

TDMX

TOP DRILL™ MODULAR X



STABILITY AND RELIABILITY
COMBINED INTO ONE MODULAR
DRILL SYSTEM



GENERAL
ENGINEERING



ENERGY



TRANSPORTATION



Platform

Standard cutter bodies in 3 x D, 5 x D, and 8 x D lengths.

Insert diameter range from 16mm up to 40mm.

One geometry and grade to cover steel and cast iron applications.

Easy to Apply

Front clamping design. No need to disassemble the body from the holder to change insert.

Easy insert nomenclature logic to identify the targeted material group.

Increased Stability and Performance

Highly engineered pocket seat design to ensure maximum stability, even in challenging applications like cross hole, inclined entry/exit, and interrupted cuts.

Suitable for high feed rates.

Flanged shank for higher rigidity.

Polished flutes for improved chip evacuation.

Brand new WP40PD grade for longer tool life in steel and cast iron applications.

WIDIA™ TOP DRILL™ Modular X (TDMX) is the ultimate choice for high-demanding drilling applications when stability and reliability are required.

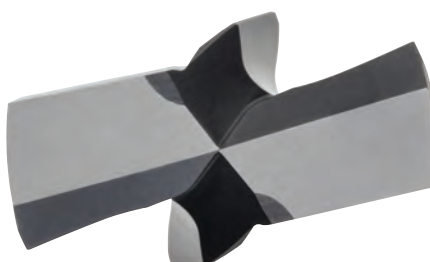
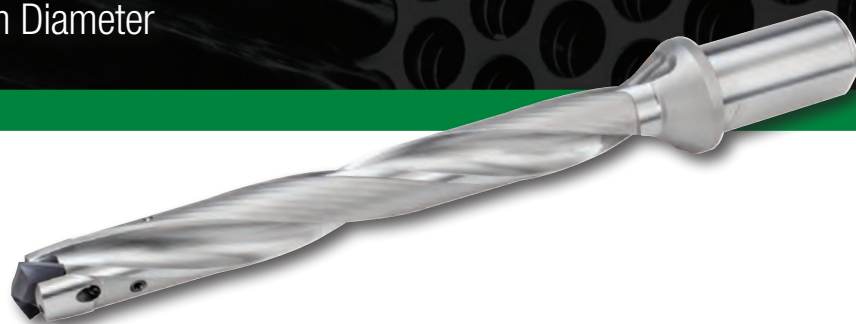
WIDIA 

widia.com

TDMX — TOP DRILL™ Modular X

Extra-Stable Modular Drill up to 40mm Diameter

- Augmented insert stability thanks to the highly engineered pocket seat design.
- Front clamping for an easy insert change, without disassembling the holder from the machine spindle.
- Diameter range from 16mm up to 40mm.
- L/D ratio of 3 x D, 5 x D, and 8 x D.



One geometry to cover two material groups in modular drilling.

PK



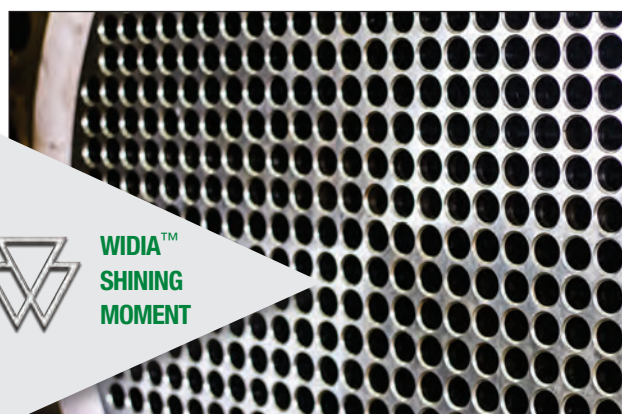
P K

First choice for Steel and Cast Iron drilling.

