YU-IO26 AMERICAS

BEST VALUE IN THE WORLD OF CUTTING TOOLS

YG



i-ONE DRILLS

MICRO GRAIN CARBIDE INSERTS AND PREMIUM TOOL STEEL HOLDERS

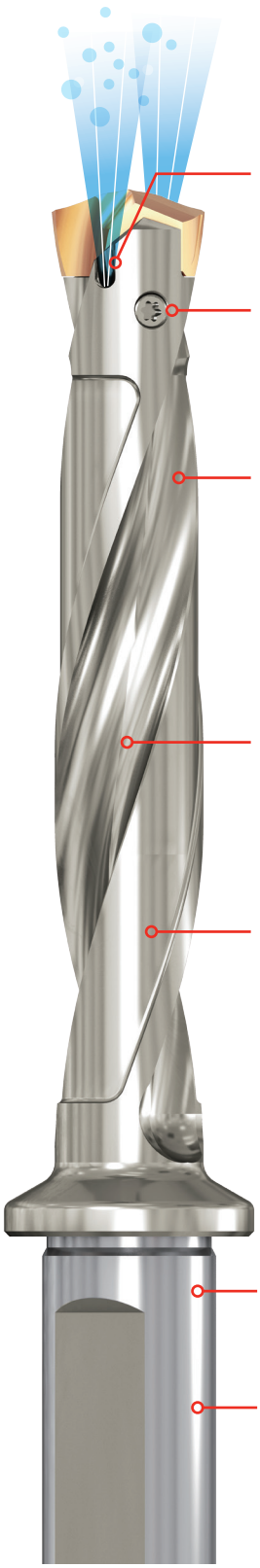
High-Performance Exchangeable
for General Steels, Cast Iron and Stainless Steels

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

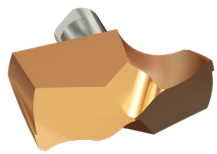
Optimized flute shape
for better chip evacuation

Nickel-plated Steel holder
for corrosion resistance and wear resistance

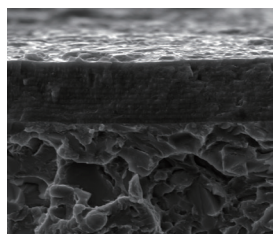
Body Clearance
for elimination of undesirable contact with workpiece

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

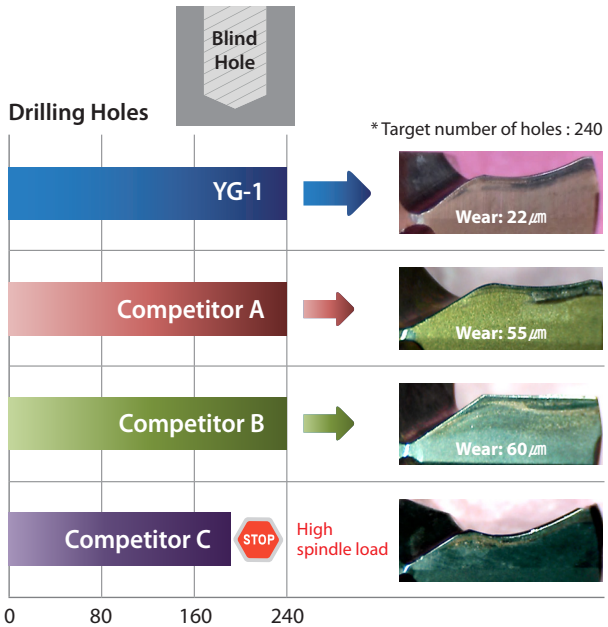
CASE STUDY

i-ONE DRILLS GENERAL

▶ Ø14.0mm, Alloy Steel

Cutting Condition

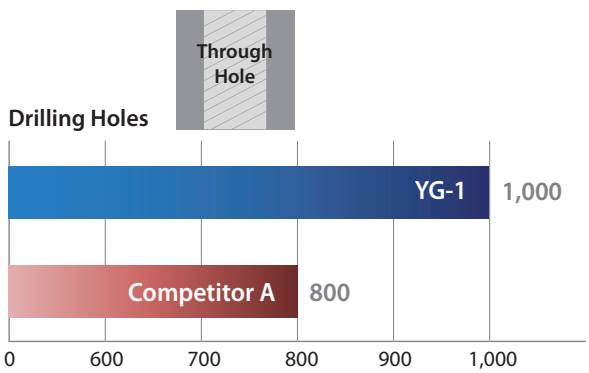
O.D Size (mm)	**Ø14.0 (.5512 inch)**
Work Material	- DIN: 42CrMo4 - AISI: 4140 - JIS: SCM440 (HRc30)
Cutting Speed	80 m/min. (262.5 ft/min.)
RPM	1,819 rev./min.
Feed	0.18 mm/rev. (.0071 in/rev.)
Drilling Depth	65.0 mm (Blind)
Cooling Method	Internal Cooling (35 bar) Water Soluble (9% Emulsion)
Machine	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

