

PRODUCT NEWS

PN-E-007

 **DIJET**[®]

"Indexable EZ DRILL"

TEZD type

- TEZD-MS (3D Type): $\phi 13.6 \sim \phi 32.1$
- TEZD-ML (5D Type): $\phi 13.6 \sim \phi 32.1$
- NEW** ■ TEZD-XL (8D Type): $\phi 13.6 \sim \phi 32.1$



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"Indexable EZ DRILL" achieved easy assembly and high cutting performance.



8 × Dc
XL type
Line up

DIJET GmbH

www.dijet.de

Indexable EZ DRILL

Features

“Indexable EZ DRILL” achieved easy assembly and high cutting performance.

Eco-friendly

Adopting unique low cutting force geometry (EZ geometry) reduced 30% power consumption.

Cost reduction

High rigid body produced long tool life of holders and inserts.

High cutting performance

Adopting unique cooling system achieved surely coolant supply to cutting edge.



Line-up

Body	Hole depth	Applicable dia.
TEZD-MS Type	$3 \times Dc$	$\varphi 13.6 \sim \varphi 32.1$
TEZD-ML Type	$5 \times Dc$	$\varphi 13.6 \sim \varphi 32.1$
NEW TEZD-XL Type	$8 \times Dc$	$\varphi 13.6 \sim \varphi 32.1$

Series Expansion

● TEZD-XL type (8D)

- **Optimized flute geometry and surface treatment** achieved both body durability and excellent chip control.



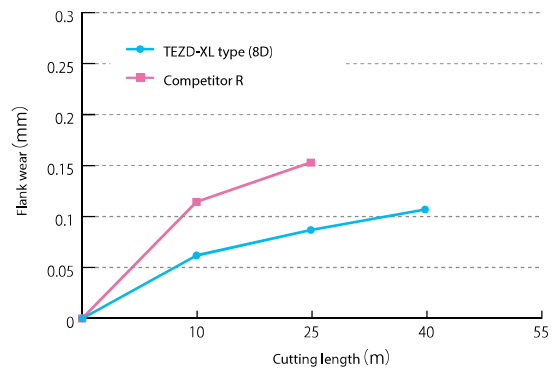
- **Adopting body clearance** prevents welding deposit of chips on the body, and reduced cutting force and achieved longer tool life of body.

Cutting performance

Tool life comparison (①C25)

- Tool No.:
 - TEZD1900S25-XL ,
 - Insert No.: TEZ1900 (\varnothing 19mm)
 - Competitor R : \varnothing 19mm
- Material : S25C C25
- Machine: Vertical MC (BT50)
- Coolant: Water soluble (Internal)
- Cutting condition :
 - $n=1,000\text{min}^{-1}$, $V_f=350\text{mm/min}$,
 - $V_c=60\text{m/min}$, $f=0.35\text{mm/rev}$, $H=130\text{mm}$ (thru.)

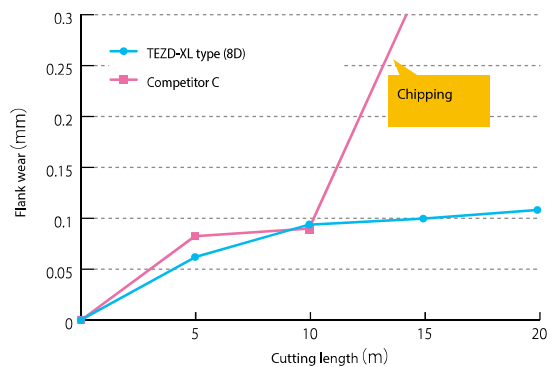
※Used guide hole drill 0.5xDc depth using TEZD-MS type (3D) with same insert.
Cutting condition is same as 8D.