TDMX — Tube Sheet Drilling

P Steel

Material: Fe510/1.0553/A441
Condition: rough surface

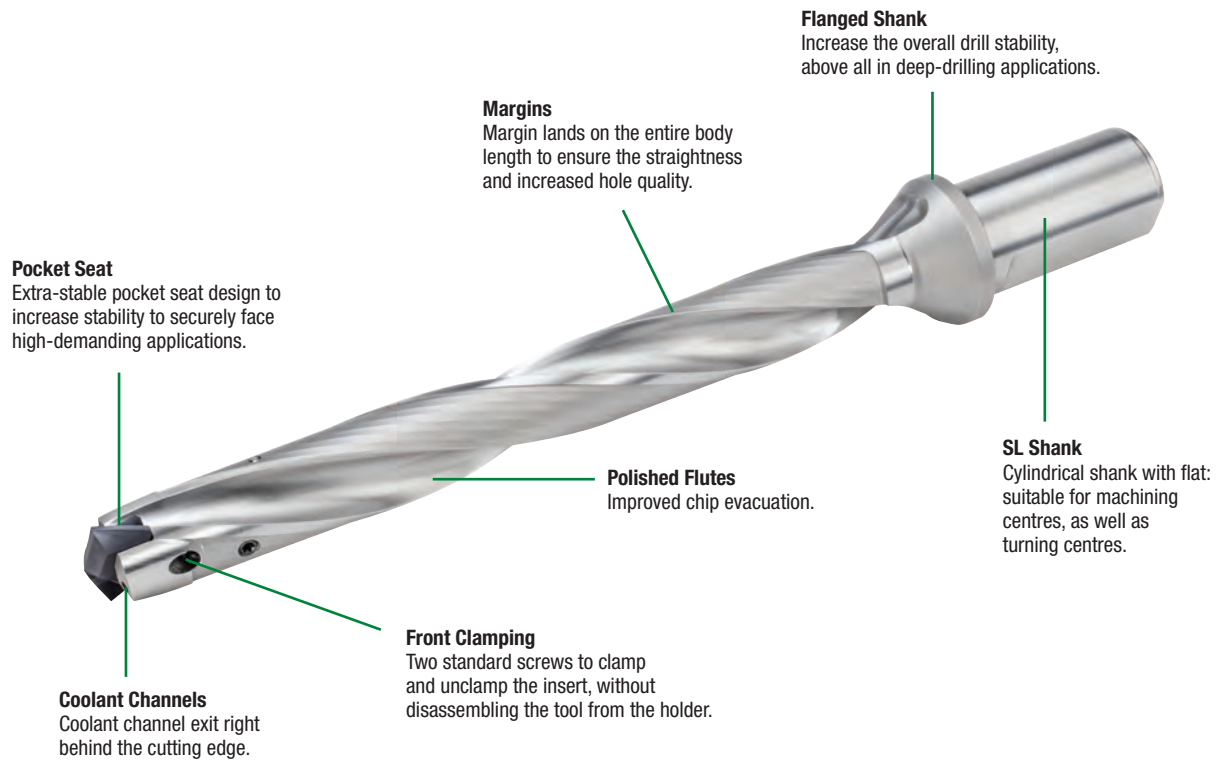


Specifications	Competitor	WIDIA
Diameter (mm)	25,6	25,6
Grade	—	WP40PD
Geometry	—	PK
Vc (m/min)	100	100
n (rev/min)	1,247	1,247
f (mm/rev)	0,33	0,35
Vf (mm/min)	400	437
LOC (mm)	50	50
Coolant	Internal Emulsion	Internal Emulsion
Tool Life (m)	30	48

