

# PRODUCT NEWS

PN-E-007

**SERIES EXPANSION**

 **DIJET**<sup>®</sup>

"Indexable EZ DRILL"

# TEZD type

- TEZD-MS (3D Type) :  $\varnothing$  13.5 ~  $\varnothing$  32.5
- TEZD-ML (5D Type) :  $\varnothing$  13.5 ~  $\varnothing$  32.5
- TEZD-XL (8D Type) :  $\varnothing$  13.5 ~  $\varnothing$  32.5



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



New type  
Inserts  
Line up

DIJET GmbH

[www.dijet.de](http://www.dijet.de)

## 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×Dc	φ 13.5~φ 32.5
TEZD-ML Type	5×Dc	φ 13.5~φ 32.5
TEZD-XL Type	8×Dc	φ 13.5~φ 32.5

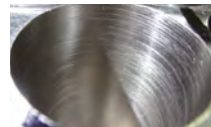
### **NEW** TEZ\*S inserts (for heat-resistant alloy)



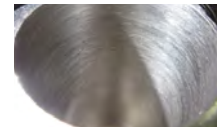
The peripheral shape with narrow margin supported by a wide land width reduces the generation of cutting-heat and improves both surface roughness and tool life.

Wide thinning pocket and the sharp tip shape improves centripetal force when biting and realizes stable drilling.

Competitor C



Conventional tool



TEZ\*S for heat-resistant alloy



Compared to inserts for general steel or competitor's products, TEZ\*S makes it possible to drill with less rifle marks!

## Series Expansion

### TEZD-XL type (8D)

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



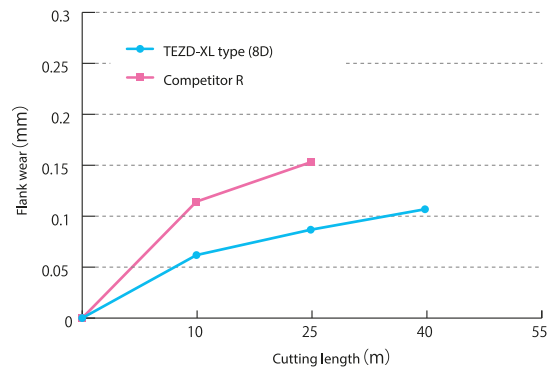
- Adopting body clearance prevents welding deposit of chips on the body, and reduced cutting force and achieved longer tool life of body.

## 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. )

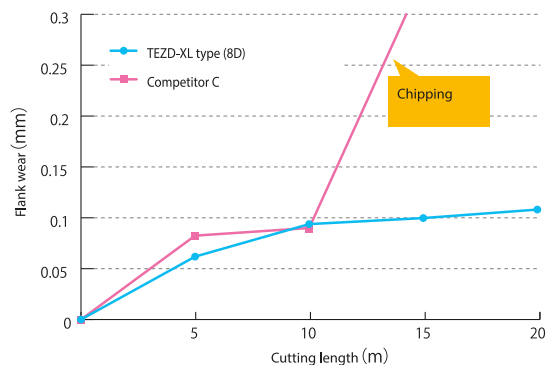
※ Used guide hole drill  $0.5 \times D_c$  depth using TEZD-MS type (3D) with same insert. Cutting condition is same as 8D.



### 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  $0.5 \times D_c$  depth using TEZD-MS type (3D) with same insert. Cutting condition is same as 8D.



