



Indexable Flat Drill

Vol 2

OSG PHOENIX[®] PDZ



For more information
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osgtool.com/phoenix-pdz



OSG PHOENIX® PDZ

Indexable Flat Drill

An indexable drill series designed for stable flat-bottom holemaking. It is an ideal solution for a wide variety of materials such as carbon and alloy steel, stainless steel, and cast iron.

List 52513

PDZ-2D (Inch)

List 78537

PDZ-2D (Metric)

List 52514

PDZ-3D (Inch)

List 78538

PDZ-3D (Metric)

List 78PZAG

PZAG Inserts for PDZ

List 7808H

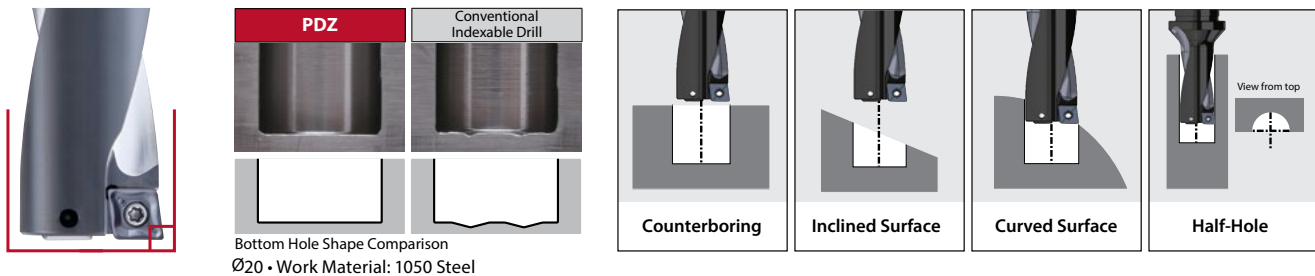
PDZ Accessories

Features & Benefits



» Flat Bottom Cutting Edge Configuration

The PDZ's flat bottom cutting edge configuration makes it compatible with a wide range of applications including drilling, counterboring, inclined surface drilling and more.



» Superior Chip Breaking Capability

The PDZ has superior chip breaking capability during drilling, counterboring and turning.



Excellent chip breaking capability with the enhanced muscle breaker.

- Uses the same insert as the PZAG counterboring cutter and the PMD multi-function cutter series
- Economical 4-corner insert design maximizes cost efficiency, with the same insert applicable to both peripheral and center cutting edge*

*2 corners for the peripheral cutting edge and 2 corners for the center cutting edge, adding up to a total of 4 corners.



Ø20 hole processing
(non-step drilling)

Work Material: 1050 Steel

Cutting Conditions:
Vc=492 SFM • f=0.004 in/rev

» Efficient Chip Evacuation

High precision finishing on flute improves rigidity, chip evacuation and reduces cutting force.

» OSG Product Lineup for Indexable Holemaking

» **PXD** Exchangeable Head Drill for 3D, 5D

- OSG's proprietary construction ensures secure mounting
- Internal coolant capability enables highly efficient drilling
- Smooth chip evacuation



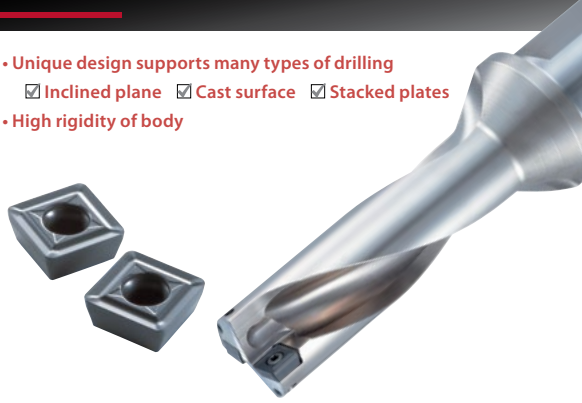
» **PD** Indexable Drill

- The same insert is used for both the peripheral and center cutting edge
- Supports 2 x D up to 5 x D
- Extensive lineup



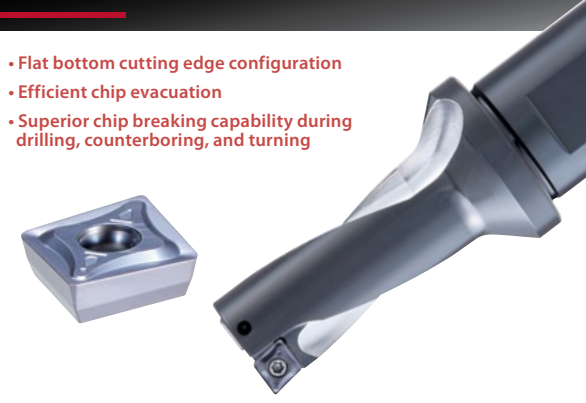
» **PHP** Indexable Drill for 3D

- Unique design supports many types of drilling
 - ☒ Inclined plane
 - ☒ Cast surface
 - ☒ Stacked plates
- High rigidity of body



» **PDZ** Indexable Flat Drill

- Flat bottom cutting edge configuration
- Efficient chip evacuation
- Superior chip breaking capability during drilling, counterboring, and turning



» OSG Product Lineup for Flat-Bottom Holemaking

	PDZ	PZAG	PMD
			
Shape	Indexable Flat Drill	Counterboring Cutter	Multi-Function Cutter
Bottom Hole Shape	Flat	Flat	Flat
Drilling Efficiency	○	◎	△
Requires a Pilot Hole when Drilling	No	Yes	No
Horizontal Milling	No	No	Yes
Insert designation	ZPNT...	ZPNT...	ZPNT... (center) ZDKT... (peripheral)

○ good ◎ best

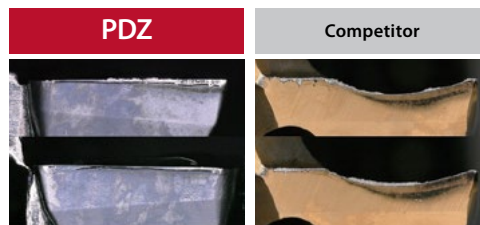
Processing Data

» Higher Cost Performance than Exchangeable Head Drills - 1050 Carbon Steel

PDZ was able to process over 3,500 holes per insert with 1.5 times the efficiency, compared to 880 holes by the competitor's exchangeable head drill.

