

YU-IO26 **AMERICAS**

BEST VALUE IN THE WORLD OF CUTTING TOOLS



i-ONE DRILLS

**MICRO GRAIN CARBIDE INSERTS
AND PREMIUM TOOL STEEL HOLDERS**

High-Performance Exchangeable
for General Steels, Cast Iron and Stainless Steels

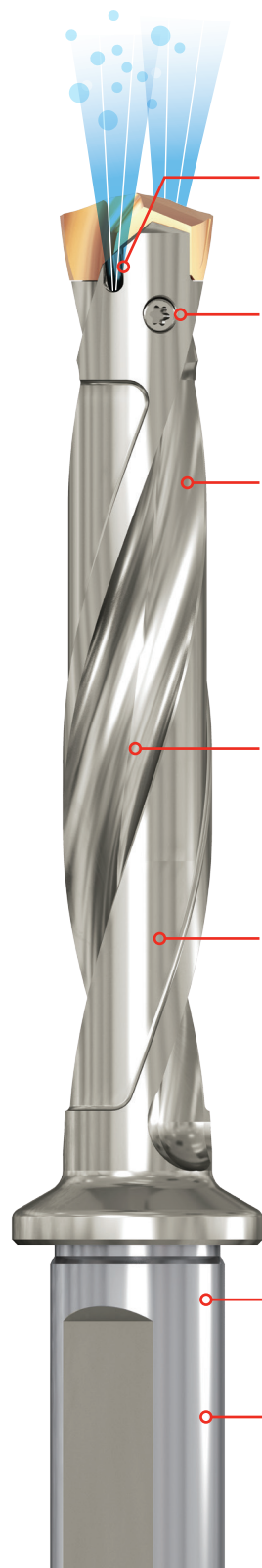
NEW *Inserts for Stainless Steel*



FEATURES

Micro Grain Carbide Inserts and Premium Tool Steel Holder with Coolant Holes

COST EFFICIENT HIGH-PERFORMANCE EXCHANGEABLE DRILLING TOOLS



Internal cooling channel
for higher drilling performance

Torx Plus Screw
for clamping insert

Optimized flute shape
for better chip evacuation

Nickel-plated Steel holder
for corrosion resistance and wear resistance

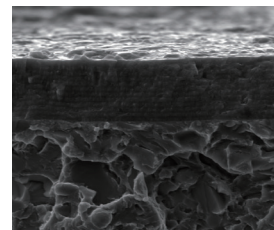
Body Clearance
for elimination of undesirable contact with workpiece

Ground bright finished shank
for more precise clamping

Cylindrical shank with a parallel flat
according to ISO 9766.
Plain shank and Whistle notch shank are available on request.



• **Secure & Quick clamping system**



• **Multi-layered Coating**

H-Coating

Reduces cracking and provides high shear strength with excellent oxidation resistance and hot hardness

NEW

Z-Coating

Provides outstanding heat resistance for high-temperature machining

• **Optimized point geometry**

of i-ONE Drills ensures centering ability and smoother cutting

• **Optimized Edge Honing (for Stainless Steel)**

Provides superior chipping resistance and consistent performance under high-load conditions

• **Ground Negative land (for General Steel)**

on cutting edge for reliable tool life

• **Self-Centering and Chip Breaking**
by radius thinning

CASE STUDY

i-ONE DRILLS GENERAL

► Ø14.0mm, Alloy Steel

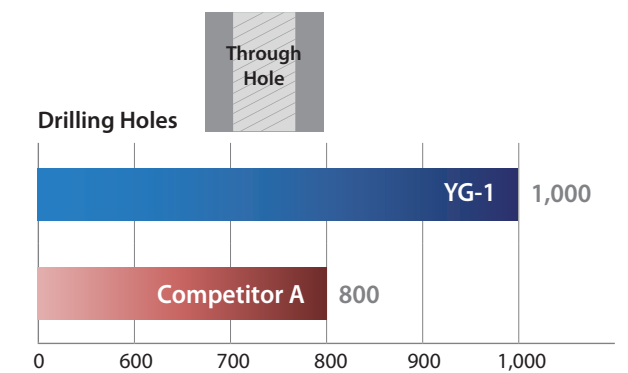
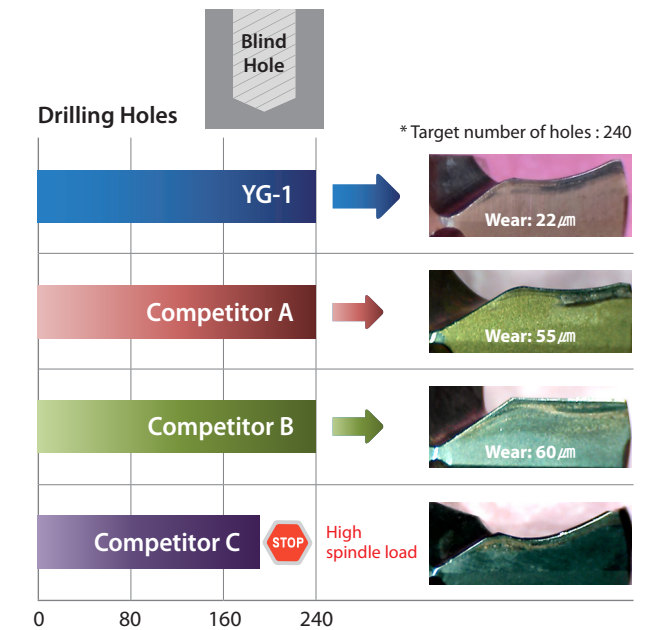
Cutting Condition

O.D Size (mm)	Ø14.0 (.5512 inch)
Work Material	- DIN: 42CrMo4 - AISI: 4140 - JIS: SCM440 (HRC30)
Cutting Speed	80 m/min. (262.5 ft/min.)
RPM	1,819 rev./min.
Feed	0.18 mm/rev. (.0071 in/rev.)
Drilling Depth	65.0 mm (Blind)
Cooling Method	Internal Cooling (35 bar) Water Soluble (9% Emulsion)
Machine	Machining Center

► Ø16.0mm, Pre-Hardened

Cutting Condition

O.D Size (mm)	Ø16.0 (.6299 inch)
Work Material	- DIN: CK45 - AISI: 1045 - JIS: S45C (HRC20)
Cutting Speed	75 m/min. (246.1 ft/min.)
RPM	1,493 rev./min.
Feed	0.3 mm/rev. (.0118 in/rev.)
Drilling Depth	35.0 mm (Through)
Cooling Method	Internal Cooling (10 bar) Water Soluble (9% Emulsion)
Machine	Machining Center



GUIDE TO ICONS

Tool Raw Material



Point Angle



Cutting Condition



Tolerance of Dimension



Tolerance of Outside Diameter



Tolerance of Shank Diameter

Surface Treatment



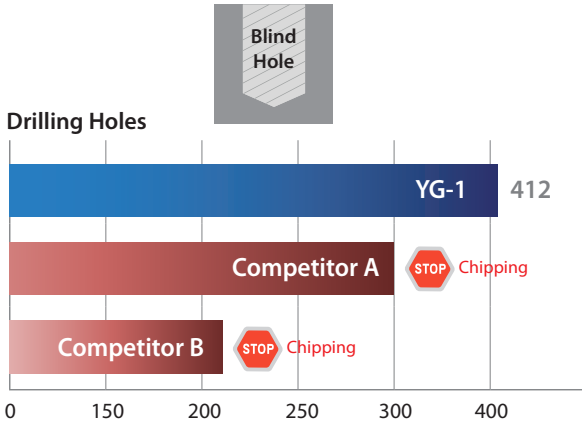
CASE STUDY

i-ONE DRILLS INOX

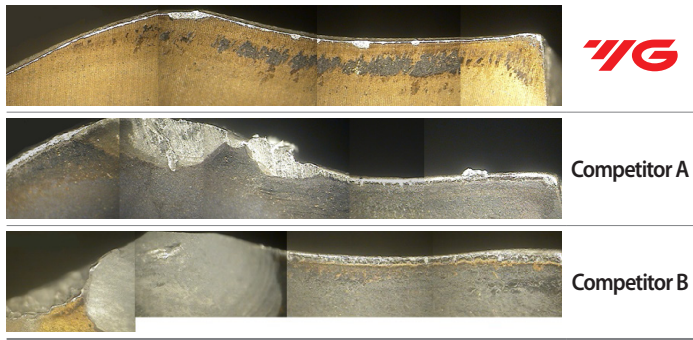
► Ø14.0mm, SUS304

Cutting Condition

O.D Size (mm)	Ø14.0 (.5512 inch)
Work Material	- DIN: X5CrNi18-9 - AISI: 304 - JIS: SUS304
Cutting Speed	50 m/min. (164.04 ft/min.)
RPM	1,137 rev./min.
Feed	0.15 mm/rev. (.0059 in/rev.)
Drilling Depth	66.0 mm (Blind)
Cooling Method	Internal Cooling (15 bar) Water Soluble (9% Emulsion)
Machine	Vertical Machining Center



