High Performance Flat Bottom Drill

KDZ Series

New Flat Bottom Drills with Unique Coating Technology

Provides Long Tool Life, High Precision and Stable Machining

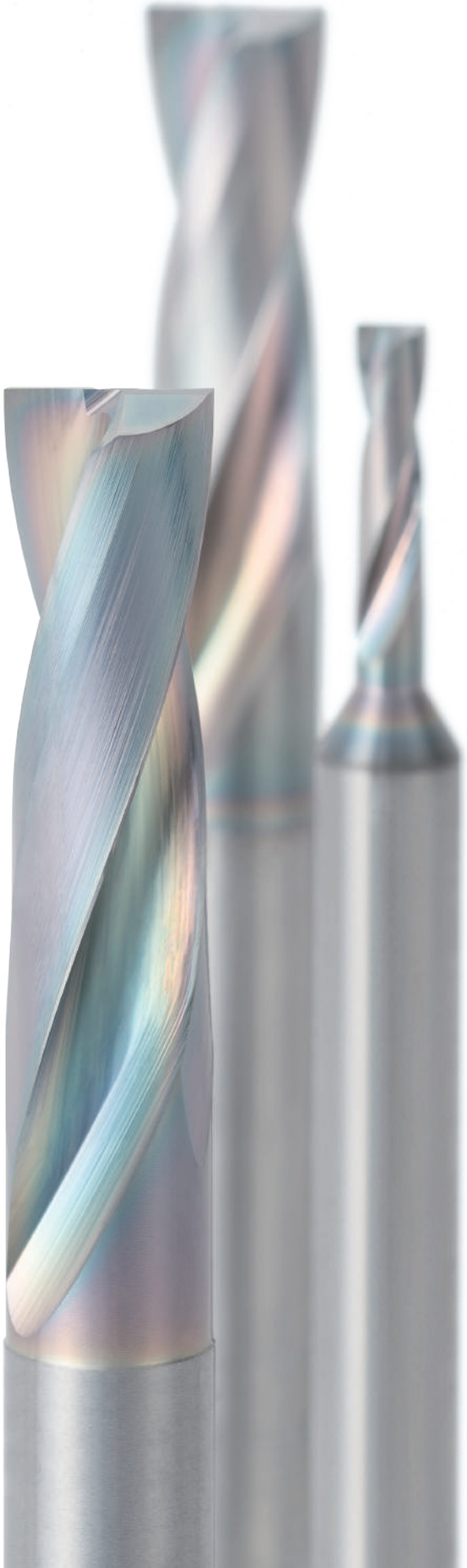
MEGACOAT NANO EX | Solid

Great for a Wide Range of Drilling Applications Including Counterboring

Achieves High Performance Results from an Economical Flat Bottom Drill

New KDZ-HP Type C with Internal Coolant for Stainless Steel Machining

NEW



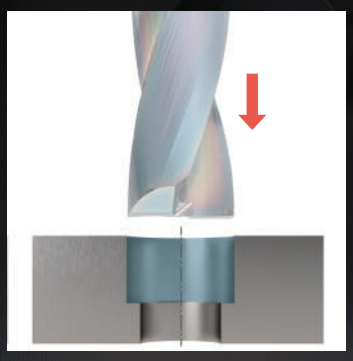
K-series
Let your potential shine

High Performance Flat Bottom Drill

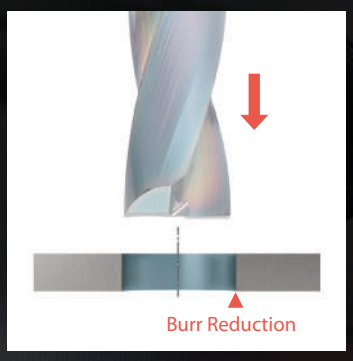
KDZ Series

Innovative, Cutting Edge Design

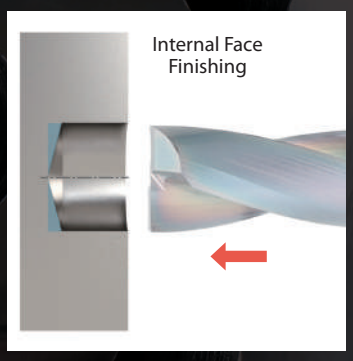
1 Excellent for drilling in many different applications



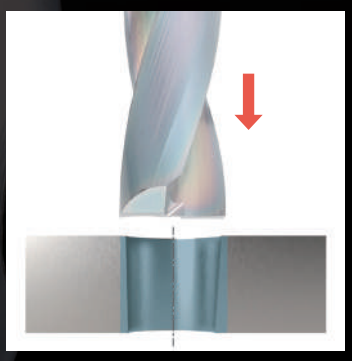
Counterboring



Plunging of Thin Plate



Turning in Automatic Lathes



Hole Expanding

K-series
Let your potential shine

Various Styles Available

Stability-oriented

KDZ

Standard Type

Tough Edge

Short	Regular
Total 111 Items Drilling Dia. ø1.0~ø12.0	Total 91 Items Drilling Dia. ø3.0~ø12.0

Sharp Edge

KDZ-HP

High Precision Machining

Low Resistance

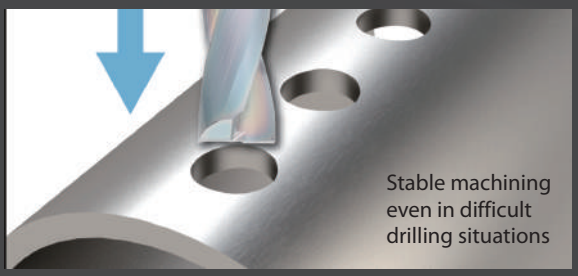
Short	Regular
Total 146 Items Drilling Dia. ø1.0~ø20.0 Long Shank LS Now Available (ø3.0~ø12.0) NEW	Total 182 Items Drilling Dia. ø3.0~ø12.0 Type C with Internal Coolant for Stainless Steel Machining Now Available (ø3.0~ø12.0) NEW

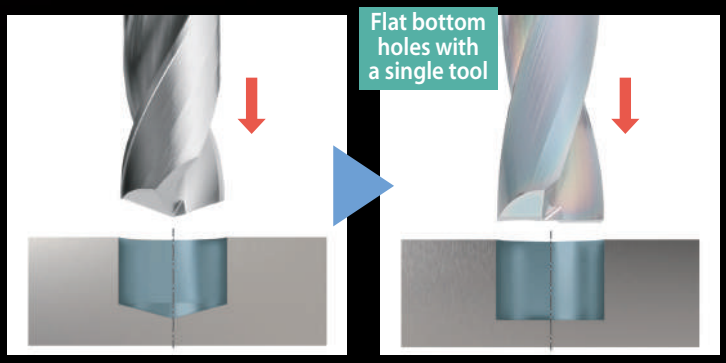
Standard Type
High Stability in Various Machining Environments

- Flat land specifications on corners
- Excellent chip evacuation with special flute shape
- Long tool life with MEGACOAT NANO EX coating technology

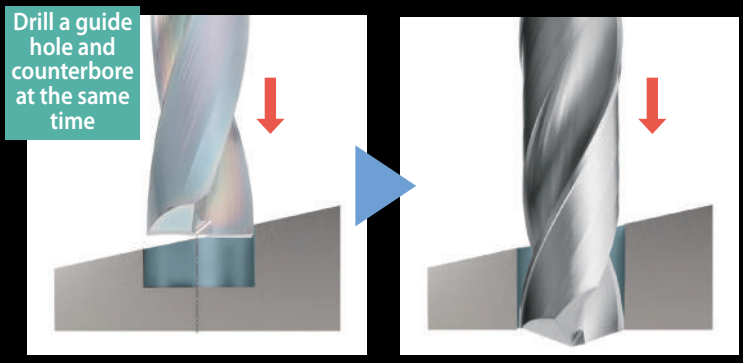
High-precision and Stable Machining with Special Chip Thinning Shape

- Improved machining accuracy when entering the workpiece
- Long tool life with MEGACOAT NANO EX coating technology
- Stable machining accuracy even when drilling into cylindrical or curved surfaces. (KDZ-HP is recommended)

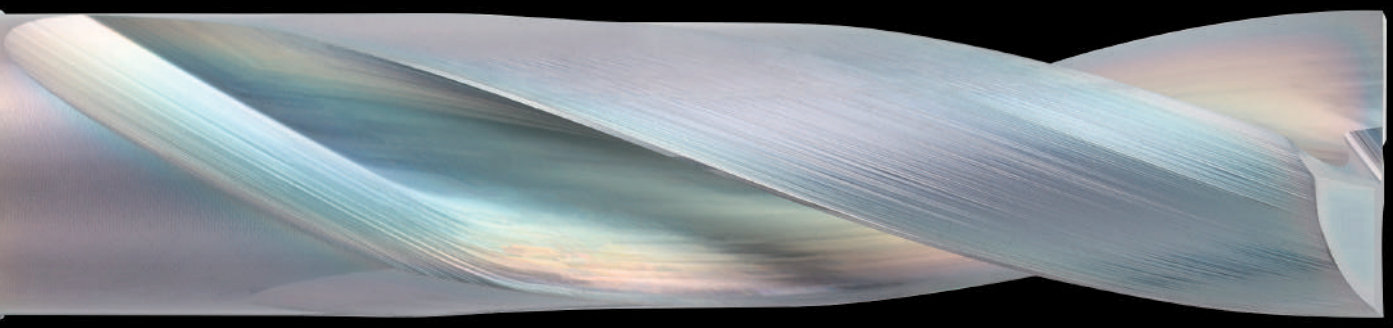




Flat Bottom Finishing after Drilling



Counterboring on Slant Surface/Spotting for Secondary Process



A unique coating designed to optimize drilling performance is now available

MEGACOAT NANO EX | Solid

2 Excellent wear resistance and fracture resistance

Special nano lamination x multilayer lamination

Nano-Lamination

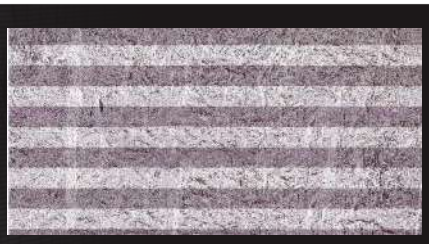
AlCrN based coating

Excellent lubricity and adhesion resistance

Nano-Lamination

TiAlN based coating

Superior wear resistance



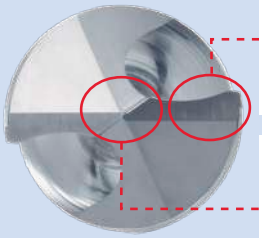
Point

1. Improved toughness by optimizing the lamination period of the film
2. Increased Cr content for excellent lubricity and with adhesion resistance to suppress wear and chipping

CG Image

General Drilling Challenges

Due to the difference in speed between the outside edge and the center, different edge designs are required to extend tool life



Drilling speed High

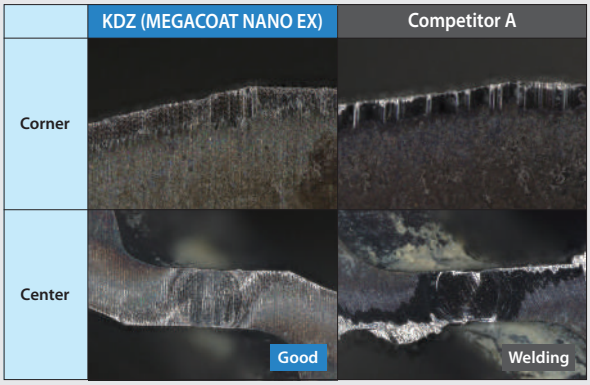
Wear and chipping resistance is required