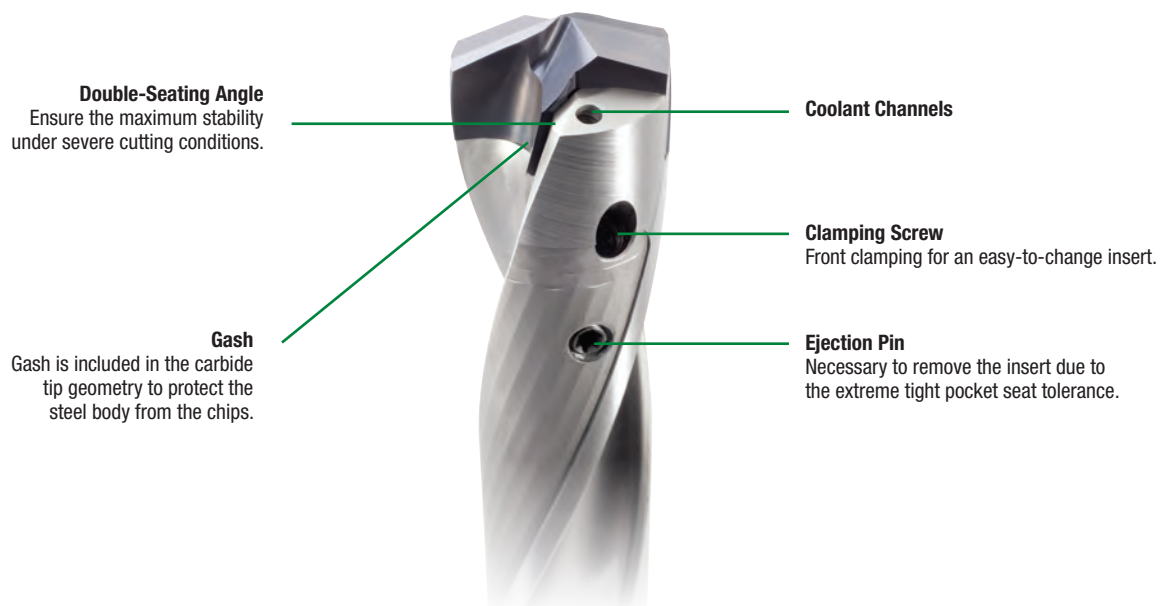


Modular Drill System • TDMX

▼ TDMX Body — Technical Details

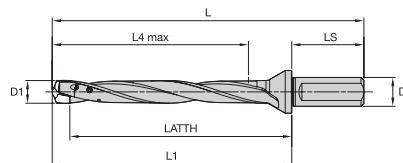


▼ TDMX Pocket Seat — Technical Details



TDMX — TOP DRILL™ Modular X

Modular Drill System • TDMX



▼ TOP DRILL™ Modular X • 3 x D / 5 x D / 8 x D • Side Lock Shank • Metric



3 x D		5 x D		8 x D		D1			clamping screw	wrench
order #	catalogue #	order #	catalogue #	order #	catalogue #	SSC	min	max		
6572091	TDMX160R3SL20M	6572125	TDMX160R5SL20M	6572155	TDMX160R8SL20M	A	16,000	16,999	193.537	12148086600
6572092	TDMX170R3SL20M	6572126	TDMX170R5SL20M	6572156	TDMX170R8SL20M	B	17,000	17,999	193.537	12148086600
6572093	TDMX180R3SL25M	6572127	TDMX180R5SL25M	6572157	TDMX180R8SL25M	C	18,000	18,999	193.537	12148086600
6572094	TDMX190R3SL25M	6572128	TDMX190R5SL25M	6572158	TDMX190R8SL25M	D	19,000	19,999	193.537	12148086600
6572096	TDMX200R3SL25M	6572129	TDMX200R5SL25M	6572159	TDMX200R8SL25M	E	20,000	20,999	193.523	170.0240
6572097	TDMX210R3SL25M	6572130	TDMX210R5SL25M	6572160	TDMX210R8SL25M	F	21,000	21,999	193.523	170.0240
6572098	TDMX220R3SL25M	6572141	TDMX220R5SL25M	6572171	TDMX220R8SL25M	G	22,000	22,999	193.523	170.0240
6572099	TDMX230R3SL25M	6572142	TDMX230R5SL25M	6572172	TDMX230R8SL25M	H	23,000	23,999	193.523	170.0240
6572100	TDMX240R3SL32M	6572143	TDMX240R5SL32M	6572173	TDMX240R8SL32M	I	24,000	24,999	193.524	12148082400
6572101	TDMX250R3SL32M	6572144	TDMX250R5SL32M	6572174	TDMX250R8SL32M	J	25,000	25,999	193.524	12148082400
6572102	TDMX260R3SL32M	6572145	TDMX260R5SL32M	6572175	TDMX260R8SL32M	K	26,000	26,999	193.524	12148082400
6572104	TDMX270R3SL32M	6572146	TDMX270R5SL32M	6572176	TDMX270R8SL32M	L	27,000	27,999	193.524	12148082400
6572105	TDMX280R3SL32M	6572147	TDMX280R5SL32M	6572177	TDMX280R8SL32M	M	28,000	28,999	193.525	TT15
6572106	TDMX290R3SL32M	6572148	TDMX290R5SL32M	6572178	TDMX290R8SL32M	N	29,000	29,999	193.525	TT15
6572107	TDMX300R3SL32M	6572149	TDMX300R5SL32M	6572179	TDMX300R8SL32M	O	30,000	30,999	193.525	TT15
6572108	TDMX310R3SL32M	6572150	TDMX310R5SL32M	6572180	TDMX310R8SL32M	P	31,000	31,999	193.525	TT15
6572109	TDMX320R3SL40M	6572151	TDMX320R5SL40M	6572181	TDMX320R8SL40M	Q	32,000	33,999	193.525	TT15
