



Leading Through Innovation



**CARBIDE INSERTS
& HOLDERS**

***i* - ONE DRILLS**

i-One Drills

- High Performance Exchangeable for General Steels and Cast Iron
- Leistungsstarke, austauschbare Bohrwerkzeuge für allgemeine Stähle und Gusseisen

SELECTION GUIDE



SERIES	Y101H	Y121H	Y141H	Y161H
SIZE MIN	10.00	12.00	14.00	16.00
SIZE MAX	11.91	13.90	15.90	17.90
PAGE	38	39	40	41

SURFACE TREATMENT H-Coating

CARBIDE INSERTS & HOLDERS
i-ONE DRILLS

High Performance Exchangeable
for General Steels and Cast Iron



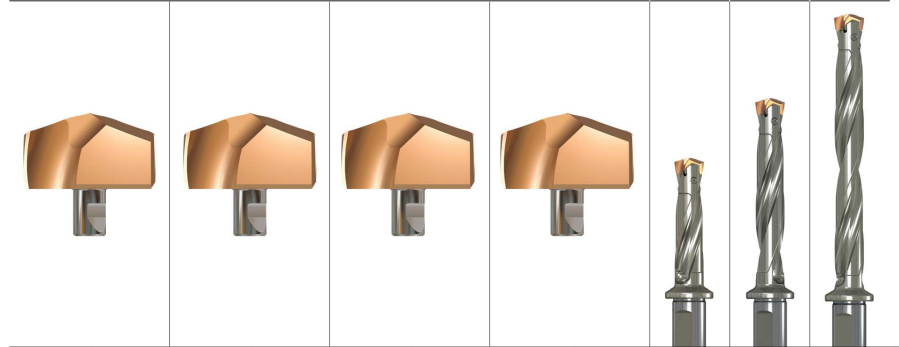
Please visit
global.yg1.com/mat
for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P.48

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc	Y101H	Y121H	Y141H	Y161H	
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	Austenitic10	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		Ferritic	130		◎	◎	◎	◎	
	20	Malleable cast iron	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)	CuZn, CuSnZn (Brass)	90					
	27	Non Metallic Materials	CuSn, Lead-free copper and electrolytic copper	100						
	28		Duroplastic, Fiber Reinforced Plastic							
	29		Rubber, Wood, etc.							
	30									
S	31	Heat Resistant Super Alloys	Fe Based Annealed	200	15					
	32		Cured	280	30					
	33		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					

Y181H	Y201H	Y221H	Y241H	Y261H	Y281H	Y301H	Y321H	ZD*3	ZD*5	ZD*8
18.00	20.00	22.00	24.00	26.00	28.00	30.00	32.00	3XD	5XD	8XD
19.90	21.90	23.90	25.90	27.78	29.77	31.75	33.73			
42	43	44	45	46	46	47	47			



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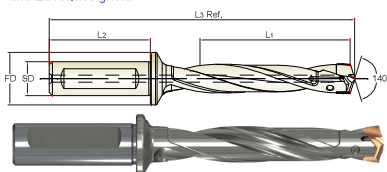
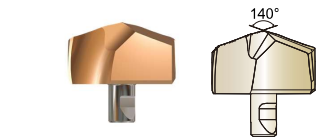
Y101H SERIES

i-ONE DRILL INSERTS & HOLDERS

- 🇩🇪 i-ONE DRILL EINSÄTZE UND HALTER
- 🇫🇷 PLAQUETTES ET PORTE-PLAQUETTE i-ONE DRILL
- 🇮🇹 INSERTI & PORTAINSERTI i-ONE DRILL

- Applications
 - For carbon steels, alloy steels and cast iron,
 - Holder length: 3xD, 5xD, 8xD
- Benefits
 - Secure and quick clamping system,
 - High performance with cost efficiency,
 - Multi-layered coating delivers outstanding productivity and reliability.

- Anwendungen
 - Für Kohlenstoffstähle, legierte Stähle und Gusseisen,
 - Halterlänge: 3xD, 5xD, 8xD
- Vorteile
 - Sicheres und schnelles Spannsystem,
 - Hohe Leistungsfähigkeit bei gleichzeitiger Kosteneffizienz,
 - Mehrschichtige Beschichtung bietet hervorragende Produktivität und Zuverlässigkeit.



