



OSG's SOMTA Brand Lineup

Vol 1

# SOMTA

Value Tooling for Drilling, Threading, and Milling



# Icon Descriptions









## Tool Materials

<b>CBN</b> CBN	<b>PCD</b> PCD	<b>HSS-Co5</b> HSS-Co5
<b>HSSE</b> High Vanadium HSS	<b>HSS-Co</b> Cobalt HSS	<b>HSSE V3</b> HSS V3
<b>CARBIDE</b> Tungsten Carbide	<b>HSS</b> HSS	<b>VC10</b> Powder Metallurgy HSS
<b>CERMET</b> CERMET	<b>HSS-Co8</b> HSS-Co8	<b>XPM</b> High Grade Powder Metallurgy HSS

## Surface Treatment

<b>BR</b> Bright	<b>N</b> Nitride Coating	<b>DLC</b> DLC Coating
<b>EXO</b> Multi-Layer TiAlN Coating	<b>TiCN</b> TiCN Coating	<b>WD1</b> WD1 Coating
<b>TiAlN</b> TiAlN Coating	<b>WXS</b> WXS® Coating	<b>HR</b> HR Coating
<b>WXL</b> WXL® Coating	<b>V</b> OSG Special Multi-Layer TiCN Coating	<b>EgiAs</b> EgiAs Coating
<b>S/O</b> Steam Oxide Coating	<b>DIA</b> OSG Patented Diamond Coating	<b>DUR</b> Duarise Coating
<b>SS</b> Super Smooth	<b>N S/O</b> Nitride/Steam Oxide Coating	
<b>CrN</b> CrN Coating	<b>TiN</b> TiN Coating	

## Tool Dimensions

<b>EXTRA LONG</b> Extra Long Length	<b>STUB</b> Stub Length	 Coolant-Through
<b>LONG</b> Long Length	 Center Cutting	 Straight Shank
<b>JOBBERS</b> Jobbers Length	 Non-Center Cutting	 Taper Shank
<b>MED</b> Medium Length	 Radius Tolerance	 Helix Angle
<b>REG</b> Regular Length	 Milling Diameter Tolerance	

## Types

<b>TYPE W</b> For Soft Materials	<b>TYPE VA</b> For Steels and Stainless Steels	<b>TYPE GG</b> For Cast Iron	<b>TYPE N</b> Standard
<b>TYPE H</b> For Hard Materials	<b>TYPE UNI</b> For Universal Use	<b>TYPE FS</b> Parabolic Flute	

## Other Icons

 Speeds & Feeds	 Shrink Fit	 New	 New Sizes
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## DRILLING

List	Product	Inch/Metric	Material	Coating	Size Range	Features	Product Page
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### DRILLS

0CS-SO		"Inch/ Metric"	Carbide	TiAIN	6mm ~ 14mm	Coolant-Through, Stub Length	8
0CJ-SO		"Inch/ Metric"	Carbide	TiAIN	6mm ~ 14mm	Coolant-Through, Jobbers Length	9
01S-SO		"Inch/ Metric"	Carbide	TiAIN	1mm ~ 14mm	Stub Length	10
01J-SO		"Inch/ Metric"	Carbide	TiAIN	1mm ~ 14mm	Jobbers Length	11
163-SO		"Inch/ Metric"	HSS-Co5	Bright / TiAIN	1mm ~ 14mm	UDL, Stub Length	12-16
164-SO		"Inch/ Metric"	HSS-Co5	Bright / TiAIN	1mm ~ 15.88mm	UDL, Jobbers Length	17-21
110-SO		"Inch/ Metric"	HSS-Co5	Bright	1mm ~ 12.7mm	UDL, Long Length	22-25
1R5-SO		"Inch/ Metric"	HSS-Co5	TiAIN	1mm ~ 13mm	RED BAND, UDS, Jobbers Length	26-28
1BB-SO		"Inch/ Metric"	HSS-Co5	TiAIN	1mm ~ 13mm	BLUE BAND, RF, Jobbers Length	29-31
1AQ-SO		"Inch/ Metric"	HSS	Bright	0.9mm ~ 13mm	YELLOW BAND, Quick Spiral Jobbers Length	32-35
1W6-SO		"Inch/ Metric"	HSS-Co5	TiAIN	1.98mm ~ 12.7mm	WHITE BAND, UDC, Jobbers Length	36-37
1G7-SO		"Inch/ Metric"	HSS-Co5	Tin	1mm ~ 13mm	GREEN BAND, NDX, Jobbers Length	38-40
101-SO, 102-SO		"Inch/ Metric"	HSS	S/O	0.3mm ~ 20mm	Straight Shank, Jobbers Length	41-45
1X6-SO		"Inch/ Metric"	HSS	TiN	1mm ~ 15.88mm	X-Ratio Split Point, Straight Shank, Jobbers Length	46-48

### CENTER DRILLS

1NA-SO		"Inch/ Metric"	HSS	Bright	1.19mm ~ 6.35mm	Center Drills	49
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### REAMERS

751-SO, 752-SO		"Inch/ Metric"	HSS-Co5	Bright	2mm ~ 20mm	Parallel Shank Machine Chucking Reamers	50-51
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# Threading Index









## THREADING

List	Product	Inch/Metric	Material	Coating	Size Range	Features	Product Page
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### SPIRAL FLUTED TAPS

5BA-SO, 5BL-SO		Inch	HSSE V3	TiAIN	No. 4 ~ 1, 1/4	RED BAND, Modified Bottom (2P-3P)	60-61
5EA-SO, 5EL-SO		Metric	HSSE V3	TiAIN	M3 ~ M24	RED BAND, Modified Bottom (2P-3P)	62
5BB-SO, 5BM-SO		Inch	HSSE V3	TiAIN	No. 4 ~ 1, 1/4	BLUE BAND, Modified Bottom (2P-3P)	63-64
5EB-SO, 5EM-SO		Metric	HSSE V3	TiAIN	M3 ~ M24	BLUE BAND, Modified Bottom (2P-3P)	65
5BC-SO, 5BN-SO		Inch	HSSE V3	Bright	No. 4 ~ 1, 1/4	YELLOW BAND, Modified Bottom (2P-3P)	66-67
5EC-SO, 5EN-SO		Metric	HSSE V3	Bright	M3 ~ M24	YELLOW BAND, Modified Bottom (2P-3P)	68
5BD-SO, 5BP-SO		Inch	HSSE V3	TiAIN	No. 4 ~ 1, 1/4	WHITE BAND, Modified Bottom (2P-3P)	69-70
5ED-SO, 5EP-SO		Metric	HSSE V3	TiAIN	M3 ~ M24	WHITE BAND, Modified Bottom (2P-3P)	71
5BE-SO, 5BK-SO		Inch	HSSE V3	TiN	No. 4 ~ 1, 1/4	GREEN BAND, Modified Bottom (2P-3P)	72-73
5EV-SO		Metric	HSSE V3	TiN	M3 ~ M24	GREEN BAND, 15° Helix, Modified Bottom (2P-3P)	74
5EW-SO		Metric	HSSE V3	TiN	M3 ~ M24	GREEN BAND, 35° Helix, Modified Bottom (2P-3P)	75




### SPIRAL POINTED TAPS

5BF-SO, 5BS-SO		Inch	HSSE V3	TiAIN	No. 4 ~ 1, 1/4	RED BAND, Plug (4P-5P)	76-77
5EF-SO, 5ES-SO		Metric	HSSE V3	TiAIN	M3 ~ M24	RED BAND, Plug (4P-5P)	78
5BG-SO, 5BT-SO		Inch	HSSE V3	TiAIN	No. 4 ~ 1, 1/4	BLUE BAND, Plug (4P-5P)	79-80
5EG-SO, 5ET-SO		Metric	HSSE V3	TiAIN	M3 ~ M24	BLUE BAND, Plug (4P-5P)	81
5BH-SO, 5BU-SO		Inch	HSSE V3	Bright	No. 4 ~ 1, 1/4	YELLOW BAND, Plug (4P-5P)	82-83
5EH-SO, 5EU-SO		Metric	HSSE V3	Bright	M3 ~ M24	YELLOW BAND, Plug (4P-5P)	84
5BJ-SO, 5BV-SO		Inch	HSSE V3	TiN	No. 4 ~ 1, 1/4	GREEN BAND, Plug (4P-5P)	85-86
5EX-SO		Metric	HSSE V3	TiN	M3 ~ M24	GREEN BAND, Plug (4P-5P)	87







## MILLING

List	Product	Inch/ Metric	No. of Flutes	Length of Cut	Material	Coating	Size Range	Features	Product Page
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### VARICUT

04V-SO		Inch/ Metric	4	Stub	Carbide	TiAlN	3/16 ~ 3/4, 5mm~20mm	Varicut	90-91
03V-SO		Inch/ Metric	4	Regular	Carbide	TiAlN	1/4 ~ 1, 5mm~20mm	Varicut	92-93
05V-SO		Inch/ Metric	5	Regular	Carbide	TiAlN	3/16 ~ 3/4, 5mm ~ 20mm	Varicut	94-95

### CARBIDE

03A-SO		Metric	2	Regular	Carbide	TiAlN	1mm ~ 20mm	Square	96
03K-SO		Metric	4	Regular	Carbide	TiAlN	1mm ~ 20mm	Square	97
03M-SO		Metric	2	Regular	Carbide	TiAlN	1mm ~ 20mm	Ball Nose	98
03P-SO		Metric	4	Regular	Carbide	TiAlN	1mm ~ 20mm	Ball Nose	99
03E-SO		Metric	4	Regular	Carbide	TiAlN	6mm ~ 20mm	Rougher	100
03F-SO		Metric	4	Regular	Carbide	TiAlN	6mm ~ 20mm	Rougher	101

### HSS CO

310-SO		Metric	2	Regular	HSS Co8	TiAlN	2mm ~ 25mm	Square	102
314-SO		Metric	4, 6	Regular	HSS Co8	TiAlN	3mm ~ 25mm	Square	103
312-SO		Metric	2	Regular	HSS Co8	TiAlN	2mm ~ 25mm	Ball Nose	104



List	Item	Brand	Inch/ Metric	Material	Coating	Size Range	Features	Product Page	Tech Page
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## DRILLS

0CS-SO		SOMTA	"Inch/ Metric"	Carbide	TiAlN	6mm ~ 14mm	Coolant-Through, Stub Length	8	52
0CJ-SO		SOMTA	"Inch/ Metric"	Carbide	TiAlN	6mm ~ 14mm	Coolant-Through, Jobbers Length	9	52
01S-SO		SOMTA	"Inch/ Metric"	Carbide	TiAlN	1mm ~ 14mm	Stub Length	10	52
01J-SO		SOMTA	"Inch/ Metric"	Carbide	TiAlN	1mm ~ 14mm	Jobbers Length	11	52
163-SO		SOMTA	"Inch/ Metric"	HSS-Co5	Bright / TiAlN	1mm ~ 14mm	UDL, Stub Length	12-16	53
164-SO		SOMTA	"Inch/ Metric"	HSS-Co5	Bright / TiAlN	1mm ~ 15.88mm	UDL, Jobbers Length	17-21	53
110-SO		SOMTA	"Inch/ Metric"	HSS-Co5	Bright	1mm ~ 12.7mm	UDL, Long Length	22-25	53
1R5-SO		SOMTA	"Inch/ Metric"	HSS-Co5	TiAlN	1mm ~ 13mm	Red Band UDS, Jobbers Length	26-28	54
1BB-SO		SOMTA	"Inch/ Metric"	HSS-Co5	TiAlN	1mm ~ 13mm	Blue Band RF, Jobbers Length	29-31	54
1AQ-SO		SOMTA	"Inch/ Metric"	HSS	Bright	0.9mm ~ 13mm	Yellow Band, Quick Spiral Jobbers Length	32-35	54
1W6-SO		SOMTA	"Inch/ Metric"	HSS-Co5	TiAlN	1.98mm ~ 12.7mm	White Band UDC, Jobbers Length	36-37	54
1G7-SO		SOMTA	"Inch/ Metric"	HSS-Co5	Tin	1mm ~ 13mm	Green Band NDX, Jobbers Length	38-40	54
101-SO, 102-SO		SOMTA	"Inch/ Metric"	HSS	S/O	0.3mm ~ 20mm	Straight Shank, Jobbers Length	41-45	55
1X6-SO		SOMTA	"Inch/ Metric"	HSS	TiN	1mm ~ 15.88mm	X-Ratio Split Point, Straight Shank, Jobbers Length	46-48	55

## CENTER DRILLS

1NA-SO		SOMTA	"Inch/ Metric"	HSS	Bright	1.19mm ~ 6.35mm	Center Drills	49	56
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## REAMERS

751-SO, 752-SO		SOMTA	"Inch/ Metric"	HSS-Co5	Bright	2mm ~ 20mm	Parallel Shank Machine Chucking Reamers	50-51	57
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List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC

## DRILLS

0CS-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
0CJ-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
01S-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
01J-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
163-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
164-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
110-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
1R5-SO	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
1BB-SO						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>				
1AQ-SO	<input type="checkbox"/>									<input checked="" type="checkbox"/>	<input type="checkbox"/>						
1W6-SO									<input checked="" type="checkbox"/>								
1G7-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>													
101-SO, 102-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
1X6-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

## CENTER DRILLS

1NA-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
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## REAMERS

751-SO, 752-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>				
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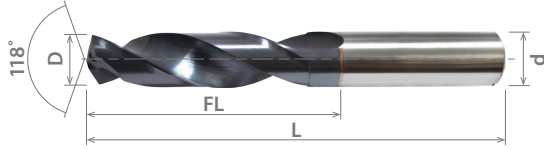
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# List OCS-SO

Coolant-Through, Stub Length Drills

<b>NEW</b>	<b>SPEED FEED</b> P52	<b>CARBIDE</b>	<b>TYPE N</b>	<b>TiAIN</b>	<b>STUB</b>		
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Cutting Diameter Tolerance (h8)		
Size	mm	inch
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤14	+0 / -0.027	+0 / -0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
OCS0600F-SO	-	-	-	6.00	0.2362	28	66	6
OCS0630F-SO	-	-	-	6.30	0.2480	34	79	8
OCS0650F-SO	-	-	-	6.50	0.2559			
OCS0680F-SO	-	-	-	6.80	0.2677	41	89	10
OCS0700F-SO	-	-	-	7.00	0.2756			
OCS0750F-SO	-	-	-	7.50	0.2953	47	102	12
OCS0800F-SO	-	-	-	8.00	0.3150			
OCS0850F-SO	-	-	-	8.50	0.3346	55	107	14
OCS0900F-SO	-	-	-	9.00	0.3543			
OCS0950F-SO	-	-	-	9.50	0.3740	60	107	14
OCS1000F-SO	-	-	-	10.00	0.3937			
OCS1020F-SO	-	-	-	10.20	0.4016	60	107	14
OCS1050F-SO	-	-	-	10.50	0.4134			
OCS1100F-SO	-	-	-	11.00	0.4331	60	107	14
OCS1150F-SO	-	-	-	11.50	0.4528			
OCS1200F-SO	-	-	-	12.00	0.4724	60	107	14
OCS1250F-SO	-	-	-	12.50	0.4921			
OCS1270F-SO	1/2	-	-	12.70	0.5000	60	107	14
OCS1300F-SO	-	-	-	13.00	0.5118			
OCS1350F-SO	-	-	-	13.50	0.5315	60	107	14
OCS1400F-SO	-	-	-	14.00	0.5512			

Packed: 1 pc.  
Available TiAIN coating only.



Work Material																	
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
OCS-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

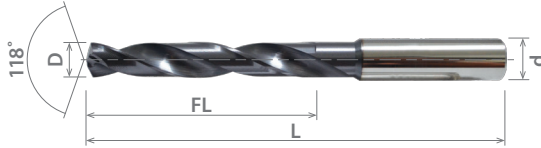
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# List 0CJ-SO

Coolant-Through, Jobber Length Drills



<b>NEW</b>	<b>SPEED FEED</b> P52	<b>CARBIDE</b>	<b>TYPE N</b>	<b>TiAlN</b>	<b>JOBBERS</b>		<b>30°</b>
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Cutting Diameter Tolerance (h8)		
Size	mm	inch
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤14	+0 / -0.027	+0 / -0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
0CJ0600F-SO	-	-	-	6.00	0.2362	44	82	6
0CJ0630F-SO	-	-	-	6.30	0.2480			
0CJ0650F-SO	-	-	-	6.50	0.2559			
0CJ0680F-SO	-	-	-	6.80	0.2677			
0CJ0700F-SO	-	-	-	7.00	0.2756			
0CJ0750F-SO	-	-	-	7.50	0.2953	53	91	8
0CJ0800F-SO	-	-	-	8.00	0.3150			
0CJ0850F-SO	-	-	-	8.50	0.3346			
0CJ0900F-SO	-	-	-	9.00	0.3543			
0CJ0950F-SO	-	-	-	9.50	0.3740			
0CJ1000F-SO	-	-	-	10.00	0.3937	61	103	10
0CJ1020F-SO	-	-	-	10.20	0.4016			
0CJ1050F-SO	-	-	-	10.50	0.4134			
0CJ1100F-SO	-	-	-	11.00	0.4330			
0CJ1150F-SO	-	-	-	11.50	0.4528			
0CJ1200F-SO	-	-	-	12.00	0.4724	71	118	12
0CJ1250F-SO	-	-	-	12.50	0.4921			
0CJ1270F-SO	1/2	-	-	12.70	0.5000			
0CJ1300F-SO	-	-	-	13.00	0.5118			
0CJ1350F-SO	-	-	-	13.50	0.5315			
0CJ1400F-SO	-	-	-	14.00	0.5512	77	124	14

Packed: 1 pc.  
Available TiAlN coating only.



Work Material																	
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
0CJ-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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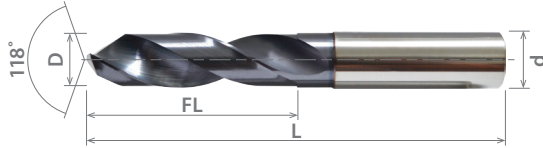




### List 01S-SO

<b>NEW</b>	<b>SPEED FEED</b> P52	<b>CARBIDE</b>	<b>TYPE N</b>	<b>TiAlN</b>	<b>STUB</b>	<b>30°</b>
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Stub Length Drills



Cutting Diameter Tolerance (h8)		
Size	mm	inch
1 ≤ D ≤ 3	+0 / -0.014	+0 / -0.0006
3 < D ≤ 6	+0 / -0.018	+0 / -0.0007
6 < D ≤ 10	+0 / -0.022	+0 / -0.0009
10 < D ≤ 14	+0 / -0.027	+0 / -0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
01S0100F-SO	-	-	-	1.00	0.0394	6	26	1.0
01S0150F-SO	-	-	-	1.50	0.0591	9	32	1.5
01S0200F-SO	-	-	-	2.00	0.0787	12	38	2.0
01S0250F-SO	-	-	-	2.50	0.0984	14	43	2.5
01S0300F-SO	-	-	-	3.00	0.1181	20	62	6.0
01S0330F-SO	-	-	-	3.30	0.1299			
01S0350F-SO	-	-	-	3.50	0.1378	24	66	8.0
01S0400F-SO	-	-	-	4.00	0.1575			
01S0420F-SO	-	-	-	4.20	0.1654	28	79	10.0
01S0450F-SO	-	16	-	4.50	0.1772			
01S0500F-SO	-	-	-	5.00	0.1969	34	102	12.0
01S0550F-SO	-	-	-	5.50	0.2165			
01S0600F-SO	-	-	-	6.00	0.2362	41	107	14.0
01S0630F-SO	-	-	-	6.30	0.2480			
01S0650F-SO	-	-	-	6.50	0.2559	47	120	16.0
01S0680F-SO	-	-	-	6.80	0.2677			
01S0700F-SO	-	-	-	7.00	0.2756	55	125	18.0
01S0750F-SO	-	-	-	7.50	0.2953			
01S0800F-SO	-	-	-	8.00	0.3150	60	130	20.0
01S0850F-SO	-	-	-	8.50	0.3346			
01S0900F-SO	-	-	-	9.00	0.3543	66	135	22.0
01S0950F-SO	-	-	-	9.50	0.3740			
01S1000F-SO	-	-	-	10.00	0.3937	72	140	24.0
01S1020F-SO	-	-	-	10.20	0.4016			
01S1050F-SO	-	-	-	10.50	0.4134	78	145	26.0
01S1100F-SO	-	-	-	11.00	0.4331			
01S1150F-SO	-	-	-	11.50	0.4528	84	150	28.0
01S1200F-SO	-	-	-	12.00	0.4724			
01S1250F-SO	-	-	-	12.50	0.4921	90	155	30.0
01S1270F-SO	1/2	-	-	12.70	0.5000			
01S1300F-SO	-	-	-	13.00	0.5118	96	160	32.0
01S1350F-SO	-	-	-	13.50	0.5315			
01S1400F-SO	-	-	-	14.00	0.5512	102	165	34.0

Packed: 1 pc.  
Available TiAlN coating only.



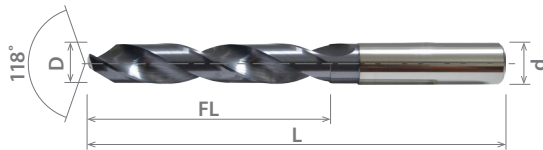
Work Material																			
List No.	P					M			K	N		S	H						
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels					
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC		
01S-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

good  best



# List 01J-SO

Jobber Length Drills



<b>NEW</b>	<b>SPEED FEED</b> P52	<b>CARBIDE</b>	<b>TYPE N</b>	<b>TiAIN</b>	<b>JOBBER</b>	<b>30°</b>
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Cutting Diameter Tolerance (h8)		
Size	mm	inch
1≤D≤3	+0/-0.014	+0/-0.0006
3<D≤6	+0/-0.018	+0/-0.0007
6<D≤10	+0/-0.022	+0/-0.0009
10<D≤14	+0/-0.027	+0/-0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
01J0100F-SO	-	-	-	1.00	0.0394	8	55	4
01J0150F-SO	-	-	-	1.50	0.0591	12		
01J0200F-SO	-	-	-	2.00	0.0787	21	57	4
01J0250F-SO	-	-	-	2.50	0.0984			
01J0300F-SO	-	-	-	3.00	0.1181	28	66	6
01J0330F-SO	-	-	-	3.30	0.1299			
01J0350F-SO	-	-	-	3.50	0.1378	36	74	6
01J0400F-SO	-	-	-	4.00	0.1575			
01J0420F-SO	-	-	-	4.20	0.1654	44	82	8
01J0450F-SO	-	16	-	4.50	0.1772			
01J0500F-SO	-	-	-	5.00	0.1969	53	91	8
01J0550F-SO	-	-	-	5.50	0.2165			
01J0600F-SO	-	-	-	6.00	0.2362	61	103	10
01J0630F-SO	-	-	-	6.30	0.2480			
01J0650F-SO	-	-	-	6.50	0.2559	71	118	12
01J0680F-SO	-	-	-	6.80	0.2677			
01J0700F-SO	-	-	-	7.00	0.2756	77	124	14
01J0750F-SO	-	-	-	7.50	0.2953			
01J0800F-SO	-	-	-	8.00	0.3150	8	91	8
01J0850F-SO	-	-	-	8.50	0.3346			
01J0900F-SO	-	-	-	9.00	0.3543	61	103	10
01J0950F-SO	-	-	-	9.50	0.3740			
01J1000F-SO	-	-	-	10.00	0.3937	71	118	12
01J1020F-SO	-	-	-	10.20	0.4016			
01J1050F-SO	-	-	-	10.50	0.4134	77	124	14
01J1100F-SO	-	-	-	11.00	0.4331			
01J1150F-SO	-	-	-	11.50	0.4528	8	91	8
01J1200F-SO	-	-	-	12.00	0.4724			
01J1250F-SO	-	-	-	12.50	0.4921	61	103	10
01J1270F-SO	1/2	-	-	12.70	0.5000			
01J1300F-SO	-	-	-	13.00	0.5118	77	124	14
01J1350F-SO	-	-	-	13.50	0.5315			
01J1400F-SO	-	-	-	14.00	0.5512			

Packed: 1 pc.  
Available TiAIN coating only.



Work Material																	
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
01J-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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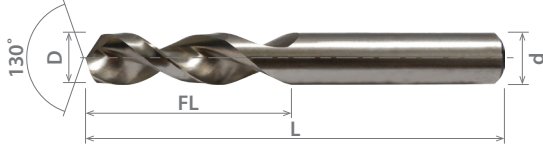




# List 163-SO

<b>NEW</b>	<b>SPEED FEED</b> P53	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>TiAIN</b>	<b>STUB</b>	<b>40°</b>
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UDL Stub Drills



Cutting Diameter Tolerance (h8)		
Size	mm	inch
1 ≤ D ≤ 3	+0 / -0.014	+0 / -0.0006
3 < D ≤ 6	+0 / -0.018	+0 / -0.0007
6 < D ≤ 10	+0 / -0.022	+0 / -0.0009
10 < D ≤ 14	+0 / -0.027	+0 / -0.0011

Bright EDP Number	TiAIN EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
		Fractional Size	Wire Gage	Letter Size	mm	Inch			
1630100-SO	1630100A-SO	-	-	-	1.00	0.0394	6	26	1.00
1630102-SO	1630102A-SO	-	60	-	1.02	0.0402			1.02
1630104-SO	1630104A-SO	-	59	-	1.04	0.0409	7	28	1.04
1630107-SO	1630107A-SO	-	58	-	1.07	0.0421			1.07
1630109-SO	1630109A-SO	-	57	-	1.09	0.0429	8	30	1.09
1630110-SO	1630110A-SO	-	-	-	1.10	0.0433			1.10
-	1630115A-SO	-	-	-	1.15	0.0453	9	32	1.15
1630118-SO	1630118A-SO	-	56	-	1.18	0.0465			1.18
1630119-SO	1630119A-SO	3/64	-	-	1.19	0.0469	10	34	1.19
1630120-SO	1630120A-SO	-	-	-	1.20	0.0472			1.20
1630125-SO	-	-	-	-	1.25	0.0492	11	36	1.25
1630130-SO	1630130A-SO	-	-	-	1.30	0.0512			1.30
1630132-SO	1630132A-SO	-	55	-	1.32	0.0520	12	38	1.32
1630135-SO	1630135A-SO	-	-	-	1.35	0.0531			1.35
1630139-SO	1630139A-SO	-	54	-	1.40	0.0551	13	40	1.40
1630140-SO	1630140A-SO	-	-	-	1.45	0.0571			1.45
1630145-SO	1630145A-SO	-	-	-	1.50	0.0591	14	43	1.50
1630150-SO	1630150A-SO	-	-	-	1.51	0.0594			1.51
1630152-SO	1630152A-SO	-	53	-	1.55	0.0610	11	36	1.55
1630155-SO	1630155A-SO	-	-	-	1.59	0.0626			1.59
1630159-SO	1630159A-SO	1/16	-	-	1.60	0.0630	12	38	1.60
1630160-SO	1630160A-SO	-	-	-	1.61	0.0634			1.61
1630161-SO	1630161A-SO	-	52	-	1.65	0.0650	13	40	1.65
1630165-SO	1630165A-SO	-	-	-	1.67	0.0657			1.67
1630167-SO	1630167A-SO	-	-	-	1.70	0.0669	14	43	1.70
1630169-SO	1630169A-SO	-	51	-	1.75	0.0689			1.75
1630170-SO	1630170A-SO	-	-	-	1.78	0.0701	11	36	1.78
1630175-SO	1630175A-SO	-	-	-	1.80	0.0709			1.80
1630178-SO	1630178A-SO	-	50	-	1.85	0.0728	12	38	1.85
1630180-SO	1630180A-SO	-	-	-	1.90	0.0748			1.90
1630185-SO	1630185A-SO	-	49	-	1.93	0.0760	13	40	1.93
1630190-SO	1630190A-SO	-	-	-	1.95	0.0768			1.95
1630193-SO	1630193A-SO	-	48	-	1.98	0.0780	14	43	1.98
1630195-SO	1630195A-SO	-	-	-	1.99	0.0783			1.99
1630198-SO	1630198A-SO	5/64	-	-	2.00	0.0787	11	36	2.00
1630199-SO	1630199A-SO	-	47	-	2.05	0.0807			2.05
1630200-SO	1630200A-SO	-	-	-	2.06	0.0811	12	38	2.06
1630205-SO	1630205A-SO	-	-	-	2.08	0.0819			2.08
1630206-SO	1630206A-SO	-	46	-	2.10	0.0827	13	40	2.10
1630208-SO	1630208A-SO	-	45	-	2.15	0.0846			2.15
1630210-SO	1630210A-SO	-	-	-	2.18	0.0858	14	43	2.18
1630215-SO	1630215A-SO	-	-	-	2.20	0.0866			2.20
1630218-SO	1630218A-SO	-	44	-	2.25	0.0886	11	36	2.25
1630220-SO	1630220A-SO	-	-	-	2.26	0.0890			2.26
1630225-SO	1630225A-SO	-	-	-	2.30	0.0906	12	38	2.30
1630226-SO	1630226A-SO	-	43	-	2.35	0.0925			2.35
1630230-SO	1630230A-SO	-	-	-	2.37	0.0933	13	40	2.37
1630235-SO	-	-	-	-	2.38	0.0937			2.38
1630237-SO	1630237A-SO	-	42	-	2.40	0.0945	14	43	2.40
1630238-SO	1630238A-SO	3/32	-	-	2.44	0.0961			2.44
1630240-SO	1630240A-SO	-	-	-	2.45	0.0965	11	36	2.45
1630244-SO	1630244A-SO	-	41	-	2.48	0.0976			2.48
1630245-SO	1630245A-SO	-	-	-	2.49	0.0980	12	38	2.49
-	1630248A-SO	-	-	-	2.50	0.0984			2.50
1630249-SO	1630249A-SO	-	40	-	2.53	0.0996	13	40	2.53
1630250-SO	1630250A-SO	-	-	-	2.55	0.1004			2.55
1630253-SO	1630253A-SO	-	39	-	-	-	-	-	
1630255-SO	-	-	-	-	-	-	-	-	

Packed: 1 pc.  
 EDP's listed above are stocked standard, other coatings available upon request.  
 Specify treatment at time of order.



# List 163-SO (Continued)

UDL Stub Drills

<b>NEW</b>	<b>SPEED FEED</b> P53	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>TiAIN</b>	<b>STUB</b>	<b>40°</b>
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Bright EDP Number	TiAIN EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
		Fractional Size	Wire Gage	Letter Size	mm	Inch			
1630258-SO	1630258A-SO	-	38	-	2.58	0.1016	14	43	2.58
1630260-SO	1630260A-SO	-	-	-	2.60	0.1024			2.60
1630264-SO	1630264A-SO	-	37	-	2.64	0.1039			2.64
1630270-SO	1630270A-SO	-	-	-	2.70	0.1063			2.70
1630271-SO	1630271A-SO	-	36	-	2.71	0.1067			2.71
1630275-SO	1630275A-SO	-	-	-	2.75	0.1083			2.75
1630278-SO	1630278A-SO	7/64	-	-	2.78	0.1094			2.78
1630279-SO	1630279A-SO	-	35	-	2.79	0.1098			2.79
1630280-SO	1630280A-SO	-	-	-	2.80	0.1102			2.80
1630282-SO	1630282A-SO	-	34	-	2.82	0.1110			2.82
1630285-SO	1630285A-SO	-	-	-	2.85	0.1122			2.85
1630287-SO	1630287A-SO	-	33	-	2.87	0.1130			2.87
1630290-SO	1630290A-SO	-	-	-	2.90	0.1142			2.90
1630295-SO	1630295A-SO	-	32	-	2.95	0.1161			2.95
1630300-SO	1630300A-SO	-	-	-	3.00	0.1181	3.00		
1630305-SO	1630305A-SO	-	31	-	3.05	0.1201	3.05		
1630310-SO	1630310A-SO	-	-	-	3.10	0.1220	3.10		
1630315-SO	1630315A-SO	-	-	-	3.15	0.1240	3.15		
1630318-SO	1630318A-SO	1/8	-	-	3.18	0.1252	3.18		
1630320-SO	1630320A-SO	-	-	-	3.20	0.1260	3.20		
1630322-SO	1630322A-SO	-	-	-	3.22	0.1268	3.22		
1630323-SO	1630323A-SO	-	-	-	3.23	0.1272	3.23		
1630325-SO	1630325A-SO	-	-	-	3.25	0.1280	3.25		
1630326-SO	1630326A-SO	-	30	-	3.26	0.1283	3.26		
1630330-SO	1630330A-SO	-	-	-	3.30	0.1299	3.30		
1630335-SO	1630335A-SO	-	-	-	3.35	0.1319	3.35		
1630340-SO	1630340A-SO	-	-	-	3.40	0.1339	3.40		
1630345-SO	1630345A-SO	-	29	-	3.45	0.1358	3.45		
1630350-SO	1630350A-SO	-	-	-	3.50	0.1378	3.50		
1630357-SO	1630357A-SO	9/64	-	-	3.57	0.1406	3.57		
1630360-SO	1630360A-SO	-	-	-	3.60	0.1417	3.60		
1630366-SO	1630366A-SO	-	27	-	3.66	0.1441	3.66		
1630370-SO	1630370A-SO	-	-	-	3.70	0.1457	3.70		
1630373-SO	1630373A-SO	-	26	-	3.73	0.1469	3.73		
1630379-SO	1630379A-SO	-	25	-	3.80	0.1496	3.80		
1630380-SO	1630380A-SO	-	-	-	-	-	-		
1630386-SO	1630386A-SO	-	24	-	3.86	0.1520	3.86		
1630390-SO	1630390A-SO	-	-	-	3.90	0.1535	3.90		
1630391-SO	1630391A-SO	-	23	-	3.91	0.1539	3.91		
1630397-SO	1630397A-SO	5/32	-	-	3.97	0.1563	3.97		
1630399-SO	1630399A-SO	-	22	-	3.99	0.1571	3.99		
1630400-SO	1630400A-SO	-	-	-	4.00	0.1575	4.00		
1630404-SO	1630404A-SO	-	21	-	4.04	0.1591	4.04		
1630409-SO	1630409A-SO	-	20	-	4.09	0.1610	4.09		
1630410-SO	1630410A-SO	-	-	-	4.10	0.1614	4.10		
1630420-SO	1630420A-SO	-	-	-	4.20	0.1654	4.20		
1630422-SO	1630422A-SO	-	19	-	4.22	0.1661	4.22		
1630425-SO	1630425A-SO	-	-	-	4.25	0.1673	4.25		
1630430-SO	1630430A-SO	-	-	-	4.30	0.1693	4.30		
1630431-SO	1630431A-SO	-	18	-	4.31	0.1697	4.31		
1630437-SO	1630437A-SO	11/64	-	-	4.37	0.1720	4.37		
1630439-SO	1630439A-SO	-	17	-	4.39	0.1728	4.39		
1630440-SO	1630440A-SO	-	-	-	4.40	0.1732	4.40		
-	1630445A-SO	-	-	-	4.45	0.1752	4.45		
1630449-SO	1630449A-SO	-	16	-	4.50	0.1772	4.50		

Packed: 1 pc.  
EDP's listed above are stocked standard, other coatings available upon request.  
Specify treatment at time of order.

**continued on next page**

List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
163-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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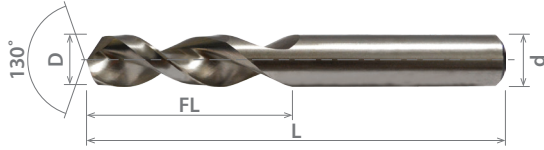




### List 163-SO (Continued)

<b>NEW</b>	<b>SPEED FEED</b> P53	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>TiAIN</b>	<b>STUB</b>	<b>40°</b>
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UDL Stub Drills



Cutting Diameter Tolerance (h8)		
Size	mm	inch
1≤D≤3	+0 / -0.014	+0 / -0.0006
3<D≤6	+0 / -0.018	+0 / -0.0007
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤14	+0 / -0.027	+0 / -0.0011

Bright EDP Number	TiAIN EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
		Fractional Size	Wire Gage	Letter Size	mm	Inch			
1630450-SO	1630450A-SO	-	-	-	4.50	0.1772	24	58	4.50
1630457-SO	1630457A-SO	-	15	-	4.57	0.1799			4.57
1630460-SO	1630460A-SO	-	-	-	4.60	0.1811			4.60
-	1630462A-SO	-	14	-	4.62	0.1819			4.62
1630469-SO	1630469A-SO	-	13	-	4.69	0.1846			4.69
1630475-SO	1630475A-SO	-	-	-	4.75	0.1870			4.75
1630476-SO	1630476A-SO	3/16	-	-	4.76	0.1874			4.76
1630479-SO	1630479A-SO	-	12	-	4.80	0.1890			4.80
1630480-SO	1630480A-SO	-	-	-	4.86	0.1913			4.86
1630485-SO	1630485A-SO	-	11	-	4.90	0.1929			4.90
1630490-SO	1630490A-SO	-	-	-	4.92	0.1937	4.92		
1630492-SO	1630492A-SO	-	10	-	4.98	0.1961	4.98		
1630498-SO	1630498A-SO	-	9	-	5.00	0.1969	5.00		
1630500-SO	1630500A-SO	-	-	-	5.05	0.1988	5.05		
1630506-SO	1630506A-SO	-	8	-	5.10	0.2008	5.10		
1630510-SO	1630510A-SO	-	-	-	5.11	0.2012	5.11		
1630511-SO	1630511A-SO	-	7	-	5.16	0.2031	5.16		
1630516-SO	1630516A-SO	13/64	-	-	5.18	0.2039	5.18		
1630518-SO	1630518A-SO	-	6	-	5.20	0.2047	5.20		
1630520-SO	1630520A-SO	-	-	-	5.22	0.2055	5.22		
1630522-SO	1630522A-SO	-	5	-	5.30	0.2087	5.30		
1630530-SO	1630530A-SO	-	-	-	5.31	0.2091	5.31		
1630532-SO	1630532A-SO	-	4	-	5.40	0.2126	5.40		
1630540-SO	1630540A-SO	-	-	-	5.41	0.2130	5.41		
1630541-SO	1630541A-SO	-	3	-	5.50	0.2165	5.50		
1630550-SO	1630550A-SO	-	-	-	5.56	0.2189	5.56		
1630556-SO	1630556A-SO	7/32	-	-	5.60	0.2205	5.60		
1630560-SO	1630560A-SO	-	-	-	5.61	0.2209	5.61		
1630561-SO	1630561A-SO	-	2	-	5.70	0.2244	5.70		
1630570-SO	1630570A-SO	-	-	-	5.75	0.2264	5.75		
1630575-SO	1630575A-SO	-	-	-	5.79	0.2280	5.79		
1630579-SO	1630579A-SO	-	1	-	5.80	0.2283	5.80		
1630580-SO	1630580A-SO	-	-	-	5.90	0.2323	5.90		
1630590-SO	1630590A-SO	-	-	-	5.94	0.2339	5.94		
1630594-SO	1630594A-SO	-	-	A	5.95	0.2343	5.95		
1630595-SO	1630595A-SO	15/64	-	-	6.00	0.2362	6.00		
1630600-SO	1630600A-SO	-	-	-	6.05	0.2382	6.05		
1630605-SO	1630605A-SO	-	-	B	6.10	0.2402	6.10		
1630610-SO	1630610A-SO	-	-	-	6.15	0.2421	6.15		
1630615-SO	1630615A-SO	-	-	C	6.20	0.2441	6.20		
1630620-SO	1630620A-SO	-	-	-	6.25	0.2461	6.25		
1630625-SO	1630625A-SO	-	-	D	6.30	0.2480	6.30		
1630630-SO	1630630A-SO	-	-	-	6.35	0.2500	6.35		
1630634-SO	1630634A-SO	-	-	E	6.40	0.2520	6.40		
1630635-SO	1630635A-SO	1/4	-	-	6.50	0.2559	6.50		
1630640-SO	1630640A-SO	-	-	-	6.53	0.2571	6.53		
1630650-SO	1630650A-SO	-	-	-	6.60	0.2598	6.60		
1630653-SO	1630653A-SO	-	-	F	6.63	0.2610	6.63		
1630660-SO	1630660A-SO	-	-	-	6.70	0.2638	6.70		
1630663-SO	1630663A-SO	-	-	G	6.76	0.2661	6.76		
1630670-SO	1630670A-SO	-	-	-	6.75	0.2657	6.75		
1630676-SO	1630676A-SO	-	-	H	6.80	0.2677	6.80		
1630677-SO	1630677A-SO	17/64	-	-	6.90	0.2717	6.90		
1630680-SO	1630680A-SO	-	-	-	6.90	0.2717	6.90		
1630690-SO	1630690A-SO	-	-	-	7.00	0.2756	7.00		
1630691-SO	1630691A-SO	-	-	I	7.04	0.2772	7.04		
1630700-SO	1630700A-SO	-	-	-					
1630704-SO	1630704A-SO	-	-	J					

Packed: 1 pc.  
 EDP's listed above are stocked standard, other coatings available upon request.  
 Specify treatment at time of order.



