



2017 Master Catalog

WIDIA ™

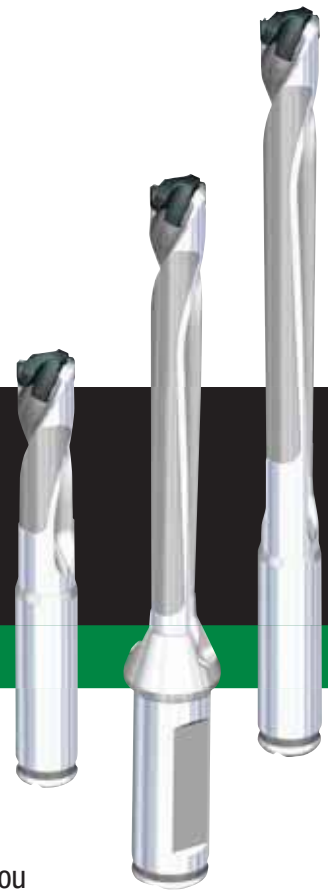
TOP DRILL M1™ Modular Drill System

TOP DRILL M1

With performance levels and metal removal rates comparable to that of solid carbide drills, WIDIA™ TOP DRILL M1 offers all the quality and performance you need in one versatile, economical package. The unique front clamping system enables inserts to be changed quickly, even inside the machine tool, saving setup time and manufacturing costs.

The TDM1 platform offers UP(M) drill-point design in WU25PD™ grade — a wide application range geometry, specially developed for cost-efficient drilling of steel, cast iron, and stainless steel. It covers diameter ranges from .3159–1.0232" (8–25.99mm) within the standard offering in L/D ratios of 3, 5, and 8 x D.

With its high level of performance, wide application range, and proven point geometry, TDM1 combines all of the economic benefits of a modular drilling system with the machining performance and hole quality to tackle even your most challenging operations.



UP Point Design — Versatility and Productivity

- One insert style for all your work in steel, cast iron, and even stainless steels.
- Low cutting forces and excellent centering capabilities.
- Universal point style for consistent performance and excellent hole quality.

Easy Insert Change

- No screws or clamps required.
- Insert blades can be changed with a simple wrench that comes with each holder.

Disposable

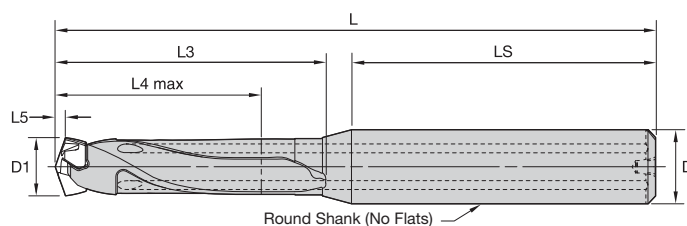
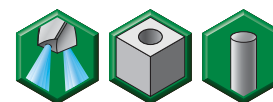
- No reconditioning costs.
- Consistent performance from tip to tip.
- Eliminates number of tools waiting for reconditioning, thus avoiding hidden costs.

Customization

- All intermediate diameters are quickly available as semi-standards.
- Multiple step drills available as customized solutions.
- New TopSTEP range of inserts offer extended chamfering and counterboring to your one-shot drilling solution.



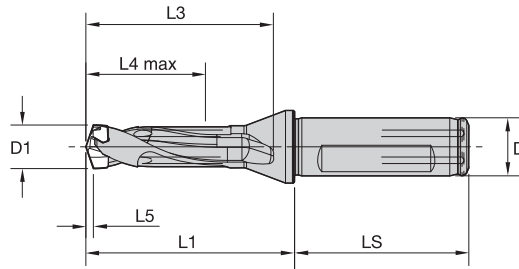
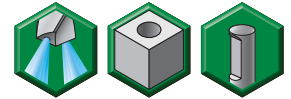
- Tool body shipped with insert wrench.



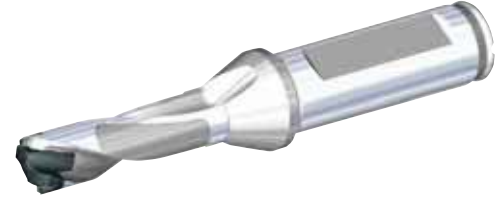
■ TOP DRILL M1 • 3 x D • Straight • Inch

order number	catalog number	D1	D1 max	D	L	L3	L4 max	L5	LS	insert blade seat size
3851478	TDM0313R3SS038	.313	.3343	.3750	3.13	1.42	1.00	.060	1.59	W10
3851480	TDM0335R3SS038	.335	.3539	.3750	3.25	1.54	1.06	.065	1.59	W11
3851482	TDM0354R3SS038	.354	.3736	.3750	3.38	1.67	1.12	.069	1.59	W12
3851544	TDM0374R3SS038	.374	.3933	.3750	3.38	1.67	1.18	.072	1.59	W13
3851545	TDM0374R3SS044	.374	.3933	.4375	3.38	1.59	1.18	.072	1.67	W13
3851548	TDM0394R3SS044	.394	.4130	.4375	3.63	1.84	1.24	.076	1.67	W14
3851550	TDM0413R3SS044	.413	.4327	.4375	3.75	1.96	1.30	.081	1.67	W15
3851552	TDM0433R3SS044	.433	.4524	.4375	3.88	2.09	1.36	.084	1.67	W16
3851554	TDM0453R3SS050	.453	.4720	.5000	3.88	1.97	1.42	.086	1.79	W17
3851556	TDM0472R3SS050	.472	.4917	.5000	4.00	2.88	1.48	.092	1.79	W18
3851558	TDM0492R3SS050	.492	.5114	.5000	4.13	2.22	1.54	.095	1.79	W19
3851559	TDM0492R3SS056	.492	.5114	.5625	4.13	2.22	1.54	.095	1.79	W19
3851562	TDM0512R3SS056	.512	.5311	.5625	4.25	2.34	1.60	.098	1.79	W20
3851564	TDM0532R3SS056	.532	.5508	.5625	4.25	2.34	1.65	.104	1.79	W21
3851566	TDM0551R3SS056	.551	.5705	.5625	4.50	2.59	1.71	.107	1.79	W22
3851568	TDM0571R3SS063	.571	.5902	.6250	4.50	2.47	1.77	.109	1.91	W23
3851570	TDM0591R3SS063	.591	.6295	.6250	4.75	2.72	1.89	.113	1.91	W24
3851572	TDM0630R3SS069	.630	.6689	.6875	4.88	2.85	2.01	.119	1.91	W25
3851574	TDM0669R3SS069	.669	.7083	.6875	5.00	2.97	2.12	.127	1.91	W26
3851576	TDM0709R3SS075	.709	.7476	.7500	5.25	3.13	2.24	.136	2.00	W27
3851578	TDM0748R3SS075	.748	.7870	.7500	5.50	3.38	2.36	.142	2.00	W28
3851580	TDM0787R3SS081	.787	.8264	.8125	5.75	3.63	2.48	.150	2.00	W29
3992477	TDM0827R3SS088	.827	.8657	.8750	5.87	3.69	2.60	.150	2.07	W30
3992478	TDM0866R3SS088	.866	.9051	.8750	6.00	3.81	2.72	.154	2.07	W31
3992479	TDM0906R3SS094	.906	.9445	.9375	6.25	3.98	2.83	.165	2.15	W32
3992480	TDM0945R3SS100	.945	.9839	1.0000	7.25	4.13	2.95	.169	3.00	W33
3992481	TDM0984R3SS100	.984	1.0232	1.0000	7.37	4.26	3.07	.177	3.00	W34

- Tool body shipped with insert wrench.



Flanged Shank with Flats (SCF)

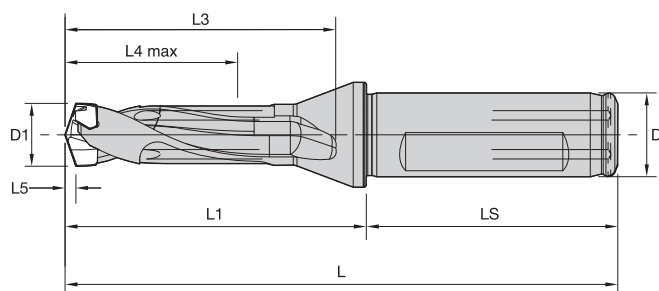
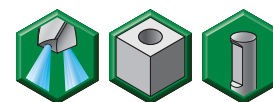


■ TOP DRILL M1 • 3 x D • Flanged • Inch

order number	catalog number	D1	D1 max	D	L1	L3	L4 max	L5	LS	insert blade seat size
4098937	TDM0313R3SCF050	.313	.3343	.5000	1.63	1.41	1.00	.057	1.77	W10
4098938	TDM0335R3SCF050	.335	.3539	.5000	1.75	1.53	1.06	.062	1.77	W11
4098939	TDM0354R3SCF050	.354	.3736	.5000	1.88	1.66	1.12	.065	1.77	W12
4098940	TDM0374R3SCF050	.374	.3933	.5000	1.88	1.66	1.18	.068	1.77	W13
4098941	TDM0394R3SCF063	.394	.4130	.6250	2.00	1.78	1.24	.072	1.89	W14
4098942	TDM0413R3SCF063	.413	.4327	.6250	2.00	1.78	1.30	.076	1.89	W15
4099013	TDM0433R3SCF063	.433	.4524	.6250	2.13	1.91	1.36	.079	1.89	W16
4099014	TDM0453R3SCF063	.453	.4720	.6250	2.25	2.03	1.42	.082	1.89	W17
4099015	TDM0472R3SCF063	.472	.4917	.6250	2.38	2.16	1.48	.087	1.89	W18
4099016	TDM0492R3SCF063	.492	.5114	.6250	2.38	2.16	1.54	.090	1.89	W19
4099017	TDM0512R3SCF063	.512	.5311	.6250	2.50	2.28	1.59	.093	1.89	W20
4099018	TDM0532R3SCF063	.532	.5508	.6250	2.50	2.28	1.65	.098	1.89	W21
4099019	TDM0551R3SCF063	.551	.5705	.6250	2.63	2.41	1.71	.101	1.89	W22
4099020	TDM0571R3SCF063	.571	.5902	.6250	2.75	2.53	1.77	.104	1.89	W23
4099021	TDM0591R3SCF075	.591	.6295	.7500	2.88	2.66	1.89	.107	1.97	W24
4099022	TDM0630R3SCF075	.630	.6689	.7500	3.00	2.78	2.01	.113	1.97	W25
4099023	TDM0669R3SCF075	.669	.7083	.7500	3.25	3.03	2.13	.121	1.97	W26
4099024	TDM0709R3SCF075	.709	.7476	.7500	3.38	3.16	2.24	.129	1.97	W27
4099025	TDM0748R3SCF075	.748	.7870	.7500	3.50	3.28	2.36	.134	1.97	W28
4099026	TDM0787R3SCF100	.787	.8264	1.0000	3.75	3.53	2.48	.143	2.20	W29
4099027	TDM0827R3SCF100	.827	.8657	1.0000	3.88	3.66	2.60	.151	2.20	W30
4099028	TDM0866R3SCF100	.866	.9051	1.0000	4.00	3.78	2.72	.156	2.20	W31
4099029	TDM0906R3SCF100	.906	.9445	1.0000	4.25	4.03	2.84	.167	2.20	W32
4099030	TDM0945R3SCF100	.945	.9839	1.0000	4.38	4.16	2.95	.173	2.20	W33
4099031	TDM0984R3SCF100	.984	1.0232	1.0000	4.50	4.28	3.07	.178	2.20	W34