Tool	PDZ1600FS20M05-2D	Competitor Exchangeable Head Drill
Insert (grade)	ZPNT050204EN (XP8030)	-
Work Material	1050 Carbon Steel	
Cutting Speed	2984 RPM (492 SFM)	1989 RPM (328 SFM)
Feed	11.7 IPM (0.004 in/rev)	7.8 IPM (0.004 in/rev)
Depth of Hole	0.945 in (Through)	
Coolant	Water-soluble	
Machine	HMC	

	Number of Holes			
	880	1,760	2,640	3,520
PDZ				
Competitor				



» Higher Cost Performance than Exchangeable Head Drills - 304 Stainless Steel

PDZ was able to process over 3,800 holes per insert, compared to 1,900 holes by the competitor's exchangeable head drill.

Tool	PDZ1600FS20M05-2D	Competitor Exchangeable Head Drill
Insert (grade)	ZPNT050204EN (XP8030)	-
Work Material	304 Stainless Steel	
Cutting Speed	1591 RPM (262 SFM)	
Feed	3.1 IPM (0.002 in/rev)	
Depth of Hole	0.945 in (Through)	
Coolant	Water-soluble	
Machine	HMC	

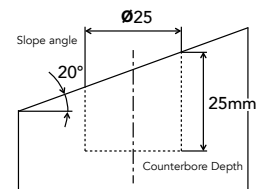
	Number of Holes			
	960	1,920	2,880	3,840
PDZ				
Competitor				



Processing Data

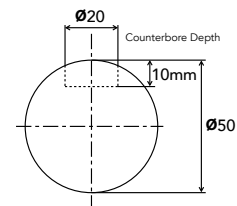
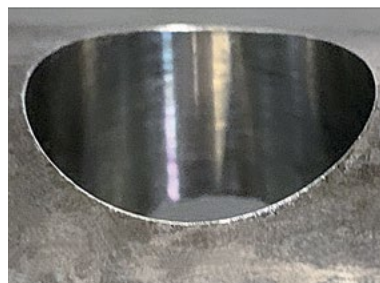
» Efficient Drilling on Angled Surfaces - 1050 Carbon Steel

Tool	PDZ2500FS25M07-2D
Insert (grade)	ZPNT070304EN (XP8030)
Work Material	1050 Carbon Steel
Cutting Speed	764 RPM (196 SFM)
Feed	1.8 IPM (0.002 in/rev)
Depth of Hole	0.984 in (20° incline)
Coolant	Air
Machine	HMC



» Efficient Drilling on Curved Surfaces - 4118 Alloy Steel

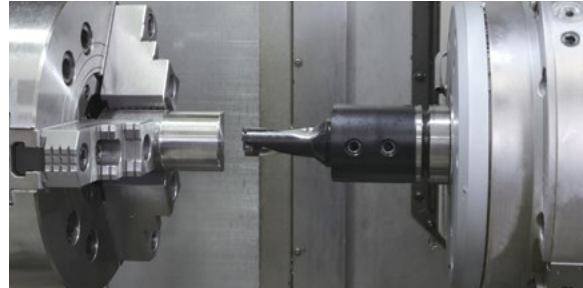
Tool	PDZ2000FS25M06-2D
Insert (grade)	ZPNT060204EN (XP8030)
Work Material	4118 Alloy Steel
Cutting Speed	800 RPM (164 SFM)
Feed	3.1 IPM (0.004 in/rev)
Depth of Hole	0.394 in
Coolant	Water-Soluble
Machine	Multifunction Lathe



Processing Data

» Multiple Operations by Turning - 4140 Alloy Steel

Tool	PDZ2500FS25M07-2D	
Insert (grade)	ZPNT070304EN (XP8030)	
Work Material	4140 Alloy Steel	
Operation	Drilling	Contouring
Cutting Speed	1273 RPM (328 SFM)	328 SFM
Feed	5.0 IPM (0.004 in/rev)	0.0047 in/rev Aa = 0.079 (4 passes)
Coolant	Air	
Machine	Multifunction Lathe	



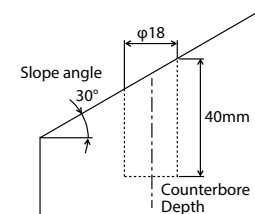
Workpiece



» Counterboring in Inclined Surfaces - Carbon Steel

Good hole shape and stable hole quality were obtained in the counterboring of inclined surface.

Tool	PDZ1800FS25M05-3D
Insert (grade)	ZPNT050204EN (XP8030)
Work Material	Carbon Steel
Cutting Speed	1,062 RPM (197 SFM)
Feed	1.7 IPM (0.0016 in/rev)
Counterbore Depth	Counterboring: 1.575 in Slope Angle: 30°
Coolant	Water-Soluble (Internal)
Machine	Vertical Machining Center

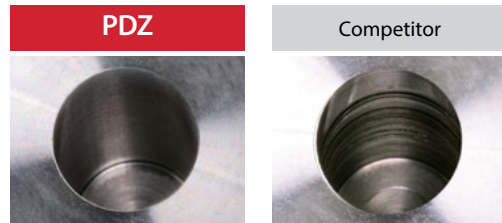


Processing Data

» Counterboring on NC Lathe - Medium Carbon Steel

When counterboring on a NC lathe, vibration occurred with the competitor product and the machined surface deteriorated. The PDZ, on the other hand, demonstrated stable machining and achieved good machined surface.

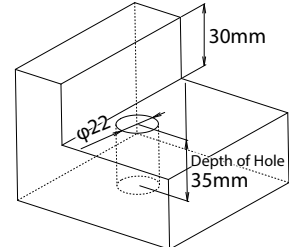
Tool	PDZ1600FS20M05-3D	Competitor
Insert (grade)	ZPNT050204EN (XP8030)	Coated Carbide Insert
Work Material	Medium Carbon Steel	
Cutting Speed	2,986 RPM (492 SFM)	
Feed	9.4 IPM (0.0031 in/rev)	
Counterbore Depth	1.890 in	
Coolant	Water-Soluble (Internal)	
Machine	Compound Machine	



» 3D Overhang Length Machining with Interference - Cast Iron

Drilling at a depth of 35 mm (1.6D) with interference. The PDZ 3D type was used to avoid interference. Due to the high rigidity of the drill body, it was possible to machine at a more aggressive cutting condition than the competitor's exchangeable head drill.