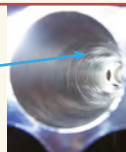
### Quality of holes

TEZD type



Good surface finish

Competitor C



Rifle mark

## TEZD-ML type (5D)

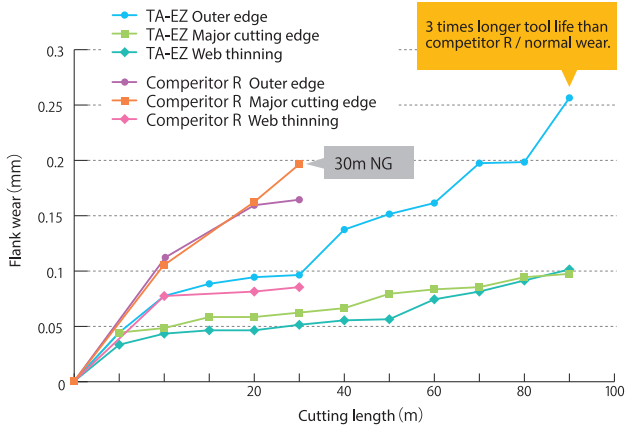
Optimized flute geometry and surface treatment achieved high efficient drilling.



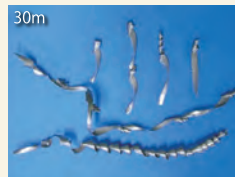
### Cutting performance

#### Tool life comparison (①C25)

- Tool No.:
  - TEZD1900S25-ML, Insert No.: TEZ1930 ( $\phi 19.3\text{mm}$ )
  - Competitor R :  $\phi 19\text{mm}$
- 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

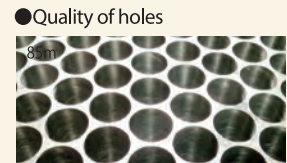


- Shape of chips
  - Uncontrolled long chips removing from cutting edge were started at 25m, and impossible to continue at 30m because of twisting chips on holder.

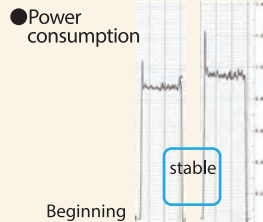
#### TEZD type



Completely breaking chips.



Good surface finish

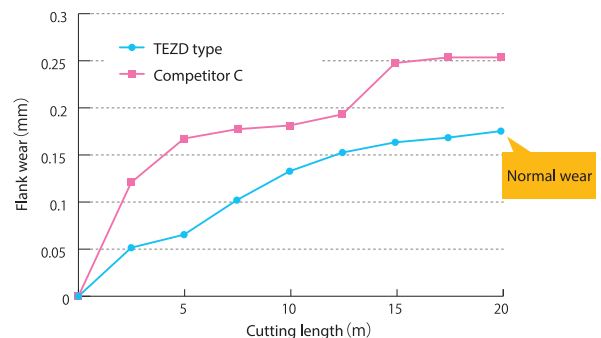


● Power consumption

Beginning stable 85m

#### Tool life comparison (②Stainless steel)

- Tool No.:
  - TEZD1900S25-ML, Insert No.: TEZ1930 ( $\phi 19.3\text{mm}$ )
  - Competitor C :  $\phi 19\text{mm}$
- 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

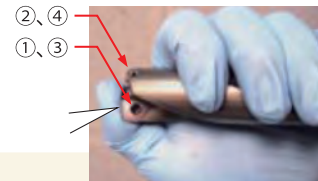
### 1 Removing the used insert

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.



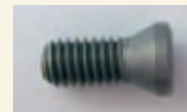
### 2 Mounting the new insert

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.



### ⚠ Attention

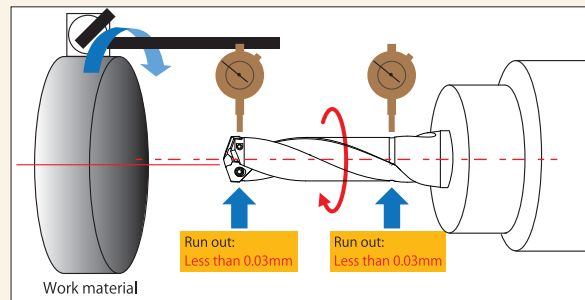
Clamp screw is expendables, so please also exchange the clamp screw whenever you exchange inserts 10 times. But, in case there is the deformation of the clamp screw, exchange it immediately.