Modular Drills

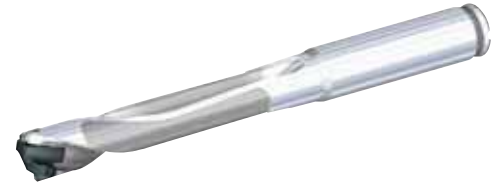
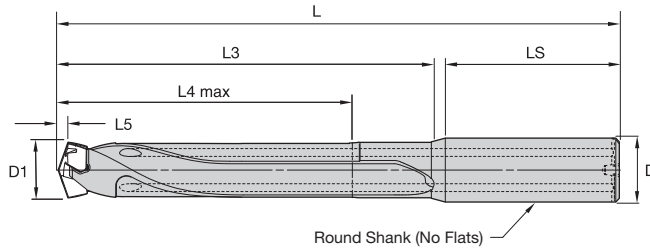
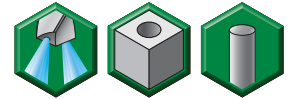
- Tool body shipped with insert wrench.



■ TOP DRILL M1 • 3 x D • Flanged • Metric

order number	catalog number	D1	D1 max	D	L	L1	L3	L4 max	L5	LS	insert blade seat size
3850904	TDM080R3SCF12M	7,94	8,49	12	86	41	35	26	1,5	45	W10
3850906	TDM085R3SCF12M	8,50	8,99	12	88	43	37	27	1,6	45	W11
3850908	TDM090R3SCF12M	9,00	9,49	12	90	45	39	29	1,7	45	W12
3850910	TDM095R3SCF12M	9,50	9,99	12	92	47	41	30	1,8	45	W13
3850912	TDM100R3SCF16M	10,00	10,49	16	97	49	43	32	1,9	48	W14
3850924	TDM105R3SCF16M	10,50	10,99	16	99	51	45	33	2,0	48	W15
3850926	TDM110R3SCF16M	11,00	11,49	16	101	53	47	35	2,1	48	W16
3850928	TDM115R3SCF16M	11,50	11,99	16	103	55	49	36	2,2	48	W17
3850930	TDM120R3SCF16M	12,00	12,49	16	106	58	52	38	2,3	48	W18
3850932	TDM125R3SCF16M	12,50	12,99	16	108	60	54	39	2,4	48	W19
3850934	TDM130R3SCF16M	13,00	13,49	16	110	62	56	41	2,5	48	W20
3850936	TDM135R3SCF16M	13,50	13,99	16	112	64	58	42	2,6	48	W21
3850938	TDM140R3SCF16M	14,00	14,49	16	114	66	60	44	2,7	48	W22
3850940	TDM145R3SCF16M	14,50	14,99	16	116	68	62	45	2,8	48	W23
3850942	TDM150R3SCF20M	15,00	15,99	20	122	72	66	48	2,8	50	W24
3850944	TDM160R3SCF20M	16,00	16,99	20	126	76	70	51	3,0	50	W25
3850946	TDM170R3SCF20M	17,00	17,99	20	131	81	75	54	3,2	50	W26
3850948	TDM180R3SCF25M	18,00	18,99	25	141	85	79	57	3,4	56	W27
3850950	TDM190R3SCF25M	19,00	19,99	25	144	89	83	60	3,6	56	W28
3850952	TDM200R3SCF25M	20,00	20,99	25	149	93	87	63	3,8	56	W29
3992070	TDM210R3SCF25M	21,00	21,99	25	153	97	91	66	3,7	56	W30
3992071	TDM220R3SCF25M	22,00	22,99	25	158	102	96	69	3,9	56	W31
3992072	TDM230R3SCF25M	23,00	23,99	25	162	106	100	72	4,1	56	W32
3992483	TDM240R3SCF25M	24,00	24,99	25	166	110	104	75	4,2	56	W33
3992484	TDM250R3SCF25M	25,00	25,99	25	170	114	108	78	4,4	56	W34

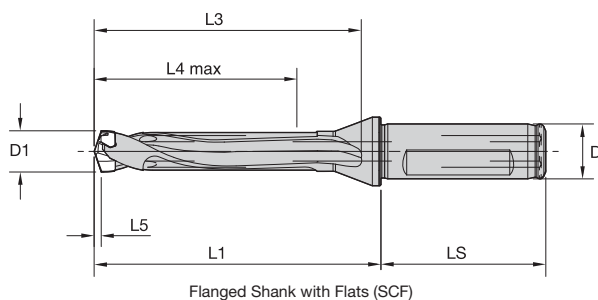
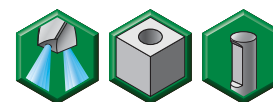
- Tool body shipped with insert wrench.



■ TOP DRILL M1 • 5 x D • Straight • Inch

order number	catalog number	D1	D1 max	D	L	L3	L4 max	L5	LS	insert blade seat size
3851479	TDM0313R5SS038	.313	.3343	.3750	3.88	2.17	1.67	.060	1.59	W10
3851481	TDM0335R5SS038	.335	.3539	.3750	4.00	2.29	1.77	.065	1.59	W11
3851543	TDM0354R5SS038	.354	.3736	.3750	4.13	2.42	1.87	.069	1.59	W12
3851546	TDM0374R5SS038	.374	.3933	.3750	4.25	2.54	1.97	.072	1.59	W13
3851547	TDM0374R5SS044	.374	.3933	.4375	4.38	2.59	1.97	.072	1.67	W13
3851549	TDM0394R5SS044	.394	.4130	.4375	4.63	2.84	2.07	.076	1.67	W14
3851551	TDM0413R5SS044	.413	.4327	.4375	4.75	2.96	2.16	.081	1.67	W15
3851553	TDM0433R5SS044	.433	.4524	.4375	4.88	3.09	2.26	.084	1.67	W16
3851555	TDM0453R5SS050	.453	.4720	.5000	5.00	3.09	2.36	.086	1.79	W17
3851557	TDM0472R5SS050	.472	.4917	.5000	5.00	3.09	2.46	.092	1.79	W18
3851560	TDM0492R5SS050	.492	.5114	.5000	5.13	3.22	2.56	.095	1.79	W19
3851561	TDM0492R5SS056	.492	.5114	.5625	5.13	3.22	2.56	.095	1.79	W19
3851563	TDM0512R5SS056	.512	.5311	.5625	5.25	3.34	2.66	.098	1.79	W20
3851565	TDM0532R5SS056	.532	.5508	.5625	5.50	3.59	2.75	.104	1.79	W21
3851567	TDM0551R5SS056	.551	.5705	.5625	5.75	3.84	2.85	.107	1.79	W22
3851569	TDM0571R5SS063	.571	.5902	.6250	5.75	3.72	2.95	.109	1.91	W23
3851571	TDM0591R5SS063	.591	.6295	.6250	6.00	3.97	3.15	.113	1.91	W24
3851573	TDM0630R5SS069	.630	.6689	.6875	6.25	4.22	3.34	.119	1.91	W25
3851575	TDM0669R5SS069	.669	.7083	.6875	6.50	4.47	3.54	.127	1.91	W26
3851577	TDM0709R5SS075	.709	.7476	.7500	6.88	4.76	3.74	.136	2.00	W27
3851579	TDM0748R5SS075	.748	.7870	.7500	7.13	5.01	3.94	.142	2.00	W28
3851581	TDM0787R5SS081	.787	.8264	.8125	7.50	5.38	4.13	.150	2.00	W29
3992503	TDM0827R5SS088	.827	.8657	.8750	7.63	5.44	4.33	.150	2.07	W30
3992504	TDM0866R5SS088	.866	.9051	.8750	7.87	5.69	4.53	.154	2.07	W31
3992505	TDM0906R5SS094	.906	.9445	.9375	8.25	5.98	4.72	.165	2.15	W32
3992506	TDM0945R5SS100	.945	.9839	1.0000	9.37	6.26	4.92	.169	3.00	W33
3992507	TDM0984R5SS100	.984	1.0232	1.0000	9.63	6.51	5.12	.177	3.00	W34

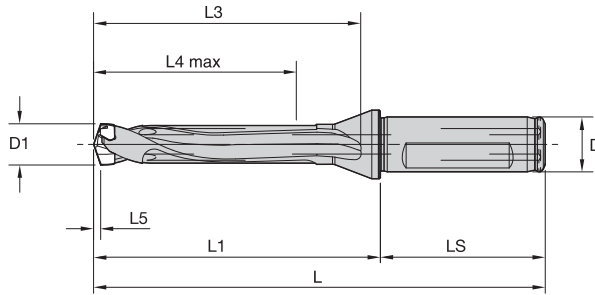
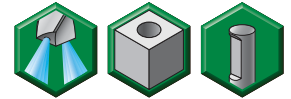
- Tool body shipped with insert wrench.