# List 163-SO (Continued)

UDL Stub Drills

<b>NEW</b>	<b>SPEED FEED</b> P53	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>TiAIN</b>	<b>STUB</b>	<b>40°</b>
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Bright EDP Number	TiAIN EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
		Fractional Size	Wire Gage	Letter Size	mm	Inch			
1630710-SO	1630710A-SO	-	-	-	7.10	0.2795	34	74	7.10
1630713-SO	1630713A-SO	-	-	K	7.14	0.2811			7.14
1630714-SO	1630714A-SO	9/32	-	-	7.20	0.2835			7.20
1630720-SO	1630720A-SO	-	-	-	7.25	0.2854			7.25
-	1630725A-SO	-	-	-	7.30	0.2874			7.30
1630730-SO	1630730A-SO	-	-	-	7.37	0.2902			7.37
1630737-SO	1630737A-SO	-	-	L	7.40	0.2913			7.40
1630740-SO	1630740A-SO	-	-	-	7.49	0.2949			7.49
1630749-SO	1630749A-SO	-	-	M	7.50	0.2953			7.50
1630750-SO	1630750A-SO	-	-	-	7.54	0.2969			7.54
1630754-SO	1630754A-SO	19/64	-	-	7.60	0.2992	7.60		
1630760-SO	1630760A-SO	-	-	-	7.67	0.3020	7.67		
1630767-SO	1630767A-SO	-	-	N	7.70	0.3031	7.70		
1630770-SO	1630770A-SO	-	-	-	7.80	0.3071	7.80		
1630780-SO	1630780A-SO	-	-	-	7.90	0.3110	7.90		
1630790-SO	1630790A-SO	-	-	-	7.94	0.3126	7.94		
1630794-SO	1630794A-SO	5/16	-	-	8.00	0.3150	8.00		
1630800-SO	1630800A-SO	-	-	-	8.03	0.3161	8.03		
1630803-SO	1630803A-SO	-	-	O	8.10	0.3189	8.10		
1630810-SO	1630810A-SO	-	-	-	8.20	0.3228	8.20		
1630820-SO	1630820A-SO	-	-	P	8.30	0.3268	8.30		
1630821-SO	1630821A-SO	-	-	-	8.33	0.3280	8.33		
1630830-SO	1630830A-SO	-	-	-	8.40	0.3307	8.40		
1630833-SO	1630833A-SO	21/64	-	-	8.43	0.3319	8.43		
1630840-SO	1630840A-SO	-	-	-	8.50	0.3346	8.50		
1630843-SO	1630843A-SO	-	-	Q	8.60	0.3386	8.60		
1630850-SO	1630850A-SO	-	-	-	8.61	0.3390	8.61		
1630860-SO	1630860A-SO	-	-	-	8.70	0.3425	8.70		
1630861-SO	1630861A-SO	-	-	R	8.73	0.3437	8.73		
1630870-SO	1630870A-SO	-	-	-	8.80	0.3465	8.80		
1630873-SO	1630873A-SO	11/32	-	-	8.84	0.3480	8.84		
1630880-SO	1630880A-SO	-	-	-	8.90	0.3504	8.90		
1630884-SO	1630884A-SO	-	-	S	9.00	0.3543	9.00		
1630890-SO	1630890A-SO	-	-	-	9.09	0.3579	9.09		
1630900-SO	1630900A-SO	-	-	-	9.10	0.3583	9.10		
1630909-SO	1630909A-SO	-	-	T	9.13	0.3594	9.13		
1630910-SO	1630910A-SO	-	-	-	9.20	0.3622	9.20		
1630913-SO	1630913A-SO	23/64	-	-	9.30	0.3661	9.30		
1630920-SO	1630920A-SO	-	-	-	9.35	0.3681	9.35		
1630930-SO	1630930A-SO	-	-	-	9.40	0.3701	9.40		
1630935-SO	1630935A-SO	-	-	U	9.50	0.3740	9.50		
1630940-SO	1630940A-SO	-	-	-	9.53	0.3752	9.53		
1630950-SO	1630950A-SO	-	-	-	9.58	0.3772	9.58		
1630953-SO	1630953A-SO	3/8	-	-	9.60	0.3780	9.60		
1630958-SO	1630958A-SO	-	-	V	9.70	0.3819	9.70		
1630960-SO	1630960A-SO	-	-	-	9.80	0.3858	9.80		
1630970-SO	1630970A-SO	-	-	-	9.90	0.3898	9.90		
1630980-SO	1630980A-SO	-	-	-	9.92	0.3906	9.92		
1630981-SO	1630981A-SO	-	-	W	10.00	0.3937	10.00		
1630990-SO	1630990A-SO	-	-	-	10.08	0.3969	10.08		
1630992-SO	1630992A-SO	25/64	-	-	10.20	0.4016	10.20		
1631000-SO	1631000A-SO	-	-	-					
1631008-SO	1631008A-SO	-	-	X					
1631020-SO	1631020A-SO	-	-	-					

Packed: 1 pc.  
EDP's listed above are stocked standard, other coatings available upon request.  
Specify treatment at time of order.

continued on next page

List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
163-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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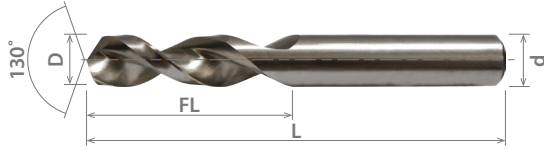




### List 163-SO (Continued)

<b>NEW</b>	<b>SPEED FEED</b> P53	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>TiAIN</b>	<b>STUB</b>	<b>40°</b>
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UDL Stub Drills



Cutting Diameter Tolerance (h8)		
Size	mm	inch
1≤D≤3	+0 / -0.014	+0 / -0.0006
3<D≤6	+0 / -0.018	+0 / -0.0007
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤14	+0 / -0.027	+0 / -0.0011

Bright EDP Number	TiAIN EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
		Fractional Size	Wire Gage	Letter Size	mm	Inch			
1631026-SO	1631026A-SO	-	-	Y	10.26	0.4039	43	89	10.26
1631032-SO	1631032A-SO	13/32	-	-	10.32	0.4063			10.32
1631049-SO	1631049A-SO	-	-	Z	10.49	0.4130			10.49
1631050-SO	1631050A-SO	-	-	-	10.50	0.4134			10.50
1631072-SO	1631072A-SO	27/64	-	-	10.72	0.4220	47	95	10.72
1631080-SO	1631080A-SO	-	-	-	10.80	0.4252			10.80
1631100-SO	1631100A-SO	-	-	-	11.00	0.4331			11.00
1631111-SO	1631111A-SO	7/16	-	-	11.11	0.4374			11.11
1631120-SO	1631120A-SO	-	-	-	11.20	0.4409	51	102	11.20
1631150-SO	1631150A-SO	-	-	-	11.50	0.4528			11.50
1631151-SO	1631151A-SO	29/64	-	-	11.51	0.4531			11.51
-	1631191A-SO	15/32	-	-	11.91	0.4689			11.91
1631200-SO	1631200A-SO	-	-	-	12.00	0.4724	54	107	12.00
1631229-SO	1631229A-SO	31/64	-	-	12.30	0.4843			12.30
1631250-SO	1631250A-SO	-	-	-	12.50	0.4921			12.50
1631269-SO	1631269A-SO	1/2	-	-	12.70	0.5000			12.70
1631300-SO	1631300A-SO	-	-	-	13.00	0.5118	54	107	13.00
1631310-SO	1631310A-SO	33/64	-	-	13.10	0.5157			13.10
1631349-SO	-	17/32	-	-	13.49	0.5311			13.49
1631389-SO	1631389A-SO	35/64	-	-	13.89	0.5469			13.89
1631400-SO	-	-	-	-	14.00	0.5512			14.00

Packed: 1 pc.  
 EDP's listed above are stocked standard, other coatings available upon request.  
 Specify treatment at time of order.



Work Material																		
List No.	P				Die Steels	M			K	N		S		H				
	Carbon Steels			Alloy Steels		Stainless Steels				Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH			6061	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
163-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

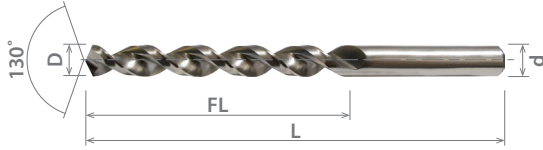
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# List 164-SO

UDL Jobber Drills



<b>NEW</b>	<b>SPEED FEED</b> P53	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>TiAIN</b>	<b>JOBBERS</b>	<b>40°</b>
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Cutting Diameter Tolerance (h8)		
Size	mm	inch
1≤D≤3	+0 / -0.014	+0 / -0.0006
3<D≤6	+0 / -0.018	+0 / -0.0007
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤16	+0 / -0.027	+0 / -0.0011

Bright EDP Number	TiAIN EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
		Fractional Size	Wire Gage	Letter Size	mm	Inch			
1640100-SO	1640100A-SO	-	-	-	1.00	0.0394	12	34	1.00
1640102-SO	1640102A-SO	-	60	-	1.02	0.0402			1.02
1640104-SO	1640104A-SO	-	59	-	1.04	0.0409	14	36	1.04
1640107-SO	1640107A-SO	-	58	-	1.07	0.0421			1.07
1640109-SO	1640109A-SO	-	57	-	1.09	0.0429	16	38	1.09
1640110-SO	1640110A-SO	-	-	-	1.10	0.0433			1.10
1640115-SO	1640115A-SO	-	-	-	1.15	0.0453	18	40	1.15
1640118-SO	1640118A-SO	-	56	-	1.18	0.0465			1.18
1640119-SO	1640119A-SO	3/64	-	-	1.19	0.0469	20	43	1.19
1640120-SO	1640120A-SO	-	-	-	1.20	0.0472			1.20
-	1640125A-SO	-	-	-	1.25	0.0492	22	46	1.25
1640130-SO	1640130A-SO	-	-	-	1.30	0.0512			1.30
1640132-SO	1640132A-SO	-	55	-	1.32	0.0520	24	49	1.32
1640139-SO	1640139A-SO	-	54	-	1.40	0.0551			1.40
1640140-SO	1640140A-SO	-	-	-	1.45	0.0571	27	53	1.45
1640145-SO	1640145A-SO	-	-	-	1.50	0.0591			1.50
1640150-SO	1640150A-SO	-	-	-	1.51	0.0594	30	57	1.51
1640152-SO	1640152A-SO	-	53	-	1.55	0.0610			1.55
1640155-SO	1640155A-SO	-	-	-	1.59	0.0626	30	57	1.59
1640159-SO	1640159A-SO	1/16	-	-	1.60	0.0630			1.60
1640160-SO	1640160A-SO	-	-	-	1.61	0.0634	30	57	1.61
1640161-SO	1640161A-SO	-	52	-	1.62	0.0638			1.62
1640162-SO	-	-	-	-	1.65	0.0650	30	57	1.65
1640165-SO	1640165A-SO	-	-	-	1.67	0.0657			1.67
1640167-SO	-	-	-	-	1.70	0.0669	30	57	1.70
1640169-SO	1640169A-SO	-	51	-	1.75	0.0689			1.75
1640170-SO	1640170A-SO	-	-	-	1.78	0.0701	30	57	1.78
-	1640175A-SO	-	-	-	1.80	0.0709			1.80
1640178-SO	1640178A-SO	-	50	-	1.85	0.0728	30	57	1.85
1640180-SO	1640180A-SO	-	-	-	1.90	0.0748			1.90
1640185-SO	1640185A-SO	-	49	-	1.93	0.0760	30	57	1.93
1640190-SO	1640190A-SO	-	-	-	1.98	0.0780			1.98
1640193-SO	1640193A-SO	-	48	-	1.99	0.0783	30	57	1.99
1640198-SO	1640198A-SO	5/64	-	-	2.00	0.0787			2.00
1640199-SO	1640199A-SO	-	47	-	2.05	0.0807	30	57	2.05
1640200-SO	1640200A-SO	-	-	-	2.06	0.0811			2.06
1640205-SO	-	-	-	-	2.08	0.0819	30	57	2.08
1640206-SO	1640206A-SO	-	46	-	2.10	0.0827			2.10
1640208-SO	1640208A-SO	-	45	-	2.15	0.0846	30	57	2.15
1640210-SO	1640210A-SO	-	-	-	2.18	0.0858			2.18
1640215-SO	1640215A-SO	-	-	-	2.20	0.0866	30	57	2.20
1640218-SO	1640218A-SO	-	44	-	2.26	0.0890			2.26
1640220-SO	1640220A-SO	-	-	-	2.30	0.0906	30	57	2.30
1640226-SO	1640226A-SO	-	43	-	2.35	0.0925			2.35
1640230-SO	1640230A-SO	-	-	-	2.37	0.0933	30	57	2.37
1640235-SO	1640235A-SO	-	-	-	2.38	0.0937			2.38
1640237-SO	1640237A-SO	-	42	-					
1640238-SO	1640238A-SO	3/32	-	-					

Packed: 1 pc.  
EDP's listed above are stocked standard, other coatings available upon request.  
Specify treatment at time of order.

continued on next page

List No.	Work Material																	
	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC
164-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

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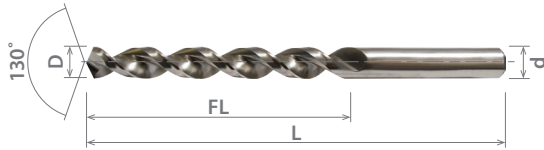




### List 164-SO (Continued)

<b>NEW</b>	<b>SPEED FEED</b> PS3	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>TiAIN</b>	<b>JOBBERS</b>	<b>40°</b>
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UDL Jobber Drills



Cutting Diameter Tolerance (h8)		
Size	mm	inch
1≤D≤3	+0 / -0.014	+0 / -0.0006
3<D≤6	+0 / -0.018	+0 / -0.0007
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤16	+0 / -0.027	+0 / -0.0011

Bright EDP Number	TiAIN EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
		Fractional Size	Wire Gage	Letter Size	mm	Inch			
1640240-SO	1640240A-SO	-	-	-	2.40	0.0945	30	57	2.40
1640244-SO	1640244A-SO	-	41	-	2.44	0.0961			2.44
1640245-SO	1640245A-SO	-	-	-	2.45	0.0965			2.45
1640249-SO	1640249A-SO	-	40	-	2.49	0.0980			2.49
1640250-SO	1640250A-SO	-	-	-	2.50	0.0984			2.50
1640253-SO	1640253A-SO	-	39	-	2.53	0.0996			2.53
1640258-SO	1640258A-SO	-	38	-	2.58	0.1016			2.58
1640260-SO	1640260A-SO	-	-	-	2.60	0.1024			2.60
1640264-SO	1640264A-SO	-	37	-	2.64	0.1039			2.64
1640270-SO	1640270A-SO	-	-	-	2.70	0.1063			2.70
1640271-SO	1640271A-SO	-	36	-	2.71	0.1067	2.71		
-	1640275A-SO	-	-	-	2.75	0.1083	2.75		
1640278-SO	1640278A-SO	7/64	-	-	2.78	0.1094	2.78		
1640279-SO	1640279A-SO	-	35	-	2.79	0.1098	2.79		
1640280-SO	1640280A-SO	-	-	-	2.80	0.1102	2.80		
1640282-SO	1640282A-SO	-	34	-	2.82	0.1110	2.82		
1640287-SO	1640287A-SO	-	33	-	2.87	0.1130	2.87		
1640290-SO	1640290A-SO	-	-	-	2.90	0.1142	2.90		
1640295-SO	1640295A-SO	-	32	-	2.95	0.1161	2.95		
1640300-SO	1640300A-SO	-	-	-	3.00	0.1181	3.00		
1640305-SO	1640305A-SO	-	31	-	3.05	0.1201	3.05		
1640310-SO	1640310A-SO	-	-	-	3.10	0.1220	3.10		
1640315-SO	1640315A-SO	-	-	-	3.15	0.1240	3.15		
1640318-SO	1640318A-SO	1/8	-	-	3.18	0.1252	3.18		
1640320-SO	1640320A-SO	-	-	-	3.20	0.1260	3.20		
1640326-SO	1640326A-SO	-	30	-	3.26	0.1283	3.26		
1640330-SO	1640330A-SO	-	-	-	3.30	0.1299	3.30		
1640335-SO	1640335A-SO	-	-	-	3.35	0.1319	3.35		
1640340-SO	1640340A-SO	-	-	-	3.40	0.1339	3.40		
1640345-SO	1640345A-SO	-	29	-	3.45	0.1358	3.45		
1640350-SO	1640350A-SO	-	-	-	3.50	0.1378	3.50		
1640357-SO	1640357A-SO	9/64	-	-	3.57	0.1406	3.57		
1640360-SO	-	-	-	-	3.60	0.1417	3.60		
1640366-SO	1640366A-SO	-	27	-	3.66	0.1441	3.66		
1640370-SO	1640370A-SO	-	-	-	3.70	0.1457	3.70		
1640373-SO	1640373A-SO	-	26	-	3.73	0.1469	3.73		
1640379-SO	1640379A-SO	-	25	-	3.80	0.1496	3.80		
1640380-SO	1640380A-SO	-	-	-	-	-	-	3.80	
1640386-SO	1640386A-SO	-	24	-	3.86	0.1520	3.86		
1640390-SO	1640390A-SO	-	-	-	3.90	0.1535	3.90		
1640391-SO	1640391A-SO	-	23	-	3.91	0.1539	3.91		
1640397-SO	1640397A-SO	5/32	-	-	3.97	0.1563	3.97		
1640399-SO	1640399A-SO	-	22	-	3.99	0.1571	3.99		
1640400-SO	1640400A-SO	-	-	-	4.00	0.1575	4.00		
1640404-SO	1640404A-SO	-	21	-	4.04	0.1591	4.04		
1640409-SO	1640409A-SO	-	20	-	4.09	0.1610	4.09		
1640410-SO	1640410A-SO	-	-	-	4.10	0.1614	4.10		
1640420-SO	1640420A-SO	-	-	-	4.20	0.1654	4.20		
1640422-SO	1640422A-SO	-	19	-	4.22	0.1661	4.22		
1640430-SO	1640430A-SO	-	-	-	4.30	0.1693	4.30		
1640431-SO	1640431A-SO	-	18	-	4.31	0.1697	4.31		
1640437-SO	1640437A-SO	11/64	-	-	4.37	0.1720	4.37		
1640439-SO	1640439A-SO	-	17	-	4.39	0.1728	4.39		
1640440-SO	1640440A-SO	-	-	-	4.40	0.1732	4.40		
1640445-SO	-	-	-	-	4.45	0.1752	4.45		
1640449-SO	1640449A-SO	-	16	-	4.50	0.1772	4.50		
1640450-SO	1640450A-SO	-	-	-	-	-	-	4.50	
1640457-SO	1640457A-SO	-	15	-	4.57	0.1799	4.57		

Packed: 1 pc.  
 EDP's listed above are stocked standard, other coatings available upon request.  
 Specify treatment at time of order.



# List 164-SO (Continued)

UDL Jobber Drills

<b>NEW</b>	<b>SPEED FEED</b> P53	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>TiAIN</b>	<b>JOBBERS</b>	<b>40°</b>
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Bright EDP Number	TiAIN EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
		Fractional Size	Wire Gage	Letter Size	mm	Inch			
-	1640460A-SO	-	-	-	4.60	0.1811	47	80	4.60
1640462-SO	1640462A-SO	-	14	-	4.62	0.1819			4.62
1640469-SO	1640469A-SO	-	13	-	4.69	0.1846			4.69
1640476-SO	1640476A-SO	3/16	-	-	4.76	0.1874			4.76
1640479-SO	1640479A-SO	-	12	-	4.80	0.1890			4.80
1640480-SO	1640480A-SO	-	-	-	4.80	0.1890			4.80
1640485-SO	1640485A-SO	-	11	-	4.86	0.1913			4.86
1640490-SO	1640490A-SO	-	-	-	4.90	0.1929			4.90
1640492-SO	1640492A-SO	-	10	-	4.92	0.1937			4.92
1640498-SO	1640498A-SO	-	9	-	4.98	0.1961			4.98
1640500-SO	1640500A-SO	-	-	-	5.00	0.1969	5.00		
1640506-SO	1640506A-SO	-	8	-	5.05	0.1988	5.05		
1640510-SO	1640510A-SO	-	-	-	5.10	0.2008	5.10		
1640511-SO	1640511A-SO	-	7	-	5.11	0.2012	5.11		
1640516-SO	1640516A-SO	13/64	-	-	5.16	0.2031	5.16		
1640518-SO	1640518A-SO	-	6	-	5.18	0.2039	5.18		
1640520-SO	1640520A-SO	-	-	-	5.20	0.2047	5.20		
1640522-SO	1640522A-SO	-	5	-	5.22	0.2055	5.22		
1640530-SO	1640530A-SO	-	-	-	5.30	0.2087	5.30		
1640532-SO	1640532A-SO	-	4	-	5.31	0.2091	5.31		
1640540-SO	1640540A-SO	-	-	-	5.40	0.2126	5.40		
1640541-SO	1640541A-SO	-	3	-	5.41	0.2130	5.41		
1640550-SO	1640550A-SO	-	-	-	5.50	0.2165	5.50		
1640556-SO	1640556A-SO	7/32	-	-	5.56	0.2189	5.56		
1640560-SO	1640560A-SO	-	-	-	5.60	0.2205	5.60		
1640561-SO	1640561A-SO	-	2	-	5.61	0.2209	5.61		
1640570-SO	1640570A-SO	-	-	-	5.70	0.2244	5.70		
1640575-SO	1640575A-SO	-	-	-	5.75	0.2264	5.75		
1640579-SO	1640579A-SO	-	1	-	5.79	0.2280	5.79		
1640580-SO	1640580A-SO	-	-	-	5.80	0.2283	5.80		
1640590-SO	1640590A-SO	-	-	-	5.90	0.2323	5.90		
1640594-SO	1640594A-SO	-	-	A	5.94	0.2339	5.94		
1640595-SO	1640595A-SO	15/64	-	-	5.95	0.2343	5.95		
1640600-SO	1640600A-SO	-	-	-	6.00	0.2362	6.00		
1640605-SO	1640605A-SO	-	-	B	6.05	0.2382	6.05		
1640610-SO	1640610A-SO	-	-	-	6.10	0.2402	6.10		
1640615-SO	1640615A-SO	-	-	C	6.15	0.2421	6.15		
1640620-SO	1640620A-SO	-	-	-	6.20	0.2441	6.20		
1640625-SO	1640625A-SO	-	-	D	6.25	0.2461	6.25		
1640630-SO	1640630A-SO	-	-	-	6.30	0.2480	6.30		
1640634-SO	1640634A-SO	-	-	E	6.30	0.2480	6.30		
1640635-SO	1640635A-SO	1/4	-	-	6.35	0.2500	6.35		
1640640-SO	1640640A-SO	-	-	-	6.40	0.2520	6.40		
1640650-SO	1640650A-SO	-	-	-	6.50	0.2559	6.50		
1640653-SO	1640653A-SO	-	-	F	6.53	0.2571	6.53		
1640660-SO	1640660A-SO	-	-	-	6.60	0.2598	6.60		
1640663-SO	1640663A-SO	-	-	G	6.63	0.2610	6.63		
1640670-SO	1640670A-SO	-	-	-	6.70	0.2638	6.70		
1640676-SO	1640676A-SO	-	-	H	6.76	0.2661	6.76		
1640677-SO	1640677A-SO	17/64	-	-	6.75	0.2657	6.75		
1640680-SO	1640680A-SO	-	-	-	6.80	0.2677	6.80		
1640690-SO	1640690A-SO	-	-	-	6.90	0.2717	6.90		
1640691-SO	1640691A-SO	-	-	I	7.00	0.2756	7.00		
1640700-SO	1640700A-SO	-	-	-	7.00	0.2756	7.00		
1640704-SO	1640704A-SO	-	-	J	7.04	0.2772	7.04		

Packed: 1 pc.  
EDP's listed above are stocked standard, other coatings available upon request.  
Specify treatment at time of order.

continued on next page

List No.	Work Material																
	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
164-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

good  best

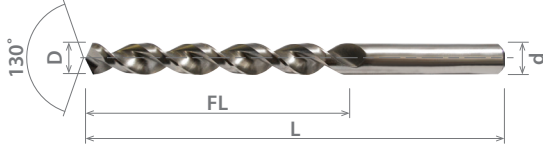




### List 164-SO (Continued)

<b>NEW</b>	<b>SPEED FEED</b> PS3	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>TiAIN</b>	<b>JOBBERS</b>	<b>40°</b>
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UDL Jobber Drills



Cutting Diameter Tolerance (h8)		
Size	mm	inch
1≤D≤3	+0 / -0.014	+0 / -0.0006
3<D≤6	+0 / -0.018	+0 / -0.0007
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤16	+0 / -0.027	+0 / -0.0011

Bright EDP Number	TiAIN EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
		Fractional Size	Wire Gage	Letter Size	mm	Inch			
1640710-SO	1640710A-SO	-	-	-	7.10	0.2795	69	109	7.10
1640713-SO	1640713A-SO	-	-	K	7.14	0.2811			7.14
1640714-SO	1640714A-SO	9/32	-	-	7.20	0.2835			7.20
1640720-SO	1640720A-SO	-	-	-	7.25	0.2854			7.25
1640725-SO	1640725A-SO	-	-	-	7.30	0.2874			7.30
1640730-SO	1640730A-SO	-	-	-	7.37	0.2902			7.37
1640737-SO	1640737A-SO	-	-	L	7.40	0.2913			7.40
1640740-SO	1640740A-SO	-	-	-	7.49	0.2949			7.49
1640749-SO	1640749A-SO	-	-	M	7.50	0.2953			7.50
1640750-SO	1640750A-SO	-	-	-	7.54	0.2969			7.54
1640754-SO	1640754A-SO	19/64	-	-	7.60	0.2992	7.60		
1640760-SO	1640760A-SO	-	-	-	7.67	0.3020	7.67		
1640767-SO	1640767A-SO	-	-	N	7.70	0.3031	7.70		
1640770-SO	1640770A-SO	-	-	-	7.80	0.3071	7.80		
1640780-SO	1640780A-SO	-	-	-	7.90	0.3110	7.90		
1640790-SO	1640790A-SO	-	-	-	7.94	0.3126	7.94		
1640794-SO	1640794A-SO	5/16	-	-	8.00	0.3150	8.00		
1640800-SO	1640800A-SO	-	-	-	8.03	0.3161	8.03		
1640803-SO	1640803A-SO	-	-	O	8.10	0.3189	8.10		
1640810-SO	1640810A-SO	-	-	-	8.21	0.3232	8.21		
1640821-SO	1640821A-SO	-	-	P	8.33	0.3280	8.33		
1640833-SO	-	21/64	-	-	8.43	0.3319	8.43		
1640843-SO	1640843A-SO	-	-	Q	8.50	0.3346	8.50		
1640850-SO	1640850A-SO	-	-	-	8.61	0.3390	8.61		
-	1640861A-SO	-	-	R	8.70	0.3425	8.70		
1640870-SO	-	-	-	-	8.73	0.3437	8.73		
1640873-SO	1640873A-SO	11/32	-	-	8.80	0.3465	8.80		
1640880-SO	-	-	-	-	8.84	0.3480	8.84		
1640884-SO	1640884A-SO	-	-	S	9.00	0.3543	9.00		
1640900-SO	1640900A-SO	-	-	-	9.13	0.3594	9.13		
1640913-SO	1640913A-SO	23/64	-	-	9.20	0.3622	9.20		
1640920-SO	1640920A-SO	-	-	-	9.30	0.3661	9.30		
-	1640930A-SO	-	-	-	9.35	0.3681	9.35		
1640935-SO	1640935A-SO	-	-	U	9.50	0.3740	9.50		
1640950-SO	1640950A-SO	-	-	-	9.53	0.3752	9.53		
1640953-SO	1640953A-SO	3/8	-	-	9.58	0.3772	9.58		
1640958-SO	1640958A-SO	-	-	V	9.60	0.3780	9.60		
1640960-SO	1640960A-SO	-	-	-	9.70	0.3819	9.70		
1640970-SO	1640970A-SO	-	-	-	9.81	0.3862	9.81		
1640981-SO	1640981A-SO	-	-	W	9.92	0.3906	9.92		
1640992-SO	1640992A-SO	25/64	-	-	10.00	0.3937	10.00		
1641000-SO	1641000A-SO	-	-	-	10.26	0.4039	10.26		
-	1641026A-SO	-	-	Y	10.32	0.4063	10.32		
1641032-SO	1641032A-SO	13/32	-	-	10.49	0.4130	10.49		
-	1641049A-SO	-	-	Z	10.50	0.4134	10.50		
1641050-SO	1641050A-SO	-	-	-	10.72	0.4220	10.72		
1641072-SO	1641072A-SO	27/64	-	-	11.00	0.4331	11.00		
1641100-SO	1641100A-SO	-	-	-	11.11	0.4374	11.11		
1641111-SO	1641111A-SO	7/16	-	-	11.50	0.4528	11.50		
1641150-SO	1641150A-SO	-	-	-	11.51	0.4531	11.51		
1641151-SO	-	29/64	-	-	11.91	0.4689	11.91		
1641191-SO	-	15/32	-	-	12.00	0.4724	12.00		
1641200-SO	1641200A-SO	-	-	-	12.29	0.4839	12.29		
1641229-SO	1641229A-SO	31/64	-	-	12.50	0.4921	12.50		
1641250-SO	1641250A-SO	-	-	-	12.70	0.5000	12.70		
1641269-SO	1641269A-SO	1/2	-	-	13.00	0.5118	13.00		
1641300-SO	1641300A-SO	-	-	-	13.10	0.5157	13.10		
1641310-SO	-	33/64	-	-					

Packed: 1 pc.  
 EDP's listed above are stocked standard, other coatings available upon request.  
 Specify treatment at time of order.



# List 164-SO (Continued)

UDL Jobber Drills

<b>NEW</b>	<b>SPEED FEED</b> P53	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>TiAIN</b>	<b>JOBBERS</b>	<b>40°</b>
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Bright EDP Number	TiAIN EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
		Fractional Size	Wire Gage	Letter Size	mm	Inch			
1641349-SO	1641349A-SO	17/32	-	-	13.49	0.5311	108	160	13.49
1641389-SO	-	35/64	-	-	13.89	0.5469			13.89
-	1641400A-SO	-	-	-	14.00	0.5512			14.00
1641429-SO	1641429A-SO	9/16	-	-	14.29	0.5626	114	169	14.29
1641450-SO	-	-	-	-	14.50	0.5709			14.50
1641468-SO	-	37/64	-	-	14.68	0.5780			14.68
-	1641508A-SO	19/32	-	-	15.08	0.5937	120	178	15.08
1641548-SO	-	39/64	-	-	15.48	0.6094			15.48
1641588-SO	-	5/8	-	-	15.88	0.6252			15.88

Packed: 1 pc.  
EDP's listed above are stocked standard, other coatings available upon request.  
Specify treatment at time of order.



# List 164-SO (SET)

SET, UDL Jobber Drills

<b>NEW</b>	<b>SPEED FEED</b> P53	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>JOBBERS</b>	<b>40°</b>
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Drill Set EDP	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1640025-SO	-	-	-	1.00	0.0394	12	34	1.0
	-	-	-	1.50	0.0591	18	40	1.5
	-	-	-	2.00	0.0787	24	49	2.0
	-	-	-	2.50	0.0984	30	57	2.5
	-	-	-	3.00	0.1181	33	61	3.0
	-	-	-	3.50	0.1378	39	70	3.5
	-	-	-	4.00	0.1575	43	75	4.0
	-	16	-	4.50	0.1772	47	80	4.5
	-	-	-	5.00	0.1969	52	86	5.0
	-	-	-	5.50	0.2165	57	93	5.5
	-	-	-	6.00	0.2362			6.0
	-	-	-	6.50	0.2559	63	101	6.5
	-	-	-	7.00	0.2756	69	109	7.0
	-	-	-	7.50	0.2953			7.5
	-	-	-	8.00	0.3150	75	117	8.0
	-	-	-	8.50	0.3346			8.5
	-	-	-	9.00	0.3543	81	125	9.0
	-	-	-	9.50	0.3740			9.5
	-	-	-	10.00	0.3937	87	133	10.0
	-	-	-	10.50	0.4134			10.5
-	-	-	11.00	0.4331	94	142	11.0	
-	-	-	11.50	0.4528			11.5	
-	-	-	12.00	0.4724	101	151	12.0	
-	-	-	12.50	0.4921			12.5	
-	-	-	13.00	0.5118			13.0	

Packed: 25 pcs. as 1 set.  
Available Bright finish only



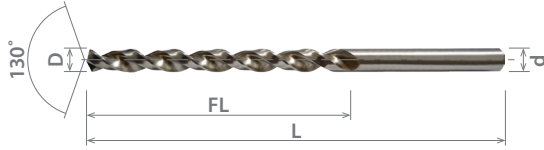
Work Material																		
List No.	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC
164-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

good  best



# List 110-SO

UDL Long Series Drills



<b>NEW</b>	<b>SPEED FEED</b> P53	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>LONG</b>	<b>40°</b>
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Cutting Diameter Tolerance (h8)		
Size	mm	inch
1≤D≤3	+0 / -0.014	+0 / -0.0006
3<D≤6	+0 / -0.018	+0 / -0.0007
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤13	+0 / -0.027	+0 / -0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1100100-SO	-	-	-	1.00	0.0394	33	56	1.00
1100102-SO	-	60	-	1.02	0.0402			1.02
1100104-SO	-	59	-	1.04	0.0409	37	60	1.04
1100107-SO	-	58	-	1.07	0.0421			1.07
1100109-SO	-	57	-	1.09	0.0429	41	65	1.09
1100110-SO	-	-	-	1.10	0.0433			1.10
1100118-SO	-	56	-	1.18	0.0465	45	70	1.18
1100120-SO	-	-	-	1.20	0.0472			1.20
1100130-SO	-	-	-	1.30	0.0512	50	76	1.30
1100132-SO	-	55	-	1.32	0.0520			1.32
1100139-SO	-	54	-	1.39	0.0547	53	80	1.39
1100140-SO	-	-	-	1.40	0.0551			1.40
1100150-SO	-	-	-	1.50	0.0591	56	85	1.50
1100152-SO	-	53	-	1.52	0.0598			1.52
1100159-SO	1/16	-	-	1.59	0.0626	59	90	1.59
1100160-SO	-	-	-	1.60	0.0630			1.60
1100161-SO	-	52	-	1.61	0.0634	62	95	1.61
1100169-SO	-	51	-	1.70	0.0669			1.70
1100170-SO	-	-	-	1.78	0.0701	66	100	1.78
1100178-SO	-	50	-	1.80	0.0709			1.80
1100180-SO	-	-	-	1.85	0.0728	69	106	1.85
1100185-SO	-	49	-	1.90	0.0748			1.90
1100190-SO	-	-	-	1.93	0.0760	62	95	1.93
1100193-SO	-	48	-	1.98	0.0780			1.98
1100198-SO	5/64	-	-	1.99	0.0783	66	100	1.99
1100199-SO	-	47	-	2.00	0.0787			2.00
1100200-SO	-	-	-	2.06	0.0811	62	95	2.06
1100206-SO	-	46	-	2.08	0.0819			2.08
1100208-SO	-	45	-	2.10	0.0827	66	100	2.10
1100210-SO	-	-	-	2.18	0.0858			2.18
1100218-SO	-	44	-	2.20	0.0866	69	106	2.20
1100220-SO	-	-	-	2.26	0.0890			2.26
1100226-SO	-	43	-	2.30	0.0906	62	95	2.30
1100230-SO	-	-	-	2.37	0.0933			2.37
1100237-SO	-	42	-	2.38	0.0937	66	100	2.38
1100238-SO	3/32	-	-	2.40	0.0945			2.40
1100240-SO	-	-	-	2.44	0.0961	69	106	2.44
1100244-SO	-	41	-	2.49	0.0980			2.49
1100249-SO	-	40	-	2.50	0.0984	66	100	2.50
1100250-SO	-	-	-	2.53	0.0996			2.53
1100253-SO	-	39	-	2.58	0.1016	62	95	2.58
1100258-SO	-	38	-	2.60	0.1024			2.60
1100260-SO	-	-	-	2.64	0.1039	66	100	2.64
1100264-SO	-	37	-	2.70	0.1063			2.70
1100270-SO	-	-	-	2.71	0.1067	69	106	2.71
1100271-SO	-	36	-	2.78	0.1094			2.78
1100278-SO	7.64	-	-	2.79	0.1098	66	100	2.79
1100279-SO	-	35	-	2.80	0.1102			2.80
1100280-SO	-	-	-	2.82	0.1110	62	95	2.82
1100282-SO	-	34	-	2.87	0.1130			2.87
1100287-SO	-	33	-	2.90	0.1142	69	106	2.90
1100290-SO	-	-	-	2.95	0.1161			2.95
1100295-SO	-	-	-	3.00	0.1181	66	100	3.00
1100300-SO	-	-	-	3.05	0.1201			3.05
1100305-SO	-	31	-	3.10	0.1220	69	106	3.10
1100310-SO	-	-	-	3.18	0.1252			3.18
1100318-SO	1/8	-	-	3.20	0.1260	66	100	3.20
1100320-SO	-	-	-					

Packed: 1 pc.  
EDP's listed above are stocked standard, other coatings available upon request.  
Specify treatment at time of order.



# List 110-SO (Continued)

UDL Long Series Drills

<b>NEW</b>	<b>SPEED FEED</b> P53	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>LONG</b>	<b>40°</b>
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EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1100326-SO	-	30	-	3.26	0.1283	69	106	3.26
1100330-SO	-	-	-	3.30	0.1299			3.30
1100340-SO	-	-	-	3.40	0.1339	73	112	3.40
1100345-SO	-	29	-	3.45	0.1358			3.45
1100350-SO	-	-	-	3.50	0.1378	3.50		
1100356-SO	-	28	-	3.56	0.1402	3.56		
1100357-SO	9/64	-	-	3.57	0.1406	3.57		
1100360-SO	-	-	-	3.60	0.1417	3.60		
1100366-SO	-	27	-	3.66	0.1441	3.66		
1100370-SO	-	-	-	3.70	0.1457	3.70		
1100373-SO	-	26	-	3.73	0.1469	3.73		
1100379-SO	-	25	-	3.79	0.1492	78	119	3.79
1100380-SO	-	-	-	3.80	0.1496			3.80
1100386-SO	-	24	-	3.86	0.1520	3.86		
1100390-SO	-	-	-	3.90	0.1535	3.90		
1100391-SO	-	23	-	3.91	0.1539	3.91		
1100397-SO	5/32	-	-	3.97	0.1563	3.97		
1100399-SO	-	22	-	3.99	0.1571	3.99		
1100400-SO	-	-	-	4.00	0.1575	4.00		
1100404-SO	-	21	-	4.04	0.1591	4.04		
1100409-SO	-	20	-	4.09	0.1610	4.09		
1100410-SO	-	-	-	4.10	0.1614	4.10		
1100420-SO	-	-	-	4.20	0.1654	4.20		
1100422-SO	-	19	-	4.22	0.1661	4.22		
1100430-SO	-	-	-	4.30	0.1693	4.30		
1100431-SO	-	18	-	4.31	0.1697	4.31		
1100437-SO	11/64	-	-	4.37	0.1720	4.37		
1100439-SO	-	17	-	4.39	0.1728	4.39		
1100440-SO	-	-	-	4.40	0.1732	4.40		
1100449-SO	-	16	-	4.49	0.1768	4.49		
1100450-SO	-	-	-	4.50	0.1772	4.50		
1100457-SO	-	15	-	4.57	0.1799	4.57		
1100460-SO	-	-	-	4.60	0.1811	4.60		
1100462-SO	-	14	-	4.62	0.1819	4.62		
1100469-SO	-	13	-	4.69	0.1846	4.69		
1100470-SO	-	-	-	4.70	0.1850	4.70		
1100476-SO	3/16	-	-	4.76	0.1874	4.76		
1100480-SO	-	-	-	4.80	0.1890	4.80		
1100479-SO	-	12	-	4.79	0.1886	4.79		
1100485-SO	-	11	-	4.85	0.1909	4.85		
1100490-SO	-	-	-	4.90	0.1929	4.90		
1100492-SO	-	10	-	4.92	0.1937	4.92		
1100498-SO	-	9	-	4.98	0.1961	4.98		
1100500-SO	-	-	-	5.00	0.1969	5.00		
1100506-SO	-	8	-	5.06	0.1992	5.06		
1100510-SO	-	-	-	5.10	0.2008	5.10		
1100511-SO	-	7	-	5.11	0.2012	5.11		
1100516-SO	13/64	-	-	5.16	0.2031	5.16		
1100518-SO	-	6	-	5.18	0.2039	5.18		
1100520-SO	-	-	-	5.20	0.2047	5.20		
1100522-SO	-	5	-	5.22	0.2055	5.22		
1100530-SO	-	-	-	5.30	0.2087	5.30		
1100532-SO	-	4	-	5.32	0.2094	5.32		
1100540-SO	-	-	-	5.40	0.2126	5.40		
1100541-SO	-	3	-	5.41	0.2130	5.41		

Packed: 1 pc.  
EDP's listed above are stocked standard, other coatings available upon request.  
Specify treatment at time of order.

**continued on next page**

List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
110-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

good  best

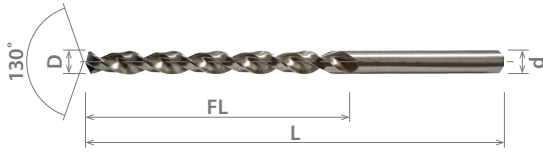




### List 110-SO (Continued)

<b>NEW</b>	<b>SPEED FEED</b> P53	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>LONG</b>	<b>40°</b>
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UDL Long Series Drills



Cutting Diameter Tolerance (h8)		
Size	mm	inch
1≤D≤3	+0 / -0.014	+0 / -0.0006
3<D≤6	+0 / -0.018	+0 / -0.0007
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤13	+0 / -0.027	+0 / -0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1100550-SO	-	-	-	5.50	0.2165	91	139	5.50
1100556-SO	7/32	-	-	5.56	0.2189			5.56
1100560-SO	-	-	-	5.60	0.2205			5.60
1100561-SO	-	2	-	5.61	0.2209			5.61
1100570-SO	-	-	-	5.70	0.2244			5.70
1100579-SO	-	1	-	5.79	0.2280			5.79
1100580-SO	-	-	-	5.80	0.2283			5.80
1100590-SO	-	-	-	5.90	0.2323			5.90
1100595-SO	15/64	-	-	5.95	0.2343			5.95
1100600-SO	-	-	-	6.00	0.2362			6.00
1100610-SO	-	-	-	6.10	0.2402	6.10		
1100620-SO	-	-	-	6.20	0.2441	6.20		
1100630-SO	-	-	-	6.30	0.2480	6.30		
1100635-SO	1/4	-	E	6.35	0.2500	6.35		
1100640-SO	-	-	-	6.40	0.2520	6.40		
1100650-SO	-	-	-	6.50	0.2559	6.50		
1100660-SO	-	-	-	6.60	0.2598	6.60		
1100670-SO	-	-	-	6.70	0.2638	6.70		
1100677-SO	17/64	-	-	6.75	0.2665	6.75		
1100680-SO	-	-	-	6.80	0.2677	6.80		
1100690-SO	-	-	-	6.90	0.2717	6.90		
1100700-SO	-	-	-	7.00	0.2756	7.00		
1100710-SO	-	-	-	7.10	0.2795	7.10		
1100714-SO	9/32	-	-	7.14	0.2811	7.14		
1100720-SO	-	-	-	7.20	0.2835	7.20		
1100730-SO	-	-	-	7.30	0.2874	7.30		
1100740-SO	-	-	-	7.40	0.2913	7.40		
1100750-SO	-	-	-	7.50	0.2953	7.50		
1100754-SO	19/64	-	-	7.54	0.2969	7.54		
1100760-SO	-	-	-	7.60	0.2992	7.60		
1100770-SO	-	-	-	7.70	0.3031	7.70		
1100780-SO	-	-	-	7.80	0.3071	7.80		
1100790-SO	-	-	-	7.90	0.3110	7.90		
1100794-SO	5/16	-	-	7.94	0.3126	7.94		
1100800-SO	-	-	-	8.00	0.3150	8.00		
1100810-SO	-	-	-	8.10	0.3189	8.10		
1100820-SO	-	-	-	8.20	0.3228	8.20		
1100830-SO	-	-	-	8.30	0.3268	8.30		
1100833-SO	21/64	-	-	8.33	0.3280	8.33		
1100840-SO	-	-	-	8.40	0.3307	8.40		
1100850-SO	-	-	-	8.50	0.3346	8.50		
1100860-SO	-	-	-	8.60	0.3386	8.60		
1100870-SO	-	-	-	8.70	0.3425	8.70		
1100873-SO	11/32	-	-	8.73	0.3437	8.73		
1100880-SO	-	-	-	8.80	0.3465	8.80		
1100890-SO	-	-	-	8.90	0.3504	8.90		
1100900-SO	-	-	-	9.00	0.3543	9.00		
1100910-SO	-	-	-	9.10	0.3583	9.10		
1100913-SO	-	-	-	9.13	0.3594	9.13		
1100920-SO	-	-	-	9.20	0.3622	9.20		
1100930-SO	-	-	-	9.30	0.3661	9.30		
1100940-SO	-	-	-	9.40	0.3701	9.40		
1100950-SO	-	-	-	9.50	0.3740	9.50		
1100953-SO	3/8	-	-	9.53	0.3752	9.53		
1100960-SO	-	-	-	9.60	0.3780	9.60		
1100970-SO	-	-	-	9.70	0.3819	9.70		
1100980-SO	-	-	-	9.80	0.3858	9.80		
1100990-SO	-	-	-	9.90	0.3898	9.90		

Packed: 1 pc.  
 EDP's listed above are stocked standard, other coatings available upon request.  
 Specify treatment at time of order.