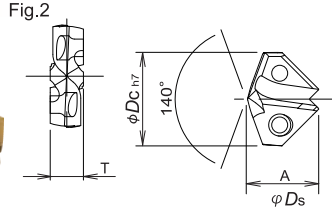
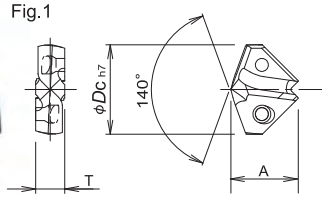
Clamp screw

### Notice of when using lathe.

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



● MS Type (3D) / ML Type (5D)



● XL Type (8D)



### ■ Body

Applicable dia.	Tool No.	Stock	L/D	Dimensions (mm)					φDs
				ℓ	ℓ <sub>2</sub>	ℓ <sub>s</sub>	L		
13.5	TEZD1400S16-MS	●	3	51	65	48	113	16	
	TEZD1400S16-ML	●	5	80	97	48	145	16	
14.5	TEZD1400S16-XL	●	8	119	133	48	181	16	
14.5	TEZD1500S20-MS	●	3	54	69	50	119	20	
	TEZD1500S20-ML	●	5	85	103	50	153	20	
15.5	TEZD1500S20-ML	●	8	128	143	50	193	20	
15.5	TEZD1600S20-MS	●	3	58	74	50	124	20	
	TEZD1600S20-ML	●	5	91	110	50	160	20	
16.5	TEZD1600S20-ML	●	8	136	152	50	202	20	
16.5	TEZD1700S20-MS	●	3	61	78	50	128	20	
	TEZD1700S20-ML	●	5	96	117	50	167	20	
17.5	TEZD1700S20-ML	●	8	145	162	50	212	20	
17.5	TEZD1800S20-MS	●	3	65	83	50	133	20	
	TEZD1800S20-ML	●	5	102	123	50	173	20	
18.5	TEZD1800S20-ML	●	8	153	171	50	221	20	

