687	2-1/8	3-5/8	DN514030	\$15.80*
31/64	.4844	2-3/16	3-11/16	DN514031	\$16.47*
1/2	.5000	2-1/4	3-3/4	DN514032	\$16.93*

LETTER SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	Tin Coated	
				EDP No.	List Price
A	.2340	1-5/16	2-7/16	DN516101	\$5.50*
B	.2380	1-3/8	2-1/2	DN516102	\$6.47*
C	.2420	1-3/8	2-1/2	DN516103	\$6.47*
D	.2460	1-3/8	2-1/2	DN516104	\$6.47*
E	.2500	1-3/8	2-1/2	DN516105	\$6.47*
F	.2570	1-7/16	2-5/8	DN516106	\$6.93*
G	.2610	1-7/16	2-5/8	DN516107	\$6.93*
H	.2660	1-1/2	2-11/16	DN516108	\$6.93*
I	.2720	1-1/2	2-11/16	DN516109	\$7.37*
J	.2770	1-1/2	2-11/16	DN516110	\$7.37*
K	.2810	1-1/2	2-11/16	DN516111	\$7.37*
L	.2900	1-9/16	2-3/4	DN516112	\$8.27*
M	.2950	1-9/16	2-3/4	DN516113	\$8.27*
N	.3020	1-5/8	2-13/16	DN516114	\$9.13*
O	.3160	1-11/16	2-15/16	DN516115	\$9.57*
P	.3230	1-11/16	2-15/16	DN516116	\$9.57*
Q	.3320	1-11/16	3	DN516117	\$10.90*
R	.3390	1-11/16	3	DN516118	\$10.90*
S	.3480	1-3/4	3-1/16	DN516119	\$12.00*
T	.3580	1-3/4	3-1/16	DN516120	\$12.00*
U	.3680	1-13/16	3-1/8	DN516121	\$12.60*
V	.3770	1-7/8	3-1/4	DN516122	\$12.60*
W	.3860	1-7/8	3-1/4	DN516123	\$13.60*
X	.3970	1-15/16	3-5/16	DN516124	\$15.13*
Y	.4040	1-15/16	3-5/16	DN516125	\$15.13*
Z	.4130	2	3-3/8	DN516126	\$16.37*

* 5 PER PACKAGE
**10 PER PACKAGE

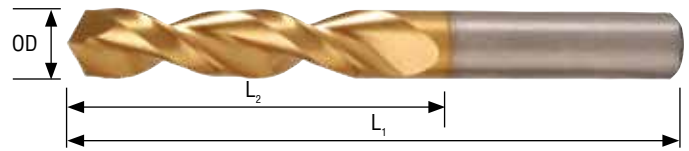
YG-COBALT SCREW MACHINE DRILLS

HSS-Co5% – Parabolic Flute, Tin Coated

Flute Geometry: Right hand spiral, **PARABOLIC FLUTE**
38° helix.

Point: 130° split point... .059 diameter and over.

Application: Improved chip removal in most materials,
especially in deep drilling applications.



See Technical Information – Page 85

WIRE GAUGE SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	Tin Coated	
				EDP No.	List Price
1	.2280	1-5/16	2-7/16	DN515201	\$5.40*
2	.2210	1-5/16	2-7/16	DN515202	\$5.40*
3	.2130	1-1/4	2-3/8	DN515203	\$5.03*
4	.2090	1-1/4	2-3/8	DN515204	\$5.03*
5	.2055	1-1/4	2-3/8	DN515205	\$5.03*
6	.2040	1-1/4	2-3/8	DN515206	\$5.03*
7	.2010	1-3/16	2-1/4	DN515207	\$4.60*
8	.1990	1-3/16	2-1/4	DN515208	\$4.60*
9	.1960	1-3/16	2-1/4	DN515209	\$4.60*
10	.1935	1-3/16	2-1/4	DN515210	\$4.60*
11	.1910	1-3/16	2-1/4	DN515211	\$4.50*
12	.1890	1-3/16	2-1/4	DN515212	\$4.50*
13	.1850	1-1/8	2-3/16	DN515213	\$4.30*
14	.1820	1-1/8	2-3/16	DN515214	\$4.30*
15	.1800	1-1/8	2-3/16	DN515215	\$4.30*
16	.1770	1-1/8	2-3/16	DN515216	\$4.30*
17	.1730	1-1/8	2-3/16	DN515217	\$4.30*
18	.1695	1-1/16	2-1/8	DN515218	\$3.80*
19	.1660	1-1/16	2-1/8	DN515219	\$3.80*
20	.1610	1-1/16	2-1/8	DN515220	\$3.80*
21	.1590	1-1/16	2-1/8	DN515221	\$3.70*
22	.1570	1-1/16	2-1/8	DN515222	\$3.70*
23	.1540	1	2-1/16	DN515223	\$3.70*
24	.1520	1	2-1/16	DN515224	\$3.70*
25	.1495	1	2-1/16	DN515225	\$3.60*
26	.1470	1	2-1/16	DN515226	\$3.60*
27	.1440	1	2-1/16	DN515227	\$3.60*

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	Tin Coated	
				EDP No.	List Price
28	.1405	15/16	1-15/16	DN515228	\$3.40*
29	.1360	15/16	1-15/16	DN515229	\$3.40*
30	.1285	15/16	1-15/16	DN515230	\$3.40*
31	.1200	7/8	1 7/8	DN515231	\$3.40*
32	.1160	7/8	1 7/8	DN515232	\$3.40*
33	.1130	7/8	1 7/8	DN515233	\$3.40*
34	.1110	7/8	1 7/8	DN515234	\$3.40*
35	.1100	7/8	1 7/8	DN515235	\$3.40*
36	.1065	13/16	1-13/16	DN515236	\$3.40*
37	.1040	13/16	1-13/16	DN515237	\$3.40**
38	.1015	13/16	1-13/16	DN515238	\$3.40**
39	.0995	13/16	1-13/16	DN515239	\$3.40**
40	.0980	13/16	1-13/16	DN515240	\$3.40**
41	.0960	13/16	1-13/16	DN515241	\$3.40**
42	.0935	3/4	1-3/4	DN515242	\$3.40**
43	.0890	3/4	1-3/4	DN515243	\$3.40**
44	.0860	3/4	1-3/4	DN515244	\$3.40**
45	.0820	3/4	1-3/4	DN515245	\$3.40**
46	.0810	3/4	1-3/4	DN515246	\$3.40**
47	.0785	11/16	1-11/16	DN515247	\$3.40**

* 5 PER PACKAGE
**10 PER PACKAGE

COBALT/HSS DRILLS

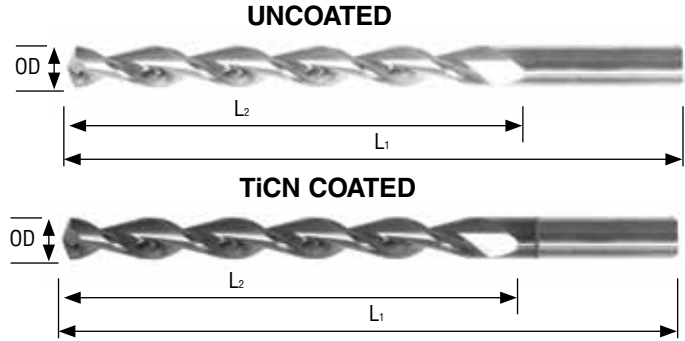
HSS-Co5% Straight Shank Taper Length Parabolic Flute Drill Uncoated & TiCN Coated

Flute Geometry: Right hand spiral, 38° helix, Parabolic Flute.

Point: 130° Split point.

Surface Treatment: Bright body.

Application: Improved chip removal in most materials, especially in deep drilling applications.



See Technical Information – Page 85

FRACTIONAL SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	Un-Coated		TiCN Coated	
				EDP No.	List Price	EDP No	List Price
5/64	.0781	2	3-3/4	DL517005	\$16.80	DX517005	\$19.67**
3/32	.0938	2-1/4	4-1/4	DL517006	\$16.80	DX517006	\$19.93**
7/64	.1094	2-1/2	4-5/8	DL517007	\$20.43	DX517007	\$23.87**
1/8	.1250	2-3/4	5-1/8	DL517008	\$20.43	DX517008	\$24.33**
9/64	.1406	3	5-3/8	DL517009	\$15.13	DX517009	\$19.17**
5/32	.1562	3	5-3/8	DL517010	\$15.73	DX517010	\$19.77**
11/64	.1719	3-3/8	5-3/4	DL517011	\$19.07	DX517011	\$23.47**
3/16	.1875	3-3/8	5-3/4	DL517012	\$25.93	DX517012	\$30.33**
13/64	.2031	3-5/8	6	DL517013	\$23.87	DX517013	\$28.33**
7/32	.2188	3-5/8	6	DL517014	\$25.93	DX517014	\$30.40**
15/64	.2344	3-3/4	6-1/8	DL517015	\$29.03	DX517015	\$33.73**
1/4	.2500	3-3/4	6-1/8	DL517016	\$28.63	DX517016	\$33.33**
17/64	.2656	3-7/8	6-1/4	DL517017	\$31.27	DX517017	\$35.97*
9/32	.2812	3-7/8	6-1/4	DL517018	\$56.73	DX517018	\$61.60*
19/64	.2969	4	6-3/8	DL517019	\$45.07	DX517019	\$50.13*
5/16	.3125	4	6-3/8	DL517020	\$41.33	DX517020	\$46.33*
21/64	.3281	4-1/8	6-1/2	DL517021	\$61.20	DX517021	\$67.00*
11/32	.3438	4-1/8	6-3/4	DL517022	\$57.67	DX517022	\$63.57*
23/64	.3590	4-1/4	6-3/4	DL517023	\$58.17	DX517023	\$64.60*
3/8	.3750	4-1/4	6-3/4	DL517024	\$60.73	DX517024	\$67.17*
25/64	.3906	4-3/8	7	DL517025	\$71.93	DX517025	\$78.50*
13/32	.4062	4-3/8	7	DL517026	\$72.33	DX517026	\$79.57*
27/64	.4219	4-5/8	7-1/4	DL517027	\$122.20	DX517027	\$129.53*
7/16	.4375	4-5/8	7-1/4	DL517028	\$85.17	DX517028	\$93.07*
29/64	.4531	4-3/4	7-1/2	DL517029	\$144.77	DX517029	\$152.83*
15/32	.4688	4-3/4	7-1/2	DL517030	\$98.33	DX517030	\$106.70*
31/64	.4844	4-3/4	7-3/4	DL517031	\$169.47	DX517031	\$178.27*
1/2	.5000	4-3/4	7-3/4	DL517032	\$111.30	DX517032	\$120.10*