■ TOP DRILL M1 • 5 x D • Flanged • Inch

order number	catalog number	D1	D1 max	D	L1	L3	L4 max	L5	LS	insert blade seat size
4099032	TDM0313R5SCF050	.313	.3343	.5000	2.38	2.16	1.67	.057	1.77	W10
4099033	TDM0335R5SCF050	.335	.3539	.5000	2.50	2.28	1.77	.062	1.77	W11
4099034	TDM0354R5SCF050	.354	.3736	.5000	2.63	2.41	1.87	.065	1.77	W12
4099035	TDM0374R5SCF050	.374	.3933	.5000	2.75	2.53	1.97	.068	1.77	W13
4099036	TDM0394R5SCF063	.394	.4130	.6250	2.88	2.66	2.07	.072	1.89	W14
4099037	TDM0413R5SCF063	.413	.4327	.6250	3.00	2.78	2.17	.076	1.89	W15
4099038	TDM0433R5SCF063	.433	.4524	.6250	3.13	2.91	2.26	.079	1.89	W16
4099039	TDM0453R5SCF063	.453	.4720	.6250	3.25	3.03	2.36	.082	1.89	W17
4099040	TDM0472R5SCF063	.472	.4917	.6250	3.38	3.16	2.46	.087	1.89	W18
4099041	TDM0492R5SCF063	.492	.5114	.6250	3.50	3.28	2.56	.090	1.89	W19
4099042	TDM0512R5SCF063	.512	.5311	.6250	3.63	3.41	2.66	.093	1.89	W20
4099043	TDM0532R5SCF063	.532	.5508	.6250	3.75	3.53	2.76	.098	1.89	W21
4099044	TDM0551R5SCF063	.551	.5705	.6250	3.88	3.66	2.85	.101	1.89	W22
4099045	TDM0571R5SCF063	.571	.5902	.6250	4.00	3.78	2.95	.104	1.89	W23
4099046	TDM0591R5SCF075	.591	.6295	.7500	4.25	4.03	3.15	.107	1.97	W24
4099047	TDM0630R5SCF075	.630	.6689	.7500	4.50	4.28	3.35	.113	1.97	W25
4099048	TDM0669R5SCF075	.669	.7083	.7500	4.75	4.53	3.54	.121	1.97	W26
4099049	TDM0709R5SCF075	.709	.7476	.7500	5.00	4.78	3.74	.129	1.97	W27
4099050	TDM0748R5SCF075	.748	.7870	.7500	5.25	5.03	3.94	.134	1.97	W28
4099051	TDM0787R5SCF100	.787	.8264	1.0000	5.38	5.16	4.13	.143	2.20	W29
4099052	TDM0827R5SCF100	.827	.8657	1.0000	5.75	5.53	4.33	.151	2.20	W30
4099053	TDM0866R5SCF100	.866	.9051	1.0000	6.00	5.78	4.53	.156	2.20	W31
4099054	TDM0906R5SCF100	.906	.9445	1.0000	6.13	5.91	4.72	.167	2.20	W32
4099055	TDM0945R5SCF100	.945	.9839	1.0000	6.38	6.16	4.92	.173	2.20	W33
4099056	TDM0984R5SCF100	.984	1.0232	1.0000	6.75	6.53	5.12	.178	2.20	W34

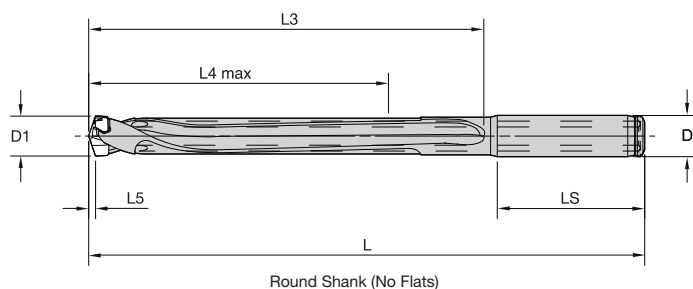
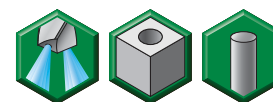
- Tool body shipped with insert wrench.



■ TOP DRILL M1 • 5 x D • Flanged • Metric

order number	catalog number	D1	D1 max	D	L	L1	L3	L4 max	L5	LS	insert blade seat size
3850905	TDM080R5SCF12M	7,94	8,49	12	104	59	53	43	1,5	45	W10
3850907	TDM085R5SCF12M	8,50	8,99	12	107	62	56	45	1,6	45	W11
3850909	TDM090R5SCF12M	9,00	9,49	12	110	65	59	48	1,7	45	W12
3850911	TDM095R5SCF12M	9,50	9,99	12	114	69	63	50	1,8	45	W13
3850923	TDM100R5SCF16M	10,00	10,49	16	120	72	66	53	1,9	48	W14
3850925	TDM105R5SCF16M	10,50	10,99	16	123	75	69	55	2,0	48	W15
3850927	TDM110R5SCF16M	11,00	11,49	16	126	78	72	58	2,1	48	W16
3850929	TDM115R5SCF16M	11,50	11,99	16	129	81	75	60	2,2	48	W17
3850931	TDM120R5SCF16M	12,00	12,49	16	132	84	78	63	2,3	48	W18
3850933	TDM125R5SCF16M	12,50	12,99	16	135	87	81	65	2,4	48	W19
3850935	TDM130R5SCF16M	13,00	13,49	16	138	90	84	68	2,5	48	W20
3850937	TDM135R5SCF16M	13,50	13,99	16	142	94	88	70	2,6	48	W21
3850939	TDM140R5SCF16M	14,00	14,49	16	145	97	91	73	2,7	48	W22
3850941	TDM145R5SCF16M	14,50	14,99	16	148	100	94	75	2,8	48	W23
3850943	TDM150R5SCF20M	15,00	15,99	20	156	106	100	80	2,8	50	W24
3850945	TDM160R5SCF20M	16,00	16,99	20	162	112	106	85	3,0	50	W25
3850947	TDM170R5SCF20M	17,00	17,99	20	169	119	113	90	3,2	50	W26
3850949	TDM180R5SCF25M	18,00	18,99	25	181	125	119	95	3,4	56	W27
3850951	TDM190R5SCF25M	19,00	19,99	25	187	131	125	100	3,6	56	W28
3850953	TDM200R5SCF25M	20,00	20,99	25	193	137	131	105	3,8	56	W29
3992485	TDM210R5SCF25M	21,00	21,99	25	200	144	138	110	3,7	56	W30
3992486	TDM220R5SCF25M	22,00	22,99	25	206	150	144	115	3,9	56	W31
3992487	TDM230R5SCF25M	23,00	23,99	25	212	156	150	120	4,1	56	W32
3992488	TDM240R5SCF25M	24,00	24,99	25	218	162	156	125	4,2	56	W33
3992489	TDM250R5SCF25M	25,00	25,99	25	225	169	163	130	4,4	56	W34

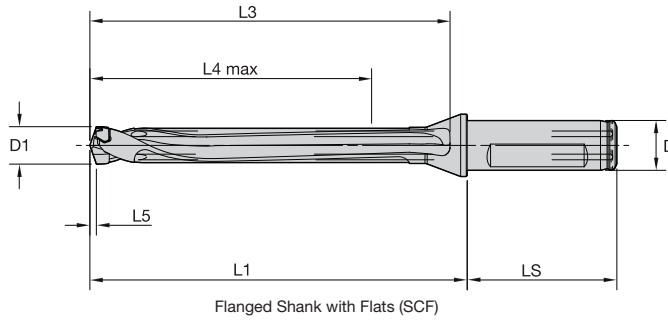
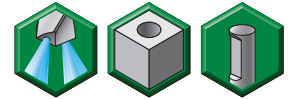
- Tool body shipped with insert wrench.



■ TOP DRILL M1 • 8 x D • Straight • Inch

order number	catalog number	D1	D1 max	D	L	L3	L4 max	L5	LS	insert blade seat size
3992536	TDM0313R8SS038	.313	.3343	.3750	4.87	3.17	2.68	.055	1.59	W10
3992537	TDM0335R8SS038	.335	.3539	.3750	5.13	3.42	2.83	.063	1.59	W11
3992538	TDM0354R8SS038	.354	.3736	.3750	5.25	3.55	2.99	.063	1.59	W12
3992539	TDM0374R8SS038	.374	.3933	.3750	5.37	3.67	3.15	.067	1.59	W13
3992540	TDM0374R8SS044	.374	.3933	.4375	5.37	3.59	3.15	.067	1.67	W13
3992541	TDM0394R8SS044	.394	.4130	.4375	5.75	3.96	3.31	.071	1.67	W14
3992542	TDM0413R8SS044	.413	.4327	.4375	6.00	4.21	3.46	.075	1.67	W15
3992543	TDM0433R8SS044	.433	.4524	.4375	6.25	4.46	3.62	.079	1.67	W16
3992544	TDM0453R8SS050	.453	.4720	.5000	6.50	4.56	3.78	.083	1.79	W17
3992545	TDM0472R8SS050	.472	.4917	.5000	6.75	4.84	3.94	.087	1.79	W18
3992546	TDM0492R8SS050	.492	.5114	.5000	7.00	5.08	4.09	.091	1.79	W19
3992547	TDM0492R8SS056	.492	.5114	.5625	7.00	5.08	4.09	.091	1.79	W19
3992548	TDM0512R8SS056	.512	.5311	.5625	7.13	5.22	4.25	.091	1.79	W20
3992549	TDM0532R8SS056	.532	.5508	.5625	7.25	5.34	4.41	.098	1.79	W21
3992550	TDM0551R8SS056	.551	.5705	.5625	7.37	5.47	4.57	.098	1.79	W22
3992551	TDM0571R8SS063	.571	.5902	.6250	7.50	5.47	4.72	.102	1.91	W23
3992552	TDM0591R8SS063	.591	.6295	.6250	7.75	5.72	5.04	.106	1.91	W24
3992553	TDM0630R8SS069	.630	.6689	.6875	8.00	5.97	5.35	.114	1.91	W25
3992554	TDM0669R8SS069	.669	.7083	.6875	8.75	6.72	5.67	.118	1.91	W26
3992555	TDM0709R8SS075	.709	.7476	.7500	9.25	7.13	5.98	.126	2.00	W27
3992556	TDM0748R8SS075	.748	.7870	.7500	9.63	7.51	6.30	.134	2.00	W28
3992557	TDM0787R8SS081	.787	.8264	.8125	10.00	7.88	6.61	.142	2.00	W29
3992558	TDM0827R8SS088	.827	.8657	.8750	10.25	8.06	6.93	.150	2.07	W30
3992559	TDM0866R8SS088	.866	.9051	.8750	10.63	8.44	7.24	.154	2.07	W31
3992560	TDM0906R8SS094	.906	.9445	.9375	11.13	8.86	7.56	.165	2.15	W32
3992561	TDM0945R8SS100	.945	.9839	1.0000	12.25	9.13	7.87	.169	3.00	W33
3992562	TDM0984R8SS100	.984	1.0232	1.0000	12.63	9.51	8.19	.177	3.00	W34

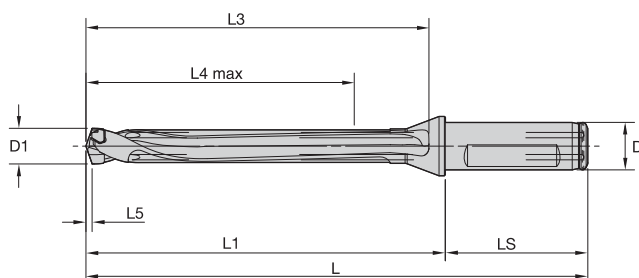
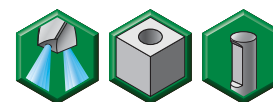
- Tool body shipped with insert wrench.