CARBIDE

Point Angle

140°

Cutting Condition

Tolerance of Dimension

h7 — Tolerance of Outside Diameter

ISO 9766 — Tolerance of Shank Diameter

Surface Treatment

H Coating

Z Coating

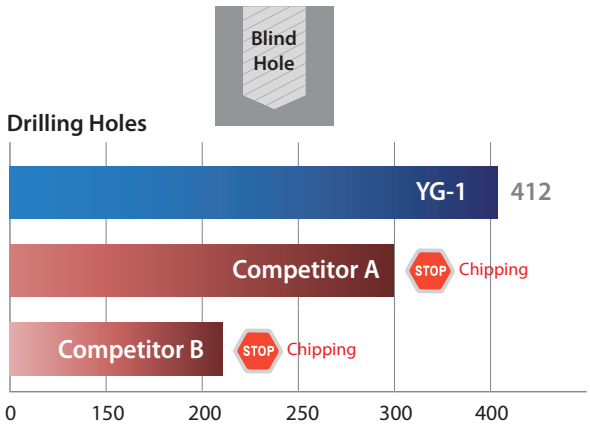
CASE STUDY

i-ONE DRILLS INOX

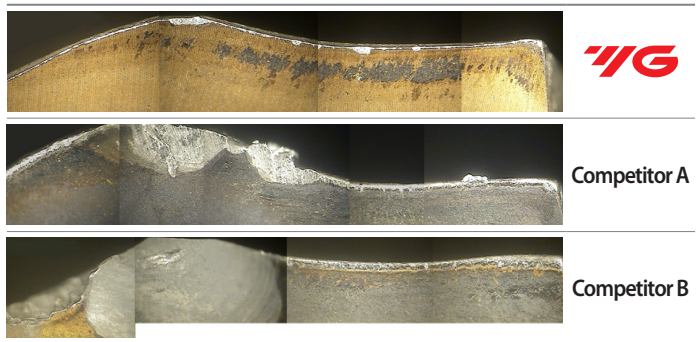
▶ Ø14.0mm, SUS304

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



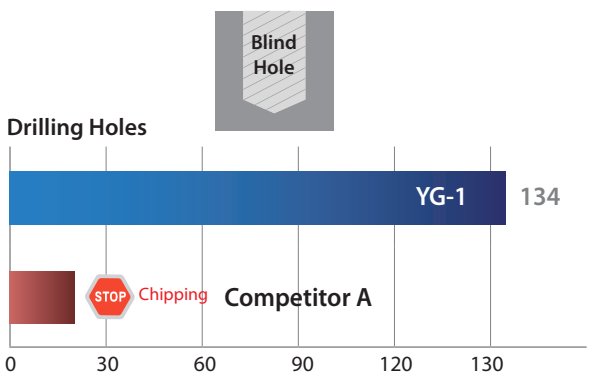
Tool Wear Comparison



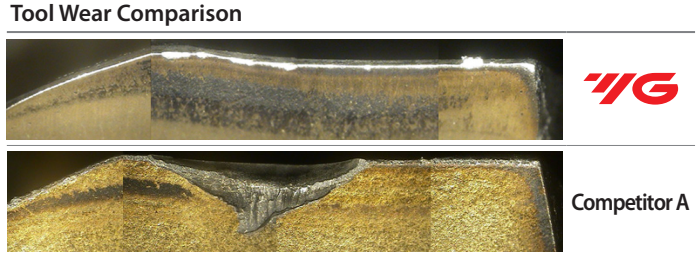
▶ Ø25.0mm, SUS304

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



i-ONE DRILLS

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

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

							General	INOX	ZD*3	ZD*5	ZD*8
						SERIES	Y*1H	Y*2Z			
						SIZE MIN	.3937	.3937			
						SIZE MAX	1.3346	1.3189			
							H-Coating	Z-Coating	3XD	5XD	8XD
											
								NEW			
ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc					
P	1	Non-alloy steel	About 0.15% C	Annealed	125		◎	○	◎	◎	◎
	2		About 0.45% C	Annealed	190	13	◎	○	◎	◎	◎
	3		About 0.45% C	Quenched & tempered	250	25	◎	○	◎	◎	◎
	4		About 0.75% C	Annealed	270	28	◎	○	◎	◎	◎
	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		Ni or Co Based	Annealed	250	25					
	34			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					

SERIES

General **Y101H**

INOX **Y102Z**

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

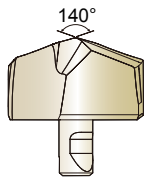
▶ Benefits
- Secure and quick clamping system
- High-Performance with cost efficiency
- Multi-layered coating delivers outstanding productivity and reliability



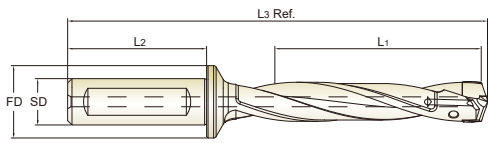
General



INOX







CARBIDE | ISO 9766 | h7 | 140° | H Coating | Z Coating

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Unit : Inch

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

Phone: 800-765-8665 | Technical Support: 888-868-5988 | yg1usa.com

MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS

i-ONE DRILLS INSERTS & HOLDERS

General **Y121H**

INOX **Y122Z**

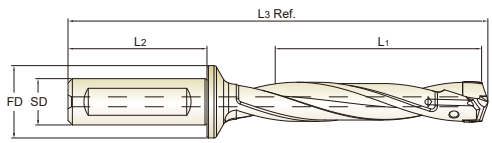
▶ Applications
- For Carbon Steels, Alloy Steels, Cast Iron and Stainless Steels
- Holder length: 3xD, 5xD, 8xD

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



General INOX





CARBIDE | ISO 9766 | h7 | 140° | H Coating | Z Coating

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Unit : Inch

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth		Overall Length	Screw No.
(mm)	General (H-Coating)	INOX (Z-Coating)	h7 dec.	h7 frac.	h7 mm		SD	L2	FD	L1		L3 Ref.	
S12 Ø12.00 to Ø13.99	Y121H1200	Y122Z1200	.4724		12.00	ZD12003063 ZD12005063 ZD12008063	5/8	1-7/8	29/32	3D 5D 8D	1-15/32 2-29/64 3-15/16	4-5/16 5-8/32 6-43/64	TX1213P5
	Y121H1210	Y122Z1210	.4764		12.10								
	Y121H1220	Y122Z1220	.4803		12.20								
	Y121H1230	Y122Z1230	.4844	31/64	12.30								
	Y121H1240	Y122Z1240	.4882		12.40								
	Y121H1250	Y122Z1250	.4921		12.50	ZD12503063 ZD12505063 ZD12508063	5/8	1-7/8	29/32	3D 5D 8D	1-17/32 2-9/16 4-3/32	4-11/32 6-33/64 6-13/16	
	Y121H1260	Y122Z1260	.4961		12.60								
	Y121H1270	Y122Z1270	.5000	1/2	12.70								
	Y121H1280	Y122Z1280	.5039		12.80								
	Y121H1290	Y122Z1290	.5079		12.90								
	Y121H1300	Y122Z1300	.5118		13.00	ZD13003063 ZD13005063 ZD13008063	5/8	1-7/8	29/32	3D 5D 8D	1-19/32 2-21/32 4-1/4	4-27/64 5-29/64 6-63/64	
	Y121H1310	Y122Z1310	.5156	33/64	13.10								
	Y121H1320	Y122Z1320	.5197		13.20								
	Y121H1330	Y122Z1330	.5236		13.30								
	Y121H1340	Y122Z1340	.5276		13.40								
	Y121H1349	Y122Z1349	.5313	17/32	13.49								
	Y121H1350	Y122Z1350	.5315		13.50	ZD13503063 ZD13505063 ZD13508063	5/8	1-7/8	29/32	3D 5D 8D	1-21/32 2-3/4 4-13/32	4-15/32 5-17/32 7-1/8	
	Y121H1360	Y122Z1360	.5354		13.60								
	Y121H1370	Y122Z1370	.5394		13.70								
	Y121H1380	Y122Z1380	.5433		13.80								
	Y121H1389	Y122Z1389	.5469	35/64	13.89								
	Y121H1390	Y122Z1390	.5472		13.90								