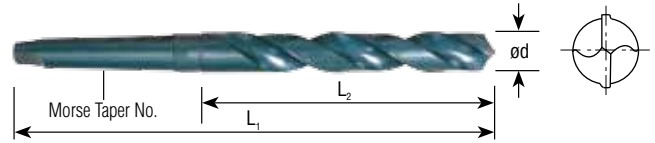
*5 per package

**10 per package

HSS TWIST DRILLS



HSS (M2) Morse Taper Shank Twist Drill



See Technical Information – Page 55

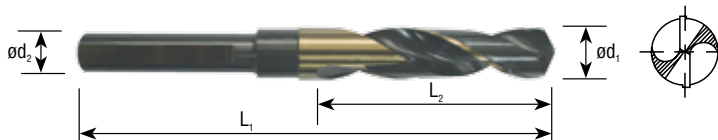
D1211 Series

Diameter (ød)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price	Diameter (ød)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Size	Morse Taper No.					Size	Morse Taper No.				
1/2	2	8-1/4	4-3/8	D1211032	\$29.27	1-3/16	4	13	7-3/8	D1211112	\$145.60
33/64	2	8-1/2	4-5/8	D1211033	\$29.27	1-13/64	4	13-1/8	7-1/2	D1211113	\$145.60
17/32	2	8-1/2	4-5/8	D1211034	\$29.27	1-7/32	4	13-1/8	7-1/2	D1211114	\$161.90
35/64	2	8-3/4	4-7/8	D1211035	\$29.27	1-15/64	4	13-1/2	7-7/8	D1211115	\$179.07
9/16	2	8-3/4	4-7/8	D1211036	\$34.60	1-1/4	4	13-1/2	7-7/8	D1211116	\$191.73
37/64	2	8-3/4	4-7/8	D1211037	\$34.60	1-17/64	4	14-1/8	8-1/2	D1211117	\$199.67
19/32	2	8-3/4	4-7/8	D1211038	\$34.60	1-9/32	4	14-1/8	8-1/2	D1211118	\$199.67
39/64	2	8-3/4	4-7/8	D1211039	\$34.60	1-19/64	4	14-1/4	8-5/8	D1211119	\$216.90
5/8	2	8-3/4	4-7/8	D1211040	\$39.87	1-5/16	4	14-1/4	8-5/8	D1211120	\$216.90
41/64	2	9	5-1/8	D1211041	\$41.93	1-21/64	4	14-3/8	8-3/4	D1211121	\$216.90
21/32	2	9	5-1/8	D1211042	\$41.93	1-11/32	4	14-3/8	8-3/4	D1211122	\$216.90
43/64	2	9-1/4	5-3/8	D1211043	\$44.47	1-23/64	4	14-1/2	8-7/8	D1211123	\$230.33
11/16	2	9-1/4	5-3/8	D1211044	\$44.47	1-3/8	4	14-1/2	8-7/8	D1211124	\$238.10
45/64	2	9-1/2	5-5/8	D1211045	\$44.47	1-13/32	4	14-5/8	9	D1211126	\$238.10
23/32	2	9-1/2	5-5/8	D1211046	\$49.37	1-7/16	4	14-3/4	9-1/8	D1211128	\$254.83
47/64	2	9-3/4	5-7/8	D1211047	\$49.37	1-15/32	4	14-7/8	9-1/4	D1211130	\$254.83
3/4	2	9-3/4	5-7/8	D1211048	\$51.80	1-1/2	4	15	9-3/8	D1211132	\$272.50
49/64	2	9-7/8	6	D1211049	\$51.80	1-33/64	5	16-3/8	9-3/8	D1211133	\$291.77
25/32	2	9-7/8	6	D1211050	\$51.80	1-17/32	5	16-3/8	9-3/8	D1211134	\$302.57
51/64	3	10-3/4	6-1/8	D1211051	\$59.27	1-9/16	5	16-5/8	9-5/8	D1211136	\$319.33
13/16	3	10-3/4	6-1/8	D1211052	\$59.27	1-19/32	5	16-7/8	9-7/8	D1211138	\$319.33
53/64	3	10-3/4	6-1/8	D1211053	\$67.53	1-5/8	5	17	10	D1211140	\$319.33
27/32	3	10-3/4	6-1/8	D1211054	\$67.53	1-21/32	5	17-1/8	10-1/8	D1211142	\$380.60
55/64	3	10-3/4	6-1/8	D1211055	\$67.53	1-11/16	5	17-1/8	10-1/8	D1211144	\$384.50
7/8	3	10-3/4	6-1/8	D1211056	\$69.63	1-23/32	5	17-1/8	10-1/8	D1211146	\$384.50
57/64	3	10-3/4	6-1/8	D1211057	\$69.63	1-3/4	5	17-1/8	10-1/8	D1211148	\$384.50
29/32	3	10-3/4	6-1/8	D1211058	\$79.03	1-13/16	5	17-1/8	10-1/8	D1211152	\$408.37
59/64	3	10-3/4	6-1/8	D1211059	\$90.47	1-27/32	5	17-1/8	10-1/8	D1211154	\$435.13
15/16	3	10-3/4	6-1/8	D1211060	\$90.47	1-7/8	5	17-3/8	10-3/8	D1211156	\$435.13
61/64	3	11	6-3/8	D1211061	\$90.47	1-15/16	5	17-3/8	10-3/8	D1211160	\$435.13
31/32	3	11	6-3/8	D1211062	\$90.47	1-31/32	5	17-3/8	10-3/8	D1211162	\$438.43
63/64	3	11	6-3/8	D1211063	\$92.90	2	5	17-3/8	10-3/8	D1211200	\$440.43
1	3	11	6-3/8	D1211100	\$92.90	2-1/32	5	17-3/8	10-3/8	D1211202	\$477.33
1-1/64	3	11-1/8	6-1/2	D1211101	\$106.77	2-1/16	5	17-3/8	10-1/4	D1211204	\$477.33
1-1/32	3	11-1/8	6-1/2	D1211102	\$106.77	2-3/32	5	17-3/8	10-1/4	D1211206	\$524.57
1-3/64	3	11-1/4	6-5/8	D1211103	\$111.20	2-1/8	5	17-3/8	10-1/4	D1211208	\$528.87
1-1/16	3	11-1/4	6-5/8	D1211104	\$111.20	2-5/32	5	17-3/8	10-1/4	D1211210	\$548.53
1-5/64	4	12-1/2	6-7/8	D1211105	\$111.93	2-3/16	5	17-3/8	10-1/4	D1211212	\$548.53
1-3/32	4	12-1/2	6-7/8	D1211106	\$111.93	2-7/32	5	17-3/8	10-1/8	D1211214	\$571.67
1-7/64	4	12-3/4	7-1/8	D1211107	\$115.47	2-1/4	5	17-3/8	10-1/8	D1211216	\$602.27
1-1/8	4	12-3/4	7-1/8	D1211108	\$115.47	2-5/16	5	17-3/8	10-1/8	D1211220	\$627.57
1-9/64	4	12-7/8	7-1/4	D1211109	\$133.07	2-3/8	5	17-3/8	10-1/8	D1211224	\$636.77
1-5/32	4	12-7/8	7-1/4	D1211110	\$133.07	2-7/16	5	18-3/4	11-1/4	D1211228	\$802.73
1-11/64	4	13	7-3/8	D1211111	\$145.60	2-1/2	5	18-3/4	11-1/4	D1211232	\$865.80

INDIVIDUALLY PACKAGED



HSS (M2) 118° Split Point 3Flat Black&Gold Silver&Deming Drill



See Technical Information – Page 55

D1191 Series

Diameter (ød)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Size (ød ₁)	Shank Dia. (ød ₂)				
1/2	1/2	6	3	D1191032	\$28.77
33/64	1/2	6	3	D1191033	\$28.77
17/32	1/2	6	3	D1191034	\$28.77
35/64	1/2	6	3	D1191035	\$30.20
9/16	1/2	6	3	D1191036	\$30.20
37/64	1/2	6	3	D1191037	\$32.33
19/32	1/2	6	3	D1191038	\$32.33
39/64	1/2	6	3	D1191039	\$33.80
5/8	1/2	6	3	D1191040	\$33.80
41/64	1/2	6	3	D1191041	\$36.00
21/32	1/2	6	3	D1191042	\$36.00
43/64	1/2	6	3	D1191043	\$37.43
11/16	1/2	6	3	D1191044	\$37.43
45/64	1/2	6	3	D1191045	\$37.67
23/32	1/2	6	3	D1191046	\$37.67
47/64	1/2	6	3	D1191047	\$41.13
3/4	1/2	6	3	D1191048	\$41.13
49/64	1/2	6	3	D1191049	\$43.83
25/32	1/2	6	3	D1191050	\$43.83
51/64	1/2	6	3	D1191051	\$46.07
13/16	1/2	6	3	D1191052	\$46.07
53/64	1/2	6	3	D1191053	\$49.70
27/32	1/2	6	3	D1191054	\$49.70
55/64	1/2	6	3	D1191055	\$51.40
7/8	1/2	6	3	D1191056	\$51.40
57/64	1/2	6	3	D1191057	\$53.60
29/32	1/2	6	3	D1191058	\$53.60
59/64	1/2	6	3	D1191059	\$54.87
15/16	1/2	6	3	D1191060	\$54.87

