



Indexable Drills Series

P2D P3D P4D P5D

Volume 3



Key features: Phoenix P2D P3D P4D P5D



- New chipbreakers available for a wide variety of materials



- 1** Economical 4-corner design

- 2** Unique flute design enables stable drilling

- 3** Using same insert to both center and peripheral cutting edge simplify tool management

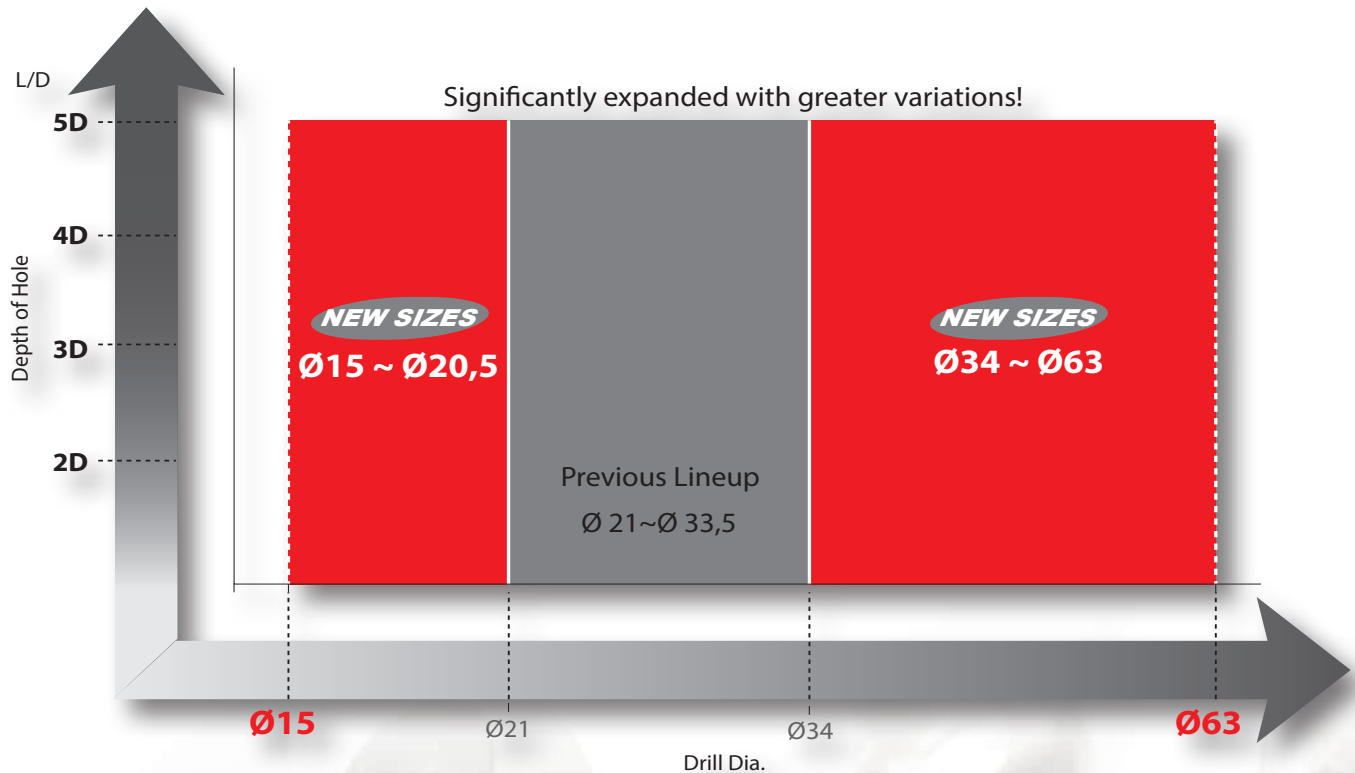
- 4** High precision finishing of the flute surface improves chip evacuation

- 5** Internal coolant system

PD-series: 200 new sizes available now

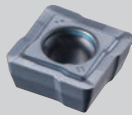
Significantly expanded with increased variations: total of items increased from 84 to 284

- 2D~5D lineup further expanded with small diameter sizes from $\varnothing 15 \sim \varnothing 20,5$ and large diameter sizes from $\varnothing 34 \sim \varnothing 63$
- 2 types of shank diameter are now available for the following sizes: $\varnothing 17,5$ $\varnothing 23,5 \sim \varnothing 25,5$ $\varnothing 31 \sim \varnothing 32$



Phoenix XCMT Inserts

Three types of chipbreakers are available for a wide variety of work material



For Steel and Stainless Steel (DM)

- Well balanced insert with sharpness and rigidity



For Cast Iron (DR)

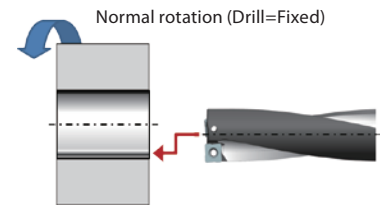
- Strong cutting edge acquired by rake angle and land



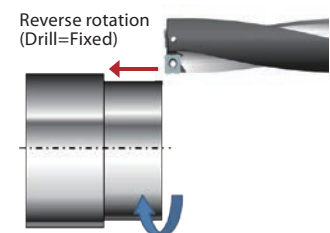
For Aluminum Alloy and Nonferrous Metal (DN)

- Excellent chip evacuation is acquired by sharp cutting edges and polishing treatment

• Turning internal diameter



• Turning outer diameter



Chipbreaker	Classification	Grades	Coating Method	(HRA) Hardness	Surface Treatment	
					Main Component	Coating Thickness
DM	P	XP9020	PVD	91.9	TiAlN	3µm
DR	K	XP1010	PVD	91.4	TiAlN	6µm
DN	N	CK110	—	92.2	—	—

Icons

EN	DE	IT	FR	DA	SV	ES	RU	TR	PL
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Applications - Anwendungen - Applicazioni - Applications - Applikation - Applikation - Aplicaciones - Применение - Uygulama - Zastosowania

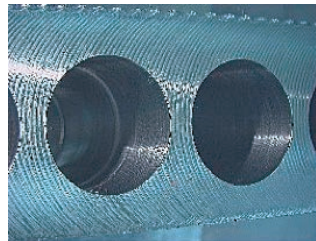
P	Steel	Stahl	Acciai	Acier	Stål	Stål	Aceros	сталей	çelikler için	Stali
M	Stainless Steel	VA - Stahl	Inox e acciai dolci	Aciers Inox	Rustfrit stål	Rostfritt stål	Aceros inoxidables	нержавеющих сталей	Ayrıca paslanmaz çelik için	Stali nierdzewnych
K	Cast Iron	Grauguss	Ghisa	Fonte	Støbejern	Gjutjärn	fundición de hierro	для чугуна и алюминия	Döküm	żeliw
N	non Ferrous Material	NE-Material	Materiali non ferrosi	Matériel non ferreux	Ikke-jærnhaltige materialer	Ikke järnhaltiga material	Materiales no ferrosos	цветных металлов	Demir dışı malzemeler	Material nieżelaznych
S	Super Alloys	Super legierungen	Super leghe	Super Alliage	Super legeringer	Super legeringar	Super aleaciones	жаропрочных сплавов	Süper alaşımlar	Süper alaşımlar
H	Hardened Material	gehärtete Materialien	Acciai temprati fino	Matériaux Supérieur	Hærdede materialer	hårdat stål	Aceros templados	закаленных материалов	Kadar sertleştirilmiş malzemeler için	Super stopy

Processing data

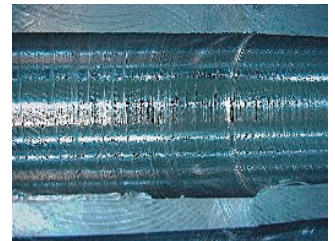
Achieves stable drilling, even when making rigorous 5xD deep holes

Work Material	S50C
Drill Diameter	Ø 25
Depth of hole	125 mm
Cutting Condition	$V_C=150\text{m/min}$ $f=0,12\text{mm/rev}$
Coolant	Water soluble
Machine	Horizontal Machining Center (BT50)

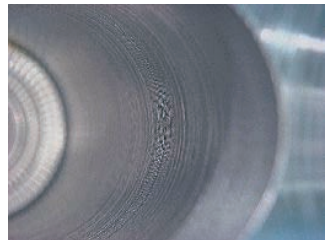
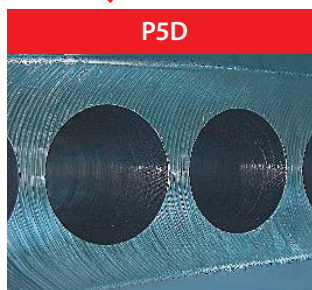
Conventional Indexable drill



Cross-sectional



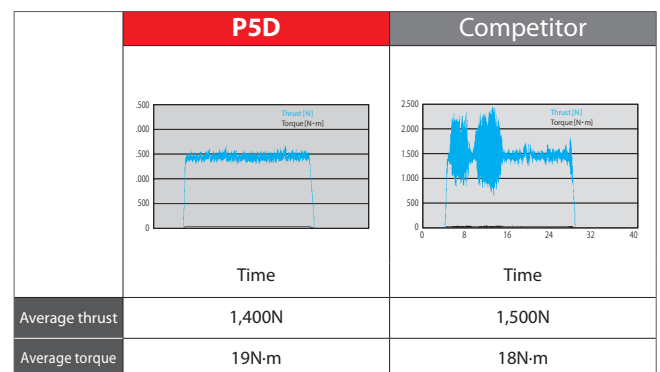
- 5xD deep hole drilling was an extremely difficult process for conventional indexable drills.
- Since conventional indexable drills are constructed of two flutes and a cutting edge, its load balance is relatively poor especially when drilling deep holes.