■ TOP DRILL M1 • 8 x D • Flanged • Inch

order number	catalog number	D1	D1 max	D	L1	L3	L4 max	L5	LS	insert blade seat size
4099057	TDM0313R8SCF050	.313	.3343	.5000	3.38	3.16	2.68	.057	1.77	W10
4099058	TDM0335R8SCF050	.335	.3539	.5000	3.50	3.28	2.83	.062	1.77	W11
4099059	TDM0354R8SCF050	.354	.3736	.5000	3.75	3.53	2.99	.065	1.77	W12
4099060	TDM0374R8SCF050	.374	.3933	.5000	4.00	3.78	3.15	.068	1.77	W13
4099061	TDM0394R8SCF063	.394	.4130	.6250	4.13	3.91	3.31	.072	1.89	W14
4099062	TDM0413R8SCF063	.413	.4327	.6250	4.25	4.03	3.46	.076	1.89	W15
4099063	TDM0433R8SCF063	.433	.4524	.6250	4.50	4.28	3.62	.079	1.89	W16
4099064	TDM0453R8SCF063	.453	.4720	.6250	4.63	4.41	3.78	.082	1.89	W17
4099065	TDM0472R8SCF063	.472	.4917	.6250	4.88	4.66	3.94	.087	1.89	W18
4099066	TDM0492R8SCF063	.492	.5114	.6250	5.00	4.78	4.09	.090	1.89	W19
4099067	TDM0512R8SCF063	.512	.5311	.6250	5.13	4.91	4.25	.093	1.89	W20
4099068	TDM0532R8SCF063	.532	.5508	.6250	5.38	5.16	4.41	.098	1.89	W21
4099069	TDM0551R8SCF063	.551	.5705	.6250	5.63	5.41	4.57	.101	1.89	W22
4099070	TDM0571R8SCF063	.571	.5902	.6250	5.75	5.53	4.72	.104	1.89	W23
4099071	TDM0591R8SCF075	.591	.6295	.7500	6.13	5.91	5.04	.107	1.97	W24
4099072	TDM0630R8SCF075	.630	.6689	.7500	6.50	6.28	5.35	.113	1.97	W25
4099073	TDM0669R8SCF075	.669	.7083	.7500	6.88	6.66	5.67	.121	1.97	W26
4099074	TDM0709R8SCF075	.709	.7476	.7500	7.25	7.03	5.98	.129	1.97	W27
4099075	TDM0748R8SCF075	.748	.7870	.7500	7.50	7.28	6.30	.134	1.97	W28
4099076	TDM0787R8SCF100	.787	.8264	1.0000	7.88	7.66	6.61	.143	2.20	W29
4099077	TDM0827R8SCF100	.827	.8657	1.0000	8.25	8.03	6.93	.151	2.20	W30
4099078	TDM0866R8SCF100	.866	.9051	1.0000	8.63	8.41	7.24	.156	2.20	W31
4099079	TDM0906R8SCF100	.906	.9445	1.0000	9.00	8.78	7.56	.167	2.20	W32
4099080	TDM0945R8SCF100	.945	.9839	1.0000	9.38	9.16	7.87	.173	2.20	W33
4099081	TDM0984R8SCF100	.984	1.0232	1.0000	9.75	9.53	8.19	.178	2.20	W34

- Tool body shipped with insert wrench.



■ TOP DRILL M1 • 8 x D • Flanged • Metric

order number	catalog number	D1	D1 max	D	L	L1	L3	L4 max	L5	LS	insert blade seat size
3992141	TDM080R8SCF12M	7,94	8,49	12	129	84	79	68	1,4	45	W10
3992142	TDM085R8SCF12M	8,50	8,99	12	134	89	83	72	1,5	45	W11
3992213	TDM090R8SCF12M	9,00	9,49	12	138	93	88	76	1,6	45	W12
3992214	TDM095R8SCF12M	9,50	9,99	12	144	99	93	80	1,7	45	W13
3992215	TDM100R8SCF16M	10,00	10,49	16	151	103	98	84	1,8	48	W14
3992216	TDM105R8SCF16M	10,50	10,99	16	156	108	102	88	1,9	48	W15
3992217	TDM110R8SCF16M	11,00	11,49	16	160	112	107	92	2,0	48	W16
3992218	TDM115R8SCF16M	11,50	11,99	16	165	117	111	96	2,1	48	W17
3992219	TDM120R8SCF16M	12,00	12,49	16	169	121	116	100	2,1	48	W18
3992220	TDM125R8SCF16M	12,50	12,99	16	174	126	120	104	2,2	48	W19
3992221	TDM130R8SCF16M	13,00	13,49	16	178	130	125	108	2,3	48	W20
3992222	TDM135R8SCF16M	13,50	13,99	16	184	136	130	112	2,4	48	W21
3992223	TDM140R8SCF16M	14,00	14,49	16	188	140	135	116	2,5	48	W22
3992224	TDM145R8SCF16M	14,50	14,99	16	193	145	139	120	2,6	48	W23
3992225	TDM150R8SCF20M	15,00	15,99	20	204	154	148	128	2,7	50	W24
3992226	TDM160R8SCF20M	16,00	16,99	20	213	163	157	136	2,8	50	W25
3992227	TDM170R8SCF20M	17,00	17,99	20	223	173	167	144	3,0	50	W26
3992228	TDM180R8SCF25M	18,00	18,99	25	238	182	176	152	3,2	56	W27
3992229	TDM190R8SCF25M	19,00	19,99	25	247	191	185	160	3,4	56	W28
3992230	TDM200R8SCF25M	20,00	20,99	25	256	200	194	168	3,6	56	W29
3992231	TDM210R8SCF25M	21,00	21,99	25	266	210	204	176	3,7	56	W30
3992232	TDM220R8SCF25M	22,00	22,99	25	275	219	213	184	3,9	56	W31
3992233	TDM230R8SCF25M	23,00	23,99	25	284	228	222	192	4,1	56	W32
3992234	TDM240R8SCF25M	24,00	24,99	25	293	237	231	200	4,2	56	W33
3992235	TDM250R8SCF25M	25,00	25,99	25	303	247	241	208	4,4	56	W34



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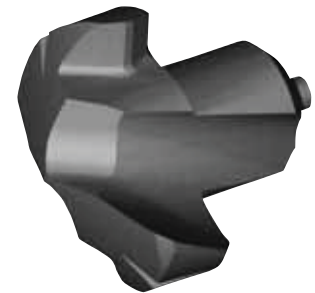
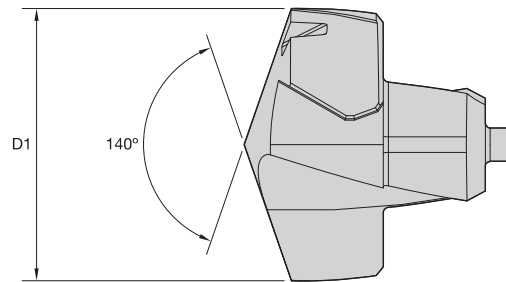
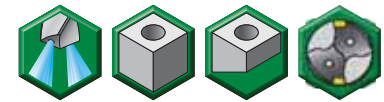
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■ TOP DRILL M1 • UP(M)

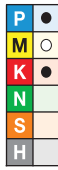
P	●
M	○
K	●
N	
S	
H	

● first choice
○ alternate choice

grade WU25PD TiAlN		D1		seat size/series
order #	catalog #	mm	in	
3850959	TDM0794UPM	7,94	.313	W10
3848984	TDM0800UPM	8,00	.315	W10
3848985	TDM0810UPM	8,10	.319	W10
3850960	TDM0816UPM	8,16	.321	W10
3850961	TDM0820UPM	8,20	.323	W10
3848986	TDM0830UPM	8,30	.327	W10
3850962	TDM0833UPM	8,33	.328	W10
3848987	TDM0840UPM	8,40	.331	W10
3850963	TDM0843UPM	8,43	.332	W10
3848988	TDM0850UPM	8,50	.335	W11
3848989	TDM0860UPM	8,60	.339	W11
3850964	TDM0861UPM	8,61	.339	W11
3848990	TDM0870UPM	8,70	.343	W11
3850965	TDM0873UPM	8,73	.344	W11
3848991	TDM0880UPM	8,80	.347	W11
3850966	TDM0884UPM	8,84	.348	W11
3848992	TDM0890UPM	8,90	.350	W11
3849043	TDM0900UPM	9,00	.354	W12
3850967	TDM0909UPM	9,09	.358	W12
3849044	TDM0910UPM	9,10	.358	W12
3850968	TDM0913UPM	9,13	.359	W12
3849045	TDM0920UPM	9,20	.362	W12
3849046	TDM0930UPM	9,30	.366	W12
3850969	TDM0935UPM	9,35	.368	W12

(continued)

(TOP DRILL M1 • UP(M) – continued)



● first choice
○ alternate choice

grade WU25PD TiAlN		D1			
order #	catalog #	mm	in	seat size/series	
3849047	TDM0940UPM	9,40	.370	W12	
3849048	TDM0950UPM	9,50	.374	W13	
3850970	TDM0953UPM	9,53	.375	W13	
3850971	TDM0956UPM	9,56	.376	W13	
3850972	TDM0958UPM	9,58	.377	W13	
3849049	TDM0960UPM	9,60	.378	W13	
3850973	TDM0970UPM	9,70	.382	W13	
3850974	TDM0980UPM	9,80	.386	W13	
3849050	TDM0990UPM	9,90	.390	W13	
3850975	TDM0992UPM	9,92	.391	W13	
3849051	TDM1000UPM	10,00	.394	W14	
3850976	TDM1002UPM	10,02	.395	W14	
3850977	TDM1008UPM	10,08	.397	W14	
3849052	TDM1010UPM	10,10	.398	W14	
3849053	TDM1020UPM	10,20	.402	W14	
3850978	TDM1026UPM	10,26	.404	W14	
3849054	TDM1030UPM	10,30	.406	W14	
3850979	TDM1032UPM	10,32	.406	W14	
3849055	TDM1040UPM	10,40	.409	W14	
3850980	TDM1049UPM	10,49	.413	W14	
3849056	TDM1050UPM	10,50	.413	W15	
3849057	TDM1060UPM	10,60	.417	W15	
3849058	TDM1070UPM	10,70	.421	W15	
3850981	TDM1072UPM	10,72	.422	W15	
3849059	TDM1080UPM	10,80	.425	W15	
3849060	TDM1090UPM	10,90	.429	W15	
3849061	TDM1100UPM	11,00	.433	W16	
3849062	TDM1110UPM	11,10	.437	W16	
3850982	TDM1111UPM	11,11	.438	W16	
3849063	TDM1120UPM	11,20	.441	W16	
3849064	TDM1130UPM	11,30	.445	W16	
3849065	TDM1140UPM	11,40	.449	W16	
3849066	TDM1150UPM	11,50	.453	W17	
3850983	TDM1151UPM	11,51	.453	W17	
3849067	TDM1160UPM	11,60	.457	W17	
3850984	TDM1161UPM	11,61	.457	W17	
3849068	TDM1170UPM	11,70	.461	W17	
3849069	TDM1180UPM	11,80	.465	W17	
3849070	TDM1190UPM	11,90	.469	W17	
3850985	TDM1191UPM	11,91	.469	W17	