Diameter (ød)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Size (ød ₁)	Shank Dia. (ød ₂)				
61/64	1/2	6	3	D1191061	\$58.00
31/32	1/2	6	3	D1191062	\$58.00
63/64	1/2	6	3	D1191063	\$64.63
1	1/2	6	3	D1191064	\$64.63
1-1/64	1/2	6	3	D1191101	\$86.43
1-1/32	1/2	6	3	D1191102	\$86.43
1-3/64	1/2	6	3	D1191103	\$89.00
1-1/16	1/2	6	3	D1191104	\$89.00
1-5/64	1/2	6	3	D1191105	\$91.93
1-3/32	1/2	6	3	D1191106	\$92.13
1-7/64	1/2	6	3	D1191107	\$93.80
1-1/8	1/2	6	3	D1191108	\$94.57
1-9/64	1/2	6	3	D1191109	\$100.97
1-5/32	1/2	6	3	D1191110	\$100.97
1-11/64	1/2	6	3	D1191111	\$110.77
1-3/16	1/2	6	3	D1191112	\$110.77
1-13/64	1/2	6	3	D1191113	\$117.03
1-7/32	1/2	6	3	D1191114	\$117.03
1-15/64	1/2	6	3	D1191115	\$119.43
1-1/4	1/2	6	3	D1191116	\$119.43
1-9/32	1/2	6	3	D1191118	\$134.53
1-5/16	1/2	6	3	D1191120	\$134.53
1-11/32	1/2	6	3	D1191122	\$155.00
1-3/8	1/2	6	3	D1191124	\$164.40
1-13/32	1/2	6	3	D1191126	\$191.97
1-7/16	1/2	6	3	D1191128	\$191.97
1-15/32	1/2	6	3	D1191130	\$204.47
1-1/2	1/2	6	3	D1191132	\$204.47

INDIVIDUALLY PACKAGED

COBALT 8% HSS, NC Spotting Drill

Application: For more precise centering work on NC/CNC machine. A larger diameter in respect to the subsequent drilling tool permit to obtain the centering and chamfering simultaneously.



NC-SPOTTING DRILLS 90°

Diameter Inch	Flute Length Inch	Overall Length Inch	EDP No.	List Price
1/8	0.472	1.93	0081L	\$7.00
3/16	0.590	2.44	0121L	\$7.80
1/4	0.669	2.76	0161L	\$8.20
5/16	0.984	3.11	0201L	\$9.43
3/8	0.827	3.50	0241L	\$11.80
1/2	0.984	4.02	0321L	\$18.90
5/8	1.575	4.53	0401L	\$30.33
3/4	1.968	5.16	0481L	\$42.00
1	1.968	6.14	0641L	\$65.33

NC-SPOTTING DRILLS 120°

Diameter Inch	Flute Length Inch	Overall Length Inch	EDP No.	List Price
1/8	0.472	1.93	2081L	\$7.00
3/16	0.590	2.44	2121L	\$7.80
1/4	0.669	2.76	2161L	\$8.20
5/16	0.984	3.11	2201L	\$9.43
3/8	0.827	3.50	2241L	\$11.80
1/2	0.984	4.02	2321L	\$18.90
5/8	1.575	4.53	2401L	\$30.33
3/4	1.968	5.16	2481L	\$42.00
1	1.968	6.14	2641L	\$65.33

INDIVIDUALLY PACKAGED

CENTER DRILLS

NEW

HSS (M2) Center Drill



D1C90 Series

Regular Length (60°)

Size	Shank Diameter (ød ₂)	Drill Diameter (ød ₁)	Overall Length (L ₁)	Drill Length (L ₂)	EDP No.	List Price
1	1/8	3/64	1-1/4	3/64	D1C90141	\$4.17**
1	1/8	3/64	1-1/2	1/16	D1C90079	\$4.17**
2	3/16	1/16	1-3/4	5/64	D1C90080	\$4.33**
2	3/16	5/64	1-7/8	5/64	D1C90142	\$4.33**
3	1/4	3/32	2	1/8	D1C90081	\$5.57**
3	1/4	7/64	2	7/64	D1C90143	\$5.57**
4	5/16	1/8	2-1/8	1/8	D1C90144	\$6.73**
4	5/16	1/8	2-1/4	5/32	D1C90082	\$6.73**
5	7/16	3/16	2-1/2	1/4	D1C90083	\$8.33**
5	7/16	3/16	2-3/4	3/16	D1C90145	\$8.33**
6	1/2	7/32	3	7/32	D1C90084	\$12.13

INDIVIDUALLY PACKAGED

**10 PER PACKAGE

Long Length (60°)

Size	Shank Diameter (ød ₂)	Drill Diameter (ød ₁)	Overall Length (L ₁)	Drill Length (L ₂)	EDP No.	List Price
1	1/8	3/64	3	3/64	D1C90085	\$5.47
1	1/8	3/64	4	3/64	D1C90086	\$5.63
1	1/8	3/64	5	3/64	D1C90087	\$7.83
1	1/8	3/64	6	3/64	D1C90088	\$10.33
2	3/16	5/64	3	5/64	D1C90089	\$6.17
2	3/16	5/64	4	5/64	D1C90090	\$9.87
2	3/16	5/64	5	5/64	D1C90091	\$12.60
2	3/16	5/64	6	5/64	D1C90092	\$16.43
3	1/4	7/64	4	7/64	D1C90093	\$7.33
3	1/4	7/64	5	7/64	D1C90094	\$9.60
3	1/4	7/64	6	7/64	D1C90095	\$11.67
4	5/16	1/8	4	1/8	D1C90096	\$9.10
4	5/16	1/8	5	1/8	D1C90097	\$11.67
4	5/16	1/8	6	1/8	D1C90098	\$13.50
5	7/16	3/16	4	3/16	D1C90099	\$11.37
5	7/16	3/16	5	3/16	D1C90100	\$21.70
5	7/16	3/16	6	3/16	D1C90101	\$24.33
6	1/2	7/32	4	7/32	D1C90102	\$15.73
6	1/2	7/32	5	7/32	D1C90103	\$30.00
6	1/2	7/32	6	7/32	D1C90104	\$36.20

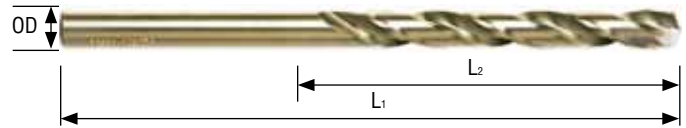
INDIVIDUALLY PACKAGED

▶ The TiN Coating, TiCN Coating and Hardslick Coating and other shank types are available upon request.

AIRCRAFT EXTENSION DRILLS-INCH SIZES

HSS-Co5, Aircraft Extension Drill, 135° Split Point, Coloring

Flute Geometry: Right hand spiral, 30° helix.
Point: 135° Split point... .059 diameter and over
Application: Improved chip removal in most materials, especially in deep drilling applications.



FRACTIONAL SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
5/64	.0781	1	6	DL601005	\$8.43**
3/32	.0938	1-1/4	6	DL601006	\$6.63**
7/64	.1094	1-1/4	6	DL601007	\$7.40**
1/8	.1250	1-5/8	6	DL601008	\$7.10**
9/64	.1406	1-3/4	6	DL601009	\$8.40**
5/32	.1562	2	6	DL601010	\$8.40**
11/64	.1719	2-1/8	6	DL601011	\$9.20**
3/16	.1875	2-5/16	6	DL601012	\$9.20**
13/64	.2031	2-7/16	6	DL601013	\$11.40**
7/32	.2188	2-1/2	6	DL601014	\$11.40**
15/64	.2344	2-5/8	6	DL601015	\$12.43**
1/4	.2500	2-3/4	6	DL601016	\$14.17*
17/64	.2656	2-7/8	6	DL601017	\$32.10*
9/32	.2813	2-15/16	6	DL601018	\$37.90*
19/64	.2969	3-1/16	6	DL601019	\$40.00*
5/16	.3125	3-3/16	6	DL601020	\$43.30*
21/64	.3281	3-5/16	6	DL601021	\$47.13*
11/32	.3438	3-7/16	6	DL601022	\$49.37*
23/64	.3594	3-1/2	6	DL601023	\$52.40*
3/8	.3750	3-5/8	6	DL601024	\$53.40*
25/64	.3906	3-3/4	6	DL601025	\$59.63*
13/32	.4063	3-7/8	6	DL601026	\$59.63*
27/64	.4219	3-15/16	6	DL601027	\$63.93*
7/16	.4375	4-1/16	6	DL601028	\$64.63*