- Achieves stable drilling with minimal irregularity.
- The P5D is designed specifically for stable drilling of 5xD deep holes

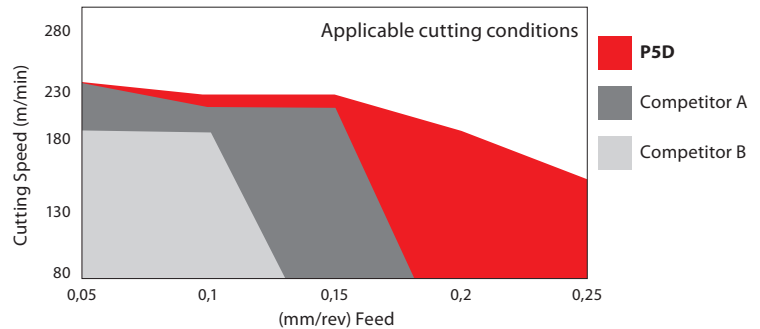
Stable cutting load

Work Material	S50C
Drill Diameter	Ø 21
Depth of hole	50 mm
Cutting Condition	$V_C=120\text{m/min}$ $f=0,12\text{mm/rev}$
Coolant	Water soluble
Machine	Horizontal Machining Center (BT50)

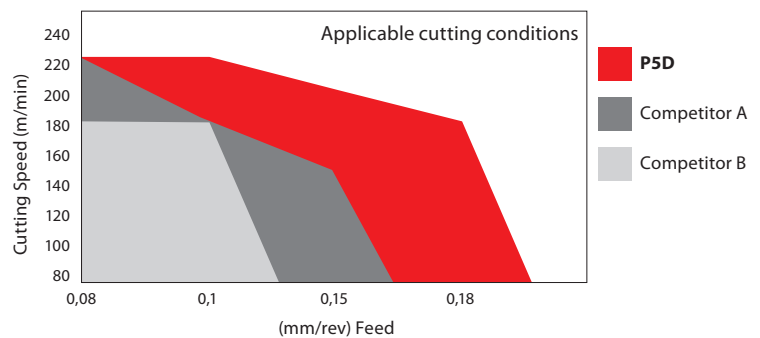


High efficiency even when drilling deep holes

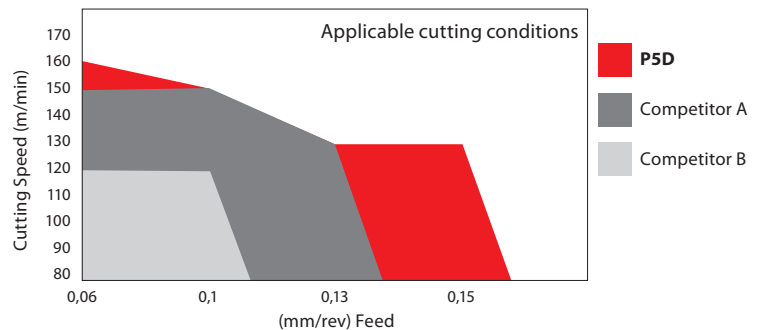
Tool	P5D2500FS32M08 (Ø25)
Insert Grade	XCMT083508ER-DM
Work Material	S50C
Depth of Hole	120 mm
Coolant	Water soluble (Internal)
Machine	BT50 Horizontal Machining Center



Tool	P5D2500FS32M08 (Ø25)
Insert Grade	XCMT083508ER-DM
Work Material	SCM440 (30HRC)
Depth of Hole	120 mm
Coolant	Water soluble (Internal)
Machine	BT50 Horizontal Machining Center



Tool	P5D2500FS32M08 (Ø25)
Insert Grade	XCMT083508ER-DM
Work Material	SUS304
Depth of Hole	120 mm
Coolant	Water soluble (Internal)
Machine	BT50 Horizontal Machining Center

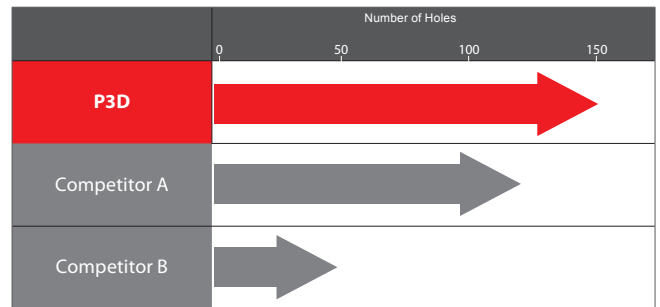


Processing data

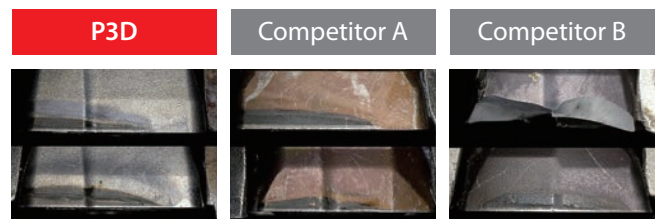
High efficiency drilling in SUS304 (P3D)

Tool	P3D2500FS32M08 (Ø25)
Insert Grade	XCMT083508ER-DM (XP9020)
Work Material	SUS304
Cutting Speed	160m/min (2.040min ⁻¹)
Feed	400mm/min (0,2mm/rev)
Depth of Hole	75mm (Blind)
Coolant	Water Soluble
Machine	Horizontal Machining Center

The P3D was able to achieve long tool life by drilling SUS 304.



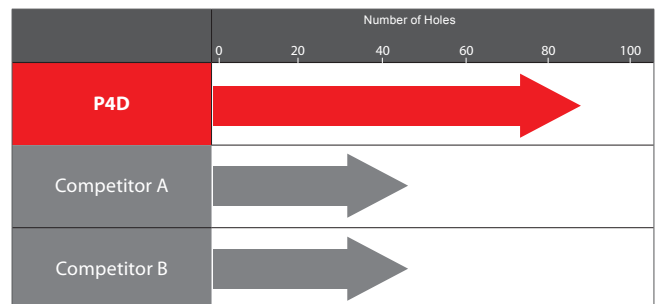
Wear comparison after drilling 48 holes



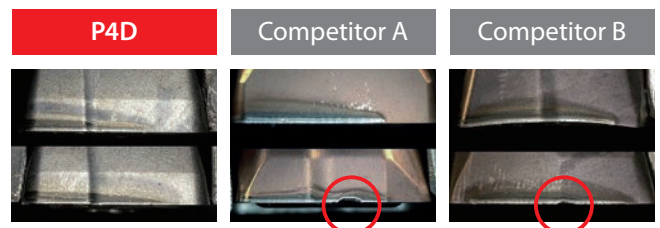
High efficiency drilling in SUS304 (P4D)

Tool	P4D2500FS32M08 (Ø25)
Insert Grade	XCMT083508ER-DM (XP9020)
Work Material	SUS304
Cutting Speed	160m/min (2.040min ⁻¹)
Feed	245mm/min (0,12mm/rev)
Depth of Hole	100mm(Blind)
Coolant	Water Soluble
Machine	Horizontal Machining Center

Long tool life was able to achieve by stable drilling.



Wear comparison after drilling 45 holes

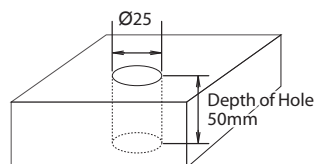


Processing data

High efficiency drilling in mold parts (P3D)

Tool	P3D2500FS32M08 (Ø25)	Competitor's Indexable Drill
Insert Grade	XCMT083508ER-DM (XP9020)	Coated Carbide Insert
Work Material	S50C	
Cutting Speed	200m/min (2.550min ⁻¹)	167m/min (2.100min ⁻¹)
Feed	300mm/min (0,12mm/rev)	170mm/min (0,08mm/rev)
Depth of Hole	50mm (Through)	
Coolant	Water Soluble (Internal)	
Machine	Vertical Machining Center	

The competitor product exhibited difficulties in the separation of cutting chips, whereas the P3D was able to break chips into small pieces for trouble-free evacuation, reducing processing time significantly.

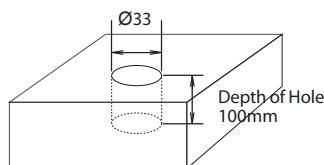
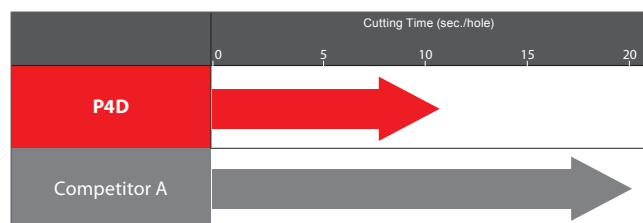


Cutting Chips of P3D

High efficiency drilling of structural parts (P4D)

Tool	P4D3300FS40M09 (Ø33)	Competitor's Indexable Drill
Insert Grade	XCMT094008ER-DM (XP9020)	Coated Carbide Insert
Work Material	SS400	
Cutting Speed	220m/min (2.100min ⁻¹)	165m/min (1.600min ⁻¹)
Feed	150mm/min (0,07mm/rev)	110mm/min (0,07mm/rev)
Depth of Hole	100mm (Blind)	
Coolant	Water Soluble (Internal)	
Machine	Horizontal Machining Center	

To prevent chip clogging, 2mm step-drilling was commonly required for applications with a depth of over 70mm. The P4D, however, was able to demonstrate excellent chip evacuation even in deep-hole with no step processing required, improving performance with the reduction of machining time by 45% per hole.

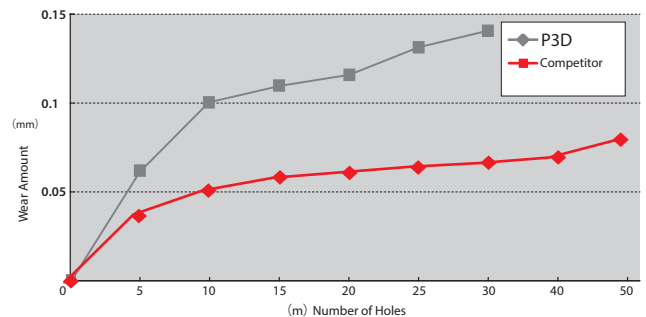
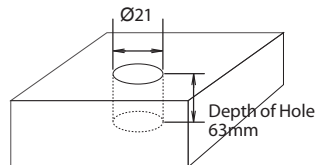


Processing data

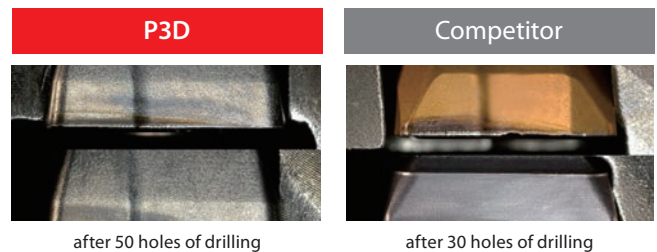
Drilling with long tool life in high-hardened material (P3D)

Tool	P3D2100FS25M07 (Ø25)	Competitor's Indexable Drill
Insert Grade	XCMT073106ER-DM (XP9020)	Coated Carbide Insert
Work Material	SKD61 (50HRC)	
Cutting Speed	80m/min (1.200min ⁻¹)	
Feed	100mm/min (0,08mm/rev)	
Depth of Hole	63mm (Blind)	
Coolant	Water Soluble (Internal)	
Machine	Horizontal Machining Center	

The competitor product exhibited chipping of the center blade after processing 30 holes in a high hardness material of HRC50. The P3D, on the other hand, was able to continue processing even after 50 holes with minimal wear.



