

Member IMC Group
Ingersoll
Cutting Tools

HOLE MAKING

Ingersoll **BORE** line



Member IMC Group

Ingersoll

Cutting Tools



Ingersoll **BORE**line

In the year 2000, Ingersoll Cutting Tool Company came to realize that in order to better serve our customers in the demanding world of metal removal, it was time to expand our horizons and become a full line supplier to the metal working industry. To that end Ingersoll introduced a line of innovative, technologically superior drills and rolled out its first ever comprehensive "Hole Making" catalog.

Now five years later, due in a large part to the popularity of both the Qwik-Twist and Quad-Drill+ lines of drilling products, the "BOREline" is the fastest growing division at Ingersoll Cutting Tools.

In this new "BOREline" catalog we've expanded both the Qwik-Twist and Quad-Drill+ lines and added exciting new products such as Ingersoll Gun Drills and a complete line of Rotary Tool Holders.

Our network of distribution partners supported by our sales engineering staff is an invaluable resource of technical tooling application expertise and customer support. These highly trained, skilled individuals are available to you on-site in your facility until our products are performing the way you expect.

We are more than just a tooling supplier. We want you to view us as partners . . . as a specialized extension of your own process engineering capabilities. We have the resources and experience you need to make informed and effective tooling decisions.

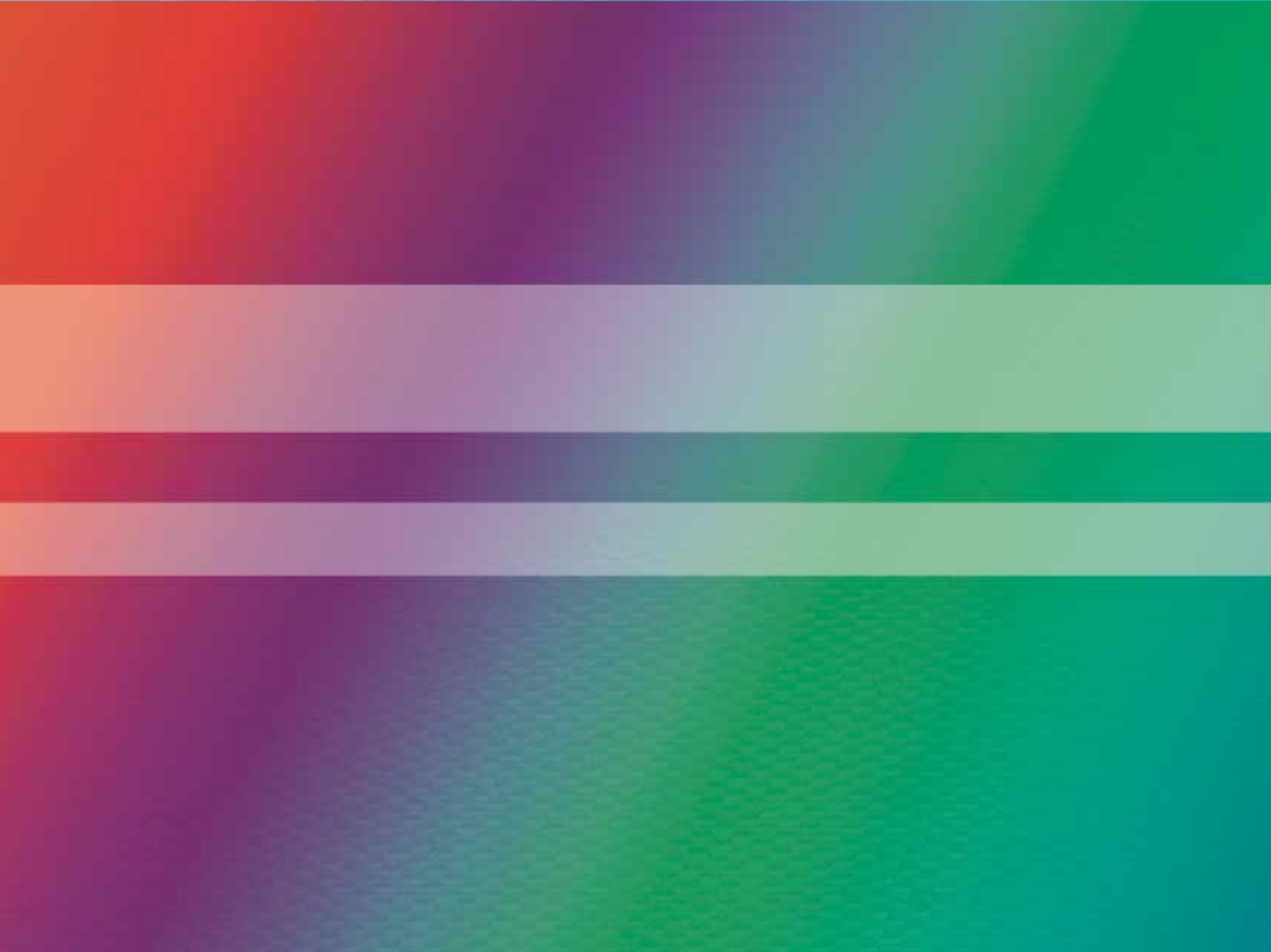
Our goal is to help you remain competitive in a rapidly changing manufacturing environment, with the latest and most productive hole making tools in the industry.

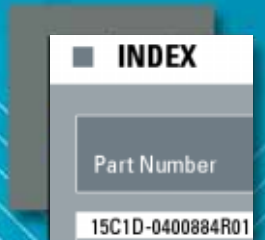
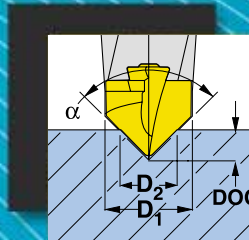
Sincerely,
The Ingersoll "BOREline" Team

P.S. For all of your finish precision boring needs, please refer to Ingersoll's "D'Andrea" Modular Boring catalog.



Ingersoll



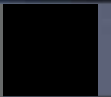


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Ingersoll



CUTTING TOOLS
CUTTING TOOLS

HOLE MAKING

Cutting Tools



Mettler MC Group
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Cutting Tools

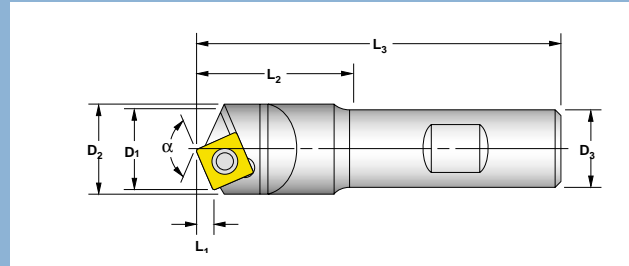
HOLE MAKING

	Diameter Range	Cutting Depth	Description	Series	Page
	.685-.842	.12-.42	SPOT-IN™ Indexable Spotting Drill	FAK	10
	.685-.842	.12-.42	DRILL-PAK™ Indexable Spotting Drill Pak	FAK	10
	.472 and .630	.08-.31	SPOT-IN™ Replaceable Point Drills	Y	12
	.1181-.4724	.87-2.08	DRILL-IN™ Solid Carbide Drills	DR	14
	.2953-1.0197	.87-2.95	QWIK-TWIST™ Replaceable Point Drills 3:1	Y	16
	.2953-1.0197	1.46-4.92	QWIK-TWIST™ Replaceable Point Drills 5:1	Y	17
	.3937-1.0197	3.15-7.87	QWIK-TWIST™ Replaceable Point Drills 8:1	Y	18
	.2953-.8228	1.02-2.60	QWIK-TWIST™ Slip Fit Drills	Y	19
	.2953-.8228	.43-2.50	QWIK-TWIST™ Chamfer Shanks	MHK	21
	.2677-.8622	.97-1.98	QWIK-TWIST™ Tap Drill/Chamfer Combo	Y	22

	Diameter Range	Cutting Depth	Description	Series	Page
	.394-.787	.06-.08	QWIK-TWIST Chamfer Rings	CB	24
	.500-2.000	.100-.400	QUAD-DRILL+ Square Insert Indexable Drills 2:1	Q	30
	.500-2.000	1.50-6.00	QUAD-DRILL+ Square Insert Indexable Drills 3:1	Q	31
	.500-2.000	2.00-8.00	QUAD-DRILL+ Square Insert Indexable Drills 4:1	Q	32
	2.125-3.250	.87-.295 4.25-9.75	QUAD-DRILL Square Insert Solid Carbide Drills 2:1, 3:1	Q	33
	-	-	QUAD-DRILL+ Eccentric Adjustment Bushing	BU	35
	.500-2.000	.50-2.00	QUAD-BORE Center Cut Counter Bore Tools	15S	36
	.438-2.000	.44-2.00	QUAD-BORE Indexable Counter Bore Tools	15C	37
	-	-	QWIK-GUN Gun Drills	-	40

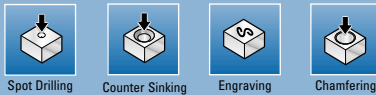
SPOTOIN™ INDEXABLE SPOTTING DRILL - SERIES "FAK"

Diameters	Nominal Included Angles	Insert Corner
.685" to .842"	82°, 90°, 118°, 135°, 144°	118°, 135°, 144° : .010" R 82°, 90° : .031", .010" R



α Included Angle	D ₁ Max Dia. of Spot inch mm	Drill Number	L ₁ Maximum Depth of Cut	D ₂ Overall Diameter	L ₂ Extension from Holder	L ₃ Overall Length	D ₃ Shank Size/Style	Number of Inserts
82°	.782 19,86	FAK-0708284R01	.42	.810	1.50	3.50	.750 Weldon	1
90°	.842 21,39	FAK-0809084R01	.39	.810	1.50	3.50	.750 Weldon	1
118°	.685 17,40	FAK-0611884R01	.20	.875	1.50	3.50	.750 Weldon	1
135°	.738 18,75	FAK-0713584R01	.15	.875	1.50	3.50	.750 Weldon	1
144°	.737 18,72	FAK-0714484R01	.12	.875	1.50	3.50	.750 Weldon	1

DRILLPAK™ INDEXABLE SPOTTING DRILL PACKAGES- SERIES "FAK"



Included Angle	Package Number
82°	FAK-0708284K01
90°	FAK-0809084K01
118°	FAK-0611884K01
135°	FAK-0713584K01
144°	FAK-0714484K01

Save up to 15%
when purchasing tooling packages



Spotting drills with indexable strength and convenience

Tooling Package Includes:

- One indexable spotting drill
- Ten inserts
- One Torx® screw driver
- Three additional insert screws
- Durable polypropylene case

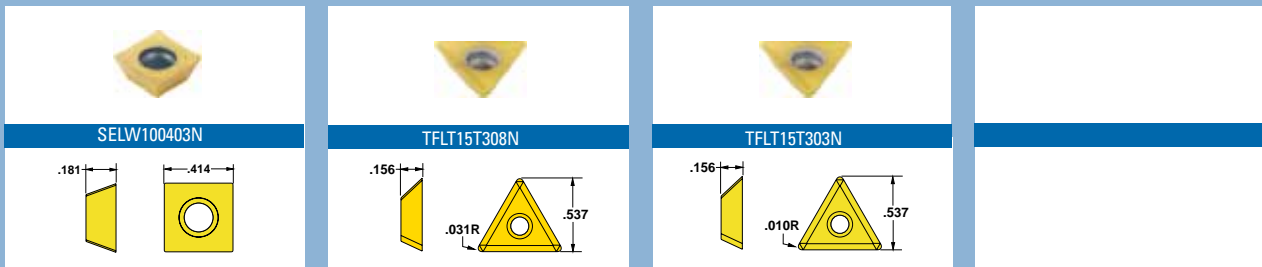
SPOTOIN™ FAK ENGRAVING CAPABILITY

- Engrave part numbers, serial numbers, lot numbers, company logos, etc. all in the same machine set-up.
- Utilize the CNC control capability to program the engraving.
- High speed engraving capability up to 100 inches/minute.

Item No.- 5110040
 Insert Part No.- TFLT15T303N
 Grade- IN1530 (Tough wear resistant grade, well suited for engraving)



INSERTS



α Included Angle	Insert Number	Application	Corner	Grade*	
				IN	1530
82°**	TFLT15T303N	Multi-Purpose	.010R	■	
82°	TFLT15T308N	Multi-Purpose	.031R	■	
90°**	TFLT15T303N	Multi-Purpose	.010R	■	
90°	TFLT15T308N	Multi-Purpose	.031R	■	
118°	SELW100403N	Multi-Purpose	.010R	■	
135°	SELW100403N	Multi-Purpose	.010R	■	
144°	SELW100403N	Multi-Purpose	.010R	■	

*For insert grade descriptions, see page 86. ** .010 insert radii for engraving

HARDWARE

Insert Series	Insert Screw		Driver
	Part No.	Torque	Part No.
TFLT15	SM30-065-00	13-18 in. lbs.	DS-T09W (Tx-09)
SELW10	SM40-093-20	30-35 in. lbs.	DS-T15T (Tx-15)

For technical information, see pages 91 and 92.

DRILL^oIN™ SOLID CARBIDE DRILLS - SERIES "DR"

Diameters
3,00mm to 12,00mm

L:D Ratio
5:1

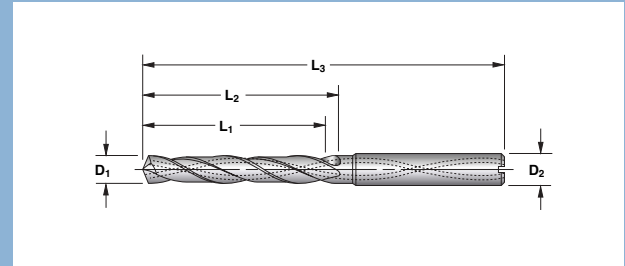
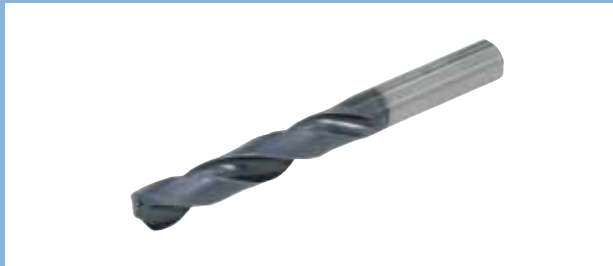
Geometry
140° included point angle
30° axial rake angle



Drilling



Coolant



Metric Standard-(dimensions in mm unless noted)

D ₁ Diameter		Drill Number	D ₂ Shank Diameter	L ₁ Maximum Depth of Cut	L ₂ Flute Length	L ₃ Overall Length
mm	inches					
3,00	.1181	DR0300024T7R01	6,00	24	28	66
3,10	.1220	DR0310023T7R01	6,00	23	28	66
3,20	.1260	DR0320023T7R01	6,00	23	28	66
3,30	.1299	DR0330023T7R01	6,00	23	28	66
3,40	.1339	DR0340023T7R01	6,00	23	28	66
3,50	.1378	DR0350023T7R01	6,00	23	28	66
3,60	.1417	DR0360023T7R01	6,00	23	28	66
3,70	.1457	DR0370022T7R01	6,00	22	28	66
3,80	.1496	DR0380030T7R01	6,00	30	36	74
3,90	.1535	DR0390030T7R01	6,00	30	36	74
4,00	.1575	DR0400030T7R01	6,00	30	36	74
4,10	.1614	DR0410030T7R01	6,00	30	36	74
4,20	.1654	DR0420030T7R01	6,00	30	36	74
4,30	.1693	DR0430030T7R01	6,00	30	36	74
4,40	.1732	DR0440029T7R01	6,00	29	36	74
4,50	.1772	DR0450029T7R01	6,00	29	36	74
4,60	.1811	DR0460029T7R01	6,00	29	36	74
4,70	.1850	DR0470029T7R01	6,00	29	36	74
4,80	.1890	DR0480037T7R01	6,00	37	44	82
4,90	.1929	DR0490037T7R01	6,00	37	44	82
5,00	.1969	DR0500037T7R01	6,00	39	46	84
5,10	.2008	DR0510036T7R01	6,00	38	46	84
5,20	.2047	DR0520036T7R01	6,00	38	46	84
5,30	.2087	DR0530036T7R01	6,00	38	46	84
5,40	.2126	DR0540036T7R01	6,00	38	46	84
5,50	.2165	DR0550036T7R01	6,00	38	46	84
5,60	.2205	DR0560036T7R01	6,00	38	46	84
5,70	.2244	DR0570035T7R01	6,00	37	46	84
5,80	.2283	DR0580035T7R01	6,00	37	46	84
5,90	.2323	DR0590035T7R01	6,00	37	46	84
6,00	.2362	DR0600035T7R01	6,00	37	46	84
6,10	.2402	DR0610044T0R01	8,00	47	56	94
6,20	.2441	DR0620044T0R01	8,00	47	56	94
6,30	.2480	DR0630044T0R01	8,00	47	56	94
6,40	.2520	DR0640043T0R01	8,00	46	56	94

(CONTINUED)