6572110	TDMX340R3SL40M	6572152	TDMX340R5SL40M	6572182	TDMX340R8SL40M	R	34,000	35,999	193.525	TT15
6572121	TDMX360R3SL40M	6572153	TDMX360R5SL40M	6572183	TDMX360R8SL40M	S	36,000	37,999	193.585	TT15
6572122	TDMX380R3SL40M	6572154	TDMX380R5SL40M	6572184	TDMX380R8SL40M	T	38,000	40,000	193.585	TT15

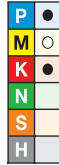
NOTE: SSC = Pocket Seat Reference. To correspond with the SSC on the inserts.

▼ Dimensions

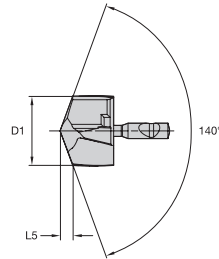
SSC	mm Ø			LS	D	SHORT ~3 x D				LONG ~5 x D				EXTRA LONG ~8 x D			
	D1 min	D1 max				LATTH	L	L1	L4 max	LATTH	L	L1	L4 max	LATTH	L	L1	L4 max
A	16,000	16,999		50	20	68,8	131	81	51	102,8	165	115	85	153,8	216	166	136
B	17,000	17,999		50	20	73,8	136	86	54	109,8	172	122	90	163,8	226	176	144
C	18,000	18,999		56	25	76,7	146	90	57	114,7	184	128	95	171,7	241	185	152
D	19,000	19,999		56	25	81,7	151	95	60	121,7	191	135	100	181,7	251	195	160
E	20,000	20,999		56	25	84,6	155	99	63	126,6	197	141	105	189,6	260	204	168
F	21,000	21,999		56	25	89,6	160	104	66	133,6	204	148	110	199,6	270	214	176
G	22,000	22,999		56	25	92,5	164	108	69	138,5	210	154	115	207,5	279	223	184
H	23,000	23,999		56	25	97,5	169	113	72	145,5	217	161	120	217,5	289	233	192
I	24,000	24,999		60	32	100,4	177	117	75	150,4	227	167	125	225,4	302	242	200
J	25,000	25,999		60	32	105,4	182	122	78	157,4	234	174	130	235,4	312	252	208
K	26,000	26,999		60	32	108,3	186	126	81	162,3	240	180	135	243,3	321	261	216
L	27,000	27,999		60	32	113,3	191	131	84	169,3	247	187	140	253,3	331	271	224
M	28,000	28,999		60	32	116,2	195	135	87	174,2	253	193	145	261,2	340	280	232
N	29,000	29,999		60	32	121,2	200	140	90	181,2	260	200	150	271,2	350	290	240
O	30,000	30,999		60	32	124,1	204	144	93	186,1	266	206	155	279,1	359	299	248
P	31,000	31,999		60	32	129,1	209	149	96	193,1	273	213	160	289,1	369	309	256
Q	32,000	33,999		70	40	136,0	228	158	102	204,0	296	226	170	306,0	398	328	272
R	34,000	35,999		70	40	145,0	237	167	108	217,0	309	239	180	325,0	417	347	288
S	36,000	37,999		70	40	151,8	246	176	114	227,8	322	252	190	341,8	436	366	304
T	38,000	40,000		70	40	160,8	255	185	120	240,8	335	265	200	360,8	455	385	320

