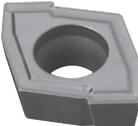


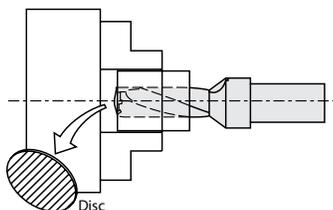
K

Overview		K2~K3
DRA Magic Drill		K4~K43
Inserts	GM - General Purpose	K6
	FTP - Flat Bottom / Counterboring	K8
	FTP-H - Steel Beam Drilling	K11
	HQP - Precision / for Carbon Steel	K13
	HQS - For Difficult-to-Cut Materials / Stainless Steel	K16
Inch Toolholders	SF-DRA (Flange Shank) 1.5D / 3D / 5D / 8D	K18
	SS-DRA (Straight Shank) 1.5D / 3D / 5D / 8D	K22
Metric Toolholders	SF-DRA (Flange Shank) 1.5D / 3D / 5D / 8D / 12D	K26
	SS-DRA (Straight Shank) 1.5D / 3D / 5D / 8D	K31
Chamfering Attachment for SS-DRA	S-CH-DRA	K36
DRV Magic Drill		K44~K73
Inserts	LCMT / SCMT (Outer Edge)	K46
	LCMT / SCMT (Inner Edge)	K48
Inch Toolholders	DRV 2D / 3D / 4D / 5D / 6D	K50
Metric Toolholders	DRV 2D / 3D / 4D / 5D / 6D	K56
Chamfering Attachment for DRV	DRV-CH	K68
Adjustable Sleeve (DRV / DRZ)		K74~K75
DRZ Magic Drill		K78~K97
Inserts	ZCMT	K78
Inch Toolholders	DRZ 2D / 3D / 4D / 5D	K80
Metric Dia. / Inch Shank Toolholders	DRZ 3D	K84
Metric Toolholders	DRZ 2D / 3D / 4D / 5D / 6D	K86
HOLESHOT Drill		K98~K105
Inserts	WCMT / WCMX	K99
Toolholders	DR	K100
Coremaster Coredrill		K106~K109
Inserts	WCMT / WCMX	K106
Toolholders	CD / CD-C / CD-XL / CD-LC	K107
Counterbores		K110~K111
Inserts	TCMT	K110
Toolholders	SHCS-CB	K111
Countersinks		K112~K113
Inserts	TCMT	K112
Toolholders	CS	K113

Product Lineup

Series Name	Image	Drill Dia. (Drilling Depth)	Cutting Edge	Notes
<p>DRA Magic Drill</p> <p>K4</p>	 <p>Screw Clamp</p>	<p>Ø0.313"~Ø1.004" Ø7.94mm~Ø25.5mm (1.5D)</p> <p>Ø0.313"~Ø1.004" Ø7.94mm~Ø33.0mm (3D / 5D / 8D)</p> <p>Ø12mm~Ø25.5mm (12D)</p>	<p>Replaceable Insert Tip with Double Margins</p> 	<p>Lineup</p>  <p>SS-DRA</p> <p>SF-DRA</p> <p>Chamfering Attachment</p>
<p>DRV Magic Drill</p> <p>K44</p>	 <p>Silver Coating</p>	<p>Ø0.500"~Ø2.000" Ø12mm~Ø60mm (2D / 3D / 4D / 5D / 6D)</p>	<p>Individually Designed Inner & Outer Edges</p>  <p>Outer Edge</p> <p>Inner Edge</p>	<p>Chip Shape (Workpiece: 1049) Drill Dia. Ø20mm</p> <p>Chip from Outer Edge</p>  <p>Chip from Inside Edge</p> 
<p>DRZ Magic Drill</p> <p>K78</p>		<p>Ø0.562"~Ø2.000" Ø13mm~Ø59mm (2D / 3D)</p> <p>Ø0.562"~Ø2.000" Ø13mm~Ø50mm (4D)</p> <p>Ø0.1.062"~Ø2.000" Ø27mm~Ø50mm (5D)</p>	<p>Inside and Outside Edge on One Insert</p> 	<p>Chip Shape (Workpiece: 1049) Drill Dia. Ø23mm</p> <p>Chip from Outer Edge</p>  <p>Chip from Inside Edge</p> 

Caution



When drilling through the workpiece, a disk may be ejected. Proper machine guarding is necessary to prevent injury. The safety cover is necessary for the conventional lathe machines to prevent any accidents.

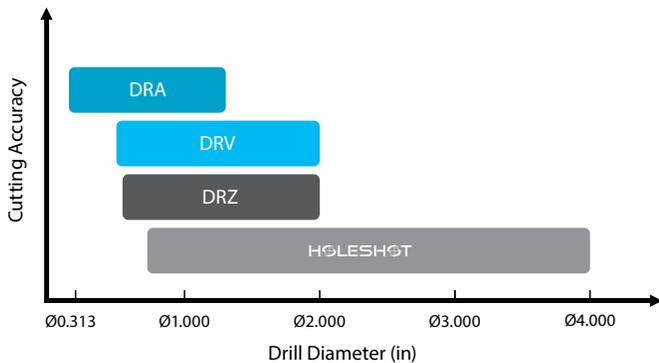
Product Lineup

Series Name	Image	Drill Dia. (Drilling Depth)	Cutting Edge	Notes
DR HOLESHOT K98		Ø0.688"~Ø4.000"	 WCMX	<ul style="list-style-type: none"> Flute design optimized for maximum rigidity and good chip evacuation Swept back design enables drilling of stacked plates and welded assemblies
CD Coremaster Coredrill K106		Ø0.825"~Ø3.150"	 WCMX	<ul style="list-style-type: none"> Available in both fixed pocket and adjustable cartridge providing 0.150" adjustment capability on diameter. Fast, effective way to expand pre-existing holes. Two effective flutes allow high feed-rates for improved productivity.
Counterbore K110			Three cutting edges per insert  TCMT	Counterbores <ul style="list-style-type: none"> For socket head cap screws 1/4" to 3/4" and 6mm to 16mm
Countersink K112			Three cutting edges per insert  TCMT	Countersinks <ul style="list-style-type: none"> For flat head cap screw sizes #10 to 3/4"

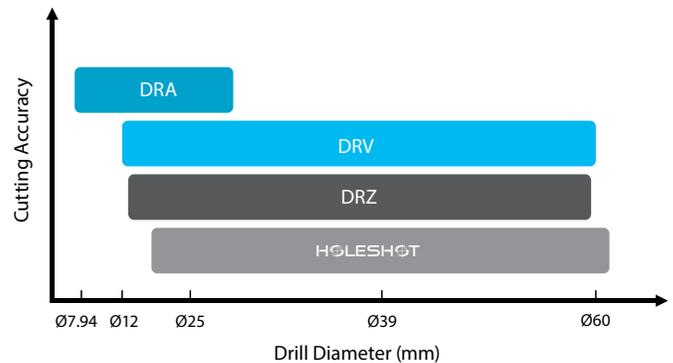
INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Drill Series Application Map

Inch Size Lineup



Metric Size Lineup

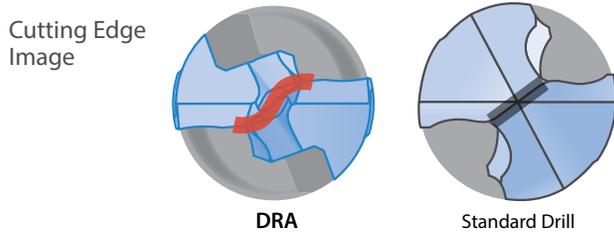


DRA Magic Drill

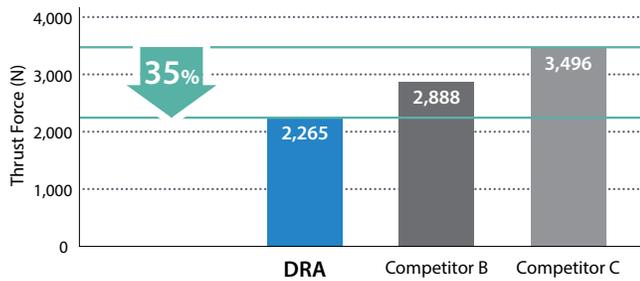
Excellent Hole Accuracy with a Low Cutting Force Design
5 Advantages to Efficiently Solve Common Drilling Difficulties

1 Low Cutting Force Design Improves Hole Accuracy

The special chisel edge with S-curve reduces thrust force and controls vibration



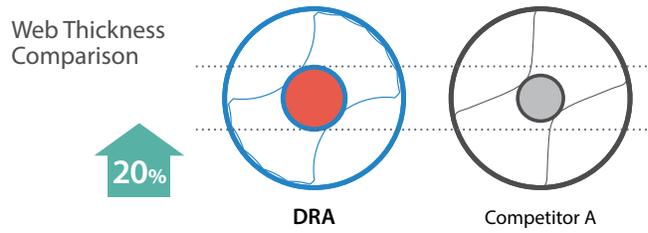
Cutting Force Comparison
(Internal Evaluation)



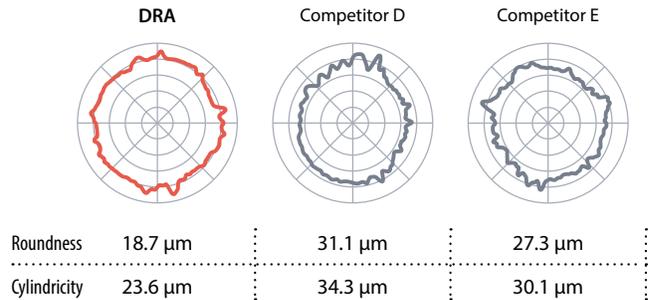
Cutting Conditions : $V_c = 390$ sfm, $f = 0.010$ ipr,
Drilling Diameter $\varnothing 0.551$ ", Drilling Depth 1.772", Wet , Workpiece : 1049 Steel

2 Optimal Web Thickness Limits Drill Deflection

The hole accuracy is improved by controlling drill deflection with a 20% thicker web compared with Competitor A



Roundness · Cylindricity Comparison
(Internal Evaluation)



Cutting Conditions : $V_c = 390$ sfm, $f = 0.012$ ipr
Drilling Diameter $\varnothing 0.551$ ", Measurement Position 2.165", Wet Workpiece : 1049 Steel

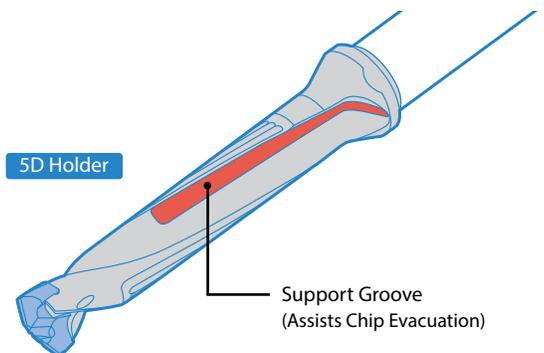
3 Fine Chip Breaking Even in Deep Hole Drilling Applications

Optimized chip thinning for stable chip evacuation
Support groove with wider flute (5D, 8D, and 12D) enables smooth chip evacuation

Chip Comparison
(Internal Evaluation)



Cutting Conditions : $V_c = 200$ sfm, $f = 0.008$ ipr, Drilling Diameter $\varnothing 0.551$ "
Drilling Depth 2.756", Wet Workpiece : 304 Stainless Steel



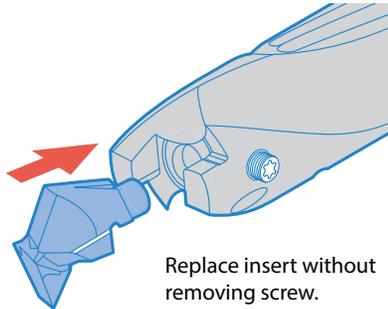
K DRILLING

DRA
DRV
DRZ
HOLESHOT
COREMASTER
COREDRILL
COUNTERBORE
COUNTERSINK

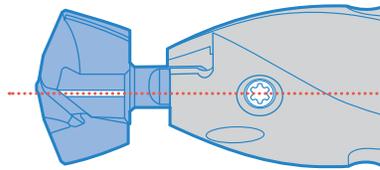
INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

4 Easy Insert Replacement

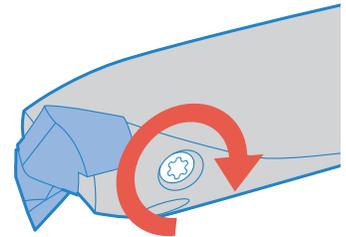
Replace insert without removing screw



Replace insert without removing screw.



Install the insert onto toolholder. (Align insert guide line with screw position)



Fix the insert by tightening the screw.

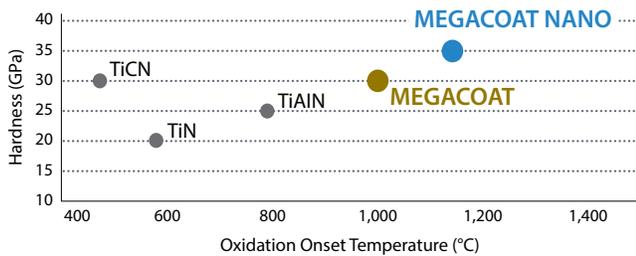
5 Long Tool Life and Stable Machining of Various Workpieces

MEGACOAT NANO grade PR1535 is used to machine various materials from steel to stainless steel, with the combination of a tough substrate and a special nano layer coating

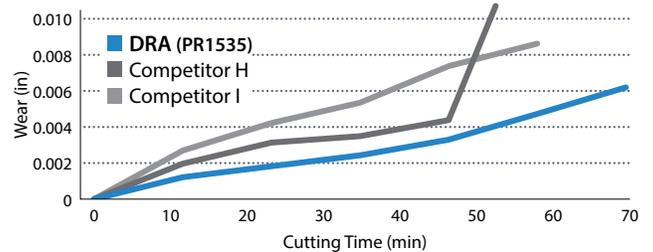
1st Recommendation

Steel PR1535	Cast Iron PR1525
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Coating Properties



Wear Resistance Comparison (Internal Evaluation)

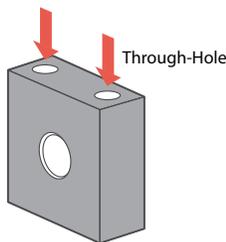


Cutting Conditions : Vc = 330 sfm, f = 0.010 ipr, Cutting Diameter Ø0.551", Cutting Depth 1.772", Wet Workpiece : 4140H

Case Studies

Attachment - Structural Steel

Vc = 230 sfm (n = 1,240 rpm)
f = 0.009 ipr (Vf = 11.221 in/min)
Cutting Depth 3.937"
Wet (Internal Coolant)
With Center Hole Drilling
SF0750-DRA180M-8
DA1800M-GM PR1535



Cutting Time

DRA Ø0.709"-8D **45 sec** ↓ 30% Cutting Time

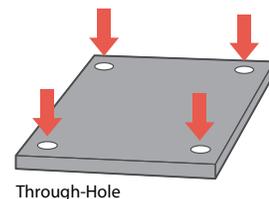
Competitor J Ø0.709"-7D **65 sec**

Competitor J applied a peck cycle to avoid chip clogging. DRA controlled chip evacuation without pecking.

(User Evaluation)

Plate - Stainless Steel

Vc = 195 sfm (n = 2,120 rpm)
f = 0.005 ipr (Vf = 10 in/min)
Cutting Depth 0.591"
Wet (Internal Coolant)
SS0375-DRA090M-3
DA0900M-GM PR1535



No. of Holes

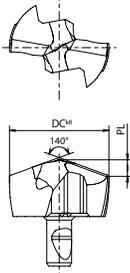
DRA Ø0.354"-3D **500** ↑ X5 Tool Life

Competitor K Ø0.354"-3D **100**

DRA extended the tool life by 5 times compared to Competitor K. DRA maintained stable machining and excellent surface finish with less cutting noise.

(User Evaluation)

DRA Insert (GM - General Purpose)

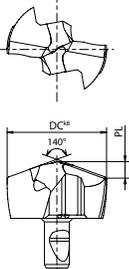
Insert		Part Number		Dimensions			Tolerance (mm)		Carbide	Applicable Toolholder K18~K34	
				DC		PL (mm)	k8 (min.)	k8 (max.)			PVD
				in	mm						
				Material			Applicable				
Carbon Steel / Alloy Steel			P								
Mold and Die Steel			M								
Stainless Steel			K								
Cast Iron			N								
Non-Ferrous Metals											
  <p>General Purpose</p>	DA 0794M-GM	0.313	7.94	1.34	0	+0.022	●●	SF...-DRA080M-○ SS...-DRA080M-○			
	DA 0800M-GM	0.315	8.00	1.35							
	DA 0810M-GM	0.319	8.10	1.37							
	DA 0818M-GM	0.322	8.18	1.38							
	DA 0820M-GM	0.323	8.20	1.38							
	DA 0830M-GM	0.327	8.30	1.40							
	DA 0840M-GM	0.331	8.40	1.42	0	+0.022	●●	SF...-DRA085M-○ SS...-DRA085M-○			
	DA 0850M-GM	0.335	8.50	1.44							
	DA 0860M-GM	0.339	8.60	1.46							
	DA 0870M-GM	0.343	8.70	1.48							
	DA 0880M-GM	0.346	8.80	1.49							
	DA 0890M-GM	0.350	8.90	1.51	0	+0.022	●●	SF...-DRA090M-○ SS...-DRA090M-○			
	DA 0900M-GM	0.354	9.00	1.52							
	DA 0910M-GM	0.358	9.10	1.54							
	DA 0920M-GM	0.362	9.20	1.56							
	DA 0930M-GM	0.366	9.30	1.58							
	DA 0940M-GM	0.370	9.40	1.59	0	+0.022	●●	SF...-DRA095M-○ SS...-DRA095M-○			
	DA 0950M-GM	0.374	9.50	1.61							
	DA 0953M-GM	0.375	9.53	1.62							
	DA 0960M-GM	0.378	9.60	1.63							
	DA 0970M-GM	0.382	9.70	1.65							
	DA 0980M-GM	0.386	9.80	1.67							
	DA 0990M-GM	0.390	9.90	1.68	0	+0.027	●●	SF...-DRA100M-○ SS...-DRA100M-○			
	DA 1000M-GM	0.394	10.00	1.70							
	DA 1010M-GM	0.398	10.10	1.72							
	DA 1020M-GM	0.402	10.20	1.74							
	DA 1030M-GM	0.406	10.30	1.75							
	DA 1040M-GM	0.409	10.40	1.77	0	+0.027	●●	SF...-DRA105M-○ SS...-DRA105M-○			
	DA 1050M-GM	0.413	10.50	1.79							
	DA 1060M-GM	0.417	10.60	1.81							
	DA 1070M-GM	0.421	10.70	1.83							
	DA 1072M-GM	0.422	10.72	1.84							
	DA 1080M-GM	0.425	10.80	1.85	0	+0.027	●●	SF...-DRA110M-○ SS...-DRA110M-○			
	DA 1090M-GM	0.429	10.90	1.86							
	DA 1100M-GM	0.433	11.00	1.87							
	DA 1110M-GM	0.437	11.10	1.89							
	DA 1120M-GM	0.441	11.20	1.91	0	+0.027	●●	SF...-DRA115M-○ SS...-DRA115M-○			
	DA 1130M-GM	0.445	11.30	1.92							
	DA 1140M-GM	0.449	11.40	1.94							
	DA 1150M-GM	0.453	11.50	1.96							
DA 1160M-GM	0.457	11.60	1.98	0	+0.027	●●	SF...-DRA120M-○ SS...-DRA120M-○				
DA 1170M-GM	0.461	11.70	2.00								
DA 1180M-GM	0.465	11.80	2.01								
DA 1190M-GM	0.469	11.90	2.03								
DA 1200M-GM	0.472	12.00	2.03	0	+0.027	●●	SF...-DRA120M-○ SS...-DRA120M-○				
DA 1210M-GM	0.476	12.10	2.05								
DA 1220M-GM	0.480	12.20	2.07								
DA 1230M-GM	0.484	12.30	2.08								
DA 1240M-GM	0.488	12.40	2.10			●●					

k8 is the dimension tolerance of the insert. It is not the dimension tolerance of the hole diameter.

Recommended Cutting Conditions  K38

DA inserts are sold in 1 piece boxes

DRA Insert (GM - General Purpose)

Insert		Part Number		Dimensions			Tolerance (mm)		Carbide	PVD	Applicable Toolholder K18~K34		
				DC		PL (mm)	k8 (min.)	k8 (max.)				PR1525	PR1535
				in	mm								
				Material									
Carbon Steel / Alloy Steel											○ ●	P	
Mold and Die Steel											○ ●	P	
Stainless Steel											○ ●	M	
Cast Iron											● ○	K	
Non-Ferrous Metals											○ ●	N	
  <p>General Purpose</p>	DA	1250M-GM	0.492	12.50	2.12	0	+0.027	● ●	SF...-DRA125M-○ SS...-DRA125M-○				
		1260M-GM	0.496	12.60	2.14								
		1270M-GM	0.500	12.70	2.16								
		1280M-GM	0.504	12.80	2.17								
		1290M-GM	0.508	12.90	2.19								
	DA	1300M-GM	0.512	13.00	2.20	0	+0.027	● ●	SF...-DRA130M-○ SS...-DRA130M-○				
		1310M-GM	0.516	13.10	2.22								
		1320M-GM	0.520	13.20	2.24								
		1330M-GM	0.524	13.30	2.25								
		1340M-GM	0.528	13.40	2.27								
	DA	1350M-GM	0.531	13.50	2.29	0	+0.027	● ●	SF...-DRA135M-○ SS...-DRA135M-○				
		1360M-GM	0.535	13.60	2.31								
		1370M-GM	0.539	13.70	2.33								
		1380M-GM	0.543	13.80	2.35								
		1390M-GM	0.547	13.90	2.36								
	DA	1400M-GM	0.551	14.00	2.33	0	+0.027	● ●	SF...-DRA140M-○ SS...-DRA140M-○				
		1410M-GM	0.555	14.10	2.34								
		1420M-GM	0.559	14.20	2.36								
		1430M-GM	0.563	14.30	2.38								
		1440M-GM	0.567	14.40	2.40								
	DA	1450M-GM	0.571	14.50	2.42	0	+0.027	● ●	SF...-DRA145M-○ SS...-DRA145M-○				
		1460M-GM	0.575	14.60	2.43								
		1468M-GM	0.578	14.68	2.44								
		1470M-GM	0.579	14.70	2.45								
		1480M-GM	0.583	14.80	2.47								
	DA	1500M-GM	0.591	15.00	2.52	0	+0.027	● ●	SF...-DRA150M-○ SS...-DRA150M-○				
		1510M-GM	0.594	15.10	2.54								
		1520M-GM	0.598	15.20	2.55								
	1530M-GM	0.602	15.30	2.57									
	1540M-GM	0.606	15.40	2.59									
	1550M-GM	0.610	15.50	2.61									
	1560M-GM	0.614	15.60	2.63									
	1570M-GM	0.618	15.70	2.65									
	1580M-GM	0.622	15.80	2.66									
	1588M-GM	0.625	15.88	2.69									
	1590M-GM	0.626	15.90	2.68									
DA	1600M-GM	0.630	16.00	2.69	0	+0.027	● ●	SF...-DRA160M-○ SS...-DRA160M-○					
	1610M-GM	0.634	16.10	2.71									
	1620M-GM	0.638	16.20	2.73									
	1630M-GM	0.642	16.30	2.75									
	1640M-GM	0.646	16.40	2.76									
	1650M-GM	0.650	16.50	2.78									
	1660M-GM	0.654	16.60	2.80									
	1667M-GM	0.656	16.67	2.81									
	1670M-GM	0.657	16.70	2.82									
	1680M-GM	0.661	16.80	2.84									
	1690M-GM	0.665	16.90	2.86									

k8 is the dimension tolerance of the insert. It is not the dimension tolerance of the hole diameter.

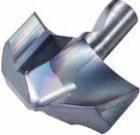
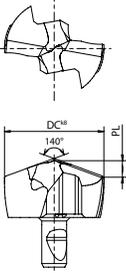
Recommended Cutting Conditions  K38

DA inserts are sold in 1 piece boxes

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRA Insert (GM - General Purpose)

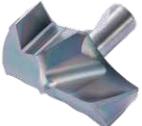
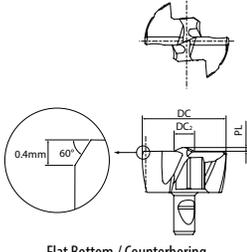
Insert		Part Number		Dimensions			Tolerance (mm)		Carbide	Applicable Toolholder K18~K34	
				DC		PL (mm)	k8 (min.)	k8 (max.)			PVD
				in	mm						
											PR1525
				Carbon Steel / Alloy Steel			○ ●		P		
				Mold and Die Steel							
				Stainless Steel			○ ●		M		
				Cast Iron			● ○		K		
				Non-Ferrous Metals					N		
  General Purpose	DA	1700M-GM	0.669	17.00	2.86	0	+0.027	● ●	SF...-DRA170M-○ SS...-DRA170M-○		
		1710M-GM	0.673	17.10	2.88			● ●			
		1720M-GM	0.677	17.20	2.90			● ●			
		1730M-GM	0.681	17.30	2.92			● ●			
		1740M-GM	0.685	17.40	2.93			● ●			
		1746M-GM	0.687	17.46	2.94			□ ●			
		1750M-GM	0.689	17.50	2.95			● ●			
		1760M-GM	0.693	17.60	2.97			● ●			
		1770M-GM	0.697	17.70	2.99			● ●			
		1780M-GM	0.701	17.80	3.01			● ●			
		1790M-GM	0.705	17.90	3.03	● ●					
		DA	1800M-GM	0.709	18.00	3.04	0	+0.027	● ●	SF...-DRA180M-○ SS...-DRA180M-○	
			1810M-GM	0.713	18.10	3.06	0	+0.033	● ●		
			1820M-GM	0.717	18.20	3.07	0	+0.033	● ●		
			1830M-GM	0.720	18.30	3.09	0	+0.033	● ●		
			1840M-GM	0.724	18.40	3.11	0	+0.033	● ●		
			1850M-GM	0.728	18.50	3.13	0	+0.033	● ●		
			1860M-GM	0.732	18.60	3.15	0	+0.033	● ●		
			1870M-GM	0.736	18.70	3.17	0	+0.033	● ●		
			1880M-GM	0.740	18.80	3.18	0	+0.033	● ●		
			1890M-GM	0.744	18.90	3.20	0	+0.033	● ●		
		DA	1900M-GM	0.748	19.00	3.21	0	+0.033	● ●	SF...-DRA190M-○ SS...-DRA190M-○	
			1905M-GM	0.750	19.05	0.13			□ ●		
			1910M-GM	0.752	19.10	3.23			● ●		
			1920M-GM	0.756	19.20	3.25			● ●		
			1930M-GM	0.760	19.30	3.27			● ●		
			1940M-GM	0.764	19.40	3.29			● ●		
			1950M-GM	0.768	19.50	3.30			● ●		
			1960M-GM	0.772	19.60	3.32			● ●		
			1970M-GM	0.776	19.70	3.34			● ●		
		1980M-GM	0.780	19.80	3.36	● ●					
		1990M-GM	0.783	19.90	3.38	● ●					
	DA	2000M-GM	0.787	20.00	3.37	0	+0.033	● ●	SF...-DRA200M-○ SS...-DRA200M-○		
		2010M-GM	0.791	20.10	3.39			● ●			
		2020M-GM	0.795	20.20	3.41			● ●			
		2030M-GM	0.799	20.30	3.43			● ●			
		2040M-GM	0.803	20.40	3.45			● ●			
		2050M-GM	0.807	20.50	3.46			● ●			
		2060M-GM	0.811	20.60	3.48			● ●			
		2064M-GM	0.813	20.64	3.48			□ ●			
		2070M-GM	0.815	20.70	3.50			● ●			
		2080M-GM	0.819	20.80	3.52			● ●			
		2090M-GM	0.823	20.90	3.54	● ●					

k8 is the dimension tolerance of the insert. It is not the dimension tolerance of the hole diameter.

Recommended Cutting Conditions  K38

DA inserts are sold in 1 piece boxes

DRA Insert (FTP - Flat Bottom / Counterboring)

Insert		Part Number		Dimensions					Tolerance (mm)		Carbide		Applicable Toolholder K18~K34	
				DC		DC2		PL (mm)	k8 (min.)	k8 (max.)	PVD	PR1525		PR1535
				in	mm	in	mm							
				Carbon Steel / Alloy Steel					○ ●		P			
				Mold and Die Steel										
				Stainless Steel					○ ●		M			
				Cast Iron					● ○		K			
				Non-Ferrous Metals							N			
  <p>Flat Bottom / Counterboring</p>	DA 0800M-FTP	0.315	8.00	0.114	2.90	0.40	0	+0.022	● ●	SF...DRA080M-○				
	0830M-FTP	0.327	8.30	0.114	2.90	0.40	0	+0.022	● ●	SS...DRA080M-○				
	DA 0850M-FTP	0.335	8.50	0.114	2.90	0.40	0	+0.022	● ●	SF...DRA085M-○				
	0880M-FTP	0.346	8.80	0.114	2.90	0.40	0	+0.022	● ●	SS...DRA085M-○				
	DA 0900M-FTP	0.354	9.00	0.118	3.00	0.43	0	+0.022	● ●	SF...DRA090M-○				
	0930M-FTP	0.366	9.30	0.118	3.00	0.43	0	+0.022	● ●	SS...DRA090M-○				
	DA 0950M-FTP	0.374	9.50	0.118	3.00	0.43	0	+0.022	● ●	SF...DRA095M-○				
										● ●	SS...DRA095M-○			
	DA 1000M-FTP	0.394	10.00	0.130	3.30	0.46	0	+0.022	● ●	SF...DRA100M-○				
	1030M-FTP	0.406	10.30	0.130	3.30	0.46	0	+0.027	● ●	SS...DRA100M-○				
	DA 1050M-FTP	0.413	10.50	0.130	3.30	0.46	0	+0.027	● ●	SF...DRA105M-○				
	1080M-FTP	0.425	10.80	0.130	3.30	0.46	0	+0.027	● ●	SS...DRA105M-○				
	DA 1100M-FTP	0.433	11.00	0.134	3.40	0.50	0	+0.027	● ●	SF...DRA110M-○				
										● ●	SS...DRA110M-○			
	DA 1150M-FTP	0.453	11.50	0.134	3.40	0.50	0	+0.027	● ●	SF...DRA115M-○				
										● ●	SS...DRA115M-○			
	DA 1200M-FTP	0.472	12.00	0.146	3.70	0.53	0	+0.027	● ●	SF...DRA120M-○				
										● ●	SS...DRA120M-○			
	DA 1250M-FTP	0.492	12.50	0.146	3.70	0.53	0	+0.027	● ●	SF...DRA125M-○				
	1270M-FTP	0.500	12.70	0.146	3.70	0.53	0	+0.027	● ●	SS...DRA125M-○				
	DA 1300M-FTP	0.512	13.00	0.154	3.90	0.56	0	+0.027	● ●	SF...DRA130M-○				
										● ●	SS...DRA130M-○			
	DA 1350M-FTP	0.531	13.50	0.154	3.90	0.56	0	+0.027	● ●	SF...DRA135M-○				
										● ●	SS...DRA135M-○			
	DA 1400M-FTP	0.551	14.00	0.165	4.20	0.60	0	+0.027	● ●	SF...DRA140M-○				
										● ●	SS...DRA140M-○			
	DA 1450M-FTP	0.571	14.50	0.165	4.20	0.60	0	+0.027	● ●	SF...DRA145M-○				
										● ●	SS...DRA145M-○			
	DA 1500M-FTP	0.591	15.00	0.173	4.40	0.65	0	+0.027	● ●	SF...DRA150M-○				
	1550M-FTP	0.610	15.50	0.173	4.40	0.65	0	+0.027	● ●	SS...DRA150M-○				
DA 1600M-FTP	0.630	16.00	0.181	4.60	0.70	0	+0.027	● ●	SF...DRA160M-○					
1650M-FTP	0.650	16.50	0.181	4.60	0.70	0	+0.027	● ●	SS...DRA160M-○					
DA 1700M-FTP	0.669	17.00	0.197	5.00	0.75	0	+0.027	● ●	SF...DRA170M-○					
1750M-FTP	0.689	17.50	0.197	5.00	0.75	0	+0.027	● ●	SS...DRA170M-○					
DA 1800M-FTP	0.709	18.00	0.197	5.00	0.80	0	+0.027	● ●	SF...DRA180M-○					
1850M-FTP	0.728	18.50	0.197	5.00	0.80	0	+0.033	● ●	SS...DRA180M-○					
DA 1900M-FTP	0.748	19.00	0.209	5.30	0.85	0	+0.033	● ●	SF...DRA190M-○					
1950M-FTP	0.768	19.50	0.209	5.30	0.85	0	+0.033	● ●	SS...DRA190M-○					
DA 2000M-FTP	0.787	20.00	0.224	5.70	0.90	0	+0.033	● ●	SF...DRA200M-○					
2050M-FTP	0.807	20.50	0.224	5.70	0.90	0	+0.033	● ●	SS...DRA200M-○					
DA 2100M-FTP	0.827	21.00	0.236	6.00	0.95	0	+0.033	● ●	SF...DRA210M-○					
2150M-FTP	0.846	21.50	0.236	6.00	0.95	0	+0.033	● ●	SS...DRA210M-○					
DA 2200M-FTP	0.866	22.00	0.252	6.40	1.00	0	+0.033	● ●	SF...DRA220M-○					
2250M-FTP	0.886	22.50	0.252	6.40	1.00	0	+0.033	● ●	SS...DRA220M-○					
DA 2300M-FTP	0.906	23.00	0.260	6.60	1.05	0	+0.033	● ●	SF...DRA230M-○					
2350M-FTP	0.925	23.50	0.260	6.60	1.05	0	+0.033	● ●	SS...DRA230M-○					
DA 2400M-FTP	0.945	24.00	0.268	6.80	1.10	0	+0.033	● ●	SF...DRA240M-○					
2450M-FTP	0.965	24.50	0.268	6.80	1.10	0	+0.033	● ●	SS...DRA240M-○					
DA 2500M-FTP	0.984	25.00	0.276	7.00	1.20	0	+0.033	● ●	SF...DRA250M-○					
2540M-FTP	1.000	25.40	0.276	7.00	1.20	0	+0.033	● ●	SS...DRA250M-○					

k8 is the dimension tolerance of the insert. It is not the dimension tolerance of the hole diameter.
Applicable to 1.5D,3D,5D,8D and 12D holders, Prepared hole (0.5xD) is needed when using 8D/12D holder.

DA inserts are sold in 1 piece boxes

Recommended Cutting Conditions K39

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

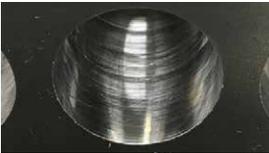
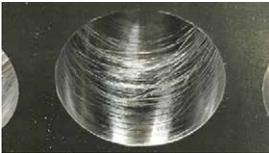
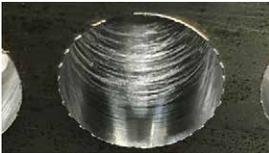
FTP-H Insert

Specialized high-performance in steel beam drilling

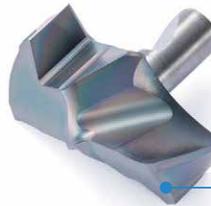
- 1 Optimized chip control
- 2 Excellent surface finish

Controlled chips reduce scratches on the hole wall

Hole quality comparison (Internal evaluation)

	DRA (FTP-H)	Competitor K
Hole Entrance		
	Good	Rifling
Hole Exit		
	Good	Burrs and chattering marks

Cutting Conditions:
 Vc = 260 sfm, f = 0.008 ipr
 Drilling diameter ø26mm (1.024") (3D)
 Drilling depth 40mm (1.575")
 Through spindle coolant
 Workpiece: structural steel St52
 BT50 M/C



Reinforced chamfer
Higher rigidity of insert



Case Study

Structure Part S355

Vc = 260 sfm (n = 979 rpm),
f = 0.008 ipr (Vf = 7.717 ipm),

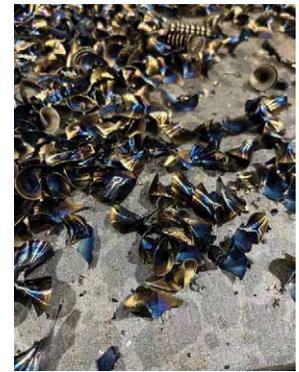
Drilling depth 0.591" through-hole
Coolant = Oil mist lubrication

SF25-DRA250M-3
DA2600M-XFTP PR1535

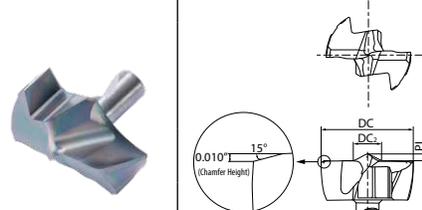
Competitor K: ø26mm-3D

FTP-H achieved tool life of 45 m with no issues.

Shortened process time. Good chip control.



DRA Insert (FTP-H - Steel Beam Drilling)

Insert		Part Number		Dimensions					Tolerance (mm)			Carbide PVD PR1535	Applicable Toolholder K18~K34
				DC		DC2		PL (mm)	k8 (min.)	k8 (max.)			
				in	mm	in	mm						
				Material									
Carbon Steel / Alloy Steel												●	P
Mold and Die Steel													
Stainless Steel													M
Cast Iron													K
Non-Ferrous Metals													N
 <p>Flat Bottom / Counterboring</p>	DA 1400M-FTP-H	0.551	14.00	0.165	4.20	0.60	0	+0.022	●	SF...-DRA140M-○ SS...-DRA140M-○			
	DA 1600M-FTP-H	0.630	16.00	0.181	4.60	0.70	0	+0.027	●	SF...-DRA160M-○ SS...-DRA160M-○			
	DA 1800M-FTP-H	0.709	18.00	0.197	5.00	0.80	0	+0.027	●	SF...-DRA180M-○ SS...-DRA180M-○			
	DA 2000M-FTP-H	0.787	20.00	0.224	5.70	0.90	0	+0.027	●	SF...-DRA200M-○ SS...-DRA200M-○			
	DA 2100M-FTP-H	0.827	21.00	0.236	6.00	0.95	0	+0.027	●	SF...-DRA210M-○ SS...-DRA210M-○			
	DA 2200M-FTP-H	0.866	22.00	0.252	6.40	1.00	0	+0.027	●	SF...-DRA220M-○ SS...-DRA220M-○			
	DA 2400M-FTP-H	0.945	24.00	0.268	6.80	1.10	0	+0.027	●	SF...-DRA240M-○ SS...-DRA240M-○			
	DA 2600M-FTP-H	1.024	26.00	0.276	7.00	1.20	0	+0.027	●	SF...-DRA260M-○			

k8 is the dimension tolerance of the insert. It is not the dimension tolerance of the hole diameter.
 Applicable to 1.5D,3D,5D,8D and 12D holders, Prepared hole (0.5xDC) is needed when using 8D/12D holder.

Recommended Cutting Conditions  K39

DA inserts are sold in 1 piece boxes

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
 Contact your local Kyocera sales engineer to upgrade old products to new technology

- INSERT GRADES A
- TURNING INSERTS B
- CBN/PCD INSERTS C
- TURNING HOLDERS D
- SMALL TOOLS E
- BORING F
- GROOVING G
- CUT-OFF H
- THREADING J
- DRILLING K
- MILLING M
- QUICK CHANGE TOOLING N
- SPARE PARTS P
- TECHNICAL R
- INDEX T

Double Margin Design

High-precision insert for steel machining

HQP

Special two-step bottom and double margin
Reduces shock for higher-precision machining of steel



PR1525

Drilling Diameter
ø0.313" ~ ø0.783"
ø7.94 ~ ø19.90mm

For difficult-to-cut materials / stainless steel machining

HQS

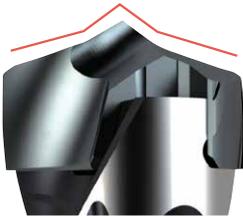
Special two-step bottom and double margin
Improving stability of difficult-to-cut materials and stainless steel during machining operations



PR1535

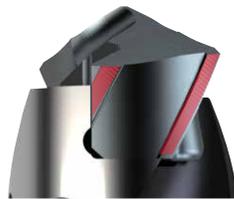
Drilling Diameter
ø0.315" ~ ø0.768"
ø8.00 ~ ø19.50mm

Special Two-step Tip Edge



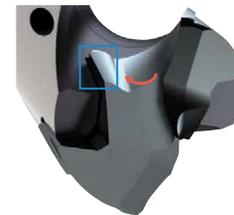
- Suppresses sudden fractures from occurring when entering the workpiece
- Improvement of cutting edge strength

Double Margin



- Optimized for difficult-to-cut materials
- Improvement of heat resistance

Unique Flute Shape

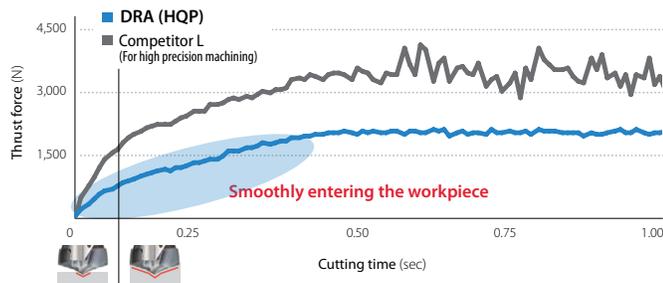


- Superior chip control
- Prevents damage to hole walls
- Excellent finished surface

K DRILLING

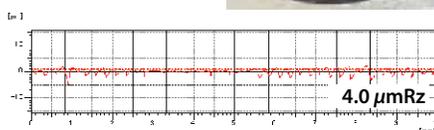
HQP High-precision insert for steel machining

Cutting Force Comparison when Entering Workpiece (Internal Evaluation)



Cutting Conditions: Vc = 330 sfm, f = 0.010 ipr, H = 1.181", Wet Workpiece: 1049 Ø0.630" (3D)

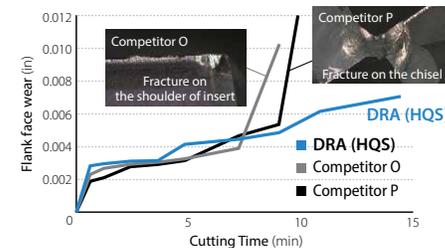
Hole Wall Surface Finish Comparison (Internal Evaluation)



Cutting Conditions: Vc = 330 sfm, f = 0.010 ipr, H = 3.150", Wet Workpiece: 1049 Ø0.630" (5D)

HQS For difficult-to-cut materials / stainless steel machining

Inconel
Wear Resistance Comparison (Internal evaluation)



Shoulder part



Normal wear condition

Chisel part



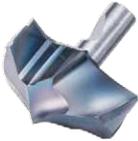
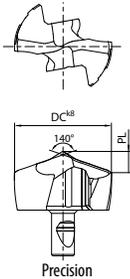
Good without fracture

DRA (HQS)

Competitor Q

Cutting Conditions: Vc = 70 sfm, f = 0.006 ipr, Drilling Diameter Ø14.5mm (0.571") (3xD)
Drilling Depth 1.575", Wet (internal/external), Workpiece: Inconel 718, BT50 M/C

DRA Insert (HQP - Precision / for Carbon Steel)

Insert		Part Number		Dimensions			Tolerance (mm)		Carbide	Applicable Toolholder ➔ K18~K34		
				DC		PL (mm)	k8 (min.)	k8 (max.)			PVD	
				in	mm							
				Carbon Steel / Alloy Steel			●				P	
				Mold and Die Steel			●				M	
Stainless Steel			●		K							
Cast Iron			●		N							
Non-Ferrous Metals			●									
  <p>Precision</p>	DA	0794M-HQP	0.313	7.94	1.90	0	+0.022	●	SF...DRA080M-○ SS...DRA080M-○			
		0800M-HQP	0.315	8.00	1.91							
		0810M-HQP	0.319	8.10	1.93							
		0820M-HQP	0.323	8.20	1.94							
		0830M-HQP	0.327	8.30	1.96							
		0840M-HQP	0.331	8.40	1.98							
	DA	0850M-HQP	0.335	8.50	1.99	0	+0.022	●	SF...DRA085M-○ SS...DRA085M-○			
		0860M-HQP	0.339	8.60	2.01							
		0870M-HQP	0.343	8.70	2.03							
		0880M-HQP	0.346	8.80	2.05							
		0890M-HQP	0.350	8.90	2.06							
	DA	0900M-HQP	0.354	9.00	2.19	0	+0.022	●	SF...DRA090M-○ SS...DRA090M-○			
		0910M-HQP	0.358	9.10	2.21							
		0920M-HQP	0.362	9.20	2.22							
		0930M-HQP	0.366	9.30	2.24							
		0940M-HQP	0.370	9.40	2.26							
	DA	0950M-HQP	0.374	9.50	2.27	0	+0.022	●	SF...DRA095M-○ SS...DRA095M-○			
		0960M-HQP	0.378	9.60	2.29							
		0970M-HQP	0.382	9.70	2.31							
		0980M-HQP	0.386	9.80	2.32							
		0990M-HQP	0.390	9.90	2.34							
	DA	1000M-HQP	0.394	10.00	2.35	0	+0.022	●	SF...DRA100M-○ SS...DRA100M-○			
		1010M-HQP	0.398	10.10	2.36							
		1020M-HQP	0.402	10.20	2.38							
		1030M-HQP	0.406	10.30	2.40							
		1040M-HQP	0.409	10.40	2.41							
	DA	1050M-HQP	0.413	10.50	2.43	0	+0.027	●	SF...DRA105M-○ SS...DRA105M-○			
		1060M-HQP	0.417	10.60	2.44							
		1070M-HQP	0.421	10.70	2.46							
		1080M-HQP	0.425	10.80	2.47							
		1090M-HQP	0.429	10.90	2.49							
	DA	1100M-HQP	0.433	11.00	2.65	0	+0.027	●	SF...DRA110M-○ SS...DRA110M-○			
		1110M-HQP	0.437	11.10	2.67							
		1120M-HQP	0.441	11.20	2.68							
		1130M-HQP	0.445	11.30	2.70							
		1140M-HQP	0.449	11.40	2.72							
	DA	1150M-HQP	0.453	11.50	2.73	0	+0.027	●	SF...DRA115M-○ SS...DRA115M-○			
		1160M-HQP	0.457	11.60	2.75							
		1170M-HQP	0.461	11.70	2.76							
		1180M-HQP	0.465	11.80	2.78							
		1190M-HQP	0.469	11.90	2.80							
	DA	1200M-HQP	0.472	12.00	2.79	0	+0.027	●	SF...DRA120M-○ SS...DRA120M-○			
		1210M-HQP	0.476	12.10	2.81							
		1220M-HQP	0.480	12.20	2.82							
		1230M-HQP	0.484	12.30	2.84							
		1240M-HQP	0.488	12.40	2.86							
	DA	1250M-HQP	0.492	12.50	2.87	0	+0.027	●	SF...DRA125M-○ SS...DRA125M-○			
		1260M-HQP	0.496	12.60	2.89							
	1270M-HQP	0.500	12.70	2.91								
	1280M-HQP	0.504	12.80	2.92								
	1290M-HQP	0.508	12.90	2.94								

k8 is the dimension tolerance of the insert. It is not the dimension tolerance of the hole diameter.

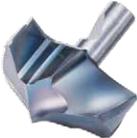
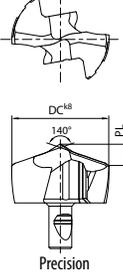
Recommended Cutting Conditions ➔ K40

DA inserts are sold in 1 piece boxes

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRA Insert (HQP - Precision / for Carbon Steel)

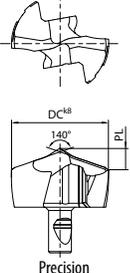
Insert		Part Number		Dimensions			Tolerance (mm)		Carbide	Applicable Toolholder K18~K34	
				DC		PL (mm)	k8 (min.)	k8 (max.)			PVD
				in	mm						
				Carbon Steel / Alloy Steel			●				P
Mold and Die Steel			●		M						
Stainless Steel			●		K						
Cast Iron			●		N						
Non-Ferrous Metals			●								
 	DA	1300M-HQP	0.512	13.00	2.98	0	+0.027	●	SF...-DRA130M-○ SS...-DRA130M-○		
		1310M-HQP	0.516	13.10	2.99						
		1320M-HQP	0.520	13.20	3.01						
		1330M-HQP	0.524	13.30	3.02						
		1340M-HQP	0.528	13.40	3.04						
	DA	1350M-HQP	0.531	13.50	3.06	0	+0.027	●	SF...-DRA135M-○ SS...-DRA135M-○		
		1360M-HQP	0.535	13.60	3.07						
		1370M-HQP	0.539	13.70	3.09						
		1380M-HQP	0.543	13.80	3.10						
		1390M-HQP	0.547	13.90	3.12						
	DA	1400M-HQP	0.551	14.00	3.11	0	+0.027	●	SF...-DRA140M-○ SS...-DRA140M-○		
		1410M-HQP	0.555	14.10	3.12						
		1420M-HQP	0.559	14.20	3.14						
		1430M-HQP	0.563	14.30	3.16						
		1440M-HQP	0.567	14.40	3.17						
	DA	1450M-HQP	0.571	14.50	3.19	0	+0.027	●	SF...-DRA145M-○ SS...-DRA145M-○		
		1460M-HQP	0.575	14.60	3.21						
		1470M-HQP	0.579	14.70	3.22						
		1480M-HQP	0.583	14.80	3.24						
		1490M-HQP	0.587	14.90	3.25						
	DA	1500M-HQP	0.591	15.00	3.33	0	+0.027	●	SF...-DRA150M-○ SS...-DRA150M-○		
		1510M-HQP	0.594	15.10	3.35						
		1520M-HQP	0.598	15.20	3.36						
		1530M-HQP	0.602	15.30	3.38						
		1540M-HQP	0.606	15.40	3.39						
		1550M-HQP	0.610	15.50	3.41						
		1560M-HQP	0.614	15.60	3.42						
		1570M-HQP	0.618	15.70	3.44						
		1580M-HQP	0.622	15.80	3.46						
		1590M-HQP	0.626	15.90	3.47						
	DA	1600M-HQP	0.630	16.00	3.55	0	+0.027	●	SF...-DRA160M-○ SS...-DRA160M-○		
		1610M-HQP	0.634	16.10	3.57						
		1620M-HQP	0.638	16.20	3.58						
		1630M-HQP	0.642	16.30	3.60						
		1640M-HQP	0.646	16.40	3.62						
		1650M-HQP	0.650	16.50	3.63						
		1660M-HQP	0.654	16.60	3.65						
		1670M-HQP	0.657	16.70	3.66						
		1680M-HQP	0.661	16.80	3.68						
		1690M-HQP	0.665	16.90	3.69						
DA	1700M-HQP	0.669	17.00	3.73	0	+0.027	●	SF...-DRA170M-○ SS...-DRA170M-○			
	1710M-HQP	0.673	17.10	3.75							
	1720M-HQP	0.677	17.20	3.77							
	1730M-HQP	0.681	17.30	3.78							
	1740M-HQP	0.685	17.40	3.80							
	1750M-HQP	0.689	17.50	3.81							
	1760M-HQP	0.693	17.60	3.83							
	1770M-HQP	0.697	17.70	3.84							
	1780M-HQP	0.701	17.80	3.86							
	1790M-HQP	0.705	17.90	3.88							

k8 is the dimension tolerance of the insert. It is not the dimension tolerance of the hole diameter.