Series Range (mm)	Insert EDP No. H-Coating	Insert O.D.			Holder EDP No.	Shank Dia. SD	Shank Length L2	Flange Dia. FD	Drilling Depth L1	Overall Length L3 Ref.	Screw No.
		h7									
		dec.	frac.	mm							
S10 Ø10.00 to Ø11.99	Y101H1000	0.3937		10.00	ZD10003016 ZD10005016 ZD10008016	16	48	23	3D	31.5	103.0
	Y101H1010	0.3976		10.10					5D	52.5	123.0
	Y101H1020	0.4016		10.20					8D	84.0	153.0
	Y101H1030	0.4055		10.30							
	Y101H1032	0.4063	13/32	10.32							
	Y101H1040	0.4094		10.40	ZD10503016 ZD10505016 ZD10508016	16	48	23	3D	33.0	104.0
	Y101H1050	0.4134		10.50					5D	55.0	125.0
	Y101H1060	0.4173		10.60					8D	88.0	156.5
	Y101H1070	0.4213		10.70							
	Y101H1072	0.4219	27/64	10.72							
	Y101H1080	0.4252		10.80	ZD11003016 ZD11005016 ZD11008016	16	48	23	3D	34.5	105.0
	Y101H1090	0.4291		10.90					5D	57.5	127.0
	Y101H1100	0.4331		11.00					8D	92.0	160.0
	Y101H1110	0.4375	7/16	11.11							
	Y101H1120	0.4409		11.20							
	Y101H1130	0.4449		11.30	ZD11503016 ZD11505016 ZD11508016	16	48	23	3D	36.0	106.0
	Y101H1140	0.4488		11.40					5D	60.0	129.0
	Y101H1150	0.4528		11.50					8D	96.0	163.5
	Y101H1151	0.4531	29/64	11.51							
	Y101H1160	0.4567		11.60							
Y101H1170	0.4606		11.70								
Y101H1180	0.4646		11.80								
Y101H1190	0.4685		11.90								
Y101H1191	0.4688	15/32	11.91								

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

⊙: Excellent ○: Good

ISO Material Description	P			M				K				H									
	Non-alloy steel			Low alloy steel				Stainless steel		Duplex		Grey cast iron		Nodular cast iron		Malleable cast iron					
VDI 3523	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	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	180	260	160	250	130	230
Recommended	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙



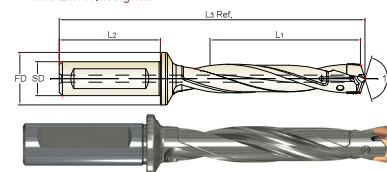
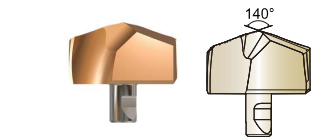
Y121H SERIES

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Series Range (mm)	Insert EDP No. H-Coating	Insert O.D.			Holder EDP No.	Shank Dia. SD	Shank Length L2	Flange Dia. FD	Drilling Depth L1	Overall Length L3 Ref.	Screw No.
		h7									
		dec.	frac.	mm							
S12 Ø12.00 to Ø13.99	Y121H1200	0.4724		12.00	ZD12003016 ZD12005016 ZD12008016	16	48	23	3D	37.5	109.8
	Y121H1210	0.4764		12.10					5D	62.5	133.8
	Y121H1220	0.4803		12.20					8D	100.0	169.8
	Y121H1230	0.4844	31/64	12.30							
	Y121H1240	0.4882		12.40					ZD12503016 ZD12505016 ZD12508016	16	48
	Y121H1250	0.4921		12.50	5D	65.0	135.8				
	Y121H1260	0.4961		12.60	8D	104.0	173.3				
	Y121H1270	0.5000	1/2	12.70							
	Y121H1280	0.5039		12.80							
	Y121H1290	0.5079		12.90	ZD13003016 ZD13005016 ZD13008016	16	48	23	3D	40.5	112.8
	Y121H1300	0.5118		13.00					5D	67.5	138.8
	Y121H1310	0.5156	33/64	13.10					8D	108.0	177.8
	Y121H1320	0.5197		13.20							
	Y121H1330	0.5236		13.30					ZD13503016 ZD13505016 ZD13508016	16	48
	Y121H1340	0.5276		13.40	5D	70.0	140.8				
	Y121H1349	0.5313	17/32	13.49	8D	112.0	181.3				
	Y121H1350	0.5315		13.50							
	Y121H1360	0.5354		13.60							
	Y121H1370	0.5394		13.70							
	Y121H1380	0.5433		13.80							
Y121H1389	0.5469	35/64	13.89								
Y121H1390	0.5472		13.90								

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

⊙: Excellent ○: Good

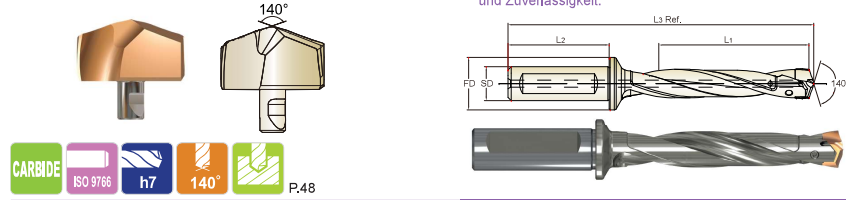
ISO Material Description	P			M				K				H									
	Non-alloy steel			Low alloy steel				High alloy steel, and tool steel		Stainless steel		Duplex		Grey cast iron		Nodular cast iron		Malleable cast iron			
VDI 3523	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	180	260	160	250	130	230
Recommended	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙

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Unit : mm

Table with columns: Series Range, Insert EDP No., Insert O.D. (h7 dec, frac, mm), Holder EDP No., Shank Dia. (SD), Shank Length (L2), Flange Dia. (FD), Drilling Depth (L1), Overall Length (L3 Ref), Screw No.

