### PRODUCT NEWS PN-E-014

**SERIES EXPANSION** 

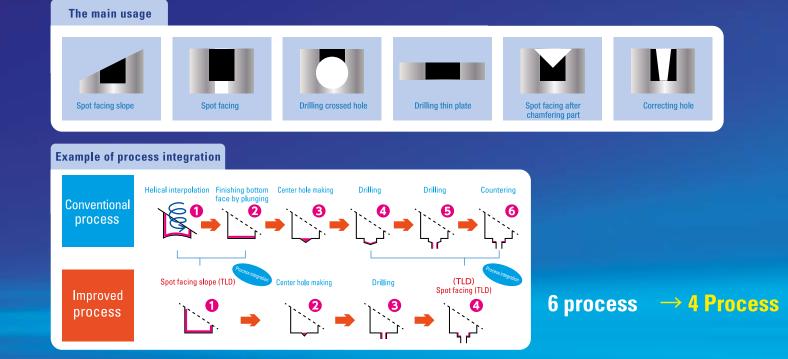
# FLAT DRILL Series

- TLDM type <Solid carbide drill>
- TLD3D/TLD5D type <Solid carbide drill>
- TLZD type <Indexable insert drill>



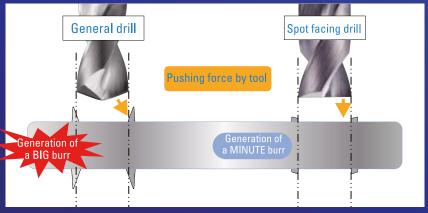
**Feature of product** 

#### Because of multi application, achieved process integration



## Widely applied from carbon & mold steel to stainless steel, cast iron & aluminum alloy

#### Restraing entrance burr and exit burr



Useful in situations where burr processing is difficult, such as crossed hole processing





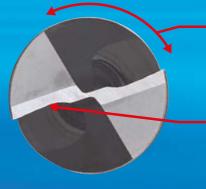




#### **■TLDM**

#### TLDM type (Drilling depth 2×Dc)

Because of shortness overhung length, improved accuracy Specializing in thin plate and bottom face processing



Wide flute design
Good chip discharge performance

Low cutting force

Excellent biting property

#### ■TLD3D/TLD5D

TLD3D/5D type (Drilling depth 3×Dc/5×Dc)

Wide flute design and Smooth surface treatment Good chip discharge performance

Through coolant hole type Specializing in deep hole drilling



Double margin shape

Improved straightness of the drilling

Low cutting force

**Excellent biting property** 

#### TLDM type

- Spot facing drill with point angle of 180 °(flat face)
- Drilling depth 2×Dc
- Helix angle:30°









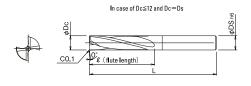


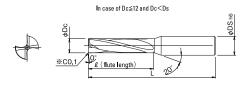
		Dimensions (mm)			
Cat. No.	Stock	φDc	l	L	φDs
TLDM010	0	1	3	60	3
TLDM011	0	1,1	3.3	60	3
TLDM012	0	1.2	3.6	60	3
TLDM013	0	1.3	3.9	60	3
TLDM014	0	1.4	4.2	60	3
TLDM015	0	1.5	4.5	60	3
TLDM016	0	1.6	4.8	60	3
TLDM017	0	1.7	5.1	60	3
TLDM018	0	1.8	5.4	60	3
TLDM019	0	1.9	5.7	60	3
TLDM020	0	2	7	60	4
TLDM021	0	2.1	7.5	60	4
TLDM022	0	2.2	8	60	4
TLDM023	0	2.3	8.5	60	4
TLDM024	0	2.4	9	60	4
TLDM025	0	2.5	9.5	60	4
TLDM026	0	2.6	10	60	4
TLDM027	0	2.7	10.5	60	4
TLDM028	0	2.8	11	60	4
TLDM029	0	2.9	11.5	60	4
TLDM030	0	3	12	60	4
TLDM030-S6	0	3	12	60	6
TLDM031	0	3.1	12	60	4
TLDM031-S6	0	3.1	12	60	6
TLDM032	0	3.2	12	60	4
TLDM032-S6	0	3.2	12	60	6
TLDM033	0	3.3	13	60	4
TLDM033-S6	0	3.3	13	60	6
TLDM034	0	3.4	13	60	4
TLDM034-S6	0	3.4	13	60	6
TLDM035	0	3.5	13	60	4
TLDM035-S6	0	3.5	13	60	6