Recommended Cutting Conditions **K40**

DA inserts are sold in 1 piece boxes

DRA Insert (HQP - Precision / for Carbon Steel)

Insert		Part Number		Dimensions			Tolerance (mm)		Carbide PVD PR1525	Applicable Toolholder ➔ K18~K34
				DC		PL (mm)	k8 (min.)	k8 (max.)		
				in	mm					
				Carbon Steel / Alloy Steel			●			
Mold and Die Steel					M					
Stainless Steel					K					
Cast Iron					N					
Non-Ferrous Metals										
 	DA	1800M-HQP	0.709	18.00	3.97	0	+0.027	●	SF...DRA180M-○ SS...DRA180M-○	
		1810M-HQP	0.713	18.10	3.98		+0.033	●		
		1820M-HQP	0.717	18.20	4.00		+0.033	●		
		1830M-HQP	0.720	18.30	4.02		+0.033	●		
		1840M-HQP	0.724	18.40	4.03		+0.033	●		
		1850M-HQP	0.728	18.50	4.05		+0.033	●		
		1860M-HQP	0.732	18.60	4.06		+0.033	●		
		1870M-HQP	0.736	18.70	4.08		+0.033	●		
		1880M-HQP	0.740	18.80	4.09		+0.033	●		
		1890M-HQP	0.744	18.90	4.11	+0.033	●			
	DA	1900M-HQP	0.748	19.00	4.20	0	+0.033	●		SF...DRA190M-○ SS...DRA190M-○
		1910M-HQP	0.752	19.10	4.22			●		
		1920M-HQP	0.756	19.20	4.23			●		
		1930M-HQP	0.760	19.30	4.25			●		
		1940M-HQP	0.764	19.40	4.26			●		
		1950M-HQP	0.768	19.50	4.28			●		
		1960M-HQP	0.772	19.60	4.29			●		
		1970M-HQP	0.776	19.70	4.31			●		
		1980M-HQP	0.780	19.80	4.33			●		
	1990M-HQP	0.783	19.90	4.34	●					

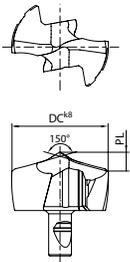
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Recommended Cutting Conditions ➔ K40

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DA inserts are sold in 1 piece boxes

DRA Insert (HQS - For Difficult-to-Cut Materials / Stainless Steel)

Insert		Part Number		Dimensions			Tolerance (mm)		Carbide	Applicable Toolholder K18~K34	
				DC		PL (mm)	k8 (min.)	k8 (max.)			PVD
				in	mm						
				Carbon Steel / Alloy Steel			Mold and Die Steel				P
Stainless Steel					M						
Cast Iron					K						
Non-Ferrous Metals					N						
 	DA 0800M-HQS	0.315	8.00	1.76	0	+0.022	●	SF...-DRA080M-○ SS...-DRA080M-○			
	DA 0820M-HQS	0.323	8.20	1.78	0	+0.022	●	SF...-DRA080M-○ SS...-DRA080M-○			
	DA 0850M-HQS	0.335	8.50	1.82	0	+0.022	●	SF...-DRA085M-○ SS...-DRA085M-○			
	DA 0870M-HQS	0.343	8.70	1.85	0	+0.022	●	SF...-DRA085M-○ SS...-DRA085M-○			
	DA 0880M-HQS	0.346	8.80	1.86	0	+0.022	●	SF...-DRA085M-○ SS...-DRA085M-○			
	DA 0900M-HQS	0.354	9.00	1.97	0	+0.022	●	SF...-DRA090M-○ SS...-DRA090M-○			
	DA 0930M-HQS	0.366	9.30	2.01	0	+0.022	●	SF...-DRA090M-○ SS...-DRA090M-○			
	DA 0940M-HQS	0.370	9.40	2.02	0	+0.022	●	SF...-DRA090M-○ SS...-DRA090M-○			
	DA 0950M-HQS	0.374	9.50	2.03	0	+0.022	●	SF...-DRA095M-○ SS...-DRA095M-○			
	DA 0970M-HQS	0.382	9.70	2.05	0	+0.022	●	SF...-DRA095M-○ SS...-DRA095M-○			
	DA 0980M-HQS	0.386	9.80	2.06	0	+0.022	●	SF...-DRA095M-○ SS...-DRA095M-○			
	DA 1000M-HQS	0.394	10.00	2.17	0	+0.022	●	SF...-DRA100M-○ SS...-DRA100M-○			
	DA 1030M-HQS	0.406	10.30	2.21	0	+0.027	●	SF...-DRA100M-○ SS...-DRA100M-○			
	DA 1040M-HQS	0.409	10.40	2.22	0	+0.027	●	SF...-DRA100M-○ SS...-DRA100M-○			
	DA 1050M-HQS	0.413	10.50	2.23	0	+0.027	●	SF...-DRA105M-○ SS...-DRA105M-○			
	DA 1080M-HQS	0.425	10.80	2.27	0	+0.027	●	SF...-DRA105M-○ SS...-DRA105M-○			
	DA 1100M-HQS	0.433	11.00	2.38	0	+0.027	●	SF...-DRA110M-○ SS...-DRA110M-○			
	DA 1150M-HQS	0.453	11.50	2.44	0	+0.027	●	SF...-DRA115M-○ SS...-DRA115M-○			
	DA 1200M-HQS	0.472	12.00	2.50	0	+0.027	●	SF...-DRA120M-○ SS...-DRA120M-○			
	DA 1250M-HQS	0.492	12.50	2.57	0	+0.027	●	SF...-DRA125M-○ SS...-DRA125M-○			
DA 1260M-HQS	0.496	12.60	2.58	0	+0.027	●	SF...-DRA125M-○ SS...-DRA125M-○				
DA 1300M-HQS	0.512	13.00	2.68	0	+0.027	●	SF...-DRA130M-○ SS...-DRA130M-○				
DA 1350M-HQS	0.531	13.50	2.74	0	+0.027	●	SF...-DRA135M-○ SS...-DRA135M-○				
DA 1390M-HQS	0.547	13.90	2.78	0	+0.027	●	SF...-DRA135M-○ SS...-DRA135M-○				
DA 1400M-HQS	0.551	14.00	2.79	0	+0.027	●	SF...-DRA140M-○ SS...-DRA140M-○				
DA 1420M-HQS	0.559	14.20	2.81	0	+0.027	●	SF...-DRA140M-○ SS...-DRA140M-○				
DA 1450M-HQS	0.571	14.50	2.85	0	+0.027	●	SF...-DRA145M-○ SS...-DRA145M-○				

k8 is the dimension tolerance of the insert. It is not the dimension tolerance of the hole diameter.

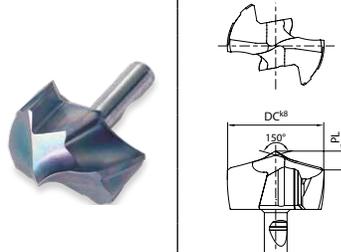
Recommended Cutting Conditions K40

K DRILLING

- DRA
- DRV
- DRZ
- HOLESHOT
- COREMASTER
COREDRILL
- COUNTERBORE
- COUNTERSINK

DA inserts are sold in 1 piece boxes

DRA Insert (HQS - For Difficult-to-Cut Materials / Stainless Steel)

Insert		Part Number		Dimensions			Tolerance (mm)		Carbide	Applicable Toolholder ➔ K18~K34	
				DC		PL (mm)	k8 (min.)	k8 (max.)			PVD
				in	mm						
											PR1535
		DA 1500M-HQS	0.591	15.00	2.96				●	SF...DRA150M-○ SS...DRA150M-○	
		DA 1520M-HQS	0.598	15.20	2.99				●		
		DA 1530M-HQS	0.602	15.30	3.00	0	+0.027		●		
		DA 1550M-HQS	0.610	15.50	3.02				●		
		DA 1570M-HQS	0.618	15.70	3.04				●		
		DA 1600M-HQS	0.630	16.00	3.18				●	SF...DRA160M-○ SS...DRA160M-○	
		DA 1610M-HQS	0.634	16.10	3.20				●		
		DA 1620M-HQS	0.638	16.20	3.21	0	+0.027		●		
		DA 1630M-HQS	0.642	16.30	3.22				●		
		DA 1650M-HQS	0.650	16.50	3.25				●		
		DA 1700M-HQS	0.669	17.00	3.38				●	SF...DRA170M-○ SS...DRA170M-○	
		DA 1750M-HQS	0.689	17.50	3.44	0	+0.027		●		
		DA 1770M-HQS	0.697	17.70	3.46				●		
		DA 1800M-HQS	0.709	18.00	3.59		+0.027		●	SF...DRA180M-○ SS...DRA180M-○	
		DA 1810M-HQS	0.713	18.10	3.60	0	+0.033		●		
		DA 1850M-HQS	0.728	18.50	3.65		+0.033		●		
		DA 1900M-HQS	0.748	19.00	3.79				●	SF...DRA190M-○ SS...DRA190M-○	
		DA 1930M-HQS	0.760	19.30	3.82	0	+0.033		●		
		DA 1950M-HQS	0.768	19.50	3.84				●		

k8 is the dimension tolerance of the insert. It is not the dimension tolerance of the hole diameter.

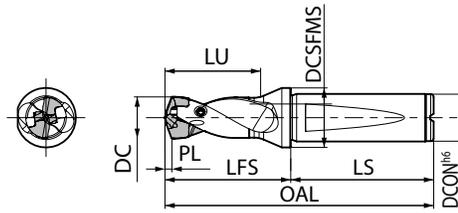
Recommended Cutting Conditions ➔ K40

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
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Contact your local Kyocera sales engineer to upgrade old products to new technology

SF-DRA (Drilling Depth : 1.5 x DC)



1.5D

For PL indicates distance from drill point to corner edge K6~K17

Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions							Coolant Hole	Spare Parts			Applicable Inserts K6~K17	
			DC min.	DC max.	DCON	OAL	LFS	LU	LS		DCSFMS	Screw	Wrench		Wrench
Inch	SF0500- DRA080M-1.5 DRA085M-1.5 DRA090M-1.5 DRA095M-1.5	●	0.313	0.334	0.500	2.805	1.033	0.504	1.772	0.630	Yes	HS-2524TRP	-	FTP-5	DA0794M-... ~ DA0840M-...
		●	0.335	0.353		2.854	1.083	0.531							DA0850M-... ~ DA0890M-...
		●	0.354	0.373		2.904	1.132	0.563							DA0900M-... ~ DA0940M-...
		●	0.374	0.393		2.953	1.181	0.591							DA0950M-... ~ DA0990M-...
	SF0625- DRA100M-1.5 DRA105M-1.5 DRA110M-1.5 DRA115M-1.5 DRA120M-1.5 DRA125M-1.5 DRA130M-1.5 DRA135M-1.5 DRA140M-1.5 DRA145M-1.5	●	0.394	0.412	0.625	3.120	1.230	0.622	1.890	0.787	Yes	HS-2534TRP	-	FTP-5	DA1000M-... ~ DA1040M-...
		●	0.413	0.432		3.169	1.280	0.650							DA1050M-... ~ DA1090M-...
		●	0.433	0.452		3.258	1.368	0.681							DA1100M-... ~ DA1140M-...
		●	0.453	0.471		3.307	1.417	0.709							DA1150M-... ~ DA1190M-...
		●	0.472	0.491		3.356	1.467	0.740							DA1200M-... ~ DA1240M-...
		●	0.492	0.511		3.406	1.516	0.768							DA1250M-... ~ DA1290M-...
		●	0.512	0.530		3.455	1.565	0.799							DA1300M-... ~ DA1340M-...
		●	0.531	0.550		3.504	1.614	0.827							DA1350M-... ~ DA1390M-...
		●	0.551	0.570		3.553	1.663	0.858							DA1400M-... ~ DA1440M-...
		●	0.571	0.590		3.602	1.713	0.886							DA1450M-... ~ DA1490M-...
	SF0750- DRA150M-1.5 DRA160M-1.5 DRA170M-1.5 DRA180M-1.5 DRA190M-1.5	●	0.591	0.629	0.750	3.819	1.850	0.917	1.969	0.984	Yes	HS-3048TRP	DTP-6	-	DA1500M-... ~ DA1590M-...
		●	0.630	0.668		3.957	1.988	0.976							DA1600M-... ~ DA1690M-...
		●	0.669	0.708		4.055	2.087	1.035							DA1700M-... ~ DA1790M-...
		●	0.709	0.747		4.193	2.224	1.094				DA1800M-... ~ DA1890M-...			
		●	0.748	0.786		4.291	2.323	1.154				DA1900M-... ~ DA1990M-...			
	SF1000- DRA200M-1.5 DRA210M-1.5 DRA220M-1.5 DRA230M-1.5 DRA240M-1.5 DRA250M-1.5	●	0.787	0.826	1.000	4.626	2.421	1.213	2.205	1.260	Yes	HS-4067TRP	DTP-7	-	DA2000M-... ~ DA2090M-...
●		0.827	0.865	4.724		2.520	1.272	DA2100M-... ~ DA2150M-...							
●		0.866	0.905	4.862		2.657	1.331	DA2200M-... ~ DA2250M-...							
●		0.906	0.944	4.961		2.756	1.390	DA2300M-... ~ DA2381M-...							
●		0.945	0.983	5.059		2.854	1.449	DA2400M-... ~ DA2450M-...							
●		0.984	1.004	5.157		2.953	1.508	DA2500M-... ~ DA2550M-...							

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder. See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

K DRILLING

DRA

DRV

DRZ

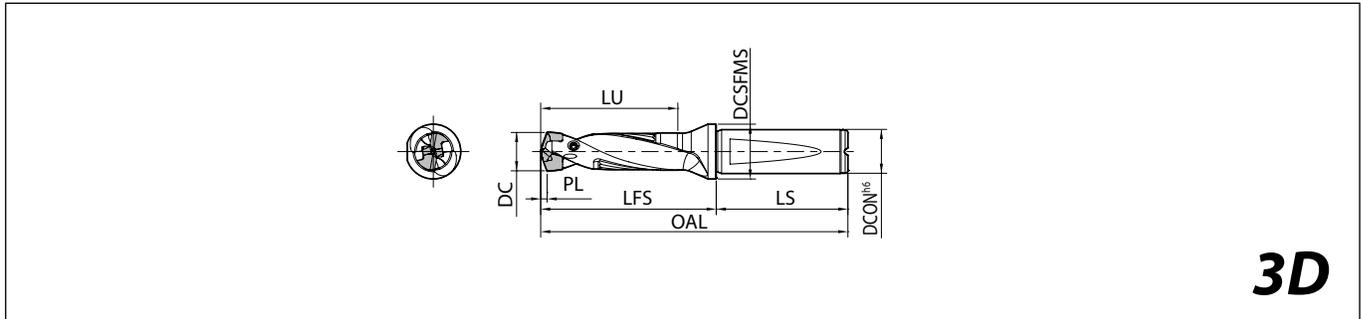
HOLESHOT

COREMASTER
COREDRILL

COUNTERBORE

COUNTERSINK

SF-DRA (Drilling Depth : 3 x DC)



For PL indicates distance from drill point to corner edge K6~K17

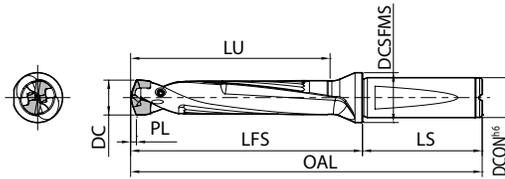
Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions							Coolant Hole	Spare Parts			Applicable Inserts K6~K17	
			DC min.	DC max.	DCON	OAL	LFS	LU	LS		DCSFMS	Screw	Wrench		Wrench
Inch	SF0500- DRA080M-3	●	0.313	0.334	0.500	3.307	1.535	1.004	1.772	0.630	Yes	HS-2524TRP	-	FTP-5	DA0794M-... ~ DA0840M-...
	DRA085M-3	●	0.335	0.353		3.386	1.614	1.063							DA0850M-... ~ DA0890M-...
	DRA090M-3	●	0.354	0.373		3.465	1.693	1.122							DA0900M-... ~ DA0940M-...
	DRA095M-3	●	0.374	0.393		3.543	1.772	1.181							DA0950M-... ~ DA0990M-...
	SF0625- DRA100M-3	●	0.394	0.412	0.625	3.740	1.850	1.240	1.890	0.787	Yes	HS-2534TRP	-	FTP-5	DA1000M-... ~ DA1040M-...
	DRA105M-3	●	0.413	0.432		3.819	1.929	1.299							DA1050M-... ~ DA1090M-...
	DRA110M-3	●	0.433	0.452		3.937	2.047	1.358							DA1100M-... ~ DA1140M-...
	DRA115M-3	●	0.453	0.471		4.016	2.126	1.417							DA1150M-... ~ DA1190M-...
	DRA120M-3	●	0.472	0.491		4.094	2.205	1.476							DA1200M-... ~ DA1240M-...
	DRA125M-3	●	0.492	0.511		4.173	2.283	1.535							DA1250M-... ~ DA1290M-...
	DRA130M-3	●	0.512	0.530		4.252	2.362	1.594							DA1300M-... ~ DA1340M-...
	DRA135M-3	●	0.531	0.550		4.331	2.441	1.654							DA1350M-... ~ DA1390M-...
	DRA140M-3	●	0.551	0.570		4.409	2.520	1.713							DA1400M-... ~ DA1440M-...
	DRA145M-3	●	0.571	0.590		4.488	2.598	1.772							DA1450M-... ~ DA1490M-...
	SF0750- DRA150M-3	●	0.591	0.629	0.750	4.764	2.795	1.890	1.969	0.984	Yes	HS-3048TRP	DTP-6	-	DA1500M-... ~ DA1590M-...
	DRA160M-3	●	0.630	0.668		4.961	2.992	2.008							DA1600M-... ~ DA1690M-...
	DRA170M-3	●	0.669	0.708		5.118	3.150	2.126							DA1700M-... ~ DA1790M-...
	DRA180M-3	●	0.709	0.747		5.315	3.346	2.244							DA1800M-... ~ DA1890M-...
	DRA190M-3	●	0.748	0.786		5.472	3.504	2.362							DA1900M-... ~ DA1990M-...
	SF1000- DRA200M-3	●	0.787	0.826	1.000	5.866	3.661	2.480	2.205	1.260	Yes	HS-4067TRP	DTP-7	-	DA2000M-... ~ DA2090M-...
DRA210M-3	●	0.827	0.865	6.024		3.819	2.598	DA2100M-... ~ DA2150M-...							
DRA220M-3	●	0.866	0.905	6.220		4.016	2.717	DA2200M-... ~ DA2250M-...							
DRA230M-3	●	0.906	0.944	6.378		4.173	2.835	DA2300M-... ~ DA2381M-...							
DRA240M-3	●	0.945	0.983	6.535		4.331	2.953	DA2400M-... ~ DA2450M-...							
DRA250M-3	●	0.984	1.004	6.693		4.488	3.071	DA2500M-... ~ DA2550M-...							

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder. See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

SF-DRA (Drilling Depth : 5 x DC)



5D

For PL indicates distance from drill point to corner edge K6~K17

Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions							Coolant Hole	Spare Parts			Applicable Inserts K6~K17	
			DC min.	DC max.	DCON	OAL	LFS	LU	LS		DCSFMS	Screw	Wrench		Wrench
Inch	SF0500- DRA080M-5	●	0.313	0.334	0.500	3.976	2.205	1.673	1.772	0.630	Yes	HS-2524TRP	-	FTP-5	DA0794M-... ~ DA0840M-...
	DRA085M-5	●	0.335	0.353		4.094	2.323	1.772							DA0850M-... ~ DA0890M-...
	DRA090M-5	●	0.354	0.373		4.213	2.441	1.870							DA0900M-... ~ DA0940M-...
	DRA095M-5	●	0.374	0.393		4.331	2.559	1.969							DA0950M-... ~ DA0990M-...
	SF0625- DRA100M-5	●	0.394	0.412	0.625	4.567	2.677	2.067	1.890	0.787	Yes	HS-2534TRP	-	FTP-5	DA1000M-... ~ DA1040M-...
	DRA105M-5	●	0.413	0.432		4.685	2.795	2.165							DA1050M-... ~ DA1090M-...
	DRA110M-5	●	0.433	0.452		4.843	2.953	2.264							DA1100M-... ~ DA1140M-...
	DRA115M-5	●	0.453	0.471		4.961	3.071	2.362							DA1150M-... ~ DA1190M-...
	DRA120M-5	●	0.472	0.491		5.079	3.189	2.461							DA1200M-... ~ DA1240M-...
	DRA125M-5	●	0.492	0.511		5.197	3.307	2.559							DA1250M-... ~ DA1290M-...
	DRA130M-5	●	0.512	0.530		5.315	3.425	2.657							DA1300M-... ~ DA1340M-...
	DRA135M-5	●	0.531	0.550		5.433	3.543	2.756							DA1350M-... ~ DA1390M-...
	DRA140M-5	●	0.551	0.570		5.551	3.661	2.854							DA1400M-... ~ DA1440M-...
	DRA145M-5	●	0.571	0.590		5.669	3.780	2.953							DA1450M-... ~ DA1490M-...
	SF0750- DRA150M-5	●	0.591	0.629	0.750	6.024	4.055	3.150	1.969	0.984	Yes	HS-3048TRP	DTP-6	-	DA1500M-... ~ DA1590M-...
	DRA160M-5	●	0.630	0.668		6.299	4.331	3.346							DA1600M-... ~ DA1690M-...
	DRA170M-5	●	0.669	0.708		6.535	4.567	3.543							DA1700M-... ~ DA1790M-...
	DRA180M-5	●	0.709	0.747		6.811	4.843	3.740							DA1800M-... ~ DA1890M-...
	DRA190M-5	●	0.748	0.786	7.047	5.079	3.937	HS-4067TRP	DTP-7	-	DA1900M-... ~ DA1990M-...				
	SF1000- DRA200M-5	●	0.787	0.826	1.000	7.520	5.315	4.134	2.205	1.260	Yes	HS-4067TRP	DTP-7	-	DA2000M-... ~ DA2090M-...
DRA210M-5	●	0.827	0.865	7.756		5.551	4.331	DA2100M-... ~ DA2150M-...							
DRA220M-5	●	0.866	0.905	8.031		5.827	4.528	DA2200M-... ~ DA2250M-...							
DRA230M-5	●	0.906	0.944	8.268		6.063	4.724	DA2300M-... ~ DA2381M-...							
DRA240M-5	●	0.945	0.983	8.504		6.299	4.921	DA2400M-... ~ DA2450M-...							
DRA250M-5	●	0.984	1.004	8.740		6.535	5.116	DA2500M-... ~ DA2550M-...							

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder. See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

K DRILLING

DRA

DRV

DRZ

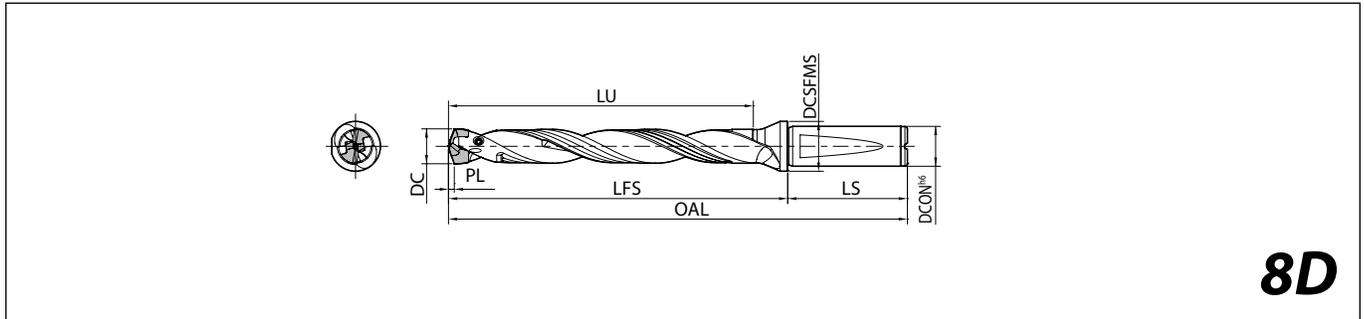
HOLESHOT

COREMASTER COREDRILL

COUNTERBORE

COUNTERSINK

SF-DRA (Drilling Depth : 8 x DC)



For PL indicates distance from drill point to corner edge K6~K17

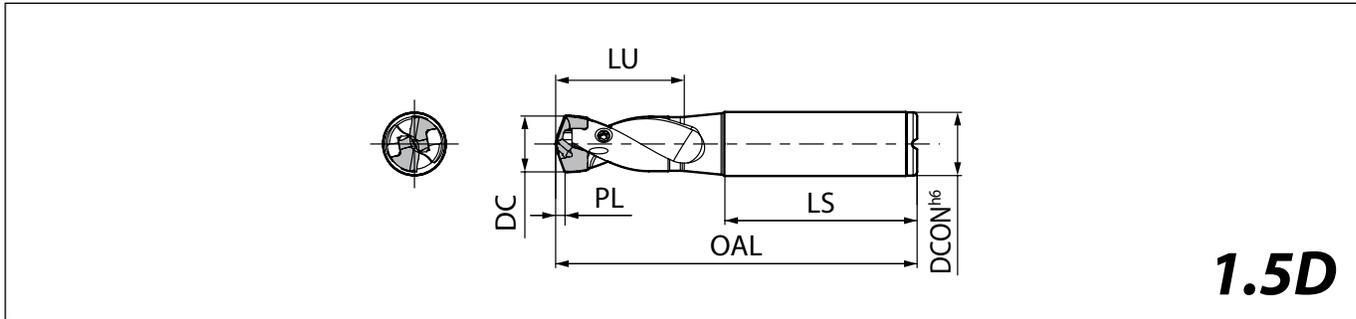
Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions							Coolant Hole	Spare Parts			Applicable Inserts K6~K17	
			DC min.	DC max.	DCON	OAL	LFS	LU	LS		DCSFMS	Screw	Wrench		Wrench
Inch	SF0500- DRA080M-8	●	0.313	0.334	0.500	4.961	3.189	2.677	1.772	0.630	Yes	HS-2524TRP	-	FTP-5	DA0794M-... ~ DA0840M-...
	DRA085M-8	●	0.335	0.353		5.157	3.386	2.835							DA0850M-... ~ DA0890M-...
	DRA090M-8	●	0.354	0.373		5.315	3.543	2.992							DA0900M-... ~ DA0940M-...
	DRA095M-8	●	0.374	0.393		5.512	3.740	3.150							DA0950M-... ~ DA0990M-...
	SF0625- DRA100M-8	●	0.394	0.412	0.625	5.787	3.898	3.307	1.890	0.787	Yes	HS-2534TRP	-	FTP-5	DA1000M-... ~ DA1040M-...
	DRA105M-8	●	0.413	0.432		5.984	4.094	3.465							DA1050M-... ~ DA1090M-...
	DRA110M-8	●	0.433	0.452		6.181	4.291	3.622							DA1100M-... ~ DA1140M-...
	DRA115M-8	●	0.453	0.471		6.378	4.488	3.780							DA1150M-... ~ DA1190M-...
	DRA120M-8	●	0.472	0.491		6.535	4.646	3.937							DA1200M-... ~ DA1240M-...
	DRA125M-8	●	0.492	0.511		6.732	4.843	4.094							DA1250M-... ~ DA1290M-...
	DRA130M-8	●	0.512	0.530		6.890	5.000	4.252							DA1300M-... ~ DA1340M-...
	DRA135M-8	●	0.531	0.550		7.087	5.197	4.409							DA1350M-... ~ DA1390M-...
	DRA140M-8	●	0.551	0.570		7.244	5.354	4.567							DA1400M-... ~ DA1440M-...
	DRA145M-8	●	0.571	0.590		7.441	5.551	4.724							DA1450M-... ~ DA1490M-...
	SF0750- DRA150M-8	●	0.591	0.629	0.750	7.913	5.945	5.039	1.969	0.984	Yes	HS-3048TRP	DTP-6	-	DA1500M-... ~ DA1590M-...
	DRA160M-8	●	0.630	0.668		8.307	6.339	5.354							DA1600M-... ~ DA1690M-...
	DRA170M-8	●	0.669	0.708		8.661	6.693	5.669							DA1700M-... ~ DA1790M-...
	DRA180M-8	●	0.709	0.747		9.055	7.087	5.984							DA1800M-... ~ DA1890M-...
	DRA190M-8	●	0.748	0.786		9.409	7.441	6.299							DA1900M-... ~ DA1990M-...
	SF1000- DRA200M-8	●	0.787	0.826	1.000	10.000	7.795	6.614	2.205	1.260	Yes	HS-4067TRP	DTP-7	-	DA2000M-... ~ DA2090M-...
DRA210M-8	●	0.827	0.865	10.354		8.150	6.929	DA2100M-... ~ DA2150M-...							
DRA220M-8	●	0.866	0.905	10.748		8.543	7.244	DA2200M-... ~ DA2250M-...							
DRA230M-8	●	0.906	0.944	11.102		8.898	7.559	DA2300M-... ~ DA2381M-...							
DRA240M-8	●	0.945	0.983	11.457		9.252	7.874	DA2400M-... ~ DA2450M-...							
DRA250M-8	●	0.984	1.004	11.811		9.606	8.189	DA2500M-... ~ DA2550M-...							

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder. See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

SS-DRA (Drilling Depth : 1.5 x DC)



For PL indicates distance from drill point to corner edge K6~K17

Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions						Coolant Hole	Spare Parts			Applicable Inserts K6~K17
			DC min.	DC max.	DCON	OAL	LU	LS		Screw	Wrench	Wrench	
Inch	SS0375- DRA080M-1.5	●	0.313	0.334	0.375	2.608	0.504	1.575	Yes	HS-2524TRP	-	FTP-5	DA0794M-... ~ DA0840M-...
	DRA085M-1.5	●	0.335	0.353		2.657	0.531						DA0850M-... ~ DA0890M-...
	DRA090M-1.5	●	0.354	0.373		2.707	0.563						DA0900M-... ~ DA0940M-...
	SS0500- DRA095M-1.5	●	0.374	0.393	0.500	2.953	0.591	1.772	Yes	HS-2534TRP	-	FTP-5	DA0950M-... ~ DA0990M-...
	DRA100M-1.5	●	0.394	0.412		3.002	0.622						DA1000M-... ~ DA1040M-...
	DRA105M-1.5	●	0.413	0.432		3.051	0.650						DA1050M-... ~ DA1090M-...
	DRA110M-1.5	●	0.433	0.452		3.140	0.681						DA1100M-... ~ DA1140M-...
	DRA115M-1.5	●	0.453	0.471		3.189	0.709						DA1150M-... ~ DA1190M-...
	SS0625- DRA120M-1.5	●	0.472	0.491	0.625	3.356	0.740	1.890	Yes	HS-2534TRP	-	FTP-5	DA1200M-... ~ DA1240M-...
	DRA125M-1.5	●	0.492	0.511		3.406	0.768						DA1250M-... ~ DA1290M-...
	DRA130M-1.5	●	0.512	0.530		3.455	0.799						DA1300M-... ~ DA1340M-...
	DRA135M-1.5	●	0.531	0.550		3.504	0.827						DA1350M-... ~ DA1390M-...
	DRA140M-1.5	●	0.551	0.570		3.553	0.858			DA1400M-... ~ DA1440M-...			
	DRA145M-1.5	●	0.571	0.590		3.602	0.886			DA1450M-... ~ DA1490M-...			
	DRA150M-1.5	●	0.591	0.629		3.740	0.917			DA1500M-... ~ DA1590M-...			
	SS0750- DRA160M-1.5	●	0.630	0.668	0.750	3.957	0.976	1.969	Yes	HS-3048TRP	DTP-6	-	DA1600M-... ~ DA1690M-...
	DRA170M-1.5	●	0.669	0.708		4.055	1.035						DA1700M-... ~ DA1790M-...
	DRA180M-1.5	●	0.709	0.747		4.193	1.094			HS-4067TRP	DTP-7	-	DA1800M-... ~ DA1890M-...
	SS1000- DRA190M-1.5	●	0.748	0.786	1.000	4.528	1.154	2.205	Yes	HS-4067TRP	DTP-7	-	DA1900M-... ~ DA1990M-...
	DRA200M-1.5	●	0.787	0.826		4.626	1.213						DA2000M-... ~ DA2090M-...
	DRA210M-1.5	●	0.827	0.865		4.724	1.272						DA2100M-... ~ DA2150M-...
DRA220M-1.5	●	0.866	0.905	4.862		1.331	DA2200M-... ~ DA2250M-...						
DRA230M-1.5	●	0.906	0.944	4.961		1.390	DA2300M-... ~ DA2381M-...						
DRA240M-1.5	●	0.945	0.983	5.059		1.449	DA2400M-... ~ DA2450M-...						
DRA250M-1.5	●	0.984	1.004	5.157	1.508	DA2500M-... ~ DA2550M-...							

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

K
DRILLING

DRA

DRV

DRZ

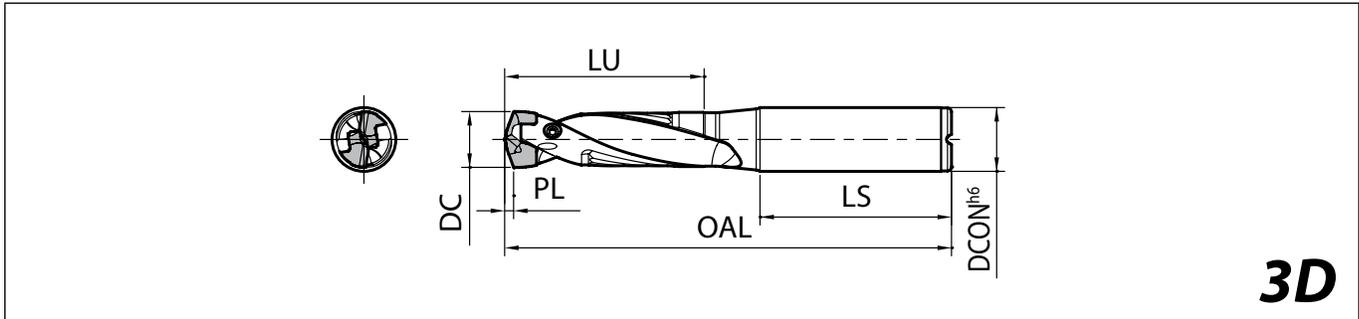
HOLESHOT

COREMASTER
COREDRILL

COUNTERBORE

COUNTERSINK

SS-DRA (Drilling Depth : 3 x DC)



For PL indicates distance from drill point to corner edge K6~K17

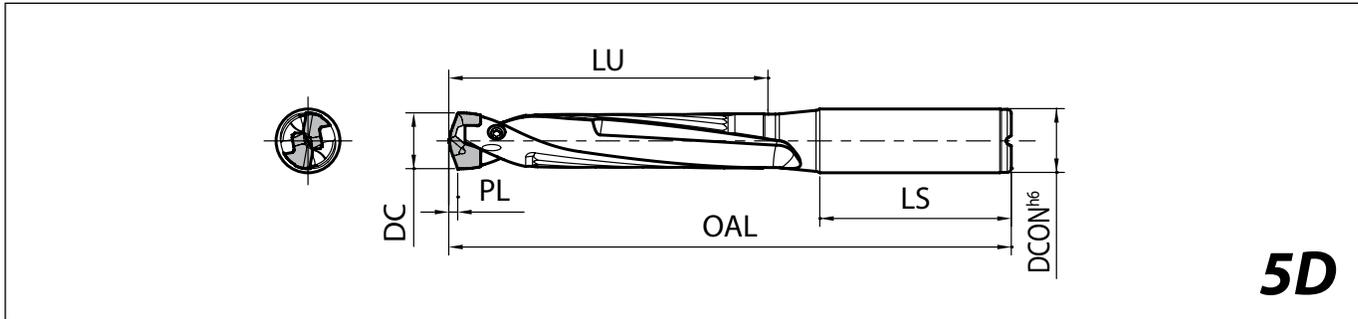
Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions						Coolant Hole	Spare Parts			Applicable Inserts K6~K17
			DC min.	DC max.	DCON	OAL	LU	LS		Screw	Wrench	Wrench	
Inch	SS0375- DRA080M-3	●	0.313	0.334	0.375	3.110	1.004	1.575	Yes	HS-2524TRP	-	FTP-5	DA0794M-... ~ DA0840M-...
	DRA085M-3	●	0.335	0.353		3.189	1.063						DA0850M-... ~ DA0890M-...
	DRA090M-3	●	0.354	0.373		3.268	1.122						DA0900M-... ~ DA0940M-...
	SS0500- DRA095M-3	●	0.374	0.393	0.500	3.543	1.181	1.772	Yes	HS-2534TRP	-	FTP-5	DA0950M-... ~ DA0990M-...
	DRA100M-3	●	0.394	0.412		3.622	1.240						DA1000M-... ~ DA1040M-...
	DRA105M-3	●	0.413	0.432		3.701	1.299						DA1050M-... ~ DA1090M-...
	DRA110M-3	●	0.433	0.452		3.819	1.358						DA1100M-... ~ DA1140M-...
	DRA115M-3	●	0.453	0.471		3.898	1.417						DA1150M-... ~ DA1190M-...
	SS0625- DRA120M-3	●	0.472	0.491	0.625	4.094	1.476	1.890	Yes	HS-2534TRP	-	FTP-5	DA1200M-... ~ DA1240M-...
	DRA125M-3	●	0.492	0.511		4.173	1.535						DA1250M-... ~ DA1290M-...
	DRA130M-3	●	0.512	0.530		4.252	1.594						DA1300M-... ~ DA1340M-...
	DRA135M-3	●	0.531	0.550		4.331	1.654						DA1350M-... ~ DA1390M-...
	DRA140M-3	●	0.551	0.570		4.409	1.713			DA1400M-... ~ DA1440M-...			
	DRA145M-3	●	0.571	0.590		4.488	1.772			DA1450M-... ~ DA1490M-...			
	DRA150M-3	●	0.591	0.629		4.685	1.890			DA1500M-... ~ DA1590M-...			
	SS0750- DRA160M-3	●	0.630	0.668	0.750	4.961	2.008	1.969	Yes	HS-3048TRP	DTP-6	-	DA1600M-... ~ DA1690M-...
	DRA170M-3	●	0.669	0.708		5.118	2.126						DA1700M-... ~ DA1790M-...
	DRA180M-3	●	0.709	0.747		5.315	2.244			DA1800M-... ~ DA1890M-...			
	SS1000- DRA190M-3	●	0.748	0.786	1.000	5.472	2.362	2.205	Yes	HS-4067TRP	DTP-7	-	DA1900M-... ~ DA1990M-...
	DRA200M-3	●	0.787	0.826		5.866	2.480						DA2000M-... ~ DA2090M-...
	DRA210M-3	●	0.827	0.865		6.024	2.598						DA2100M-... ~ DA2150M-...
	DRA220M-3	●	0.866	0.905		6.220	2.717						DA2200M-... ~ DA2250M-...
	DRA230M-3	●	0.906	0.944		6.378	2.835						DA2300M-... ~ DA2381M-...
	DRA240M-3	●	0.945	0.983		6.535	2.953						DA2400M-... ~ DA2450M-...
DRA250M-3	●	0.984	1.004	6.693		3.070	DA2500M-... ~ DA2550M-...						

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

SS-DRA (Drilling Depth : 5 x DC)



For PL indicates distance from drill point to corner edge K6~K17

Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions						Coolant Hole	Spare Parts			Applicable Inserts K6~K17
			DC min.	DC max.	DCON	OAL	LU	LS		Screw	Wrench	Wrench	
Inch	SS0375- DRA080M-5	●	0.313	0.334	0.375	3.780	1.673	1.575	Yes	HS-2524TRP	-	FTP-5	DA0794M-... ~ DA0840M-...
	DRA085M-5	●	0.335	0.353		3.898	1.772						DA0850M-... ~ DA0890M-...
	DRA090M-5	●	0.354	0.373		4.016	1.870						DA0900M-... ~ DA0940M-...
	SS0500- DRA095M-5	●	0.374	0.393	0.500	4.331	1.969	1.772	Yes	HS-2524TRP	-	FTP-5	DA0950M-... ~ DA0990M-...
	DRA100M-5	●	0.394	0.412		4.449	2.067						DA1000M-... ~ DA1040M-...
	DRA105M-5	●	0.413	0.432		4.567	2.165						DA1050M-... ~ DA1090M-...
	DRA110M-5	●	0.433	0.452		4.724	2.264						DA1100M-... ~ DA1140M-...
	DRA115M-5	●	0.453	0.471		4.843	2.362						DA1150M-... ~ DA1190M-...
	SS0625- DRA120M-5	●	0.472	0.491	0.625	5.079	2.461	1.890	Yes	HS-2534TRP	-	FTP-5	DA1200M-... ~ DA1240M-...
	DRA125M-5	●	0.492	0.511		5.197	2.559						DA1250M-... ~ DA1290M-...
	DRA130M-5	●	0.512	0.530		5.315	2.657						DA1300M-... ~ DA1340M-...
	DRA135M-5	●	0.531	0.550		5.433	2.756						DA1350M-... ~ DA1390M-...
	DRA140M-5	●	0.551	0.570		5.551	2.854			DA1400M-... ~ DA1440M-...			
	DRA145M-5	●	0.571	0.590		5.669	2.953			DA1450M-... ~ DA1490M-...			
	DRA150M-5	●	0.591	0.629		5.945	3.150			DA1500M-... ~ DA1590M-...			
	SS0750- DRA160M-5	●	0.630	0.668	0.750	6.299	3.346	1.969	Yes	HS-3048TRP	DTP-6	-	DA1600M-... ~ DA1690M-...
	DRA170M-5	●	0.669	0.708		6.535	3.543						DA1700M-... ~ DA1790M-...
	DRA180M-5	●	0.709	0.747		6.811	3.740			HS-4067TRP	DTP-7	-	DA1800M-... ~ DA1890M-...
	SS1000- DRA190M-5	●	0.748	0.786	1.000	7.047	3.937	2.205	Yes	HS-4067TRP	DTP-7	-	DA1900M-... ~ DA1990M-...
	DRA200M-5	●	0.787	0.826		7.520	4.134						DA2000M-... ~ DA2090M-...
	DRA210M-5	●	0.827	0.865		7.756	4.331						DA2100M-... ~ DA2150M-...
DRA220M-5	●	0.866	0.905	8.031		4.528	DA2200M-... ~ DA2250M-...						
DRA230M-5	●	0.906	0.944	8.268		4.724	DA2300M-... ~ DA2381M-...						
DRA240M-5	●	0.945	0.983	8.504		4.921	DA2400M-... ~ DA2450M-...						
DRA250M-5	●	0.984	1.004	8.740	5.116	DA2500M-... ~ DA2550M-...							

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

K DRILLING

DRA

DRV

DRZ

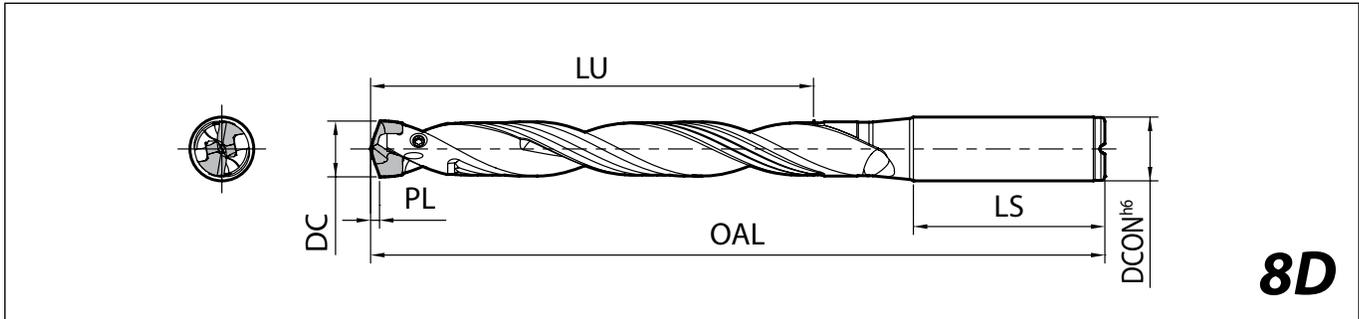
HOLESHOT

COREMASTER
COREDRILL

COUNTERBORE

COUNTERSINK

SS-DRA (Drilling Depth : 8 x DC)



For PL indicates distance from drill point to corner edge K6~K17

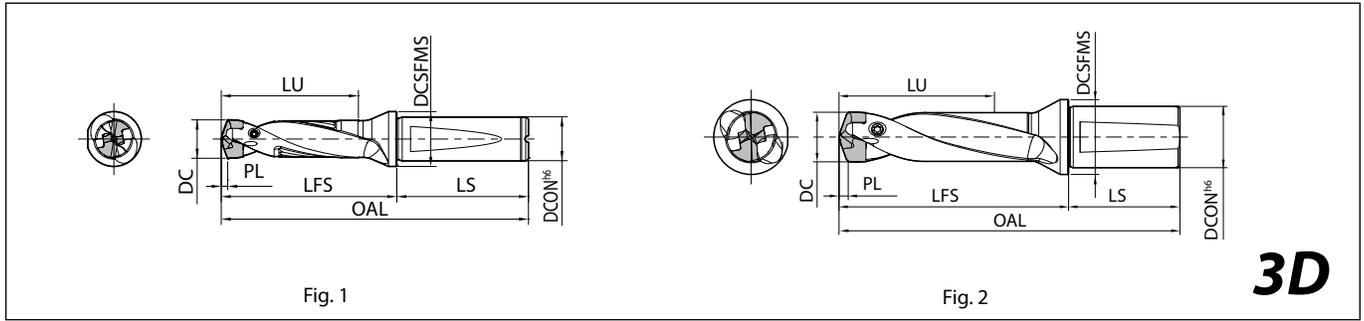
Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions					Coolant Hole	Spare Parts			Applicable Inserts K6~K17	
			DC min.	DC max.	DCON	OAL	LU		LS	Screw	Wrench		Wrench
Inch	SS0375- DRA080M-8	●	0.313	0.334	0.375	4.764	2.677	1.575	Yes	HS-2524TRP	-	FTP-5	DA0794M-... ~ DA0840M-...
	DRA085M-8	●	0.335	0.353		4.961	2.835						DA0850M-... ~ DA0890M-...
	DRA090M-8	●	0.354	0.373		5.118	2.992						DA0900M-... ~ DA0940M-...
	SS0500- DRA095M-8	●	0.374	0.393	0.500	5.512	3.150	1.772	Yes	HS-2524TRP	-	FTP-5	DA0950M-... ~ DA0990M-...
	DRA100M-8	●	0.394	0.412		5.669	3.307						DA1000M-... ~ DA1040M-...
	DRA105M-8	●	0.413	0.432		5.866	3.465						DA1050M-... ~ DA1090M-...
	DRA110M-8	●	0.433	0.452		6.063	3.622						DA1100M-... ~ DA1140M-...
	DRA115M-8	●	0.453	0.471		6.260	3.780						DA1150M-... ~ DA1190M-...
	SS0625- DRA120M-8	●	0.472	0.491	0.625	6.535	3.937	1.890	Yes	HS-2534TRP	-	FTP-5	DA1200M-... ~ DA1240M-...
	DRA125M-8	●	0.492	0.511		6.732	4.094						DA1250M-... ~ DA1290M-...
	DRA130M-8	●	0.512	0.530		6.890	4.252						DA1300M-... ~ DA1340M-...
	DRA135M-8	●	0.531	0.550		7.087	4.409						DA1350M-... ~ DA1390M-...
	DRA140M-8	●	0.551	0.570		7.244	4.567			DA1400M-... ~ DA1440M-...			
	DRA145M-8	●	0.571	0.590		7.441	4.724			DA1450M-... ~ DA1490M-...			
	DRA150M-8	●	0.591	0.629		7.835	5.039			DA1500M-... ~ DA1590M-...			
	SS0750- DRA160M-8	●	0.630	0.668	0.750	8.307	5.354	1.969	Yes	HS-3048TRP	DTP-6	-	DA1600M-... ~ DA1690M-...
	DRA170M-8	●	0.669	0.708		8.661	5.669						DA1700M-... ~ DA1790M-...
	DRA180M-8	●	0.709	0.747		9.055	5.984			DA1800M-... ~ DA1890M-...			
	SS1000- DRA190M-8	●	0.748	0.786	1.000	9.409	6.299	2.205	Yes	HS-4067TRP	DTP-7	-	DA1900M-... ~ DA1990M-...
	DRA200M-8	●	0.787	0.826		10.000	6.614						DA2000M-... ~ DA2090M-...
	DRA210M-8	●	0.827	0.865		10.354	6.929						DA2100M-... ~ DA2150M-...
	DRA220M-8	●	0.866	0.905		10.748	7.244						DA2200M-... ~ DA2250M-...
	DRA230M-8	●	0.906	0.944		11.102	7.559						DA2300M-... ~ DA2381M-...
	DRA240M-8	●	0.945	0.983		11.457	7.874						DA2400M-... ~ DA2450M-...
DRA250M-8	●	0.984	1.004	11.969		8.189	DA2500M-... ~ DA2550M-...						

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

SF-DRA (Drilling Depth : 3 x DC)



For PL indicates distance from drill point to corner edge K6~K17

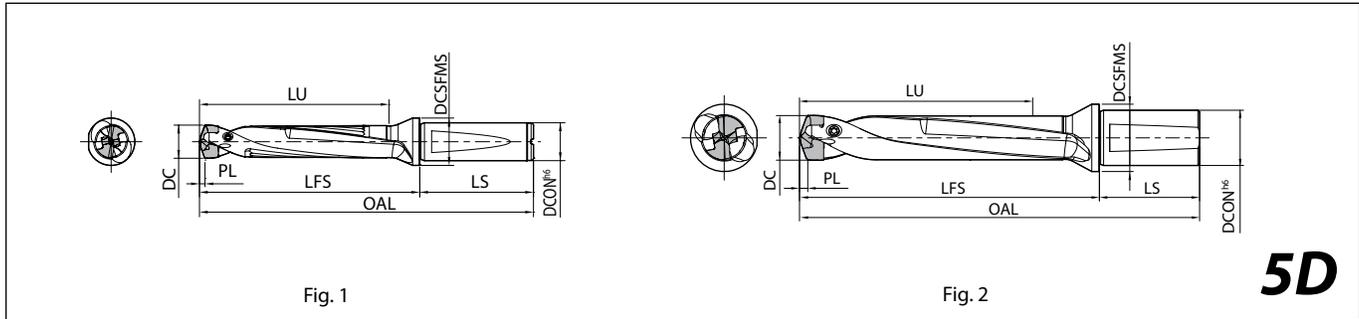
Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions							Coolant Hole	Fig.	Spare Parts			Applicable Inserts K6~K17		
			DC min.	DC max.	DCON	OAL	LFS	LU	LS			DCSFMS	Screw	Wrench		Wrench	
mm	SF12- DRA080M-3	●	7.94	8.49	12	84	39	25.5	45	16	Yes	1	HS-2524TRP	-	FTP-5	DA0794M-...~DA0840M-...	
	DRA085M-3	●	8.5	8.99		86	41	27								1	DA0850M-...~DA0890M-...
	DRA090M-3	●	9	9.49		88	43	28.5								1	DA0900M-...~DA0940M-...
	DRA095M-3	●	9.5	9.99		90	45	30								1	DA0950M-...~DA0990M-...
	SF16- DRA100M-3	●	10	10.49	16	95	47	31.5	48	20	Yes	1	HS-2534TRP	-	FTP-5	DA1000M-...~DA1040M-...	
	DRA105M-3	●	10.5	10.99		97	49	33								1	DA1050M-...~DA1090M-...
	DRA110M-3	●	11	11.49		100	52	34.5								1	DA1100M-...~DA1140M-...
	DRA115M-3	●	11.5	11.99		102	54	36								1	DA1150M-...~DA1190M-...
	DRA120M-3	●	12	12.49		104	56	37.5								1	DA1200M-...~DA1240M-...
	DRA125M-3	●	12.5	12.99		106	58	39								1	DA1250M-...~DA1290M-...
	DRA130M-3	●	13	13.49		108	60	40.5								1	DA1300M-...~DA1340M-...
	DRA135M-3	●	13.5	13.99		110	62	42								1	DA1350M-...~DA1390M-...
	DRA140M-3	●	14	14.49		112	64	43.5								1	DA1400M-...~DA1440M-...
	DRA145M-3	●	14.5	14.99		114	66	45								1	DA1450M-...~DA1490M-...
	SF20- DRA150M-3	●	15	15.99	20	121	71	48	50	25	Yes	1	HS-3048TRP	DTP-6	-	DA1500M-...~DA1590M-...	
	DRA160M-3	●	16	16.99		126	76	51								1	DA1600M-...~DA1690M-...
	DRA170M-3	●	17	17.99		130	80	54								1	DA1700M-...~DA1790M-...
	SF25- DRA180M-3	●	18	18.99	25	141	85	57	56	32	Yes	1	HS-4067TRP	DTP-7	-	DA1800M-...~DA1890M-...	
	DRA190M-3	●	19	19.99		145	89	60								1	DA1900M-...~DA1990M-...
	DRA200M-3	●	20	20.99		149	93	63								1	DA2000M-...~DA2090M-...
	DRA210M-3	●	21	21.99		153	97	66								1	DA2100M-...~DA2150M-...
	DRA220M-3	●	22	22.99		158	102	69								1	DA2200M-...~DA2250M-...
	DRA230M-3	●	23	23.99		162	106	72								1	DA2300M-...~DA2350M-...
	DRA240M-3	●	24	24.99		166	110	75								1	DA2400M-...~DA2450M-...
	DRA250M-3	●	25	25.99		170	114	78								1	DA2500M-...~DA2550M-...
	SF32- DRA260M-3	●	26	26.99	32	178	120	81	58	39	Yes	2	HS-50100TRP	DTPM-15	-	DA2600M-...~DA2650M-...	
	DRA270M-3	●	27	27.99		181	123	84								2	DA2700M-...~DA2750M-...
	DRA280M-3	●	28	28.99		185	127	87								2	DA2800M-...~DA2850M-...
	DRA290M-3	●	29	29.99		189	131	90								2	DA2900M-...~DA2950M-...
	DRA300M-3	●	30	30.99		193	135	93								2	DA3000M-...~DA3050M-...
	DRA310M-3	●	31	31.99		196	138	96								2	DA3100M-...~DA3150M-...
	DRA320M-3	●	32	33		200	142	99								2	DA3200M-...~DA3300M-...

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

SF-DRA (Drilling Depth : 5 x DC)



For PL indicates distance from drill point to corner edge K6~K17

Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions								Coolant Hole	Fig.	Spare Parts			Applicable Inserts K6~K17
			DC min.	DC max.	DCON	OAL	LFS	LU	LS	DCSFMS			Screw	Wrench	Wrench	
mm	SF12- DRA080M-5 DRA085M-5 DRA090M-5 DRA095M-5	●	7.94	8.49	12	101	56	42.5	45	16	Yes	1	HS-2524TRP	-	FTP-5	DA0794M-...~DA0840M-...
		●	8.5	8.99		104	59	45								DA0850M-...~DA0890M-...
		●	9	9.49		107	62	47.5								DA0900M-...~DA0940M-...
		●	9.5	9.99		110	65	50								DA0950M-...~DA0990M-...
	SF16- DRA100M-5 DRA105M-5 DRA110M-5 DRA115M-5 DRA120M-5 DRA125M-5 DRA130M-5 DRA135M-5 DRA140M-5 DRA145M-5	●	10	10.49	16	116	68	52.5	48	20	Yes	1	HS-2534TRP	-	FTP-5	DA1000M-...~DA1040M-...
		●	10.5	10.99		119	71	55								DA1050M-...~DA1090M-...
		●	11	11.49		123	75	57.5								DA1100M-...~DA1140M-...
		●	11.5	11.99		126	78	60								DA1150M-...~DA1190M-...
		●	12	12.49		129	81	62.5								DA1200M-...~DA1240M-...
		●	12.5	12.99		132	84	65								DA1250M-...~DA1290M-...
		●	13	13.49		135	87	67.5								DA1300M-...~DA1340M-...
		●	13.5	13.99		138	90	70								DA1350M-...~DA1390M-...
		●	14	14.49		141	93	72.5								DA1400M-...~DA1440M-...
		●	14.5	14.99		144	96	75								DA1450M-...~DA1490M-...
	SF20- DRA150M-5 DRA160M-5 DRA170M-5	●	15	15.99	20	153	103	80	50	25	Yes	1	HS-3048TRP	DTP-6	-	DA1500M-...~DA1590M-...
		●	16	16.99		160	110	85								DA1600M-...~DA1690M-...
		●	17	17.99		166	116	90								DA1700M-...~DA1790M-...
	SF25- DRA180M-5 DRA190M-5 DRA200M-5 DRA210M-5 DRA220M-5 DRA230M-5 DRA240M-5 DRA250M-5	●	18	18.99	25	179	123	95	56	32	Yes	1	HS-4067TRP	DTP-7	-	DA1800M-...~DA1890M-...
		●	19	19.99		185	129	100								DA1900M-...~DA1990M-...
		●	20	20.99		191	135	105								DA2000M-...~DA2090M-...
		●	21	21.99		197	141	110								DA2100M-...~DA2150M-...
		●	22	22.99		204	148	115								DA2200M-...~DA2250M-...
		●	23	23.99		210	154	120								DA2300M-...~DA2350M-...
		●	24	24.99		216	160	125								DA2400M-...~DA2450M-...
		●	25	25.99		222	166	130								DA2500M-...~DA2550M-...
	SF32- DRA260M-5 DRA270M-5 DRA280M-5 DRA290M-5 DRA300M-5 DRA310M-5 DRA320M-5	●	26	26.99	32	232	174	135	58	39	Yes	2	HS-50100TRP	DTPM-15	-	DA2600M-...~DA2650M-...
		●	27	27.99		237	179	140								DA2700M-...~DA2750M-...
		●	28	28.99		243	185	145								DA2800M-...~DA2850M-...
		●	29	29.99		249	191	150								DA2900M-...~DA2950M-...
		●	30	30.99		255	197	155								DA3000M-...~DA3050M-...
		●	31	31.99		260	202	160								DA3100M-...~DA3150M-...
		●	32	33		266	208	165								DA3200M-...~DA3300M-...