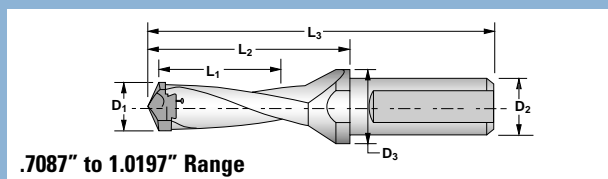
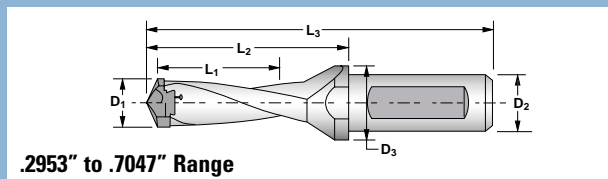
Metric Standard-(dimensions in mm unless noted)						
D ₁ Diameter		Drill Number	D ₂ Shank Diameter	L ₁ Maximum Depth of Cut	L ₂ Flute Length	L ₃ Overall Length
mm	inches					
6,50	.2559	DR0650043TOR01	8,00	46	56	94
6,60	.2598	DR0660043TOR01	8,00	46	56	94
6,70	.2638	DR0670043TOR01	8,00	46	56	94
6,80	.2677	DR0680043TOR01	8,00	46	56	94
6,90	.2717	DR0690043TOR01	8,00	46	56	94
7,00	.2756	DR0700043TOR01	8,00	46	56	94
7,10	.2795	DR0710042TOR01	8,00	45	56	94
7,20	.2835	DR0720042TOR01	8,00	45	56	94
7,30	.2874	DR0730042TOR01	8,00	45	56	94
7,40	.2913	DR0740042TOR01	8,00	45	56	94
7,50	.2953	DR0750042TOR01	8,00	45	56	94
7,60	.2992	DR0760042TOR01	8,00	45	56	94
7,70	.3031	DR0770041TOR01	8,00	44	56	94
7,80	.3071	DR0780041TOR01	8,00	44	56	94
7,90	.3110	DR0790041TOR01	8,00	44	56	94
8,00	.3150	DR0800041TOR01	8,00	44	56	94
8,10	.3189	DR0810049T1R01	10,00	53	65	107
8,20	.3228	DR0820049T1R01	10,00	53	65	107
8,30	.3268	DR0830049T1R01	10,00	53	65	107
8,40	.3307	DR0840048T1R01	10,00	52	65	107
8,50	.3346	DR0850048T1R01	10,00	52	65	107
8,60	.3386	DR0860048T1R01	10,00	52	65	107
8,70	.3425	DR0870048T1R01	10,00	52	65	107
8,80	.3465	DR0880048T1R01	10,00	52	65	107
8,90	.3504	DR0890048T1R01	10,00	52	65	107
9,00	.3543	DR0900048T1R01	10,00	52	65	107
9,10	.3583	DR0910047T1R01	10,00	51	65	107
9,20	.3622	DR0920047T1R01	10,00	51	65	107
9,30	.3661	DR0930047T1R01	10,00	51	65	107
9,40	.3701	DR0940047T1R01	10,00	51	65	107
9,50	.3740	DR0950047T1R01	10,00	51	65	107
9,60	.3780	DR0960047T1R01	10,00	51	65	107
9,70	.3819	DR0970046T1R01	10,00	50	65	107
9,80	.3858	DR0980046T1R01	10,00	50	65	107
9,90	.3898	DR0990046T1R01	10,00	50	65	107
10,00	.3937	DR1000046T1R01	10,00	50	65	107
10,10	.3976	DR1010056T2R01	12,00	63	78	125
10,20	.4016	DR1020056T2R01	12,00	63	78	125
10,30	.4055	DR1030056T2R01	12,00	63	78	125
10,40	.4094	DR1040055T2R01	12,00	62	78	125
10,50	.4134	DR1050055T2R01	12,00	62	78	125
10,60	.4173	DR1060055T2R01	12,00	62	78	125
10,70	.4213	DR1070055T2R01	12,00	62	78	125
10,80	.4252	DR1080055T2R01	12,00	62	78	125
10,90	.4291	DR1090055T2R01	12,00	62	78	125
11,00	.4331	DR1100055T2R01	12,00	62	78	125
11,10	.4370	DR1110054T2R01	12,00	61	78	125
11,20	.4409	DR1120054T2R01	12,00	61	78	125
11,30	.4449	DR1130054T2R01	12,00	61	78	125
11,40	.4488	DR1140054T3R01	12,00	61	78	125
11,50	.4528	DR1150054T2R01	12,00	61	78	125
11,60	.4567	DR1160054T2R01	12,00	61	78	125
11,70	.4606	DR1170053T2R01	12,00	60	78	125
11,80	.4646	DR1180053T2R01	12,00	60	78	125
11,90	.4685	DR1190053T2R01	12,00	60	78	125
12,00	.4724	DR1200053T2R01	12,00	60	78	125

For technical information, see page 93.

QWIKOTWIST™ REPLACEABLE POINT DRILLS - SERIES "Y"

Diameters
.2953" to 1.0197"

Length to Diameter Ratio
3:1



D ₁ Nom. Dia.		Body Number 3:1	L ₁	L ₂	L ₃	D ₂	D ₃	Pocket Size	Clamping Key	Optional Torque Clamping Key	Chamfer Ring
inch	mm		DOC	Ext.	Overall	Shank Dia.	Flange Dia.				
.2953-.3110	7,5-7,9	YD0750022B9R01	.87	1.30	3.07	.500	.63	8	KDCM-8	TKDCM-8	-
.3150-.3307	8,0-8,4	YD0800024B9R01	.94	1.38	3.15	.500	.63	8	KDCM-8	TKDCM-8	-
.3346-.3504	8,5-8,9	YD0850025B9R01	.98	1.46	3.23	.500	.63	8	KDCM-8	TKDCM-8	-
.3543-.3701	9,0-9,4	YD0900027B9R01	1.06	1.54	3.31	.500	.63	9	KDCM-9	TKDCM-9	-
.3740-.3898	9,5-9,9	YD0950028B9R01	1.10	1.68	3.45	.500	.63	9	KDCM-9	TKDCM-9	-
.3937-.4094	10,0-10,4	YD1000030C0R01	1.18	1.73	3.62	.625	.79	10	KDCM-10	TKDCM-10	CB100-01
.4134-.4291	10,5-10,9	YD1050031C0R01	1.24	1.81	3.70	.625	.79	10	KDCM-10	TKDCM-10	CB105-01
.4331-.4488	11,0-11,4	YD1100033C0R01	1.30	1.89	3.78	.625	.79	11	KDCM-11	TKDCM-11	CB110-01
.4528-.4685	11,5-11,9	YD1150034C0R01	1.35	1.97	3.86	.625	.79	11	KDCM-11	TKDCM-11	CB115-01
.4724-.4882	12,0-12,4	YD1200036C0R01	1.41	2.06	3.95	.625	.79	12	KDCM-12	TKDCM-12	CB120-01
.4912-.5079	12,5-12,9	YD1250037C0R01	1.47	2.12	4.01	.625	.79	12	KDCM-12	TKDCM-12	CB125-01
.5118-.5276	13,0-13,4	YD1300039C0R01	1.53	2.22	4.11	.625	.79	13	KDCM-13	TKDCM-13	CB130-01
.5315-.5472	13,5-13,9	YD1350040C0R01	1.59	2.30	4.19	.625	.79	13	KDCM-13	TKDCM-13	CB135-01
.5512-.5669	14,0-14,4	YD1400042C0R01	1.65	2.41	4.30	.625	.79	14	KDCM-14	TKDCM-14	CB140-01
.5709-.5866	14,5-14,9	YD1450043C0R01	1.71	2.49	4.38	.625	.79	14	KDCM-14	TKDCM-14	CB145-01
.5906-.6260	15,0-15,9	YD150004518R01	1.77	2.58	4.55	.750	.98	15	KDCM-15	TKDCM-15	CB150-01
.6299-.6654	16,0-16,9	YD160004818R01	1.89	2.75	4.72	.750	.98	16	KDCM-16	TKDCM-16	CB160-01
.6693-.7047	17,0-17,9	YD170005118R01	2.01	2.89	4.86	.750	.98	17	KDCM-17	TKDCM-17	CB170-01
.7087-.7441	18,0-18,9	YD1800054C8R01	2.13	3.08	5.28	1.000	1.26	18	KDCM-18	TKDCM-18	CB180-01
.7480-.7835	19,0-19,9	YD1900057C8R01	2.24	3.24	5.44	1.000	1.26	19	KDCM-19	TKDCM-19	CB190-01
.7874-.8228	20,0-20,9	YD2000060C8R01	2.36	3.42	5.62	1.000	1.26	20	KDCM-20	TKDCM-20	CB200-01
.8268-.8622	21,0-21,9	YD2100063C8R01	2.48	3.57	5.77	1.000	1.26	21	KDCM-21	TKDCM-21	-
.8661-.9016	22,0-22,9	YD2200066C8R01*	2.60	3.74	5.94	1.000	1.26	22	KDCM-22	TKDCM-22	-
.9055-.9409	23,0-23,9	YD2300069C8R01*	2.71	3.92	6.12	1.000	1.26	23	KDCM-23	TKDCM-23	-
.9449-.9803	24,0-24,9	YD2400072C8R01*	2.83	4.08	6.28	1.000	1.26	24	KDCM-24	TKDCM-24	-
.9843-1.0197	25,0-25,9	YD2500075C8R01*	2.95	4.29	6.49	1.000	1.26	25	KDCM-25	TKDCM-25	-

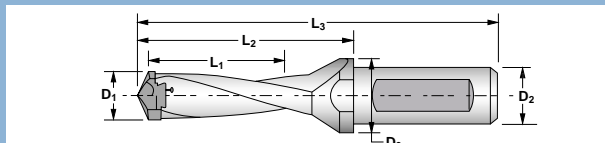
Do not mount a smaller drill point than the D1 range listed for each drill body.

* Drill bodies for coolant through the point.

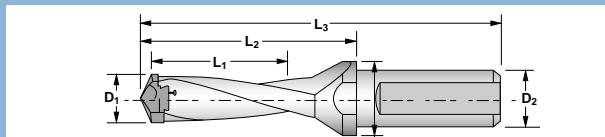
Metric shanks available as non-stock standards.
See pages 25-29 for replaceable drill points.
For technical information, see pages 95-99.

Diameters
.2953" to 1.0197"

Length to Diameter Ratio
5:1



.2953" to .7047" Range



.7087" to 1.0197" Range

D ₁ Nom. Dia. inch	D ₁ mm	Body Number 5:1	L ₁	L ₂	L ₃	D ₂	D ₃	Pocket Size	Clamping Key	Optional Torque Clamping Key	Chamfer Ring
			DOC	Ext.	Overall	Shank Dia.	Flange Dia.				
.2953-.3110	7,5-7,9	YD0750037B9R01	1.46	2.01	3.78	.500	.63	8	KDCM-8	TKDCM-8	-
.3150-.3307	8,0-8,4	YD0800040B9R01	1.57	2.01	3.78	.500	.63	8	KDCM-8	TKDCM-8	-
.3346-.3504	8,5-8,9	YD0850042B9R01	1.65	2.13	3.90	.500	.63	8	KDCM-8	TKDCM-8	-
.3543-.3701	9,0-9,4	YD0900045B9R01	1.77	2.25	4.02	.500	.63	9	KDCM-9	TKDCM-9	-
.3740-.3898	9,5-9,9	YD0950047B9R01	1.85	2.37	4.14	.500	.63	9	KDCM-9	TKDCM-9	-
.3937-.4094	10,0-10,4	YD1000050C0R01	1.96	2.52	4.41	.625	.79	10	KDCM-10	TKDCM-10	CB100-01
.4134-.4291	10,5-10,9	YD1050052C0R01	2.06	2.64	4.53	.625	.79	10	KDCM-10	TKDCM-10	CB105-01
.4331-.4488	11,0-11,4	YD1100055C0R01	2.16	2.76	4.65	.625	.79	11	KDCM-11	TKDCM-11	CB110-01
.4528-.4685	11,5-11,9	YD1150057C0R01	2.26	2.87	4.76	.625	.79	11	KDCM-11	TKDCM-11	CB115-01
.4724-.4882	12,0-12,4	YD1200060C0R01	2.36	3.00	4.89	.625	.79	12	KDCM-12	TKDCM-12	CB120-01
.4912-.5079	12,5-12,9	YD1250062C0R01	2.46	3.12	5.01	.625	.79	12	KDCM-12	TKDCM-12	CB125-01
.5118-.5276	13,0-13,4	YD1300065C0R01	2.56	3.24	5.13	.625	.79	13	KDCM-13	TKDCM-13	CB130-01
.5315-.5472	13,5-13,9	YD1350067C0R01	2.65	3.36	5.25	.625	.79	13	KDCM-13	TKDCM-13	CB135-01
.5512-.5669	14,0-14,4	YD1400070C0R01	2.75	3.51	5.40	.625	.79	14	KDCM-14	TKDCM-14	CB140-01
.5709-.5866	14,5-14,9	YD1450072C0R01	2.85	3.63	5.52	.625	.79	14	KDCM-14	TKDCM-14	CB145-01
.5906-.6260	15,0-15,9	YD150007518R01	2.95	3.76	5.73	.750	.98	15	KDCM-15	TKDCM-15	CB150-01
.6299-.6654	16,0-16,9	YD160008018R01	3.15	4.01	5.98	.750	.98	16	KDCM-16	TKDCM-16	CB160-01
.6693-.7047	17,0-17,9	YD170008518R01	3.35	4.23	6.20	.750	.98	17	KDCM-17	TKDCM-17	CB170-01
.7087-.7441	18,0-18,9	YD1800090C8R01	3.54	4.50	6.70	1.000	1.26	18	KDCM-18	TKDCM-18	CB180-01
.7480-.7835	19,0-19,9	YD1900095C8R01	3.74	4.73	6.93	1.000	1.26	19	KDCM-19	TKDCM-19	CB190-01
.7874-.8228	20,0-20,9	YD2000100C8R01	3.94	5.00	7.20	1.000	1.26	20	KDCM-20	TKDCM-20	CB200-01
.8268-.8622	21,0-21,9	YD2100105C8R01	4.13	5.23	7.43	1.000	1.26	21	KDCM-21	TKDCM-21	-
.8661-.9016	22,0-22,9	YD2200110C8R01*	4.33	5.47	7.67	1.000	1.26	22	KDCM-22	TKDCM-22	-
.9055-.9409	23,0-23,9	YD2300115C8R01*	4.53	5.72	7.92	1.000	1.26	23	KDCM-23	TKDCM-23	-
.9449-.9803	24,0-24,9	YD2400120C8R01*	4.72	5.97	8.17	1.000	1.26	24	KDCM-24	TKDCM-24	-
.9843-1.0197	25,0-25,9	YD2500125C8R01*	4.92	6.26	8.46	1.000	1.26	25	KDCM-25	TKDCM-25	-

Do not mount a smaller drill point than the D1 range listed for each drill body.

* Drill bodies for coolant through the point.

Metric shanks available as non-stock standards.

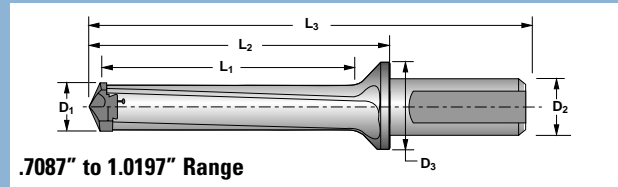
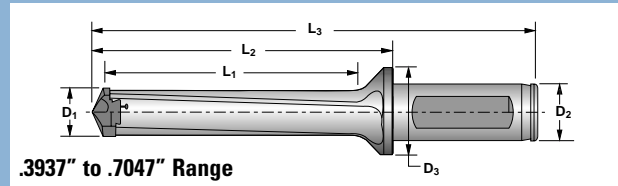
See pages 25-29 for replaceable drill points.

For technical information, see pages 95-99.

QWIKOTWIST™ REPLACEABLE POINT DRILLS - SERIES "Y"

Diameters
.3937" to 1.0197"

Length to Diameter Ratio
8:1



D ₁ Nom. Dia.	Body Number 8:1	L ₁ DOC	L ₂ Ext.	L ₃ Overall	D ₂ Shank Dia.	D ₃ Flange Dia.	Pocket Size	Clamping Key	Optional Torque Clamping Key	
										inch
.3937-.4291	10,0-10,9	YD1000080C0R01	3.15	3.70	5.59	.625	.79	10	KDCM-10	TKDCM-10
.4331-.4685	11,0-11,9	YD1100088C0R01	3.46	4.06	5.95	.625	.79	11	KDCM-11	TKDCM-11
.4724-.5079	12,0-12,9	YD1200096C0R01	3.78	4.42	6.31	.625	.79	12	KDCM-12	TKDCM-12
.5118-.5472	13,0-13,9	YD1300104C0R01	4.09	4.78	6.67	.625	.79	13	KDCM-13	TKDCM-13
.5512-.5866	14,0-14,9	YD1400112C0R01	4.41	5.17	7.06	.625	.79	14	KDCM-14	TKDCM-14
.5906-.6260	15,0-15,9	YD150012018R01	4.72	5.54	7.51	.750	.98	15	KDCM-15	TKDCM-15
.6299-.6654	16,0-16,9	YD160012818R01	5.04	5.90	7.87	.750	.98	16	KDCM-16	TKDCM-16
.6693-.7047	17,0-17,9	YD170013618R01	5.35	6.24	8.21	.750	.98	17	KDCM-17	TKDCM-17
.7087-.7441	18,0-18,9	YD1800144C8R01	5.67	6.62	8.82	1.000	1.26	18	KDCM-18	TKDCM-18
.7480-.7835	19,0-19,9	YD1900152C8R01	5.98	6.98	9.18	1.000	1.26	19	KDCM-19	TKDCM-19
.7874-.8228	20,0-20,9	YD2000160C8R01	6.30	7.37	9.57	1.000	1.26	20	KDCM-20	TKDCM-20
.8268-.8622	21,0-21,9	YD2100168C8R01	6.61	7.72	9.93	1.000	1.26	21	KDCM-21	TKDCM-21
.8661-.9016	22,0-22,9	YD2200176C8R01*	6.93	8.07	10.28	1.000	1.26	22	KDCM-22	TKDCM-22
.9055-.9409	23,0-23,9	YD2300184C8R01*	7.24	8.46	10.67	1.000	1.26	23	KDCM-23	TKDCM-23
.9449-.9803	24,0-24,9	YD2400192C8R01*	7.56	8.83	11.04	1.000	1.26	24	KDCM-24	TKDCM-24
.9843-1.0197	25,0-25,9	YD2500200C8R01*	7.87	9.20	11.41	1.000	1.26	25	KDCM-25	TKDCM-25

Do not mount a smaller drill point than the D1 range listed for each drill body.