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

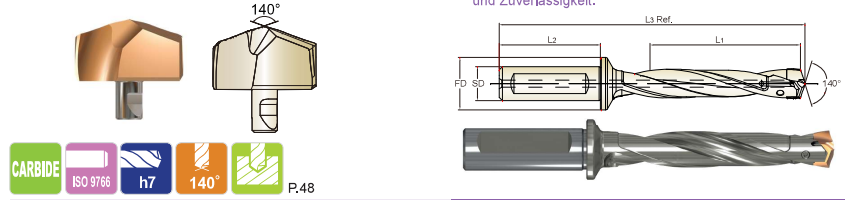
Material compatibility chart with columns: ISO, Material Description, VDI 3523, HRc, HB, Recommended, and categories P, M, K, N, S, H.

i-ONE DRILL INSERTS & HOLDERS

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PLAQUETTES ET PORTE-PLAQUETTE i-ONE DRILL
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HSS



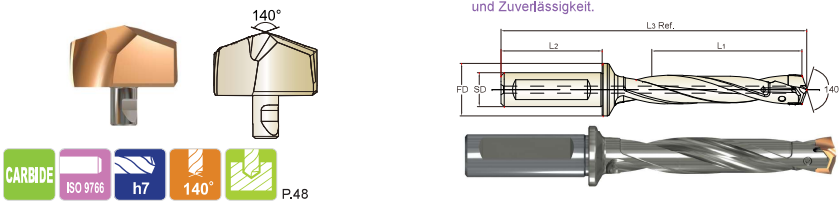
Y181H SERIES

i-ONE DRILL INSERTS & HOLDERS

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		h7										
		dec.	frac.	mm								
S18 Ø18.00 to Ø19.99	Y181H1800	0.7087		18.00	ZD18003025 ZD18005025 ZD18008025	25	56	32	3D	57.0	141.3	TX1819P9
	Y181H1810	0.7126		18.10					5D	95.0	178.3	
	Y181H1820	0.7165		18.20					8D	152.0	233.8	
	Y181H1826	0.7188	23/32	18.26								
	Y181H1830	0.7205		18.30								
	Y181H1840	0.7244		18.40								
	Y181H1850	0.7283		18.50								
	Y181H1860	0.7323		18.60								
	Y181H1865	0.7344	47/64	18.65								
	Y181H1870	0.7362		18.70								
	Y181H1880	0.7402		18.80								
	Y181H1890	0.7441		18.90								
	Y181H1900	0.7480		19.00	ZD19003025 ZD19005025 ZD19008025	25	56	32	3D	60.0	145.3	TX1920P9
	Y181H1905	0.7500	3/4	19.05					5D	100.0	184.3	
	Y181H1910	0.7520		19.10					8D	160.0	242.8	
	Y181H1920	0.7559		19.20								
	Y181H1927	0.7587		19.27								
	Y181H1930	0.7598		19.30								
	Y181H1940	0.7638		19.40								
	Y181H1945	0.7656	49/64	19.45								
Y181H1950	0.7677		19.50									
Y181H1960	0.7717		19.60									
Y181H1970	0.7756		19.70									
Y181H1980	0.7795		19.80									
Y181H1984	0.7813	25/32	19.84									
Y181H1990	0.7835		19.90									

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ISO Material Description VDI 3323 HRC HB Recommended	P										M				K																																																																																					
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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100