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

K DRILLING

DRA

DRV

DRZ

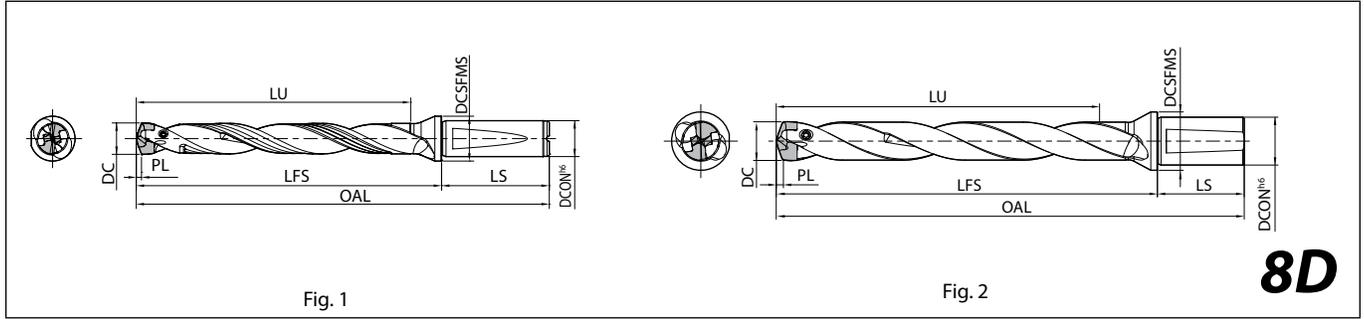
HOLESHOT

COREMASTER
COREDRILL

COUNTERBORE

COUNTERSINK

SF-DRA (Drilling Depth : 8 x DC)



For PL indicates distance from drill point to corner edge K6~K17

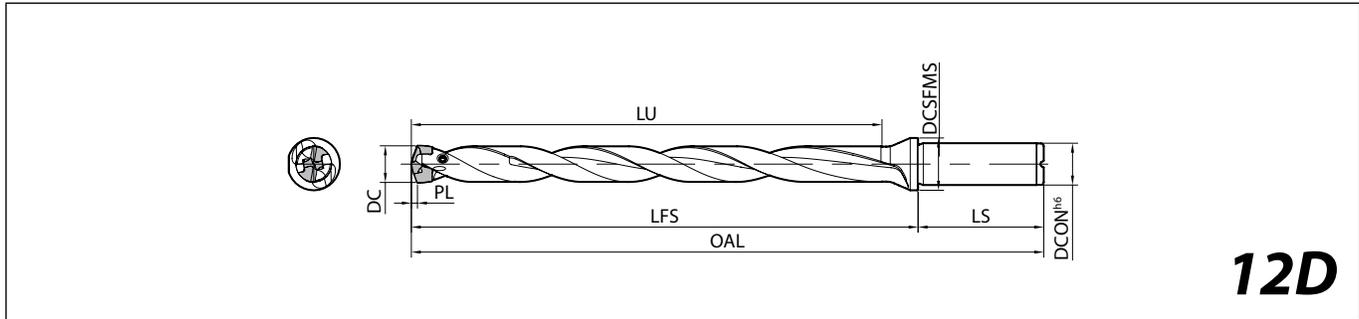
Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions								Coolant Hole	Fig.	Spare Parts			Applicable Inserts K6~K17	
			DC min.	DC max.	DCON	OAL	LFS	LU	LS	DCSFMS			Screw	Wrench	Wrench		
mm	SF12- DRA080M-8	●	7.94	8.49	12	126	81	68	45	16	Yes	1	HS-2524TRP	-	FTP-5	DA0794M-...~DA0840M-...	
	DRA085M-8	●	8.5	8.99		131	86	72								1	DA0850M-...~DA0890M-...
	DRA090M-8	●	9	9.49		135	90	76								1	DA0900M-...~DA0940M-...
	DRA095M-8	●	9.5	9.99		140	95	80								1	DA0950M-...~DA0990M-...
	SF16- DRA100M-8	●	10	10.49	16	147	99	84	48	20	Yes	1	HS-2534TRP	-	FTP-5	DA1000M-...~DA1040M-...	
	DRA105M-8	●	10.5	10.99		152	104	88								1	DA1050M-...~DA1090M-...
	DRA110M-8	●	11	11.49		157	109	92								1	DA1100M-...~DA1140M-...
	DRA115M-8	●	11.5	11.99		162	114	96								1	DA1150M-...~DA1190M-...
	DRA120M-8	●	12	12.49		166	118	100								1	DA1200M-...~DA1240M-...
	DRA125M-8	●	12.5	12.99		171	123	104								1	DA1250M-...~DA1290M-...
	DRA130M-8	●	13	13.49		175	127	108								1	DA1300M-...~DA1340M-...
	DRA135M-8	●	13.5	13.99		180	132	112								1	DA1350M-...~DA1390M-...
	DRA140M-8	●	14	14.49		184	136	116								1	DA1400M-...~DA1440M-...
	DRA145M-8	●	14.5	14.99		189	141	120								1	DA1450M-...~DA1490M-...
	SF20- DRA150M-8	●	15	15.99	20	201	151	128	50	25	Yes	1	HS-3048TRP	DTP-6	-	DA1500M-...~DA1590M-...	
	DRA160M-8	●	16	16.99		211	161	136								1	DA1600M-...~DA1690M-...
	DRA170M-8	●	17	17.99		220	170	144								1	DA1700M-...~DA1790M-...
	SF25- DRA180M-8	●	18	18.99	25	236	180	152	56	32	Yes	1	HS-4067TRP	DTP-7	-	DA1800M-...~DA1890M-...	
	DRA190M-8	●	19	19.99		245	189	160								1	DA1900M-...~DA1990M-...
	DRA200M-8	●	20	20.99		254	198	168								1	DA2000M-...~DA2090M-...
	DRA210M-8	●	21	21.99		263	207	176								1	DA2100M-...~DA2150M-...
	DRA220M-8	●	22	22.99		273	217	184								1	DA2200M-...~DA2250M-...
	DRA230M-8	●	23	23.99		282	226	192								1	DA2300M-...~DA2350M-...
	DRA240M-8	●	24	24.99		291	235	200								1	DA2400M-...~DA2450M-...
	DRA250M-8	●	25	25.99		300	244	208								1	DA2500M-...~DA2550M-...
	SF32- DRA260M-8	●	26	26.99	32	313	255	216	58	39	Yes	2	HS-50100TRP	DTPM-15	-	DA2600M-...~DA2650M-...	
	DRA270M-8	●	27	27.99		321	263	224								2	DA2700M-...~DA2750M-...
	DRA280M-8	●	28	28.99		330	272	232								2	DA2800M-...~DA2850M-...
	DRA290M-8	●	29	29.99		339	281	240								2	DA2900M-...~DA2950M-...
	DRA300M-8	●	30	30.99		348	290	248								2	DA3000M-...~DA3050M-...
	DRA310M-8	●	31	31.99		356	298	256								2	DA3100M-...~DA3150M-...
	DRA320M-8	●	32	33		365	307	264								2	DA3200M-...~DA3300M-...

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder. See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

SF-DRA (Drilling Depth : 12 x DC)



12D

For PL indicates distance from drill point to corner edge K6~K17

Toolholder Dimensions

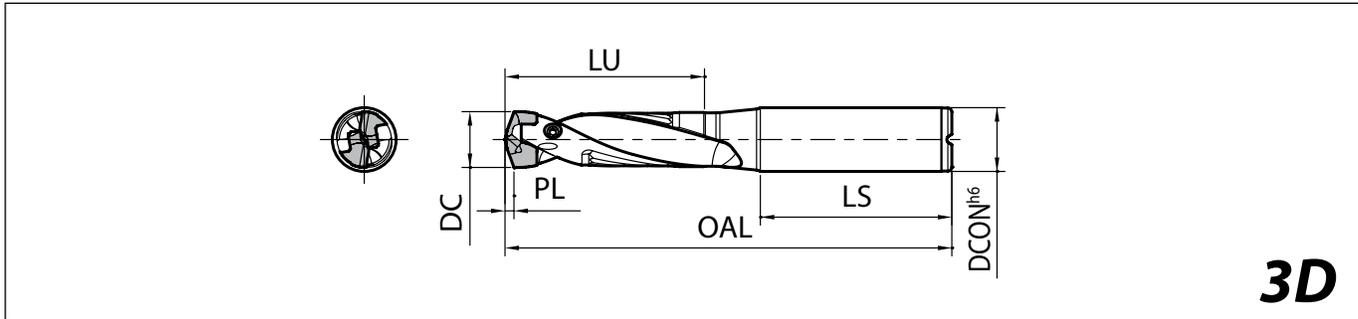
Unit	Part Number	Std. Item	Dimensions							Coolant Hole	Spare Parts			Applicable Inserts K6~K17	
			DC min.	DC max.	DCON	OAL	LFS	LU	LS		DCSFMS	Screw	Wrench		Wrench
mm	SF16- DRA120M-12 DRA125M-12 DRA130M-12 DRA135M-12 DRA140M-12 DRA145M-12	●	12	12.49	16	216	168	150	48	20	Yes	HS-2534TRP	-	FTP-5	DA1200M-...~DA1240M-...
		●	12.5	12.99		223	175	156							DA1250M-...~DA1290M-...
		●	13	13.49		229	181	162							DA1300M-...~DA1340M-...
		●	13.5	13.99		236	188	168							DA1350M-...~DA1390M-...
		●	14	14.49		242	194	174							DA1400M-...~DA1440M-...
		●	14.5	14.99		249	201	180							DA1450M-...~DA1490M-...
	SF20- DRA150M-12 DRA160M-12 DRA170M-12	●	15	15.99	20	265	215	192	50	25	Yes	HS-3048TRP	DTP-6	-	DA1500M-...~DA1590M-...
		●	16	16.99		279	229	204							DA1600M-...~DA1690M-...
		●	17	17.99		292	242	216							DA1700M-...~DA1790M-...
	SF25- DRA180M-12 DRA190M-12 DRA200M-12 DRA210M-12 DRA220M-12 DRA230M-12 DRA240M-12 DRA250M-12	●	18	18.99	25	312	256	228	56	32	Yes	HS-4067TRP	DTP-7	-	DA1800M-...~DA1890M-...
		●	19	19.99		325	269	240							DA1900M-...~DA1990M-...
		●	20	20.99		338	282	252							DA2000M-...~DA2090M-...
		●	21	21.99		351	295	264							DA2100M-...~DA2150M-...
		●	22	22.99		365	309	276							DA2200M-...~DA2250M-...
		●	23	23.99		378	322	288							DA2300M-...~DA2350M-...
		●	24	24.99		391	335	300							DA2400M-...~DA2450M-...
		●	25	25.5		404	348	312							DA2500M-...~DA2550M-...

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

K DRILLING

- DRA
- DRV
- DRZ
- HOLESHOT
- COREMASTER
COREDRILL
- COUNTERBORE
- COUNTERSINK

SS-DRA (Drilling Depth : 3 x DC)



For PL indicates distance from drill point to corner edge K6~K17

Toolholder Dimensions

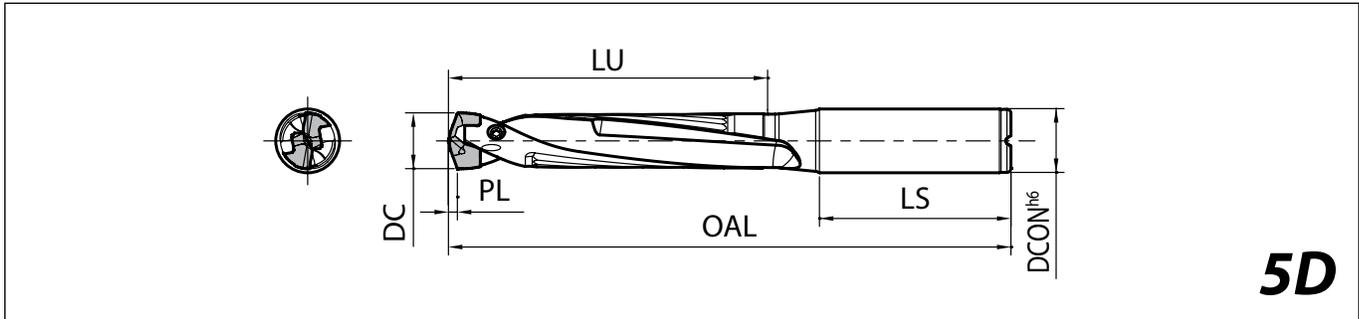
Unit	Part Number	Std. Item	Dimensions						Coolant Hole	Spare Parts			Applicable Inserts K6~K17	Applicable Chamfering Attachment K36
			DC min.	DC max.	DCON	OAL	LU	LS		Screw	Wrench	Wrench		
mm	SS10- DRA080M-3 DRA085M-3 DRA090M-3 DRA095M-3	●	7.94	8.49	10	79	25.5	40	Yes	HS-2524TRP	-	FTP-5	DA0794M-...~DA0840M-...	S20-CH10-DRA
		●	8.5	8.99		81	27						DA0850M-...~DA0890M-...	
		●	9	9.49		83	28.5						DA0900M-...~DA0940M-...	
		●	9.5	9.99		85	30						DA0950M-...~DA0990M-...	
	SS12- DRA100M-3 DRA105M-3 DRA110M-3 DRA115M-3	●	10	10.49	12	92	31.5	45	Yes	HS-2534TRP	-	FTP-5	DA1000M-...~DA1040M-...	S32-CH12-DRA
		●	10.5	10.99		94	33						DA1050M-...~DA1090M-...	
		●	11	11.49		97	34.5						DA1100M-...~DA1140M-...	
		●	11.5	11.99		99	36						DA1150M-...~DA1190M-...	
	SS14- DRA120M-3 DRA125M-3 DRA130M-3 DRA135M-3	●	12	12.49	14	101	37.5	45	Yes	HS-2534TRP	-	FTP-5	DA1200M-...~DA1240M-...	S32-CH14-DRA
		●	12.5	12.99		103	39						DA1250M-...~DA1290M-...	
		●	13	13.49		105	40.5						DA1300M-...~DA1340M-...	
		●	13.5	13.99		107	42						DA1350M-...~DA1390M-...	
	SS16- DRA140M-3 DRA145M-3 DRA150M-3	●	14	14.49	16	112	43.5	48	Yes	HS-3048TRP	DTP-6	-	DA1400M-...~DA1440M-...	S32-CH16-DRA
		●	14.5	14.99		114	45						DA1450M-...~DA1490M-...	
		●	15	15.99		119	48						DA1500M-...~DA1590M-...	
	SS18- DRA160M-3 DRA170M-3	●	16	16.99	18	124	51	48	Yes	HS-3048TRP	DTP-6	-	DA1600M-...~DA1690M-...	S32-CH18-DRA
		●	17	17.99		128	54						DA1700M-...~DA1790M-...	
	SS20- DRA180M-3 DRA190M-3	●	18	18.99	20	135	57	50	Yes	HS-4067TRP	DTP-7	-	DA1800M-...~DA1890M-...	S32-CH20-DRA
		●	19	19.99		139	60						DA1900M-...~DA1990M-...	
	SS25- DRA200M-3 DRA210M-3 DRA220M-3 DRA230M-3 DRA240M-3	●	20	20.99	25	149	63	56	Yes	HS-4067TRP	DTP-7	-	DA2000M-...~DA2090M-...	-
●		21	21.99	153		66	DA2100M-...~DA2150M-...							
●		22	22.99	158		69	DA2200M-...~DA2250M-...							
●		23	23.99	162		72	DA2300M-...~DA2350M-...							
SS32- DRA250M-3	●	24	24.99	32	166	75	60	Yes	HS-4067TRP	DTP-7	-	DA2400M-...~DA2450M-...	-	
SS32- DRA250M-3	●	25	25.5	32	174	78	60	Yes	HS-4067TRP	DTP-7	-	DA2500M-...~DA2550M-...	-	

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

K DRILLING

DRA
DRV
DRZ
HOLESHOT
COREMASTER
COREDRILL
COUNTERBORE
COUNTERSINK

SS-DRA (Drilling Depth : 5 x DC)



For PL indicates distance from drill point to corner edge K6~K17

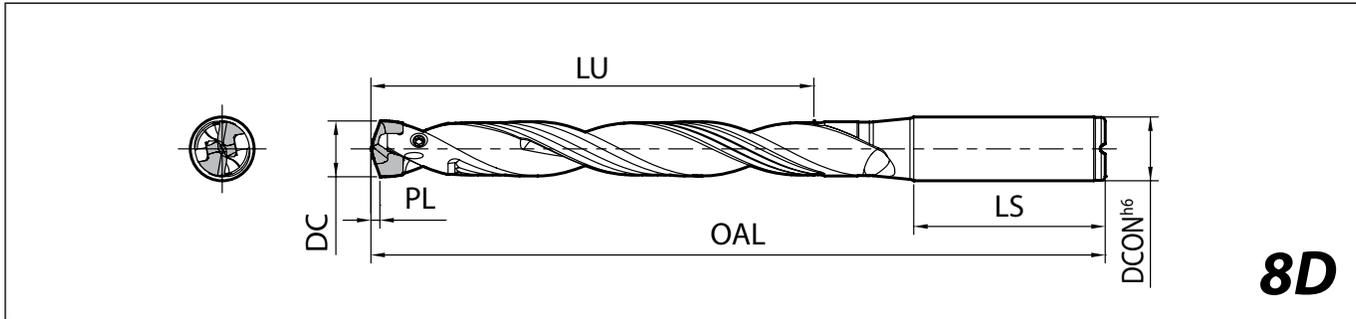
Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions					Coolant Hole	Spare Parts			Applicable Inserts K6~K17	Applicable Chamfering Attachment K36	
			DC min.	DC max.	DCON	OAL	LU		LS	Screw	Wrench			Wrench
mm	SS10- DRA080M-5	●	7.94	8.49	10	96	42.5	40	Yes	HS-2524TRP	-	FTP-5	DA0794M-...~DA0840M-...	S20-CH10-DRA
	DRA085M-5	●	8.5	8.99		99	45						DA0850M-...~DA0890M-...	
	DRA090M-5	●	9	9.49		102	47.5						DA0900M-...~DA0940M-...	
	DRA095M-5	●	9.5	9.99		105	50						DA0950M-...~DA0990M-...	
	SS12- DRA100M-5	●	10	10.49	12	113	52.5	45	Yes	HS-2534TRP	-	FTP-5	DA1000M-...~DA1040M-...	S32-CH12-DRA
	DRA105M-5	●	10.5	10.99		116	55						DA1050M-...~DA1090M-...	
	DRA110M-5	●	11	11.49		120	57.5						DA1100M-...~DA1140M-...	
	DRA115M-5	●	11.5	11.99		123	60						DA1150M-...~DA1190M-...	
	SS14- DRA120M-5	●	12	12.49	14	126	62.5	45	Yes	HS-2534TRP	-	FTP-5	DA1200M-...~DA1240M-...	S32-CH14-DRA
	DRA125M-5	●	12.5	12.99		129	65						DA1250M-...~DA1290M-...	
	DRA130M-5	●	13	13.49		132	67.5						DA1300M-...~DA1340M-...	
	DRA135M-5	●	13.5	13.99		135	70						DA1350M-...~DA1390M-...	
	SS16- DRA140M-5	●	14	14.49	16	141	72.5	48	Yes	HS-3048TRP	DTP-6	-	DA1400M-...~DA1440M-...	S32-CH16-DRA
	DRA145M-5	●	14.5	14.99		144	75						DA1450M-...~DA1490M-...	
	DRA150M-5	●	15	15.99		151	80						DA1500M-...~DA1590M-...	
	SS18- DRA160M-5	●	16	16.99	18	158	85	48	Yes	HS-3048TRP	DTP-6	-	DA1600M-...~DA1690M-...	S32-CH18-DRA
	DRA170M-5	●	17	17.99		164	90						DA1700M-...~DA1790M-...	
	SS20- DRA180M-5	●	18	18.99	20	173	95	50	Yes	HS-4067TRP	DTP-7	-	DA1800M-...~DA1890M-...	S32-CH20-DRA
	DRA190M-5	●	19	19.99		179	100						DA1900M-...~DA1990M-...	
	SS25- DRA200M-5	●	20	20.99	25	191	105	56	Yes	HS-4067TRP	DTP-7	-	DA2000M-...~DA2090M-...	-
DRA210M-5	●	21	21.99	197		110	DA2100M-...~DA2150M-...							
DRA220M-5	●	22	22.99	204		115	DA2200M-...~DA2250M-...							
DRA230M-5	●	23	23.99	210		120	DA2300M-...~DA2350M-...							
DRA240M-5	●	24	24.99	216		125	DA2400M-...~DA2450M-...							
SS32- DRA250M-5	●	25	25.5	32	226	130	60	Yes	HS-4067TRP	DTP-7	-	DA2500M-...~DA2550M-...	-	

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder. See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

SS-DRA (Drilling Depth : 8 x DC)



For PL indicates distance from drill point to corner edge K6~K17

Toolholder Dimensions

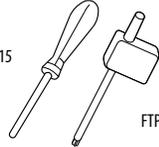
Unit	Part Number	Std. Item	Dimensions						Coolant Hole	Spare Parts			Applicable Inserts K6~K17	Applicable Chamfering Attachment K36
			DC min.	DC max.	DCON	OAL	LU	LS		Screw	Wrench	Wrench		
K DRILLING	SS10- DRA080M-8 DRA085M-8 DRA090M-8 DRA095M-8	●	7.94	8.49	10	121	68	40	Yes	HS-2524TRP	-	FTP-5	DA0794M-...~DA0840M-...	S20-CH10-DRA
		●	8.5	8.99		126	72						DA0850M-...~DA0890M-...	
		●	9	9.49		130	76						DA0900M-...~DA0940M-...	
		●	9.5	9.99		135	80						DA0950M-...~DA0990M-...	
	SS12- DRA100M-8 DRA105M-8 DRA110M-8 DRA115M-8	●	10	10.49	12	144	84	45	Yes	HS-2534TRP	-	FTP-5	DA1000M-...~DA1040M-...	S32-CH12-DRA
		●	10.5	10.99		149	88						DA1050M-...~DA1090M-...	
		●	11	11.49		154	92						DA1100M-...~DA1140M-...	
		●	11.5	11.99		159	96						DA1150M-...~DA1190M-...	
	SS14- DRA120M-8 DRA125M-8 DRA130M-8 DRA135M-8	●	12	12.49	14	163	100	45	Yes	HS-2534TRP	-	FTP-5	DA1200M-...~DA1240M-...	S32-CH14-DRA
		●	12.5	12.99		168	104						DA1250M-...~DA1290M-...	
		●	13	13.49		172	108						DA1300M-...~DA1340M-...	
		●	13.5	13.99		177	112						DA1350M-...~DA1390M-...	
	SS16- DRA140M-8 DRA145M-8 DRA150M-8	●	14	14.49	16	184	116	48	Yes	HS-3048TRP	DTP-6	-	DA1400M-...~DA1440M-...	S32-CH16-DRA
		●	14.5	14.99		189	120						DA1450M-...~DA1490M-...	
		●	15	15.99		199	128						DA1500M-...~DA1590M-...	
	SS18- DRA160M-8 DRA170M-8	●	16	16.99	18	209	136	48	Yes	HS-3048TRP	DTP-6	-	DA1600M-...~DA1690M-...	S32-CH18-DRA
●		17	17.99	218		144	DA1700M-...~DA1790M-...							
SS20- DRA180M-8 DRA190M-8	●	18	18.99	20	230	152	50	Yes	HS-4067TRP	DTP-7	-	DA1800M-...~DA1890M-...	S32-CH20-DRA	
	●	19	19.99		239	160						DA1900M-...~DA1990M-...		
SS25- DRA200M-8 DRA210M-8 DRA220M-8 DRA230M-8 DRA240M-8	●	20	20.99	25	254	168	56	Yes	HS-4067TRP	DTP-7	-	DA2000M-...~DA2090M-...	-	
	●	21	21.99		263	176						DA2100M-...~DA2150M-...		
	●	22	22.99		273	184						DA2200M-...~DA2250M-...		
	●	23	23.99		282	192						DA2300M-...~DA2350M-...		
	●	24	24.99		291	200						DA2400M-...~DA2450M-...		
SS32- DRA250M-8	●	25	25.5	32	304	208	60	Yes	HS-4067TRP	DTP-7	-	DA2500M-...~DA2550M-...	-	

DC min. and max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K17 for actual cutting diameters (DC).

Spare Parts

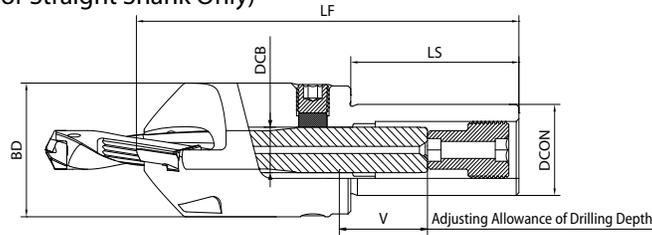
Clamp Screw	Part Number
HS-2524TRP	HS-2524TRP
HS-2534TRP	HS-2534TRP
HS-3048TRP	HS-3048TRP
HS-4067TRP	HS-4067TRP
	HS-50100TRP

Wrench	Part Number	Torque
DTP-6	FTP-5	0.5 Nm (4.4 in/lb)
DTP-7	DTP-6	0.8 Nm (7.1 in/lb)
DTPM-15	DTP-7	1.2 Nm (10.6 in/lb)
	DTPM-15	3.5 Nm (31.0 in/lb)



INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Chamfering Attachment (for Straight Shank Only)



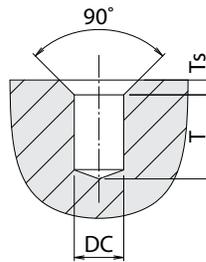
Dimensions

Part Number	Std. Item	Applicable Drill Shank Dia. DCB	Dimensions (mm)					Applicable Chamfer Insert
			DCON	BD	LF	LS	V (Max)	
S20-CH10-DRA	●	10	20	39	110	52	18	CT12T3-45DA
S32-CH12-DRA	●	12	32	43	130	62	24	
S32-CH14-DRA	●	14	32	45	130	62	24	
S32-CH16-DRA	●	16	32	47	141	62	24	
S32-CH18-DRA	●	18	32	49	145	62	24	
S32-CH20-DRA	●	20	32	53	150	62	24.5	

Applicable Insert

Shape	Part Number	MEGACOAT NANO	Dimensions (mm)	
		PR1535	W1	S
	CT12T3-45DA	●	13.54	3.97

Drilling and Chamfering Depths



DRA	Cutting Dia. (mm) DC		Drilling Depth (mm)						Chamfering Dimensions (mm)		Applicable Chamfering Attachment
	min.	max.	T (3XD)		T (5XD)		T (8XD)		Ts	Tsmax.	
			min.	max.	min.	max.	min.	max.			
DRV	7.94	8.49	12.5	20	18	36	43	60	2.5	8	S20-CH10-DRA
DRZ	8.50	8.99	12.5	21.5	21.5	38.5	48	64			
HOLESHOT	9.00	9.49	12.5	23	24	41	52	68			
COREMASTER COREDRILL	9.50	9.99	12.5	24.5	27.5	43.5	57.5	72.5	4	8	S32-CH12-DRA
	10.00	10.49	15.5	26	22	46	52	76			
COUNTERBORE	10.50	10.99	16	27.5	24.5	48.5	56	80			
COUNTERSINK	11.00	11.49	16.5	29	27	51	60	84	4	8	S32-CH14-DRA
	11.50	11.99	17.5	30.5	29.5	53.5	64	88			
	12.00	12.49	18	32	32	56	68	92			
	12.50	12.99	19	34	35	59	72.5	96.5	4	8	S32-CH16-DRA
	13.00	13.49	19.5	35.5	37.5	61.5	76	100			
	13.50	13.99	20	36.5	39.5	63.5	80	104			
	14.00	14.49	21	38.5	42.5	66.5	84.5	108.5	4	8	S32-CH18-DRA
	14.50	14.99	21.5	40	45	69	88.5	112.5			
	15.00	15.99	22.5	41.5	47.5	71.5	92.5	116.5			
	16.00	16.99	24	44.5	52.5	76.5	100.5	124.5	4	8	S32-CH20-DRA
	17.00	17.99	25.5	47.5	57.5	81.5	108.5	132.5			
	18.00	18.99	27.5	51	64	87	121	141			
	19.00	19.99	29.5	54	69	92	129	149	4	8	

Ts: Max. chamfering dimension at the full feed.
Tsmax.: Max. chamfering dimension at a 50% feed reduction.

Chamfer Attachment Spare Parts

Chamfering Attachment	Adjusting Screw		For Fixing Drills				For Mounting Inserts			
			Clamp	Clamp Screw	Plug Screw	Clamp	Clamp Screw	Wrench		
Part Number		Width Across Flat (mm)			Width Across Flat (mm)	Torque [N-m]				
S20-CH10-DRA	AJ-12X22	6	CP-CH10	HS8X8	4	12	BNP6	C09N	W6X18N	DTM-15
S32-CH12-DRA	AJ-16X30		CP-CH12			15				
S32-CH14-DRA	AJ-20X30	8	CP-CH14	HS10X10	5	20				
S32-CH16-DRA			CP-CH16		30					
S32-CH18-DRA	AJ-22x35	10	CP-CH18	HS12X10	6	30				
S32-CH20-DRA			CP-CH20	HS16X10	8	45				

DRA Chamfering Attachment Method

1. Mount DRA drill into the chamfering attachment (Fig.1)



Fig.1 Install the DRA

2. Install an insert and tighten temporarily with clearance between the cutting edge and DRA body (Fig.2)



Fig.2 Install Inserts

3. Adjust drilling depth by turning adjustment screw with hexagon wrench (Fig.3)

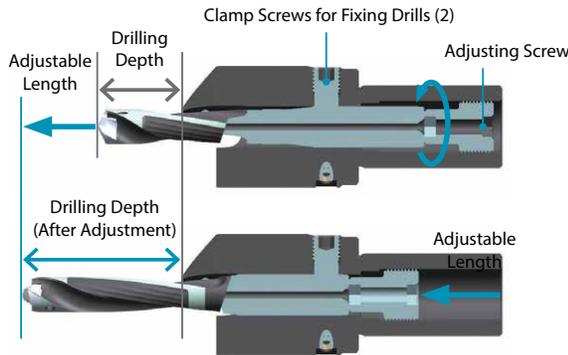


Fig.3 Adjustment of Drilling Depth

4. Align the flute edge and black relief part of the drill to the position shown by rotating the DRA drill (Fig.4)

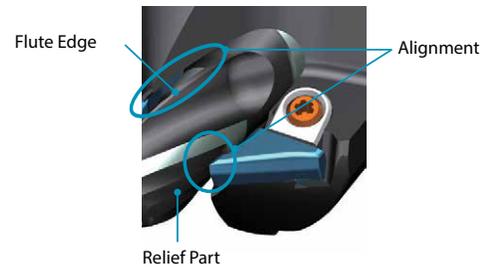


Fig.4 DRA Alignment

5. Fasten the two clamp screws for DRA (See table 1. for recommended torque)

Table1. Recommended Torque

Chamfering Attachment Part Number	Clamp Screw	
	Recommended Torque (N-m)	Width Across Flat (mm)
S20-CH10-DRA	12	4
S32-CH12-DRA	15	
S32-CH14-DRA	20	5
S32-CH16-DRA	30	6
S32-CH18-DRA	30	
S32-CH20-DRA	45	8

6. Tighten the inserts while lightly pressing the edge of insert against the relief part (Fig.5) (Recommended torque is 3.5Nm)

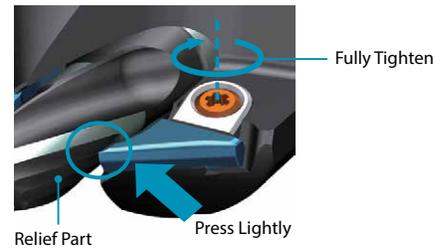


Fig.5 Fully Tighten

Cautions

- Chamfering attachment is compatible with straight shank SS-DRA. It cannot be used for flanged shank SF-DRA.
- Chamfering requires two chamfering inserts. Using one insert is not recommended.
- Only fully remove clamp screws when replacing them.

- Clamps and clamp screws for mounting inserts need to be replaced regularly.
- Screw locking adhesive is applied to adjustment screw. The effect will eventually wear off if the screws are used for a long time. Regular replacement is recommended.
- Please do not operate the plug screws.

INSERT GRADES A
TURNING INSERTS B
CBN/PCD INSERTS C
TURNING HOLDERS D
SMALL TOOLS E
BORING F
GROOVING G
CUT-OFF H
THREADING J
DRILLING K
MILLING M
QUICK CHANGE TOOLING N
SPARE PARTS P
TECHNICAL R
INDEX T

Recommended Cutting Conditions

GM - General Purpose

★ : 1st Recommendation ☆ : 2nd Recommendation

Workpiece Material	Recommended Grade / Cutting Speed (sfm)		Cutting Dia. DC (in)	Cutting Dia. DC (mm)	Holder Type (Cutting Depth) Feed Rate (ipr)			Notes
	PR1535	PR1525			1.5D & 3D	5D & 8D	12D	
Low Carbon Steel	★ 330~590	☆ 330~590	0.313 ~ 0.429	7.94 ~ 10.90	0.0047 ~ 0.0094	0.0038 ~ 0.0076	0.0033 ~ 0.0066	
			0.433 ~ 0.547	11.00 ~ 13.90	0.0047 ~ 0.0122	0.0038 ~ 0.0098	0.0033 ~ 0.0085	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0063 ~ 0.0142	0.0050 ~ 0.0113	0.0044 ~ 0.0099	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0063 ~ 0.0157	0.0050 ~ 0.0126	0.0044 ~ 0.0110	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
			0.984 ~ 1.122	25.00 ~ 28.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
			1.142 ~ 1.280	29.00 ~ 32.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	~	
Carbon Steel	★ 330~490	☆ 330~490	0.313 ~ 0.429	7.94 ~ 10.90	0.0047 ~ 0.0094	0.0038 ~ 0.0076	0.0033 ~ 0.0066	
			0.433 ~ 0.547	11.00 ~ 13.90	0.0047 ~ 0.0122	0.0038 ~ 0.0098	0.0033 ~ 0.0085	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0063 ~ 0.0142	0.0050 ~ 0.0113	0.0044 ~ 0.0099	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0063 ~ 0.0157	0.0050 ~ 0.0126	0.0044 ~ 0.0110	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
			0.984 ~ 1.122	25.00 ~ 28.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
			1.142 ~ 1.280	29.00 ~ 32.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	~	
Alloy Steel	★ 230~390	☆ 230~390	0.313 ~ 0.429	7.94 ~ 10.90	0.0047 ~ 0.0094	0.0038 ~ 0.0076	0.0033 ~ 0.0066	
			0.433 ~ 0.547	11.00 ~ 13.90	0.0047 ~ 0.0122	0.0038 ~ 0.0098	0.0033 ~ 0.0085	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0063 ~ 0.0142	0.0050 ~ 0.0113	0.0044 ~ 0.0099	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0063 ~ 0.0157	0.0050 ~ 0.0126	0.0044 ~ 0.0110	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
			0.984 ~ 1.122	25.00 ~ 28.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
			1.142 ~ 1.280	29.00 ~ 32.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	~	
Tool Steel	★ 160~300	☆ 160~300	0.313 ~ 0.429	7.94 ~ 10.90	0.0031 ~ 0.0067	0.0025 ~ 0.0054	0.0022 ~ 0.0047	Coolant See K42
			0.433 ~ 0.547	11.00 ~ 13.90	0.0031 ~ 0.0087	0.0025 ~ 0.0069	0.0022 ~ 0.0061	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0043 ~ 0.0098	0.0035 ~ 0.0079	0.0030 ~ 0.0069	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0043 ~ 0.0110	0.0035 ~ 0.0088	0.0030 ~ 0.0077	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0055 ~ 0.0126	0.0044 ~ 0.0101	0.0039 ~ 0.0088	
			0.984 ~ 1.122	25.00 ~ 28.50	0.0055 ~ 0.0126	0.0044 ~ 0.0101	0.0039 ~ 0.0088	
			1.142 ~ 1.280	29.00 ~ 32.50	0.0055 ~ 0.0126	0.0044 ~ 0.0101	~	
Stainless Steel**	★ 130~230	☆ 130~230	0.313 ~ 0.429	7.94 ~ 10.90	0.0039 ~ 0.0094	0.0031 ~ 0.0076	0.0028 ~ 0.0066	
			0.433 ~ 0.547	11.00 ~ 13.90	0.0039 ~ 0.0094	0.0031 ~ 0.0076	0.0028 ~ 0.0066	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0047 ~ 0.0118	0.0038 ~ 0.0094	0.0033 ~ 0.0083	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0059 ~ 0.0118	0.0047 ~ 0.0094	0.0041 ~ 0.0083	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0059 ~ 0.0118	0.0047 ~ 0.0094	0.0041 ~ 0.0083	
			0.984 ~ 1.122	25.00 ~ 28.50	0.0059 ~ 0.0138	0.0047 ~ 0.0110	0.0041 ~ 0.0096	
			1.142 ~ 1.280	29.00 ~ 32.50	0.0059 ~ 0.0138	0.0047 ~ 0.0110	~	
Gray Cast Iron	☆ 300~560	★ 300~560	0.313 ~ 0.429	7.94 ~ 10.90	0.0055 ~ 0.0114	0.0044 ~ 0.0091	0.0039 ~ 0.0080	
			0.433 ~ 0.547	11.00 ~ 13.90	0.0055 ~ 0.0146	0.0044 ~ 0.0117	0.0039 ~ 0.0102	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0075 ~ 0.0169	0.0060 ~ 0.0135	0.0052 ~ 0.0119	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0075 ~ 0.0177	0.0060 ~ 0.0142	0.0052 ~ 0.0124	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0094 ~ 0.0177	0.0076 ~ 0.0142	0.0066 ~ 0.0124	
			0.984 ~ 1.122	25.00 ~ 28.50	0.0094 ~ 0.0177	0.0076 ~ 0.0142	0.0066 ~ 0.0124	
			1.142 ~ 1.280	29.00 ~ 32.50	0.0094 ~ 0.0177	0.0076 ~ 0.0142	~	
Nodular Cast Iron	☆ 130~390	★ 130~390	0.313 ~ 0.429	7.94 ~ 10.90	0.0047 ~ 0.0094	0.0038 ~ 0.0076	0.0033 ~ 0.0066	
			0.433 ~ 0.547	11.00 ~ 13.90	0.0047 ~ 0.0122	0.0038 ~ 0.0098	0.0033 ~ 0.0085	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0063 ~ 0.0142	0.0050 ~ 0.0113	0.0044 ~ 0.0099	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0063 ~ 0.0157	0.0050 ~ 0.0126	0.0044 ~ 0.0110	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
			0.984 ~ 1.122	25.00 ~ 28.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
			1.142 ~ 1.280	29.00 ~ 32.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	~	

** Feed Rate 0.006 ipr or less is recommended for stainless steel until drilling depth reaches 0.5D. As drilling depth increases (1.5D → 3D → 5D → 8D → 12D), feed rates should be reduced. Internal and External coolant recommended for Stainless, Heat-resistant Alloys, and Titanium. Recommended Feed Rate Shows: 1.5D/3D = 100%, 5D/8D ≤ 80%, 12D ≤ 70%. Recommended Cutting Speed: 8D ≤ 80%, 12D ≤ 70%

K DRILLING

DRA
DRV
DRZ
HOLESHOT
COREMASTER
COREDRILL
COUNTERBORE
COUNTERSINK

Recommended Cutting Conditions

FTP - Flat Bottom, Counterboring / FTP-H Steel Beam Drilling

★ : 1st Recommendation ☆ : 2nd Recommendation

Workpiece Material	Recommended Grade / Cutting Speed (sfm)		Cutting Dia. DC (in)	Cutting Dia. DC (mm)	Holder Type (Cutting Depth) Feed Rate (ipr)			Notes
	PR1535	PR1525			1.5D & 3D	5D & 8D	12D	
Low Carbon Steel	★ 330~590	☆ 330~590	0.313 ~ 0.429	7.94 ~ 10.90	0.0047 ~ 0.0094	0.0038 ~ 0.0076	0.0033 ~ 0.0066	Coolant See K42
			0.433 ~ 0.547	11.00 ~ 13.90	0.0047 ~ 0.0122	0.0038 ~ 0.0098	0.0033 ~ 0.0085	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0063 ~ 0.0142	0.0050 ~ 0.0113	0.0044 ~ 0.0099	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0063 ~ 0.0157	0.0050 ~ 0.0126	0.0044 ~ 0.0110	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
			0.984 ~ 1.004	25.00 ~ 25.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
Carbon Steel	★ 330~490	☆ 330~490	0.313 ~ 0.429	7.94 ~ 10.90	0.0047 ~ 0.0094	0.0038 ~ 0.0076	0.0033 ~ 0.0066	
			0.433 ~ 0.547	11.00 ~ 13.90	0.0047 ~ 0.0122	0.0038 ~ 0.0098	0.0033 ~ 0.0085	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0063 ~ 0.0142	0.0050 ~ 0.0113	0.0044 ~ 0.0099	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0063 ~ 0.0157	0.0050 ~ 0.0126	0.0044 ~ 0.0110	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
			0.984 ~ 1.004	25.00 ~ 25.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
Alloy Steel	★ 230~390	☆ 230~390	0.313 ~ 0.429	7.94 ~ 10.90	0.0047 ~ 0.0094	0.0038 ~ 0.0076	0.0033 ~ 0.0066	
			0.433 ~ 0.547	11.00 ~ 13.90	0.0047 ~ 0.0122	0.0038 ~ 0.0098	0.0033 ~ 0.0085	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0063 ~ 0.0142	0.0050 ~ 0.0113	0.0044 ~ 0.0099	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0063 ~ 0.0157	0.0050 ~ 0.0126	0.0044 ~ 0.0110	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0079 ~ 0.0157	0.0063 ~ 0.0126	0.0055 ~ 0.0110	
			0.984 ~ 1.004	25.00 ~ 25.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
Tool Steel	★ 160~300	☆ 160~300	0.313 ~ 0.429	7.94 ~ 10.90	0.0031 ~ 0.0067	0.0025 ~ 0.0054	0.0022 ~ 0.0047	
			0.433 ~ 0.547	11.00 ~ 13.90	0.0031 ~ 0.0087	0.0025 ~ 0.0069	0.0022 ~ 0.0061	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0043 ~ 0.0098	0.0035 ~ 0.0079	0.0030 ~ 0.0069	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0043 ~ 0.0110	0.0035 ~ 0.0088	0.0030 ~ 0.0077	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0055 ~ 0.0118	0.0044 ~ 0.0094	0.0039 ~ 0.0083	
			0.984 ~ 1.004	25.00 ~ 25.50	0.0055 ~ 0.0126	0.0044 ~ 0.0101	0.0039 ~ 0.0088	
Stainless Steel※	★ 130~230	☆ 130~230	0.313 ~ 0.429	7.94 ~ 10.90	0.0039 ~ 0.0079	0.0031 ~ 0.0063	0.0028 ~ 0.0055	
			0.433 ~ 0.547	11.00 ~ 13.90	0.0039 ~ 0.0079	0.0031 ~ 0.0063	0.0028 ~ 0.0055	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0039 ~ 0.0094	0.0031 ~ 0.0076	0.0028 ~ 0.0066	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0059 ~ 0.0094	0.0047 ~ 0.0076	0.0041 ~ 0.0066	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0059 ~ 0.0094	0.0047 ~ 0.0076	0.0041 ~ 0.0066	
			0.984 ~ 1.004	25.00 ~ 25.50	0.0059 ~ 0.0110	0.0047 ~ 0.0088	0.0041 ~ 0.0077	
Gray Cast Iron	☆ 300~560	★ 300~560	0.313 ~ 0.429	7.94 ~ 10.90	0.0055 ~ 0.0114	0.0044 ~ 0.0091	0.0039 ~ 0.0080	
			0.433 ~ 0.547	11.00 ~ 13.90	0.0055 ~ 0.0146	0.0044 ~ 0.0117	0.0039 ~ 0.0102	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0075 ~ 0.0169	0.0060 ~ 0.0135	0.0052 ~ 0.0119	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0075 ~ 0.0177	0.0060 ~ 0.0142	0.0052 ~ 0.0124	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0094 ~ 0.0177	0.0076 ~ 0.0142	0.0066 ~ 0.0124	
			0.984 ~ 1.004	25.00 ~ 25.50	0.0094 ~ 0.0177	0.0076 ~ 0.0142	0.0066 ~ 0.0124	
Nodular Cast Iron	☆ 130~390	★ 130~390	0.313 ~ 0.429	7.94 ~ 10.90	0.0047 ~ 0.0094	0.0038 ~ 0.0076	0.0033 ~ 0.0066	
			0.433 ~ 0.547	11.00 ~ 13.90	0.0047 ~ 0.0122	0.0038 ~ 0.0098	0.0033 ~ 0.0085	
			0.551 ~ 0.705	14.00 ~ 17.90	0.0063 ~ 0.0142	0.0050 ~ 0.0113	0.0044 ~ 0.0099	
			0.709 ~ 0.846	18.00 ~ 21.50	0.0063 ~ 0.0157	0.0050 ~ 0.0126	0.0044 ~ 0.0110	
			0.866 ~ 0.965	22.00 ~ 24.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	
			0.984 ~ 1.004	25.00 ~ 25.50	0.0079 ~ 0.0177	0.0063 ~ 0.0142	0.0055 ~ 0.0124	

※ Feed Rate 0.006 ipr or less is recommended for stainless steel until drilling depth reaches 0.5D.
Internal and External coolant recommended for Stainless, Heat-resistant Alloys, and Titanium

As drilling depth increases (1.5D → 3D → 5D → 8D), feed rates should be reduced.
Recommended Feed Rate Shows: 1.5D/3D = 100%, 5D/8D ≤ 80%, 12D ≤ 70%
Recommended Cutting Speed: 8D ≤ 80%, 12D ≤ 70%

Notes: The recommended cutting conditions are for drilling on plain surfaces.
The conditions for drilling on slant hole shows the depth from the top of workpiece.
Set the feed rate under 50% when inclination angle is under 30°.
Set the feed rate under 30% when inclination angle is over 30°.
Traversing is not recommended.
Applicable to 1.5D, 3D, 5D, 8D, and 12D holders. Prepared hole (0.5 x DC) is needed when using 8D/12D holder.

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Recommended Cutting Conditions

HQP - High Precision Insert for Steel

★ : 1st Recommendation ☆ : 2nd Recommendation

Workpiece Material	Recommended Grade / Cutting Speed (sfm)	Cutting Dia. DC (in)	Cutting Dia. DC (mm)	Holder Type (Cutting Depth) Feed Rate (ipr)			Notes
	PR1525			1.5D & 3D	5D	8D & 12D	
Low Carbon Steel	★ 260~590	0.313 ~ 0.429	7.94 ~ 10.90	0.0047 ~ 0.0094	0.0038 ~ 0.0076	0.0033 ~ 0.0066	Coolant See K42
		0.433 ~ 0.547	11.00 ~ 13.90	0.0047 ~ 0.0110	0.0038 ~ 0.0088	0.0033 ~ 0.0077	
		0.551 ~ 0.705	14.00 ~ 17.90	0.0063 ~ 0.0126	0.0050 ~ 0.0101	0.0044 ~ 0.0088	
		0.709 ~ 0.784	18.00 ~ 19.90	0.0063 ~ 0.0142	0.0050 ~ 0.0113	0.0044 ~ 0.0099	
Carbon Steel	★ 260~490	0.313 ~ 0.429	7.94 ~ 10.90	0.0047 ~ 0.0094	0.0038 ~ 0.0076	0.0033 ~ 0.0066	
		0.433 ~ 0.547	11.00 ~ 13.90	0.0047 ~ 0.0110	0.0038 ~ 0.0088	0.0033 ~ 0.0077	
		0.551 ~ 0.705	14.00 ~ 17.90	0.0063 ~ 0.0126	0.0050 ~ 0.0101	0.0044 ~ 0.0088	
		0.709 ~ 0.784	18.00 ~ 19.90	0.0063 ~ 0.0142	0.0050 ~ 0.0113	0.0044 ~ 0.0099	
Alloy Steel	★ 230~390	0.313 ~ 0.429	7.94 ~ 10.90	0.0047 ~ 0.0094	0.0038 ~ 0.0076	0.0033 ~ 0.0066	
		0.433 ~ 0.547	11.00 ~ 13.90	0.0047 ~ 0.0110	0.0038 ~ 0.0088	0.0033 ~ 0.0077	
		0.551 ~ 0.705	14.00 ~ 17.90	0.0063 ~ 0.0126	0.0050 ~ 0.0101	0.0044 ~ 0.0088	
		0.709 ~ 0.784	18.00 ~ 19.90	0.0063 ~ 0.0142	0.0050 ~ 0.0113	0.0044 ~ 0.0099	
Tool Steel	★ 160~300	0.313 ~ 0.429	7.94 ~ 10.90	0.0031 ~ 0.0067	0.0025 ~ 0.0054	0.0022 ~ 0.0047	
		0.433 ~ 0.547	11.00 ~ 13.90	0.0031 ~ 0.0079	0.0025 ~ 0.0063	0.0022 ~ 0.0055	
		0.551 ~ 0.705	14.00 ~ 17.90	0.0043 ~ 0.0091	0.0035 ~ 0.0072	0.0030 ~ 0.0063	
		0.709 ~ 0.784	18.00 ~ 19.90	0.0043 ~ 0.0102	0.0035 ~ 0.0082	0.0030 ~ 0.0072	

As drilling depth increases (1.5D → 3D → 5D → 8D → 12D), feed rates should be reduced.
Recommended Feed Rate Shows: 1.5D/3D = 100%, 5D ≤ 80%, 8D/12D ≤ 70%

HQS - for Difficult-to-Cut Materials / Stainless Steel

★ : 1st Recommendation ☆ : 2nd Recommendation

Workpiece Material	Recommended Grade / Cutting Speed (sfm)	Cutting Dia. DC (in)	Cutting Dia. DC (mm)	Holder Type (Cutting Depth) Feed Rate (ipr)			Notes
	PR1535			1.5D & 3D	5D	8D & 12D	
Stainless Steel※	★ 130~160	0.313 ~ 0.429	7.94 ~ 10.90	0.0031 ~ 0.0047	0.0025 ~ 0.0038	0.0022 ~ 0.0033	Coolant See K42
		0.433 ~ 0.547	11.00 ~ 13.90	0.0039 ~ 0.0059	0.0031 ~ 0.0047	0.0028 ~ 0.0041	
		0.551 ~ 0.705	14.00 ~ 17.90	0.0039 ~ 0.0059	0.0031 ~ 0.0047	0.0028 ~ 0.0041	
		0.709 ~ 0.784	18.00 ~ 19.90	0.0047 ~ 0.0071	0.0038 ~ 0.0057	0.0033 ~ 0.0050	
Heat-Resistant Alloy	★ 50~70	0.313 ~ 0.429	7.94 ~ 10.90	0.0031 ~ 0.0047	0.0025 ~ 0.0038	0.0022 ~ 0.0033	
		0.433 ~ 0.547	11.00 ~ 13.90	0.0031 ~ 0.0059	0.0025 ~ 0.0047	0.0022 ~ 0.0041	
		0.551 ~ 0.705	14.00 ~ 17.90	0.0039 ~ 0.0059	0.0031 ~ 0.0047	0.0028 ~ 0.0041	
		0.709 ~ 0.784	18.00 ~ 19.90	0.0047 ~ 0.0071	0.0038 ~ 0.0057	0.0033 ~ 0.0050	
Titanium Alloy	★ 100~130	0.313 ~ 0.429	7.94 ~ 10.90	0.0031 ~ 0.0047	0.0025 ~ 0.0038	0.0022 ~ 0.0033	
		0.433 ~ 0.547	11.00 ~ 13.90	0.0031 ~ 0.0059	0.0025 ~ 0.0047	0.0022 ~ 0.0041	
		0.551 ~ 0.705	14.00 ~ 17.90	0.0039 ~ 0.0059	0.0031 ~ 0.0047	0.0028 ~ 0.0041	
		0.709 ~ 0.784	18.00 ~ 19.90	0.0047 ~ 0.0071	0.0038 ~ 0.0057	0.0033 ~ 0.0050	

※ Feed Rate 0.006 ipr or less is recommended for stainless steel until drilling depth reaches 0.5D.
Internal and External coolant recommended for Stainless, Heat-resistant Alloys, and Titanium

As drilling depth increases (1.5D → 3D → 5D → 8D → 12D), feed rates should be reduced.
Recommended Feed Rate Shows: 1.5D/3D = 100%, 5D ≤ 80%, 8D/12D ≤ 70%

K DRILLING

DRA

DRV

DRZ

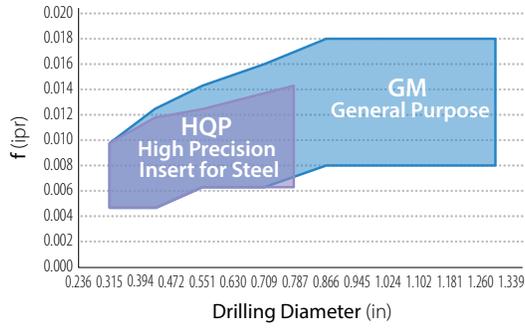
HOLESHOT

COREMASTER
COREDRILL

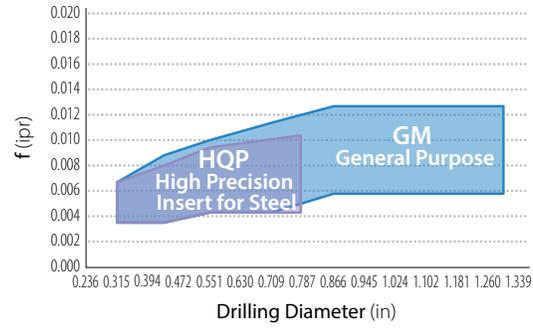
COUNTERBORE

COUNTERSINK

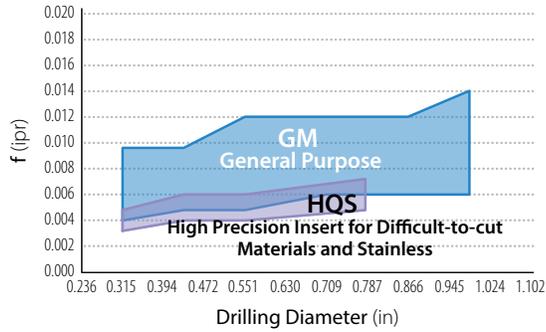
Low Carbon Steel/Carbon Steel/Alloy Steel



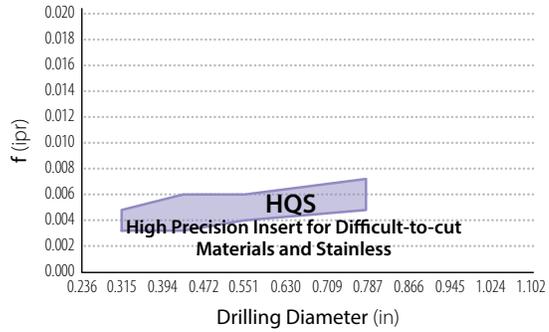
Mold Steel



Stainless Steel



Heat-resistant Alloy / Titanium Alloy



INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

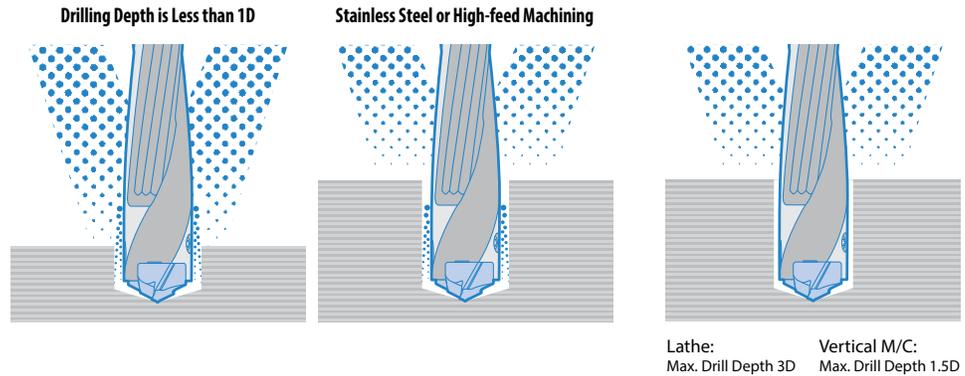
Coolant *Dry cutting is not recommended

1st Recommendation

Internal coolant

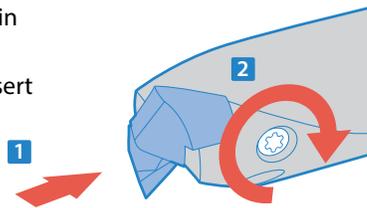
Internal + External Coolant

External Coolant

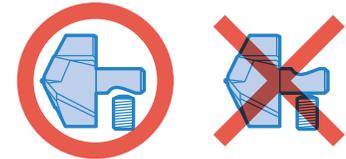


How to Attach Inserts

- 1 Install insert onto the toolholder in the right direction
- 2 Tighten clamp screw to fix the insert
(Torque: see page 31)



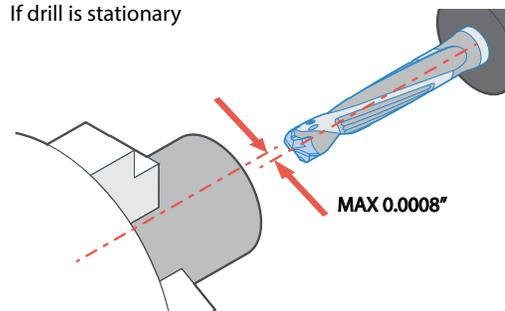
Be careful of the insert direction



- *1 Remove dust on insert pocket using air blow for every replacement.
- *2 Make sure that the locating surfaces of the insert closely contacts the toolholder.