# List 110-SO (Continued)

UDL Long Series Drills

<b>NEW</b>	<b>SPEED FEED</b> P53	<b>HSS-Co5</b>	<b>TYPE FS</b>	<b>BR</b>	<b>LONG</b>	<b>40°</b>
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EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1100992-SO	25/64	-	-	9.92	0.3906	121	184	9.92
1101000-SO	-	-	-	10.00	0.3937			10.00
1101032-SO	13/32	-	-	10.32	0.4063			10.32
1101072-SO	27/64	-	-	10.72	0.4220	128	195	10.72
1101111-SO	7/16	-	-	11.11	0.4374			11.11
1101151-SO	29/64	-	-	11.51	0.4531			11.51
1101191-SO	15/32	-	-	11.91	0.4689	134	205	11.91
1101230-SO	31/64	-	-	12.30	0.4843			12.30
1101270-SO	1/2	-	-	12.70	0.5000			12.70

Packed: 1 pc.  
EDP's listed above are stocked standard, other coatings available upon request.  
Specify treatment at time of order.



Work Material																		
List No.	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC
110-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

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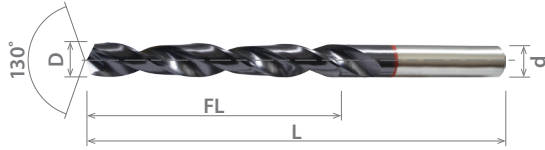




### List 1R5-SO

RED BAND, UDS Jobber Drills

<b>NEW</b>	<b>RED BAND TAPS</b> P60-51, 76-77	<b>SPEED FEED</b> P54	<b>HSS-Co5</b>	<b>TYPE H</b>	<b>TYPE FS</b>	<b>TiAlN</b>	<b>JOBBERS</b>	<b>30°</b>
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Cutting Diameter Tolerance (h8)		
Size	mm	inch
1≤D≤3	+0 / -0.014	+0 / -0.0006
3<D≤6	+0 / -0.018	+0 / -0.0007
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤13	+0 / -0.027	+0 / -0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1R50100-SO	-	-	-	1.00	0.0394	12	34	1.00
1R50150-SO	-	-	-	1.50	0.0591	18	40	1.50
1R50160-SO	-	-	-	1.60	0.0630	20	43	1.60
1R50198-SO	5/64	-	-	1.98	0.0780	24	49	1.98
1R50199-SO	-	47	-	1.99	0.0783			1.99
1R50200-SO	-	-	-	2.00	0.0787			2.00
1R50206-SO	-	46	-	2.06	0.0811			2.06
1R50208-SO	-	45	-	2.08	0.0819			2.08
1R50210-SO	-	-	-	2.10	0.0827			2.10
1R50218-SO	-	44	-	2.18	0.0858			2.18
1R50226-SO	-	43	-	2.26	0.0890			2.26
1R50237-SO	-	42	-	2.37	0.0933			2.37
1R50238-SO	3/32	-	-	2.38	0.0937			2.38
1R50244-SO	-	41	-	2.44	0.0961	2.44		
1R50249-SO	-	40	-	2.49	0.0980	2.49		
1R50250-SO	-	-	-	2.50	0.0984	2.50		
1R50253-SO	-	39	-	2.53	0.0996	2.53		
1R50258-SO	-	38	-	2.58	0.1016	2.58		
1R50264-SO	-	37	-	2.64	0.1039	2.64		
1R50271-SO	-	36	-	2.71	0.1067	2.71		
1R50278-SO	7/64	-	-	2.78	0.1094	2.78		
1R50279-SO	-	35	-	2.79	0.1098	2.79		
1R50282-SO	-	34	-	2.82	0.1110	2.82		
1R50287-SO	-	33	-	2.87	0.1130	2.87		
1R50290-SO	-	-	-	2.90	0.1142	2.90		
1R50295-SO	-	32	-	2.95	0.1161	2.95		
1R50300-SO	-	-	-	3.00	0.1181	3.00		
1R50305-SO	-	31	-	3.05	0.1201	3.05		
1R50318-SO	1/8	-	-	3.18	0.1252	3.18		
1R50326-SO	-	30	-	3.26	0.1283	3.26		
1R50330-SO	-	-	-	3.30	0.1299	3.30		
1R50345-SO	-	29	-	3.45	0.1358	3.45		
1R50350-SO	-	-	-	3.50	0.1378	3.50		
1R50356-SO	-	28	-	3.57	0.1406	3.57		
1R50357-SO	9/64	-	-			3.66	0.1441	3.66
1R50366-SO	-	27	-	3.70	0.1457	3.70		
1R50370-SO	-	-	-	3.73	0.1469	3.73		
1R50373-SO	-	26	-	3.80	0.1496	3.80		
1R50379-SO	-	25	-	3.86	0.1520	3.86		
1R50386-SO	-	24	-	3.91	0.1539	3.91		
1R50391-SO	-	23	-	3.97	0.1563	3.97		
1R50397-SO	5/32	-	-	3.99	0.1571	3.99		
1R50399-SO	-	22	-	4.00	0.1575	4.00		
1R50400-SO	-	-	-	4.04	0.1591	4.04		
1R50404-SO	-	21	-	4.09	0.1610	4.09		
1R50409-SO	-	20	-	4.20	0.1654	4.20		
1R50420-SO	-	-	-	4.22	0.1661	4.22		
1R50422-SO	-	19	-	4.31	0.1697	4.31		
1R50431-SO	-	18	-	4.37	0.1720	4.37		
1R50437-SO	11/64	-	-	4.39	0.1728	4.39		
1R50439-SO	-	17	-	4.50	0.1772	4.50		
1R50449-SO	-	16	-			4.57	0.1799	4.57
1R50450-SO	-	-	-			4.62	0.1819	4.62
1R50457-SO	-	15	-			4.70	0.1850	4.70
1R50462-SO	-	14	-			4.76	0.1874	4.76
1R50469-SO	-	13	-	4.80	0.1890	4.80		
1R50476-SO	3/16	-	-	52	86	4.76		
1R50479-SO	-	12	-			4.80		

Packed: 1 pc.  
Available TiAlN coating only.



# List 1R5-SO (Continued)

RED BAND, UDS Jobber Drills

<b>NEW</b>	<b>RED BAND TAPS</b> P60-61 76-77	<b>SPEED FEED</b> P54	<b>HSS-Co5</b>	<b>TYPE H</b>	<b>TYPE FS</b>	<b>TiAIN</b>	<b>JOBBER</b>	<b>30°</b>
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EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1R50485-SO	-	11	-	4.86	0.1913	52	86	4.86
1R50492-SO	-	10	-	4.92	0.1937			4.92
1R50498-SO	-	9	-	4.98	0.1961			4.98
1R50500-SO	-	-	-	5.00	0.1969			5.00
1R50506-SO	-	8	-	5.05	0.1988			5.05
1R50511-SO	-	7	-	5.11	0.2012			5.11
1R50516-SO	13/64	-	-	5.16	0.2031			5.16
1R50518-SO	-	6	-	5.18	0.2039			5.18
1R50522-SO	-	5	-	5.22	0.2055			5.22
1R50532-SO	-	4	-	5.31	0.2091			5.31
1R50541-SO	-	3	-	5.41	0.2130	5.41		
1R50550-SO	-	-	-	5.50	0.2165	5.50		
1R50556-SO	7/32	-	-	5.56	0.2189	5.56		
1R50561-SO	-	2	-	5.61	0.2209	5.61		
1R50579-SO	-	1	-	5.79	0.2280	5.79		
1R50595-SO	15/64	-	-	5.95	0.2343	5.95		
1R50600-SO	-	-	-	6.00	0.2362	6.00		
1R50635-SO	1/4	-	-	6.35	0.2500	6.35		
1R50650-SO	-	-	-	6.50	0.2559	6.50		
1R50653-SO	-	-	F	6.53	0.2571	6.53		
1R50675-SO	17/64	-	-	6.75	0.2657	6.75		
1R50680-SO	-	-	-	6.80	0.2677	6.80		
1R50691-SO	-	-	I	6.90	0.2717	6.90		
1R50700-SO	-	-	-	7.00	0.2756	7.00		
1R50714-SO	9/32	-	-	7.14	0.2811	7.14		
1R50750-SO	-	-	-	7.50	0.2953	7.50		
1R50754-SO	19/64	-	-	7.54	0.2969	7.54		
1R50794-SO	5/16	-	-	7.94	0.3126	7.94		
1R50800-SO	-	-	-	8.00	0.3150	8.00		
1R50833-SO	21/64	-	-	8.33	0.3280	8.33		
1R50843-SO	-	-	Q	8.43	0.3319	8.43		
1R50850-SO	-	-	-	8.50	0.3346	8.50		
1R50873-SO	11/32	-	-	8.73	0.3437	8.73		
1R50900-SO	-	-	-	9.00	0.3543	9.00		
1R50913-SO	23/64	-	-	9.13	0.3594	9.13		
1R50950-SO	-	-	-	9.50	0.3740	9.50		
1R50953-SO	3/8	-	-	9.53	0.3752	9.53		
1R50992-SO	25/64	-	-	9.92	0.3906	9.92		
1R51000-SO	-	-	-	10.00	0.3937	10.00		
1R51020-SO	-	-	-	10.20	0.4016	10.20		
1R51032-SO	13/32	-	-	10.32	0.4063	10.32		
1R51050-SO	-	-	-	10.50	0.4134	10.50		
1R51072-SO	27/64	-	-	10.72	0.4220	10.72		
1R51100-SO	-	-	-	11.00	0.4331	11.00		
1R51111-SO	7/16	-	-	11.11	0.4374	11.11		
1R51150-SO	-	-	-	11.50	0.4528	11.50		

Packed: 1 pc.  
Available TiAIN coating only.



continued on next page ➔

List No.	Work Material																
	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
1R5-SO	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

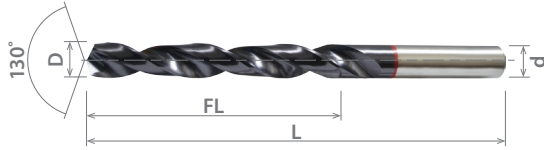
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# List 1R5-SO (Continued)

RED BAND, UDS Jobber Drills

NEW	RED BAND TAPS P60-61, 76-77	SPEED FEED P54	HSS-Co5	TYPE H	TYPE FS	TiAIN	JOBBERS	30°
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Cutting Diameter Tolerance (h8)		
Size	mm	inch
1≤D≤3	+0 / -0.014	+0 / -0.0006
3<D≤6	+0 / -0.018	+0 / -0.0007
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤13	+0 / -0.027	+0 / -0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1R51200-SO	-	-	-	12.00	0.4724	101	151	12.00
1R51250-SO	-	-	-	12.50	0.4921			12.50
1R51269-SO	1/2	-	-	12.70	0.5000			12.70
1R51300-SO	-	-	-	13.00	0.5118			13.00

Packed: 1 pc.  
Available TiAIN coating only.



Work Material																	
List No.	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
1R5-SO	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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### List 1BB-SO (Continued)

<b>NEW</b>	<b>BLUE BAND TAPS</b> P63-65, 79-81	<b>SPEED FEED</b> P54	<b>HSS-Co5</b>	<b>TYPE VA</b>	<b>TiAIN</b>	<b>JOBBERS</b>	<b>35°</b>
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BLUE BAND, RF Jobber Drills



Cutting Diameter Tolerance (h8)		
Size	mm	inch
1≤D≤3	+0 / -0.014	+0 / -0.0006
3<D≤6	+0 / -0.018	+0 / -0.0007
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤13	+0 / -0.027	+0 / -0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1BB0422-SO	-	19	-	4.22	0.1661	43	75	4.22
1BB0431-SO	-	18	-	4.31	0.1697			4.31
1BB0437-SO	11/64	-	-	4.37	0.1720			4.37
1BB0439-SO	-	17	-	4.39	0.1728	47	80	4.39
1BB0449-SO	-	16	-	4.50	0.1772			4.50
1BB0450-SO	-	-	-	-	-			4.50
1BB0457-SO	-	15	-	4.57	0.1799	52	86	4.57
1BB0462-SO	-	14	-	4.62	0.1819			4.62
1BB0469-SO	-	13	-	4.70	0.1850			4.70
1BB0476-SO	3/16	-	-	4.76	0.1874	57	93	4.76
1BB0479-SO	-	12	-	4.80	0.1890			4.80
1BB0485-SO	-	11	-	4.86	0.1913			4.86
1BB0492-SO	-	10	-	4.92	0.1937	63	101	4.92
1BB0498-SO	-	9	-	4.98	0.1961			4.98
1BB0500-SO	-	-	-	5.00	0.1969			5.00
1BB0506-SO	-	8	-	5.05	0.1988	69	109	5.05
1BB0511-SO	-	7	-	5.11	0.2012			5.11
1BB0516-SO	13/64	-	-	5.16	0.2031			5.16
1BB0518-SO	-	6	-	5.18	0.2039	75	117	5.18
1BB0522-SO	-	5	-	5.22	0.2055			5.22
1BB0530-SO	-	-	-	5.30	0.2087			5.30
1BB0532-SO	-	4	-	5.31	0.2091	81	125	5.31
1BB0541-SO	-	3	-	5.41	0.2130			5.41
1BB0550-SO	-	-	-	5.50	0.2165			5.50
1BB0556-SO	7/32	-	-	5.56	0.2189	87	133	5.56
1BB0561-SO	-	2	-	5.61	0.2209			5.61
1BB0579-SO	-	1	-	5.79	0.2280			5.79
1BB0595-SO	15/64	-	-	5.95	0.2343	93	141	5.95
1BB0600-SO	-	-	-	6.00	0.2362			6.00
1BB0634-SO	1/4	-	-	6.35	0.2500			6.35
1BB0650-SO	-	-	-	6.50	0.2559	99	149	6.50
1BB0653-SO	-	-	F	6.53	0.2571			6.53
1BB0675-SO	17/64	-	-	6.75	0.2657			6.75
1BB0680-SO	-	-	-	6.80	0.2677	105	157	6.80
1BB0691-SO	-	-	I	6.90	0.2717			6.90
1BB0700-SO	-	-	-	7.00	0.2756			7.00
1BB0714-SO	9/32	-	-	7.14	0.2811	111	165	7.14
1BB0730-SO	-	-	-	7.30	0.2874			7.30
1BB0750-SO	-	-	-	7.50	0.2953			7.50
1BB0754-SO	19/64	-	-	7.54	0.2969	117	173	7.54
1BB0780-SO	-	-	-	7.80	0.3071			7.80
1BB0794-SO	5/16	-	-	7.94	0.3126			7.94
1BB0800-SO	-	-	-	8.00	0.3150	123	181	8.00
1BB0833-SO	21/64	-	-	8.33	0.3280			8.33
1BB0843-SO	-	-	Q	8.43	0.3319			8.43
1BB0850-SO	-	-	-	8.50	0.3346	129	189	8.50
1BB0873-SO	11/32	-	-	8.73	0.3437			8.73
1BB0880-SO	-	-	-	8.80	0.3465			8.80
1BB0900-SO	-	-	-	9.00	0.3543	135	197	9.00
1BB0913-SO	23/64	-	-	9.13	0.3594			9.13
1BB0950-SO	-	-	-	9.50	0.3740			9.50
1BB0953-SO	3/8	-	-	9.53	0.3752	141	205	9.53
1BB0992-SO	25/64	-	-	9.92	0.3906			9.92
1BB1000-SO	-	-	-	10.00	0.3937			10.00
1BB1020-SO	-	-	-	10.20	0.4016	147	213	10.20
1BB1032-SO	13/32	-	-	10.32	0.4063			10.32
1BB1050-SO	-	-	-	10.50	0.4134			10.50

Packed: 1 pc.  
Available TiAIN coating only.



# List 1BB-SO (Continued)

BLUE BAND, RF Jobber Drills

<b>NEW</b>	<b>BLUE BAND TAPS</b> P63-65, 79-81	<b>SPEED FEED</b> P54	<b>HSS-Co5</b>	<b>TYPE VA</b>	<b>TiAIN</b>	<b>JOBBERS</b>	<b>35°</b>
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EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1BB1072-SO	27/64	-	-	10.72	0.4220	94	142	10.72
1BB1080-SO	-	-	-	10.80	0.4252			10.80
1BB1100-SO	-	-	-	11.00	0.4331			11.00
1BB1111-SO	7/16	-	-	11.11	0.4374			11.11
1BB1150-SO	-	-	-	11.50	0.4528			11.50
1BB1151-SO	29/64	-	-	11.51	0.4531			11.51
1BB1191-SO	15/32	-	-	11.91	0.4689	101	151	11.91
1BB1200-SO	-	-	-	12.00	0.4724			12.00
1BB1229-SO	31/64	-	-	12.30	0.4843			12.30
1BB1250-SO	-	-	-	12.50	0.4921			12.50
1BB1269-SO	1/2	-	-	12.70	0.5000			12.70
1BB1300-SO	-	-	-	13.00	0.5118			13.00

Packed: 1 pc.  
Available TiAIN coating only.



Work Material																	
List No.	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
1BB-SO						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>				

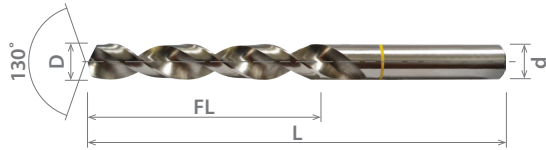
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### List 1AQ-SO

YELLOW BAND, Quick Spiral Jobber Drills



<b>NEW</b>	<b>YELLOW BAND TAPS</b> P66-68, 82-84	<b>SPEED FEED</b> P54	<b>HSS</b>	<b>TYPE W</b>	<b>BR</b>	<b>JOBBERS</b>	<b>40°</b>
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Cutting Diameter Tolerance (h8)		
Size	mm	inch
0.9 ≤ D ≤ 3	+0 / -0.014	+0 / -0.0006
3 < D ≤ 6	+0 / -0.018	+0 / -0.0007
6 < D ≤ 10	+0 / -0.022	+0 / -0.0009
10 < D ≤ 13	+0 / -0.027	+0 / -0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1AQ0090-SO	-	-	-	0.90	0.0354	11	32	0.90
1AQ0100-SO	-	-	-	1.00	0.0394	12	34	1.00
1AQ0110-SO	-	-	-	1.10	0.0433	14	36	1.10
1AQ0120-SO	-	-	-	1.20	0.0472	16	38	1.20
1AQ0130-SO	-	-	-	1.30	0.0512			1.30
1AQ0140-SO	-	-	-	1.40	0.0551	18	40	1.40
1AQ0150-SO	-	-	-	1.50	0.0591			1.50
1AQ0160-SO	-	-	-	1.60	0.0630	20	43	1.60
1AQ0170-SO	-	-	-	1.70	0.0669			1.70
1AQ0175-SO	-	-	-	1.75	0.0689	22	46	1.75
1AQ0180-SO	-	-	-	1.80	0.0709			1.80
1AQ0190-SO	-	-	-	1.90	0.0748	24	49	1.90
1AQ0198-SO	5/64	-	-	1.98	0.0780			1.98
1AQ0199-SO	-	47	-	1.99	0.0783	27	53	1.99
1AQ0200-SO	-	-	-	2.00	0.0787			2.00
1AQ0206-SO	-	46	-	2.06	0.0811	30	57	2.06
1AQ0208-SO	-	45	-	2.08	0.0819			2.08
1AQ0210-SO	-	-	-	2.10	0.0827	33	61	2.10
1AQ0218-SO	-	44	-	2.18	0.0858			2.18
1AQ0220-SO	-	-	-	2.20	0.0866	36	65	2.20
1AQ0225-SO	-	-	-	2.25	0.0886			2.25
1AQ0226-SO	-	43	-	2.26	0.0890	39	70	2.26
1AQ0230-SO	-	-	-	2.30	0.0906			2.30
1AQ0237-SO	-	42	-	2.37	0.0933	36	65	2.37
1AQ0238-SO	3/32	-	-	2.38	0.0937			2.38
1AQ0240-SO	-	-	-	2.40	0.0945	39	70	2.40
1AQ0244-SO	-	41	-	2.44	0.0961			2.44
1AQ0249-SO	-	40	-	2.49	0.0980	36	65	2.49
1AQ0250-SO	-	-	-	2.50	0.0984			2.50
1AQ0253-SO	-	39	-	2.53	0.0996	39	70	2.53
1AQ0258-SO	-	38	-	2.58	0.1016			2.58
1AQ0260-SO	-	-	-	2.60	0.1024	36	65	2.60
1AQ0264-SO	-	37	-	2.64	0.1039			2.64
1AQ0270-SO	-	-	-	2.70	0.1063	39	70	2.70
1AQ0271-SO	-	36	-	2.71	0.1067			2.71
1AQ0275-SO	-	-	-	2.75	0.1083	36	65	2.75
1AQ0278-SO	7/64	-	-	2.78	0.1094			2.78
1AQ0279-SO	-	35	-	2.79	0.1098	39	70	2.79
1AQ0280-SO	-	-	-	2.80	0.1102			2.80
1AQ0282-SO	-	34	-	2.82	0.1110	36	65	2.82
1AQ0287-SO	-	33	-	2.87	0.1130			2.87
1AQ0290-SO	-	-	-	2.90	0.1142	39	70	2.90
1AQ0295-SO	-	32	-	2.95	0.1161			2.95
1AQ0300-SO	-	-	-	3.00	0.1181	36	65	3.00
1AQ0305-SO	-	31	-	3.05	0.1201			3.05
1AQ0310-SO	-	-	-	3.10	0.1220	39	70	3.10
1AQ0318-SO	1/8	-	-	3.18	0.1252			3.18
1AQ0320-SO	-	-	-	3.20	0.1260	36	65	3.20
1AQ0326-SO	-	30	-	3.26	0.1283			3.26
1AQ0330-SO	-	-	-	3.30	0.1299	39	70	3.30
1AQ0340-SO	-	-	-	3.40	0.1339			3.40
1AQ0345-SO	-	29	-	3.45	0.1358	36	65	3.45
1AQ0350-SO	-	-	-	3.50	0.1378			3.50
1AQ0356-SO	-	28	-	3.56	0.1400	39	70	3.56
1AQ0357-SO	9/64	-	-	3.57	0.1406			3.57
1AQ0360-SO	-	-	-	3.60	0.1417	36	65	3.60
1AQ0366-SO	-	27	-	3.66	0.1441			3.66
1AQ0370-SO	-	-	-	3.70	0.1457	3.70		

Packed: 1 pc.  
 EDP's listed above are stocked standard, other coatings available upon request.  
 Specify treatment at time of order.





# List 1AQ-SO (Continued)

YELLOW BAND, Quick Spiral Jobber Drills

NEW YELLOW BAND TAPS P66-68, 82-84 SPEED FEED P54 HSS TYPE W BR JOBBERS 40°

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1AQ0373-SO	-	26	-	3.73	0.1469	39	70	3.73
1AQ0379-SO	-	25	-	3.80	0.1496			3.80
1AQ0380-SO	-	-	-	3.86	0.1520			3.86
1AQ0386-SO	-	24	-	3.90	0.1535			3.90
1AQ0390-SO	-	-	-	3.91	0.1539			3.91
1AQ0391-SO	-	23	-	3.97	0.1563			3.97
1AQ0397-SO	5/32	-	-	3.99	0.1571			3.99
1AQ0399-SO	-	22	-	4.00	0.1575			4.00
1AQ0400-SO	-	-	-	4.04	0.1591			4.04
1AQ0404-SO	-	21	-	4.09	0.1610			4.09
1AQ0409-SO	-	20	-	4.10	0.1614	4.10		
1AQ0410-SO	-	-	-	4.20	0.1654	4.20		
1AQ0420-SO	-	-	-	4.22	0.1661	4.22		
1AQ0422-SO	-	19	-	4.30	0.1693	4.30		
1AQ0430-SO	-	-	-	4.31	0.1697	4.31		
1AQ0431-SO	-	18	-	4.37	0.1720	4.37		
1AQ0437-SO	11/64	-	-	4.39	0.1728	4.39		
1AQ0439-SO	-	17	-	4.40	0.1732	4.40		
1AQ0440-SO	-	-	-	4.50	0.1772	4.50		
1AQ0449-SO	-	16	-	4.57	0.1799	4.57		
1AQ0450-SO	-	-	-	4.60	0.1811	4.60		
1AQ0457-SO	-	15	-	4.62	0.1819	4.62		
1AQ0460-SO	-	-	-	4.70	0.1850	4.70		
1AQ0462-SO	-	14	-	4.76	0.1874	4.76		
1AQ0469-SO	-	13	-	4.80	0.1890	4.80		
1AQ0470-SO	-	-	-	4.86	0.1913	4.86		
1AQ0476-SO	3/16	-	-	4.90	0.1929	4.90		
1AQ0479-SO	-	12	-	4.92	0.1937	4.92		
1AQ0480-SO	-	-	-	4.98	0.1961	4.98		
1AQ0485-SO	-	11	-	5.00	0.1969	5.00		
1AQ0490-SO	-	-	-	5.05	0.1988	5.05		
1AQ0492-SO	-	10	-	5.10	0.2008	5.10		
1AQ0498-SO	-	9	-	5.11	0.2012	5.11		
1AQ0500-SO	-	-	-	5.16	0.2031	5.16		
1AQ0506-SO	-	8	-	5.18	0.2039	5.18		
1AQ0510-SO	-	-	-	5.20	0.2047	5.20		
1AQ0511-SO	-	7	-	5.22	0.2055	5.22		
1AQ0516-SO	13/64	-	-	5.30	0.2087	5.30		
1AQ0518-SO	-	6	-	5.31	0.2091	5.31		
1AQ0520-SO	-	-	-	5.40	0.2126	5.40		
1AQ0522-SO	-	5	-	5.41	0.2130	5.41		
1AQ0530-SO	-	-	-	5.50	0.2165	5.50		
1AQ0532-SO	-	4	-	5.56	0.2189	5.56		
1AQ0540-SO	-	-	-	5.60	0.2205	5.60		
1AQ0541-SO	-	3	-	5.61	0.2209	5.61		
1AQ0550-SO	-	-	-	5.70	0.2244	5.70		
1AQ0556-SO	7/32	-	-	5.79	0.2280	5.79		
1AQ0560-SO	-	-	-	5.80	0.2283	5.80		
1AQ0561-SO	-	2	-	5.90	0.2323	5.90		
1AQ0570-SO	-	-	-	5.95	0.2343	5.95		
1AQ0579-SO	-	1	-	6.00	0.2362	6.00		
1AQ0580-SO	-	-	-					
1AQ0590-SO	-	-	-					
1AQ0595-SO	15/64	-	-					
1AQ0600-SO	-	-	-					

Packed: 1 pc.  
EDP's listed above are stocked standard, other coatings available upon request.  
Specify treatment at time of order.

continued on next page

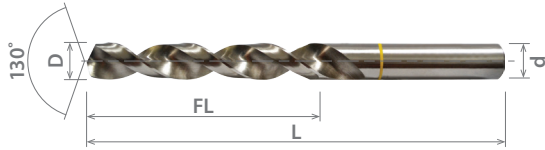
List No.	Work Material																
	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
1AQ-SO	<input type="checkbox"/>								<input checked="" type="checkbox"/>	<input type="checkbox"/>							

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# List 1AQ-SO (Continued)

YELLOW BAND, Quick Spiral Jobber Drills



<b>NEW</b>	<b>YELLOW BAND TAPS</b> P66-68, 82-84	<b>SPEED FEED</b> P54	<b>HSS</b>	<b>TYPE W</b>	<b>BR</b>	<b>JOBBERS</b>	<b>40°</b>
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Cutting Diameter Tolerance (h8)		
Size	mm	inch
0.9 ≤ D ≤ 3	+0 / -0.014	+0 / -0.0006
3 < D ≤ 6	+0 / -0.018	+0 / -0.0007
6 < D ≤ 10	+0 / -0.022	+0 / -0.0009
10 < D ≤ 13	+0 / -0.027	+0 / -0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d		
	Fractional Size	Wire Gage	Letter Size	mm	Inch					
1AQ0610-SO	-	-	-	6.10	0.2402	63	101	6.10		
1AQ0620-SO	-	-	-	6.20	0.2441			6.20		
1AQ0630-SO	-	-	-	6.30	0.2480			6.30		
1AQ0635-SO	1/4	-	-	6.35	0.2500			6.35		
1AQ0640-SO	-	-	-	6.40	0.2520			6.40		
1AQ0650-SO	-	-	-	6.50	0.2559			6.50		
1AQ0653-SO	-	-	F	6.53	0.2571			6.53		
1AQ0660-SO	-	-	-	6.60	0.2598			6.60		
1AQ0670-SO	-	-	-	6.70	0.2638			6.70		
1AQ0675-SO	17/64	-	-	6.75	0.2657			6.75		
1AQ0680-SO	-	-	-	6.80	0.2677	6.80				
1AQ0690-SO	-	-	-	6.90	0.2717	69	109	6.90		
1AQ0691-SO	-	-	I					7.00	0.2756	7.00
1AQ0700-SO	-	-	-					7.10	0.2795	7.10
1AQ0710-SO	-	-	-					7.14	0.2811	7.14
1AQ0714-SO	9/32	-	-					7.20	0.2835	7.20
1AQ0720-SO	-	-	-					7.30	0.2874	7.30
1AQ0730-SO	-	-	-					7.40	0.2913	7.40
1AQ0740-SO	-	-	-					7.50	0.2953	7.50
1AQ0750-SO	-	-	-					7.54	0.2969	7.54
1AQ0754-SO	19/64	-	-					7.60	0.2992	7.60
1AQ0760-SO	-	-	-	7.70	0.3031	7.70				
1AQ0770-SO	-	-	-	7.80	0.3071	7.80				
1AQ0780-SO	-	-	-	7.90	0.3110	7.90				
1AQ0790-SO	-	-	-	7.94	0.3126	7.94				
1AQ0794-SO	5/16	-	-	8.00	0.3150	8.00				
1AQ0800-SO	-	-	-	8.10	0.3189	8.10				
1AQ0810-SO	-	-	-	8.20	0.3228	8.20				
1AQ0820-SO	-	-	-	8.30	0.3268	8.30				
1AQ0830-SO	-	-	-	8.33	0.3280	8.33				
1AQ0833-SO	21/64	-	-	8.40	0.3307	8.40				
1AQ0840-SO	-	-	-	8.43	0.3319	8.43				
1AQ0843-SO	-	-	Q	8.50	0.3346	8.50				
1AQ0850-SO	-	-	-	8.60	0.3386	8.60				
1AQ0860-SO	-	-	-	8.70	0.3425	8.70				
1AQ0870-SO	-	-	-	8.73	0.3437	8.73				
1AQ0873-SO	11/32	-	-	8.80	0.3465	8.80				
1AQ0880-SO	-	-	-	8.90	0.3504	8.90				
1AQ0890-SO	-	-	-	9.00	0.3543	9.00				
1AQ0900-SO	-	-	-	9.10	0.3583	9.10				
1AQ0910-SO	-	-	-	9.13	0.3594	9.13				
1AQ0913-SO	23/64	-	-	9.20	0.3622	9.20				
1AQ0920-SO	-	-	-	9.30	0.3661	9.30				
1AQ0930-SO	-	-	-	9.40	0.3701	9.40				
1AQ0940-SO	-	-	-	9.50	0.3740	9.50				
1AQ0950-SO	-	-	-	9.53	0.3752	9.53				
1AQ0953-SO	3/8	-	-	9.60	0.3780	9.60				
1AQ0960-SO	-	-	-	9.70	0.3819	9.70				
1AQ0970-SO	-	-	-	9.80	0.3858	9.80				
1AQ0980-SO	-	-	-	9.90	0.3898	9.90				
1AQ0990-SO	-	-	-	9.92	0.3906	9.92				
1AQ0992-SO	25/64	-	-	10.00	0.3937	10.00				
1AQ1000-SO	-	-	-	10.20	0.4016	10.20				
1AQ1020-SO	-	-	-	10.32	0.4063	10.32				
1AQ1032-SO	13/32	-	-	10.50	0.4134	10.50				
1AQ1050-SO	-	-	-							

Packed: 1 pc.  
EDP's listed above are stocked standard, other coatings available upon request.  
Specify treatment at time of order.



# List 1AQ-SO (Continued)

**YELLOW BAND**, Quick Spiral Jobber Drills

<b>NEW</b>	<b>YELLOW BAND TAPS</b> P66-68, 82-84	<b>SPEED FEED</b> P54	<b>HSS</b>	<b>TYPE W</b>	<b>BR</b>	<b>JOBBERS</b>	<b>40°</b>
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EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1AQ1072-SO	27/64	-	-	10.72	0.4220	94	142	10.72
1AQ1100-SO	-	-	-	11.00	0.4331			11.00
1AQ1111-SO	7/16	-	-	11.11	0.4374			11.11
1AQ1150-SO	-	-	-	11.50	0.4528			11.50
1AQ1200-SO	-	-	-	12.00	0.4724			12.00
1AQ1229-SO	31/64	-	-	12.30	0.4843	101	151	12.30
1AQ1250-SO	-	-	-	12.50	0.4921			12.50
1AQ1269-SO	1/2	-	-	12.70	0.5000			12.70
1AQ1270-SO	-	-	-	12.70	0.5000			12.70
1AQ1300-SO	-	-	-	13.00	0.5118			13.00

Packed: 1 pc.  
EDP's listed above are stocked standard, other coatings available upon request.  
Specify treatment at time of order.



Work Material																	
List No.	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
1AQ-SO	<input type="checkbox"/>									<input checked="" type="checkbox"/>	<input type="checkbox"/>						

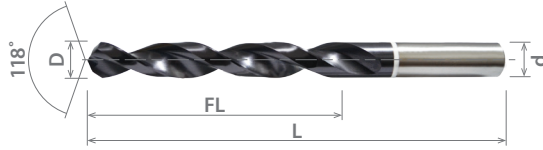
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### List 1W6-SO

WHITE BAND, UDC Jobber Drills



<b>NEW</b>	WHITE BAND TAPS P69-71	SPEED FEED P54	HSS-Co5	TYPE FS	TYPE GG	TiAlN	JOBBERS	30°
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Cutting Diameter Tolerance (h8)		
Size	mm	inch
1.98 ≤ D ≤ 3	+0 / -0.014	+0 / -0.0006
3 < D ≤ 6	+0 / -0.018	+0 / -0.0007
6 < D ≤ 10	+0 / -0.022	+0 / -0.0009
10 < D ≤ 13	+0 / -0.027	+0 / -0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1W60198-SO	5/64	-	-	1.98	0.0780	24	49	1.98
1W60199-SO	-	47	-	1.99	0.0783			1.99
1W60206-SO	-	46	-	2.06	0.0811			2.06
1W60208-SO	-	45	-	2.08	0.0819	27	53	2.08
1W60218-SO	-	44	-	2.18	0.0858			2.18
1W60226-SO	-	43	-	2.26	0.0890			2.26
1W60237-SO	-	42	-	2.37	0.0933	30	57	2.37
1W60238-SO	3/32	-	-	2.38	0.0937			2.38
1W60244-SO	-	41	-	2.44	0.0961			2.44
1W60249-SO	-	40	-	2.49	0.0980	33	61	2.49
1W60250-SO	-	-	-	2.50	0.0984			2.50
1W60253-SO	-	39	-	2.53	0.0996			2.53
1W60258-SO	-	38	-	2.58	0.1016	36	65	2.58
1W60264-SO	-	37	-	2.64	0.1039			2.64
1W60271-SO	-	36	-	2.71	0.1067			2.71
1W60278-SO	7/64	-	-	2.78	0.1094	39	70	2.78
1W60279-SO	-	35	-	2.79	0.1098			2.79
1W60282-SO	-	34	-	2.82	0.1110			2.82
1W60287-SO	-	33	-	2.87	0.1130	43	75	2.87
1W60295-SO	-	32	-	2.95	0.1161			2.95
1W60305-SO	-	31	-	3.05	0.1201			3.05
1W60318-SO	1/8	-	-	3.18	0.1252	47	80	3.18
1W60326-SO	-	30	-	3.26	0.1283			3.26
1W60330-SO	-	-	-	3.30	0.1299			3.30
1W60345-SO	-	29	-	3.45	0.1358	52	86	3.45
1W60356-SO	-	28	-	3.57	0.1406			3.57
1W60357-SO	9/64	-	-	3.66	0.1441			3.66
1W60366-SO	-	27	-	3.73	0.1469	57	91	3.73
1W60373-SO	-	26	-	3.80	0.1496			3.80
1W60379-SO	-	25	-	3.86	0.1520			3.86
1W60386-SO	-	24	-	3.91	0.1539	61	105	3.91
1W60391-SO	-	23	-	3.97	0.1563			3.97
1W60397-SO	5/32	-	-	3.99	0.1571			3.99
1W60399-SO	-	22	-	4.00	0.1575	65	119	4.00
1W60400-SO	-	-	-	4.04	0.1591			4.04
1W60404-SO	-	21	-	4.09	0.1610			4.09
1W60409-SO	-	20	-	4.20	0.1654	69	133	4.20
1W60420-SO	-	-	-	4.22	0.1661			4.22
1W60422-SO	-	19	-	4.31	0.1697			4.31
1W60431-SO	-	18	-	4.37	0.1720	73	147	4.37
1W60437-SO	11/64	-	-	4.39	0.1728			4.39
1W60439-SO	-	17	-	4.50	0.1772			4.50
1W60449-SO	-	16	-	4.57	0.1799	77	161	4.57
1W60450-SO	-	-	-	4.62	0.1819			4.62
1W60457-SO	-	15	-	4.70	0.1850			4.70
1W60462-SO	-	14	-	4.76	0.1874	81	175	4.76
1W60469-SO	-	13	-	4.80	0.1890			4.80
1W60476-SO	3/16	-	-	4.86	0.1913			4.86
1W60479-SO	-	12	-	4.92	0.1937	85	189	4.92
1W60485-SO	-	11	-	4.98	0.1961			4.98
1W60492-SO	-	10	-	5.00	0.1969			5.00
1W60498-SO	-	9	-	5.05	0.1988	89	203	5.05
1W60500-SO	-	-	-	5.11	0.2012			5.11
1W60506-SO	-	8	-	5.16	0.2031			5.16
1W60511-SO	-	7	-	5.18	0.2039	93	217	5.18
1W60516-SO	13/64	-	-	5.22	0.2055			5.22
1W60518-SO	-	6	-					
1W60522-SO	-	5	-					

Packed: 1 pc.  
Available TiAlN coating only.



# List 1W6-SO (Continued)

WHITE BAND, UDC Jobber Drills

<b>NEW</b>	WHITE BAND TAPS P69-71	SPEED FEED P54	HSS-Co5	TYPE FS	TYPE GG	TiAIN	JOBBER	30°
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EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1W60532-SO	-	4	-	5.31	0.2091	57	93	5.31
1W60541-SO	-	3	-	5.41	0.2130			5.41
1W60550-SO	-	-	-	5.50	0.2165			5.50
1W60556-SO	7/32	-	-	5.56	0.2189			5.56
1W60561-SO	-	2	-	5.61	0.2209			5.61
1W60579-SO	-	1	-	5.79	0.2280			5.79
1W60595-SO	15/64	-	-	5.95	0.2343			5.95
1W60600-SO	-	-	-	6.00	0.2362			6.00
1W60634-SO	1/4	-	-	6.35	0.2500			6.35
1W60650-SO	-	-	-	6.50	0.2559			6.50
1W60653-SO	-	-	F	6.53	0.2571	6.53		
1W60675-SO	17/64	-	-	6.75	0.2657	6.75		
1W60680-SO	-	-	-	6.80	0.2677	6.80		
1W60691-SO	-	-	I	6.90	0.2717	6.90		
1W60700-SO	-	-	-	7.00	0.2756	7.00		
1W60714-SO	9/32	-	-	7.14	0.2811	7.14		
1W60750-SO	-	-	-	7.50	0.2953	7.50		
1W60754-SO	19/64	-	-	7.54	0.2969	7.54		
1W60794-SO	5/16	-	-	7.94	0.3126	7.94		
1W60800-SO	-	-	-	8.00	0.3150	8.00		
1W60833-SO	21/64	-	-	8.33	0.3280	8.33		
1W60843-SO	-	-	Q	8.43	0.3319	8.43		
1W60850-SO	-	-	-	8.50	0.3346	8.50		
1W60873-SO	11/32	-	-	8.73	0.3437	8.73		
1W60900-SO	-	-	-	9.00	0.3543	9.00		
1W60913-SO	23/64	-	-	9.13	0.3594	9.13		
1W60950-SO	-	-	-	9.50	0.3740	9.50		
1W60953-SO	3/8	-	-	9.53	0.3752	9.53		
1W60992-SO	25/64	-	-	9.92	0.3906	9.92		
1W61000-SO	-	-	-	10.00	0.3937	10.00		
1W61020-SO	-	-	-	10.20	0.4016	10.20		
1W61030-SO	13/32	-	-	10.32	0.4063	10.32		
1W61050-SO	-	-	-	10.50	0.4134	10.50		
1W61072-SO	27/64	-	-	10.72	0.4220	10.72		
1W61100-SO	-	-	-	11.00	0.4331	11.00		
1W61111-SO	7/16	-	-	11.11	0.4374	11.11		
1W61191-SO	15/32	-	-	11.91	0.4689	11.91		
1W61200-SO	-	-	-	12.00	0.4724	12.00		
1W61269-SO	1/2	-	-	12.70	0.5000	12.70		

Packed: 1 pc.  
Available TiAIN coating only.