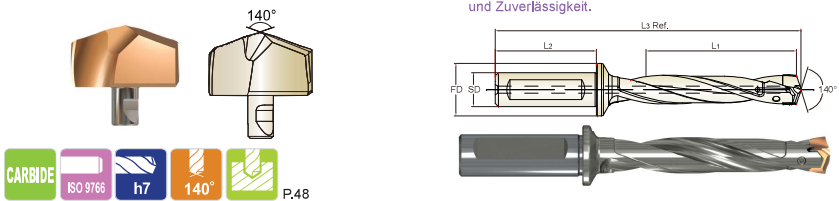
Y201H SERIES

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Series Range (mm)	Insert EDP No.	Insert O.D.			Holder EDP No.	Shank Dia. SD	Shank Length L2	Flange Dia. FD	Drilling Depth L1	Overall Length L3 Ref.	Screw No.	
		h7										
		dec.	frac.	mm								
S20 Ø20.00 to Ø21.99	Y201H2000	0.7874		20.00	ZD20003025 ZD20005025 ZD20008025	25	56	32	3D	63.0	147.5	TX2021P9
	Y201H2010	0.7913		20.10					5D	105.0	188.5	
	Y201H2020	0.7953		20.20					8D	168.0	250.0	
	Y201H2024	0.7969	51/64	20.24								
	Y201H2030	0.7992		20.30								
	Y201H2040	0.8031		20.40								
	Y201H2050	0.8071		20.50								
	Y201H2060	0.8110		20.60								
	Y201H2064	0.8125	13/16	20.64								
	Y201H2070	0.8150		20.70								
	Y201H2080	0.8189		20.80								
	Y201H2090	0.8228		20.90	ZD21003025 ZD21005025 ZD21008025	25	56	32	3D	66.0	150.5	TX2122P9
	Y201H2100	0.8268		21.00					5D	110.0	193.5	
	Y201H2103	0.8281	53/64	21.03					8D	176.0	258.0	
	Y201H2110	0.8307		21.10								
	Y201H2120	0.8346		21.20								
	Y201H2130	0.8386		21.30								
	Y201H2140	0.8425		21.40								
	Y201H2143	0.8438	27/32	21.43								
	Y201H2150	0.8465		21.50								
Y201H2160	0.8504		21.60									
Y201H2170	0.8543		21.70									
Y201H2180	0.8583		21.80									
Y201H2183	0.8594	55/64	21.83									
Y201H2190	0.8622		21.90									

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

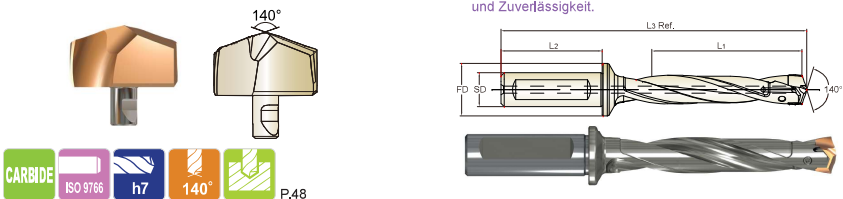
ISO Material Description VDI 3323 HRC HB Recommended	P										M				K																																																																																					
	Non-alloy steel					Low alloy steel					High alloyed steel and tool steel		Stainless steel		Duplex	Grey cast iron		Nodular cast iron		Malleable cast iron																																																																																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

i-ONE DRILL INSERTS & HOLDERS

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PLAQUETTES ET PORTE-PLAQUETTE i-ONE DRILL
INSERTI & PORTAINSERTI i-ONE DRILL

- Applications
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- Anwendungen
 - Für Kohlenstoffstähle, legierte Stähle und Gusseisen,
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 - Sicheres und schnelles Spannsystem,
 - Hohe Leistungsfähigkeit bei gleichzeitiger Kosteneffizienz,
 - Mehrschichtige Beschichtung bietet hervorragende Produktivität und Zuverlässigkeit.



Series Range (mm)	Insert EDP No. H-Coating	Insert O.D.			Holder EDP No.	Shank Dia. SD	Shank Length L2	Flange Dia. FD	Drilling Depth L1	Overall Length L3 Ref.	Screw No.	
		h7										
		dec.	frac.	mm								
S22 Ø22.00 to Ø23.99	Y221H2200	0.8661		22.00	ZD22003025 ZD22005025 ZD22008025	25	56	32	3D	69.0	153.4	TX2223P9
	Y221H2210	0.8701		22.10								
	Y221H2220	0.8740		22.20								
	Y221H2223	0.8750	7/8	22.23								
	Y221H2230	0.8780		22.30								
	Y221H2240	0.8819		22.40								
	Y221H2250	0.8858		22.50								
	Y221H2260	0.8898		22.60								
	Y221H2262	0.8906	57/64	22.62								
	Y221H2270	0.8937		22.70								
	Y221H2280	0.8976		22.80								
	Y221H2290	0.9016		22.90								
	Y221H2300	0.9055		23.00	ZD23003025 ZD23005025 ZD23008025	25	56	32	3D	72.0	157.4	
	Y221H2310	0.9094	29/32	23.10								
	Y221H2320	0.9134		23.20								
	Y221H2330	0.9173		23.30								
	Y221H2340	0.9213		23.40								
	Y221H2342	0.9219	59/64	23.42								
	Y221H2350	0.9252		23.50								
	Y221H2360	0.9291		23.60								
	Y221H2370	0.9331		23.70								
	Y221H2380	0.9370		23.80								
Y221H2381	0.9375	15/16	23.81									
Y221H2390	0.9409		23.90									

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

◎: Excellent ○: Good

ISO	P									M					K				H		
Material Description	Non-alloy steel					Low alloy steel				High alloy steel and tool steel	Stainless steel			Duplex	Grey cast iron		Nodular cast iron	Malleable cast iron			
VDI 3523	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