(continued)

Modular Drills

(TOP DRILL M1 • UP(M) – continued)



● first choice
○ alternate choice

grade WU25PD TiAIN		D1		
order #	catalog #	mm	in	seat size/series
3849071	TDM1200UPM	12,00	.473	W18
3849072	TDM1210UPM	12,10	.476	W18
3849073	TDM1220UPM	12,20	.480	W18
3850986	TDM1230UPM	12,30	.484	W18
3849074	TDM1240UPM	12,40	.488	W18
3850987	TDM1247UPM	12,47	.491	W18
3849075	TDM1250UPM	12,50	.492	W19
3849076	TDM1260UPM	12,60	.496	W19
3850988	TDM1270UPM	12,70	.500	W19
3849077	TDM1280UPM	12,80	.504	W19
3850989	TDM1290UPM	12,90	.508	W19
3849078	TDM1300UPM	13,00	.512	W20
3850990	TDM1310UPM	13,10	.516	W20
3849079	TDM1320UPM	13,20	.520	W20
3849080	TDM1330UPM	13,30	.524	W20
3849081	TDM1340UPM	13,40	.528	W20
3850991	TDM1349UPM	13,49	.531	W20
3849082	TDM1350UPM	13,50	.532	W21
3849083	TDM1360UPM	13,60	.535	W21
3849084	TDM1370UPM	13,70	.539	W21
3849085	TDM1380UPM	13,80	.543	W21
3850992	TDM1389UPM	13,89	.547	W21
3850993	TDM1390UPM	13,90	.547	W21
3849086	TDM1400UPM	14,00	.551	W22
3849087	TDM1410UPM	14,10	.555	W22
3849088	TDM1420UPM	14,20	.559	W22
3850994	TDM1429UPM	14,29	.563	W22
3849089	TDM1430UPM	14,30	.563	W22
3849090	TDM1440UPM	14,40	.567	W22
3849091	TDM1450UPM	14,50	.571	W23
3849092	TDM1460UPM	14,60	.575	W23
3850995	TDM1467UPM	14,67	.577	W23
3850996	TDM1468UPM	14,68	.578	W23
3849093	TDM1470UPM	14,70	.579	W23
3849094	TDM1480UPM	14,80	.583	W23
3849095	TDM1490UPM	14,90	.587	W23
3849096	TDM1500UPM	15,00	.591	W24
3850997	TDM1508UPM	15,08	.594	W24
3849097	TDM1510UPM	15,10	.595	W24
3849098	TDM1520UPM	15,20	.598	W24

(continued)

(TOP DRILL M1 • UP(M) – continued)



● first choice
○ alternate choice

grade WU25PD TiAlN		D1		
order #	catalog #	mm	in	seat size/series
3849099	TDM1530UPM	15,30	.602	W24
3849100	TDM1540UPM	15,40	.606	W24
3850998	TDM1548UPM	15,48	.609	W24
3849101	TDM1550UPM	15,50	.610	W24
3849102	TDM1560UPM	15,60	.614	W24
3849103	TDM1570UPM	15,70	.618	W24
3849104	TDM1580UPM	15,80	.622	W24
3850999	TDM1588UPM	15,88	.625	W24
3849105	TDM1600UPM	16,00	.630	W25
3851000	TDM1603UPM	16,03	.631	W25
3851001	TDM1608UPM	16,08	.633	W25
3849106	TDM1610UPM	16,10	.634	W25
4010625	TDM1618UPM	16,18	.637	W25
3849107	TDM1620UPM	16,20	.638	W25
3851002	TDM1627UPM	16,27	.641	W25
3849108	TDM1630UPM	16,30	.642	W25
3849109	TDM1640UPM	16,40	.646	W25
3849110	TDM1650UPM	16,50	.650	W25
3849111	TDM1660UPM	16,60	.654	W25
3851003	TDM1667UPM	16,67	.656	W25
3849112	TDM1670UPM	16,70	.658	W25
3849113	TDM1680UPM	16,80	.661	W25
3851004	TDM1687UPM	16,87	.664	W25
3849114	TDM1690UPM	16,90	.665	W25
3849119	TDM1700UPM	17,00	.669	W26
3851005	TDM1707UPM	17,07	.672	W26
3849120	TDM1710UPM	17,10	.673	W26
3849121	TDM1720UPM	17,20	.677	W26
3849122	TDM1730UPM	17,30	.681	W26
3849193	TDM1740UPM	17,40	.685	W26
3851006	TDM1746UPM	17,46	.688	W26
3849194	TDM1750UPM	17,50	.689	W26
3849195	TDM1760UPM	17,60	.693	W26
3849196	TDM1770UPM	17,70	.697	W26
3849197	TDM1780UPM	17,80	.701	W26
3851007	TDM1786UPM	17,86	.703	W26
3849198	TDM1790UPM	17,90	.705	W26
3849199	TDM1800UPM	18,00	.709	W27
3849200	TDM1810UPM	18,10	.713	W27
3849201	TDM1820UPM	18,20	.717	W27

(continued)

(TOP DRILL M1 • UP(M) – continued)



● first choice
○ alternate choice

grade WU25PD TiAlN		D1		
order #	catalog #	mm	in	seat size/series
3851008	TDM1826UPM	18,26	.719	W27
3849202	TDM1830UPM	18,30	.721	W27
3849203	TDM1840UPM	18,40	.724	W27
3849204	TDM1850UPM	18,50	.728	W27
3849205	TDM1860UPM	18,60	.732	W27
3851009	TDM1865UPM	18,65	.734	W27
3849206	TDM1870UPM	18,70	.736	W27
3849207	TDM1880UPM	18,80	.740	W27
3849208	TDM1890UPM	18,90	.744	W27
3849209	TDM1900UPM	19,00	.748	W28
3851010	TDM1905UPM	19,05	.750	W28
3849210	TDM1910UPM	19,10	.752	W28
3849211	TDM1920UPM	19,20	.756	W28
3851011	TDM1923UPM	19,23	.757	W28
3851012	TDM1925UPM	19,25	.758	W28
3851013	TDM1928UPM	19,28	.759	W28
3849212	TDM1930UPM	19,30	.760	W28
3851014	TDM1935UPM	19,35	.762	W28
3849213	TDM1940UPM	19,40	.764	W28
3851015	TDM1945UPM	19,45	.766	W28
3849214	TDM1950UPM	19,50	.768	W28
3849215	TDM1960UPM	19,60	.772	W28
3849216	TDM1970UPM	19,70	.776	W28
3849217	TDM1980UPM	19,80	.780	W28
3851016	TDM1984UPM	19,84	.781	W28
3849218	TDM1990UPM	19,90	.784	W28
3849219	TDM2000UPM	20,00	.788	W29
3849220	TDM2010UPM	20,10	.791	W29
3849221	TDM2020UPM	20,20	.795	W29
3851017	TDM2024UPM	20,24	.797	W29
3849222	TDM2030UPM	20,30	.799	W29
3849223	TDM2040UPM	20,40	.803	W29
3849224	TDM2050UPM	20,50	.807	W29
3849225	TDM2060UPM	20,60	.811	W29
3851018	TDM2064UPM	20,64	.813	W29
3849226	TDM2070UPM	20,70	.815	W29
3849227	TDM2080UPM	20,80	.819	W29
3849228	TDM2090UPM	20,90	.823	W29
3849229	TDM2099UPM	20,99	.826	W29
4003225	TDM2100UPM	21,00	.827	W30

(continued)

(TOP DRILL M1 • UP(M) – continued)



● first choice
○ alternate choice

grade WU25PD TiAlN		D1		
order #	catalog #	mm	in	seat size/series
4003203	TDM2144UPM	21,44	.844	W30
3969291	TDM2150UPM	21,50	.846	W30
4003226	TDM2200UPM	22,00	.866	W31
4003204	TDM2223UPM	22,23	.875	W31
4003205	TDM2245UPM	22,45	.884	W31
4003227	TDM2250UPM	22,50	.887	W31
4003228	TDM2300UPM	23,00	.906	W32
4003229	TDM2350UPM	23,50	.925	W32
4003206	TDM2381UPM	23,81	.938	W32
4003230	TDM2400UPM	24,00	.945	W33
4003231	TDM2450UPM	24,50	.965	W33
4003207	TDM2461UPM	24,61	.969	W33
4003232	TDM2500UPM	25,00	.984	W34
4003208	TDM2540UPM	25,40	1.000	W34
4002444	TDM2550UPM	25,50	1.004	W34
4003209	TDM2568UPM	25,68	1.011	W34
4003210	TDM2581UPM	25,81	1.016	W34
3992013	TDM2599UPM	25,99	1.023	W34