Work Material																		
List No.	P					M			K Cast Iron	N		S		H				
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels				Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels				
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
1W6-SO									<input checked="" type="checkbox"/>									

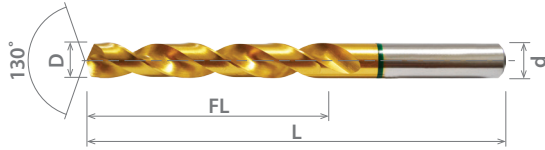
good  best





### List 1G7-SO

GREEN BAND, NDX Jobber Drills



<b>NEW</b>	<b>GREEN BAND TAPS</b> P12-75, 85-87	<b>SPEED FEED</b> P54	<b>HSS-Co5</b>	<b>TYPE UNI</b>	<b>TiN</b>	<b>JOBBERS</b>	<b>33°</b>
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Cutting Diameter Tolerance (h8)		
Size	mm	inch
1≤D≤3	+0 / -0.014	+0 / -0.0006
3<D≤6	+0 / -0.018	+0 / -0.0007
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤13	+0 / -0.027	+0 / -0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1G70100-SO	-	-	-	1.00	0.0394	12	34	1.00
1G70150-SO	-	-	-	1.50	0.0591	18	40	1.50
1G70160-SO	-	-	-	1.60	0.0630			1.60
1G70170-SO	-	-	-	1.70	0.0669	20	43	1.70
1G70190-SO	-	-	-	1.90	0.0748	22	46	1.90
1G70198-SO	5/64	-	-	1.98	0.0780			1.98
1G70199-SO	-	47	-	1.99	0.0783			1.99
1G70200-SO	-	-	-	2.00	0.0787	24	49	2.00
1G70206-SO	-	46	-	2.06	0.0811			2.06
1G70208-SO	-	45	-	2.08	0.0819			2.08
1G70210-SO	-	-	-	2.10	0.0827			2.10
1G70218-SO	-	44	-	2.18	0.0858	27	53	2.18
1G70226-SO	-	43	-	2.26	0.0890			2.26
1G70237-SO	-	42	-	2.37	0.0933			2.37
1G70238-SO	3/32	-	-	2.38	0.0937			2.38
1G70244-SO	-	41	-	2.44	0.0961			2.44
1G70249-SO	-	40	-	2.49	0.0980			2.49
1G70250-SO	-	-	-	2.50	0.0984	30	57	2.50
1G70253-SO	-	39	-	2.53	0.0996			2.53
1G70258-SO	-	38	-	2.58	0.1016			2.58
1G70260-SO	-	-	-	2.60	0.1024			2.60
1G70264-SO	-	37	-	2.64	0.1039			2.64
1G70270-SO	-	-	-	2.70	0.1063			2.70
1G70271-SO	-	36	-	2.71	0.1067			2.71
1G70278-SO	7/64	-	-	2.78	0.1094			2.78
1G70279-SO	-	35	-	2.79	0.1098			2.79
1G70280-SO	-	-	-	2.80	0.1102	33	61	2.80
1G70282-SO	-	34	-	2.82	0.1110			2.82
1G70287-SO	-	33	-	2.87	0.1130			2.87
1G70290-SO	-	-	-	2.90	0.1142			2.90
1G70295-SO	-	32	-	2.95	0.1161			2.95
1G70300-SO	-	-	-	3.00	0.1181			3.00
1G70305-SO	-	31	-	3.05	0.1201			3.05
1G70310-SO	-	-	-	3.10	0.1220			3.10
1G70318-SO	1/8	-	-	3.18	0.1252	36	65	3.18
1G70320-SO	-	-	-	3.20	0.1260			3.20
1G70326-SO	-	30	-	3.26	0.1283			3.26
1G70330-SO	-	-	-	3.30	0.1299			3.30
1G70340-SO	-	-	-	3.40	0.1339			3.40
1G70345-SO	-	29	-	3.45	0.1358			3.45
1G70350-SO	-	-	-	3.50	0.1378			3.50
1G70356-SO	-	28	-	3.56	0.1406			3.56
1G70357-SO	9/64	-	-	3.57	0.1406	39	70	3.57
1G70360-SO	-	-	-	3.60	0.1417			3.60
1G70366-SO	-	27	-	3.66	0.1441			3.66
1G70370-SO	-	-	-	3.70	0.1457			3.70
1G70373-SO	-	26	-	3.73	0.1469			3.73
1G70379-SO	-	25	-	3.79	0.1496			3.79
1G70380-SO	-	-	-	3.80	0.1496	43	75	3.80
1G70386-SO	-	24	-	3.86	0.1520			3.86
1G70390-SO	-	-	-	3.90	0.1535			3.90
1G70391-SO	-	23	-	3.91	0.1539			3.91
1G70397-SO	5/32	-	-	3.97	0.1563			3.97
1G70399-SO	-	22	-	3.99	0.1571			3.99
1G70400-SO	-	-	-	4.00	0.1575			4.00
1G70404-SO	-	21	-	4.04	0.1591			4.04
1G70409-SO	-	20	-	4.09	0.1610			4.09
1G70410-SO	-	-	-	4.10	0.1614			4.10

Packed: 1 pc.  
Available TiN coating only.



# List 1G7-SO (Continued)

GREEN BAND, NDX Jobber Drills

<b>NEW</b>	<b>GREEN BAND TAPS</b> P72-75, 85-87	<b>SPEED FEED</b> P54	<b>HSS-Co5</b>	<b>TYPE UNI</b>	<b>TiN</b>	<b>JOBBERS</b>	<b>33°</b>
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EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1G70420-SO	-	-	-	4.20	0.1654	43	75	4.20
1G70422-SO	-	19	-	4.22	0.1661			4.22
1G70430-SO	-	-	-	4.30	0.1693			4.30
1G70431-SO	-	18	-	4.31	0.1697	47	80	4.31
1G70437-SO	11/64	-	-	4.37	0.1720			4.37
1G70439-SO	-	17	-	4.39	0.1728			4.39
1G70449-SO	-	16	-	4.50	0.1772	52	86	4.50
1G70450-SO	-	-	-					4.57
1G70457-SO	-	15	-	4.62	0.1819			4.62
1G70462-SO	-	14	-	4.70	0.1850	4.70		
1G70469-SO	-	13	-	4.76	0.1874	57	93	4.76
1G70476-SO	3/16	-	-					4.80
1G70479-SO	-	12	-	4.86	0.1913			4.86
1G70480-SO	-	-	-	4.92	0.1937	4.92		
1G70485-SO	-	11	-	4.98	0.1961	4.98		
1G70492-SO	-	10	-	5.00	0.1969	5.00		
1G70498-SO	-	9	-	5.05	0.1988	5.05		
1G70500-SO	-	-	-	5.10	0.2008	5.10		
1G70506-SO	-	8	-	5.11	0.2012	5.11		
1G70510-SO	-	7	-	5.16	0.2031	5.16		
1G70511-SO	-	-	-	5.18	0.2039	5.18		
1G70516-SO	13/64	-	-	5.20	0.2047	5.20		
1G70518-SO	-	6	-	5.22	0.2055	5.22		
1G70520-SO	-	-	-	5.30	0.2087	5.30		
1G70522-SO	-	5	-	5.31	0.2091	5.31		
1G70530-SO	-	-	-	5.41	0.2130	5.41		
1G70532-SO	-	4	-	5.50	0.2165	5.50		
1G70541-SO	-	3	-	5.56	0.2189	5.56		
1G70550-SO	-	-	-	5.61	0.2209	5.61		
1G70556-SO	7/32	-	-	5.79	0.2280	5.79		
1G70561-SO	-	2	-	5.80	0.2283	5.80		
1G70579-SO	-	1	-	5.90	0.2323	5.90		
1G70580-SO	-	-	-	5.95	0.2343	5.95		
1G70590-SO	-	-	-	6.00	0.2362	6.00		
1G70595-SO	15/64	-	-	6.10	0.2402	6.10		
1G70600-SO	-	-	-	6.20	0.2441	6.20		
1G70610-SO	-	-	-	6.30	0.2480	6.30		
1G70620-SO	-	-	-	6.35	0.2500	6.35		
1G70630-SO	-	-	-	6.40	0.2520	6.40		
1G70635-SO	1/4	-	-	6.50	0.2559	6.50		
1G70640-SO	-	-	-	6.53	0.2571	6.53		
1G70650-SO	-	-	-	6.75	0.2657	6.75		
1G70653-SO	-	-	F	6.80	0.2677	6.80		
1G70675-SO	17/64	-	-	6.90	0.2717	69	109	6.90
1G70680-SO	-	-	-					7.00
1G70690-SO	-	-	-	7.14	0.2811			7.14
1G70691-SO	-	-	I	7.30	0.2874	7.30		
1G70700-SO	-	-	-	7.50	0.2953	7.50		
1G70714-SO	9/32	-	-	7.54	0.2969	7.54		
1G70730-SO	-	-	-	7.70	0.3031	7.70		
1G70750-SO	-	-	-					
1G70754-SO	19/64	-	-			75	117	7.54
1G70770-SO	-	-	-					7.70

Packed: 1 pc.  
Available TiN coating only.

continued on next page

List No.	Work Material																	
	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC
1G7-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>														

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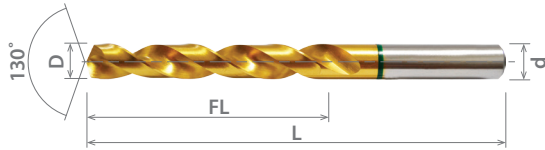




### List 1G7-SO (Continued)

<b>NEW</b>	<b>GREEN BAND TAPS</b> P72-75, 85-87	<b>SPEED FEED</b> P54	<b>HSS-Co5</b>	<b>TYPE UNI</b>	<b>TiN</b>	<b>JOBBERS</b>	<b>33°</b>
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GREEN BAND, NDX Jobber Drills



Cutting Diameter Tolerance (h8)		
Size	mm	inch
1≤D≤3	+0 / -0.014	+0 / -0.0006
3<D≤6	+0 / -0.018	+0 / -0.0007
6<D≤10	+0 / -0.022	+0 / -0.0009
10<D≤13	+0 / -0.027	+0 / -0.0011

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d		
	Fractional Size	Wire Gage	Letter Size	mm	Inch					
1G70780-SO	-	-	-	7.80	0.3071	75	117	7.80		
1G70790-SO	-	-	-	7.90	0.3110			7.90		
1G70794-SO	5/16	-	-	7.94	0.3126			7.94		
1G70800-SO	-	-	-	8.00	0.3150			8.00		
1G70810-SO	-	-	-	8.10	0.3189			8.10		
1G70820-SO	-	-	-	8.20	0.3228			8.20		
1G70833-SO	21/64	-	-	8.33	0.3280			8.33		
1G70840-SO	-	-	-	8.40	0.3307			8.40		
1G70843-SO	-	-	Q	8.43	0.3319			8.43		
1G70850-SO	-	-	-	8.50	0.3346			8.50		
1G70870-SO	-	-	-	8.70	0.3425	8.70				
1G70873-SO	11/32	-	-	8.73	0.3437	81	125	8.73		
1G70880-SO	-	-	-	8.80	0.3465			8.80		
1G70890-SO	-	-	-	8.90	0.3504			8.90		
1G70900-SO	-	-	-	9.00	0.3543			9.00		
1G70913-SO	23/64	-	-	9.13	0.3594			9.13		
1G70930-SO	-	-	-	9.30	0.3661			9.30		
1G70950-SO	-	-	-	9.50	0.3740			9.50		
1G70953-SO	3/8	-	-	9.53	0.3752			9.53		
1G70960-SO	-	-	-	9.60	0.3780			9.60		
1G70992-SO	25/64	-	-	9.92	0.3906			9.92		
1G71000-SO	-	-	-	10.00	0.3937	87	133	10.00		
1G71010-SO	-	-	-	10.10	0.3976			10.10		
1G71020-SO	-	-	-	10.20	0.4016			10.20		
1G71030-SO	-	-	-	10.30	0.4055			10.30		
1G71032-SO	13/32	-	-	10.32	0.4063			10.32		
1G71050-SO	-	-	-	10.50	0.4134			10.50		
1G71060-SO	-	-	-	10.60	0.4173			10.60		
1G71070-SO	-	-	-	10.70	0.4213			10.70		
1G71072-SO	27/64	-	-	10.72	0.4220			10.72		
1G71080-SO	-	-	-	10.80	0.4252			10.80		
1G71100-SO	-	-	-	11.00	0.4331	11.00				
1G71111-SO	7/16	-	-	11.11	0.4374	94	142	11.11		
1G71130-SO	-	-	-	11.30	0.4449			11.30		
1G71150-SO	-	-	-	11.50	0.4528			11.50		
1G71170-SO	-	-	-	11.70	0.4606			11.70		
1G71180-SO	-	-	-	11.80	0.4646			11.80		
1G71200-SO	-	-	-	12.00	0.4724			12.00		
1G71250-SO	-	-	-	12.50	0.4921			12.50		
1G71269-SO	1/2	-	-	12.70	0.5000			101	151	12.70
1G71270-SO	-	-	-	12.80	0.5039					12.80
1G71280-SO	-	-	-	12.90	0.5079					12.90
1G71290-SO	-	-	-	13.00	0.5118	13.00				
1G71300-SO	-	-	-	13.00	0.5118	13.00				

Packed: 1 pc.  
Available TiN coating only.



List No.	Work Material																	
	P					M			K	N		S	H					
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
1G7-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>														

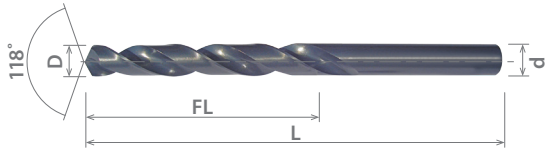
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# List 101-SO, 102-SO

Straight Shank Jobber Drills



<b>NEW</b>	<b>SPEED FEED</b> P55	<b>HSS</b>	<b>TYPE N</b>	<b>S/O</b>	<b>JOBBERS</b>	<b>30°</b>
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Cutting Diameter Tolerance (h8)		
Size	mm	inch
0.3 ≤ D ≤ 3	+0 / -0.014	+0 / -0.0006
3 < D ≤ 6	+0 / -0.018	+0 / -0.0007
6 < D ≤ 10	+0 / -0.022	+0 / -0.0009
10 < D ≤ 18	+0 / -0.027	+0 / -0.0011
18 < D ≤ 20	+0 / -0.033	+0 / -0.0013

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1010030-SO	-	-	-	0.30	0.0118	3	19	0.30
1010035-SO	-	-	-	0.35	0.0138	4		0.35
1020040-SO	1/64	-	-	0.40	0.0157	5	20	0.40
1010040-SO	-	-	-					
1010045-SO	-	-	-	0.45	0.0177	6	22	0.50
1010050-SO	-	-	-	0.50	0.0197			
1010055-SO	-	-	-	0.55	0.0217	7	24	0.55
1010060-SO	-	-	-	0.60	0.0236			
1010070-SO	-	-	-	0.70	0.0276	9	28	0.70
1010075-SO	-	-	-	0.75	0.0295			
1020079-SO	1/32	-	-	0.79	0.0311	10	30	0.79
1010080-SO	-	-	-	0.80	0.0315			
1010090-SO	-	-	-	0.90	0.0354	11	32	0.90
1010100-SO	-	-	-	1.00	0.0394			
1010105-SO	-	-	-	1.05	0.0413	12	34	1.05
1010110-SO	-	-	-	1.10	0.0433			
1010115-SO	-	-	-	1.15	0.0453	14	36	1.15
1020119-SO	3/64	-	-	1.19	0.0469			
1010120-SO	-	-	-	1.20	0.0472	16	38	1.20
1010125-SO	-	-	-	1.25	0.0492			
1010130-SO	-	-	-	1.30	0.0512	18	40	1.30
1010135-SO	-	-	-	1.35	0.0531			
1010140-SO	-	-	-	1.40	0.0551	20	43	1.40
1010145-SO	-	-	-	1.45	0.0571			
1010150-SO	-	-	-	1.50	0.0591	22	46	1.50
1010155-SO	-	-	-	1.55	0.0610			
1020159-SO	1/16	-	-	1.59	0.0626	24	49	1.59
1010160-SO	-	-	-	1.60	0.0630			
1010165-SO	-	-	-	1.65	0.0650	27	53	1.65
1010170-SO	-	-	-	1.70	0.0669			
1010175-SO	-	-	-	1.75	0.0689	30	57	1.75
1010180-SO	-	-	-	1.80	0.0709			
1010185-SO	-	-	-	1.85	0.0728	30	57	1.85
1010190-SO	-	-	-	1.90	0.0748			
1010195-SO	-	-	-	1.95	0.0768	24	49	1.95
1020198-SO	5/64	-	-	1.98	0.0780			
1010200-SO	-	-	-	2.00	0.0787	27	53	2.00
1010205-SO	-	-	-	2.05	0.0807			
1010210-SO	-	-	-	2.10	0.0827	30	57	2.10
1010215-SO	-	-	-	2.15	0.0846			
1010220-SO	-	-	-	2.20	0.0866	27	53	2.20
1010225-SO	-	-	-	2.25	0.0886			
1010230-SO	-	-	-	2.30	0.0906	30	57	2.30
1010235-SO	-	-	-	2.35	0.0925			
1020238-SO	3/32	-	-	2.38	0.0937	30	57	2.38
1010240-SO	-	-	-	2.40	0.0945			
1010245-SO	-	-	-	2.45	0.0965			2.45

Packed: 1 pc.  
Available Steam Oxide coating only.

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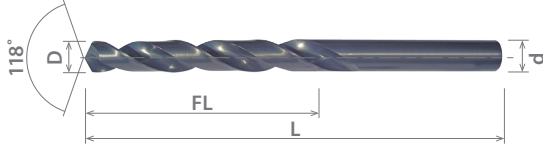
List No.	Work Material																		
	P					M			K	N		S		H					
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels					
	Low	Med.	High			300	400	17-4 PH		6061	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
101-SO, 102-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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# List 101-SO, 102-SO (Continued)

Straight Shank Jobber Drills



<b>NEW</b>	<b>SPEED FEED</b> P55	<b>HSS</b>	<b>TYPE N</b>	<b>S/O</b>	<b>JOBBERS</b>	<b>30°</b>
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Cutting Diameter Tolerance (h8)		
Size	mm	inch
0.3 ≤ D ≤ 3	+0 / -0.014	+0 / -0.0006
3 < D ≤ 6	+0 / -0.018	+0 / -0.0007
6 < D ≤ 10	+0 / -0.022	+0 / -0.0009
10 < D ≤ 18	+0 / -0.027	+0 / -0.0011
18 < D ≤ 20	+0 / -0.033	+0 / -0.0013

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1010250-SO	-	-	-	2.50	0.0984	30	57	2.50
1010255-SO	-	-	-	2.55	0.1004			2.55
1010260-SO	-	-	-	2.60	0.1024			2.60
1010265-SO	-	-	-	2.65	0.1043			2.65
1010270-SO	-	-	-	2.70	0.1063	33	61	2.70
1010275-SO	-	-	-	2.75	0.1083			2.75
1020278-SO	7/64	-	-	2.78	0.1094			2.78
1010280-SO	-	-	-	2.80	0.1102			2.80
1010285-SO	-	-	-	2.85	0.1122	36	65	2.85
1010290-SO	-	-	-	2.90	0.1142			2.90
1010295-SO	-	-	-	2.95	0.1161			2.95
1010300-SO	-	-	-	3.00	0.1181			3.00
1010310-SO	-	-	-	3.10	0.1220	39	70	3.10
1020318-SO	1/8	-	-	3.18	0.1252			3.18
1010320-SO	-	-	-	3.20	0.1260			3.20
1010325-SO	-	-	-	3.25	0.1280			3.25
1010330-SO	-	-	-	3.30	0.1299	43	75	3.30
1010340-SO	-	-	-	3.40	0.1339			3.40
1010350-SO	-	-	-	3.50	0.1378			3.50
1020357-SO	9/64	-	-	3.57	0.1406			3.57
1010360-SO	-	-	-	3.60	0.1417	47	80	3.60
1010370-SO	-	-	-	3.70	0.1457			3.70
1010380-SO	-	-	-	3.80	0.1496			3.80
1010390-SO	-	-	-	3.90	0.1535			3.90
1020397-SO	5/32	-	-	3.97	0.1563	52	86	3.97
1010400-SO	-	-	-	4.00	0.1575			4.00
1010410-SO	-	-	-	4.10	0.1614			4.10
1010420-SO	-	-	-	4.20	0.1654			4.20
1010425-SO	-	-	-	4.25	0.1673	57	93	4.25
1010430-SO	-	-	-	4.30	0.1693			4.30
1020437-SO	11/64	-	-	4.37	0.1720			4.37
1010440-SO	-	-	-	4.40	0.1732			4.40
1010450-SO	-	-	-	4.50	0.1772	63	101	4.50
1010460-SO	-	-	-	4.60	0.1811			4.60
1010470-SO	-	-	-	4.70	0.1850			4.70
1020476-SO	3/16	-	-	4.76	0.1874			4.76
1010480-SO	-	-	-	4.80	0.1890	63	101	4.80
1010490-SO	-	-	-	4.90	0.1929			4.90
1010500-SO	-	-	-	5.00	0.1969			5.00
1010510-SO	-	-	-	5.10	0.2008			5.10
1020516-SO	13/64	-	-	5.16	0.2031	57	93	5.16
1010520-SO	-	-	-	5.20	0.2047			5.20
1010525-SO	-	-	-	5.25	0.2067			5.25
1010530-SO	-	-	-	5.30	0.2087			5.30
1010540-SO	-	-	-	5.40	0.2126	63	101	5.40
1010550-SO	-	-	-	5.50	0.2165			5.50
1020556-SO	7/32	-	-	5.56	0.2189			5.56
1010560-SO	-	-	-	5.60	0.2205			5.60
1010570-SO	-	-	-	5.70	0.2244	63	101	5.70
1010575-SO	-	-	-	5.75	0.2264			5.75
1010580-SO	-	-	-	5.80	0.2283			5.80
1010590-SO	-	-	-	5.90	0.2323			5.90
1020595-SO	15/64	-	-	5.95	0.2343	63	101	5.95
1010600-SO	-	-	-	6.00	0.2362			6.00
1010610-SO	-	-	-	6.10	0.2402			6.10
1010620-SO	-	-	-	6.20	0.2441			6.20
1010625-SO	-	-	-	6.25	0.2461	63	101	6.25
1010630-SO	-	-	-	6.30	0.2480			6.30

Packed: 1 pc.  
Available Steam Oxide coating only.



# List 101-SO, 102-SO (Continued)

Straight Shank Jobber Drills

**NEW** SPEED FEED P55 HSS TYPE N S/O JOBBERS 30°

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1020635-SO	1/4	-	-	6.35	0.2500	63	101	6.35
1010640-SO	-	-	-	6.40	0.2520			6.40
1010650-SO	-	-	-	6.50	0.2559			6.50
1010660-SO	-	-	-	6.60	0.2598			6.60
1010670-SO	-	-	-	6.70	0.2638			6.70
1020675-SO	17/64	-	-	6.75	0.2657	69	109	6.75
1010675-SO	-	-	-	6.80	0.2677			6.80
1010680-SO	-	-	-	6.90	0.2717			6.90
1010700-SO	-	-	-	7.00	0.2756			7.00
1010710-SO	-	-	-	7.10	0.2795			7.10
1020714-SO	9/32	-	-	7.14	0.2811			7.14
1010720-SO	-	-	-	7.20	0.2835			7.20
1010730-SO	-	-	-	7.30	0.2874			7.30
1010740-SO	-	-	-	7.40	0.2913			7.40
1010750-SO	-	-	-	7.50	0.2953			7.50
1020754-SO	19/64	-	-	7.54	0.2969	75	117	7.54
1010760-SO	-	-	-	7.60	0.2992			7.60
1010770-SO	-	-	-	7.70	0.3031			7.70
1010780-SO	-	-	-	7.80	0.3071			7.80
1010790-SO	-	-	-	7.90	0.3110			7.90
1020794-SO	5/16	-	-	7.94	0.3126			7.94
1010800-SO	-	-	-	8.00	0.3150			8.00
1010810-SO	-	-	-	8.10	0.3189			8.10
1010820-SO	-	-	-	8.20	0.3228			8.20
1010825-SO	-	-	-	8.25	0.3248			8.25
1010830-SO	-	-	-	8.30	0.3268			8.30
1020833-SO	21/64	-	-	8.33	0.3280			8.33
1010840-SO	-	-	-	8.40	0.3307			8.40
1010850-SO	-	-	-	8.50	0.3346			8.50
1010860-SO	-	-	-	8.60	0.3386			8.60
1010870-SO	-	-	-	8.70	0.3425	8.70		
1020873-SO	11/32	-	-	8.73	0.3437	8.73		
1010875-SO	-	-	-	8.75	0.3445	8.75		
1010880-SO	-	-	-	8.80	0.3465	8.80		
1010890-SO	-	-	-	8.90	0.3504	8.90		
1010900-SO	-	-	-	9.00	0.3543	9.00		
1010910-SO	-	-	-	9.10	0.3583	9.10		
1020913-SO	23/64	-	-	9.13	0.3594	9.13		
1010920-SO	-	-	-	9.20	0.3622	9.20		
1010925-SO	-	-	-	9.25	0.3642	9.25		
1010930-SO	-	-	-	9.30	0.3661	9.30		
1010940-SO	-	-	-	9.40	0.3701	9.40		
1010950-SO	-	-	-	9.50	0.3740	9.50		
1020953-SO	3/8	-	-	9.53	0.3752	9.53		
1010960-SO	-	-	-	9.60	0.3780	9.60		
1010970-SO	-	-	-	9.70	0.3819	9.70		
1010975-SO	-	-	-	9.75	0.3839	9.75		
1010980-SO	-	-	-	9.80	0.3858	9.80		
1010990-SO	-	-	-	9.90	0.3898	9.90		
1020992-SO	25/64	-	-	9.92	0.3906	9.92		
1011000-SO	-	-	-	10.00	0.3937	10.00		
1011010-SO	-	-	-	10.10	0.3976	10.10		

Packed: 1 pc.  
Available Steam Oxide coating only.

continued on next page 

List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
101-SO, 102-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

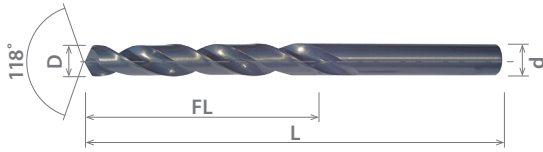
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# List 101-SO, 102-SO (Continued)

<b>NEW</b>	<b>SPEED FEED</b> P55	<b>HSS</b>	<b>TYPE N</b>	<b>S/O</b>	<b>JOBBERS</b>	<b>30°</b>
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Straight Shank Jobber Drills



Cutting Diameter Tolerance (h8)		
Size	mm	inch
0.3 ≤ D ≤ 3	+0 / -0.014	+0 / -0.0006
3 < D ≤ 6	+0 / -0.018	+0 / -0.0007
6 < D ≤ 10	+0 / -0.022	+0 / -0.0009
10 < D ≤ 18	+0 / -0.027	+0 / -0.0011
18 < D ≤ 20	+0 / -0.033	+0 / -0.0013

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
1011020-SO	-	-	-	10.20	0.4016	87	133	10.20
1011025-SO	-	-	-	10.25	0.4035			10.25
1011030-SO	-	-	-	10.30	0.4055			10.30
1021032-SO	13/32	-	-	10.32	0.4063			10.32
1011040-SO	-	-	-	10.40	0.4094			10.40
1011050-SO	-	-	-	10.50	0.4134			10.50
1011060-SO	-	-	-	10.60	0.4173	10.60		
1011070-SO	-	-	-	10.70	0.4213	94	142	10.70
1021072-SO	27/64	-	-	10.72	0.4220			10.72
1011075-SO	-	-	-	10.75	0.4232			10.75
1011080-SO	-	-	-	10.80	0.4252			10.80
1011090-SO	-	-	-	10.90	0.4291			10.90
1011100-SO	-	-	-	11.00	0.4331			11.00
1011110-SO	-	-	-	11.10	0.4370			11.10
1021111-SO	7/16	-	-	11.11	0.4374			11.11
1011120-SO	-	-	-	11.20	0.4409			11.20
1011130-SO	-	-	-	11.30	0.4449			11.30
1011140-SO	-	-	-	11.40	0.4488			11.40
1011150-SO	-	-	-	11.50	0.4528			11.50
1021151-SO	29/64	-	-	11.51	0.4531			11.51
1011160-SO	-	-	-	11.60	0.4567			11.60
1011170-SO	-	-	-	11.70	0.4606	11.70		
1011180-SO	-	-	-	11.80	0.4646	11.80		
1011190-SO	-	-	-	11.90	0.4685	11.90		
1021191-SO	15/32	-	-	11.91	0.4689	11.91		
1011200-SO	-	-	-	12.00	0.4724	12.00		
1011210-SO	-	-	-	12.10	0.4764	12.10		
1011220-SO	-	-	-	12.20	0.4803	12.20		
1011225-SO	-	-	-	12.25	0.4823	12.25		
1011230-SO	-	-	-	12.30	0.4843	12.30		
1021230-SO	31/64	-	-	12.30	0.4843	12.30		
1011240-SO	-	-	-	12.40	0.4882	12.40		
1011250-SO	-	-	-	12.50	0.4921	12.50		
1011260-SO	-	-	-	12.60	0.4961	12.60		
1021270-SO	1/2	-	-	12.70	0.5000	12.70		
1011270-SO	-	-	-	12.70	0.5000	12.70		
1011275-SO	-	-	-	12.75	0.5020	12.75		
1011280-SO	-	-	-	12.80	0.5039	12.80		
1011290-SO	-	-	-	12.90	0.5079	12.90		
1011300-SO	-	-	-	13.00	0.5118	13.00		
1021310-SO	33/64	-	-	13.10	0.5157	13.10		
1011310-SO	-	-	-	13.10	0.5157	13.10		
1011320-SO	-	-	-	13.20	0.5197	13.20		
1011325-SO	-	-	-	13.25	0.5217	13.25		
1011330-SO	-	-	-	13.30	0.5236	13.30		
1011340-SO	-	-	-	13.40	0.5276	13.40		
1021349-SO	17/32	-	-	13.49	0.5311	13.49		
1011350-SO	-	-	-	13.50	0.5315	13.50		
1011360-SO	-	-	-	13.60	0.5354	13.60		
1011370-SO	-	-	-	13.70	0.5394	13.70		
1011380-SO	-	-	-	13.80	0.5433	13.80		
1021389-SO	35/64	-	-	13.89	0.5469	13.89		
1011400-SO	-	-	-	14.00	0.5512	14.00		
1011425-SO	-	-	-	14.25	0.5610	14.25		
1021429-SO	9/16	-	-	14.29	0.5626	14.29		
1011450-SO	-	-	-	14.50	0.5709	14.50		
1021468-SO	37/64	-	-	14.68	0.5780	14.68		
1011475-SO	-	-	-	14.75	0.5807	14.75		

Packed: 1 pc.  
Available Steam Oxide coating only.









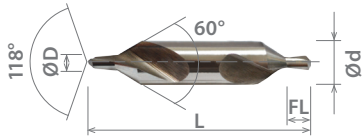




# List 1NA-SO

Center Drills

<b>NEW</b>	<b>SPEED FEED</b> P56	<b>HSS</b>	<b>BR</b>
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EDP Number	Diameter	Tool Number	Flute Length	Overall Length	Shank Diameter
			FL	L	d
1NA0001-SO	3/64	1	0.047	1.260	0.125
1NA0002-SO	5/64	2	0.078	1.890	0.187
1NA0003-SO	7/64	3	0.110	2.008	0.250
1NA0004-SO	1/8	4	0.126	2.126	0.313
1NA0005-SO	3/16	5	0.189	2.756	0.437
1NA0006-SO	7/32	6	0.217	2.992	0.500
1NA0007-SO	1/4	7	0.252	3.268	0.625

Packed: 1 pc.  
EDP's listed above are stocked standard, other coatings available upon request.  
Specify treatment at time of order.



Work Material																	
List No.	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
1NA-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

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### List 751-SO, 752-SO

Parallel Shank Machine Chucking Reamers

NEW	SPEED FEED	HSS-Co5	BR	10°
	P57			



Cutting Diameter Tolerance (h7)		
Size	mm	inch
2≤D≤3	+0 / -0.01	+0 / -0.0003
3<D≤6	+0 / -0.012	+0 / -0.0004
6<D≤10	+0 / -0.015	+0 / -0.0005
10<D≤18	+0 / -0.018	+0 / -0.0007
18<D≤20	+0 / -0.021	+0 / -0.0008

EDP Number	Diameter					Flute Length	Overall Length	Shank Diameter
	Fractional Size	Wire Gage	Letter Size	mm	Inch			
7510200-SO	-	-	-	2.00	0.0787	11	49	2.0
7510240-SO	-	-	-	2.40	0.0945	14	57	2.4
7510250-SO	-	-	-	2.50	0.0984			2.5
7510260-SO	-	-	-	2.60	0.1024			2.6
7510270-SO	-	-	-	2.70	0.1063	15	61	2.7
7510280-SO	-	-	-	2.80	0.1102			2.8
7510300-SO	-	-	-	3.00	0.1181			3.0
7510310-SO	-	-	-	3.10	0.1220	16	65	3.1
7520318-SO	1/8	-	-	3.18	0.1252			3.2
7510320-SO	-	-	-	3.20	0.1260			3.2
7510340-SO	-	-	-	3.40	0.1339	18	70	3.4
7510350-SO	-	-	-	3.50	0.1378			3.5
7510360-SO	-	-	-	3.60	0.1417			3.6
7510380-SO	-	-	-	3.80	0.1496	19	75	4.0
7510400-SO	-	-	-	4.00	0.1575			4.0
7510410-SO	-	-	-	4.10	0.1614			4.0
7510420-SO	-	-	-	4.20	0.1654	21	80	4.5
7510430-SO	-	-	-	4.30	0.1693			4.5
7510440-SO	-	-	-	4.40	0.1732			4.5
7510450-SO	-	-	-	4.50	0.1772	23	86	5.0
7520476-SO	3/16	-	-	4.76	0.1874			5.0
7510480-SO	-	-	-	4.80	0.1890			5.0
7510490-SO	-	-	-	4.90	0.1929	26	93	5.6
7510500-SO	-	-	-	5.00	0.1969			5.6
7510510-SO	-	-	-	5.10	0.2008			5.6
7510520-SO	-	-	-	5.20	0.2047	28	101	6.3
7510530-SO	-	-	-	5.30	0.2087			6.3
7510540-SO	-	-	-	5.40	0.2126			6.3
7510550-SO	-	-	-	5.50	0.2165	31	109	7.1
7510560-SO	-	-	-	5.60	0.2205			7.1
7510570-SO	-	-	-	5.70	0.2244			7.1
7510580-SO	-	-	-	5.80	0.2283	33	117	8.0
7510600-SO	-	-	-	6.00	0.2362			8.0
7510610-SO	-	-	-	6.10	0.2402			8.0
7510620-SO	-	-	-	6.20	0.2441	36	125	9.0
7510630-SO	-	-	-	6.30	0.2480			9.0
7520635-SO	1/4	-	-	6.35	0.2500			9.0
7510640-SO	-	-	-	6.40	0.2520	36	125	9.0
7510650-SO	-	-	-	6.50	0.2559			9.0
7510660-SO	-	-	-	6.60	0.2598			9.0
7510670-SO	-	-	-	6.70	0.2638	36	125	9.0
7510680-SO	-	-	-	6.80	0.2677			9.0
7510700-SO	-	-	-	7.00	0.2756			9.0
7510710-SO	-	-	-	7.10	0.2795	36	125	9.0
7510720-SO	-	-	-	7.20	0.2835			9.0
7510730-SO	-	-	-	7.30	0.2874			9.0
7510750-SO	-	-	-	7.50	0.2953	36	125	9.0
7510780-SO	-	-	-	7.80	0.3071			9.0
7510790-SO	-	-	-	7.90	0.3110			9.0
7520794-SO	5/16	-	-	7.94	0.3126	36	125	9.0
7510800-SO	-	-	-	8.00	0.3150			9.0
7510810-SO	-	-	-	8.10	0.3189			9.0
7510820-SO	-	-	-	8.20	0.3228	36	125	9.0
7510830-SO	-	-	-	8.30	0.3268			9.0
7510840-SO	-	-	-	8.40	0.3307			9.0
7510850-SO	-	-	-	8.50	0.3346	36	125	9.0
7510860-SO	-	-	-	8.60	0.3386			9.0
7510880-SO	-	-	-	8.80	0.3465			9.0

Packed: 1 pc.  
 EDP's listed above are stocked standard, other coatings available upon request.  
 Specify treatment at time of order.  
 The body is steam oxide. The shank and land with are bright.



# List 751-SO, 752-SO (Continued)

Parallel Shank Machine Chucking Reamers

**NEW** **SPEED FEED** **HSS-Co5** **BR** **10°**  
P57

EDP Number	Diameter					Flute Length FL	Overall Length L	Shank Diameter d			
	Fractional Size	Wire Gage	Letter Size	mm	Inch						
7510890-SO	-	-	-	8.90	0.3504	36	125	9.0			
7510900-SO	-	-	-	9.00	0.3543						
7510910-SO	-	-	-	9.10	0.3583						
7510950-SO	-	-	-	9.50	0.3740	38	133				
7520953-SO	3/8	-	-	9.53	0.3752						
7510960-SO	-	-	-	9.60	0.3780						
7510970-SO	-	-	-	9.70	0.3819						
7510980-SO	-	-	-	9.80	0.3858						
7510990-SO	-	-	-	9.90	0.3898						
7511000-SO	-	-	-	10.00	0.3937						
7511010-SO	-	-	-	10.10	0.3976						
7511020-SO	-	-	-	10.20	0.4016						
7511030-SO	-	-	-	10.30	0.4055						
7511050-SO	-	-	-	10.50	0.4134	41	142	10.0			
7511060-SO	-	-	-	10.60	0.4173						
7511070-SO	-	-	-	10.70	0.4213						
7511080-SO	-	-	-	10.80	0.4252						
7511090-SO	-	-	-	10.90	0.4291						
7511100-SO	-	-	-	11.00	0.4331						
7511110-SO	-	-	-	11.10	0.4370						
7521111-SO	7/16	-	-	11.11	0.4374						
7511150-SO	-	-	-	11.50	0.4528						
7511170-SO	-	-	-	11.70	0.4606						
7511180-SO	-	-	-	11.80	0.4646	44	151				
7511190-SO	-	-	-	11.90	0.4685						
7511200-SO	-	-	-	12.00	0.4724						
7511210-SO	-	-	-	12.10	0.4764						
7511220-SO	-	-	-	12.20	0.4803						
7511230-SO	-	-	-	12.30	0.4843						
7511240-SO	-	-	-	12.40	0.4882						
7511250-SO	-	-	-	12.50	0.4921						
7511260-SO	-	-	-	12.60	0.4961						
7511270-SO	-	-	-	12.70	0.5000						
7521270-SO	1/2	-	-	12.70	0.5000	47	160				
7511280-SO	-	-	-	12.80	0.5039						
7511290-SO	-	-	-	12.90	0.5079						
7511300-SO	-	-	-	13.00	0.5118						
7511350-SO	-	-	-	13.50	0.5315						
7511400-SO	-	-	-	14.00	0.5512				50	162	12.5
7521429-SO	9/16	-	-	14.29	0.5626						
7511450-SO	-	-	-	14.50	0.5709						
7511500-SO	-	-	-	15.00	0.5906				52	170	
7511550-SO	-	-	-	15.50	0.6102						
7521588-SO	5/8	-	-	15.88	0.6252						
7511600-SO	-	-	-	16.00	0.6299	54	175	14.0			
7511700-SO	-	-	-	17.00	0.6693						
7511800-SO	-	-	-	18.00	0.7087						
7521905-SO	3/4	-	-	19.05	0.7500	56	182				
7512000-SO	-	-	-	20.00	0.7874	60	195	16.0			

Packed: 1 pc.  
EDP's listed above are stocked standard, other coatings available upon request.  
Specify treatment at time of order.  
The body is steam oxide. The shank and land with are bright.