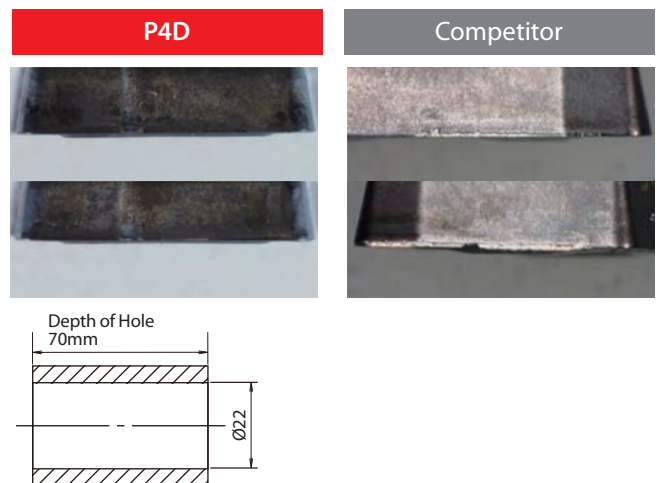
Wear comparison



Turning of building component (P4D)

Tool	P4D2200FS25M07 (Ø22)	Competitor's Indexable Drill
Insert Grade	XCMT073106ER-DM (XP9020)	Coated Carbide Insert
Work Material	SCM415	
Cutting Speed	104m/min (1.500min ⁻¹)	
Feed	300mm/min (0,2mm/rev)	
Depth of Hole	70mm (Through)	
Coolant	Water Soluble (Internal)	
Machine	Horizontal NC Lathe	

The insert of the competitor tool exhibited chipping during the processing of a 70mm deep-hole turning application while the P4D was able to continue processing with minimal wear shown.

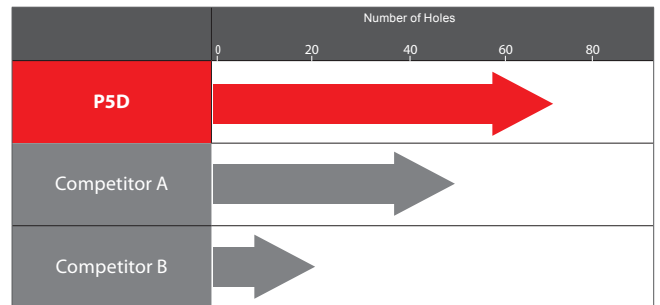


Processing data

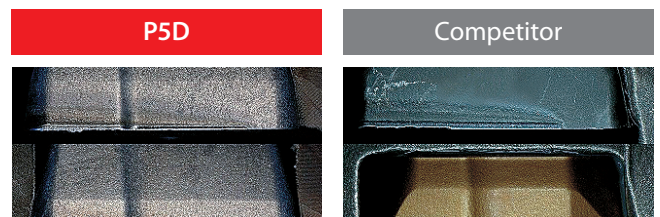
High efficiency drilling in S50C (P5D)

Tool	P5D2700FS32M08 (Ø27)
Insert Grade	XCMT083508ER-DM (XP9020)
Work Material	S50C
Cutting Speed	150m/min (1,800min ⁻¹)
Feed	216mm/min (0.12mm/rev)
Depth of Hole	120mm (Through)
Coolant	Water Soluble
Machine	Horizontal Machining Center

High efficiency can be achieved even when drilling 5xD deep holes. With stable performance, tool life can be prolonged.



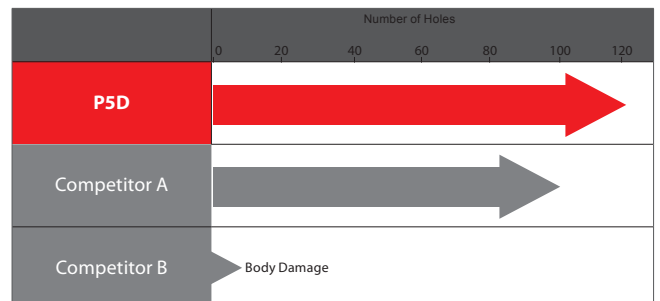
Wear comparison after drilling 40 holes



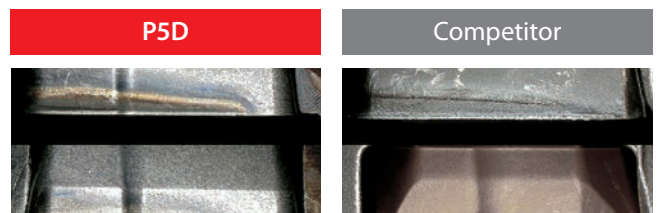
Stable performance even in stainless steel (P5D)

Tool	P5D2700FS32M08 (Ø27)
Insert Grade	XCMT083508ER-DM (XP9020)
Work Material	SUS304
Cutting Speed	120m/min (1,400min ⁻¹)
Feed	140mm/min (0.1mm/rev)
Depth of Hole	120mm (Through)
Coolant	Water Soluble
Machine	Horizontal Machining Center

The P5D is able to achieve great chip evacuation and stable performance even in SUS304, where chip packing is a common problem.



Wear comparison after drilling 100 holes



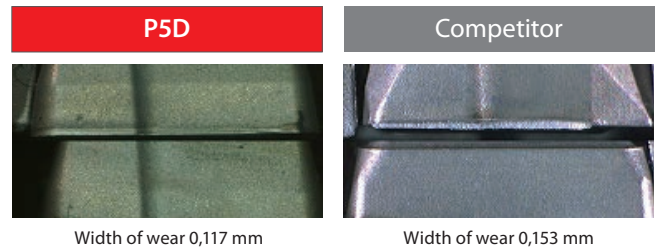
Processing data

Drilling with long tool life in ADC12 (P5D)

Tool	P5D2500FS32M8 (Ø25)
Insert Grade	XCMT083508ER-DN (CK110)
Work Material	ADC12
Cutting Speed	250m/min (3.185min ⁻¹)
Feed	320mm/min (0,1mm/rev)
Depth of Hole	100mm (Blind)
Coolant	Water Soluble
Machine	Horizontal Machining Center

Long tool life was achieved in machining ADC12 by using inserts for aluminum alloy and non-ferrous materials.

Wear comparison after drilling 200 holes

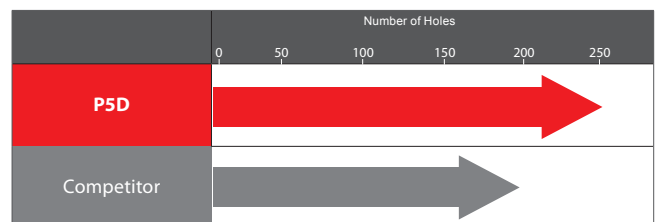


Width of wear 0,117 mm

Width of wear 0,153 mm

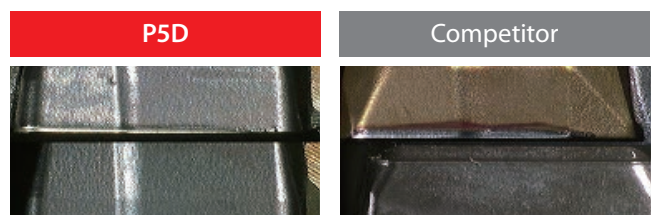
Drilling with long tool life in FC250 (P5D)

Tool	P5D2500FS32M08 (Ø25)
Insert Grade	XCMT083508ER-DR (XP1010)
Work Material	FC250
Cutting Speed	150m/min (1,910min ⁻¹)
Feed	200mm/min (0.1mm/rev)
Depth of Hole	100mm (Blind)
Coolant	Water Soluble
Machine	Horizontal Machining Center



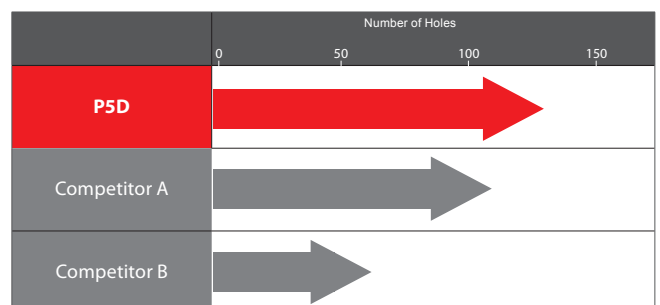
P5D achieved stable drilling of 250holes, which was over 1,3 times, versus the competition.

Wear comparison after drilling 150 holes

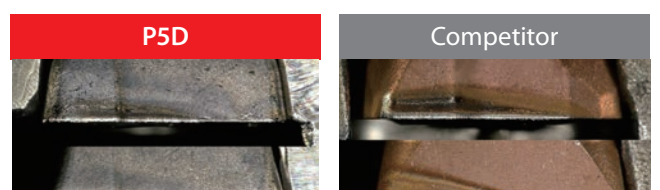


Stable performance even in SUS304 (P5D)

Tool	P5D1500FS20M04 (Ø15)	Competitor A	Competitor B
Insert Grade	XCMT042204ER-DM (XP9020)	Coated Carbide Insert	
Work Material	SUS304		
Cutting Speed	120m/min (2.550min ⁻¹)		
Feed	150mm/min (0,06mm/rev)		
Depth of Hole	75mm (Blind)		
Coolant	Water Soluble (internal)		
Machine	Horizontal Machining Center		