Tool life comparison (②Stainless steel)

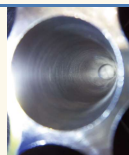
- Tool No.:
 - TEZD1900S25-XL ,
 - Insert No.: TEZ1930 (\varnothing 19.3mm)
 - Competitor C : \varnothing 19mm
- Material : SUS304 Stainless steel
- Machine: Vertical MC (BT50)
- Coolant: Water soluble (Internal)
- Cutting condition :
 - $n=660\text{min}^{-1}$, $V_f=165\text{mm/min}$,
 - $V_c=40\text{m/min}$, $f=0.25\text{mm/rev}$, $H=150\text{mm}$ (thru.)

※Used guide hole drill 0.5xDc depth using TEZD-MS type (3D) with same insert.
Cutting condition is same as 8D.



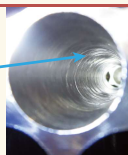
Quality of holes

TEZD type



Good surface finish

Competitor C



Rifle mark

TEZD-ML type (5D)

Optimized flute geometry and surface treatment achieved high efficient drilling.

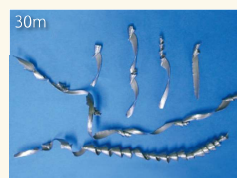


Cutting performance

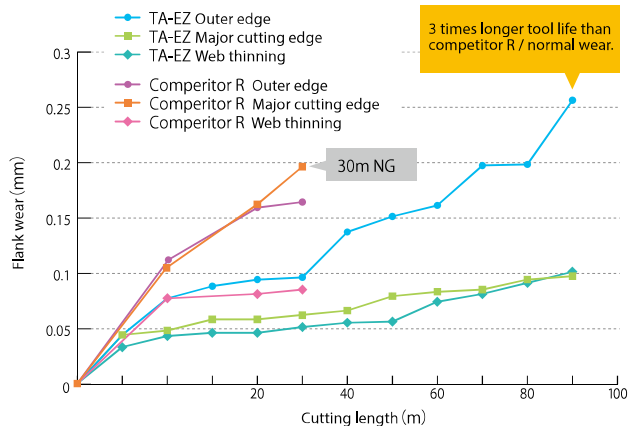
Tool life comparison (①C25)

- Tool No.:
 - TEZD1900S25-ML, Insert No.: TEZ1930(ϕ 19.3mm)
 - Competitor R : ϕ 19mm
- Material : S25C C25
- Machine : Vertical MC (BT50)
- Coolant : Water soluble (Internal)
- Cutting condition :
 - $V_c=75\text{m/min}$, $f=0.35\text{mm/rev}$, $H=95\text{mm}$ (thru.)

Competitor R



- Shape of chips
 - Uncontrolled long chips removing from cutting edge were started at 25m, and impossible to continue at 30m because of twisting chips on holder.



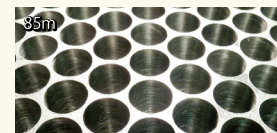
TEZD type

● Shape of chips



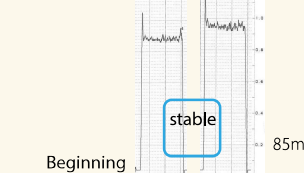
Completely breaking chips.

● Quality of holes



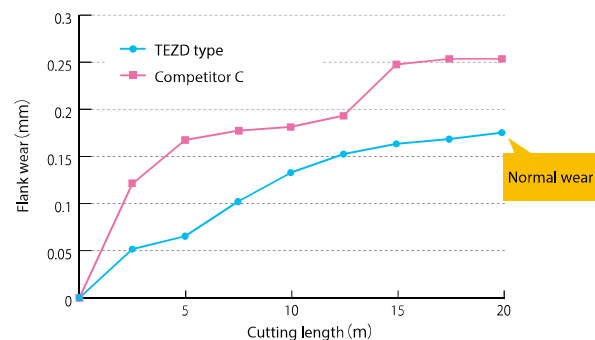
Good surface finish

● Power consumption



Tool life comparison (②Stainless steel)