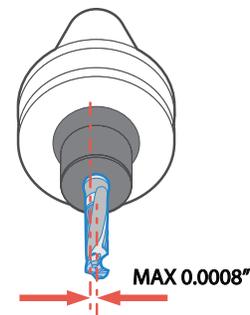
Core Deviation / Alignment Cautions

If drill is stationary



DRA works with both boring sleeve and collet-chuck. Center line deviation should be less than 0.0008" between workpiece and drill.

If drill is rotating



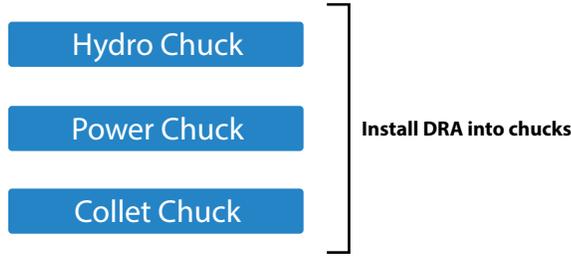
Do not use any arbor whose attachment surface is deformed. Center deviation must be less than 0.0008".

DRA
DRV
DRZ
HOLESHOT
COREMASTER COREDRILL
COUNTERBORE
COUNTERSINK

Toolholder Connection Cautions

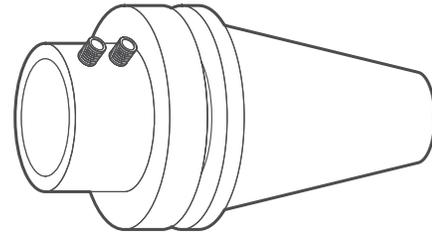
1st Choice

Hydro chuck, power chuck, collet chuck, etc.



2nd Choice

Side lock arbor

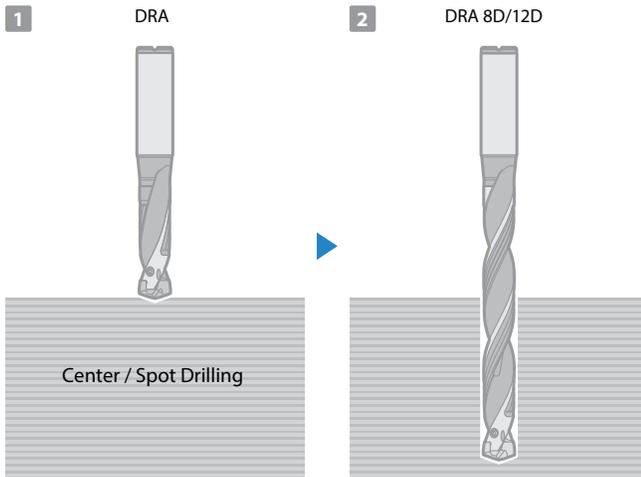


Example of side lock arbor

Cautions for Machining with 8D/12D Holder

Recommendations

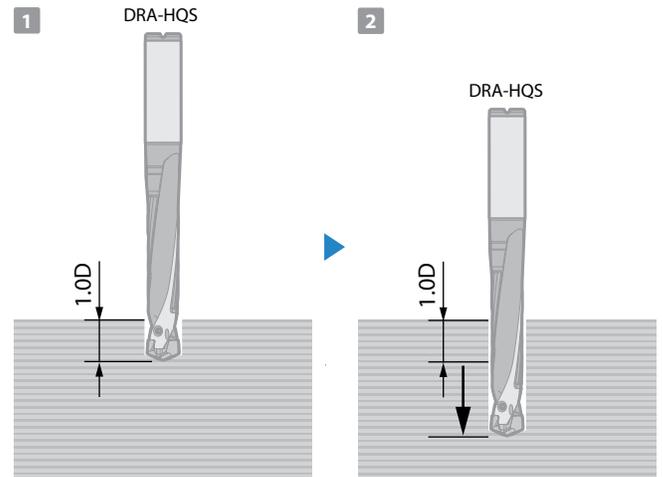
- 1 Make a center spot using DRA 1.5D/3D/5D
(Depth of center spot should be at least half the cutting diameter)
- 2 Then drill the hole using DRA (8D/12D)



Cautions for Machining with HQS Inserts

If chips are clogged at the entrance of drill hole machining in stainless steel machining, etc., the following machining method is recommended.

- 1 Up to 1.0D, the feed rate should be 0.003 ipr or less
- 2 After 1.0D, machine within the normal recommended range



Applicable Workpiece Applications

Application	Workpiece Shape	Machining Caution
Plain Surface		<ol style="list-style-type: none"> 1. When machining stainless steel, for hole depths of up to 0.5D, keep feed rate at less than 0.006 ipr. 2. Thru coolant is recommended for smooth chip removal. For stainless steel, the combination of thru and external coolant is recommended.
Stacked Plates		<ol style="list-style-type: none"> 1. Fix stacked plates securely to ensure they do not slip while machining.
Concave Surface		<ol style="list-style-type: none"> 1. When machining concave holes, set the feed rate at less than half of recommended feed for continuous hole machining. 2. Utilize a pecking cycle if chips are not broken short at the inlet.
Tubing		<ol style="list-style-type: none"> 1. Hole machining on the centerline of the tubing is possible. 2. Do not machine on curved surface areas. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Good</p> <p>Center Machining</p> </div> <div style="text-align: center;"> <p>Bad</p> <p>Off Center Machining</p> </div> </div>

*Machining possible with FTP Inserts and 1.5D holders

Not Recommended Applications

Application	Workpiece Shape	Application	Workpiece Shape
*Hole Expansion		*Angled Surface	
Application	Workpiece Shape	Application	Workpiece Shape
Half Cylindrical		*Existing Hole	

*Machining possible with FTP Inserts and 1.5D holders

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRV Magic Drill

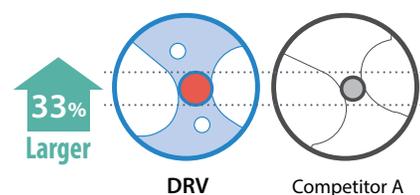
Economical Inserts with 4 Cutting Edges

Excellent Chip Evacuation with 6D Maximum Deep-Hole Drilling

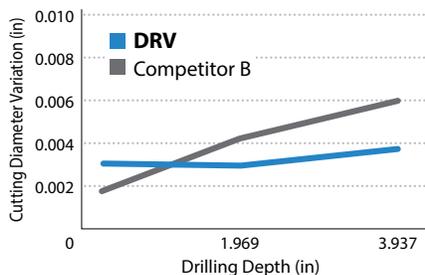
1 Excellent Drilling Precision with Less Variation in Cutting Diameter

Optimal Web Thickness and Low Cutting Force Design Reduces Chattering

Web Thickness Comparison
(Internal Evaluation)

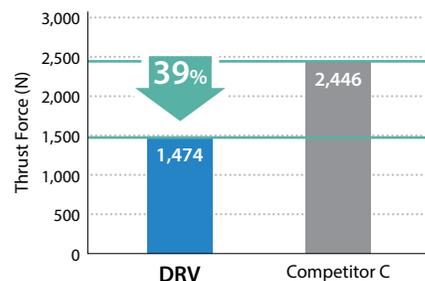


Cutting Diameter Variation Comparison
(Internal Evaluation)



Cutting Conditions : Vc = 490 sfm, f = 0.0024 ipr
Cutting Dia. 00.812" (5D), Wet, Workpiece : 1049

Cutting Force Comparison
(Internal Evaluation)



Cutting Conditions : Vc = 660 sfm, f = 0.0047 ipr
Cutting Dia. 00.812" (3D), Wet, Workpiece : 1049

2 Unique Insert Design to Control Chip Flow

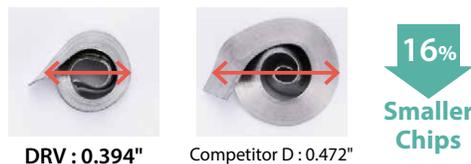
Outer Edge Insert

Unique Insert Pattern to Differentiate between Outside and Inside Inserts



Smooth Chip Evacuation with Compact Chips

Chip Shape Comparison of Outer Insert Cutting Edge
(Internal Evaluation)



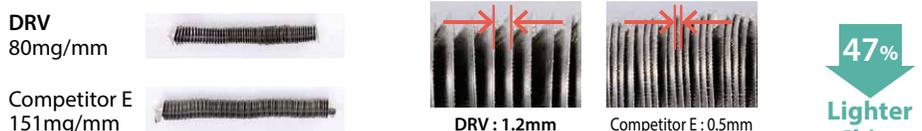
Cutting Conditions : Vc = 490 sfm, f = 0.0024 ipr, Cutting Dia. 00.812 (3D), Wet Workpiece : 1049

Inner Edge Insert



Excellent Chip Evacuation with 6xD Maximum Deep-Hole Drilling

Weight per Unit of Length for Chips Generated by the Inner Insert
(Internal Evaluation)



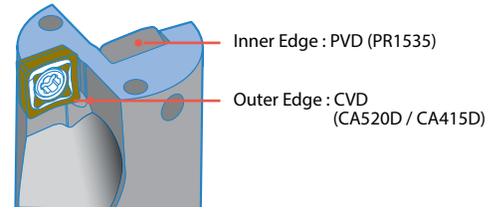
Cutting Conditions : Vc = 820 sfm, f = 0.0031 ipr, Cutting Dia. 00.812 (5D), Wet, Workpiece : 304

K DRILLING

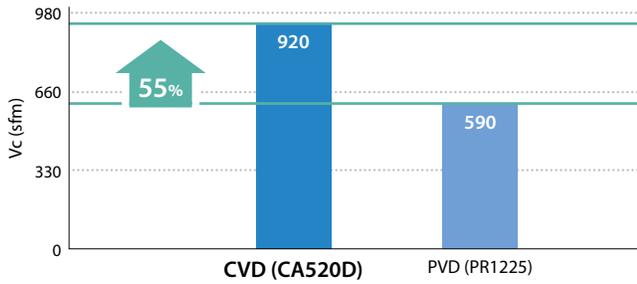
- DRA
- DRV**
- DRZ
- HOLESHOT
- COREMASTER COREDRILL
- COUNTERBORE
- COUNTERSINK

3 CVD Insert on the Outside Edge for Highly Efficient Drilling

High Speed and Highly Efficient Machining with the Combination of CVD (Outer Edge) and PVD (Inner Edge) Inserts

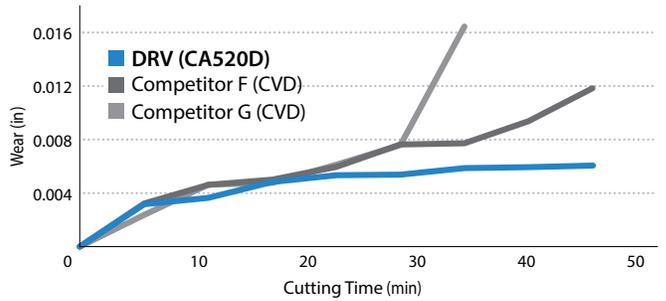


Recommended Cutting Conditions (Maximum Values)



Cutting Dia. 0.0812" (3D) Workpiece : 1049

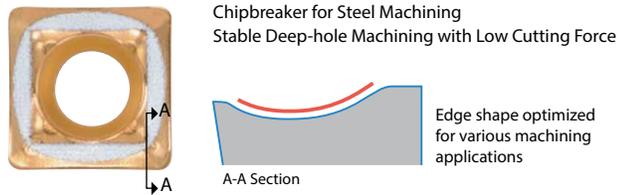
Wear Resistance Comparison (Internal Evaluation)



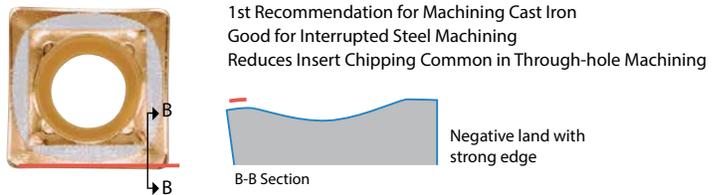
Cutting Conditions : Vc = 660 sfm, f = 0.0047 ipr, Cutting Dia. 0.0812" (3D) , Wet Workpiece : 4140H

4 Economical 4-Edge Inserts 4 Types of Chipbreakers for Various Machining Applications

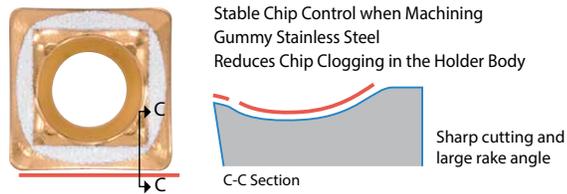
GM Chipbreaker - General Purpose



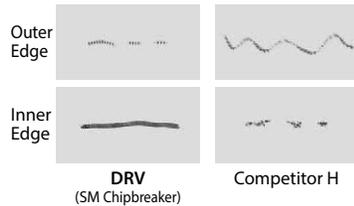
GH Chipbreaker - Tough Edge



SM Chipbreaker - For Stainless Steel Machining

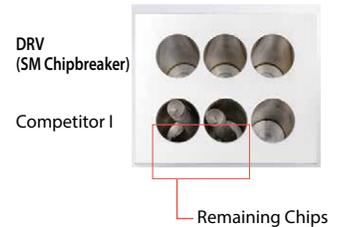


Chip Control Comparison (Internal Evaluation)



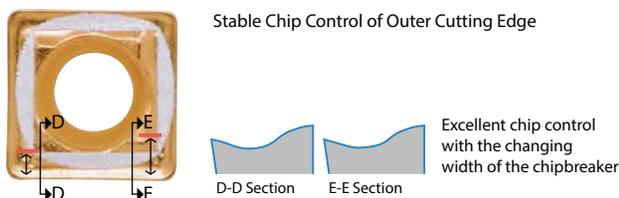
Cutting Conditions : Vc = 330 sfm, f = 0.0039 ipr
Cutting Dia. 0.0812" (3D), Drilling Depth 2.436"
Wet, Workpiece : 304

Comparison of Remaining Chips (Internal Evaluation)

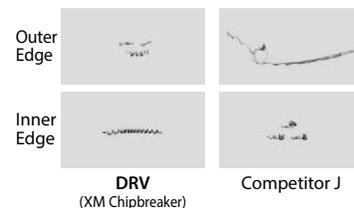


Cutting Conditions : Vc = 490 sfm, f = 0.0031 ipr
Cutting Dia. 0.0984" (5D), Drilling Depth 3.858"
Wet, Workpiece : 304

XM Chipbreaker - For Machining Soft Steel and Structural Steel



Chip Control Comparison (Internal Evaluation)



Cutting Conditions : Vc = 660 sfm, f = 0.0047 ipr
Cutting Dia. 0.0625" (3D), Drilling Depth 1.875"
Wet, Workpiece : A36

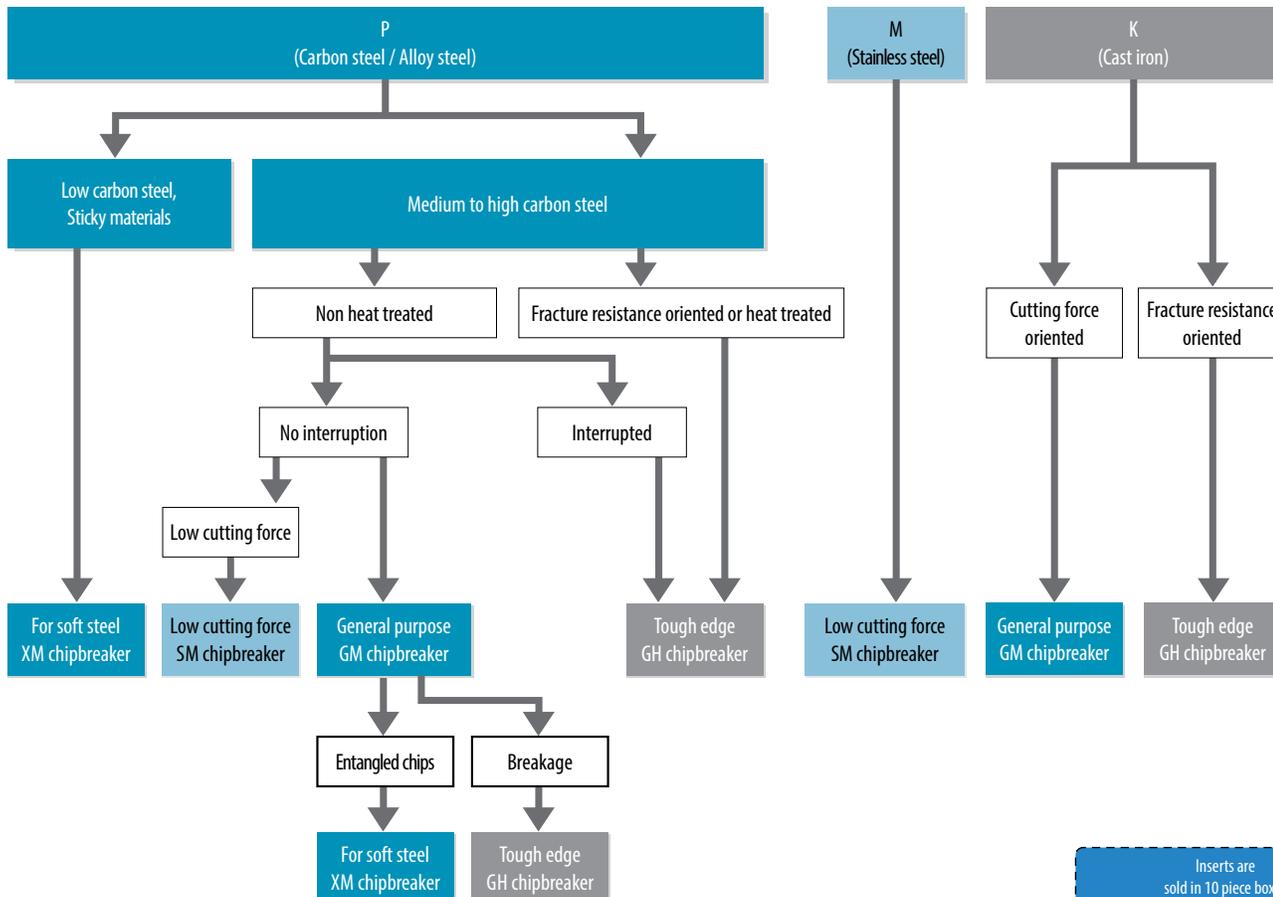
INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

LCMT (Outer Edge)

Usage Classification		Carbon Steel / Alloy Steel		★ ☆		P							
		Mold and Die Steel		★ ☆		M							
★ : High speed and highly efficient drilling ☆ : Stable machining oriented		Stainless Steel		★ ☆		K							
		Cast Iron		★ ☆		N							
Non-Ferrous Metals													
Insert	Part Number	No. of Edges	Dimensions (mm)					Angle (°)	Carbide			Applicable Toolholder ➔ K50~K64	
			S	D1	RE	L	W1		AN	CVD	PVD		
				CA415D	CA520D	PR1225							
	 Tough Edge	LCMT 030203-GH-E	2	2	2.3	0.3	5.54	4.4	7	●	●	●	
	 General Purpose	LCMT 030203-GM-E	2	2	2.3	0.3	5.54	4.4	7	●	●	●	S075-DRV...-□-03 S20-DRV...-□-03
	 Stainless Steel	LCMT 030203-SM-E	2	2	2.3	0.3	5.54	4.4	7	●	●	●	

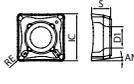
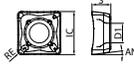
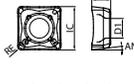
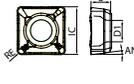
Recommended Cutting Conditions ➔ K70~K73

Chipbreaker selection chart



Inserts are sold in 10 piece boxes

SCMT (Outer Edge)

Usage Classification		Carbon Steel / Alloy Steel		★☆☆		P							
		Mold and Die Steel		★☆☆		P							
★ : High speed and highly efficient drilling ☆☆ : Stable machining oriented		Stainless Steel		★☆☆		M							
		Cast Iron		★☆☆		K							
Insert		Part Number		No. of Edges		Dimensions (mm)		Angle (°)		Carbide		Applicable Toolholder K50~K64	
  Tough Edge	SCMT 040205-GH-E	4	4.8	2.2	2.4	0.5	7	●	●	●	●	S..DRV...□-04	
	SCMT 050205-GH-E	4	5.25	2.6	2.4	0.5	7	●	●	●	●	S..DRV...□-05	
	SCMT 060205-GH-E	4	6.4	2.8	2.9	0.5	7	●	●	●	●	S..DRV...□-06	
	SCMT 070305-GH-E	4	7.65	3.2	3.5	0.5	7	●	●	●	●	S..DRV...□-07	
	SCMT 090405-GH-E	4	9.1	4.1	4	0.5	7	●	●	●	●	S..DRV...□-09	
	SCMT 110406-GH-E	4	11	4.5	4.6	0.6	7	●	●	●	●	S..DRV...□-11	
	SCMT 140508-GH-E	4	13.8	5	5.7	0.8	7	●	●	●	●	S..DRV...□-14	
	SCMT 170608-GH-E	4	16.8	6.58	6.9	0.8	7	●	●	●	●	S..DRV...□-17	
  General Purpose	SCMT 040205-GM-E	4	4.8	2.2	2.4	0.5	7	●	●	●	●	S..DRV...□-04	
	SCMT 050205-GM-E	4	5.25	2.6	2.4	0.5	7	●	●	●	●	S..DRV...□-05	
	SCMT 060205-GM-E	4	6.4	2.8	2.9	0.5	7	●	●	●	●	S..DRV...□-06	
	SCMT 070305-GM-E	4	7.65	3.2	3.5	0.5	7	●	●	●	●	S..DRV...□-07	
	SCMT 090405-GM-E	4	9.1	4.1	4	0.5	7	●	●	●	●	S..DRV...□-09	
	SCMT 110406-GM-E	4	11	4.5	4.6	0.6	7	●	●	●	●	S..DRV...□-11	
	SCMT 140508-GM-E	4	13.8	5	5.7	0.8	7	●	●	●	●	S..DRV...□-14	
	SCMT 170608-GM-E	4	16.8	6.58	6.9	0.8	7	●	●	●	●	S..DRV...□-17	
  Stainless Steel	SCMT 040205-SM-E	4	4.8	2.2	2.4	0.5	7	●	●	●	●	S..DRV...□-04	
	SCMT 050205-SM-E	4	5.25	2.6	2.4	0.5	7	●	●	●	●	S..DRV...□-05	
	SCMT 060205-SM-E	4	6.4	2.8	2.9	0.5	7	●	●	●	●	S..DRV...□-06	
	SCMT 070305-SM-E	4	7.65	3.2	3.5	0.5	7	●	●	●	●	S..DRV...□-07	
	SCMT 090405-SM-E	4	9.1	4.1	4	0.5	7	●	●	●	●	S..DRV...□-09	
	SCMT 110406-SM-E	4	11	4.5	4.6	0.6	7	●	●	●	●	S..DRV...□-11	
	SCMT 140508-SM-E	4	13.8	5	5.7	0.8	7	●	●	●	●	S..DRV...□-14	
	SCMT 170608-SM-E	4	16.8	6.58	6.9	0.8	7	●	●	●	●	S..DRV...□-17	
  Low Carbon Steel	SCMT 040205-XM-E	4	4.8	2.2	2.4	0.5	7	●	●	●	●	S..DRV...□-04	
	SCMT 050205-XM-E	4	5.25	2.6	2.4	0.5	7	●	●	●	●	S..DRV...□-05	
	SCMT 060205-XM-E	4	6.4	2.8	2.9	0.5	7	●	●	●	●	S..DRV...□-06	
	SCMT 070305-XM-E	4	7.65	3.2	3.5	0.5	7	●	●	●	●	S..DRV...□-07	
	SCMT 090405-XM-E	4	9.1	4.1	4	0.5	7	●	●	●	●	S..DRV...□-09	
	SCMT 110406-XM-E	4	11	4.5	4.6	0.6	7	●	●	●	●	S..DRV...□-11	
	SCMT 140508-XM-E	4	13.8	5	5.7	0.8	7	●	●	●	●	S..DRV...□-14	
	SCMT 170608-XM-E	4	16.8	6.58	6.9	0.8	7	●	●	●	●	S..DRV...□-17	

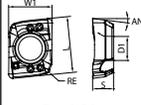
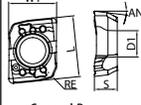
Recommended Cutting Conditions ● K70~K73

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Inserts are sold in 10 piece boxes

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
 Contact your local Kyocera sales engineer to upgrade old products to new technology

LCMT (Inner Edge)

Usage Classification ★ : High speed and highly efficient drilling		Carbon Steel / Alloy Steel		★		P				
		Mold and Die Steel		★		M				
		Stainless Steel		★		K				
		Cast Iron		★		N				
		Non-Ferrous Metals								
Insert	Part Number	No. of Edges	Dimensions (mm)					Angle (°)	Carbide	Applicable Toolholder ➡ K50~K64
			S	D1	RE	L	W1			
  Tough Edge	LCMT 030205-GH-I	2	2	2.3	0.5	5.37	4.16	7	●	S075-DRV...-□-03 S20-DRV...-□-03
  General Purpose	LCMT 030205-GM-I	2	2	2.3	0.5	5.37	4.16	7	●	
  Stainless Steel	LCMT 030205-SM-I	2	2	2.3	0.5	5.37	4.16	7	●	

Recommended Cutting Conditions ➡ K70~K73

K DRILLING

DRA
DRV
DRZ
HOLESHOT
COREMASTER COREDRILL
COUNTERBORE
COUNTERSINK

Inserts are sold in 10 piece boxes

SCMT (Inner Edge)

Usage Classification		Carbon Steel / Alloy Steel		★		P			
		Mold and Die Steel		★		M			
★ : High speed and highly efficient drilling		Stainless Steel		★		K			
		Cast Iron		★		N			
Non-Ferrous Metals						N			
Insert	Part Number	No. of Edges	Dimensions (mm)				Angle (°)	Carbide	Applicable Toolholder K50~K64
			IC	S	D1	RE			
				PVD		PRIS35			
 Tough Edge	SCMT 040209-GH-I	4	5	2.2	2.4	0.9	7	●	S..-DRV...-□-04
	SCMT 050210-GH-I	4	5.7	2.6	2.4	1	7	●	S..-DRV...-□-05
	SCMT 060210-GH-I	4	6.9	2.8	2.9	1	7	●	S..-DRV...-□-06
	SCMT 070310-GH-I	4	8.2	3.2	3.5	1	7	●	S..-DRV...-□-07
	SCMT 090410-GH-I	4	9.8	4.1	4	1	7	●	S..-DRV...-□-09
	SCMT 110410-GH-I	4	11.9	4.5	4.6	1	7	●	S..-DRV...-□-11
	SCMT 140510-GH-I	4	14.9	5	5.7	1	7	●	S..-DRV...-□-14
	SCMT 170610-GH-I	4	17.9	6.58	6.9	1	7	●	S..-DRV...-□-17
 General Purpose	SCMT 040209-GM-I	4	5	2.2	2.4	0.9	7	●	S..-DRV...-□-04
	SCMT 050210-GM-I	4	5.7	2.6	2.4	1	7	●	S..-DRV...-□-05
	SCMT 060210-GM-I	4	6.9	2.8	2.9	1	7	●	S..-DRV...-□-06
	SCMT 070310-GM-I	4	8.2	3.2	3.5	1	7	●	S..-DRV...-□-07
	SCMT 090410-GM-I	4	9.8	4.1	4	1	7	●	S..-DRV...-□-09
	SCMT 110410-GM-I	4	11.9	4.5	4.6	1	7	●	S..-DRV...-□-11
	SCMT 140510-GM-I	4	14.9	5	5.7	1	7	●	S..-DRV...-□-14
	SCMT 170610-GM-I	4	17.9	6.58	6.9	1	7	●	S..-DRV...-□-17
 Stainless Steel	SCMT 040209-SM-I	4	5	2.2	2.4	0.9	7	●	S..-DRV...-□-04
	SCMT 050210-SM-I	4	5.7	2.6	2.4	1	7	●	S..-DRV...-□-05
	SCMT 060210-SM-I	4	6.9	2.8	2.9	1	7	●	S..-DRV...-□-06
	SCMT 070310-SM-I	4	8.2	3.2	3.5	1	7	●	S..-DRV...-□-07
	SCMT 090410-SM-I	4	9.8	4.1	4	1	7	●	S..-DRV...-□-09
	SCMT 110410-SM-I	4	11.9	4.5	4.6	1	7	●	S..-DRV...-□-11
	SCMT 140510-SM-I	4	14.9	5	5.7	1	7	●	S..-DRV...-□-14
	SCMT 170610-SM-I	4	17.9	6.58	6.9	1	7	●	S..-DRV...-□-17
 Low Carbon Steel	SCMT 040209-XM-I	4	5	2.2	2.4	0.9	7	●	S..-DRV...-□-04
	SCMT 050210-XM-I	4	5.7	2.6	2.4	1	7	●	S..-DRV...-□-05
	SCMT 060210-XM-I	4	6.9	2.8	2.9	1	7	●	S..-DRV...-□-06
	SCMT 070310-XM-I	4	8.2	3.2	3.5	1	7	●	S..-DRV...-□-07
	SCMT 090410-XM-I	4	9.8	4.1	4	1	7	●	S..-DRV...-□-09
	SCMT 110410-XM-I	4	11.9	4.5	4.6	1	7	●	S..-DRV...-□-11
	SCMT 140510-XM-I	4	14.9	5	5.7	1	7	●	S..-DRV...-□-14
	SCMT 170610-XM-I	4	17.9	6.58	6.9	1	7	●	S..-DRV...-□-17

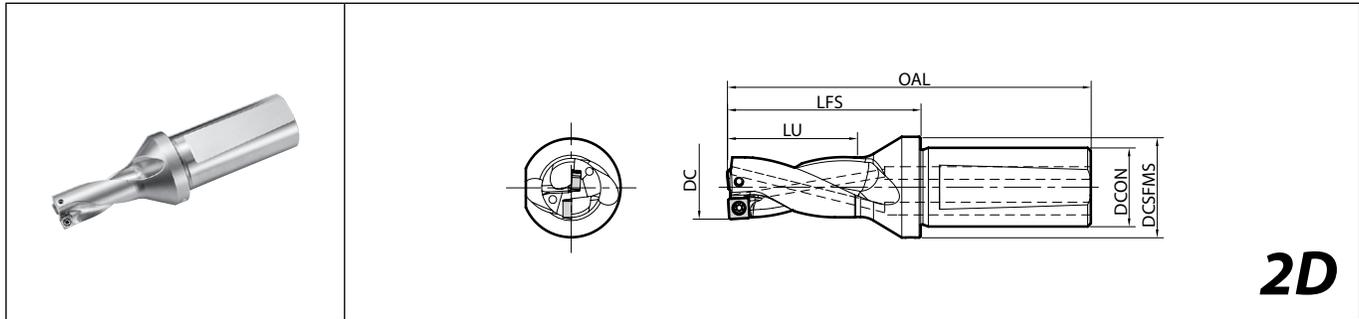
Recommended Cutting Conditions ● K70~K73

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Inserts are sold in 10 piece boxes

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRV (Drilling Depth : 2 x DC)



2D

Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions					Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K46~K49	
				DC	DCON	OAL	LFS	LU			DCSFMS	Screw	Wrench	Wrench		Wrench
Inch	S075- DRV0484-2-03	●	2	0.484	0.750	3.268	1.575	0.969	1.063	Yes	+0.008	SB-2037TRP	-	FTP-6	-	LCMT030203-□□-E (Outer) LCMT030205-□□-I (Inner)
	DRV0500-2-03	●		0.500		3.299	1.606	1.000			+0.006					
	DRV0516-2-03	●		0.516		3.331	1.638	1.031			+0.006					
	DRV0531-2-03	●		0.531		3.362	1.669	1.063			+0.004					
	S075- DRV0562-2-04	●	2	0.563	0.750	3.661	1.969	1.125	1.063	Yes	+0.014	SB-2037TRP	-	FTP-6	-	SCMT040205-□□-E (Outer) SCMT040209-□□-I (Inner)
	DRV0578-2-04	●		0.578		3.693	2.000	1.156			+0.014					
	S075- DRV0625-2-05	●	2	0.625	0.750	3.866	2.173	1.250	1.063	Yes	+0.016	SB-2041TRP	-	FTP-6	-	SCMT050205-□□-E (Outer) SCMT050210-□□-I (Inner)
	DRV0656-2-05	●		0.656		3.929	2.236	1.313			+0.012					
	S100- DRV0688-2-05	●	2	0.688	1.000	4.425	2.299	1.375	1.260	Yes	+0.010					
	S100- DRV0750-2-06	●	2	0.750	1.000	4.469	2.343	1.500	1.260	Yes	+0.024	SB-2555TRP	DTPM-8	-	-	SCMT060205-□□-E (Outer) SCMT060210-□□-I (Inner)
	DRV0812-2-06	●		0.813		4.594	2.469	1.625			+0.018					
	DRV0875-2-06	●		0.875		4.720	2.594	1.750			+0.010					
	S100- DRV0938-2-07	●	2	0.938	1.000	4.827	2.701	1.875	1.260	Yes	+0.028	SB-3060TRP	DTPM-10	-	-	SCMT070305-□□-E (Outer) SCMT070310-□□-I (Inner)
	DRV0984-2-07	●		0.984		4.917	2.791	1.969			+0.024					
	DRV1000-2-07	●		1.000		4.949	2.823	2.000			+0.020					
	S125- DRV1062-2-09	●	2	1.063	1.250	5.341	3.018	2.125	1.614	Yes	+0.041	SB-3573TRP	DTPM-10	-	-	SCMT090405-□□-E (Outer) SCMT090410-□□-I (Inner)
	DRV1125-2-09	●		1.125		5.467	3.144	2.250			+0.033					
	DRV1188-2-09	●		1.188		5.593	3.270	2.375			+0.026					
	S150- DRV1250-2-09	●	2	1.250	1.500	6.256	3.539	2.500	1.929	Yes	+0.020					
	S150- DRV1312-2-11	●	2	1.313	1.500	6.380	3.663	2.625	1.929	Yes	+0.045	SB-4086TRP	DTPM-15	-	-	SCMT110406-□□-E (Outer) SCMT110410-□□-I (Inner)
DRV1375-2-11	●	1.375		6.506		3.789	2.750	+0.039								
DRV1438-2-11	●	1.438		6.632		3.915	2.875	+0.031								
DRV1500-2-11	●	1.500		6.756		4.039	3.000	+0.022								
S150- DRV1562-2-14	●	2	1.562	1.500	7.116	4.400	3.124	1.929	Yes	+0.070	SB-50120TRPH	-	-	TTP-20	SCMT140508-□□-E (Outer) SCMT140510-□□-I (Inner)	
DRV1625-2-14	●		1.625		7.242	4.526	3.250			+0.063						
DRV1688-2-14	●		1.688		7.368	4.652	3.376			+0.056						
DRV1750-2-14	●		1.750		7.492	4.776	3.500			+0.049						
DRV1812-2-14	●		1.812		7.616	4.900	3.624			+0.041						
DRV1875-2-14	●		1.875		7.742	5.026	3.750			+0.034						
DRV1938-2-14	●		1.938		7.868	5.152	3.876			+0.027						
S150- DRV2000-2-17	●	2	2.000		7.854	5.138	4.000	2.323	Yes	+0.079	SB-60130TRP	-	-	TTP-20	SCMT170608-□□-E (Outer) SCMT170610-□□-I (Inner)	

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

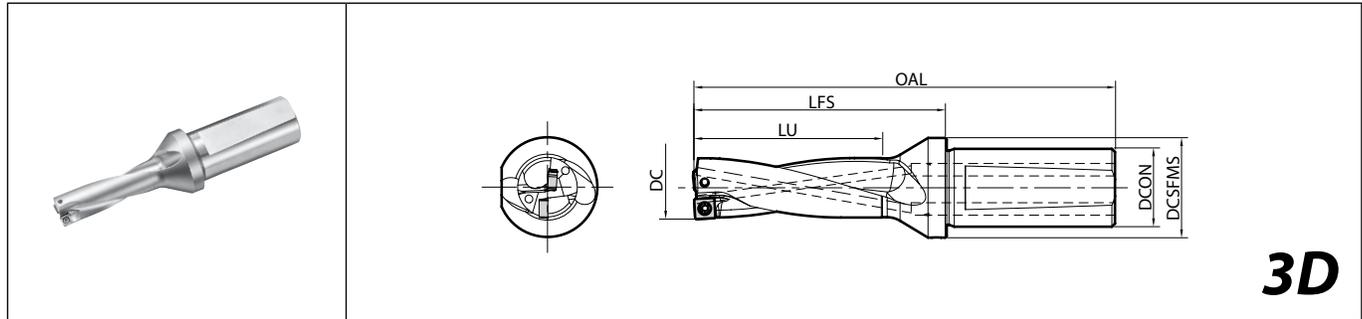
Recommended Cutting Conditions K70~K73
Troubleshooting K67

Hole Dia. Tolerance (2D type)

DC	Hole Dia. Tolerance (in)
ø0.484" - ø2.000"	+0.012 0

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

DRV (Drilling Depth : 3 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions						Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K46~K49	
				DC	DCON	OAL	LFS	LU	DCSFMS			Screw	Wrench	Wrench	Wrench		
																	Image
Inch	S075- DRV0484-3-03	●	2	0.484	0.750	3.752	2.059	1.453	1.063	Yes	+0.008	SB-2037TRP	-	FTP-6	-	LCMT030203-□□-E (Outer) LCMT030205-□□-I (Inner)	
	DRV0500-3-03	●		0.500		3.799	2.106	1.500									+0.006
	DRV0516-3-03	●		0.516		3.847	2.154	1.547									+0.006
	DRV0531-3-03	●		0.531		3.894	2.201	1.594									+0.004
	S075- DRV0562-3-04	●	2	0.563	0.750	4.224	2.531	1.688	1.063	Yes	+0.014	SB-2037TRP	-	FTP-6	-	SCMT040205-□□-E (Outer) SCMT040209-□□-I (Inner)	
	DRV0578-3-04	●		0.578		4.268	2.575	1.734									+0.014
	S075- DRV0625-3-05	●	2	0.625	0.750	4.492	2.799	1.875	1.063	Yes	+0.016	SB-2041TRP	-	FTP-6	-	SCMT050205-□□-E (Outer) SCMT050210-□□-I (Inner)	
	DRV0656-3-05	●		0.656		4.587	2.894	1.969									+0.012
	S100- DRV0688-3-05	●	2	0.688	1.000	5.114	2.988	2.063	1.260	Yes	+0.010						
	S100- DRV0750-3-06	●	2	0.750	1.000	5.220	3.094	2.250	1.260	Yes	+0.024	SB-2555TRP	DTPM-8	-	-	SCMT060205-□□-E (Outer) SCMT060210-□□-I (Inner)	
	DRV0812-3-06	●		0.813		5.406	3.280	2.438									+0.018
	DRV0875-3-06	●		0.875		5.594	3.469	2.625									+0.010
	S100- DRV0938-3-07	●	2	0.938	1.000	5.764	3.638	2.813	1.260	Yes	+0.028	SB-3060TRP	DTPM-10	-	-	SCMT070305-□□-E (Outer) SCMT070310-□□-I (Inner)	
	DRV0984-3-07	●		0.984		5.902	3.776	2.953									+0.024
	DRV1000-3-07	●		1.000		5.949	3.823	3.000									+0.020
	S125- DRV1062-3-09	●	2	1.063	1.250	6.402	4.080	3.188	1.614	Yes	+0.041	SB-3573TRP	DTPM-10	-	-	SCMT090405-□□-E (Outer) SCMT090410-□□-I (Inner)	
	DRV1125-3-09	●		1.125		6.592	4.269	3.375									+0.033
	DRV1188-3-09	●		1.188		6.781	4.458	3.563									+0.026
	S150- DRV1250-3-09	●	2	1.250	1.500	7.508	4.791	3.750	1.929	Yes	+0.020						
	S150- DRV1312-3-11	●	2	1.313	1.500	7.692	4.976	3.938	1.929	Yes	+0.045	SB-4086TRP	DTPM-15	-	-	SCMT110406-□□-E (Outer) SCMT110410-□□-I (Inner)	
DRV1375-3-11	●	1.375		7.881		5.165	4.125	+0.039									
DRV1438-3-11	●	1.438		8.070		5.354	4.313	+0.031									
DRV1500-3-11	●	1.500		8.256		5.539	4.500	+0.022									
S150- DRV1562-3-14	●	2	1.562	1.500	8.678	5.962	4.686	1.929	Yes	+0.070	SB-50120TRPH	-	-	TTP-20	SCMT140508-□□-E (Outer) SCMT140510-□□-I (Inner)		
DRV1625-3-14	●		1.625		8.867	6.151	4.875									+0.063	
DRV1688-3-14	●		1.688		9.056	6.340	5.064									+0.056	
DRV1750-3-14	●		1.750		9.242	6.526	5.250	+0.049									
DRV1812-3-14	●		1.812		9.428	6.712	5.436	+0.041									
DRV1875-3-14	●		1.875		9.617	6.901	5.625	+0.034									
DRV1938-3-14	●		1.938		9.806	7.090	5.814	+0.027									
S150- DRV2000-3-17	●	2	2.000		9.854	7.138	6.000	2.323	Yes	+0.079	SB-60130TRP	-	-	TTP-20	SCMT170608-□□-E (Outer) SCMT170610-□□-I (Inner)		

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K70~K73
Troubleshooting K67

Hole Dia. Tolerance (3D type)

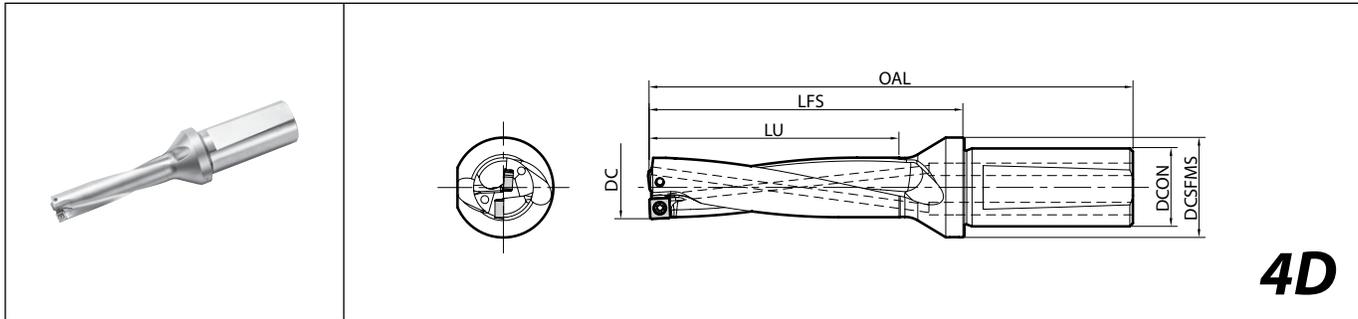
DC	Hole Dia. Tolerance (in)
ø0.484" - ø2.000"	+0.012 0

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRV (Drilling Depth : 4 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions					Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K46~K49		
				DC	DCON	OAL	LFS	LU			DCSFMS	Screw	Wrench	Wrench		Wrench	
Inch	S075- DRV0484-4-03	●	2	0.484	0.750	4.236	2.543	1.938	1.063	Yes	+0.008	SB-2037TRP	-	FTP-6	-	LCMT030203-□□-E (Outer) LCMT030205-□□-I (Inner)	
	DRV0500-4-03	●		0.500		4.299	2.606	2.000									+0.006
	DRV0516-4-03	●		0.516		4.362	2.669	2.062									
	DRV0531-4-03	●		0.531		4.425	2.732	2.125									+0.004
	S075- DRV0562-4-04	●	2	0.563	0.750	4.787	3.094	2.250	1.063	Yes	+0.014	SB-2037TRP	-	FTP-6	-	SCMT040205-□□-E (Outer) SCMT040209-□□-I (Inner)	
	DRV0578-4-04	●		0.578		4.847	3.154	2.312									+0.014
	S075- DRV0625-4-05	●	2	0.625	0.750	5.118	3.425	2.500	1.063	Yes	+0.016	SB-2041TRP	-	FTP-6	-	SCMT050205-□□-E (Outer) SCMT050210-□□-I (Inner)	
	DRV0656-4-05	●		0.656		5.240	3.551	2.625									+0.012
	S100- DRV0688-4-05	●	●	0.688	1.000	5.803	3.677	2.750	1.260	Yes	+0.010						
	S100- DRV0750-4-06	●	2	0.750	1.000	5.969	3.843	3.000	1.260	Yes	+0.024	SB-2555TRP	DTPM-8	-	-	SCMT060205-□□-E (Outer) SCMT060210-□□-I (Inner)	
	DRV0812-4-06	●		0.813		6.217	4.091	3.250									+0.018
	DRV0875-4-06	●		0.875		6.469	4.343	3.500									
	S100- DRV0938-4-07	●	2	0.938	1.000	6.701	4.575	3.750	1.260	Yes	+0.028	SB-3060TRP	DTPM-10	-	-	SCMT070305-□□-E (Outer) SCMT070310-□□-I (Inner)	
	DRV0984-4-07	●		0.984		6.886	4.760	3.938									+0.024
	DRV1000-4-07	●		1.000		6.949	4.823	4.000									
	S125- DRV1062-4-09	●	2	1.063	1.250	7.465	5.142	4.250	1.614	Yes	+0.041	SB-3573TRP	DTPM-10	-	-	SCMT090405-□□-E (Outer) SCMT090410-□□-I (Inner)	
	DRV1125-4-09	●		1.125		7.717	5.394	4.500									+0.033
	DRV1188-4-09	●		1.188		7.969	5.646	4.750									
	S150- DRV1250-4-09	●	●	1.250	1.500	8.756	6.039	5.000	1.929	Yes	+0.020						
	S150- DRV1312-4-11	●	2	1.313	1.500	9.004	6.287	5.250	1.929	Yes	+0.045	SB-4086TRP	DTPM-15	-	-	SCMT110406-□□-E (Outer) SCMT110410-□□-I (Inner)	
DRV1375-4-11	●	1.375		9.256		6.539	5.500	+0.039									
DRV1438-4-11	●	1.438		9.508		6.791	5.750										+0.031
DRV1500-4-11	●	1.500		9.756		7.039	6.000	+0.022									
S150- DRV1562-4-14	●	2	1.562	1.500	10.240	7.524	6.248	1.929	Yes	+0.070	SB-50120TRPH	-	-	TTP-20	SCMT140508-□□-E (Outer) SCMT140510-□□-I (Inner)		
DRV1625-4-14	●		1.625		10.492	7.776	6.500									+0.063	
DRV1688-4-14	●		1.688		10.744	8.028	6.752										+0.056
DRV1750-4-14	●		1.750		10.992	8.276	7.000									+0.049	
DRV1812-4-14	●		1.812		11.240	8.524	7.248										+0.041
S200- DRV1875-4-14	●		2		1.875	2.000	11.492									8.776	
DRV1938-4-14	●	1.938		11.744	9.028		7.752	+0.027									
S200- DRV2000-4-17	●	2	2.000	2.000	11.854	9.138	8.000	2.520	Yes	+0.079	SB-60130TRP	-	-	TTP-20	SCMT170608-□□-E (Outer) SCMT170610-□□-I (Inner)		

When offset drilling, reduce feed rate to 0.0024 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K70~K73
Troubleshooting K67

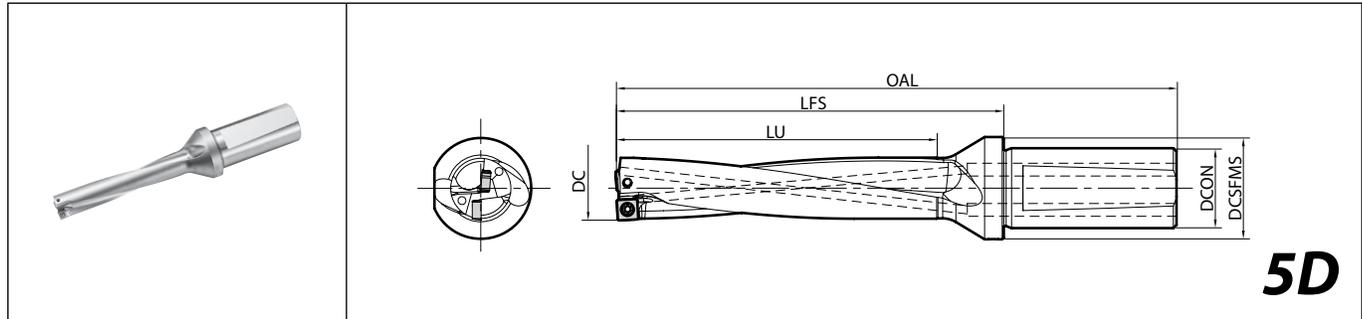
Hole Dia. Tolerance (4D type)

DC	Hole Dia. Tolerance (in)	DC	Hole Dia. Tolerance (in)
ø0.484" - ø1.500"	+0.014 0	ø1.562" - ø2.000"	+0.016 0