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◎ : 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		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																					

SERIES

General **Y141H**

INOX **Y142Z**

MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS

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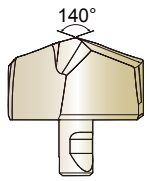
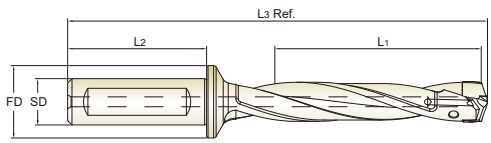
General



INOX







CARBIDE | ISO 9766 | h7 | 140° | H Coating | Z Coating

p.18

Unit : Inch

Series Range (mm)	Insert EDP No. General (H-Coating)	Insert EDP No. INOX (Z-Coating)	Insert O.D. h7 dec.	Insert O.D. h7 frac.	Insert O.D. h7 mm	Holder EDP No.	Shank Dia. SD	Shank Length L2	Flange Dia. FD	Drilling Depth L1		Overall Length L3 Ref.	Screw No.
S14 Ø14.00 to Ø15.99	**Y141H1400**	**Y142Z1400**	.5512		14.00	**ZD14003063**	5/8	1-7/8	29/32	3D	1-23/32	4-9/16	TX1415P7
	Y141H1410	**Y142Z1410**	.5551		14.10								
	Y141H1420	**Y142Z1420**	.5591		14.20	**ZD14005063**				5D	2-55/64	5-43/64	
	Y141H1429	**Y142Z1429**	.5625	9/16	14.29								
	Y141H1430	**Y142Z1430**	.5630		14.30	**ZD14008063**				8D	4-9/16	7-5/16	
	Y141H1440	**Y142Z1440**	.5669		14.40								
	Y141H1450	**Y142Z1450**	.5709		14.50	**ZD14503063**	5/8	1-7/8	29/32	3D	1-49/64	4-41/64	
	Y141H1460	**Y142Z1460**	.5748		14.60								
	Y141H1468	**Y142Z1468**	.5781	37/64	14.68	**ZD14505063**				5D	2-61/64	5-25/32	
	Y141H1470	**Y142Z1470**	.5787		14.70								
	Y141H1480	**Y142Z1480**	.5827		14.80	**ZD14508063**				8D	4-23/32	7-1/2	
	Y141H1490	**Y142Z1490**	.5866		14.90								
	Y141H1500	**Y142Z1500**	.5906		15.00	**ZD15003063**	5/8	1-7/8	29/32	3D	1-53/64	4-23/32	
	Y141H1508	**Y142Z1508**	.5938	19/32	15.08								
	Y141H1510	**Y142Z1510**	.5945		15.10	**ZD15005063**				5D	3-3/64	5-29/32	
	Y141H1520	**Y142Z1520**	.5984		15.20								
	Y141H1530	**Y142Z1530**	.6024		15.30	**ZD15008063**				8D	4-7/8	7-43/64	
	Y141H1540	**Y142Z1540**	.6063		15.40								
	Y141H1548	**Y142Z1548**	.6094	39/64	15.48								
	Y141H1550	**Y142Z1550**	.6102		15.50	**ZD15503063**	5/8	1-7/8	29/32	3D	1-57/64	4-49/64	
	Y141H1560	**Y142Z1560**	.6142		15.60								
	Y141H1570	**Y142Z1570**	.6181		15.70	**ZD15505063**				5D	3-5/32	5-63/64	
	Y141H1580	**Y142Z1580**	.6220		15.80								
	Y141H1588	**Y142Z1588**	.6250	5/8	15.88	**ZD15508063**				8D	5-3/64	7-13/16	
	Y141H1590	**Y142Z1590**	.6260		15.90								

▶ 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		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

General **Y161H**
INOX **Y162Z**

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

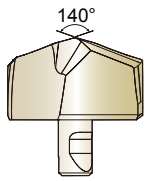
▶ Benefits
- Secure and quick clamping system
- High-Performance with cost efficiency
- Multi-layered coating delivers outstanding productivity and reliability



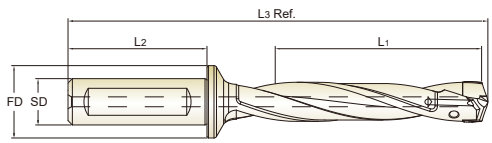
General



INOX







CARBIDE | ISO 9766 | h7 | 140° | H Coating | Z Coating

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Unit : Inch

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth		Overall Length	Screw No.
(mm)	General (H-Coating)	INOX (Z-Coating)	h7 dec.	h7 frac.	h7 mm		SD	L2	FD	L1		L3 Ref.	
S16 Ø16.00 to Ø17.99	**Y161H1600**	**Y162Z1600**	.6299		16.00								
	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	**ZD16003075**				3D	2-1/64	5-1/32	
	Y161H1640	**Y162Z1640**	.6457		16.40	**ZD16005075**	3/4	2	1	5D	3-11/32	6-21/64	TX1617P7
	Y161H1650	**Y162Z1650**	.6496		16.50	**ZD16008075**				8D	5-23/64	8-9/32	
	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								
	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	**ZD17003075**				3D	2-1/8	5-5/32	
	Y161H1746	**Y162Z1746**	.6875	11/16	17.46	**ZD17005075**	3/4	2	1	5D	3-35/64	6-17/32	TX1718P7
	Y161H1750	**Y162Z1750**	.6890		17.50	**ZD17008075**				8D	5-43/64	8-19/32	
	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

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		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																					

SERIES

General **Y181H**

INOX **Y182Z**

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

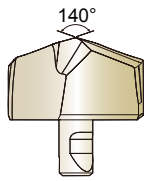
▶ Benefits
- Secure and quick clamping system
- High-Performance with cost efficiency
- Multi-layered coating delivers outstanding productivity and reliability