Modular Drill System • TDMX

▼ TOP DRILL™ Modular X • PK(M)



● first choice
○ alternate choice



grade WP40PD
TiAlN

order #	catalogue #	D1	L5	SSC
6568446	TDMX16000PKM	16,00	3,21	A
6568447	TDMX16200PKM	16,20	3,25	A
6568448	TDMX16281PKM	16,28	3,26	A
6568449	TDMX16500PKM	16,50	3,30	A
6568450	TDMX16667PKM	16,67	3,33	A
6568461	TDMX17000PKM	17,00	3,39	B
6568462	TDMX17064PKM	17,06	3,41	B
6568464	TDMX17463PKM	17,46	3,48	B
6568465	TDMX17500PKM	17,50	3,49	B
6568467	TDMX17600PKM	17,60	3,50	B
6568471	TDMX17800PKM	17,80	3,54	B
6568472	TDMX17859PKM	17,86	3,55	B
6568473	TDMX18000PKM	18,00	3,58	C
6568474	TDMX18255PKM	18,26	3,64	C
6568475	TDMX18500PKM	18,50	3,68	C
6568476	TDMX18651PKM	18,65	3,71	C
6568477	TDMX18800PKM	18,80	3,74	C
6568478	TDMX19000PKM	19,00	3,78	D
6568479	TDMX19050PKM	19,05	3,78	D
6568480	TDMX19200PKM	19,20	3,81	D
6568481	TDMX19270PKM	19,27	3,82	D
6568482	TDMX19450PKM	19,45	3,86	D
6568483	TDMX19500PKM	19,50	3,87	D
6568484	TDMX19700PKM	19,70	3,90	D
6568485	TDMX19840PKM	19,84	3,93	D
6568813	TDMX20000PKM	20,00	3,97	E
6568814	TDMX20100PKM	20,10	3,99	E
6568815	TDMX20200PKM	20,20	4,01	E
6568816	TDMX20239PKM	20,24	4,02	E
6568817	TDMX20300PKM	20,30	4,03	E
6568818	TDMX20400PKM	20,40	4,05	E
6568819	TDMX20500PKM	20,50	4,06	E
6568820	TDMX20600PKM	20,60	4,08	E
6568841	TDMX20650PKM	20,65	4,09	E
6568842	TDMX20700PKM	20,70	4,10	E
6568843	TDMX20800PKM	20,80	4,12	E
6568844	TDMX20900PKM	20,90	4,14	E
6568845	TDMX21000PKM	21,00	4,16	F
6568846	TDMX21430PKM	21,43	4,23	F
6568847	TDMX21500PKM	21,50	4,25	F
6568848	TDMX22000PKM	22,00	4,35	G
6568849	TDMX22225PKM	22,23	4,39	G
6568850	TDMX22450PKM	22,45	4,44	G
6568851	TDMX22500PKM	22,50	4,44	G
6568852	TDMX23000PKM	23,00	4,54	H
6568853	TDMX23500PKM	23,50	4,63	H
6568854	TDMX23813PKM	23,81	4,68	H
6568856	TDMX24000PKM	24,00	4,73	I
6568857	TDMX24500PKM	24,50	4,82	I
6568858	TDMX24605PKM	24,61	4,84	I
6568859	TDMX25000PKM	25,00	4,91	J
6568860	TDMX25400PKM	25,40	4,99	J
6568861	TDMX25500PKM	25,50	5,01	J
6568862	TDMX25670PKM	25,67	5,04	J
6568863	TDMX25700PKM	25,70	5,04	J
6568864	TDMX25760PKM	25,76	5,05	J