- Tool No.:
 - TEZD1900S25-ML, Insert No.: TEZ1930(ϕ 19.3mm)
 - Competitor C : ϕ 19mm
- Material : SUS304 Stainless steel
- Machine : Vertical MC (BT50)
- Coolant : Water soluble (Internal)
- Cutting condition :
 - TEZD type / $V_c=50\text{m/min}$, $f=0.25\text{mm/rev}$, $n=826\text{min}^{-1}$, $V_f=207\text{mm/min}$
 - Competitor C / $V_c=60\text{m/min}$, $f=0.20\text{mm/rev}$, $n=1,005\text{min}^{-1}$, $V_f=201\text{mm/min}$



Procedure of mounting insert for TEZD

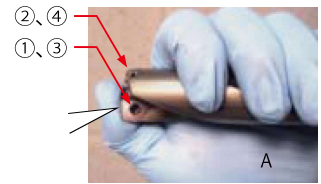
1 Removing the used insert

Remove the used insert and clean the insert pocket by brush or air blow before mounting new insert. In case of blocking clamp pocket by chips and dust, please remove them before loosening the clamp screw.



2 Mounting the new insert

Tighten the two clamp screws lightly with pressing the top of insert (①,②:initial tightening). After confirming that there is no gap, be sure to fix the insert completely by tightening the clamp screws again to the recommended torque (③,④:final tightening). And, please recommend to spread the MOLY coat on the clamp screw in advance.

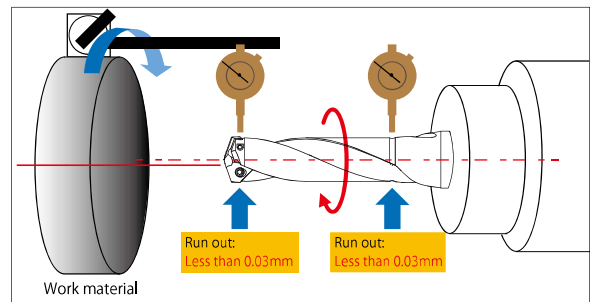


Clamp screw is expendables, so please also exchange the clamp screw whenever you exchange inserts 10 times. But, in case there is the deformation of the clamp screw, exchange it immediately.



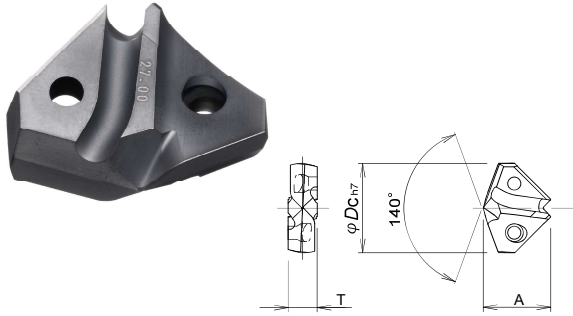
Clamp screw

1. Check run-out of insert O.D. with in 0.03mm (off set of center with in 0.015mm) and flute O.D. of shank side with in approximately 0.03mm.
2. Due to large thrust cutting forces. Set back up plate at end of shank.
3. Reduce the cutting speed and feed rate 20% against recommended cutting conditions. In case long chip coming out of flutes, increase feed rate only.



Line up

● TEZD-MS/ML/XL type



Through coolant hole
Hole Depth : $3 \times D_c / 5 \times D_c / 8 \times D_c$

● MS type (3D) / ML type (5D)



● XL type (8D)