General



INOX



CARBIDE | ISO 9766 | h7 | 140° | H Coating | Z Coating

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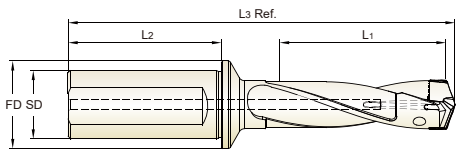

FULL-FLAT SHANK

Unit : Inch

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth		Overall Length	Screw No.
(mm)	General (H-Coating)	INOX (Z-Coating)	h7 dec.	h7 frac.	h7 mm		SD	L2	FD		L1	L3 Ref.	
S18 Ø18.00 to Ø19.99	Y181H1800	Y182Z1800	.7087		18.00	ZD18003100 ZD18005100 ZD18008100	1	2-3/16	1-1/4	3D 5D 8D	2-1/4 3-47/64 5-63/64	5-35/64 7 9-3/16	TX1819P9
	Y181H1810	Y182Z1810	.7126		18.10								
	Y181H1820	Y182Z1820	.7165		18.20								
	Y181H1826	Y182Z1826	.7188	23/32	18.26								
	Y181H1830	Y182Z1830	.7205		18.30								
	Y181H1840	Y182Z1840	.7244		18.40								
	Y181H1850	Y182Z1850	.7283		18.50								
	Y181H1860	Y182Z1860	.7323		18.60								
	Y181H1865	Y182Z1865	.7344	47/64	18.65								
	Y181H1870	Y182Z1870	.7362		18.70								
	Y181H1880	Y182Z1880	.7402		18.80								
	Y181H1890	Y182Z1890	.7441		18.90								
	Y181H1900	Y182Z1900	.7480		19.00	ZD19003100 ZD19005100 ZD19008100	1	2-3/16	1-1/4	3D 5D 8D	2-23/64 3-15/16 6-19/64	5-45/64 7-15/64 9-35/64	TX1920P9
	Y181H1905	Y182Z1905	.7500	3/4	19.05								
	Y181H1910	Y182Z1910	.7520		19.10								
	Y181H1920	Y182Z1920	.7559		19.20								
	Y181H1927	Y182Z1927	.7587		19.27								
	Y181H1930	Y182Z1930	.7598		19.30								
	Y181H1940	Y182Z1940	.7638		19.40								
	Y181H1945	Y182Z1945	.7656	49/64	19.45								
	Y181H1950	Y182Z1950	.7677		19.50								
	Y181H1960	Y182Z1960	.7717		19.60								
	Y181H1970	Y182Z1970	.7756		19.70								
	Y181H1980	Y182Z1980	.7795		19.80								
	Y181H1984	Y182Z1984	.7813	25/32	19.84								
	Y181H1990	Y182Z1990	.7835		19.90								

▶ 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		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																					

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MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS

i-ONE DRILLS INSERTS & HOLDERS

General **Y201H**
INOX **Y202Z**

▶ 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

CARBIDE | ISO 9766 | h7 | 140° | H Coating | Z Coating

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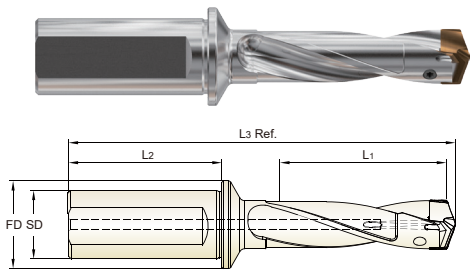


FULL-FLAT SHANK

Unit : Inch

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth		Overall Length	Screw No.
(mm)	General (H-Coating)	INOX (Z-Coating)	h7 dec.	h7 frac.	h7 mm		SD	L2	FD	L1		L3 Ref.	
S20 Ø20.00 to Ø21.99	**Y201H2000**	**Y202Z2000**	.7874		20.00	**ZD20003100**	1	2-3/16	1-1/4	3D	2-31/64	5-51/64	TX2021P9
	Y201H2010	**Y202Z2010**	.7913		20.10	**ZD20005100**				5D	4-9/64	7-13/32	
	Y201H2020	**Y202Z2020**	.7953		20.20	**ZD20008100**				8D	6-39/64	9-53/64	
	Y201H2024	**Y202Z2024**	.7969	51/64	20.24								
	Y201H2030	**Y202Z2030**	.7992		20.30								
	Y201H2040	**Y202Z2040**	.8031		20.40								
	Y201H2050	**Y202Z2050**	.8071		20.50								
	Y201H2060	**Y202Z2060**	.8110		20.60								
	Y201H2064	**Y202Z2064**	.8125	13/16	20.64								
	Y201H2070	**Y202Z2070**	.8150		20.70								
	Y201H2080	**Y202Z2080**	.8189		20.80								
	Y201H2090	**Y202Z2090**	.8228		20.90								
	Y201H2100	**Y202Z2100**	.8268		21.00	**ZD21003100**	1	2-3/16	1-1/4	3D	2-19/32	5-29/32	TX2122P9
	Y201H2103	**Y202Z2103**	.8281	53/64	21.03	**ZD21005100**				5D	4-21/64	7-19/32	
	Y201H2110	**Y202Z2110**	.8307		21.10	**ZD21008100**				8D	6-59/64	10-9/64	
	Y201H2120	**Y202Z2120**	.8346		21.20								
	Y201H2130	**Y202Z2130**	.8386		21.30								
	Y201H2140	**Y202Z2140**	.8425		21.40								
	Y201H2143	**Y202Z2143**	.8438	27/32	21.43								
	Y201H2150	**Y202Z2150**	.8465		21.50								
	Y201H2160	**Y202Z2160**	.8504		21.60								
	Y201H2170	**Y202Z2170**	.8543		21.70								
	Y201H2180	**Y202Z2180**	.8583		21.80								
	Y201H2183	**Y202Z2183**	.8594	55/64	21.83								
	Y201H2190	**Y202Z2190**	.8622		21.90								

▶ 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		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																					

SERIES

General **Y221H**

INOX **Y222Z**

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

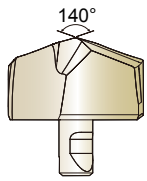
▶ Benefits
- Secure and quick clamping system
- High-Performance with cost efficiency
- Multi-layered coating delivers outstanding productivity and reliability



General



INOX



CARBIDE | ISO 9766 | h7 | 140° | H Coating | Z Coating

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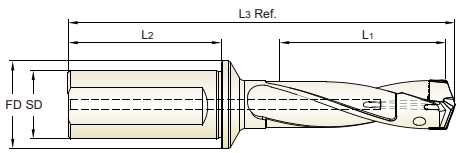