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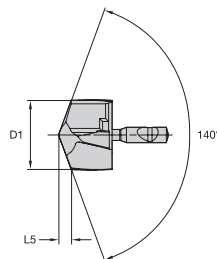
TDMX — TOP DRILL™ Modular X

Modular Drill System • TDMX

(TOP DRILL Modular X • PK(M) — continued)



● first choice
○ alternate choice



grade WP40PD
TiAlN

order #	catalogue #	D1	L5	SSC
6568865	TDMX25796PKM	25,80	5,06	J
6568866	TDMX26000PKM	26,00	5,11	K
6568867	TDMX26192PKM	26,19	5,15	K
6568868	TDMX26400PKM	26,40	5,18	K
6568869	TDMX26500PKM	26,50	5,20	K
6568870	TDMX26589PKM	26,59	5,22	K
6568871	TDMX27000PKM	27,00	5,29	L
6568872	TDMX27500PKM	27,50	5,38	L
6568873	TDMX27780PKM	27,78	5,43	L
6568874	TDMX28000PKM	28,00	5,49	M
6568875	TDMX28176PKM	28,18	5,52	M
6568876	TDMX28500PKM	28,50	5,58	M
6568877	TDMX28575PKM	28,58	5,59	M
6568878	TDMX29000PKM	29,00	5,67	N
6568879	TDMX29367PKM	29,37	5,74	N
6568880	TDMX29500PKM	29,50	5,76	N
6568891	TDMX29764PKM	29,76	5,81	N
6568892	TDMX30000PKM	30,00	5,87	O
6568893	TDMX30163PKM	30,16	5,90	O
6568896	TDMX30500PKM	30,50	5,96	O
6568897	TDMX30955PKM	30,96	6,04	O
6568898	TDMX31000PKM	31,00	6,05	P
6568899	TDMX31500PKM	31,50	6,14	P
6568900	TDMX31750PKM	31,75	6,18	P
6568901	TDMX32000PKM	32,00	6,25	Q
6568902	TDMX32500PKM	32,50	6,34	Q
6568903	TDMX33000PKM	33,00	6,43	Q
6568904	TDMX33338PKM	33,34	6,49	Q
6568905	TDMX34000PKM	34,00	6,61	R
6568906	TDMX34130PKM	34,13	6,64	R
6568907	TDMX34925PKM	34,93	6,78	R
6568908	TDMX35000PKM	35,00	6,79	R
6568909	TDMX35500PKM	35,50	6,89	R
6568910	TDMX36000PKM	36,00	7,00	S
6568911	TDMX36500PKM	36,50	7,09	S
6568912	TDMX37000PKM	37,00	7,18	S
6568913	TDMX37500PKM	37,50	7,27	S
6568914	TDMX38000PKM	38,00	7,36	T
6568915	TDMX38100PKM	38,10	7,38	T
6568916	TDMX38500PKM	38,50	7,46	T
6568917	TDMX39000PKM	39,00	7,55	T
6568918	TDMX39289PKM	39,29	7,60	T
6568919	TDMX39500PKM	39,50	7,64	T
6568920	TDMX40000PKM	40,00	7,73	T

NOTE: SSC = Pocket Seat Reference. To correspond with the SSC on the toolholder.