Insert

Body

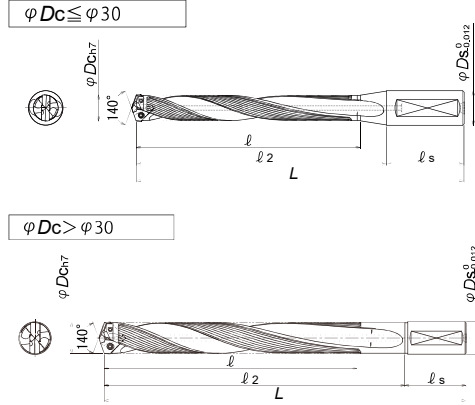
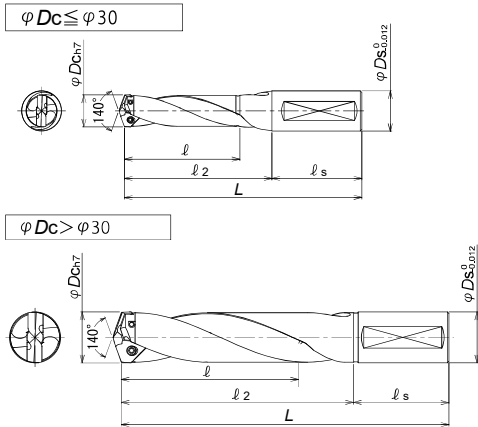
Drill dia. (mm)	Insert			Body									
	Insert No.	PVD coated	Dimensions (mm)		Applicable dia.		MS type (3D)						
		JC8050	A	T	Over	Or under	Tool No.	Stock	Dimensions (mm)				
ϕD_c								l_1	l_2	l_s	L	ϕD_s	
13.6	TEZ1360	●	11.4	4.5	13.5	14.5	TEZD1400S16-MS	●	51	65	48	113	16
13.8	TEZ1380	●											
14	TEZ1400	●											
14.1	TEZ1410	●											
14.2	TEZ1420	●											
14.3	TEZ1430	●											
14.4	TEZ1440	●											
14.5	TEZ1450	●											
14.6	TEZ1460	●	11.5	4.8	14.5	15.5	TEZD1500S20-MS	●	54	69	50	119	20
14.7	TEZ1470	●											
14.8	TEZ1480	●											
14.9	TEZ1490	●											
15	TEZ1500	●											
15.1	TEZ1510	●											
15.2	TEZ1520	●											
15.3	TEZ1530	●											
15.4	TEZ1540	●											
15.5	TEZ1550	●											
15.6	TEZ1560	●	12.4	5.0	15.5	16.5	TEZD1600S20-MS	●	58	74	50	124	20
15.7	TEZ1570	●											
15.8	TEZ1580	●											
15.9	TEZ1590	●											
16	TEZ1600	●											
16.1	TEZ1610	●											
16.2	TEZ1620	●											
16.3	TEZ1630	●											
16.4	TEZ1640	●											
16.5	TEZ1650	●											
16.6	TEZ1660	●	13.2	5.5	16.5	17.5	TEZD1700S20-MS	●	61	78	50	128	20
16.7	TEZ1670	●											
16.8	TEZ1680	●											
16.9	TEZ1690	●											
17	TEZ1700	●											
17.1	TEZ1710	●											
17.2	TEZ1720	●											
17.3	TEZ1730	●											
17.4	TEZ1740	●											
17.5	TEZ1750	●											
17.6	TEZ1760	●	13.5	5.8	17.5	18.5	TEZD1800S20-MS	●	65	83	50	133	20
17.7	TEZ1770	●											
17.8	TEZ1780	●											
17.9	TEZ1790	●											
18	TEZ1800	●											
18.1	TEZ1810	●											

1 insert per case..

● : Standard stock items

● MS type (3D) / ML type (5D)

● XL type (8D)



Clamp screw	Recommended torque (N·m)
DSW-2045H	0.9
TSW-2556H	1.2
TSW-2567H	1.2
DSW-307H	2.1
DSW-309H	2.1
TSW-3510H	3.0
TSW-3512H	3.0