●:Standard stock item	O:Stock in Japan

		Dimensions (mm)			
Cat. No.	Stock	φDc	l	L	φDs
TLDM036	0	3.6	14	60	4
TLDM036-S6	0	3.6	14	60	6
TLDM037	0	3.7	14	60	4
TLDM037-S6	0	3.7	14	60	6
TLDM038	0	3.8	15	60	4
TLDM038-S6	0	3.8	15	60	6
TLDM039	0	3.9	15	60	4
TLDM039-S6	0	3.9	15	60	6
TLDM040	0	4	15	60	4
TLDM040-S6	0	4	15	60	6
TLDM041	0	4.1	16	60	6
TLDM042	0	4.2	16	60	6
TLDM043	0	4.3	17	60	6
TLDM044	0	4.4	17	60	6
TLDM045	0	4.5	17	60	6
TLDM046	0	4.6	18	65	6
TLDM047	0	4.7	18	65	6
TLDM048	0	4.8	18	65	6
TLDM049	0	4.9	19	65	6
TLDM050	0	5	19	65	6
TLDM051	0	5.1	20	65	6
TLDM052	0	5.2	20	65	6
TLDM053	0	5.3	20	65	6
TLDM054	0	5.4	21	65	6
TLDM055	0	5.5	21	65	6
TLDM056	0	5.6	22	70	6
TLDM057	0	5.7	22	70	6
TLDM058	0	5.8	22	70	6
TLDM059	0	5.9	23	70	6
TLDM060	0	6	23	70	6
TLDM061	0	6.1	23	70	8
TLDM062	0	6.2	24	70	8







Cat. No.

#### ●Tolerance of drill diameter (mm)

Drill dia.	Tolerance
Dc ≤ 3	0 -0.010
3 < Dc ≤ 6	0 -0.012
6 < Dc ≤ 10	0 -0.015
10 < Dc ≤ 18	0 -0.018

Dimensions (mm)

	In case of Dc>12	91
C0.1	O' <sub>Z</sub> (flute length)	ΦDS h6

		Dimensions (mm)			
Cat. No.	Stock	φDc	l	L	φDs
TLDM063	0	6.3	24	70	8
TLDM064	0	6.4	25	70	8
TLDM065	0	6.5	25	70	8
TLDM066	0	6.6	25	75	8
TLDM067	0	6.7	26	75	8
TLDM068	0	6.8	26	75	8
TLDM069	0	6.9	27	75	8
TLDM070	0	7	27	75	8
TLDM071	0	7.1	27	75	8
TLDM072	0	7.2	28	75	8
TLDM073	0	7.3	28	75	8
TLDM074	0	7.4	28	75	8
TLDM075	0	7.5	29	75	8
TLDM076	0	7.6	29	75	8
TLDM077	0	7.7	30	75	8
TLDM078	0	7.8	30	75	8
TLDM079	0	7.9	30	75	8
TLDM080	0	8	31	75	8
TLDM081	0	8.1	31	75	10
TLDM082	0	8.2	32	75	10
TLDM083	0	8.3	32	75	10
TLDM084	0	8.4	32	75	10
TLDM085	0	8.5	32	75	10
TLDM086	0	8.6	33	80	10
TLDM087	0	8.7	33	80	10
TLDM088	0	8.8	34	80	10
TLDM089	0	8.9	34	80	10
TLDM090	0	9	35	80	10
TLDM091	0	9.1	35	80	10
TLDM092	0	9.2	35	80	10
TLDM093	0	9.3	36	80	10
TLDM094	0	9.4	36	80	10