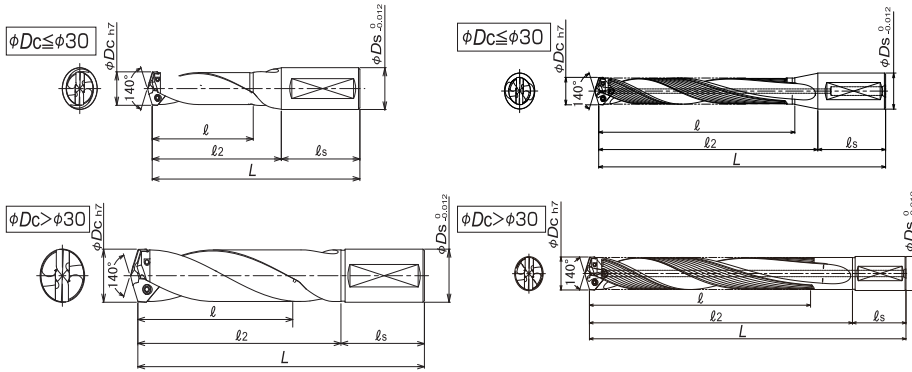
### ■ Insert

Drill dia. (mm)	PVD coated (Fig.1) JC8050	Stock	PVD coated (Fig.2) JC7515	Stock	Dimensions (mm)		Parts	
					A	T	Clamp screw	Wash note to include
13.5	TEZ1350	●	TEZ1350S	●	11.4	4.5	DSW-2045H	A-07
13.6	TEZ1360	●	TEZ1360S	●				
13.7	TEZ1370	●	TEZ1370S	●				
13.8	TEZ1380	●	TEZ1380S	●				
13.9	TEZ1390	●	TEZ1390S	●				
14.0	TEZ1400	●	TEZ1400S	●				
14.1	TEZ1410	●	TEZ1410S	●				
14.2	TEZ1420	●	TEZ1420S	●				
14.3	TEZ1430	●	TEZ1430S	●				
14.4	TEZ1440	●	TEZ1440S	●				
14.5	TEZ1450	●	TEZ1450S	●	11.5	4.8	DSW-2045H	A-07
14.6	TEZ1460	●	TEZ1460S	●				
14.7	TEZ1470	●	TEZ1470S	●				
14.8	TEZ1480	●	TEZ1480S	●				
14.9	TEZ1490	●	TEZ1490S	●				
15.0	TEZ1500	●	TEZ1500S	●				
15.1	TEZ1510	●	TEZ1510S	●				
15.2	TEZ1520	●	TEZ1520S	●				
15.3	TEZ1530	●	TEZ1530S	●				
15.4	TEZ1540	●	TEZ1540S	●				
15.5	TEZ1550	●	TEZ1550S	●	12.4	5.0	TSW-2556H	A-08
15.6	TEZ1560	●	TEZ1560S	●				
15.7	TEZ1570	●	TEZ1570S	●				
15.8	TEZ1580	●	TEZ1580S	●				
15.9	TEZ1590	●	TEZ1590S	●				
16.0	TEZ1600	●	TEZ1600S	●				
16.1	TEZ1610	●	TEZ1610S	●				
16.2	TEZ1620	●	TEZ1620S	●				
16.3	TEZ1630	●	TEZ1630S	●				
16.4	TEZ1640	●	TEZ1640S	●				
16.5	TEZ1650	●	TEZ1650S	●	13.2	5.5	TSW-2556H	A-08
16.6	TEZ1660	●	TEZ1660S	●				
16.7	TEZ1670	●	TEZ1670S	●				
16.8	TEZ1680	●	TEZ1680S	●				
16.9	TEZ1690	●	TEZ1690S	●				
17.0	TEZ1700	●	TEZ1700S	●				
17.1	TEZ1710	●	TEZ1710S	●				
17.2	TEZ1720	●	TEZ1720S	●				
17.3	TEZ1730	●	TEZ1730S	●				
17.4	TEZ1740	●	TEZ1740S	●				
17.5	TEZ1750	●	TEZ1750S	●	13.5	5.8	TSW-2556H	A-08
17.6	TEZ1760	●	TEZ1760S	●				
17.7	TEZ1770	●	TEZ1770S	●				
17.8	TEZ1780	●	TEZ1780S	●				
17.9	TEZ1790	●	TEZ1790S	●				
18.0	TEZ1800	●	TEZ1800S	●				
18.1	TEZ1810	●	TEZ1810S	●				
18.2	TEZ1820	●	TEZ1820S	●				
18.3	TEZ1830	●	TEZ1830S	●				
18.4	TEZ1840	●	TEZ1840S	●				
18.5	TEZ1850	●	TEZ1850S	●				