▼Movie



■Body

■Body

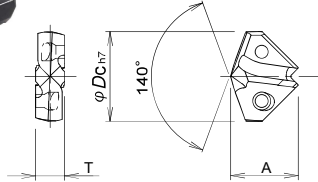
■Parts

Body						Body					Parts				
ML type (5D)						XL type (8D)					Clamp screw 	Wrench (not be included) 			
Tool No.	Stock	Dimensions (mm)				Tool No.	Stock	Dimensions (mm)							
		l	l ₂	l _s	L			φDs	l	l ₂	l _s	L	φDs		
TEZD1400S16-ML	●	80	97	48	145	16	TEZD1400S16-XL	●	119	133	48	181	16	DSW-2045H	A-07
TEZD1500S20-ML	●	85	103	50	153	20	TEZD1500S20-XL	●	128	143	50	193	20	DSW-2045H	A-07
TEZD1600S20-ML	●	91	110	50	160	20	TEZD1600S20-XL	●	136	152	50	202	20	TSW-2556H	A-08
TEZD1700S20-ML	●	96	117	50	167	20	TEZD1700S20-XL	●	145	162	50	212	20	TSW-2556H	A-08
TEZD1800S20-ML	●	102	123	50	173	20	TEZD1800S20-XL	●	153	171	50	221	20	TSW-2556H	A-08

Note) 1. All holders are supplied without insert.
2. All products are supplied without wrench & MOLY since February 2019 for our stock production.

Line up

● TEZD-MS/ML/XL type



Through coolant hole
Hole Depth : $3 \times D_c / 5 \times D_c / 8 \times D_c$

● MS type (3D) / ML type (5D)



● XL type (8D)



■ Insert

■ Body

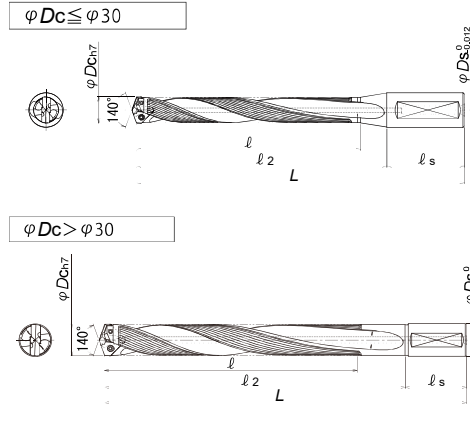
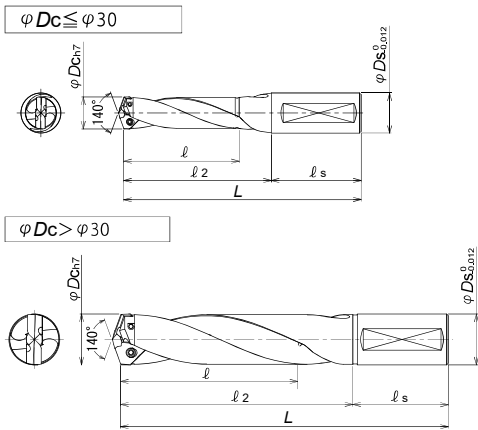
Drill dia. (mm)	Insert			Body									
	Insert No.	PVD coated	Dimensions (mm)		Applicable dia.		MS type (3D)						
		JC8050	A	T	Over	Or under	Tool No.	Stock	Dimensions (mm)				
φD_c								l	l_2	l_s	L	φD_s	
18.2	TEZ1820	●	13.5	5.8	17.5	18.5	TEZD1800S20-MS	●	65	83	50	133	20
18.3	TEZ1830	●											
18.4	TEZ1840	●											
18.5	TEZ1850	●											
18.6	TEZ1860	●	14.2	6.0	18.5	19.5	TEZD1900S25-MS	●	68	87	56	143	25
18.7	TEZ1870	●											
18.8	TEZ1880	●											
18.9	TEZ1890	●											
19	TEZ1900	●											
19.1	TEZ1910	●											
19.2	TEZ1920	●											
19.3	TEZ1930	●											
19.4	TEZ1940	●											
19.5	TEZ1950	●											
19.6	TEZ1960	●	15.1	6.5	19.5	20.5	TEZD2000S25-MS	●	72	92	56	148	25
19.7	TEZ1970	●											
19.8	TEZ1980	●											
19.9	TEZ1990	●											
20	TEZ2000	●											
20.1	TEZ2010	●											
20.5	TEZ2050	●	15.7	6.7	20.5	21.5	TEZD2100S25-MS	●	75	96	56	152	25
20.6	TEZ2060	●											
21	TEZ2100	●											
21.1	TEZ2110	●											
21.2	TEZ2120	●											
21.5	TEZ2150	●	16.6	7.5	21.5	22.5	TEZD2200S25-MS	●	79	101	56	157	25
21.6	TEZ2160	●											
21.9	TEZ2190	●											
22	TEZ2200	●											
22.1	TEZ2210	●											
22.3	TEZ2230	●											
22.5	TEZ2250	●	17.4	7.5	22.5	23.5	TEZD2300S25-MS	●	82	105	56	161	25
22.6	TEZ2260	●											
22.7	TEZ2270	●											
23	TEZ2300	●											
23.1	TEZ2310	●											
23.5	TEZ2350	●	18.2	8.0	23.5	24.5	TEZD2400S32-MS	●	86	110	60	170	32
23.6	TEZ2360	●											
24	TEZ2400	●											
24.1	TEZ2410	●											
24.2	TEZ2420	●											
24.5	TEZ2450	●											
25	TEZ2500	●											
25.1	TEZ2510	●											