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRV (Drilling Depth : 5 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions					Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K46~K49				
				DC	DCON	OAL	LFS	LU			DCSFMS	Screw	Wrench	Wrench		Wrench			
Inch	S075- DRV0484-5-03	●	2	0.484	0.750	4.721	3.028	2.422	1.063	Yes	+0.008	SB-2037TRP	-	FTP-6	-	LCMT030203-□□-E (Outer) LCMT030205-□□-I (Inner)			
	DRV0500-5-03	●		0.500		4.799	3.106	2.500									+0.006		
	DRV0516-5-03	●		0.516		4.878	3.185	2.578										+0.006	
	DRV0531-5-03	●		0.531		4.957	3.264	2.657											+0.004
	S075- DRV0562-5-04	●	2	0.563	0.750	5.346	3.654	2.813	1.063	Yes	+0.014	SB-2037TRP	-	FTP-6	-	SCMT040205-□□-E (Outer) SCMT040209-□□-I (Inner)			
	DRV0578-5-04	●		0.578		5.425	3.732	2.891									+0.014		
	S075- DRV0625-5-05	●	2	0.625	0.750	5.744	4.051	3.125	1.063	Yes	+0.016	SB-2041TRP	-	FTP-6	-	SCMT050205-□□-E (Outer) SCMT050210-□□-I (Inner)			
	DRV0656-5-05	●		0.656		5.898	4.205	3.281									+0.012		
	S100- DRV0688-5-05	●	2	0.688	1.000	6.492	4.366	3.438	1.260	Yes	+0.010								
	S100- DRV0750-5-06	●	2	0.750	1.000	6.720	4.594	3.750	1.260	Yes	+0.024	SB-2555TRP	DTPM-8	-	-	SCMT060205-□□-E (Outer) SCMT060210-□□-I (Inner)			
	DRV0812-5-06	●		0.813		7.028	4.902	4.063									+0.018		
	DRV0875-5-06	●		0.875		7.343	5.217	4.375										+0.010	
	S100- DRV0938-5-07	●	2	0.938	1.000	7.638	5.512	4.688	1.260	Yes	+0.028	SB-3060TRP	DTPM-10	-	-	SCMT070305-□□-E (Outer) SCMT070310-□□-I (Inner)			
	DRV0984-5-07	●		0.984		7.870	5.744	4.922									+0.024		
	DRV1000-5-07	●		1.000		7.949	5.823	5.000										+0.020	
	S125- DRV1062-5-09	●	2	1.063	1.250	8.526	6.204	5.313	1.614	Yes	+0.041	SB-3573TRP	DTPM-10	-	-	SCMT090405-□□-E (Outer) SCMT090410-□□-I (Inner)			
	DRV1125-5-09	●		1.125		8.842	6.519	5.625									+0.033		
	DRV1188-5-09	●		1.188		9.157	6.834	5.938										+0.026	
	S150- DRV1250-5-09	●	2	1.250	1.500	10.008	7.291	6.250	1.929	Yes	+0.020								
	S150- DRV1312-5-11	●	2	1.313	1.500	10.316	7.600	6.563	1.929	Yes	+0.045	SB-4086TRP	DTPM-15	-	-	SCMT110406-□□-E (Outer) SCMT110410-□□-I (Inner)			
DRV1375-5-11	●	1.375		10.631		7.915	6.875	+0.039											
DRV1438-5-11	●	1.438		10.946		8.230	7.188										+0.031		
DRV1500-5-11	●	1.500		11.256		8.539	7.500											+0.022	
S150- DRV1562-5-14	●	2	1.562	1.500	11.802	9.086	7.810	1.929	Yes	+0.070	SB-50120TRPH	-	-	TTP-20	SCMT140508-□□-E (Outer) SCMT140510-□□-I (Inner)				
DRV1625-5-14	●		1.625		12.117	9.401	8.125									+0.063			
DRV1688-5-14	●		1.688		12.432	9.716	8.440										+0.056		
DRV1750-5-14	●		1.750		12.742	10.026	8.750											+0.049	
DRV1812-5-14	●		1.812		13.052	10.336	9.060												+0.041
DRV1875-5-14	●		1.875		13.367	10.651	9.375												
DRV1938-5-14	●	1.938	13.682	10.966	9.690	+0.027													
S200- DRV1875-5-14	●	2	2.000	2.000	13.367	10.651	9.375	2.520	Yes	+0.034	SB-60130TRP	-	-	TTP-20	SCMT170608-□□-E (Outer) SCMT170610-□□-I (Inner)				
DRV1938-5-14	●		1.938		13.682	10.966	9.690									+0.027			
S200- DRV2000-5-17	●	2	2.000	2.000	13.854	11.138	10.000	2.520	Yes	+0.079									

When offset drilling, reduce feed rate to 0.0020 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K70~K73
Troubleshooting K67

Hole Dia. Tolerance (5D type)

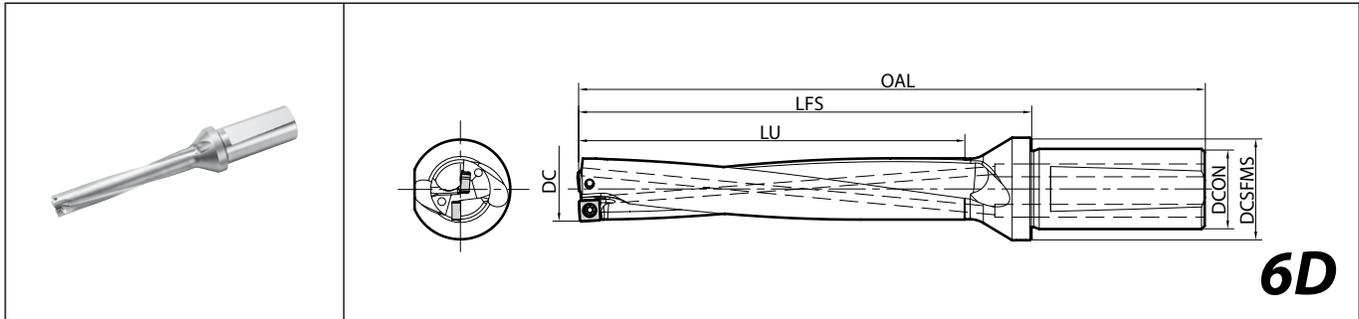
DC	Hole Dia. Tolerance (in)	DC	Hole Dia. Tolerance (in)
ø0.484" - ø1.500"	+0.014 0	ø1.562" - ø2.000"	+0.016 0

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES	A
TURNING INSERTS	B
CBN / PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRV (Drilling Depth : 6 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions					Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K46~K49		
				DC	DCON	OAL	LFS	LU			DCSFMS	Screw	Wrench	Wrench		Wrench	
Inch	S075- DRV0484-6-03	●	2	0.484	0.750	5.205	3.512	2.906	1.063	Yes	+0.008	SB-2037TRP	-	FTP-6	-	LCMT030203-□□-E (Outer) LCMT030205-□□-I (Inner)	
	DRV0500-6-03	●		0.500		5.299	3.606	3.000									+0.006
	DRV0516-6-03	●		0.516		5.394	3.701	3.094									
	DRV0531-6-03	●		0.531		5.488	3.795	3.188									+0.004
	S075- DRV0562-6-04	●	2	0.563	0.750	5.909	4.217	3.375	1.063	Yes	+0.014	SB-2037TRP	-	FTP-6	-	SCMT040205-□□-E (Outer) SCMT040209-□□-I (Inner)	
	DRV0578-6-04	●		0.578		6.004	4.311	3.469									+0.014
	S075- DRV0625-6-05	●	2	0.625	0.750	6.370	4.677	3.750	1.063	Yes	+0.016	SB-2041TRP	-	FTP-6	-	SCMT050205-□□-E (Outer) SCMT050210-□□-I (Inner)	
	DRV0656-6-05	●		0.656		6.555	4.862	3.938									+0.012
	S100- DRV0688-6-05	●	1	0.688	1.000	7.181	5.055	4.125	1.260	Yes	+0.010						
	S100- DRV0750-6-06	●	2	0.750	1.000	7.469	5.343	4.500	1.260	Yes	+0.024	SB-2555TRP	DTPM-8	-	-	SCMT060205-□□-E (Outer) SCMT060210-□□-I (Inner)	
	DRV0812-6-06	●		0.813		7.843	5.717	4.875									+0.018
	DRV0875-6-06	●		0.875		8.220	6.094	5.250									
	S100- DRV0938-6-07	●	2	0.938	1.000	8.579	6.453	5.625	1.260	Yes	+0.028	SB-3060TRP	DTPM-10	-	-	SCMT070305-□□-E (Outer) SCMT070310-□□-I (Inner)	
	DRV0984-6-07	●		0.984		8.854	6.728	5.906									+0.024
	DRV1000-6-07	●		1.000		8.949	6.823	6.000									
	S125- DRV1062-6-09	●	2	1.063	1.250	9.589	7.266	6.375	1.614	Yes	+0.041	SB-3573TRP	DTPM-10	-	-	SCMT090405-□□-E (Outer) SCMT090410-□□-I (Inner)	
	DRV1125-6-09	●		1.125		9.967	7.644	6.750									+0.033
	DRV1188-6-09	●		1.188		10.344	8.022	7.125									
	S150- DRV1250-6-09	●	1	1.250	1.500	11.256	8.539	7.500	1.929	Yes	+0.020						
	S150- DRV1312-6-11	●	2	1.313	1.500	11.628	8.911	7.875	1.929	Yes	+0.045	SB-4086TRP	DTPM-15	-	-	SCMT110406-□□-E (Outer) SCMT110410-□□-I (Inner)	
DRV1375-6-11	●	1.375		12.006		9.289	8.250	+0.039									
DRV1438-6-11	●	1.438		12.384		9.667	8.625										+0.031
DRV1500-6-11	●	1.500		12.756		10.039	9.000	+0.022									
S150- DRV1562-6-14	●	2	1.562	1.500	13.364	10.648	9.372	1.929	Yes	+0.070	SB-50120TRPH	-	-	TTP-20	SCMT140508-□□-E (Outer) SCMT140510-□□-I (Inner)		
DRV1625-6-14	●		1.625		13.742	11.026	9.750									+0.063	
DRV1688-6-14	●		1.688		14.120	11.404	10.128										+0.056
DRV1750-6-14	●		1.750		14.492	11.776	10.500									+0.049	
DRV1812-6-14	●		1.812		14.864	12.148	10.872										+0.041
S200- DRV1875-6-14	●	2	1.875	2.000	15.242	12.526	11.250	2.520	Yes	+0.034							
DRV1938-6-14	●		1.938		15.620	12.904	11.628									+0.027	
S200- DRV2000-6-17	●	2	2.000	2.000	15.854	13.138	12.000	2.520	Yes	+0.079	SB-60130TRP	-	-	TTP-20	SCMT170608-□□-E (Outer) SCMT170610-□□-I (Inner)		

When offset drilling, reduce feed rate to 0.0024 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K70~K73
Troubleshooting K67

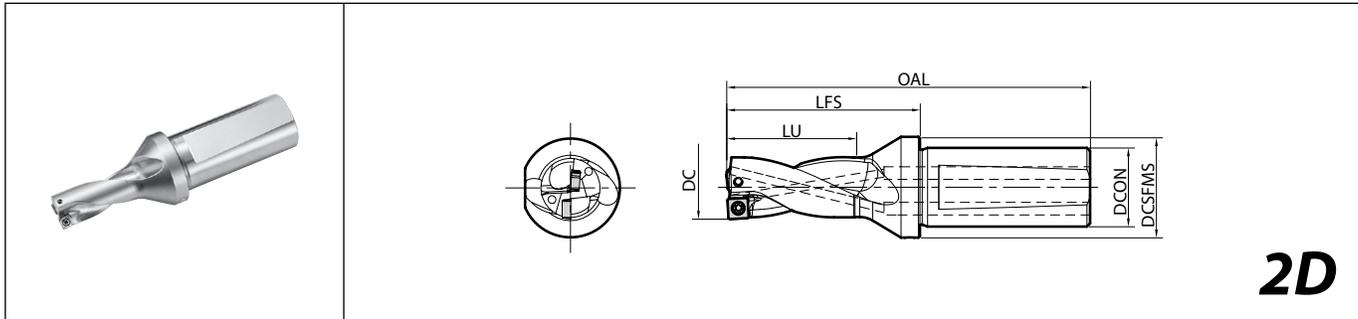
Hole Dia. Tolerance (6D type)

DC	Hole Dia. Tolerance (in)
ø0.484" - ø1.500"	+0.018 0
ø1.562" - ø2.000"	+0.020 0

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRV (Drilling Depth : 2 x DC)



2D

Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions					Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K46~K49										
				DC	DCON	OAL	LFS	LU			DCSFMS	Screw	Wrench	Wrench		Wrench									
mm	S20- DRV120M-2-03	●	2	12	20	82	39	24	27	Yes	+0.25	SB-2037TRP	-	FTP-6	-	LCMT030203-□□-E (Outer) LCMT030205-□□-I (Inner)									
	DRV125M-2-03	●		12.5		83	40	25									+0.20								
	DRV130M-2-03	●		13		84	41	26										+0.15							
	DRV135M-2-03	●		13.5		85	42	27									+0.10								
	S20- DRV140M-2-04	●	2	14	20	92	49	28	27	Yes	+0.40	SB-2037TRP	-	FTP-6	-	SCMT040205-□□-E (Outer) SCMT040209-□□-I (Inner)									
	DRV145M-2-04	●		14.5		93	50	29									+0.35								
	DRV150M-2-04	●		15		94	51	30										+0.30							
	DRV155M-2-04	●		15.5		95	52	31									+0.25								
	S25- DRV160M-2-05	●	2	16	25	110	56	32	32	Yes	+0.40	SB-2041TRP	-	FTP-6	-	SCMT050205-□□-E (Outer) SCMT050210-□□-I (Inner)									
	DRV165M-2-05	●		16.5		111	57	33									+0.35								
	DRV170M-2-05	●		17		112	58	34										+0.30							
	DRV175M-2-05	●		17.5		113	59	35									+0.25								
	DRV180M-2-05	●		18		114	60	36										+0.20							
	DRV185M-2-05	●		18.5		115	61	37									+0.15								
	S25- DRV190M-2-06	●	2	19	25	113	59	38	32	Yes	+0.65	SB-2555TRP	DTPM-8	-	-	SCMT060205-□□-E (Outer) SCMT060210-□□-I (Inner)									
	DRV195M-2-06	●		19.5		114	60	39									+0.60								
	DRV200M-2-06	●		20		115	61	40										+0.55							
	DRV205M-2-06	●		20.5		116	62	41									+0.50								
	DRV210M-2-06	●		21		117	63	42										+0.45							
	DRV215M-2-06	●		21.5		118	64	43									+0.35								
	DRV220M-2-06	●		22		119	65	44										+0.30							
	S25- DRV225M-2-07	●		2		22.5	25	120									66	45	32	Yes	+0.90	SB-3060TRP	DTPM-10	-	-
	DRV230M-2-07	●	23		121	67		46	+0.80																
	DRV235M-2-07	●	23.5		122	68		47		+0.75															
	DRV240M-2-07	●	24		123	69		48	+0.70																
	DRV245M-2-07	●	24.5		124	70		49		+0.65															
	DRV250M-2-07	●	25		125	71		50	+0.60																
	DRV255M-2-07	●	25.5		126	72		51		+0.50															
DRV260M-2-07	●	26	127		73	52		+0.45																	
S32- DRV270M-2-09	●	2	27		32	136		77	54	41	Yes	+1.05	SB-3573TRP	DTPM-10	-	-	SCMT090405-□□-E (Outer) SCMT090410-□□-I (Inner)								
DRV280M-2-09	●		28			138		79	56									+0.95							
DRV290M-2-09	●		29	140		81	58	+0.85																	
DRV300M-2-09	●		30	142		83	60		+0.75																
DRV310M-2-09	●		31	144		85	62	+0.60																	
DRV320M-2-09	●		32	146		87	64		+0.50																

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions ● K70~K73
Troubleshooting ● K67

Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions					DCSFMS	Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K46~K49											
				DC	DCON	OAL	LFS	LU				Screw	Wrench	Wrench	Wrench												
																											
mm	S40- DRV330M-2-11 DRV340M-2-11 DRV350M-2-11 DRV360M-2-11 DRV370M-2-11 DRV380M-2-11 DRV390M-2-11	●	2	40	33	161	92	66	49	Yes	+1.25	SB-4086TRP	DTPM-15	-	-	SCMT110406-□□-E (Outer) SCMT110410-□□-I (Inner)											
		●			34		94	68			+1.15																
		●			35		96	70			+1.00																
		●			36		98	72			+0.90																
		●			37		100	74			+0.80																
		●			38		102	76			+0.65																
		●			39		104	78			+0.55																
		●			40		112	80			+1.75																
	S40- DRV400M-2-14 DRV410M-2-14 DRV420M-2-14 DRV430M-2-14 DRV440M-2-14 DRV450M-2-14 DRV460M-2-14 DRV470M-2-14 DRV480M-2-14 DRV490M-2-14	●	2	40	40	181	112	80	49	Yes	+1.60	SB-50120TRPH	-	-	TTP-20	SCMT140508-□□-E (Outer) SCMT140510-□□-I (Inner)											
		●			41		114	82			+1.50																
		●			42		116	84			+1.40																
		●			43		118	86			+1.30																
		●			44		120	88			+1.15																
		●			45		122	90			+1.05																
		●			46		124	92			+0.95																
		●			47		126	94			+0.80																
		●			48		128	96			+0.70																
		●			49		130	98			+0.70																
		S40- DRV500M-2-17 DRV510M-2-17 DRV520M-2-17 DRV530M-2-17 DRV540M-2-17 DRV550M-2-17 DRV560M-2-17 DRV570M-2-17 DRV580M-2-17 DRV590M-2-17 DRV600M-2-17			●		2	40			50						198	129	100	59	Yes	+2.10	SB-60130TRP	-	-	TTP-20	SCMT170608-□□-E (Outer) SCMT170610-□□-I (Inner)
					●						51							131	102			+1.95					
	●		52	133	104	+1.85																					
	●		53	135	106	+1.75																					
	●		54	137	108	+1.65																					
	●		55	139	110	+1.50																					
	●		56	141	112	+1.40																					
	●		57	143	114	+1.30																					
	●		58	145	116	+1.15																					
	●		59	147	118	+1.05																					
	●	60	149	120	+0.95																						

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K70~K73
Troubleshooting K67

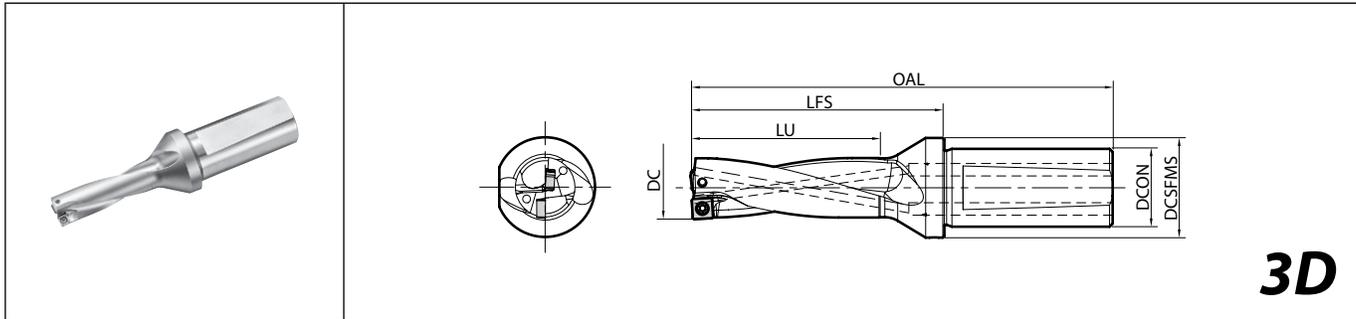
Hole Dia. Tolerance (2D type)

DC	Hole Dia. Tolerance (mm)
ø12 - ø60mm	+0.30 0

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRV (Drilling Depth : 3 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions					Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts ● K46~K49		
				DC	DCON	OAL	LFS	LU			DCSFMS	Screw	Wrench	Wrench		Wrench	
mm	S20- DRV120M-3-03	●	2	12	20	94	51	36	27	Yes	+0.25	SB-2037TRP	-	FTP-6	-	LCMT030203-□□-E (Outer) LCMT030205-□□-I (Inner)	
	DRV125M-3-03	●		12.5		96	53	37.5									+0.20
	DRV130M-3-03	●		13		97	54	39									
	DRV135M-3-03	●		13.5		99	56	40.5									+0.10
	S20- DRV140M-3-04	●	2	14	20	106	63	42	27	Yes	+0.40	SB-2037TRP	-	FTP-6	-	SCMT040205-□□-E (Outer) SCMT040209-□□-I (Inner)	
	DRV145M-3-04	●		14.5		108	65	43.5									+0.35
	DRV150M-3-04	●		15		109	66	45									
	DRV155M-3-04	●		15.5		111	68	46.5									+0.25
	S25- DRV160M-3-05	●	2	16	25	126	72	48	32	Yes	+0.40	SB-2041TRP	-	FTP-6	-	SCMT050205-□□-E (Outer) SCMT050210-□□-I (Inner)	
	DRV165M-3-05	●		16.5		127	73	49.5									+0.35
	DRV170M-3-05	●		17		129	75	51									
	DRV175M-3-05	●		17.5		130	76	52.5									+0.25
	DRV180M-3-05	●		18		132	78	54									
	DRV185M-3-05	●		18.5		133	79	55.5									+0.15
	S25- DRV190M-3-06	●	2	19	25	132	78	57	32	Yes	+0.65	SB-2555TRP	DTPM-8	-	-	SCMT060205-□□-E (Outer) SCMT060210-□□-I (Inner)	
	DRV195M-3-06	●		19.5		134	80	58.5									+0.60
	DRV200M-3-06	●		20		135	81	60									
	DRV205M-3-06	●		20.5		137	83	61.5									+0.50
	DRV210M-3-06	●		21		138	84	63									
	DRV215M-3-06	●		21.5		140	86	64.5									+0.35
	DRV220M-3-06	●	22	141	87	66	+0.30										
	S25- DRV225M-3-07	●	2	22.5	25	142	88	67.5	32	Yes	+0.90	SB-3060TRP	DTPM-10	-	-	SCMT070305-□□-E (Outer) SCMT070310-□□-I (Inner)	
	DRV230M-3-07	●		23		144	90	69									+0.80
	DRV235M-3-07	●		23.5		145	91	70.5									
	DRV240M-3-07	●		24		147	93	72									+0.70
	DRV245M-3-07	●		24.5		148	94	73.5									
	DRV250M-3-07	●		25		150	96	75									+0.60
	DRV255M-3-07	●		25.5		151	97	76.5									
DRV260M-3-07	●	26		153		99	78	+0.45									

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions ● K70~K73
Troubleshooting ● K67

Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions					Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K46~K49	
				DC	DCON	OAL	LFS	LU			DCSFMS	Screw	Wrench	Wrench		Wrench
																
mm	S32- DRV265M-3-09	●	2	26.5	32	161	102	79.5	41	Yes	+1.15	SB-3573TRP	DTPM-10	-	-	SCMT090405-□□-E (Outer) SCMT090410-□□-I (Inner)
	DRV270M-3-09	●		27		163	104	81			+1.05					
	DRV275M-3-09	●		27.5		164	105	82.5			+1.00					
	DRV280M-3-09	●		28		166	107	84			+0.95					
	DRV285M-3-09	●		28.5		167	108	85.5			+0.90					
	DRV290M-3-09	●		29		169	110	87			+0.85					
	DRV295M-3-09	●		29.5		170	111	88.5			+0.80					
	DRV300M-3-09	●		30		172	113	90			+0.75					
	DRV305M-3-09	●		30.5		173	114	91.5			+0.65					
	DRV310M-3-09	●		31		175	116	93			+0.60					
	DRV315M-3-09	●		31.5		176	117	94.5			+0.55					
	DRV320M-3-09	●		32		178	119	96			+0.50					
	S40- DRV330M-3-11	●	2	33	40	194	125	99	49	Yes	+1.25	SB-4086TRP	DTPM-15	-	-	SCMT110406-□□-E (Outer) SCMT110410-□□-I (Inner)
	DRV340M-3-11	●		34		197	128	102			+1.15					
	DRV350M-3-11	●		35		200	131	105			+1.00					
	DRV360M-3-11	●		36		203	134	108			+0.90					
	DRV370M-3-11	●		37		206	137	111			+0.80					
	DRV380M-3-11	●		38		209	140	114			+0.65					
	DRV390M-3-11	●		39		212	143	117			+0.55					
	S40- DRV400M-3-14	●	2	40	40	221	152	120	49	Yes	+1.75	SB-50120TRPH	-	-	TTP-20	SCMT140508-□□-E (Outer) SCMT140510-□□-I (Inner)
	DRV410M-3-14	●		41		224	155	123			+1.60					
	DRV420M-3-14	●		42		227	158	126			+1.50					
	DRV430M-3-14	●		43		230	161	129			+1.40					
	DRV440M-3-14	●		44		233	164	132			+1.30					
	DRV450M-3-14	●		45		236	167	135			+1.15					
	DRV460M-3-14	●		46		239	170	138			+1.05					
	DRV470M-3-14	●		47		242	173	141			+0.95					
	DRV480M-3-14	●		48		245	176	144			+0.80					
	DRV490M-3-14	●	49	248	179	147	+0.70									
	S40- DRV500M-3-17	●	2	50	40	248	179	150	59	Yes	+2.10	SB-60130TRP	-	-	TTP-20	SCMT170608-□□-E (Outer) SCMT170610-□□-I (Inner)
	DRV510M-3-17	●		51		251	182	153			+1.95					
	DRV520M-3-17	●		52		254	185	156			+1.85					
	DRV530M-3-17	●		53		257	188	159			+1.75					
	DRV540M-3-17	●		54		260	191	162			+1.65					
	DRV550M-3-17	●		55		263	194	165			+1.50					
	DRV560M-3-17	●		56		266	197	168			+1.40					
DRV570M-3-17	●	57		269		200	171	+1.30								
DRV580M-3-17	●	58		272		203	174	+1.15								
DRV590M-3-17	●	59		275		206	177	+1.05								
DRV600M-3-17	●	60	278	209	180	+0.95										

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K70~K73
Troubleshooting K67

Hole Dia. Tolerance (3D type)

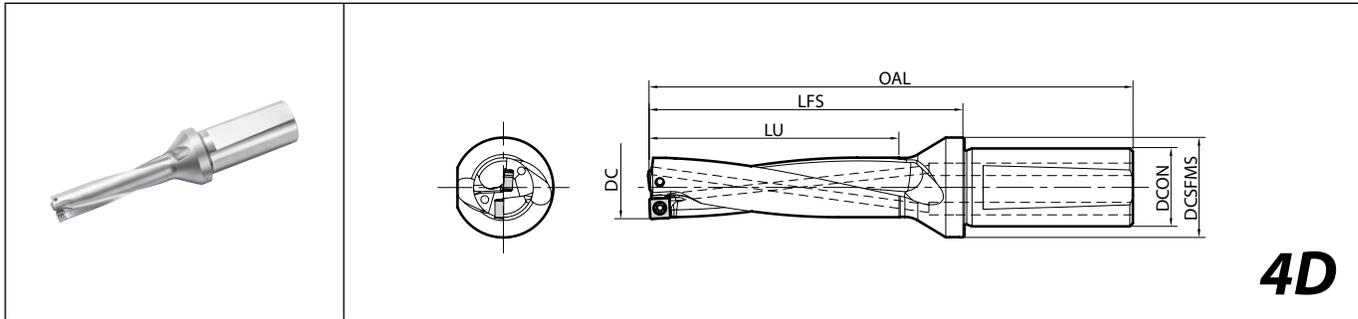
DC	Hole Dia. Tolerance (mm)
ø12 - ø60mm	+0.30 0

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRV (Drilling Depth : 4 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions					Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K46~K49		
				DC	DCON	OAL	LFS	LU			DCSFMS	Screw	Wrench	Wrench		Wrench	
																	Illustration of Screw
mm	S20- DRV120M-4-03	●	2	12	20	106	63	48	27	Yes	+0.25	SB-2037TRP	-	FTP-6	-	LCMT030203-□□-E (Outer) LCMT030205-□□-I (Inner)	
	DRV125M-4-03	●		12.5		108	65	50									+0.20
	DRV130M-4-03	●		13		110	67	52									+0.15
	DRV135M-4-03	●		13.5		112	69	54									+0.10
	S20- DRV140M-4-04	●	2	14	20	120	77	56	27	Yes	+0.40	SB-2037TRP	-	FTP-6	-	SCMT040205-□□-E (Outer) SCMT040209-□□-I (Inner)	
	DRV145M-4-04	●		14.5		122	79	58									+0.35
	DRV150M-4-04	●		15		124	81	60									+0.30
	DRV155M-4-04	●		15.5		126	83	62									+0.25
	S25- DRV160M-4-05	●	2	16	25	142	88	64	32	Yes	+0.40	SB-2041TRP	-	FTP-6	-	SCMT050205-□□-E (Outer) SCMT050210-□□-I (Inner)	
	DRV165M-4-05	●		16.5		144	90	66									+0.35
	DRV170M-4-05	●		17		146	92	68									+0.30
	DRV175M-4-05	●		17.5		148	94	70									+0.25
	DRV180M-4-05	●		18		150	96	72									+0.20
	DRV185M-4-05	●		18.5		152	98	74									+0.15
	S25- DRV190M-4-06	●	2	19	25	151	97	76	32	Yes	+0.65	SB-2555TRP	DTPM-8	-	-	SCMT060205-□□-E (Outer) SCMT060210-□□-I (Inner)	
	DRV195M-4-06	●		19.5		153	99	78									+0.60
	DRV200M-4-06	●		20		155	101	80									+0.55
	DRV205M-4-06	●		20.5		157	103	82									+0.50
	DRV210M-4-06	●		21		159	105	84									+0.45
	DRV215M-4-06	●		21.5		161	107	86									+0.35
	DRV220M-4-06	●		22		163	109	88									+0.30
	S25- DRV225M-4-07	●	2	22.5	25	165	111	90	32	Yes	+0.90	SB-3060TRP	DTPM-10	-	-	SCMT070305-□□-E (Outer) SCMT070310-□□-I (Inner)	
	DRV230M-4-07	●		23		167	113	92									+0.80
	DRV235M-4-07	●		23.5		169	115	94									+0.75
	DRV240M-4-07	●		24		171	117	96									+0.70
	DRV245M-4-07	●		24.5		173	119	98									+0.65
	DRV250M-4-07	●		25		175	121	100									+0.60
	DRV255M-4-07	●		25.5		177	123	102									+0.50
DRV260M-4-07	●	26		179		125	104	+0.45									
S32- DRV270M-4-09	●	2		27		32	190	131									108
DRV280M-4-09	●		28	194	135		112	+0.95									
DRV290M-4-09	●		29	198	139		116	+0.85									
DRV300M-4-09	●		30	202	143		120	+0.75									
DRV310M-4-09	●		31	206	147		124	+0.60									
DRV320M-4-09	●		32	210	151		128	+0.50									

When offset drilling, reduce feed rate to 0.0024 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K70~K73
Troubleshooting K67

Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions					Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K46~K49											
				DC	DCON	OAL	LFS	LU			DCSFMS	Screw	Wrench	Wrench		Wrench										
																										
mm	S40- DRV330M-4-11 DRV340M-4-11 DRV350M-4-11 DRV360M-4-11 DRV370M-4-11 DRV380M-4-11 DRV390M-4-11	●	2	40	33	227	158	132	49	Yes	+1.25	SB-4086TRP	DTPM-15	-	-	SCMT110406-□□-E (Outer) SCMT110410-□□-I (Inner)										
		●			34	231	162	136			+1.15															
		●			35	235	166	140			+1.00															
		●			36	239	170	144			+0.90															
		●			37	243	174	148			+0.80															
		●			38	247	178	152			+0.65															
		●			39	251	182	156			+0.55															
	S40- DRV400M-4-14 DRV410M-4-14 DRV420M-4-14 DRV430M-4-14 DRV440M-4-14 DRV450M-4-14 DRV460M-4-14 DRV470M-4-14	●	2	40	40	261	192	160	49	Yes	+1.75	SB-50120TRPH	-	-	TTP-20	SCMT140508-□□-E (Outer) SCMT140510-□□-I (Inner)										
		●			41	265	196	164			+1.60															
		●			42	269	200	168			+1.50															
		●			43	273	204	172			+1.40															
		●			44	277	208	176			+1.30															
		●			45	281	212	180			+1.15															
		●			46	285	216	184			+1.05															
		●			47	289	220	188			+0.95															
		S50- DRV480M-4-14 DRV490M-4-14			●	2	50	48			293						224	192	59	Yes	+0.80					
					●			49			297						228	196			+0.70					
	S50- DRV500M-4-17 DRV510M-4-17 DRV520M-4-17 DRV530M-4-17 DRV540M-4-17 DRV550M-4-17 DRV560M-4-17 DRV570M-4-17 DRV580M-4-17 DRV590M-4-17 DRV600M-4-17	●	2	50	50	298	229	200	59	Yes	+2.10	SB-60130TRP	-	-	TTP-20	SCMT170608-□□-E (Outer) SCMT170610-□□-I (Inner)										
		●			51	302	233	204			+1.95															
		●			52	306	237	208			+1.85															
		●			53	310	241	212			+1.75															
		●			54	314	245	216			+1.65															
		●			55	318	249	220			+1.50															
		●			56	322	253	224	+1.40																	
		●			57	326	257	228	+1.30																	
		●			58	330	261	232	+1.15																	
		●			59	334	265	236	+1.05																	
		●			60	338	269	240	+0.95																	

When offset drilling, reduce feed rate to 0.0024 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K70~K73
Troubleshooting K67

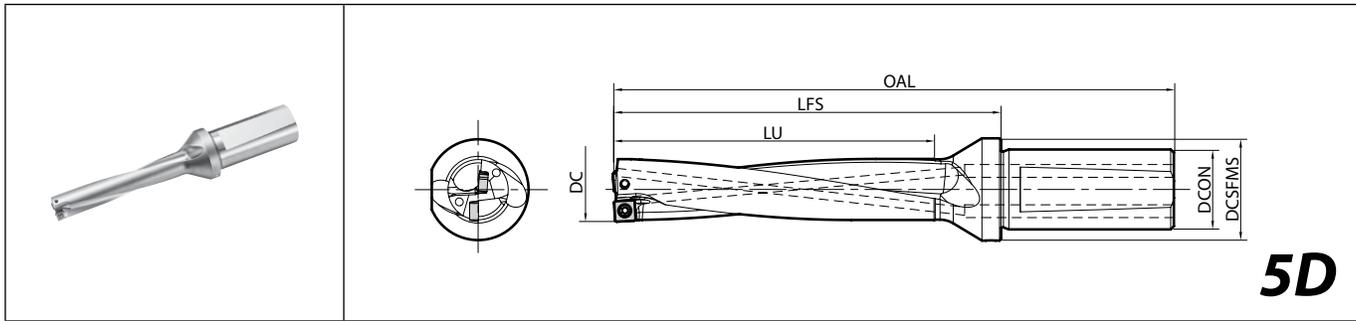
Hole Dia. Tolerance (4D type)

DC	Hole Dia. Tolerance (mm)
ø12 - ø39mm	+0.35 0
ø40 - ø60mm	+0.40 0

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRV (Drilling Depth : 5 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions					Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K46~K49	
				DC	DCON	OAL	LFS	LU			DCSFMS	Screw	Wrench	Wrench		Wrench
mm	S20- DRV120M-5-03	●	2	12	20	118	75	60	27	Yes	+0.25	SB-2037TRP	-	FTP-6	-	LCMT030203-□□-E (Outer) LCMT030205-□□-I (Inner)
	DRV130M-5-03	●		13		123	80	65			+0.15					
	S20- DRV140M-5-04	●	2	14	20	134	91	70	27	Yes	+0.40	SB-2037TRP	-	FTP-6	-	SCMT040205-□□-E (Outer) SCMT040209-□□-I (Inner)
	DRV150M-5-04	●		15		139	96	75			+0.30					
	S25- DRV160M-5-05	●	2	16	25	158	104	80	32	Yes	+0.40	SB-2041TRP	-	FTP-6	-	SCMT050205-□□-E (Outer) SCMT050210-□□-I (Inner)
	DRV170M-5-05	●		17		163	109	85			+0.30					
	DRV180M-5-05	●		18		168	114	90			+0.20					
	S25- DRV190M-5-06	●	2	19	25	170	116	95	32	Yes	+0.65	SB-2555TRP	DTPM-8	-	-	SCMT060205-□□-E (Outer) SCMT060210-□□-I (Inner)
	DRV200M-5-06	●		20		175	121	100			+0.55					
	DRV210M-5-06	●		21		180	126	105			+0.45					
	DRV220M-5-06	●		22		185	131	110			+0.30					
	S25- DRV230M-5-07	●	2	23	25	190	136	115	32	Yes	+0.80	SB-3060TRP	DTPM-10	-	-	SCMT070305-□□-E (Outer) SCMT070310-□□-I (Inner)
	DRV240M-5-07	●		24		195	141	120			+0.70					
	DRV250M-5-07	●		25		200	146	125			+0.60					
	DRV260M-5-07	●		26		205	151	130			+0.45					
	S32- DRV270M-5-09	●	2	27	32	217	158	135	41	Yes	+1.05	SB-3573TRP	DTPM-10	-	-	SCMT090405-□□-E (Outer) SCMT090410-□□-I (Inner)
	DRV280M-5-09	●		28		222	163	140			+0.95					
	DRV290M-5-09	●		29		227	168	145			+0.85					
	DRV300M-5-09	●		30		232	173	150			+0.75					
	DRV310M-5-09	●		31		237	178	155			+0.60					
DRV320M-5-09	●	32	242	183	160	+0.50										
S40- DRV330M-5-11	●	2	33	40	260	191	165	49	Yes	+1.25	SB-4086TRP	DTPM-15	-	-	SCMT110406-□□-E (Outer) SCMT110410-□□-I (Inner)	
DRV340M-5-11	●		34		265	196	170			+1.15						
DRV350M-5-11	●		35		270	201	175			+1.00						
DRV360M-5-11	●		36		275	206	180			+0.90						
DRV370M-5-11	●		37		280	211	185			+0.80						
DRV380M-5-11	●		38		285	216	190			+0.65						
DRV390M-5-11	●		39		290	221	195			+0.55						

When offset drilling, reduce feed rate to 0.0020 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K70~K73
Troubleshooting K67

Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions					Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K46~K49		
				DC	DCON	OAL	LFS	LU			DCSEMS	Screw	Wrench	Wrench		Wrench	
											Yes						
mm	S40- DRV400M-5-14	●	2	40	40	301	232	200	49	Yes	+1.75	SB-50120TRPH	-	-	TTP-20	SCMT140508-□□-E (Outer) SCMT140510-□□-I (Inner)	
	DRV410M-5-14	●		41		306	237	205									+1.60
	DRV420M-5-14	●		42		311	242	210									+1.50
	DRV430M-5-14	●		43		316	247	215									+1.40
	DRV440M-5-14	●		44		321	252	220									+1.30
	DRV450M-5-14	●		45		326	257	225									+1.15
	DRV460M-5-14	●		46		331	262	230									+1.05
	DRV470M-5-14	●		47		336	267	235									+0.95
	S50- DRV480M-5-14	●	2	48	50	341	272	240	59	Yes	+0.80	SB-60130TRP	-	-	TTP-20	SCMT170608-□□-E (Outer) SCMT170610-□□-I (Inner)	
	DRV490M-5-14	●		49		346	277	245									+0.70
	S50- DRV500M-5-17	●	2	50	50	348	279	250	59	Yes	+2.10	SB-60130TRP	-	-	TTP-20	SCMT170608-□□-E (Outer) SCMT170610-□□-I (Inner)	
	DRV510M-5-17	●		51		353	284	255									+1.95
	DRV520M-5-17	●		52		358	289	260									+1.85
	DRV530M-5-17	●		53		363	294	265									+1.75
	DRV540M-5-17	●		54		368	299	270									+1.65
	DRV550M-5-17	●		55		373	304	275									+1.50
	DRV560M-5-17	●		56		378	309	280	+1.40								
	DRV570M-5-17	●		57		383	314	285	+1.30								
	DRV580M-5-17	●		58		388	319	290	+1.15								
	DRV590M-5-17	●		59		393	324	295	+1.05								
DRV600M-5-17	●	60		398		329	300	+0.95									

When offset drilling, reduce feed rate to 0.0020 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K70~K73
Troubleshooting K67

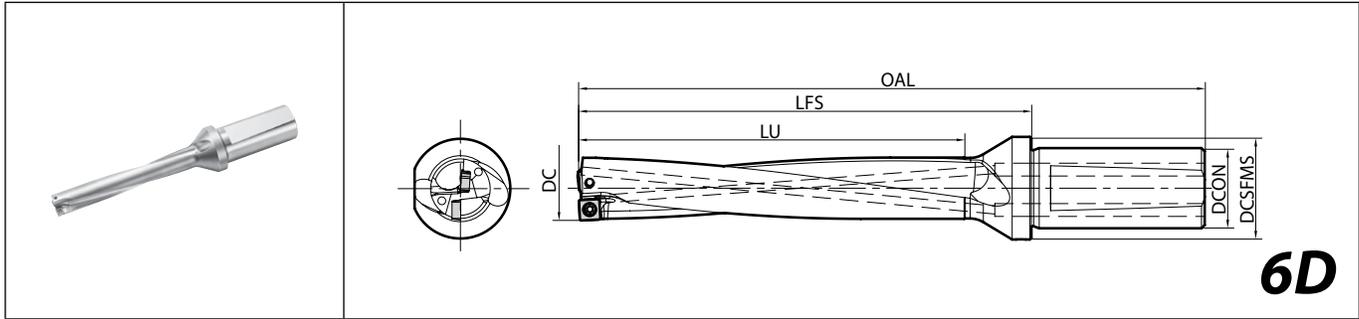
Hole Dia. Tolerance (5D type)

DC	Hole Dia. Tolerance (mm)
ø12 - ø39mm	+0.35 0
ø40 - ø60mm	+0.40 0

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

- INSERT GRADES **A**
- TURNING INSERTS **B**
- CBN / PCD INSERTS **C**
- TURNING HOLDERS **D**
- SMALL TOOLS **E**
- BORING **F**
- GROOVING **G**
- CUT-OFF **H**
- THREADING **J**
- DRILLING **K**
- MILLING **M**
- QUICK CHANGE TOOLING **N**
- SPARE PARTS **P**
- TECHNICAL **R**
- INDEX **T**

DRV (Drilling Depth : 6 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions							Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K46~K49
				DC	DCON	OAL	LFS	LU	DCSFMS	Screw			Wrench	Wrench	Wrench		
																Icon	
mm	S20- DRV120M-6-03	●	2	12	20	130	87	72	27	Yes	+0.25	SB-2037TRP	-	FTP-6	-	LCMT030203-□□-E (Outer) LCMT030205-□□-I (Inner)	
	DRV130M-6-03	●		13		136	93	78			+0.15						
	S20- DRV140M-6-04	●	2	14	20	148	105	84	27	Yes	+0.40	SB-2037TRP	-	FTP-6	-	SCMT040205-□□-E (Outer) SCMT040209-□□-I (Inner)	
	DRV150M-6-04	●		15		154	111	90			+0.30						
	S25- DRV160M-6-05	●	2	16	25	174	120	96	32	Yes	+0.40	SB-2041TRP	-	FTP-6	-	SCMT050205-□□-E (Outer) SCMT050210-□□-I (Inner)	
	DRV170M-6-05	●		17		180	126	102			+0.30						
	DRV180M-6-05	●		18		186	132	108			+0.20						
	S25- DRV190M-6-06	●	2	19	25	189	135	114	32	Yes	+0.65	SB-2555TRP	DTPM-8	-	-	SCMT060205-□□-E (Outer) SCMT060210-□□-I (Inner)	
	DRV200M-6-06	●		20		195	141	120			+0.55						
	DRV210M-6-06	●		21		201	147	126			+0.45						
	DRV220M-6-06	●		22		207	153	132			+0.30						
	S25- DRV230M-6-07	●	2	23	25	213	159	138	32	Yes	+0.80	SB-3060TRP	DTPM-10	-	-	SCMT070305-□□-E (Outer) SCMT070310-□□-I (Inner)	
	DRV240M-6-07	●		24		219	165	144			+0.70						
	DRV250M-6-07	●		25		225	171	150			+0.60						
	DRV260M-6-07	●		26		231	177	156			+0.45						
	S32- DRV270M-6-09	●	2	27	32	244	185	162	41	Yes	+1.05	SB-3573TRP	DTPM-10	-	-	SCMT090405-□□-E (Outer) SCMT090410-□□-I (Inner)	
	DRV280M-6-09	●		28		250	191	168			+0.95						
	DRV290M-6-09	●		29		256	197	174			+0.85						
	DRV300M-6-09	●		30		262	203	180			+0.75						
	DRV310M-6-09	●		31		268	209	186			+0.60						
	DRV320M-6-09	●		32		274	215	192			+0.50						
	S40- DRV330M-6-11	●	2	33	40	293	224	198	49	Yes	+1.25	SB-4086TRP	DTPM-15	-	-	SCMT110406-□□-E (Outer) SCMT110410-□□-I (Inner)	
	DRV340M-6-11	●		34		299	230	204			+1.15						
	DRV350M-6-11	●		35		305	236	210			+1.00						
	DRV360M-6-11	●		36		311	242	216			+0.90						
	DRV370M-6-11	●		37		317	248	222			+0.80						
	DRV380M-6-11	●		38		323	254	228			+0.65						
	DRV390M-6-11	●		39		329	260	234			+0.55						
S40- DRV400M-6-14	●	2	40	40	341	272	240	49	Yes	+1.75	SB-50120TRPH	-	-	TTP-20	SCMT140508-□□-E (Outer) SCMT140510-□□-I (Inner)		
DRV410M-6-14	●		41		347	278	246			+1.60							
DRV420M-6-14	●		42		353	284	252			+1.50							
DRV430M-6-14	●		43		359	290	258			+1.40							
DRV440M-6-14	●		44		365	296	264			+1.30							
DRV450M-6-14	●		45		371	302	270			+1.15							
S50- DRV500M-6-17	●	2	50	50	398	329	300	59	Yes	+2.10	SB-60130TRP	-	-	TTP-20	SCMT170608-□□-E (Outer) SCMT170610-□□-I (Inner)		
DRV550M-6-17	●		55		428	359	330			+1.50							
DRV600M-6-17	●		60		458	389	360			+0.95							

When offset drilling, reduce feed rate to 0.0016 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K70~K73
Troubleshooting K67

Hole Dia. Tolerance (6D type)

DC	Hole Dia. Tolerance (mm)
ø12 - ø39mm	+0.45 0
ø40 - ø60mm	+0.50 0

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Insert Grade Selection Guide

Select CVD for the outer edge when performing high speed and high efficiency drilling and for abrasion resistance and long tool life.

Select PVD MEGACOAT for the outer edge for stable drilling and a better surface finish.

PVD MEGACOAT is recommended for the outer edge if chattering occurs, machining with lathe, or if cutting conditions cannot be increased to the recommended speed for CVD.

1st Recommendation
(High Speed and High Efficiency Drilling)

Outer Edge : CVD (CA520D / CA415D)



Inner Edge : PVD (PR1535)



Stable Machining Oriented
(1st Recommendation for Lathe Machining)

Outer Edge : PVD (PR1225)



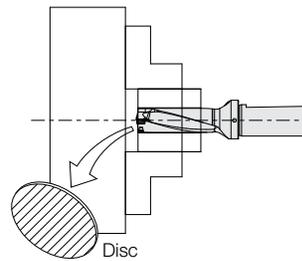
Inner Edge : PVD (PR1535)



Machining Caution

In case of through-hole machining, a disc may be generated and ejected outward when exiting the hole.

Be sure to install guards to protect against dangers if using a machine without the covers (including general-purpose lathes, etc.).



DRV Hole Bottom Shape

	DRV Inch Diameters (in)			DRV Metric Diameters (mm)											
	Insert Size	DC	A	Insert Size	DC	A	Insert Size	DC	A	Insert Size	DC	A	Insert Size	DC	A
	03	0.500	0.028	03	12.0	0.7	06	19.0	1.2	09	26.5	1.2	14	40.0	1.9
	04	0.562	0.039		12.5			19.5			27.0			41.0	
	05	0.625	0.043		13.0			20.0			27.5			42.0	
		0.656		04	13.5	20.5	28.0	43.0							
		0.688			14.0	21.0	28.5	44.0							
	06	0.750	0.047	04	14.5	1.0	07	21.5	1.3	09	29.0	1.3	14	45.0	2.1
		0.812	0.051		15.0			22.0			29.5			46.0	
		0.875	0.051		15.5			22.5			30.0			47.0	
	07	0.938	0.047	05	16.0	1.1	07	23.0	1.2	09	30.5	1.4	14	48.0	2.2
		0.984	0.051		16.5			23.5			31.0			49.0	
		1.000	0.051		17.0			24.0			31.5			50.0	
	09	1.062	0.047	05	17.5	1.2	07	24.5	1.3	11	32.0	1.5	17	51.0	2.1
		1.125	0.051		18.0			25.0			33.0			52.0	
		1.188	0.055		18.5			25.5			34.0			53.0	
		1.250	0.059		26.0			35.0			54.0				
	11	1.312	0.059	14	0.075	17	2.2	11	1.6	17	36.0	1.6	17	55.0	2.2
		1.375									37.0			56.0	
		1.438	0.063								38.0			57.0	
		1.500									39.0			58.0	
	14	1.562	0.075	14	0.075	17	2.4	11	1.7	17	59.0	1.7	17	60.0	2.4
1.625		59.0													
1.688		0.079	60.0												
1.750			0.083												
1.812		0.087	60.0												
1.875			0.087												
1.938	0.083														
17	2.000	0.083													

Common for 2D, 3D, 4D, 5D, 6D Drills

*Above is estimated values. (varies within $\pm 0.1\text{mm}$ ($\pm 0.004''$) depending on workpiece material and cutting conditions)

K
DRILLING

- DRA
- DRV**
- DRZ
- HOLESHOT
- COREMASTER
COREDRILL
- COUNTERBORE
- COUNTERSINK

Troubleshooting (DRV / DRZ)

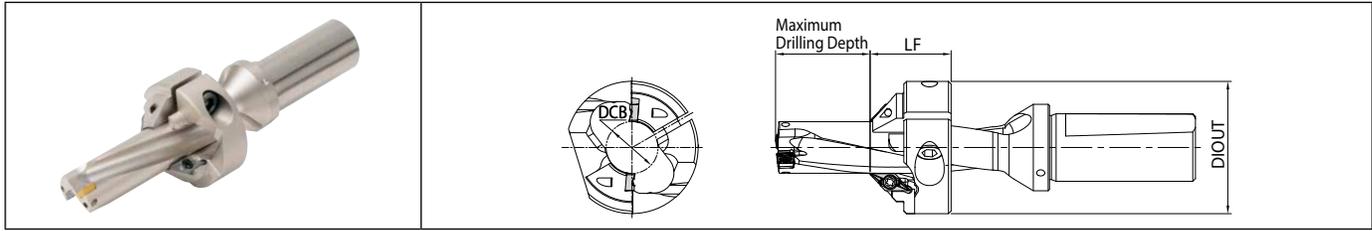
Problems	Conditions	Cause	Countermeasures
Hole Diameter is Smaller at the Bottom of the Hole	<p>A (Inlet Side) B (Bottom Side)</p> <p>There is no problem for inlet, however gradually hole diameter is getting smaller at the bottom. $A > B$</p>	Chip jam (External or Internal edge chip stuck)	Change the cutting conditions · Increase the cutting speed · Lower the feed rate See K70~K73 , K94 for "Recommended Cutting Conditions".
Hole Diameter is Larger at the Bottom of the Hole	<p>A (Inlet Side) B' (Bottom Side)</p> <p>There is no problem for inlet, however gradually hole diameter is getting larger at the bottom. $A < B$</p>	Internal edge chip jam.	Change the cutting conditions · Increase the cutting speed · Lower the feed rate See K70~K73 , K94 for "Recommended Cutting Conditions". · Check the core height K76~K77 (DRV) K96~K97 (DRZ)
Hole Diameter is Small at the Hole Inlet		Incorrect adjustment of hole diameter.	In case of using lathe machine, use X-axis and adjustment hole diameter. K76 (DRV) K96 (DRZ)
		No core at internal edge. (No core remains)	Adjust the center height. K76~K77 (DRV) K96~K97 (DRZ)

Identifying Tool Life of Magic Drill (DRV / DRZ)

How to Judge Tool Life	Tool Life Indications
Tool Condition and Insert Wear	<ul style="list-style-type: none"> When an insert is new, the holder is slightly bent to the side during cutting. (Therefore, the cutting diameter is slightly bigger during cutting). Once cutting is finished, the holder will return back to normal size. No tool marks will appear on the finished surface. (his depends on workpiece and cutting condition: during external machining slight tool mark might appear.) When an insert is at the end of its tool life, Gradually the external corner part gets worn out, the holder does not bend slightly outwards - it starts to bend inwards. After the cutting is finished, the holder returns to the normal position. When taking off a holder under this condition the cutting edge of the insert creates external tool marks on the finished surface of the workpiece.
Checking Hole Diameter	When cutting diameter is measured, suddenly it shows small diameter. In this case, a worn out insert can be the cause.
Checking the Surface on the Exit Side	If insert wear progresses, the burrs of penetrated hole entrance become bigger. This is a clear indication that the tool must be exchanged.
Variation of Cutting Noise	Light drilling noise at the beginning turns to dull noise with vibration
Variation of Vibration	As the end of tool life is getting closer, there is more vibration and the cutting noise changes. However, when machining smaller diameters these factors are difficult to detect.