1 insert per case

● : Standard stock items ◎ : Soon be stocked

● 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

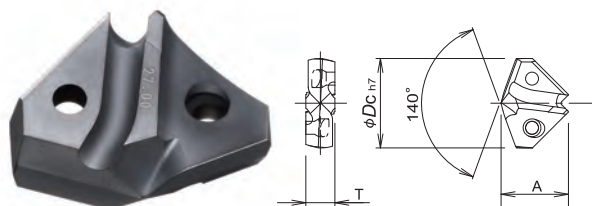
■ Insert

Applicable dia.	Tool No.	Stock	L/D	Dimensions (mm)				$\phi D_s$	Drill dia. (mm)	PVD coated (Fig.1) JC8050	Stock	PVD coated (Fig.2) JC7515	Stock	Dimensions (mm)		Parts	
				$l$	$l_2$	$l_s$	$L$							A	T	Clamp screw	Wrench (not included)
18.5 Over	TEZD1900S25-MS	●	3	68	87	56	143	25	18.6	TEZ1860	●	TEZ1860S	●	14.2	6.0	TSW-2567H	A-08
	TEZD1900S25-ML	●	5	107	130	56	186	25	18.7	TEZ1870	●	TEZ1870S	●				
19.5 Or under	TEZD1900S25-XL	●	8	162	181	56	237	25	18.8	TEZ1880	●	TEZ1880S	●	15.1	6.5	TSW-2567H	A-08
	TEZD2000S25-MS	●	3	72	92	56	148	25	18.9	TEZ1890	●	TEZ1890S	●				
19.5 Over	TEZD2000S25-ML	●	5	113	137	56	193	25	19.0	TEZ1900	●	TEZ1900S	●	15.7	6.7	TSW-2567H	A-08
	TEZD2000S25-XL	●	8	170	190	56	246	25	19.1	TEZ1910	●	TEZ1910S	●				
20.5 Or under	TEZD2100S25-MS	●	3	75	96	56	152	25	19.2	TEZ1920	●	TEZ1920S	●	16.6	7.5	DSW-307H	A-10
	TEZD2100S25-ML	●	5	118	143	56	199	25	19.3	TEZ1930	●	TEZ1930S	●				
20.5 Over	TEZD2100S25-XL	●	8	179	200	56	256	25	19.4	TEZ1940	●	TEZ1940S	●	17.4	7.5	DSW-307H	A-10
	TEZD2200S25-MS	●	3	79	101	56	157	25	19.5	TEZ1950	●	TEZ1950S	●				
21.5 Or under	TEZD2200S25-ML	●	5	124	150	56	206	25	19.6	TEZ1960	●	TEZ1960S	●	17.4	7.5	DSW-307H	A-10
	TEZD2200S25-XL	●	8	187	209	56	265	25	19.7	TEZ1970	●	TEZ1970S	●				
21.5 Over	TEZD2300S25-MS	●	3	82	105	56	161	25	19.8	TEZ1980	●	TEZ1980S	●	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-ML	●	5	129	157	56	213	25	19.9	TEZ1990	●	TEZ1990S	●				
22.5 Or under	TEZD2300S25-XL	●	8	196	219	56	275	25	20.0	TEZ2000	●	TEZ2000S	●	17.4	7.5	DSW-307H	A-10
	TEZD2200S25-MS	●	3	79	101	56	157	25	20.1	TEZ2010	●	—	—				
22.5 Over	TEZD2200S25-ML	●	5	124	150	56	206	25	20.2	TEZ2020	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2200S25-XL	●	8	187	209	56	265	25	20.3	TEZ2030	●	—	—				
22.5 Or under	TEZD2200S25-MS	●	3	79	101	56	157	25	20.4	TEZ2040	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2200S25-ML	●	5	124	150	56	206	25	20.5	TEZ2050	●	—	—				
22.5 Over	TEZD2200S25-XL	●	8	187	209	56	265	25	20.6	TEZ2060	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-MS	●	3	82	105	56	161	25	20.7	TEZ2070	●	—	—				