FULL-FLAT SHANK

Unit : Inch

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth		Overall Length	Screw No.
(mm)	General (H-Coating)	INOX (Z-Coating)	h7 dec.	h7 frac.	h7 mm		SD	L2	FD	L1		L3 Ref.	
S22 Ø22.00 to Ø23.99	**Y221H2200**	**Y222Z2200**	.8661		22.00	**ZD22003100**	1	2-3/16	1-1/4	3D	2-23/32	6-1/32	TX2223P9
	Y221H2210	**Y222Z2210**	.8701		22.10	**ZD22005100**				5D	4-34/64	7-51/64	
	Y221H2220	**Y222Z2220**	.8740		22.20	**ZD22008100**				8D	7-1/4	10-29/64	
	Y221H2223	**Y222Z2223**	.8750	7/8	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		23.00	**ZD23003100**	1	2-3/16	1-1/4	3D	2-53/64	6-3/16	TX2223P9
	Y221H2302	**Y222Z2302**	.9063	29/32	23.02	**ZD23005100**				5D	4-23/32	8-1/32	
	Y221H2310	**Y222Z2310**	.9094		23.10	**ZD23008100**				8D	7-9/16	10-13/16	
	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			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		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																					

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MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS

i-ONE DRILLS INSERTS & HOLDERS

General **Y241H**
INOX **Y242Z**

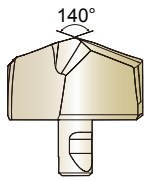
▶ Applications
- For Carbon Steels, Alloy Steels, Cast Iron and Stainless Steels
- Holder length: 3xD, 5xD, 8xD

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


General



INOX



CARBIDE | ISO 9766 | h7 | 140° | H Coating | Z Coating

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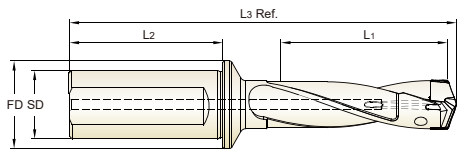


FULL-FLAT SHANK

Unit : Inch

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth		Overall Length	Screw No.
(mm)	General (H-Coating)	INOX (Z-Coating)	h7 dec.	h7 frac.	h7 mm		SD	L2	FD	L1		L3 Ref.	
S24 Ø24.00 to Ø25.99	**Y241H2400**	**Y242Z2400**	.9449		24.00	**ZD24003125**	1-1/4	2-3/8	1-15/32	3D	2-61/64	6-17/32	TX2425P10
	Y241H2410	**Y242Z2410**	.9488		24.10	**ZD24005125**				5D	4-59/64	8-15/32	
	Y241H2420	**Y242Z2420**	.9528		24.20	**ZD24008125**				8D	7-7/8	11-23/64	
	Y241H2421	**Y242Z2421**	.9531	61/64	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**	1-1/4	2-3/8	1-15/32	3D	3-5/64	6-47/64	TX2526P10
	Y241H2510	**Y242Z2510**	.9882		25.10	**ZD25005125**				5D	5-1/8	8-47/64	
	Y241H2520	**Y242Z2520**	.9921		25.20	**ZD25008125**				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	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																					

SERIES

General **Y261H**

INOX **Y262Z**

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

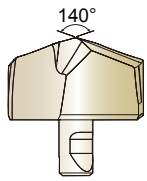
▶ Benefits
- Secure and quick clamping system
- High-Performance with cost efficiency
- Multi-layered coating delivers outstanding productivity and reliability



General



INOX



CARBIDE | ISO 9766 | h7 | 140° | H Coating | Z Coating

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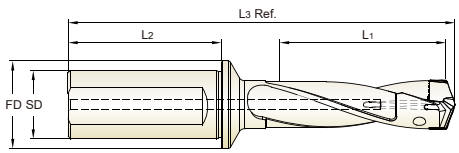

FULL-FLAT SHANK

Unit : Inch

Series Range	Insert EDP No.		Insert O.D.			Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth		Overall Length	Screw No.
(mm)	General (H-Coating)	INOX (Z-Coating)	h7 dec.	h7 frac.	h7 mm		SD	L2	FD		L1	L3 Ref.	
S26 Ø26.00 to Ø27.99	**Y261H2600**	**Y262Z2600**	1.0236		26.00	**ZD26003125**	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	**ZD26005125**				5D	5-5/16	8-7/8	
	Y261H2620	-	1.0315		26.20	**ZD26008125**				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**	1-1/4	2-3/8	1-15/32	3D	3-5/16	6-29/32	TX2728P10
	Y261H2710	-	1.0669		27.10	**ZD27005125**				5D	5-33/64	9-5/64	
	Y261H2720	-	1.0709		27.20	**ZD27008125**				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

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		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																					

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MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS

i-ONE DRILLS INSERTS & HOLDERS

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



General INOX

CARBIDE | ISO 9766 | h7 | 140° | H Coating | Z Coating

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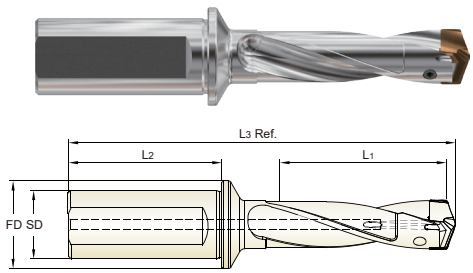


FULL-FLAT SHANK

Unit : Inch

Series Range (mm)	Insert EDP No. General (H-Coating)	Insert EDP No. INOX (Z-Coating)	Insert O.D. h7 dec.	Insert O.D. h7 frac.	Insert O.D. h7 mm	Holder EDP No.	Shank Dia. SD	Shank Length L2	Flange Dia. FD	Drilling Depth L1		Overall Length L3 Ref.	Screw No.
S28 Ø28.00 to Ø29.99	**Y281H2800**	**Y282Z2800**	1.1024		28.00	**ZD28003125**	1-1/4	2-3/8	1-15/32	3D	3-27/64	7-1/16	TX2830P10
	Y281H2810	-	1.1063		28.10	**ZD28005125**				5D	5-45/64	9-5/16	
	Y281H2818	**Y282Z2818**	1.1094	1-7/64	28.18	**ZD28008125**				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		28.50								
	Y281H2858	**Y282Z2858**	1.1252	1-1/8	28.58								
	Y281H2860	-	1.1260		28.60								
	Y281H2870	-	1.1299		28.70								
	Y281H2880	-	1.1339		28.80								
	Y281H2890	-	1.1378		28.90								
	Y281H2900	**Y282Z2900**	1.1417		29.00	**ZD29003125**	1-1/4	2-3/8	1-15/32	3D	3-35/64	7-7/32	TX2930P10
	Y281H2910	-	1.1457		29.10	**ZD29005125**				5D	5-29/32	9-35/64	
	Y281H2920	-	1.1496		29.20	**ZD29008125**				8D	9-29/64	13-1/32	
	Y281H2930	-	1.1535		29.30								
	Y281H2937	**Y282Z2937**	1.1563	1-5/32	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								
	Y281H2980	-	1.1732		29.80								
	Y281H2990	-	1.1772		29.90								