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

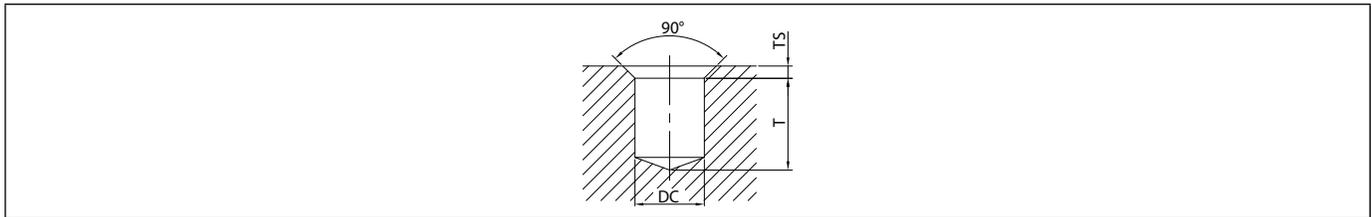
Chamfering Attachment



Chamfer Attachment Dimensions

Part Number	Std. Item	Applicable Drill Bodies		Dimensions (mm)			Applicable Inserts	Spare Parts			
		Inch Size Bodies	Metric Size Bodies	DIOUT	DCB	LF		Insert Screw	Wrench	Clamp Screw	Wrench
DRV-CH17	●	S075-DRV0656-...-05	S25-DRV165M-...-05 S25-DRV170M-...-05	47	16.2	30	CH0503-45	SB-3080TR	FT-10	HH6X18	LW-5
DRV-CH18	●	S100-DRV0688-...-05	S25-DRV175M-...-05 S25-DRV180M-...-05	47	17.2	30					
DRV-CH19	●	-	S25-DRV185M-...-05 S25-DRV190M-...-06	49	18.2	30					
DRV-CH20	●	S100-DRV0766-...-06	S25-DRV195M-...-06 S25-DRV200M-...-06	49	19.2	30					
DRV-CH21	●	S100-DRV0812-...-06	S25-DRV205M-...-06 S25-DRV210M-...-06	49	20.2	30					
DRV-CH22	●	-	S25-DRV215M-...-06 S25-DRV220M-...-06	49	21.2	30					
DRV-CH23	●	-	S25-DRV225M-...-07 S25-DRV230M-...-07	51	22.2	30					
DRV-CH24	●	S100-DRV0938-...-07	S25-DRV235M-...-07 S25-DRV240M-...-07	51	23.2	30					
DRV-CH25	●	S100-DRV0984-...-07	S25-DRV245M-...-07 S25-DRV250M-...-07	53	24.2	30					
DRV-CH26	●	-	S25-DRV255M-...-07 S25-DRV260M-...-07	53	25.2	30					
DRV-CH27	●	S125-DRV1062-...-09	S25-DRV265M-...-09 S32-DRV270M-...-09	64	26	35					

Maximum Drilling Depth / Chamfering Depths



Drilling Diameter (mm)	Maximum Drilling Depth T (mm)						Max Chamfering Depth Ts (mm)	Applicable Chamfering Attachment	
	2D Drill	3D Drill	4D Drill	5D Drill	6D Drill				
DC							2.5	DRV-CH17	
Ø16.5	0.5	17	33.5	-	-				
Ø17.0	1.5	18.5	35.5	52.5	69.5				DRV-CH18
Ø17.5	2.5	20	37.5	-	-				
Ø18.0	3.5	21.5	39.5	57.5	75.5				DRV-CH19
Ø18.5	4.5	23	41.5	-	-				
Ø19.0	5.5	24.5	43.5	62.5	81.5				DRV-CH20
Ø19.5	6.5	26	45.5	-	-				
Ø20.0	7.5	27.5	47.5	67.5	87.5				DRV-CH21
Ø20.5	8.5	29	49.5	-	-				
Ø21.0	9.5	30.5	51.5	72.5	93.5				DRV-CH22
Ø21.5	10.5	32	53.5	-	-				
Ø22.0	11.5	33.5	55.5	77.5	99.5				DRV-CH23
Ø22.5	12.5	35	57.5	-	-				
Ø23.0	13.5	36.5	59.5	82.5	105.5				DRV-CH24
Ø23.5	14.5	38	61.5	-	-				
Ø24.0	15.5	39.5	63.5	87.5	111.5				DRV-CH25
Ø24.5	16.5	41	65.5	-	-				
Ø25.0	17.5	42.5	67.5	92.5	117.5				DRV-CH26
Ø25.5	18.5	44	69.5	-	-				
Ø26.0	19.5	45.5	71.5	97.5	123.5				DRV-CH27
Ø26.5	-	47	-	-	-				
Ø27.0	16.5	43.5	75.5	97.5	124.5				

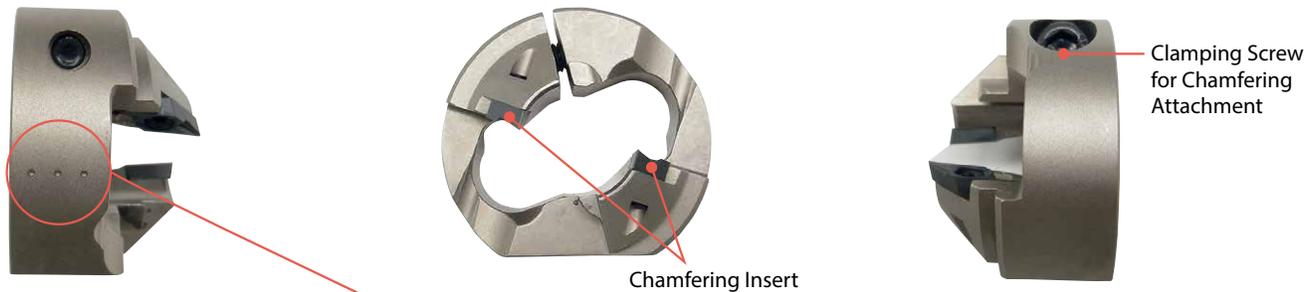
K DRILLING

DRA
DRV
 DRZ
 HOLESHOT
 COREMASTER
 COREDRILL
 COUNTERBORE
 COUNTERSINK

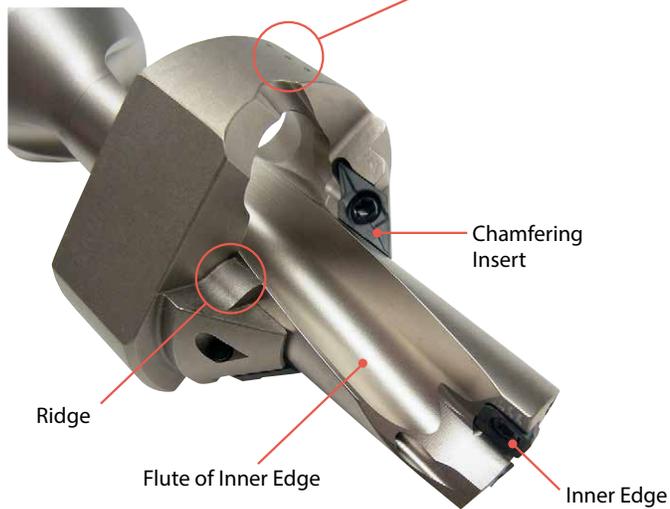
How to Install Chamfering Attachment

Insert	Part Number	Dimensions (mm)		MEGACOAT NANO PR1535	Applicable Chamfering Attachment
		W1	S		
	CH0503-45	7.05	3.18	●	DRV-CH○○

How to Install Chamfering Attachment



Identification on Inner Edge



Instructions
1) Install the attachment over the DRV body so that "• • •" mark on the side of the attachment aligns with the inside flute edge (see image).
2) Adjust the position to avoid interference between the chamfering inserts, chamfering attachment ridges, and drill body flutes. Then fasten the clamp screw with the recommended torque below.

Recommended Torque

Chamfering Attachment Part Number	Torque (Nm)	Clamping Screw	Wrench
DRV-CH17 ~ DRV-CH26	10	HH6X18	LW-5
DRV-CH27	14	HH8X20	LW-6

Inserts are sold in 10 piece boxes

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
 Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRV 2D/3D - Recommended Cutting Conditions (with Coolant)

Drilling Depth: 2D / 3D

Workpiece Material	Recommended Insert Grade / Cutting Speed (sfm)										Inch Drill Dia. DC (in)	Metric Drill Dia. DC (mm)	Drill Depth / Feed Rate (ipr)				
	PVD Coated Carbide					CVD Coated Carbide							2D~3D				
	PR1225					CA520D							CA415D				
	GM	GH	XM	SM	GM	GH	XM	SM	GM	GH			GM	GH	XM	SM	
Low Carbon Steel	-	-	★ 390-660	☆ 390-660	-	-	★ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	-	-	-	0.0016 ~ 0.0024	
	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	-	-	0.0016 ~ 0.0035	0.0016 ~ 0.0028	
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	-	-	0.0016 ~ 0.0039	0.0016 ~ 0.0031	
	-	-	-	-	-	-	-	-	-	-	0.750 - 0.875	19.0 - 22.0	-	-	0.0016 ~ 0.0047	0.0016 ~ 0.0031	
	-	-	-	-	-	-	-	-	-	-	0.922 - 1.000	22.5 - 26.0	-	-	0.0016 ~ 0.0055	0.0024 ~ 0.0039	
	-	-	-	-	-	-	-	-	-	-	1.062 - 1.250	26.5 - 32.0	-	-	0.0024 ~ 0.0055	0.0024 ~ 0.0039	
	-	-	-	-	-	-	-	-	-	-	1.312 - 1.500	33.0 - 39.0	-	-	0.0024 ~ 0.0055	0.0024 ~ 0.0039	
	-	-	-	-	-	-	-	-	-	-	1.562 - 2.000	40.0 - 60.0	-	-	0.0024 ~ 0.0063	0.0031 ~ 0.0047	
Carbon Steel	★ 330-590	☆ 330-590	☆ 330-590	☆ 330-590	★ 490-920	☆ 490-920	☆ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0055	0.0016 ~ 0.0055	-	0.0016 ~ 0.0039	
	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0055	0.0016 ~ 0.0055	0.0016 ~ 0.0039	0.0016 ~ 0.0039	
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0063	0.0024 ~ 0.0063	0.0024 ~ 0.0047	0.0024 ~ 0.0047	
	-	-	-	-	-	-	-	-	-	-	0.750 - 1.000	19.0 - 26.0	0.0031 ~ 0.0079	0.0031 ~ 0.0079	0.0024 ~ 0.0055	0.0024 ~ 0.0055	
	-	-	-	-	-	-	-	-	-	-	1.062 - 1.250	26.5 - 32.0	0.0031 ~ 0.0079	0.0031 ~ 0.0079	0.0024 ~ 0.0055	0.0024 ~ 0.0055	
	-	-	-	-	-	-	-	-	-	-	1.312 - 1.500	33.0 - 39.0	0.0031 ~ 0.0079	0.0031 ~ 0.0079	0.0028 ~ 0.0063	0.0024 ~ 0.0055	
	-	-	-	-	-	-	-	-	-	-	1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0079	0.0031 ~ 0.0079	0.0024 ~ 0.0071	0.0024 ~ 0.0055	
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Alloy Steel	★ 330-525	☆ 330-525	☆ 330-525	-	★ 460-720	☆ 460-720	☆ 460-720	-	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0047	0.0016 ~ 0.0047	-	-	
	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0055	0.0016 ~ 0.0055	-	-	
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0063	0.0024 ~ 0.0063	-	-	
	-	-	-	-	-	-	-	-	-	-	0.750 - 1.500	19.0 - 39.0	0.0031 ~ 0.0079	0.0031 ~ 0.0079	-	-	
	-	-	-	-	-	-	-	-	-	-	1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0079	0.0031 ~ 0.0079	-	-	
Tool Steel	☆ 260-490	★ 260-490	-	-	☆ 425-690	★ 425-690	-	-	-	-	0.500 - 0.578	12.0 - 15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	-	-	
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0047	0.0024 ~ 0.0047	-	-	
	-	-	-	-	-	-	-	-	-	-	0.750 - 1.250	19.0 - 32.0	0.0031 ~ 0.0059	0.0031 ~ 0.0059	-	-	
	-	-	-	-	-	-	-	-	-	-	1.312 - 1.500	33.0 - 39.0	0.0031 ~ 0.0059	0.0031 ~ 0.0059	-	-	
	-	-	-	-	-	-	-	-	-	-	1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0059	0.0031 ~ 0.0059	-	-	
Stainless Steel (Austenitic)	-	-	-	★ 230-460	-	-	-	-	-	-	0.500 - 0.578	12.0 - 15.5	-	-	-	0.0016 ~ 0.0039	
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	-	-	-	0.0024 ~ 0.0047	
	-	-	-	-	-	-	-	-	-	-	0.750 - 2.000	19.0 - 60.0	-	-	-	0.0024 ~ 0.0055	
Gray Cast Iron	☆ 330-490	★ 330-490	-	-	-	-	-	-	-	☆ 490-720	★ 490-720	0.500	12.0 - 13.5	0.0031 ~ 0.0055	0.0031 ~ 0.0055	-	-
	-	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	0.0031 ~ 0.0055	0.0031 ~ 0.0055	-	-
	-	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0031 ~ 0.0071	0.0031 ~ 0.0071	-	-
	-	-	-	-	-	-	-	-	-	-	-	0.750 - 1.500	19.0 - 39.0	0.0031 ~ 0.0079	0.0031 ~ 0.0079	-	-
	-	-	-	-	-	-	-	-	-	-	-	1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0079	0.0031 ~ 0.0079	-	-
Nodular Cast Iron	☆ 260-390	★ 260-390	-	-	-	-	-	-	-	☆ 390-590	★ 390-590	0.500 - 0.578	12.0 - 15.5	0.0031 ~ 0.0047	0.0031 ~ 0.0047	-	-
	-	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0031 ~ 0.0063	0.0031 ~ 0.0063	-	-
	-	-	-	-	-	-	-	-	-	-	-	0.750 - 1.500	19.0 - 39.0	0.0031 ~ 0.0071	0.0031 ~ 0.0071	-	-
	-	-	-	-	-	-	-	-	-	-	-	1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0071	0.0031 ~ 0.0071	-	-

Internal Coolant is Recommended

★ : 1st Recommendation ☆ : 2nd Recommendation

Cutting Conditions by Application

Applications	Plain Surface	Angled Surface	Half Cylindrical	Hole Expansion	Existing Hole	Concave Surface	Stacked Plates
Workpiece Shape							
Cutting Speed Vc (sfm)	See recommended cutting conditions above	390 (PVD insert is recommended for outer edge)					Not Recommended
f (ipr)	See recommended cutting conditions above	50% of above recommendation				50% of above recommendation initially. See recommendations above once drill is fully engaged.	Not Available
Internal Coolant	Yes						Not Recommended

DRV 4D - Recommended Cutting Conditions (with Coolant)

Drilling Depth: 4D

Workpiece Material	Recommended Insert Grade / Cutting Speed (sfm)										Inch Drill Dia. DC (in)	Metric Drill Dia. DC (mm)	Drill Depth / Feed Rate (ipr)			
	PVD Coated Carbide					CVD Coated Carbide							4D			
	PR1225					CA520D							4D			
	GM	GH	XM	SM	GM	GH	XM	SM	GM	GH			GM	GH	XM	SM
Low Carbon Steel	-	-	★ 390-660	☆ 390-660	-	-	★ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	-	-	-	0.0016 ~ 0.0024
	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	-	-	0.0016 ~ 0.0031	0.0016 ~ 0.0028
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	-	-	0.0016 ~ 0.0031	0.0016 ~ 0.0031
	-	-	-	-	-	-	-	-	-	-	0.750 - 0.875	19.0 - 22.0	-	-	0.0016 ~ 0.0039	0.0016 ~ 0.0031
	-	-	-	-	-	-	-	-	-	-	0.922 - 1.000	22.5 - 26.0	-	-	0.0016 ~ 0.0047	0.0020 ~ 0.0039
	-	-	-	-	-	-	-	-	-	-	1.062 - 1.250	26.5 - 32.0	-	-	0.0016 ~ 0.0047	0.0020 ~ 0.0039
	-	-	-	-	-	-	-	-	-	-	1.312 - 1.500	33.0 - 39.0	-	-	0.0024 ~ 0.0047	0.0020 ~ 0.0039
Carbon Steel	★ 330-590	☆ 330-590	☆ 330-590	☆ 330-590	★ 490-920	☆ 490-920	☆ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0039	0.0016 ~ 0.0039	-	0.0016 ~ 0.0031
	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0039	0.0016 ~ 0.0039	0.0016 ~ 0.0031	0.0016 ~ 0.0031
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0047	0.0020 ~ 0.0047	0.0016 ~ 0.0039	0.0020 ~ 0.0039
	-	-	-	-	-	-	-	-	-	-	0.750 - 1.000	19.0 - 26.0	0.0028 ~ 0.0063	0.0028 ~ 0.0063	0.0016 ~ 0.0047	0.0020 ~ 0.0047
	-	-	-	-	-	-	-	-	-	-	1.062 - 1.250	26.5 - 32.0	0.0028 ~ 0.0063	0.0028 ~ 0.0063	0.0016 ~ 0.0047	0.0020 ~ 0.0047
	-	-	-	-	-	-	-	-	-	-	1.312 - 1.500	33.0 - 39.0	0.0028 ~ 0.0063	0.0028 ~ 0.0063	0.0024 ~ 0.0055	0.0020 ~ 0.0047
	-	-	-	-	-	-	-	-	-	-	1.562 - 2.000	40.0 - 60.0	0.0028 ~ 0.0063	0.0028 ~ 0.0063	0.0024 ~ 0.0063	0.0020 ~ 0.0047
Alloy Steel	★ 330-525	☆ 330-525	☆ 330-525	-	★ 460-720	☆ 460-720	☆ 460-720	-	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0039	0.0016 ~ 0.0039	-	-
	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0039	0.0016 ~ 0.0039	-	-
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0047	0.0020 ~ 0.0047	-	-
	-	-	-	-	-	-	-	-	-	-	0.750 - 1.500	19.0 - 39.0	0.0028 ~ 0.0063	0.0028 ~ 0.0063	-	-
Tool Steel	☆ 260-490	★ 260-490	-	-	☆ 425-690	★ 425-690	-	-	-	-	0.500 - 0.578	12.0 - 15.5	0.0016 ~ 0.0028	0.0016 ~ 0.0028	-	-
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0039	0.0020 ~ 0.0039	-	-
	-	-	-	-	-	-	-	-	-	-	0.750 - 1.250	19.0 - 32.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	-	-
	-	-	-	-	-	-	-	-	-	-	1.312 - 1.500	33.0 - 39.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	-	-
Stainless Steel (Austenitic)	-	-	-	★ 230-460	-	-	-	-	★ 460-660	-	0.500 - 0.578	12.0 - 15.5	-	-	-	0.0016 ~ 0.0031
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	-	-	-	0.0020 ~ 0.0043
	-	-	-	-	-	-	-	-	-	-	0.750 - 2.000	19.0 - 60.0	-	-	-	0.0024 ~ 0.0047
Gray Cast Iron	☆ 330-490	★ 330-490	-	-	-	-	-	-	☆ 490-720	★ 490-720	0.500	12.0 - 13.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	-	-
	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	0.0024 ~ 0.0047	0.0024 ~ 0.0047	-	-
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0031 ~ 0.0063	0.0031 ~ 0.0063	-	-
	-	-	-	-	-	-	-	-	-	-	0.750 - 1.500	19.0 - 39.0	0.0031 ~ 0.0071	0.0031 ~ 0.0071	-	-
	-	-	-	-	-	-	-	-	-	-	1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0071	0.0031 ~ 0.0071	-	-
Nodular Cast Iron	☆ 260-390	★ 260-390	-	-	-	-	-	-	☆ 390-590	★ 390-590	0.500 - 0.578	12.0 - 15.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	-	-
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0031 ~ 0.0055	0.0031 ~ 0.0055	-	-
	-	-	-	-	-	-	-	-	-	-	0.750 - 1.500	19.0 - 39.0	0.0031 ~ 0.0063	0.0031 ~ 0.0063	-	-
	-	-	-	-	-	-	-	-	-	-	1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0063	0.0031 ~ 0.0063	-	-

Internal Coolant is Recommended

★ : 1st Recommendation ☆ : 2nd Recommendation

Cutting Conditions by Application

Applications	Plain Surface	Angled Surface	Half Cylindrical	Hole Expansion	Existing Hole	Concave Surface	Stacked Plates	
Workpiece Shape								
Cutting Speed Vc (sfm)	See recommended cutting conditions above	390 (PVD insert is recommended for outer edge)					Not Recommended	
f (ipr)	See recommended cutting conditions above	50% of above recommendation				50% of above recommendation initially. See recommendations above once drill is fully engaged.		Not Available
Internal Coolant	Yes						Not Recommended	

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRV 5D - Recommended Cutting Conditions (with Coolant)

Drilling Depth: 5D

Workpiece Material	Recommended Insert Grade / Cutting Speed (sfm)										Inch Drill Dia. DC (in)	Metric Drill Dia. DC (mm)	Drill Depth / Feed Rate (ipr)				
	PVD Coated Carbide					CVD Coated Carbide							5D				
	PR1225					CA520D				CA415D							
	GM	GH	XM	SM		GM	GH	XM	SM	GM			GH	GM	GH	XM	SM
Low Carbon Steel	-	-	★	☆				★	☆			0.500	12.0 - 13.5	-	-	-	0.0012 ~ 0.0020
												0.562 - 0.578	14.0 - 15.5	-	-	0.0016 ~ 0.0028	0.0016 ~ 0.0024
												0.625 - 0.688	16.0 - 18.5	-	-	0.0016 ~ 0.0031	0.0016 ~ 0.0024
												0.750 - 0.875	19.0 - 22.0	-	-	0.0016 ~ 0.0039	0.0016 ~ 0.0028
												0.922 - 1.000	22.5 - 26.0	-	-	0.0016 ~ 0.0047	0.0016 ~ 0.0031
												1.062 - 1.250	26.5 - 32.0	-	-	0.0016 ~ 0.0047	0.0016 ~ 0.0031
												1.312 - 1.500	33.0 - 39.0	-	-	0.0020 ~ 0.0047	0.0016 ~ 0.0039
												1.562 - 2.000	40.0 - 60.0	-	-	0.0020 ~ 0.0055	0.0016 ~ 0.0039
Carbon Steel	★	☆	☆	☆	★	☆	☆	☆	☆	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	-	0.0016 ~ 0.0028
												0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	0.0016 ~ 0.0028	0.0016 ~ 0.0028
												0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0039	0.0020 ~ 0.0039	0.0020 ~ 0.0031	0.0020 ~ 0.0031
												0.750 - 1.000	19.0 - 26.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	0.0020 ~ 0.0039	0.0020 ~ 0.0039
												1.062 - 1.250	26.5 - 32.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	0.0020 ~ 0.0047	0.0020 ~ 0.0039
												1.312 - 1.500	33.0 - 39.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	0.0020 ~ 0.0047	0.0020 ~ 0.0039
												1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	0.0024 ~ 0.0047	0.0020 ~ 0.0039
Alloy Steel	★	☆	☆	-	★	☆	☆	-	-	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	-	-
												0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	-	-
												0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0039	0.0020 ~ 0.0039	-	-
												0.750 - 1.500	19.0 - 39.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	-	-
												1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	-	-
Tool Steel	☆	★	-	-	☆	★	-	-	-	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0024	0.0016 ~ 0.0024	-	-
												0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0024	0.0016 ~ 0.0024	-	-
												0.625 - 0.688	16.0 - 18.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	-	-
												0.750 - 1.500	19.0 - 39.0	0.0020 ~ 0.0039	0.0020 ~ 0.0039	-	-
												1.562 - 2.000	40.0 - 60.0	0.0020 ~ 0.0039	0.0020 ~ 0.0039	-	-
Stainless Steel (Austenitic)	-	-	-	★	-	-	-	-	-	-	-	0.500	12.0 - 13.5	-	-	-	0.0016 ~ 0.0031
												0.562 - 0.578	14.0 - 15.5	-	-	-	0.0016 ~ 0.0031
												0.625 - 0.688	16.0 - 18.5	-	-	-	0.0016 ~ 0.0039
												0.750 - 2.000	19.0 - 60.0	-	-	-	0.0024 ~ 0.0047
Gray Cast Iron	☆	★	-	-	-	-	-	-	-	☆	★	0.500 - 0.578	12.0 - 15.5	0.0016 ~ 0.0039	0.0016 ~ 0.0039	-	-
												0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0047	0.0024 ~ 0.0047	-	-
												0.750 - 1.500	19.0 - 39.0	0.0024 ~ 0.0055	0.0024 ~ 0.0055	-	-
												1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0055	0.0024 ~ 0.0055	-	-
Nodular Cast Iron	☆	★	-	-	-	-	-	-	-	☆	★	0.500	12.0 - 13.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	-	-
												0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	-	-
												0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	-	-
												0.750 - 1.500	19.0 - 39.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	-	-
											1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	-	-	

Internal Coolant is Recommended

★ : 1st Recommendation ☆ : 2nd Recommendation

Cutting Conditions by Application

Applications	Plain Surface	Angled Surface	Half Cylindrical	Hole Expansion	Existing Hole	Concave Surface	Stacked Plates	
Workpiece Shape								
Cutting Speed Vc (sfm)	See recommended cutting conditions above	390 (PVD insert is recommended for outer edge)						Not Recommended
f (ipr)	See recommended cutting conditions above	50% of above recommendation				50% of above recommendation initially. See recommendations above once drill is fully engaged.		Not Available
Internal Coolant	Yes						Not Recommended	

DRV 6D - Recommended Cutting Conditions (with Coolant)

Drilling Depth: 6D

Workpiece Material	Recommended Insert Grade / Cutting Speed (sfm)										Inch Drill Dia. DC (in)	Metric Drill Dia. DC (mm)	Drill Depth / Feed Rate (ipr)				
	PVD Coated Carbide					CVD Coated Carbide							6D				
	PR1225					CA520D							CA415D				
	GM	GH	XM	SM	GM	GH	XM	SM	GM	GH			GM	GH	XM	SM	
Low Carbon Steel	-	-	★ 390-660	☆ 390-660	-	-	★ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	-	-	-	0.0012 ~ 0.0020	
	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	-	-	0.0016 ~ 0.0024	0.0016 ~ 0.0024	
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	-	-	0.0016 ~ 0.0024	0.0016 ~ 0.0024	
	-	-	-	-	-	-	-	-	-	-	0.750 - 0.875	19.0 - 22.0	-	-	0.0016 ~ 0.0028	0.0016 ~ 0.0028	
	-	-	-	-	-	-	-	-	-	-	0.922 - 1.000	22.5 - 26.0	-	-	0.0016 ~ 0.0031	0.0016 ~ 0.0028	
	-	-	-	-	-	-	-	-	-	-	1.062 - 1.250	26.5 - 32.0	-	-	0.0016 ~ 0.0031	0.0016 ~ 0.0028	
	-	-	-	-	-	-	-	-	-	-	1.312 - 1.500	33.0 - 39.0	-	-	0.0016 ~ 0.0035	0.0016 ~ 0.0031	
Carbon Steel	★ 330-590	☆ 330-590	☆ 330-590	☆ 330-590	★ 490-920	☆ 490-920	☆ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	0.0012 ~ 0.0020	0.0012 ~ 0.0020	-	0.0012 ~ 0.0020	
	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0024	0.0016 ~ 0.0024	0.0016 ~ 0.0024	0.0016 ~ 0.0024	
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0031	0.0020 ~ 0.0031	0.0020 ~ 0.0028	0.0020 ~ 0.0028	
	-	-	-	-	-	-	-	-	-	-	0.750 - 1.000	19.0 - 26.0	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0020 ~ 0.0031	0.0020 ~ 0.0031	
	-	-	-	-	-	-	-	-	-	-	1.062 - 1.250	26.5 - 32.0	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0020 ~ 0.0031	0.0020 ~ 0.0031	
	-	-	-	-	-	-	-	-	-	-	1.312 - 1.500	33.0 - 39.0	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0020 ~ 0.0031	0.0020 ~ 0.0031	
	-	-	-	-	-	-	-	-	-	-	1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0020 ~ 0.0031	
Alloy Steel	★ 330-525	☆ 330-525	☆ 330-525	-	★ 460-720	☆ 460-720	☆ 460-720	-	-	-	0.500	12.0 - 13.5	0.0012 ~ 0.0020	0.0012 ~ 0.0020	-	-	
	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0024	0.0016 ~ 0.0024	-	-	
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0031	0.0020 ~ 0.0031	-	-	
	-	-	-	-	-	-	-	-	-	-	0.750 - 1.500	19.0 - 39.0	0.0024 ~ 0.0039	0.0024 ~ 0.0039	-	-	
Tool Steel	☆ 260-490	★ 260-490	-	-	☆ 425-690	★ 425-690	-	-	-	-	0.500	12.0 - 13.5	0.0012 ~ 0.0020	0.0012 ~ 0.0020	-	-	
	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0020	0.0016 ~ 0.0020	-	-	
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0016 ~ 0.0024	0.0016 ~ 0.0024	-	-	
	-	-	-	-	-	-	-	-	-	-	0.750 - 1.500	19.0 - 39.0	0.0020 ~ 0.0031	0.0020 ~ 0.0031	-	-	
Stainless Steel (Austenitic)	-	-	-	★ 230-460	-	-	-	-	-	-	0.500	12.0 - 13.5	-	-	-	0.0012 ~ 0.0020	
	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	-	-	-	0.0016 ~ 0.0024	
	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	-	-	-	0.0016 ~ 0.0035	
	-	-	-	-	-	-	-	-	-	-	0.750 - 2.000	19.0 - 60.0	-	-	-	0.0024 ~ 0.0039	
Gray Cast Iron	☆ 330-490	★ 330-490	-	-	-	-	-	-	-	☆ 490-720	★ 490-720	0.500 - 0.578	12.0 - 15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	-	-
	-	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	-	-
	-	-	-	-	-	-	-	-	-	-	-	0.750 - 1.500	19.0 - 39.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	-	-
	-	-	-	-	-	-	-	-	-	-	-	1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	-	-
Nodular Cast Iron	☆ 260-390	★ 260-390	-	-	-	-	-	-	-	☆ 390-590	★ 390-590	0.500	12.0 - 13.5	0.0012 ~ 0.0020	0.0012 ~ 0.0020	-	-
	-	-	-	-	-	-	-	-	-	-	-	0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0024	0.0016 ~ 0.0024	-	-
	-	-	-	-	-	-	-	-	-	-	-	0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0031	0.0024 ~ 0.0031	-	-
	-	-	-	-	-	-	-	-	-	-	-	0.750 - 1.500	19.0 - 39.0	0.0024 ~ 0.0039	0.0024 ~ 0.0039	-	-
-	-	-	-	-	-	-	-	-	-	-	-	1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0039	0.0024 ~ 0.0039	-	-

Internal Coolant is Recommended

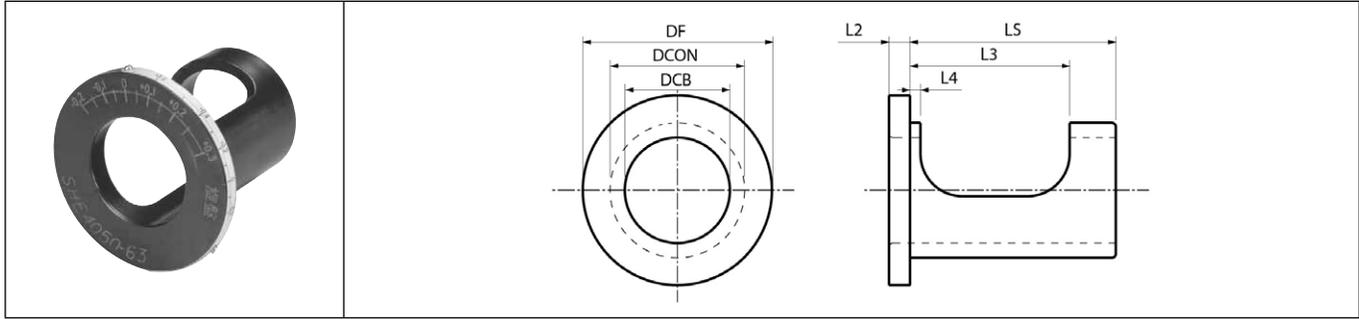
★ : 1st Recommendation ☆ : 2nd Recommendation

Cutting Conditions by Application

Applications	Plain Surface	Angled Surface	Half Cylindrical	Hole Expansion	Existing Hole	Concave Surface	Stacked Plates
Workpiece Shape							
Cutting Speed Vc (sfm)	See recommended cutting conditions above	390 (PVD insert is recommended for outer edge)					Not Recommended
f (ipr)	See recommended cutting conditions above	50% of above recommendation				50% of above recommendation initially. See recommendations above once drill is fully engaged.	Not Available
Internal Coolant	Yes						Not Recommended

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

SHE



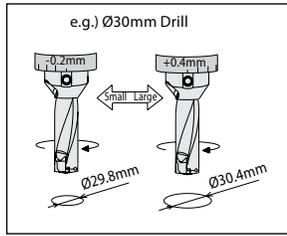
Toolholder Dimensions

Unit	Part Number	Std. Item	Dimensions							* Drill Dia. Adjustable Range	Center Height Adjustable Range
			DCB	DCON	DF	L2	L3	L4	L5		
Inch	ASL 75100-175	●	0.750	1.000	1.614	0.157	1.417	0.118	1.750	+0.016 ~ -0.008	+0.008 ~ -0.006
	100125-212	●	1.000	1.250	1.929	0.236	1.496	0.098	2.125	+0.016 ~ -0.008	+0.008 ~ -0.006
	125150-238	●	1.250	1.500	2.283	0.236	1.693	0.098	2.375	+0.016 ~ -0.008	+0.008 ~ -0.006
mm	SHE 2025-43	●	20	25	41	6	36	3	43	+0.4 ~ -0.2	+0.2 ~ -0.15
	2532-48	●	25	32	49		38	2.5	48	+0.4 ~ -0.2	+0.2 ~ -0.15
	3240-53	●	32	40	58		43		53	+0.4 ~ -0.2	+0.2 ~ -0.15
	4050-63	●	40	50	74		49	3	63	+0.6 ~ -0.2	+0.3 ~ -0.2

Diameter Adjustment Range adjusts the drill diameter.

DRA
DRV
DRZ
HOLESHOT
COREMASTER COREDRILL
COUNTERBORE
COUNTERSINK

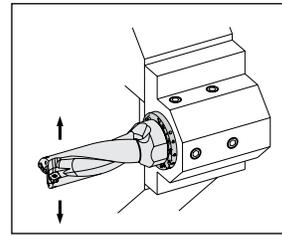
1. Diameter Adjustment (for Machining Center)



3 Diameter Adjustment

ASL (in)		SHE (mm)	
Shank Dia.	Adjustment Range	Shank Dia.	Adjustment Range
Ø0.750"	+0.016 ~ -0.008	Ø20	+0.4 ~ -0.2
Ø1.000"		Ø25	
Ø1.250"		Ø32	
-	-	Ø40	+0.6 ~ -0.2

2. Center Height Adjustment (for Lathe Operations)



3 Center Height Adjustment

ASL (in)		SHE (mm)	
Shank Dia.	Adjustment Range	Shank Dia.	Adjustment Range
Ø0.750"	+0.008 ~ -0.006	Ø20	+0.2 ~ -0.15
Ø1.000"		Ø25	
Ø1.250"		Ø32	
-	-	Ø40	+0.3 ~ -0.2

How to Use the Adjustable Sleeve

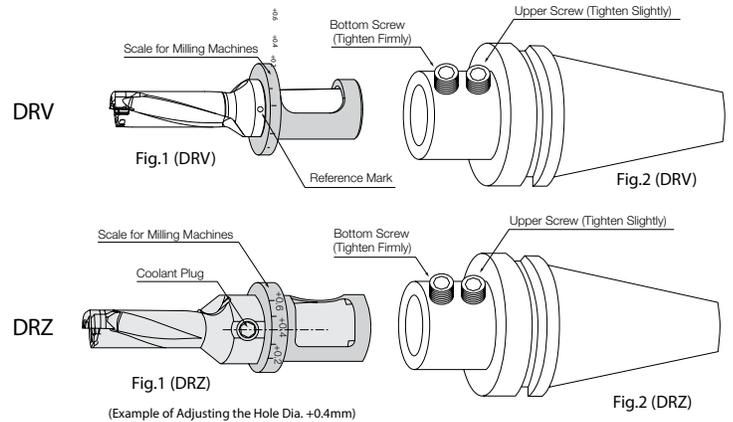
1. Hole Diameter Adjustment when Drilling

- (1) Adjust the scale at the flange periphery of the sleeve to the center of the drill coolant plug. (Fig.1)
- (2) When making the hole diameter larger, rotate the sleeve in (+) direction and to make it smaller, rotate the sleeve in (-) direction.
- (3) When rotating the sleeve, insert the wrench supplied with the drill into the hole on the flange periphery to rotate the sleeve.
- (4) Using the bottom screw of the side-lock arbor, firmly tighten on the drill directly through the sleeve's window.

The upper screw should be tightened slightly so that the sleeve will not be damaged.

Caution:

- Not applicable with Collet Chuck type Arbor.
- Scale on the sleeve is the reference value. Check the actual hole diameter after adjusting.



2. Center-Height Adjustment for Lathes

Most Lathe problems occur due to Center Height Deviation.

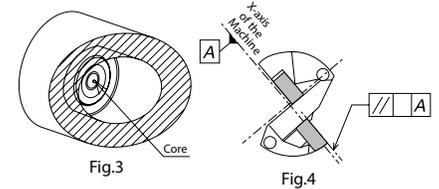
The Center Height is appropriate if a core approximately 0.5mm diameter remains at the center of the end face. (Fig.3)

Center-height adjustment is necessary if:

- ◆ No core remains or ◆ Core diameter is more than 1mm

- (1) Align the drill with the outer insert face parallel to the X-axis of the tool turret. (Fig.4)
- (2) Align the scale (for the lathe) on the flange face of the sleeve to the center of the drill coolant plug.
- (3) When no core remains, rotate the sleeve to (+) direction to make the core larger, and when the core diameter is more than 1mm, rotate the sleeve to (-) direction to make the core smaller.
- (4) When rotating the sleeve, insert the wrench supplied with the drill into the hole on the flange periphery to rotate the sleeve.
- (5) After Completing the adjustment, firmly tighten on the drill directly through the sleeve's window.

Note: Depending on amount of the center height adjustment, the hole diameter may change. It is recommended that the hole diameter is checked after the center height adjustment.



Magic Drill Setup for Lathes

Installation

1. The top face of the outer insert should be parallel to the X-axis to allow for offset cutting.
(Cutting diameter can be changed by moving in the X-axis.)
2. It is recommended to set the outer insert as shown in Fig.1 with the outer insert facing the operator. (Fig.1)
(It is also possible to use it by setting it in 180° reverse position)
If the lathe has two turrets, when installing the drill into the lower turret, the outer insert should be set to face the operator.
(It is also possible to use it by setting it at 180° reverse position)

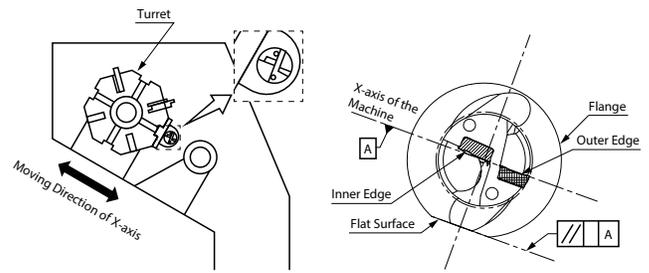


Fig.1 Installed into the Lathe

Cutting Diameter Adjustment

1 Cutting Diameter Adjustment

1. Cutting diameter is adjusted by moving X-axis.
The moving direction of the X-axis depends on the position of the toolholder.
2. For making the hole diameter larger, slide the tool along the X-axis toward the outer insert side. (Fig.2, Fig.3)
For making the hole diameter smaller, slide the tool along the X-axis in the opposite direction.
(This movement of the axis is called an "Offset")
Be sure not to make the hole diameter smaller than the drill diameter by more than 0.2mm (0.008"). Otherwise, the toolholder will interfere with the drilled hole. (Fig.4)
Ex.) When using Ø20mm drill, the hole diameter must not be smaller than 19.8mm (0.780")

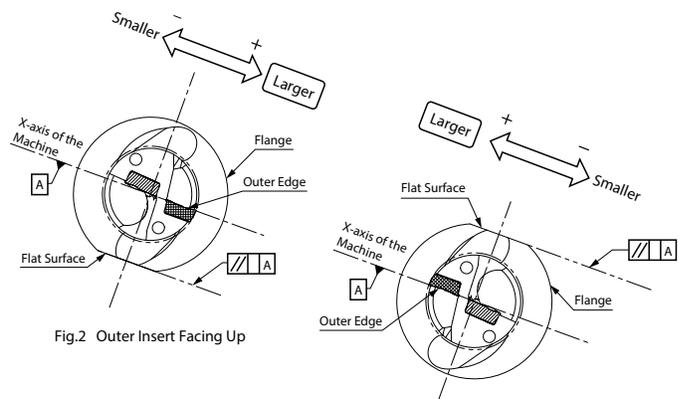


Fig.2 Outer Insert Facing Up

Fig.3 Outer Insert Facing Down

2 Offset Limit of the Cutting Diameter

For the maximum limit of the cutting diameter, refer to "Max. Offset (Radial)" in the Toolholder Dimensions table.
(The figure in the Toolholder Dimensions table shows how much it is possible to offset the drill in the radial direction.)
Ex.) When using Ø20mm (Ø0.787") drill, for example, it is possible to make a hole up to Ø21.1mm (0.831") since "Max. Offset (Radial)" is +0.55mm (+0.022").

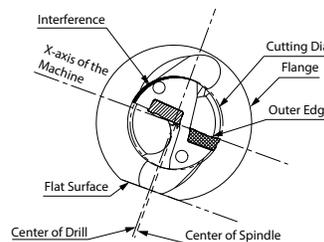


Fig.4 Excessive Offset (For Smaller Hole Diameter)

Center Height Adjustment

1 Center Height of the Inner Insert

When installing inner insert as shown in Fig.1, it will be set around 0.05mm (0.002") below the Center of Spindle. (Fig.5)
This is the normal position of the center height.
However, in case that the turret of the lathe is out of alignment with the Center of Spindle, sometimes the inner insert may be above or below center.
For stable machining, it is essential to check the Center Height of the inner insert carefully

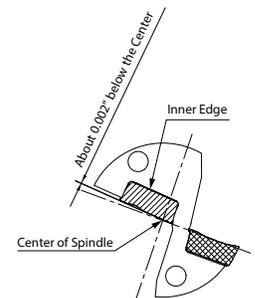


Fig.5 Front View of the Drill

2 How to Check the Center Height

For checking the center height of the inner insert, see the core which remains at the center of the bottom of the drilled hole.
If the center height is in the normal position, a core of about 0.5mm (0.020") in diameter, will remain after machining. (Fig.6)
Adjustment of center height is required if no core is present or a large core diameter of 1mm (0.039") or more remains.
* The drilled hole for verification purposes needs to be machined at approximately 10mm (0.375") in depth
and at a feed rate of 0.004 ipr or lower.

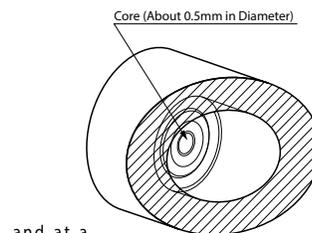


Fig.6 Center Core

DRA
DRV
DRZ
HOLESHOT
COREMASTER COREDRILL
COUNTERBORE
COUNTERSINK

3 Center Height Adjustment

1. When there is no remaining core and the inner insert is chipping

This occurs when the inner insert is set above center. (Fig.7)

How to Adjust
<p>A. Install the drill rotated by 180° Most problems will be solved by this method (Fig.8)</p>
<p>B. If the core diameter becomes too large after the above adjustment, install the drill by rotating 90° counter-clockwise as shown in Fig.9 (outer edge is positioned lower) and adjust the center height by moving the tool in the X-axis direction. (However, this will make it impossible to adjust the cutting diameter) Caution: When installing the drill in the opposite direction (outer insert is positioned above), the cutting diameter will become smaller, which may cause the drill body to interfere with the drilled hole. The best solution is to readjust the center position of the turret itself.</p>

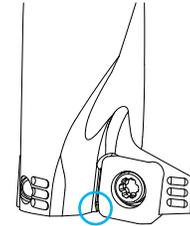


Fig.7 Insert breakage near the center of the drill

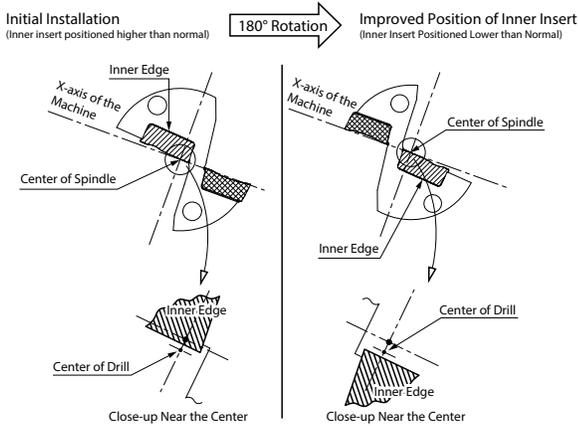


Fig.8

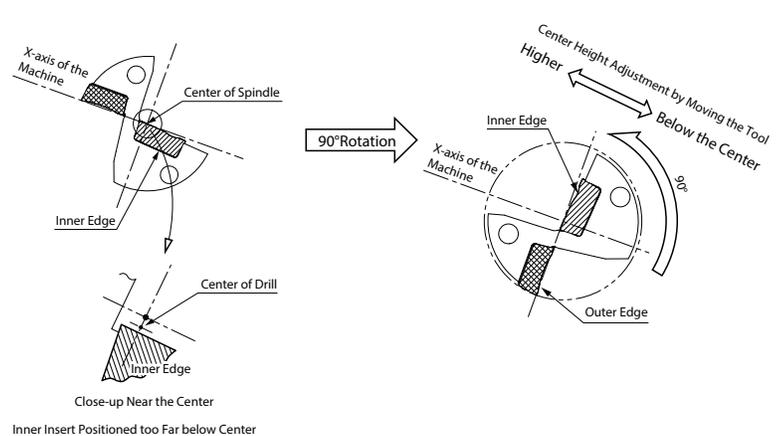


Fig.9

2. Core with Excessively Large Diameter More than 1mm (0.039")

This occurs when the inner insert is below center

This condition causes poor chip evacuation and an adjustment is required.

How to Adjust
<p>Install the drill rotated 90° as shown in Fig.10. (outer insert is positioned on the upper side) and adjust the center height by moving tool in the X-axis direction. (However, this will make it impossible to adjust the cutting diameter) Caution: When installing the drill in the opposite direction (outer insert is positioned lower), the cutting diameter will become smaller, which may cause the drill body to interfere with the drilled hole. The best solution is to readjust the center position of the turret itself.</p>

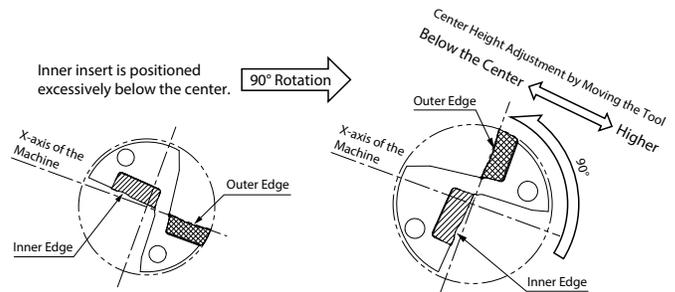
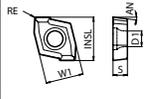
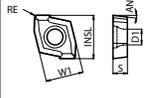


Fig.10

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

ZCMT

		Carbon Steel / Alloy Steel		● ○		P						
		Mold and Die Steel		● ●								
		Stainless Steel		● ○		M						
		Cast Iron		● ●		K						
		Non-Ferrous Metals		● ●		N						
Insert	Part Number	Dimensions (mm)					Angle (°)	Carbide			Applicable Toolholder ➔ K80~K92	
		S	D1	RE	INSL	W1	AN	PVD				
								PR1210	PR1225	PR1230		KW10
 RE  General Purpose	ZCMT 050203	2.38	2.3	0.3	5.9	5	7	●	●	●	●	S.-DRZ....-05
	ZCMT 06T204	2.8	2.5	0.4	7	6	7	●	●	●	●	S.-DRZ....-06
	ZCMT 080304	3.18	2.9	0.4	9.7	8.2	7	●	●	●	●	S.-DRZ....-08
	ZCMT 10T304	3.97	4.4	0.4	12	10.4	7	●	●	●	●	S.-DRZ....-10
	ZCMT 12T306	3.97	5.6	0.6	14.3	12.8	7	●	●	●	●	S.-DRZ....-12
	ZCMT 150408	4.76	5.6	0.8	17.8	15.8	7	●	●	●	●	S.-DRZ....-15
 RE  Deep Drilling / Low Cutting Force	ZCMT 050203SP	2.38	2.3	0.3	5.9	5	7	●	●	●	●	S.-DRZ....-05
	ZCMT 06T204SP	2.8	2.5	0.4	7	6	7	●	●	●	●	S.-DRZ....-06
	ZCMT 080304SP	3.18	2.9	0.4	9.7	8.2	7	●	●	●	●	S.-DRZ....-08
	ZCMT 10T304SP	3.97	4.4	0.4	12	10.4	7	●	●	●	●	S.-DRZ....-10
	ZCMT 12T304SP	3.97	5.6	0.4	14.3	12.8	7	●	●	●	●	S.-DRZ....-12
	ZCMT 150406SP	4.76	5.6	0.6	17.8	15.8	7	●	●	●	●	S.-DRZ....-15
 RE  Stainless Steel	ZCMT 050203SU	2.38	2.3	0.3	5.9	5	7	●	●	●	●	S.-DRZ....-05
	ZCMT 06T204SU	2.8	2.5	0.4	7	6	7	●	●	●	●	S.-DRZ....-06

Features of SP Chipbreaker

1. Less cutting force with large rake angle
2. Suitable for chip control of sticky materials such as stainless steel or soft steel.
3. Larger size inserts have smaller corner-R(RE) than standard chipbreaker type and can reduce burrs.

Recommended Cutting Conditions ➔ K94

K
DRILLING

DRA
DRV
DRZ
HOLESHOT
COREMASTER COREDRILL
COUNTERBORE
COUNTERSINK

Inserts are sold in 10 piece boxes

Chipbreaker Selection Guide (ZCMT)

★ : 1st Recommendation ☆ : 2nd Recommendation

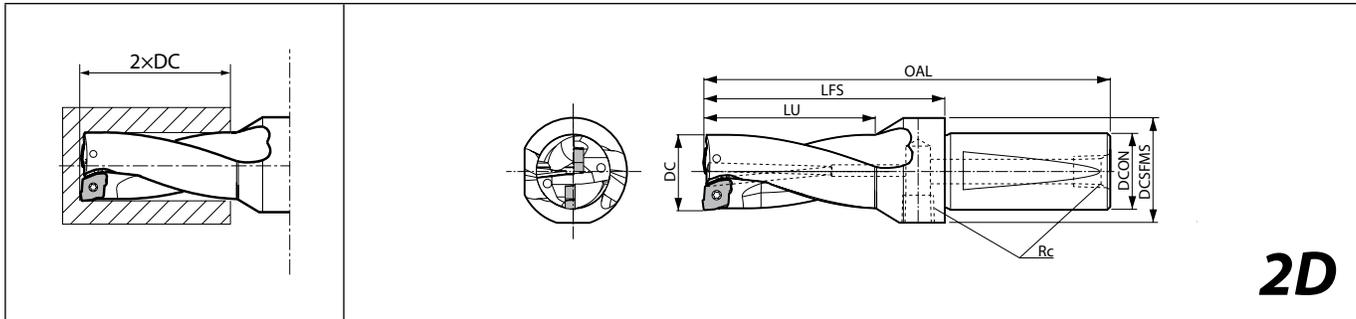
Workpiece Material	Insert Size		ZCMT05									ZCMT06									ZCMT08						
	Chipbreaker		Standard			SP			SU			Standard			SP			SU			Standard			SP			
	Cutting Depth		2D	3D	4D	2D	3D	4D	2D	3D	4D	2D	3D	4D	2D	3D	4D	2D	3D	4D	2D	3D	4D	2D	3D	4D	
Low Carbon Steel	☆	☆	-	★	★	★	-	-	-	☆	☆	-	★	★	★	☆	☆	☆	☆	☆	☆	☆	☆	-	★	★	★
Carbon Steel	★	★	☆	☆	☆	★	-	-	-	★	★	☆	☆	☆	★	-	-	-	★	★	☆	☆	☆	☆	☆	★	
Alloy Steel	★	★	☆	☆	☆	★	-	-	-	★	★	☆	☆	☆	★	-	-	-	★	★	☆	☆	☆	☆	☆	★	
Tool Steel	★	★	☆	☆	☆	★	-	-	-	★	★	☆	☆	☆	★	-	-	-	★	★	☆	☆	☆	☆	☆	★	
Stainless Steel	☆	☆	-	★	★	★	☆	☆	-	-	-	-	☆	☆	☆	★	★	★	☆	☆	-	★	★	★	★	★	★
Cast Iron	★	★	★	☆	☆	☆	-	-	-	★	★	★	☆	☆	☆	-	-	-	★	★	★	☆	☆	☆	☆	☆	
Aluminum Alloy	☆	☆	☆	★	★	★	-	-	-	☆	☆	☆	★	★	★	-	-	-	☆	☆	☆	★	★	★	★	★	★
Brass	★	★	★	☆	☆	☆	-	-	-	★	★	★	☆	☆	☆	-	-	-	★	★	★	☆	☆	☆	☆	☆	
Titanium Alloy	☆	☆	☆	★	★	★	-	-	-	☆	☆	☆	★	★	★	-	-	-	☆	☆	☆	★	★	★	★	★	★

Workpiece Material	Insert Size		ZCMT10								ZCMT12								ZCMT15								ZCMT20								
	Chipbreaker		Standard				SP				Standard				SP				Standard				SP				Standard								
	Cutting Depth		2D	3D	4D	5D	2D	3D	4D	5D	2D	3D	4D	5D	2D	3D	4D	5D	2D	3D	4D	5D	2D	3D	4D	5D	2D	3D	4D						
Low Carbon Steel	☆	☆	-	-	★	★	★	★	☆	☆	-	-	★	★	★	★	☆	☆	-	-	★	★	★	★	☆	☆	-	-	★	★	★	★	★	★	★
Carbon Steel	★	★	☆	☆	☆	☆	★	★	★	★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	★	★	★	★	★			
Alloy Steel	★	★	☆	☆	☆	☆	★	★	★	★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	★	★	★	★	★			
Tool Steel	★	★	☆	☆	☆	☆	★	★	★	★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	★	★	★	★	★			
Stainless Steel	☆	☆	-	-	★	★	★	☆	☆	-	-	★	★	★	★	☆	☆	-	-	★	★	★	★	☆	☆	-	-	★	★	★	★	★	★	★	
Cast Iron	★	★	★	★	☆	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	☆	☆	★	★	☆	☆	☆	☆	★	★	★	★	★	★	★			
Aluminum Alloy	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	★	★	★	★	★			
Brass	★	★	★	★	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	★	★	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆			
Titanium Alloy	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	★	★	★	★	★			

Standard chipbreakers (without symbol) may function better with interrupted cutting.
When machining aluminum, chips become long and difficult to discharge at depths over 2D.