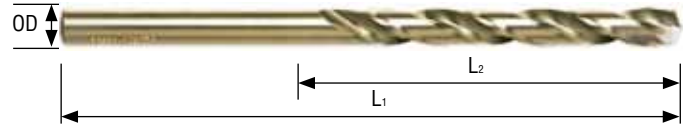
Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
29/64	.4531	4-3/16	6	DL601029	\$70.87*
15/32	.4688	4-5/16	6	DL601030	\$73.27*
31/64	.4844	4-3/8	6	DL601031	\$76.20*
1/2	.5000	4-1/2	6	DL601032	\$77.33*
7/32	.2188	2-1/2	12	DL604014	\$26.03**
15/64	.2344	2-5/8	12	DL604015	\$30.00**
1/4	.2500	2-3/4	12	DL604016	\$30.00*
17/64	.2656	2-7/8	12	DL604017	\$40.97*
9/32	.2813	2-15/16	12	DL604018	\$48.17*
19/64	.2969	3-1/16	12	DL604019	\$48.17*
5/16	.3125	3-3/16	12	DL604020	\$52.20*
21/64	.3281	3-5/16	12	DL604021	\$52.20*
11/32	.3438	3-7/16	12	DL604022	\$64.23*
23/64	.3594	3-1/2	12	DL604023	\$65.20*
3/8	.3750	3-5/8	12	DL604024	\$65.20*
25/64	.3906	3-3/4	12	DL604025	\$67.87*
13/32	.4063	3-7/8	12	DL604026	\$80.97*
27/64	.4219	3-15/16	12	DL604027	\$80.97*
7/16	.4375	4-1/16	12	DL604028	\$80.97*
29/64	.4531	4-3/16	12	DL604029	\$83.70*
15/32	.4688	4-5/16	12	DL604030	\$83.70*
31/64	.4844	4-3/8	12	DL604031	\$83.07*
1/2	.5000	4-1/2	12	DL604032	\$86.37*

* 5 PER PACKAGE
 **10 PER PACKAGE

AIRCRAFT EXTENSION DRILLS-INCH SIZES

HSS-Co5, Aircraft Extension Drill, 135° Split Point, Coloring

Flute Geometry: Right hand spiral, 30° helix.
Point: 135° Split point... .059 diameter and over
Application: Improved chip removal in most materials, especially in deep drilling applications.



LETTER SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
A	.2340	2-5/8	6	DL602101	\$19.87**
B	.2380	2-3/4	6	DL602102	\$19.87*
C	.2420	2-3/4	6	DL602103	\$19.87*
D	.2460	2-3/4	6	DL602104	\$19.87*
E	.2500	2-3/4	6	DL602105	\$19.87*
F	.2570	2-7/8	6	DL602106	\$22.67*
G	.2610	2-7/8	6	DL602107	\$34.73*
H	.2660	2-7/8	6	DL602108	\$37.47*
I	.2720	2-7/8	6	DL602109	\$37.47*
J	.2770	2-7/8	6	DL602110	\$37.47*
K	.2810	2-15/16	6	DL602111	\$37.90*
L	.2900	2-15/16	6	DL602112	\$42.90*
M	.2950	3-1/16	6	DL602113	\$42.90*
N	.3020	3-1/16	6	DL602114	\$48.40*
O	.3160	3-3/16	6	DL602115	\$50.53*
P	.3230	3-5/16	6	DL602116	\$50.53*
Q	.3320	3-7/16	6	DL602117	\$50.93*
R	.3390	3-7/16	6	DL602118	\$51.43*
S	.3480	3-1/2	6	DL602119	\$58.77*
T	.3580	3-1/2	6	DL602120	\$58.77*
U	.3680	3-5/8	6	DL602121	\$61.43*
V	.3770	3-5/8	6	DL602122	\$64.93*
W	.3860	3-3/4	6	DL602123	\$64.93*
X	.3970	3-3/4	6	DL602124	\$64.93*
Y	.4040	3-7/8	6	DL602125	\$64.93*
Z	.4130	3-7/8	6	DL602126	\$69.60*

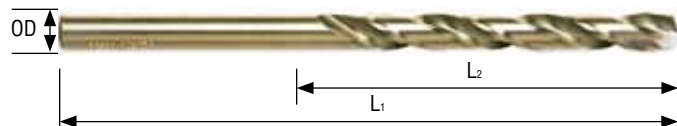
Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
A	.2340	2-5/8	12	DL605101	\$42.03**
B	.2380	2-3/4	12	DL605102	\$42.03*
C	.2420	2-3/4	12	DL605103	\$42.03*
D	.2460	2-3/4	12	DL605104	\$42.03*
E	.2500	2-3/4	12	DL605105	\$42.03*
F	.2570	2-7/8	12	DL605106	\$49.70*
G	.2610	2-7/8	12	DL605107	\$49.70*
H	.2660	2-7/8	12	DL605108	\$49.70*
I	.2720	2-7/8	12	DL605109	\$49.70*
J	.2770	2-7/8	12	DL605110	\$49.70*
K	.2810	2-15/16	12	DL605111	\$49.70*
L	.2900	2-15/16	12	DL605112	\$52.50*
M	.2950	3-1/16	12	DL605113	\$52.50*
N	.3020	3-1/16	12	DL605114	\$52.50*
O	.3160	3-3/16	12	DL605115	\$61.50*
P	.3230	3-5/16	12	DL605116	\$61.50*
Q	.3320	3-7/16	12	DL605117	\$64.30*
R	.3390	3-7/16	12	DL605118	\$67.17*
S	.3480	3-1/2	12	DL605119	\$76.33*
T	.3580	3-1/2	12	DL605120	\$76.33*
U	.3680	3-5/8	12	DL605121	\$76.33*
V	.3770	3-5/8	12	DL605122	\$80.97*
W	.3860	3-3/4	12	DL605123	\$80.97*
X	.3970	3-3/4	12	DL605124	\$80.97*
Y	.4040	3-7/8	12	DL605125	\$80.97*
Z	.4130	3-7/8	12	DL605126	\$80.97*

* 5 PER PACKAGE
 **10 PER PACKAGE

AIRCRAFT EXTENSION DRILLS-INCH SIZES

HSS-Co5, Aircraft Extension Drill, 135° Split Point, Coloring

Flute Geometry: Right hand spiral, 30° helix.
Point: 135° Split point... .059 diameter and over
Application: Improved chip removal in most materials, especially in deep drilling applications.



WIRE GAUGE SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
1	.2280	2-5/8	6	DL603256	\$12.97**
2	.2210	2-5/8	6	DL603255	\$12.97**
3	.2130	2-1/2	6	DL603254	\$11.80**
4	.2090	2-1/2	6	DL603253	\$11.80**
5	.2055	2-1/2	6	DL603252	\$11.80**
6	.2040	2-1/2	6	DL603251	\$11.80**
7	.2010	2-7/16	6	DL603250	\$11.80**
8	.1990	2-7/16	6	DL603249	\$11.80**
9	.1960	2-7/16	6	DL603248	\$11.80**
10	.1935	2-7/16	6	DL603247	\$10.27**
11	.1910	2-5/16	6	DL603246	\$10.27**
12	.1890	2-5/16	6	DL603245	\$10.27**
13	.1850	2-5/16	6	DL603244	\$10.27**
14	.1820	2-3/16	6	DL603243	\$10.27**
15	.1800	2-3/16	6	DL603242	\$10.27**
16	.1770	2-3/16	6	DL603241	\$10.27**
17	.1730	2-3/16	6	DL603240	\$10.27**
18	.1695	2-1/8	6	DL603239	\$10.27**
19	.1660	2-1/8	6	DL603238	\$10.27**
20	.1610	2-1/8	6	DL603237	\$8.90**
21	.1590	2-1/8	6	DL603236	\$8.90**
22	.1570	2	6	DL603235	\$8.90**
23	.1540	2	6	DL603234	\$8.90**

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
24	.1520	2	6	DL603233	\$8.90**
25	.1495	1-7/8	6	DL603232	\$8.90**
26	.1470	1-7/8	6	DL603231	\$8.90**
27	.1440	1-7/8	6	DL603230	\$8.90**
28	.1405	1-3/4	6	DL603229	\$8.90**
29	.1360	1-3/4	6	DL603228	\$8.90**
30	.1285	1-5/8	6	DL603227	\$7.23**
31	.1200	1-5/8	6	DL603226	\$7.23**
32	.1160	1-5/8	6	DL603225	\$7.23**
33	.1130	1-1/2	6	DL603224	\$7.23**
34	.1110	1-1/2	6	DL603223	\$7.23**
35	.1100	1-1/2	6	DL603222	\$7.23**
36	.1065	1-7/16	6	DL603221	\$7.23**
37	.1040	1-7/16	6	DL603220	\$7.23**
38	.1015	1-7/16	6	DL603219	\$7.23**
39	.0995	1-3/8	6	DL603218	\$7.23**
40	.0980	1-3/8	6	DL603217	\$6.83**
41	.0960	1-3/8	6	DL603216	\$6.83**
42	.0935	1-1/4	6	DL603215	\$6.83**
43	.0890	1-1/4	6	DL603214	\$8.43**
1	.2280	2-5/8	12	DL606256	\$29.10**
3	.2130	2-1/2	12	DL606254	\$29.10**

**10 PER PACKAGE

AIRCRAFT EXTENSION DRILLS-INCH SIZES

HSS Aircraft Extension Drill, 135° Split Point, Steam Oxide

Flute Geometry: Right hand spiral, 30° helix.
Point: 135° Split point... .059 diameter and over
Application: Improved chip removal in most materials, especially in deep drilling applications.