TLDM095	0	9.5	37	80	10
TLDM096	0	9.6	37	80	10
TLDM097	0	9.7	37	80	10
TLDM098	0	9.8	38	80	10
TLDM099	0	9.9	38	80	10
TLDM100	0	10	39	80	10
TLDM101	0	10.1	39	85	12
TLDM102	0	10.2	39	85	12
TLDM103	0	10.3	40	85	12
TLDM104	0	10.4	40	85	12
TLDM105	0	10.5	40	85	12
TLDM106	0	10.6	41	85	12
TLDM107	0	10.7	41	85	12
TLDM108	0	10.8	42	85	12
TLDM109	0	10.9	42	85	12
TLDM110	0	11	42	85	12
TLDM111	0	11.1	43	85	12
TLDM112	0	11.2	43	85	12
TLDM113	0	11.3	44	85	12
TLDM114	0	11.4	44	85	12
TLDM115	0	11.5	44	85	12
TLDM116	0	11.6	45	90	12
TLDM117	0	11.7	45	90	12
TLDM118	0	11.8	45	90	12
TLDM119	0	11.9	46	90	12
TLDM120	0	12	46	90	12
TLDM125	0	12.5	48	95	12
TLDM130	0	13	50	100	12
TLDM135	0	13.5	52	100	12
TLDM140	0	14	54	100	12

<ul><li>Standard stock item</li></ul>	O:Stock in Japan

#### Spot facing drill

#### Line up

#### TLD3D type

- Spot facing drill with point angle of 180 °(flat face)
- Through coolant hole
- Drilling depth 3×Dc
- Helix angle:30°
- Double margin









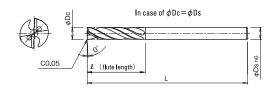


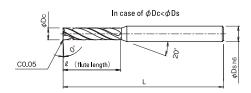
		Dimensions (mm)			
Cat. No.	Stock	φDc	l	L	φDs
TLD3DCH0300S03	•	3	14	60	3
TLD3DCH0310S04	•	3,1	14	60	4
TLD3DCH0320S04	•	3.2	15	60	4
TLD3DCH0330S04	•	3.3	15	60	4
TLD3DCH0340S04	•	3.4	16	60	4
TLD3DCH0350S04	•	3.5	16	60	4
TLD3DCH0360S04	•	3.6	17	60	4
TLD3DCH0370S04	•	3.7	17	60	4
TLD3DCH0380S04	•	3.8	18	60	4
TLD3DCH0390S04	•	3.9	18	60	4
TLD3DCH0400S04	•	4	18	60	4
TLD3DCH0410S05	•	4.1	19	65	5
TLD3DCH0420S05	•	4.2	19	65	5
TLD3DCH0430S05	•	4.3	20	65	5
TLD3DCH0440S05	•	4.4	20	65	5
TLD3DCH0450S05	•	4.5	21	65	5
TLD3DCH0460S05	•	4.6	21	65	5
TLD3DCH0470S05	•	4.7	22	65	5
TLD3DCH0480S05	•	4.8	22	65	5
TLD3DCH0490S05	•	4.9	23	65	5
TLD3DCH0500S05	•	5	23	65	5
TLD3DCH0510S06	•	5.1	23	70	6
TLD3DCH0520S06	•	5.2	24	70	6
TLD3DCH0530S06	•	5.3	24	70	6