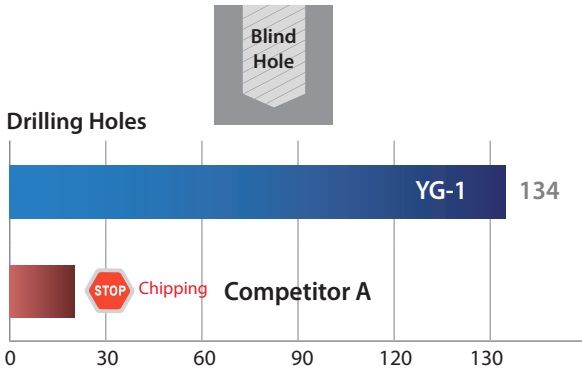
Tool Wear Comparison



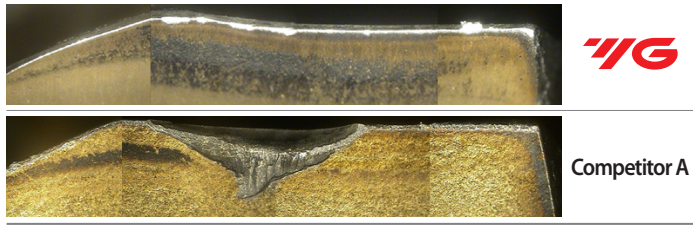
► Ø25.0mm, SUS304

Cutting Condition

O.D Size (mm)	Ø25.0 (.9844 inch)
Work Material	- DIN: X5CrNi18-9 - AISI: 304 - JIS: SUS304
Cutting Speed	50 m/min. (164.04 ft/min.)
RPM	637 rev./min.
Feed	0.20 mm/rev. (.0079 in/rev.)
Drilling Depth	110.0 mm (Blind)
Cooling Method	Internal Cooling (15 bar) Water Soluble (9% Emulsion)
Machine	Vertical Machining Center



Tool Wear Comparison





High-Performance Exchangeable
for General Steels, Cast Iron and Stainless Steels



Please visit
globalyg1.com/mat
for material search

◎ : Excellent ○ : Good

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc					
P	1	Non-alloy steel	About 0.15% C	Annealed	125	13	◎	○	◎	◎	◎
	2		About 0.45% C	Annealed	190	25	◎	○	◎	◎	◎
	3		About 0.45% C	Quenched & tempered	250	28	◎	○	◎	◎	◎
	4		About 0.75% C	Annealed	270	32	◎	○	◎	◎	◎
	5		About 0.75% C	Quenched & tempered	300	32	◎		◎	◎	◎
	6	Low alloy steel		Annealed	180	10	◎	○	◎	◎	◎
	7			Quenched & tempered	275	29	◎	○	◎	◎	◎
	8			Quenched & tempered	300	32	◎		◎	◎	◎
	9			Quenched & tempered	350	38	◎		◎	◎	◎
	10	High alloyed steel, and tool steel		Annealed	200	15	◎	○	◎	◎	◎
	11			Quenched & Tempered	325	35	◎		◎	◎	◎
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15		◎	◎	◎	◎
	13		Martensitic	Quenched & Tempered	240	23		◎	◎	◎	◎
	14			Austenitic	180	10		◎	◎	◎	◎
K	15	Grey cast iron	Pearlitic / Ferritic		180	10	◎		◎	◎	◎
	16		Pearlitic (Martensitic)		260	26	◎		◎	◎	◎
	17	Nodular cast iron	Ferritic		160	3	◎		◎	◎	◎
	18		Pearlitic		250	25	◎		◎	◎	◎
	19	Malleable cast iron	Ferritic		130		◎		◎	◎	◎
	20		Pearlitic		230	21	◎		◎	◎	◎
N	21	Aluminum-wrought alloy	Not Curable		60						
	22		Curable Hardened		100						
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75						
	24		≤ 12% Si, Curable Hardened		90						
	25		> 12% Si, Not Curable		130						
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110						
	27		CuZn, CuSnZn (Brass)		90						
	28		CuSn, lead-free copper and electrolytic copper		100						
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic								
	30		Rubber, Wood, etc.								
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15					
	32			Cured	280	30					
	33			Annealed	250	25					
	34		Ni or Co Based	Cured	350	38					
	35			Cast	320	34					
	36	Titanium Alloys	Pure Titanium		400 Rm						
	37		Alpha + Beta Alloys	Hardened	1050 Rm						
H	38	Hardened steel		Hardened	550	55					
	39			Hardened	630	60					
	40	Chilled Cast Iron		Cast	400	42					
	41	Hardened Cast Iron		Hardened	550	55					

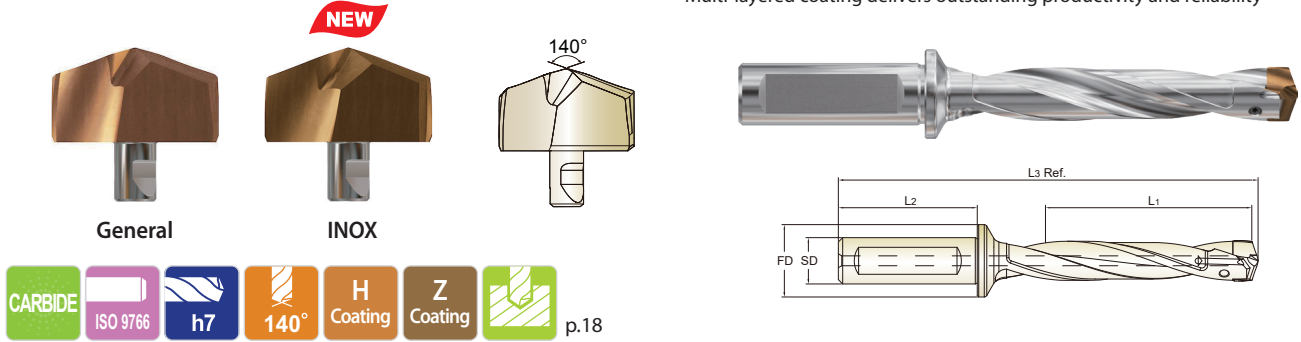


MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS
i-ONE DRILLS INSERTS & HOLDERS

SERIES
General **Y101H**
INOX **Y102Z**

- Applications
- For Carbon Steels, Alloy Steels, Cast Iron and Stainless Steels
- Holder length: 3xD, 5xD, 8xD

- Benefits
- Secure and quick clamping system
- High-Performance with cost efficiency
- Multi-layered coating delivers outstanding productivity and reliability



CARBIDE ISO 9766 h7 140° Coating Z Coating p.18

Unit : Inch													
Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth		Overall Length	
(mm)	General (H-Coating)	INOX (Z-Coating)	h7				SD	L2	FD	L1	L3 Ref.	Screw No.	
			dec.	frac.	mm								
S10 Ø10.00 to Ø11.99	Y101H1000	Y102Z1000	.3937	13/32	10.00	ZD10003063 ZD10005063 ZD10008063	5/8	1-7/8	29/32	3D	1-15/64	4-3/64	TX1011P5
	Y101H1010	Y102Z1010	.3976		10.10					5D	2-1/16	4-53/64	
	Y101H1020	Y102Z1020	.4016		10.20					8D	3-5/16	6-1/64	
	Y101H1030	Y102Z1030	.4055		10.30								
	Y101H1032	Y102Z1032	.4063		10.32								
	Y101H1040	Y102Z1040	.4094	10.40	ZD10503063 ZD10505063 ZD10508063	5/8	1-7/8	29/32	3D	1-19/64	4-5/64		
	Y101H1050	Y102Z1050	.4134	10.50					5D	2-11/64	4-29/32		
	Y101H1060	Y102Z1060	.4173	10.60					8D	3-15/32	6-9/64		
	Y101H1070	Y102Z1070	.4213	10.70									
	Y101H1072	Y102Z1072	.4219	27/64					10.72				
	Y101H1080	Y102Z1080	.4252	10.80	ZD11003063 ZD11005063 ZD11008063	5/8	1-7/8	29/32	3D	1-23/64	4-1/8		
	Y101H1090	Y102Z1090	.4291	10.90					5D	2-17/64	4-63/64		
	Y101H1100	Y102Z1100	.4331	11.00					8D	3-5/8	6-9/32		
	Y101H1110	Y102Z1110	.4370	11.10									
	Y101H1111	Y102Z1111	.4375	7/16					11.11				
	Y101H1120	Y102Z1120	.4409	11.20	ZD11503063 ZD11505063 ZD11508063	5/8	1-7/8	29/32	3D	1-27/64	4-5/32		
	Y101H1130	Y102Z1130	.4449	11.30					5D	2-23/64	5-1/16		
	Y101H1140	Y102Z1140	.4488	11.40					8D	3-25/32	6-27/64		
	Y101H1150	Y102Z1150	.4528	11.50									
	Y101H1151	Y102Z1151	.4531	29/64					11.51				
	Y101H1160	Y102Z1160	.4567	11.60	ZD13003063 ZD13005063 ZD13008063	5/8	1-7/8	29/32	3D	1-19/32	4-27/64		
	Y101H1170	Y102Z1170	.4606	11.70					5D	2-21/32	5-29/64		
	Y101H1180	Y102Z1180	.4646	11.80					8D	4-1/4	6-63/64		
	Y101H1190	Y102Z1190	.4685	11.90									
	Y101H1191	Y102Z1191	.4688	15/32					11.91				

► Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent ○ : Good

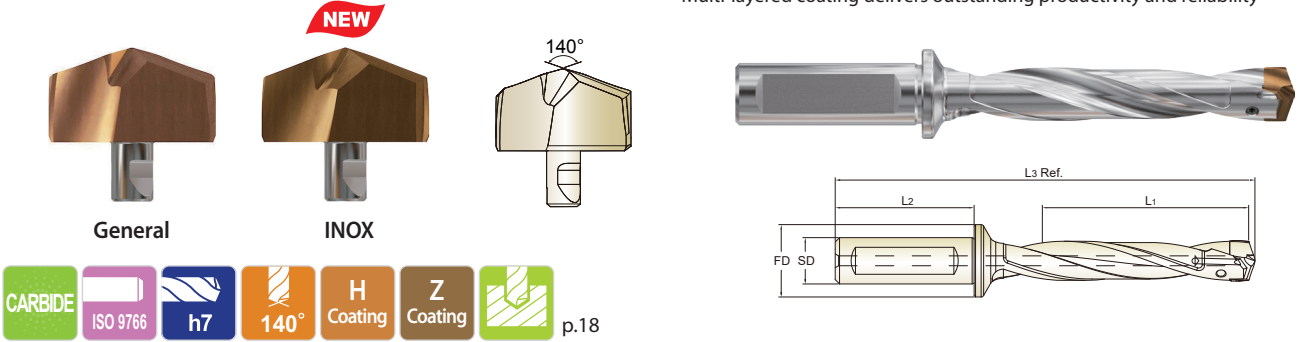
ISO	P											M				K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25		21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
General	◎	◎	◎		◎	◎	◎	◎	◎	◎	◎				◎	◎	◎	◎	◎	◎	
INOX	○	○	○	○		○	○			○		◎	◎	◎							
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
General																					
INOX																					

MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS
i-ONE DRILLS INSERTS & HOLDERS

SERIES
General **Y121H**
INOX **Y122Z**

- Applications
- For Carbon Steels, Alloy Steels, Cast Iron and Stainless Steels
- Holder length: 3xD, 5xD, 8xD

- Benefits
- Secure and quick clamping system
- High-Performance with cost efficiency
- Multi-layered coating delivers outstanding productivity and reliability



CARBIDE ISO 9766 h7 140° Coating Z Coating p.18

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth		Overall Length	Screw No.
							SD	L2	FD			L3 Ref.	
	General (H-Coating)	INOX (Z-Coating)	dec.	frac.	mm					L1			
S12 Ø12.00 to Ø13.99	Y121H1200	Y122Z1200	.4724		12.00	ZD12003063 ZD12005063 ZD12008063	5/8	1-7/8	29/32	3D	1-15/32	4-5/16	TX1213P5
	Y121H1210	Y122Z1210	.4764		12.10					5D	2-29/64	5-8/32	
	Y121H1220	Y122Z1220	.4803		12.20					8D	3-15/16	6-43/64	
	Y121H1230	Y122Z1230	.4844	31/64	12.30								
	Y121H1240	Y122Z1240	.4882		12.40	ZD12503063 ZD12505063 ZD12508063	5/8	1-7/8	29/32	3D	1-17/32	4-11/32	
	Y121H1250	Y122Z1250	.4921		12.50					5D	2-9/16	6-33/64	
	Y121H1260	Y122Z1260	.4961		12.60					8D	4-3/32	6-13/16	
	Y121H1270	Y122Z1270	.5000	1/2	12.70								
	Y121H1280	Y122Z1280	.5039		12.80	ZD13003063 ZD13005063 ZD13008063	5/8	1-7/8	29/32	3D	1-19/32	4-27/64	
	Y121H1290	Y122Z1290	.5079		12.90					5D	2-21/32	5-29/64	
	Y121H1300	Y122Z1300	.5118	33/64	13.00					8D	4-1/4	6-63/64	
	Y121H1310	Y122Z1310	.5156		13.10								
	Y121H1320	Y122Z1320	.5197		13.20	ZD13503063 ZD13505063 ZD13508063	5/8	1-7/8	29/32	3D	1-21/32	4-15/32	
	Y121H1330	Y122Z1330	.5236		13.30					5D	2-3/4	5-17/32	
	Y121H1340	Y122Z1340	.5276		13.40					8D	4-13/32	7-1/8	
	Y121H1349	Y122Z1349	.5313	17/32	13.49								
	Y121H1350	Y122Z1350	.5315		13.50								
	Y121H1360	Y122Z1360	.5354		13.60	ZD13503063 ZD13505063 ZD13508063	5/8	1-7/8	29/32	3D	1-21/32	4-15/32	
	Y121H1370	Y122Z1370	.5394		13.70					5D	2-3/4	5-17/32	
	Y121H1380	Y122Z1380	.5433		13.80					8D	4-13/32	7-1/8	
	Y121H1389	Y122Z1389	.5469	35/64	13.89								
	Y121H1390	Y122Z1390	.5472		13.90								

► Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent ○ : Good

ISO	P											M			K						
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VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
General	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎				◎	◎	◎	◎	◎	◎	
INOX	○	○	○	○		○	○			○		◎	◎	◎							
ISO	N									S						H					
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel		Chilled Cast iron	Hardened Cast iron		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
General																					
INOX																					

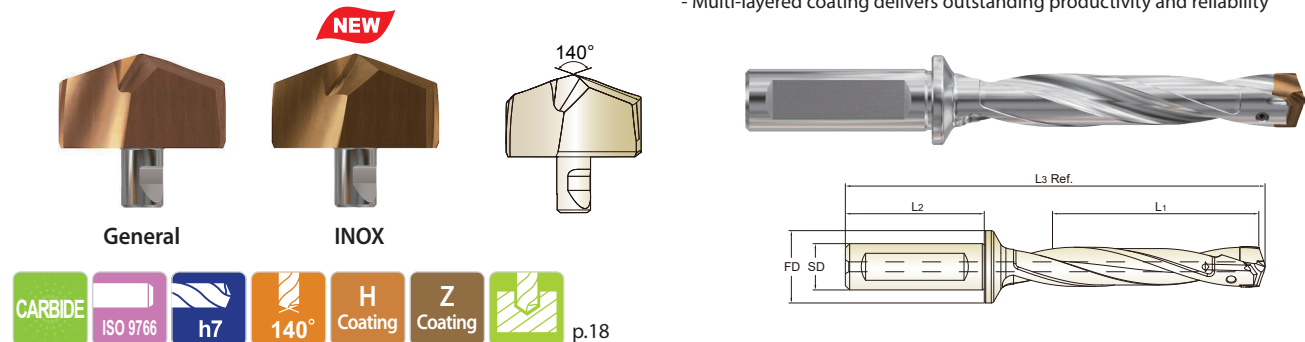
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Unit : Inch

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	General (H-Coating)	INOX (Z-Coating)	h7				SD	L2	FD	L1		L3 Ref.	
(mm)			dec.	frac.	mm								
S14 Ø14.00 to Ø15.99	Y141H1400	Y142Z1400	.5512	9/16	14.00	ZD14003063 ZD14005063 ZD14008063	5/8	1-7/8	29/32				TX1415P7
	Y141H1410	Y142Z1410	.5551		14.10					3D	1-23/32	4-9/16	
	Y141H1420	Y142Z1420	.5591		14.20					5D	2-55/64	5-43/64	
	Y141H1429	Y142Z1429	.5625		14.29					8D	4-9/16	7-5/16	
	Y141H1430	Y142Z1430	.5630		14.30								
	Y141H1440	Y142Z1440	.5669		14.40								
	Y141H1450	Y142Z1450	.5709	37/64	14.50	ZD14503063 ZD14505063 ZD14508063	5/8	1-7/8	29/32				
	Y141H1460	Y142Z1460	.5748		14.60					3D	1-49/64	4-41/64	
	Y141H1468	Y142Z1468	.5781		14.68					5D	2-61/64	5-25/32	
	Y141H1470	Y142Z1470	.5787		14.70					8D	4-23/32	7-1/2	
	Y141H1480	Y142Z1480	.5827		14.80								
	Y141H1490	Y142Z1490	.5866		14.90								
	Y141H1500	Y142Z1500	.5906	19/32	15.00	ZD15003063 ZD15005063 ZD15008063	5/8	1-7/8	29/32				
	Y141H1508	Y142Z1508	.5938		15.08					3D	1-53/64	4-23/32	
	Y141H1510	Y142Z1510	.5945		15.10					5D	3-3/64	5-29/32	
	Y141H1520	Y142Z1520	.5984		15.20					8D	4-7/8	7-43/64	
	Y141H1530	Y142Z1530	.6024		15.30								
	Y141H1540	Y142Z1540	.6063	39/64	15.40	ZD15503063 ZD15505063 ZD15508063	5/8	1-7/8	29/32				
	Y141H1548	Y142Z1548	.6094		15.48					3D	1-57/64	4-49/64	
	Y141H1550	Y142Z1550	.6102		15.50					5D	3-5/32	5-63/64	
Y141H1560	Y142Z1560	.6142	15.60		8D					5-3/64	7-13/16		
Y141H1570	Y142Z1570	.6181	15.70										
Y141H1580	Y142Z1580	.6220	5/8	15.80									
Y141H1588	Y142Z1588	.6250		15.88									
Y141H1590	Y142Z1590	.6260		15.90									

► Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent ○ : Good

[illegible]

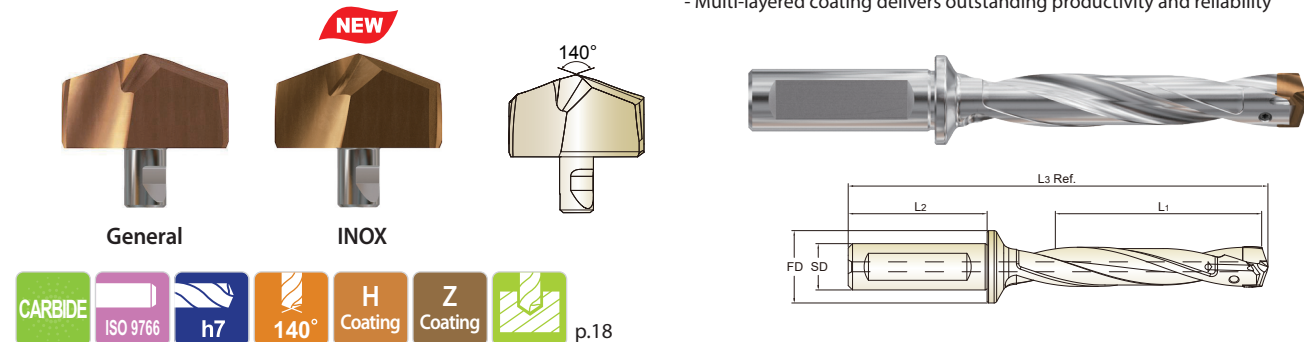
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- Multi-layered coating delivers outstanding productivity and reliability



Unit : Inch

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth		Overall Length	
(mm)	General (H-Coating)	INOX (Z-Coating)	h7				SD	L2	FD	L1		L3 Ref.	Screw No.
			dec.	frac.	mm								
S16 Ø16.00 to Ø17.99	Y161H1600	Y162Z1600	.6299		16.00	ZD16003075 ZD16005075 ZD16008075	3/4	2	1	3D 5D 8D	2-1/64 3-11/32 5-23/64	5-1/32 6-21/64 8-9/32	TX1617P7
	Y161H1609	Y162Z1609	.6335		16.09								
	Y161H1610	Y162Z1610	.6339		16.10								
	Y161H1620	Y162Z1620	.6378		16.20								
	Y161H1627	Y162Z1627	.6406	41/64	16.27								
	Y161H1630	Y162Z1630	.6417		16.30								
	Y161H1640	Y162Z1640	.6457		16.40								
	Y161H1650	Y162Z1650	.6496		16.50								
	Y161H1660	Y162Z1660	.6535		16.60								
	Y161H1667	Y162Z1667	.6563	21/32	16.67								
	Y161H1670	Y162Z1670	.6575		16.70								
	Y161H1680	Y162Z1680	.6614		16.80								
	Y161H1690	Y162Z1690	.6654		16.90								
	Y161H1700	Y162Z1700	.6693		17.00	ZD17003075 ZD17005075 ZD17008075	3/4	2	1	3D 5D 8D	2-1/8 3-35/64 5-43/64	5-5/32 6-17/32 8-19/32	TX1718P7
	Y161H1707	Y162Z1707	.6719	43/64	17.07								
	Y161H1710	Y162Z1710	.6732		17.10								
	Y161H1720	Y162Z1720	.6772		17.20								
	Y161H1730	Y162Z1730	.6811		17.30								
	Y161H1740	Y162Z1740	.6850		17.40								
	Y161H1746	Y162Z1746	.6875	11/16	17.46								
	Y161H1750	Y162Z1750	.6890		17.50								
	Y161H1760	Y162Z1760	.6929		17.60								
	Y161H1770	Y162Z1770	.6969		17.70								
	Y161H1780	Y162Z1780	.7008		17.80								
Y161H1786	Y162Z1786	.7031	45/64	17.86									
Y161H1790	Y162Z1790	.7047		17.90									

► Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent ○ : Good

[illegible]



SERIES

MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS
i-ONE DRILLS INSERTS & HOLDERS

General

Y221H

INOX

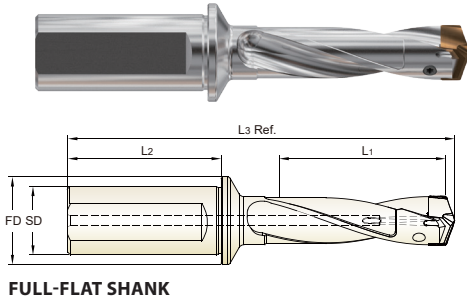
Y222Z

► Applications

- For Carbon Steels, Alloy Steels, Cast Iron and Stainless Steels
- Holder length: 3xD, 5xD, 8xD

► Benefits

- Secure and quick clamping system
- High-Performance with cost efficiency
- Multi-layered coating delivers outstanding productivity and reliability



FULL-FLAT SHANK

p.18

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth	Overall Length			
(mm)	General (H-Coating)	INOX (Z-Coating)	h7				SD	L2	FD	L1	L3 Ref.	Screw No.		
			dec.	frac.	mm									
S22 Ø22.00 to Ø23.99	Y221H2200	Y222Z2200	.8661	7/8	22.00	ZD22003100 ZD22005100 ZD22008100	1	2-3/16	1-1/4	3D 5D 8D	2-23/32 4-34/64 7-1/4	6-1/32 7-51/64 10-29/64	TX2223P9	
	Y221H2210	Y222Z2210	.8701		22.10									
	Y221H2220	Y222Z2220	.8740		22.20									
	Y221H2223	Y222Z2223	.8750		22.23									
	Y221H2230	Y222Z2230	.8780		22.30									
	Y221H2240	Y222Z2240	.8819		22.40									
	Y221H2250	Y222Z2250	.8858		22.50									
	Y221H2260	Y222Z2260	.8898		22.60									
	Y221H2262	Y222Z2262	.8906		57/64									22.62
	Y221H2270	Y222Z2270	.8937		22.70									
	Y221H2280	Y222Z2280	.8976		22.80									
	Y221H2290	Y222Z2290	.9016		22.90									
	Y221H2300	Y222Z2300	.9055	29/32	23.00	ZD23003100 ZD23005100 ZD23008100	1	2-3/16	1-1/4	3D 5D 8D	2-53/64 4-23/32 7-9/16	6-3/16 8-1/32 10-13/16	TX2223P9	
	Y221H2302	Y222Z2302	.9063		23.02									
	Y221H2310	Y222Z2310	.9094		23.10									
	Y221H2320	Y222Z2320	.9134		23.20									
	Y221H2330	Y222Z2330	.9173		23.30									
	Y221H2340	Y222Z2340	.9213		23.40									
	Y221H2342	Y222Z2342	.9219		59/64									23.42
	Y221H2350	Y222Z2350	.9252		23.50									
	Y221H2360	Y222Z2360	.9291		23.60									
	Y221H2370	Y222Z2370	.9331		23.70									
	Y221H2380	Y222Z2380	.9370		23.80									
	Y221H2381	Y222Z2381	.9375		15/16									23.81
	Y221H2390	Y222Z2390	.9409		23.90									

► Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent ○ : Good

ISO	P										M				K			
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
HRC	13	25	28	32	32	10	29	32	38	15	35	15	23	10	10	26	3	25
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250
General	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
INOX	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ISO	N										S				H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)		Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
HRC	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	36	37	38
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550
General																		
INOX																		

SERIES

MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS
i-ONE DRILLS INSERTS & HOLDERS

General

Y241H

INOX

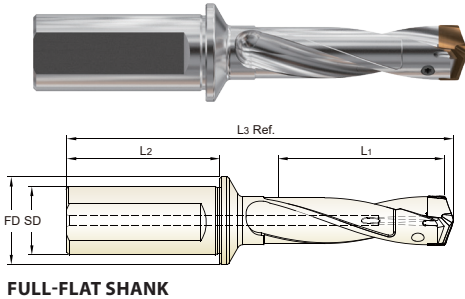
Y242Z

► Applications

- For Carbon Steels, Alloy Steels, Cast Iron and Stainless Steels
- Holder length: 3xD, 5xD, 8xD

► Benefits

- Secure and quick clamping system
- High-Performance with cost efficiency
- Multi-layered coating delivers outstanding productivity and reliability