* Drill bodies for coolant through the point.

Metric shanks available as non-stock standards.

See pages 25-29 for replaceable drill points.

For technical information, see pages 95-99.

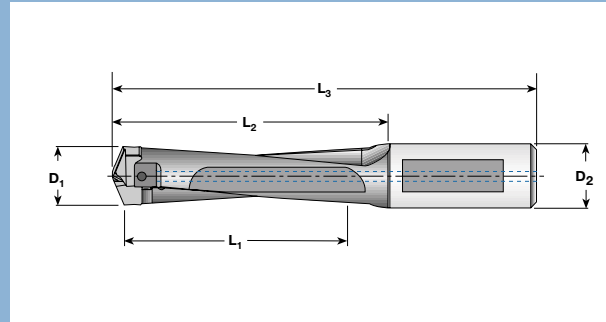
QWIKOTWIST™ SLIP FIT DRILLS - SERIES "Y"

Diameters
.2953-.8228"

Length to Diameter Ratio
3.5:1



Coolant



D1 Nom. Dia		Part Number	L ₁ DOC	L ₂ Ext	L ₃ Overall	D ₂ Shank Dia		Pocket Size	Clamping Key
inch	mm					inch	mm		
.2953-.3110	7,5-7,9	YD0750026SDR00	1.02	1.33	3.02	.315	8	8	KDCM-8
.3150-.3307	8,0-8,4	YD0800028SDR00	1.10	1.41	3.11	.315	8	8	KDCM-8
.3346-.3504	8,5-8,9	YD0850029SER00	1.14	1.45	3.15	.354	9	8	KDCM-8
.3543-.3701	9,0-9,4	YD0900031SER00	1.22	1.54	3.23	.354	9	9	KDCM-9
.3740-.3898	9,5-9,9	YD0950033SFR00	1.30	1.59	3.28	.394	10	9	KDCM-9
.3937-.4094	10,0-10,4	YD1000033SFR00	1.30	1.69	3.39	.394	10	10	KDCM-10
.4134-.4291	10,5-10,9	YD1050034SGR00	1.34	1.76	3.46	.433	11	10	KDCM-10
.4331-.4488	11,0-11,4	YD1100036SGR00	1.42	1.85	3.54	.433	11	11	KDCM-11
.4528-.4685	11,5-11,9	YD1150038SHR00	1.50	1.91	3.61	.472	12	11	KDCM-11
.4724-.4882	12,0-12,4	YD1200042SHR00	1.65	2.00	3.69	.472	12	12	KDCM-12
.4921-.5079	12,5-12,9	YD1250042SJR00	1.65	2.07	3.76	.512	13	12	KDCM-12
.5118-.5276	13,0-13,4	YD1300042SJR00	1.65	2.15	3.92	.512	13	13	KDCM-13
.5315-.5472	13,5-13,9	YD1350044SKR00	1.73	2.21	3.98	.551	14	13	KDCM-14
.5512-.5669	14,0-14,4	YD1400048SKR00	1.89	2.33	4.10	.551	14	14	KDCM-14
.5709-.5866	14,5-14,9	YD1450050SLR00	1.97	2.40	4.17	.591	15	14	KDCM-15
.5906-.6260	15,0-15,9	YD1500052SLR00	2.05	2.49	4.26	.591	15	15	KDCM-15
.6299-.6654	16,0-16,9	YD1600052SMR00	2.05	2.64	4.53	.630	16	16	KDCM-16
.6693-.7047	17,0-17,9	YD1700055SNR00	2.17	2.90	4.79	.669	17	17	KDCM-17
.7087-.7441	18,0-18,9	YD1800060SPR00	2.36	3.08	4.97	.709	18	18	KDCM-18
.7480-.7835	19,0-19,9	YD1900062SQR00	2.44	3.22	5.35	.748	19	19	KDCM-19
.7874-.8228	20,0-20,9	YD2000066SRR00	2.60	3.33	5.46	.787	20	20	KDCM-20

Do not mount a smaller drill point than the D1 range listed for each drill body.

See pages 25-29 for replaceable drill points.

For technical information, see page 102.

QWIK-TWIST™ TORQUE KEY



The number of drill point indexes is dependent on machine rigidity, workpiece stability and clamping, machining parameters, workpiece configuration, material coolant, coolant pressure and proper drill application.

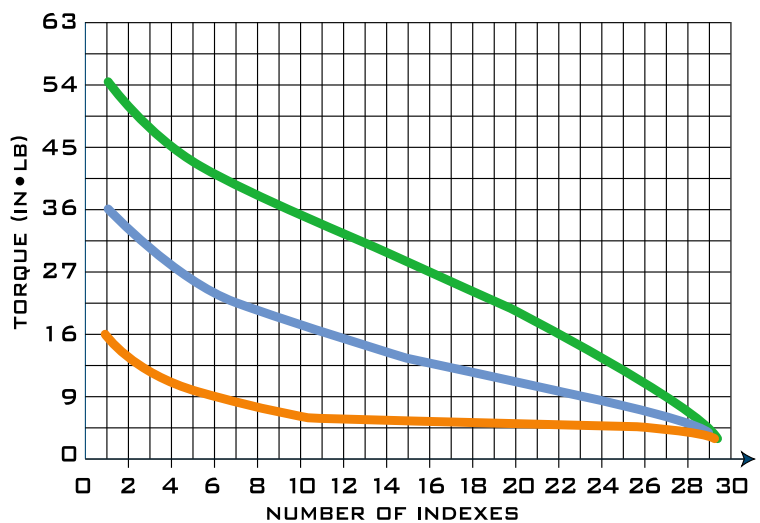
It is recommended to use the torque key for inspection purposes only, not as a substitute for the standard key provided with each drill body.



Torque keys are available for checking minimal clamping torque. If a "click" is not heard or felt while slowly unclamping with the torque key, the drill must be replaced

Key Part Number	Drill Pocket Size	Minimal Clamping Torque (in-lb)
TKDCM-8	8	1.3 - 1.8
TKDCM-9	9	1.3 - 1.8
TKDCM-10	10	1.9 - 2.1
TKDCM-11	11	1.9 - 2.1
TKDCM-12	12	1.9 - 2.1
TKDCM-13	13	1.9 - 2.1
TKDCM-14	14	1.9 - 2.1
TKDCM-15	15	1.9 - 2.1
TKDCM-16	16	1.9 - 2.1
TKDCM-17	17	2.3 - 2.6
TKDCM-18	18	2.3 - 2.6
TKDCM-19	19	2.3 - 2.6
TKDCM-20	20	2.3 - 2.6
TKDCM-21	21	2.7 - 3.1
TKDCM-22	22	2.7 - 3.1
TKDCM-23	23	2.7 - 3.1
TKDCM-24	24	2.7 - 3.1
TKDCM-25	25	2.7 - 3.1

TYPICAL UNLOCKING TORQUE RANGE



DIA=.669 - 1.020

DIA=.433 - .665

DIA=.295 - .429

QWIK-TWIST™ SLIP FIT CHAMFER SHANKS - SERIES "MHK"

Hole Diameters
.2953" - .8228"

Shanks
Adjustable depth drilling and
chamfering combination tools



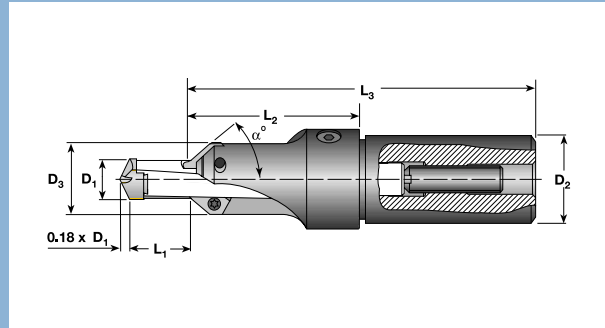
Chamfering



Drilling



Coolant



D1 Nom. Dia.	Slip Fit Drills Part No.	L1 Adjustment		Chamfer Part Number	*D2 Shank Dia	D3 Insert Dia	L2 Ext.	L3 OAL	Chamfer Inse Series
		Min ¹	Max ²						
.2953-.3110	YD0750026SDR00	.43	.81	MHK018047DBR01	1.000	.74	1.87	4.07	GOMT06...
.3150-.3307	YD0800028SDR00	.49	.85						
.3346-.3504	YD0850029SER00	.53	.98	MHK019047DBR01	1.000	.78	1.87	4.07	GOMT06...
.3543-.3701	YD0900031SER00	.55	1.00						
.3740-.3898	YD0950033SFR00	.61	1.08	MHK024067DBR01	1.000	.98	2.65	4.85	GOMT08...
.3937-.4094	YD1000033SFR00	.49	1.04						
.4134-.4291	YD1050034SGR00	.49	1.08	MHK025067DBR01	1.000	1.02	2.65	4.85	GOMT08...
.4331-.4488	YD1100036SGR00	.63	1.14						
.4528-.4685	YD1150038SHR00	.53	1.22	MHK026067DBR01	1.000	1.06	2.65	4.85	GOMT08...
.4724-.4882	YD1200042SHR00	.67	1.30						
.4921-.5079	YD1250042SJR00	.67	1.38	MHK027067DBR01	1.000	1.10	2.65	4.85	GOMT08...
.5118-.5276	YD1300042SJR00	.75	1.42						
.5315-.5472	YD1350044SKR00	.67	1.46	MHK028067DCR01	1.250	1.12	2.65	5.01	GOMT08...
.5512-.5669	YD1400048SKR00	.75	1.54						
.5709-.5866	YD1450050SLR00	.69	1.56	MHK029067DCR01	1.250	1.16	2.65	5.01	GOMT08...
.5906-.6260	YD1500052SLR00	.89	1.61						
.6299-.6654	YD1600052SMR00	.93	1.83	MHK030067DCR01	1.250	1.20	2.65	5.01	GOMT08...
.6693-.7047	YD1700055SNR00	1.00	1.95						
.7087-.7441	YD1800060SPR00	1.10	2.13	MHK032067DCR01	1.250	1.28	2.65	5.01	GOMT08...
.7480-.7835	YD1900062SQR00	1.30	2.36						
.7874-.8228	YD2000066SRR00	1.42	2.50	MHK034075DCR01	1.250	1.35	2.95	5.31	GOMT08...

1- Minimum adjustment is with the smallest drill point diameter in the range
 2- Minimum adjustment is with the largest drill point diameter in the range
 *Straight shank with whistle notch flat

For chamfer inserts see page 23.
 For replaceable points see page 25-29.
 For technical information, see page 102.

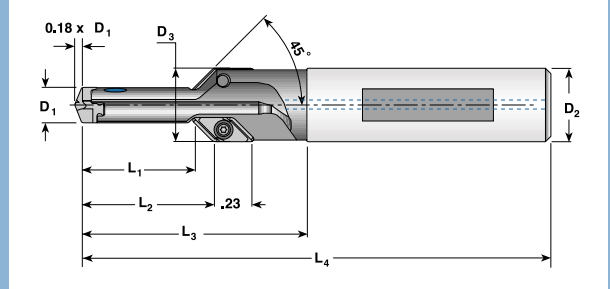
HARDWARE

Drill Range	Side Lock Screw	Rear Adjusting Screw	Lock Screw Key	Insert Screw	Torque (in-lbs)	Insert Screw Torx Blade	Insert Screw T-Handle
Chamfer Shank .2953"-.3701"	SA060-02	SC060-02	WS-0060	SM25-064-00	9-13	DS-T08W	-
Chamfer Shank .3740"-.8228"	SA100-02	SC100-02	DS-H05HB	SM40-093-20	30-35	DS-T15HB	DSHH06T

QWIK TWIST™ TAP DRILL/CHAMFER COMBO - SERIES "Y"

Tap Drills
M8-M24
UNC/UNF 3/8" - 7/8"

Combine tap drilling and chamfering in one operation.



Metric

Thread Size	D1		Body Number	General Purpose Drill Point	D1 Point Range	L1 Full Dia to Chamfer	L2 Full Dia to Top of Chamfer	L3 Ext	L4 OAL	D2		D3 Chamfer Dia	Pocket Size	Clamping Key
	Nom Point Size Inch	Nom Point Size mm								Shank Dia mm	Shank Dia			
M8	.2677	6,8	YC0680021SKR00	YAB0680R01	.2677 .2913	.827	.972	1.650	3.42	14	.551	.547	6,8	KDCM-8
M10	.3346	8,5	YC0830026SKR00	YAB0850R01	.3268 .3504	1.024	1.138	1.831	3.60	14	.551	.551	8	KDCM-8
M12	.4016	10,2	YC1000030SKR00	YAB1020R01	.3937 .4291	1.181	1.264	2.047	3.82	14	.551	.551	10	KDCM-10
M14	.4724	12,0	YC1200035SMR00	YAB1200R01	.4724 .5079	1.378	1.465	2.283	4.17	16	.630	.630	12	KDCM-12
M16	.5512	14,0	YC1400039SPR00	YAB1400R01	.5512 .5866	1.535	1.622	2.362	4.25	18	.709	.709	14	KDCM-14
M20	.6890	17,5	YC1730042SRR00	YAB1750R01	.6811 .7047	1.654	1.728	2.480	4.45	20	.787	.827	17	KDCM-17
M24	.8268	21,0	YC2100048SSR00	YAB2100R01	.8268 .8622	1.890	1.984	2.677	4.88	25	.984	1.004	21	KDCM-21

Reduce recommended feed for M8 drill by 10%.

Inch

Thread Size	D1		Body Number	General Purpose Drill Point	D1 Point Range	L1 Full Dia to Chamfer	L2 Full Dia to Top of Chamfer	L3 Ext	L4 OAL	D2		D3 Chamfer Dia	Pocket Size	Clamping Key
	Nom Point Size Inch	Nom Point Size mm								Shank Dia mm	Shank Dia Inch			
3/8 UNC	.3110	7,9	YC0770025RHR01	YAB0790R01	.3031 .3110	1.00	1.15	1.80	3.69	.625	15.88	.59	8	KDCM-8
3/8 UNF	.3346	8,5	YC0820025RHR01	YAB0850R01	.3228 .3504	1.00	1.15	1.80	3.69	.625	15.88	.61	8	KDCM-8
7/16 UNC	.3701	9,4	YC0910026RHR01	YAB0940R01	.3583 .3898	1.06	1.20	1.83	3.72	.625	15.88	.63	9	KDCM-9
7/16 UNF	.3898	9,9	YC0910026RHR01	YAB0990R01	.3819 .3898	1.06	1.18	1.82	3.71	.625	15.88	.63	9	KDCM-9
1/2 UNC	.4252	10,8	YC1050026RHR01	YAB1080R01	.4134 .4291	1.06	1.17	1.89	3.78	.625	15.88	.63	10	KDCM-10
1/2 UNF	.4528	11,5	YC1130026RHR01	YAB1150R01	.4449 .4685	1.06	1.15	1.89	3.78	.625	15.88	.63	11	KDCM-11
9/16 UNC	.4843	12,3	YC1210026RHR01	YAB1230R01	.4764 .5079	1.06	1.14	1.89	3.78	.625	15.88	.63	12	KDCM-12
9/16 UNF	.5118	13,0	YC1300026RHR01	YAB1300R01	.5118 .5472	1.06	1.12	1.89	3.78	.625	15.88	.63	13	KDCM-13
5/8 UNC	.5394	13,7	YC1330030RJR01	YAB1370R01	.5236 .5472	1.20	1.32	2.01	3.98	.750	19.05	.75	13	KDCM-13
5/8 UNF	.5748	14,6	YC1450030RJR01	YAB1460R01	.5709 .5866	1.20	1.29	2.03	4.00	.750	19.05	.75	14	KDCM-14
3/4 UNC	.6575	16,7	YC1650035RJR01	YAB1670R01	.6496 .6654	1.40	1.47	2.20	4.17	.750	19.05	.78	16	KDCM-16
3/4 UNF	.6890	17,5	YC1730035RLR01	YAB1750R01	.6811 .7047	1.40	1.50	2.20	4.40	1.000	25.40	.88	17	KDCM-17
7/8 UNC	.7677	19,5	YC1920041RLR01	YAB1950R01	.7559 .7835	1.65	1.78	2.48	4.68	1.000	25.40	1.00	19	KDCM-19
7/8 UNF	.8071	20,5	YC2040041RLR01	YAB2050R01	.8031 .8228	1.65	1.75	2.48	4.68	1.000	25.40	1.00	20	KDCM-20

For chamfer inserts see page 23. For replaceable points see page 25-29. For technical information, see page 102.