FRACTIONAL SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
5/64	.0781	1	6	D1631005	\$4.50**
3/32	.0938	1-1/4	6	D1631006	\$3.90**
7/64	.1094	1-1/4	6	D1631007	\$3.90**
1/8	.1250	1-5/8	6	D1631008	\$3.90**
9/64	.1406	1-3/4	6	D1631009	\$4.50**
5/32	.1562	2	6	D1631010	\$4.50**
11/64	.1719	2-1/8	6	D1631011	\$4.90**
3/16	.1875	2-5/16	6	D1631012	\$4.90**
13/64	.2031	2-7/16	6	D1631013	\$6.13**
7/32	.2188	2-1/2	6	D1631014	\$6.13**
15/64	.2344	2-5/8	6	D1631015	\$6.53**
1/4	.2500	2-3/4	6	D1631016	\$6.53*
17/64	.2656	2-7/8	6	D1631017	\$13.67*
9/32	.2813	2-15/16	6	D1631018	\$14.20*
19/64	.2969	3-1/16	6	D1631019	\$16.70*
5/16	.3125	3-3/16	6	D1631020	\$18.07*
21/64	.3281	3-5/16	6	D1631021	\$19.67*
11/32	.3438	3-7/16	6	D1631022	\$20.60*
23/64	.3594	3-1/2	6	D1631023	\$21.83*
3/8	.3750	3-5/8	6	D1631024	\$22.23*
25/64	.3906	3-3/4	6	D1631025	\$24.83*
13/32	.4063	3-7/8	6	D1631026	\$24.83*
27/64	.4219	3-15/16	6	D1631027	\$26.63*
7/16	.4375	4-1/16	6	D1631028	\$26.90*

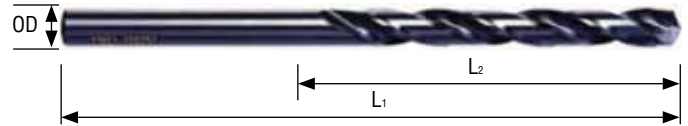
Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
29/64	.4531	4-3/16	6	D1631029	\$29.53*
15/32	.4688	4-5/16	6	D1631030	\$30.50*
31/64	.4844	4-3/8	6	D1631031	\$31.77*
1/2	.5000	4-1/2	6	D1631032	\$32.20*
7/32	.2188	2-1/2	12	D1634014	\$13.80**
15/64	.2344	2-5/8	12	D1634015	\$15.07**
1/4	.2500	2-3/4	12	D1634016	\$15.07*
17/64	.2656	2-7/8	12	D1634017	\$17.83*
9/32	.2813	2-15/16	12	D1634018	\$18.27*
19/64	.2969	3-1/16	12	D1634019	\$21.53*
5/16	.3125	3-3/16	12	D1634020	\$23.73*
21/64	.3281	3-5/16	12	D1634021	\$25.23*
11/32	.3438	3-7/16	12	D1634022	\$25.23*
23/64	.3594	3-1/2	12	D1634023	\$28.13*
3/8	.3750	3-5/8	12	D1634024	\$29.03*
25/64	.3906	3-3/4	12	D1634025	\$31.90*
13/32	.4063	3-7/8	12	D1634026	\$31.90*
27/64	.4219	3-15/16	12	D1634027	\$34.10*
7/16	.4375	4-1/16	12	D1634028	\$34.10*
29/64	.4531	4-3/16	12	D1634029	\$37.90*
15/32	.4688	4-5/16	12	D1634030	\$39.20*
31/64	.4844	4-3/8	12	D1634031	\$40.60*
1/2	.5000	4-1/2	12	D1634032	\$41.33*

* 5 PER PACKAGE
 **10 PER PACKAGE

AIRCRAFT EXTENSION DRILLS-INCH SIZES

HSS Aircraft Extension Drill, 135° Split Point, Steam Oxide

Flute Geometry: Right hand spiral, 30° helix.
Point: 135° Split point... .059 diameter and over
Application: Improved chip removal in most materials, especially in deep drilling applications.



LETTER SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
A	.2340	2-5/8	6	D1632101	\$9.27**
B	.2380	2-3/4	6	D1632102	\$9.27*
C	.2420	2-3/4	6	D1632103	\$9.27*
D	.2460	2-3/4	6	D1632104	\$9.27*
E	.2500	2-3/4	6	D1632105	\$9.27*
F	.2570	2-7/8	6	D1632106	\$9.28*
G	.2610	2-7/8	6	D1632107	\$15.67*
H	.2660	2-7/8	6	D1632108	\$16.90*
I	.2720	2-7/8	6	D1632109	\$16.90*
J	.2770	2-7/8	6	D1632110	\$16.90*
K	.2810	2-15/16	6	D1632111	\$16.90*
L	.2900	2-15/16	6	D1632112	\$19.13*
M	.2950	3-1/16	6	D1632113	\$19.13*
N	.3020	3-1/16	6	D1632114	\$21.60*
O	.3160	3-3/16	6	D1632115	\$22.50*
P	.3230	3-5/16	6	D1632116	\$22.50*
Q	.3320	3-7/16	6	D1632117	\$22.70*
R	.3390	3-7/16	6	D1632118	\$22.70*
S	.3480	3-1/2	6	D1632119	\$25.03*
T	.3580	3-1/2	6	D1632120	\$25.03*
U	.3680	3-5/8	6	D1632121	\$26.47*
V	.3770	3-5/8	6	D1632122	\$27.97*
W	.3860	3-3/4	6	D1632123	\$27.97*
X	.3970	3-3/4	6	D1632124	\$27.97*
Y	.4040	3-7/8	6	D1632125	\$27.97*
Z	.4130	3-7/8	6	D1632126	\$30.00*

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
A	.2340	2-5/8	12	D1635101	\$18.97**
B	.2380	2-3/4	12	D1635102	\$18.97*
C	.2420	2-3/4	12	D1635103	\$18.97*
D	.2460	2-3/4	12	D1635104	\$18.97*
E	.2500	2-3/4	12	D1635105	\$18.97*
F	.2570	2-7/8	12	D1635106	\$22.60*
G	.2610	2-7/8	12	D1635107	\$22.60*
H	.2660	2-7/8	12	D1635108	\$22.60*
I	.2720	2-7/8	12	D1635109	\$22.60*
J	.2770	2-7/8	12	D1635110	\$22.60*
K	.2810	2-15/16	12	D1635111	\$22.60*
L	.2900	2-15/16	12	D1635112	\$23.87*
M	.2950	3-1/16	12	D1635113	\$23.87*
N	.3020	3-1/16	12	D1635114	\$23.87*
O	.3160	3-3/16	12	D1635115	\$27.87*
P	.3230	3-5/16	12	D1635116	\$27.87*
Q	.3320	3-7/16	12	D1635117	\$29.17*
R	.3390	3-7/16	12	D1635118	\$30.43*
S	.3480	3-1/2	12	D1635119	\$31.90*
T	.3580	3-1/2	12	D1635120	\$31.90*
U	.3680	3-5/8	12	D1635121	\$31.90*
V	.3770	3-5/8	12	D1635122	\$33.83*
W	.3860	3-3/4	12	D1635123	\$33.83*
X	.3970	3-3/4	12	D1635124	\$35.80*
Y	.4040	3-7/8	12	D1635125	\$35.80*
Z	.4130	3-7/8	12	DL635126	\$37.80*

* 5 PER PACKAGE
 **10 PER PACKAGE

AIRCRAFT EXTENSION DRILLS-INCH SIZES

HSS Aircraft Extension Drill, 135° Split Point, Steam Oxide

Flute Geometry: Right hand spiral, 30° helix.
Point: 135° Split point... .059 diameter and over
Application: Improved chip removal in most materials, especially in deep drilling applications.



WIRE GAUGE SIZE

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
1	.2280	2-5/8	6	D1633256	\$6.93**
2	.2210	2-5/8	6	D1633255	\$6.93**
3	.2130	2-1/2	6	D1633254	\$6.13**
4	.2090	2-1/2	6	D1633253	\$6.13**
5	.2055	2-1/2	6	D1633252	\$6.13**
6	.2040	2-1/2	6	D1633251	\$6.13**
7	.2010	2-7/16	6	D1633250	\$6.13**
8	.1990	2-7/16	6	D1633249	\$6.13**
9	.1960	2-7/16	6	D1633248	\$6.13**
10	.1935	2-7/16	6	D1633247	\$5.23**
11	.1910	2-5/16	6	D1633246	\$5.23**
12	.1890	2-5/16	6	D1633245	\$5.23**
13	.1850	2-5/16	6	D1633244	\$5.23**
14	.1820	2-3/16	6	D1633243	\$5.23**
15	.1800	2-3/16	6	D1633242	\$5.23**
16	.1770	2-3/16	6	D1633241	\$5.23**
17	.1730	2-3/16	6	D1633240	\$5.23**
18	.1695	2-1/8	6	D1633239	\$5.23**
19	.1660	2-1/8	6	D1633238	\$5.23**
20	.1610	2-1/8	6	D1633237	\$4.70**
21	.1590	2-1/8	6	D1633236	\$4.70**
22	.1570	2	6	D1633235	\$4.70**
23	.1540	2	6	D1633234	\$4.70**