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRZ (Drilling Depth : 2 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions								Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K78
				DC	DCON	OAL	LFS	LU	DCSFMS	Rc	Plug			Screw	Wrench	Wrench		
Inch	S75- DRZ5621125-05G	●	2	0.562	0.75	3.87	2.18	1.125	1.06	1/8 NPT	Yes	+0.020	GP-1N	SB-2045TR	-	FT-6	ZCMT050203 ZCMT050203SP ZCMT050203SU	
	S100- DRZ6251250-06G	●	2	0.625	1.00	4.52	2.39	1.250	1.26	1/8 NPT	Yes	+0.043	GP-1N	SB-2260TR	DTM-7	-	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU	
	DRZ6561312-06G	●		0.656		4.52	2.39	1.312				+0.034						
	DRZ6881375-06G	●		0.688		4.56	2.43	1.375				+0.027						
	DRZ7501500-06G	●		0.750		4.73	2.61	1.500				+0.020						
	DRZ8121625-06G	●		0.812		4.93	2.81	1.625				+0.014						
	S100- DRZ8751750-08G	●	2	0.875	5.02	2.90	1.750	1.30	1/8 NPT	Yes	+0.055	GP-1N	SB-2570TR	DT-8	-	ZCMT080304 ZCMT080304SP		
	DRZ9381875-08G	●	0.938	5.17	3.05	1.875	1.30	+0.043										
	DRZ10002000-08G	●	1.000	5.24	3.11	2.000	1.38	+0.028										
	S100- DRZ10622125-10G	●	2	1.062	1.25	5.67	3.54	2.125	1.65	1/4 NPT	Yes	+0.098	GP-2N	SB-4085TR	DT-15	-	ZCMT10T304 ZCMT10T304SP	
	DRZ11252250-10G	●		1.125		5.74	3.62	2.250	1.65			+0.073						
	DRZ11882375-10G	●		1.188		5.86	3.74	2.375	1.77			+0.067						
	DRZ12502500-10G	●		1.250		5.92	3.79	2.500	1.77			+0.047						
	S125- DRZ13122625-12G	●	2	1.312	1.25	6.82	4.10	2.625	2.17	1/4 NPT	Yes	+0.110	GP-2N	SB-5085TR	DT-20	-	ZCMT12T304SP ZCMT12T306	
	DRZ13752750-12G	●		1.375		6.98	4.27	2.750				+0.094						
	DRZ14382875-12G	●		1.438		7.07	4.35	2.875				+0.078						
	DRZ15003000-12G	●		1.500		7.19	4.47	3.000				+0.067						
	DRZ15623125-12G	●		1.562		7.29	4.57	3.125				+0.047						
	S125- DRZ16253250-15G	●	2	1.625	1.25	7.34	4.62	3.250	2.36	1/4 NPT	Yes	+0.150	GP-2N	SB-5085TR	DT-20	-	ZCMT150406SP ZCMT150408	
	DRZ16883375-15G	●		1.688		7.49	4.78	3.375				+0.138						
DRZ17503500-15G	●	1.750		7.57		4.85	3.500	+0.122										
DRZ18123625-15G	●	1.812		7.78		5.06	3.625	+0.106										
DRZ18753750-15G	●	1.875		7.97		5.26	3.750	+0.087										
DRZ19383875-15G	●	1.938		8.05		5.34	3.875	+0.070										
DRZ20004000-15G	●	2.000		8.05		5.34	4.000	+0.055										

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

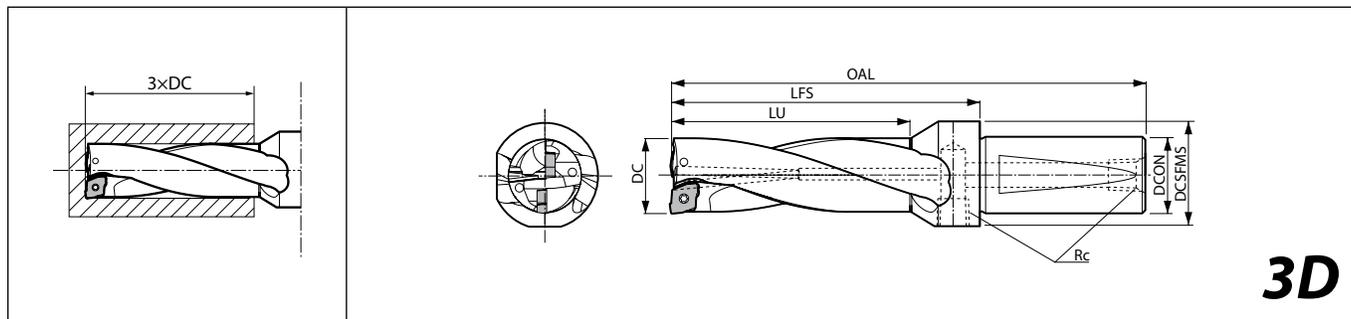
Recommended Cutting Conditions K94
Troubleshooting K67

Hole Dia. Tolerance (2D type)

DC	Hole Dia. Tolerance (in)
ø0.562"~ø1.000"	+0.008 -0.004
ø1.062"~ø1.562"	+0.010 -0.006
ø1.625"~ø2.000"	+0.012 -0.008

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

DRZ (Drilling Depth : 3 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions								Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K78
				DC	DCON	OAL	LFS	LU	DCSFMS	Rc	Plug			Screw	Wrench	Wrench		
Inch	S75- DRZ5621687-05G	●	2	0.562	0.75	4.42	2.72	1.687	1.06	1/8 NPT	Yes	+0.020	GP-1N	SB-2045TR	-	FT-6	ZCMT050203 ZCMT050203SP ZCMT050203SU	
	S100- DRZ6251875-06G DRZ6561969-06G DRZ6882062-06G DRZ7502250-06G DRZ8122438-06G	●	2	0.625 0.656 0.688 0.750 0.812	1.00	5.15 5.15 5.23 5.48 5.76	3.02 3.02 3.10 3.35 3.64	1.875 1.969 2.062 2.250 2.438	1.26	1/8 NPT	Yes	+0.043 +0.034 +0.027 +0.020 +0.014	GP-1N	SB-2260TR	DTM-7	-	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU	
	S100- DRZ8752625-08G DRZ9382814-08G DRZ10003000-08G	●	2	0.875 0.938 1.000	1.00	5.77 5.89 6.11	3.65 3.76 3.98	2.625 2.814 3.000	1.30 1.38	1/8 NPT	Yes	+0.055 +0.043 +0.028	GP-1N	SB-2570TR	DT-8	-	ZCMT080304 ZCMT080304SP	
	S100- DRZ10623187-10G DRZ11253375-10G DRZ11883562-10G DRZ12503750-10G	●	2	1.062 1.125 1.188 1.250	1.25	6.81 6.92 7.12 7.22	4.49 4.60 4.80 4.89	3.187 3.375 3.562 3.750	1.65 1.65 1.77 1.77	1/4 NPT	Yes	+0.098 +0.073 +0.067 +0.047	GP-2N	SB-4085TR	DT-15	-	ZCMT10T304 ZCMT10T304SP	
	S125- DRZ13123938-12G DRZ13754125-12G DRZ14384312-12G DRZ15004500-12G DRZ15624688-12G	●	2	1.312 1.375 1.438 1.500 1.562	1.25	8.00 8.24 8.37 8.57 8.69	5.28 5.53 5.65 5.85 5.97	3.938 4.125 4.312 4.500 4.688	2.17	1/4 NPT	Yes	+0.110 +0.094 +0.078 +0.067 +0.047	GP-2N	SB-5085TR	DT-20	-	ZCMT12T304SP ZCMT12T306	
	S125- DRZ16254875-15G DRZ16885062-15G DRZ17505250-15G DRZ18125438-15G DRZ18755625-15G DRZ19385812-15G DRZ20006000-15G	●	2	1.625 1.688 1.750 1.812 1.875 1.938 2.000	1.25	8.83 8.93 9.18 9.47 9.65 9.86 9.88	6.11 6.21 6.47 6.75 6.93 7.15 7.17	4.875 5.062 5.250 5.438 5.625 5.812 6.000	2.17 2.36	1/4 NPT	Yes	+0.150 +0.138 +0.122 +0.106 +0.087 +0.070 +0.055	GP-2N	SB-5085TR	DT-20	-	ZCMT150406SP ZCMT150408	

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K94
Troubleshooting K67

Hole Dia. Tolerance (3D type)

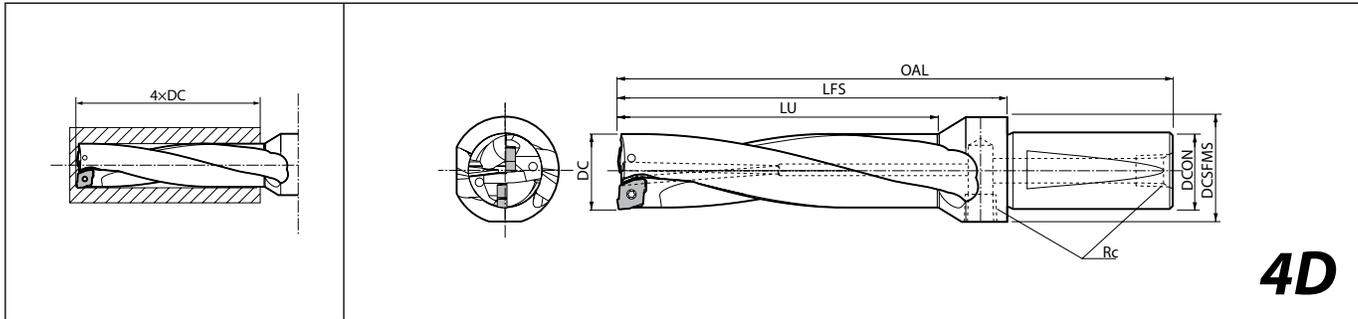
DC	Hole Dia. Tolerance (in)
ø0.562"~ø1.000"	+0.008 -0.004
ø1.062"~ø1.562"	+0.010 -0.006
ø1.625"~ø2.000"	+0.012 -0.008

* Above is numeric guideline.
It may vary depending on machines / workpieces / damping status / cutting conditions.

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES	A
TURNING INSERTS	B
CBN / PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRZ (Drilling Depth : 4 x DC)



4D

Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions						Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K78	
				DC	DCON	OAL	LFS	LU	DCSFMS			Rc	Plug	Screw	Wrench		Wrench
Inch	S75- DRZ5622250-05G	●	2	0.562	0.75	5.77	3.27	2.25	1.06	1/8 NPT	Yes	+0.020	GP-1N	SB-2045TR	-	FT-6	ZCMT050203 ZCMT050203SP ZCMT050203SU
	S100- DRZ6252500-06G	●	2	0.625	1.00	6.65	3.65	2.50	1.26	1/8 NPT	Yes	+0.043	GP-1N	SB-2260TR	DTM-7	-	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU
	DRZ6882750-06G	●		0.688		7.07	4.07	3.00				+0.027					
	DRZ7503000-06G	●		0.750		7.39	4.39	3.25				+0.020					
	DRZ8123250-06G	●		0.812		7.77	4.77	3.75				+0.014					
	S100- DRZ8753500-08G	●	2	0.875	1.00	7.56	4.56	3.50	1.30	1/8 NPT	Yes	+0.055	GP-1N	SB-2570TR	DT-8	-	ZCMT080304 ZCMT080304SP
	DRZ9383750-08G	●		0.938		8.06	5.06	4.00	1.38			+0.043					
	DRZ10004000-08G	●		1.000		8.55	5.55	4.25	1.65			+0.028					
	S125- DRZ10624250-10G	●	2	1.062	1.25	8.55	5.55	4.25	1.65	1/4 NPT	Yes	+0.098	GP-2N	SB-4085TR	DT-15	-	ZCMT10T304 ZCMT10T304SP
	DRZ11254500-10G	●		1.125		8.84	5.84	4.50	1.65			+0.073					
	DRZ11884750-10G	●		1.188		8.98	5.98	4.75	1.77			+0.067					
	DRZ12505000-10G	●		1.250		9.30	6.30	5.00	1.77			+0.047					
	S125- DRZ13125250-12G	●	2	1.312	1.25	9.58	6.58	5.25	2.17	1/4 NPT	Yes	+0.110	GP-2N	SB-5085TR	DT-20	-	ZCMT12T304SP ZCMT12T306
	DRZ13755500-12G	●		1.375		9.91	6.91	5.50				+0.094					
	DRZ14385750-12G	●		1.438		10.07	7.07	5.75				+0.078					
	DRZ15006000-12G	●		1.500		10.35	7.35	6.00				+0.067					
	DRZ15626250-12G	●		1.562		10.50	7.50	6.25				+0.047					
	S125- DRZ16256500-15G	●	2	1.625	1.50	10.73	7.73	6.50	2.17	1/4 NPT	Yes	+0.150	GP-2N	SB-5085TR	DT-20	-	ZCMT150406SP ZCMT150408
	S150- DRZ16886750-15G	●		1.688		11.37	7.87	6.75	2.17			+0.138					
	DRZ17507000-15G	●		1.750		11.70	8.20	7.00	2.17			+0.122					
DRZ18127250-15G	●	1.812		12.06		8.56	7.25	2.36	+0.106								
DRZ18757500-15G	●	1.875		12.28		8.78	7.50	2.36	+0.087								
DRZ19387750-15G	●	1.938		12.58		9.08	7.75	2.36	+0.070								
DRZ20008000-15G	●	2.000		12.63		9.13	8.00	2.36	+0.055								

When offset drilling, reduce feed rate to 0.0024 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

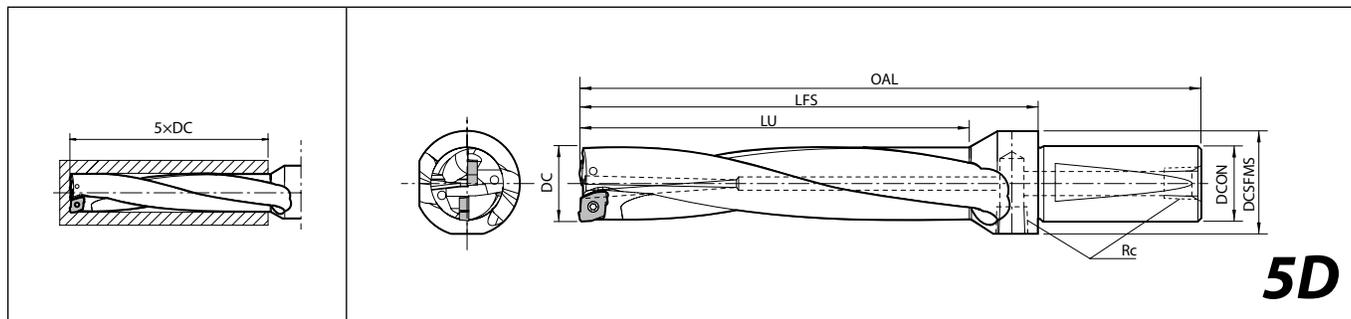
Recommended Cutting Conditions K94
Troubleshooting K67

Hole Dia. Tolerance (2D type)

DC	Hole Dia. Tolerance (in)
ø0.562"~ø1.000"	+0.008 -0.004
ø1.062"~ø1.562"	+0.010 -0.006
ø1.625"~ø2.000"	+0.012 -0.008

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

DRZ (Drilling Depth : 5 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions						Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K78	
				DC	DCON	OAL	LFS	LU	DCSFMS			Rc	Plug	Screw	Wrench		Wrench
Inch	S125- DRZ10625310-10G	●	2	1.062	1.25	9.61	6.61	5.31	1.65	1/4 NPT	Yes	+0.098	GP-2N	SB-4085TR	DT-15	-	ZCMT10T304 ZCMT10T304SP
	DRZ11255625-10G	●		1.125		9.97	6.97	5.63				+0.073					
	DRZ11885940-10G	●		1.188		10.17	7.17	5.94				+0.067					
	DRZ12506250-10G	●		1.250		10.55	7.55	6.25				+0.047					
	S125- DRZ13126560-12G	●	2	1.312	1.25	10.89	7.89	6.56	2.17	1/4 NPT	Yes	+0.110	GP-2N	SB-5085TR	DT-20	-	ZCMT12T304SP ZCMT12T306
	DRZ13756875-12G	●		1.375		11.28	8.28	6.88				+0.094					
	DRZ14387190-12G	●		1.438		11.51	8.51	7.19				+0.078					
	DRZ15007500-12G	●		1.500		11.85	8.85	7.50				+0.067					
	DRZ15627810-12G	●	1.562	12.07	9.07	7.81	+0.047										
	S125- DRZ16258125-15G	●	2	1.625	1.25	12.35	9.35	8.13	2.17	1/4 NPT	Yes	+0.150	GP-2N	SB-5085TR	DT-20	-	ZCMT150406SP ZCMT150408
	S150- DRZ16888440-15G	●		1.688		13.05	9.55	8.44				+0.138					
	DRZ17508750-15G	●		1.750		13.45	9.95	8.75				+0.122					
	DRZ18129060-15G	●		1.812		13.87	10.37	9.06				+0.106					
	DRZ18759375-15G	●	2	1.875	1.50	14.15	10.65	9.38	2.36	1/4 NPT	Yes	+0.087	GP-2N	SB-5085TR	DT-20	-	ZCMT150406SP ZCMT150408
	DRZ19389690-15G	●		1.938		14.51	11.01	9.69				+0.070					
DRZ200010000-15G	●	2.000		14.63		11.13	10.00	+0.055									

When offset drilling, reduce feed rate to 0.0020 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K94
Troubleshooting K67

Hole Dia. Tolerance (3D type)

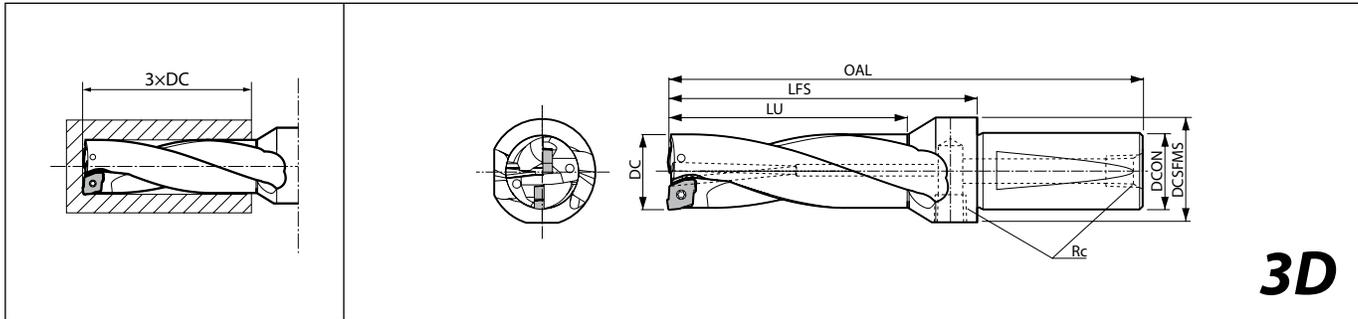
DC	Hole Dia. Tolerance (in)
ø1.062" ~ ø1.562"	+0.014 -0.006
ø1.625" ~ ø2.000"	+0.016 -0.008

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRZ (Drilling Depth : 3 x DC)

Metric Dia. / Inch Shank



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions (in)								Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K78
				DC		DCON	OAL	LFS	LU	DCSFMS	Rc			Plug	Screw	Wrench	Wrench	
				mm	in													
Metric Dia. / Inch Shank	S75 -DRZ1339-05G	●	2	13.0	0.512	0.75	4.27	2.58	1.54	1.06	1/8NPT	Yes	+0.020	GP-1N	SB-2045TR	FT-6	-	ZCMT050203 ZCMT050203SP ZCMT050203SU
	-DRZ135405-05G	●		13.5	0.531		4.27	2.58	1.59				+0.020					
	-DRZ1442-05G	●		14.0	0.551		4.42	2.72	1.65				+0.020					
	-DRZ145435-05G	●		14.5	0.571		4.42	2.72	1.71				+0.020					
	-DRZ1545-05G	●		15.0	0.591		4.52	2.83	1.77				+0.020					
	-DRZ155465-05G	●		15.5	0.610		4.52	2.83	1.83				+0.020					
	S100 -DRZ1648-06G	●	2	16.0	0.630	1.00	5.15	3.02	1.89	1.26	1/8NPT	Yes	+0.043	GP-1N	SB-2260TR	-	DTM-7	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU
	-DRZ165495-06G	●		16.5	0.650		5.15	3.02	1.95				+0.035					
	-DRZ1751-06G	●		17.0	0.669		5.23	3.10	2.01				+0.031					
	-DRZ1854-06G	●		18.0	0.709		5.36	3.23	2.13				+0.024					
	-DRZ185555-06G	●		18.5	0.728		5.36	3.23	2.19				+0.020					
	-DRZ1957-06G	●		19.0	0.748		5.48	3.35	2.24				+0.020					
	-DRZ195585-06G	●		19.5	0.768		5.48	3.35	2.30				+0.020					
	-DRZ2060-06G	●		20.0	0.787		5.61	3.49	2.36				+0.020					
	-DRZ2163-06G	●	21.0	0.827	5.76	3.64	2.48	+0.008										
	S100 -DRZ215645-08G	●	2	21.5	0.846	1.30	5.77	3.65	2.54	1.38	1/8NPT	Yes	+0.071	GP-1N	SB-2570TR	-	DT-8	ZCMT080304 ZCMT080304SP
	-DRZ2266-08G	●		22.0	0.866		5.77	3.65	2.60				+0.063					
	-DRZ225675-08G	●		22.5	0.886		5.77	3.65	2.66				+0.055					
	-DRZ2369-08G	●		23.0	0.906		5.89	3.76	2.72				+0.051					
	-DRZ2472-08G	●		24.0	0.945		6.00	3.87	2.84				+0.043					
	-DRZ2575-08G	●		25.0	0.984		6.11	3.98	2.95				+0.031					
	-DRZ2678-08G	●		26.0	1.024		6.23	4.10	3.07				+0.024					

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K94
Troubleshooting K67

K
DRILLING

- DRA
- DRV
- DRZ**
- HOLESHOT
- COREMASTER
COREDRILL
- COUNTERBORE
- COUNTERSINK

Toolholder Dimensions

Metric Dia. / Inch Shank

Unit	Part Number	Std. Item	No. of Inserts	Dimensions (in)							Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K78		
				DC		DCON	OAL	LFS	LU	DCSFMS			Rc	Plug	Screw	Wrench		Wrench	
				mm	in														
Metric Dia. / Inch Shank	S100 -DRZ2781-10G -DRZ2884-10G -DRZ2987-10G -DRZ3090-10G -DRZ3193-10G -DRZ3296-10G	●	2	27.0	1.063	1.00	6.81	4.49	3.19	1.65	1/4 NPT	Yes	+0.098	GP-1N	SB-4085TR	-	DT-15	ZCMT10T304 ZCMT10T304SP	
		●		28.0	1.102		6.92	4.60	3.31										+0.087
		●		29.0	1.142		7.04	4.72	3.43										+0.079
		●		30.0	1.181		7.12	4.80	3.54										+0.067
		●		31.0	1.220		7.22	4.89	3.66										+0.059
		●		32.0	1.260		7.36	5.04	3.78										+0.047
	S125 -DRZ3399-12G -DRZ34102-12G -DRZ36108-12G -DRZ37111-12G -DRZ38114-12G -DRZ39117-12G -DRZ40120-12G	●	2	33.0	1.299	1.25	8.00	5.28	3.90	2.17	1/4 NPT	Yes	+0.114	GP-2N	SB-5085TR	-	DT-20	ZCMT12T304SP ZCMT12T306	
		●		34.0	1.338		8.15	5.44	4.02										+0.106
		●		36.0	1.418		8.37	5.65	4.25										+0.087
		●		37.0	1.457		8.46	5.74	4.37										+0.075
		●		38.0	1.496		8.57	5.85	4.49										+0.067
		●		39.0	1.535		8.69	5.97	4.61										+0.055
	S125 -DRZ41123-15G -DRZ42126-15G -DRZ43129-15G -DRZ44132-15G -DRZ46138-15G -DRZ48144-15G	●	2	41.0	1.614	1.25	8.83	6.11	4.84	2.17	1/4 NPT	Yes	+0.157	GP-2N	SB-5085TR	-	DT-20	ZCMT150406SP ZCMT150408	
		●		42.0	1.654		8.93	6.21	4.96										+0.146
		●		43.0	1.693		9.07	6.35	5.08										+0.138
		●		44.0	1.732		9.18	6.47	5.20										+0.126
		●		46.0	1.811		9.47	6.75	5.43										+0.106
		●		48.0	1.890		9.74	7.03	5.67										+0.087

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K94
Troubleshooting K67

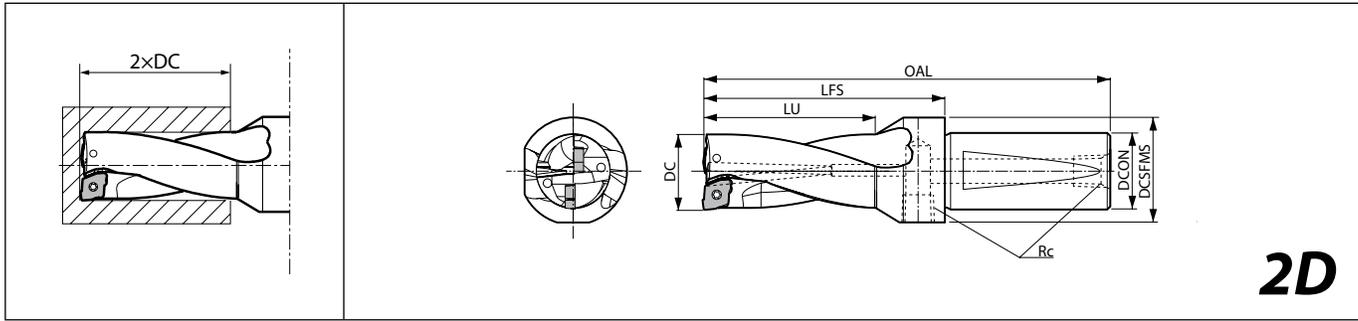
Hole Dia. Tolerance (3D type)

DC	Hole Dia. Tolerance (mm)
ø13~ø26.5mm	+0.20 -0.10
ø27~ø40mm	+0.25 -0.15
ø41~ø59mm	+0.30 -0.20

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

INSERT GRADES	A
TURNING INSERTS	B
CBN / PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRZ (Drilling Depth : 2 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions						Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K78		
				DC	OAL	LFS	LFS	LU	DCSFMS			Rc	Plug	Screw	Wrench		Wrench	
mm	S20- DRZ1326-05	●	2	13	20	95	52	26	27	Rc1/8	Yes	+0.5	GP-1	SB-2045TR	-	FT-6	ZCMT050203 ZCMT050203SP ZCMT050203SU	
	DRZ135270-05	●		13.5				27										
	DRZ1428-05	●		14	98	55	28											
	DRZ145290-05	●		14.5			29											
	DRZ1530-05	●		15	100	57	30											
	DRZ155310-05	●	15.5	31														
	S25- DRZ1632-06	●	2	16	25	115	61	32	32	Rc1/8	Yes	+1.1	GP-1	SB-2260TR	DTM-7	-	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU	
	DRZ165330-06	●		16.5				33				+0.9						
	DRZ1734-06	●		17	116	62	34	+0.8										
	DRZ175350-06	●		17.5			35	+0.7										
	DRZ1836-06	●		18	118	64	36	+0.6										
	DRZ185370-06	●		18.5			37	+0.5										
	DRZ1938-06	●		19	120	66	38	+0.3										
	DRZ195390-06	●		19.5			39	+0.2										
	DRZ2040-06	●		20	123	69	40											
	DRZ205410-06	●		20.5			41											
	DRZ2142-06	●	21	125	71	42												
	S25- DRZ215430-08	●	2	21.5	25	128	74	43	33	Rc1/8	Yes	+1.8	GP-1	SB-2570TR	DT-8	-	ZCMT080304 ZCMT080304SP	
	DRZ2244-08	●		22				44				+1.6						
	DRZ225450-08	●		22.5				45				+1.4						
	DRZ2346-08	●		23				130				76						46
DRZ235470-08	●	23.5		47														+1.2
DRZ2448-08	●	24		131	77	48	+1.1											
DRZ245490-08	●	24.5				49	+0.9											
DRZ2550-08	●	25		133	79	50	+0.8											
DRZ25510-08	●	25.5				51	+0.7											
DRZ2652-08	●	26				135	81	52				+0.6						
DRZ265530-08	●	26.5	53	+0.5														

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K94
Troubleshooting K67

Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions						Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts ➔ K78										
				DC	D/CON	OAL	LFS	LU	DCSFMS			Rc	Plug	Screw	Wrench		Wrench									
												   														
mm	S32- DRZ2754-10	●	2	27	32	149	90	54	42	Rc1/4	Yes	+2.5	GP-2	SB-4085TR	DT-15	-	ZCMT10T304 ZCMT10T304SP									
	DRZ275550-10	●	27.5	151														92	56	+2.2						
	DRZ2856-10	●	28																		153	94	58	+2		
	DRZ285570-10	●	28.5	154		95	60	+1.8																		
	DRZ2958-10	●	29															155	96	62					+1.5	
	DRZ295590-10	●	29.5	158		99	64	+1.2																		
	DRZ3060-10	●	30																		45	66	+1.3			
	DRZ305610-10	●	30.5	63		+1.1																				
	DRZ3162-10	●	31				55	Rc1/4										Yes	+2.9	GP-2				SB-5085TR	DT-20	-
	DRZ315630-10	●	31.5	173		104															68	+2.7				
	DRZ3264-10	●	32																				177			
	DRZ325650-10	●	32.5	180		111	72	+2.2																		
	S40- DRZ3366-12	●	33		181				112	74	+1.9															
	DRZ3468-12	●	34	183		114	76	+1.7																		
	DRZ3570-12	●	35									55	Rc1/4	Yes	+2.2	GP-2	SB-5085TR	DT-20	-	ZCMT150406SP ZCMT150408						
	DRZ3672-12	●	36	185	116	78	+1.4																			
	DRZ3774-12	●	37					60	Rc1/4	Yes	+4										GP-2	SB-5085TR	DT-20	-	ZCMT150406SP ZCMT150408	
	DRZ3876-12	●	38	188	119	84	+3.7																			
	DRZ3978-12	●	39									190	121	86	+3.5											
	DRZ4080-12	●	40	192	123	88	+3.2																			
	S40- DRZ4182-15	●	41					198	129	92	+2.7															
	DRZ4284-15	●	42	201	132	94	+2.5																			
	DRZ4386-15	●	43									60	Rc1/4	Yes	+2.2	GP-2	SB-5085TR	DT-20	-	ZCMT200608						
	DRZ4488-15	●	44	203	134	96	+2																			
	DRZ4590-15	●	45					204	135	98	+1.7															
	DRZ4692-15	●	46	205	136	102	+1.2																			
	DRZ4794-15	●	47									208	139	106	+0.7											
	DRZ4896-15	●	48	214	145	108	+5																			
	DRZ4998-15	●	49					65	Rc1/4	Yes	+4.7					GP-2	SB-60120TR	DT-25	-	ZCMT200608						
	DRZ50100-15	●	50	215	146	110	+4.4																			
	DRZ51102-15	●	51									217	148	112	+4.1											
	DRZ52104-15	●	52	219	150	114	+3.8																			
	DRZ53106-15	●	53					221	152	116	+3.5															
	S40- DRZ54108-20	●	54	223	154	118	+3.5																			
	DRZ55110-20	●	55									225	156	120	+3.2											
	DRZ56112-20	●	56	227	158	122	+2.9																			
DRZ57114-20	●	57	229					160	124	+2.6																
DRZ58116-20	●	58		231	162	126	+2.3																			
DRZ59118-20	●	59									233	164	128	+2.0												

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions ➔ K94
Troubleshooting ➔ K67

Hole Dia. Tolerance (2D type)

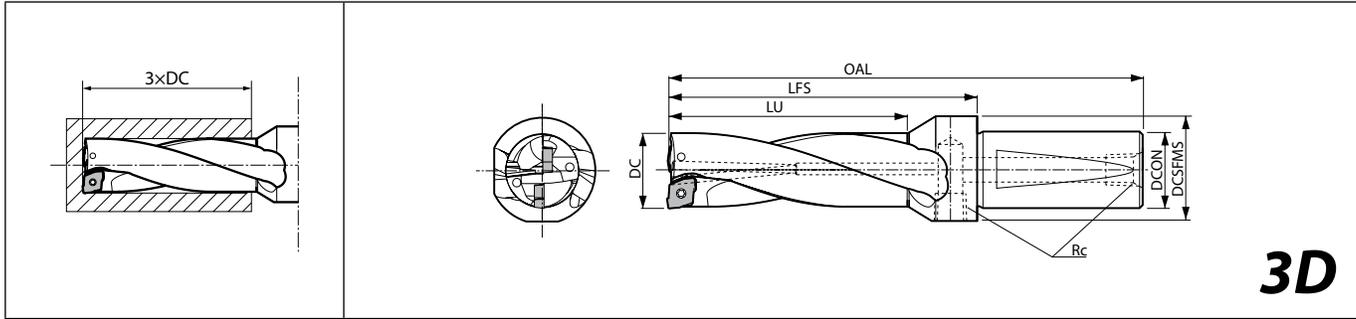
DC	Hole Dia. Tolerance (mm)
ø13~ø26.5mm	+0.20 -0.10
ø27~ø40mm	+0.25 -0.15
ø41~ø59mm	+0.30 -0.20

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRZ (Drilling Depth : 3 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions						Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts ➔ K78		
				DC	DCON	OAL	LFS	LU	DCSFMS			Rc	Plug	Screw	Wrench		Wrench	
mm	S20- DRZ1339-05	●	2	13	20	108	65	39	27	Rc1/8	Yes	+0.5	GP-1	SB-2045TR	-	FT-6	ZCMT050203 ZCMT050203SP ZCMT050203SU	
	DRZ135405-05	●		13.5														40.5
	DRZ1442-05	●		14														42
	DRZ145435-05	●		14.5														43.5
	DRZ1545-05	●		15														45
	DRZ155465-05	●	15.5	46.5														
	S25- DRZ1648-06	●	2	16	25	131	77	48	32	Rc1/8	Yes	+1.1	GP-1	SB-2260TR	DTM-7	-	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU	
	DRZ165495-06	●		16.5								49.5						+0.9
	DRZ1751-06	●		17								51						+0.8
	DRZ175525-06	●		17.5								52.5						+0.7
	DRZ1854-06	●		18								54						+0.6
	DRZ185555-06	●		18.5								55.5						
	DRZ1957-06	●		19								57						+0.5
	DRZ195585-06	●		19.5								58.5						
	DRZ2060-06	●		20								60						+0.5
	DRZ205615-06	●		20.5								61.5						+0.3
	DRZ2163-06	●	21	63	+0.2													
	S25- DRZ215645-08	●	2	21.5	25	147	93	64.5	33	Rc1/8	Yes	+1.8	GP-1	SB-2570TR	DT-8	-	ZCMT080304 ZCMT080304SP	
	DRZ2266-08	●		22								66						+1.6
	DRZ225675-08	●		22.5								67.5						+1.4
	DRZ2369-08	●		23								69						+1.3
	DRZ235705-08	●		23.5								70.5						+1.2
	DRZ2472-08	●		24								72						+1.1
	DRZ245735-08	●		24.5								73.5						
DRZ2575-08	●	25		75								+0.8						
DRZ255765-08	●	25.5		76.5														
DRZ2678-08	●	26		78								+0.6						
DRZ265795-08	●	26.5	79.5	+0.5														

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions ➔ K94
Troubleshooting ➔ K67

Hole Dia. Tolerance (3D type)

DC	Hole Dia. Tolerance (mm)
ø13~ø26.5mm	+0.20 -0.10
ø27~ø40mm	+0.25 -0.15
ø41~ø59mm	+0.30 -0.20

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

Toolholder Dimensions

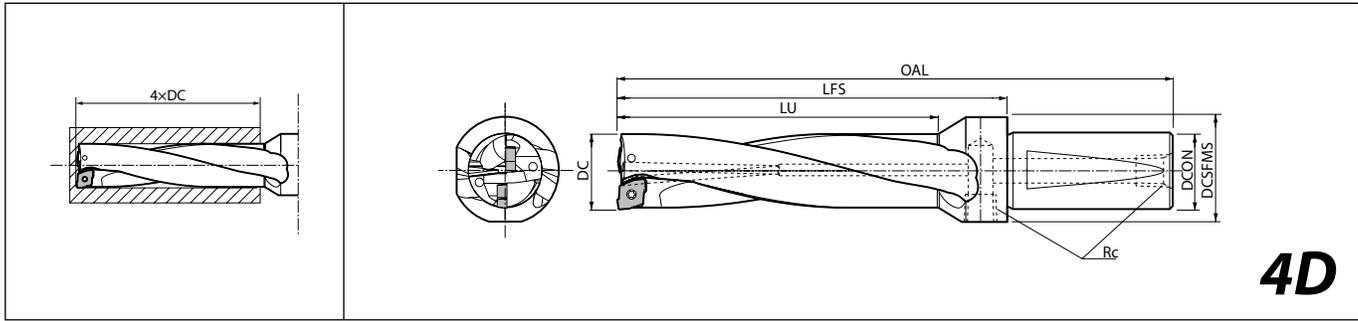
Unit	Part Number	Std. Item	No. of Inserts	Dimensions						Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts ➔ K78						
				DC	DCON	OAL	LFS	LU	DCSFMS			Rc	Plug	Screw	Wrench		Wrench					
												   										
mm	S32- DRZ2781-10	●	2	27	32	173	114	81	42	Rc1/4	Yes	+2.5	GP-2	SB-4085TR	DT-15	-	ZCMT10T304 ZCMT10T304SP					
	DRZ275825-10	●		27.5														176	117	82.5	+2.3	
	DRZ2884-10	●		28																		179
	DRZ285855-10	●		28.5		181	122	85.5										+2.1				
	DRZ2987-10	●		29															183	124	87	
	DRZ295885-10	●		29.5		187	128	88.5										+1.8				
	DRZ3090-10	●		30	45				90	91.5	+1.7											
	DRZ305915-10	●		30.5		187	128	93				+1.5										
	DRZ3193-10	●		31									187	128	94.5	+1.5						
	DRZ315945-10	●		31.5	187	128	96	+1.3														
	DRZ3296-10	●		32					45	96	97.5	+1.2										
	DRZ325975-10	●		32.5	187	128	97.5	+1														
	S32- DRZ3399-12	●	2	33									32	193	134	99	55	Rc1/4	Yes	+2.9	GP-2	SB-5085TR
	DRZ34102-12	●		34	203	144	108	+2.2														
	DRZ35105-12	●		35					205	146	111	+1.9										
	DRZ36108-12	●		36	208	149	114	+1.7														
	DRZ37111-12	●		37										211	152	117						
	DRZ38114-12	●		38	212	153	120	+1.2														
	DRZ39117-12	●		39					40	203	134	99	+2.9									
	DRZ40120-12	●		40	207	138	102	+2.7														
	S40- DRZ3399-12	●		33										209	140	105	+2.4					
	DRZ34102-12	●		34	213	144	108	+2.2														
	DRZ35105-12	●		35					215	146	111	+1.9										
	DRZ36108-12	●		36	218	149	114	+1.7														
	DRZ37111-12	●	37	221									152	117	+1.4							
	DRZ38114-12	●	38		222	153	120	+1.2														
	DRZ39117-12	●	39						40	224	155	123				+4						
	DRZ40120-12	●	40	227	158	126	+3.7															
	S40- DRZ41123-15	●	41					230					161	129	+3.5							
	DRZ42126-15	●	42	233	164	132	+3.2															
	DRZ43129-15	●	43						234	165	135	+3										
	DRZ44132-15	●	44	241	172	138	+2.7															
	DRZ45135-15	●	45					40					245	176	141	+2.5						
	DRZ46138-15	●	46	248	179	144	+2.2															
	DRZ47141-15	●	47						250	181	147	+2										
	DRZ48144-15	●	48	251	182	150	+1.7															
	DRZ49147-15	●	49					254					185	153	+1.2							
	DRZ50150-15	●	50	257	188	156	+1															
	DRZ51153-15	●	51						260	191	159	+0.7										
	DRZ52156-15	●	52	266	197	162	+5															
	DRZ53159-15	●	53					40					269	200	165	+4.7						
	S40- DRZ54162-20	●	54	272	203	168	+4.4															
DRZ55165-20	●	55	275						206	171	+4.1											
DRZ56168-20	●	56		278	209	174	+3.8															
DRZ57171-20	●	57						65				Rc1/4	Yes	+3.5								
DRZ58174-20	●	58	281	212	177	+3.5																
DRZ59177-20	●	59					65		Rc1/4	Yes	+3.5											

When offset drilling, reduce feed rate to 0.0031 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions ➔ K94
Troubleshooting ➔ K67

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRZ (Drilling Depth : 4 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions						Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K78		
				DC	DCON	OAL	LFS	LU	DCSFMS			Rc	Plug	Screw	Wrench		Wrench	
mm	S20- DRZ1352-05	●	2	13	20	121	78	52	27	Rc1/8	Yes	+0.5	GP-1	SB-2045TR	-	FT-6	ZCMT050203 ZCMT050203SP ZCMT050203SU	
	DRZ135540-05	●		13.5														54
	DRZ1456-05	●		14														56
	DRZ145580-05	●		14.5		58												
	DRZ1560-05	●		15		60												
	DRZ155620-05	●		15.5		62												
	S25- DRZ1664-06	●	2	16	25	147	93	64	32	Rc1/8	Yes	+1.1	GP-1	SB-2260TR	DTM-7	-	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU	
	DRZ165660-06	●		16.5								66						+0.9
	DRZ1768-06	●		17								68						+0.8
	DRZ175700-06	●		17.5		70	+0.7											
	DRZ1872-06	●		18		72	+0.6											
	DRZ185740-06	●		18.5		74	+0.5											
	DRZ1976-06	●		19		76	+0.5											
	DRZ195780-06	●		19.5		78	+0.5											
	DRZ2080-06	●		20		80	+0.3											
	DRZ205820-06	●		20.5		82	+0.3											
	DRZ2184-06	●		21		84	+0.2											
	S25- DRZ215860-08	●		2		21.5	25	169				115						86
	DRZ2288-08	●	22		88	+1.6												
	DRZ225900-08	●	22.5		90	+1.4												
	DRZ2392-08	●	23		92	+1.3												
	DRZ235940-08	●	23.5		94	+1.2												
	DRZ2496-08	●	24		96	+1.1												
	DRZ245980-08	●	24.5		98	+0.9												
DRZ25100-08	●	25	100		+0.8													
DRZ2551020-08	●	25.5	102		+0.7													
DRZ26104-08	●	26	104		+0.6													
DRZ2651060-08	●	26.5	106		+0.5													

When offset drilling, reduce feed rate to 0.0024 ipor less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K94
Troubleshooting K67

K
DRILLING

- DRA
- DRV
- DRZ**
- HOLESHOT
- COREMASTER
COREDRILL
- COUNTERBORE
- COUNTERSINK

Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions						Coolant Hole	Radial Offset Max.	Spare Parts				Applicable Inserts K78						
				DC	DCON	OAL	LFS	LU	DCSFMS			Rc	Plug	Screw	Wrench		Wrench					
mm	S32- DRZ27108-10	●	2	27	32	200	141	108	42	Rc1/4	Yes	+2.5	GP-2	SB-408STR	DT-15	-	ZCMT10T304 ZCMT10T304SP					
	DRZ2751100-10	●		27.5								204						145	110	+2.3		
	DRZ28112-10	●		28																208	149	116
	DRZ2851140-10	●		28.5		45	Rc1/4	Yes														
	DRZ29116-10	●		29								211						152	120	+2		
	DRZ2951180-10	●		29.5																214	155	122
	DRZ30120-10	●		30	219																	
	DRZ3051220-10	●		30.5								219						160	126	+1.5		
	DRZ31124-10	●		31																219	160	128
	DRZ3151260-10	●		31.5		55	Rc1/4	Yes														
	DRZ32128-10	●		32								226						167	132	+1		
	DRZ3251300-10	●		32.5																32	226	167
	S32- DRZ33132-12	●	33	231	172				136	+2.7												
	DRZ34136-12	●	34							234	175	140	+2.4									
	DRZ35140-12	●	35										40	239	180	144	+2.2					
	DRZ36144-12	●	36	242	183	148	+1.9															
	DRZ37148-12	●	37				246	187	152	+1.7												
	DRZ38152-12	●	38							55	Rc1/4	Yes					+1.4					
	DRZ39156-12	●	39	252	193	160	+1.2															
	DRZ40160-12	●	40				40	249	180								144	+2.9				
	S40- DRZ33132-12	●	33										241	172	136	+2.7						
	DRZ34136-12	●	34	244	175	140										+2.4						
	DRZ35140-12	●	35													40		249	180	144	+2.2	
	DRZ36144-12	●	36	252	183	148				+1.9												
	DRZ37148-12	●	37							256	187	152	+1.7									
	DRZ38152-12	●	38				55	Rc1/4	Yes				+1.4									
	DRZ39156-12	●	39	260	191	156				+1.2												
	DRZ40160-12	●	40							40	262	193	160	+2.9								
	S40- DRZ41164-15	●	41											269	200	168	+2.7					
	DRZ42168-15	●	42	273	204	172											+2.4					
	DRZ43172-15	●	43														40	277	208	176	+2.2	
	DRZ44176-15	●	44	279	210	180	+3															
	DRZ45180-15	●	45				287	218	184					+2.7								
	DRZ46184-15	●	46							60	292	223	188	+2.5								
	DRZ47188-15	●	47	296	227	192	+2.2															
	DRZ48192-15	●	48				300	231	196					+2								
DRZ49196-15	●	49	55											Rc1/4	Yes	+1.7						
DRZ50200-15	●	50		301	232	200	164	+4														
S40- DRZ41164-15	●	41						265	196							164	+3.7					
DRZ42168-15	●	42								269	200	168	+3.5									
DRZ43172-15	●	43											40				277	208	176	+3.2		
DRZ44176-15	●	44						279	210	180	+3											
DRZ45180-15	●	45	287								218	184		+2.7								
DRZ46184-15	●	46		60	292	223	188							+2.5								
DRZ47188-15	●	47	296					227	192	+2.2												
DRZ48192-15	●	48								300	231	196		+2								
DRZ49196-15	●	49											55	Rc1/4	Yes	+1.7						
DRZ50200-15	●	50	301					232	200	164	+4											

When offset drilling, reduce feed rate to 0.0024 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K94
Troubleshooting K67

Hole Dia. Tolerance (4D type)

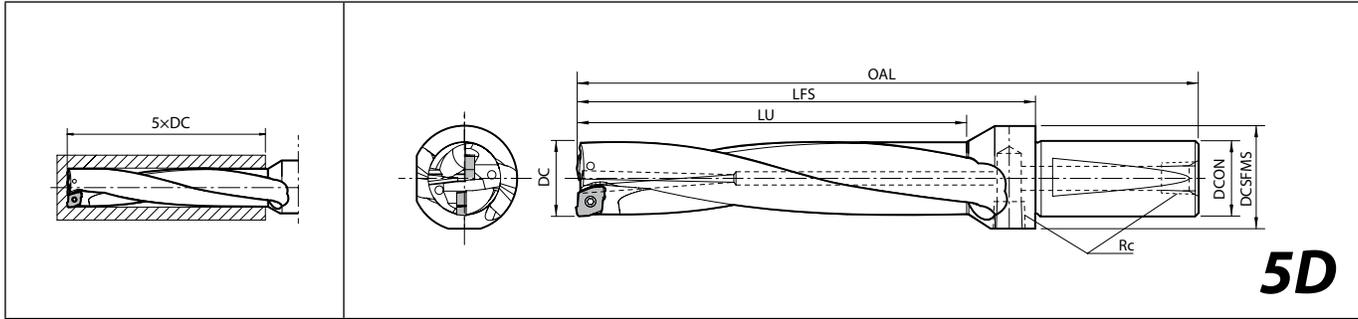
DC	Hole Dia. Tolerance (mm)
ø13~ø26.5mm	+0.25 -0.10
ø27~ø40mm	+0.30 -0.15
ø41~ø50mm	+0.35 -0.20

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

DRZ (Drilling Depth : 5 x DC)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions						Coolant Hole	Radial Offset Max.	Spare Parts			Applicable Inserts K78	
				DC	DCON	OAL	LFS	LU	DCSFMS			Rc	Plug	Screw		Wrench
				mm												
K DRILLING	S32- DRZ27135-10 DRZ28140-10 DRZ29145-10 DRZ30150-10 DRZ31155-10 DRZ32160-10	●	2	27	277	168	135	42	Rc1/4	Yes	+2.5	GP-2	SB-4085TR	DT-15	ZCMT10T304 ZCMT10T304SP	
		●		28	232	173	140				+2.2					
		●		29	237	178	145				+2					
		●		30	241	182	150				+1.7					
		●		31	245	186	155				+1.5					
		●		32	251	192	160				+1.2					
	S40- DRZ33165-12 DRZ34170-12 DRZ35175-12 DRZ36180-12 DRZ37185-12 DRZ38190-12 DRZ39195-12 DRZ40200-12	●	2	33	269	200	165	55	Rc1/4	Yes	+2.9	GP-2	SB-5085TR	DT-20	ZCMT12T304SP ZCMT12T306	
		●		34	275	206	170				+2.7					
		●		35	279	210	175				+2.4					
		●		36	285	216	180				+2.2					
		●		37	289	220	185				+1.9					
		●		38	294	225	190				+1.7					
		●		39	299	230	195				+1.4					
		●		40	302	233	200				+1.2					
	S40- DRZ41205-15 DRZ42210-15 DRZ43215-15 DRZ45225-15 DRZ46230-15 DRZ47235-15 DRZ48240-15 DRZ49245-15 DRZ50250-15	●	2	41	306	237	205	55	Rc1/4	Yes	+4	GP-2	SB-5085TR	DT-20	ZCMT150406SP ZCMT150408	
		●		42	311	242	210				+3.7					
		●		43	316	247	215				+3.5					
		●		45	324	255	225				+3					
		●		46	333	264	230				+2.7					
		●		47	339	270	235	+2.5								
		●		48	344	275	240	+2.2								
		●		49	349	280	245	+2								
		●		50	351	282	250	+1.7								

When offset drilling, reduce feed rate to 0.0020 ipr or less.
See page K74 for Adjustable Sleeve (ASL / SHE).

Recommended Cutting Conditions K94
Troubleshooting K67

Hole Dia. Tolerance (5D type)

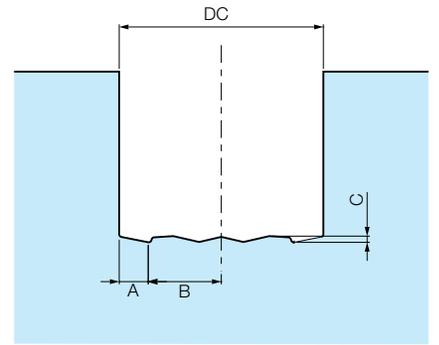
DC	Hole Dia. Tolerance (mm)
ø27~ø40mm	+0.35 -0.15
ø41~ø50mm	+0.40 -0.20

* Above is numeric guideline.
It may vary depending on machines / workpieces / clamping status / cutting conditions.

DRZ Hole Bottom Shape (Common for 2D, 3D, 4D, and 5D Lengths)

DRZ Inch Diameters (in)				DRZ Metric Diameters (mm)								
DC	A	B	C	DC	A	B	C	DC	A	B	C	
0.562	0.083	0.198	0.016	13.0	2.1	4.4	0.4	27.0	4.0	9.5	0.7	
0.625	0.106	0.207	0.024	13.5		4.7		27.5		9.8		
0.656		0.222		14.0		4.9		28.0		10.0		
0.688		0.238		14.5		5.2		28.5		10.3		
0.750		0.269		15.0	5.4	29.0	10.5					
0.812	0.300	15.5	5.7	29.5	5.7	30.0	10.8					
0.875	0.122	0.316	0.024	16.0	2.7	5.3	0.6	30.5	5.7	11.0	0.8	
0.938		0.347	16.5	5.6		31.0		11.3				
1.000		0.378	17.0	5.8		31.5		11.5				
1.062		0.374	17.5	6.1		32.0		11.8				
1.125	0.157	0.406	0.028	18.0	6.3	7.1	0.7	32.5	5.7	12.0	0.8	
1.188		0.437		18.5				6.6		33.0		12.3
1.250		0.468		19.0				6.8		33.5		12.6
1.312		0.432		19.5				7.1		34.0		12.9
1.375	0.224	0.464	0.031	20.0	7.3	7.6	0.8	34.5	5.7	13.2	0.9	
1.438		0.495		20.5				7.6		35.0		13.5
1.500		0.526		21.0				7.8		35.5		13.8
1.562		0.557		21.5				7.7		36.0		14.1
1.625	0.256	0.557	0.035	22.0	7.9	8.2	0.6	36.5	6.5	14.4	1.0	
1.688		0.588		22.5				8.2		37.0		14.7
1.750		0.619		23.0				8.4		37.5		15.0
1.812		0.650		23.5				8.7		38.0		15.3
1.875	0.043	0.682	0.039	24.0	8.9	9.2	0.7	38.5	6.5	15.6	1.1	
1.938		0.713		24.5				9.2		39.0		15.9
2.000		0.744		25.0				9.4		39.5		16.2
				25.5				9.7		40.0		16.5
				26.0	3.1	9.9	0.7	40.5	6.5	16.8	1.2	
				26.5				10.2		41.0		17.1
										41.5		17.4
										42.0		17.7
								42.5	6.5	18.0	1.1	
								43.0		18.3		
								43.5		18.6		
								44.0		18.9		
								44.5	8.5	19.2	1.2	
								45.0		19.5		
								45.5		19.8		
								46.0		20.1		
								46.5	8.5	20.4	1.2	
								47.0		20.7		
								47.5		21.0		
								48.0		21.3		
								48.5	8.5	21.6	1.2	
								49.0		21.9		
								49.5		22.2		
								50.0		22.5		
								50.5	8.5	22.8	1.2	
								51.0		23.1		
								51.5		23.4		
								52.0		23.7		
								52.5	8.5	24.0	1.2	
								53.0		24.3		
								53.5		24.6		
								54.0		24.9		
								54.5	8.5	25.2	1.2	
								55.0		25.5		
								55.5		25.8		
								56.0		26.1		
								56.5	8.5	26.4	1.2	
								57.0		26.7		
								57.5		27.0		
								58.0		27.3		
								58.5	8.5	27.6	1.2	
								59.0		27.9		
										28.2		
										28.5		

- Figures in chart are nominal sizes.
- (Varies from -0.004" (-0.1mm) to +0.004" (+0.1mm) depending on work material and cutting conditions)



INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Recommended Cutting Conditions (with Coolant)

Workpiece Material	Recommended Insert Grade / Cutting Speed (sfm)				Drill Dia. DC (in)	Drill Dia. DC (mm)	Drill Depth / Feed Rate (ipr)			
	MEGACOAT			Carbide			2D	3D	4D	5D
	PR1230	PR1225	PR1210	KW10						
	Standard SP SU	Standard SP SU	Standard	Standard SP						
Low Carbon Steel	★ 390 ~ 720	☆ 390 ~ 720	-	-	0.512~0.610	13~15.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0016 ~ 0.0031	-
					0.630~1.043	16~26.5	0.0031 ~ 0.0059	0.0031 ~ 0.0059	0.0024 ~ 0.0047	-
					1.063~1.969	27~50	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0047	0.0020 ~ 0.0035
					1.969~	50~	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0047	-
Carbon Steel	★ 330 ~ 520	☆ 330 ~ 520	-	-	0.512~0.610	13~15.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0016 ~ 0.0031	-
					0.630~1.043	16~26.5	0.0031 ~ 0.0059	0.0031 ~ 0.0059	0.0024 ~ 0.0047	-
					1.063~1.969	27~50	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0047	0.0020 ~ 0.0035
					1.969~	50~	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0047	-
Alloy Steel	★ 260 ~ 460	☆ 260 ~ 460	-	-	0.512~0.610	13~15.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0016 ~ 0.0031	-
					0.630~1.043	16~26.5	0.0031 ~ 0.0059	0.0031 ~ 0.0059	0.0024 ~ 0.0047	-
					1.063~1.969	27~50	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0047	0.0020 ~ 0.0035
					1.969~	50~	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0047	-
Tool Steel	★ 230 ~ 430	☆ 230 ~ 430	-	-	0.512~0.610	13~15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	0.0012 ~ 0.0028	-
					0.630~1.043	16~26.5	0.0031 ~ 0.0047	0.0024 ~ 0.0039	0.0024 ~ 0.0031	-
					1.063~1.969	27~50	0.0031 ~ 0.0059	0.0024 ~ 0.0047	0.0024 ~ 0.0039	0.0016 ~ 0.0028
					1.969~	50~	0.0031 ~ 0.0059	0.0024 ~ 0.0047	0.0024 ~ 0.0039	-
Stainless Steel (Austenitic)	☆ 200 ~ 390	★ 200 ~ 390	-	-	0.512~0.610	13~15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	0.0012 ~ 0.0024	-
					0.630~1.043	16~26.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0016 ~ 0.0031	-
					1.063~1.969	27~50	0.0024 ~ 0.0047	0.0024 ~ 0.0039	0.0016 ~ 0.0039	0.0016 ~ 0.0028
					1.969~	50~	0.0024 ~ 0.0047	0.0024 ~ 0.0047	0.0016 ~ 0.0039	-
Gray Cast Iron	-	-	★ 330 ~ 490	☆ 330 ~ 390	0.512~0.610	13~15.5	0.0031 ~ 0.0047	0.0031 ~ 0.0039	0.0024 ~ 0.0031	-
					0.630~1.043	16~26.5	0.0039 ~ 0.0071	0.0039 ~ 0.0059	0.0031 ~ 0.0047	-
					1.063~1.969	27~50	0.0039 ~ 0.0079	0.0039 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0039
					1.969~	50~	0.0039 ~ 0.0079	0.0039 ~ 0.0071	0.0031 ~ 0.0059	-
Nodular Cast Iron	-	-	★ 260 ~ 390	☆ 260 ~ 330	0.512~0.610	13~15.5	0.0031 ~ 0.0047	0.0031 ~ 0.0039	0.0024 ~ 0.0031	-
					0.630~1.043	16~26.5	0.0039 ~ 0.0071	0.0039 ~ 0.0059	0.0031 ~ 0.0047	-
					1.063~1.969	27~50	0.0039 ~ 0.0079	0.0039 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0039
					1.969~	50~	0.0039 ~ 0.0079	0.0039 ~ 0.0071	0.0031 ~ 0.0059	-
Non-ferrous Metals	-	-	-	★ 660 ~ 1970	0.512~0.610	13~15.5	0.0024 ~ 0.0047	0.0024 ~ 0.0039	0.0016 ~ 0.0031	-
					0.630~1.043	16~26.5	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0059	-
					1.063~1.969	27~50	0.0031 ~ 0.0079	0.0031 ~ 0.0071	0.0024 ~ 0.0059	0.0020 ~ 0.0039
					1.969~	50~	0.0031 ~ 0.0079	0.0031 ~ 0.0071	0.0024 ~ 0.0059	-
Titanium Alloys	-	-	-	★ 130 ~ 230	0.512~0.610	13~15.5	0.0020 ~ 0.0024	0.0020 ~ 0.0024	0.0020 ~ 0.0024	-
					0.630~1.043	16~26.5	0.0020 ~ 0.0028	0.0020 ~ 0.0028	0.0020 ~ 0.0028	-
					1.063~1.969	27~50	0.0024 ~ 0.0031	0.0024 ~ 0.0031	0.0024 ~ 0.0031	0.0016 ~ 0.0020
					1.969~	50~	0.0024 ~ 0.0031	0.0024 ~ 0.0031	0.0024 ~ 0.0031	-

Apply a sufficient amount of coolant

★ : 1st Recommendation ☆ : 2nd Recommendation

K DRILLING

- DRA
- DRV
- DRZ**
- HOLESHOT
- COREMASTER COREDRILL
- COUNTERBORE
- COUNTERSINK

Cutting Conditions by Application

(Workpiece Material: 1049)

Applications	Plain Surface	Angled Surface	Half Cylindrical	Hole Expansion	Concave Surface	Existing Hole	Stacked Plates
Workpiece Shape							
Cutting Speed Vc (sfm)	390	390	390	390	390	390	Not Available
f (ipr)	0.004	0.002	0.002	0.002	Concave Surface: 0.002 Once drill is fully engaged: 0.004	*0.002	Not Available
Internal Coolant	Yes	Yes	Yes	Yes	Yes	Yes	Not Available

Max. Depth for Drilling with External Coolant

In case of using external coolant system, chip evacuation will be bad.