Metric
tolerance

D1	tolerance k8
8–10	0,000/+0,022
>10–17	0,000/+0,027
>17–18	0,000/+0,027
>18–21	0,000/+0,033

▼ TOP DRILL Modular X • PK(M) • WP40PD • Speed and Feed Chart • Metric

Material Group									
		Cutting Speed — Vc			Recommended Feed Rate (f) by Diameter				
		Range — m/min			Tool Diameter (mm)	16,0	20,0	25,0	32,0
P	1	90	125	170	mm/r	0,19–0,45	0,25–0,48	0,25–0,52	0,28–0,57
	2	105	140	180	mm/r	0,23–0,46	0,28–0,50	0,30–0,52	0,33–0,57
	3	50	75	100	mm/r	0,23–0,46	0,28–0,50	0,30–0,52	0,33–0,57
	4	50	75	100	mm/r	0,19–0,45	0,22–0,48	0,25–0,50	0,28–0,55
	5	50	65	80	mm/r	0,16–0,32	0,18–0,36	0,22–0,42	0,24–0,46
	6	50	65	80	mm/r	0,16–0,32	0,18–0,36	0,22–0,42	0,24–0,46
M	1	40	80	110	mm/r	0,11–0,26	0,13–0,28	0,13–0,32	0,14–0,35
	2	35	55	75	mm/r	0,11–0,26	0,13–0,28	0,13–0,32	0,14–0,35
	3	20	35	50	mm/r	0,11–0,26	0,13–0,28	0,13–0,32	0,14–0,35
K	1	60	95	170	mm/r	0,25–0,48	0,28–0,52	0,32–0,56	0,35–0,62
	2	60	75	90	mm/r	0,25–0,48	0,28–0,52	0,32–0,56	0,35–0,62
	3	40	65	90	mm/r	0,21–0,44	0,23–0,48	0,25–0,50	0,28–0,55

NOTE: Through coolant recommended for greater than 3 x D applications.
Material group M is recommended for secondary applications.

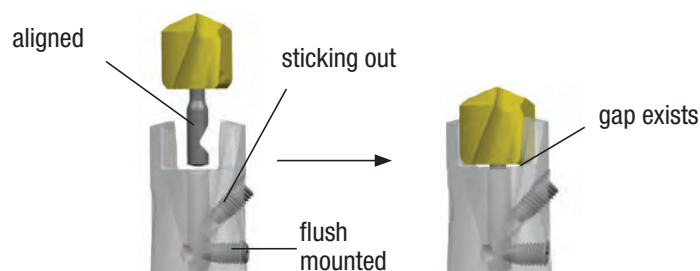
TDMX — TOP DRILL™ Modular X

Modular Drill System • TDMX

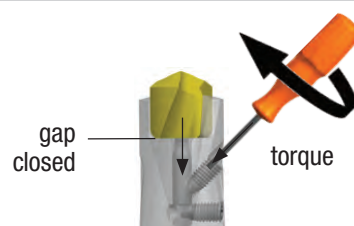
Assembling and Disassembling Instructions

▼ Assembly

1 Insert positioning



2 Insert clamping



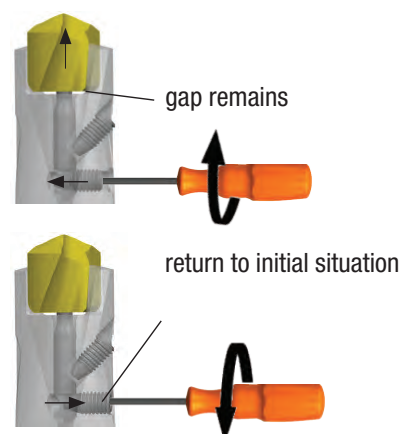
Drill diameter	Torque
ø 16–19,999mm	1,5 Nm
ø 20–23,999mm	2,1 Nm
ø 24–27,999mm	3,0 Nm
ø 28–40,000mm	4,5 Nm