Tool	PDZ2200FS25M06-3D	Competitor Exchangeable Head Drill
Insert (grade)	ZPNT060204EN (XP8030)	—
Work Material	Cast Iron	
Cutting Speed	2,170 RPM (492 SFM)	1,013 RPM (230 SFM)
Feed	10.2 IPM (0.0047 in/rev)	7.2 IPM (0.0071 in/rev)
Counterbore Depth	1.378 in	
Coolant	Water-Soluble (Internal)	
Machine	Vertical Machining Center	



List 52513

OSG PHOENIX® PDZ-2D, Flat Shank



NEW



SPEED
FEED
P18-19

INSERTS
P13

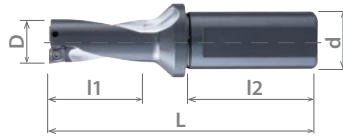
ACCS.
P14

STEEL



2 FLUTE

PACKED
1 PIECE



EDP Number		Designation	Diameter	Drilling Depth	Overall Length	Shank Diameter	Shank Length	Applicable Insert
			D (in)	L1 (in)	L (in)	d (in)	L2 (in)	
52513002	●	PDZ0688FS075A05-2D	0.688	1.375	4.053	0.750	1.969	ZPNT05
52513003	●	PDZ0750FS100A06-2D	0.750	1.500	4.413	1.000	2.205	ZPNT06
52513004	●	PDZ0812FS100A06-2D	0.813	1.625	4.537	1.000	2.205	ZPNT06
52513005	●	PDZ0875FS100A06-2D	0.875	1.750	4.860	1.000	2.205	ZPNT06
52513006	●	PDZ0937FS125A07-2D	0.938	1.875	5.142	1.250	2.362	ZPNT07
52513007	●	PDZ1000FS125A07-2D	1.000	2.000	5.268	1.250	2.362	ZPNT07
52513008	●	PDZ1062FS125A08-2D	1.063	2.125	5.392	1.250	2.362	ZPNT08
52513009	●	PDZ1125FS125A08-2D	1.125	2.250	5.518	1.250	2.362	ZPNT08
52513010	●	PDZ1187FS125A08-2D	1.188	2.375	5.642	1.250	2.362	ZPNT08
52513011	●	PDZ1250FS125A09-2D	1.250	2.500	5.768	1.250	2.362	ZPNT09
52513012	●	PDZ1312FS150A09-2D	1.313	2.625	6.285	1.500	2.756	ZPNT09
52513013	●	PDZ1375FS150A09-2D	1.375	2.750	6.411	1.500	2.756	ZPNT09
52513014	●	PDZ1437FS150A10-2D	1.438	2.875	6.535	1.500	2.756	ZPNT10
52513015	●	PDZ1500FS150A10-2D	1.500	3.000	6.661	1.500	2.756	ZPNT10

● Stocked ○ Available Upon Request; MOQ May Apply ▲ Globally Stocked

PXT

DESIGNATION EXPLANATION

PDZ-0688-FS-075-A-05-2D



See Full Detail on Page 15

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron	Non-Ferrous	HRSA	Hardened Steel
◎	◎	◎	○	○	○

Material recommendation based on inserts compatible with this tool body.

○ Good ◎ Best



List 78537

OSG PHOENIX[®] PDZ-2D, Flat Shank



NEW



SPEED
FEED
P18-19

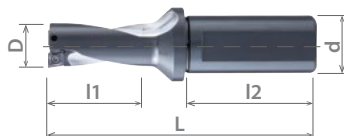
INSERTS
P13

ACCS.
P14

STEEL

2 FLUTE

PACKED
1 PIECE



EDP Number		Designation	Diameter	Drilling Depth	Overall Length	Shank Diameter	Shank Length	Applicable Insert
			D (mm)	L1 (mm)	L (mm)	d (mm)	L2 (mm)	
7803776	●	PDZ1600FS20M05-2D	16.00	32.00	97.00	20.00	50.00	ZPNT05
7803777	●	PDZ1650FS20M05-2D	16.50	33.00	98.00	20.00	50.00	ZPNT05
7803778	●	PDZ1700FS20M05-2D	17.00	34.00	102.00	20.00	50.00	ZPNT05
7803779	●	PDZ1750FS25M05-2D	17.50	35.00	109.00	25.00	56.00	ZPNT05
7803780	●	PDZ1800FS25M05-2D	18.00	36.00	110.00	25.00	56.00	ZPNT05
7803781	●	PDZ1850FS25M05-2D	18.50	37.00	111.00	25.00	56.00	ZPNT05
7803782	●	PDZ1900FS25M06-2D	19.00	38.00	112.00	25.00	56.00	ZPNT06
7803783	●	PDZ1950FS25M06-2D	19.50	39.00	113.00	25.00	56.00	ZPNT06
7803784	●	PDZ2000FS25M06-2D	20.00	40.00	114.00	25.00	56.00	ZPNT06
7803785	●	PDZ2100FS25M06-2D	21.00	42.00	121.00	25.00	56.00	ZPNT06
7803786	●	PDZ2200FS25M06-2D	22.00	44.00	123.00	25.00	56.00	ZPNT06
7803787	●	PDZ2300FS25M07-2D	23.00	46.00	125.00	25.00	56.00	ZPNT07
7803788	●	PDZ2400FS25M07-2D	24.00	48.00	127.00	25.00	56.00	ZPNT07
7803790	●	PDZ2500FS32M07-2D	25.00	50.00	133.00	32.00	60.00	ZPNT07
7803791	●	PDZ2600FS32M07-2D	26.00	52.00	135.00	32.00	60.00	ZPNT07
7803792	●	PDZ2700FS32M08-2D	27.00	54.00	137.00	32.00	60.00	ZPNT08
7803793	●	PDZ2800FS32M08-2D	28.00	56.00	139.00	32.00	60.00	ZPNT08
7803794	●	PDZ2900FS32M08-2D	29.00	58.00	141.00	32.00	60.00	ZPNT08
7803795	●	PDZ3000FS32M08-2D	30.00	60.00	143.00	32.00	60.00	ZPNT08
7803796	●	PDZ3100FS32M08-2D	31.00	62.00	145.00	32.00	60.00	ZPNT08
7803797	●	PDZ3200FS32M09-2D	32.00	64.00	147.00	32.00	60.00	ZPNT09
7803798	●	PDZ3300FS40M09-2D	33.00	66.00	159.00	40.00	70.00	ZPNT09
7803799	●	PDZ3400FS40M09-2D	34.00	68.00	161.00	40.00	70.00	ZPNT09
7803800	●	PDZ3500FS40M10-2D	35.00	70.00	163.00	40.00	70.00	ZPNT10
7803801	●	PDZ3600FS40M10-2D	36.00	72.00	165.00	40.00	70.00	ZPNT10
7803802	●	PDZ3700FS40M10-2D	37.00	74.00	167.00	40.00	70.00	ZPNT10
7803803	●	PDZ3800FS40M10-2D	38.00	76.00	169.00	40.00	70.00	ZPNT10
7803804	●	PDZ3900FS40M13-2D	39.00	78.00	178.00	40.00	70.00	ZPNT13
7803805	●	PDZ4000FS40M13-2D	40.00	80.00	180.00	40.00	70.00	ZPNT13
7803806	●	PDZ4100FS40M13-2D	41.00	82.00	182.00	40.00	70.00	ZPNT13
7803807	●	PDZ4200FS40M13-2D	42.00	84.00	184.00	40.00	70.00	ZPNT13
7803808	●	PDZ4300FS40M13-2D	43.00	86.00	186.00	40.00	70.00	ZPNT13