Drilling speed Low

Adhesion and chipping resistance is required

Solution

Cutting edge conditions comparison when drilling (Internal evaluation)



Cutting Conditions: Vc = 80 m/min, f = 0.06 mm/rev,
Cutting Dia. ø3, Drilling depth: 6 mm Wet (External Coolant) Workpiece: S50C

KDZ with MEGACOAT NANO EX

Wear Resistance **Adhesion Resistance** **Chipping Resistance**

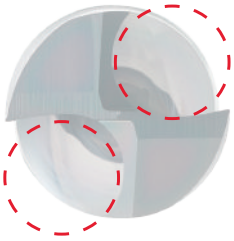
Provides high resistance performance for precision drilling

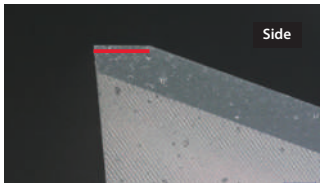
3 Unique shape for excellent machining performance

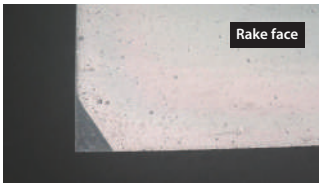
KDZ

Stability-oriented

A Large Chip Pocket
Excellent Chip Evacuation







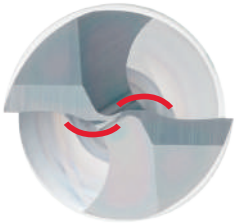
Flat land specifications to improve fracture resistance

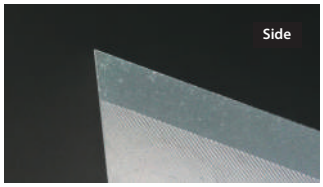
KDZ-HP

Sharp Edge

Special design improves chip thinning and discharge

Reducing the load on the center of the cutting edge



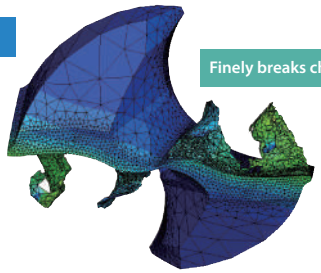


There is no land and a rake face is formed from the cutting edge

Reduced impact forces when entering provides high-precision and stable machining (~ø12)

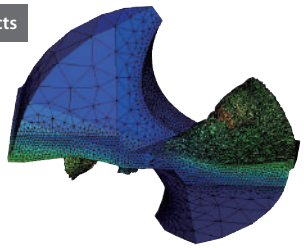
Chipping simulation comparison (Image) (Internal evaluation)

KDZ-HP

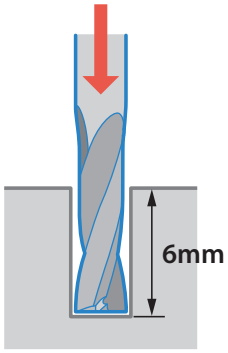


Finely breaks chips into small pieces

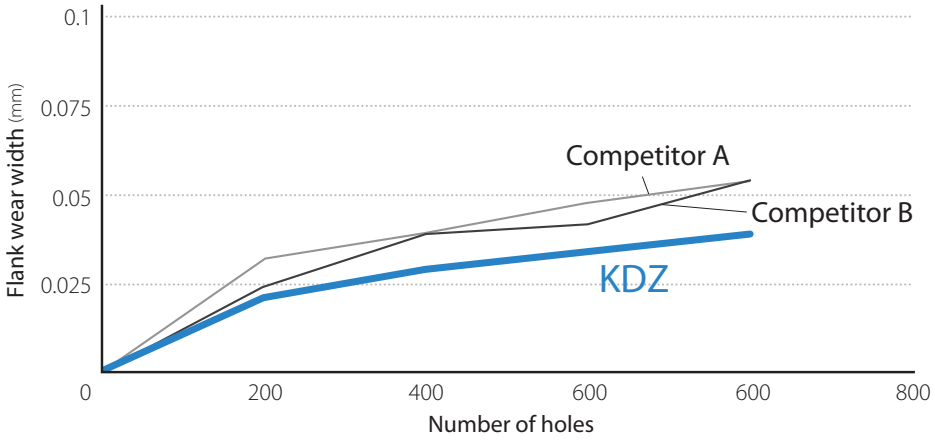
Conventional products



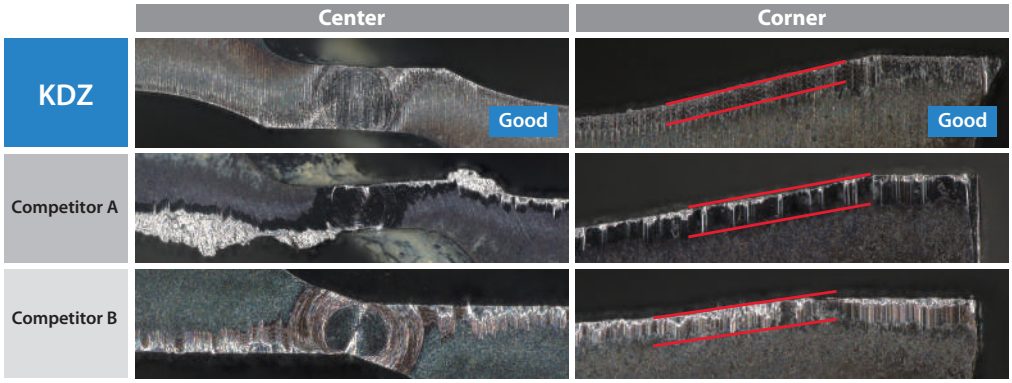
Drilling Performance (Internal evaluation)



Wear Resistance Comparison



Edge condition



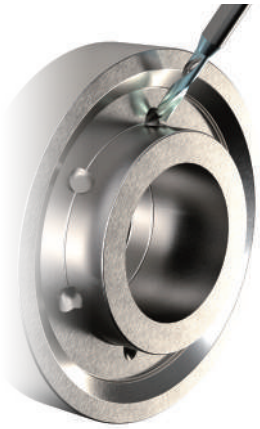
Cutting Conditions: Vc = 80 m/min, f = 0.06 mm/rev, Cutting Dia. ø3, Drilling depth: 6 mm Wet (External Coolant) Workpiece: S50C

KDZ restrains wear. Less welding and chipping
Showed high wear resistance, adhesion resistance and chipping resistance

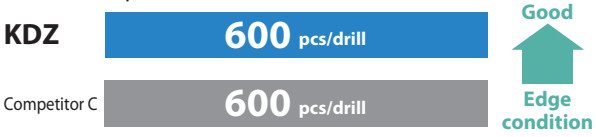
Case Studies

Automotive Parts S25C

n = 6,000 min^{-1} (Vc = 55 m/min)
Vf = 115 mm/min (f = 0.02 mm/rev)
Drilling depth 3 mm Wet (External coolant) KDZ0300X3.0S060N

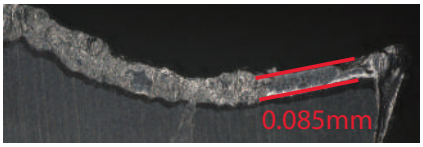


Number of Workpieces

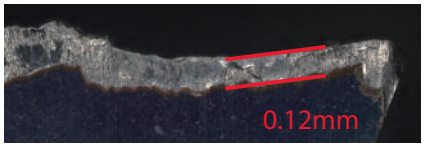


Edge condition

KDZ



Competitor C



KDZ provides superior wear resistance and stable machining

(User evaluation)

4 New KDZ-HP Type C with Internal Coolant NEW

High-precision, stable machining with five advantages

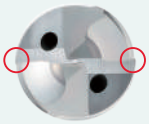
Both sharpness and edge strength, which are difficult to achieve with conventional tools

1 Special chip thinning design

High rigidity and excellent chip control

2 Corner: Flat land specifications

Sharpness and chipping resistance



3 Micro honing

Maintains sharpness and improves wear resistance

4 Unique flute shape

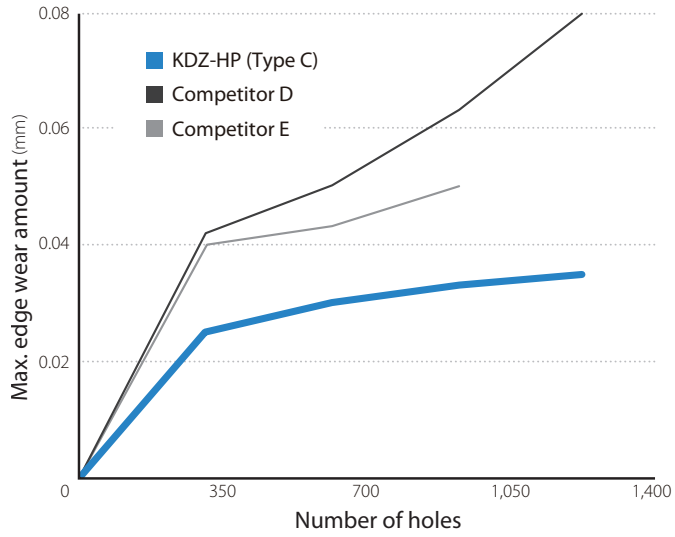
Optimized chip evacuation and rigidity

5 Double Margin

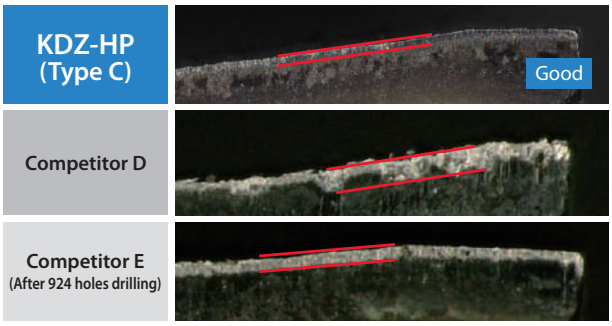
High-precision machining with guiding action

Solution Excellent wear resistance in stainless steel machining

Wear resistance comparison (Internal evaluation)



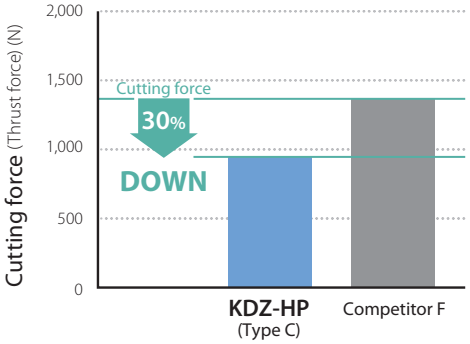
Flank wear condition (After 1,232 holes drilling)



Cutting Conditions: Vc = 80 m/min, f = 0.07 mm/rev, H = 12 mm, Internal Coolant
Workpiece: SUS304