HARDWARE

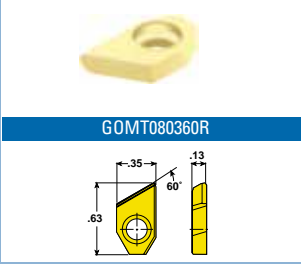
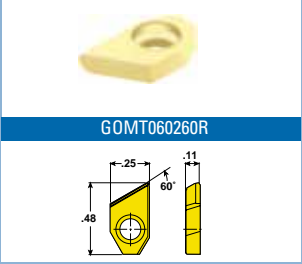
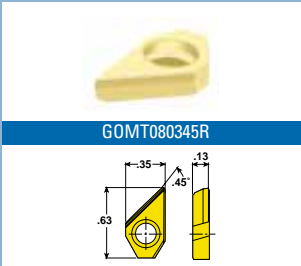
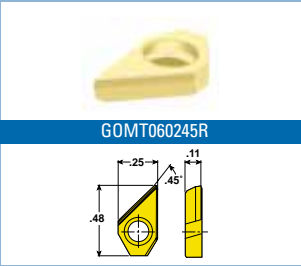
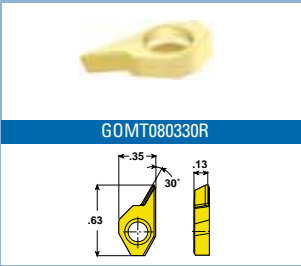
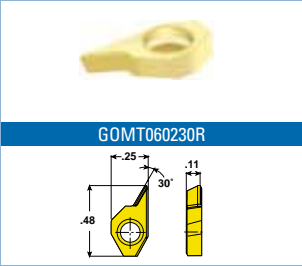
Chamfering Insert Screw Chamfering Insert Screw Key Torque (in-lbs)

SM22-046-00

DS-T07F

7-11

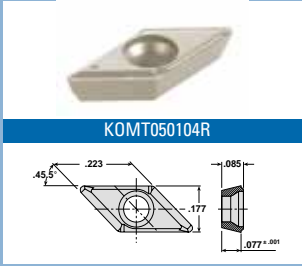
CHAMFER SHANK INSERTS



Insert Number	Application	Grade*	
		IN	2005
GOMT060230R	Multi-Purpose	■	■
GOMT080330R	Multi-Purpose	■	■
GOMT060245R	Multi-Purpose	■	■
GOMT080345R	Multi-Purpose	■	■
GOMT060260R	Multi-Purpose	■	■
GOMT080360R	Multi-Purpose	■	■

* For insert grade descriptions, see page 86.

TAP DRILL/CHAMFER COMBO DRILL INSERTS



Insert Number	Application	Grade*	
		IN	1505
KOMT050104R	Multi-Purpose	■	■

* For insert grade descriptions, see page 86.

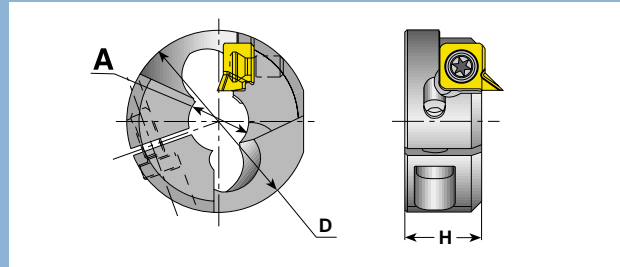
QWIK•TWIST™ CHAMFER RINGS - SERIES "CB"

Chamfer Hole Diameters
.394" to .787"

Chamfer Rings
Combine drilling and chamfering in one operation.



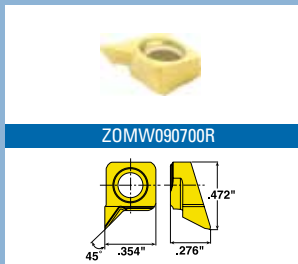
Chamfering



Ring Number	A Fits Quik•Twist Drill Series	Maximum Chamfer Size	D	H
CB100-01	YD1000 _____	.06" X 45°	1.26	.56
CB105-01	YD1050 _____	.06" X 45°	1.26	.56
CB110-01	YD1100 _____	.06" X 45°	1.38	.57
CB115-01	YD1150 _____	.06" X 45°	1.38	.57
CB120-01	YD1200 _____	.06" X 45°	1.48	.57
CB125-01	YD1250 _____	.06" X 45°	1.48	.57
CB130-01	YD1300 _____	.06" X 45°	1.54	.57
CB135-01	YD1350 _____	.06" X 45°	1.54	.57
CB140-01	YD1400 _____	.06" X 45°	1.61	.60
CB145-01	YD1450 _____	.06" X 45°	1.61	.60
CB150-01	YD1500 _____	.06" X 45°	1.69	.65
CB160-01	YD1600 _____	.08" X 45°	1.77	.67
CB170-01	YD1700 _____	.08" X 45°	1.85	.69
CB180-01	YD1800 _____	.08" X 45°	1.89	.71
CB190-01	YD1900 _____	.08" X 45°	1.97	.71
CB200-01	YD2000 _____	.08" X 45°	2.05	.71

Chamfer rings for use only with 3:1 and 5:1 Quik Twist drills.

INSERTS & HARDWARE



Insert Number	Application	Grade*	
		IN	1530
ZOMW090700R	Multi-Purpose	■	

* For insert grade descriptions, see page 86.

Ring Number	Insert Screw		Ring Clamp Screw	Driver		
	Part No.	Torque	Part No.	Insert Driver Blade	Clamp Screw Driver Blade	Driver Blade Handle
CB 100 to CB150	SM40-093-20	30-35 in. lbs.	SD050-A5	DS-T15HB	DS-T25HB	DSHH06T
CB 160 to CB200	SM40-093-20	30-35 in. lbs.	SD060-20	DS-T15HB	DS-H05HB	DSHH06T

For technical information, see pages 100-101.

QWIKOTWIST™ REPLACEABLE DRILL POINTS - SERIES "Y"

DRILL POINTS- .2677" TO .4291"



General Purpose



Cast Iron



D ₁ Drill Diameter		General Purpose Part Number	Cast Iron** Part Number	Pocket Size	Grade*	
inch	mm				IN	2005
.2677	6,8	YAB0680R01	YBB0680R01	6, 8		■
.2953	7,5	YAB0750R01	YBB0750R01	8		■
.2992	7,6	YAB0760R01	YBB0760R01	8		■
.3031	7,7	YAB0770R01	YBB0770R01	8		■
.3071	7,8	YAB0780R01	YBB0780R01	8		■
.3110	7,9	YAB0790R01	YBB0790R01	8		■
.3150	8,0	YAB0800R01	YBB0800R01	8		■
.3189	8,1	YAB0810R01	YBB0810R01	8		■
.3228	8,2	YAB0820R01	YBB0820R01	8		■
.3268	8,3	YAB0830R01	YBB0830R01	8		■
.3307	8,4	YAB0840R01	YBB0840R01	8		■
.3346	8,5	YAB0850R01	YBB0850R01	8		■
.3386	8,6	YAB0860R01	YBB0860R01	8		■
.3425	8,7	YAB0870R01	YBB0870R01	8		■
.3465	8,8	YAB0880R01	YBB0880R01	8		■
.3504	8,9	YAB0890R01	YBB0890R01	8		■
.3543	9,0	YAB0900R01	YBB0900R01	9		■
.3583	9,1	YAB0910R01	YBB0910R01	9		■
.3622	9,2	YAB0920R01	YBB0920R01	9		■
.3661	9,3	YAB0930R01	YBB0930R01	9		■
.3701	9,4	YAB0940R01	YBB0940R01	9		■
.3740	9,5	YAB0950R01	YBB0950R01	9		■
.3780	9,6	YAB0960R01	YBB0960R01	9		■
.3819	9,7	YAB0970R01	YBB0970R01	9		■
.3858	9,8	YAB0980R01	YBB0980R01	9		■
.3898	9,9	YAB0990R01	YBB0990R01	9		■
.3937	10,0	YAB1000R01	YBB1000R01	10		■
.3976	10,1	YAB1010R01	YBB1010R01	10		■
.4016	10,2	YAB1020R01	YBB1020R01	10		■
.4055	10,3	YAB1030R01	YBB1030R01	10		■
.4094	10,4	YAB1040R01	YBB1040R01	10		■
.4134	10,5	YAB1050R01	YBB1050R01	10		■
.4173	10,6	YAB1060R01	YBB1060R01	10		■
.4213	10,7	YAB1070R01	YBB1070R01	10		■
.4252	10,8	YAB1080R01	YBB1080R01	10		■
.4291	10,9	YAB1090R01	YBB1090R01	10		■

* For insert grade descriptions, see page 86.

** Cast iron point also effective in reducing burrs and breakout in steel applications.

QWIKOTWIST™ REPLACEABLE DRILL POINTS - SERIES "Y"

DRILL POINTS- .4331" TO .5866"

D ₁ Drill Diameter		General Purpose Part Number	Cast Iron** Part Number	Pocket Size	Grade*	
inch	mm				IN	2005
.4331	11,0	YAB1100R01	YBB1100R01	11		■
.4370	11,1	YAB1110R01	YBB1110R01	11		■
.4409	11,2	YAB1120R01	YBB1120R01	11		■
.4449	11,3	YAB1130R01	YBB1130R01	11		■
.4488	11,4	YAB1140R01	YBB1140R01	11		■
.4528	11,5	YAB1150R01	YBB1150R01	11		■
.4567	11,6	YAB1160R01	YBB1160R01	11		■
.4606	11,7	YAB1170R01	YBB1170R01	11		■
.4646	11,8	YAB1180R01	YBB1180R01	11		■
.4685	11,9	YAB1190R01	YBB1190R01	11		■
.4724	12,0	YAB1200R01	YBB1200R01	12		■
.4764	12,1	YAB1210R01	YBB1210R01	12		■
.4803	12,2	YAB1220R01	YBB1220R01	12		■
.4843	12,3	YAB1230R01	YBB1230R01	12		■
.4882	12,4	YAB1240R01	YBB1240R01	12		■
.4921	12,5	YAB1250R01	YBB1250R01	12		■
.4961	12,6	YAB1260R01	YBB1260R01	12		■
.5000	12,7	YAB1270R01	YBB1270R01	12		■
.5039	12,8	YAB1280R01	YBB1280R01	12		■
.5079	12,9	YAB1290R01	YBB1290R01	12		■
.5118	13,0	YAB1300R01	YBB1300R01	13		■
.5157	13,1	YAB1310R01	YBB1310R01	13		■
.5197	13,2	YAB1320R01	YBB1320R01	13		■
.5236	13,3	YAB1330R01	YBB1330R01	13		■
.5276	13,4	YAB1340R01	YBB1340R01	13		■
.5315	13,5	YAB1350R01	YBB1350R01	13		■
.5354	13,6	YAB1360R01	YBB1360R01	13		■
.5394	13,7	YAB1370R01	YBB1370R01	13		■
.5433	13,8	YAB1380R01	YBB1380R01	13		■
.5472	13,9	YAB1390R01	YBB1390R01	13		■
.5512	14,0	YAB1400R01	YBB1400R01	14		■
.5551	14,1	YAB1410R01	YBB1410R01	14		■
.5591	14,2	YAB1420R01	YBB1420R01	14		■
.5630	14,3	YAB1430R01	YBB1430R01	14		■
.5669	14,4	YAB1440R01	YBB1440R01	14		■
.5709	14,5	YAB1450R01	YBB1450R01	14		■
.5748	14,6	YAB1460R01	YBB1460R01	14		■
.5787	14,7	YAB1470R01	YBB1470R01	14		■
.5827	14,8	YAB1480R01	YBB1480R01	14		■
.5866	14,9	YAB1490R01	YBB1490R01	14		■

* For insert grade descriptions, see page 86.

** Cast iron point also effective in reducing burrs and breakout in steel applications.

DRILL POINTS- .5906" TO .7441"

D ₁ Drill Diameter		General Purpose Part Number	Cast Iron** Part Number	Pocket Size	Grade*	
inch	mm				IN	2005
.5906	15,0	YAB1500R01	YBB1500R01	15		■
.5945	15,1	YAB1510R01	YBB1510R01	15		■
.5984	15,2	YAB1520R01	YBB1520R01	15		■
.6024	15,3	YAB1530R01	YBB1530R01	15		■
.6063	15,4	YAB1540R01	YBB1540R01	15		■
.6102	15,5	YAB1550R01	YBB1550R01	15		■
.6142	15,6	YAB1560R01	YBB1560R01	15		■
.6181	15,7	YAB1570R01	YBB1570R01	15		■
.6220	15,8	YAB1580R01	YBB1580R01	15		■
.6260	15,9	YAB1590R01	YBB1590R01	15		■
.6299	16,0	YAB1600R01	YBB1600R01	16		■
.6339	16,1	YAB1610R01	YBB1610R01	16		■
.6378	16,2	YAB1620R01	YBB1620R01	16		■
.6417	16,3	YAB1630R01	YBB1630R01	16		■
.6457	16,4	YAB1640R01	YBB1640R01	16		■
.6496	16,5	YAB1650R01	YBB1650R01	16		■
.6535	16,6	YAB1660R01	YBB1660R01	16		■
.6575	16,7	YAB1670R01	YBB1670R01	16		■
.6614	16,8	YAB1680R01	YBB1680R01	16		■
.6654	16,9	YAB1690R01	YBB1690R01	16		■
.6693	17,0	YAB1700R01	YBB1700R01	17		■
.6732	17,1	YAB1710R01	YBB1710R01	17		■
.6772	17,2	YAB1720R01	YBB1720R01	17		■
.6811	17,3	YAB1730R01	YBB1730R01	17		■
.6850	17,4	YAB1740R01	YBB1740R01	17		■
.6890	17,5	YAB1750R01	YBB1750R01	17		■
.6929	17,6	YAB1760R01	YBB1760R01	17		■
.6968	17,7	YAB1770R01	YBB1770R01	17		■
.7008	17,8	YAB1780R01	YBB1780R01	17		■
.7047	17,9	YAB1790R01	YBB1790R01	17		■
.7087	18,0	YAB1800R01	YBB1800R01	18		■
.7126	18,1	YAB1810R01	YBB1810R01	18		■
.7165	18,2	YAB1820R01	YBB1820R01	18		■
.7205	18,3	YAB1830R01	YBB1830R01	18		■
.7244	18,4	YAB1840R01	YBB1840R01	18		■
.7283	18,5	YAB1850R01	YBB1850R01	18		■
.7323	18,6	YAB1860R01	YBB1860R01	18		■
.7362	18,7	YAB1870R01	YBB1870R01	18		■
.7402	18,8	YAB1880R01	YBB1880R01	18		■
.7441	18,9	YAB1890R01	YBB1890R01	18		■

* For insert grade descriptions, see page 86.

** Cast iron point also effective in reducing burrs and breakout in steel applications.

QWIKOTWIST™ REPLACEABLE DRILL POINTS - SERIES "Y"

DRILL POINTS- .7480" TO .9016"

D ₁ Drill Diameter inch	mm	General Purpose Part Number	Cast Iron** Part Number	Pocket Size	Grade*	
					IN	2005
.7480	19,0	YAB1900R01	YBB1900R01	19	■	
.7500	19,05	YAB1905R01	YBB1905R01	19	■	
.7520	19,1	YAB1910R01	YBB1910R01	19	■	
.7559	19,2	YAB1920R01	YBB1920R01	19	■	
.7598	19,3	YAB1930R01	YBB1930R01	19	■	
.7638	19,4	YAB1940R01	YBB1940R01	19	■	
.7677	19,5	YAB1950R01	YBB1950R01	19	■	
.7717	19,6	YAB1960R01	YBB1960R01	19	■	
.7756	19,7	YAB1970R01	YBB1970R01	19	■	
.7795	19,8	YAB1980R01	YBB1980R01	19	■	
.7835	19,9	YAB1990R01	YBB1990R01	19	■	
.7874	20,0	YAB2000R01	YBB2000R01	20	■	
.7913	20,1	YAB2010R01	YBB2010R01	20	■	
.7953	20,2	YAB2020R01	YBB2020R01	20	■	
.7992	20,3	YAB2030R01	YBB2030R01	20	■	
.8031	20,4	YAB2040R01	YBB2040R01	20	■	
.8071	20,5	YAB2050R01	YBB2050R01	20	■	
.8110	20,6	YAB2060R01	YBB2060R01	20	■	
.8150	20,7	YAB2070R01	YBB2070R01	20	■	
.8189	20,8	YAB2080R01	YBB2080R01	20	■	
.8228	20,9	YAB2090R01	YBB2090R01	20	■	
.8268	21,0	YAB2100R01	YBB2100R01	21	■	
.8307	21,1	YAB2110R01	YBB2110R01	21	■	
.8346	21,2	YAB2120R01	YBB2120R01	21	■	
.8386	21,3	YAB2130R01	YBB2130R01	21	■	
.8425	21,4	YAB2140R01	YBB2140R01	21	■	
.8465	21,5	YAB2150R01	YBB2150R01	21	■	
.8504	21,6	YAB2160R01	YBB2160R01	21	■	
.8543	21,7	YAB2170R01	YBB2170R01	21	■	
.8583	21,8	YAB2180R01	YBB2180R01	21	■	
.8622	21,9	YAB2190R01	YBB2190R01	21	■	
.8661	22,0	YAB2200R01	YBB2200R01	22	■	
.8701	22,1	YAB2210R01	YBB2210R01	22	■	
.8740	22,2	YAB2220R01	YBB2220R01	22	■	
.8750	22,22	YAB2222R01	YBB2222R01	22	■	
.8780	22,3	YAB2230R01	YBB2230R01	22	■	
.8819	22,4	YAB2240R01	YBB2240R01	22	■	
.8858	22,5	YAB2250R01	YBB2250R01	22	■	
.8898	22,6	YAB2260R01	YBB2260R01	22	■	
.8937	22,7	YAB2270R01	YBB2270R01	22	■	
.8976	22,8	YAB2280R01	YBB2280R01	22	■	
.9016	22,9	YAB2290R01	YBB2290R01	22	■	

** Cast iron point also effective in reducing burrs and breakout in steel applications.

DRILL POINTS- .9055" TO 1.0197"

D ₁ Drill Diameter		General Purpose Part Number	Cast Iron** Part Number	Pocket Size	Grade*	
inch	mm				IN	2005
.9055	23,0	YAB2300R01	YBB2300R01	23		■
.9094	23,1	YAB2310R01	YBB2310R01	23		■
.9134	23,2	YAB2320R01	YBB2320R01	23		■
.9173	23,3	YAB2330R01	YBB2330R01	23		■
.9213	23,4	YAB2340R01	YBB2340R01	23		■
.9252	23,5	YAB2350R01	YBB2350R01	23		■
.9291	23,6	YAB2360R01	YBB2360R01	23		■
.9331	23,7	YAB2370R01	YBB2370R01	23		■
.9370	23,8	YAB2380R01	YBB2380R01	23		■
.9409	23,9	YAB2390R01	YBB2390R01	23		■
.9449	24,0	YAB2400R01	YBB2400R01	24		■
.9488	24,1	YAB2410R01	YBB2410R01	24		■
.9528	24,2	YAB2420R01	YBB2420R01	24		■
.9567	24,3	YAB2430R01	YBB2430R01	24		■
.9606	24,4	YAB2440R01	YBB2440R01	24		■
.9646	24,5	YAB2450R01	YBB2450R01	24		■
.9685	24,6	YAB2460R01	YBB2460R01	24		■
.9724	24,7	YAB2470R01	YBB2470R01	24		■
.9764	24,8	YAB2480R01	YBB2480R01	24		■
.9803	24,9	YAB2490R01	YBB2490R01	24		■
.9843	25,0	YAB2500R01	YBB2500R01	25		■
.9882	25,1	YAB2510R01	YBB2510R01	25		■
.9921	25,2	YAB2520R01	YBB2520R01	25		■
.9961	25,3	YAB2530R01	YBB2530R01	25		■
1.0000	25,4	YAB2540R01	YBB2540R01	25		■
1.0039	25,5	YAB2550R01	YBB2550R01	25		■
1.0079	25,6	YAB2560R01	YBB2560R01	25		■
1.0118	25,7	YAB2570R01	YBB2570R01	25		■
1.0157	25,8	YAB2580R01	YBB2580R01	25		■
1.0197	25,9	YAB2590R01	YBB2590R01	25		■

* For insert grade descriptions, see page 86.