▶ 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		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																					

SERIES

General **Y301H**

INOX **Y302Z**

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

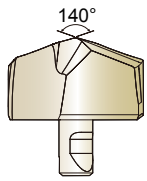
▶ Benefits
- Secure and quick clamping system
- High-Performance with cost efficiency
- Multi-layered coating delivers outstanding productivity and reliability



General



INOX



CARBIDE | ISO 9766 | h7 | 140° | H Coating | Z Coating

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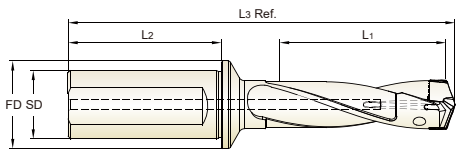

FULL-FLAT SHANK

Unit : Inch

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

▶ 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		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																					

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MICRO GRAIN CARBIDE INSERTS and PREMIUM TOOL STEEL HOLDERS

i-ONE DRILLS INSERTS & HOLDERS

General **Y321H**
INOX **Y322Z**

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

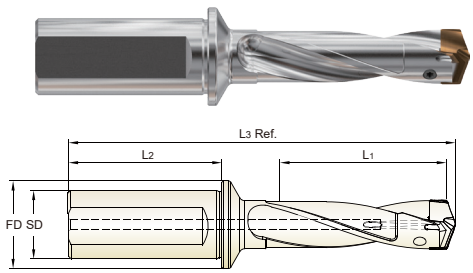
▶ Benefits
- Secure and quick clamping system
- High-Performance with cost efficiency
- Multi-layered coating delivers outstanding productivity and reliability



General INOX

CARBIDE | ISO 9766 | h7 | 140° | H Coating | Z Coating

p.18



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	Screw No.
(mm)	General (H-Coating)	INOX (Z-Coating)	h7 dec.	h7 frac.	h7 mm		SD	L2	FD	L1		L3 Ref.	
S32 Ø32.00 to Ø33.99	**Y321H3200**	**Y322Z3200**	1.2598		32.00	**ZD32003125**	1-1/4	2-3/8	1-15/32	3D	3-57/64	7-25/32	TX3233P15
	Y321H3210	-	1.2638		32.10								
	Y321H3215	**Y322Z3215**	1.2657	1-17/64	32.15								
	Y321H3220	-	1.2677		32.20								
	Y321H3230	-	1.2717		32.30								
	Y321H3240	-	1.2756		32.40	**ZD32005125**				5D	6-1/2	10-21/64	
	Y321H3250	**Y322Z3250**	1.2795		32.50	**ZD32008125**				8D	10-25/64	14-11/64	
	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		33.00	**ZD33003125**	1-1/4	2-3/8	1-15/32	3D	4-1/64	7-15/16	TX3334P15
	Y321H3310	-	1.3031		33.10								
	Y321H3320	-	1.3071		33.20								
	Y321H3330	-	1.3110		33.30								
	Y321H3334	**Y322Z3334**	1.3126	1-5/16	33.34								
	Y321H3340	-	1.3150		33.40								
	Y321H3350	**Y322Z3350**	1.3189		33.50	**ZD33005125**				5D	6-11/16	10-37/64	
	Y321H3360	-	1.3228		33.60	**ZD33008125**				8D	10-45/64	14-17/32	
	Y321H3370	-	1.3268		33.70								
	Y321H3373	-	1.3280	1-21/64	33.73								
	Y321H3380	-	1.3307		33.80								
	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	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						

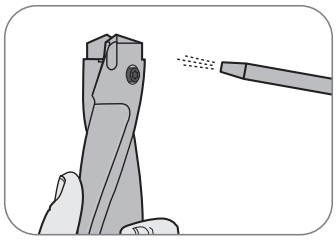
i-ONE DRILLS - INOX

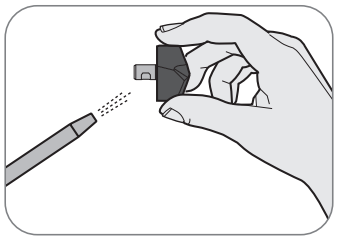
SFM = ft/min.
FEED = inch/rev.

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						

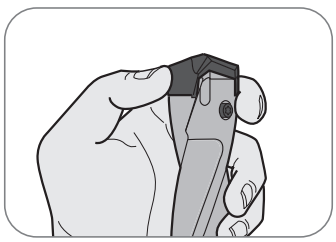
▶ The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.
▶ Recommend you to reduce the feed rate 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.

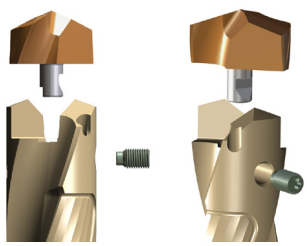
ASSEMBLY OF i-ONE DRILLS



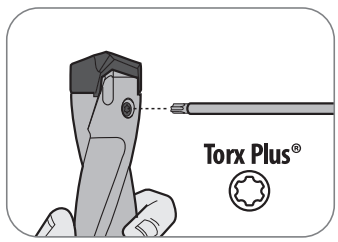


Make sure to clean
the insert and insert seat.