Wear comparison after 9m of drilling



Phoenix indexable drill

■ High performance
■ 2 flutes

■ High performance
■ 2 Schneiden

■ Alta prestazione
■ 2 denti

■ Haute performance
■ 2 lèvres

■ Yüksek performans
■ 2 Kanal

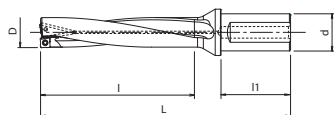
■ High performance
■ 2 skær

■ High performance
■ 2 skär

■ Altas prestaciones
■ 2 labios

■ Высокая производительность
■ 2-зуба

■ Wysoka wydajność
■ 2 ostrowe



EDP	Designation	D	Applicable Inserts	L	l	l1	d	Price
NEW SIZES 7803117	P2D1500FS20M04	15	①	95	30	50	20	264,60
NEW SIZES 7803118	P2D1550FS20M04	15,5		96	31	50	20	264,60
NEW SIZES 7803119	P2D1600FS20M04	16		97	32	50	20	264,60
NEW SIZES 7803120	P2D1650FS20M04	16,5		98	33	50	20	264,60
NEW SIZES 7803121	P2D1700FS20M05	17	②	102	34	50	20	264,60
NEW SIZES 7803122	P2D1750FS20M05	17,5		103	35	50	20	276,80
NEW SIZES 7803190	P2D1750FS25M05	17,5		109	35	56	25	276,80
NEW SIZES 7803123	P2D1800FS25M05	18		110	36	56	25	276,80
NEW SIZES 7803124	P2D1850FS25M05	18,5	③	111	37	56	25	276,80
NEW SIZES 7803125	P2D1900FS25M06	19		112	38	56	25	276,80
NEW SIZES 7803126	P2D1950FS25M06	19,5		113	39	56	25	276,80
NEW SIZES 7803127	P2D2000FS25M06	20		114	40	56	25	276,80
NEW SIZES 7803128	P2D2050FS25M06	20,5	④	115	41	56	25	276,80
7803129	P2D2100FS25M07	21		121	42	56	25	274,40
7803130	P2D2150FS25M07	21,5		122	43	56	25	292,30
7803131	P2D2200FS25M07	22		123	44	56	25	292,30
7803132	P2D2250FS25M07	22,5	⑤	124	45	56	25	292,30
7803133	P2D2300FS25M07	23		125	46	56	25	292,30
NEW SIZES 7803191	P2D2350FS25M07	23,5		126	47	56	25	292,30
7803134	P2D2350FS32M07	23,5		130	47	60	32	292,30
NEW SIZES 7803192	P2D2400FS25M07	24	⑥	127	48	56	25	292,30
7803135	P2D2400FS32M07	24		131	48	60	32	292,30
NEW SIZES 7803193	P2D2450FS25M07	24,5		128	49	56	25	292,30
7803136	P2D2450FS32M07	24,5		132	49	60	32	292,30
NEW SIZES 7803194	P2D2500FS25M08	25	⑦	129	50	56	25	292,30
7803137	P2D2500FS32M08	25		133	50	60	32	292,30
NEW SIZES 7803195	P2D2550FS25M08	25,5		130	51	56	25	347,60
7803138	P2D2550FS32M08	25,5		134	51	60	32	292,30
7803139	P2D2600FS32M08	26	⑧	135	52	60	32	292,30
7803140	P2D2650FS32M08	26,5		136	53	60	32	292,30
7803141	P2D2700FS32M08	27		137	54	60	32	347,60
7803142	P2D2800FS32M08	28		139	56	60	32	347,60
7803143	P2D2850FS32M08	28,5	⑨	140	57	60	32	347,60
7803144	P2D2900FS32M09	29		141	58	60	32	347,60
7803145	P2D3000FS32M09	30		143	60	60	32	347,60
7803146	P2D3100FS32M09	31		145	62	60	32	347,60
NEW SIZES 7803196	P2D3100FS40M09	31	⑩	155	62	70	40	347,60
7803147	P2D3200FS32M09	32		147	64	60	32	347,60
NEW SIZES 7803197	P2D3200FS40M09	32		157	64	70	40	347,60
7803148	P2D3300FS40M09	33		159	66	70	40	347,60
7803149	P2D3350FS40M09	33,5	⑪	160	67	70	40	385,60
NEW SIZES 7803150	P2D3400FS40M10	34		161	68	70	40	392,00
NEW SIZES 7803151	P2D3500FS40M10	35		163	70	70	40	392,00
NEW SIZES 7803152	P2D3600FS40M10	36		165	72	70	40	392,00
NEW SIZES 7803153	P2D3700FS40M10	37	⑫	167	74	70	40	405,80
NEW SIZES 7803154	P2D3800FS40M10	38		169	76	70	40	405,80
NEW SIZES 7803155	P2D3900FS40M12	39		178	78	70	40	438,90
NEW SIZES 7803156	P2D4000FS40M12	40		180	80	70	40	438,90
NEW SIZES 7803157	P2D4100FS40M12	41	⑬	182	82	70	40	438,90
NEW SIZES 7803158	P2D4200FS40M12	42		184	84	70	40	438,90
NEW SIZES 7803159	P2D4300FS40M12	43		186	86	70	40	438,90
NEW SIZES 7803160	P2D4400FS40M12	44		188	88	70	40	438,90
NEW SIZES 7803161	P2D4500FS40M13	45	⑭	190	90	70	40	471,10
NEW SIZES 7803162	P2D4600FS40M13	46		192	92	70	40	471,10
NEW SIZES 7803163	P2D4700FS40M13	47		194	94	70	40	471,10
NEW SIZES 7803164	P2D4800FS40M13	48		196	96	70	40	471,10
NEW SIZES 7803165	P2D4900FS40M13	49	⑮	198	98	70	40	471,10
NEW SIZES 7803166	P2D5000FS40M14	50		200	100	70	40	522,30
NEW SIZES 7803167	P2D5100FS40M14	51		202	102	70	40	522,30
NEW SIZES 7803168	P2D5200FS40M14	52		204	104	70	40	522,30
NEW SIZES 7803169	P2D5300FS40M14	53	⑯	206	106	70	40	522,30
NEW SIZES 7803170	P2D5400FS40M14	54		208	108	70	40	522,30
NEW SIZES 7803171	P2D5500FS40M14	55		210	110	70	40	522,30
NEW SIZES 7803172	P2D5600FS40M14	56		212	112	70	40	522,30
NEW SIZES 7803173	P2D5700FS40M16	57	⑰	214	114	70	40	537,30
NEW SIZES 7803174	P2D5800FS40M16	58		216	116	70	40	537,30
NEW SIZES 7803175	P2D5900FS40M16	59		218	118	70	40	537,30
NEW SIZES 7803176	P2D6000FS40M16	60		220	120	70	40	537,30
NEW SIZES 7803177	P2D6100FS40M16	61	⑱	222	122	70	40	537,30
NEW SIZES 7803178	P2D6200FS40M16	62		224	124	70	40	537,30
NEW SIZES 7803179	P2D6300FS40M16	63		226	126	70	40	537,30

Phoenix indexable drill

■ High performance
■ 2 flutes

■ High performance
■ 2 Schneiden

■ Alta prestazione
■ 2 denti

■ Haute performance
■ 2 lèvres

■ Yüksek performans
■ 2 Kanal

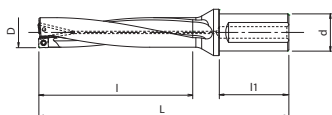
■ High performance
■ 2 skær

■ High performance
■ 2 skär

■ Altas prestaciones
■ 2 labios

■ Высокая производительность
■ 2-зуба

■ Wysoka wydajność
■ 2 ostrowce



EDP	Designation	D	Applicable Inserts	L	l	l1	d	Price
NEW SIZES 7803217	P3D1500FS20M04	15	①	110	45	50	20	294,70
NEW SIZES 7803218	P3D1550FS20M04	15,5		112	47	50	20	294,70
NEW SIZES 7803219	P3D1600FS20M04	16		113	48	50	20	294,70
NEW SIZES 7803220	P3D1650FS20M04	16,5		115	50	50	20	294,70
NEW SIZES 7803221	P3D1700FS20M05	17	②	119	51	50	20	294,70
NEW SIZES 7803222	P3D1750FS20M05	17,5		121	53	50	20	294,70
NEW SIZES 7803290	P3D1750FS25M05	17,5		127	53	56	25	296,10
NEW SIZES 7803223	P3D1800FS25M05	18		128	54	56	25	294,70
NEW SIZES 7803224	P3D1850FS25M05	18,5	③	130	56	56	25	294,70
NEW SIZES 7803225	P3D1900FS25M06	19		131	57	56	25	294,70
NEW SIZES 7803226	P3D1950FS25M06	19,5		133	59	56	25	294,70
NEW SIZES 7803227	P3D2000FS25M06	20		134	60	56	25	294,70
NEW SIZES 7803228	P3D2050FS25M06	20,5	④	136	62	56	25	294,70
7803229	P3D2100FS25M07	21		142	63	56	25	308,40
7803230	P3D2150FS25M07	21,5		144	65	56	25	308,40
7803231	P3D2200FS25M07	22		145	66	56	25	308,40
7803232	P3D2250FS25M07	22,5	⑤	147	68	56	25	308,40
7803233	P3D2300FS25M07	23		148	69	56	25	323,50
NEW SIZES 7803291	P3D2350FS25M07	23,5		150	71	56	25	323,50
7803234	P3D2350FS32M07	23,5		154	71	60	32	323,50
NEW SIZES 7803292	P3D2400FS25M07	24	⑥	151	72	56	25	323,50
7803235	P3D2400FS32M07	24		155	72	60	32	323,50
NEW SIZES 7803293	P3D2450FS25M07	24,5		153	74	56	25	323,50
7803236	P3D2450FS32M07	24,5		157	74	60	32	323,50
NEW SIZES 7803294	P3D2500FS25M08	25	⑦	154	75	56	25	323,50
7803237	P3D2500FS32M08	25		158	75	60	32	323,50
NEW SIZES 7803295	P3D2550FS25M08	25,5		156	77	56	25	323,50
7803238	P3D2550FS32M08	25,5		160	77	60	32	323,50
7803239	P3D2600FS32M08	26	⑧	161	78	60	32	366,60
7803240	P3D2650FS32M08	26,5		163	80	60	32	366,60
7803241	P3D2700FS32M08	27		164	81	60	32	366,60
7803242	P3D2800FS32M08	28		167	84	60	32	366,60
7803243	P3D2850FS32M08	28,5	⑨	169	86	60	32	366,60
7803244	P3D2900FS32M09	29		170	87	60	32	366,60
7803245	P3D3000FS32M09	30		173	90	60	32	366,60
7803246	P3D3100FS32M09	31		176	93	60	32	406,90
NEW SIZES 7803296	P3D3100FS40M09	31	⑩	186	93	70	40	406,90
7803247	P3D3200FS32M09	32		179	96	60	32	406,90
NEW SIZES 7803297	P3D3200FS40M09	32		189	96	70	40	406,90
7803248	P3D3300FS40M09	33		192	99	70	40	406,90
7803249	P3D3350FS40M09	33,5	⑪	194	101	70	40	406,90
NEW SIZES 7803250	P3D3400FS40M10	34		195	102	70	40	412,70
NEW SIZES 7803251	P3D3500FS40M10	35		198	105	70	40	412,70
NEW SIZES 7803252	P3D3600FS40M10	36		201	108	70	40	412,70
NEW SIZES 7803253	P3D3700FS40M10	37	⑫	204	111	70	40	431,00
NEW SIZES 7803254	P3D3800FS40M10	38		207	114	70	40	431,00
NEW SIZES 7803255	P3D3900FS40M12	39		217	117	70	40	466,80
NEW SIZES 7803256	P3D4000FS40M12	40		220	120	70	40	466,80
NEW SIZES 7803257	P3D4100FS40M12	41	⑬	223	123	70	40	466,80
NEW SIZES 7803258	P3D4200FS40M12	42		226	126	70	40	466,80
NEW SIZES 7803259	P3D4300FS40M12	43		229	129	70	40	466,80
NEW SIZES 7803260	P3D4400FS40M12	44		232	132	70	40	466,80
NEW SIZES 7803261	P3D4500FS40M13	45	⑭	235	135	70	40	509,70
NEW SIZES 7803262	P3D4600FS40M13	46		238	138	70	40	509,70
NEW SIZES 7803263	P3D4700FS40M13	47		241	141	70	40	509,70
NEW SIZES 7803264	P3D4800FS40M13	48		244	144	70	40	509,70
NEW SIZES 7803265	P3D4900FS40M13	49	⑮	247	147	70	40	509,70
7803266	P3D5000FS40M14	50		250	150	70	40	564,50
NEW SIZES 7803267	P3D5100FS40M14	51		253	153	70	40	564,50
NEW SIZES 7803268	P3D5200FS40M14	52		256	156	70	40	564,50
NEW SIZES 7803269	P3D5300FS40M14	53	⑯	259	159	70	40	564,50
NEW SIZES 7803270	P3D5400FS40M14	54		262	162	70	40	564,50
NEW SIZES 7803271	P3D5500FS40M14	55		265	165	70	40	564,50
NEW SIZES 7803272	P3D5600FS40M14	56		268	168	70	40	564,50
NEW SIZES 7803273	P3D5700FS40M16	57	⑰	271	171	70	40	578,60
NEW SIZES 7803274	P3D5800FS40M16	58		274	174	70	40	578,60
NEW SIZES 7803275	P3D5900FS40M16	59		277	177	70	40	578,60
NEW SIZES 7803276	P3D6000FS40M16	60		280	180	70	40	578,60
NEW SIZES 7803277	P3D6100FS40M16	61	⑱	283	183	70	40	578,60
NEW SIZES 7803278	P3D6200FS40M16	62		286	186	70	40	578,60
NEW SIZES 7803279	P3D6300FS40M16	63		289	189	70	40	578,60