FULL-FLAT SHANK

p.18

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth	Overall Length			
(mm)	General (H-Coating)	INOX (Z-Coating)	h7				SD	L2	FD	L1	L3 Ref.	Screw No.		
			dec.	frac.	mm									
S24 Ø24.00 to Ø25.99	Y241H2400	Y242Z2400	.9449	61/64	24.00	ZD24003125 ZD24005125 ZD24008125	1-1/4	2-3/8	1-15/32	3D	2-61/64	6-17/32	TX2425P10	
	Y241H2410	Y242Z2410	.9488		24.10					5D	4-59/64	8-15/32		
	Y241H2420	Y242Z2420	.9528		24.20					8D	7-7/8	11-23/64		
	Y241H2421	Y242Z2421	.9531		24.21									
	Y241H2430	Y242Z2430	.9567		24.30									
	Y241H2440	Y242Z2440	.9606		24.40									
	Y241H2450	Y242Z2450	.9646		24.50									
	Y241H2460	Y242Z2460	.9685		24.60									
	Y241H2461	Y242Z2461	.9688		31/32					24.61				
	Y241H2470	Y242Z2470	.9724		24.70									
	Y241H2480	Y242Z2480	.9764	24.80										
	Y241H2490	Y242Z2490	.9803	24.90										
	Y241H2500	Y242Z2500	.9844	63/64	25.00	ZD25003125 ZD25005125 ZD25008125	1-1/4	2-3/8	1-15/32	3D	3-5/64	6-47/64	TX2526P10	
	Y241H2510	Y242Z2510	.9882	25.10	5D					5-1/8	8-47/64			
	Y241H2520	Y242Z2520	.9921	25.20	8D					8-3/16	11-3/4			
	Y241H2530	Y242Z2530	.9961	25.30										
	Y241H2540	Y242Z2540	1.0000	1	25.40									
	Y241H2550	Y242Z2550	1.0039	25.50										
	Y241H2560	Y242Z2560	1.0079	25.60										
	Y241H2567	Y242Z2567	1.0106	25.67										
	Y241H2570	Y242Z2570	1.0118	25.70										
	Y241H2580	Y242Z2580	1.0156	1-1/64	25.80									
	Y241H2590	Y242Z2590	1.0197	25.90										

► Other diameters of insert and shank types of holder are available upon request.

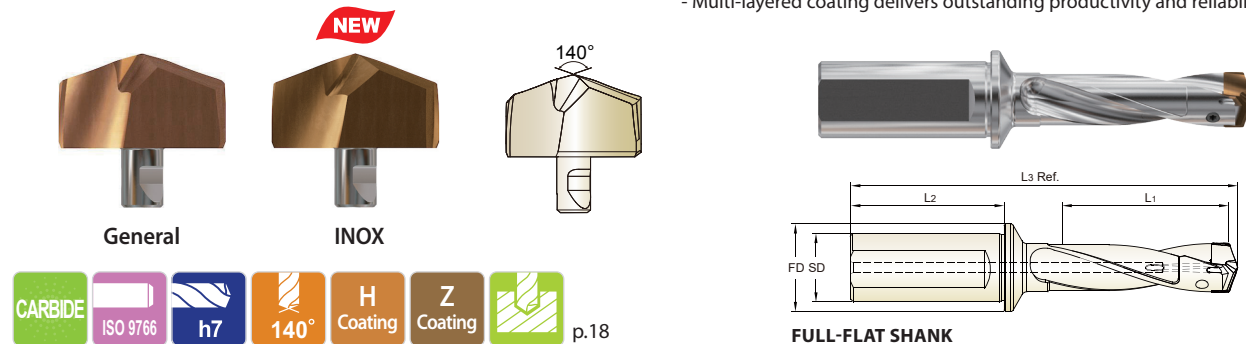
◎ : Excellent ○ : Good

ISO	P										M				K						
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRC	13	25	28	32	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
General	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎				◎	◎	◎	◎	◎	◎	
INOX	○	○	○	○		○	○			○		◎	◎	◎							
ISO	N										S						H				
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)		Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron			
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC											15	30	25	38	34			55	60	42	55
HB	60	100		75	90	130	110	90	100		200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
General																					
INOX																					

MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS
i-ONE DRILLS INSERTS & HOLDERS

SERIES	
General	Y261H
INOX	Y262Z

- | | |
|---|--|
| <p>► Applications</p> <ul style="list-style-type: none"> - For Carbon Steels, Alloy Steels, Cast Iron and Stainless Steels - Holder length: 3xD, 5xD, 8xD | <p>► Benefits</p> <ul style="list-style-type: none"> - Secure and quick clamping system - High-Performance with cost efficiency - Multi-layered coating delivers outstanding productivity and reliability |
|---|--|



Unit : Inch

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth	Overall Length		
(mm)	General (H-Coating)	INOX (Z-Coating)	h7				SD	L2	FD	L1	L3 Ref.	Screw No.	
S26 Ø26.00 to Ø27.99	Y261H2600	Y262Z2600	1.0236		26.00	ZD26003125 ZD26005125 ZD26008125	1-1/4	2-3/8	1-15/32	3D	3-3/16	6-51/64	TX2627P10
	Y261H2619	Y262Z2619	1.0311	1-1/32	26.19					5D	5-5/16	8-7/8	
	Y261H2620	-	1.0315		26.20					8D	8-1/2	12-1/64	
	Y261H2650	Y262Z2650	1.0433		26.50								
	Y261H2659	Y262Z2659	1.0469	1-3/64	26.59								
	Y261H2660	-	1.0472		26.60								
	Y261H2670	-	1.0512		26.70								
	Y261H2680	-	1.0551		26.80								
	Y261H2690	-	1.0591		26.90								
	Y261H2699	Y262Z2699	1.0626	1-1/16	26.99								
	Y261H2700	Y262Z2700	1.0630		27.00	ZD27003125 ZD27005125 ZD27008125	1-1/4	2-3/8	1-15/32	3D	3-5/16	6-29/32	TX2728P10
	Y261H2710	-	1.0669		27.10					5D	5-33/64	9-5/64	
	Y261H2720	-	1.0709		27.20					8D	8-13/16	12-21/64	
	Y261H2730	-	1.0748		27.30								
	Y261H2738	-	1.0780	1-5/64	27.38								
	Y261H2740	-	1.0787		27.40								
	Y261H2750	Y262Z2750	1.0827		27.50								
	Y261H2760	-	1.0866		27.60								
	Y261H2770	-	1.0906		27.70								
	Y261H2778	Y262Z2778	1.0937	1-3/32	27.78								
Y261H2780	-	1.0945		27.80									
Y261H2790	-	1.0984		27.90									

► Other diameters of insert and shank types of holder are available upon request.

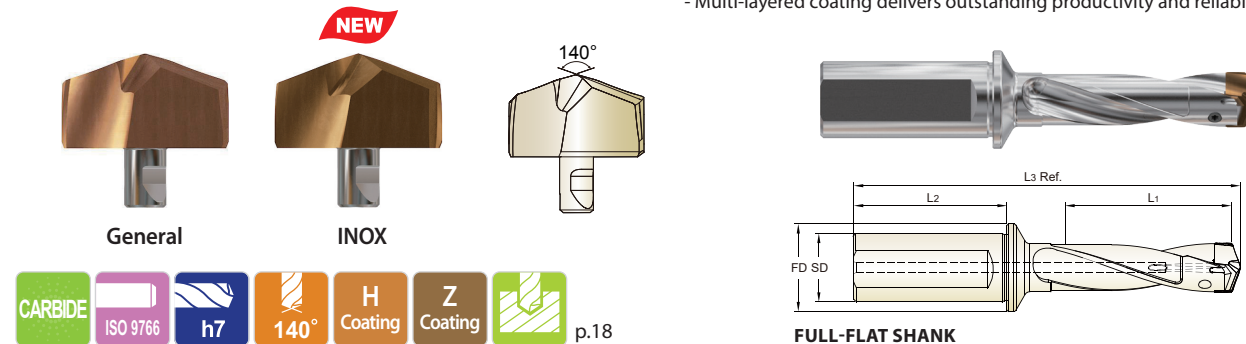
◎ : Excellent ○ : Good

[illegible]

MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS
i-ONE DRILLS INSERTS & HOLDERS

	SERIES
General	Y281H
INOX	Y282Z

- Applications
 - For Carbon Steels, Alloy Steels, Cast Iron and Stainless Steels
 - Holder length: 3xD, 5xD, 8xD
 - Benefits
 - Secure and quick clamping system
 - High-Performance with cost efficiency
 - Multi-layered coating delivers outstanding productivity and reliability