List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High	4140 4340	300	400	17-4 PH	6061 7075		Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
751-SO, 752-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

good  best



# List OCS-SO

# List OCJ-SO

# List O1S-SO

# List O1J-SO

Work Material	Carbon Steels Mild Steels 1010, 1050, 12L14		Alloy Steels 4140, 4130		Stainless Steels 300, 400, 17-4PH		Cast Iron		Ductile Cast Iron		
Drilling Speed	395-500 SFM		165-400 SFM		130-295 SFM		245-495 SFM		245-495 SFM		
Drill Dia. mm    Inch	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	
	1	-	42,970	0.0010-0.0012	27,058	0.0007-0.0008	20,692	0.0007-0.0008	35,813	0.0008-0.0010	35,813
2	-	21,485	0.0020-0.0024	13,529	0.0014-0.0016	10,346	0.0014-0.0016	17,906	0.0016-0.0020	17,906	0.0016-0.0020
-	3/32	18,045	0.0023-0.0028	11,363	0.0017-0.0019	8,689	0.0017-0.0019	15,039	0.0019-0.0023	15,039	0.0019-0.0023
3	-	14,323	0.0030-0.0035	9,019	0.0021-0.0024	6,897	0.0021-0.0024	11,938	0.0024-0.0030	11,938	0.0024-0.0030
-	1/8	13,534	0.0031-0.0038	8,522	0.0023-0.0025	6,517	0.0023-0.0025	11,280	0.0025-0.0031	11,280	0.0025-0.0031
4	-	10,743	0.0039-0.0047	6,765	0.0029-0.0031	5,173	0.0029-0.0031	8,953	0.0031-0.0039	8,953	0.0031-0.0039
-	3/16	9,023	0.0047-0.0056	5,682	0.0034-0.0038	4,345	0.0034-0.0038	7,520	0.0038-0.0047	7,520	0.0038-0.0047
6	-	7,162	0.0059-0.0071	4,510	0.0043-0.0047	3,449	0.0043-0.0047	5,969	0.0047-0.0059	5,969	0.0047-0.0059
-	1/4	6,767	0.0063-0.0075	4,261	0.0045-0.0050	3,259	0.0045-0.0050	5,640	0.0050-0.0063	5,640	0.0050-0.0063
8	-	5,371	0.0079-0.0094	3,382	0.0057-0.0063	2,586	0.0057-0.0063	4,477	0.0063-0.0079	4,477	0.0063-0.0079
-	3/8	4,511	0.0094-0.0113	2,841	0.0068-0.0075	2,172	0.0068-0.0075	3,760	0.0075-0.0094	3,760	0.0075-0.0094
10	-	4,297	0.0098-0.0118	2,706	0.0071-0.0079	2,069	0.0071-0.0079	3,581	0.0079-0.0098	3,581	0.0079-0.0098
-	7/16	3,867	0.0109-0.0131	2,435	0.0079-0.0088	1,862	0.0079-0.0088	3,223	0.0088-0.0109	3,223	0.0088-0.0109
12	-	3,581	0.0118-0.0142	2,255	0.0086-0.0094	1,724	0.0086-0.0094	2,984	0.0094-0.0118	2,984	0.0094-0.0118
-	1/2	3,383	0.0125-0.0150	2,131	0.0091-0.0100	1,629	0.0091-0.0100	2,820	0.0100-0.0125	2,820	0.0100-0.0125
14	-	3,069	0.0138-0.0165	1,933	0.0100-0.0110	1,478	0.0100-0.0110	2,558	0.0110-0.0138	2,558	0.0110-0.0138

Work Material	Aluminum				Copper	Synthetics	High Heat Material						
	Alloy		Casting				Ti-Alloy, Ti-6Al-4V		Ni-Base Material, Inconel				
Drilling Speed	495-655 SFM		150-490 SFM		165-260 SFM		325-985 SFM		65-200 SFM		65-230 SFM		
Drill Dia. mm    Inch	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	
	1	-	55,708	0.0010-0.0012	31,038	0.0010-0.0012	20,692	0.0010-0.0012	63,667	0.0012-0.0018	12,733	0.0007-0.0008	14,325
2	-	27,854	0.0020-0.0024	15,519	0.0020-0.0024	10,346	0.0020-0.0024	31,833	0.0025-0.0033	6,367	0.0014-0.0016	7,163	0.0014-0.0016
-	3/32	23,395	0.0023-0.0028	13,034	0.0023-0.0028	8,689	0.0023-0.0028	26,737	0.0034-0.0039	5,347	0.0017-0.0019	6,016	0.0017-0.0019
3	-	18,569	0.0030-0.0035	10,346	0.0030-0.0035	6,897	0.0030-0.0035	21,222	0.0044-0.0050	4,244	0.0021-0.0024	4,775	0.0021-0.0024
-	1/8	17,546	0.0031-0.0038	9,776	0.0031-0.0038	6,517	0.0031-0.0038	20,052	0.0044-0.0050	4,010	0.0023-0.0025	4,512	0.0023-0.0025
4	-	13,927	0.0039-0.0047	7,759	0.0039-0.0047	5,173	0.0039-0.0047	15,917	0.0060-0.0065	3,183	0.0029-0.0031	3,581	0.0029-0.0031
-	3/16	11,697	0.0047-0.0056	6,517	0.0047-0.0056	4,345	0.0047-0.0056	13,368	0.0070-0.0075	2,674	0.0034-0.0038	3,008	0.0034-0.0038
6	-	9,285	0.0059-0.0071	5,173	0.0059-0.0071	3,449	0.0059-0.0071	10,611	0.0090-0.0095	2,122	0.0043-0.0047	2,388	0.0043-0.0047
-	1/4	8,773	0.0063-0.0075	4,888	0.0063-0.0075	3,259	0.0063-0.0075	10,026	0.0093-0.0100	2,005	0.0045-0.0050	2,256	0.0045-0.0050
8	-	6,964	0.0079-0.0094	3,880	0.0079-0.0094	2,586	0.0079-0.0094	7,958	0.0120-0.0126	1,592	0.0057-0.0063	1,791	0.0057-0.0063
-	3/8	5,849	0.0094-0.0113	3,259	0.0094-0.0113	2,172	0.0094-0.0113	6,684	0.0145-0.0150	1,337	0.0068-0.0075	1,504	0.0068-0.0075
10	-	5,571	0.0098-0.0118	3,104	0.0098-0.0118	2,069	0.0098-0.0118	6,367	0.0154-0.0157	1,273	0.0071-0.0079	1,433	0.0071-0.0079
-	7/16	5,013	0.0109-0.0131	2,793	0.0109-0.0131	1,862	0.0109-0.0131	5,729	0.0169-0.0175	1,146	0.0079-0.0088	1,289	0.0079-0.0088
12	-	4,642	0.0118-0.0142	2,586	0.0118-0.0142	1,724	0.0118-0.0142	5,306	0.0184-0.0189	1,061	0.0086-0.0094	1,194	0.0086-0.0094
-	1/2	4,386	0.0125-0.0150	2,444	0.0125-0.0150	1,629	0.0125-0.0150	5,013	0.0195-0.0200	1,003	0.0091-0.0100	1,128	0.0091-0.0100
14	-	3,979	0.0138-0.0165	2,217	0.0138-0.0165	1,478	0.0138-0.0165	4,548	0.0210-0.0220	910	0.0100-0.0110	1,023	0.0100-0.0110

**List 163-SO**  
**List 164-SO**  
**List 110-SO**

Work Material	Carbon Steels Mild Steels 1010, 1050, 12L14		Alloy Steels 4140, 4130		Stainless Steels 300, 400, 17-4PH		Cast Iron		Ductile Cast Iron		
Drilling Speed	80-230 SFM		66-130 SFM		25-105 SFM		80-180 SFM		40-115 SFM		
Drill Dia. mm    Inch	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	
	1	-	15,119	0.0008-0.0010	9,550	0.0004-0.0007	6,367	0.0004-0.0012	12,733	0.0006-0.0007	7,481
2	-	7,559	0.0016-0.0020	4,775	0.0009-0.0014	3,183	0.0008-0.0024	6,367	0.0012-0.0014	3,740	0.0009-0.0012
-	3/32	6,349	0.0019-0.0023	4,010	0.0010-0.0017	2,674	0.0010-0.0029	5,347	0.0014-0.0017	3,142	0.0010-0.0014
3	-	5,040	0.0024-0.0030	3,183	0.0013-0.0021	2,122	0.0012-0.0036	4,244	0.0018-0.0021	2,494	0.0013-0.0018
-	1/8	4,762	0.0025-0.0031	3,008	0.0014-0.0023	2,005	0.0013-0.0038	4,010	0.0019-0.0023	2,356	0.0014-0.0019
4	-	3,780	0.0031-0.0039	2,388	0.0017-0.0028	1,592	0.0017-0.0048	3,183	0.0024-0.0028	1,870	0.0017-0.0024
-	3/16	3,175	0.0038-0.0047	2,005	0.0021-0.0034	1,337	0.0020-0.0058	2,674	0.0028-0.0034	1,571	0.0021-0.0028
6	-	2,520	0.0047-0.0059	1,592	0.0026-0.0043	1,061	0.0025-0.0073	2,122	0.0035-0.0043	1,247	0.0026-0.0035
-	1/4	2,381	0.0050-0.0063	1,504	0.0028-0.0045	1,003	0.0027-0.0077	2,005	0.0038-0.0045	1,178	0.0028-0.0038
8	-	1,890	0.0063-0.0079	1,194	0.0035-0.0057	796	0.0034-0.0097	1,592	0.0047-0.0057	935	0.0035-0.0047
-	3/8	1,587	0.0075-0.0094	1,003	0.0041-0.0068	668	0.0041-0.0116	1,337	0.0056-0.0068	785	0.0041-0.0056
10	-	1,512	0.0079-0.0098	955	0.0043-0.0071	637	0.0043-0.0122	1,273	0.0059-0.0071	748	0.0043-0.0059
-	7/16	1,361	0.0088-0.0109	859	0.0048-0.0079	573	0.0048-0.0135	1,146	0.0066-0.0079	673	0.0048-0.0066
12	-	1,260	0.0094-0.0118	796	0.0052-0.0085	531	0.0051-0.0146	1,061	0.0071-0.0085	623	0.0052-0.0071
-	1/2	1,190	0.0100-0.0125	752	0.0055-0.0090	501	0.0055-0.0155	1,003	0.0075-0.0090	589	0.0055-0.0075
14	-	1,080	0.0110-0.0138	682	0.0061-0.0099	455	0.0060-0.0170	910	0.0083-0.0099	534	0.0061-0.0083
-	19/32	1,002	0.1190-0.0148	633	0.0065-0.0107	422	0.0065-0.0184	844	0.0089-0.0106	496	0.0065-0.0089
16	-	945	0.0126-0.0157	597	0.0069-0.0113	398	0.0069-0.0195	796	0.0094-0.0113	468	0.0069-0.0094

Work Material	Aluminum				Copper	Synthetics	High Heat Material						
	Alloy		Casting				Ti-Alloy, Ti-6Al-4V		Ni-Base Material, Inconel				
Drilling Speed	245-410 SFM		90-380 SFM		90-350 SFM		50-410 SFM		15-115 SFM		15-80 SFM		
Drill Dia. mm    Inch	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	
	1	-	31,833	0.0009-0.0018	22,602	0.0009-0.0018	21,010	0.0009-0.0018	22,283	0.0007-0.0018	6,367	0.0003-0.0004	4,775
2	-	15,917	0.0018-0.0035	11,301	0.0017-0.0035	10,505	0.0017-0.0035	11,142	0.0015-0.0035	3,183	0.0005-0.0009	2,388	0.0005-0.0014
-	3/32	13,368	0.0022-0.0042	9,492	0.0021-0.0042	8,823	0.0021-0.0042	9,358	0.0018-0.0042	2,674	0.0006-0.0010	2,005	0.0006-0.0017
3	-	10,611	0.0027-0.0053	7,534	0.0026-0.0053	7,003	0.0026-0.0053	7,428	0.0022-0.0053	2,122	0.0008-0.0013	1,592	0.0008-0.0021
-	1/8	10,026	0.0029-0.0056	7,119	0.0028-0.0056	6,617	0.0028-0.0056	7,018	0.0024-0.0056	2,005	0.0008-0.0014	1,504	0.0008-0.0023
4	-	7,958	0.0036-0.0071	5,650	0.0035-0.0071	5,253	0.0035-0.0071	5,571	0.0030-0.0071	1,592	0.0010-0.0017	1,194	0.0010-0.0028
-	3/16	6,684	0.0043-0.0084	4,746	0.0041-0.0084	4,412	0.0041-0.0084	4,679	0.0036-0.0084	1,337	0.0012-0.0021	1,003	0.0012-0.0034
6	-	5,306	0.0054-0.0106	3,767	0.0052-0.0106	3,502	0.0052-0.0106	3,714	0.0045-0.0106	1,061	0.0015-0.0026	796	0.0015-0.0043
-	1/4	5,013	0.0058-0.0113	3,559	0.0055-0.0113	3,309	0.0055-0.0113	3,509	0.0048-0.0113	1,003	0.0016-0.0028	752	0.0016-0.0045
8	-	3,979	0.0072-0.0142	2,825	0.0069-0.0142	2,626	0.0069-0.0142	2,785	0.0060-0.0142	796	0.0020-0.0035	597	0.0020-0.0057
-	3/8	3,342	0.0086-0.0169	2,373	0.0083-0.0169	2,206	0.0083-0.0169	2,339	0.0071-0.0169	668	0.0024-0.0041	501	0.0024-0.0068
10	-	3,183	0.0091-0.0177	2,260	0.0087-0.0177	2,101	0.0087-0.0177	2,228	0.0075-0.0177	637	0.0026-0.0043	478	0.0026-0.0071
-	7/16	2,865	0.0101-0.0197	2,034	0.0096-0.0197	1,891	0.0096-0.0197	2,005	0.0083-0.0197	573	0.0028-0.0048	430	0.0028-0.0079
12	-	2,653	0.0109-0.0213	1,883	0.0104-0.0213	1,751	0.0104-0.0213	1,857	0.0090-0.0213	531	0.0031-0.0052	398	0.0031-0.0085
-	1/2	2,507	0.0115-0.0225	1,780	0.0110-0.0225	1,654	0.0110-0.0225	1,755	0.0095-0.0225	501	0.0033-0.0055	376	0.0033-0.0090
14	-	2,274	0.0127-0.0248	1,614	0.0121-0.0248	1,501	0.0121-0.0248	1,592	0.0105-0.0248	455	0.0036-0.0061	341	0.0036-0.0099
-	19/32	2,110	0.0136-0.0267	1,500	0.0136-0.0267	1,390	0.0130-0.0267	1,480	0.0112-0.0267	420	0.0038-0.0065	320	0.0038-0.0106
16	-	1,990	0.0144-0.0283	1,410	0.0144-0.0283	1,310	0.0138-0.0283	1,390	0.0119-0.0283	400	0.0040-0.0069	300	0.0040-0.0113



# List 1R5-SO

# List 1BB-SO

# List 1AQ-SO

# List 1W6-SO

# List 1G7-SO

Work Material		Carbon Steels Mild Steels 1010, 1050, 12L14		Alloy Steels 4140, 4130		Stainless Steels 300, 400, 17-4PH		Cast Iron		Ductile Cast Iron	
Drilling Speed		80-165 SFM		30-100 SFM		30-75 SFM		115-150 SFM		50-115 SFM	
Drill Dia.		Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
mm	Inch										
1	-	11,936	0.0004-0.0016	6,367	0.0004-0.0008	5,093	0.0004-0.0011	12,733	0.0007-0.0016	7,958	0.0004-0.0008
2	-	5,968	0.0008-0.0031	3,183	0.0008-0.0016	2,547	0.0008-0.0022	6,367	0.0014-0.0031	3,979	0.0008-0.0016
-	3/32	5,012	0.0010-0.0038	2,674	0.0010-0.0019	2,139	0.0010-0.0027	5,347	0.0017-0.0038	3,342	0.0010-0.0019
3	-	3,979	0.0012-0.0047	2,122	0.0012-0.0024	1,698	0.0012-0.0033	4,244	0.0021-0.0047	2,653	0.0012-0.0024
-	1/8	3,759	0.0013-0.0050	2,005	0.0013-0.0026	1,604	0.0013-0.0035	4,010	0.0023-0.0050	2,507	0.0013-0.0026
4	-	2,984	0.0017-0.0063	1,592	0.0017-0.0033	1,273	0.0017-0.0045	3,183	0.0028-0.0063	1,990	0.0017-0.0033
-	3/16	2,506	0.0020-0.0075	1,337	0.0020-0.0039	1,069	0.0020-0.0053	2,674	0.0034-0.0075	1,671	0.0020-0.0039
6	-	1,989	0.0025-0.0094	1,061	0.0025-0.0049	849	0.0025-0.0067	2,122	0.0043-0.0094	1,326	0.0025-0.0049
-	1/4	1,880	0.0026-0.0100	1,003	0.0026-0.0052	802	0.0026-0.0071	2,005	0.0045-0.0100	1,253	0.0026-0.0052
8	-	1,492	0.0033-0.0126	796	0.0033-0.0065	637	0.0033-0.0089	1,592	0.0057-0.0126	995	0.0033-0.0065
-	3/8	1,253	0.0039-0.0150	668	0.0039-0.0078	535	0.0039-0.0106	1,337	0.0068-0.0150	836	0.0039-0.0078
10	-	1,194	0.0041-0.0157	637	0.0041-0.0081	509	0.0041-0.0112	1,273	0.0071-0.0157	796	0.0041-0.0081
-	7/16	1,074	0.0046-0.0175	573	0.0046-0.0090	458	0.0046-0.0124	1,146	0.0079-0.0175	716	0.0046-0.0090
12	-	995	0.0050-0.0189	531	0.0050-0.0098	424	0.0050-0.0134	1,061	0.0085-0.0189	663	0.0050-0.0098
-	1/2	940	0.0053-0.0200	501	0.0053-0.0103	401	0.0053-0.0142	1,003	0.0090-0.0200	627	0.0053-0.0103
13	-	918	0.0054-0.0205	490	0.0054-0.0106	392	0.0054-0.0145	979	0.0092-0.0205	612	0.0054-0.0106

Work Material		Aluminum				Copper		High Heat Material			
		6061, 7075		Casting				Ti-Alloy, Ti-6Al-4V		Ni-Base Material, Inconel	
Drilling Speed		115-200 SFM		75-130 SFM		50-90 SFM		20-105 SFM		15-50 SFM	
Drill Dia.		Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
mm	Inch										
1	-	15,121	0.0006-0.0016	10,028	0.0006-0.0011	6,844	0.0004-0.0008	6,048	0.0004-0.0008	3,024	0.0003-0.0011
2	-	7,560	0.0011-0.0031	5,014	0.0011-0.0022	3,422	0.0008-0.0016	3,024	0.0008-0.0016	1,512	0.0006-0.0022
-	3/32	6,350	0.0013-0.0038	4,211	0.0013-0.0027	2,874	0.0010-0.0019	2,540	0.0010-0.0019	1,270	0.0008-0.0027
3	-	5,040	0.0017-0.0047	3,343	0.0017-0.0033	2,281	0.0012-0.0024	2,016	0.0012-0.0024	1,008	0.0009-0.0033
-	1/8	4,762	0.0018-0.0050	3,158	0.0018-0.0035	2,156	0.00130-0.0026	1,905	0.0013-0.0026	952	0.0010-0.0035
4	-	3,780	0.0022-0.0063	2,507	0.0022-0.0045	1,711	0.0017-0.0033	1,512	0.0017-0.0033	756	0.0013-0.0045
-	3/16	3,175	0.0026-0.0075	2,106	0.0026-0.0053	1,437	0.0020-0.0039	1,270	0.0020-0.0039	635	0.0015-0.0053
6	-	2,520	0.0033-0.0094	1,671	0.0033-0.0067	1,141	0.0025-0.0049	1,008	0.0025-0.0049	504	0.0019-0.0067
-	1/4	2,381	0.0035-0.0100	1,579	0.0035-0.0071	1,078	0.0026-0.0052	952	0.0026-0.0052	476	0.0020-0.0071
8	-	1,890	0.0044-0.0126	1,253	0.0044-0.0089	856	0.0033-0.0065	756	0.0033-0.0065	378	0.0025-0.0089
-	3/8	1,587	0.0053-0.0150	1,053	0.0053-0.0106	719	0.0039-0.0078	635	0.0039-0.0078	317	0.0030-0.0106
10	-	1,512	0.0055-0.0157	1,003	0.0055-0.0112	684	0.0041-0.0081	605	0.0041-0.0081	302	0.0031-0.0112
-	7/16	1,361	0.0061-0.0175	902	0.0061-0.0124	616	0.0046-0.0090	544	0.0046-0.0090	272	0.0035-0.0124
12	-	1,260	0.0066-0.0189	836	0.0066-0.0134	570	0.0050-0.0098	504	0.0050-0.0098	252	0.0038-0.0134
-	1/2	1,191	0.0070-0.0200	790	0.0070-0.0142	539	0.0053-0.0103	476	0.0053-0.0103	238	0.0040-0.0142
13	-	1,163	0.0072-0.0205	771	0.0072-0.0145	526	0.0054-0.0106	465	0.0054-0.0106	233	0.0041-0.0145

# List 101-SO, 102-SO List 1X6-SO

Work Material		Carbon Steels Mild Steels 1010, 1050, 12L14		Alloy Steels 4140, 4130		Stainless Steels 300, 400, 17-4PH		Cast Iron		Ductile Cast Iron	
Drilling Speed		30-100 SFM		30-100 SFM		30-50 SFM		80-115 SFM		50-100 SFM	
Drill Dia. mm	Inch	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
		1	-	6,366	0.0003-0.0010	4,457	0.0004-0.0008	3,502	0.0002-0.0007	9,550	0.0004-0.0008
2	-	3,183	0.0005-0.0020	2,228	0.0009-0.0016	1,751	0.0005-0.0014	4,775	0.0009-0.0016	3,581	0.0009-0.0016
-	3/32	2,673	0.0006-0.0023	1,872	0.0010-0.0019	1,471	0.0006-0.0017	4,010	0.0010-0.0019	3,008	0.0010-0.0019
3	-	2,122	0.0008-0.0030	1,486	0.0013-0.0024	1,167	0.0007-0.0021	3,183	0.0013-0.0024	2,388	0.0013-0.0024
-	1/8	2,005	0.0008-0.0031	1,404	0.0014-0.0026	1,103	0.0008-0.0023	3,008	0.0014-0.0026	2,256	0.0014-0.0026
4	-	1,591	0.0010-0.0039	1,114	0.0017-0.0033	875	0.0009-0.0028	2,388	0.0017-0.0033	1,791	0.0017-0.0033
-	3/16	1,337	0.0012-0.0047	936	0.0021-0.0039	735	0.0011-0.0034	2,005	0.0021-0.0039	1,504	0.0021-0.0039
6	-	1,061	0.0015-0.0059	743	0.0026-0.0049	584	0.0014-0.0043	1,592	0.0026-0.0049	1,194	0.0026-0.0049
-	1/4	1,002	0.0016-0.0063	702	0.0028-0.0052	551	0.0015-0.0045	1,504	0.0028-0.0052	1,128	0.0028-0.0052
8	-	796	0.0020-0.0079	557	0.0035-0.0065	438	0.0019-0.0057	1,194	0.0035-0.0065	895	0.0035-0.0065
-	3/8	668	0.0024-0.0094	468	0.0041-0.0078	368	0.0023-0.0068	1,003	0.0041-0.0078	752	0.0041-0.0078
10	-	637	0.0026-0.0098	446	0.0043-0.0081	350	0.0024-0.0071	955	0.0043-0.0081	716	0.0043-0.0081
-	7/16	573	0.0028-0.0109	401	0.0048-0.0090	315	0.0026-0.0079	859	0.0048-0.0090	645	0.0048-0.0090
12	-	530	0.0031-0.0118	371	0.0052-0.0098	292	0.0028-0.0085	796	0.0052-0.0098	597	0.0052-0.0098
-	1/2	501	0.0033-0.0125	351	0.0055-0.0103	276	0.0030-0.0090	752	0.0055-0.0103	564	0.0055-0.0103
14	-	455	0.0036-0.0138	318	0.0061-0.0114	250	0.0033-0.0099	682	0.0061-0.0114	512	0.0061-0.0114
-	9/16	446	0.0036-0.0140	312	0.0061-0.0116	245	0.0033-0.0101	668	0.0078-0.0116	501	0.0065-0.0118
16	-	398	0.0040-0.0157	279	0.0069-0.0130	219	0.0037-0.0113	597	0.0081-0.0132	448	0.0072-0.0132
18	-	354	0.0046-0.0177	248	0.0077-0.0146	195	0.0042-0.0127	531	0.0085-0.0148	398	0.0078-0.0148
20	-	318	0.0051-0.0197	223	0.0087-0.0163	175	0.0047-0.0142	478	0.0087-0.0163	358	0.0087-0.0163

Work Material		Aluminum				Copper		High Heat Material			
		6061, 7075		Casting				Ti-Alloy, Ti-6Al-4V		Ni-Base Material, Inconel	
Drilling Speed		30-100 SFM		100-330 SFM		50-165 SFM		25-80 SFM		15-35 SFM	
Drill Dia. mm	Inch	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
		1	-	11,938	0.0010-0.0013	20,692	0.0010-0.0013	10,346	0.0010-0.0013	5,093	0.0003-0.0006
2	-	5,969	0.0020-0.0025	10,346	0.0020-0.0025	5,173	0.0020-0.0025	2,547	0.0005-0.0011	1,194	0.0005-0.0009
-	3/32	5,013	0.0023-0.0030	8,689	0.0023-0.0030	4,345	0.0023-0.0030	2,139	0.0006-0.0013	1,003	0.0005-0.0010
3	-	3,979	0.0030-0.0038	6,897	0.0030-0.0038	3,449	0.0030-0.0038	1,698	0.0008-0.0017	796	0.0010-0.0013
-	1/8	3,760	0.0031-0.0040	6,517	0.0031-0.0040	3,259	0.0031-0.0040	1,604	0.0008-0.0018	752	0.0010-0.0014
4	-	2,984	0.0039-0.0050	5,173	0.0039-0.0050	2,586	0.0039-0.0050	1,273	0.0010-0.0022	597	0.0014-0.0017
-	3/16	2,507	0.0047-0.0060	4,345	0.0047-0.0060	2,172	0.0047-0.0060	1,069	0.0012-0.0026	501	0.0018-0.0021
6	-	1,990	0.0059-0.0076	3,449	0.0059-0.0076	1,724	0.0059-0.0076	849	0.0015-0.0033	398	0.0020-0.0026
-	1/4	1,880	0.0063-0.0080	3,259	0.0063-0.0080	1,629	0.0063-0.0080	802	0.0016-0.0035	376	0.0024-0.0028
8	-	1,492	0.0079-0.0101	2,586	0.0079-0.0101	1,293	0.0079-0.0101	637	0.0020-0.0044	298	0.0030-0.0035
-	3/8	1,253	0.0094-0.0120	2,172	0.0094-0.0120	1,086	0.0094-0.0120	535	0.0024-0.0053	251	0.0037-0.0041
10	-	1,194	0.0098-0.0126	2,069	0.0098-0.0126	1,035	0.0098-0.0126	509	0.0026-0.0055	239	0.0039-0.0043
-	7/16	1,074	0.0109-0.0140	1,862	0.0109-0.0140	931	0.0109-0.0140	458	0.0028-0.0061	215	0.0044-0.0048
12	-	995	0.0118-0.0151	1,724	0.0118-0.0151	862	0.0118-0.0151	424	0.0031-0.0066	199	0.0047-0.0052
-	1/2	940	0.0125-0.0160	1,629	0.0125-0.0160	815	0.0125-0.0160	401	0.0033-0.0070	188	0.0050-0.0055
14	-	853	0.0138-0.0176	1,478	0.0138-0.0176	739	0.0138-0.0176	364	0.0036-0.0077	171	0.0055-0.0061
-	9/16	836	0.0140-0.0180	1,448	0.0140-0.0182	724	0.0140-0.0180	356	0.0036-0.0078	167	0.0061-0.0065
16	-	746	0.0157-0.0187	1,293	0.0157-0.0191	647	0.0157-0.0201	318	0.0040-0.0088	149	0.0065-0.0077
18	-	663	0.0177-0.0195	1,150	0.0177-0.0187	575	0.0177-0.0226	283	0.0046-0.0099	133	0.0077-0.0081
20	-	597	0.0197-0.0252	1,035	0.0197-0.0252	517	0.0197-0.0252	255	0.0051-0.0110	119	0.0081-0.0087



## List 1NA-SO

Work Material		Carbon Steels Mild Steels 1010, 1050, 12L14		Alloy Steels 4140, 4130		Stainless Steels 300, 400, 17-4PH		Cast Iron		Ductile Cast Iron	
Drilling Speed		30-100 SFM		15-80 SFM		20-50 SFM		50-115 SFM		50-100 SFM	
Drill Dia.		Speed	Feed	Speed	Feed	Speed	Feed	Speed	Feed	Speed	Feed
mm	Inch	RPM	IPR	RPM	IPR	RPM	IPR	RPM	IPR	RPM	IPR
1.19	No. 1	5,349	0.0014-0.0035	3,745	0.0014-0.0035	2,943	0.0014-0.0035	8,025	0.0014-0.0035	6,019	0.0014-0.0035
1.98	No. 2	3,215	0.0023-0.0058	2,251	0.0023-0.0058	1,769	0.0023-0.0058	4,823	0.0023-0.0058	3,617	0.0023-0.0058
2.78	No. 3	2,290	0.0033-0.0082	1,603	0.0033-0.0082	1,260	0.0033-0.0082	3,435	0.0033-0.0082	2,576	0.0033-0.0082
3.18	No. 4	2,002	0.0063-0.0225	1,401	0.0063-0.0225	1,101	0.0063-0.0225	3,003	0.0063-0.0225	2,252	0.0063-0.0225
4.76	No. 5	1,337	0.0094-0.0337	936	0.0094-0.0337	736	0.0094-0.0337	2,006	0.0094-0.0337	1,505	0.0094-0.0337
5.56	No. 6	1,145	0.0219-0.0613	802	0.0219-0.0613	630	0.0219-0.0613	1,718	0.0219-0.0613	1,288	0.0219-0.0613
6.35	No. 7	1,002	0.0250-0.0700	702	0.0250-0.0700	551	0.0250-0.0700	1,504	0.0250-0.0700	1,128	0.0250-0.0700

Work Material		Aluminum				Copper		High Heat Material			
		6061, 7075		Casting				Ti-Alloy, Ti-6Al-4V		Ni-Base Material, Inconel	
Drilling Speed		30-100 SFM		100-330 SFM		50-165 SFM		25-80 SFM		15-20 SFM	
Drill Dia.		Speed	Feed	Speed	Feed	Speed	Feed	Speed	Feed	Speed	Feed
mm	Inch	RPM	IPR	RPM	IPR	RPM	IPR	RPM	IPR	RPM	IPR
1.19	No. 1	10,032	0.0014-0.0035	17,388	0.0014-0.0035	8,694	0.0014-0.0035	4,280	0.0014-0.0035	1,338	0.0014-0.0035
1.98	No. 2	6,029	0.0023-0.0058	10,450	0.0023-0.0058	5,225	0.0023-0.0058	2,572	0.0023-0.0058	804	0.0023-0.0058
2.78	No. 3	4,294	0.0033-0.0082	7,443	0.0033-0.0082	3,722	0.0033-0.0082	1,832	0.0033-0.0082	573	0.0033-0.0082
3.18	No. 4	3,754	0.0063-0.0225	6,507	0.0063-0.0225	3,253	0.0063-0.0225	1,602	0.0063-0.0225	501	0.0063-0.0225
4.76	No. 5	2,508	0.0094-0.0337	4,347	0.0094-0.0337	2,173	0.0094-0.0337	1,070	0.0094-0.0337	334	0.0094-0.0337
5.56	No. 6	2,147	0.0219-0.0613	3,722	0.0219-0.0613	1,861	0.0219-0.0613	916	0.0219-0.0613	286	0.0219-0.0613
6.35	No. 7	1,880	0.0250-0.0700	3,259	0.0250-0.0700	1,629	0.0250-0.0700	802	0.0250-0.0700	251	0.0250-0.0700



# List 751-SO List 752-SO

Work Material		Carbon Steels Mild Steels 1010, 1050, 12L14		Alloy Steels 4140, 4130		Tool Steel		Stainless Steels 300, 400, 17-4PH	
Drilling Speed		80-230 SFM		66-130 SFM		25-35 SFM		5-25 SFM	
Drill Dia.		Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
mm	Inch								
2	-	3,155	0.003-0.004	1,575	0.002-0.004	970	0.002-0.003	1,455	0.002-0.004
-	3/32	2,650	0.003-0.005	1,325	0.003-0.004	815	0.002-0.003	1,220	0.003-0.005
3	-	2,100	0.004-0.007	1,505	0.003-0.005	645	0.002-0.004	970	0.003-0.007
-	1/8	1,985	0.005-0.008	995	0.004-0.006	610	0.003-0.004	915	0.004-0.008
4	-	1,575	0.005-0.008	790	0.004-0.007	485	0.003-0.005	730	0.004-0.008
-	3/16	1,325	0.005-0.009	660	0.004-0.007	405	0.003-0.005	610	0.004-0.009
6	-	1,050	0.006-0.010	525	0.005-0.008	325	0.004-0.006	485	0.005-0.010
-	1/4	995	0.006-0.010	495	0.005-0.008	305	0.004-0.007	460	0.005-0.010
8	-	790	0.006-0.011	395	0.005-0.009	245	0.004-0.007	365	0.005-0.011
-	3/8	660	0.007-0.012	330	0.006-0.010	205	0.005-0.008	305	0.006-0.012
10	-	630	0.008-0.013	315	0.006-0.010	195	0.005-0.008	290	0.006-0.013
-	7/16	570	0.008-0.013	285	0.007-0.011	175	0.005-0.009	260	0.007-0.013
12	-	525	0.008-0.014	265	0.007-0.012	160	0.005-0.009	245	0.007-0.014
-	1/2	495	0.009-0.015	250	0.008-0.013	155	0.006-0.010	230	0.008-0.015
14	-	450	0.010-0.016	225	0.008-0.013	140	0.006-0.010	210	0.008-0.016
-	3/4	330	0.010-0.016	165	0.008-0.014	100	0.006-0.011	155	0.008-0.016
20	-	315	0.012-0.019	160	0.009-0.015	95	0.007-0.012	145	0.009-0.019

Work Material		Cast Iron		Ductile Cast Iron		High Heat Material			
Drilling Speed		80-115 SFM		50-100 SFM		Ti-Alloy, Ti-6Al-4V		Ni-Base Material, Inconel	
Drill Dia.		Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
mm	Inch								
2	-	2,425	0.003-0.007	1,940	0.003-0.004	1,215	0.002-0.004	485	0.003-0.005
-	3/32	2,035	0.004-0.008	1,630	0.003-0.005	1,020	0.003-0.005	405	0.003-0.007
3	-	1,615	0.005-0.009	1,295	0.004-0.007	810	0.003-0.007	325	0.004-0.008
-	1/8	1,530	0.005-0.011	1,220	0.005-0.008	765	0.004-0.008	305	0.005-0.009
4	-	1,215	0.006-0.011	970	0.005-0.008	605	0.004-0.008	245	0.005-0.009
-	3/16	1,020	0.006-0.012	815	0.005-0.009	510	0.004-0.009	205	0.005-0.010
6	-	810	0.007-0.015	645	0.006-0.010	405	0.005-0.010	160	0.006-0.012
-	1/4	765	0.007-0.016	610	0.006-0.010	380	0.005-0.010	155	0.006-0.012
8	-	605	0.008-0.017	485	0.006-0.011	305	0.005-0.011	120	0.006-0.013
-	3/8	510	0.009-0.018	405	0.007-0.012	255	0.006-0.012	100	0.007-0.015
10	-	485	0.009-0.019	390	0.008-0.013	245	0.006-0.013	95	0.008-0.016
-	7/16	435	0.010-0.020	350	0.008-0.013	220	0.007-0.013	85	0.008-0.017
12	-	405	0.011-0.021	325	0.008-0.014	200	0.007-0.014	80	0.008-0.018
-	1/2	380	0.011-0.023	305	0.009-0.015	190	0.008-0.015	75	0.009-0.019
14	-	345	0.012-0.024	275	0.010-0.016	175	0.008-0.016	70	0.010-0.020
-	3/4	255	0.012-0.025	205	0.010-0.016	125	0.008-0.016	50	0.010-0.020
20	-	245	0.014-0.026	195	0.012-0.019	120	0.009-0.019	50	0.012-0.023



List	Item	Inch/Metric	Material	Coating	Size Range	Features	Product Page
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## SPIRAL FLUTED TAPS

5BA-SO, 5BL-SO		Inch	HSSE V3	TiAIN	No. 4 ~ 1, 1/4	<b>RED BAND,</b> Modified Bottom (2P-3P)	60-61
5EA-SO, 5EL-SO		Metric	HSSE V3	TiAIN	M3 ~ M24	<b>RED BAND,</b> Modified Bottom (2P-3P)	62
5BB-SO, 5BM-SO		Inch	HSSE V3	TiAIN	No. 4 ~ 1, 1/4	<b>BLUE BAND,</b> Modified Bottom (2P-3P)	63-64
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5BC-SO, 5BN-SO		Inch	HSSE V3	Bright	No. 4 ~ 1, 1/4	<b>YELLOW BAND,</b> Modified Bottom (2P-3P)	66-67
5EC-SO, 5EN-SO		Metric	HSSE V3	Bright	M3 ~ M24	<b>YELLOW BAND,</b> Modified Bottom (2P-3P)	68
5BD-SO, 5BP-SO		Inch	HSSE V3	TiAIN	No. 4 ~ 1, 1/4	<b>WHITE BAND,</b> Modified Bottom (2P-3P)	69-70
5ED-SO, 5EP-SO		Metric	HSSE V3	TiAIN	M3 ~ M24	<b>WHITE BAND,</b> Modified Bottom (2P-3P)	71
5BE-SO, 5BK-SO		Inch	HSSE V3	TiN	No. 4 ~ 1, 1/4	<b>GREEN BAND,</b> Modified Bottom (2P-3P)	72-73
5EV-SO		Metric	HSSE V3	TiN	M3 ~ M24	<b>GREEN BAND, 15° Helix,</b> Modified Bottom (2P-3P)	74
5EW-SO		Metric	HSSE V3	TiN	M3 ~ M24	<b>GREEN BAND, 35° Helix,</b> Modified Bottom (2P-3P)	75

## SPIRAL POINTED TAPS

5BF-SO, 5BS-SO		Inch	HSSE V3	TiAIN	No. 4 ~ 1, 1/4	<b>RED BAND,</b> Plug (4P-5P)	76-77
5EF-SO, 5ES-SO		Metric	HSSE V3	TiAIN	M3 ~ M24	<b>RED BAND,</b> Plug (4P-5P)	78
5BG-SO, 5BT-SO		Inch	HSSE V3	TiAIN	No. 4 ~ 1, 1/4	<b>BLUE BAND,</b> Plug (4P-5P)	79-80
5EG-SO, 5ET-SO		Metric	HSSE V3	TiAIN	M3 ~ M24	<b>BLUE BAND,</b> Plug (4P-5P)	81
5BH-SO, 5BU-SO		Inch	HSSE V3	Bright	No. 4 ~ 1, 1/4	<b>YELLOW BAND,</b> Plug (4P-5P)	82-83
5EH-SO, 5EU-SO		Metric	HSSE V3	Bright	M3 ~ M24	<b>YELLOW BAND,</b> Plug (4P-5P)	84
5BJ-SO, 5BV-SO		Inch	HSSE V3	TiN	No. 4 ~ 1, 1/4	<b>GREEN BAND,</b> Plug (4P-5P)	85-86
5EX-SO		Metric	HSSE V3	TiN	M3 ~ M24	<b>GREEN BAND,</b> Plug (4P-5P)	87



List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC

## SPIRAL FLUTED TAPS

5BA-SO, 5BL-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
5EZ-SO, 5EL-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
5BB-SO, 5BM-SO						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					<input checked="" type="checkbox"/>				
5EB-SO, 5EM-SO						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					<input checked="" type="checkbox"/>				
5BC-SO, 5BN-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
5EC-SO, 5EN-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
5BD-SO, 5BP-SO									<input checked="" type="checkbox"/>								
5ED-SO, 5EP-SO									<input checked="" type="checkbox"/>								
5BE-SO, 5BK-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
5EV-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
5EW-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					

## SPIRAL POINTED TAPS

5BF-SO, 5BS-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
5EF-SO, 5ES-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
5BG-SO, 5BT-SO						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					<input checked="" type="checkbox"/>				
5EG-SO, 5ET-SO						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					<input checked="" type="checkbox"/>				
5BH-SO, 5BU-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
5EH-SO, 5EU-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
5BJ-SO, 5BV-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
5EX-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					

good  best



# List 5BA-SO, 5BL-SO

**NEW** **RED BAND DRILLS** P26-28 **HSSE V3** **TYPE H** **TiAIN** **15°**

RED BAND, Spiral Flute, Modified Bottom (2P-3P)



Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length					
			Mod Bottom (2P-3P)										
			TiAIN										
			L	Lc	d	k	lk						
4 - 40 UNC	H3	3	5BA0280-SO	1.890	0.236	0.141	0.110	0.197					
	H5		5BA0290-SO										
4 - 48 UNF	H3		5BL0280-SO										
	H5		5BL0290-SO										
5 - 40 UNC	H3		5BA0320-SO						1.969	0.315	0.168	0.131	0.256
	H5		5BA0330-SO										
5 - 44 UNF	H3		5BL0320-SO										
	H5		5BL0330-SO										
6 - 32 UNC	H3		5BA0350-SO	2.087	0.394	0.194	0.152	0.276					
	H5		5BA0360-SO										
6 - 40 UNF	H3		5BL0350-SO										
	H5		5BL0360-SO										
8 - 32 UNC	H3		5BA0420-SO						2.303	0.472	0.255	0.191	0.315
	H5		5BA0430-SO										
8 - 36 UNF	H3		5BL0420-SO										
	H5		5BL0430-SO										
10 - 24 UNC	H3		5BA0480-SO	2.402	0.551	0.318	0.238	0.374					
	H5		5BA0490-SO										
10 - 32 UNF	H3		5BL0480-SO										
	H5		5BL0490-SO										
12 - 24 UNC	H3		5BA0550-SO						2.559	0.630	0.381	0.286	0.433
	H5		5BA0560-SO										
12 - 28 UNF	H3		5BL0550-SO										
	H5		5BL0560-SO										
1/4 - 20 UNC	H3		5BA0640-SO	2.756	0.709	0.323	0.242	0.413					
	H5		5BA0650-SO										
1/4 - 28 UNF	H3		5BL0640-SO										
	H5		5BL0650-SO										
5/16 - 18 UNC	H3		5BA0790-SO						3.031	0.827	0.367	0.275	0.433
	H5		5BA0800-SO										
5/16 - 24 UNF	H3		5BL0790-SO										
	H5		5BL0800-SO										
3/8 - 16 UNC	H3	5BA0950-SO	3.228	0.906	0.480	0.360	0.571						
	H5	5BA0960-SO											
3/8 - 24 UNF	H3	5BL0950-SO											
	H5	5BL0960-SO											
7/16 - 14 UNC	H3	5BA1110-SO						3.425	0.984	0.590	0.442	0.689	
	H5	5BA1120-SO											
7/16 - 20 UNF	H3	5BL1110-SO											
	H5	5BL1120-SO											
1/2 - 13 UNC	H3	5BA1270-SO	3.661	0.866	0.429	0.322	0.492						
	H5	5BA1280-SO											
1/2 - 20 UNF	H3	5BL1270-SO											
	H5	5BL1280-SO											
9/16 - 12 UNC	H3	5BA1430-SO						3.878	0.906	0.480	0.360	0.571	
	H5	5BA1440-SO											
9/16 - 18 UNF	H3	5BL1430-SO											
	H5	5BL1440-SO											
5/8 - 11 UNC	H3	5BA1590-SO	4.252	0.984	0.590	0.442	0.689						
	H5	5BA1600-SO											
5/8 - 18 UNF	H3	5BL1590-SO											
	H5	5BL1600-SO											
3/4 - 10 UNC	H3	5BA1910-SO						4.252	0.984	0.590	0.442	0.689	
	H5	5BA1920-SO											
3/4 - 16 UNF	H3	5BL1910-SO											
	H5	5BL1920-SO											

Packed: 1 pc.  
Available TiAIN only.



# List 5BA-SO, 5BL-SO (Continued)

**NEW** **RED BAND DRILLS** P26-28 **HSSE V3** **TYPE H** **TiAlN** **15°**

RED BAND, Spiral Flute, Modified Bottom (2P-3P)

Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Mod Bottom (2P-3P)					
			TiAlN					
			L	Lc	d	k	lk	
7/8 - 9 UNC	H3	4	5BA2220-SO	4.685	1.102	0.697	0.523	0.748
	H5		5BA2230-SO					
7/8 - 14 UNF	H3		5BL2220-SO					
	H5		5BL2230-SO					
1 - 8 UNC	H3		5BA2540-SO	5.118	1.260	0.800	0.600	0.807
	H5		5BA2550-SO					
1 - 12 UNF	H3		5BL2540-SO					
	H5		5BL2550-SO					
1,1/8 - 7 UNC	H3		5BA2860-SO	5.433	1.417	0.896	0.672	0.866
	H5		5BA2870-SO					
1,1/8 - 12 UNF	H3		5BL2860-SO					
	H5		5BL2870-SO					
1,1/4 - 7 UNC	H3	5BA3180-SO	5.748	1.021	0.766	1.004		
	H5	5BA3190-SO						
1,1/4 - 12 UNF	H3	5BL3180-SO						
	H5	5BL3190-SO						

Packed: 1 pc.  
Available TiAlN only.