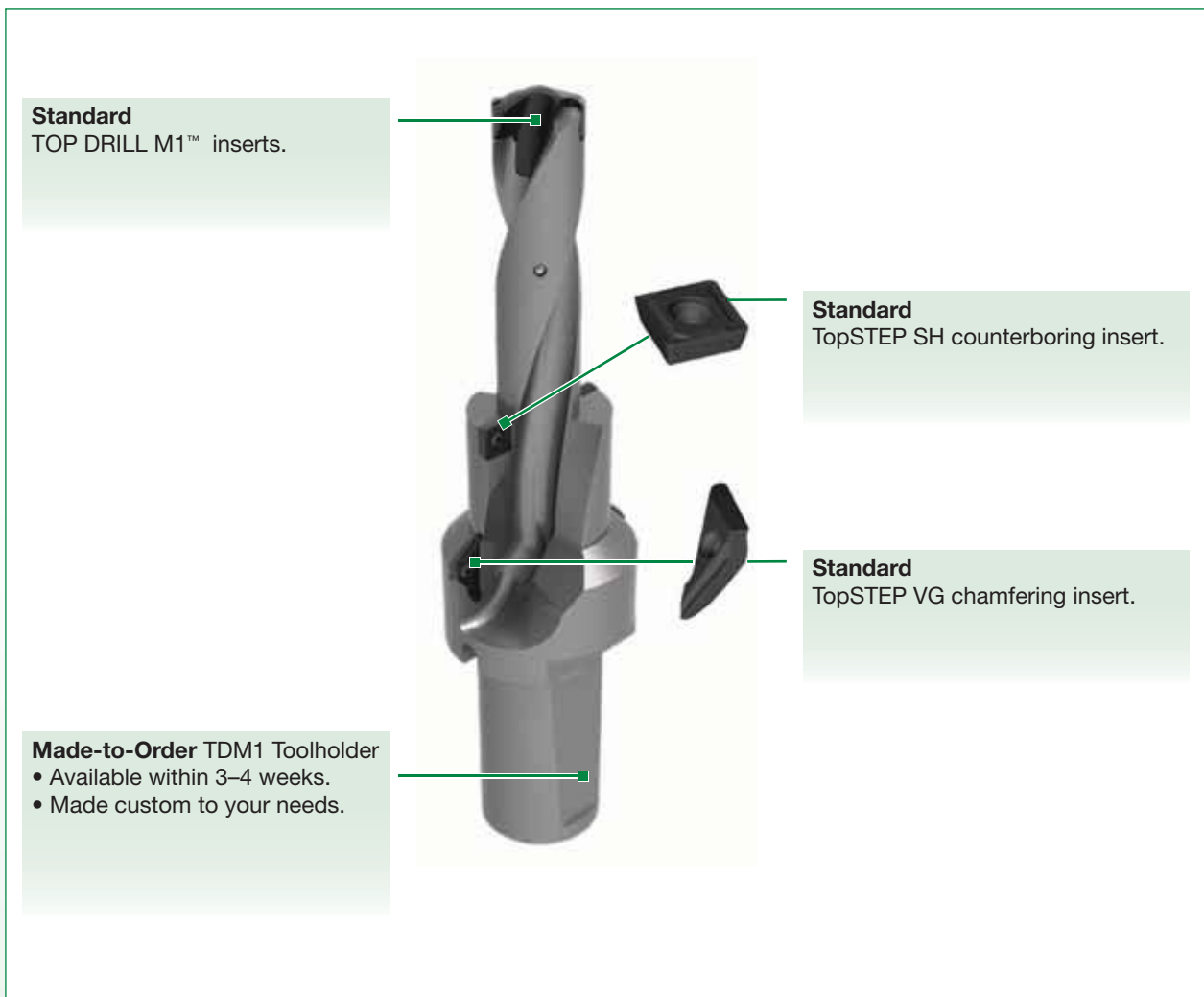
Inch tolerance		Metric tolerance	
D1	tolerance k8	D1	tolerance k8
.3125–.3906	.000/+0.0009	8–10	0,000/+0,022
>.3906–.6250	.000/+0.0011	>10–17	0,000/+0,027
>.6692–.7090	.000/+0.0010	>17–18	0,000/+0,027
>.7090–.8228	.000/+0.0013	>18–21	0,000/+0,033



Modular TOP DRILL M1 Step Drill

Provides high productivity through high-feed, one-shot operations, and excellent tool life.

- Use TopSTEP VG and SH chamfer and counterboring inserts to create your specific TDM1 modular step drill.
- Create complex holes with countersinks, chamfers, or even both operations in one shot.
- Save time, achieve better cost, and run your complex drilling process with higher stability.



Standard
TOP DRILL M1™ inserts.

Standard
TopSTEP SH counterboring insert.

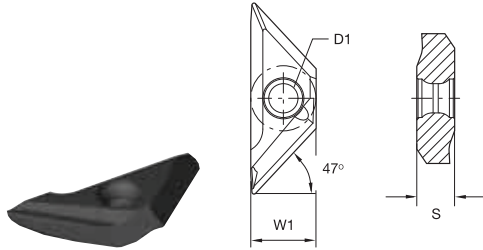
Standard
TopSTEP VG chamfering insert.

Made-to-Order TDM1 Toolholder
 • Available within 3–4 weeks.
 • Made custom to your needs.

Let your WIDIA™ representative know about your specific needs. Use the Chamfer and Counterboring Order Planning pages to create and send us your request – available online as well.

TopSTEP VG Chamfering Inserts

- 45° chamfer angle with broad cutting edge.
- Hassle-free usage.
- Very stable and accurate positioning in pocket.
- Two times indexable.
- One universal insert size for a lot of applications.



● first choice
○ alternate choice

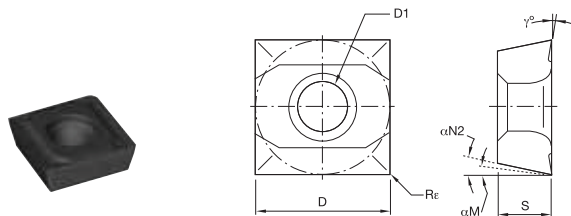
P	●
M	○
K	●
N	○
S	○
H	

■ TopSTEP VG Chamfering Inserts

catalog number	W1		D1		S		WP20PH
	mm	in	mm	in	mm	in	
VXGX10030234	6,35	.250	2,85	.112	3,48	.137	5983706

TopSTEP SH Counterboring Inserts

- 90° insert can be positioned in alternative angles.
- Very good chip forming and surface quality.
- Two times indexable.
- Stocked standards in six insert sizes.



● first choice
○ alternate choice

P	●
M	○
K	○
N	
S	
H	

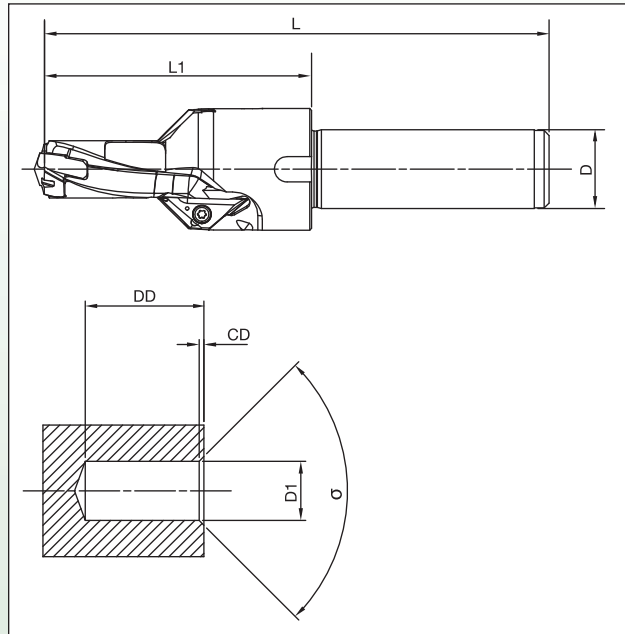
■ TopSTEP SH Counterboring Inserts

catalog number	D		D1		S		Rε		αN	αN M	WP20PH
	mm	in	mm	in	mm	in	mm	in			
SXHX060204R20	6,35	.250	2,85	.112	2,38	.094	0,40	.016	11	7	5983390
SXHX070304R20	6,35	.250	2,85	.112	2,38	.094	0,40	.016	11	7	5983702
SXHX060208R20	6,35	.250	2,85	.112	2,38	.094	0,80	.031	11	7	5983701
SXHX070308R20	6,35	.250	2,85	.112	2,38	.094	0,80	.031	11	7	5983703
SXHX090304R20	9,52	.375	3,50	.138	3,18	.125	0,40	.016	11	7	5983704
SXHX090308R20	9,52	.375	3,50	.138	3,18	.125	0,80	.031	11	7	5983705

Please utilize guide below to plan your TOP DRILL M1™ modular step drill based on your needs and requirements. Please contact your distributor for a quote.

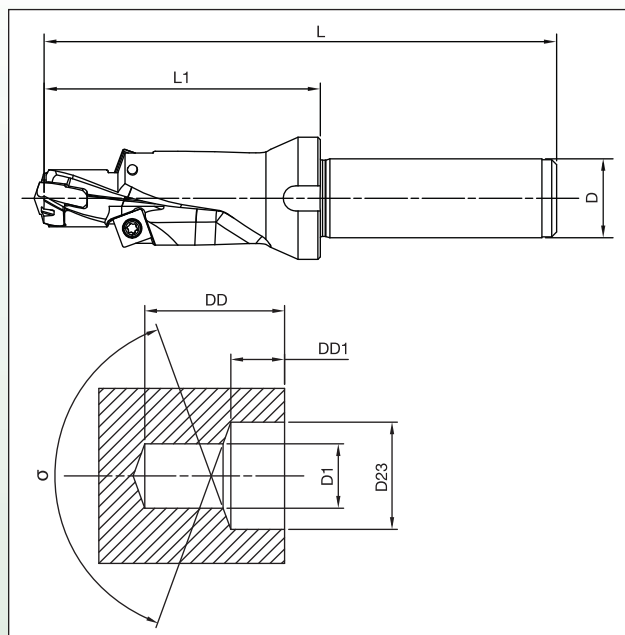
Option 1 TOP DRILL M1 Drilling and Chamfering

Overall Length	[L]	<input type="text"/>
Drill Length	[L1]	<input type="text"/>
Shank Diameter	[D]	<input type="text"/>
Drill Diameter Min	[D1]	<input type="text"/>
Drilling Depth	[DD]	<input type="text"/>
Cutting Diameter 2 Angle	σ	<input type="text"/>
Chamfering Depth	[CD]	<input type="text"/>



Option 2 TOP DRILL M1 Drilling and Countersinking

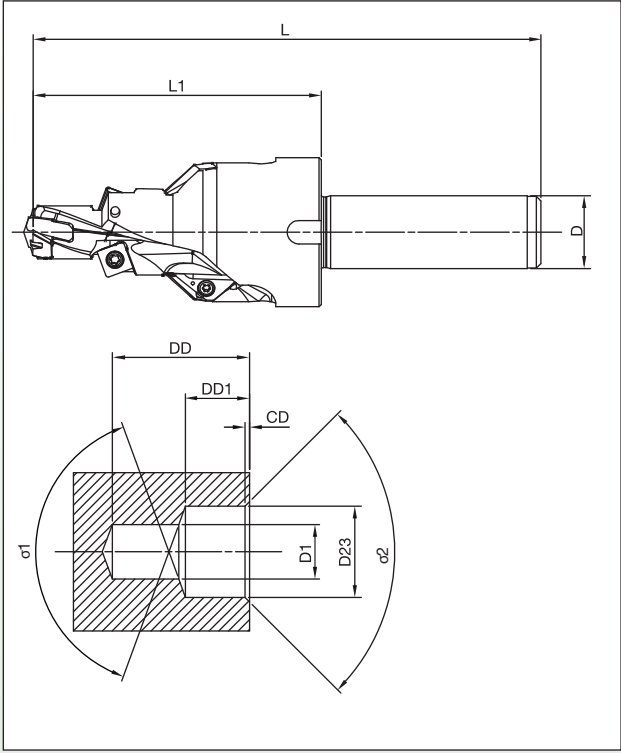
Overall Length	[L]	<input type="text"/>
Drill Length	[L1]	<input type="text"/>
Shank Diameter	[D]	<input type="text"/>
Drill Diameter Min	[D1]	<input type="text"/>
Drilling Depth	[DD]	<input type="text"/>
Cut Diameter 23	[D23]	<input type="text"/>
Countersinking Depth	[DD1]	<input type="text"/>
Cutting Diameter 2 Angle	σ	<input type="text"/>



Please utilize guide below to plan your TOP DRILL M1™ modular step drill based on your needs and requirements. Please contact your distributor for a quote.