● Stocked ○ Available Upon Request; MOQ May Apply ▲ Globally Stocked

PXT

DESIGNATION EXPLANATION

PDZ-1600-FS-20-M-05-2D



See Full Detail on Page 15

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron	Non-Ferrous	HRSA	Hardened Steel
○	○	○	○	○	○

Material recommendation based on inserts compatible with this tool body.

○ Good ○ Best



List 52514

OSG PHOENIX® PDZ-3D, Flat Shank



NEW



SPEED
FEED
P18-19

INSERTS
P13

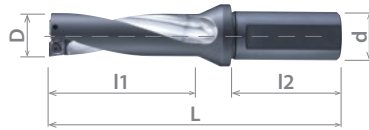
ACCS.
P14

STEEL



2 FLUTE

PACKED
1 PIECE



EDP Number		Designation	Diameter	Drilling Depth	Overall Length	Shank Diameter	Shank Length	Applicable Insert
			D (in)	L1 (in)	L (in)	d (in)	L2 (in)	
52514002	●	PDZ0688FS075A05-3D	0.688	2.063	4.741	0.750	1.969	ZPNT05
52514003	●	PDZ0750FS100A06-3D	0.750	2.250	5.163	1.000	2.205	ZPNT06
52514004	●	PDZ0812FS100A06-3D	0.813	2.438	5.350	1.000	2.205	ZPNT06
52514005	●	PDZ0875FS100A06-3D	0.875	2.625	5.735	1.000	2.205	ZPNT06
52514006	●	PDZ0937FS125A07-3D	0.938	2.813	6.080	1.250	2.362	ZPNT07
52514007	●	PDZ1000FS125A07-3D	1.000	3.000	6.268	1.250	2.362	ZPNT07
52514008	●	PDZ1062FS125A08-3D	1.063	3.188	6.455	1.250	2.362	ZPNT08
52514009	●	PDZ1125FS125A08-3D	1.125	3.375	6.643	1.250	2.362	ZPNT08
52514010	●	PDZ1187FS125A08-3D	1.188	3.563	6.830	1.250	2.362	ZPNT08
52514011	●	PDZ1250FS125A09-3D	1.250	3.750	7.018	1.250	2.362	ZPNT09
52514012	●	PDZ1312FS150A09-3D	1.313	3.938	7.598	1.500	2.756	ZPNT09
52514013	●	PDZ1375FS150A09-3D	1.375	4.125	7.786	1.500	2.756	ZPNT09
52514014	●	PDZ1437FS150A10-3D	1.438	4.313	7.973	1.500	2.756	ZPNT10
52514015	●	PDZ1500FS150A10-3D	1.500	4.500	8.161	1.500	2.756	ZPNT10

● Stocked ○ Available Upon Request; MOQ May Apply ▲ Globally Stocked

PXT

DESIGNATION EXPLANATION

PDZ-0688-FS-075-A-05-3D



See Full Detail on Page 15

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron	Non-Ferrous	HRSA	Hardened Steel
⊙	⊙	⊙	○	○	○

Material recommendation based on inserts compatible with this tool body.