Work Material																	
List No.	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
5BA-SO, 5BL-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
SFM	59-89	59-89	59-89	59-79	59-79				59-88	78-118		16-36	20-40	30-50	30-50		

good  best



# List 5EA-SO, 5EL-SO

<b>NEW</b>	<b>RED BAND DRILLS</b> P26-28	<b>HSSE V3</b>	<b>TYPE H</b>	<b>TiAlN</b>	<b>15°</b>
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RED BAND, Spiral Flute, Modified Bottom (2P-3P)



Tap Size	Thread Limit	No. of Flutes	EDP Number		Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Mod Bottom (2P-3P)						
			TiAlN		L	Lc	d	k	lk
M3 x 0.5	D4	3	5EA0300-SO		48.00	6.00	3.58	2.79	5.00
M3.5 x 0.6			5EA0350-SO		50.00	8.00			
M4 x 0.7			5EA0400-SO		53.00		4.27	3.33	
M5 x 0.8			5EA0500-SO		58.50	4.93			4.93
M6 x 1.0			5EA0600-SO		65.00		6.48	4.85	
M6 x 0.75			5EL0600-SO						
M7 x 1.0			5EA0700-SO		69.00	8.08	6.05	9.50	
M8 x 1.25			5EA0800-SO						
M8 x 1.0			5EL0800-SO		77.00	16.00	9.68	7.26	
M10 x 1.5			5EA1000-SO						
M10 x 1.25			5EL1010-SO						
M12 x 1.75	D6	4	5EA1200-SO		87.00	18.00	9.32	9.32	11.00
M12 x 1.5			5EA1214-SO						
M12 x 1.25	D4		5EL1200-SO						
M14 x 2.0			5EL1190-SO						
M14 x 1.5	D6		5EA1400-SO		93.00	22.00	10.90	10.90	13.00
			5EA1414-SO						
			5EL1400-SO						
M16 x 2.0	D6		5EL1414-SO		98.50	23.00	12.19	12.19	14.00
			5EA1600-SO						
			5EA1614-SO						
M16 x 1.5	D4		5EL1600-SO		108.00	25.00	13.76	13.76	15.88
		5EL1614-SO							
		5EA1800-SO							
M18 x 2.5	D6	5EA1814-SO		114.00	28.00	16.56	16.56	17.50	
		5EL1800-SO							
		5EL1814-SO							
M18 x 1.5	D4	5EA2000-SO		119.00	30.00	17.70	13.28	19.05	
		5EL2000-SO							
		5EA2200-SO							
M20 x 2.5	D4	5EL2200-SO		125.00	30.00	19.30	14.48	19.05	
		5EA2400-SO							
		5EL2400-SO							
M20 x 1.5	D4	5EA2400-SO		125.00	30.00	19.30	14.48	19.05	
M22 x 2.5		5EL2000-SO							
M22 x 1.5		5EA2200-SO							
M24 x 3.0		5EL2200-SO							

Packed: 1 pc.  
Available TiAlN coating only.



Work Material																	
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
5EA-SO, 5EL-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
SFM	59-89	59-89	59-89	59-79	59-79				59-88	78-118		16-36	20-40	30-50	30-50		

good  best



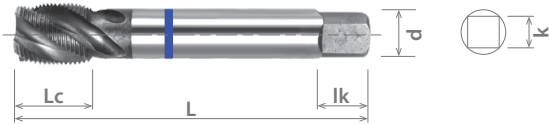




### List 5BB-SO, 5BM-SO (Continued)

<b>NEW</b>	<b>BLUE BAND DRILLS</b> P29-31	HSSE V3	TYPE VA	TiAIN	40°
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BLUE BAND, Spiral Flute, Modified Bottom (2P-3P)



Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length					
			Mod Bottom (2P-3P)										
			TiAIN										
				L	Lc	d	k	lk					
9/16 - 12 UNC	H3	3	5BB1434-SO	3.661	0.866	0.429	0.322	0.492					
	H5		5BB1444-SO										
9/16 - 18 UNF	H3		5BM1434-SO										
	H5		5BM1444-SO										
5/8 - 11 UNC	H3		5BB1594-SO						3.878	0.906	0.480	0.360	0.571
	H5		5BB1604-SO										
5/8 - 18 UNF	H3		5BM1594-SO										
	H5		5BM1604-SO										
3/4 - 10 UNC	H3		5BB1914-SO	4.252	0.984	0.590	0.442	0.689					
	H5		5BB1924-SO										
3/4 - 16 UNF	H3		5BM1914-SO										
	H5		5BM1924-SO										
7/8 - 9 UNC	H3	5BB2224-SO	4.685						1.102	0.697	0.523	0.748	
	H5	5BB2234-SO											
7/8 - 14 UNF	H3	5BM2224-SO											
	H5	5BM2234-SO											
1 - 8 UNC	H3	5BB2544-SO		5.118	1.260	0.800	0.600	0.807					
	H5	5BB2554-SO											
1 - 12 UNF	H3	5BM2544-SO											
	H5	5BM2554-SO											
1,1/8 - 7 UNC	H3	4	5BB2864-SO						5.433	1.417	0.896	0.672	0.866
	H5		5BB2874-SO										
1,1/8 - 12 UNF	H3		5BM2864-SO										
	H5		5BM2874-SO										
1,1/4 - 7 UNC	H3		5BB3184-SO	5.748	1.021	0.766	1.004						
	H5		5BB3194-SO										
1,1/4 - 12 UNF	H3		5BM3184-SO										
	H5		5BM3194-SO										

Packed: 1 pc.  
Available TiAIN coating only.



Work Material																										
List No.	P					M			K	N		S	H													
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels												
	Low	Med.	High			300	400	17-4 PH		6061	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC									
5BB-SO, 5BM-SO	1010	1035	1065	4140																						
SFM	1018	1045		4340																						

good  best

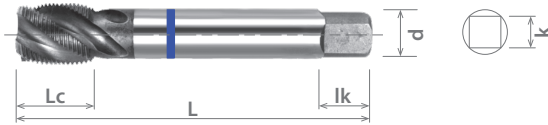




# List 5EB-SO, 5EM-SO

**NEW** **BLUE BAND DRILLS** P29-31 **HSSE V3** **TYPE VA** **TiAIN** **40°**

BLUE BAND, Spiral Flute, Modified Bottom (2P-3P)



Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Mod Bottom (2P-3P)					
			TiAIN	L	Lc	d	k	lk
M3 x 0.5	D4	3	5EB0304-SO	48.00	6.00	3.58	2.79	5.00
M3.5 x 0.6			5EB0354-SO	50.00	8.00			
M4 x 0.7			5EB0404-SO	53.00		4.27	3.33	
M5 x 0.8			5EB0504-SO	58.50	4.93			3.86
M6 x 1.0	D6	3	5EB0604-SO	65.00		12.00	6.48	
M6 x 0.75			5EM0604-SO					
M7 x 1.0	D4		5EB0704-SO	69.00	8.08	6.05	9.50	
M8 x 1.25			5EB0714-SO					
M8 x 1.0	D4	5EB0804-SO	70.00	14.00	8.08	6.05	9.50	
	D6	5EB0814-SO						
M10 x 1.5	D4	5EM0804-SO	77.00	16.00	9.68	7.26	11.00	
	D6	5EM0814-SO						
M10 x 1.25	D4	3	5EB1004-SO	87.00	18.00	9.32	6.99	
M10 x 1			5EM1014-SO					
M12 x 1.75			5EM1004-SO	93.00	22.00	10.90	8.18	13.00
M12 x 1.25			5EM1214-SO					
M14 x 2.0	D6	3	5EB1204-SO	98.50	23.00	12.19	9.14	14.00
			5EB1404-SO					
M14 x 1.5	D4		5EM1404-SO	108.00	25.00	13.76	10.30	15.88
	D6		5EM1414-SO					
M16 x 2.0	D4	3	5EB1604-SO	114.00	28.00	17.70	13.28	
			5EB1614-SO					
M16 x 1.5	D6		5EM1604-SO	119.00	30.00	19.30	14.48	
			5EM1614-SO					
M18 x 2.5	D4	3	5EB1804-SO	125.00	30.00	19.30	14.48	
			5EB1814-SO					
M18 x 1.5	D6		5EM1804-SO	114.00	28.00	17.70	13.28	
			5EM1814-SO					
M20 x 2.5	D4	3	5EB2004-SO	119.00	28.00	17.70	13.28	
M20 x 1.5			5EM2004-SO					
M22 x 2.5			D6	5EB2204-SO	125.00	30.00	19.30	14.48
M22 x 1.5				5EM2204-SO				
M24 x 3.0	D4	4	5EB2404-SO	125.00	30.00	19.30	14.48	
			5EM2404-SO					

Packed: 1 pc.  
Available TiAIN coating only.



Work Material																	
List No.	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels				Aluminum			Nickel Alloy	Titanium			
	Low	Med.	High			300	400	17-4 PH		Cast Iron	6061		Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
5EB-SO, 5EM-SO	1010	1035	1065	4140	4340	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				<input checked="" type="checkbox"/>					
SFM	1018	1045				29-49	26-49	25-45				20-60					

good  best

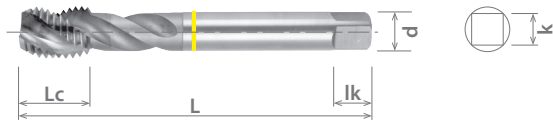




# List 5BC-SO, 5BN-SO

YELLOW BAND, Spiral Flute, Modified Bottom (2P-3P)

NEW	YELLOW BAND DRILLS P32-35	HSSE V3	TYPE W	BR	40°
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Mod Bottom (2P-3P)					
			Bright					
				L	Lc	d	k	lk
4 - 40 UNC	H3	2	5BC0280-SO	1.890	0.236	0.141	0.110	0.197
	H5		5BC0290-SO					
4 - 48 UNF	H3		5BN0280-SO					
	H5		5BN0290-SO					
5 - 40 UNC	H3		5BC0320-SO					
	H5		5BC0330-SO					
5 - 44 UNF	H3		5BN0320-SO					
	H5		5BN0330-SO					
6 - 32 UNC	H3		5BC0350-SO	1.969	0.315	0.168	0.131	0.256
	H5		5BC0360-SO					
6 - 40 UNF	H3		5BN0350-SO					
	H5		5BN0360-SO					
8 - 32 UNC	H3		5BC0420-SO	2.087	0.394	0.194	0.152	0.276
	H5		5BC0430-SO					
8 - 36 UNF	H3		5BN0420-SO					
	H5		5BN0430-SO					
10 - 24 UNC	H3		5BC0480-SO	2.303	0.394	0.220	0.165	0.276
	H5		5BC0490-SO					
10 - 32 UNF	H3		5BN0480-SO					
	H5		5BN0490-SO					
12 - 24 UNC	H3		5BC0550-SO	2.402	0.472	0.255	0.191	0.315
	H5		5BC0560-SO					
12 - 28 UNF	H3		5BN0550-SO					
	H5		5BN0560-SO					
1/4 - 20 UNC	H3	5BC0640-SO	2.559	0.551	0.318	0.238	0.374	
	H5	5BC0650-SO						
1/4 - 28 UNF	H3	5BN0640-SO						
	H5	5BN0650-SO						
5/16 - 18 UNC	H3	5BC0790-SO	2.756	0.630	0.381	0.286	0.433	
	H5	5BC0800-SO						
5/16 - 24 UNF	H3	5BN0790-SO						
	H5	5BN0800-SO						
3/8 - 16 UNC	H3	5BC0950-SO	3.031	0.709	0.323	0.242	0.413	
	H5	5BC0960-SO						
3/8 - 24 UNF	H3	5BN0950-SO						
	H5	5BN0960-SO						
7/16 - 14 UNC	H3	5BC1110-SO	3.228	0.827	0.367	0.275	0.433	
	H5	5BC1120-SO						
7/16 - 20 UNF	H3	5BN1110-SO						
	H5	5BN1120-SO						
1/2 - 13 UNC	H3	5BC1270-SO	3.425	0.906	0.480	0.360	0.571	
	H5	5BC1280-SO						
1/2 - 20 UNF	H3	5BN1270-SO						
	H5	5BN1280-SO						
9/16 - 12 UNC	H3	5BC1430-SO	3.661	0.984	0.590	0.442	0.689	
	H5	5BC1440-SO						
9/16 - 18 UNF	H3	5BN1430-SO						
	H5	5BN1440-SO						
5/8 - 11 UNC	H3	5BC1590-SO	3.878	0.984	0.590	0.442	0.689	
	H5	5BC1600-SO						
5/8 - 18 UNF	H3	5BN1590-SO						
	H5	5BN1600-SO						
3/4 - 10 UNC	H3	5BC1910-SO	4.252	0.984	0.590	0.442	0.689	
	H5	5BC1920-SO						
3/4 - 16 UNF	H3	5BN1910-SO						
	H5	5BN1920-SO						

Packed: 1 pc.  
EDPs listed above are stock standard, other coatings available upon request.  
Specify treatment at the time of order.



# List 5BC-SO, 5BN-SO (Continued)

YELLOW BAND, Spiral Flute, Modified Bottom (2P-3P)

<b>NEW</b>	<b>YELLOW BAND DRILLS</b> P32-35	HSSE V3	TYPE W	BR	40°
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Tap Size	Thread Limit	No. of Flutes	EDP Number		Overall Length	Thread Length	Shank Dia.	Square Width	Square Length	
			Mod Bottom (2P-3P)	Bright						
			L	Lc	d	k	lk			
7/8 - 9 UNC	H3	3	5BC2220-SO		4.685	1.102	0.697	0.523	0.748	
	H5		5BC2230-SO							
7/8 - 14 UNF	H3		5BN2220-SO							
	H5		5BN2230-SO							
1 - 8 UNC	H3		5BC2540-SO		5.118	1.260	0.800	0.600	0.807	
	H5		5BC2550-SO							
1 - 12 UNF	H3		5BN2540-SO							
	H5		5BN2550-SO							
1,1/8 - 7 UNC	H3		5BC2860-SO		5.433	1.417	0.896	0.672	0.866	
	H5		5BC2870-SO							
1,1/8 - 12 UNF	H3		5BN2860-SO							
	H5		5BN2870-SO							
1,1/4 - 7 UNC	H3		5BC3180-SO		5.748		1.417	1.021	0.766	1.004
	H5		5BC3190-SO							
1,1/4 - 12 UNF	H3		5BN3180-SO							
	H5		5BN3190-SO							

Packed: 1 pc.  
EDPs listed above are stock standard, other coatings available upon request.  
Specify treatment at the time of order.



Work Material																
List No.	P					M			K	N		S	H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC
5BC-SO,5BN-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
SFM	58-88	58-88	58-88							78-170	40-65					

good  best

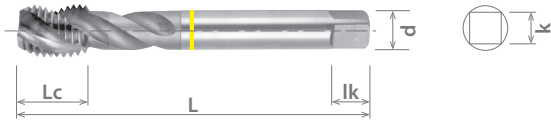




### List 5EC-SO, 5EN-SO

YELLOW BAND, Spiral Flute, Modified Bottom (2P-3P)

NEW	YELLOW BAND DRILLS P32-35	HSSE V3	TYPE W	BR	40°
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length	
			Mod Bottom (2P-3P)						
			Bright						L
M3 x 0.5	D4	2	5EC0300-SO	48.00	6.00	3.58	2.79	5.00	
M4 x 0.7			5EC0400-SO	53.00	8.00	4.27	3.33		
M5 x 0.8	D6		5EC0500-SO	58.50	10.00	4.93	3.86	6.50	
M6 x 1.0	D4		5EC0514-SO						
M6 x 0.75	D6		5EC0600-SO	65.00	12.00	6.48	4.85	8.00	
M7 x 1.0	D4		5EC0614-SO						
M8 x 1.25	D4		5EN0600-SO	69.00	14.00	8.08	6.05	9.50	
M8 x 1.0	D6		5EC0700-SO						
M8 x 1.0	D4		5EC0800-SO	70.00	14.00	8.08	6.05	9.50	
M8 x 1.0	D6		5EC0814-SO						
M8 x 1.0	D4		5EN0800-SO	77.00	16.00	9.68	7.26	11.00	
M8 x 1.0	D6		5EN0814-SO						
M10 x 1.5	D4	3	5EC1000-SO	77.00	16.00	9.68	7.26	11.00	
M10 x 1.25	D6		5EC1014-SO						
M10 x 1.25	D4		5EN1010-SO						
M10 x 1.0	D6		5EN1000-SO						
M10 x 1.0	D4		5EN1014-SO						
M12 x 1.75	D4		5EC1200-SO	87.00	18.00	9.32	6.99	11.00	
M12 x 1.5	D6		5EN1200-SO						
M12 x 1.5	D4		5EN1214-SO						
M14 x 2.0	D4		3	5EC1400-SO	93.00	22.00	10.90	8.18	13.00
M14 x 1.5				5EN1400-SO					
M16 x 2.0				5EC1600-SO	98.50	23.00	12.19	9.14	14.00
M16 x 1.5				5EN1600-SO					
M18 x 2.5		5EC1800-SO		108.00	25.00	13.76	10.30	15.88	
M18 x 1.5		5EN1800-SO							
M20 x 2.5		5EC2000-SO		114.00	25.00	16.56	12.42	17.50	
M20 x 1.5		5EN2000-SO							
M22 x 2.5		5EC2200-SO		119.00	28.00	17.70	13.28	19.05	
M22 x 1.5		5EN2200-SO							
M24 x 3.0		D4		5EC2400-SO	125.00	30.00	19.30	14.48	

Packed: 1 pc.  
EDPs listed above are stock standard, other coatings available upon request.  
Specify treatment at the time of order.



Work Material																		
List No.	P					M			K	N		S	H					
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
5EC-SO, 5EN-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
SFM	58-88	58-88	58-88							78-170	40-65							

good  best



# List 5BD-SO, 5BP-SO

WHITE BAND, Spiral Flute, Modified Bottom (2P-3P)

<b>NEW</b>	WHITE BAND DRILLS P36-37	HSSE V3	TYPE GG	TiAIN	15°
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Mod Bottom (2P-3P)					
			TiAIN					
			L	Lc	d	k	lk	
4 - 40 UNC	H3	3	5BD0285-SO	1.890	0.236	0.141	0.110	0.197
	H5		5BD0295-SO					
4 - 48 UNF	H3		5BP0285-SO					
	H5		5BP0295-SO					
5 - 40 UNC	H3		5BD0325-SO					
	H5		5BD0335-SO					
5 - 44 UNF	H3		5BP0325-SO					
	H5		5BP0335-SO					
6 - 32 UNC	H3		5BD0355-SO	1.969	0.315	0.168	0.131	0.256
	H5		5BD0365-SO					
6 - 40 UNF	H3		5BP0355-SO					
	H5		5BP0365-SO					
8 - 32 UNC	H3		5BD0425-SO	2.087	0.394	0.194	0.152	0.276
	H5		5BD0435-SO					
8 - 36 UNF	H3		5BP0425-SO					
	H5		5BP0435-SO					
10 - 24 UNC	H3		5BD0485-SO	2.303	0.394	0.220	0.165	0.315
	H5		5BD0495-SO					
10 - 32 UNF	H3		5BP0485-SO					
	H5		5BP0495-SO					
12 - 24 UNC	H3		5BD0555-SO	2.402	0.472	0.255	0.191	0.374
	H5		5BD0565-SO					
12 - 28 UNF	H3		5BP0555-SO					
	H5		5BP0565-SO					
1/4 - 20 UNC	H3	5BD0645-SO	2.559	0.551	0.318	0.238	0.433	
	H5	5BD0655-SO						
1/4 - 28 UNF	H3	5BP0645-SO						
	H5	5BP0655-SO						
5/16 - 18 UNC	H3	5BD0795-SO	2.756	0.630	0.381	0.286	0.413	
	H5	5BD0805-SO						
5/16 - 24 UNF	H3	5BP0795-SO						
	H5	5BP0805-SO						
3/8 - 16 UNC	H3	5BD0955-SO	3.031	0.709	0.323	0.242	0.433	
	H5	5BD0965-SO						
3/8 - 24 UNF	H3	5BP0955-SO						
	H5	5BP0965-SO						
7/16 - 14 UNC	H3	5BD1115-SO	3.228	0.827	0.367	0.275	0.433	
	H5	5BD1125-SO						
7/16 - 20 UNF	H3	5BP1115-SO						
	H5	5BP1125-SO						
1/2 - 13 UNC	H3	5BD1275-SO	3.425	0.827	0.367	0.275	0.433	
	H5	5BD1285-SO						
1/2 - 20 UNF	H3	5BP1275-SO						
	H5	5BP1285-SO						

Packed: 1 pc.  
Available TiAIN coating only.

continued on next page

Work Material																		
List No.	P				Die Steels	M			K Cast Iron	N		S Nickel Alloy Inconel	H					
	Carbon Steels			Alloy Steels		Stainless Steels				Aluminum			Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
5BD-SO, 5BP-SO									<input checked="" type="checkbox"/>									
SFM									<input type="checkbox"/>									

good  best





# List 5BD-SO, 5BP-SO (Continued)

<b>NEW</b>	WHITE BAND DRILLS P36-37	HSSE V3	TYPE GG	TiAIN	15°
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WHITE BAND, Spiral Flute, Modified Bottom (2P-3P)



Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Mod Bottom (2P-3P)					
			TiAIN					
				L	Lc	d	k	lk
9/16 - 12 UNC	H3	4	5BD1435-SO	3.661	0.866	0.429	0.322	0.492
	H5		5BD1445-SO					
9/16 - 18 UNF	H3		5BP1435-SO					
	H5		5BP1445-SO					
5/8 - 11 UNC	H3		5BD1595-SO	3.878	0.906	0.480	0.360	0.571
	H5		5BD1605-SO					
5/8 - 18 UNF	H3		5BP1595-SO					
	H5		5BP1605-SO					
3/4 - 10 UNC	H3		5BD1915-SO	4.252	0.984	0.590	0.442	0.689
	H5		5BD1925-SO					
3/4 - 16 UNF	H3		5BP1915-SO					
	H5		5BP1925-SO					
7/8 - 9 UNC	H3		5BD2225-SO	4.685	1.102	0.697	0.523	0.748
	H5		5BD2235-SO					
7/8 - 14 UNF	H3		5BP2225-SO					
	H5		5BP2235-SO					
1 - 8 UNC	H3		5BD2545-SO	5.118	1.260	0.800	0.600	0.807
	H5		5BD2555-SO					
1 - 12 UNF	H3		5BP2545-SO					
	H5		5BP2555-SO					
1,1/8 - 7 UNC	H3	5BD2865-SO	5.433	1.417	0.896	0.672	0.866	
	H5	5BD2875-SO						
1,1/8 - 12 UNF	H3	5BP2865-SO						
	H5	5BP2875-SO						
1,1/4 - 7 UNC	H3	5BD3185-SO	5.748	1.021	0.766	1.004		
	H5	5BD3195-SO						
1,1/4 - 12 UNF	H3	5BP3185-SO						
	H5	5BP3195-SO						

Packed: 1 pc.  
Available TiAIN coating only.



Work Material																		
List No.	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels				Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
5BD-SO, 5BP-SO																		
SFM									☐									

☐ good ☑ best



# List 5ED-SO, 5EP-SO

WHITE BAND, Spiral Flute, Modified Bottom (2P-3P)

<b>NEW</b>	WHITE BAND DRILLS P36-37	HSSE V3	TYPE GG	TiAlN	15°
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length		
			Mod Bottom (2P-3P)							
			TiAlN							
				L	Lc	d	k	lk		
M3 x 0.5	D4	3	5ED0305-SO	48.00	6.00	3.58	2.79	5.00		
M3.5 X 6			5ED0355-SO	50.00	8.00					
M4 x 0.7			5ED0405-SO	53.00		4.27	3.33			
M5 x 0.8			5ED0505-SO	58.00	4.93			3.86		
M6 x 1.0			5ED0605-SO	65.00		6.48	4.85			
M6 x 0.75			5EP0605-SO							
M7 x 1.0			5ED0705-SO	69.00	8.08	6.05				
M7 x 0.75			5EP0705-SO							
M8 x 1.25			5ED0805-SO	70.00	14.00	9.50				
M8 x 1.0			5EP0805-SO							
M10 x 1.5			D6	4	5ED1005-SO	77.00	16.00	9.68	7.26	11.00
M10 x 1.25					5EP0995-SO					
M10 x 1.0	5EP1005-SO	87.00			18.00	9.32	6.99			
M12 x 1.75	5EP1015-SO									
M12 x 1.5	5ED1205-SO	93.00			22.00	10.90	8.18			
M12 x 1.25	5EP1214-SO									
M14 x 2.0	5EP1235-SO	98.50			23.00	12.19	9.14			
M14 x 1.5	5ED1405-SO									
M16 x 2.0	5EP1405-SO	108.00			25.00	13.76	10.30			
M16 x 1.5	5ED1605-SO									
M18 x 2.5	5EP1605-SO	114.00			28.00	16.56	12.42			
M18 x 1.5	5ED1805-SO									
M20 x 2.5	5EP1805-SO	119.00	30.00	17.70	13.28					
M20 x 1.5	5ED2005-SO									
M22 x 2.5	5EP2005-SO	125.00	30.00	19.30	14.48					
M22 x 1.5	5ED2205-SO									
M24 x 3.0	5EP2205-SO	5ED2405-SO								

Packed: 1 pc.  
Available TiAlN coating only.



Work Material																		
List No.	P					M			K	N		S	H					
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
5ED-SO, 5EP-SO																		
SFM									☐									

☐ good ☑ best

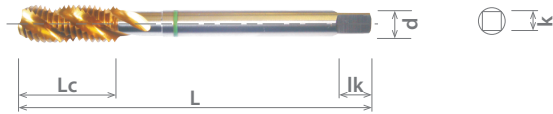




# List 5BE-SO, 5BK-SO

GREEN BAND, Spiral Flute, Modified Bottom (2P-3P)

<b>NEW</b>	<b>GREEN BAND DRILLS</b> P38-40	<b>HSSE V3</b>	<b>TYPE UNI</b>	<b>TiN</b>	<b>35°</b>
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length										
			Mod Bottom (2P-3P)															
			TiN															
				L	Lc	d	k	lk										
4 - 40 UNC	H3	3	5BE0280-SO	1.890	0.236	0.141	0.110	0.197										
	H5		5BE0290-SO															
4 - 48 UNF	H3		5BK0280-SO															
	H5		5BK0290-SO															
5 - 40 UNC	H3		5BE0320-SO						1.969	0.315	0.168	0.131	0.256					
	H5		5BE0330-SO															
5 - 44 UNF	H3		5BK0320-SO															
	H5		5BK0330-SO															
6 - 32 UNC	H3		5BE0350-SO											2.087	0.394	0.194	0.152	0.276
	H5		5BE0360-SO															
6 - 40 UNF	H3		5BK0350-SO															
	H5		5BK0360-SO															
8 - 32 UNC	H3		5BE0420-SO	2.303	0.472	0.255	0.191	0.315										
	H5		5BE0430-SO															
8 - 36 UNF	H3		5BK0420-SO															
	H5		5BK0430-SO															
10 - 24 UNC	H3		5BE0480-SO						2.402	0.551	0.318	0.238	0.374					
	H5		5BE0490-SO															
10 - 32 UNF	H3		5BK0480-SO															
	H5		5BK0490-SO															
12 - 24 UNC	H3		5BE0550-SO											2.559	0.630	0.381	0.286	0.433
	H5		5BE0560-SO															
12 - 28 UNF	H3		5BK0550-SO															
	H5		5BK0560-SO															
1/4 - 20 UNC	H3		5BE0640-SO	2.756	0.709	0.323	0.242	0.413										
	H5		5BE0650-SO															
1/4 - 28 UNF	H3		5BK0640-SO															
	H5		5BK0650-SO															
5/16 - 18 UNC	H3		5BE0790-SO						3.031	0.827	0.367	0.275	0.433					
	H5		5BE0800-SO															
5/16 - 24 UNF	H3		5BK0790-SO															
	H5		5BK0800-SO															
3/8 - 16 UNC	H3	5BE0960-SO	3.228											0.906	0.480	0.360	0.571	
	H5	5BE0960-SO																
3/8 - 24 UNF	H3	5BK0950-SO																
	H5	5BK0960-SO																
7/16 - 14 UNC	H3	5BE1110-SO		3.425	0.984	0.590	0.442	0.689										
	H5	5BE1120-SO																
7/16 - 20 UNF	H3	5BK1110-SO																
	H5	5BK1120-SO																
1/2 - 13 UNC	H3	5BE1270-SO							3.661	0.866	0.429	0.322	0.492					
	H5	5BE1280-SO																
1/2 - 20 UNF	H3	5BK1270-SO																
	H5	5BK1280-SO																
9/16 - 12 UNC	H3	5BE1430-SO	3.878											0.906	0.480	0.360	0.571	
	H5	5BE1440-SO																
9/16 - 18 UNF	H3	5BK1430-SO																
	H5	5BK1440-SO																
5/8 - 11 UNC	H3	5BE1590-SO		4.252	0.984	0.590	0.442	0.689										
	H5	5BE1600-SO																
5/8 - 18 UNF	H3	5BK1590-SO																
	H5	5BK1600-SO																
3/4 - 10 UNC	H3	5BE1910-SO							4.252	0.984	0.590	0.442	0.689					
	H5	5BE1920-SO																
3/4 - 16 UNF	H3	5BK1910-SO																
	H5	5BK1920-SO																

Packed: 1 pc.  
Available TiN coating only.





# List 5BE-SO, 5BK-SO (Continued)

GREEN BAND, Spiral Flute, Modified Bottom (2P-3P)

<b>NEW</b>	<b>GREEN BAND DRILLS</b> P38-40	<b>HSSE V3</b>	<b>TYPE UNI</b>	<b>TiN</b>	<b>35°</b>
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Tap Size	Thread Limit	No. of Flutes	EDP Number		Overall Length	Thread Length	Shank Dia.	Square Width	Square Length	
			Mod Bottom (2P-3P)							
			TiN		L	Lc	d	k	lk	
7/8 - 9 UNC	H3	4	5BE2220-SO		4.685	1.102	0.697	0.523	0.748	
	H5		5BE2230-SO							
7/8 - 14 UNF	H3		5BK2220-SO							
	H5		5BK2230-SO							
1 - 8 UNC	H3		5BE2540-SO		5.118	1.260	0.800	0.600	0.807	
	H5		5BE2550-SO							
1 - 12 UNF	H3		5BK2540-SO							
	H5		5BK2550-SO							
1,1/8 - 7 UNC	H3		5BE2860-SO		5.433	1.417	0.896	0.672	0.807	
	H5		5BE2870-SO							
1,1/8 - 12 UNF	H3		5BK2860-SO							
	H5		5BK2870-SO							
1,1/4 - 7 UNC	H3		5BE3180-SO		5.748		1.417	1.021	0.766	1.004
	H5		5BE3190-SO							
1,1/4 - 12 UNF	H3		5BK3180-SO							
	H5		5BK3190-SO							

Packed: 1 pc.  
Available TiN coating only.



Work Material																			
List No.	P				Die Steels	M			K	N		S	H						
	Carbon Steels			Alloy Steels		Stainless Steels				Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH			6061 7075				Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
5BE-SO, 5BK-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
SFM	59-88	59-88	59-79			59-79			30-85	78-170	30-80	19-39							

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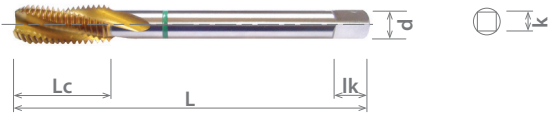




# List 5EV-SO

GREEN BAND, Spiral Flute, Modified Bottom (2P-3P)

NEW	GREEN BAND DRILLS P38-40	HSSE V3	TYPE UNI	TiN	15°
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Mod Bottom (2P-3P)					
			TiN					
			L	Lc	d	k	lk	
M3 x 0.5	D4	3	5EV0300-SO	48.00	6.00	3.58	2.79	5.00
M4 x 0.7			5EV0400-SO	53.00	8.00	4.27	3.33	6.50
M5 x 0.8			5EV0500-SO	58.50	10.00	4.93	3.86	
M6 x 1.0			5EV0600-SO	65.00	12.00	6.48	4.85	8.00
M8 x 1.25			5EV0800-SO	70.00	14.00	8.08	6.05	9.50
M10 x 1.5	D6		5EV1000-SO	77.00	16.00	9.68	7.26	11.00
M12 x 1.75			5EV1200-SO	87.00	18.00	9.32	6.99	
M14 x 2.0			5EV1400-SO	93.00	22.00	10.90	8.18	13.00
M16 x 2.0			5EV1600-SO	98.50	23.00	12.19	9.14	14.00
M18 x 2.5			5EV1800-SO	108.00	25.00	13.76	10.30	15.88
M20 x 2.5	D4	5EV2000-SO	114.00	16.56		12.42	17.50	
M22 x 2.5		5EV2200-SO	119.00	17.70	13.28	19.05		
M24 x 3.0		5EV2400-SO	125.00	19.30	14.48			

Packed: 1 pc.  
Available TiN coating only.



Work Material																	
List No.	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
5EV-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
SFM	59-88	59-88	59-79			59-79			30-85	78-170	30-80	19-39					

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# List 5EW-SO

GREEN BAND, Spiral Flute, Modified Bottom (2P-3P)

NEW	GREEN BAND DRILLS P38-40	HSSE V3	TYPE UNI	TiN	35°
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Mod Bottom (2P-3P)					
			TiN					
M3 x 0.5	D4	3	5EW0300-SO	48.00	6.00	3.58	2.79	5.00
M4 x 0.7			5EW0400-SO	53.00	8.00	4.27	3.33	6.50
M5 x 0.8			5EW0500-SO	58.50	10.00	4.93	3.86	
M6 x 1.0			5EW0600-SO	65.00	12.00	6.48	4.85	8.00
M8 x 1.25			5EW0800-SO	70.00	14.00	8.08	6.05	9.50
M10 x 1.5	D6		5EW1000-SO	77.00	16.00	9.68	7.26	11.00
M12 x 1.75			5EW1200-SO	87.00	18.00	9.32	6.99	
M14 x 2.0			5EW1400-SO	93.00	22.00	10.90	8.18	13.00
M16 x 2.0			5EW1600-SO	98.50	23.00	12.19	9.14	14.00
M18 x 2.5			5EW1800-SO	108.00	25.00	13.76	10.30	15.88
M20 x 2.5	D4	5EW2000-SO	114.00	16.56		12.42	17.50	
M22 x 2.5		5EW2200-SO	119.00	17.70	13.28	19.05		
M24 x 3.0		5EW2400-SO	125.00	19.30	14.48			

Packed: 1 pc.  
Available TiN coating only.



Work Material																	
List No.	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
5EW-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
SFM	59-88	59-88	59-79			59-79			30-85	78-170	30-80	19-39					

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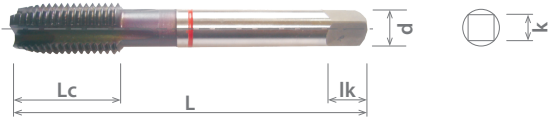




# List 5BF-SO, 5BS-SO

RED BAND, Spiral Point, Plug (4P-5P)

NEW	RED BAND DRILLS P26-28	HSSE V3	TYPE H	TiAIN
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Plug (4P-5P)					
			TiAIN					
				L	Lc	d	k	lk
4 - 40 UNC	H3	3	5BF0280-SO	1.890	0.433	0.141	0.110	0.197
	H5		5BF0290-SO					
4 - 48 UNF	H3		5BS0280-SO					
	H5		5BS0290-SO					
5 - 40 UNC	H3		5BF0320-SO					
	H5		5BF0330-SO					
5 - 44 UNF	H3		5BS0320-SO					
	H5		5BS0330-SO					
6 - 32 UNC	H3		5BF0350-SO	1.969	0.512	0.168	0.131	0.256
	H5		5BF0360-SO					
6 - 40 UNF	H3		5BS0350-SO					
	H5		5BS0360-SO					
8 - 32 UNC	H3		5BF0420-SO	2.087	0.630	0.194	0.152	0.276
	H5		5BF0430-SO					
	8 - 36 UNF		H3					
H5			5BS0430-SO					
10 - 24 UNC			H3	5BF0480-SO	2.303	0.630	0.220	0.165
	H5		5BF0490-SO					
	10 - 32 UNF		H3	5BS0480-SO				
H5			5BS0490-SO					
12 - 24 UNC			H3	5BF0550-SO	2.402	0.748	0.255	0.191
	H5		5BF0560-SO					
	12 - 28 UNF		H3	5BS0550-SO				
H5			5BS0560-SO					
1/4 - 20 UNC		H3	5BF0640-SO	2.559	0.866	0.318	0.238	0.433
	H5	5BF0650-SO						
	1/4 - 28 UNF	H3	5BS0640-SO					
H5		5BS0650-SO						
5/16 - 18 UNC		H3	5BF0790-SO	2.756	0.945	0.381	0.286	0.413
	H5	5BF0800-SO						
	5/16 - 24 UNF	H3	5BS0790-SO					
H5		5BS0800-SO						
3/8 - 16 UNC		H3	5BF0950-SO	3.031	0.984	0.323	0.242	0.433
	H5	5BF0960-SO						
	3/8 - 24 UNF	H3	5BS0950-SO					
H5		5BS0960-SO						
7/16 - 14 UNC		H3	5BF1110-SO	3.228	1.142	0.367	0.275	0.433
	H5	5BF1120-SO						
	7/16 - 20 UNF	H3	5BS1110-SO					
H5		5BS1120-SO						
1/2 - 13 UNC		H3	5BF1270-SO	3.425	1.260	0.480	0.360	0.571
	H5	5BF1280-SO						
	1/2 - 20 UNF	H3	5BS1270-SO					
H5		5BS1280-SO						
9/16 - 12 UNC		H3	5BF1430-SO	3.661	1.457	0.590	0.442	0.689
	H5	5BF1440-SO						
	9/16 - 18 UNF	H3	5BS1430-SO					
H5		5BS1440-SO						
5/8 - 11 UNC		H3	5BF1590-SO	3.878	1.457	0.590	0.442	0.689
	H5	5BF1600-SO						
	5/8 - 18 UNF	H3	5BS1590-SO					
H5		5BS1600-SO						
3/4 - 10 UNC		H3	5BF1910-SO	4.252	1.457	0.590	0.442	0.689
	H5	5BF1920-SO						
	3/4 - 16 UNF	H3	5BS1910-SO					
H5		5BS1920-SO						

Packed: 1 pc.  
Available TiAIN coating only.



# List 5BF-SO, 5BS-SO (Continued)

RED BAND, Spiral Point, Plug (4P-5P)

NEW **RED BAND DRILLS** P26-28 HSSE V3 TYPE H **TiAlN**

Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Plug (4P-5P)					
			TiAlN					
			L	Lc	d	k	lk	
7/8 - 9 UNC	H3	4	5BF2220-SO	4.685	1.339	0.697	0.523	0.748
	H5		5BF2230-SO					
7/8 - 14 UNF	H3		5BS2220-SO					
	H5		5BS2230-SO					
1 - 8 UNC	H3		5BF2540-SO	5.118	1.772	0.800	0.600	0.807
	H5		5BF2550-SO					
1 - 12 UNF	H3		5BS2540-SO					
	H5		5BS2550-SO					
1,1/8 - 7 UNC	H3		5BF2860-SO	5.433	1.890	0.896	0.672	0.866
	H5		5BF2870-SO					
1,1/8 - 12 UNF	H3		5BS2860-SO					
	H5		5BS2870-SO					
1,1/4 - 7 UNC	H3		5BF3180-SO	5.748	2.008	1.021	0.766	1.004
	H5		5BF3190-SO					
1,1/4 - 12 UNF	H3		5BS3180-SO					
	H5		5BS3190-SO					

Packed: 1 pc.  
Available TiAlN coating only.



Work Material																	
List No.	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061	7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC
5BF-SO, 5BS-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
SFM	59-89	59-89	59-89	59-79	59-79				59-88	78-118		16-36	20-40	30-50	30-50		

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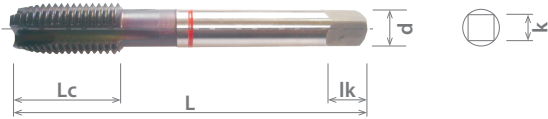




### List 5EF-SO, 5ES-SO

RED BAND, Spiral Point, Plug (4P-5P)

NEW	RED BAND DRILLS P26-28	HSSE V3	TYPE H	TiAIN
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length		
			Plug (4P-5P)							
			TiAIN						L	Lc
M3 x 0.5	D4	3	5EF0300-SO	48.00	11.00	3.58	2.79	5.00		
M3.5 x 0.6			5EF0350-SO	50.00	13.00					
M4 x 0.7			5EF0400-SO	53.00		4.27	3.33			
M4.5 X 0.75			5EF0450-SO	58.50	16.00			4.93	3.86	6.50
M5 x 0.8			5EF0500-SO							
M6 x 1.0			5EF0600-SO	65.00	19.00	6.48	4.85	8.00		
M6 x 0.75			5ES0600-SO							
M7 x 1.0			5EF0700-SO	69.00	22.00	8.08	6.05	9.50		
M8 x 1.25			5EF0800-SO							
M8 x 1.0			5ES0800-SO							
M10 x 1.5			D6	3	5EF1000-SO	77.00	24.00	9.68	7.26	11.00
M10 x 1.25					5ES1010-SO					
M10 x 1	D4	3	5ES1000-SO	87.00	29.00	9.32	6.99	11.00		
M12 x 1.75			5EF1200-SO							
M12 x 1.5	D6	3	5ES1200-SO	93.00	30.00	10.90	8.18	13.00		
M12 x 1.25			5ES1210-SO							
M14 x 2.0	D4	4	5EF1400-SO	98.50	32.00	12.19	9.14	14.00		
M14 x 1.5	D6		5EF1410-SO							
	D4		5ES1400-SO							
M16 x 2.0	D4		5ES1410-SO	108.00	37.00	13.76	10.31	15.88		
	D6		5EF1600-SO							
M16 x 1.5	D4		5EF1610-SO	114.00	34.00	16.56	12.42	17.50		
	D6		5ES1600-SO							
M18 x 2.5	D4		5ES1610-SO	119.00	45.00	17.70	13.28	19.05		
	D6		5EF1800-SO							
M18 x 1.5	D4		5EF1810-SO	125.00	45.00	19.30	14.48	19.05		
	D6		5ES1800-SO							
M20 x 2.5	D4		4	5EF2000-SO	114.00	34.00	16.56	12.42	17.50	
		5ES2000-SO								
M20 x 1.5	D4	4	5EF2200-SO	119.00	45.00	17.70	13.28	19.05		
			5ES2200-SO							
M22 x 1.5	D4	4	5EF2400-SO	125.00	45.00	19.30	14.48	19.05		
M24 x 3.0			5ES2400-SO							

Packed: 1 pc.  
Available TiAIN coating only.