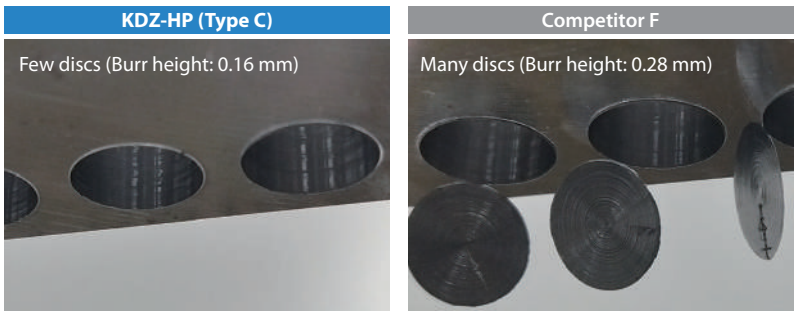
KDZ-HP (Type C) showed less adhesion to the cutting edge
Provides excellent wear resistance

Cutting force comparison (Internal evaluation)



Cutting Conditions: n = 3,180 min^{-1}, Vf = 795 mm/min, Drilling Depth 10 mm, Wet (Internal Coolant) Cutting Dia. ø10mm Workpiece: S50C

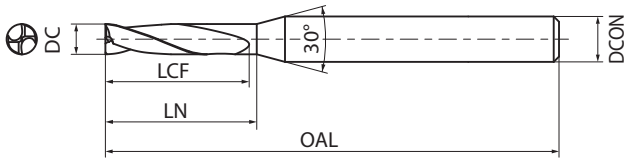
Burr Formation Comparison (Internal evaluation)

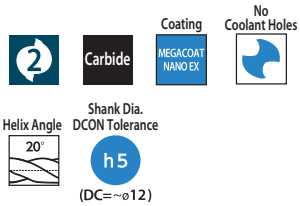


Cutting Conditions: n = 3,800 min^{-1}, Vf = 950 mm/min, Drilling Depth 12 mm, Wet (Internal Coolant) Cutting Dia. ø10mm Workpiece: S50C

KDZ-HP (Type C) is lower in cutting force. There is few remaining discs and the sharpness is good.

KDZ Short





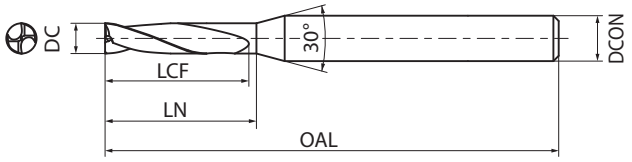
Description	Stock	Dimension (mm)					
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL
KDZ0100X1.5S040N	●	1.0	0 -0.010	3	4	4	50
KDZ0110X1.5S040N	●	1.1	0 -0.010	3.5	4.5	4	50
KDZ0120X1.5S040N	●	1.2					
KDZ0130X1.5S040N	●	1.3	0 -0.010	4	5	4	50
KDZ0140X1.5S040N	●	1.4	0 -0.010	4.5	5.5	4	50
KDZ0150X1.5S040N	●	1.5	0 -0.010	5	6	4	50
KDZ0160X1.5S040N	●	1.6					
KDZ0170X1.5S040N	●	1.7	0 -0.010	5.5	6.5	4	50
KDZ0180X1.5S040N	●	1.8	0 -0.010	6	7	4	50
KDZ0190X1.5S040N	●	1.9					
KDZ0200X1.5S040N	●	2.0					
KDZ0210X1.5S040N	●	2.1	0 -0.010	7	8	4	50
KDZ0220X1.5S040N	●	2.2					
KDZ0230X1.5S040N	●	2.3					
KDZ0240X1.5S040N	●	2.4	0 -0.010	8	9	4	50
KDZ0250X1.5S040N	●	2.5					
KDZ0260X1.5S040N	●	2.6					
KDZ0270X1.5S040N	●	2.7	0 -0.010	9	10	4	50
KDZ0280X1.5S040N	●	2.8					
KDZ0290X1.5S040N	●	2.9					
KDZ0300X1.5S060N	●	3.0				6	60
KDZ0310X1.5S060N	●	3.1	0 -0.012	10	11	6	60
KDZ0320X1.5S060N	●	3.2					
KDZ0330X1.5S060N	●	3.3					
KDZ0340X1.5S060N	●	3.4	0 -0.012	11	12	6	60
KDZ0350X1.5S060N	●	3.5					
KDZ0360X1.5S060N	●	3.6					

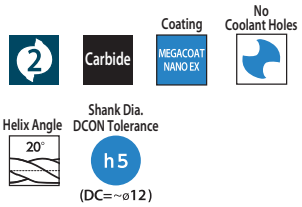
The standard drilling depth is 1.5 D (1.5 x DC).

Description	Stock	Dimension (mm)					
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL
KDZ0370X1.5S060N	●	3.7	0 -0.012	12	13	6	60
KDZ0380X1.5S060N	●	3.8					
KDZ0390X1.5S060N	●	3.9					
KDZ0400X1.5S060N	●	4.0					
KDZ0410X1.5S060N	●	4.1	0 -0.012	13	14	6	60
KDZ0420X1.5S060N	●	4.2					
KDZ0430X1.5S060N	●	4.3					
KDZ0440X1.5S060N	●	4.4	0 -0.012	14	15	6	60
KDZ0450X1.5S060N	●	4.5					
KDZ0460X1.5S060N	●	4.6					
KDZ0470X1.5S060N	●	4.7	0 -0.012	15	16	6	60
KDZ0480X1.5S060N	●	4.8					
KDZ0490X1.5S060N	●	4.9					
KDZ0500X1.5S060N	●	5.0	0 -0.012	16	17	6	60
KDZ0510X1.5S060N	●	5.1					
KDZ0520X1.5S060N	●	5.2					
KDZ0530X1.5S060N	●	5.3					
KDZ0540X1.5S060N	●	5.4	0 -0.012	17	18	6	60
KDZ0550X1.5S060N	●	5.5					
KDZ0560X1.5S060N	●	5.6					
KDZ0570X1.5S060N	●	5.7	0 -0.012	18	19	6	60
KDZ0580X1.5S060N	●	5.8					
KDZ0590X1.5S060N	●	5.9					

●: Standard Stock

KDZ Short





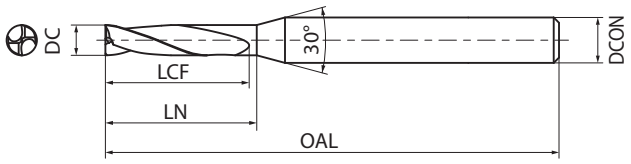
Description	Stock	Dimension (mm)					
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL
KDZ0600X1.5S060N	●	6.0	0 -0.012	19	21	6	60
KDZ0610X1.5S080N	●	6.1	0 -0.015			8	70
KDZ0620X1.5S080N	●	6.2					
KDZ0630X1.5S080N	●	6.3	0 -0.015	20	22	8	70
KDZ0640X1.5S080N	●	6.4					
KDZ0650X1.5S080N	●	6.5					
KDZ0660X1.5S080N	●	6.6					
KDZ0670X1.5S080N	●	6.7	0 -0.015	21	23	8	70
KDZ0680X1.5S080N	●	6.8					
KDZ0690X1.5S080N	●	6.9					
KDZ0700X1.5S080N	●	7.0	0 -0.015	22	24	8	70
KDZ0710X1.5S080N	●	7.1					
KDZ0720X1.5S080N	●	7.2					
KDZ0730X1.5S080N	●	7.3	0 -0.015	23	25	8	70
KDZ0740X1.5S080N	●	7.4					
KDZ0750X1.5S080N	●	7.5					
KDZ0760X1.5S080N	●	7.6	0 -0.015	24	25	8	70
KDZ0770X1.5S080N	●	7.7					
KDZ0780X1.5S080N	●	7.8					
KDZ0790X1.5S080N	●	7.9					
KDZ0800X1.5S080N	●	8.0	0 -0.015	25	27	8	70
KDZ0810X1.5S100N	●	8.1				10	80
KDZ0820X1.5S100N	●	8.2					
KDZ0830X1.5S100N	●	8.3	0 -0.015	26	28	10	80
KDZ0840X1.5S100N	●	8.4					
KDZ0850X1.5S100N	●	8.5					
KDZ0860X1.5S100N	●	8.6	0 -0.015	27	29	10	80
KDZ0870X1.5S100N	●	8.7					
KDZ0880X1.5S100N	●	8.8					
KDZ0890X1.5S100N	●	8.9	0 -0.015	28	30	10	80
KDZ0900X1.5S100N	●	9.0					
KDZ0910X1.5S100N	●	9.1					

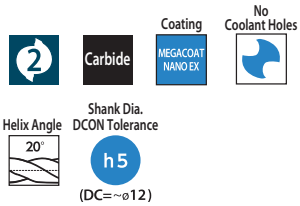
The standard drilling depth is 1.5 D (1.5 x DC).

Description	Stock	Dimension (mm)					
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL
KDZ0920X1.5S100N	●	9.2	0 -0.015	29	31	10	80
KDZ0930X1.5S100N	●	9.3					
KDZ0940X1.5S100N	●	9.4					
KDZ0950X1.5S100N	●	9.5					
KDZ0960X1.5S100N	●	9.6	0 -0.015	30	32	10	80
KDZ0970X1.5S100N	●	9.7					
KDZ0980X1.5S100N	●	9.8					
KDZ0990X1.5S100N	●	9.9	0 -0.015	31	33	10	80
KDZ1000X1.5S100N	●	10.0					
KDZ1010X1.5S120N	●	10.1	0 -0.018			12	100
KDZ1020X1.5S120N	●	10.2	0 -0.018	32	34	12	100
KDZ1030X1.5S120N	●	10.3					
KDZ1040X1.5S120N	●	10.4					
KDZ1050X1.5S120N	●	10.5	0 -0.018	33	35	12	100
KDZ1060X1.5S120N	●	10.6					
KDZ1070X1.5S120N	●	10.7					
KDZ1080X1.5S120N	●	10.8					
KDZ1090X1.5S120N	●	10.9	0 -0.018	34	36	12	100
KDZ1100X1.5S120N	●	11.0					
KDZ1110X1.5S120N	●	11.1					
KDZ1120X1.5S120N	●	11.2	0 -0.018	35	37	12	100
KDZ1130X1.5S120N	●	11.3					
KDZ1140X1.5S120N	●	11.4					
KDZ1150X1.5S120N	●	11.5	0 -0.018	36	38	12	100
KDZ1160X1.5S120N	●	11.6					
KDZ1170X1.5S120N	●	11.7					
KDZ1180X1.5S120N	●	11.8					
KDZ1190X1.5S120N	●	11.9					
KDZ1200X1.5S120N	●	12.0	0 -0.018	37	39	12	100