Phoenix indexable drill

■ High performance
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■ Alta prestazione
■ 2 denti

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■ 2 Kanal

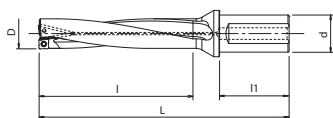
■ High performance
■ 2 skær

■ High performance
■ 2 skär

■ Altas prestaciones
■ 2 labios

■ Высокая производительность
■ 2-зуба

■ Wysoka wydajność
■ 2 ostrowe



EDP	Designation	D	Applicable Inserts	L	l	l1	d	Price
NEW SIZES 7803317	P4D1500FS20M04	15	①	125	60	50	20	444,70
NEW SIZES 7803318	P4D1550FS20M04	15,5		127	62	50	20	444,70
NEW SIZES 7803319	P4D1600FS20M04	16		129	64	50	20	444,70
NEW SIZES 7803320	P4D1650FS20M04	16,5		131	66	50	20	444,70
NEW SIZES 7803321	P4D1700FS20M05	17	②	136	68	50	20	467,40
NEW SIZES 7803322	P4D1750FS20M05	17,5		138	70	50	20	467,40
NEW SIZES 7803390	P4D1750FS25M05	17,5		144	70	56	25	467,40
NEW SIZES 7803323	P4D1800FS25M05	18		146	72	56	25	467,40
NEW SIZES 7803324	P4D1850FS25M05	18,5	③	148	74	56	25	467,40
NEW SIZES 7803325	P4D1900FS25M06	19		150	76	56	25	484,90
NEW SIZES 7803326	P4D1950FS25M06	19,5		152	78	56	25	484,90
NEW SIZES 7803327	P4D2000FS25M06	20		154	80	56	25	484,90
NEW SIZES 7803328	P4D2050FS25M06	20,5	④	156	82	56	25	484,90
7803329	P4D2100FS25M07	21		163	84	56	25	438,60
7803330	P4D2150FS25M07	21,5		165	86	56	25	438,60
7803331	P4D2200FS25M07	22		167	88	56	25	438,60
7803332	P4D2250FS25M07	22,5	⑤	169	90	56	25	438,60
7803333	P4D2300FS25M07	23		171	92	56	25	438,60
NEW SIZES 7803391	P4D2350FS25M07	23,5		173	94	56	25	438,60
7803334	P4D2350FS32M07	23,5		177	94	60	32	438,60
NEW SIZES 7803392	P4D2400FS25M07	24	⑥	175	96	56	25	438,60
7803335	P4D2400FS32M07	24		179	96	60	32	438,60
NEW SIZES 7803393	P4D2450FS25M07	24,5		177	98	56	25	438,60
7803336	P4D2450FS32M07	24,5		181	98	60	32	438,60
NEW SIZES 7803394	P4D2500FS25M08	25	⑦	179	100	56	25	468,10
7803337	P4D2500FS32M08	25		183	100	60	32	468,10
NEW SIZES 7803395	P4D2550FS25M08	25,5		181	102	56	25	468,10
7803338	P4D2550FS32M08	25,5		185	102	60	32	468,10
7803339	P4D2600FS32M08	26	⑧	187	104	60	32	468,10
7803340	P4D2650FS32M08	26,5		189	106	60	32	468,10
7803341	P4D2700FS32M08	27		191	108	60	32	468,10
7803342	P4D2800FS32M08	28		195	112	60	32	468,10
7803343	P4D2850FS32M08	28,5	⑨	197	114	60	32	468,10
7803344	P4D2900FS32M09	29		199	116	60	32	495,50
7803345	P4D3000FS32M09	30		203	120	60	32	495,50
7803346	P4D3100FS32M09	31		207	124	60	32	495,50
NEW SIZES 7803396	P4D3100FS40M09	31	⑩	217	124	70	31	495,60
7803347	P4D3200FS32M09	32		211	128	60	32	495,60
NEW SIZES 7803397	P4D3200FS40M09	32		221	128	70	32	495,60
7803348	P4D3300FS40M09	33		225	132	70	40	495,60
7803349	P4D3350FS40M09	33,5	⑪	227	134	70	40	495,60
NEW SIZES 7803350	P4D3400FS40M10	34		229	136	70	40	502,60
NEW SIZES 7803351	P4D3500FS40M10	35		233	140	70	40	502,60
NEW SIZES 7803352	P4D3600FS40M10	36		237	144	70	40	502,60
NEW SIZES 7803353	P4D3700FS40M10	37	⑫	241	148	70	40	522,50
7803354	P4D3800FS40M10	38		245	152	70	40	522,50
NEW SIZES 7803355	P4D3900FS40M12	39		256	156	70	40	532,40
NEW SIZES 7803356	P4D4000FS40M12	40		260	160	70	40	589,00
NEW SIZES 7803357	P4D4100FS40M12	41	⑬	264	164	70	40	589,00
NEW SIZES 7803358	P4D4200FS40M12	42		268	168	70	40	589,00
NEW SIZES 7803359	P4D4300FS40M12	43		272	172	70	40	589,00
NEW SIZES 7803360	P4D4400FS40M12	44		276	176	70	40	589,00
NEW SIZES 7803361	P4D4500FS40M13	45	⑭	280	180	70	40	620,60
NEW SIZES 7803362	P4D4600FS40M13	46		284	184	70	40	620,60
NEW SIZES 7803363	P4D4700FS40M13	47		288	188	70	40	620,60
NEW SIZES 7803364	P4D4800FS40M13	48		292	192	70	40	620,60
NEW SIZES 7803365	P4D4900FS40M13	49	⑮	296	196	70	40	620,60
NEW SIZES 7803366	P4D5000FS40M14	50		300	200	70	40	690,50
NEW SIZES 7803367	P4D5100FS40M14	51		304	204	70	40	690,50
NEW SIZES 7803368	P4D5200FS40M14	52		308	208	70	40	690,50
NEW SIZES 7803369	P4D5300FS40M14	53	⑯	312	212	70	40	690,50
NEW SIZES 7803370	P4D5400FS40M14	54		316	216	70	40	690,50
NEW SIZES 7803371	P4D5500FS40M14	55		320	220	70	40	690,50
NEW SIZES 7803372	P4D5600FS40M14	56		324	224	70	40	690,50
NEW SIZES 7803373	P4D5700FS40M16	57	⑰	328	228	70	40	707,90
NEW SIZES 7803374	P4D5800FS40M16	58		332	232	70	40	707,90
NEW SIZES 7803375	P4D5900FS40M16	59		336	236	70	40	707,90
NEW SIZES 7803376	P4D6000FS40M16	60		340	240	70	40	707,90
NEW SIZES 7803377	P4D6100FS40M16	61	⑱	344	244	70	40	707,90
NEW SIZES 7803378	P4D6200FS40M16	62		348	248	70	40	707,90
NEW SIZES 7803379	P4D6300FS40M16	63		352	252	70	40	707,90

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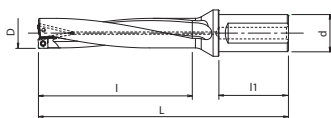
■ High performance
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■ 2-зуба

■ Wysoka wydajność
■ 2 ostrowce



EDP	Designation	D	Applicable Inserts	L	l	l1	d	Price
NEW SIZES 7802717	P5D1500FS20M04	15	①	140	75	50	20	449,80
NEW SIZES 7802718	P5D1550FS20M04	15,5		143	78	50	20	449,80
NEW SIZES 7802719	P5D1600FS20M04	16		145	80	50	20	449,80
NEW SIZES 7802720	P5D1650FS20M04	16,5		148	83	50	20	449,80
NEW SIZES 7802721	P5D1700FS20M05	17	②	153	85	50	20	473,90
NEW SIZES 7802722	P5D1750FS20M05	17,5		156	88	50	20	473,90
NEW SIZES 7802790	P5D1750FS25M05	17,5		162	88	56	25	473,90
NEW SIZES 7802723	P5D1800FS25M05	18		164	90	56	25	473,90
NEW SIZES 7802724	P5D1850FS25M05	18,5	③	167	93	56	25	473,90
NEW SIZES 7802725	P5D1900FS25M06	19		169	95	56	25	491,40
NEW SIZES 7802726	P5D1950FS25M06	19,5		172	98	56	25	491,40
NEW SIZES 7802727	P5D2000FS25M06	20		174	100	56	25	491,40
NEW SIZES 7802728	P5D2050FS25M06	20,5	④	177	103	56	25	491,40
7802729	P5D2100FS25M07	21		184	105	56	25	466,10
7802730	P5D2150FS25M07	21,5		187	108	56	25	466,10
7802731	P5D2200FS25M07	22		189	110	56	25	466,10
7802732	P5D2250FS25M07	22,5	⑤	192	113	56	25	466,10
7802733	P5D2300FS25M07	23		194	115	56	25	466,10
NEW SIZES 7802791	P5D2350FS25M07	23,5		197	118	56	25	466,10
NEW SIZES 7802734	P5D2350FS32M07	23,5		201	118	60	32	466,10
NEW SIZES 7802792	P5D2400FS25M07	24	⑥	199	120	56	25	466,10
7802735	P5D2400FS32M07	24		203	120	60	32	466,10
NEW SIZES 7802793	P5D2450FS25M07	24,5		202	123	56	25	466,10
7802736	P5D2450FS32M07	24,5		206	123	60	32	466,10
NEW SIZES 7802794	P5D2500FS25M08	25	⑦	204	125	56	25	497,40
7802737	P5D2500FS32M08	25		208	125	60	32	497,40
NEW SIZES 7802795	P5D2550FS25M08	25,5		207	128	56	25	497,40
7802738	P5D2550FS32M08	25,5		211	128	60	32	497,40
7802739	P5D2600FS32M08	26	⑧	213	130	60	32	497,40
7802740	P5D2650FS32M08	26,5		216	133	60	32	497,40
7802741	P5D2700FS32M08	27		218	135	60	32	497,40
7802742	P5D2800FS32M08	28		223	140	60	32	497,40
7802743	P5D2850FS32M08	28,5	⑨	226	143	60	32	497,40
7802744	P5D2900FS32M09	29		228	145	60	32	528,40
7802745	P5D3000FS32M09	30		233	150	60	32	528,40
7802746	P5D3100FS32M09	31		238	155	60	32	528,40
NEW SIZES 7802796	P5D3100FS40M09	31	⑩	248	155	70	40	528,40
7802747	P5D3200FS32M09	32		243	160	60	32	528,40
NEW SIZES 7802797	P5D3200FS40M09	32		253	160	70	40	528,40
7802748	P5D3300FS40M09	33		258	165	70	40	528,40
7802749	P5D3350FS40M09	33,5	⑪	261	168	70	40	528,40
NEW SIZES 7802750	P5D3400FS40M10	34		263	170	70	40	538,40
NEW SIZES 7802751	P5D3500FS40M10	35		268	175	70	40	538,40
NEW SIZES 7802752	P5D3600FS40M10	36		273	180	70	40	538,40
NEW SIZES 7802753	P5D3700FS40M10	37	⑫	278	185	70	40	560,70
NEW SIZES 7802754	P5D3800FS40M10	38		283	190	70	40	560,70
NEW SIZES 7802755	P5D3900FS40M12	39		295	195	70	40	624,80
NEW SIZES 7802756	P5D4000FS40M12	40		300	200	70	40	624,80
NEW SIZES 7802757	P5D4100FS40M12	41	⑬	305	205	70	40	624,80
NEW SIZES 7802758	P5D4200FS40M12	42		310	210	70	40	624,80
NEW SIZES 7802759	P5D4300FS40M12	43		315	215	70	40	624,80
NEW SIZES 7802760	P5D4400FS40M12	44		320	220	70	40	624,80
NEW SIZES 7802761	P5D4500FS40M13	45	⑭	325	225	70	40	661,00
NEW SIZES 7802762	P5D4600FS40M13	46		330	230	70	40	661,00
NEW SIZES 7802763	P5D4700FS40M13	47		335	235	70	40	661,00
NEW SIZES 7802764	P5D4800FS40M13	48		340	240	70	40	661,00
NEW SIZES 7802765	P5D4900FS40M13	49	⑮	345	245	70	40	661,00
NEW SIZES 7802766	P5D5000FS40M14	50		350	250	70	40	800,70
NEW SIZES 7802767	P5D5100FS40M14	51		355	255	70	40	800,70
NEW SIZES 7802768	P5D5200FS40M14	52		360	260	70	40	800,70
NEW SIZES 7802769	P5D5300FS40M14	53	⑯	365	265	70	40	800,70
NEW SIZES 7802770	P5D5400FS40M14	54		370	270	70	40	800,70
NEW SIZES 7802771	P5D5500FS40M14	55		375	275	70	40	800,70
NEW SIZES 7802772	P5D5600FS40M14	56		380	280	70	40	800,70
NEW SIZES 7802773	P5D5700FS40M16	57	⑰	385	285	70	40	828,90
NEW SIZES 7802774	P5D5800FS40M16	58		390	290	70	40	828,90
NEW SIZES 7802775	P5D5900FS40M16	59		395	295	70	40	828,90
NEW SIZES 7802776	P5D6000FS40M16	60		400	300	70	40	828,90
NEW SIZES 7802777	P5D6100FS40M16	61	⑱	405	305	70	40	828,90
NEW SIZES 7802778	P5D6200FS40M16	62		410	310	70	40	828,90
NEW SIZES 7802779	P5D6300FS40M16	63		415	315	70	40	828,90