○ Good ⊙ Best



List 78538

OSG PHOENIX® PDZ-3D, Flat Shank



NEW



SPEED
FEED
P18-19

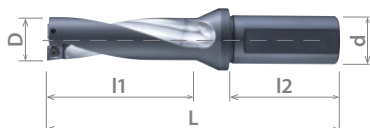
INSERTS
P13

ACCS.
P14

STEEL

2 FLUTE

PACKED
1 PIECE



EDP Number		Designation	Diameter	Drilling Depth	Overall Length	Shank Diameter	Shank Length	Applicable Insert
			D (mm)	L1 (mm)	L (mm)	d (mm)	L2 (mm)	
7803828	●	PDZ1600FS20M05-3D	16.00	48.00	113.00	20.00	50.00	ZPNT05
7803829	●	PDZ1650FS20M05-3D	16.50	50.00	115.00	20.00	50.00	ZPNT05
7803830	●	PDZ1700FS20M05-3D	17.00	51.00	119.00	20.00	50.00	ZPNT05
7803831	●	PDZ1750FS25M05-3D	17.50	53.00	127.00	25.00	56.00	ZPNT05
7803832	●	PDZ1800FS25M05-3D	18.00	54.00	128.00	25.00	56.00	ZPNT05
7803833	●	PDZ1850FS25M05-3D	18.50	56.00	130.00	25.00	56.00	ZPNT05
7803834	●	PDZ1900FS25M06-3D	19.00	57.00	131.00	25.00	56.00	ZPNT05
7803835	●	PDZ1950FS25M06-3D	19.50	59.00	133.00	25.00	56.00	ZPNT05
7803836	●	PDZ2000FS25M06-3D	20.00	60.00	134.00	25.00	56.00	ZPNT06
7803837	●	PDZ2100FS25M06-3D	21.00	63.00	142.00	25.00	56.00	ZPNT06
7803838	●	PDZ2200FS25M06-3D	22.00	66.00	145.00	25.00	56.00	ZPNT06
7803839	●	PDZ2300FS25M07-3D	23.00	69.00	148.00	25.00	56.00	ZPNT07
7803840	●	PDZ2400FS25M07-3D	24.00	72.00	151.00	25.00	56.00	ZPNT07
7803842	●	PDZ2500FS32M07-3D	25.00	75.00	158.00	32.00	60.00	ZPNT07
7803843	●	PDZ2600FS32M07-3D	26.00	78.00	161.00	32.00	60.00	ZPNT07
7803844	●	PDZ2700FS32M08-3D	27.00	81.00	164.00	32.00	60.00	ZPNT08
7803845	●	PDZ2800FS32M08-3D	28.00	84.00	167.00	32.00	60.00	ZPNT08
7803846	●	PDZ2900FS32M08-3D	29.00	87.00	170.00	32.00	60.00	ZPNT08
7803847	●	PDZ3000FS32M08-3D	30.00	90.00	173.00	32.00	60.00	ZPNT08
7803848	●	PDZ3100FS32M08-3D	31.00	93.00	176.00	32.00	60.00	ZPNT08
7803849	●	PDZ3200FS32M09-3D	32.00	96.00	179.00	32.00	60.00	ZPNT09
7803850	●	PDZ3300FS40M09-3D	33.00	99.00	192.00	40.00	70.00	ZPNT09
7803851	●	PDZ3400FS40M09-3D	34.00	102.00	195.00	40.00	70.00	ZPNT09
7803852	●	PDZ3500FS40M10-3D	35.00	105.00	198.00	40.00	70.00	ZPNT10
7803853	●	PDZ3600FS40M10-3D	36.00	108.00	201.00	40.00	70.00	ZPNT10
7803854	●	PDZ3700FS40M10-3D	37.00	111.00	204.00	40.00	70.00	ZPNT10
7803855	●	PDZ3800FS40M10-3D	38.00	114.00	207.00	40.00	70.00	ZPNT10
7803856	●	PDZ3900FS40M13-3D	39.00	117.00	217.00	40.00	70.00	ZPNT13
7803857	●	PDZ4000FS40M13-3D	40.00	120.00	220.00	40.00	70.00	ZPNT13
7803858	●	PDZ4100FS40M13-3D	41.00	123.00	223.00	40.00	70.00	ZPNT13
7803859	●	PDZ4200FS40M13-3D	42.00	126.00	226.00	40.00	70.00	ZPNT13
7803860	●	PDZ4300FS40M13-3D	43.00	129.00	229.00	40.00	70.00	ZPNT13

● Stocked ○ Available Upon Request; MOQ May Apply ▲ Globally Stocked

PXT

DESIGNATION EXPLANATION

PDZ-0688-FS-075-A-05-3D



See Full Detail on Page 15

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron	Non-Ferrous	HRSA	Hardened Steel
○	○	○	○	○	○

Material recommendation based on inserts compatible with this tool body.

○ Good ○ Best

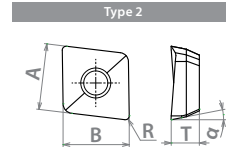
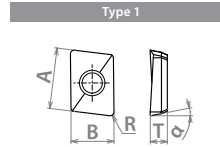


List 78PZAG

OSG PHOENIX® PZAG / PDZ / PMD Inserts



SPEED FEED	PACKED
P18-19	10 PIECE



EDP Number		Designation	Number of Cutting Edges	Insert Size				Type	Grade
				AxB (mm)	T (mm)	α (°)	R (mm)		
7814101	●	ZPNT040104ER	2	6.35 x 4.45	1.76	11	0.4	1	XP8030
7814102	●	ZPNT050204EN	2	5.9 x 5.9	2.25	11	0.4	2	XP8030
7814103	●	ZPNT060204EN	2	6.95 x 6.95	2.93	11	0.4	2	XP8030
7814104	●	ZPNT070304EN	2	7.84 x 7.84	3.87	11	0.4	2	XP8030
7814105	●	ZPNT080304EN	2	8.85 x 8.85	3.92	11	0.4	2	XP8030
7814106	●	ZPNT090404EN	2	9.94 x 9.94	4.65	11	0.4	2	XP8030
7814108	●	ZPNT100408EN	2	10.95 x 10.95	4.65	11	0.8	2	XP8030
7814109	●	ZPNT130504EN	2	13.92 x 13.92	5.46	11	0.4	2	XP8030
7814110	●	ZPNT130508EN	2	13.92 x 13.92	5.46	11	0.8	2	XP8030
7814111	●	ZPNT170608EN	2	17.85 x 17.85	6.31	11	0.8	2	XP8030
7815101	●	ZPNT040104ER	2	6.35 x 4.45	1.76	11	0.4	1	XC8035
7815102	●	ZPNT050204EN	2	5.9 x 5.9	2.25	11	0.4	2	XC8035
7815103	●	ZPNT060204EN	2	6.95 x 6.95	2.93	11	0.4	2	XC8035
7815104	●	ZPNT070304EN	2	7.84 x 7.84	3.87	11	0.4	2	XC8035
7815105	●	ZPNT080304EN	2	8.85 x 8.85	3.92	11	0.4	2	XC8035
7815106	●	ZPNT090404EN	2	9.94 x 9.94	4.65	11	0.4	2	XC8035
7815108	●	ZPNT100408EN	2	10.95 x 10.95	4.65	11	0.8	2	XC8035
7815109	●	ZPNT130504EN	2	13.92 x 13.92	5.46	11	0.4	2	XC8035
7815110	●	ZPNT130508EN	2	13.92 x 13.92	5.46	11	0.8	2	XC8035
7815111	●	ZPNT170608EN	2	17.85 x 17.85	6.31	11	0.8	2	XC8035

● Stocked ○ Available Upon Request; MOQ May Apply ▲ Globally Stocked

Note: XC8035 recommended for peripheral cutting edge only.