Size OD	Decimal Equiv. OD	Flute Length L ₂	Overall Length L ₁	EDP No.	List Price
24	.1520	2	6	D1633233	\$4.70**
25	.1495	1-7/8	6	D1633232	\$4.70**
26	.1470	1-7/8	6	D1633231	\$4.70**
27	.1440	1-7/8	6	D1633230	\$4.70**
28	.1405	1-3/4	6	D1633229	\$4.70**
29	.1360	1-3/4	6	D1633228	\$4.70**
30	.1285	1-5/8	6	D1633227	\$3.90**
31	.1200	1-5/8	6	D1633226	\$3.90**
32	.1160	1-5/8	6	D1633225	\$3.90**
33	.1130	1-1/2	6	D1633224	\$3.90**
34	.1110	1-1/2	6	D1633223	\$3.90**
35	.1100	1-1/2	6	D1633222	\$3.90**
36	.1065	1-7/16	6	D1633221	\$3.90**
37	.1040	1-7/16	6	D1633220	\$3.90**
38	.1015	1-7/16	6	D1633219	\$3.90**
39	.0995	1-3/8	6	D1633218	\$3.90**
40	.0980	1-3/8	6	D1633217	\$3.50**
41	.0960	1-3/8	6	D1633216	\$3.50**
42	.0935	1-1/4	6	D1633215	\$3.50**
43	.0890	1-1/4	6	D1633214	\$4.50**
1	.2280	2-5/8	12	D1636256	\$16.23**
3	.2130	2-1/2	12	D1636254	\$15.07**

**10 PER PACKAGE

RECOMMENDED CUTTING CONDITIONS

HSS/Cobalt Jobbers & Screw Machine Drills

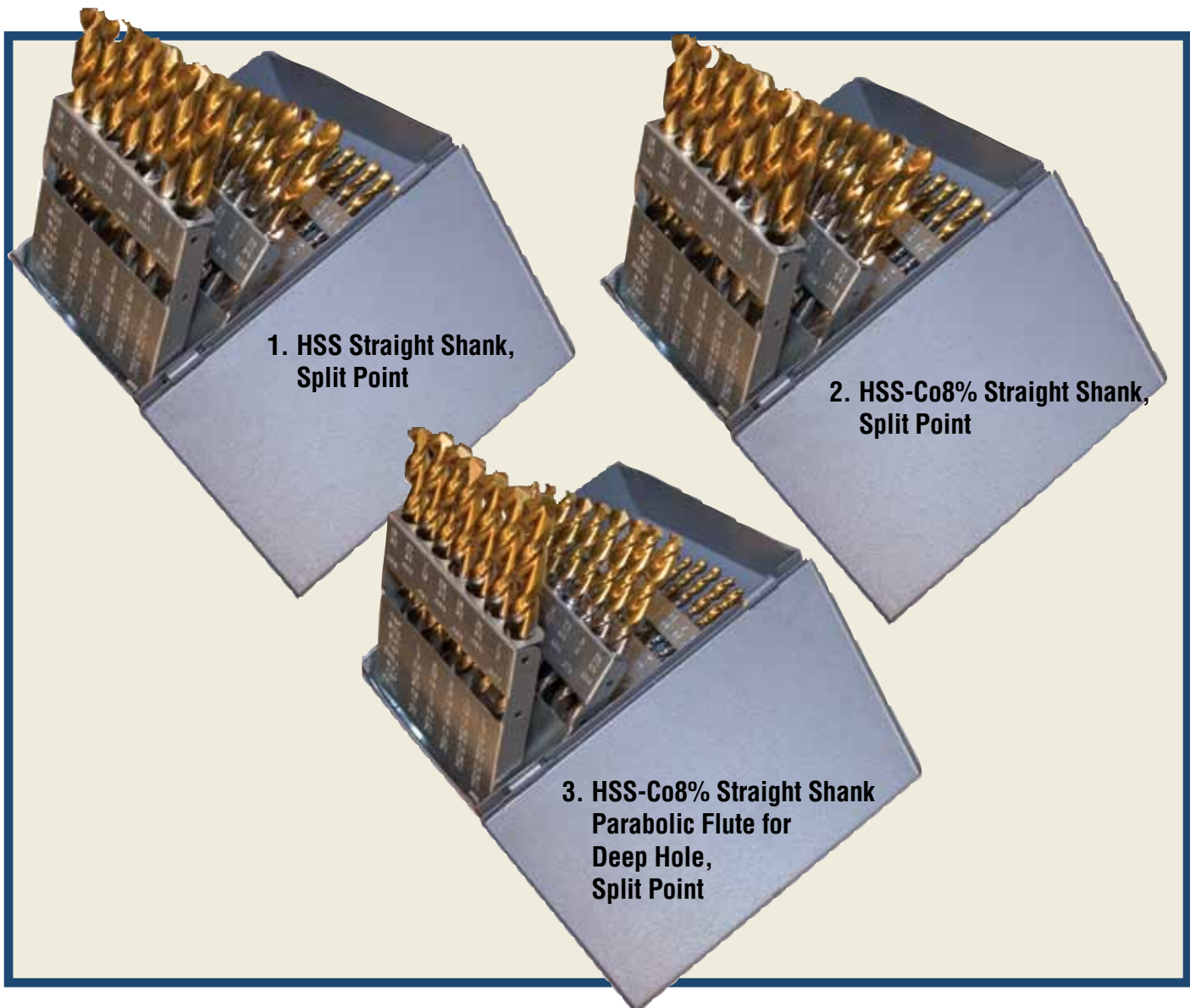
STANDARD HELIX 135° SPLIT POINT

Work Material		Low Carbon Steel		Carbon and Alloy Steel		Alloy Steels		Cast Iron		Stainless Steels	
Hardness				Less Than 23 Rc		23-34 Rc		Less Than 28 Rc		Less Than 28 Rc	
Diameter		RPM	Feed Rate	RPM	Feed Rate	RPM	Feed Rate	RPM	Feed Rate	RPM	Feed Rate
Metric	Inch										
2	1/16	14000	0.0008	12500	0.0008	7700	0.0008	16000	0.0008	7000	0.0008
2.5	3/32	7000	0.0023	6100	0.0024	3850	0.0024	7900	0.0027	3500	0.0024
3	1/8	4650	0.0038	4100	0.0031	2550	0.031	5250	0.0043	2350	0.0031
4	5/32	3500	0.0044	3050	0.0043	1950	0.0039	3950	0.0054	1750	0.0039
5	3/16	3800	0.0049	2450	0.0043	1550	0.0039	3150	0.0054	1400	0.0039
6	1/4	2350	0.0056	2050	0.0051	1300	0.0047	2650	0.0069	1150	0.0047
8	5/16	1750	0.0072	1550	0.0071	960	0.0059	1950	0.0087	875	0.0059
10	3/8	1550	0.0077	1350	0.0087	855	0.0071	1750	0.0095	780	0.0071
11	7/16	1250	0.0087	1100	0.0087	700	0.0071	1450	0.0108	650	0.0071
12	15/32	1150	0.0090	1000	0.0087	650	0.0079	1300	0.0108	585	0.0079
13	1/2	1050	0.0090	950	0.0087	595	0.0079	1200	0.0108	540	0.0079

PARABOLIC FLUTE 38° HELIX 130° SPLIT POINT

Work Material	Low Carbon Steel		Alloy Steels		Cast Iron		Stainless Steels		Aluminum Alloys	
Hardness	Less than 25 Rc		25 ~ 35 Rc		Less than 25 Rc		Less Than 28 Rc			
Diameter	RPM	Feed Rate	RPM	Feed Rate	RPM	Feed Rate	RPM	Feed Rate	RPM	Feed Rate
1/16	8750	0.0008	6300	0.0008	16000	0.0008	7000	0.0008	21000	0.002
3/32	4400	0.0022	3150	0.0022	7900	0.0027	3500	0.0024	15000	0.003
1/8	2900	0.0032	2100	0.0032	5250	0.0043	2350	0.0031	10500	0.004
5/32	2200	0.0036	1600	0.0036	3950	0.0054	1750	0.0039	8500	0.0045
3/16	1750	0.0041	1250	0.0041	3150	0.0054	1400	0.0039	7000	0.005
1/4	1450	0.0047	1050	0.0047	2650	0.0069	1150	0.0047	5300	0.006
5/16	1100	0.0060	790	0.0060	1950	0.0087	875	0.0059	4200	0.008
3/8	975	0.0066	700	0.0066	1750	0.0095	780	0.0071	3500	0.009
7/16	800	0.0077	575	0.0077	1450	0.0108	650	0.0071	3000	0.0095
15/32	730	0.0077	525	0.0077	1300	0.0108	585	0.0079	2850	0.010
1/2	675	0.0077	485	0.0077	1200	0.0108	540	0.0079	2600	0.011

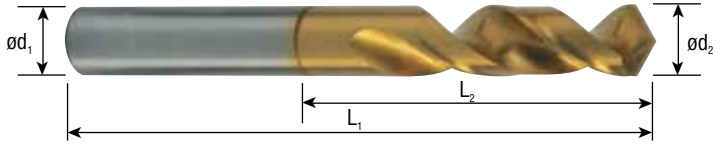
GOLD-P COATED DRILL SETS



JOBBERS DRILL SETS

	Description	Size	Qty.	EDP Number	List Price
1	HSS Straight Shank, Split Point	1/16 ~ 1/2 x 64ths	29 pcs	D1GP182SET	\$145.53
	HSS Straight Shank, Split Point	A ~ Z	26 pcs	D1GP139SET	\$159.53
	HSS Straight Shank, Split Point	1 ~ 56	56 pcs	D1GP138SET	\$109.37
2	HSS-Co8% Straight Shank, Split Point	1/16 ~ 1/2 x 64ths	29 pcs	D2GP185SET	\$218.60
	HSS-Co8% Straight Shank, Split Point	A ~ Z	26 pcs	D2GP186SET	\$210.33
	HSS-Co8% Straight Shank, Split Point	1 ~ 56	56 pcs	D2GP187SET	\$151.53
3	HSS-Co5% Straight Shank Parabolic Flute For Deep Hole, Split Point	5/64 ~ 1/2 x 64ths	28 pcs	DLGP511SET	\$182.93
	HSS-Co5% Straight Shank Parabolic Flute For Deep Hole, Split Point	A ~ Z	26 pcs	DLGP513SET	\$208.60
	HSS-Co5% Straight Shank Parabolic Flute For Deep Hole, Split Point	1 ~ 47	47 pcs	DLGP512SET	\$122.77