PHOENIX XCMT INSERTS

Phoenix PD-series Inserts

■ Applicable insert
for P2D,3D,4D,5D drill

■ Wendeplatten, Bohrer
P2D,3D,4D,5D

■ Inserti applicabili per punta
P2D,3D,4D,5D

■ Choix de plaquettes pour le perçage
P2D,3D,4D,5D

■ P2D,3D,4D,5D
matkap için uygun uç

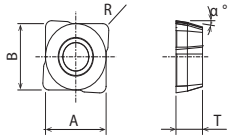
■ Anvendelige skær til
P2D,3D,4D,5D bor

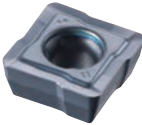
■ Utbytbara vändskär för korthålsborr
P2D,3D,4D,5D

■ Plaquetas para broca
P2D,3D,4D,5D

■ Сменные пластинки для
P2D,3D,4D,5D сверла

■ Płytki, do wiertel
P2D,3D,4D,5D



	Specification			Designation	Number of Cutting Edges	Applicable Body	Insert Size				Uncoated	Grade of Coated Materials		Price
							A×B	T	α°	R		CK110	XP9020	
	for Steel & Stainless Steel	NEW	①	XCMT042204ER-DM	4	Ø15~16,5	5,0	2,2	8	0,4		7823064		9,70
		NEW	②	XCMT052404ER-DM	4	Ø17~18,5	5,83	2,4	8	0,4		7823065		10,00
		NEW	③	XCMT062706ER-DM	4	Ø19~20,5	6,46	2,7	8	0,6		7823066		10,50
			④	XCMT073106ER-DM	4	Ø21~24,5	7,11	3,1	8	0,6		7823067		12,40
			⑤	XCMT083508ER-DM	4	Ø25~28,5	8,36	3,5	8	0,8		7823068		13,10
			⑥	XCMT094008ER-DM	4	Ø29~33,5	9,62	4,0	8	0,8		7823069		14,20
		NEW	⑦	XCMT104608ER-DM	4	Ø34~38	10,89	4,6	8	0,8		7823097		14,90
		NEW	⑧	XCMT125010ER-DM	4	Ø39~44	12,57	5,0	8	1,0		7823071		16,00
		NEW	⑨	XCMT135212ER-DM	4	Ø45~49	14,05	5,2	8	1,2		7823072		17,20
		NEW	⑩	XCMT145612ER-DM	4	Ø50~56	15,58	5,6	8	1,2		7823073		19,40
		NEW	⑪	XCMT165912ER-DM	4	Ø57~63	17,28	5,9	8	1,2		7823075		23,10
	for Cast Iron	NEW	①	XCMT042204ER-DR	4	Ø15 16,5	5,0	2,2	8	0,4			7823164	9,70
		NEW	②	XCMT052404ER-DR	4	Ø17~18,5	5,83	2,4	8	0,4			7823165	10,00
		NEW	③	XCMT062706ER-DR	4	Ø19~20,5	6,46	2,7	8	0,6			7823166	10,50
			④	XCMT073106ER-DR	4	Ø21~24,5	7,11	3,1	8	0,6			7823167	12,40
			⑤	XCMT083508ER-DR	4	Ø25~28,5	8,36	3,5	8	0,8			7823168	13,20
			⑥	XCMT094008ER-DR	4	Ø29~33,5	9,62	4,0	8	0,8			7823169	14,30
			⑦	XCMT104608ER-DR	4	Ø34~38	10,89	4,6	8	0,8			7823197	14,90
			⑧	XCMT125010ER-DR	4	Ø39~44	12,57	5,0	8	1,0			7823171	16,00
			⑨	XCMT135212ER-DR	4	Ø45~49	14,05	5,2	8	1,2			7823172	17,20
			⑩	XCMT145612ER-DR	4	Ø50~56	15,58	5,6	8	1,2			7823173	19,40
			⑪	XCMT165912ER-DR	4	Ø57~63	17,28	5,9	8	1,2			7823175	23,10
	for Aluminium & non-ferrous Metal	NEW	①	XCMT042204ER-DN	4	Ø15~16,5	5,0	2,2	8	0,4	7823264			8,40
		NEW	②	XCMT052404ER-DN	4	Ø17~18,5	5,83	2,4	8	0,4	7823265			9,20
		NEW	③	XCMT062706ER-DN	4	Ø19~20,5	6,46	2,7	8	0,6	7823266			9,20
			④	XCMT073106ER-DN	4	Ø21~24,5	7,11	3,1	8	0,6	7823267			12,40
			⑤	XCMT083508ER-DN	4	Ø25~28,5	8,36	3,5	8	0,8	7823268			13,20
			⑥	XCMT094008ER-DN	4	Ø29~33,5	9,62	4,0	8	0,8	7823269			14,30
		NEW	⑦	XCMT104608ER-DN	4	Ø34~38	10,89	4,6	8	0,8	7823297			13,30
		NEW	⑧	XCMT125010ER-DN	4	Ø39~44	12,57	5,0	8	1,0	7823271			14,70
		NEW	⑨	XCMT135212ER-DN	4	Ø45~49	14,05	5,2	8	1,2	7823272			15,80
		NEW	⑩	XCMT145612ER-DN	4	Ø50~56	15,58	5,6	8	1,2	7823273			18,10
		NEW	⑪	XCMT165912ER-DN	4	Ø57~63	17,28	5,9	8	1,2	7823275			21,80

Grades

Grade	Chipbreaker	Coolant / Dry	P	M	K	N	S	H
XP9020	DM	Coolant	⊙	⊙	○	○	○	○
XP1010	DR	Coolant	○		⊙			
CK110	DN	Coolant				⊙		

DM For steel and stainless steel

DR For cast iron NM For aluminium alloy

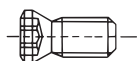
⊙ First choice

○ Second choice

Dc	P2D-P3D	P4D-P5D
Ø15~Ø20,5	+0,25 0	+0,3 0
Ø21~Ø49	+0,3 0	+0,4 0
Ø50~Ø63	+0,35 0	+0,5 0

The above values are general recommendation and may differ based on actual machining condition.

Accessories



Clamping Screw

EDP	Designation	Applicable Inserts						Price
NEW 7808139	FS20543P	①	XCMT0422...	②	XCMT0524...	-	-	7,50
NEW 7808138	FS22550P	③	XCMT0627...	-	-	-	-	7,20
7808136	FS25560P	④	XCMT0731...	-	-	-	-	6,20
7808135	FS30570P	⑤	XCMT0835...	⑥	XCMT0940...	-	-	4,90
7808137	FS35586P	⑦	XCMT1046...	⑧	XCMT1250...	-	-	5,80
NEW 7808114	FS45510P	⑨	XCMT1352...	⑩	XCMT1456...	⑩	XCMT1659...	5,70



Wrench

EDP	Designation	Applicable Inserts						Price
NEW 7808223	6IP-D (Torx 6IP)	①	XCMT0422...	②	XCMT0524...	-	-	11,10
7808224	7IP-D (Torx 7IP)	③	XCMT0627...	-	—	-	-	9,70
7808225	8IP-D (Torx 8IP)	④	XCMT0731...	-	—	-	-	12,70
7808226	9IP-D (Torx 9IP)	⑤	XCMT0835...	⑥	XCMT0940...	-	-	13,30
7808228	15IP-D (Torx 15IP)	⑦	XCMT1046...	⑧	XCMT1250...	-	-	17,30
7808229	20IP-D (Torx 20IP)	⑨	XCMT1352...	⑩	XCMT1456...	⑩	XCMT1659...	18,20