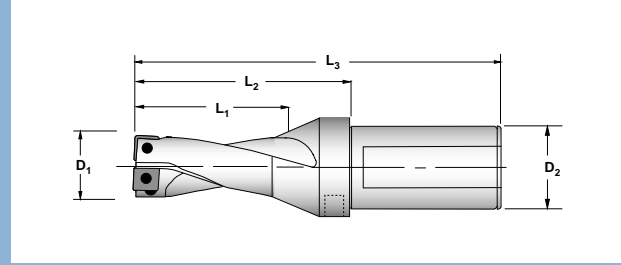
** Cast iron point also effective in reducing burrs and breakout in steel applications.

QUADODRILL⁺ SQUARE INSERT INDEXABLE DRILLS-2:1

Diameters
.500" to 2.000"

L:D Ratio
2:1

Geometry
Positive



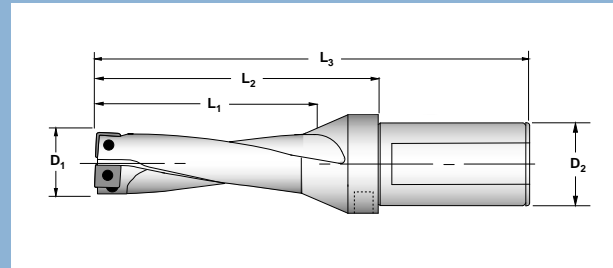
D ₁ Nom. Dia. inch	mm	New Drill Number	L ₁ Drilling Length	L ₂ Ext. frm Holder	L ₃ Overall Length	D ₂ Shank Style/Size	Num. of Inserts
.500	12,7	Q0127025N5R01	1.00	2.05	4.25	1.000 Universal	2
.531	13,5	Q0135027N5R01	1.06	2.13	4.33	1.000 Universal	2
.563	14,3	Q0143029N5R01	1.13	2.13	4.33	1.000 Universal	2
.594	15,0	Q0150030N5R01	1.19	2.24	4.44	1.000 Universal	2
.625	15,9	Q0159032N5R01	1.25	2.36	4.57	1.000 Universal	2
.657	16,7	Q0167033N5R01	1.31	2.44	4.65	1.000 Universal	2
.688	17,5	Q0175035N5R01	1.38	2.56	4.76	1.000 Universal	2
.719	18,3	Q0183037N5R01	1.44	2.56	4.76	1.000 Universal	2
.750	19,0	Q0191038N5R01	1.50	2.64	4.84	1.000 Universal	2
.781	19,8	Q0198040N5R01	1.56	2.80	5.00	1.000 Universal	2
.813	20,6	Q0206041N5R01	1.63	2.87	5.08	1.000 Universal	2
.843	21,4	Q0214042N5R02	1.69	2.95	5.16	1.000 Universal	2
.875	22,2	Q0222044N5R02	1.75	2.95	5.16	1.000 Universal	2
.906	23,0	Q0230046N6R01	1.81	3.19	5.55	1.250 Universal	2
.938	23,8	Q0238048N6R01	1.88	3.31	5.67	1.250 Universal	2
.969	24,6	Q0246049N6R01	1.94	3.43	5.79	1.250 Universal	2
1.000	25,4	Q0254051N6R01	2.00	3.50	5.87	1.250 Universal	2
1.031	26,2	Q0262052N6R01	2.06	3.50	5.87	1.250 Universal	2
1.063	27,0	Q0270054N6R01	2.13	3.58	5.94	1.250 Universal	2
1.094	27,8	Q0278056N6R02	2.19	3.70	6.06	1.250 Universal	2
1.125	28,6	Q0286057N6R02	2.25	3.78	6.14	1.250 Universal	2
1.156	29,4	Q0294059N6R01	2.31	3.98	6.34	1.250 Universal	2
1.187	30,2	Q0302060N6R01	2.37	3.98	6.34	1.250 Universal	2
1.219	31,0	Q0310062N6R01	2.44	4.09	6.45	1.250 Universal	2
1.250	31,7	Q0318063N6R01	2.50	4.17	6.53	1.250 Universal	2
1.281	32,5	Q0325065N6R01	2.56	4.29	6.65	1.250 Universal	2
1.312	33,3	Q0333067N6R01	2.62	4.29	6.65	1.250 Universal	2
1.343	34,1	Q0341068N6R02	2.69	4.37	6.73	1.250 Universal	2
1.375	34,9	Q0349070N6R02	2.75	4.49	6.85	1.250 Universal	2
1.406	35,7	Q0357071N6R02	2.81	4.61	6.97	1.250 Universal	2
1.437	36,5	Q0365073N6R01	2.87	4.72	7.08	1.250 Universal	2
1.468	37,3	Q0373075N6R01	2.94	4.72	7.08	1.250 Universal	2
1.500	38,1	Q0381076N6R01	3.00	4.84	7.20	1.250 Universal	2
1.531	38,9	Q0389078N6R01	3.06	4.92	7.28	1.250 Universal	2
1.562	39,7	Q0397079N6R01	3.12	5.04	7.40	1.250 Universal	2
1.594	40,5	Q0405081N6R01	3.19	5.16	7.52	1.250 Universal	2
1.625	41,3	Q0413083N6R01	3.25	5.16	7.52	1.250 Universal	2
1.687	42,8	Q0428086N6R02	3.37	5.35	7.71	1.250 Universal	2
1.719	43,7	Q0437087N6R01	3.44	5.43	7.79	1.250 Universal	2
1.750	44,5	Q0445089N6R01	3.50	5.59	7.95	1.250 Universal	2
1.781	45,2	Q0452090N7R01	3.56	5.59	8.35	1.500 Universal	2
1.813	46,0	Q0460092N7R01	3.63	5.71	8.46	1.500 Universal	2
1.875	47,6	Q0476095N7R01	3.75	5.91	8.66	1.500 Universal	2
1.937	49,2	Q0492098N7R01	3.87	5.98	8.74	1.500 Universal	2
1.969	50,0	Q0500100N7R01	3.94	6.10	8.86	1.500 Universal	2
2.000	50,8	Q0508102N7R01	4.00	6.22	8.98	1.500 Universal	2

For insert information, see page 34.

Diameters
.500" to 2.000"

L:D Ratio
3:1

Geometry
Positive



D ₁ Nom. Dia.		New Drill Number	L ₁ Drilling Length	L ₂ Ext. frm Holder	L ₃ Overall Length	D ₂ Shank Style/Size	Num. of Inserts
inch	mm						
.500	12,7	Q0127038N5R01	1.50	2.56	4.76	1.000 Universal	2
.531	13,5	Q0135041N5R01	1.59	2.68	4.88	1.000 Universal	2
.563	14,3	Q0143043N5R01	1.69	2.68	4.88	1.000 Universal	2
.594	15,0	Q0150045N5R01	1.78	2.83	5.03	1.000 Universal	2
.626	15,9	Q0159048N5R01	1.88	2.99	5.20	1.000 Universal	2
.657	16,7	Q0167050N5R01	1.97	3.11	5.31	1.000 Universal	2
.688	17,5	Q0175053N5R01	2.06	3.27	5.47	1.000 Universal	2
.719	18,3	Q0183055N5R01	2.16	3.27	5.47	1.000 Universal	2
.750	19,0	Q0191057N5R01	2.25	3.39	5.59	1.000 Universal	2
.781	19,8	Q0198059N5R01	2.34	3.58	5.79	1.000 Universal	2
.813	20,6	Q0206062N5R01	2.44	3.70	5.91	1.000 Universal	2
.843	21,4	Q0214064N5R02	2.53	3.82	6.02	1.000 Universal	2
.875	22,2	Q0222067N5R02	2.63	3.82	6.02	1.000 Universal	2
.906	23,0	Q0230069N6R01	2.72	4.09	6.46	1.250 Universal	2
.938	23,8	Q0238071N6R01	2.81	4.25	6.61	1.250 Universal	2
.969	24,6	Q0246074N6R01	2.91	4.41	6.77	1.250 Universal	2
1.000	25,4	Q0254076N6R01	3.00	4.53	6.89	1.250 Universal	2
1.031	26,2	Q0262079N6R01	3.09	4.53	6.89	1.250 Universal	2
1.063	27,0	Q0270081N6R01	3.19	4.65	7.01	1.250 Universal	2
1.094	27,8	Q0278083N6R02	3.28	4.80	7.17	1.250 Universal	2
1.125	28,6	Q0286086N6R02	3.38	4.92	7.28	1.250 Universal	2
1.156	29,4	Q0294088N6R01	3.47	5.16	7.52	1.250 Universal	2
1.187	30,2	Q0302090N6R01	3.56	5.16	7.52	1.250 Universal	2
1.219	31,0	Q0310093N6R01	3.66	5.31	7.67	1.250 Universal	2
1.250	31,7	Q0318095N6R01	3.75	5.43	7.79	1.250 Universal	2
1.281	32,5	Q0325098N6R01	3.84	5.59	7.95	1.250 Universal	2
1.312	33,3	Q0333100N6R01	3.94	5.59	7.95	1.250 Universal	2
1.343	34,1	Q0341102N6R02	4.03	5.71	8.07	1.250 Universal	2
1.375	34,9	Q0349105N6R02	4.13	5.87	8.23	1.250 Universal	2
1.406	35,7	Q0357107N6R02	4.22	6.02	8.38	1.250 Universal	2
1.437	36,5	Q0365110N6R01	4.31	6.18	8.54	1.250 Universal	2
1.468	37,3	Q0373112N6R01	4.40	6.18	8.54	1.250 Universal	2
1.500	38,1	Q0381114N6R01	4.50	6.34	8.70	1.250 Universal	2
1.531	38,9	Q0389117N6R01	4.59	6.46	8.82	1.250 Universal	2
1.562	39,7	Q0397119N6R01	4.69	6.61	8.97	1.250 Universal	2
1.594	40,5	Q0405122N6R01	4.78	6.77	9.13	1.250 Universal	2
1.625	41,3	Q0413124N6R01	4.88	6.77	9.13	1.250 Universal	2
1.687	42,8	Q0428128N6R02	5.06	7.05	9.41	1.250 Universal	2
1.719	43,7	Q0437131N6R01	5.16	7.17	9.53	1.250 Universal	2
1.750	44,5	Q0445134N6R01	5.25	7.36	9.72	1.250 Universal	2
1.781	45,2	Q0452136N7R01	5.34	7.36	10.12	1.500 Universal	2
1.813	46,0	Q0460138N7R01	5.44	7.52	10.28	1.500 Universal	2
1.875	47,6	Q0476143N7R01	5.63	7.80	10.55	1.500 Universal	2
1.937	49,2	Q0492148N7R01	5.81	7.91	10.67	1.500 Universal	2
1.969	50,0	Q0500150N7R01	5.91	8.07	10.83	1.500 Universal	2
2.000	50,8	Q0508152N7R01	6.00	8.23	10.98	1.500 Universal	2

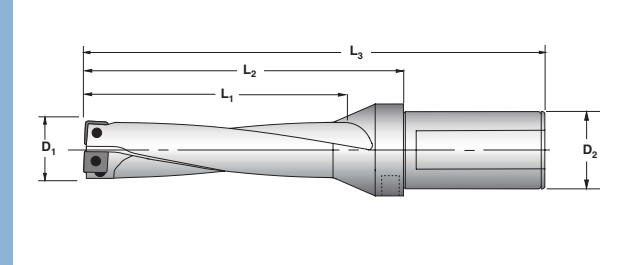
For insert information, see page 34.

QUAD⁺DRILL™ SQUARE INSERT INDEXABLE DRILLS-4:1

Diameters
.500" to 2.000"

L:D Ratio
4:1

Geometry
Positive



D ₁ Nom. Dia.		Drill Number	L ₁ Drilling Length	L ₂ Ext. frm Holder	L ₃ Overall Length	D ₂ Shank Style/Size	Num. of Inserts
inch	mm						
.500	12,7	Q0127051N5R01	2.00	3.07	5.27	1.000 Universal	2
.531	13,5	Q0135054N5R01	2.12	3.23	5.43	1.000 Universal	2
.563	14,3	Q0143057N5R01	2.25	3.23	5.43	1.000 Universal	2
.594	15,0	Q0150060N5R01	2.38	3.43	5.63	1.000 Universal	2
.626	15,9	Q0159064N5R01	2.50	3.62	5.83	1.000 Universal	2
.657	16,7	Q0167067N5R01	2.63	3.78	5.98	1.000 Universal	2
.688	17,5	Q0175070N5R01	2.75	3.98	6.18	1.000 Universal	2
.719	18,3	Q0183073N5R01	2.88	3.98	6.18	1.000 Universal	2
.750	19,0	Q0191076N5R01	3.00	4.13	6.34	1.000 Universal	2
.781	19,8	Q0198079N5R01	3.12	4.37	6.57	1.000 Universal	2
.813	20,6	Q0206082N5R01	3.25	4.53	6.73	1.000 Universal	2
.843	21,4	Q0214086N5R02	3.37	4.69	6.89	1.000 Universal	2
.875	22,2	Q0222089N5R02	3.50	4.69	6.89	1.000 Universal	2
.906	23,0	Q0230092N6R01	3.62	5.00	7.36	1.250 Universal	2
.938	23,8	Q0238095N6R01	3.75	5.20	7.56	1.250 Universal	2
.969	24,6	Q0246098N6R01	3.88	5.39	7.76	1.250 Universal	2
1.000	25,4	Q0254102N6R01	4.00	5.55	7.91	1.250 Universal	2
1.031	26,2	Q0262105N6R01	4.12	5.55	7.91	1.250 Universal	2
1.063	27,0	Q0270108N6R01	4.25	5.71	8.27	1.250 Universal	2
1.094	27,8	Q0278111N6R02	4.38	5.91	7.79	1.250 Universal	2
1.125	28,6	Q0286114N6R02	4.50	6.06	8.43	1.250 Universal	2
1.156	29,4	Q0294118N6R01	4.62	6.34	8.70	1.250 Universal	2
1.187	30,2	Q0302120N6R01	4.75	6.34	8.90	1.250 Universal	2
1.219	31,0	Q0310124N6R01	4.88	6.54	8.82	1.250 Universal	2
1.250	31,8	Q0318127N6R01	5.00	6.69	9.05	1.250 Universal	2
1.281	32,5	Q0325130N6R01	5.12	6.89	9.25	1.250 Universal	2
1.312	33,3	Q0333133N6R01	5.25	6.89	9.25	1.250 Universal	2
1.343	34,1	Q0341136N6R02	5.37	6.65	9.33	1.250 Universal	2
1.375	34,9	Q0349140N6R02	5.50	7.24	9.60	1.250 Universal	2
1.406	35,7	Q0357143N6R02	5.62	7.44	9.80	1.250 Universal	2
1.437	36,5	Q0365146N6R01	5.75	7.64	10.00	1.250 Universal	2
1.468	37,3	Q0373149N6R01	5.87	7.64	10.00	1.250 Universal	2
1.500	38,1	Q0381152N6R01	6.00	7.83	10.19	1.250 Universal	2
1.531	38,9	Q0389156N6R01	6.12	7.99	10.35	1.250 Universal	2
1.562	39,7	Q0397159N6R01	6.25	8.19	10.55	1.250 Universal	2
1.594	40,5	Q0405162N6R01	6.38	8.39	10.75	1.250 Universal	2
1.625	41,3	Q0413165N6R01	6.50	8.39	10.75	1.250 Universal	2
1.687	42,8	Q0428171N6R02	6.75	8.74	11.26	1.250 Universal	2
1.719	43,7	Q0437175N6R01	6.88	8.90	11.18	1.250 Universal	2
1.750	44,5	Q0445178N6R01	7.00	9.13	11.89	1.250 Universal	2
1.781	45,2	Q0452181N7R01	7.12	9.13	11.89	1.500 Universal	2
1.813	46,0	Q0460184N7R01	7.25	9.33	12.09	1.500 Universal	2
1.875	47,6	Q0476190N7R01	7.50	9.69	12.44	1.500 Universal	2
1.937	49,2	Q0492197N7R01	7.75	9.84	12.60	1.500 Universal	2
1.969	50,0	Q0500200N7R01	7.88	10.04	12.80	1.500 Universal	2
2.000	50,8	Q0508203N7R01	8.00	10.24	12.99	1.500 Universal	2

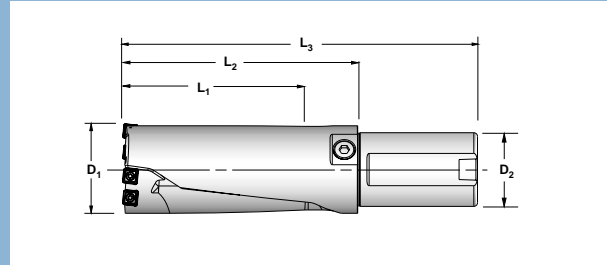
For insert information, see page 34.