HSS-EX, HPD-SUS TWIST DRILLS



Stub series

See Technical Information on Page 45

Diameter (ød ₁ =ød ₂)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Metric	Inch				
2.0	.0787	44	12	0201JCN	\$11.83
2.1	.0827	44	12	0211JCN	\$13.80
2.2	.0866	45	13	0221JCN	\$13.80
2.3	.0906	45	13	0231JCN	\$13.80
2.4	.0945	46	14	0241JCN	\$13.80
2.5	.0984	46	14	0251JCN	\$11.83
2.6	.1024	46	14	0261JCN	\$13.20
2.7	.1063	48	16	0271JCN	\$13.20
2.8	.1102	48	16	0281JCN	\$13.20
2.9	.1142	48	16	0291JCN	\$13.20
3.0	.1181	48	16	0301JCN	\$11.00
3.1	.1220	50	18	0311JCN	\$13.80
3.2	.1260	50	18	0321JCN	\$13.80
3.3	.1299	50	18	0331JCN	\$13.80
3.4	.1339	52	20	0341JCN	\$13.80
3.5	.1378	52	20	0351JCN	\$13.80
3.6	.1417	52	20	0361JCN	\$16.50
3.7	.1457	52	20	0371JCN	\$16.50
3.8	.1496	54	22	0381JCN	\$14.90
3.9	.1535	54	22	0391JCN	\$16.50
4.0	.1575	54	22	0401JCN	\$14.90
4.1	.1614	66	22	0411JCN	\$19.70
4.2	.1654	66	22	0421JCN	\$17.90
4.3	.1693	68	24	0431JCN	\$19.70
4.4	.1732	68	24	0441JCN	\$19.70
4.5	.1772	68	24	0451JCN	\$23.43
4.6	.1811	68	24	0461JCN	\$23.13
4.7	.1850	68	24	0471JCN	\$23.13
4.8	.1890	70	26	0481JCN	\$23.13
4.9	.1929	70	26	0491JCN	\$23.13
5.0	.1969	70	26	0501JCN	\$20.80
5.1	.2008	70	26	0511JCN	\$20.80
5.2	.2047	70	26	0521JCN	\$24.10
5.3	.2087	70	26	0531JCN	\$26.77
5.4	.2126	72	28	0541JCN	\$26.77
5.5	.2165	72	28	0551JCN	\$24.10
5.6	.2205	72	28	0561JCN	\$30.87
5.7	.2244	72	28	0571JCN	\$30.87
5.8	.2283	72	28	0581JCN	\$30.87
5.9	.2323	72	28	0591JCN	\$30.87
6.0	.2362	72	28	0601JCN	\$27.50
6.1	.2402	75	31	0611JCN	\$34.43
6.2	.2441	75	31	0621JCN	\$34.43
6.3	.2480	75	31	0631JCN	\$34.43
6.4	.2520	75	31	0641JCN	\$34.43
6.5	.2559	75	31	0651JCN	\$30.87
6.6	.2598	75	31	0661JCN	\$34.70
6.7	.2638	75	31	0671JCN	\$34.70
6.8	.2677	78	34	0681JCN	\$34.70
6.9	.2717	78	34	0691JCN	\$34.70
7.0	.2756	78	34	0701JCN	\$32.77
7.1	.2795	78	34	0711JCN	\$35.53
7.2	.2835	78	34	0721JCN	\$35.53
7.3	.2874	78	34	0731JCN	\$35.53
7.4	.2913	78	34	0741JCN	\$35.53
7.5	.2953	78	34	0751JCN	\$35.53

Diameter (ød ₁ =ød ₂)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Metric	Inch				
7.6	.2992	81	37	0761JCN	\$39.63
7.7	.3031	81	37	0771JCN	\$39.63
7.8	.3071	81	37	0781JCN	\$39.63
7.9	.3110	81	37	0791JCN	\$39.63
8.0	.3150	81	37	0801JCN	\$37.82
8.1	.3189	87	37	0811JCN	\$44.07
8.2	.3228	87	37	0821JCN	\$44.07
8.3	.3268	87	37	0831JCN	\$44.07
8.4	.3307	87	37	0841JCN	\$44.07
8.5	.3346	87	37	0851JCN	\$39.63
8.6	.3386	90	40	0861JCN	\$39.63
8.7	.3425	90	40	0871JCN	\$49.27
8.8	.3465	90	40	0881JCN	\$49.27
8.9	.3504	90	40	0891JCN	\$49.27
9.0	.3543	90	40	0901JCN	\$41.30
9.1	.3583	90	40	0911JCN	\$54.83
9.2	.3622	90	40	0921JCN	\$54.83
9.3	.3661	90	40	0931JCN	\$54.83
9.4	.3701	90	40	0941JCN	\$54.83
9.5	.3740	90	40	0951JCN	\$50.43
9.6	.3780	93	43	0961JCN	\$61.97
9.7	.3819	93	43	0971JCN	\$61.97
9.8	.3858	93	43	0981JCN	\$61.97
9.9	.3898	93	43	0991JCN	\$61.97
10.0	.3937	93	43	1001JCN	\$52.33
10.1	.3976	100	43	1011JCN	\$69.40
10.2	.4016	100	43	1021JCN	\$69.40
10.3	.4055	100	43	1031JCN	\$69.40
10.4	.4094	100	43	1041JCN	\$69.40
10.5	.4134	100	43	1051JCN	\$63.80
10.6	.4173	100	43	1061JCN	\$76.03
10.7	.4213	104	47	1071JCN	\$76.03
10.8	.4252	104	47	1081JCN	\$76.03
10.9	.4291	104	47	1091JCN	\$76.03
11.0	.4331	104	47	1101JCN	\$65.83
11.1	.4370	104	47	1111JCN	\$85.10
11.2	.4409	104	47	1121JCN	\$85.10
11.3	.4449	104	47	1131JCN	\$85.10
11.4	.4488	104	47	1141JCN	\$85.10
11.5	.4528	104	47	1151JCN	\$77.97
11.6	.4567	104	47	1161JCN	\$92.27
11.7	.4606	104	47	1171JCN	\$92.27
11.8	.4646	104	47	1181JCN	\$92.27
11.9	.4685	108	51	1191JCN	\$92.27
12.0	.4724	108	51	1201JCN	\$79.03
12.1	.4764	108	51	1211JCN	\$100.20
12.2	.4803	108	51	1221JCN	\$100.20
12.3	.4843	108	51	1231JCN	\$100.20
12.4	.4882	108	51	1241JCN	\$100.20
12.5	.4921	108	51	1251JCN	\$92.53
12.6	.4961	108	51	1261JCN	\$106.33
12.7	.5000	108	51	1271JCN	\$106.33
12.8	.5039	108	51	1281JCN	\$106.33
12.9	.5079	108	51	1291JCN	\$106.33
13.0	.5118	108	51	1301JCN	\$94.73

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HSS-EX, HPD-SUS TWIST DRILLS