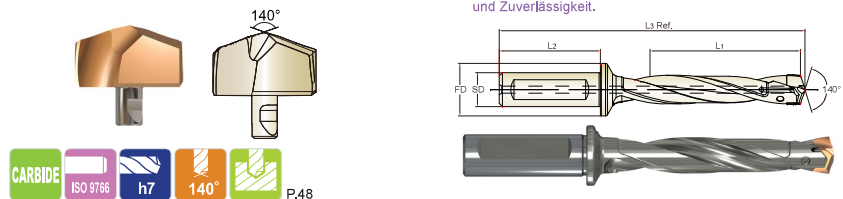
ISO	N					S					H										
Material Description	Aluminum-wrought alloy			Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys		Titanium Alloys	Hardened steel	Chilled Cast Iron	Hardened Cast Iron				
VDI 3523	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100				200	280	250	350	320	400 Rm / 1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

i-ONE DRILL INSERTS & HOLDERS

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Series Range (mm)	Insert EDP No. H-Coating	Insert O.D.			Holder EDP No.	Shank Dia. SD	Shank Length L2	Flange Dia. FD	Drilling Depth L1	Overall Length L3 Ref.	Screw No.	
		h7										
		dec.	frac.	mm								
S24 Ø24.00 to Ø25.99	Y241H2400	0.9449		24.00	ZD24003032 ZD24005032 ZD24008032	32	60	37	3D	75.0	165.8	TX2425P10
	Y241H2410	0.9488		24.10								
	Y241H2420	0.9528		24.20								
	Y241H2421	0.9531	61/64	24.21								
	Y241H2430	0.9567		24.30								
	Y241H2440	0.9606		24.40								
	Y241H2450	0.9646		24.50								
	Y241H2460	0.9685		24.60								
	Y241H2461	0.9688	31/32	24.61								
	Y241H2470	0.9724		24.70								
	Y241H2480	0.9764		24.80								
	Y241H2490	0.9803		24.90								
	Y241H2500	0.9844	63/64	25.00								
	Y241H2510	0.9882		25.10								
	Y241H2520	0.9921		25.20								
	Y241H2530	0.9961		25.30								
	Y241H2540	1.0000	1	25.40								
	Y241H2550	1.0039		25.50								
	Y241H2560	1.0079		25.60								
Y241H2567	1.0106		25.67									
Y241H2570	1.0118		25.70									
Y241H2580	1.0156	1-1/64	25.80									
Y241H2590	1.0197		25.90									

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

◎: Excellent ○: Good

ISO	P									M					K				H		
Material Description	Non-alloy steel					Low alloy steel				High alloy steel and tool steel	Stainless steel			Duplex	Grey cast iron		Nodular cast iron	Malleable cast iron			
VDI 3523	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

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 3523	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100				200	280	250	350	320	400 Rm / 1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	



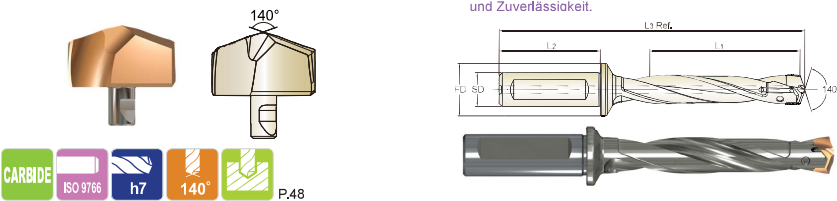
Y261H SERIES
Y281H SERIES

i-ONE DRILL INSERTS & HOLDERS

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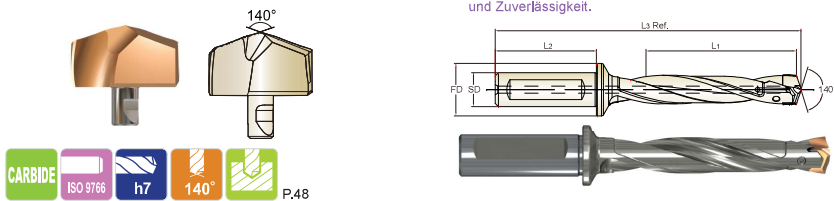
Y301H SERIES
Y321H SERIES

i-ONE DRILL INSERTS & HOLDERS

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PLAQUETTES ET PORTE-PLAQUETTE i-ONE DRILL
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 - Für Kohlenstoffstähle, legierte Stähle und Gusseisen,
 - Halterlänge: 3xD, 5xD, 8xD
- Vorteile
 - Sicheres und schnelles Spannsystem,
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 - Mehrschichtige Beschichtung bietet hervorragende Produktivität und Zuverlässigkeit.