Conditions

P2D/P3D/P4D/P5D

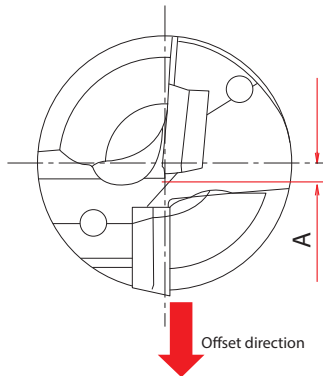
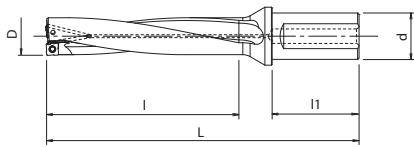
	Work Material	Tensile strength/ Hardness	Vc (m/min) Milling Speed	Feed Rate f (mm/rev)							
				2D 3D							
				ø15~ø16,5	ø17~ø18,5	ø19~ø20,5	ø21~ø24,5	ø25~ø28,5	ø29~ø33,5	ø34~ø63	
	Mild Steel-Low Carbon Steel (S5400-S10C)	~180HB	200 (150~250)	0,06 (0,04~0,1)	0,06 (0,04~0,1)	0,07 (0,04~0,1)	0,08 (0,04~0,12)	0,08 (0,04~0,12)	0,1 (0,05~0,15)	0,1 (0,05~0,18)	
	Carbon Steel-Alloy Steel (S50C-SCM440)	~280HB	150 (100~220)	0,08 (0,04~0,14)	0,09 (0,04~0,16)	0,1 (0,04~0,18)	0,14 (0,04~0,2)	0,18 (0,06~0,25)	0,2 (0,08~0,3)	0,2 (0,08~0,35)	
	Die Steel (SKD11-SKD61)	~280HB	120 (80~180)	0,06 (0,04~0,1)	0,07 (0,04~0,1)	0,08 (0,04~0,12)	0,12 (0,04~0,15)	0,14 (0,06~0,2)	0,18 (0,08~0,25)	0,18 (0,08~0,25)	
	Stainless Steel (SUS304,SUS420)	~250HB	130 (80~180)	0,07 (0,04~0,1)	0,08 (0,04~0,1)	0,09 (0,04~0,12)	0,1 (0,04~0,15)	0,13 (0,06~0,2)	0,15 (0,08~0,25)	0,15 (0,08~0,25)	
	Cast Iron (FC250)	~350N/mm²	200 (150~280)	0,08 (0,04~0,14)	0,1 (0,04~0,16)	0,12 (0,04~0,2)	0,16 (0,08~0,25)	0,2 (0,06~0,3)	0,2 (0,08~0,3)	0,2 (0,08~0,35)	
	Ductile Cast Iron (FCD400)	~800N/mm²	160 (100~220)	0,08 (0,04~0,12)	0,09 (0,04~0,14)	0,1 (0,04~0,18)	0,14 (0,04~0,2)	0,18 (0,06~0,25)	0,18 (0,08~0,25)	0,18 (0,08~0,25)	
	Aluminum Alloy	~13%Si	200 (100~800)	0,08 (0,04~0,12)	0,1 (0,04~0,16)	0,12 (0,04~0,2)	0,16 (0,04~0,25)	0,2 (0,06~0,3)	0,2 (0,08~0,3)	0,2 (0,08~0,3)	
	Superalloy (Inconel®718)	—	30 (15~50)	0,04 (0,02~0,06)	0,05 (0,03~0,06)	0,05 (0,03~0,06)	0,06 (0,04~0,08)	0,08 (0,06~0,1)	0,1 (0,06~0,12)	0,1 (0,06~0,12)	
	Titanium Alloy (Ti-6AL-4V)	—	60 (30~100)	0,05 (0,04~0,08)	0,06 (0,04~0,08)	0,06 (0,04~0,08)	0,08 (0,04~0,15)	0,1 (0,06~0,2)	0,14 (0,08~0,2)	0,14 (0,08~0,2)	
	Pre-hardened Steel (NAK80)	40~43HRC	100 (60~120)	0,06 (0,04~0,1)	0,06 (0,04~0,12)	0,07 (0,04~0,12)	0,08 (0,04~0,12)	0,1 (0,06~0,15)	0,1 (0,06~0,15)	0,1 (0,06~0,15)	
	Hardened Steel (SKD11)	50~55HRC	60 (40~80)	0,05 (0,04~0,08)	0,05 (0,04~0,08)	0,06 (0,04~0,08)	0,06 (0,04~0,08)	0,08 (0,04~0,1)	0,08 (0,04~0,1)	0,08 (0,04~0,1)	

Conditions

	Feed Rate f (mm/rev)													
	4D							5D						
	ø15~ø16,5	ø17~ø18,5	ø19~ø20,5	ø21~ø24,5	ø25~ø28,5	ø29~ø33,5	ø34~ø63	ø15~ø16,5	ø17~ø18,5	ø19~ø20,5	ø21~ø24,5	ø25~ø28,5	ø29~ø33,5	ø34~ø65
	0,06 (0,04~0,08)	0,06 (0,04~0,08)	0,07 (0,04~0,1)	0,08 (0,04~0,12)	0,08 (0,04~0,12)	0,1 (0,05~0,15)	0,1 (0,05~0,18)	0,05 (0,04~0,08)	0,06 (0,04~0,08)	0,07 (0,04~0,1)	0,08 (0,04~0,12)	0,08 (0,04~0,12)	0,1 (0,05~0,15)	0,1 (0,05~0,18)
	0,08 (0,04~0,14)	0,08 (0,04~0,16)	0,09 (0,04~0,18)	0,12 (0,04~0,15)	0,18 (0,06~0,25)	0,2 (0,08~0,25)	0,2 (0,08~0,3)	0,06 (0,04~0,09)	0,08 (0,04~0,12)	0,08 (0,04~0,14)	0,12 (0,04~0,15)	0,15 (0,06~0,2)	0,18 (0,08~0,2)	0,18 (0,08~0,25)
	0,06 (0,04~0,1)	0,07 (0,04~0,1)	0,08 (0,04~0,12)	0,1 (0,04~0,13)	0,14 (0,06~0,2)	0,18 (0,08~0,25)	0,18 (0,08~0,25)	0,06 (0,04~0,08)	0,06 (0,04~0,08)	0,07 (0,04~0,1)	0,1 (0,04~0,13)	0,12 (0,06~0,15)	0,15 (0,08~0,18)	0,16 (0,08~0,22)
	0,06 (0,04~0,08)	0,07 (0,04~0,1)	0,08 (0,04~0,1)	0,08 (0,04~0,1)	0,13 (0,06~0,2)	0,15 (0,08~0,2)	0,15 (0,08~0,2)	0,06 (0,04~0,08)	0,06 (0,04~0,08)	0,07 (0,04~0,09)	0,08 (0,04~0,1)	0,1 (0,06~0,15)	0,12 (0,06~0,18)	0,12 (0,06~0,2)
	0,08 (0,04~0,14)	0,09 (0,04~0,16)	0,1 (0,04~0,2)	0,12 (0,04~0,15)	0,2 (0,06~0,3)	0,2 (0,08~0,3)	0,2 (0,08~0,3)	0,06 (0,04~0,1)	0,08 (0,04~0,12)	0,08 (0,04~0,13)	0,12 (0,04~0,15)	0,15 (0,06~0,2)	0,18 (0,08~0,2)	0,18 (0,08~0,25)
	0,08 (0,04~0,1)	0,08 (0,04~0,12)	0,09 (0,04~0,15)	0,12 (0,04~0,15)	0,15 (0,06~0,25)	0,18 (0,08~0,25)	0,18 (0,08~0,25)	0,06 (0,04~0,09)	0,08 (0,04~0,12)	0,08 (0,04~0,12)	0,1 (0,04~0,13)	0,12 (0,06~0,15)	0,15 (0,08~0,18)	0,18 (0,08~0,25)
	0,07 (0,04~0,12)	0,09 (0,04~0,12)	0,12 (0,04~0,2)	0,14 (0,04~0,2)	0,2 (0,06~0,3)	0,2 (0,08~0,3)	0,2 (0,08~0,3)	0,06 (0,04~0,1)	0,09 (0,04~0,12)	0,1 (0,04~0,15)	0,12 (0,04~0,15)	0,15 (0,06~0,25)	0,2 (0,08~0,3)	0,2 (0,08~0,3)
	0,04 (0,02~0,06)	0,04 (0,02~0,06)	0,04 (0,02~0,06)	0,05 (0,04~0,08)	0,07 (0,06~0,1)	0,08 (0,06~0,12)	0,08 (0,06~0,12)	0,04 (0,02~0,06)	0,04 (0,02~0,06)	0,04 (0,02~0,06)	0,04 (0,02~0,06)	0,07 (0,06~0,08)	0,07 (0,06~0,08)	0,07 (0,06~0,08)
	0,05 (0,04~0,08)	0,06 (0,04~0,08)	0,06 (0,04~0,08)	0,08 (0,04~0,1)	0,1 (0,06~0,2)	0,14 (0,08~0,2)	0,14 (0,08~0,2)	0,05 (0,04~0,08)	0,06 (0,04~0,08)	0,06 (0,04~0,08)	0,06 (0,04~0,1)	0,08 (0,06~0,15)	0,1 (0,08~0,15)	0,1 (0,08~0,15)
	0,06 (0,04~0,1)	0,06 (0,04~0,1)	0,06 (0,04~0,1)	0,08 (0,04~0,12)	0,08 (0,06~0,12)	0,1 (0,06~0,13)	0,1 (0,06~0,13)	0,06 (0,04~0,08)	0,06 (0,04~0,08)	0,06 (0,04~0,08)	0,08 (0,04~0,1)	0,08 (0,06~0,12)	0,1 (0,06~0,12)	0,1 (0,06~0,12)
	0,05 (0,04~0,08)	0,05 (0,04~0,08)	0,06 (0,04~0,08)	0,06 (0,04~0,08)	0,08 (0,04~0,1)	0,08 (0,04~0,1)	0,08 (0,04~0,1)	0,05 (0,04~0,07)	0,05 (0,04~0,07)	0,06 (0,04~0,07)	0,06 (0,04~0,08)	0,07 (0,04~0,1)	0,08 (0,04~0,1)	0,08 (0,04~0,1)



Maximum offset amount for drilling with rotation of work materials



D	D + A offset Amount	D Max.
15	0,4	15,8
15,5	0,3	16,1
16	0,3	16,6
16,5	0,3	17,1
17	0,6	18,2
17,5	0,5	18,5
18	0,5	19
18,5	0,4	19,3
19	0,6	20,2
19,5	0,5	20,5
20	0,4	20,8
20,5	0,4	21,3
21	1	23
21,5	0,9	23,3
22	0,8	23,6
22,5	0,7	23,9
23	0,5	24
23,5	0,4	24,3
24	0,3	24,6
24,5	0,2	24,9
25	1,1	27,2
25,5	0,9	27,3
26	0,8	27,6
26,5	0,7	27,9
27	0,6	28,2
28	0,3	28,6
28,5	0,2	28,9
29	1,3	31,6
30	1,1	32,2
31	0,8	32,6
32	0,6	33,2
33	0,3	33,6
33,5	0,2	33,9
34	1,1	36,2
35	0,8	36,6
36	0,8	37,6
37	0,6	38,2
38	0,3	38,6
39	1,0	41,0
40	0,9	41,8
41	0,8	42,6
42	0,6	43,2
43	0,5	44,0
44	0,3	44,6
45	0,9	46,8
46	0,8	47,6
47	0,7	48,4
48	0,5	49,0
49	0,3	49,6
50	1,1	52,2
51	1,0	53,0
52	0,8	53,6
53	0,7	54,4
54	0,6	55,2
55	0,4	55,8
56	0,1	56,2
57	1,1	59,2
58	1,0	60,0
59	0,9	60,8
60	0,8	61,6
61	0,6	62,2
62	0,4	62,8
63	0,2	63,4