Therefore D.O.C. should be measured within 1.5 times (1.5 x DC) of drill diameter (DC).

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Magic Drill Setup for Lathes

Installation

- ① The top face of the outer insert should be parallel to the X-axis to allow for offset cutting. (Cutting diameter can be changed by moving in the X-axis.)
- ② It is recommended to set the outer insert as shown in Fig.1 with the outer insert facing the operator. (It is also possible to use it by setting 180° reverse position.)
In case of the lathe with two turrets, when installing the drill to the lower turret, the outer insert should be set so as to face the operator. (It is also possible to use it by setting at 180° reverse position.)

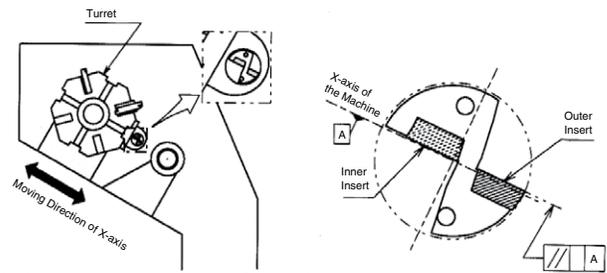


Fig.1 Installation to the Turning Lathe

Cutting Diameter Adjustment

1. Cutting Diameter Adjustment

- ① Cutting diameter is adjusted by moving the tool in the X-axis direction. The moving direction of the X-axis movement depends on the position of the toolholder.
- ② For making the hole diameter larger, slide the tool along the X-axis toward the outer insert side. (Fig. 2, Fig. 3)
For making the hole diameter smaller, slide the tool along the X-axis in the opposite direction. (This movement of the axis is called an "Offset")
However, be sure not to make the hole diameter smaller than the drill diameter by more than 0.2mm (.008"). Otherwise, the toolholder will interfere with the drilled hole. (Fig. 4)
e.g.) when using $\varnothing 20$ ($\varnothing.787$ ") drill, the hole diameter must not be smaller than 19.8mm (.780").

2. Offset Limit of the Cutting Diameter

For the maximum limit of the cutting diameter, refer to "Max. Offset (Radial)" in the Toolholder Dimension table. (The figure in the table shows how much it is possible the offset the drill in the radial direction.)
e.g.) In case of using $\varnothing 20$ ($\varnothing.787$ ") drill, it is possible to make a hole up to $\varnothing 21$ ($\varnothing.827$ ") since "Max. Offset (Radial)" is +0.5mm (.02").

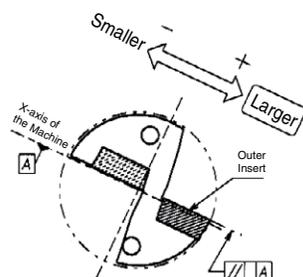


Fig. 2 Outer Insert Facing Up

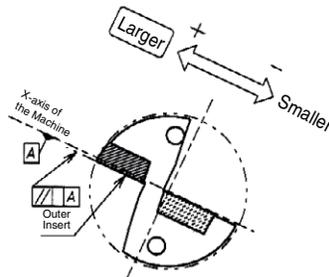


Fig. 3 Outer Insert Facing Down

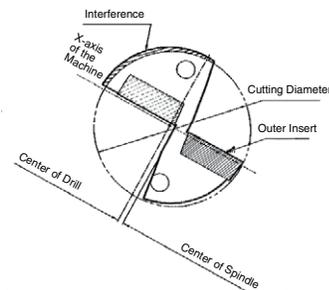


Fig. 4 Excessive Offset (For Smaller Hole Diameter)

Center Height Adjustment

1. Center Height of the Inner Insert

When installing inner insert as shown in Fig. 1, it will be set around 0.2mm (.008") below the Center line of the Spindle. (Fig. 5)
This is the normal position of the center height and the inner insert is designed to be set at this position. However, in case that the turret of the lathe is out of alignment with the center of spindle, sometimes the inner insert may be above or below center.
For stable machining, it is essential to check the center height of the inner insert carefully.

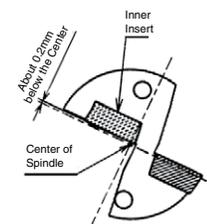


Fig. 5 Front View of the Drill

2. How to Check the Center Height of Inner Insert

For checking the center height of the inner insert, see the core which remains at the center of the drilled hole. (Fig. 6)
If the center height is in the normal condition, a core of about 0.5mm (.020") in diameter will remain after machining.

In the following case, it is necessary to adjust the center height.

- No core remains
- Core diameter is more than 1mm (.039")

The drilled hole for verification purposes needs to be machined at approximately 10mm (0.375") in depth and at a feed rate of 0.004 ipr or lower.

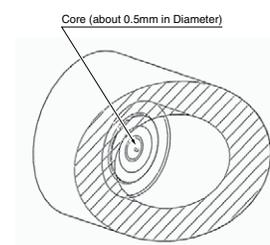


Fig. 6 Center Core

3. Center Height Adjustment

- a) No Core or Cores with Small Diameter

This occurs when the inner insert is set above center.

In this case, adjustment is necessary since insert breakage is likely at the center of the drill. (Fig. 7)

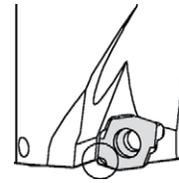


Fig. 7 Insert Breakage near the Center of Drill

Adjustments

- 1 Install the drill rotated at the 180°. Most problems will be solved by this method.

- 2 If the core diameter becomes too large after the above adjustment, install the drill rotated 90° counter-clockwise as shown in Fig.9 (outer insert is positioned lower) and adjust the center height by moving the tool in the X-axis direction. (However, this makes it impossible to adjust the cutting diameter.)

Caution: In case of installing the drill in the opposite direction (outer insert is positioned upper), the cutting diameter will become smaller, which may cause the drill body to interfere with the drilled hole. The fundamental solution is to readjust the center position of the turret itself.

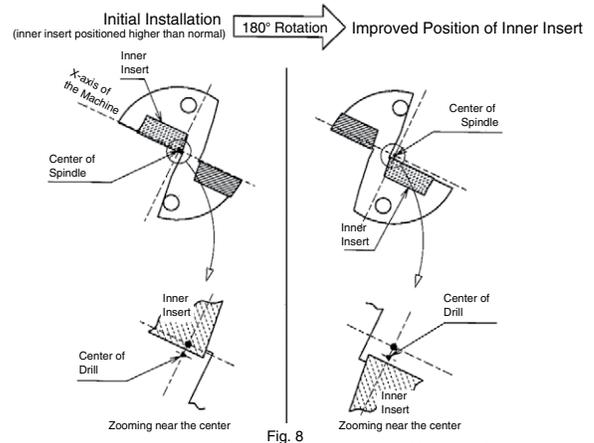


Fig. 8

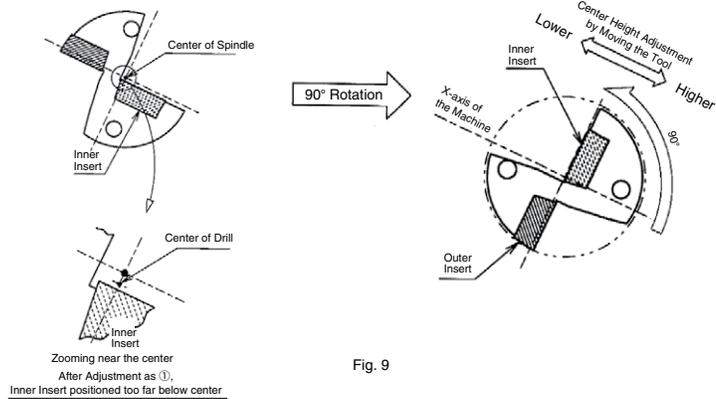


Fig. 9

- b) Core with Excessively Large Diameter (More than 1mm/.04")

This occurs when the inner insert is below center.

This condition causes poor chip evacuation and on adjustment is required.

Adjustments

Install the drill rotated 90° counter-clockwise as shown in Fig.10 (outer insert is positioned upper), and adjust the center height by moving the tool in the X-axis direction.

(However, this makes it impossible to adjust the cutting diameter.)

Caution: When installing the drill in the opposite direction (outer insert is positioned lower), the cutting diameter will become smaller, which may cause the drill body to interfere with the drilled hole.

The fundamental solution is to readjust the center position of the turret itself.

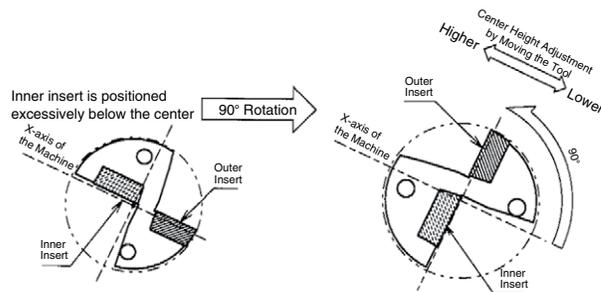


Fig. 10

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

HOLESHOT Drill

Sharp Cutting with Enhanced Chip Evacuation
 Superior Fracture Resistance and Long Tool Life with
 MEGACOAT NANO Coating Technology

- 1 Drill Diameters from 0.688" to 4.000"
- 2 Flute Designs Optimized for Maximum Rigidity and Good Chip Evacuation
- 3 Featuring Grades PR1535 and CA6535 Available for Difficult-to-Cut Materials



Patented Swept Back Design



- Enables Drilling of Stacked Plates and Welded Assemblies
- Reduces Slug Formation
- Provides Excellent Chip Control

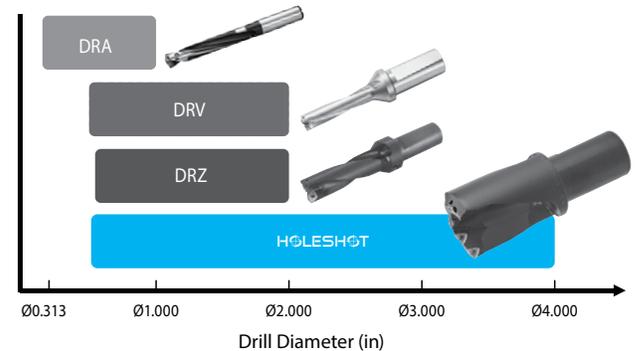
K DRILLING

Applicable Workpieces

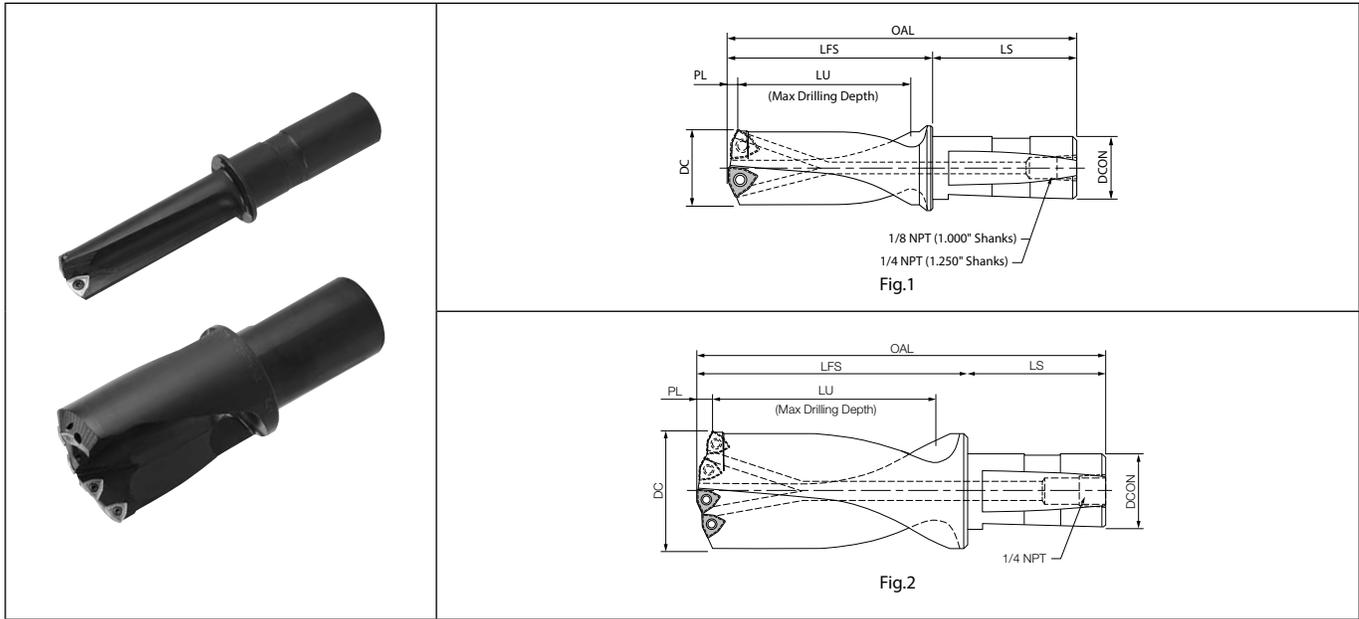
	Plain Surface	Stacked Plates	Hole Expansion	Angled Surface
HOLESHOT				

Hole Expansion: Overlap amount of through hole must be 1/5DC (0.2 x DC) or less.
 Expansion of blind holes is not possible because chips are built up in the next hole and will cause chip recutting issues

HOLESHOT Drill Diameter Range



HOLESHOT (DR)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions							Coolant Hole	Fig.	Spare Parts		Applicable Inserts K99	
				DC		DCON	OAL	LFS	LS	LU			PL	Screw		Wrench
				in	mm											
Inch	DR- 0688-X3N	●	2	0.688	-	0.750	4.87	2.84	2.03	2.06	0.090	Yes	1	SCR-01	T7	WCMX 040204-M1A
	0719-X3N	●		0.719		0.750	5.00	2.97	2.03	2.15	0.093					
	0750-X3N	●		0.750		0.750	5.13	3.10	2.03	2.25	0.102					
	0781-X3N	●		0.781		0.750	5.26	3.23	2.03	2.34	0.106					
	0813-X3N	●		0.813		0.750	5.39	3.36	2.03	2.44	0.110					
	0844-X3N	●		0.844		0.750	5.52	3.49	2.03	2.53	0.114					
	DR- 0866	△	2	0.866	22	1.000	4.78	2.50	2.28	1.75	0.130	Yes	1	SCR-03	T9	WCMT 050308 WCMX 050308-M1 WCMX 050308-M1A
	DR- 0866-X3N	△					5.80	3.52		2.60						
	DRV 0875	△		0.875	-	1.000	4.78	2.50	2.28	1.75	0.131					
	DRZ 0875-X3N	●					5.79	3.51		2.63						
	DRZ 0906	●		0.906	23	1.000	4.78	2.50	2.28	1.75	0.135					
	HOLESHOT 0906-X3N	●					5.88	3.60		2.71						
	HOLESHOT 0937	●		0.937	-	1.000	4.78	2.50	2.28	1.75	0.139					
	COREMASTER COREDRILL 0937-X3N	●					5.98	3.70		2.81						
	COUNTERBORE 0945	△		0.945	24	1.000	4.78	2.50	2.28	1.75	0.140					
	COUNTERBORE 0945-X3N	△					6.04	3.76		2.83						
	COUNTERSINK 0969-X3N	●		0.969	-	1.000	6.08	3.80	2.28	2.91	0.143					
	0984	●					4.78	2.50		1.75						
0984-X3N	△	6.17					3.89	2.95								

Recommended Cutting Conditions K104

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions								Coolant Hole	Spare Parts		Applicable Inserts K99	
				DC		DCON	OAL	LFS	LS	LU	PL		Fig.	Screw		Wrench
				in	mm											
																
Inch	DR- 1000	●	2	1.000	-	1.000	4.78	2.50	2.28	1.75	0.147	Yes	1	SCR-03	T9	WCMX 050308-M1 WCMX 050308-M1A
	1000-X3N	●					6.18	3.90		3.00						
	1024-X3N	△	1.024	26	1.000	6.29	4.01	2.28	3.07	0.150						
	1031	●	2	1.031	-	1.000	5.16	2.88	2.28	2.13	0.151					
	1031-X3N	●					6.27	3.99		3.09						
	1062	●	2	1.062	27	1.000	5.16	2.88	2.28	2.13	0.155					
	1062-X3N	●					6.37	4.09		3.18						
	1094	△	2	1.094	-	1.000	5.16	2.88	2.28	2.13	0.159					
	1102	●					1.102	28		1.000						
	1125	●	2	1.125	-	1.000	5.16	2.88	2.28	2.13	0.163					
	1125-X3N	●					6.56	4.28		3.37						
	1142	●	2	1.142	29	1.000	5.16	2.88	2.28	2.13	0.165					
	1142-X3N	△					6.66	4.38		3.43						
	1156	●	2	1.156	-	1.000	5.16	2.88	2.28	2.13	0.167					
	1156-X3N	●					6.67	4.39		3.47						
	DR- 1187	●	2	1.187	-	1.000	5.16	2.88	2.28	2.13	0.169					
	1187-X3N	●					1.250	6.76		4.48						
	1250	●	2	1.250	-	1.000	5.53	3.25	2.28	2.50	0.177					
	1250-X3N	●					1.250	6.96		4.68						
	1299	△	2	1.299	33	1.000	5.53	3.25	2.28	2.50	0.184					
	1312	●					1.312	-		1.000						
	1375	●	2	1.375	-	1.000	5.53	3.25	2.28	2.50	0.193					
	1375-X3N	●					1.250	7.34		5.06						
	1406	△	2	1.406	-	1.000	5.78	3.50	2.28	2.75	0.197					
	1417	●					1.417	36		1.000						
	1437	●	2	1.437	-	1.000	5.78	3.50	2.28	2.75	0.196					
	1437-X3N	△					1.250	7.54		5.26						
	1457	△	2	1.457	37	1.000	5.78	3.50	2.28	2.75	0.199					
	1469	△					1.469	-		1.000						
	1469-X3N	●				1.250	7.63	5.35		4.40						
	1500	●	2	1.500	-	1.000	5.78	3.50	2.28	2.75	0.204					
	1500-X3N	●					1.250	7.73		5.45						
	1562-X3N	●	2	1.562	-	1.250	8.17	5.89	2.28	4.68	0.212					
DR- 1575	●	3	1.575	40	1.250	6.16	3.88	2.28	2.88	0.208						
1575-X3N	△				1.500	8.61	5.92	2.69	4.72							
1614	△	3	1.614	41	1.250	6.16	3.88	2.28	2.88	0.212						
1614-X3N	●				1.500	8.73	6.04	2.69	4.84							
1625	●	3	1.625	-	1.250	6.16	3.88	2.28	2.88	0.214						
1625-X3N	●				1.500	8.77	6.08	2.69	4.87							
1656	●	3	1.656	-	1.250	6.16	3.88	2.28	2.88	0.218						
1719	●				1.719	-	1.250	6.41	4.13		2.28	3.00	0.225			

Recommended Cutting Conditions K104

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions							Coolant Hole	Fig.	Spare Parts		Applicable Inserts K99	
				DC		DCON	OAL	LFS	LS	LU			PL	Screw		Wrench
				in	mm											
Inch	DR- 1750	●	4	1.750	-	1.250	6.41	4.13	2.28	3.00	0.225	Yes	2	SCR-03	T9	WCMX 050308-M1 WCMX 050308-M1A
	1750-X3N	●				1.500	9.30	6.61	2.69	5.25						
	1772	●		1.772	45	1.250	6.41	4.13	2.28	3.00	0.231					
	1772-X3N	△				1.500	9.42	6.73	2.69	5.31						
	1781	●		1.781	-	1.250	6.41	4.13	2.28	3.00	0.223					
	1812	●				1.250	6.41	4.13	2.28	3.00						
	1812-X3N	△		1.812	-	1.500	9.48	6.79	2.69	5.43	0.230					
	1844	●				1.250	6.78	4.50	2.28	3.38						
	1850-X3N	△		1.850	47	1.500	9.66	6.97	2.69	5.55	0.233					
	1875-X3N	●		1.875	-	1.500	9.68	6.99	2.69	5.62	0.240					
	1890-X3N	△		1.890	48	1.500	9.79	7.10	2.69	5.67	0.246					
	1929	△		1.929	49	1.250	6.78	4.50	2.28	3.38	0.259					
	1929-X3N	△				1.500	9.92	7.23	2.69	5.79						
	1937	●		1.937	-	1.250	6.78	4.50	2.28	3.38	0.259					
	1937-X3N	●				1.500	9.89	7.20	2.69	5.81						
	1969	●		1.969	50	1.250	6.78	4.50	2.28	3.38	0.260					
	1969-X3N	●				1.500	9.99	7.30	2.69	5.91						
	2000	●		2.000	-	1.250	6.78	4.50	2.28	3.38	0.267					
	2000-X1	●				1.250	6.06	3.38	2.28	2.13						
	2000-X3N	●				1.500	10.09	7.40	2.69	6.00						
2008-X3N	△	2.008	51	1.500	10.16	7.47	2.69	6.02	0.267							
2031-X3N	●	2.031	-	1.500	10.30	7.61	2.69	6.09	0.268							
K DRILLING	DR- 2062	●	4	2.062	-	1.500	7.44	4.75	2.69	3.50	0.260	Yes	2	SCR-30	T10	WCMX 06T308-M1 WCMX 06T308-M1A
	2062-X1	△				1.500	6.06	3.38	2.69	2.13						
	2062-X3N	●				2.000	10.94	7.69	3.25	6.18						
	2094	△		2.094	-	1.500	7.44	4.75	2.69	3.50	0.267					
	2094-X1	△				1.500	6.06	3.38	2.69	2.13						
	2125	●		2.125	54	1.500	7.44	4.75	2.69	3.50	0.266					
	2187-X1	△		2.187	-	1.500	6.25	3.56	2.69	2.31	0.273					
	2187-X3N	●				2.000	11.33	8.08	3.25	6.56						
	2219	●				1.500	7.81	5.13	2.69	3.88						
	2219-X1	●		2.219	-	1.500	6.25	3.56	2.69	2.31	0.277					
	2219-X3N	●				2.000	11.44	8.19	3.25	6.66						
	2250	●		2.250	-	1.500	7.81	5.13	2.69	3.88	0.281					
	2250-X1	●				1.500	6.25	3.56	2.69	2.31						
	2250-X3N	●				2.000	11.53	8.28	3.25	6.75						
	COREMASTER COREDRILL	2281		●	2.281	-	1.500	7.81	5.13	2.69	3.88					
COUNTERBORE	2312	●	2.312	-	1.500	7.81	5.13	2.69	3.88	0.287						
COUNTERSINK	2312-X3N	●			2.000	11.72	8.47	3.25	6.93							

Recommended Cutting Conditions K104

Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions							Coolant Hole	Spare Parts		Applicable Inserts K99				
				DC		DCON	OAL	LFS	LS	LU		PL	Fig.		Screw	Wrench		
				in	mm													
Inch	DR- 2362	△	4	2.362	60	1.500	8.19	5.50	2.69	4.13	0.301	Yes	2	SCR-30	T10	WCMX 06T308-M1 WCMX 06T308-M1A		
	2375	●		2.375	1.500	8.19	5.50	2.69	4.13	0.298								
	2375-X1	●		2.375	1.500	6.56	3.88	2.69	2.50	0.298								
	2375-X3N	●		2.375	2.000	12.05	8.80	3.25	7.12	0.298								
	2437-X1	△		2.437	1.500	6.56	3.88	2.69	2.50	0.309								
	2437-X3N	●			2.000	12.25	9.00	3.25	7.31									
	2469	●		2.469	1.500	8.19	5.50	2.69	4.13	0.319								
	2500	●		2.500	1.500	8.19	5.50	2.69	4.13	0.329								
	2500-X1	●			1.500	6.56	3.88	2.69	2.50									
	2500-X3N	●			2.000	12.46	9.21	3.25	7.50									
	2625	●		2.625	2.000	11.25	8.00	3.25	6.50	0.326								
	2625-X1	●			2.000	7.50	4.25	3.25	2.75									
	2750	●		2.750	2.000	11.25	8.00	3.25	6.50	0.340								
	2750-X1	●			2.000	7.50	4.25	3.25	2.75									
	2875	●			2.875	2.000	11.25	8.00	3.25		6.50						0.357	
	2875-X1	●		2.000		7.75	4.50	3.25	3.00									
	DR- 3000-X1	●		6	-	3.000	2.000	7.75	4.50	3.25	3.00						0.369	
	3000	●				3.000	2.000	11.25	8.00	3.25	6.50							
	3125	●				3.125	2.000	12.50	9.25	3.25	7.63							0.393
	3125-X1	△					2.000	8.13	4.88	3.25	3.25							
	3250	●				3.250	2.000	12.50	9.25	3.25	7.63							0.387
	3250-X1	△					2.000	8.13	4.88	3.25	3.25							
	3500	●				3.500	2.000	12.50	9.25	3.25	7.63							0.440
	3500-X1	●					2.000	8.38	5.13	3.25	3.50							
	3625	●				3.625	2.000	12.67	9.42	3.25	7.94							0.441
	3750	●				3.750	2.000	13.00	9.75	3.25	8.00							0.459
	3750-X1	△					2.000	8.75	5.50	3.25	3.75							
	3875	△				3.875	2.000	13.44	10.19	3.25	8.44							0.470
4000	●	4.000	2.000			13.88	10.63	3.25	8.56	0.482								
4000-X1	●		2.000			9.38	6.13	3.25	4.00									

Recommended Cutting Conditions K104

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
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● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Recommended Cutting Conditions

Workpiece Material	Feed Rate (ipr)	Recommended Insert Grade / Cutting Speed (sfm)					Notes
		MEGACOAT NANO		MEGACOAT	CVD Carbide	Carbide	
		PR1535	PR1510	PR1230	CA6535	KW10	
Low Carbon Steel	0.0015~0.0035	☆ 250~650	-	★ 800~900	-	-	Coolant
Carbon Steel	0.005~0.009	☆ 250~550	-	★ 400~800	-	-	
Alloy Steel	0.004~0.010	☆ 225~500	-	★ 250~750	-	-	
Tool Steel	0.004~0.010	-	-	★ 250~750	-	-	
Stainless Steel (Austenitic)	0.0025~0.006	★ 200~600	-	★ 200~600	☆ 250~650	-	
Gray Cast Iron	0.005~0.011	-	★ 400~800	-	-	☆ 400~800	
Nodular Cast Iron	0.004~0.010	-	★ 300~500	-	-	☆ 300~500	
Non-ferrous Metals	0.008~0.010	-	-	-	-	★ 1,800~2,000	
Heat-resistant Alloy	0.0010~0.0015	☆ 75~150	-	★ 75~150	★ 75~200	-	
Titanium Alloys	0.0025~0.0030	★ 100~200	-	-	-	☆ 150~250	

Apply a sufficient amount of coolant

★ : 1st Recommendation ☆ : 2nd Recommendation



DRA
DRV
DRZ
HOLESHOT
COREMASTER COREDRILL
COUNTERBORE
COUNTERSINK

HOLESHOT Applications

DRILL APPLICATION HOLESHOT INDEXABLE DRILL

Stationary

For stationary (lathe) applications the drill should be mounted in a toolholder that is concentric within 0.003 TIR and parallel to the machine centerline. Flats on the shank should be precisely aligned so that the cutting edges are parallel to the x-axis, which will help chip flow.

A disc is normally produced as the drill breaks through the hole. Although the disc is usually minimal with holedrill, adequate guarding should be provided for and in place.

holedrill drills can be used to back bore an existing hole to a desired size. The drill can be offset by up to 0.015" for back boring.

Rotating

Make certain the spindle is rigid with minimal runout. Since both machine and fixture rigidity are key factors, make sure the workpiece is fixed rigidly and secured. Mount drill for the least possible overhang and make sure the drill flange is flush against the face of the adapter.

Coolant - Chip removal and tool life are enhanced by feeding coolant through the drill. 30 P.S.I. minimum coolant pressure is recommended for horizontal applications. Vertical position requires a higher coolant pressure (40 to 60 P.S.I.) to flush chips properly.

Through the tool coolant is preferred for holedrill drilling, but due to the unique flute design, coolant deficiencies can be overcome. Especially in smaller, lower horsepower machine tools, strong flood coolant can be utilized with excellent results. When flooding the cut, direct coolant directly into the drilling area.

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Coremaster Coredrill

Fast and Effective way to Expand Pre-Existing Holes
 Superior Fracture Resistance and Long Tool Life with
 MEGACOAT NANO Coating Technology



- 1 Two Effective Flutes Allow High Feed Rates for Improved Productivity
- 2 Deeper Drilling Depths Available in XL Series
- 3 Fixed Pocket and Adjustable Cartridge Styles Available

Adjustable cartridges can be adjusted 0.075" per side, providing 0.150" adjustment capability on diameter

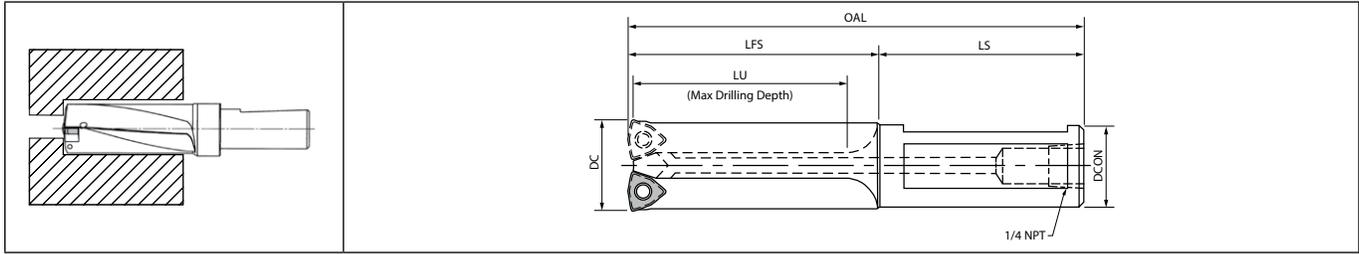
WCMX

		Carbon Steel / Alloy Steel		Mold and Die Steel		Stainless Steel		Cast Iron		Non-Ferrous Metals		Heat-resistant alloy		P		
														M		
														K		
														N		
														S		
K DRILLING	Insert	Part Number	No. of Edges	Dimensions (in)				Carbide			Cermets		Applicable Toolholder K107~K108			
				IC	S	D1	RE	CVD	PVD	-	PVD	-				
DRA																
DRV		WCMX 050308-M1	3	5/16	1/8	0.125									CD-825 ~ CD-1052 CD-825-XL ~ CD-1052-XL	
DRZ		050308-M1A	3													
HOLESHOT		06T308-M1	3				1/32									CD-1115 ~ CD-1303 CD-1360-C ~ CD-2960-C CD-1115-XL ~ CD-1303-XL CD-1350-LC ~ CD-3000-LC
COREMASTER COREDRILL		06T308-M1A	3	3/8	5/32	0.146										
COUNTERBORE																
COUNTERSINK																

WCMX...M1: General purpose drilling insert; First choice for Med-High Carbon Steel, Tool Steels, and Cast Iron; also available for general purpose drilling in Stainless Steel. Tougher edge than M1A chipbreaker.
 WCMX...M1A: First choice for Low-carbon Steel, Aluminum, and other "sticky" materials. Freer cutting than M1 chipbreaker.

Inserts are sold in 10 piece boxes

Coremaster Coredrill (CD) (Fixed Pocket)



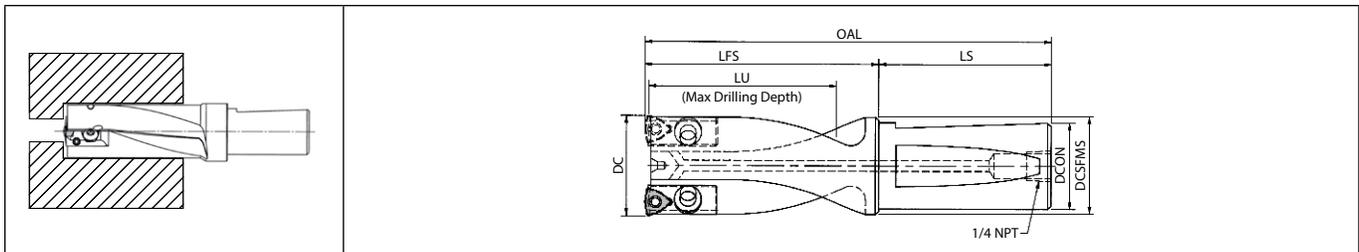
Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions						Spare Parts		Applicable Inserts ➔ K106
				DC	DCON	OAL	LFS	LS	LU	Screw	Wrench	
Inch	CD- 0825	●	2	0.825	1.000	4.750	2.250	2.500	1.750	SCR03	T9	WCMT 050308 WCMX 050308-M1 WCMX 050308-M1A
	0865	●		0.865								
	0938	●		0.938								
	0990	●		0.990								
	1052	●		1.052								
	1115	●	2	1.115	1.000	5.500	3.000	2.500	2.500	SCR30	T10	
	1178	●		1.178								
	1240	●		1.240								
	1303	●		1.303								

Maximum material removal: WCMX 050308 – 5/16" per side, WCMX 06T308 – 3/8" per side.

Recommended Cutting Conditions ➔ K109

Coremaster Coredrill (CD-C) (Adjustable Pocket)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions								Spare Parts				Applicable Inserts ➔ K106
				DC	DCON	OAL	LFS	LS	LU	DCSFMS	Insert Screw	Wrench	Cartridge	Screw		
Inch	CD- 1360-C	●	2	1.36 - 1.46	1.250	6.250	3.500	2.750	2.750	1.27	SCR30	T10	02-03	01-01	WCMT 06T308 WCMX 06T308-M1 WCMX 06T308-M1A	
	1460-C	●		1.46 - 1.56												
	1560-C	●		1.56 - 1.66												
	1660-C	●		1.66 - 1.76												
	1760-C	●		1.76 - 1.86												
	1860-C	●		1.86 - 1.96												
	1960-C	●		1.96 - 2.06												
	2060-C	●		2.06 - 2.16												
	2160-C	●		2.16 - 2.26												
	2260-C	●		2.26 - 2.36												
	2360-C	●		1.500	7.000	4.000	3.000	3.125	2.27	SCR30	T10	02-03	01-02			
	2460-C	●												2.36 - 2.46		
	2560-C	●												2.46 - 2.56		
	2660-C	●												2.56 - 2.66		
	2760-C	●												2.66 - 2.76		
	2860-C	●												2.76 - 2.86		
	2960-C	●												2.86 - 2.96		
	2960-C	●												2.96 - 3.06		

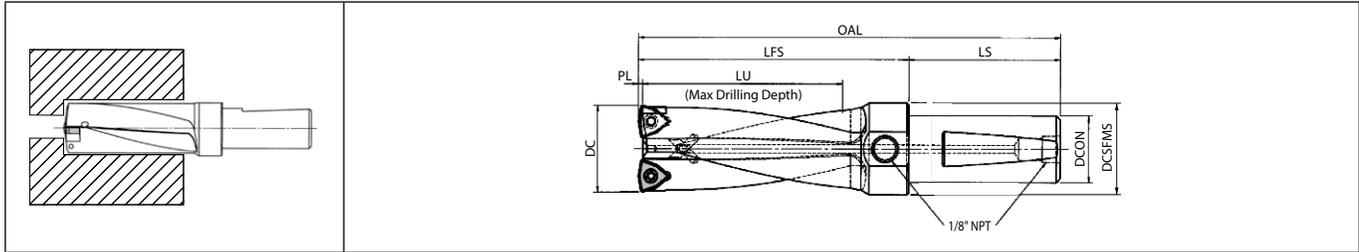
Maximum material removal: WCMX 050308 – 5/16" per side, WCMX 06T308 – 3/8" per side.

Recommended Cutting Conditions ➔ K109

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

- A INSERT GRADES
- B TURNING INSERTS
- C CBN/PCD INSERTS
- D TURNING HOLDERS
- E SMALL TOOLS
- F BORING
- G GROOVING
- H CUT-OFF
- J THREADING
- K DRILLING
- M MILLING
- N QUICK CHANGE TOOLING
- P SPARE PARTS
- R TECHNICAL
- T INDEX

Coremaster Coredrill (CD-XL) (Extended Length - Fixed Pocket)



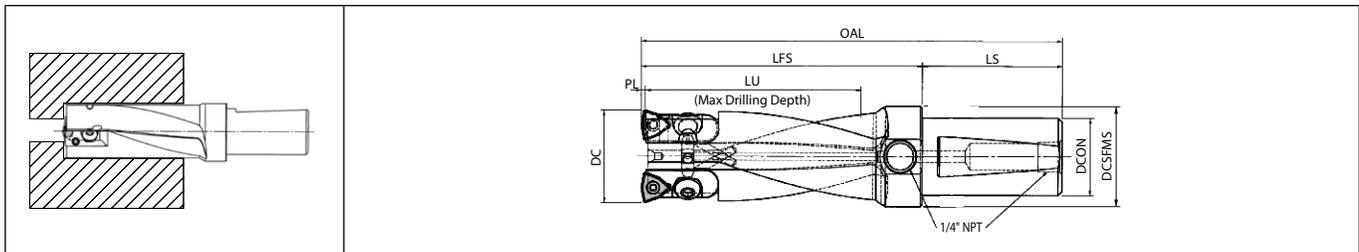
Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions							Spare Parts		Applicable Inserts K106
				DC	DCON	OAL	LFS	LS	LU	DCSFMS	Screw	Wrench	
Inch	CD- 0825-XL	●	2	0.825	1.000	5.530	3.250	2.280	2.250	1.375	SCR03	T9	WCMT 050308 WCMX 050308-M1 WCMX 050308-M1A
	0865-XL	●		0.865									
	0938-XL	●		0.938									
	0990-XL	●		0.990									
	1052-XL	●		1.052	5.780	3.500	2.500						
	1115-XL	●		1.115									
	1178-XL	●		1.178	1.000	6.280	4.000	2.280	3.000	1.375	SCR30	T10	
	1240-XL	●		1.240									
1303-XL	●	1.303											

Maximum material removal: WCMX 050308 – 5/16" per side, WCMX 06T308 – 3/8" per side.

Recommended Cutting Conditions K109

Coremaster Coredrill (CD-LC) (Extended Length - Adjustable Pocket)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions							Spare Parts				Applicable Inserts K106
				DC	DCON	OAL	LFS	LS	LU	DCSFMS	Insert Screw	Wrench	Cartridge	Screw	
Inch	CD- 1350-LC	●	2	1.35 - 1.50	1.250	6.780	4.500	2.280	3.500	1.63	SCR30	T10	02-03	01-01	WCMT 06T308 WCMX 06T308-M1 WCMX 06T308-M1A
	1500-LC	●		1.50 - 1.65											
	1650-LC	●		1.65 - 1.80	1.500	8.190	5.500	2.690	4.500	1.88					
	1800-LC	●		1.80 - 1.95											
	1950-LC	●		1.95 - 2.10	1.500	8.190	5.500	2.690	4.500	-					
	2100-LC	●		2.10 - 2.25											
	2250-LC	●		2.25 - 2.40	2.000	9.750	6.500	3.250	5.500	2.38					
	2400-LC	●		2.40 - 2.55											
	2550-LC	●		2.55 - 2.70	2.000	9.750	6.500	3.250	5.500	-					
	2700-LC	●		2.70 - 2.85											
	2850-LC	●		2.85 - 3.00	2.000	10.250	7.000	3.250	6.000	-					
	3000-LC	●		3.00 - 3.15											

Maximum material removal: WCMX 050308 – 5/16" per side, WCMX 06T308 – 3/8" per side.

Recommended Cutting Conditions K109

K
DRILLING

DRA
DRV
DRZ
HOLESHOT
COREMASTER
COREDRILL
COUNTERBORE
COUNTERSINK

Recommended Cutting Conditions

Workpiece Material	Feed Rate (ipr)	Recommended Insert Grade / Cutting Speed (sfm)								Notes
		MEGACOAT NANO		MEGACOAT	CVD Carbide	Cermet	PVD Cermet	PVD Coated Carbide	Carbide	
		PR1535	PR1510	PR1230	CA6535	TN60	PV90	PR905	KW10	
Low Carbon Steel	0.003~0.007	☆ 250~650	-	★ 800~900	-	-	☆ 300~1,000	-	-	Coolant
Carbon Steel	0.010~0.018	☆ 250~550	-	★ 400~800	-	-	☆ 300~900	-	-	
Alloy Steel	0.008~0.020	☆ 225~500	-	★ 250~750	-	-	☆ 250~800	-	-	
Tool Steel	0.008~0.020	-	-	★ 250~750	-	-	☆ 200~750	-	-	
Stainless Steel (Austenitic)	0.005~0.012	★ 200~600	-	★ 200~600	☆ 250~650	-	-	-	-	
Gray Cast Iron	0.010~0.022	-	★ 400~800	-	-	-	-	☆ 400~800	☆ 400~800	
Nodular Cast Iron	0.008~0.020	-	★ 300~500	-	-	-	-	☆ 300~500	☆ 300~500	
Non-ferrous Metals	0.016~0.020	-	-	-	-	★ 1,800~2,000	-	-	★ 1,800~2,000	
Heat-resistant Alloy	0.002~0.005	☆ 75~150	-	★ 75~150	★ 75~200	-	-	-	-	
Titanium Alloys	0.005~0.006	★ 100~200	-	-	-	-	-	☆ 100~210	☆ 150~250	

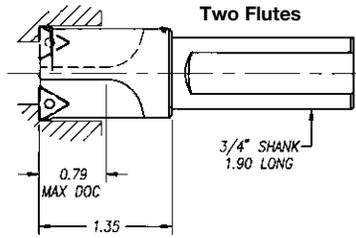
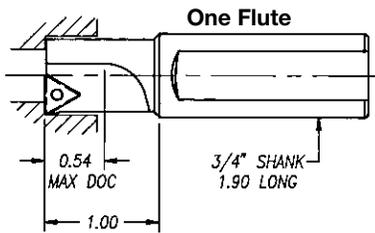
Apply a sufficient amount of coolant

★ : 1st Recommendation ☆ : 2nd Recommendation

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

Counterbores

For Socket Head Cap Screw Sizes 1/4"~3/4" and 6mm~16mm



TCMT

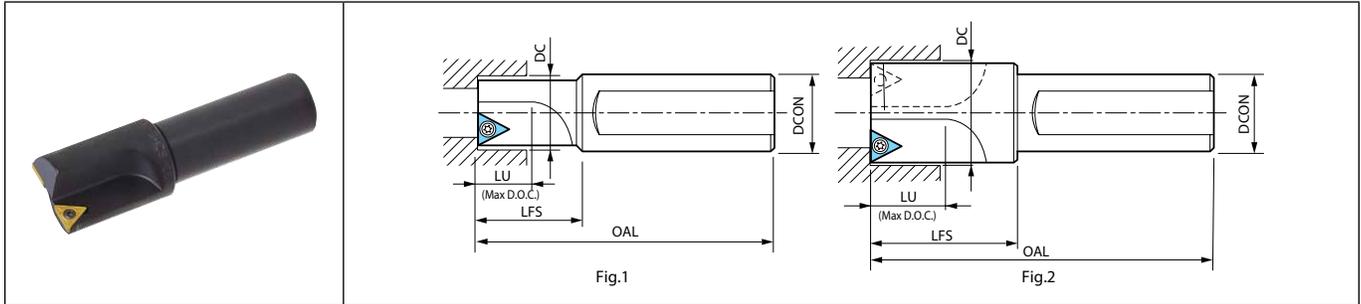
		Carbon Steel / Alloy Steel		●		P			
		Mold and Die Steel		●					
		Stainless Steel		●		M			
		Cast Iron		●		K			
		Non-Ferrous Metals		●		N			
		Heat-resistant alloy		●		S			
Insert	Part Number	No. of Edges	Dimensions (in)				Carbide		Applicable Toolholder K111
			IC	S	D1	RE	CA6535	CA125P	
	TCMT 18151HP	3	7/32	3/32	0.094	1/64	●	●	...SHCS-CB
	TCMT 18151HQ	3	7/32	3/32	0.098	1/64	●	●	

K
DRILLING

- DRA
- DRV
- DRZ
- HOLESHOT
- COREMASTER
COREDRILL
- COUNTERBORE**
- COUNTERSINK

Inserts are sold in 10 piece boxes

Counterbores (SHCS-CB)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions						Fig.	Spare Parts		Applicable Inserts K110	
				SHCS		DC	DCON	OAL	LFS		LU	Screw		Wrench
				in	mm									
Inch	1/4-SHCS-CB	●	1	1/4	-	0.422	0.750	2.90	1.00	0.54	1	SCR-05	FT-7	TCMT18151HP TCMT18151HQ
	5/16-SHCS-CB	●		5/16		0.515								
	3/8-SHCS-CB	●		3/8		0.609								
	7/16-SHCS-CB	●		7/16		0.703								
	1/2-SHCS-CB	●	2	1/2	-	0.797	3.25	1.35	0.79	2	SCR-05	FT-7		
	5/8-SHCS-CB	●		5/8		1.000								
	3/4-SHCS-CB	●		3/4		1.187								
	M6-SHCS-CB	●	1	-	M6	0.750	2.90	1.00	0.54	1	SCR-05	FT-7		
	M8-SHCS-CB	●			M8								0.558	
	M10-SHCS-CB	●			M10								0.676	
M12-SHCS-CB	●	M12			0.755								3.25	1.35

Maximum material removal per side is 1/4"

Recommended Cutting Conditions

Workpiece Material	Chipbreaker / Feed Rate (ipr)		Recommended Insert Grade / Cutting Speed (sfm)		Notes
			CVD Carbide		
	HP	HQ	CA6535	CA125P	
Low Carbon Steel	-	0.004~0.010	-	★ 390~850	Coolant
Carbon Steel	-	0.004~0.010	-	★ 390~850	
Alloy Steel	-	0.004~0.010	-	★ 360~750	
Stainless Steel (Austenitic)	0.004~0.010	-	★ 250~650	-	
Heat-resistant Alloy	0.004~0.010	-	★ 75~200	-	

Apply a sufficient amount of coolant

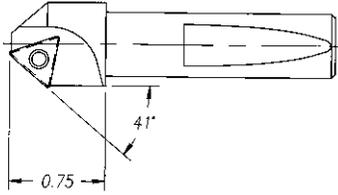
★ : 1st Recommendation ☆ : 2nd Recommendation

INSERT GRADES	A
TURNING INSERTS	B
CBN/PCD INSERTS	C
TURNING HOLDERS	D
SMALL TOOLS	E
BORING	F
GROOVING	G
CUT-OFF	H
THREADING	J
DRILLING	K
MILLING	M
QUICK CHANGE TOOLING	N
SPARE PARTS	P
TECHNICAL	R
INDEX	T

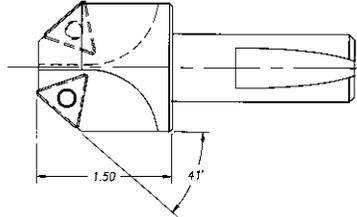
Countersinks

For Flat Head Cap Screw Sizes #10 ~ 3/4"

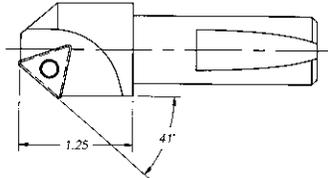
CS-82-177



CS-82-612



CS-82-362



TCMT

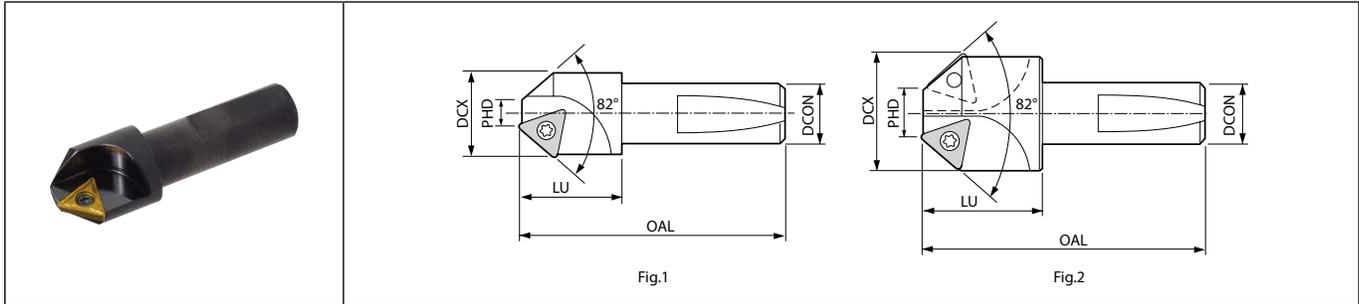
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DRZ
HOLESHOT
COREMASTER
COREDRILL
COUNTERBORE
COUNTERSINK

		Carbon Steel / Alloy Steel		●		P			
		Mold and Die Steel		●					
		Stainless Steel		●		M			
		Cast Iron				K			
		Non-Ferrous Metals				N			
		Heat-resistant alloy		●		S			
Insert	Part Number	No. of Edges	Dimensions (in)				Carbide		Applicable Toolholder K113
			IC	S	D1	RE	CVD		
						CA6535	CA125P		
	TCMT 2151HQ	3	1/4	3/32	0.110	1/64	●	CS82-177	
	TCMT 3252HQ	3	3/8	5/32	0.173	1/32	● ●	CS82-362 CS82-612	

Inserts are sold in 10 piece boxes

Countersinks (CS)



Toolholder Dimensions

Unit	Part Number	Std. Item	No. of Inserts	Dimensions					Rake Angle (°)		FHCS	Fig.	Spare Parts		Applicable Inserts ● K112
				DCX	DCON	PHD	OAL	LU	A.R.	R.R.			Screw	Wrench	
Inch	CS 82-177	●	1	0.673	0.500	0.177	2.530	0.750	0	0	#10, 1/4", 5/16"	1	SCR-01	FT-7	TCMT2151HQ
	82-362	●	1	1.073	0.750	0.362	3.280	1.250			3/8", 7/16", 1/2"		SCR-02	FT-15	TCMT3252HQ
	82-612	●	2	1.464	0.750	0.612	3.530	1.500			5/8", 3/4"		2		

CS82-612 is one flute effective with staggered inserts.

Recommended Cutting Conditions

Workpiece Material	Chipbreaker / Feed Rate (ipr)		Recommended Insert Grade / Cutting Speed (sfm)		Notes
			CVD Carbide		
	HP	HQ	CA6535	CA125P	
Low Carbon Steel	-	0.004~0.010	-	★ 390~850	Coolant
Carbon Steel	-	0.004~0.010	-	★ 390~850	
Alloy Steel	-	0.004~0.010	-	★ 360~750	
Stainless Steel (Austenitic)	0.004~0.010	-	★ 250~650	-	
Heat-resistant Alloy	0.004~0.010	-	★ 75~200	-	

Apply a sufficient amount of coolant

★ : 1st Recommendation ☆ : 2nd Recommendation

INSERT GRADES	A
TURNING INSERTS	B
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