Series Range	Insert EDP No.	Insert O.D.		Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth		Overall Length	Screw No.	
		dec.	frac.					L1	L3 Ref.			
S26	Y261H2600	1.0236	26.00	ZD26003032	32	60	37	3D	81.0	172.2	TX2627P10	
	Y261H2619	1.0313	1-1/32					26.19	5D	135.0		225.2
	Y261H2650	1.0433						26.50	8D	216.0		304.
	Y261H2659	1.0469	1-3/64					26.59				
	Y261H2699	1.0625	1-1/16	26.99	ZD27003032	32	60	37	3D	84.0	175.2	TX2728P10
	Y261H2700	1.0630		27.00					5D	140.0	230.2	
	Y261H2738	1.0781	1-5/64	27.38					8D	224.0	312.7	
	Y261H2750	1.0827		27.50								
	Y261H2778	1.0938	1-3/32	27.78								
	Y281H2800	1.1024		28.00					ZD28003032	32	60	
Y281H2818	1.1094	1-7/64	28.18	5D	145.0	236.2						
Y281H2850	1.1220		28.50	8D	232.0	321.7						
Y281H2858	1.1250	1-1/8	28.58									
Y281H2897	1.1406	1-9/64	28.97	ZD29003032	32	60	37	3D	90.0	183.2	TX2930P10	
Y281H2900	1.1417		29.00					5D	150.0	242.2		
Y281H2937	1.1563	1-5/32	29.37					8D	240.0	330.7		
Y281H2950	1.1614		29.50									
Y281H2977	1.1719	1-11/64	29.77									

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

Series Range	Insert EDP No.	Insert O.D.		Holder EDP No.	Shank Dia.	Shank Length	Flange Dia.	Drilling Depth		Overall Length	Screw No.	
		dec.	frac.					L1	L3 Ref.			
S30	Y301H3000	1.1811	30.00	ZD30003032	32	60	37	3D	93.0	187.0	TX3031P15	
	Y301H3016	1.1875	1-3/16					30.16	5D	155.0		248.0
	Y301H3050	1.2008						30.50	8D	248.0		339.5
	Y301H3056	1.2031	1-13/64					30.56				
	Y301H3096	1.2188	1-7/32	30.96	ZD31003032	32	60	37	3D	96.0	191.0	TX3132P15
	Y301H3100	1.2205		31.00					5D	160.0	254.0	
	Y301H3135	1.2344	1-15/64	31.35					8D	256.0	348.5	
	Y301H3150	1.2402		31.50								
	Y301H3175	1.2500	1-1/4	31.75								
	Y321H3200	1.2598		32.00					ZD32003032	32	60	
Y321H3215	1.2656	1-17/64	32.15	5D	165.0	262.2						
Y321H3250	1.2795		32.50	8D	264.0	359.7						
Y321H3254	1.2813	1-9/32	32.54									
Y321H3294	1.2969	1-19/64	32.94	ZD33003032	32	60	37	3D	102.0	201.2	TX3334P15	
Y321H3300	1.2992		33.00					5D	170.0	268.2		
Y321H3334	1.3125	1-5/16	33.34					8D	272.0	368.7		
Y321H3350	1.3189		33.50									
Y321H3373	1.3281	1-21/64	33.73									

► 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			Duplex	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	10	26	3	25	21								
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	180	260	160	250	130	230						
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎						

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	34	35	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
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

◎: Excellent ○: Good

ISO	P									M									K								
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel and tool steel	Stainless steel			Duplex	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	10	26	3	25	21								
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	180	260	160	250	130	230						
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎						

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	34	35	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
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