●: Standard Stock

KDZ Regular





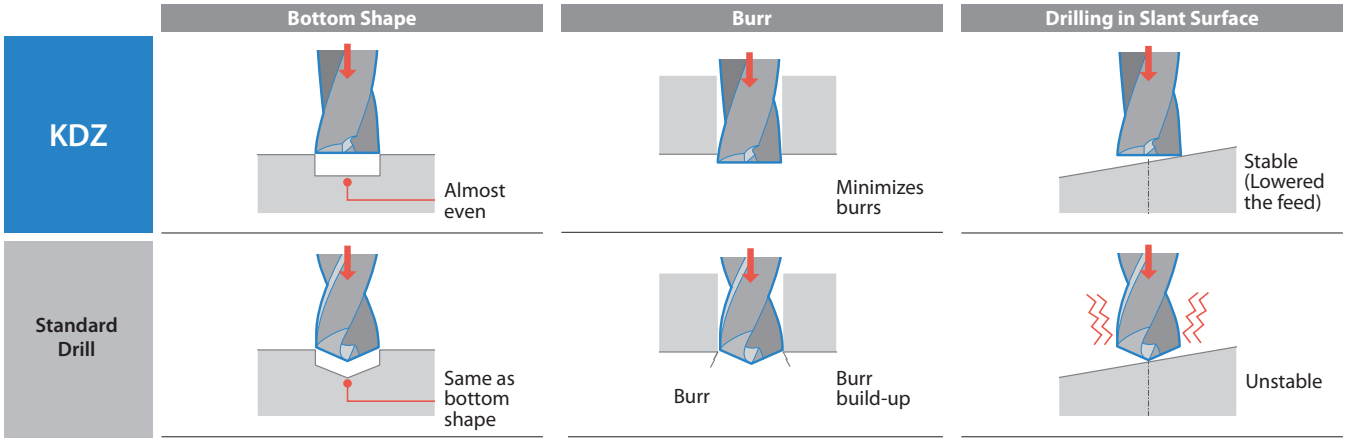
Description	Stock	Dimension (mm)					
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL
KDZ0300X3.0S060N	●	3.0	0 -0.010	14	15	6	60
KDZ0310X3.0S060N	●	3.1	0 -0.012				
KDZ0320X3.0S060N	●	3.2					
KDZ0330X3.0S060N	●	3.3	0 -0.012	15	16	6	60
KDZ0340X3.0S060N	●	3.4					
KDZ0350X3.0S060N	●	3.5	0 -0.012	17	18	6	60
KDZ0360X3.0S060N	●	3.6					
KDZ0370X3.0S060N	●	3.7					
KDZ0380X3.0S060N	●	3.8					
KDZ0390X3.0S060N	●	3.9					
KDZ0400X3.0S060N	●	4.0	0 -0.012	19	20	6	60
KDZ0410X3.0S060N	●	4.1					
KDZ0420X3.0S060N	●	4.2	0 -0.012	20	21	6	60
KDZ0430X3.0S060N	●	4.3					
KDZ0440X3.0S060N	●	4.4					
KDZ0450X3.0S060N	●	4.5	0 -0.012	21	22	6	60
KDZ0460X3.0S060N	●	4.6					
KDZ0470X3.0S060N	●	4.7					

Description	Stock	Dimension (mm)					
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL
KDZ0480X3.0S060N	●	4.8	0 -0.012	21	22	6	60
KDZ0490X3.0S060N	●	4.9					
KDZ0500X3.0S060N	●	5.0	0 -0.012	23	24	6	60
KDZ0510X3.0S060N	●	5.1					
KDZ0520X3.0S060N	●	5.2					
KDZ0530X3.0S060N	●	5.3	0 -0.012	24	25	6	60
KDZ0540X3.0S060N	●	5.4					
KDZ0550X3.0S060N	●	5.5	0 -0.012	25	26	6	60
KDZ0560X3.0S060N	●	5.6	0 -0.012	26	27	6	60
KDZ0570X3.0S060N	●	5.7					
KDZ0580X3.0S060N	●	5.8					
KDZ0590X3.0S060N	●	5.9					
KDZ0600X3.0S060N	●	6.0	0 -0.012	28	28	6	60
KDZ0610X3.0S080N	●	6.1	0 -0.015		29	8	70
KDZ0620X3.0S080N	●	6.2					
KDZ0630X3.0S080N	●	6.3					
KDZ0640X3.0S080N	●	6.4					
KDZ0650X3.0S080N	●	6.5	0 -0.015	30	31	8	70

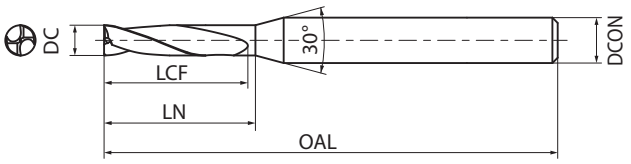
The standard drilling depth is 2.0 D (2.0 x DC).
Pecking is recommended when drilling depth is 2D or over

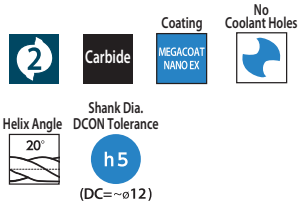
●: Standard Stock

Advantages of Flat Bottom Drill



KDZ Regular





Description	Stock	Dimension (mm)					
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL
KDZ0660X3.0S080N	●	6.6	0 -0.015	30	31	8	70
KDZ0670X3.0S080N	●	6.7					
KDZ0680X3.0S080N	●	6.8	0 -0.015	31	32	8	70
KDZ0690X3.0S080N	●	6.9					
KDZ0700X3.0S080N	●	7.0	0 -0.015	32	33	8	70
KDZ0710X3.0S080N	●	7.1					
KDZ0720X3.0S080N	●	7.2					
KDZ0730X3.0S080N	●	7.3					
KDZ0740X3.0S080N	●	7.4					
KDZ0750X3.0S080N	●	7.5	0 -0.015	34	35	8	70
KDZ0760X3.0S080N	●	7.6					
KDZ0770X3.0S080N	●	7.7					
KDZ0780X3.0S080N	●	7.8					
KDZ0790X3.0S080N	●	7.9					
KDZ0800X3.0S080N	●	8.0	0 -0.015	36	36	8	70
KDZ0810X3.0S100N	●	8.1			37	10	80
KDZ0820X3.0S100N	●	8.2					
KDZ0830X3.0S100N	●	8.3					
KDZ0840X3.0S100N	●	8.4					
KDZ0850X3.0S100N	●	8.5	0 -0.015	38	39	10	80
KDZ0860X3.0S100N	●	8.6					
KDZ0870X3.0S100N	●	8.7					
KDZ0880X3.0S100N	●	8.8	0 -0.015	39	40	10	80
KDZ0890X3.0S100N	●	8.9					
KDZ0900X3.0S100N	●	9.0	0 -0.015	40	41	10	80
KDZ0910X3.0S100N	●	9.1					
KDZ0920X3.0S100N	●	9.2					
KDZ0930X3.0S100N	●	9.3					
KDZ0940X3.0S100N	●	9.4					

Description	Stock	Dimension (mm)					
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL
KDZ0950X3.0S100N	●	9.5	0 -0.015	42	43	10	80
KDZ0960X3.0S100N	●	9.6					
KDZ0970X3.0S100N	●	9.7					
KDZ0980X3.0S100N	●	9.8					
KDZ0990X3.0S100N	●	9.9					
KDZ1000X3.0S100N	●	10.0	0 -0.015	45	45	10	80
KDZ1010X3.0S120N	●	10.1	0 -0.018		46	12	100
KDZ1020X3.0S120N	●	10.2					
KDZ1030X3.0S120N	●	10.3	0 -0.018	46	47	12	100
KDZ1040X3.0S120N	●	10.4					
KDZ1050X3.0S120N	●	10.5	0 -0.018	47	48	12	100
KDZ1060X3.0S120N	●	10.6					
KDZ1070X3.0S120N	●	10.7					
KDZ1080X3.0S120N	●	10.8					
KDZ1090X3.0S120N	●	10.9					
KDZ1100X3.0S120N	●	11.0	0 -0.018	51	52	12	100
KDZ1110X3.0S120N	●	11.1					
KDZ1120X3.0S120N	●	11.2					
KDZ1130X3.0S120N	●	11.3					
KDZ1140X3.0S120N	●	11.4					
KDZ1150X3.0S120N	●	11.5	0 -0.018	53	54	12	100
KDZ1160X3.0S120N	●	11.6					
KDZ1170X3.0S120N	●	11.7					
KDZ1180X3.0S120N	●	11.8					
KDZ1190X3.0S120N	●	11.9					
KDZ1200X3.0S120N	●	12.0	0 -0.018	54	54	12	100

●: Standard Stock

The standard drilling depth is 2.0 D (2.0 x DC).
Pecking is recommended when drilling depth is 2D or over

KDZ-HP Short

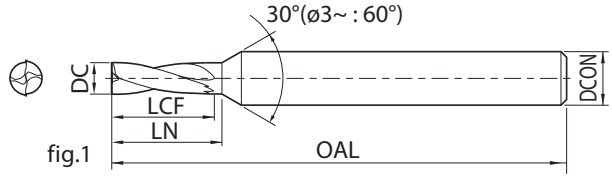


fig.1

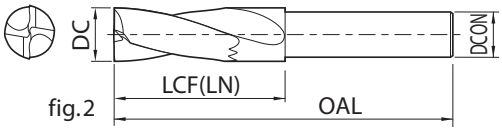
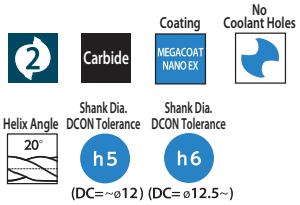


fig.2



Description	Stock	Dimension (mm)						Shape
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL	
KDZ0100X1.5S040N-HP	●	1.0	0 -0.010	3.5	4.3	4	50	fig.1
KDZ0110X1.5S040N-HP	●	1.1	0 -0.010	3.9	4.7	4	50	fig.1
KDZ0120X1.5S040N-HP	●	1.2	0 -0.010	4.3	5.1	4	50	fig.1
KDZ0130X1.5S040N-HP	●	1.3	0 -0.010	4.7	5.5	4	50	fig.1
KDZ0140X1.5S040N-HP	●	1.4	0 -0.010	5.1	5.9	4	50	fig.1
KDZ0150X1.5S040N-HP	●	1.5	0 -0.010	5.5	6.3	4	50	fig.1
KDZ0160X1.5S040N-HP	●	1.6	0 -0.010	5.7	6.5	4	50	fig.1
KDZ0170X1.5S040N-HP	●	1.7	0 -0.010	5.9	6.7	4	50	fig.1
KDZ0180X1.5S040N-HP	●	1.8	0 -0.010	6.1	6.9	4	50	fig.1
KDZ0190X1.5S040N-HP	●	1.9	0 -0.010	6.3	7.1	4	50	fig.1
KDZ0200X1.5S040N-HP	●	2.0	0 -0.010	6.5	7.3	4	50	fig.1
KDZ0210X1.5S040N-HP	●	2.1	0 -0.010	6.9	7.7	4	50	fig.1
KDZ0220X1.5S040N-HP	●	2.2	0 -0.010	7.3	8.1	4	50	fig.1
KDZ0230X1.5S040N-HP	●	2.3	0 -0.010	7.7	8.5	4	50	fig.1
KDZ0240X1.5S040N-HP	●	2.4	0 -0.010	8.1	8.9	4	50	fig.1
KDZ0250X1.5S040N-HP	●	2.5	0 -0.010	8.5	9.3	4	50	fig.1
KDZ0260X1.5S040N-HP	●	2.6	0 -0.010	8.8	9.5	4	50	fig.1
KDZ0270X1.5S040N-HP	●	2.7	0 -0.010	9.1	9.8	4	50	fig.1
KDZ0280X1.5S040N-HP	●	2.8	0 -0.010	9.3	10.0	4	50	fig.1
KDZ0290X1.5S040N-HP	●	2.9	0 -0.010	9.5	10.3	4	50	fig.1
KDZ0300X1.5S060N-HP	●	3.0	0 -0.010	9	10	6	60	fig.1
KDZ0310X1.5S060N-HP	●	3.1	0 -0.012	10	11	6	60	fig.1
KDZ0320X1.5S060N-HP	●	3.2						
KDZ0330X1.5S060N-HP	●	3.3						
KDZ0340X1.5S060N-HP	●	3.4	0 -0.012	11	12	6	60	fig.1
KDZ0350X1.5S060N-HP	●	3.5						
KDZ0360X1.5S060N-HP	●	3.6						
KDZ0370X1.5S060N-HP	●	3.7	0 -0.012	12	13	6	60	fig.1
KDZ0380X1.5S060N-HP	●	3.8						
KDZ0390X1.5S060N-HP	●	3.9						
KDZ0400X1.5S060N-HP	●	4.0						
KDZ0410X1.5S060N-HP	●	4.1	0 -0.012	13	14	6	60	fig.1
KDZ0420X1.5S060N-HP	●	4.2						
KDZ0430X1.5S060N-HP	●	4.3						