1 insert per case..

● : Standard stock items

● MS type (3D) / ML type (5D)

● XL type (8D)



Clamp screw	Recommended torque (N·m)
DSW-2045H	0.9
TSW-2556H	1.2
TSW-2567H	1.2
DSW-307H	2.1
DSW-309H	2.1
TSW-3510H	3.0
TSW-3512H	3.0

▼Movie



■Body

■Body

■Parts

Body							Body						Parts		
ML type (5D)							XL type (8D)						Clamp screw 	Wrench (not be included) 	
Tool No.	Stock	Dimensions (mm)					Tool No.	Stock	Dimensions (mm)						
		l	l_2	l_s	L	φD_s			l	l_2	l_s	L	φD_s		
TEZD1800S20-ML	●	102	123	50	173	20	TEZD1800S20-XL	●	153	171	50	221	20	TSW-2556H	A-08
TEZD1900S25-ML	●	107	130	56	186	25	TEZD1900S25-XL	●	162	181	56	237	25	TSW-2567H	A-08
TEZD2000S25-ML	●	113	137	56	193	25	TEZD2000S25-XL	●	170	190	56	246	25	TSW-2567H	A-08
TEZD2100S25-ML	●	118	143	56	199	25	TEZD2100S25-XL	●	179	200	56	256	25	TSW-2567H	A-08
TEZD2200S25-ML	●	124	150	56	206	25	TEZD2200S25-XL	●	187	209	56	265	25	DSW-307H	A-10
TEZD2300S25-ML	●	129	157	56	213	25	TEZD2300S25-XL	●	196	219	56	275	25	DSW-307H	A-10
TEZD2400S32-ML	●	135	164	60	224	32	TEZD2400S32-XL	●	204	228	60	288	32	DSW-307H	A-10
TEZD2500S32-ML	●	140	170	60	230	32	TEZD2500S32-XL	●	213	238	60	298	32	DSW-309H	A-10

Note) 1. All holders are supplied without insert.
2. All products are supplied without wrench & MOLY since February 2019 for our stock production.

Line up

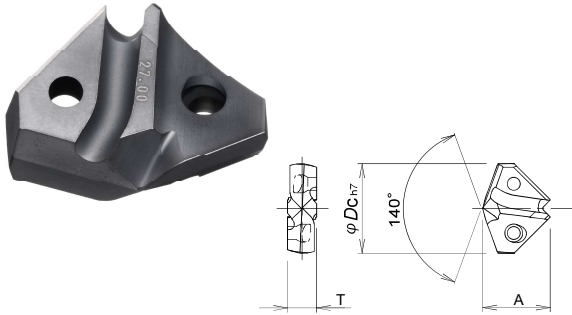
TEZD-MS/ML/XL type

Through coolant hole
Hole Depth : $3 \times D_c / 5 \times D_c / 8 \times D_c$

● MS type (3D) / ML type (5D)



● XL type (8D)