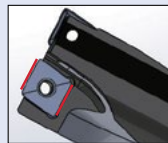
PXI

⚠ Precautions when installing the insert

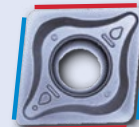
- The insert (XP8030) has a total of 4 working corners – 2 corners for the peripheral cutting edge and 2 corners for the center cutting edge.
- Use the peripheral cutting edge corner for the peripheral cutting edge and the center cutting edge corner for the center cutting edge.



Attached with peripheral cutting edge



Attached with center cutting edge



Edges for peripheral cutting

Edges for center cutting

DESIGNATION EXPLANATION

Z P N T 04 02 04 E R - X C 8035



See Full Detail on Page 16-17

Insert Grade	Coolant	P	M	K	N	S	H
		Steel	Stainless Steel	Cast Iron	Non-Ferrous	HRSA	Hardened Steel
XC8035	Yes	○	○	⊗	○	○	○
XP8030	Yes	⊗	⊗	○	○	○	○

○ Good ⊗ Best

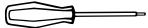




PACKED	PACKED
1 PIECE	10 PIECE

List 7808H

OSG PHOENIX® PDZ Accessories

Appearance	EDP No.		Designation	Applicable Insert	Recommended Tightening
 Clamping Screw	7808139	●	FS20543P (M2 x 4.3, Torx 6IP)	ZPNT05	0.7 Nm
	7808138	●	FS22550P (M2.2 x 5, Torx 7IP)	ZPNT06	1.0 Nm
	7808136	●	FS25560P (M2.5 x 6, Torx 8IP)	ZPNT07	1.6 Nm
	7808135	●	FS30570P (M3 x 7, Torx 9IP)	ZPNT08, ZPNT09	2.2 Nm
	7808137	●	FS35586P (M3.5 x 8.6, Torx 15IP)	ZPNT10	3.2 Nm
	7808114	●	FS45510P (M4.5 x 10, Torx 20IP)	ZPNT13	5.0 Nm
 Wrench	7808223	●	6IP-D (Torx 6IP)	ZPNT05	
	7808224	●	7IP-D (Torx 7IP)	ZPNT06	
	7808225	●	8IP-D (Torx 8IP)	ZPNT07	
	7808226	●	9IP-D (Torx 9IP)	ZPNT08, ZPNT09	
	7808228	●	15IP-D (Torx 15IP)	ZPNT10	
	7808229	●	20IP-D (Torx 20IP)	ZPNT13	

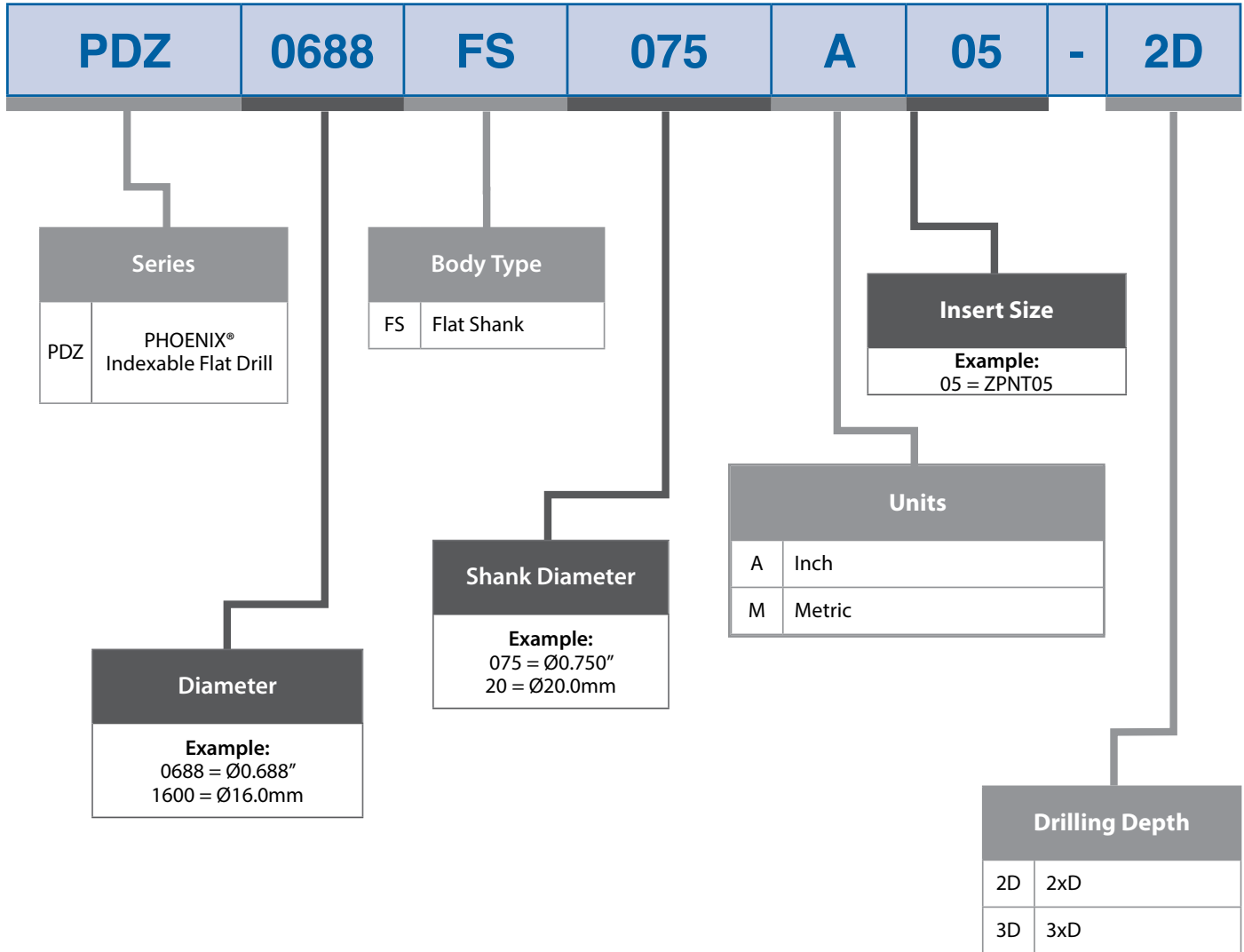
● Stocked ○ Available Upon Request; MOQ May Apply ▲ Globally Stocked

Note: Wrench sold separately

Packed: Clamping Screws = 10 pcs.; Wrench = 1 pc.