Work Material																		
List No.	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
5EF-SO, 5ES-SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
SFM	59-89	59-89	59-89	59-79	59-79				59-88	78-118		16-36	20-40	30-50	30-50			

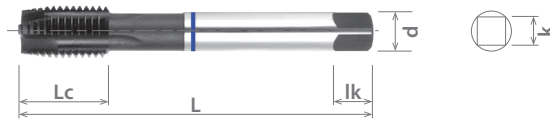
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# List 5BG-SO, 5BT-SO

BLUE BAND, Spiral Point, Plug (4P-5P)

<b>NEW</b>	<b>BLUE BAND DRILLS</b> P29-31	HSSE V3	TYPE VA	TiAIN
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length					
			Plug (4P-5P)										
			TiAIN										
			L	Lc	d	k	lk						
4 - 40 UNC	H3	3	5BG0284-SO	1.890	0.433	0.141	0.110	0.197					
	H5		5BG0294-SO										
4 - 48 UNF	H3		5BT0284-SO										
	H5		5BT0294-SO										
5 - 40 UNC	H3		5BG0324-SO						1.969	0.512	0.168	0.131	0.256
	H5		5BG0334-SO										
5 - 44 UNF	H3		5BT0324-SO										
	H5		5BT0334-SO										
6 - 32 UNC	H3		5BG0354-SO	2.087	0.630	0.194	0.152	0.276					
	H5		5BG0364-SO										
6 - 40 UNF	H3		5BT0354-SO										
	H5		5BT0364-SO										
8 - 32 UNC	H3		5BG0424-SO						2.303	0.748	0.255	0.191	0.315
	H5		5BG0434-SO										
8 - 36 UNF	H3		5BT0424-SO										
	H5		5BT0434-SO										
10 - 24 UNC	H3		5BG0484-SO	2.559	0.866	0.318	0.238	0.374					
	H5		5BG0494-SO										
10 - 32 UNF	H3		5BT0484-SO										
	H5		5BT0494-SO										
12 - 24 UNC	H3		5BG0554-SO						2.756	0.945	0.381	0.286	0.433
	H5		5BG0564-SO										
12 - 28 UNF	H3		5BT0554-SO										
	H5		5BT0564-SO										
1/4 - 20 UNC	H3		5BG0644-SO	3.031	0.984	0.323	0.242	0.413					
	H5		5BG0654-SO										
1/4 - 28 UNF	H3		5BT0644-SO										
	H5		5BT0654-SO										
5/16 - 18 UNC	H3		5BG0794-SO						3.228	1.142	0.367	0.275	0.433
	H5		5BG0804-SO										
5/16 - 24 UNF	H3		5BT0794-SO										
	H5		5BT0804-SO										
3/8 - 16 UNC	H3	5BG0954-SO	3.425										
	H5	5BG0964-SO											
3/8 - 24 UNF	H3	5BT0954-SO											
	H5	5BT0964-SO											
7/16 - 14 UNC	H3	5BG1114-SO											
	H5	5BG1124-SO											
7/16 - 20 UNF	H3	5BT1114-SO											
	H5	5BT1124-SO											
1/2 - 13 UNC	H3	5BG1274-SO											
	H5	5BG1284-SO											
1/2 - 20 UNF	H3	5BT1274-SO											
	H5	5BT1284-SO											

Packed: 1 pc.  
Available TiAIN coating only.

continued on next page

Work Material																	
List No.	P				Die Steels	M			K Cast Iron	N		S Nickel Alloy Inconel	H				
	Carbon Steels			Alloy Steels 4140 4340		Stainless Steels				Aluminum			Titanium 6Al4V (30 HRC)	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
5BG-SO, 5BT-SO						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				<input checked="" type="checkbox"/>					
SFM						29-49	26-49	25-45				20-60					

good  best

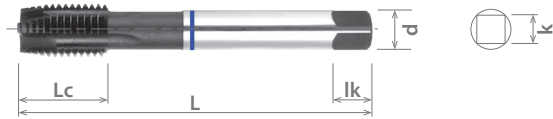




### List 5BG-SO, 5BT-SO (Continued)

<b>NEW</b>	<b>BLUE BAND DRILLS</b> P29-31	<b>HSSE V3</b>	<b>TYPE VA</b>	<b>TiAIN</b>
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BLUE BAND, Spiral Point, Plug (4P-5P)



Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length					
			Plug (4P-5P)										
			TiAIN										
			L	Lc	d	k	lk						
9/16 - 12 UNC	H3	3	5BG1434-SO	3.661	1.181	0.429	0.322	0.492					
	H5		5BG1444-SO										
9/16 - 18 UNF	H3		5BT1434-SO										
	H5		5BT1444-SO										
5/8 - 11 UNC	H3		5BG1594-SO						3.878	1.260	0.480	0.360	0.571
	H5		5BG1604-SO										
5/8 - 18 UNF	H3	5BT1594-SO											
	H5	5BT1604-SO											
3/4 - 10 UNC	H3	4	5BG1914-SO	4.252	1.457	0.590	0.442	0.689					
	H5		5BG1924-SO										
3/4 - 16 UNF	H3		5BT1914-SO										
	H5		5BT1924-SO										
7/8 - 9 UNC	H3		5BG2224-SO						4.685	1.339	0.697	0.523	0.748
	H5		5BG2234-SO										
7/8 - 14 UNF	H3		5BT2224-SO										
	H5		5BT2234-SO										
1 - 8 UNC	H3		5BG2544-SO	5.118	1.772	0.800	0.600	0.807					
	H5		5BG2554-SO										
1 - 12 UNF	H3		5BT2544-SO										
	H5		5BT2554-SO										
1,1/8 - 7 UNC	H3	5BG2864-SO	5.433						1.890	0.896	0.672	0.866	
	H5	5BG2874-SO											
1,1/8 - 12 UNF	H3	5BT2864-SO											
	H5	5BT2874-SO											
1,1/4 - 7 UNC	H3	5BG3184-SO		5.748	2.008	1.021	0.766	1.004					
	H5	5BG3194-SO											
1,1/4 - 12 UNF	H3	5BT3184-SO											
	H5	5BT3194-SO											

Packed: 1 pc.  
Available TiAIN coating only.



Work Material																		
List No.	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
5BG-SO, 5BT-SO	1010	1035	1065	4140	4340	300	400	17-4 PH		6061	7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
SFM						29-49	26-49	25-45						20-60				

good  best

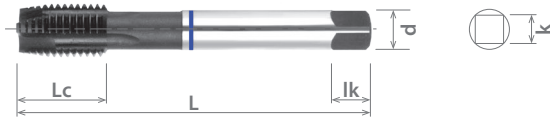




# List 5EG-SO, 5ET-SO

BLUE BAND, Spiral Point, Plug (4P-5P)

<b>NEW</b>	<b>BLUE BAND DRILLS</b> P29-31	<b>HSSE V3</b>	<b>TYPE VA</b>	<b>TiAlN</b>
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length		
			Plug (4P-5P)							
			TiAlN						L	Lc
M3 x 0.5	D4	3	5EG0304-SO	48.00	11.00	3.58	2.79	5.00		
M3.5 x 0.6	D6		5EG0354-SO	50.00	13.00					
M4 x 0.7	D4		5EG0404-SO	53.00	16.00	4.27	3.33	6.50		
M4.5 X 0.75			5EG0454-SO	58.50		4.93	3.86			
M5 x 0.8			5EG0504-SO	65.00		19.00	6.48		4.85	8.00
M6 x 1.0			5EG0604-SO							
M6 x 0.75	5EG0614-SO									
M7 x 1.0	5ET0604-SO									
M8 x 1.25	D4		4	5EG0704-SO	69.00	22.00	8.08	6.05	9.50	
	D6			5EG0714-SO						
M8 x 1.0	D4			5EG0804-SO	70.00	24.00	9.68	7.26	11.00	
	D6			5ET0804-SO						
M10 x 1.5	D4			5ET0814-SO	77.00	29.00	9.32	6.99	13.00	
	D6			5EG1004-SO						
M10 x 1.25	D4			5EG1014-SO	87.00	30.00	10.90	8.18	14.00	
M10 x 1				5ET1014-SO						
M12 x 1.75				5EG1204-SO						
M12 x 1.5				5EG1214-SO						
M12 x 1.25	D4			5ET1204-SO	93.00	32.00	12.19	9.14	15.88	
M14 x 2.0				5ET1194-SO						
M14 x 1.5	D6	5EG1404-SO	98.50	34.00	16.56	12.42	17.50			
	D4	5EG1414-SO								
M16 x 2.0	D6	5ET1404-SO	108.00	37.00	13.76	10.31	15.88			
	D4	5ET1414-SO								
M16 x 1.5	D6	5EG1604-SO	114.00	45.00	19.30	14.48	19.05			
	D4	5EG1614-SO								
M18 x 2.5	D4	5ET1604-SO	119.00	17.70	13.28	19.05	19.05			
	D6	5ET1614-SO								
M18 x 1.5	D4	5EG1804-SO	125.00	34.00	16.56	12.42	17.50			
	D6	5EG1814-SO								
M20 x 2.5	D4	5ET1804-SO	125.00	45.00	19.30	14.48	19.05			
		5ET1814-SO								
M20 x 1.5	D4	5EG2004-SO	125.00	45.00	19.30	14.48	19.05			
M22 x 2.5		5ET2004-SO								
M22 x 1.5		5EG2204-SO								
M24 x 3.0		5ET2204-SO								

Packed: 1 pc.  
Available TiAlN coating only.



Work Material																		
List No.	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels				Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH			6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
5EG-SO, 5ET-SO						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				<input checked="" type="checkbox"/>						
SFM						29-49	26-49	25-45					20-60					

good  best

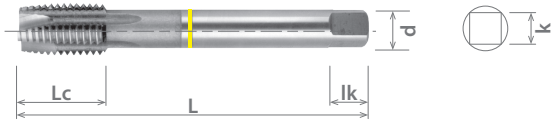




# List 5BH-SO, 5BU-SO

YELLOW BAND, Spiral Point, Plug (4P-5P)

NEW	YELLOW BAND DRILLS P32-35	HSSE V3	TYPE W	BR
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Plug (4P-5P)					
			Bright					
4 - 40 UNC	H3	2	5BH0280-SO	1.890	0.433	0.141	0.110	0.197
	H5		5BH0290-SO					
4 - 48 UNF	H3		5BU0280-SO					
	H5		5BU0290-SO					
5 - 40 UNC	H3		5BH0320-SO					
	H5		5BH0330-SO					
5 - 44 UNF	H3		5BU0320-SO					
	H5		5BU0330-SO					
6 - 32 UNC	H3		5BH0350-SO	1.969	0.512	0.168	0.131	0.256
	H5		5BH0360-SO					
6 - 40 UNF	H3		5BU0350-SO					
	H5		5BU0360-SO					
8 - 32 UNC	H3		5BH0420-SO	2.087	0.630	0.194	0.152	0.276
	H5		5BH0430-SO					
8 - 36 UNF	H3		5BU0420-SO					
	H5		5BU0430-SO					
10 - 24 UNC	H3		5BH0480-SO	2.303	0.630	0.220	0.165	0.315
	H5		5BH0490-SO					
10 - 32 UNF	H3		5BU0480-SO					
	H5		5BU0490-SO					
12 - 24 UNC	H3		5BH0550-SO	2.402	0.748	0.255	0.191	0.374
	H5		5BH0560-SO					
12 - 28 UNF	H3		5BU0550-SO					
	H5		5BU0560-SO					
1/4 - 20 UNC	H3	5BH0640-SO	2.559	0.866	0.318	0.238	0.433	
	H5	5BH0650-SO						
1/4 - 28 UNF	H3	5BU0640-SO						
	H5	5BU0650-SO						
5/16 - 18 UNC	H3	5BH0790-SO	2.756	0.945	0.381	0.286	0.413	
	H5	5BH0800-SO						
5/16 - 24 UNF	H3	5BU0790-SO						
	H5	5BU0800-SO						
3/8 - 16 UNC	H3	5BH0950-SO	3.031	0.984	0.323	0.242	0.433	
	H5	5BH0960-SO						
3/8 - 24 UNF	H3	5BU0950-SO						
	H5	5BU0960-SO						
7/16 - 14 UNC	H3	5BH1110-SO	3.228	1.142	0.367	0.275	0.492	
	H5	5BH1120-SO						
7/16 - 20 UNF	H3	5BU1110-SO						
	H5	5BU1120-SO						
1/2 - 13 UNC	H3	5BH1270-SO	3.425	1.260	0.480	0.360	0.571	
	H5	5BH1280-SO						
1/2 - 20 UNF	H3	5BU1270-SO						
	H5	5BU1280-SO						
9/16 - 12 UNC	H3	5BH1430-SO	3.661	1.457	0.590	0.442	0.689	
	H5	5BH1440-SO						
9/16 - 18 UNF	H3	5BU1430-SO						
	H5	5BU1440-SO						
5/8 - 11 UNC	H3	5BH1590-SO	3.878	1.457	0.590	0.442	0.689	
	H5	5BH1600-SO						
5/8 - 18 UNF	H3	5BU1590-SO						
	H5	5BU1600-SO						
3/4 - 10 UNC	H3	5BH1910-SO	4.252	1.457	0.590	0.442	0.689	
	H5	5BH1920-SO						
3/4 - 16 UNF	H3	5BU1910-SO						
	H5	5BU1920-SO						

Packed: 1 pc.  
EDPs listed above are stock standard, other coatings available upon request.  
Specify treatment at the time of order.



# List 5BH-SO, 5BU-SO (Continued)

YELLOW BAND, Spiral Point, Plug (4P-5P)

NEW	YELLOW BAND DRILLS P32-35	HSSE V3	TYPE W	BR
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Plug (4P-5P)					
			Bright					
			L	Lc	d	k	lk	
7/8 - 9 UNC	H3	3	5BH2220-SO	4.685	1.339	0.697	0.523	0.748
	H5		5BH2230-SO					
7/8 - 14 UNF	H3		5BU2220-SO					
	H5		5BU2230-SO					
1 - 8 UNC	H3		5BH2540-SO	5.118	1.772	0.800	0.600	0.807
	H5		5BH2541-SO					
1 - 12 UNF	H3		5BU2540-SO					
	H5		5BU2550-SO					
1,1/8 - 7 UNC	H3		5BH2860-SO	5.433	1.890	0.896	0.672	0.866
	H5		5BH2870-SO					
1,1/8 - 12 UNF	H3		5BU2860-SO					
	H5		5BU2870-SO					
1,1/4 - 7 UNC	H3	5BH3180-SO	5.748	2.008	1.021	0.766	1.004	
	H5	5BH3190-SO						
1,1/4 - 12 UNF	H3	5BU3180-SO						
	H5	5BU3190-SO						

Packed: 1 pc.  
EDPs listed above are stock standard, other coatings available upon request.  
Specify treatment at the time of order.



Work Material																		
List No.	P					M			K	N		S	H					
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
5BH-SO, 5BU-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
SFM	58-88	58-88	58-88							78-170	40-65							

good  best

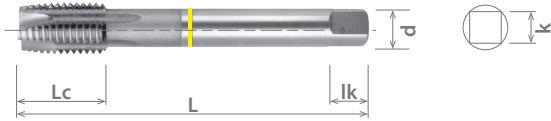




# List 5EH-SO, 5EU-SO

YELLOW BAND, Spiral Point, Plug (4P-5P)

NEW	YELLOW BAND DRILLS P32-35	HSSE V3	TYPE W	BR
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length		
			Plug (4P-5P)							
			Bright						L	Lc
M3 x 0.5	D4	2	5EH0300-SO	48.00	11.00	3.58	2.79	5.00		
M4 x 0.7			5EH0400-SO	53.00	13.00	4.27	3.33	6.50		
M5 x 0.8			5EH0500-SO	58.50	16.00	4.93	3.86			
M6 x 1.0	D6		5EH0600-SO	65.00	19.00	6.48	4.85	8.00		
M6 x 0.75			5EH0610-SO							
M7 x 1.0	D4		5EU0600-SO							
M8 x 1.25	D6		3	5EH0700-SO	69.00	22.00	8.08	6.05	9.50	
				M8 x 1.0						5EH0800-SO
M8 x 1.0	D4			5EH0810-SO						
	D6			5EU0800-SO						
M10 x 1.5	D4			5EU0810-SO	77.00	24.00	9.68	7.26		11.00
	D6			5EH1000-SO						
M10 x 1	D4	5EH1010-SO								
M12 x 1.75	D4	3	5EU1000-SO	87.00	29.00	9.32	6.99			
			M12 x 1.5					5EH1200-SO		
M12 x 1.5	D6		5EH1210-SO							
	D4		5EU1200-SO							
M14 x 2.0	D4		5EU1210-SO	93.00	30.00	10.90	8.18	13.00		
			M14 x 1.5						5EH1400-SO	
M16 x 2.0	D6		5EU1400-SO							
M16 x 1.5	D4		5EH1600-SO	98.50	32.00	12.19	9.14	14.00		
			M18 x 2.5						5EU1600-SO	
M18 x 1.5	D6		5EH1800-SO							
M20 x 2.5	D4		5EU1800-SO	108.00	37.00	13.76	10.31	15.88		
			M20 x 1.5						5EH2000-SO	
M22 x 2.5	D4	5EU2000-SO	114.00						34.00	16.56
		M22 x 1.5		5EH2200-SO						
M24 x 3.0	D6	5EU2200-SO		119.00	45.00	17.70	13.28	19.05		
		M24 x 3.0	5EH2400-SO							
M24 x 3.0	D4	5EU2400-SO	125.00						45.00	19.30

Packed: 1 pc.  
EDPs listed above are stock standard, other coatings available upon request.  
Specify treatment at the time of order.



Work Material																	
List No.	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
5EH-SO, 5EU-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
SFM	58-88	58-88	58-88							78-170	40-65						

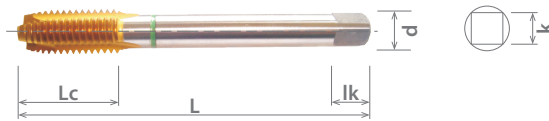
good  best



# List 5BJ-SO, 5BV-SO

GREEN BAND, Spiral Point, Plug (4P-5P)

NEW	GREEN BAND DRILLS P38-40	HSSE V3	TYPE UNI	TiN
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Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Plug (4P-5P)					
			TiN					
				L	Lc	d	k	lk
4 - 40 UNC	H3	3	5BJ0280-SO	1.890	0.433	0.141	0.110	0.197
	H5		5BJ0290-SO					
4 - 48 UNF	H3		5BV0280-SO					
	H5		5BV0290-SO					
5 - 40 UNC	H3		5BJ0320-SO					
	H5		5BJ0330-SO					
5 - 44 UNF	H3		5BV0320-SO					
	H5		5BV0330-SO					
6 - 32 UNC	H3		5BJ0350-SO	1.969	0.512	0.168	0.131	0.256
	H5		5BJ0360-SO					
6 - 40 UNF	H3		5BV0350-SO					
	H5		5BV0360-SO					
8 - 32 UNC	H3		5BJ0420-SO	2.087	0.630	0.194	0.152	0.276
	H5		5BJ0430-SO					
8 - 36 UNF	H3		5BV0420-SO					
	H5		5BV0430-SO					
10 - 24 UNC	H3		5BJ0480-SO	2.303	0.630	0.220	0.165	0.315
	H5		5BJ0490-SO					
10 - 32 UNF	H3		5BV0480-SO					
	H5		5BV0490-SO					
12 - 24 UNC	H3		5BJ0550-SO	2.402	0.748	0.255	0.191	0.374
	H5		5BJ0560-SO					
12 - 28 UNF	H3		5BV0550-SO					
	H5		5BV0560-SO					
1/4 - 20 UNC	H3		5BJ0640-SO	2.559	0.866	0.318	0.238	0.433
	H5		5BJ0650-SO					
1/4 - 28 UNF	H3		5BV0640-SO					
	H5		5BV0650-SO					
5/16 - 18 UNC	H3	5BJ0790-SO	2.756	0.945	0.381	0.286	0.413	
	H5	5BJ0800-SO						
5/16 - 24 UNF	H3	5BV0790-SO						
	H5	5BV0800-SO						
3/8 - 16 UNC	H3	5BJ0950-SO	3.031	0.984	0.323	0.242	0.433	
	H5	5BJ0960-SO						
3/8 - 24 UNF	H3	5BV0950-SO						
	H5	5BV0960-SO						
7/16 - 14 UNC	H3	5BJ1110-SO	3.228	1.142	0.367	0.275	0.433	
	H5	5BJ1120-SO						
7/16 - 20 UNF	H3	5BV1110-SO						
	H5	5BV1120-SO						
1/2 - 13 UNC	H3	5BJ1270-SO	3.425	1.142	0.367	0.275	0.433	
	H5	5BJ1280-SO						
1/2 - 20 UNF	H3	5BV1270-SO						
	H5	5BV1280-SO						

Packed: 1 pc.  
Available TiN coating only.

continued on next page

Work Material																		
List No.	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
5BJ-SO, 5BV-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
SFM	59-88	59-88	59-79			59-79			30-85	78-170	30-80	19-39						

good  best

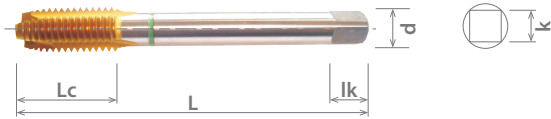




### List 5BJ-SO, 5BV-SO (Continued)

NEW	GREEN BAND DRILLS P38-40	HSSE V3	TYPE UNI	TiN
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GREEN BAND, Spiral Point, Plug (4P-5P)



Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length										
			Plug (4P-5P)															
			TiN															
			L	Lc	d	k	lk											
9/16 - 12 UNC	H3	3	5BJ1430-SO	3.661	1.181	0.429	0.322	0.492										
	H5		5BJ1440-SO															
9/16 - 18 UNF	H3		5BV1430-SO															
	H5		5BV1440-SO															
5/8 - 11 UNC	H3		4						5BJ1590-SO	3.878	1.260	0.480	0.360	0.571				
	H5								5BJ1600-SO									
5/8 - 18 UNF	H3	5BV1590-SO																
	H5	5BV1600-SO																
3/4 - 10 UNC	H3	5BJ1910-SO		4.252	1.457	0.590	0.442	0.689										
	H5	5BJ1920-SO																
3/4 - 16 UNF	H3	5BV1910-SO																
	H5	5BV1920-SO																
7/8 - 9 UNC	H3	5BJ2220-SO							4.685						1.339	0.697	0.523	0.748
	H5	5BJ2230-SO																
7/8 - 14 UNF	H3	5BV2220-SO																
	H5	5BV2230-SO																
1 - 8 UNC	H3	5BJ2540-SO	5.118	1.772	0.800	0.600	0.807											
	H5	5BJ2550-SO																
1 - 12 UNF	H3	5BV2540-SO																
	H5	5BV2550-SO																
1,1/8 - 7 UNC	H3	5BJ2860-SO						5.433	1.890	0.896	0.672	0.866						
	H5	5BJ2870-SO																
1,1/8 - 12 UNF	H3	5BV2860-SO																
	H5	5BV2870-SO																
1,1/4 - 7 UNC	H3	5BJ3180-SO	5.748	2.008	1.021	0.766	1.004											
	H5	5BJ3190-SO																
1,1/4 - 12 UNF	H3	5BV3180-SO																
	H5	5BV3190-SO																

Packed: 1 pc.  
Available TiN coating only.



Work Material																	
List No.	P				Die Steels	M			K Cast Iron	N		S		H			
	Carbon Steels			Alloy Steels		Stainless Steels				Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
5BJ-SO, 5BV-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
SFM	59-88	59-88	59-79			59-79			30-85	78-170	30-80	19-39					

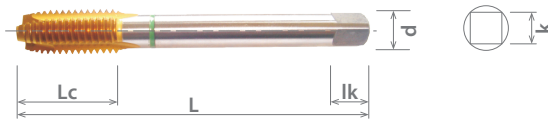
good  best



# List 5EX-SO

<b>NEW</b>	<b>GREEN BAND DRILLS</b> P38-40	<b>HSSE V3</b>	<b>TYPE UNI</b>	<b>TiN</b>
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GREEN BAND, Spiral Point, Plug (4P-5P)



Tap Size	Thread Limit	No. of Flutes	EDP Number	Overall Length	Thread Length	Shank Dia.	Square Width	Square Length
			Plug (4P-5P)					
			TiN					
M3 x 0.5	D4	3	5EX0300-SO	48.00	11.00	3.58	2.79	5.00
M4 x 0.7			5EX0400-SO	53.00	13.00	4.27	3.33	6.50
M5 x 0.8			5EX0500-SO	58.50	16.00	4.93	3.86	
M6 x 1.0			5EX0600-SO	65.00	19.00	6.48	4.85	8.00
M8 x 1.25			5EX0800-SO	70.00	22.00	8.08	6.05	9.50
M10 x 1.5	D6	3	5EX1000-SO	77.00	24.00	9.68	7.26	11.00
M12 x 1.75			5EX1200-SO	87.00	29.00	9.32	6.99	
M14 x 2.0			5EX1400-SO	93.00	30.00	10.90	8.18	13.00
M16 x 2.0			5EX1600-SO	98.50	32.00	12.18	9.14	14.00
M18 x 2.5			5EX1800-SO	108.00	37.00	13.76	10.31	15.88
M20 x 2.5		4	5EX2000-SO	114.00	34.00	16.56	12.42	17.50
M22 x 2.5			5EX2200-SO	119.00		17.70	13.28	19.05
M24 x 3.0			5EX2400-SO	125.00	45.00	19.30	14.48	

Packed: 1 pc.  
Available TiN coating only.



Work Material																		
List No.	P				Die Steels	M			K	N		S		H				
	Carbon Steels			Alloy Steels		Stainless Steels				Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH			6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
5EX-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
SFM	59-88	59-88	59-79			59-79			30-85	78-170	30-80	19-39						




good  best











List	Item	Inch/ Metric	No. of Flutes	Length of Cut	Material	Coating	Size Range	Features	Product Page	Tech Page
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## VARICUT

04V-SO		"Inch/ Metric"	4	Stub	Carbide	TiAIN	3/16 ~ 3/4, 5mm~20mm	Varicut	90-91	105- 106
03V-SO		"Inch/ Metric"	4	Regular	Carbide	TiAIN	1/4 ~ 1, 5mm~20mm	Varicut	92-93	105- 106
05V-SO		"Inch/ Metric"	5	Regular	Carbide	TiAIN	3/16 ~ 3/4, 5mm ~ 20mm	Varicut	94-95	107- 108

## CARBIDE

03A-SO		Metric	2	Regular	Carbide	TiAIN	1mm ~ 20mm	Square	96	109
03K-SO		Metric	4	Regular	Carbide	TiAIN	1mm ~ 20mm	Square	97	110
03M-SO		Metric	2	Regular	Carbide	TiAIN	1mm ~ 20mm	Ball Nose	98	109
03P-SO		Metric	4	Regular	Carbide	TiAIN	1mm ~ 20mm	Ball Nose	99	110
03E-SO		Metric	4	Regular	Carbide	TiAIN	6mm ~ 20mm	Rougher	100	111
03F-SO		Metric	4	Regular	Carbide	TiAIN	6mm ~ 20mm	Rougher	101	112

## HSS-CO

310-SO		Metric	2	Regular	HSS Co8	TiAIN	2mm ~ 25mm	Square	102	113
314-SO		Metric	4, 6	Regular	HSS Co8	TiAIN	3mm ~ 25mm	Square	103	114- 115
312-SO		Metric	2	Regular	HSS Co8	TiAIN	2mm ~ 25mm	Ball Nose	104	113





List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels			
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC

## VARICUT

04V-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
03V-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
05V-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			

## CARBIDE

03A-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
03K-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
03M-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
03P-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
03E-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input type="checkbox"/>			
03F-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				

## HSS-CO

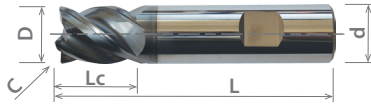
310-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>				
314-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>				
312-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>				

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# List 04V-SO

INCH, 4 Flute, Varicut, Corner Chamfer, Stub Length

<b>NEW</b>	<b>SPEED FEED</b> P105	<b>CARBIDE</b>	<b>TiAIN</b>	<b>TYPE UNI</b>		<b>STUB</b>	 40°	<b>SHANK</b> h6
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EDP Number	Mill Diameter	Chamfer Width	Overall Length	Length of Cut	Shank Diameter
	D	C	L	Lc	d
04V0474X-SO	3/16	0.016x45°	2 - 1/8	3/8	1/4
04V0633X-SO	1/4	0.016x45°	2 - 1/8	3/8	1/4
04V0792X-SO	5/16	0.020x45°	2 - 1/4	1/2	5/16
04V0951X-SO	3/8	0.020x45°	2 - 1/2	9/16	3/8
04V1268X-SO	1/2	0.020x45°	2 - 7/8	5/8	1/2
04V1586X-SO	5/8	0.020x45°	3 - 1/4	7/8	5/8
04V1903X-SO	3/4	0.020x45°	3 - 1/2	1	3/4

Packed: 1 pc.  
Available TiAIN coating only.



Work Material																	
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
04V-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			

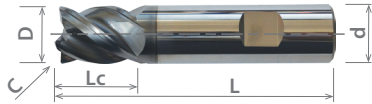
good  best



# List 04V-SO

METRIC, 4 Flute, Varicut, Corner Chamfer, Stub Length Length

<b>NEW</b>	SPEED FEED P106	CARBIDE	TiAlN	TYPE UNI		STUB	40°	SHANK h6
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EDP Number	Mill Diameter	Chamfer Width	Overall Length	Length of Cut	Shank Diameter
	D	C	L	Lc	d
04V0500X-SO	5	0.4x45°	54	9	6
04V0600X-SO	6	0.4x45°	54	10	6
04V0800X-SO	8	0.5x45°	58	12	8
04V1000X-SO	10	0.5x45°	66	14	10
04V1200X-SO	12	0.5x45°	73	16	12
04V1600X-SO	16	0.5x45°	82	22	16
04V2000X-SO	20	0.5x45°	92	26	20

Packed: 1 pc.  
Available TiAlN coating only.



List No.	Work Material																	
	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels				
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
04V-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

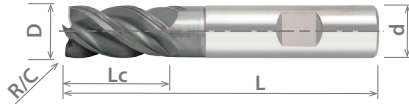
good  best



# List 03V-SO

INCH, 4 Flute, Varicut, Reg Length, C Radius/ C Chamfer

<b>NEW</b>	<b>SPEED FEED</b> P105	<b>CARBIDE</b>	<b>TiAlN</b>	<b>TYPE UNI</b>		<b>REG</b>		<b>SHANK</b> h6
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EDP Number	EDP Number w/ Weldon Flat	Mill Diameter	Corner Radius	Chamfer Width	Overall Length	Length of Cut	Shank Diameter
		D	R	C	L	Lc	d
03V0633X-SO	03V0635X-SO	1/4	-	0.016x45°	2 - 1/2	1/2	1/4
03V0634X-SO	03V0636X-SO	1/4	0.015	-	2 - 1/2	1/2	1/4
03V0951X-SO	03V0953X-SO	3/8	-	0.020x45°	2 - 1/2	7/8	3/8
03V0952X-SO	03V0954X-SO	3/8	0.015	-	2 - 1/2	7/8	3/8
03V1268X-SO	03V1270X-SO	1/2	-	0.020x45°	3	1	1/2
03V1269X-SO	03V1271X-SO	1/2	0.03	-	3	1	1/2
03V1586X-SO	03V1588X-SO	5/8	-	0.020x45°	3 - 1/2	1 - 1/4	5/8
03V1587X-SO	03V1589X-SO	5/8	0.03	-	3 - 1/2	1 - 1/4	5/8
03V1903X-SO	03V1905X-SO	3/4	-	0.020x45°	4	1 - 1/2	3/4
03V1904X-SO	03V1906X-SO	3/4	0.03	-	4	1 - 1/2	3/4
03V2502X-SO	03V2504X-SO	1	-	0.020x45°	4	1 - 1/2	1
03V2503X-SO	03V2505X-SO	1	0.03	-	4	1 - 1/2	1

Packed: 1 pc.  
Available TiAlN coating only.



Work Material																		
List No.	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC
03V-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

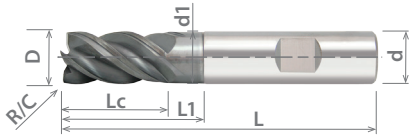
good  best



# List 03V-SO

METRIC, 4 Flute, Varicut, Reg Length, Reduced Neck, C Radius/C Chamfer

<b>NEW</b>	<b>SPEED FEED</b> P106	<b>CARBIDE</b>	<b>TiAlN</b>	<b>TYPE UNI</b>		<b>REG</b>		<b>40°</b>	<b>SHANK</b> h6
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EDP Number	EDP Number w/ Weldon Flat	Mill Diameter	Corner Radius	Chamfer Width	Overall Length	Length of Cut	Neck Length	Neck Diameter	Shank Diameter
		D	R	C	L	Lc	L1	d1	d
-	03V0500X-SO	5	-	0.2x45°	57	13	18	4.8	6
03V0545X-SO	-	5	-	0.4x45°	57	13	-	-	6
03V0505X-SO	-	5	0.5	-	57	13	25	4.8	6
03V0510X-SO	-	5	1.0	-	57	13	25	4.8	6
-	03V0600X-SO	6	-	0.2x45°	57	13	18	5.8	6
03V0645X-SO	-	6	-	0.4x45°	57	13	-	-	6
03V0605X-SO	-	6	0.5	-	57	13	25	5.8	6
03V0610X-SO	-	6	1.0	-	57	13	25	5.8	6
-	03V0800X-SO	8	-	0.25x45°	63	19	24	7.7	8
03V0845X-SO	-	8	-	0.5x45°	63	19	-	-	8
03V0805X-SO	-	8	0.5	-	63	19	31	7.8	8
03V0810X-SO	-	8	1.0	-	63	19	31	7.8	8
-	03V1000X-SO	10	-	0.25x45°	72	22	32	9.7	10
03V1045X-SO	-	10	-	0.5x45°	72	22	-	-	10
03V1005X-SO	-	10	0.5	-	72	22	34	9.8	10
03V1010X-SO	-	10	1.0	-	72	22	34	9.8	10
-	03V1200X-SO	12	-	0.3x45°	83	26	36	11.6	12
03V1245X-SO	-	12	-	0.75x45°	83	26	-	-	12
03V1205X-SO	-	12	0.5	-	83	26	38	11.8	12
03V1210X-SO	-	12	1.0	-	83	26	38	11.8	12
-	03V1600X-SO	16	-	0.4x45°	92	32	42	15.5	16
03V1645X-SO	-	16	-	0.75x45°	92	32	-	-	16
03V1610X-SO	-	16	1	-	92	32	44	15.8	16
03V1620X-SO	-	16	2	-	92	32	44	15.8	16
-	03V2000X-SO	20	-	0.4x45°	104	38	48	19.5	20
03V2045X-SO	-	20	-	0.75x45°	104	38	-	-	20
03V2010X-SO	-	20	1	-	104	38	50	19.8	20
03V2020X-SO	-	20	2	-	104	38	50	19.8	20

Packed: 1 pc.  
Available TiAlN coating only.



Work Material																		
List No.	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels 4140 4340	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy Inconel	Titanium 6Al4V (30 HRC)	Hardened Steels				
	Low 1010 1018	Med. 1035 1045	High 1065			300	400	17-4 PH		6061 7075	Casting			~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
03V-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

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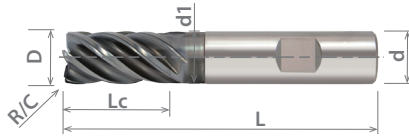




### List 05V-SO

INCH, Varicut, Reg Length, Reduced Neck, C Radius/C Chamfer

<b>NEW</b>	<b>SPEED FEED</b> P107	<b>CARBIDE</b>	<b>TiAIN</b>	<b>TYPE UNI</b>		<b>REG</b>	<b>40°</b>	<b>SHANK</b> h6
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EDP Number	Mill Diameter	Corner Radius	Overall Length	Length of Cut	Neck Length	Neck Diameter	Shank Diameter
	D	R	L	Lc	L1	d1	d
05V0476X-SO	3/16	0.015	2 - 1/4	1/2	1	0.180	1/4
05V0477X-SO	3/16	0.030	2 - 1/4	1/2	1	0.180	1/4
05V0636X-SO	1/4	0.015	2 - 1/4	1/2	1	0.242	1/4
05V0634X-SO	1/4	0.030	2 - 1/4	1/2	1	0.242	1/4
05V0632X-SO	1/4	0.060	2 - 1/4	1/2	1	0.242	1/4
05V0795X-SO	5/16	0.015	2 - 1/2	3/4	1 - 1/4	0.305	5/16
05V0793X-SO	5/16	0.030	2 - 1/2	3/4	1 - 1/4	0.305	5/16
05V0791X-SO	5/16	0.060	2 - 1/2	3/4	1 - 1/4	0.305	5/16
05V0954X-SO	3/8	0.015	2 - 1/2	7/8	1 - 1/2	0.367	3/8
05V0952X-SO	3/8	0.030	2 - 7/8	7/8	1 - 1/2	0.367	3/8
05V0950X-SO	3/8	0.060	2 - 1/2	7/8	1 - 1/2	0.367	3/8
05V1271X-SO	1/2	0.015	3	1	1 - 1/2	0.484	1/2
05V1269X-SO	1/2	0.030	3 - 1/4	1	1 - 1/2	0.484	1/2
05V1267X-SO	1/2	0.060	3 - 1/4	1	1 - 1/2	0.484	1/2
05V1265X-SO	1/2	0.090	3 - 1/4	1	1 - 1/2	0.484	1/2
05V1263X-SO	1/2	0.120	3	1	1 - 1/2	0.484	1/2
05V1589X-SO	5/8	0.030	3 - 1/2	1 - 1/4	1 - 3/4	0.609	5/8
05V1587X-SO	5/8	0.060	3 - 1/2	1 - 1/4	1 - 3/4	0.609	5/8
05V1585X-SO	5/8	0.090	3 - 1/2	1 - 1/4	1 - 3/4	0.609	5/8
05V1906X-SO	3/4	0.030	4	1 - 1/2	2	0.734	3/4
05V1904X-SO	3/4	0.060	4	1 - 1/2	2	0.734	3/4
05V1902X-SO	3/4	0.090	4	1 - 1/2	2	0.734	3/4
05V1900X-SO	3/4	0.120	4	1 - 1/2	2	0.734	3/4

Packed: 1 pc.  
Available TiAIN coating only.



List No.	Work Material																	
	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC
05V-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

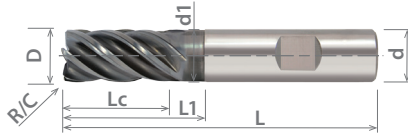
good  best



# List 05V-SO

METRIC, Varicut, Reg Length, Reduced Neck, C Radius/C Chamfer

NEW SPEED FEED P108 CARBIDE TiAlN TYPE UNI REG 40° SHANK h6



EDP Number	EDP Number w/ Weldon Flat	Mill Diameter	Corner Radius	Chamfer Width	Overall Length	Length of Cut	Neck Length	Neck Diameter	Shank Diameter
		D	R	C	L	Lc	L1	d1	d
-	05V0500X-SO	5	-	0.2x45°	57	13	18	4.8	6
05V0545X-SO	-	5	-	0.4x45°	57	13	-	-	6
05V0505X-SO	-	5	0.5	-	57	13	25	4.8	6
05V0510X-SO	-	5	1	-	57	13	25	4.8	6
-	05V0600X-SO	6	-	0.2x45°	57	13	18	5.8	6
05V0645X-SO	-	6	-	0.4x45°	57	13	-	-	6
05V0605X-SO	-	6	0.5	-	57	13	25	5.8	6
05V0610X-SO	-	6	1	-	57	13	25	5.8	6
-	05V0800X-SO	8	-	0.25x45°	63	19	24	7.7	8
05V0845X-SO	-	8	-	0.5x45°	63	19	-	-	8
05V0805X-SO	-	8	0.5	-	63	19	31	7.8	8
05V0810X-SO	-	8	1	-	63	19	31	7.8	8
-	05V1000X-SO	10	-	0.25x45°	72	22	32	9.7	10
05V1045X-SO	-	10	-	0.5x45°	72	22	-	-	10
05V1005X-SO	-	10	0.5	-	72	22	34	9.8	10
05V1010X-SO	-	10	1	-	72	22	34	9.8	10
-	05V1200X-SO	12	-	0.3x45°	83	26	36	11.6	12
05V1245X-SO	-	12	-	0.75x45°	83	26	-	-	12
05V1205X-SO	-	12	0.5	-	83	26	38	11.8	12
05V1210X-SO	-	12	1	-	83	26	38	11.8	12
-	05V1600X-SO	16	-	0.4x45°	92	32	42	15.5	16
05V1645X-SO	-	16	-	0.75x45°	92	32	-	-	16
05V1610X-SO	-	16	1	-	92	32	44	15.8	16
05V1620X-SO	-	16	2	-	92	32	44	15.8	16
-	05V2000X-SO	20	-	0.4x45°	104	38	48	19.5	20
05V2045X-SO	-	20	-	0.75x45°	104	38	-	-	20
05V2010X-SO	-	20	1	-	104	38	50	19.8	20
05V2020X-SO	-	20	2	-	104	38	50	19.8	20

Packed: 1 pc.  
Available TiAlN coating only.



List No.	Work Material																	
	P					M			K	N		S		H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC
05V-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

good  best

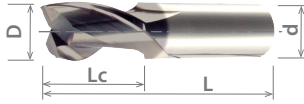




## List 03A-SO

2 Flute, Regular Length

<b>NEW</b>	<b>SPEED FEED</b> P109	<b>CARBIDE</b>	<b>TiAlN</b>	<b>TYPE N</b>		<b>REG</b>		<b>SHANK</b> h6
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EDP Number	Mill Diameter	Overall Length	Length of Cut	Shank Diameter
	D	L	Lc	d
03A0100X-SO	1.0	39	3	3
03A0150X-SO	1.5	39	5	3
03A0200X-SO	2.0	39	7	3
03A0250X-SO	2.5	39	7	3
03A0300X-SO	3.0	39	8	3
03A0400X-SO	4.0	57	8	6
03A0500X-SO	5.0	57	10	6
03A0600X-SO	6.0	57	10	6
03A0800X-SO	8.0	63	16	8
03A1000X-SO	10.0	72	19	10
03A1200X-SO	12.0	83	22	12
03A1400X-SO	14.0	83	22	14
03A1600X-SO	16.0	92	26	16
03A1800X-SO	18.0	96	26	18
03A2000X-SO	20.0	104	32	20

Packed: 1 pc.  
Available TiAlN coating only.



List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
03A-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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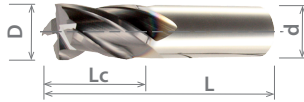




# List 03K-SO

4 Flute, Regular Length

<b>NEW</b>	<b>SPEED FEED</b> P110	<b>CARBIDE</b>	<b>TiAlN</b>	<b>TYPE N</b>		<b>REG</b>	<b>30°</b>	<b>SHANK</b> h6
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EDP Number	Mill Diameter	Overall Length	Length of Cut	Shank Diameter
	D	L	Lc	d
03K0100X-SO	1.0	39	3	3
03K0150X-SO	1.5	39	5	3
03K0200X-SO	2.0	39	7	3
03K0250X-SO	2.5	39	7	3
03K0300X-SO	3.0	39	9	3
03K0400X-SO	4.0	57	11	6
03K0500X-SO	5.0	57	13	6
03K0600X-SO	6.0	57	13	6
03K0800X-SO	8.0	63	19	8
03K1000X-SO	10.0	72	22	10
03K1200X-SO	12.0	83	26	12
03K1400X-SO	14.0	83	26	14
03K1600X-SO	16.0	92	32	16
03K1800X-SO	18.0	96	32	18
03K2000X-SO	20.0	104	38	20

Packed: 1 pc.  
Available TiAlN coating only.