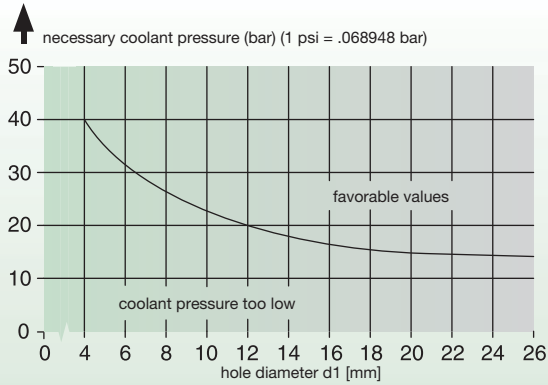
Option 3 TOP DRILL M1 Drilling and Countersinking and Chamfering

Overall Length	[L]	<input type="text"/>
Drill Length	[L1]	<input type="text"/>
Shank Diameter	[D]	<input type="text"/>
Drill Diameter Min	[D1]	<input type="text"/>
Drilling Depth	[DD]	<input type="text"/>
Cut Diameter 23	[D23]	<input type="text"/>
Countersinking Depth	[DD1]	<input type="text"/>
Cutting Diameter 2 Angle	σ_1	<input type="text"/>
Cutting Diameter 3 Angle	σ_2	<input type="text"/>
Chamfering depth	[CD]	<input type="text"/>



If a more complex tool is required, we need your individual information to serve your specific needs. Please contact your WIDIA™ distributor for further guidance.





Coolant Pressure

The diagram at left shows the coolant pressure as a function of the hole diameter. The higher the coolant pressure, the better the drilling result. Tool life and hole quality improve with increased coolant flow.

Drilling on Inclined Surfaces

When drilling on inclined or curved surfaces, use a 50% lower feed than the standard value. After the drill margins are fully engaged in the workpiece, increase the feed to the standard value (100%). Premachining is required on surfaces with inclination greater than 3°.

■ TOP DRILL M1 • UP(M) • WU25PD™ • Speed and Feed Chart • Metric

Material Group		Cutting Speed – vc Range – m/min			Recommended Feed Rate							
		min	Starting Value	max	Tool Diameter (mm)	8,0	10,0	12,0	14,0	16,0	20,0	25,0
		P	1	90	125	170	mm/r	0,11–0,20	0,13–0,25	0,14–0,31	0,17–0,39	0,19–0,45
2	105		140	180	mm/r	0,11–0,28	0,12–0,35	0,16–0,37	0,21–0,46	0,23–0,46	0,28–0,50	0,30–0,52
3	50		75	100	mm/r	0,11–0,28	0,12–0,35	0,16–0,37	0,21–0,46	0,23–0,46	0,28–0,50	0,30–0,52
4	50		75	100	mm/r	0,11–0,28	0,12–0,35	0,16–0,37	0,17–0,36	0,19–0,45	0,22–0,48	0,25–0,50
5	50		65	80	mm/r	0,10–0,20	0,10–0,23	0,10–0,25	0,14–0,29	0,16–0,32	0,18–0,36	0,22–0,42
6	50		65	80	mm/r	0,10–0,20	0,10–0,23	0,10–0,25	0,14–0,29	0,16–0,32	0,18–0,36	0,22–0,42
M	1	40	80	110	mm/r	0,06–0,22	0,08–0,23	0,09–0,24	0,10–0,25	0,11–0,26	0,13–0,28	0,13–0,32
	2	35	55	75	mm/r	0,06–0,22	0,08–0,23	0,09–0,24	0,10–0,25	0,11–0,26	0,13–0,28	0,13–0,32
	3	20	35	50	mm/r	0,06–0,22	0,08–0,23	0,09–0,24	0,10–0,25	0,11–0,26	0,13–0,28	0,13–0,32
K	1	60	95	170	mm/r	0,15–0,29	0,16–0,32	0,17–0,35	0,21–0,42	0,25–0,48	0,28–0,52	0,32–0,56
	2	60	75	90	mm/r	0,15–0,29	0,16–0,30	0,17–0,33	0,21–0,41	0,25–0,48	0,28–0,52	0,32–0,56
	3	40	65	90	mm/r	0,16–0,30	0,17–0,33	0,18–0,36	0,20–0,41	0,21–0,44	0,23–0,48	0,25–0,50

NOTE: Through coolant recommended for greater than 3 x D applications.

■ TOP DRILL M1 • UP(M) • WU25PD • Speed and Feed Chart • Inch

Material Group		Cutting Speed – vc Range – SFM			Recommended Feed Rate							
		min	Starting Value	max	Tool Diameter (inch)	.315	.394	.472	.551	.630	.787	1.000
		P	1	262	410	558	IPR	.004–.008	.005–.010	.006–.012	.007–.015	.007–.018
2	345		459	591	IPR	.004–.011	.005–.014	.006–.015	.008–.018	.009–.018	.011–.020	.012–.020
3	164		246	328	IPR	.004–.011	.005–.014	.006–.015	.008–.018	.009–.018	.011–.020	.012–.020
4	164		246	328	IPR	.004–.011	.005–.014	.006–.015	.007–.018	.007–.018	.009–.019	.010–.020
5	160		210	260	IPR	.004–.008	.004–.009	.004–.010	.006–.011	.006–.013	.007–.014	.009–.017
6	160		210	260	IPR	.004–.008	.004–.009	.004–.010	.006–.011	.006–.013	.007–.014	.009–.017
M	1	130	260	360	IPR	.002–.009	.003–.009	.004–.010	.004–.010	.004–.010	.005–.012	.006–.013
	2	110	180	250	IPR	.002–.009	.003–.009	.004–.010	.004–.010	.004–.010	.005–.012	.006–.013
	3	70	110	160	IPR	.002–.009	.003–.009	.004–.010	.004–.010	.004–.010	.005–.012	.006–.013
K	1	197	312	558	IPR	.006–.011	.006–.013	.007–.014	.008–.017	.010–.019	.011–.020	.013–.022
	2	197	246	295	IPR	.006–.011	.006–.012	.007–.013	.008–.016	.010–.019	.011–.020	.013–.022
	3	131	213	295	IPR	.006–.012	.007–.013	.007–.014	.008–.016	.008–.017	.009–.019	.010–.020

NOTE: Through coolant recommended for greater than 3 x D applications.

How to attach inserts



1) Fix drill holder on arbor. For insert exchange, fix arbor on the machine or set on tool presetter.



2) Remove dust using air blast.



3) Put insert into drill holder.
(Use gloves to protect your hands.)



4) Turn lightly in a clockwise direction.
(Use gloves to protect your hands.)



5) Set the wrench properly.*



6) Make sure the wrench fits with the insert slot for the wrench. (Is the wrench unfixated from the slot?)



7) Slowly turn the wrench in a clockwise direction.



8) Complete.

How to detach inserts



1) Remove dust from insert using air blast.



2) Set the wrench properly.*



3) Fit the wrench to insert slot.



4) Turn the wrench in a counterclockwise direction.



5) Once lock is released, insert can be turned with fingers. (Use gloves to protect your hands.)



6) Remove insert. (Use gloves to protect your hands.)

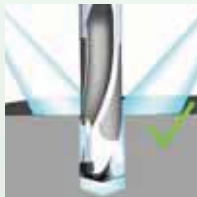
**To order the TDM1 Wrench, please use order number 3861623 and catalog number 170.315.*

Cautions

Coolant



1) Internal coolant is recommended.



2) In case of external coolant, cutting depth must be 3 x D or less.

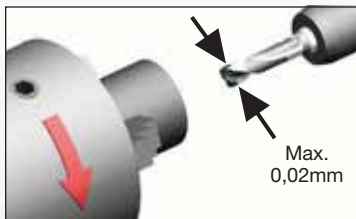


3) Dry cutting is not recommended. Limited applicability in cast iron materials, MQL strongly recommended.

Usage Precautions

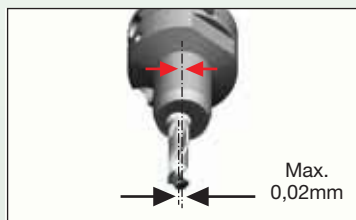
Core deviation

1) For Turning Machines



Set deviation amount under 0,02mm between workpiece and drill.

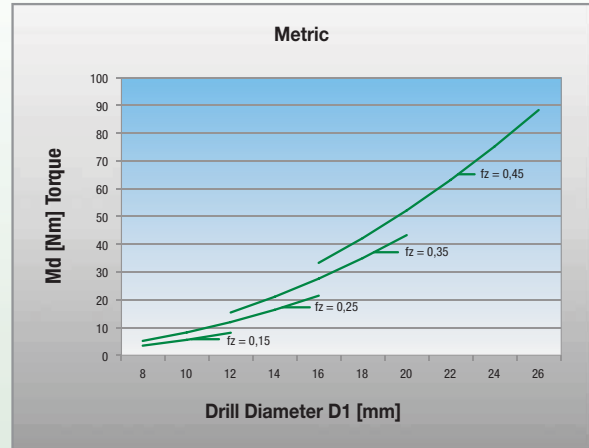
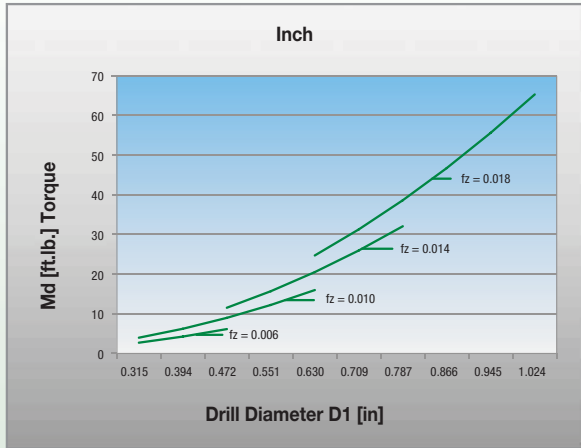
2) For Machining Centers



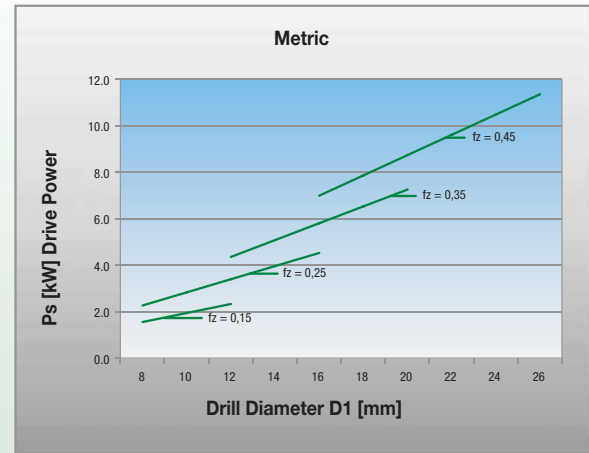
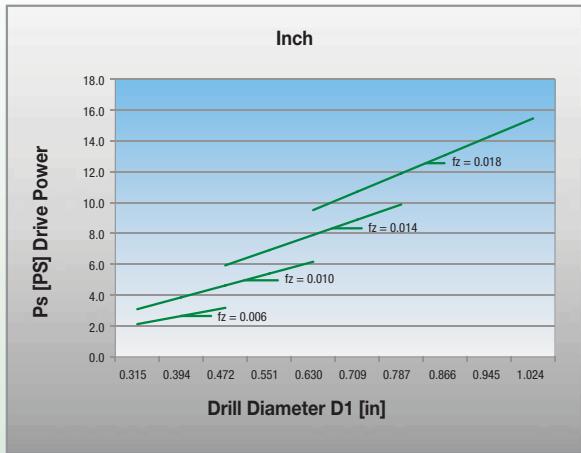
Do not use any arbor with a damaged attachment surface. Center of arbor deviation must be within 0,02mm.