23.5 Or under	TEZD2300S25-ML	●	5	129	157	56	213	25	20.8	TEZ2080	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-XL	●	8	196	219	56	275	25	20.9	TEZ2090	●	—	—				
23.5 Or under	TEZD2300S25-MS	●	3	82	105	56	161	25	21.0	TEZ2100	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-ML	●	5	129	157	56	213	25	21.1	TEZ2110	●	—	—				
23.5 Or under	TEZD2300S25-XL	●	8	196	219	56	275	25	21.2	TEZ2120	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-MS	●	3	82	105	56	161	25	21.3	TEZ2130	●	—	—				
23.5 Or under	TEZD2300S25-ML	●	5	129	157	56	213	25	21.4	TEZ2140	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-XL	●	8	196	219	56	275	25	21.5	TEZ2150	●	—	—				
23.5 Or under	TEZD2300S25-MS	●	3	82	105	56	161	25	21.6	TEZ2160	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-ML	●	5	129	157	56	213	25	21.7	TEZ2170	●	—	—				
23.5 Or under	TEZD2300S25-XL	●	8	196	219	56	275	25	21.8	TEZ2180	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-MS	●	3	82	105	56	161	25	21.9	TEZ2190	●	—	—				
23.5 Or under	TEZD2300S25-ML	●	5	129	157	56	213	25	22.0	TEZ2200	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-XL	●	8	196	219	56	275	25	22.1	TEZ2210	●	—	—				
23.5 Or under	TEZD2300S25-MS	●	3	82	105	56	161	25	22.2	TEZ2220	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-ML	●	5	129	157	56	213	25	22.3	TEZ2230	●	—	—				
23.5 Or under	TEZD2300S25-XL	●	8	196	219	56	275	25	22.4	TEZ2240	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-MS	●	3	82	105	56	161	25	22.5	TEZ2250	●	—	—				
23.5 Or under	TEZD2300S25-ML	●	5	129	157	56	213	25	22.6	TEZ2260	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-XL	●	8	196	219	56	275	25	22.7	TEZ2270	●	—	—				
23.5 Or under	TEZD2300S25-MS	●	3	82	105	56	161	25	22.8	TEZ2280	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-ML	●	5	129	157	56	213	25	22.9	TEZ2290	●	—	—				
23.5 Or under	TEZD2300S25-XL	●	8	196	219	56	275	25	23.0	TEZ2300	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-MS	●	3	82	105	56	161	25	23.1	TEZ2310	●	—	—				
23.5 Or under	TEZD2300S25-ML	●	5	129	157	56	213	25	23.2	TEZ2320	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-XL	●	8	196	219	56	275	25	23.3	TEZ2330	●	—	—				
23.5 Or under	TEZD2300S25-MS	●	3	82	105	56	161	25	23.4	TEZ2340	●	—	—	17.4	7.5	DSW-307H	A-10
	TEZD2300S25-ML	●	5	129	157	56	213	25	23.5	TEZ2350	●	—	—				