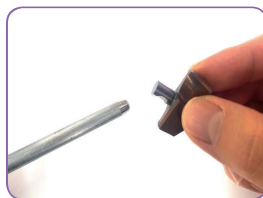
RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc (m/min)	Feed(mm/rev)						
				Ø10.0-11.99	Ø12.09-14.99	Ø15.00-17.99	Ø18.00-21.99	Ø22.0-26.9	Ø27.0-33.99	
P	1	Non-alloy steel	100-126	0.14-0.24	0.18-0.31	0.23-0.39	0.30-0.44	0.37-0.57	0.41-0.61	
	2		84-110	0.12-0.21	0.15-0.26	0.23-0.39	0.30-0.44	0.37-0.57	0.41-0.61	
	3		63-84	0.11-0.18	0.13-0.22	0.19-0.31	0.24-0.35	0.33-0.51	0.36-0.54	
	4		58-74	0.09-0.14	0.11-0.18	0.17-0.28	0.23-0.33	0.28-0.42	0.32-0.47	
	5	Low alloy steel	58-74	0.09-0.14	0.11-0.18	0.17-0.28	0.23-0.33	0.28-0.42	0.32-0.47	
	6		74-95	0.11-0.18	0.13-0.22	0.19-0.31	0.24-0.35	0.33-0.51	0.37-0.55	
	7		63-84	0.11-0.18	0.13-0.22	0.17-0.28	0.24-0.35	0.33-0.51	0.37-0.55	
	8		58-74	0.09-0.14	0.11-0.18	0.14-0.23	0.23-0.33	0.28-0.42	0.32-0.47	
	9		47-63	0.07-0.11	0.09-0.13	0.14-0.23	0.23-0.33	0.28-0.42	0.32-0.47	
	10		High alloyed steel, and tool steel	53-68	0.09-0.14	0.11-0.18	0.14-0.23	0.20-0.29	0.22-0.34	0.26-0.39
	11			42-58	0.09-0.14	0.11-0.18	0.12-0.20	0.23-0.33	0.22-0.34	0.26-0.39
M	12	Stainless steel								
13										
14										
K	15	Grey cast iron	105-131	0.13-0.23	0.17-0.29	0.22-0.41	0.30-0.46	0.40-0.56	0.44-0.61	
	16		79-100	0.10-0.18	0.12-0.22	0.18-0.32	0.22-0.33	0.28-0.39	0.32-0.44	
	17	Nodular cast iron	100-126	0.11-0.20	0.14-0.24	0.19-0.34	0.23-0.35	0.31-0.44	0.35-0.48	
	18		79-100	0.10-0.18	0.12-0.22	0.15-0.29	0.21-0.32	0.28-0.39	0.32-0.44	
	19	Malleable cast iron	105-131	0.11-0.20	0.14-0.24	0.19-0.34	0.23-0.35	0.31-0.44	0.35-0.48	
20	79-100		0.10-0.15	0.12-0.20	0.15-0.29	0.21-0.32	0.28-0.39	0.32-0.44		
N	21	Aluminum-wrought alloy								
	22									
	23	Aluminum-cast, alloyed								
	24									
	25									
	26	Copper and Copper Alloys (Bronze / Brass)								
	27									
	28	Non Metallic Materials								
	29									
	30									
S	31	Heat Resistant Super Alloys								
	32									
	33									
	34									
	35	Titanium Alloys								
	36									
	37									
H	38	Hardened steel								
	39									
	40	Hardened Cast Iron								
	41									

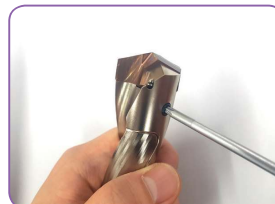
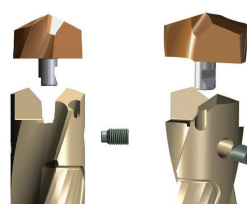
► The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points. Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.
 ► Recommend you to reduce the feed rate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

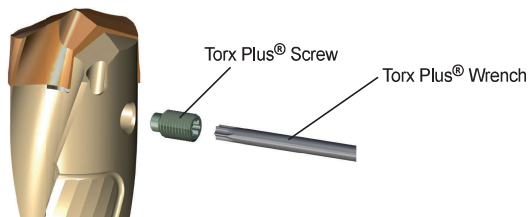


Make sure to clean the insert and insert seat.
Schneideinsatz und Haltersitz sorgfältig reinigen.



Slide the drill insert into the slot of the holder and press down the insert to touch the bottom of the slot.
Schneideinsatz in den Haltersitz einführen und den Schneideinsatz fest auf den Grund des Haltersitzes pressen.

After confirming the insert is pressed down to the bottom of the slot, tighten the screw using anti-seize compound.
Wenn der Schneideinsatz fest auf den Grund des Haltersitzes gepresst ist, die Schraube fest anziehen und dabei Spezialfett verwenden.

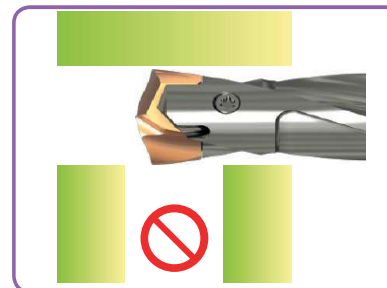


WRENCH TYPE	PRODUCT NO.	SERIES (INSERT SIZE)	TORX PLUS®	TORQUE (N·m)
	TWFP05	S10~S12 (10.00 ~ 13.90)	5 IP	0.6
	TWDP07	S14~S16 (14.00 ~ 17.90)	7 IP	1.0
	TWDP09	S18~S22 (18.00 ~ 23.90)	9 IP	1.5
	TWDP10	S24~S28 (24.00 ~ 29.77)	10 IP	2.2
	TWDP15	S30~S32 (30.00 ~ 33.73)	15 IP	3.2

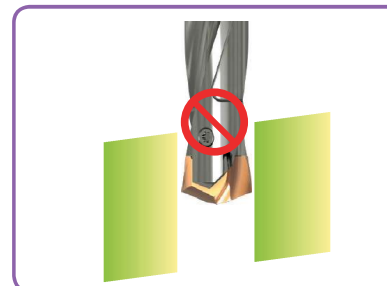
Use the Torx Plus wrench
Benutzen Sie den Winkeldreher oder T - Schlüsse

- ▶ Need to use appropriate wrenches and screws as indicated.
Unbedingt die angegebenen Schrauben und Dreher verwenden.
- ▶ It's important to tighten up the screw properly.
Es ist wichtig, die Schraube korrekt und fest anzuziehen.