QUADODRILL™ LARGE INDEXABLE DRILLS-2:1, 3:1

Diameters
2.125" to 3.250"

L:D Ratio
2:1, 3:1

Geometry
Neutral



2:1

D ₁ Nom. Dia.		Drill Number	L ₁ Drilling Length	L ₂ Ext. frm Holder	L ₃ Overall Length	D ₂ Shank Style/Size	Num. of Inserts
inch	mm						
2.125	53,9	Q0539108N8R01	4.25	6.00	9.25	2.000 Universal	4
2.250	57,1	Q0571114N8R01	4.50	6.00	9.25	2.000 Universal	4
2.375	60,3	Q0603121N8R01	4.75	6.50	9.75	2.000 Universal	4
2.500	63,5	Q0635127N8R01	5.00	6.38	9.63	2.000 Universal	4
2.625	66,6	Q0666133N8R01	5.25	6.75	10.00	2.000 Universal	4
2.750	69,8	Q0698140N8R01	5.50	7.00	10.25	2.000 Universal	4
2.875	73,0	Q0730146N8R01	5.75	7.25	10.50	2.000 Universal	4
3.000	76,2	Q0762152N8R01	6.00	7.50	10.75	2.000 Universal	4
3.250	82,5	Q0825165N8R01	6.50	8.00	11.25	2.000 Universal	4

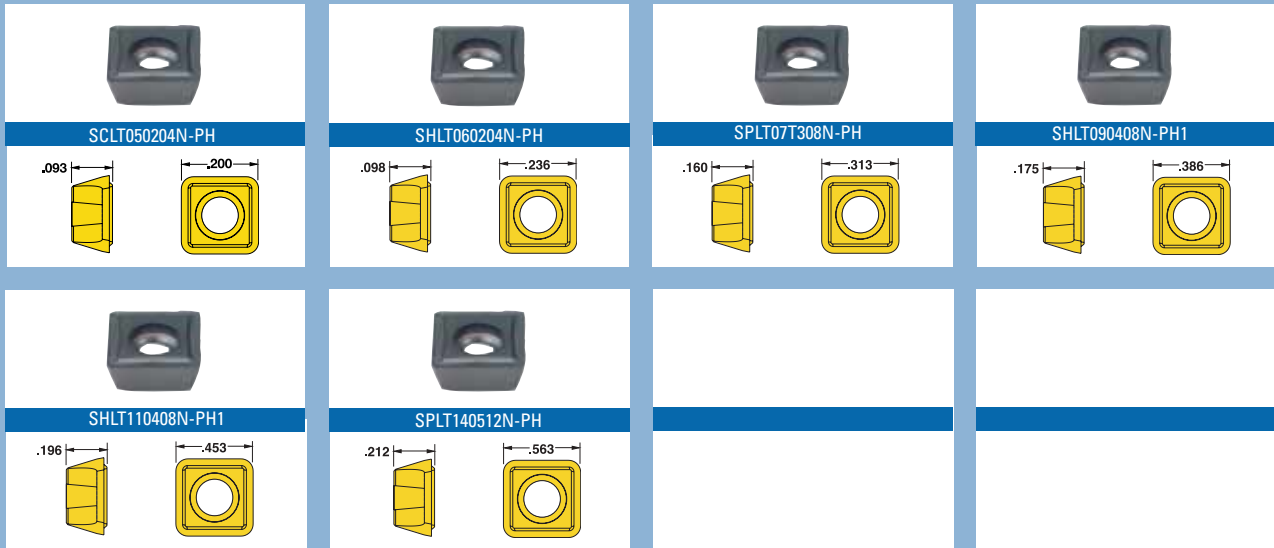
3:1

D Nom. Dia.		Drill Number	L ₁ Drilling Length	L ₂ Ext. frm Holder	L ₃ Overall Length	D ₂ Shank Style/Size	Num. of Inserts
inch	mm						
2.125	53,9	Q0539162N8R01	6.38	7.88	11.13	2.000 Universal	4
2.250	57,1	Q0571172N8R01	6.75	8.25	11.50	2.000 Universal	4
2.375	60,3	Q0603181N8R01	7.13	8.88	12.13	2.000 Universal	4
2.500	63,5	Q0635191N8R01	7.50	8.88	12.13	2.000 Universal	4
2.625	66,6	Q0666200N8R01	7.88	8.38	12.63	2.000 Universal	4
2.750	69,8	Q0698210N8R01	8.25	9.75	13.00	2.000 Universal	4
2.875	73,0	Q0730219N8R01	8.63	10.13	13.38	2.000 Universal	4
3.000	76,2	Q0762229N8R01	9.00	10.50	13.75	2.000 Universal	4
3.250	82,5	Q0825248N8R01	9.75	11.25	14.50	2.000 Universal	4

For insert information, see page 34.

QUAD^oDRILL™ QUAD^oDRILL⁺™ INSERTS

INSERTS

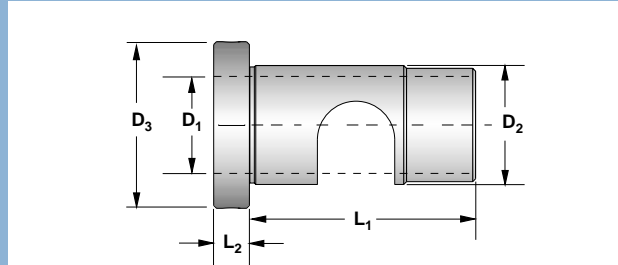
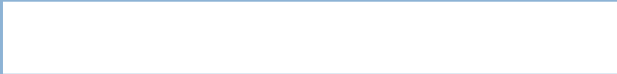


Drill Diameter	Insert Number	Corner	Grades*		
			IN	1030	2005
.500-.594	SCLT050204N-PH	.015R	■	■	
.625-.813	SHLT060204N-PH	.016R	■	■	
.843-1.063 + 2.125	SPLT07T308N-PH	.030R	■	■	
1.094-1.312, 2.250-2.750	SHLT090408N-PH1	.030R	■	■	
1.343-1.625, 2.875-3.000	SHLT110408N-PH1	.030R	■	■	
1.687 - 2.000 + 3.250	SPLT140512N-PH	.047R	■	■	

* For insert grade descriptions, see page 86.

HARDWARE

Insert Screw			Driver	Coolant Fitting
Drill Diameter	Part No.	Torque	Part No.	
.500-.594	SM20-043-00	5-9 in. lbs.	DS-TP06S	PF-0012
.625-.813	SM22-052-00	7-11 in. lbs.	DS-T07F (Tx-07)	PF-0012
.843-1.063 + 2.125	SM25-064-00	10-15 in. lbs.	DS-T08W (Tx-08)	PF-0013
1.094-1.312, 2.250-2.750	SM35-088-60	25-30 in. lbs.	DS-T10T (Tx-10)	-
1.343-1.625, 2.875-3.000	SM40-093-20	30-35 in. lbs.	DS-T15T (Tx-15)	-
1.687 - 2.000 + 3.250	SM50-122-50	40-45 in. lbs.	DS-T20T (Tx-20)	-



Bushing Number	D_1	D_2	D_3	L_1	L_2
BU16-16	1.00	1.25	1.75	2.00	0.38
BU24-44	1.25	1.50	2.00	2.10	0.38
BU32-02	1.50	2.00	2.50	2.44	0.38

For technical information, see page 108.



QUAD^oBORE™ CENTER-CUTTING COUNTER BORE TOOLS- SERIES "15S"

Diameters
.500" to 2.000"

L:D Ratio
1:1

Geometry
Positive



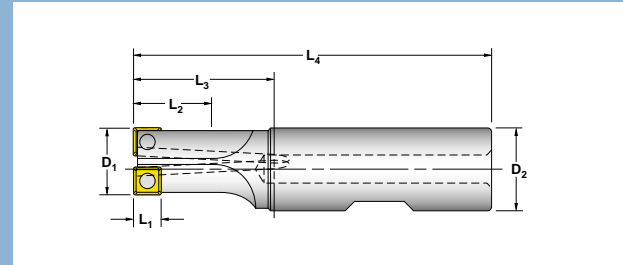
Plunging



Flat Bottom



Coolant



D ₁ Nom. Dia. inch	mm	Drill Number	L ₁ Cutting Edge	L ₂ Max C'bore Depth	L ₃ Ext. from Holder	L ₄ Overall Length	D ₂ Shank Size/Style	Num. of Inserts
.500	12,7	15S1D-0500884R01	.22	.50	.88	2.85	.750 Weldon	1
.625	15,8	15S1D-0601084R01	.22	.62	1.00	2.97	.750 Weldon	2
.719	18,2	15S1D-0701084R01	.22	.72	1.00	2.97	.750 Weldon	2
.750	19,0	15S1D-0701284R01	.22	.75	1.25	3.22	.750 Weldon	2
.813	20,6	15S1G-0801284R01	.40	.75	1.25	3.25	.750 Weldon	1
.844	21,4	15S1G-0801284R02	.40	.75	1.25	3.25	.750 Weldon	1
1.000	25,4	15S1F-1001580R01	.33	1.00	1.50	3.69	1.000 Weldon	2
1.187	30,1	15S1G-1102080R01	.40	1.18	2.00	4.25	1.000 Weldon	2
1.250	31,7	15S1G-1202080R01	.40	1.25	2.00	4.25	1.000 Weldon	2
1.375	34,9	15S1G-1302281R01	.40	1.38	2.25	4.50	1.250 Weldon	2
1.500	38,1	15S1G-1502281R01	.40	1.50	2.25	4.50	1.250 Weldon	2
1.625	41,2	15S1J-1602381R01	.53	1.63	2.38	4.63	1.250 Weldon	2
1.750	44,4	15S1J-1702681R01	.53	1.75	2.62	4.82	1.250 Weldon	2
2.000	50,8	15S1J-2003081R01	.53	2.00	3.00	5.61	1.250 Weldon	2

HARDWARE

Insert Screw			Driver
Drill Diameter	Part No.	Torque	New Part No.
.500-.750	SM22-052-00	7-11 in. lbs.	DS-T07F (Tx-07)
.813-1.000	SM40-080-30	30-35 in. lbs.	DS-T15T (Tx-15)
1.187-1.500	SM40-093-20	30-35 in. lbs.	DS-T15T (Tx-15)
1.625	SM50-096-20	40-45 in. lbs.	DS-T20T (Tx-20)
1.750-2.000	SM50-127-10	40-45 in. lbs.	DS-T20T (Tx-20)

For technical information, see pages 109 and 110.

Insert Loading-15S: Insert Series R.

Right **Wrong**

Series R inserts have only two cutting edges and must be loaded into the pockets properly or damage to the tool may result.

For insert informaton see page 38.

For technical information, see pages 109 and 110.

QUAD^oBORE™ INDEXABLE COUNTER BORING TOOLS- SERIES "15C"

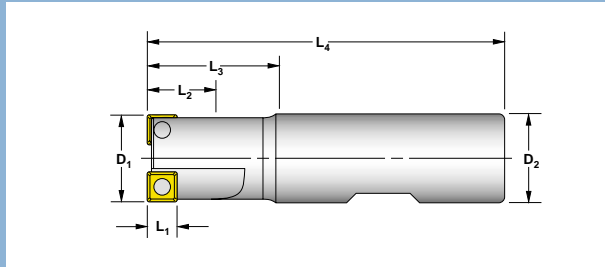
Diameters .438" to 2.000"	L:D Ratio 1:1	Geometry Positive
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Plunging



Flat Bottom



D ₁ Nom. Dia. inch	mm	Drill Number	L ₁ Cutting Edge	L ₂ Max C'bore Depth	L ₃ Ext. from Holder	L ₄ Overall Length	D ₂ Shank Size/Style	Number of Inserts	Min. Cored Hole Dia.	
									Socket Head Cap Screw	Min. Cored Hole Dia.
.438	11,1	15C1D-0400884R01	.22	.44	.88	2.85	.750 Weldon	1	1/4	.150
.531	13,4	15C1D-0500884R01	.22	.53	.88	2.85	.750 Weldon	1	5/16	.230
.625	15,8	15C1D-0601084R01	.22	.62	1.00	2.97	.750 Weldon	2	3/8	.320
.719	18,2	15C1D-0701084R01	.22	.72	1.00	2.97	.750 Weldon	2	7/16	.420
.812	20,6	15C1E-0801284R01	.28	.81	1.25	3.25	.750 Weldon	2	1/2	.250
1.000	25,4	15C1G-1001580R01	.40	1.00	1.50	3.75	1.000 Weldon	2	5/8	.250
1.187	30,1	15C1G-1102080R01	.40	1.18	2.00	4.25	1.000 Weldon	2	3/4	.437
1.250	31,7	15C1G-1202080R01	.40	1.25	2.00	4.25	1.000 Weldon	2	-	.500
1.375	34,9	15C1G-1302281R01	.40	1.38	2.25	4.50	1.250 Weldon	3	-	.625
1.500	38,1	15C1G-1502281R01	.40	1.50	2.25	4.50	1.250 Weldon	3	-	.750
1.500	38,1	15C1G-1503781R01	.40	1.00	3.75	6.00	1.250 Weldon*	3	-	.750
1.750	44,4	15C1J-1702681R01	.53	1.75	2.62	4.82	1.250 Weldon	2	-	.880
2.000	50,8	15C1J-2003081R01	.53	2.00	3.00	5.25	1.250 Weldon	4	-	1.120

*Modified Weldon shank for more extension.

HARDWARE

Insert Screw			Driver
Drill Diameter	Part No.	Torque	New Part No.
0.438	SM22-037-00	7-11 in. lbs.	DS-T07F (Tx-07)
.531-.719	SM22-052-30	7-11 in. lbs.	DS-T07F (Tx-07)
0.812	SM30-065-20	13-18 in. lbs.	DS-T09W (Tx-09)
1.000-1.500	SM40-093-20	30-35 in. lbs.	DS-T15T (Tx-15)
1.750	SM50-127-10	40-45 in. lbs.	DS-T20T (Tx-20)
2.000	SM50-096-20	40-45 in. lbs.	DS-T20T (Tx-20)

For technical information, see pages 109 and 110.

Insert Loading-15C: Insert Series R.

Right **Wrong**

Series R inserts have only two cutting edges and must be loaded into the pockets properly or damage to the tool may result.

For insert informaton see page 38.

For technical information, see pages 109 and 110.

QUAD^oBORE™ INDEXABLE COUNTER BORING INSERTS

INSERTS

 <p>SPLT060204R-DM04</p> 	 <p>SPLT060204R</p> 	 <p>SDLT07T308N-PS</p> 	 <p>SDLT07T308N-PH</p> 
 <p>SHLT090408N-FS</p> 	 <p>SHLT090416N-FS</p> 	 <p>SHLT090408N-PH</p> 	 <p>SHLT110408N-FS</p> 
 <p>SHLT110416N-FS</p> 	 <p>SHLT110408N-PH</p> 	 <p>SHLT110408TN-HR</p> 	 <p>SHLT140508N-FS</p> 
 <p>SHLT140516N-FS</p> 	 <p>SHLT140508N-PH</p> 	 <p>SHLT140508TN-HR</p> 	

*For Insert Descriptions, see page 86.

***DM04 Series:** Designed with 4 cutting edges and is suitable for use in all materials.

***R Series:** Designed with 2 cutting edges for use in materials such as steels, cast irons, stainless, carbon and alloyed steels.

***PS Series:** Designed with 4 cutting edges for use in materials that tend to drill easily but are too malleable to break.

***FS Series:** Designed with 4 cutting edges for use in materials such as steels, cast irons, stainless, carbon and alloyed steels.

***PH Series:** Designed with 4 cutting edges for use in materials such as steels, cast irons, stainless, carbon, alloyed steels, aluminum and high temp alloys.

***HR Series:** Designed with 4 cutting edges for use in materials such as steels, cast irons, stainless, carbon, alloyed steels, aluminum and high temp alloys.

15C				Grade*									
Counterbore Diameter		Insert Number	Corner										
inch	mm			IN	30M	40P	1030	1040	2005	6515	6530		
.438 to .719	11,1 to 18,2	SPLT060204R-DM04	.016R				■						
.438 to .719	11,1 to 18,2	SPLT060204R	.016R		■		■	■					
.812	20,6	SDLT07T308N-PS	.030R				■						
.812	20,6	SDLT07T308N-PH	.030R							■			
1.000 to 1.500	25,4 to 38,1	SHLT110408N-FS	.030R				■			■		■	
1.000 to 1.500	25,4 to 38,1	SHLT110416N-FS	.060R				■						
1.000 to 1.500	25,4 to 38,1	SHLT110408TN-PH	.030R							■			
1.000 to 1.500	25,4 to 38,1	SHLT110408N-HR	.030R		■	■	■			■			■
1.750 to 2.000	44,4 to 50,8	SHLT140508N-FS	.030R				■			■		■	
1.750 to 2.000	44,4 to 50,8	SHLT140516N-FS	.060R				■					■	
1.750 to 2.000	44,4 to 50,8	SHLT140508N-PH	.030R							■			
1.750 to 2.000	44,4 to 50,8	SHLT140508TN-HR	.030R		■	■	■			■			■

* For insert grade descriptions, see page 86.