Tool Body Designation



Insert Designation

Z	D	K	T
---	---	---	---

Shape of Insert		
C	Diamond Apex 80°	
D	Diamond Apex 55°	
O	Octagon	
R	Round	
S	Square	
T	Triangle	
V	Diamond Apex 35°	
W	Axometric Hexagon	
Z	Other Shapes	—

Clearance Angle		
A	3°	
C	7°	
D	15°	
E	20°	
N	0°	
P	11°	
X	Special Dimension	

Tolerance			
Symbol	Inscribed Circle Tolerance (mm)	Corner Height Tolerance (mm)	Thickness Tolerance (mm)
A	±0.025	±0.005	±0.025
C	±0.025	±0.013	±0.025
E	±0.025	±0.025	±0.025
H	±0.013	±0.013	±0.025
K*	±0.05~±0.15	±0.013	±0.025
M*	±0.05~±0.15	±0.08~±0.18	±0.13
N*	±0.05~±0.15	±0.08~±0.18	±0.025

*Sintered insert shown on the side

Special Cutting and Fastening Feature			
Symbol	Shape of Hole	With or Without Breaker	Insert Cross Section
W	(40°~60°) Partial cylindrical hole	No Breaker	
T		One Side	
B	(70°~90°) Partial cylindrical hole	No Breaker	
U	(40°~60°) Partial cylindrical hole	Both Sides	
N	—	No Breaker	
R	—	One Side	

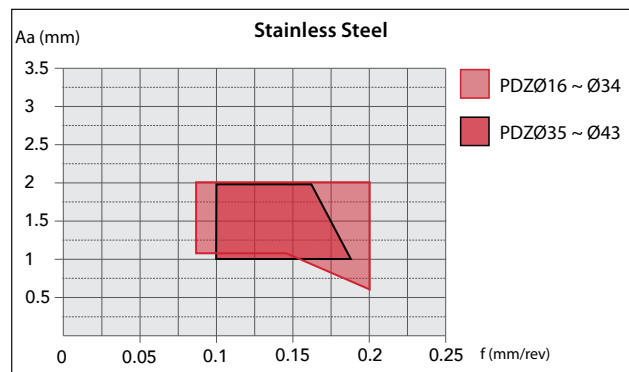
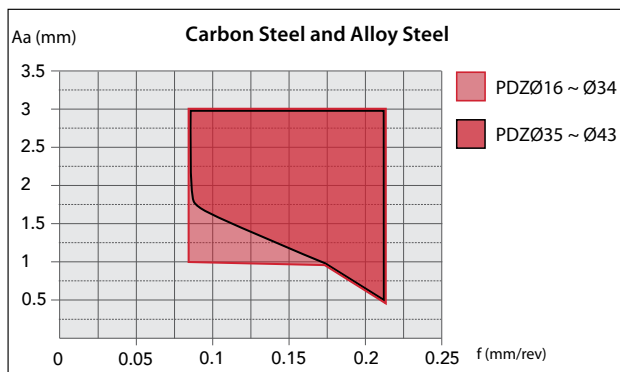
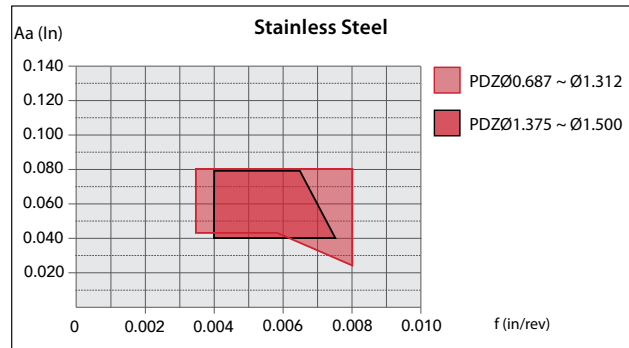
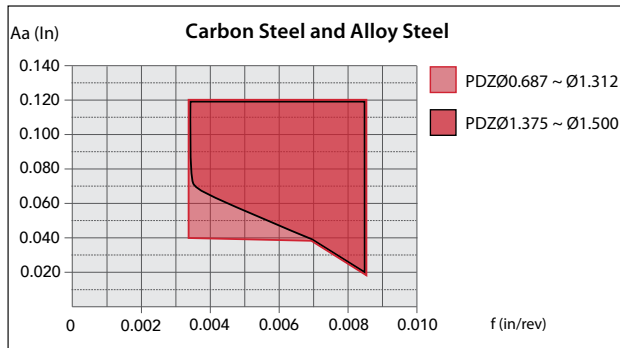
Insert Designation (Continued)