Jobber series

See Technical Information on Page 45

Diameter (od=od ₂)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price	Diameter (od=od ₂)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price	Diameter (od=od ₂)		Overall Length (L ₁)	Flute Length (L ₂)	EDP No.	List Price
Metric	Inch					Metric	Inch					Metric	Inch				
2.0	.0787	56	24	0201KCN	\$13.40	6.3	.2480	107	63	0631KCN	\$38.77	10.6	.4173	144	87	1061KCN	\$86.17
2.1	.0827	56	24	0211KCN	\$15.63	6.4	.2520	107	63	0641KCN	\$38.77	10.7	.4213	151	94	1071KCN	\$86.17
2.2	.0866	59	27	0221KCN	\$15.63	6.5	.2559	107	63	0651KCN	\$34.70	10.8	.4252	151	94	1081KCN	\$86.17
2.3	.0906	59	27	0231KCN	\$15.63	6.6	.2598	107	63	0661KCN	\$39.00	10.9	.4291	151	94	1091KCN	\$86.17
2.4	.0945	62	30	0241KCN	\$15.63	6.7	.2638	107	63	0671KCN	\$39.00	11.0	.4331	151	94	1101KCN	\$74.53
2.5	.0984	62	30	0251KCN	\$13.40	6.8	.2677	113	69	0681KCN	\$39.00	11.1	.4370	151	94	1111KCN	\$96.47
2.6	.1024	62	30	0261KCN	\$15.00	6.9	.2717	113	69	0691KCN	\$39.00	11.2	.4409	151	94	1121KCN	\$96.47
2.7	.1063	65	33	0271KCN	\$15.00	7.0	.2756	113	69	0701KCN	\$36.87	11.3	.4449	151	94	1131KCN	\$96.47
2.8	.1102	65	33	0281KCN	\$15.00	7.1	.2795	113	69	0711KCN	\$40.37	11.4	.4488	151	94	1141KCN	\$96.47
2.9	.1142	65	33	0291KCN	\$15.00	7.2	.2835	113	69	0721KCN	\$40.37	11.5	.4528	151	94	1151KCN	\$88.33
3.0	.1181	65	33	0301KCN	\$12.43	7.3	.2874	113	69	0731KCN	\$40.37	11.6	.4567	151	94	1161KCN	\$104.33
3.1	.1220	68	36	0311KCN	\$15.63	7.4	.2913	113	69	0741KCN	\$40.37	11.7	.4606	151	94	1171KCN	\$104.33
3.2	.1260	68	36	0321KCN	\$15.63	7.5	.2953	113	69	0751KCN	\$40.37	11.8	.4646	151	94	1181KCN	\$104.33
3.3	.1299	68	36	0331KCN	\$15.63	7.6	.2992	119	75	0761KCN	\$45.23	11.9	.4685	158	101	1191KCN	\$104.33
3.4	.1339	71	39	0341KCN	\$15.63	7.7	.3031	119	75	0771KCN	\$45.23	12.0	.4724	158	101	1201KCN	\$89.43
3.5	.1378	71	39	0351KCN	\$15.63	7.8	.3071	119	75	0781KCN	\$45.23	12.1	.4764	158	101	1211KCN	\$113.53
3.6	.1417	71	39	0361KCN	\$18.67	7.9	.3110	119	75	0791KCN	\$45.23	12.2	.4803	158	101	1221KCN	\$113.53
3.7	.1457	71	39	0371KCN	\$18.67	8.0	.3150	119	75	0801KCN	\$42.53	12.3	.4843	158	101	1231KCN	\$113.53
3.8	.1496	75	43	0381KCN	\$16.80	8.1	.3189	125	75	0811KCN	\$49.87	12.4	.4882	158	101	1241KCN	\$113.53
3.9	.1535	75	43	0391KCN	\$18.67	8.2	.3228	125	75	0821KCN	\$49.87	12.5	.4921	158	101	1251KCN	\$104.60
4.0	.1575	75	43	0401KCN	\$16.80	8.3	.3268	125	75	0831KCN	\$49.87	12.6	.4961	158	101	1261KCN	\$120.30
4.1	.1614	87	43	0411KCN	\$22.37	8.4	.3307	125	75	0841KCN	\$49.87	12.7	.5000	158	101	1271KCN	\$120.30
4.2	.1654	87	43	0421KCN	\$20.30	8.5	.3346	125	75	0851KCN	\$45.23	12.8	.5039	158	101	1281KCN	\$120.30
4.3	.1693	91	47	0431KCN	\$22.37	8.6	.3386	131	81	0861KCN	\$45.23	12.9	.5079	158	101	1291KCN	\$120.30
4.4	.1732	91	47	0441KCN	\$22.37	8.7	.3425	131	81	0871KCN	\$55.83	13.0	.5118	158	101	1301KCN	\$107.03
4.5	.1772	91	47	0451KCN	\$20.30	8.8	.3465	131	81	0881KCN	\$55.83	13.5	.5315	166	106	1351KCN	\$131.00
4.6	.1811	91	47	0461KCN	\$26.13	8.9	.3504	131	81	0891KCN	\$55.83	14.0	.5512	166	106	1401KCN	\$131.00
4.7	.1850	91	47	0471KCN	\$26.13	9.0	.3543	131	81	0901KCN	\$46.60	14.1	.5551	169	109	1411KCN	\$173.67
4.8	.1890	96	52	0481KCN	\$26.13	9.1	.3583	131	81	0911KCN	\$62.30	14.5	.5709	169	109	1451KCN	\$157.93
4.9	.1929	96	52	0491KCN	\$26.13	9.2	.3622	131	81	0921KCN	\$62.30	15.0	.5906	169	109	1501KCN	\$157.93
5.0	.1969	96	52	0501KCN	\$23.73	9.3	.3661	131	81	0931KCN	\$62.30	15.5	.6102	172	112	1551KCN	\$189.33
5.1	.2008	96	52	0511KCN	\$23.73	9.4	.3701	131	81	0941KCN	\$62.30	15.6	.6141	172	112	1561KCN	\$208.47
5.2	.2047	96	52	0521KCN	\$27.07	9.5	.3740	131	81	0951KCN	\$57.17	16.0	.6299	172	112	1601KCN	\$189.33
5.3	.2087	96	52	0531KCN	\$30.33	9.6	.3780	137	87	0961KCN	\$70.17	16.5	.6496	181	115	1651KCN	\$220.03
5.4	.2126	101	57	0541KCN	\$30.33	9.7	.3819	137	87	0971KCN	\$70.17	17.0	.6693	181	115	1701KCN	\$220.03
5.5	.2165	101	57	0551KCN	\$27.07	9.8	.3858	137	87	0981KCN	\$70.17	17.5	.6890	184	118	1751KCN	\$269.80
5.6	.2205	101	57	0561KCN	\$34.70	9.9	.3898	137	87	0991KCN	\$70.17	17.6	.6929	184	118	1761KCN	\$296.77
5.7	.2244	101	57	0571KCN	\$34.70	10.0	.3937	137	87	1001KCN	\$59.33	18.0	.7087	184	118	1801KCN	\$269.80
5.8	.2283	101	57	0581KCN	\$34.70	10.1	.3976	144	87	1011KCN	\$78.30	18.5	.7283	188	122	1851KCN	\$287.70
5.9	.2323	101	57	0591KCN	\$34.70	10.2	.4016	144	87	1021KCN	\$78.30	19.0	.7480	188	122	1901KCN	\$287.70
6.0	.2362	101	57	0601KCN	\$31.17	10.3	.4055	144	87	1031KCN	\$78.30	19.5	.7677	191	125	1951KCN	\$318.83
6.1	.2402	107	63	0611KCN	\$38.77	10.4	.4094	144	87	1041KCN	\$78.30	19.6	.7716	191	125	1961KCN	\$390.50
6.2	.2441	107	63	0621KCN	\$38.77	10.5	.4134	144	87	1051KCN	\$72.10	20.0	.7874	191	125	2001KCN	\$355.03

INDIVIDUALLY PACKAGED

CONVERSION CHART

Surface Feet Per Minute (SFM) to Revolutions Per Minute (RPM)

SFM	DIAMETER OF TOOL														
	1/16 .0625	3/32 .0937	1/8 .1250	5/32 .1562	3/16 .1875	7/32 .2187	1/4 .2500	9/32 .2812	5/16 .3125	11/32 .3437	3/8 .3750	13/32 .4062	7/16 .4375	15/32 .4687	1/2 .5000
	RPM														
50	3056	2038	1528	1223	1019	873	764	679	611	556	509	469	437	407	382
60	3668	2446	1834	1467	1222	1048	917	815	733	667	611	563	524	489	459
70	4280	2854	2140	1712	1426	1222	1070	951	856	778	713	656	611	570	535
80	4888	3261	2444	1956	1630	1397	1222	1087	978	889	815	752	699	652	611
90	5504	3669	2752	2201	1833	1572	1376	1222	1100	1000	916	844	786	733	688
100	6112	4077	3056	2446	2037	1746	1528	1358	1222	1111	1018	938	874	815	764
120	7336	4892	3668	2935	2445	2096	1834	1630	1466	1334	1222	1125	1049	978	917
140	8556	5707	4278	3424	2852	2445	2139	1902	1711	1556	1425	1313	1224	1141	1070
160	9780	6523	4890	3913	3259	2794	2445	2173	1955	1778	1629	1500	1398	1253	1222
180	11000	7337	5500	4402	3667	3144	2750	2445	2200	2000	1832	1687	1573	1467	1375
200	12224	8153	6112	4891	4074	3493	3056	2717	2444	2233	2036	1875	1748	1630	1528
225	13753	9172	6874	5503	4583	3929	3438	3056	2750	2500	2292	2110	1964	1834	1719
250	15281	10192	7638	6114	5093	4366	3820	3396	3056	2778	2546	2344	2182	2037	1910
275	16808	11211	8402	6725	5602	4803	4202	3735	3362	3056	2801	2579	2401	2241	2101
300	18337	12230	9166	7336	6111	5239	4584	4075	3667	3334	3056	2813	2619	2445	2292
325	19866	13249	9930	7948	6620	5676	4966	4415	3973	3612	3310	3048	2837	2649	2483
350	21394	14268	10694	8560	7130	6112	5348	4754	4278	3889	3565	3282	3056	2852	2675
375	22922	15288	11457	9171	7639	6549	5730	5094	4584	4168	3820	3517	3274	3056	2866
400	24450	16307	12221	9782	8148	6986	6112	5433	4889	4445	4074	3751	3492	3260	3057
425	25978	17326	12985	10394	8657	7422	6493	5773	5195	4723	4329	3985	3710	3463	3248
450	27506	18345	13749	11005	9167	7859	6875	6112	5501	5001	4584	4220	3929	3667	3439
475	29034	19364	14513	11617	9676	8295	7257	6452	5806	5278	4838	4454	4147	3871	3629
500	30562	20383	15277	12228	10185	8732	7639	6791	6112	5557	5093	4689	4365	4075	3821
525	32090	21402	16040	12839	10694	9169	8021	7131	6417	5835	5347	4923	4584	4278	4011
550	33619	22422	16804	13451	11204	9506	8403	7471	6723	6112	5602	5158	4802	4482	4203
575	35147	23441	17568	14062	11713	10042	8785	7810	7028	6390	5857	5392	5020	4686	4393
600	36675	24460	18332	14674	12222	10478	9167	8150	7334	6668	6111	5626	5238	4890	4584
625	38203	25479	19096	15285	12732	10915	9549	8490	7640	6945	6366	5861	5457	5093	4775
650	39731	26498	19858	15896	13241	11352	9931	8829	7945	7224	6620	6095	5675	5297	4966
675	41259	27517	20623	16508	13750	11788	10313	9168	8251	7502	6875	6330	5893	5501	5157
700	42787	28536	21387	17119	14259	12225	10695	9508	8556	7779	7130	6564	6111	5705	5348
750	45844	30575	22915	18342	15278	13098	11459	10187	9168	8335	7639	7033	6548	6112	5730

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