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



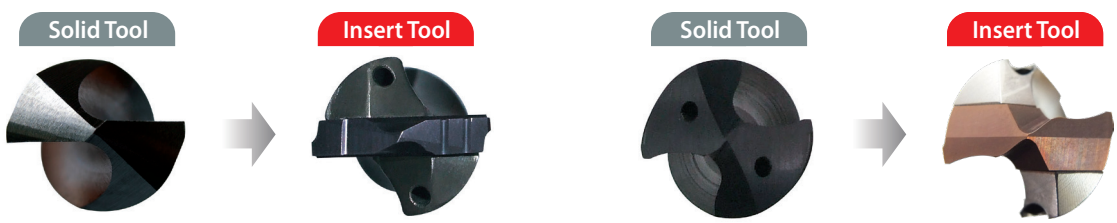
After confirming the insert is pressed down to the bottom
of the slot, tighten the screw using anti-seize compound.

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

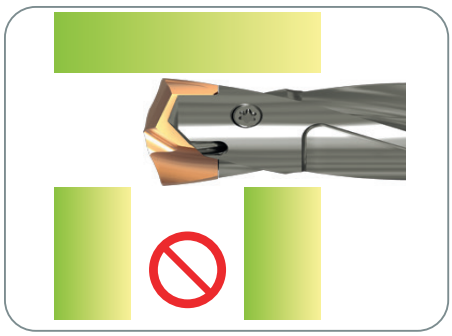
Use the Torx Plus® wrench

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

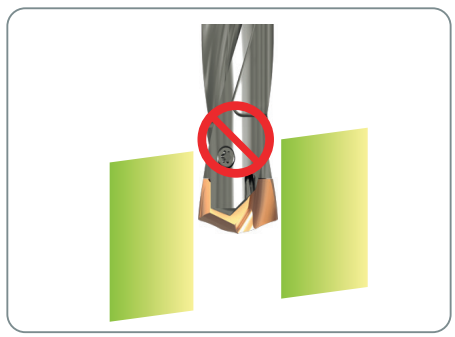
Comparison with Split Point Drill - Spade Drill & Dream Drill



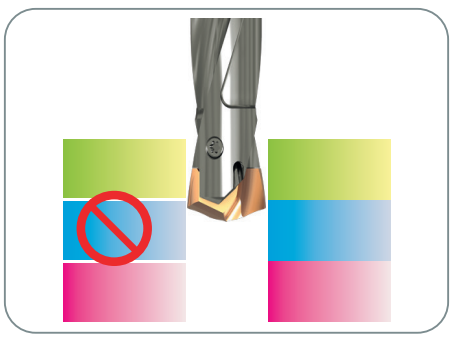
CAUTION – NOT RECOMMENDED APPLICATIONS



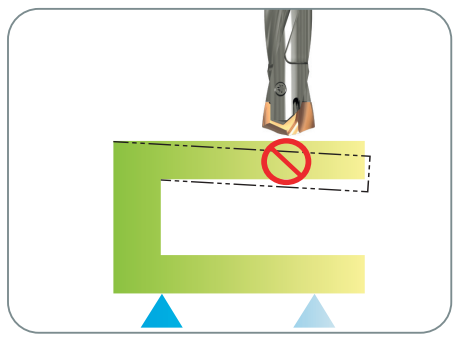
Intersecting cross hole is bigger than the drill insert's Margin Length.



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

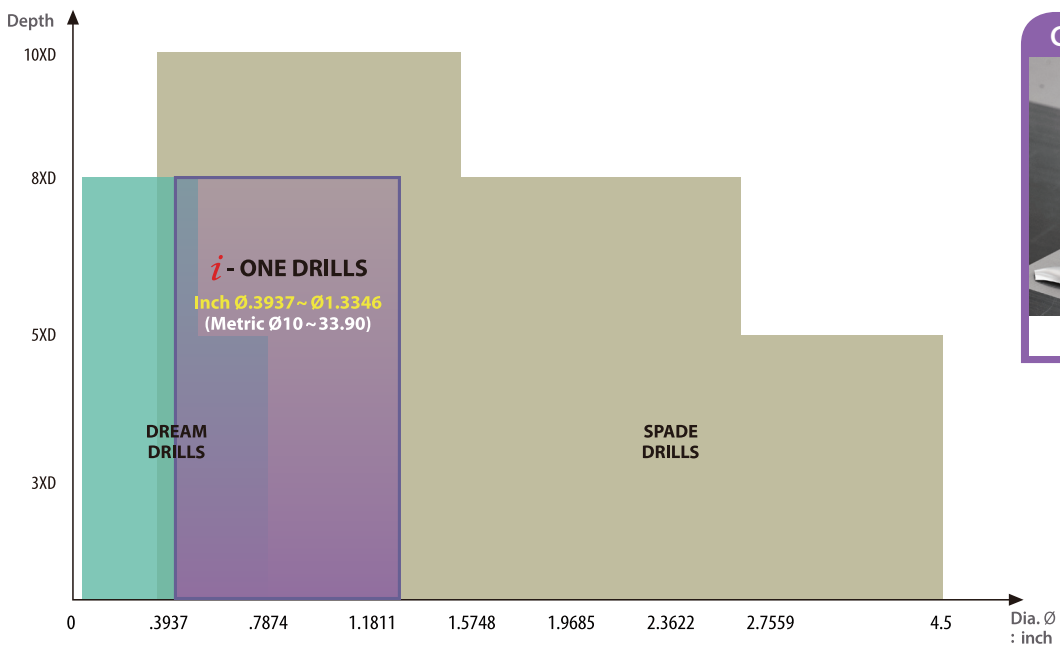


For drilling stacked plates, minimize the space between the plates. The space between stacked plates can cause insert breakage or poor chip control.



The material needs to be fixtured securely before drilling.

YG-1 EXCHANGEABLE RANGE OF DRILLS - POSITIONING MAP



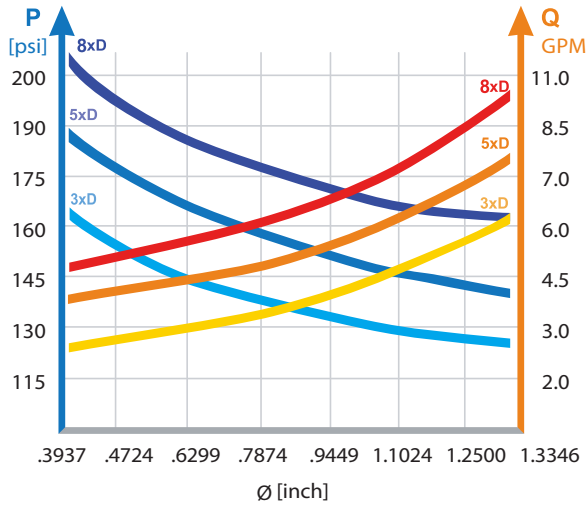
GROUND INSERTS



Ø.3937 ~ 1.3346 Inch

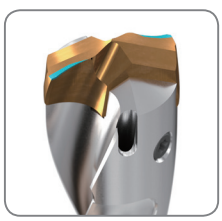


RECOMMENDED COOLANT PRESSURE AND FLOW RATE ON VERTICAL DRILLING

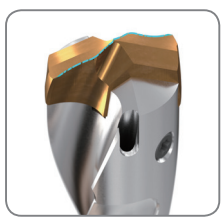


- Recommended emulsion mix is 6 - 8%.
- For Drilling into Stainless and High Strength steels, a mix of 10% is recommended.
- For horizontal drilling, 30% reduction on the coolant pressure and flow rate is possible.
- Dry drilling is possible for 1 - 2xD drilling. But not recommended.