Description	Stock	Dimension (mm)						Shape
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL	
KDZ0440X1.5S060N-HP	●	4.4	0 -0.012	14	15	6	60	fig.1
KDZ0450X1.5S060N-HP	●	4.5						
KDZ0460X1.5S060N-HP	●	4.6						
KDZ0470X1.5S060N-HP	●	4.7	0 -0.012	15	16	6	60	fig.1
KDZ0480X1.5S060N-HP	●	4.8						
KDZ0490X1.5S060N-HP	●	4.9						
KDZ0500X1.5S060N-HP	●	5.0	0 -0.012	16	17	6	60	fig.1
KDZ0510X1.5S060N-HP	●	5.1						
KDZ0520X1.5S060N-HP	●	5.2						
KDZ0530X1.5S060N-HP	●	5.3						
KDZ0540X1.5S060N-HP	●	5.4	0 -0.012	17	18	6	60	fig.1
KDZ0550X1.5S060N-HP	●	5.5						
KDZ0560X1.5S060N-HP	●	5.6						
KDZ0570X1.5S060N-HP	●	5.7	0 -0.012	18	19	6	60	fig.1
KDZ0580X1.5S060N-HP	●	5.8						
KDZ0590X1.5S060N-HP	●	5.9						
KDZ0600X1.5S060N-HP	●	6.0	0 -0.012	19	21	6	60	fig.1
KDZ0610X1.5S080N-HP	●	6.1	0 -0.015	19	21	8	70	fig.1
KDZ0620X1.5S080N-HP	●	6.2						
KDZ0630X1.5S080N-HP	●	6.3	0 -0.015	20	22	8	70	fig.1
KDZ0640X1.5S080N-HP	●	6.4						
KDZ0650X1.5S080N-HP	●	6.5						
KDZ0660X1.5S080N-HP	●	6.6						
KDZ0670X1.5S080N-HP	●	6.7	0 -0.015	21	23	8	70	fig.1
KDZ0680X1.5S080N-HP	●	6.8						
KDZ0690X1.5S080N-HP	●	6.9						
KDZ0700X1.5S080N-HP	●	7.0	0 -0.015	22	24	8	70	fig.1
KDZ0710X1.5S080N-HP	●	7.1						
KDZ0720X1.5S080N-HP	●	7.2						
KDZ0730X1.5S080N-HP	●	7.3	0 -0.015	23	25	8	70	fig.1
KDZ0740X1.5S080N-HP	●	7.4						
KDZ0750X1.5S080N-HP	●	7.5						

●: Standard Stock

The standard drilling depth is 1.5 D (1.5 x DC).

KDZ-HP Short

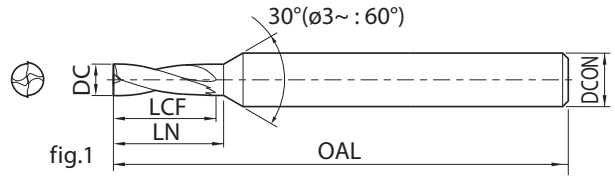


fig.1

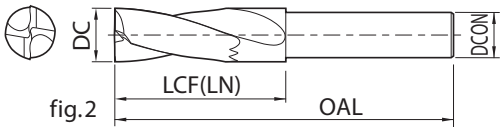
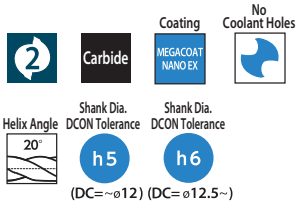


fig.2



Description	Stock	Dimension (mm)						Shape
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL	
KDZ0760X1.5S080N-HP	●	7.6	0 -0.015	24	25	8	70	fig.1
KDZ0770X1.5S080N-HP	●	7.7						
KDZ0780X1.5S080N-HP	●	7.8						
KDZ0790X1.5S080N-HP	●	7.9						
KDZ0800X1.5S080N-HP	●	8.0	0 -0.015	25	27	8	70	fig.1
KDZ0810X1.5S100N-HP	●	8.1	0 -0.015	25	27	10	80	fig.1
KDZ0820X1.5S100N-HP	●	8.2						
KDZ0830X1.5S100N-HP	●	8.3	0 -0.015	26	28	10	80	fig.1
KDZ0840X1.5S100N-HP	●	8.4						
KDZ0850X1.5S100N-HP	●	8.5						
KDZ0860X1.5S100N-HP	●	8.6	0 -0.015	27	29	10	80	fig.1
KDZ0870X1.5S100N-HP	●	8.7						
KDZ0880X1.5S100N-HP	●	8.8						
KDZ0890X1.5S100N-HP	●	8.9	0 -0.015	28	30	10	80	fig.1
KDZ0900X1.5S100N-HP	●	9.0						
KDZ0910X1.5S100N-HP	●	9.1						
KDZ0920X1.5S100N-HP	●	9.2	0 -0.015	29	31	10	80	fig.1
KDZ0930X1.5S100N-HP	●	9.3						
KDZ0940X1.5S100N-HP	●	9.4						
KDZ0950X1.5S100N-HP	●	9.5						
KDZ0960X1.5S100N-HP	●	9.6	0 -0.015	30	32	10	80	fig.1
KDZ0970X1.5S100N-HP	●	9.7						
KDZ0980X1.5S100N-HP	●	9.8						
KDZ0990X1.5S100N-HP	●	9.9	0 -0.015	31	33	10	80	fig.1
KDZ1000X1.5S100N-HP	●	10.0						
KDZ1010X1.5S120N-HP	●	10.1	0 -0.018	31	33	12	100	fig.1
KDZ1020X1.5S120N-HP	●	10.2	0 -0.018	32	34	12	100	fig.1
KDZ1030X1.5S120N-HP	●	10.3						
KDZ1040X1.5S120N-HP	●	10.4						
KDZ1050X1.5S120N-HP	●	10.5	0 -0.018	33	35	12	100	fig.1
KDZ1060X1.5S120N-HP	●	10.6						
KDZ1070X1.5S120N-HP	●	10.7						
KDZ1080X1.5S120N-HP	●	10.8						

The standard drilling depth is 1.5 D (1.5 x DC).

Description	Stock	Dimension (mm)						Shape
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL	
KDZ1090X1.5S120N-HP	●	10.9	0 -0.018	34	36	12	100	fig.1
KDZ1100X1.5S120N-HP	●	11.0						
KDZ1110X1.5S120N-HP	●	11.1						
KDZ1120X1.5S120N-HP	●	11.2	0 -0.018	35	37	12	100	fig.1
KDZ1130X1.5S120N-HP	●	11.3						
KDZ1140X1.5S120N-HP	●	11.4						
KDZ1150X1.5S120N-HP	●	11.5	0 -0.018	36	38	12	100	fig.1
KDZ1160X1.5S120N-HP	●	11.6						
KDZ1170X1.5S120N-HP	●	11.7						
KDZ1180X1.5S120N-HP	●	11.8						
KDZ1190X1.5S120N-HP	●	11.9						
KDZ1200X1.5S120N-HP	●	12.0	0 -0.018	37	39	12	100	fig.1
KDZ1250X1.5S120N-HP	●	12.5	0 -0.018	41	41	12	100	fig.2
KDZ1300X1.5S120N-HP	●	13.0		43	43			
KDZ1350X1.5S120N-HP	●	13.5		44	44			
KDZ1400X1.5S120N-HP	●	14.0		45	45			
KDZ1450X1.5S120N-HP	●	14.5	0 -0.018	47	47	12	115	fig.2
KDZ1500X1.5S120N-HP	●	15.0		48	48			
KDZ1550X1.5S120N-HP	●	15.5		50	50			
KDZ1600X1.5S160N-HP	●	16.0	0 -0.018	52	52	16	115	fig.1
KDZ1650X1.5S160N-HP	●	16.5	0 -0.018	53	53	16	115	fig.2
KDZ1700X1.5S160N-HP	●	17.0		54	54			
KDZ1750X1.5S160N-HP	●	17.5		56	56			
KDZ1800X1.5S160N-HP	●	18.0		57	57			
KDZ1850X1.5S160N-HP	●	18.5	0 -0.021	59	59	16	125	fig.2
KDZ1900X1.5S160N-HP	●	19.0		60	60			
KDZ1950X1.5S160N-HP	●	19.5		62	62			
KDZ2000X1.5S200N-HP	●	20.0	0 -0.021	63	63	20	125	fig.1

●: Standard Stock

KDZ-HP Short (Long shank)

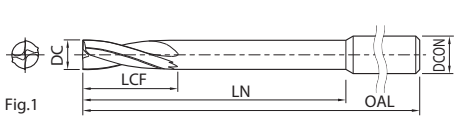


Fig.1

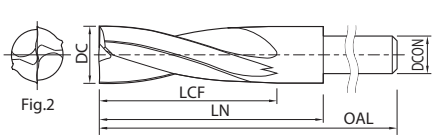
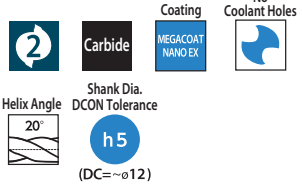