List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
03K-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

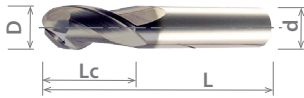
good  best



# List 03M-SO

2 Flute, Ball Nose, Regular Length

<b>NEW</b>	<b>SPEED FEED</b> P109	<b>CARBIDE</b>	<b>TiAIN</b>	<b>TYPE N</b>		<b>REG</b>		<b>SHANK</b> h6
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EDP Number	Mill Diameter	Overall Length	Length of Cut	Shank Diameter
	D	L	Lc	d
03M0100X-SO	1.0	39	3	3
03M0150X-SO	1.5	39	5	3
03M0200X-SO	2.0	39	7	3
03M0250X-SO	2.5	39	7	3
03M0300X-SO	3.0	39	8	3
03M0400X-SO	4.0	57	8	6
03M0500X-SO	5.0	57	10	6
03M0600X-SO	6.0	57	10	6
03M0800X-SO	8.0	63	16	8
03M1000X-SO	10.0	72	19	10
03M1200X-SO	12.0	83	22	12
03M1400X-SO	14.0	83	22	14
03M1600X-SO	16.0	92	26	16
03M1800X-SO	18.0	96	26	18
03M2000X-SO	20.0	104	32	20

Packed: 1 pc.  
Available TiAIN coating only.



List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
03M-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

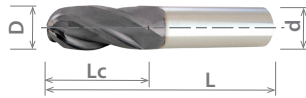
good  best



# List 03P-SO

4 Flute, Ball Nose, Regular Length

<b>NEW</b>	<b>SPEED FEED</b> P110	<b>CARBIDE</b>	<b>TiAlN</b>	<b>TYPE N</b>		<b>REG</b>		<b>SHANK</b> h6
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EDP Number	Mill Diameter	Overall Length	Length of Cut	Shank Diameter
	D	L	Lc	d
03P0100X-SO	1.0	39	3	3
03P0150X-SO	1.5	39	5	3
03P0200X-SO	2.0	39	7	3
03P0250X-SO	2.5	39	7	3
03P0300X-SO	3.0	39	9	3
03P0400X-SO	4.0	57	11	6
03P0500X-SO	5.0	57	13	6
03P0600X-SO	6.0	57	13	6
03P0800X-SO	8.0	63	19	8
03P1000X-SO	10.0	72	22	10
03P1200X-SO	12.0	83	26	12
03P1400X-SO	14.0	83	26	14
03P1600X-SO	16.0	92	32	16
03P1800X-SO	18.0	96	32	18
03P2000X-SO	20.0	104	38	20

Packed: 1 pc.  
Available TiAlN coating only.



List No.	Work Material																
	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
03P-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

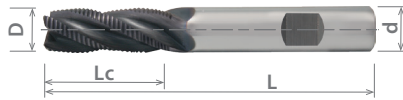
good  best



# List 03E-SO

4 Flute, Rougher, Fine Pitch Knuckle, Regular Length

<b>NEW</b>	<b>SPEED FEED</b> P111	<b>CARBIDE</b>	<b>TiAlN</b>	<b>TYPE UNI</b>		<b>REG</b>	 30°	<b>SHANK</b> h6
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EDP Number	Mill Diameter	Overall Length	Length of Cut	Shank Diameter
	D	L	Lc	d
03E0600X-SO	6	57	13	6
03E0800X-SO	8	63	16	8
03E1000X-SO	10	72	22	10
03E1200X-SO	12	83	26	12
03E1600X-SO	16	92	32	16
03E2000X-SO	20	104	38	20

Packed: 1 pc.  
Available TiAlN coating only.



Work Material																	
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
03E-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input type="checkbox"/>				

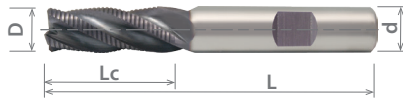
good  best



# List 03F-SO

4 Flute, Rougher, Fine Pitch Flat Crest, Regular Length

<b>NEW</b>	<b>SPEED FEED</b> P112	<b>CARBIDE</b>	<b>TiAlN</b>	<b>TYPE UNI</b>		<b>REG</b>		<b>SHANK</b> h6
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EDP Number	Mill Diameter	Overall Length	Length of Cut	Shank Diameter
	D	L	Lc	d
03F0600X-SO	6	57	13	6
03F0800X-SO	8	63	16	8
03F1000X-SO	10	72	22	10
03F1200X-SO	12	83	26	12
03F1600X-SO	16	92	32	16
03F2000X-SO	20	104	38	20

Packed: 1 pc.  
Available TiAlN coating only.



Work Material																	
List No.	P					M			K	N		S	H				
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
03F-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>					

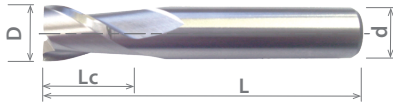
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# List 310-SO

2 Flute, Regular Length

<b>NEW</b>	<b>SPEED FEED</b> P113	<b>HSS-Co8</b>	<b>TiAlN</b>	<b>TYPE N</b>		<b>REG</b>	 30°	<b>SHANK</b> h7
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EDP Number	Mill Diameter	Overall Length	Length of Cut	Shank Diameter
	D	L	Lc	d
3100200A-SO	2.0	48	4	6
3100250A-SO	2.5	49	5	6
3100300A-SO	3.0	49	5	6
3100350A-SO	3.5	50	6	6
3100400A-SO	4.0	51	7	6
3100450A-SO	4.5	51	7	6
3100500A-SO	5.0	52	8	6
3100550A-SO	5.5	52	8	6
3100600A-SO	6.0	52	8	6
3100650A-SO	6.5	60	10	10
3100700A-SO	7.0	60	10	10
3100750A-SO	7.5	60	10	10
3100800A-SO	8.0	61	11	10
3100850A-SO	8.5	61	11	10
3100900A-SO	9.0	61	11	10
3100950A-SO	9.5	61	11	10
3101000A-SO	10.0	63	13	10
3101100A-SO	11.0	70	13	12
3101200A-SO	12.0	73	16	12
3101300A-SO	13.0	73	16	12
3101400A-SO	14.0	73	16	12
3101500A-SO	15.0	73	16	12
3101600A-SO	16.0	79	19	16
3101700A-SO	17.0	79	19	16
3101800A-SO	18.0	79	19	16
3101900A-SO	19.0	79	19	16
3102000A-SO	20.0	88	22	20
3102200A-SO	22.0	88	22	20
3102400A-SO	24.0	102	26	25
3102500A-SO	25.0	102	26	25

Packed: 1 pc.  
Available TiAlN coating only.



List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
310-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

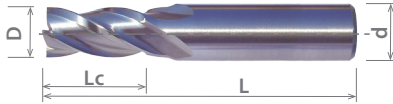
good  best



# List 314-SO

4 & 6 Flute, Regular Length

<b>NEW</b>	<b>SPEED FEED</b> P114-115	HSS-Co8	TiAIN	TYPE N		REG		SHANK h7
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EDP Number	Mill Diameter	Overall Length	Length of Cut	Shank Diameter	Number of Flutes
	D	L	Lc	d	
3140300A-SO	3	52	8	6	4
3140400A-SO	4	55	11	6	4
3140500A-SO	5	57	13	6	4
3140600A-SO	6	57	13	6	4
3140700A-SO	7	66	16	10	4
3140800A-SO	8	69	19	10	4
3140900A-SO	9	69	19	10	4
3141000A-SO	10	72	22	10	4
3141100A-SO	11	79	22	12	4
3141200A-SO	12	83	26	12	4
3141300A-SO	13	83	26	12	4
3141400A-SO	14	83	26	12	4
3141500A-SO	15	83	26	12	4
3141600A-SO	16	92	32	16	4
3141800A-SO	18	92	32	16	4
3141900A-SO	19	92	32	16	4
3142000A-SO	20	104	38	20	4
3142200A-SO	22	104	38	20	6
3142500A-SO	25	121	45	25	6

Packed: 1 pc.  
Available TiAIN coating only.  
Note: Center cutting in sizes 20mm and smaller.



List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
314-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

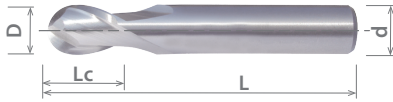
good  best



# List 312-SO

2 Flute, Ball Nose, Regular Length

<b>NEW</b>	<b>SPEED FEED</b> P113	HSS-Co8	TiAlN	TYPE N		REG	 30°	 SHANK h7
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EDP Number	Mill Diameter	Overall Length	Length of Cut	Shank Diameter
	D	L	Lc	d
3120200A-SO	2	48	4	6
3120300A-SO	3	49	5	6
3120400A-SO	4	51	7	6
3120500A-SO	5	52	8	6
3120600A-SO	6	52	8	6
3120700A-SO	7	60	10	10
3120800A-SO	8	61	11	10
3120900A-SO	9	61	11	10
3121000A-SO	10	63	13	10
3121100A-SO	11	70	13	12
3121200A-SO	12	73	16	12
3121300A-SO	13	73	16	12
3121400A-SO	14	73	16	12
3121500A-SO	15	73	16	12
3121600A-SO	16	79	19	16
3121800A-SO	18	79	19	16
3122000A-SO	20	88	22	20
3122200A-SO	22	88	22	20
3122400A-SO	24	102	26	25
3122500A-SO	25	102	26	25

Packed: 1 pc.  
Available TiAlN coating only.



List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels ≤200HB			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
312-SO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

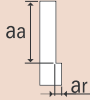
good  best



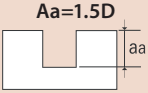


# List 04V-SO List 03V-SO

## Side Milling

Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys		High Temp. Alloys Inconel Hastelloy	
Cutting Speed	295-655 SFM		165-330 SFM		195-375 SFM		145-280 SFM		260-460 SFM		165-195 SFM		80-165 SFM	
Depth of Cut	 Aa=1.5D Ar=0.5D												Aa=1.5D Ar=0.3D	
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
3/16	9,677	50.3	5,042	16.7	5,806	27.4	4,329	14.3	7,334	31.2	3,667	12.1	2,496	6.7
1/4	7,258	45.7	3,782	14.9	4,355	24.7	3,247	12.8	5,501	28.6	2,750	10.8	1,872	5.9
5/16	5,806	50.3	3,025	16.2	3,484	26.9	2,598	13.9	4,401	31.2	2,200	11.8	1,497	6.6
3/8	4,839	49.5	2,521	16.3	2,903	27.0	2,165	14.0	3,667	31.2	1,834	11.8	1,248	6.5
1/2	3,629	42.3	1,891	14.0	2,177	23.0	1,624	12.0	2,750	26.9	1,375	10.2	936	5.6
5/8	2,903	42.1	1,513	13.8	1,742	22.8	1,299	11.9	2,200	26.3	1,100	10.0	749	5.5
3/4	2,419	39.6	1,261	12.9	1,452	21.5	1,082	11.1	1,834	24.8	917	9.4	624	5.2
1	1,815	32.3	945	10.6	1,089	17.5	812	9.1	1,375	20.1	688	7.7	468	4.3

## Slotting


Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys		High Temp. Alloys Inconel Hastelloy	
Cutting Speed	295-655 SFM		165-330 SFM		195-375 SFM		145-280 SFM		260-460 SFM		165-195 SFM		80-165 SFM	
Depth of Cut	 Aa=1.5D		Aa=0.75D-1D		Aa=1.25D		Aa=1D		Aa=0.75D		Aa=1D		Aa=0.3D	
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
3/16	9,677	45.3	5,042	15.0	5,806	24.7	4,329	12.9	7,334	28.1	3,667	10.9	2,496	6.0
1/4	7,258	41.1	3,782	13.4	4,355	22.2	3,247	11.5	5,501	25.7	2,750	9.7	1,872	5.3
5/16	5,806	45.3	3,025	14.6	3,484	24.2	2,598	12.5	4,401	28.1	2,200	10.6	1,497	5.9
3/8	4,839	44.6	2,521	14.7	2,903	24.3	2,165	12.6	3,667	28.1	1,834	10.7	1,248	5.8
1/2	3,629	38.1	1,891	12.6	2,177	20.7	1,624	10.8	2,750	24.2	1,375	9.2	936	5.0
5/8	2,903	37.9	1,513	12.4	1,742	20.5	1,299	10.7	2,200	23.7	1,100	9.0	749	5.0
3/4	2,419	35.7	1,261	11.6	1,452	19.3	1,082	10.0	1,834	22.3	917	8.4	624	4.7
1	1,815	29.1	945	9.5	1,089	15.7	812	8.2	1,375	18.1	688	6.9	468	3.8

continued on next page 

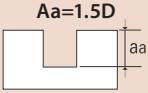
## List 04V-SO (Continued)

## List 03V-SO (Continued)

### Side Milling

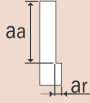
Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys		High Temp. Alloys Inconel Hastelloy	
Cutting Speed	295-655 SFM		165-330 SFM		195-375 SFM		145-280 SFM		260-460 SFM		165-195 SFM		80-165 SFM	
Depth of Cut	 Aa=1.5D Ar=0.5D												Aa=1.5D Ar=0.3D	
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
5	9,218	47.9	4,803	15.9	5,531	26.1	4,124	13.6	6,986	29.7	3,493	11.6	2,377	6.4
6	7,681	48.4	4,002	15.8	4,609	26.1	3,436	13.5	5,822	30.3	2,911	11.5	1,981	6.2
8	5,761	49.9	3,002	16.1	3,457	26.7	2,577	13.8	4,366	30.9	2,183	11.7	1,486	6.6
10	4,609	47.2	2,401	15.5	2,765	25.7	2,062	13.3	3,493	29.7	1,747	11.3	1,189	6.2
12	3,841	44.8	2,001	14.8	2,304	24.3	1,718	12.7	2,911	28.4	1,455	10.8	990	5.9
16	2,881	41.7	1,501	13.7	1,728	22.6	1,289	11.8	2,183	26.1	1,092	10.0	743	5.5
20	2,304	37.7	1,201	12.3	1,383	20.5	1,031	10.6	1,747	23.7	873	8.9	594	5.0

### Slotting

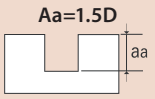
Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys		High Temp. Alloys Inconel Hastelloy	
Cutting Speed	295-655 SFM		165-330 SFM		195-375 SFM		145-280 SFM		260-460 SFM		165-195 SFM		80-165 SFM	
Depth of Cut	 Aa=1.5D		Aa=0.75D-1D		Aa=1.25D		Aa=1D		Aa=0.75D		Aa=1D		Aa=0.3D	
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
5	9,218	43.1	4,803	14.3	5,531	23.5	4,124	12.3	6,986	26.7	3,493	10.4	2,377	5.7
6	7,681	43.5	4,002	14.2	4,609	23.5	3,436	12.2	5,822	27.2	2,911	10.3	1,981	5.6
8	5,761	44.9	3,002	14.5	3,457	24.0	2,577	12.4	4,366	27.8	2,183	10.5	1,486	5.9
10	4,609	42.5	2,401	14.0	2,765	23.1	2,062	12.0	3,493	26.7	1,747	10.1	1,189	5.6
12	3,841	40.3	2,001	13.3	2,304	21.9	1,718	11.4	2,911	25.6	1,455	9.7	990	5.3
16	2,881	37.6	1,501	12.3	1,728	20.3	1,289	10.6	2,183	23.5	1,092	9.0	743	4.9
20	2,304	34.0	1,201	11.1	1,383	18.4	1,031	9.5	1,747	21.3	873	8.0	594	4.5

# 05V-SO

## Side Milling

Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys		High Temp. Alloys Inconel Hastelloy	
Cutting Speed	295-655 SFM		165-330 SFM		195-375 SFM		145-280 SFM		260-460 SFM		165-195 SFM		80-165 SFM	
Depth of Cut													Aa=1.5D Ar=0.3D	
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
3/16	9,677	62.9	5,042	20.8	5,806	34.3	4,329	17.9	7,334	39.0	3,667	15.2	2,496	8.4
1/4	7,258	57.1	3,782	18.6	4,355	30.9	3,247	16.0	5,501	35.7	2,750	13.5	1,872	7.4
5/16	5,806	62.9	3,025	20.2	3,484	33.6	2,598	17.4	4,401	39.0	2,200	14.7	1,497	8.3
3/8	4,839	61.9	2,521	20.3	2,903	33.7	2,165	17.5	3,667	39.0	1,834	14.8	1,248	8.1
1/2	3,629	52.9	1,891	17.5	2,177	28.7	1,624	15.0	2,750	33.6	1,375	12.7	936	7.0
5/8	2,903	52.6	1,513	17.3	1,742	28.5	1,299	14.8	2,200	32.9	1,100	12.6	749	6.9
3/4	2,419	49.5	1,261	16.1	1,452	26.9	1,082	13.8	1,834	31.0	917	11.7	624	6.5
1	1,815	40.4	945	13.2	1,089	21.9	812	11.3	1,375	25.2	688	9.6	468	5.3

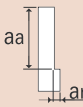
## Slotting

Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys		High Temp. Alloys Inconel Hastelloy	
Cutting Speed	295-655 SFM		165-330 SFM		195-375 SFM		145-280 SFM		260-460 SFM		165-195 SFM		80-165 SFM	
Depth of Cut			Aa=0.75D-1D		Aa=1.25D		Aa=1D		Aa=0.75D		Aa=1D		Aa=0.3D	
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
3/16	9,677	56.6	5,042	18.8	5,806	30.9	4,329	16.1	7,334	35.1	3,667	13.6	2,496	7.5
1/4	7,258	51.4	3,782	16.8	4,355	27.8	3,247	14.4	5,501	32.2	2,750	12.2	1,872	6.6
5/16	5,806	56.6	3,025	18.2	3,484	30.2	2,598	15.6	4,401	35.1	2,200	13.3	1,497	7.4
3/8	4,839	55.7	2,521	18.3	2,903	30.3	2,165	15.7	3,667	35.1	1,834	13.3	1,248	7.3
1/2	3,629	47.6	1,891	15.7	2,177	25.8	1,624	13.5	2,750	30.2	1,375	11.5	936	6.3
5/8	2,903	47.3	1,513	15.5	1,742	25.6	1,299	13.3	2,200	29.6	1,100	11.3	749	6.2
3/4	2,419	44.6	1,261	14.5	1,452	24.2	1,082	12.5	1,834	27.9	917	10.6	624	5.9
1	1,815	36.3	945	11.9	1,089	19.7	812	10.2	1,375	22.7	688	8.6	468	4.8

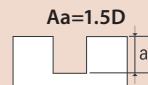
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## 05V-SO (Continued)

### Side Milling

Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys		High Temp. Alloys Inconel Hastelloy	
Cutting Speed	295-655 SFM		165-330 SFM		195-375 SFM		145-280 SFM		260-460 SFM		165-195 SFM		80-165 SFM	
Depth of Cut	 Aa=1.5D Ar=0.5D												Aa=1.5D Ar=0.3D	
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
5	9,218	59.9	4,803	19.9	5,531	32.7	4,124	17.0	6,986	37.1	3,493	14.4	2,377	8.0
6	7,681	60.5	4,002	19.7	4,609	32.7	3,436	16.9	5,822	37.8	2,911	14.3	1,981	7.8
8	5,761	62.4	3,002	20.1	3,457	33.3	2,577	17.2	4,366	38.7	2,183	14.6	1,486	8.2
10	4,609	59.0	2,401	19.4	2,765	32.1	2,062	16.6	3,493	37.1	1,747	14.1	1,189	7.7
12	3,841	55.9	2,001	18.5	2,304	30.4	1,718	15.9	2,911	35.5	1,455	13.5	990	7.4
16	2,881	52.2	1,501	17.1	1,728	28.2	1,289	14.7	2,183	32.7	1,092	12.5	743	6.9
20	2,304	47.2	1,201	15.4	1,383	25.6	1,031	13.2	1,747	29.6	873	11.2	594	6.2


### Slotting

Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys		High Temp. Alloys Inconel Hastelloy	
Cutting Speed	295-655 SFM		165-330 SFM		195-375 SFM		145-280 SFM		260-460 SFM		165-195 SFM		80-165 SFM	
Depth of Cut	 Aa=1.5D		Aa=0.75D-1D		Aa=1.25D		Aa=1D		Aa=0.75D		Aa=1D		Aa=0.3D	
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
5	9,218	53.9	4,803	17.9	5,531	29.4	4,124	15.3	6,986	33.4	3,493	13.0	2,377	7.2
6	7,681	54.4	4,002	17.7	4,609	29.4	3,436	15.2	5,822	34.0	2,911	12.9	1,981	7.0
8	5,761	56.1	3,002	18.1	3,457	30.0	2,577	15.5	4,366	34.8	2,183	13.2	1,486	7.4
10	4,609	53.1	2,401	17.4	2,765	28.9	2,062	15.0	3,493	33.4	1,747	12.7	1,189	6.9
12	3,841	50.4	2,001	16.7	2,304	27.4	1,718	14.3	2,911	32.0	1,455	12.1	990	6.7
16	2,881	47.0	1,501	15.4	1,728	25.4	1,289	13.2	2,183	29.4	1,092	11.2	743	6.2
20	2,304	42.5	1,201	13.8	1,383	23.0	1,031	11.9	1,747	26.6	873	10.1	594	5.6

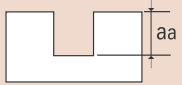
# List 03A-SO

# List 03M-SO

## Side Milling

Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys		High Temp. Alloys Inconel Hastelloy	
Cutting Speed	260-655 SFM		115-195 SFM		130-230 SFM		95-170 SFM		95-165 SFM		80-130 SFM		50-65 SFM	
Depth of Cut	$Aa=0.5D$ $Ar=1D$ 													
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
1	44,390	104.9	15,039	4.7	17,465	82.5	12,856	4.0	12,614	39.7	10,188	32.1	5,579	6.6
2	22,195	87.4	7,520	3.6	8,733	55.0	6,428	3.0	6,307	24.8	5,094	20.1	2,790	4.4
4	11,098	43.7	3,760	2.1	4,366	3.4	3,214	1.8	3,153	12.4	2,547	10.0	1,395	2.2
6	7,398	35.0	2,507	2.0	2,911	3.4	2,143	1.7	2,102	8.3	1,698	6.7	930	2.2
8	5,549	35.0	1,880	2.2	2,183	3.4	1,607	1.9	1,577	6.2	1,273	5.0	697	1.6
10	4,439	28.0	1,504	2.4	1,747	4.1	1,286	2.0	1,261	6.0	1,019	4.8	558	1.8
12	3,699	29.1	1,253	3.0	1,455	4.6	1,071	2.5	1,051	5.0	849	4.0	465	1.8
16	2,774	21.8	940	3.0	1,092	4.3	804	2.5	788	4.3	637	3.5	349	1.4
18	2,466	19.4	836	3.0	970	4.6	714	2.5	701	4.4	566	3.6	310	1.5
20	2,220	17.5	752	3.0	873	4.8	643	2.5	631	4.0	509	3.2	279	1.3


## Slotting

Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys		High Temp. Alloys Inconel Hastelloy	
Cutting Speed	260-655 SFM		115-195 SFM		130-230 SFM		95-170 SFM		95-165 SFM		80-130 SFM		50-65 SFM	
Depth of Cut	$Aa=1.25D$ 													
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
1	44,390	94.4	15,039	4.3	17,465	74.3	12,856	3.6	12,614	35.8	10,188	28.9	5,579	5.9
2	22,195	78.6	7,520	3.2	8,733	49.5	6,428	2.7	6,307	22.3	5,094	18.0	2,790	4.0
4	11,098	39.3	3,760	1.9	4,366	3.1	3,214	1.6	3,153	11.2	2,547	9.0	1,395	2.0
6	7,398	31.5	2,507	1.8	2,911	3.1	2,143	1.5	2,102	7.4	1,698	6.0	930	2.0
8	5,549	31.5	1,880	2.0	2,183	3.1	1,607	1.7	1,577	5.6	1,273	4.5	697	1.5
10	4,439	25.2	1,504	2.1	1,747	3.7	1,286	1.8	1,261	5.4	1,019	4.3	558	1.6
12	3,699	26.2	1,253	2.7	1,455	4.1	1,071	2.3	1,051	4.5	849	3.6	465	1.6
16	2,774	19.7	940	2.7	1,092	3.9	804	2.3	788	3.9	637	3.2	349	1.2
18	2,466	17.5	836	2.7	970	4.1	714	2.3	701	4.0	566	3.2	310	1.3
20	2,220	15.7	752	2.7	873	4.3	643	2.3	631	3.6	509	2.9	279	1.2

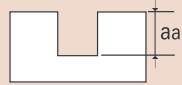
# List 03K-SO

# List 03P-SO

## Side Milling

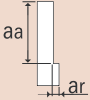
Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys		High Temp. Alloys Inconel Hastelloy	
Cutting Speed	260-655 SFM		115-195 SFM		130-230 SFM		95-170 SFM		95-165 SFM		80-130 SFM		50-65 SFM	
Depth of Cut	$Aa=0.5D$ $Ar=1D$ 													
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
1	44,390	209.7	15,039	9.5	17,465	165.0	12,856	8.1	12,614	79.5	10,188	64.2	5,579	13.2
2	22,195	174.8	7,520	7.1	8,733	110.0	6,428	6.1	6,307	49.7	5,094	40.1	2,790	8.8
4	11,098	87.4	3,760	4.1	4,366	6.9	3,214	3.5	3,153	24.8	2,547	20.1	1,395	4.4
6	7,398	69.9	2,507	3.9	2,911	6.9	2,143	3.4	2,102	16.6	1,698	13.4	930	4.4
8	5,549	69.9	1,880	4.4	2,183	6.9	1,607	3.8	1,577	12.4	1,273	10.0	697	3.3
10	4,439	55.9	1,504	4.7	1,747	8.3	1,286	4.0	1,261	11.9	1,019	9.6	558	3.5
12	3,699	58.3	1,253	5.9	1,455	9.2	1,071	5.1	1,051	9.9	849	8.0	465	3.7
16	2,774	43.7	940	5.9	1,092	8.6	804	5.1	788	8.7	637	7.0	349	2.7
18	2,466	38.8	836	5.9	970	9.2	714	5.1	701	8.8	566	7.1	310	2.9
20	2,220	35.0	752	5.9	873	9.6	643	5.1	631	7.9	509	6.4	279	2.6

## Slotting

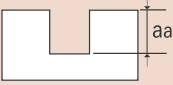
Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys		High Temp. Alloys Inconel Hastelloy	
Cutting Speed	260-655 SFM		115-195 SFM		130-230 SFM		95-170 SFM		95-165 SFM		80-130 SFM		50-65 SFM	
Depth of Cut	$Aa=0.5D$ 													
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
1	44,390	188.7	15,039	8.5	17,465	148.5	12,856	7.3	12,614	71.5	10,188	57.8	5,579	11.9
2	22,195	157.3	7,520	6.4	8,733	99.0	6,428	5.5	6,307	44.7	5,094	36.1	2,790	7.9
4	11,098	78.6	3,760	3.7	4,366	6.2	3,214	3.2	3,153	22.3	2,547	18.0	1,395	4.0
6	7,398	62.9	2,507	3.6	2,911	6.2	2,143	3.0	2,102	14.9	1,698	12.0	930	4.0
8	5,549	62.9	1,880	4.0	2,183	6.2	1,607	3.4	1,577	11.2	1,273	9.0	697	3.0
10	4,439	50.3	1,504	4.3	1,747	7.4	1,286	3.6	1,261	10.7	1,019	8.7	558	3.2
12	3,699	52.4	1,253	5.3	1,455	8.3	1,071	4.6	1,051	8.9	849	7.2	465	3.3
16	2,774	39.3	940	5.3	1,092	7.7	804	4.6	788	7.8	637	6.3	349	2.5
18	2,466	35.0	836	5.3	970	8.3	714	4.6	701	7.9	566	6.4	310	2.6
20	2,220	31.5	752	5.3	873	8.7	643	4.6	631	7.2	509	5.8	279	2.4

## List 03E-SO

### Side Milling


Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys	
Cutting Speed	390-655 SFM		195-330 SFM		260-330 SFM		195-250 SFM		260-460 SFM		145-215 SFM	
Depth of Cut	$Aa=1D$ $Ar=0.5D$ 											
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
6	8,450	43.9	4,245	16.0	4,771	22.5	3,598	13.6	5,822	24.8	2,911	11.0
8	6,337	44.9	3,184	16.5	3,578	23.1	2,699	14.0	4,366	25.4	2,183	11.3
10	5,070	43.1	2,547	15.6	2,862	22.1	2,159	13.3	3,493	24.2	1,747	10.7
12	4,225	43.9	2,122	16.4	2,385	22.9	1,799	13.9	2,911	24.8	1,455	11.2
16	3,169	40.4	1,592	15.0	1,789	21.1	1,349	12.7	2,183	22.7	1,092	10.3
20	2,535	36.7	1,273	14.0	1,431	19.6	1,079	11.9	1,747	20.9	873	9.6

### Slotting


Hardness	Up to 25 HRC		25 to 30 HRC		30 to 35 HRC		35 to 45 HRC		45 to 50 HRC		< 35 HRC	
Work Material	Mild Steels Carbon Steels Cast Iron		400 Stainless Steels Alloy Steels Tool Steels		300 Stainless Steels Hardened Steels Pre-hardened Steels		PH Stainless Steels Hardened Steels		Hardened Steels		Titanium Alloys	
Cutting Speed	390-655 SFM		195-330 SFM		260-330 SFM		195-250 SFM		260-460 SFM		145-215 SFM	
Depth of Cut	$Aa=0.75D$ 											
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
6	8,450	39.5	4,245	14.4	4,771	20.3	3,598	12.2	5,822	22.3	2,911	9.9
8	6,337	40.4	3,184	14.9	3,578	20.8	2,699	12.6	4,366	22.9	2,183	10.2
10	5,070	38.8	2,547	14.1	2,862	19.9	2,159	11.9	3,493	21.8	1,747	9.7
12	4,225	39.5	2,122	14.7	2,385	20.6	1,799	12.5	2,911	22.3	1,455	10.1
16	3,169	36.4	1,592	13.5	1,789	19.0	1,349	11.5	2,183	20.4	1,092	9.3
20	2,535	33.1	1,273	12.6	1,431	17.6	1,079	10.7	1,747	18.8	873	8.7

## List 03F-SO

### Side Milling

Hardness	Up to 25 HRC	25 to 30 HRC	30 to 35 HRC	35 to 45 HRC	45 to 50 HRC	< 35 HRC	< 35 HRC							
Work Material	Mild Steels Carbon Steels Cast Iron	400 Stainless Steels Alloy Steels Tool Steels	300 Stainless Steels Hardened Steels Pre-hardened Steels	PH Stainless Steels Hardened Steels	Hardened Steels	Titanium Alloys	High Temp. Alloys Inconel Hastelloy							
Cutting Speed	390-655 SFM	195-330 SFM	260-330 SFM	195-250 SFM	330-460 SFM	145-215 SFM	65-130 SFM							
Depth of Cut	$Aa=1D$ $Ar=0.5D$ 													
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
6	8,450	53.2	4,245	19.4	4,771	27.0	3,598	16.4	6,388	33.2	2,911	11.9	1,577	4.7
8	6,337	54.9	3,184	20.1	3,578	28.2	2,699	17.0	4,791	34.0	2,183	12.7	1,183	4.8
10	5,070	52.7	2,547	19.3	2,862	27.5	2,159	16.3	3,833	32.6	1,747	12.4	946	4.8
12	4,225	51.2	2,122	18.7	2,385	26.3	1,799	15.9	3,194	31.2	1,455	11.9	788	4.6
16	3,169	46.9	1,592	17.5	1,789	24.5	1,349	14.9	2,395	29.0	1,092	11.0	591	4.3
20	2,535	43.1	1,273	16.2	1,431	22.8	1,079	13.8	1,916	26.6	873	10.2	473	4.0

### Slotting

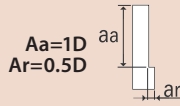
Hardness	Up to 25 HRC	25 to 30 HRC	30 to 35 HRC	35 to 45 HRC	45 to 50 HRC	< 35 HRC	< 35 HRC							
Work Material	Mild Steels Carbon Steels Cast Iron	400 Stainless Steels Alloy Steels Tool Steels	300 Stainless Steels Hardened Steels Pre-hardened Steels	PH Stainless Steels Hardened Steels	Hardened Steels	Titanium Alloys	High Temp. Alloys Inconel Hastelloy							
Cutting Speed	390-655 SFM	195-330 SFM	260-330 SFM	195-250 SFM	330-460 SFM	145-215 SFM	65-130 SFM							
Depth of Cut	$Aa=0.75D$ 													
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
6	8,450	47.9	4,245	17.4	4,771	24.3	3,598	14.8	6,388	29.9	2,911	10.7	1,577	4.2
8	6,337	49.4	3,184	18.0	3,578	25.4	2,699	15.3	4,791	30.6	2,183	11.4	1,183	4.4
10	5,070	47.4	2,547	17.3	2,862	24.7	2,159	14.7	3,833	29.3	1,747	11.1	946	4.3
12	4,225	46.1	2,122	16.8	2,385	23.7	1,799	14.3	3,194	28.1	1,455	10.7	788	4.1
16	3,169	42.2	1,592	15.8	1,789	22.1	1,349	13.4	2,395	26.1	1,092	9.9	591	3.9
20	2,535	38.8	1,273	14.6	1,431	20.5	1,079	12.4	1,916	23.9	873	9.2	473	3.6



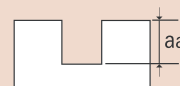
# List 310-SO

# List 312-SO

## Side Milling

Hardness	-	Up to 25 HRC	25 to 30 HRC	30 to 35 HRC	35 to 45 HRC	45 to 50 HRC	< 35 HRC							
Work Material	Aluminum	Mild Steels Carbon Steels Cast Iron	400 Stainless Steels Alloy Steels Tool Steels	300 Stainless Steels Hardened Steels Pre-hardened Steels	PH Stainless Steels Hardened Steels	Hardened Steels	Titanium Alloys							
Cutting Speed	325-820 SFM	50-130 SFM	15-30 SFM	15-30 SFM	10-23 SFM	50-80 SFM	20-40 SFM							
Depth of Cut	 <p>Aa=1D Ar=0.5D</p>													
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
2	27,774	28.4	4,366	3.4	1,092	0.9	1,092	0.9	800	0.6	3,153	2.5	1,455	1.1
4	13,887	20.8	2,183	2.6	546	0.6	546	0.6	400	0.5	1,577	1.9	728	0.8
6	9,258	20.4	1,455	2.5	364	0.6	364	0.6	267	0.5	1,051	1.8	485	0.8
8	6,944	21.3	1,092	2.6	273	0.6	273	0.6	200	0.5	788	1.9	364	0.8
10	5,555	20.1	873	2.5	218	0.6	218	0.6	160	0.5	631	1.8	291	0.7
12	4,629	20.8	728	2.5	182	0.6	182	0.6	133	0.5	526	1.8	243	0.8
14	3,968	20.6	624	2.5	156	0.6	156	0.6	114	0.5	450	1.8	208	0.8
16	3,472	20.5	546	2.5	136	0.6	136	0.6	100	0.5	394	1.8	182	0.7
18	3,086	20.7	485	2.5	121	0.6	121	0.6	89	0.5	350	1.8	162	0.7
20	2,777	20.1	437	2.5	109	0.6	109	0.6	80	0.5	315	1.8	146	0.8
22	2,525	20.7	397	2.5	99	0.6	99	0.6	73	0.5	287	1.8	132	0.8
24	2,315	20.0	364	2.4	91	0.6	91	0.6	67	0.4	263	1.8	121	0.7
25	2,222	20.5	349	2.5	87	0.6	87	0.6	64	0.5	252	1.8	116	0.7

## Slotting

Hardness	-	Up to 25 HRC	25 to 30 HRC	30 to 35 HRC	35 to 45 HRC	45 to 50 HRC	< 35 HRC							
Work Material	Aluminum	Mild Steels Carbon Steels Cast Iron	400 Stainless Steels Alloy Steels Tool Steels	300 Stainless Steels Hardened Steels Pre-hardened Steels	PH Stainless Steels Hardened Steels	Hardened Steels	Titanium Alloys							
Cutting Speed	325-820 SFM	390-655 SFM	195-330 SFM	260-330 SFM	195-250 SFM	260-460 SFM	145-215 SFM							
Depth of Cut	 <p>Aa=0.5D</p>													
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
2	27,774	25.6	4,366	3.1	1,092	0.8	1,092	0.8	800	0.6	3,153	2.2	1,455	1.0
4	13,887	18.7	2,183	2.3	546	0.6	546	0.6	400	0.4	1,577	1.7	728	0.7
6	9,258	18.4	1,455	2.3	364	0.6	364	0.6	267	0.4	1,051	1.6	485	0.7
8	6,944	19.2	1,092	2.3	273	0.6	273	0.6	200	0.4	788	1.7	364	0.7
10	5,555	18.1	873	2.2	218	0.6	218	0.6	160	0.4	631	1.6	291	0.7
12	4,629	18.7	728	2.3	182	0.6	182	0.6	133	0.4	526	1.6	243	0.7
14	3,968	18.6	624	2.3	156	0.6	156	0.6	114	0.4	450	1.6	208	0.7
16	3,472	18.5	546	2.2	136	0.6	136	0.6	100	0.4	394	1.6	182	0.7
18	3,086	18.6	485	2.2	121	0.6	121	0.6	89	0.4	350	1.6	162	0.7
20	2,777	18.1	437	2.3	109	0.6	109	0.6	80	0.4	315	1.6	146	0.7
22	2,525	18.6	397	2.3	99	0.6	99	0.6	73	0.4	287	1.6	132	0.7
24	2,315	18.0	364	2.2	91	0.5	91	0.5	67	0.4	263	1.6	121	0.6
25	2,222	18.4	349	2.2	87	0.6	87	0.6	64	0.4	252	1.6	116	0.7



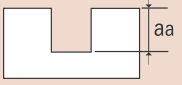
## List 314-SO

### Side Milling

Hardness	-	Up to 25 HRC	25 to 30 HRC	30 to 35 HRC	35 to 45 HRC	45 to 50 HRC	< 35 HRC							
Work Material	Aluminum	Mild Steels Carbon Steels Cast Iron	400 Stainless Steels Alloy Steels Tool Steels	300 Stainless Steels Hardened Steels Pre-hardened Steels	PH Stainless Steels Hardened Steels	Hardened Steels	Titanium Alloys							
Cutting Speed	325-820 SFM	50-130 SFM	15-30 SFM	15-30 SFM	10-23 SFM	50-80 SFM	20-40 SFM							
Depth of Cut	<p>Aa=1D Ar=0.5D</p>						<p>Aa=1D Ar=0.1D</p>							
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
2	27,774	56.9	4,366	6.9	1,092	1.7	1,092	1.7	800	1.3	3,153	5.0	1,455	2.3
4	13,887	41.6	2,183	5.2	546	1.3	546	1.3	400	0.9	1,577	3.7	728	1.5
6	9,258	40.8	1,455	5.0	364	1.3	364	1.3	267	0.9	1,051	3.6	485	1.5
8	6,944	42.6	1,092	5.2	273	1.3	273	1.3	200	0.9	788	3.7	364	1.5
10	5,555	40.2	873	5.0	218	1.2	218	1.2	160	0.9	631	3.6	291	1.5
12	4,629	41.6	728	5.0	182	1.3	182	1.3	133	0.9	526	3.6	243	1.5
14	3,968	41.2	624	5.0	156	1.3	156	1.3	114	0.9	450	3.6	208	1.5
16	3,472	41.0	546	5.0	136	1.2	136	1.2	100	0.9	394	3.6	182	1.5
18	3,086	41.3	485	5.0	121	1.2	121	1.2	89	0.9	350	3.6	162	1.5
20	2,777	40.2	437	5.0	109	1.3	109	1.3	80	0.9	315	3.6	146	1.5
22	2,525	62.0	397	7.5	99	1.9	99	1.9	73	1.4	287	5.4	132	2.3
24	2,315	60.1	364	7.3	91	1.8	91	1.8	67	1.3	263	5.3	121	2.2
25	2,222	61.4	349	7.4	87	1.9	87	1.9	64	1.4	252	5.4	116	2.2



### Slotting

Hardness	-	Up to 25 HRC	25 to 30 HRC	30 to 35 HRC	35 to 45 HRC	45 to 50 HRC	< 35 HRC							
Work Material	Aluminum	Mild Steels Carbon Steels Cast Iron	400 Stainless Steels Alloy Steels Tool Steels	300 Stainless Steels Hardened Steels Pre-hardened Steels	PH Stainless Steels Hardened Steels	Hardened Steels	Titanium Alloys							
Cutting Speed	325-820 SFM	390-655 SFM	195-330 SFM	260-330 SFM	195-250 SFM	260-460 SFM	145-215 SFM							
Depth of Cut	$Aa=0.5D$ 													
Mill Dia.	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min	Speed RPM	Feed in/min
2	27,774	51.2	4,366	6.2	1,092	1.5	1,092	1.5	800	1.1	3,153	4.5	1,455	2.0
4	13,887	37.4	2,183	4.6	546	1.2	546	1.2	400	0.9	1,577	3.4	728	1.4
6	9,258	36.7	1,455	4.5	364	1.1	364	1.1	267	0.8	1,051	3.3	485	1.3
8	6,944	38.4	1,092	4.6	273	1.2	273	1.2	200	0.9	788	3.4	364	1.4
10	5,555	36.2	873	4.5	218	1.1	218	1.1	160	0.8	631	3.2	291	1.3
12	4,629	37.4	728	4.5	182	1.1	182	1.1	133	0.8	526	3.3	243	1.3
14	3,968	37.1	624	4.5	156	1.1	156	1.1	114	0.8	450	3.3	208	1.3
16	3,472	36.9	546	4.5	136	1.1	136	1.1	100	0.8	394	3.2	182	1.3
18	3,086	37.2	485	4.5	121	1.1	121	1.1	89	0.8	350	3.2	162	1.3
20	2,777	36.2	437	4.5	109	1.1	109	1.1	80	0.8	315	3.3	146	1.3
22	2,525	55.8	397	6.8	99	1.7	99	1.7	73	1.2	287	4.9	132	2.0
24	2,315	54.1	364	6.6	91	1.6	91	1.6	67	1.2	263	4.7	121	1.9
25	2,222	55.3	349	6.7	87	1.7	87	1.7	64	1.2	252	4.8	116	2.0



*shaping your dreams*

 **Safe use of cutting tools**

- Use safety cover, safety glasses and safety shoes during operation.
- Do not touch cutting edges with bare hands.
- Do not touch cutting chips with bare hands. Chips will be hot after cutting.
- Stop cutting when the tool becomes dull.
- Stop cutting operation immediately if you hear any abnormal cutting sounds.
- Do not modify tools.
- Please use appropriate tools for the operation. Check dimensions to ensure proper selection.

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