■ Insert

■ Body

Drill dia. (mm)	Insert				Body									
	Insert No.	PVD coated	Dimensions (mm)		Applicable dia.		MS type (3D)							
			φ Dc	JC8050	A	T	Over	Or under	Tool No.	Stock	Dimensions (mm)			
										ℓ	ℓ ₂	ℓ _s	L	φ D _s
25.5	TEZ2550	●	19.1	8.0	24.5	25.5	TEZD2500S32-MS	●	89	114	60	174	32	
25.6	TEZ2560	●	19.7	8.5	25.5	26.5	TEZD2600S32-MS	●	93	119	60	179	32	
25.7	TEZ2570	●												
26	TEZ2600	●												
26.1	TEZ2610	●												
26.5	TEZ2650	●	20.4	8.5	26.5	27.5	TEZD2700S32-MS	●	96	123	60	183	32	
26.6	TEZ2660	●												
26.7	TEZ2670	●												
27	TEZ2700	●												
27.1	TEZ2710	●												
27.4	TEZ2740	●												
27.5	TEZ2750	●	21.2	9.0	27.5	28.5	TEZD2800S32-MS	●	100	128	60	188	32	
28	TEZ2800	●												
28.1	TEZ2810	●												
28.5	TEZ2850	●												
28.6	TEZ2860	●	22.1	9.0	28.5	29.5	TEZD2900S32-MS	●	103	132	60	192	32	
28.7	TEZ2870	●												
29	TEZ2900	●												
29.1	TEZ2910	●												
29.5	TEZ2950	●												
30	TEZ3000	●	22.5	9.5	29.5	30.5	TEZD3000S32-MS	●	107	137	60	197	32	
30.1	TEZ3010	●												
30.5	TEZ3050	●												
31	TEZ3100	●												
31.5	TEZ3150	●	23.4	10.0	30.5	31.5	TEZD3100S32-MS	●	110	141	60	201	32	
32	TEZ3200	●												
32.1	TEZ3210	●												
			24.3	10.0	31.5	32.5	TEZD3200S32-MS	●	114	146	60	206	32	

1 insert per case.

● : Standard stock items

The appearance of TEZD-MS/ML/XL/KMS type will be changed sequentially due to improvement of the body rigidity and durability, but not changed specification.

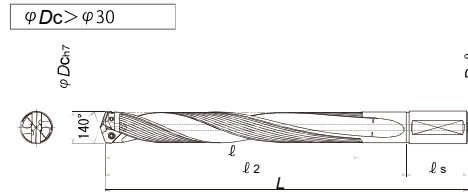
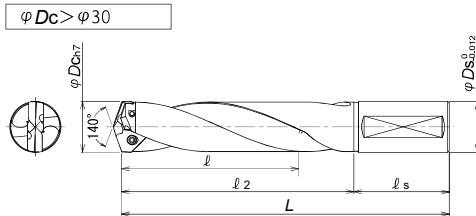
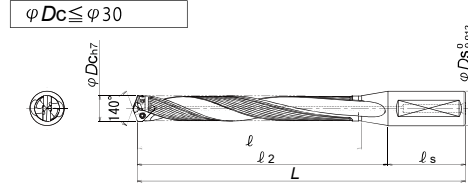
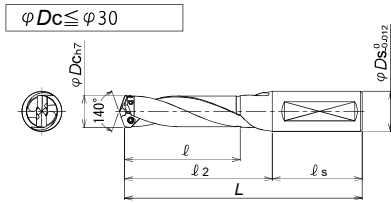
Before

After



● MS type (3D) / ML type (5D)

● XL type (8D)



Clamp screw	Recommended torque (N·m)
DSW-2045H	0.9
TSW-2556H	1.2
TSW-2567H	1.2
DSW-307H	2.1
DSW-309H	2.1
TSW-3510H	3.0
TSW-3512H	3.0