Fig.2



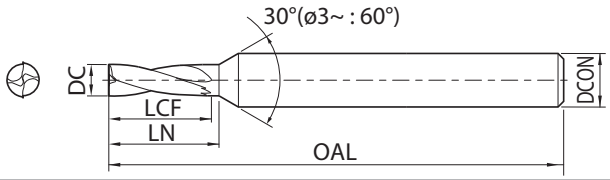
Description	Stock	Dimension (mm)						Shape
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL	
KDZ0300X1.5S060N-HPL	●	3.0	0 -0.010	9.0	30	6	100	fig.1
KDZ0310X1.5S060N-HPL	MTO	3.1	0 -0.012	10	31	6	100	fig.1
KDZ0320X1.5S060N-HPL	MTO	3.2			32			
KDZ0330X1.5S060N-HPL	MTO	3.3			33			
KDZ0340X1.5S060N-HPL	MTO	3.4	0 -0.012	11	34	6	100	fig.1
KDZ0350X1.5S060N-HPL	●	3.5			35			
KDZ0360X1.5S060N-HPL	MTO	3.6			36			
KDZ0370X1.5S060N-HPL	MTO	3.7	0 -0.012	12	37	6	100	fig.1
KDZ0380X1.5S060N-HPL	MTO	3.8			38			
KDZ0390X1.5S060N-HPL	MTO	3.9			39			
KDZ0400X1.5S060N-HPL	●	4.0			40			
KDZ0410X1.5S060N-HPL	MTO	4.1	0 -0.012	13	41	6	100	fig.1
KDZ0420X1.5S060N-HPL	MTO	4.2			42			
KDZ0430X1.5S060N-HPL	MTO	4.3			43			
KDZ0440X1.5S060N-HPL	MTO	4.4	0 -0.012	14	44	6	100	fig.1
KDZ0450X1.5S060N-HPL	●	4.5			45			
KDZ0460X1.5S060N-HPL	MTO	4.6			46			
KDZ0470X1.5S060N-HPL	MTO	4.7	0 -0.012	15	47	6	100	fig.1
KDZ0480X1.5S060N-HPL	MTO	4.8			48			
KDZ0490X1.5S060N-HPL	MTO	4.9			49			
KDZ0500X1.5S060N-HPL	●	5.0	0 -0.012	16	50	6	110	fig.1
KDZ0510X1.5S060N-HPL	MTO	5.1			51			
KDZ0520X1.5S060N-HPL	MTO	5.2			52			
KDZ0530X1.5S060N-HPL	MTO	5.3			53			
KDZ0540X1.5S060N-HPL	MTO	5.4	0 -0.012	17	54	6	110	fig.1
KDZ0550X1.5S060N-HPL	●	5.5			55			
KDZ0560X1.5S060N-HPL	MTO	5.6			56			
KDZ0570X1.5S060N-HPL	MTO	5.7	0 -0.012	18	57	6	110	fig.1
KDZ0580X1.5S060N-HPL	MTO	5.8			58			
KDZ0590X1.5S060N-HPL	MTO	5.9			59			
KDZ0600X1.5S060N-HPL	●	6.0	0 -0.012	19	60	6	120	fig.1
KDZ0610X1.5S060N-HPL	MTO	6.1	0 -0.015		29			fig.2
KDZ0620X1.5S060N-HPL	MTO	6.2						
KDZ0630X1.5S060N-HPL	MTO	6.3	0 -0.015	20	29.5	6	120	fig.2
KDZ0640X1.5S060N-HPL	MTO	6.4						
KDZ0650X1.5S060N-HPL	●	6.5						
KDZ0660X1.5S060N-HPL	MTO	6.6						
KDZ0670X1.5S060N-HPL	MTO	6.7	0 -0.015	21	30	6	120	fig.2
KDZ0680X1.5S060N-HPL	MTO	6.8						
KDZ0690X1.5S060N-HPL	MTO	6.9						
KDZ0700X1.5S060N-HPL	●	7.0	0 -0.015	22	30	6	120	fig.2
KDZ0710X1.5S060N-HPL	MTO	7.1			30.5			
KDZ0720X1.5S060N-HPL	MTO	7.2						
KDZ0730X1.5S060N-HPL	MTO	7.3	0 -0.015	23	30.5	6	120	fig.2
KDZ0740X1.5S060N-HPL	MTO	7.4						
KDZ0750X1.5S060N-HPL	●	7.5						

Description	Stock	Dimension (mm)						Shape
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL	
KDZ0760X1.5S060N-HPL	MTO	7.6	0 -0.015	24	31	6	120	fig.2
KDZ0770X1.5S060N-HPL	MTO	7.7						
KDZ0780X1.5S060N-HPL	MTO	7.8						
KDZ0790X1.5S060N-HPL	MTO	7.9						
KDZ0800X1.5S080N-HPL	●	8.0	0 -0.015	25	80	8	130	fig.1
KDZ0810X1.5S080N-HPL	MTO	8.1			31.5			fig.2
KDZ0820X1.5S080N-HPL	MTO	8.2						
KDZ0830X1.5S080N-HPL	MTO	8.3	0 -0.015	26	31.5	8	130	fig.2
KDZ0840X1.5S080N-HPL	MTO	8.4			32			
KDZ0850X1.5S080N-HPL	●	8.5						
KDZ0860X1.5S080N-HPL	MTO	8.6	0 -0.015	27	32	8	130	fig.2
KDZ0870X1.5S080N-HPL	MTO	8.7						
KDZ0880X1.5S080N-HPL	MTO	8.8			32.5			
KDZ0890X1.5S080N-HPL	MTO	8.9	0 -0.015	28	32.5	8	130	fig.2
KDZ0900X1.5S080N-HPL	●	9.0						
KDZ0910X1.5S080N-HPL	MTO	9.1						
KDZ0920X1.5S080N-HPL	MTO	9.2	0 -0.015	29	32.5	8	130	fig.2
KDZ0930X1.5S080N-HPL	MTO	9.3						
KDZ0940X1.5S080N-HPL	MTO	9.4						
KDZ0950X1.5S080N-HPL	●	9.5						
KDZ0960X1.5S080N-HPL	MTO	9.6	0 -0.015	30	33.5	8	130	fig.2
KDZ0970X1.5S080N-HPL	MTO	9.7						
KDZ0980X1.5S080N-HPL	MTO	9.8						
KDZ0990X1.5S080N-HPL	MTO	9.9	0 -0.015	31	34.5	8	130	fig.2
KDZ1000X1.5S100N-HPL	●	10.0			100	10	150	fig.1
KDZ1010X1.5S100N-HPL	MTO	10.1	0 -0.018		35.5			fig.2
KDZ1020X1.5S100N-HPL	MTO	10.2	0 -0.018	32	35.5	10	150	fig.2
KDZ1030X1.5S100N-HPL	MTO	10.3			36			
KDZ1040X1.5S100N-HPL	MTO	10.4						
KDZ1050X1.5S100N-HPL	●	10.5	0 -0.018	33	36.5	10	150	fig.2
KDZ1060X1.5S100N-HPL	MTO	10.6						
KDZ1070X1.5S100N-HPL	MTO	10.7						
KDZ1080X1.5S100N-HPL	MTO	10.8						
KDZ1090X1.5S100N-HPL	MTO	10.9	0 -0.018	34	37.5	10	150	fig.2
KDZ1100X1.5S100N-HPL	●	11.0						
KDZ1110X1.5S100N-HPL	MTO	11.1						
KDZ1120X1.5S100N-HPL	MTO	11.2	0 -0.018	35	38.5	10	150	fig.2
KDZ1130X1.5S100N-HPL	MTO	11.3						
KDZ1140X1.5S100N-HPL	MTO	11.4						
KDZ1150X1.5S100N-HPL	●	11.5	0 -0.018	36	39.5	10	150	fig.2
KDZ1160X1.5S100N-HPL	MTO	11.6						
KDZ1170X1.5S100N-HPL	MTO	11.7						
KDZ1180X1.5S100N-HPL	MTO	11.8						
KDZ1190X1.5S100N-HPL	MTO	11.9						
KDZ1200X1.5S120N-HPL	●	12.0	0 -0.018	37	120	12	170	fig.1

●: Standard Stock MTO: Made to order

The standard drilling depth is 1.0 D (1.0 x DC).

KDZ-HP Regular



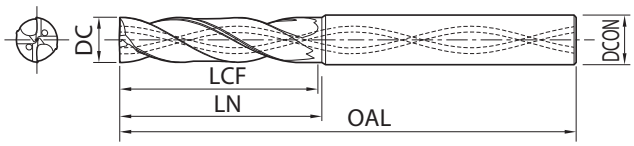
2 | Carbide | Coating: MEGACOAT NANO EX | No Coolant Holes | Helix Angle: 20° | Shank Dia. DCON Tolerance: h5 (DC=~ø12)

Description	Stock	Dimension (mm)					
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL
KDZ0300X3.0S060N-HP	●	3.0	0 -0.010	14	15	6	60
KDZ0310X3.0S060N-HP	●	3.1	0 -0.012	14	15	6	60
KDZ0320X3.0S060N-HP	●	3.2					
KDZ0330X3.0S060N-HP	●	3.3	0 -0.012	15	16	6	60
KDZ0340X3.0S060N-HP	●	3.4					
KDZ0350X3.0S060N-HP	●	3.5	0 -0.012	17	18	6	60
KDZ0360X3.0S060N-HP	●	3.6					
KDZ0370X3.0S060N-HP	●	3.7					
KDZ0380X3.0S060N-HP	●	3.8					
KDZ0390X3.0S060N-HP	●	3.9					
KDZ0400X3.0S060N-HP	●	4.0	0 -0.012	19	20	6	60
KDZ0410X3.0S060N-HP	●	4.1					
KDZ0420X3.0S060N-HP	●	4.2	0 -0.012	20	21	6	60
KDZ0430X3.0S060N-HP	●	4.3					
KDZ0440X3.0S060N-HP	●	4.4					
KDZ0450X3.0S060N-HP	●	4.5	0 -0.012	21	22	6	60
KDZ0460X3.0S060N-HP	●	4.6					
KDZ0470X3.0S060N-HP	●	4.7					
KDZ0480X3.0S060N-HP	●	4.8					
KDZ0490X3.0S060N-HP	●	4.9					
KDZ0500X3.0S060N-HP	●	5.0	0 -0.012	23	24	6	60
KDZ0510X3.0S060N-HP	●	5.1					
KDZ0520X3.0S060N-HP	●	5.2					
KDZ0530X3.0S060N-HP	●	5.3	0 -0.012	24	25	6	60
KDZ0540X3.0S060N-HP	●	5.4					
KDZ0550X3.0S060N-HP	●	5.5	0 -0.012	25	26	6	60
KDZ0560X3.0S060N-HP	●	5.6	0 -0.012	26	27	6	60
KDZ0570X3.0S060N-HP	●	5.7					
KDZ0580X3.0S060N-HP	●	5.8					
KDZ0590X3.0S060N-HP	●	5.9					
KDZ0600X3.0S060N-HP	●	6.0	0 -0.012	28	(28)	6	60
KDZ0610X3.0S080N-HP	●	6.1	0 -0.015	28	29	8	70
KDZ0620X3.0S080N-HP	●	6.2					
KDZ0630X3.0S080N-HP	●	6.3					
KDZ0640X3.0S080N-HP	●	6.4					
KDZ0650X3.0S080N-HP	●	6.5	0 -0.015	30	31	8	70
KDZ0660X3.0S080N-HP	●	6.6					
KDZ0670X3.0S080N-HP	●	6.7					
KDZ0680X3.0S080N-HP	●	6.8	0 -0.015	31	32	8	70
KDZ0690X3.0S080N-HP	●	6.9					
KDZ0700X3.0S080N-HP	●	7.0	0 -0.015	32	33	8	70
KDZ0710X3.0S080N-HP	●	7.1					
KDZ0720X3.0S080N-HP	●	7.2					
KDZ0730X3.0S080N-HP	●	7.3					
KDZ0740X3.0S080N-HP	●	7.4					
KDZ0750X3.0S080N-HP	●	7.5	0 -0.015	34	35	8	70
KDZ0760X3.0S080N-HP	●	7.6	0 -0.015	34	35	8	70
KDZ0770X3.0S080N-HP	●	7.7					
KDZ0780X3.0S080N-HP	●	7.8					
KDZ0790X3.0S080N-HP	●	7.9					
KDZ0800X3.0S080N-HP	●	8.0	0 -0.015	36	(36)	8	70
KDZ0810X3.0S100N-HP	●	8.1	0 -0.015	36	37	10	80
KDZ0820X3.0S100N-HP	●	8.2					
KDZ0830X3.0S100N-HP	●	8.3					
KDZ0840X3.0S100N-HP	●	8.4					
KDZ0850X3.0S100N-HP	●	8.5	0 -0.015	38	39	10	80
KDZ0860X3.0S100N-HP	●	8.6					
KDZ0870X3.0S100N-HP	●	8.7					
KDZ0880X3.0S100N-HP	●	8.8	0 -0.015	39	40	10	80
KDZ0890X3.0S100N-HP	●	8.9					
KDZ0900X3.0S100N-HP	●	9.0	0 -0.015	40	41	10	80
KDZ0910X3.0S100N-HP	●	9.1					
KDZ0920X3.0S100N-HP	●	9.2					
KDZ0930X3.0S100N-HP	●	9.3					
KDZ0940X3.0S100N-HP	●	9.4					
KDZ0950X3.0S100N-HP	●	9.5	0 -0.015	42	43	10	80
KDZ0960X3.0S100N-HP	●	9.6					
KDZ0970X3.0S100N-HP	●	9.7					
KDZ0980X3.0S100N-HP	●	9.8					
KDZ0990X3.0S100N-HP	●	9.9					
KDZ1000X3.0S100N-HP	●	10.0	0 -0.015	45	(45)	10	80
KDZ1010X3.0S120N-HP	●	10.1	0 -0.018	45	46	12	100
KDZ1020X3.0S120N-HP	●	10.2					
KDZ1030X3.0S120N-HP	●	10.3	0 -0.018	46	47	12	100
KDZ1040X3.0S120N-HP	●	10.4					
KDZ1050X3.0S120N-HP	●	10.5	0 -0.018	47	48	12	100
KDZ1060X3.0S120N-HP	●	10.6					
KDZ1070X3.0S120N-HP	●	10.7					
KDZ1080X3.0S120N-HP	●	10.8					
KDZ1090X3.0S120N-HP	●	10.9					
KDZ1100X3.0S120N-HP	●	11.0	0 -0.018	51	52	12	100
KDZ1110X3.0S120N-HP	●	11.1					
KDZ1120X3.0S120N-HP	●	11.2					
KDZ1130X3.0S120N-HP	●	11.3					
KDZ1140X3.0S120N-HP	●	11.4					
KDZ1150X3.0S120N-HP	●	11.5	0 -0.018	53	54	12	100
KDZ1160X3.0S120N-HP	●	11.6					
KDZ1170X3.0S120N-HP	●	11.7					
KDZ1180X3.0S120N-HP	●	11.8					
KDZ1190X3.0S120N-HP	●	11.9					
KDZ1200X3.0S120N-HP	●	12.0	0 -0.018	54	(54)	12	100