1 insert per case

● : Standard stock items ○ : Soon be stocked

## Line up



● MS Type (3D) / ML Type (5D)



● XL Type (8D)



### Body

### Insert

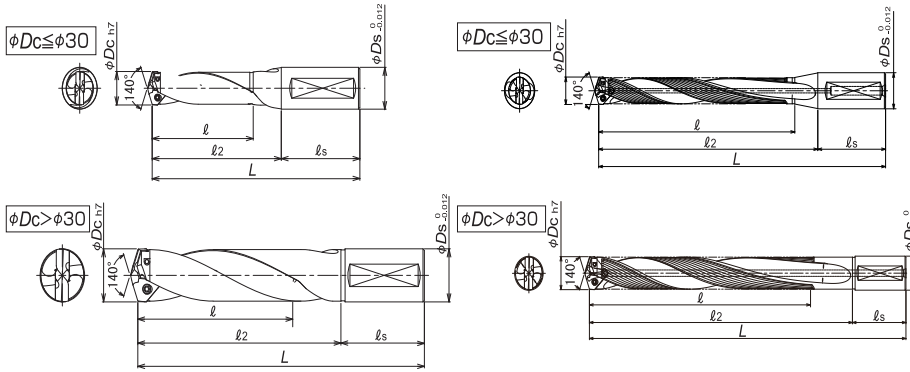
Applicable dia.	Tool No.	Stock	L/D	Dimensions (mm)					Drill dia. (mm)	PVD coated JC8050	Stock	Dimensions (mm)		Parts	
				ℓ	ℓ <sub>2</sub>	ℓ <sub>s</sub>	L	φDs				A	T	Clamp screw	Wash water outlet
23.5 Over	TEZD2400S32-MS	●	3	86	110	60	170	32	23.6	TEZ2360	●	18.2	8.0	DSW-307H	A-10
	TEZD2400S32-ML	●	5	135	164	60	224	32	23.7	TEZ2370	●				
24.5 Or under	TEZD2400S32-XL	●	8	204	228	60	288	32	23.8	TEZ2380	●				
									23.9	TEZ2390	●				
									24.0	TEZ2400	●				
									24.1	TEZ2410	●				
									24.2	TEZ2420	●				
									24.3	TEZ2430	●				
									24.4	TEZ2440	●				
									24.5	TEZ2450	●				
24.5 Over	TEZD2500S32-MS	●	3	89	114	60	174	32	24.6	TEZ2460	●	19.1	8.0	DSW-309H	A-10
	TEZD2500S32-ML	●	5	140	170	60	230	32	24.7	TEZ2470	●				
25.5 Or under	TEZD2500S32-XL	●	8	213	238	60	298	32	24.8	TEZ2480	●				
									24.9	TEZ2490	●				
									25.0	TEZ2500	●				
									25.1	TEZ2510	●				
									25.2	TEZ2520	●				
									25.3	TEZ2530	●				
									25.4	TEZ2540	●				
									25.5	TEZ2550	●				
25.5 Over	TEZD2600S32-MS	●	3	93	119	60	179	32	25.6	TEZ2560	●	19.7	8.5	DSW-309H	A-10
	TEZD2600S32-ML	●	5	146	177	60	237	32	25.7	TEZ2570	●				
26.5 Or under	TEZD2600S32-XL	●	8	221	247	60	307	32	25.8	TEZ2580	●				
									25.9	TEZ2590	●				
									26.0	TEZ2600	●				
									26.1	TEZ2610	●				
									26.2	TEZ2620	●				
									26.3	TEZ2630	●				
									26.4	TEZ2640	●				
									26.5	TEZ2650	●				
26.5 Over	TEZD2700S32-MS	●	3	96	123	60	183	32	26.6	TEZ2660	●	20.4	8.5	TSW-3510H	A-15
	TEZD2700S32-ML	●	5	151	184	60	244	32	26.7	TEZ2670	●				
27.5 Or under	TEZD2700S32-XL	●	8	230	257	60	317	32	26.8	TEZ2680	●				
									26.9	TEZ2690	●				
									27.0	TEZ2700	●				
									27.1	TEZ2710	●				
									27.2	TEZ2720	●				
									27.3	TEZ2730	●				
									27.4	TEZ2740	●				
									27.5	TEZ2750	●				
27.5 Over	TEZD2800S32-MS	●	3	100	128	60	188	32	27.6	TEZ2760	●	21.2	9.0	TSW-3510H	A-15
	TEZD2800S32-ML	●	5	157	190	60	250	32	27.7	TEZ2770	●				
28.5 Or under	TEZD2800S32-XL	●	8	238	266	60	326	32	27.8	TEZ2780	●				
									27.9	TEZ2790	●				
									28.0	TEZ2800	●				
									28.1	TEZ2810	●				
									28.2	TEZ2820	●				
									28.3	TEZ2830	●				
									28.4	TEZ2840	●				
									28.5	TEZ2850	●				