15	05	08	S	R	-	GM																																												
Length of the Cutting Edge <table><tr><td>O</td><td></td></tr><tr><td>R</td><td></td></tr><tr><td>S</td><td></td></tr><tr><td>T</td><td></td></tr><tr><td>Z</td><td></td></tr></table>		O		R		S		T		Z		Corner Radius Symbol <table><tr><th>Symbol</th><th>Corner Radius (mm)</th></tr><tr><td>02</td><td>R0.2</td></tr><tr><td>04</td><td>R0.4</td></tr><tr><td>08</td><td>R0.8</td></tr><tr><td>12</td><td>R1.2</td></tr><tr><td>16</td><td>R1.6</td></tr><tr><td>24</td><td>R2.4</td></tr></table>		Symbol	Corner Radius (mm)	02	R0.2	04	R0.4	08	R0.8	12	R1.2	16	R1.6	24	R2.4	Cutting Direction <table><tr><th>Symbol</th><th>Cutting Direction</th></tr><tr><td>R</td><td>Right Hand</td></tr><tr><td>L</td><td>Left Hand</td></tr><tr><td>N</td><td>Neutral</td></tr></table>			Symbol	Cutting Direction	R	Right Hand	L	Left Hand	N	Neutral												
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Thickness of Insert <table><tr><th>Symbol</th><th>Thickness (mm)</th></tr><tr><td>02</td><td>2.38</td></tr><tr><td>03</td><td>3.18</td></tr><tr><td>T3</td><td>3.97</td></tr><tr><td>04</td><td>4.76</td></tr><tr><td>05</td><td>5.56</td></tr><tr><td>06</td><td>6.35</td></tr></table>		Symbol	Thickness (mm)	02	2.38	03	3.18	T3	3.97	04	4.76	05	5.56	06	6.35	Type of Cutting Edge <table><tr><th>Symbol</th><th>Appearance</th></tr><tr><td>F</td><td> Sharp Edge</td></tr><tr><td>E</td><td> Round Honing</td></tr><tr><td>T</td><td> Chamfer Honing</td></tr><tr><td>S</td><td> Combination Honing</td></tr></table>		Symbol	Appearance	F	 Sharp Edge	E	 Round Honing	T	 Chamfer Honing	S	 Combination Honing	Type of Chip Breaker <table><tr><th>Symbol</th><th>Name</th></tr><tr><td>GL</td><td>GL Breaker</td></tr><tr><td>GM</td><td>GM Breaker</td></tr><tr><td>GR</td><td>GR Breaker</td></tr><tr><td>HR</td><td>HR Breaker</td></tr><tr><td>NM</td><td>NM Breaker</td></tr><tr><td>SM</td><td>SM Breaker</td></tr><tr><td>DM</td><td>DM Breaker</td></tr><tr><td>DR</td><td>DR Breaker</td></tr><tr><td>DN</td><td>DN Breaker</td></tr></table>			Symbol	Name	GL	GL Breaker	GM	GM Breaker	GR	GR Breaker	HR	HR Breaker	NM	NM Breaker	SM	SM Breaker	DM	DM Breaker	DR	DR Breaker	DN	DN Breaker
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DR	DR Breaker																																																	
DN	DN Breaker																																																	

Cutting Conditions - Drilling

Work Material		Tensile Strength - Hardness	Drilling Speed Vc (SFM)	Feed Rate, f (in/rev)						
				Drilling Depth 2xD						
				Ø0.630-0.650 (16-16.5mm)	Ø0.669-0.728 (17-18.5mm)	Ø0.748-0.787 (19-20mm)	Ø0.827-0.945 (21-24mm)	Ø0.984-1.102 (25-28mm)	Ø1.142-1.299 (29-33mm)	Ø1.338-1.693 (34-43mm)
P	Mild Steels, Carbon Steels (1010, 1018)	~180 HB	650 (500 - 800)	.0024 (.0015 - .004)	.0024 (.0015 - .004)	.0027 (.0015 - .004)	.003 (.0015 - .0047)	.003 (.0015 - .0047)	.004 (.002 - .006)	.004 (.002 - .007)
	Carbon Steels, Alloy Steels (1050, 4140)	~280 HB	500 (330 - 720)	.003 (.0015 - .0055)	.0035 (.0015 - .0063)	.004 (.0015 - .007)	.0055 (.0015 - .008)	.007 (.0024 - .010)	.008 (.003 - .012)	.008 (.003 - .014)
	Die Steels (D2, H13)	~280 HB	400 (260 - 600)	.0024 (.0015 - .004)	.0027 (.0015 - .004)	.003 (.0015 - .0047)	.0047 (.0015 - .006)	.0055 (.0024 - .008)	.007 (.003 - .010)	.007 (.003 - .010)
M	Stainless Steels (304, 420)	~250 HB	425 (260 - 600)	.0027 (.0015 - .004)	.003 (.0015 - .004)	.0035 (.0015 - .0047)	.004 (.0015 - .006)	.005 (.0024 - .008)	.006 (.003 - .010)	.006 (.003 - .010)
K	Cast Iron (FC250)	~350 N/mm²	650 (500 - 920)	.003 (.0015 - .0055)	.004 (.0015 - .0063)	.0047 (.0015 - .008)	.0063 (.003 - .010)	.008 (.0024 - .012)	.008 (.003 - .012)	.008 (.003 - .014)
	Ductile Cast Iron (60-40-18)	~800 N/mm²	525 (330 - 720)	.003 (.0015 - .0047)	.0035 (.0015 - .0055)	.004 (.0015 - .007)	.0055 (.0015 - .008)	.007 (.0024 - .010)	.007 (.003 - .010)	.007 (.003 - .010)
N	Aluminum Alloys (6061, 7075)	~13% Si	650 (330 - 2600)	.003 (.0015 - .0047)	.004 (.0015 - .0063)	.0047 (.0015 - .008)	.0063 (.0015 - .010)	.008 (.0024 - .012)	.008 (.003 - .012)	.008 (.003 - .012)
S	Heat Resistant Alloys (Inconel 718)	-	165 (50 - 200)	.0015 (.0008 - .0024)	.002 (.0012 - .0024)	.002 (.0012 - .0024)	.0024 (.0015 - .003)	.003 (.0024 - .004)	.004 (.0024 - .0047)	.004 (.0024 - .0047)
	Titanium Alloy (Ti-6Al-4V)	-	200 (100 - 330)	.002 (.0015 - .003)	.0024 (.0015 - .003)	.0024 (.0015 - .003)	.003 (.0015 - .006)	.004 (.0024 - .008)	.0055 (.003 - .008)	.0055 (.003 - .008)
H	Pre-hardened Steel (P20, Stavax)	40 - 43 Hrc	330 (200 - 400)	.0024 (.0015 - .004)	.0024 (.0015 - .0047)	.0027 (.0015 - .0047)	.003 (.0015 - .0047)	.004 (.0024 - .006)	.004 (.0024 - .006)	.004 (.0024 - .006)
	Die Cast Steels (A2, S7)	43 - 48 Hrc	260 (165 - 330)	.002 (.0015 - .003)	.002 (.0015 - .003)	.0024 (.0015 - .003)	.0024 (.0015 - .003)	.003 (.0015 - .004)	.003 (.0015 - .004)	.003 (.0015 - .004)
	Hardened Steels (D2)	50 - 55 Hrc	200 (130 - 260)	.002 (.0015 - .003)	.002 (.0015 - .003)	.0024 (.0015 - .003)	.0024 (.0015 - .003)	.003 (.0015 - .004)	.003 (.0015 - .004)	.003 (.0015 - .004)

Cutting Conditions - Turning





shaping your dreams

 Safe use of cutting tools

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

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