●: Standard Stock

The standard drilling depth is 2.0 D (2.0 x DC).
Pecking is recommended when drilling depth is 2D or over

KDZ-HP Regular (with coolant hole) Type C



2 | Carbide | Coating: MEGACOAT NANO EX | With Coolant Holes | Helix Angle: 30° | Shank Dia. DCON Tolerance: h5 (DC=~ø12)

Description	Stock	Dimension (mm)					
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL
KDZ0300X3.0S030C-HP	●	3.0	0 -0.010	13.5	15.5	3	68
KDZ0310X3.0S040C-HP	●	3.1	0 -0.012	14.0	16.0	4	72
KDZ0320X3.0S040C-HP	●	3.2		14.4	16.4		
KDZ0330X3.0S040C-HP	●	3.3		14.9	16.9		
KDZ0340X3.0S040C-HP	●	3.4		15.3	17.3		
KDZ0350X3.0S040C-HP	●	3.5		15.8	17.8		
KDZ0360X3.0S040C-HP	●	3.6	0 -0.012	16.2	18.2	4	72
KDZ0370X3.0S040C-HP	●	3.7		16.7	18.7		
KDZ0380X3.0S040C-HP	●	3.8		17.1	19.1		
KDZ0390X3.0S040C-HP	●	3.9		17.6	19.6		
KDZ0400X3.0S040C-HP	●	4.0		18.0	20.0		
KDZ0410X3.0S050C-HP	●	4.1	0 -0.012	18.5	20.5	5	80
KDZ0420X3.0S050C-HP	●	4.2		18.9	20.9		
KDZ0430X3.0S050C-HP	●	4.3		19.4	21.4		
KDZ0440X3.0S050C-HP	●	4.4		19.8	21.8		
KDZ0450X3.0S050C-HP	●	4.5		20.3	22.3		
KDZ0460X3.0S050C-HP	●	4.6	0 -0.012	20.7	22.7	5	80
KDZ0470X3.0S050C-HP	●	4.7		21.2	23.2		
KDZ0480X3.0S050C-HP	●	4.8		21.6	23.6		
KDZ0490X3.0S050C-HP	●	4.9		22.1	24.1		
KDZ0500X3.0S050C-HP	●	5.0		22.5	24.5		
KDZ0510X3.0S060C-HP	●	5.1	0 -0.012	23.0	25.0	6	82
KDZ0520X3.0S060C-HP	●	5.2		23.4	25.4		
KDZ0530X3.0S060C-HP	●	5.3		23.9	25.9		
KDZ0540X3.0S060C-HP	●	5.4		24.3	26.3		
KDZ0550X3.0S060C-HP	●	5.5		24.8	26.8		
KDZ0560X3.0S060C-HP	●	5.6	0 -0.012	25.2	27.2	6	82
KDZ0570X3.0S060C-HP	●	5.7		25.7	27.7		
KDZ0580X3.0S060C-HP	●	5.8		26.1	28.1		
KDZ0590X3.0S060C-HP	●	5.9		26.6	28.6		
KDZ0600X3.0S060C-HP	●	6.0		27.0	29.0		
KDZ0610X3.0S070C-HP	●	6.1	0 -0.015	27.5	29.5	7	88
KDZ0620X3.0S070C-HP	●	6.2		27.9	29.9		
KDZ0630X3.0S070C-HP	●	6.3		28.4	30.4		
KDZ0640X3.0S070C-HP	●	6.4		28.8	30.8		
KDZ0650X3.0S070C-HP	●	6.5		29.3	31.3		
KDZ0660X3.0S070C-HP	●	6.6	0 -0.015	29.7	31.7	7	88
KDZ0670X3.0S070C-HP	●	6.7		30.2	32.2		
KDZ0680X3.0S070C-HP	●	6.8		30.6	32.6		
KDZ0690X3.0S070C-HP	●	6.9		31.1	33.1		
KDZ0700X3.0S070C-HP	●	7.0		31.5	33.5		
KDZ0710X3.0S080C-HP	●	7.1	0 -0.015	32.0	34.0	8	94
KDZ0720X3.0S080C-HP	●	7.2		32.4	34.4		
KDZ0730X3.0S080C-HP	●	7.3		32.9	34.9		
KDZ0740X3.0S080C-HP	●	7.4		33.3	35.3		
KDZ0750X3.0S080C-HP	●	7.5		33.8	35.8		

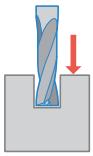
Description	Stock	Dimension (mm)					
		DC	Outside Dia. Tolerance	LCF	LN	DCON	OAL
KDZ0760X3.0S080C-HP	●	7.6	0 -0.015	34.2	36.2	8	94
KDZ0770X3.0S080C-HP	●	7.7		34.7	36.7		
KDZ0780X3.0S080C-HP	●	7.8		35.1	37.1		
KDZ0790X3.0S080C-HP	●	7.9		35.6	37.6		
KDZ0800X3.0S080C-HP	●	8.0		36.0	38.0		
KDZ0810X3.0S090C-HP	●	8.1	0 -0.015	36.5	38.5	9	100
KDZ0820X3.0S090C-HP	●	8.2		36.9	38.9		
KDZ0830X3.0S090C-HP	●	8.3		37.4	39.4		
KDZ0840X3.0S090C-HP	●	8.4		37.8	39.8		
KDZ0850X3.0S090C-HP	●	8.5		38.3	40.3		
KDZ0860X3.0S090C-HP	●	8.6	0 -0.015	38.7	40.7	9	100
KDZ0870X3.0S090C-HP	●	8.7		39.2	41.2		
KDZ0880X3.0S090C-HP	●	8.8		39.6	41.6		
KDZ0890X3.0S090C-HP	●	8.9		40.1	42.1		
KDZ0900X3.0S090C-HP	●	9.0		40.5	42.5		
KDZ0910X3.0S100C-HP	●	9.1	0 -0.015	41.0	43.0	10	106
KDZ0920X3.0S100C-HP	●	9.2		41.4	43.4		
KDZ0930X3.0S100C-HP	●	9.3		41.9	43.9		
KDZ0940X3.0S100C-HP	●	9.4		42.3	44.3		
KDZ0950X3.0S100C-HP	●	9.5		42.8	44.8		
KDZ0960X3.0S100C-HP	●	9.6		43.2	45.2		
KDZ0970X3.0S100C-HP	●	9.7		43.7	45.7		
KDZ0980X3.0S100C-HP	●	9.8		44.1	46.1		
KDZ0990X3.0S100C-HP	●	9.9		44.6	46.6		
KDZ1000X3.0S100C-HP	●	10.0		45.0	47.0		
KDZ1010X3.0S110C-HP	●	10.1	0 -0.018	45.5	47.5	11	116
KDZ1020X3.0S110C-HP	●	10.2		45.9	47.9		
KDZ1030X3.0S110C-HP	●	10.3		46.4	48.4		
KDZ1040X3.0S110C-HP	●	10.4		46.8	48.8		
KDZ1050X3.0S110C-HP	●	10.5		47.3	49.3		
KDZ1060X3.0S110C-HP	●	10.6	0 -0.018	47.7	49.7	11	116
KDZ1070X3.0S110C-HP	●	10.7		48.2	50.2		
KDZ1080X3.0S110C-HP	●	10.8		48.6	50.6		
KDZ1090X3.0S110C-HP	●	10.9		49.1	51.1		
KDZ1100X3.0S110C-HP	●	11.0		49.5	51.5		
KDZ1110X3.0S120C-HP	●	11.1	0 -0.018	50.0	52.0	12	122
KDZ1120X3.0S120C-HP	●	11.2		50.4	52.4		
KDZ1130X3.0S120C-HP	●	11.3		50.9	52.9		
KDZ1140X3.0S120C-HP	●	11.4		51.3	53.3		
KDZ1150X3.0S120C-HP	●	11.5		51.8	53.8		
KDZ1160X3.0S120C-HP	●	11.6		52.2	54.2		
KDZ1170X3.0S120C-HP	●	11.7		52.7	54.7		
KDZ1180X3.0S120C-HP	●	11.8		53.1	55.1		
KDZ1190X3.0S120C-HP	●	11.9		53.6	55.6		
KDZ1200X3.0S120C-HP	●	12.0		54.0	56.0		

●: Standard Stock

The standard drilling depth is 2.0 D (2.0 x DC).
Pecking is recommended when drilling depth is 2D or over