Unit : Inch

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth	Overall Length													
(mm)	General (H-Coating)	INOX (Z-Coating)	h7				SD	L2	FD	L1	L3 Ref.	Screw No.												
			dec.	frac.	mm																			
S28 Ø28.00 to Ø29.99	Y281H2800	Y282Z2800	1.1024	1-7/64	28.00	ZD28003125 ZD28005125 ZD28008125	1-1/4	2-3/8	1-15/32	3D	3-27/64	7-1/16	TX2830P10											
	Y281H2810	-	1.1063		28.10									5D	5-45/64	9-5/16								
	Y281H2818	Y282Z2818	1.1094		28.18												8D	9-9/64	12-43/64					
	Y281H2820	-	1.1102		28.20																			
	Y281H2830	-	1.1142		28.30																			
	Y281H2840	-	1.1181	28.40																				
	Y281H2850	Y282Z2850	1.1220	1-1/8	28.50					ZD29003125 ZD29005125 ZD29008125	1-1/4	2-3/8		1-15/32	3D	3-35/64				7-7/32	TX2930P10			
	Y281H2858	Y282Z2858	1.1252		28.58												5D	5-29/32	9-35/64					
	Y281H2860	-	1.1260		28.60																	8D	9-29/64	13-1/32
	Y281H2870	-	1.1299		28.70																			
	Y281H2880	-	1.1339		28.80																			
	Y281H2890	-	1.1378	28.90																				
	Y281H2900	Y282Z2900	1.1417	1-5/32	29.00	ZD29003125 ZD29005125 ZD29008125	1-1/4	2-3/8	1-15/32				3D		3-35/64	7-7/32	TX2930P10							
	Y281H2910	-	1.1457		29.10													5D	5-29/32	9-35/64				
	Y281H2920	-	1.1496		29.20																	8D	9-29/64	13-1/32
	Y281H2930	-	1.1535		29.30																			
	Y281H2937	Y282Z2937	1.1563		29.37																			
	Y281H2940	-	1.1575	29.40																				
	Y281H2950	Y282Z2950	1.1614	29.50																				
	Y281H2960	-	1.1654	29.60																				
Y281H2970	-	1.1693	29.70																					
Y281H2977	Y282Z2977	1.1720	1-11/64	29.77	ZD29003125 ZD29005125 ZD29008125					1-1/4	2-3/8	1-15/32	3D	3-35/64	7-7/32	TX2930P10								
Y281H2980	-	1.1732		29.80		5D	5-29/32	9-35/64																
Y281H2990	-	1.1772		29.90					8D								9-29/64	13-1/32						

► Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent ○ : Good

[illegible]



SERIES

MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS
i-ONE DRILLS INSERTS & HOLDERS

General

Y301H

INOX

Y302Z

► Applications

- For Carbon Steels, Alloy Steels, Cast Iron and Stainless Steels
- Holder length: 3xD, 5xD, 8xD

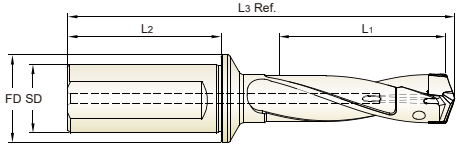
► Benefits

- Secure and quick clamping system
- High-Performance with cost efficiency
- Multi-layered coating delivers outstanding productivity and reliability



General

INOX



FULL-FLAT SHANK

Unit : Inch

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth	Overall Length										
(mm)	General (H-Coating)	INOX (Z-Coating)	h7				SD	L2	FD	L1	L3 Ref.	Screw No.									
			dec.	frac.	mm																
S30 Ø30.00 to Ø31.99	Y301H3000	Y302Z3000	1.1811	1-3/16	30.00	ZD30003125 ZD30005125 ZD30008125	1-1/4	2-3/8	1-15/32	3D 5D 8D	3-21/32 6-7/64 9-49/64	7-3/8 9-25/32 13-3/8	TX3031P15								
	Y301H3010	-	1.1850		30.10																
	Y301H3016	Y302Z3016	1.1874		30.16																
	Y301H3020	-	1.1890		30.20																
	Y301H3030	-	1.1929		30.30																
	Y301H3040	-	1.1969		30.40																
	Y301H3050	Y302Z3050	1.2008	1-13/64	30.50									ZD31003125 ZD31005125 ZD31008125	1-1/4	2-3/8	1-15/32	3D 5D 8D	3-25/32 6-19/64 10-5/64	7-17/32 10-1/64 13-47/64	TX3132P15
	Y301H3056	Y302Z3056	1.2031		30.56																
	Y301H3060	Y302Z3060	1.2047		30.60																
	Y301H3070	Y302Z3070	1.2087		30.70																
	Y301H3080	Y302Z3080	1.2126		30.80																
	Y301H3090	Y302Z3090	1.2165		30.90																
	Y301H3096	Y302Z3096	1.2189	1-7/32	30.96	ZD31003125 ZD31005125 ZD31008125	1-1/4	2-3/8	1-15/32	3D 5D 8D	3-25/32 6-19/64 10-5/64	7-17/32 10-1/64 13-47/64	TX3132P15								
	Y301H3100	Y302Z3100	1.2205	1-1/4	31.00																
	Y301H3110	-	1.2244		31.10																
	Y301H3120	-	1.2283		31.20																
	Y301H3130	-	1.2323		31.30																
	Y301H3140	-	1.2362		31.40																
	Y301H3150	Y302Z3150	1.2402		31.50																
	Y301H3160	-	1.2441	1-1/4	31.60									ZD31003125 ZD31005125 ZD31008125	1-1/4	2-3/8	1-15/32	3D 5D 8D	3-25/32 6-19/64 10-5/64	7-17/32 10-1/64 13-47/64	TX3132P15
	Y301H3170	-	1.2480		31.70																
	Y301H3175	Y302Z3175	1.2500		31.75																
	Y301H3180	-	1.2520		31.80																
	Y301H3190	-	1.2559		31.90																

► Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent ○ : Good

ISO	P										M				K						
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
General	◎	◎	◎		◎	◎	◎	◎	◎	◎	◎				◎	◎	◎	◎	◎	◎	
INOX	○	○	○	○		○	○			○		◎	◎	◎							
ISO	N										S						H				
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)		Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron			
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
General																					
INOX																					

SERIES

General

Y321H

INOX

Y322Z

MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS
i-ONE DRILLS INSERTS & HOLDERS

► Applications

- For Carbon Steels, Alloy Steels, Cast Iron and Stainless Steels
- Holder length: 3xD, 5xD, 8xD

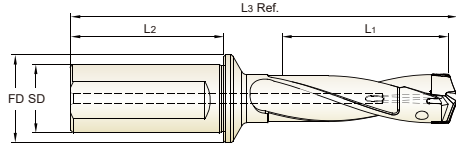
► Benefits

- Secure and quick clamping system
- High-Performance with cost efficiency
- Multi-layered coating delivers outstanding productivity and reliability



General

INOX



FULL-FLAT SHANK

Unit : Inch

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth	Overall Length								
(mm)	General (H-Coating)	INOX (Z-Coating)	h7				SD	L2	FD	L1	L3 Ref.	Screw No.							
			dec.	frac.	mm														
S32 Ø32.00 to Ø33.99	Y321H3200	Y322Z3200	1.2598	1-17/64	32.00	ZD32003125 ZD32005125 ZD32008125	1-1/4	2-3/8	1-15/32	3D 3-57/64 5D 6-1/2 8D 10-25/64	7-25/32 10-21/64 14-11/64	TX3233P15							
	Y321H3210	-	1.2638		32.10														
	Y321H3215	Y322Z3215	1.2657		32.15														
	Y321H3220	-	1.2677		32.20														
	Y321H3230	-	1.2717		32.30														
	Y321H3240	-	1.2756	32.40	ZD33003125 ZD33005125 ZD33008125								1-1/4	2-3/8	1-15/32	3D 4-1/64 5D 6-11/16 8D 10-45/64	7-15/16 10-37/64 14-17/32	TX3334P15	
	Y321H3250	Y322Z3250	1.2795	32.50															
	Y321H3254	Y322Z3254	1.2811	1-9/32															32.54
	Y321H3260	-	1.2835	32.60															
	Y321H3270	-	1.2874	32.70															
	Y321H3280	-	1.2913	32.80															
	Y321H3290	-	1.2953	32.90															
	Y321H3294	-	1.2969	1-19/64		32.94													
	Y321H3300	Y322Z3300	1.2992	1-5/16		33.00	ZD33003125 ZD33005125 ZD33008125	1-1/4	2-3/8	1-15/32	3D 4-1/64 5D 6-11/16 8D 10-45/64	7-15/16 10-37/64 14-17/32							TX3334P15
	Y321H3310	-	1.3031			33.10													
	Y321H3320	-	1.3071		33.20														
	Y321H3330	-	1.3110		33.30														
	Y321H3334	Y322Z3334	1.3126		33.34														
	Y321H3340	-	1.3150	33.40	1-21/64	1-1/4							2-3/8	1-15/32	3D 4-1/64 5D 6-11/16 8D 10-45/64	7-15/16 10-37/64 14-17/32	TX3334P15		
	Y321H3350	Y322Z3350	1.3189	33.50															
	Y321H3360	-	1.3228	33.60															
	Y321H3370	-	1.3268	33.70															
	Y321H3373	-	1.3280	33.73															
	Y321H3380	-	1.3307	33.80	1-21/64	1-1/4	2-3/8	1-15/32	3D 4-1/64 5D 6-11/16 8D 10-45/64	7-15/16 10-37/64 14-17/32	TX3334P15								
	Y321H3390	-	1.3346	33.90															

► Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent ○ : Good

ISO	P											M				K						
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel				Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25		21		
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230		
General	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙				⊙	⊙	⊙	⊙	⊙	⊙		
INOX	○	○	○	○		○	○			○		⊙	⊙	⊙								
ISO	N										S							H				
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRc											15	30	25	38	34			55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	
General																						
INOX																						

i-ONE DRILLS - General

SFM = ft/min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	FEED					
				Ø13/32 - Ø35/64	Ø9/16 - Ø45/64	Ø23/32 - Ø55/64	Ø7/8 - Ø1-1/64	Ø1-1/32 - Ø1-11/64	Ø1-3/16 - Ø1-21/64
P	1	Non-alloy steel	260 - 440	.0050 - .0115	.0080 - .0140	.0100 - .0160	.0120 - .0185	.0140 - .0200	.0150 - .0210
	2		230 - 400						
	3		230 - 300						
	4		230 - 300						
	5		130 - 260						
	6	Low alloy steel	260 - 330	.0045 - .0110	.0075 - .0135	.0100 - .0155	.0120 - .0175	.0135 - .0195	.0140 - .0200
	7		230 - 295						
	8		200 - 260						
	9		165 - 200						
	10	High alloyed steel, and tool steel	150 - 260	.0045 - .0100	.0065 - .0120	.0085 - .0140	.0100 - .0155	.0115 - .0165	.0125 - .0175
	11		115 - 230						
K	15	Grey cast iron	330 - 590	.0060 - .0140	.0100 - .0175	.0125 - .0205	.0150 - .0230	.0165 - .0245	.0175 - .0255
	16		295 - 525						
	17	Nodular cast iron	330 - 490						
	18		295 - 460						
	19	Malleable cast iron	330 - 490						
	20		295 - 460						

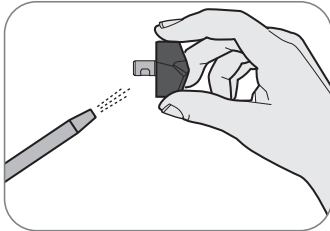
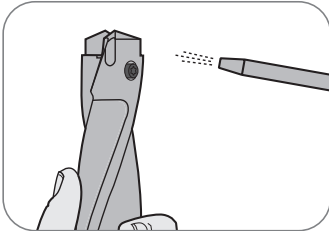
i-ONE DRILLS - INOX

SFM = ft/min.
FEED = inch/rev.

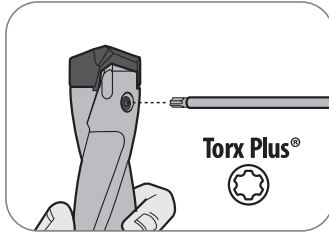
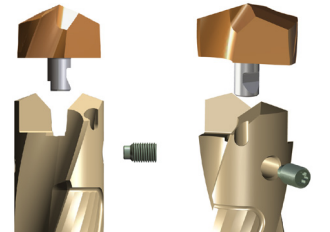
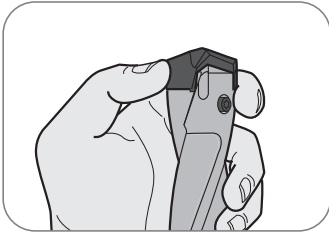
ISO	VDI 3323	Material Description	SFM	FEED					
				Ø13/32 - Ø35/64	Ø9/16 - Ø45/64	Ø23/32 - Ø55/64	Ø7/8 - Ø1-1/64	Ø1-1/32 - Ø1-11/64	Ø1-3/16 - Ø1-21/64
P	1	Non-alloy steel	260 - 440	.0050 - .0115	.0080 - .0140	.0100 - .0160	.0120 - .0185	.0140 - .0200	.0150 - .0210
	2		230 - 400						
	3		230 - 300						
	4		230 - 300						
	6	Low alloy steel	260 - 330	.0045 - .0110	.0075 - .0135	.0100 - .0155	.0120 - .0175	.0135 - .0195	.0140 - .0200
	7		230 - 295						
	10	High alloyed steel, and tool steel	150 - 260	.0045 - .0100	.0065 - .0120	.0085 - .0140	.0100 - .0155	.0115 - .0165	.0125 - .0175
M	12	Stainless steel	130 - 230	.0035 - .0055	.0050 - .0065	.0065 - .0080	.0075 - .0095	.0085 - .0105	.0100 - .0120
	13		115 - 200						
	14		115 - 200						

- The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.
- Recommend you to reduce the feed rate to 85%, 70% when you use 5xD, 8xD holders.
- For use of 8xD holder, we recommend to use a pilot drill with equal to or larger than 140° point angle (0.5xD -1.5xD).
The use of the centering pre-hole improves hole location, roundness and surface finish.

ASSEMBLY OF i-ONE DRILLS



Make sure to clean the insert and insert seat.



Slide the drill insert into the slot of the holder and press down the insert to touch the bottom of the slot.

After confirming the insert is pressed down to the bottom of the slot, tighten the screw using anti-seize compound.

Wrench Type	Product No.	Series (Insert Size)	Torx Plus®	Torque (lbs-in)
	TWFP05	S10 ~ S12 Inch : Ø.3937~ Ø.5472 Metric: Ø10.00~ Ø13.90	5 IP	5.5
	TWDP07	S14 ~ S16 Inch : Ø.5512~ Ø.7047 Metric: Ø14.00~ Ø17.90	7 IP	9.0
	TWDP09	S18 ~ S22 Inch : Ø.7087~ Ø.9409 Metric: Ø18.00~ Ø23.90	9 IP	13.5
	TWDP10	S24 ~ S28 Inch : Ø.9449 ~ Ø1.1772 Metric: Ø24.00 ~ Ø29.90	10 IP	20.0
	TWDP15	S30 ~ S32 Inch : Ø1.1811~ Ø1.3346 Metric: Ø30.00~ Ø33.90	15 IP	28.5

Use the Torx Plus® wrench

- Need to use appropriate wrenches and screws as indicated.
- It's important to tighten up the screw properly.

Comparison with Split Point Drill - Spade Drill & Dream Drill



Normal Split Point Drill



Spade Drill



Dream Drill

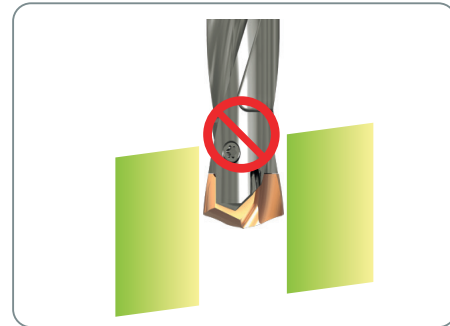


i-ONE Drills

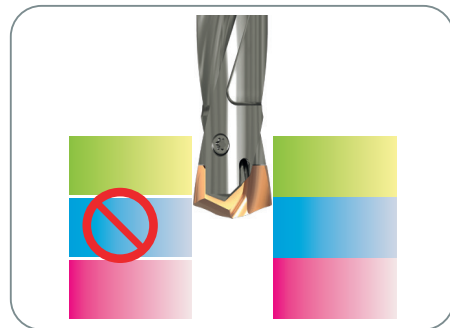
CAUTION – NOT RECOMMENDED APPLICATIONS



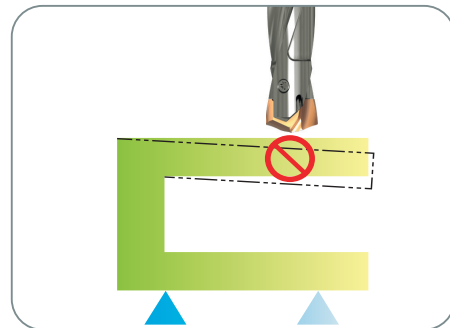
Intersecting cross hole is bigger than the drill insert's Margin Length.



Material with slanting entrance and exit over 7 degrees. (If drilling 7 degrees or under slanting surface, reduce the feed about 30-50%)