▼Movie



■ Body

■ Body

■ Parts

Body							Body							Parts	
ML type (5D)							XL type (8D)							Clamp screw 	Wrench (not be included)
Tool No.	Stock	Dimensions (mm)					Tool No.	Stock	Dimensions (mm)						
		l	l_2	l_s	L	φD_s			l	l_2	l_s	L	φD_s		
TEZD2500S32-ML	●	140	170	60	230	32	TEZD2500S32-XL	●	213	238	60	298	32	DSW-309H	A-10
TEZD2600S32-ML	●	146	177	60	237	32	TEZD2600S32-XL	●	221	247	60	307	32	DSW-309H	A-10
TEZD2700S32-ML	●	151	184	60	244	32	TEZD2700S32-XL	●	230	257	60	317	32	DSW-309H	A-10
TEZD2800S32-ML	●	157	190	60	250	32	TEZD2800S32-XL	●	238	266	60	326	32	TSW-3510H	A-15
TEZD2900S32-ML	●	162	197	60	257	32	TEZD2900S32-XL	●	247	276	60	336	32	TSW-3510H	A-15
TEZD3000S32-ML	●	168	204	60	264	32	TEZD3000S32-XL	●	255	285	60	345	32	TSW-3510H	A-15
TEZD3100S32-ML	●	173	210	60	270	32	TEZD3100S32-XL	●	248	295	60	355	32	TSW-3512H	A-15
TEZD3200S32-ML	●	179	217	60	277	32	TEZD3200S32-XL	●	256	304	60	364	32	TSW-3512H	A-15

Note) 1. All holders are supplied without insert.
2. All products are supplied without wrench & MOLY since February 2019 for our stock production.

Recommended cutting conditions

Recommended cutting conditions for TEZD-MS/ML/XL type

Work material	(Steel for structure, carbon steel C50 (~280HB))		Alloy steel 1.7223 (280~350HB)		Stainless steel SUS304 (~280HB)		Grey cast iron GG25 (Tensile strength ~350MPa)		Nodular cast iron GGG40 (Tensile strength ~450MPa)	
	V_c (m/min)	f (mm/rev)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)
V_c (m/min)	75~90		70~90		45		85~110		60~90	
f (mm/rev)	0.3~0.35		0.22~0.25		0.25		0.3~0.4		0.15~0.28	
Drill dia. (mm)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)
14	1,700	510	1,600	350	1,000	250	1,900	570	1,500	450
15	1,600	480	1,500	350	950	240	1,900	570	1,400	420
16	1,500	450	1,400	340	890	220	1,900	570	1,350	400
17	1,400	450	1,300	330	840	210	1,800	570	1,250	400
18	1,300	450	1,250	310	790	200	1,700	570	1,000	350
19	1,250	440	1,200	300	750	190	1,600	560	1,000	350
20	1,200	420	1,100	280	710	180	1,600	560	1,000	350
21	1,200	420	1,100	280	680	170	1,550	540	1,000	350
22	1,200	420	1,050	260	650	160	1,500	530	1,000	350
23	1,200	420	1,050	260	620	155	1,450	510	1,000	350
24	1,200	420	1,050	260	600	150	1,400	490	1,000	350
25	1,150	400	1,050	260	570	140	1,350	470	1,000	350
26	1,110	390	1,050	260	550	140	1,300	460	1,000	350
27	1,070	370	1,000	250	530	135	1,250	460	950	330
28	1,030	360	1,000	250	510	130	1,200	460	950	330
29	990	350	950	240	495	125	1,150	460	950	330
30	960	340	950	240	480	120	1,150	460	950	330
31	930	330	900	225	460	115	1,100	440	850	300
32	900	315	900	225	445	110	1,100	440	850	300

Note) 1. Above cutting conditions are for general guidance.

2. The figures to be adjusted according to machining shape, purpose and rigidity of machine and work clamping.

3. In case of using TEZD-XL type (8D), recommend to reduce 20% both n and V_f in the above cutting conditions. And recommend to guide hole drilling by TEZD-MS type (3D) with the same diameter as the TEZD-XL type (Depth of guide hole is 0.5D).

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Hier dreht sich was.



Mit Leidenschaft für Präzision sind wir Ihr Partner für spezielle Werkzeuge mit kurzer Lieferzeit.

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