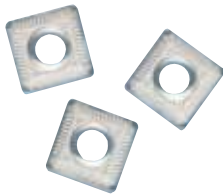
15S				Grade*									
Center Cutting Counterbore Diameter		Insert Number	Corner										
inch	mm			IN	30M	40P	1030	1040	2005	6515	6530		
.500 to .750	11,1 to 19,0	SPLT060204R-DM04	.016R				■						
.500 to .750	11,1 to 19,0	SPLT060204R	.016R		■		■	■					
.500 to .750	11,1 to 19,0	SPLT060204-DM	.016R										
.813 to 1.500	20,7 to 38,1	SHLT110408N-FS	.030R				■			■		■	
.813 to 1.500	20,7 to 38,1	SHLT110416N-FS	.060R				■					■	
.813 to 1.500	20,7 to 38,1	SHLT110408N-PH	.030R				■						
.813 to 1.500	20,7 to 38,1	SHLT110408N-HR	.030R		■		■			■			
1.000	25,4	SHLT090408N-FS	.030R				■			■		■	
1.000	25,4	SHLT090416N-FS	.060R				■					■	
1.000	25,4	SHLT090408N-PH	.030R							■			
1.625 to 2.000	41,2 to 50,8	SHLT140508N-FS	.030R				■			■		■	
1.625 to 2.000	41,2 to 50,8	SHLT140516N-FS	.060R				■					■	
1.625 to 2.000	41,2 to 50,8	SHLT140508N-PH	.030R				■						
1.625 to 2.000	41,2 to 50,8	SHLT140508N-HR	.030R		■	■	■			■			■

* For insert grade descriptions, see page 86.

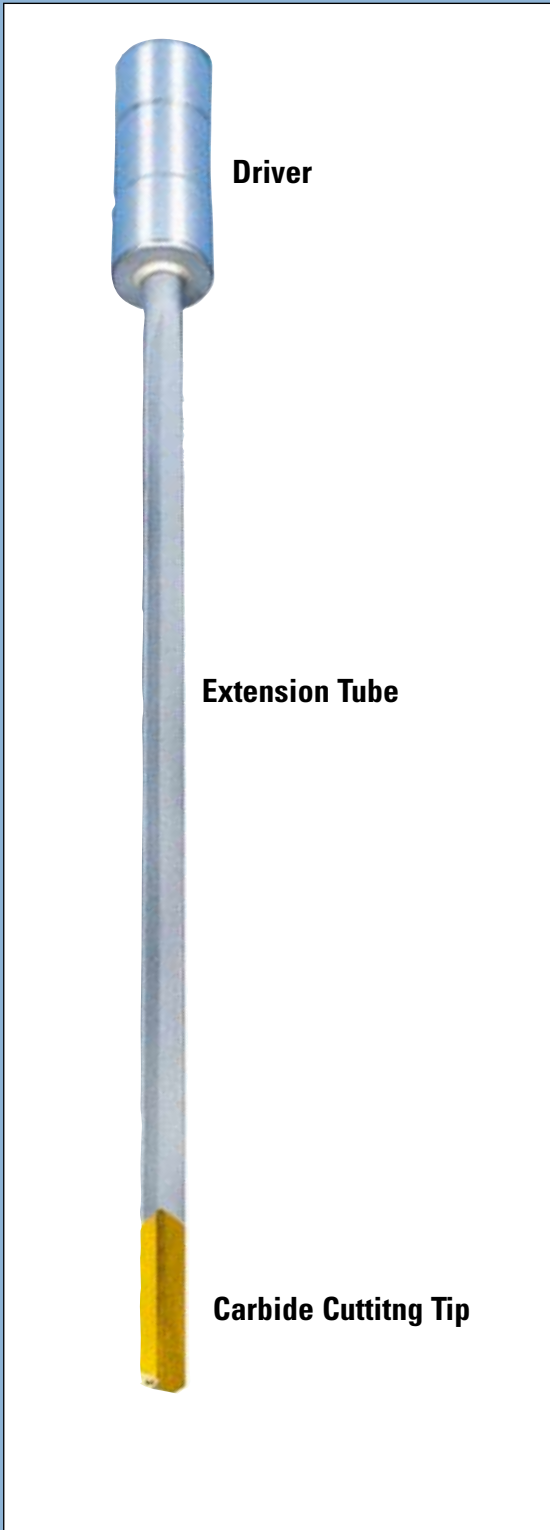
Optional Inserts

Insert Series SHLT110408TN-HR & SHLT140508TN-HR for End Milling.

Series 15C1G, 15C1J, 15S1G and 15S1TJ can use optional insert Series SHLT110408TN-HR & SHLT140508TN-HR. These inserts include a chipbreaker designed to enhance chip formation when end milling. Do not use Series SHLT110408TN-HR or SHLT140508TN-HR inserts for counterboring applications.



QWIKOGUN™ SINGLE FLUTE BRAZED GUN DRILLS



Diameter Range (inch): Ø0.100" to Ø1.575"

Length Range (inch): 5.9" to 118.0"

Advantages:

- Hole tolerance of IT7 to IT9 attainable
- Excellent straightness and concentricity
- Reduced true position deviation
- Surface finish Ra 0.4 to 1.6 easily achieved
- Often eliminates secondary reaming operation

The Carbide Cutting Tip

Available with 4 different standard cutting geometries, 8 different standard pad forms and 4 coating options for a multitude of possibilities.

The Extension Tube

Designed with a crimped "V" flute and large coolant ports. The hardened steel extension tube provides the optimal conditions for twist resistance, coolant flow and chip evacuation.

The Driver

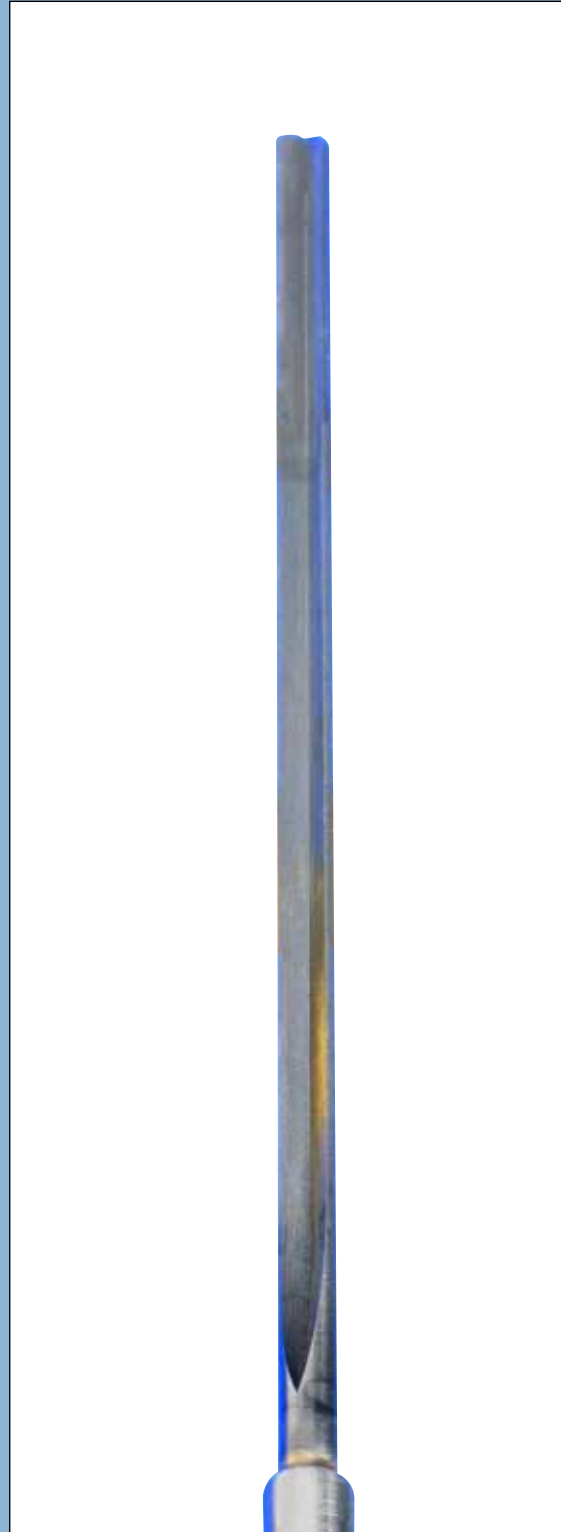
The steel driver provides the means to clamp the gundrill into the machine tool.

QWIK-GUN™ SOLID CARBIDE GUNDRILLS

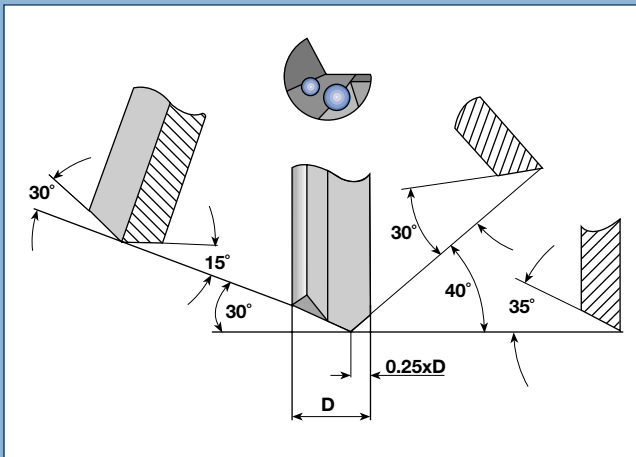
Diameter Range (inch): Ø.055" to Ø.630"

Length Range (inch): 40 x Drill Diameter up to 7.874" flute length

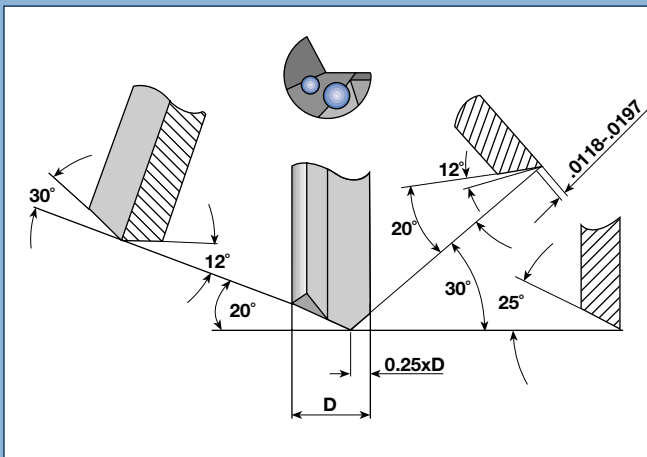
Made with an integral cutting tip and extension tube with either a steel or carbide driver. The solid carbide gun drill is designed for use in conventional machining centers and lathes. These drills provide superior rigidity with optimum coolant flow. As a result, speeds and feeds up to 100% faster may be obtained.



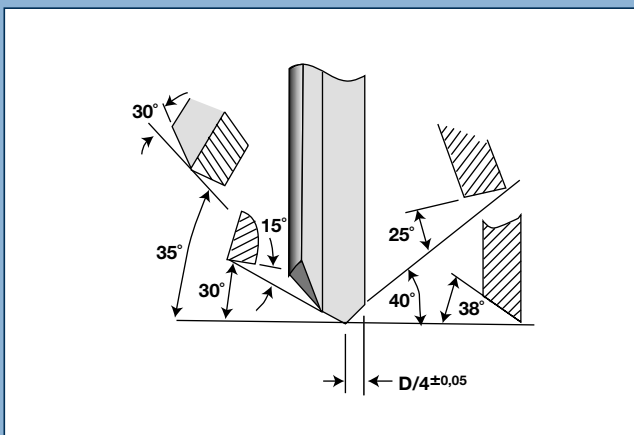
STANDARD GUN DRILL SHARPENING ANGLES



Standard sharpening for diameters less than .157"



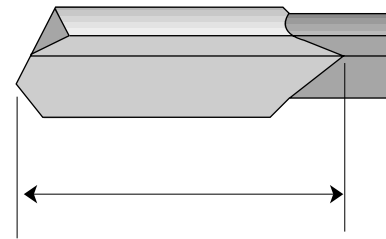
Standard sharpening for diameters greater than .157"



Optional sharpening for materials where it is difficult to break a chip.

Depending on the required tolerance, cutting performance and desired chip shape, the following standard sharpening angles are recommended

Standard Gundrill Carbide Length

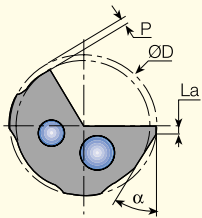


Diameter Range	Head Length
.098" - .149"	.787"
.150" - .159"	.906"
.160" - .199"	.094"
.200" - .258"	1.181"
.259" - .435"	1.378"
.436" - .722"	1.575"
.723" - .841"	1.772"
.842" - .919"	1.970"
.920" - 1.037"	2.165"
1.038" - 1.260"	2.560"

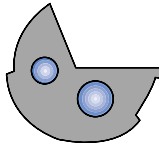
STANDARD GUN DRILL PAD FORMS

Drilling capacity and hole finish are dependent on the geometrical shape of the drill head. Both the pad form and the sharpening must be matched to the workpiece material. The pad form is determined when the tool is manufactured. Regrinding may change the cutting geometry, but the pad form will remain the same.

All cross section profile parameters such as: P, La and α must be precisely matched to the workpiece material properties.



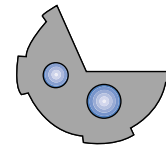
Universal G Form



Applications:

For all material groups
Works well in materials that tend to shrink
Maintains precision bore tolerance and straightness

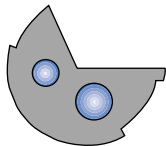
Standard A Form



Applications:

For cast iron & aluminum alloys (coated)
Drilling through cross holes and angled entry and exits
Large gap between pads ensures good lubrication

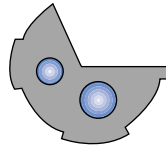
Standard B Form



Applications:

For cast iron & aluminum alloys
Maintains high precision hole tolerances
Excellent surface finish

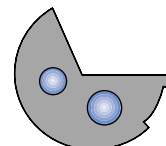
Standard C Form



Applications:

With larger back taper for use in materials that tend to shrink.
(Some alloys and stainless)
Drilling through cross holes and angled entry and exit
Not recommended for precise straightness control

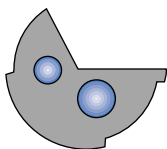
Standard D Form



Applications:

For cast iron only (with coating)
Works very well in grey cast iron

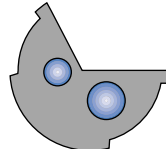
Standard E Form



Applications:

General purpose for all materials
Commonly used in crankshaft and other forged materials
Precise straightness control

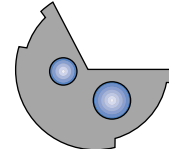
Standard H Form



Applications:

For all non-ferrous materials
For cast iron greater than .200" hole diameter
Can be used in wood & plastic with a larger back taper

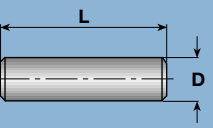
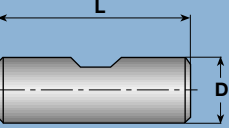
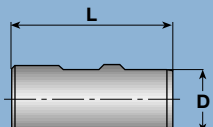
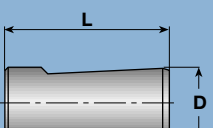
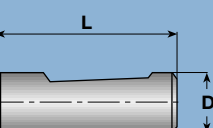
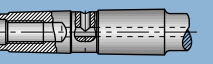

Standard I Form



Applications:

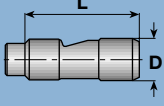
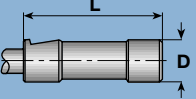
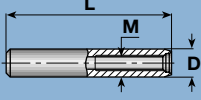
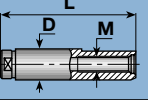
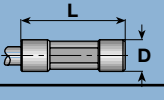
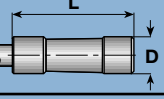
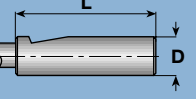
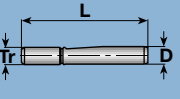
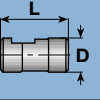
For aluminum and brass when best surface finish is required
Can be used in cross hole and interrupted cut applications

STANDARD GUN DRILL DRIVERS FOR MACHINING CENTERS, LATHES, ETC.