Tap Pilot Hole Size Chart

Thread Size	Recommended tap drill hole diameter	Min. drill hole dia	Max. drill hole dia.	Applicable Body		Recommended Tap Series	
			6H	P2D	P3D	A-SFT	A-POT
M17×1,5	15,5	15,4	15,67	P2D1550FS20M04	P3D1550FS20M04	-	-
M18×2,5	15,5	15,3	15,74			48139214	48145214
M18×2	16	15,9	16,21	P2D1600FS20M04	P3D1600FS20M04	-	-
M18×1,5	16,5	16,4	16,67	P2D1650FS20M04	P3D1650FS20M04	48139216	48145216
M20×2,5	17,5	17,3	17,74	P2D1750FS20M05	P3D1750FS20M05	48139228	48145228
				P2D1750FS25M05	P3D1750FS25M05		
M20×2	18	17,9	18,21	P2D1800FS25M05	P3D1800FS25M05	48139220	48145220
M20×1,5	18,5	18,4	18,67	P2D1850FS25M05	P3D1850FS25M05	48139230	48145230
M22×2,5	19,5	19,3	19,74	P2D1950FS25M06	P3D1950FS25M06	48139238	48145238
M22×2	20	19,9	20,21	P2D2000FS25M06	P3D2000FS25M06	48139239	48145239
M22×1,5	20,5	20,4	20,67	P2D2050FS20M06	P3D2050FS20M06	48139240	48145240
M24×3	21	20,8	21,25	P2D2100FS25M07	P3D2100FS25M07	48139247	48145247
M24×2	22	21,9	22,21	P2D2200FS25M07	P3D2200FS25M07	48139249	48145249
M24×1,5	22,5	22,4	22,67	P2D2250FS25M07	P3D2250FS25M07	48139250	48145250
M27×3	24	23,8	24,25	P2D2400FS25M07	P3D2400FS25M07	48140262	—
				P2D2400FS32M07	P3D2400FS32M07		
M27×1,5	25,5	25,4	25,67	P2D2550FS25M08	P3D2550FS25M08	-	
				P2D2550FS32M08	P3D2550FS32M08		
M30×3,5	26,5	26,3	26,77	P2D2650FS32M08	P3D2650FS32M08	48140271	
M30×3	27	26,8	27,25	P2D2700FS32M08	P3D2700FS32M08	-	
M30×1,5	28,5	28,4	28,67	P2D2850FS32M08	P3D2850FS32M08	-	
M36×4	32	31,7	32,27	P2D3200FS32M09	P3D3200FS32M09	48140294	
				P2D3200FS40M09	P3D3200FS40M09		
M36×3	33	32,8	33,25	P2D3300FS40M09	P3D3300FS40M09	-	
M39×4	35	34,7	35,27	P2D3500FS40M10	P3D3500FS40M10	48140304	
M42×3	39	38,8	39,25	P2D3900FS40M12	P3D3900FS40M12	-	
M48×5	43	42,6	43,29	P2D4300FS40M12	P3D4300FS40M12	48140325	
M48×3	45	44,8	45,25	P2D4500FS40M13	P3D4500FS40M13	-	

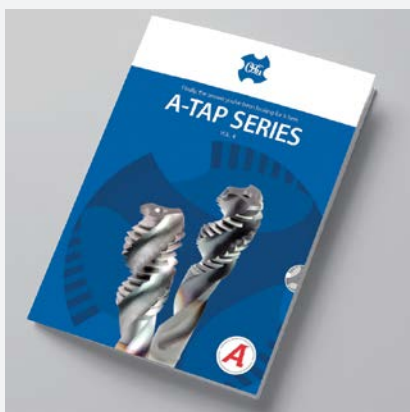
For additional sizes and styles, please refer to the high efficiency, multi-purpose A-Tap series catalog.

Tap recommendation

STANDARD **A**

Need a thread? Please consider trying our A-Tap (cutting tap) and/or XPF Tap series (forming) after drilling

● A-Tap Series



The new industry standard for stable threading.

● XPF Series



Superior forming taps that stably make threads without creating chips.

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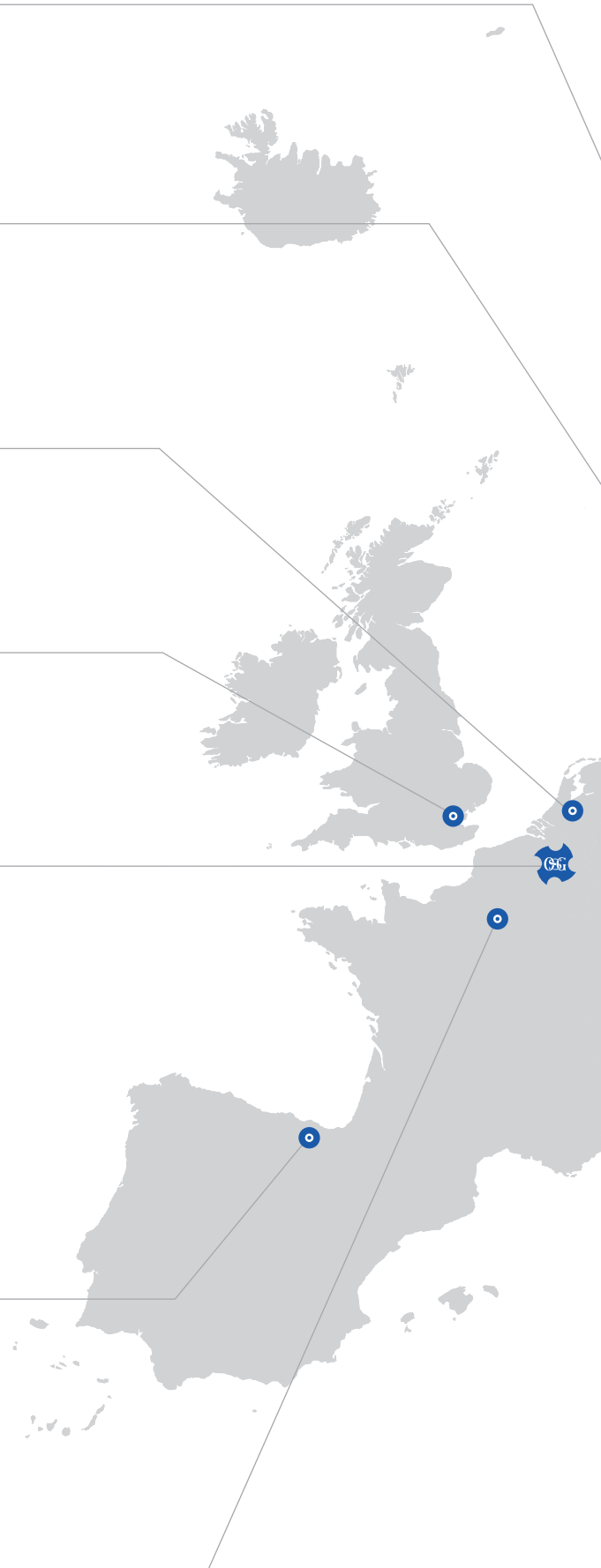
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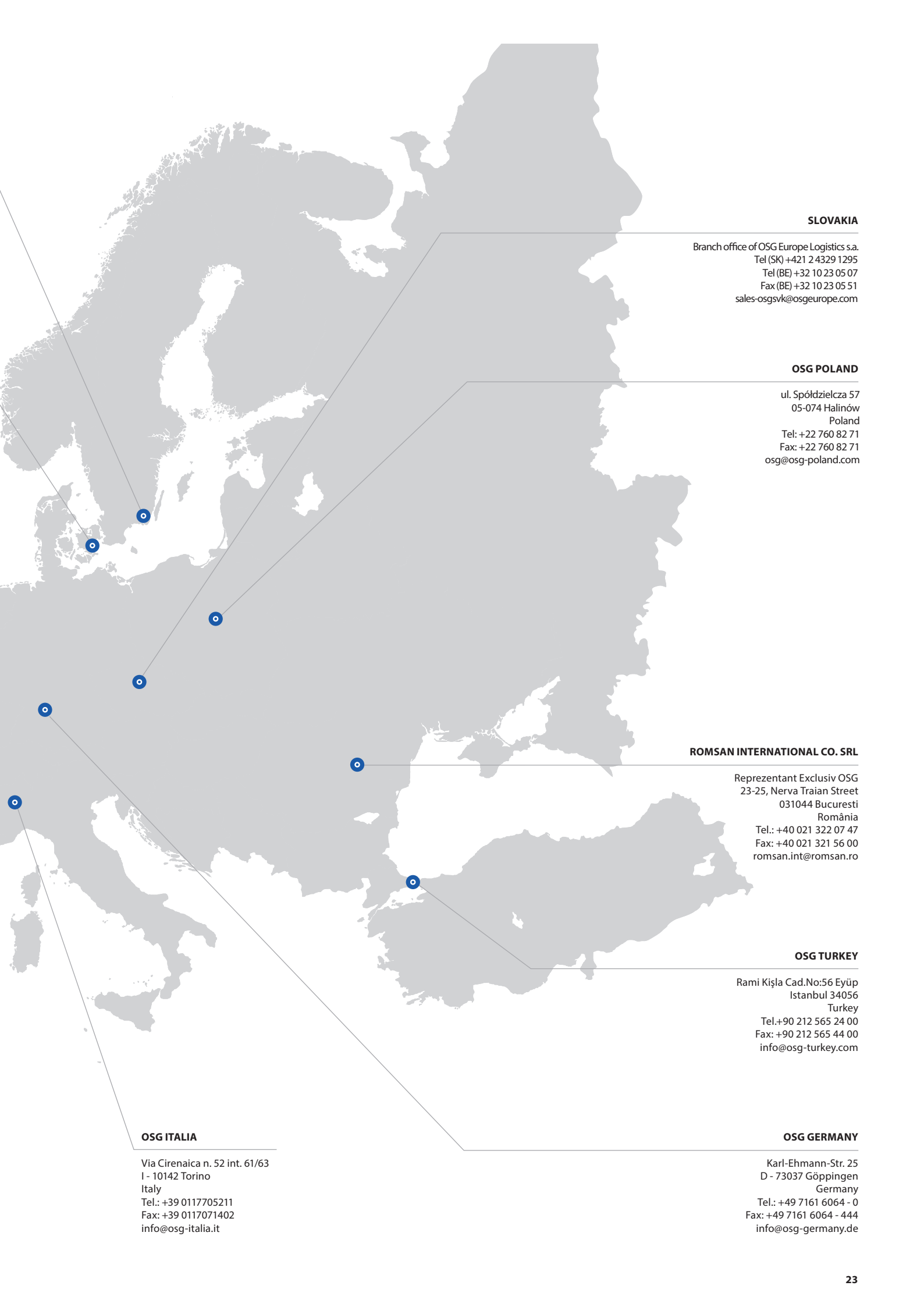
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