Application Recommendation	Workpiece Shape
Flat Face Recommended	
Stacked Plates Recommended	
Inclined Surface >3° Not Recommended	
Half Cylindrical Not Recommended	
Hole Expansion Not Recommended	
Concave Surface Not Recommended	
Pipe Material Not Recommended	
Cored Hole Not Recommended	

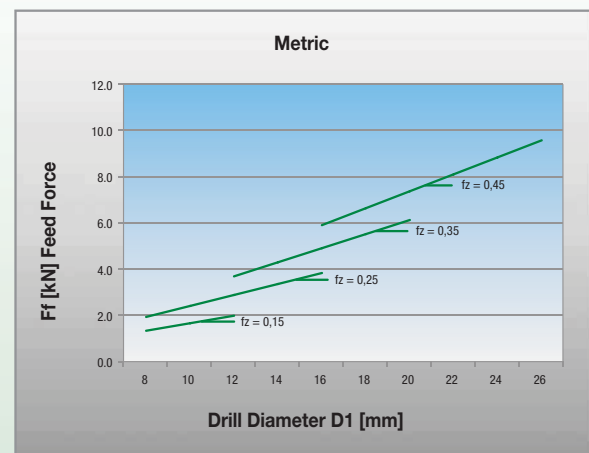
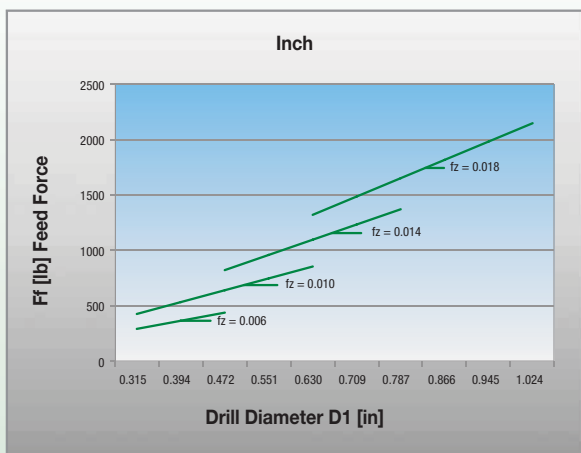
Torque



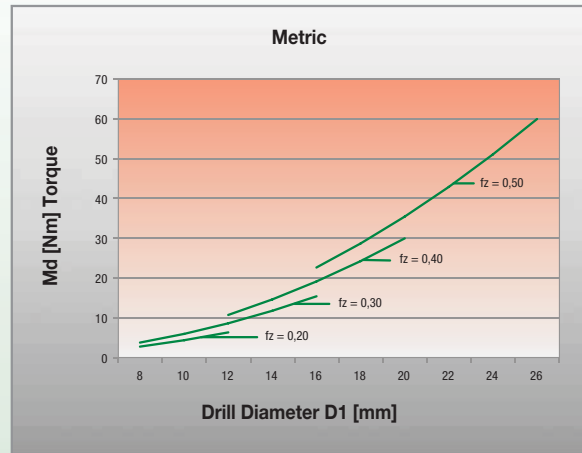
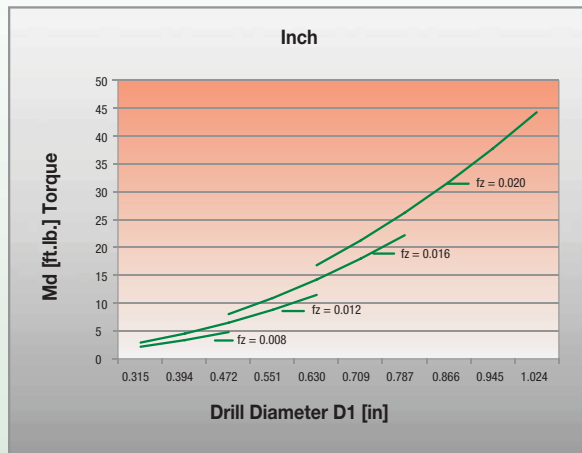
Power



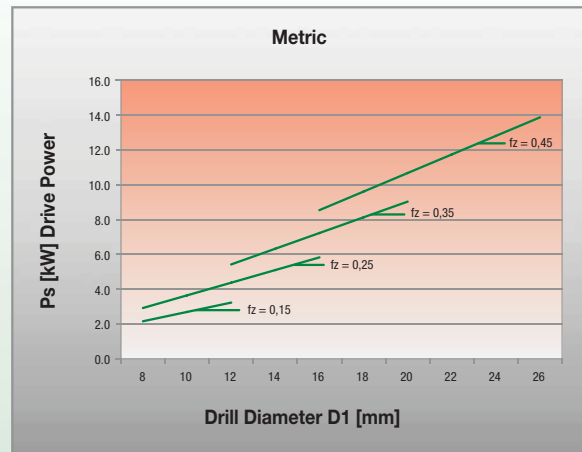
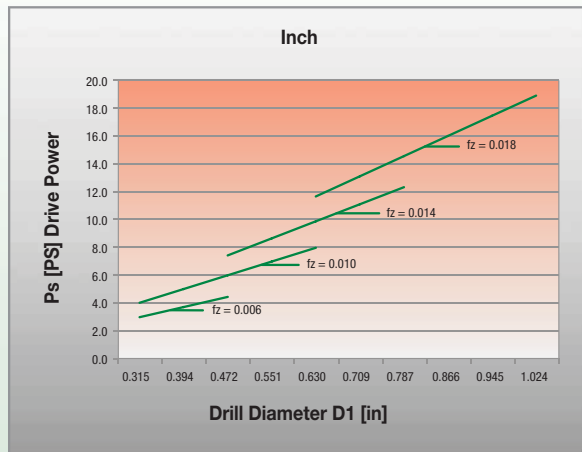
Feed Force



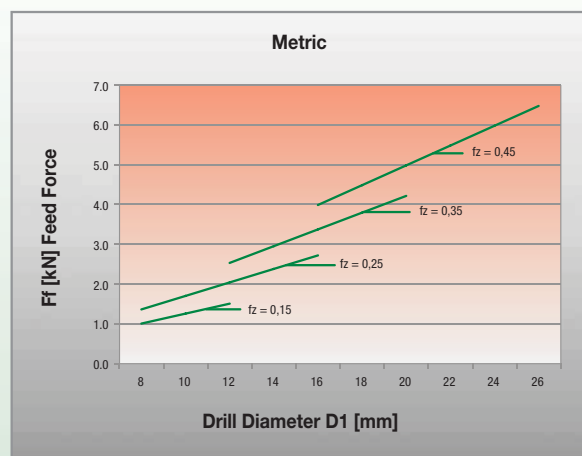
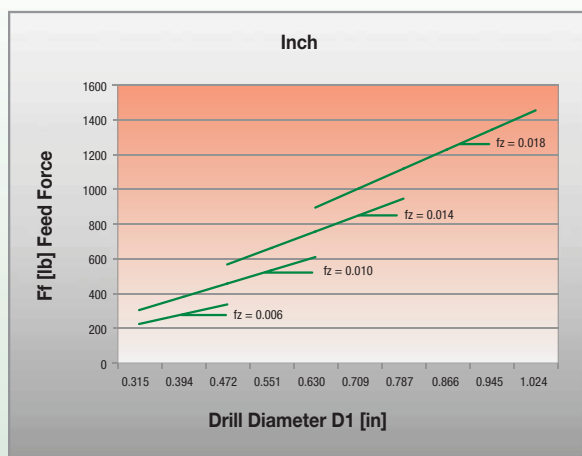
■ Torque



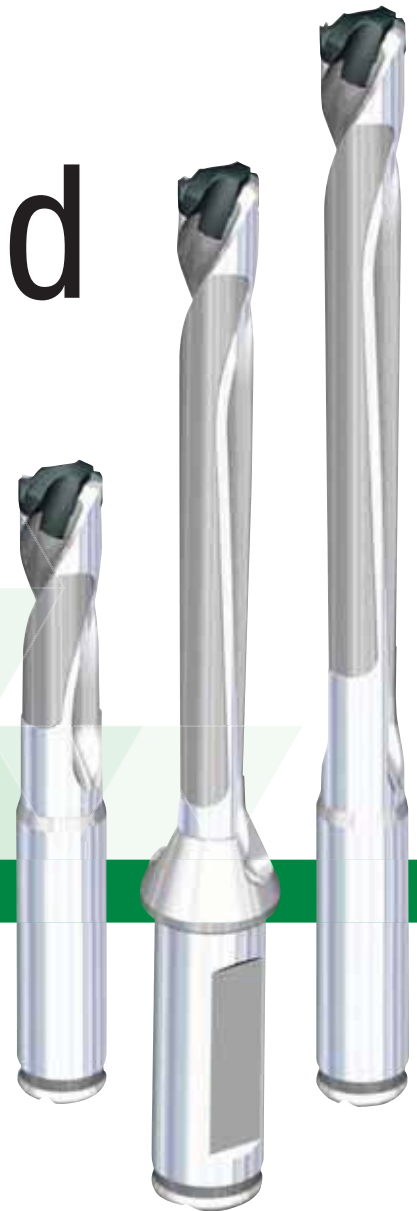
■ Power



■ Feed Force



Cut Time and Costs, Not Quality and Performance



EXTREME **CHALLENGES.**
EXTREME **RESULTS.**

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- Disposable — eliminates number of tools waiting for reconditioning, avoiding hidden costs.
- All intermediate diameters available as semi-standards. Multiple step drills available as customized solutions. New TopSTEP range of inserts offer extended chamfering and counterboring.

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