Driver Type	Drawing	ØD x L	Driver Code	Carbide Tipped Gun Drills	Solid Carbide Gun Drills
Cylindrical DIN1835A DIN6535HA		.157x1.102	01	•	•
		.197x1.102	02		•
		.236x1.417	03	•	•
		.315x1.417	04	•	•
		.394x1.575	05	•	•
		.472x1.772	06	•	•
		.551x1.772	07		•
		.630x1.890	08	•	•
		.709x1.890	09		
		.787x1.968	10	•	
		.984x2.205	11	•	
		1.260x2.362	12	•	
		1.575x2.756	13		
		1.969x3.150	14		
		2.480x3.543	15		
Weldon DIN1835B		.236x1.417	16	•	
		.315x1.417	17	•	
		.394x1.575	18	•	•
		.472x1.772	19	•	•
		.630x1.890	20	•	•
		.709x1.890	21		
		.787x1.968	22	•	•
		.984x2.205	23	•	
		1.260x2.362	24	•	
		1.575x2.756	25		
		1.968x3.150	26		
		2.48x3.543	27		
DIN6535HB		.236x1.417	28	•	
		.315x1.417	29	•	
		.394x1.575	30	•	•
		.472x1.772	31	•	•
		.630x1.890	32	•	•
		.709x1.890	33		
		.787x1.968	34	•	•
		.984x2.205	35	•	
		1.26x2.362	36	•	
		1.575x2.756	37		
Whistle Notch DIN1835E		.236x1.417	38	•	
		.315x1.417	39	•	
		.394x1.575	40	•	•
		.472x1.772	41	•	•
		.630x1.890	42	•	•
		.709x1.890	43		
		.787x1.968	44	•	•
		.984x2.205	45	•	
		1.26x2.362	46	•	
		1.575x2.756	47		
Whistle Notch DIN6535HE		.236x1.417	48	•	
		.315x1.417	49	•	
		.394x1.575	50	•	•
		.472x1.772	51	•	•
		.630x1.890	52	•	•
DIN228AK		CM1	45		
		CM2	46	•	
		CM3	47		
		CM4	48		
DIN228BK		CM1	49		
		CM2	50	•	
		CM3	51		
		CM4	52		

• Recommended style

STANDARD GUN DRILL DRIVERS FOR GUN DRILL MACHINES

Driver Type	Drawing	D x L	Driver Code	Carbide Tipped Gun Drills	Solid Carbide Gun Drills
Central Clamping Surface 15°		.236x1.181	53		•
		.394x1.575	54	•	•
		.630x1.772	55	•	
		.750x2.748	56	•	
		.984x2.756	57	•	
		1.00x2.748	58	•	
		1.25x2.748	59	•	
1.50x2.748	60				
Frontal Clamping Surface 15°		.630x1.968	61	•	
Cylindrical with Thread		.394x1.968 M6X0.5	62		•
		.394x2.362 M6X0.5	63	•	
		.500x1.968 M6x0.5	64		•
		.630x3.150 M10X1	65	•	•
		.984x3.937 M16x1.5	66	•	
		1.417x4.724 M24x1.5	67		
VDI Design		.394x2.677 M6x0.5	68	•	
		.630x3.543 M10x1	69	•	•
		.984x4.409 M16x1.5	70	•	
		1.417x5.315 M24x1.5	71		
Central Clamping Hexagonal		.984x2.756	72	•	
		1.26x2.756	73	•	
Central Clamping Tapered		.500x1.500	74	•	•
		.630x2.756	75		
		.750x2.748	76	•	
		.787x2.756	77		
Frontal Clamping Surface 2°		.500x1.500	78	•	
		.750x2.748	79	•	
		1.00x2.748	80	•	
		1.00x3.937	81	•	
		1.25x2.748	82	•	
		1.25x3.937	83	•	
		1.50x2.748	84		
1.50x3.937	85				
Trapezoidal Thread		.630x4.409 Tr 16x1.5	86	•	
		.787x4.960 Tr 20x2	87	•	
		1.102x4.960 Tr 28x2	88	•	
		1.417x6.378 Tr 36x2	89		
Spraymist Driver		.630x1.575	90	•	
		.984x1.968	91	•	
		1.378x2.362	92	•	

• Recommended style

■ BRAZED GUN DRILLS

All Ingersoll brazed gun drills are made to order. Standard gun drill components, carbide tips, extension tubes and drivers are kept in stock.

STANDARD DESIGN

- Standard diameters:
 - Ø.098" to .787" available in .004" increments
 - Ø.788" to 1.260" available in .039" (1mm) increments
- Standard sub-micron carbide Grade (K15)
- Standard inch sizes in stock: 1/4, 7/16, 3/8, 1/2, 9/16, 5/8, 3/4
- Standard pad form = G form (Standard inch sizes = E form)
- Standard back taper (0.07%)
- Standard sharpening
- Uncoated
- Standard driver

SEMI-STANDARD DESIGN

- Out of standard diameter range
- Any other pad form from the catalog other than G or E
- Special surface finish
- Any coating

SPECIAL DESIGN

- Any non-catalog specification

■ SOLID CARBIDE GUN DRILLS

All Ingersoll solid carbide gun drills are made to order. Standard solid carbide gun drills and drivers are kept in stock.

STANDARD DESIGN

- Standard sub-micron carbide Grade (K15)
- Standard pad form (G)
- Standard back taper (0.07%)
- Standard sharpening
- Uncoated
- Standard driver

SEMI-STANDARD DESIGN

- Any other pad form from the catalog
- Special surface finish
- Coating

SPECIAL DESIGN

- Any non-catalog specification

GUN DRILL REQUEST FOR QUOTATION FORM

CUSTOMER

Customer Number
Company Name
Address
Contact Person

THE PIECE PART

Name
Part Number

Hole Diameter
Tolerance
Surface Finish (Ra, Rz,...)
Concentricity (.001"/1.0")
Straightness (.001"/1.0')

Hole Depth

Hole Type (Check all that apply)	
Blind Hole <input type="checkbox"/>	Through Hole <input type="checkbox"/>
Angled entry <input type="checkbox"/>	Angled exit <input type="checkbox"/>
Drilling from solid <input type="checkbox"/>	Core drill <input type="checkbox"/>
Cross holes <input type="checkbox"/>	Other (text) <input type="text"/>

Material (Din material, spec etc.)		
Steel <input type="checkbox"/>	Iron <input type="checkbox"/>	Aluminum <input type="checkbox"/>
Stainless steel <input type="checkbox"/>	Nickel <input type="checkbox"/>	Other <input type="checkbox"/>
Hardness <input type="text"/>		
Long chips <input type="checkbox"/>	Short chips <input type="checkbox"/>	

Application	
Workpiece Stationary <input type="checkbox"/>	Rotating <input type="checkbox"/>
Tool Stationary <input type="checkbox"/>	Rotating <input type="checkbox"/>

THE MACHINE

Machine Type/Model		
Power <input type="text"/> [hp/Kw]		
Rigidity: Good <input type="checkbox"/>	Average <input type="checkbox"/>	Poor <input type="checkbox"/>

Cutting Data	Max Possible	Current
Cutting speed "Vc" (SFM)		
Revolutions per minute		
Feed "f" (in/rev)		
Feed "F" (in/min)		

Drill Guide Method	Internal Dia.	Tolerance
Pre-Drilled pilot hole		
Bushing		

Coolant		
Pressure "P" (psi)		
Flow Rate (gal/min)		
Neat Oil <input type="checkbox"/>	Soluable <input type="checkbox"/>	% <input type="text"/>

Additional Information

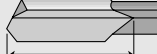
Inquiry Number
Inquiry Date
Quantities Requested

THE TOOL

Tool Type	Carbide Tipped <input type="checkbox"/>
Unknown <input type="checkbox"/>	Solid Carbide <input type="checkbox"/>
Single Lipped <input type="checkbox"/>	Double Lipped <input type="checkbox"/>
Customer Drawing No.	






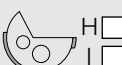
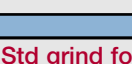
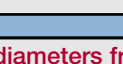
Tool Diameter	<input type="text"/> [in/mm]
Tolerance h5 <input type="checkbox"/>	Other <input type="checkbox"/>

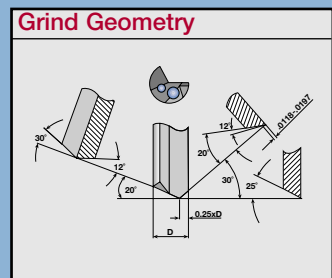
Coating of the Carbide Tip	
Uncoated <input type="checkbox"/>	TiAlN <input type="checkbox"/>
TiN <input type="checkbox"/>	AlTiN <input type="checkbox"/>
TiCN <input type="checkbox"/>	Unknown <input type="checkbox"/>
TiN + TiCN <input type="checkbox"/>	Other <input type="text"/>

Carbide Tip Length	Other <input type="text"/>
Standard <input type="checkbox"/>	

Overall Length	<input type="text"/> [in/mm]
Flute Length	<input type="text"/> [in/mm]

Driver
List Std catalog number
Other Length x Diameter
Driver Extension L x Dia

Pad Forms	
 G <input type="checkbox"/>	 A <input type="checkbox"/>
 E <input type="checkbox"/>	 B <input type="checkbox"/>
 C <input type="checkbox"/>	 D <input type="checkbox"/>
 H <input type="checkbox"/>	 I <input type="checkbox"/>

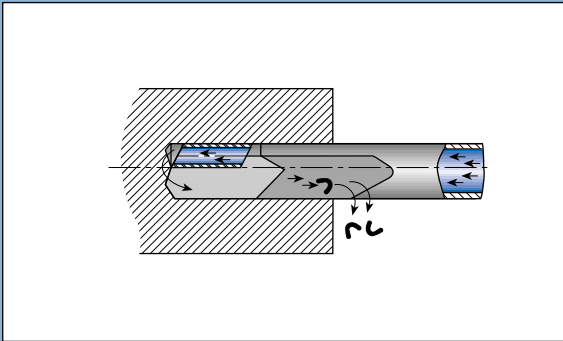


Std grind for diameters from .055" thru .157"
-1=40 -2=30 d=D/4
-1=30 -2=15 -3=35 -1=0 -2=30 b=0

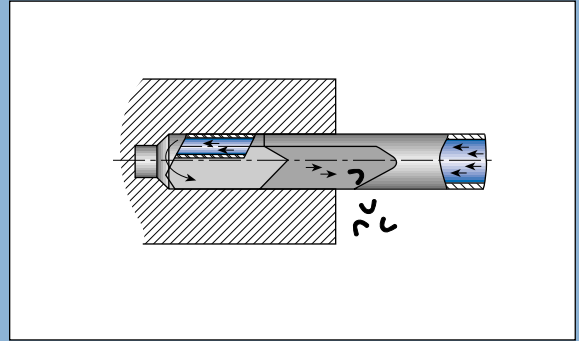
Std grind for diameters from .158" thru 1.260"
-1=30 -2=20 d=D/4
-1=12 -2=12 -3=25 -1=25 -2=30 b=0,3/0,5

Other	-1=	-2=	d=		
-1=	-2=	-3=	-1=	-2=	b=

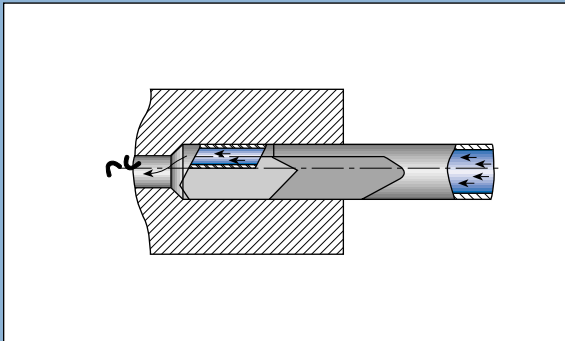
DEEP DRILLING APPLICATIONS



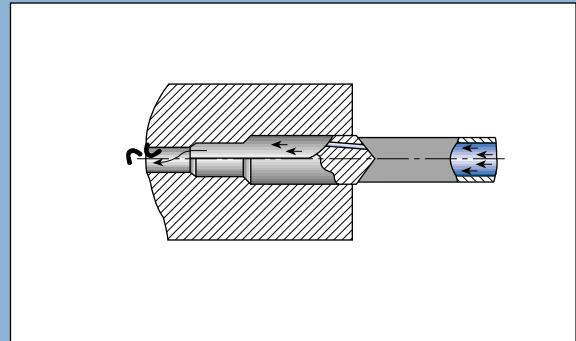
Gun drilling operation in blind hole when chips and coolant are evacuated back through the flute.



Gun drill boring operation in blind hole when chips and coolant are evacuated back through the flute.



Gundrill boring operation in through hole when chips and coolant are evacuated ahead of the drill tip.

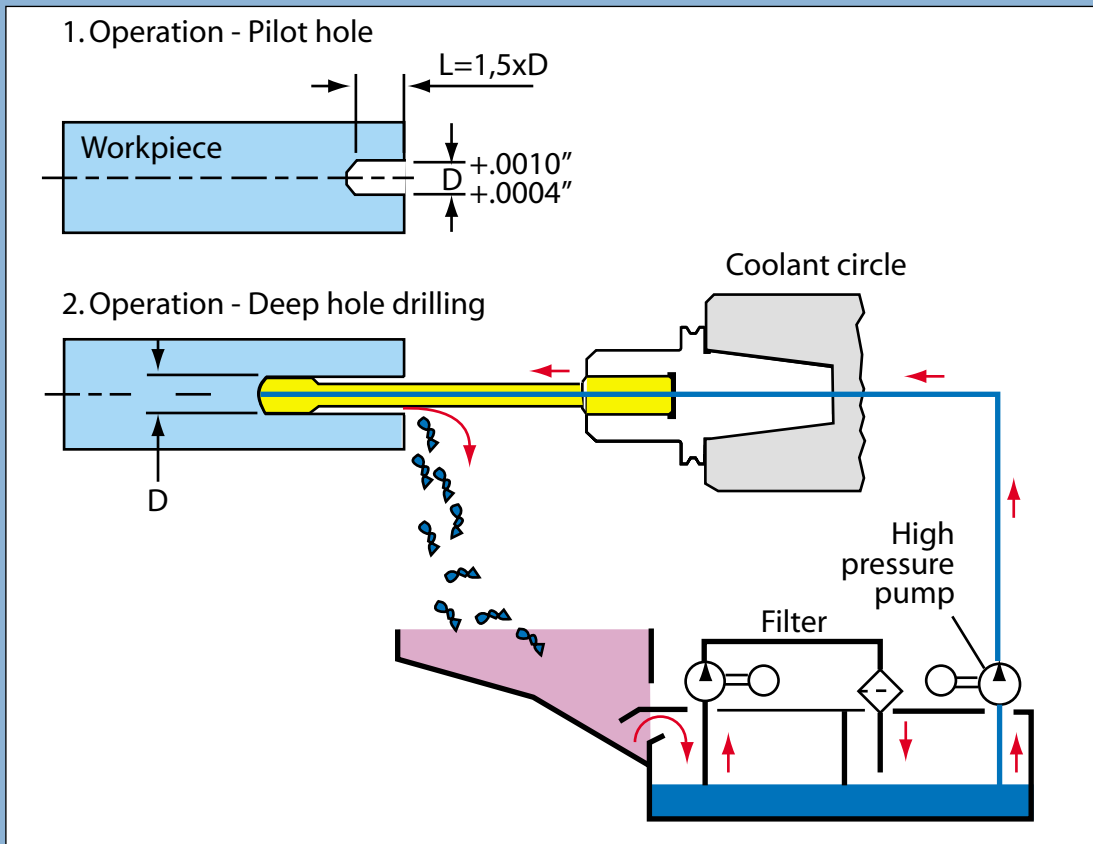


Stepped gundrill boring operation in through hole when chips and coolant are evacuated ahead of the drill tip.

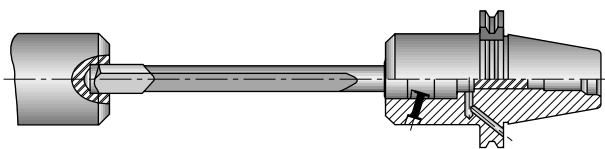
INDERSOLL

■ GUN DRILL MACHINING CENTER APPLICATION

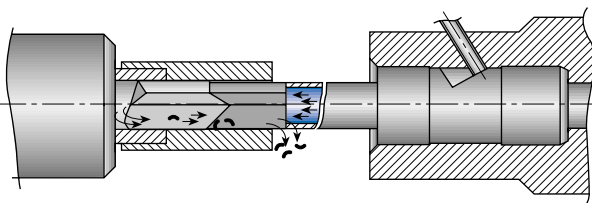
Deep Hole Drilling on Conventional Machine Tools



Gun Drills in Machining Centers



Centering/Guiding hole for gundrill operation in machining center



Bushing guide barrel for Gun drill stabilizing in machining center

GUN DRILL TROUBLESHOOTING GUIDE

Possible Cause	Drill Problems										Hole Problems						
	Cratering	Built-up edge	Damaged wear pad	Flute bending	Drill heat	Excessive flank wear	Excessive corner wear	Excessive margin wear	Poor drill life	Chipping	Breakage	Corved hole axis	Conical entrance	Runout	Rough surface finish	Undersized	Oversized
Poor clamping								+			+	+					+
Insufficient coolant flow					+	+			+					+			+
Low coolant pressure									+					+	+		
Incorrect coolant type	+	+	+			+	+	+	+					+			
Feed fluctuations		+		+					+	+	+	+					
Too high feed	+	+		+	+	+			+		+		+	+			+
Too low feed		+							+	+							
Spindle speed too high			+	+	+	+	+	+	+		+						
Spindle speed too low	+	+							+		+			+			
Material structure	+	+	+				+		+	+	+	+					
Material shrinking due to heat			+	+		+			+		+		+	+			
Workpiece thin wall section									+	+	+						
Misalignment			+	+		+		+	+	+	+	+					+
Undersized hole			+		+	+		+	+	+	+			+			
Rough cutting edge finish	+	+					+		+	+	+	+					
Built up edge							+		+		+			+			+
Worn out edge	+	+					+	+	+	+	+	+					
Interrupted chip flow			+	+		+		+	+	+	+		+				+
Too small flute clearance			+		+	+		+	+	+		+	+				
Incoorrect drill profile	+	+	+	+			+	+	+	+	+	+	+	+	+	+	+
Incorrect head angles	+	+		+		+	+		+	+	+	+	+	+	+	+	+
Vibrations	+	+	+	+			+		+	+	+	+	+	+	+	+	+
Oversized bushing									+		+		+				+
A gap between bushing and workpiece						+			+		+		+	+	+	+	+
Bushing undersized			+	+		+		+	+	+	+		+	+			
Loss of coolant pressure		+	+	+	+				+		+		+	+			
High coolant pressure												+					+
Overheating coolant	+		+		+	+	+	+	+					+			
Insufficient coolant	+	+	+	+	+				+		+		+	+	+	+	+
Head inside angle excessive wear			+	+					+		+		+	+	+	+	+
Head outside angle excessive wear		+		+			+		+		+		+	+	+	+	+
Too short carbide head	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Tool heel drag			+	+	+	+		+	+	+	+	+	+	+	+	+	+
Worn supporting pads	+		+	+	+		+		+		+		+				+
Tool whip - Reverse tool rotation	+	+	+	+			+		+	+	+	+	+	+	+	+	+