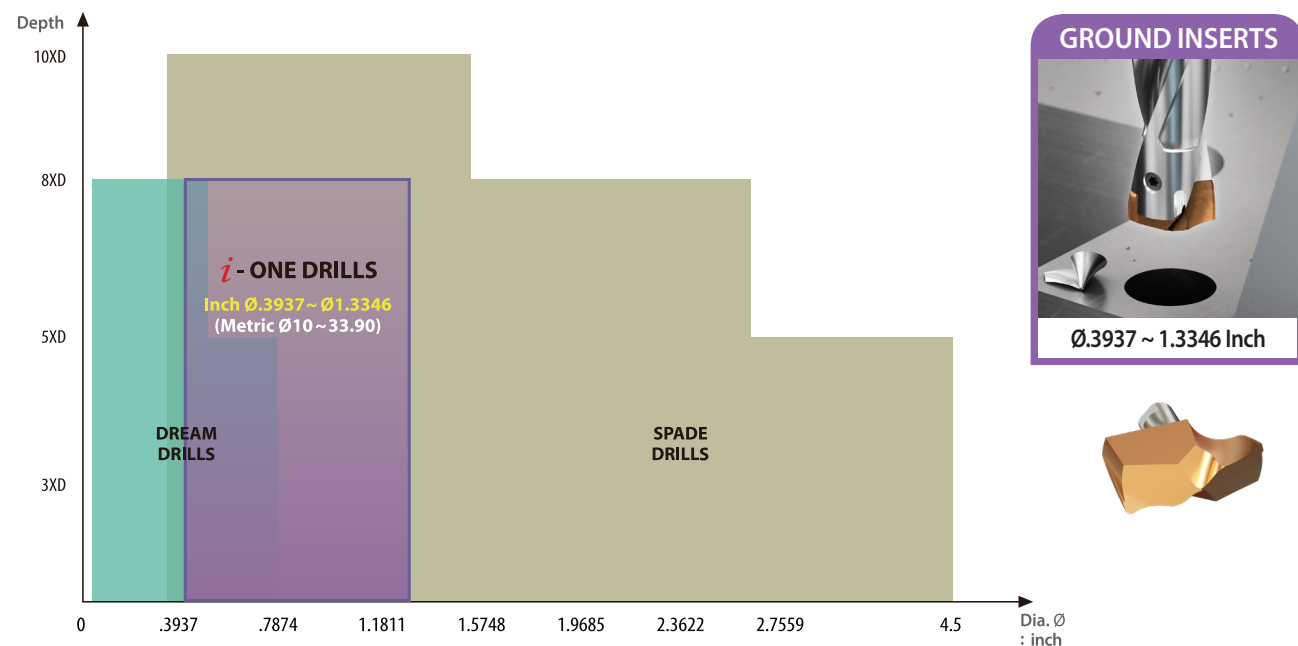


For drilling stacked plates, minimize the space between the plates. The space between stacked plates can cause insert breakage or poor chip control.

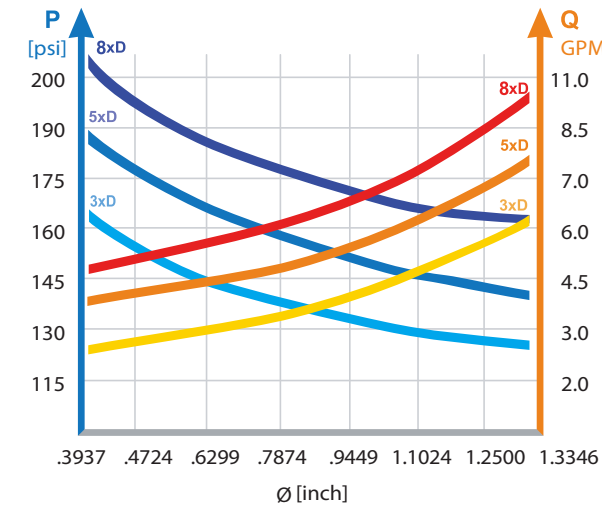


The material needs to be fixtured securely before drilling.

YG-1 EXCHANGEABLE RANGE OF DRILLS - POSITIONING MAP

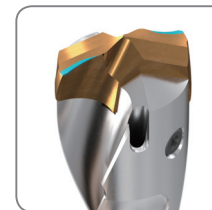


RECOMMENDED COOLANT PRESSURE AND FLOW RATE ON VERTICAL DRILLING



- Recommended emulsion mix is 6 - 8%.
- For Drilling into Stainless and High Strength steels, a mix of 10% is recommended.
- For horizontal drilling, 30% reduction on the coolant pressure and flow rate is possible.
- Dry drilling is possible for 1 - 2xD drilling. But not recommended.

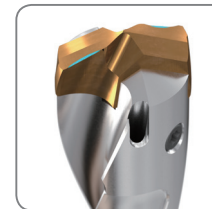
TROUBLE SHOOTING



- 1) Heavy flank wear / Fast flank wear
 - Reduce cutting speed
 - Increase feed



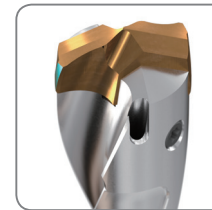
- 2) Chipping on cutting edge
 - Reduce feed
 - Check the rigidity of spindle and chuck
 - Rigid clamping of workpiece



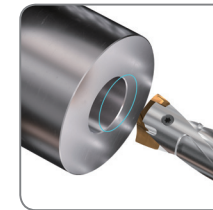
- 3) Build up on cutting edge
 - Increase cutting speed
 - Use a coated insert



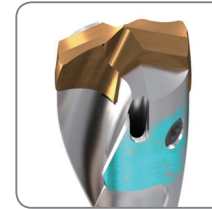
- 4) Chipping or break down on outer corner
 - Reduce feed
 - Rigid clamping of workpiece



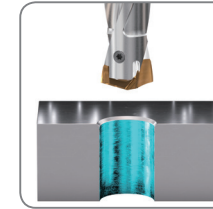
- 5) Wear of land margin
 - Rigid clamping of workpiece
 - Reduce cutting speed
 - Increase coolant flow



- 6) Unsatisfactory positioning of the hole
 - Rigid clamping of workpiece
 - Reduce feed during entrance or exit



- 7) Scratching on holder
 - Rigid clamping of workpiece
 - Reduce feed
 - Increase coolant flow



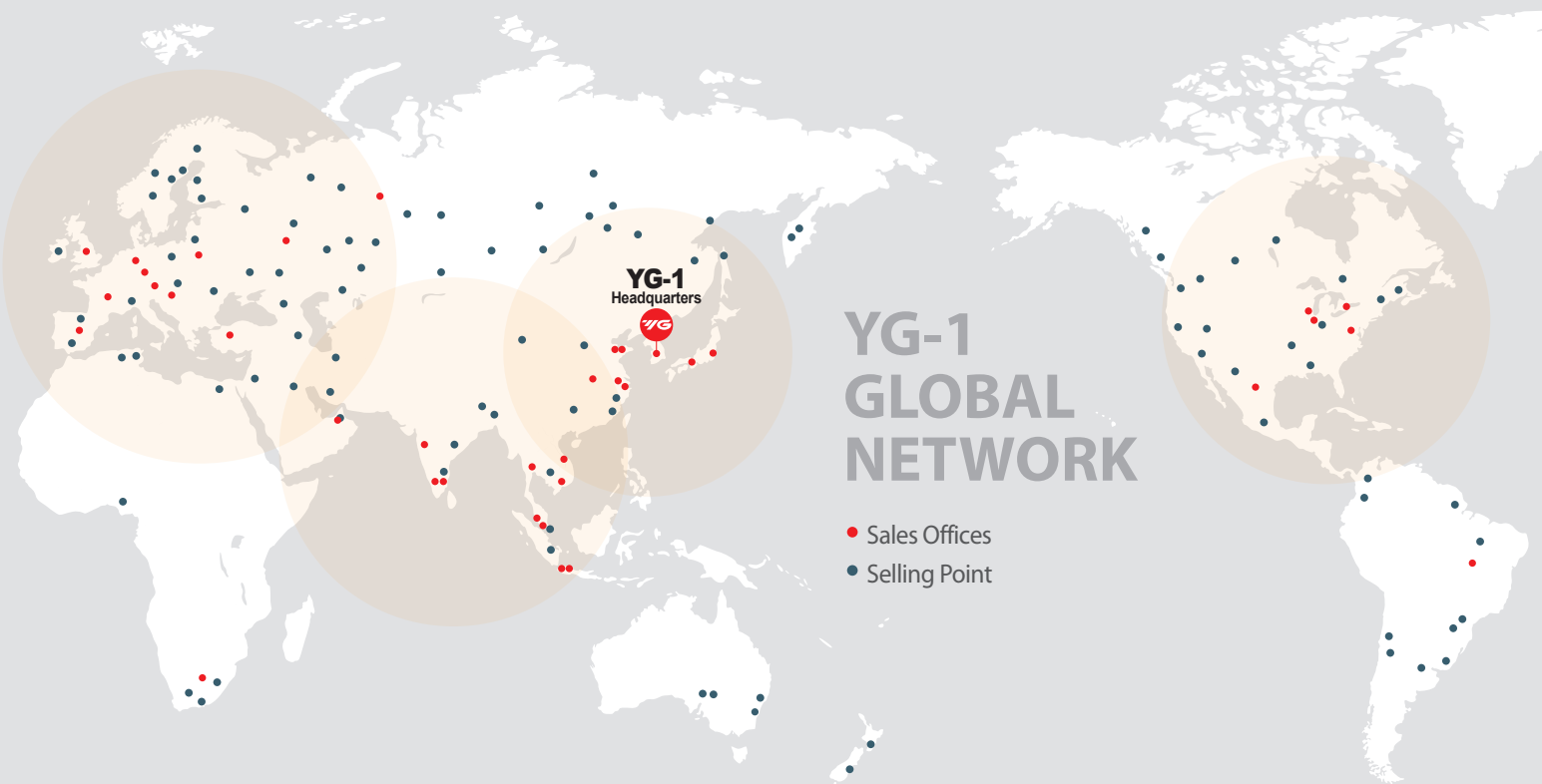
- 8) Unsatisfactory surface finish
 - Rigid clamping of workpiece
 - Increase coolant flow and pressure

MEMO



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