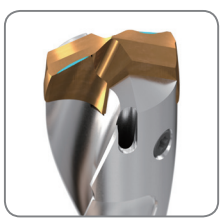
TROUBLE SHOOTING



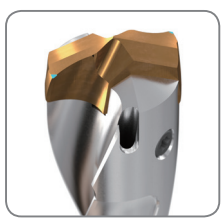
1) Heavy flank wear / Fast flank wear
   - Reduce cutting speed
   - Increase feed



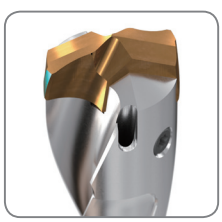
2) Chipping on cutting edge
   - Reduce feed
   - Check the rigidity of spindle and chuck
   - Rigid clamping of workpiece



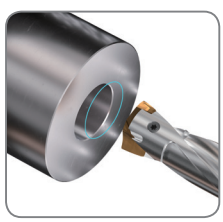
3) Build up on cutting edge
   - Increase cutting speed
   - Use a coated insert



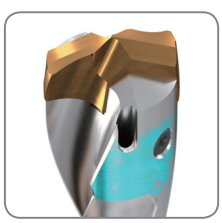
4) Chipping or break down on outer corner
   - Reduce feed
   - Rigid clamping of workpiece



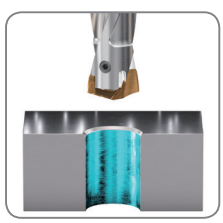
5) Wear of land margin
   - Rigid clamping of workpiece
   - Reduce cutting speed
   - Increase coolant flow



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

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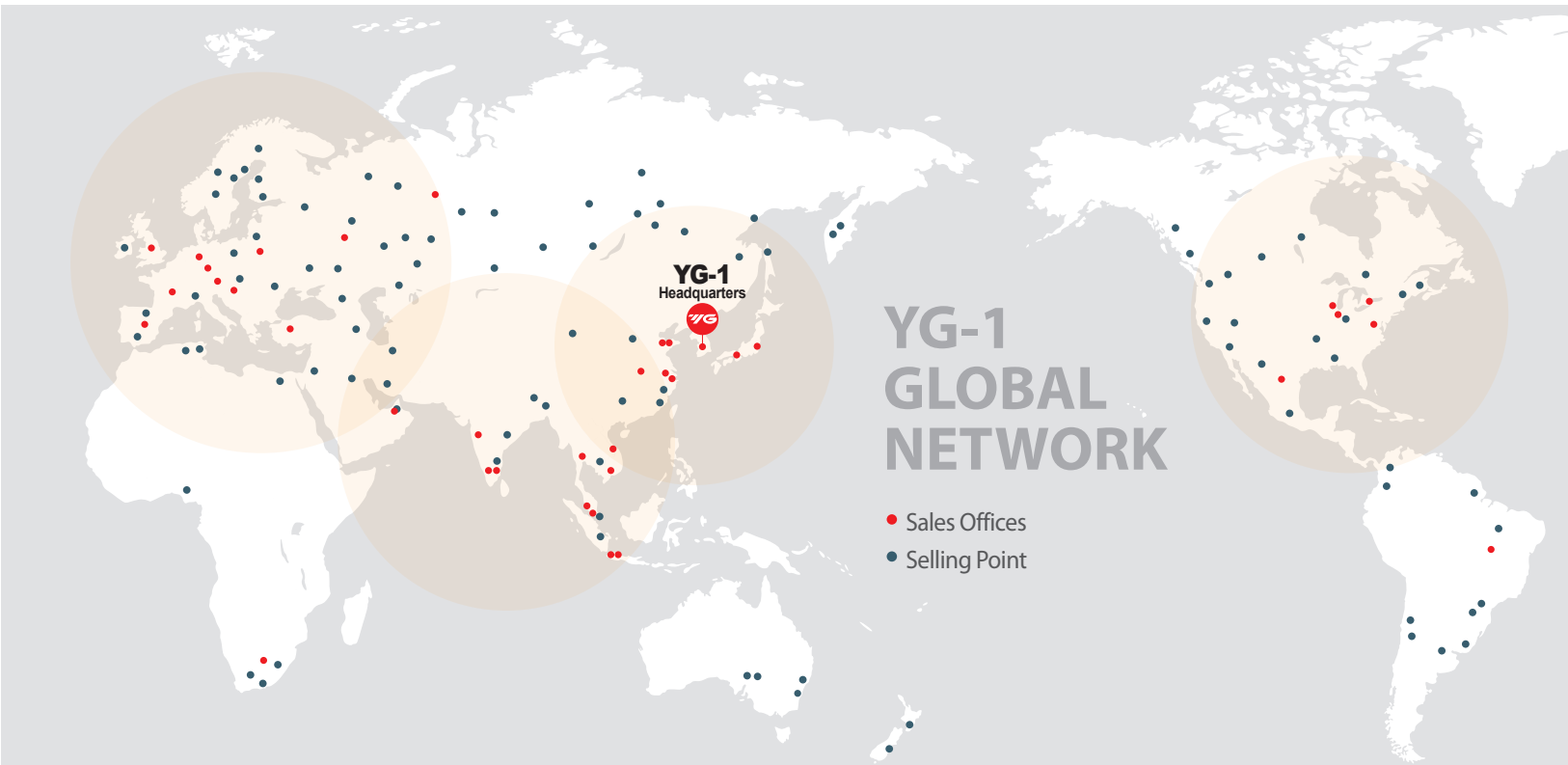

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