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

■Insert

Applicable dia.	Tool No.	Stock	L/D	Dimensions (mm)					Drill dia. (mm)	PVD coated JC8050	Stock	Dimensions (mm)		Parts	
				ℓ	ℓ <sub>2</sub>	ℓ <sub>s</sub>	L	φ <sub>Ds</sub>				A	T	Clamp screw	Wrench (not included)
28.5 Over	TEZD2900S32-MS	●	3	103	132	60	192	32	28.6 TEZ2860	●	22.1	9.0	TSW-3510H	A-15	
	TEZD2900S32-ML	●	5	162	197	60	257	32	28.7 TEZ2870	●					
29.5 Or under	TEZD2900S32-XL	●	8	247	276	60	336	32	28.8 TEZ2880	●	22.5	9.5	TSW-3510H	A-15	
	TEZD3000S32-MS	●	3	107	137	60	197	32	28.9 TEZ2890	●					
29.5 Over	TEZD3000S32-ML	●	5	168	204	60	264	32	29.0 TEZ2900	●	23.4	10.0	TSW-3512H	A-15	
	TEZD3000S32-XL	●	8	255	285	60	345	32	29.1 TEZ2910	●					
30.5 Or under	TEZD3100S32-MS	●	3	110	141	60	201	32	29.2 TEZ2920	●	24.3	10.0	TSW-3512H	A-15	
	TEZD3100S32-ML	●	5	173	210	60	270	32	29.3 TEZ2930	●					
30.5 Over	TEZD3100S32-XL	●	8	248	295	60	355	32	29.4 TEZ2940	●	22.1	9.0	TSW-3510H	A-15	
	TEZD3200S32-MS	●	3	114	146	60	206	32	29.5 TEZ2950	●					
31.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	29.6 TEZ2960	●	22.5	9.5	TSW-3510H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	29.7 TEZ2970	●					
31.5 Over	TEZD3200S32-ML	●	5	179	217	60	277	32	29.8 TEZ2980	●	23.4	10.0	TSW-3512H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	29.9 TEZ2990	●					
32.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	30.0 TEZ3000	●	24.3	10.0	TSW-3512H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	30.1 TEZ3010	●					
32.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	30.2 TEZ3020	●	22.1	9.0	TSW-3510H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	30.3 TEZ3030	●					
32.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	30.4 TEZ3040	●	22.5	9.5	TSW-3510H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	30.5 TEZ3050	●					
32.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	30.6 TEZ3060	●	23.4	10.0	TSW-3512H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	30.7 TEZ3070	●					
32.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	30.8 TEZ3080	●	24.3	10.0	TSW-3512H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	30.9 TEZ3090	●					
32.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	31.0 TEZ3100	●	22.1	9.0	TSW-3510H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	31.1 TEZ3110	●					
32.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	31.2 TEZ3120	●	22.5	9.5	TSW-3510H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	31.3 TEZ3130	●					
32.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	31.4 TEZ3140	●	23.4	10.0	TSW-3512H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	31.5 TEZ3150	●					
32.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	31.6 TEZ3160	●	24.3	10.0	TSW-3512H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	31.7 TEZ3170	●					
32.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	31.8 TEZ3180	●	22.1	9.0	TSW-3510H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	31.9 TEZ3190	●					
32.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	32.0 TEZ3200	●	22.5	9.5	TSW-3510H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	32.1 TEZ3210	●					
32.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	32.2 TEZ3220	●	23.4	10.0	TSW-3512H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	32.3 TEZ3230	●					
32.5 Or under	TEZD3200S32-ML	●	5	179	217	60	277	32	32.4 TEZ3240	●	24.3	10.0	TSW-3512H	A-15	
	TEZD3200S32-XL	●	8	256	304	60	364	32	32.5 TEZ3250	●					

1 insert per case

● : Standard stock items

## 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 <sup>-1</sup> )	$V_f$ (mm/min)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)	$n$ (min <sup>-1</sup> )	$V_f$ (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 <sup>-1</sup> )	$V_f$ (mm/min)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)	$n$ (min <sup>-1</sup> )	$V_f$ (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).  
 4. Please see page 14 for recommended Cutting conditions using TEZ\*S inserts.  
 5. When machining stainless steel, TEZ\*S type is recommended.

● Recommended cutting conditions for TEZD/TEZDtype using TEZ\*S inserts

Work material	Titanium alloy 30~42HRC (Ti-6Al-4V)		Stainless steel (~280HB) (SUS304)	
	$V_c$ (m/min)	$f$ (mm/rev)	$V_c$ (m/min)	$f$ (mm/rev)
	35~60		45~80	
	0.15~0.2		0.15~0.2	
Drill dia. (mm)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)
14	1,130	170	1,360	200
15	1,060	170	1,270	200
16	990	160	1,190	190
17	930	160	1,120	190
18	880	160	1,060	190
19	830	160	1,000	190
20	790	160	950	190

$V_c$ : Cutting speed  $n$ : Spindle speed  $V_f$ : Feed speed  $f$ : feed

- 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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