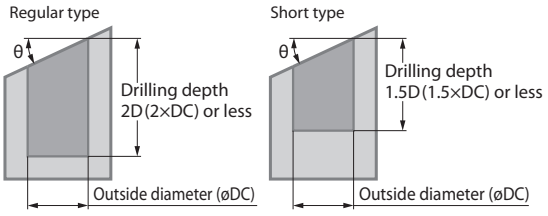
Recommended Cutting Conditions

KDZ

Workpiece	Application	Outside Diameter DC (mm)	ø1	ø2	ø3	ø4	ø5	ø6	ø8	ø10	ø12
Structural Steel Carbon Steel SS400, S45C	 Plunging	Spindle Revolution (min^{-1})	19,500	11,200	8,300	6,200	5,000	4,200	3,200	2,500	2,100
		Feed Rate (mm/min)	300	380	520	520	520	520	520	450	450
Alloy Steel SCM, SNCM		Spindle Revolution (min^{-1})	19,000	10,000	7,200	5,400	4,400	3,600	2,700	2,200	1,800
		Feed Rate (mm/min)	300	320	450	450	450	450	450	400	400
Pre-hardened Steel (30~45HRC)		Spindle Revolution (min^{-1})	16,000	8,000	3,900	2,900	2,300	1,900	1,500	1,200	1,000
		Feed Rate (mm/min)	210	210	210	210	210	210	210	190	190
Nodular Cast Iron FCD400		Spindle Revolution (min^{-1})	16,000	10,000	7,200	5,400	4,400	3,600	2,700	2,200	1,800
		Feed Rate (mm/min)	200	300	390	390	390	390	390	340	340
Aluminum Alloy A7075		Spindle Revolution (min^{-1})	20,000	20,000	17,800	13,100	10,500	8,900	6,700	5,400	4,500
		Feed Rate (mm/min)	500	850	1,270	1,270	1,270	1,270	1,270	1,270	1,270
Aluminum Alloy Casting AC, ADC		Spindle Revolution (min^{-1})	20,000	20,000	13,100	10,000	8,000	6,700	5,000	4,000	3,400
		Feed Rate (mm/min)	450	750	820	820	820	820	820	820	820

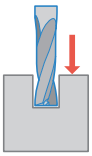
Precautions

- This tool is specially designed for plunging and NOT recommended for traversing
- Coolant is recommended
- Adjust ap to suit machine rigidity and overhang length
- Pecking is recommended when drilling depth is 2D or over
- Use chuck and machine with the highest rigidity possible
- Drilling stainless steel (SUS 304, SUS 316, etc.) is not recommended
- Cutting condition modifications may be needed when cutting a slant surface, depending on the slant angle (Right Figure)
  When workpiece slant is 30° or less, reduce the feed rate below 50%
  When workpiece slant is over 30°, lower the revolution to 70% or less and the feed rate to 30% or less



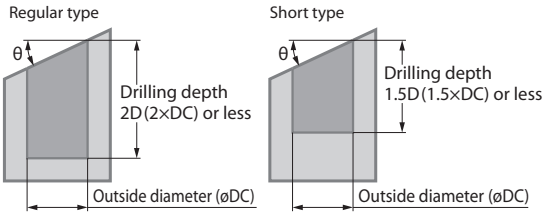
Recommended Cutting Conditions

KDZ-HP

Workpiece	Application	Outside Diameter DC (mm)	ø1	ø1.5	ø2	ø2.5	ø3	ø3.5	ø4	ø4.5	ø5	ø6	ø8	ø10	ø12	ø14	ø16	ø18	ø20
Structural Steel Carbon Steel SS400, S45C	 Plunging	Spindle Revolution (min^{-1})	20,700	13,800	11,150	9,200	9,100	7,800	6,800	6,100	5,500	4,600	3,500	2,800	2,300	1,800	1,600	1,400	1,300
		Feed Rate (mm/min)	350	350	430	430	520	520	520	520	520	520	520	520	520	480	480	480	480
Alloy Steel SCM, SNCM		Spindle Revolution (min^{-1})	17,500	11,700	9,600	7,650	7,200	6,200	5,400	4,800	4,400	3,600	2,700	2,200	1,800	1,500	1,350	1,200	1,100
		Feed Rate (mm/min)	290	290	380	380	450	450	450	450	450	450	450	450	450	420	420	420	420
Pre-hardened Steel (30~45HRC)		Spindle Revolution (min^{-1})	9,600	6,400	5,570	4,460	3,900	3,400	2,900	2,600	2,300	1,900	1,500	1,200	1,000	850	750	650	600
		Feed Rate (mm/min)	120	120	170	170	210	210	210	210	210	210	210	210	210	200	200	200	200
Nodular Cast Iron FCD400		Spindle Revolution (min^{-1})	15,900	10,600	10,360	8,290	7,200	6,200	5,400	4,800	4,400	3,600	2,700	2,200	1,800	1,550	1,350	1,200	1,100
		Feed Rate (mm/min)	220	250	390	390	390	390	390	390	390	390	390	390	390	360	360	360	360
Aluminum Alloy A7075		Spindle Revolution (min^{-1})	39,800	26,600	23,000	18,500	17,800	15,200	13,100	11,800	10,500	8,900	6,700	5,400	4,500	3,800	3,400	3,000	2,700
		Feed Rate (mm/min)	900	1,000	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270
Aluminum Alloy Casting AC, ADC		Spindle Revolution (min^{-1})	29,000	19,200	17,500	14,000	13,100	11,500	10,000	8,800	8,000	6,700	5,000	4,000	3,400	2,900	2,500	2,200	2,000
		Feed Rate (mm/min)	550	550	820	820	820	820	820	820	820	820	820	820	820	820	820	820	820

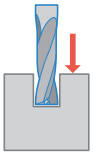
Precautions

- This tool is specially designed for plunging and NOT recommended for traversing
- Coolant is recommended
- Adjust ap to suit machine rigidity and overhang length
- Pecking is recommended when drilling depth is 2D or over
- Use chuck and machine with the highest rigidity possible
- Drilling stainless steel (SUS 304, SUS 316, etc.) is not recommended
- Cutting condition modifications may be needed when cutting a slant surface, depending on the slant angle (Right Figure)
  When workpiece slant is 30° or less, reduce the feed rate below 50%
  When workpiece slant is over 30°, lower the revolution to 70% or less and the feed rate to 30% or less



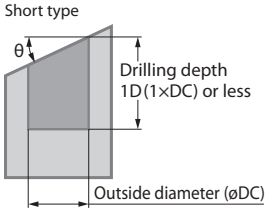
Recommended Cutting Conditions

KDZ-HP Short (Long shank)

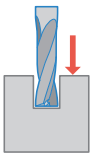
Workpiece	Application	Outside Diameter DC (mm)	ø3	ø3.5	ø4	ø4.5	ø5	ø6	ø8	ø10	ø12
Structural Steel Carbon Steel SS400, S45C	 Plunging	Spindle Revolution (min^{-1})	10,600	9,100	8,000	7,100	6,400	5,300	4,000	3,200	2,700
		Feed Rate (mm/min)	830	830	830	830	830	830	830	830	830
Alloy Steel SCM, SNCM		Spindle Revolution (min^{-1})	9,500	8,200	7,200	6,400	5,700	4,800	3,600	2,900	2,400
		Feed Rate (mm/min)	630	630	630	630	630	630	630	630	630
Pre-hardened Steel (30~45HRC)		Spindle Revolution (min^{-1})	7,400	6,400	5,600	5,000	4,500	3,700	2,800	2,200	1,900
		Feed Rate (mm/min)	365	365	365	365	365	365	365	365	365
Nodular Cast Iron FCD400		Spindle Revolution (min^{-1})	9,600	8,200	7,200	6,400	5,700	4,800	3,600	2,900	2,400
		Feed Rate (mm/min)	475	475	475	475	475	475	475	475	475
Aluminum Alloy A7075		Spindle Revolution (min^{-1})	12,700	10,900	9,600	8,500	7,600	6,400	4,800	3,800	3,200
		Feed Rate (mm/min)	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050
Aluminum Alloy Casting AC, ADC		Spindle Revolution (min^{-1})	9,500	8,200	7,200	6,400	5,700	4,800	3,600	2,900	2,400
		Feed Rate (mm/min)	675	675	675	675	675	675	675	675	675

Precautions
- This tool is specially designed for plunging and NOT recommended for traversing
- Coolant is recommended
- Adjust ap to suit machine rigidity and overhang length
- Use chuck and machine with the highest rigidity possible
- Drilling stainless steel (SUS 304, SUS 316, etc.) is not recommended
- Cutting condition modifications may be needed when cutting a slant surface, depending on the slant angle (Right Figure)
  When workpiece slant is 30° or less, reduce the feed rate below 50%
  When workpiece slant is over 30°, lower the revolution to 70% or less and the feed rate to 30% or less

Short type

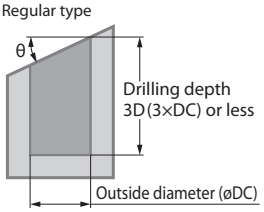


KDZ-HP (Type C)

Workpiece	Application	Outside Diameter DC (mm)	ø3	ø4	ø5	ø6	ø8	ø10	ø12
Structural Steel Carbon Steel SS400, S45C	 Plunging	Spindle Revolution (min^{-1})	10,600	7,950	6,350	5,300	3,980	3,180	2,650
		Feed Rate (mm/min)	750	750	750	750	750	750	750
Alloy Steel SCM, SNCM		Spindle Revolution (min^{-1})	9,550	7,160	5,730	4,770	3,580	2,860	2,390
		Feed Rate (mm/min)	700	680	630	600	600	600	600
Pre-hardened Steel (30~45HRC)		Spindle Revolution (min^{-1})	5,300	3,980	3,180	2,650	1,990	1,590	1,330
		Feed Rate (mm/min)	300	300	300	300	300	280	280
Stainless Steel SUS304		Spindle Revolution (min^{-1})	7,430	5,570	5,100	4,240	3,180	2,550	2,120
		Feed Rate (mm/min)	400	400	400	500	500	500	500
Nodular Cast Iron FCD400		Spindle Revolution (min^{-1})	9,550	7,160	5,730	4,770	3,580	2,860	2,390
		Feed Rate (mm/min)	580	580	500	500	500	450	450
Aluminum Alloy A7075		Spindle Revolution (min^{-1})	18,000	13,500	10,800	9,000	6,800	5,400	4,500
		Feed Rate (mm/min)	1,270	1,270	1,270	1,270	1,270	1,270	1,270
Aluminum Alloy Casting AC, ADC		Spindle Revolution (min^{-1})	13,100	10,000	8,000	6,700	5,000	4,000	3,400
		Feed Rate (mm/min)	900	900	850	850	850	850	850

Precautions
- This tool is specially designed for plunging and NOT recommended for traversing
- Coolant is recommended
- Adjust ap to suit machine rigidity and overhang length
- Pecking is recommended when drilling depth is 2D or over
- Use chuck and machine with the highest rigidity possible
- Cutting condition modifications may be needed when cutting a slant surface, depending on the slant angle (Right Figure)
  When workpiece slant is 30° or less, reduce the feed rate below 50%
  When workpiece slant is over 30°, lower the revolution to 70% or less and the feed rate to 30% or less
- If there is insufficient chip evacuation at the specified drill depth, it is recommended to peck or change cutting conditions
- Pre-drilling is recommended if cutting is unstable
- Pre-drilling and pecking are recommended for stainless steel machining

Regular type



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