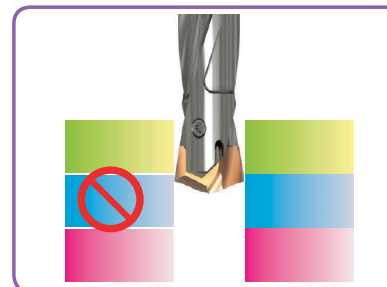
**CAUTION-NOT RECOMMENDABLE APPLICATION
ACHTUNG - NICHT EMPFOHLENE ANWENDUNG**



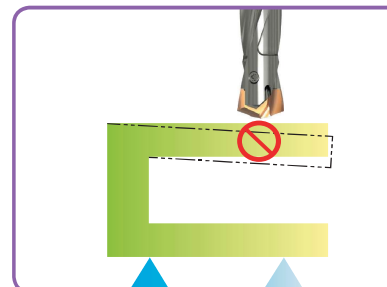
Intersecting cross hole is bigger than the drill insert's Margin Length.
Der Haltersitz ist größer als die Breite des Schneideinsatzes.



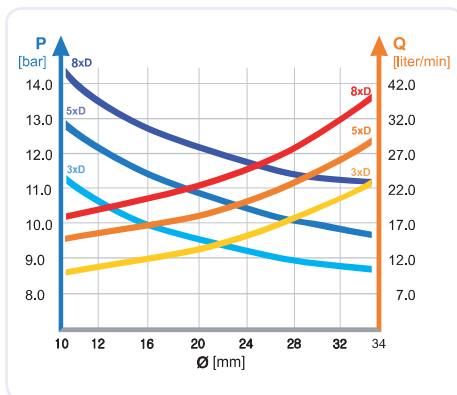
Material with slanting entrance and exit over 7 degrees.
(If drilling 7 degrees or under slanting surface, reduce the feed about 30-50%)
Werkstücke mit schrägem Anschnitt oder Austritt von über 7°. (Zum Bohren von bis zu 7° Schräge den Vorschub um ca. 30-50% reduzieren).



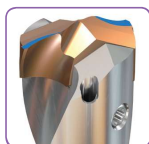
For drilling stacked plates, minimize the space between the plates.
Beim Bohren von Blechpaketen den Abstand der Bleche minimieren.
The space between stacked plates can cause insert breakage or poor chip control.
Freiraum in Blechpaketen kann den Bruch des Schneideinsatzes oder schlechte Entspannung verursachen.



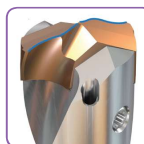
The material needs to be fixtured securely before drilling.
Das Werkstück muss fest und sicher aufgespannt sein

RECOMMENDED COOLANT PRESSURE AND FLOW RATE ON VERTICAL DRILLING
EMPFOHLENE KÜHLMITTELDRUCK UND -MENGE BEIM VERTIKALEN BOHREN


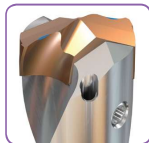
- Recommended emulsion mix is 6 - 8%.
Empfohlene Emulsionsmischung 6 - 8%.
- For Drilling into Stainless and High Strength steels, a mix of 10% is recommended.
Beim Bohren in rostfreie und hochfeste Stähle werden 10% empfohlen.
- For horizontal drilling, 30% reduction on the coolant pressure and flow rate is possible.
Beim horizontalen Bohren können Kühlmitteldruck und -menge um 30% gemindert werden.
- Dry drilling is possible for 1-2xD drilling.
But not recommended.
Trocken Bohren ist möglich bei 1-2xD. Aber nicht empfohlen.

TROUBLE SHOOTING
PROBLEMLÖSUNGEN


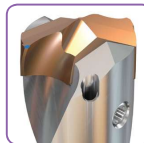
- 1) Heavy flank wear / Fast flank wear**
- Reduce cutting speed
 - Increase feed



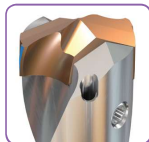
- 2) Chipping on cutting edge**
- Reduce feed
 - Check the rigidity of spindle and chuck
 - Rigid clamping of workpiece



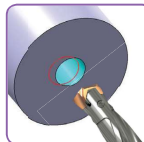
- 3) Build-up on cutting edge**
- Increase cutting speed
 - Use a coated insert



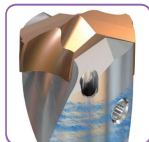
- 4) Chipping or break down on outer corner**
- Reduce feed
 - Rigid clamping of workpiece



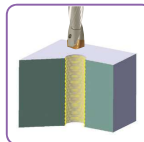
- 5) Wear of land margin**
- Rigid clamping of workpiece
 - Reduce cutting speed
 - Increase coolant flow



- 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