▼ Disassembly

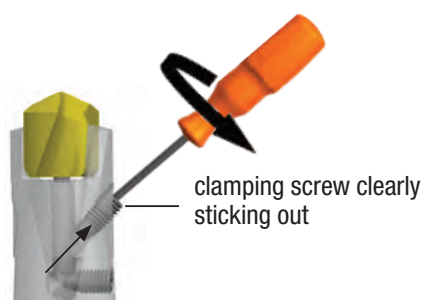
1 Clamping screw loosening



2 Insert pushing out

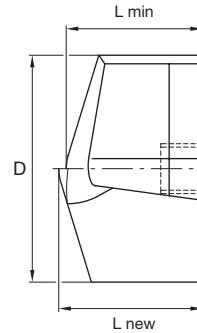
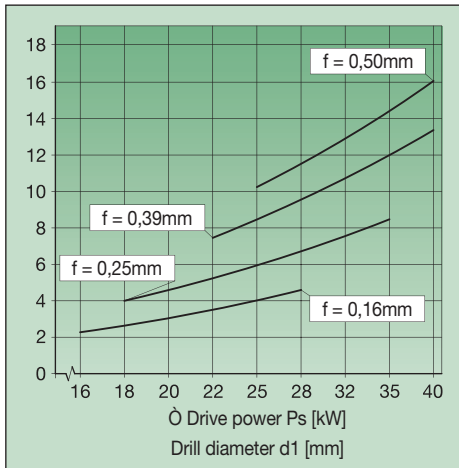


3 Further clamping screw loosening



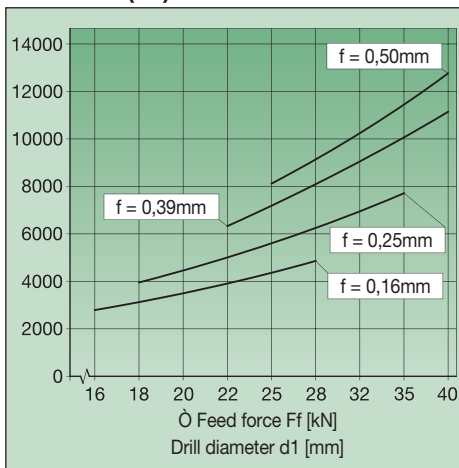
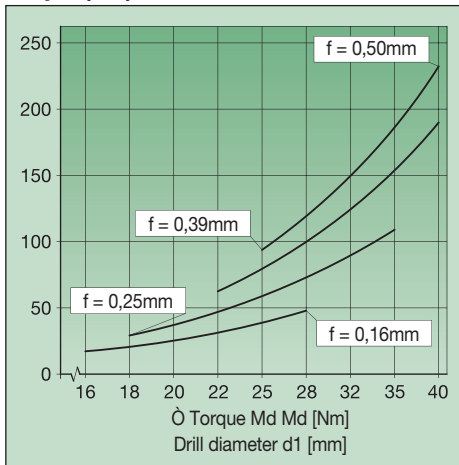
4 Insert removal



TDMX Application Notes • Power and Coolant Requirements**Drive Power (kW)**

The following coolant pressure is recommended:

relative drilling depth	coolant pressure
1–3 x D	8 bars
5 x D	12 bars
7 x D	20 bars
10 x D	30 bars

Feed Force (kN)**Torque (Nm)**

SSC	diameter range D (mm)	L min. (mm)	L new (mm)
A	16–16.999	11.2	12.5
B	17–17.999	11.2	12.5
C	18–18.999	12.2	13.6
D	19–19.999	12.2	13.6
E	20–20.999	13.2	14.7
F	21–21.999	13.2	14.7
G	22–22.999	14.2	15.8
H	23–23.999	14.2	15.8
I	24–24.999	15.2	16.9
J	25–25.999	15.2	16.9
K	26–26.999	16.2	18
L	27–27.999	16.2	18
M	28–28.999	17.2	19.1
N	29–29.999	17.2	19.1
O	30–30.999	18.2	20.2
P	31–31.999	18.2	20.2
Q	32–33.999	20.1	22.3
R	34–35.999	20.1	22.3
S	36–37.999	22.1	24.5
T	38–40	22.1	24.5

NOTE: SSC = Pocket Seat Reference. To correspond with the SSC on the inserts.

NOTE: The diagrams above are used to determine the drive power, feed force, and torque. They are based on cutting force measurement in tempered steels in Cgr. 6. Tensile strength: $R_m = 600 \text{ N/mm}^2$. The base cutting speed used is: $vc = 80 \text{ m/min}$.