<ul> <li>Standard stock item</li> </ul>	O:Stock in Japan
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		Dimensions (mm)			
Cat. No.	Stock	φDc	l	L	φDs
TLD3DCH0540S06	•	5.4	25	70	6
TLD3DCH0550S06	•	5,5	25	70	6
TLD3DCH0560S06	•	5.6	26	70	6
TLD3DCH0570S06	•	5.7	26	70	6
TLD3DCH0580S06	•	5.8	27	70	6
TLD3DCH0590S06	•	5.9	27	70	6
TLD3DCH0600S06	•	6	27	70	6
TLD3DCH0610S07	•	6.1	28	75	7
TLD3DCH0620S07	•	6.2	28	75	7
TLD3DCH0630S07	•	6.3	29	75	7
TLD3DCH0640S07	•	6.4	29	75	7
TLD3DCH0650S07	•	6.5	30	75	7
TLD3DCH0660S07	•	6.6	30	75	7
TLD3DCH0670S07	•	6.7	31	75	7
TLD3DCH0680S07	•	6.8	31	75	7
TLD3DCH0690S07	•	6.9	32	75	7
TLD3DCH0700S07	•	7	32	75	7
TLD3DCH0710S08	•	7.1	32	80	8
TLD3DCH0720S08	•	7.2	33	80	8
TLD3DCH0730S08	•	7.3	33	80	8
TLD3DCH0740S08	•	7.4	34	80	8
TLD3DCH0750S08	•	7.5	34	80	8
TLD3DCH0760S08	•	7.6	35	80	8
TLD3DCH0770S08	•	7.7	35	80	8







		Dimensions (mm)			
Cat. No.	Stock	φDc	l	L	φDs
TLD3DCH0780S08	•	7.8	36	80	8
TLD3DCH0790S08	•	7.9	36	80	8
TLD3DCH0800S08	•	8	36	80	8
TLD3DCH0810S09	•	8.1	37	90	9
TLD3DCH0820S09	•	8.2	37	90	9
TLD3DCH0830S09	•	8.3	38	90	9
TLD3DCH0840S09	•	8.4	38	90	9
TLD3DCH0850S09	•	8.5	39	90	9
TLD3DCH0860S09	•	8.6	39	90	9
TLD3DCH0870S09	•	8.7	40	90	9
TLD3DCH0880S09	•	8.8	40	90	9
TLD3DCH0890S09	•	8.9	41	90	9
TLD3DCH0900S09	•	9	41	90	9
TLD3DCH0910S10	•	9.1	41	95	10
TLD3DCH0920S10	•	9.2	42	95	10
TLD3DCH0930S10	•	9.3	42	95	10
TLD3DCH0940S10	•	9.4	43	95	10
TLD3DCH0950S10	•	9.5	43	95	10
TLD3DCH0960S10	•	9.6	44	95	10
TLD3DCH0970S10	•	9.7	44	95	10
TLD3DCH0980S10	•	9.8	45	95	10
TLD3DCH0990S10	•	9.9	45	95	10
TLD3DCH1000S10	•	10	45	95	10
TLD3DCH1010S11	•	10.1	46	105	11

• Standard stock item • Stock in Japan

#### ●Tolerance of drill diameter (mm)

Drill dia.	Tolerance
Dc ≤ 3	0 -0.010
3 < Dc ≤ 6	0 -0.012
6 < Dc ≤ 10	0 -0.015
10 < Dc ≤ 18	0 -0.018

			Dimen	sions (mn	mm)		
Cat. No.	Stock	φDc	l	L	φDs		
TLD3DCH1020S11	•	10.2	46	105	11		
TLD3DCH1030S11	•	10.3	47	105	11		
TLD3DCH1040S11	•	10.4	47	105	11		
TLD3DCH1050S11	•	10.5	48	105	11		
TLD3DCH1060S11	•	10.6	48	105	11		
TLD3DCH1070S11	•	10.7	49	105	11		
TLD3DCH1080S11	•	10.8	49	105	11		
TLD3DCH1090S11	•	10.9	50	105	11		
TLD3DCH1100S11	•	11	50	105	11		
TLD3DCH1110S12	•	11.1	50	115	12		
TLD3DCH1120S12	•	11.2	51	115	12		
TLD3DCH1130S12	•	11.3	115	12			
TLD3DCH1140S12	•	11.4	52	115	12		
TLD3DCH1150S12	•	11.5	52	115	12		
TLD3DCH1160S12	•	11.6	53	115	12		
TLD3DCH1170S12	•	11.7	53	115	12		
TLD3DCH1180S12	•	11.8	54	115	12		
TLD3DCH1190S12	•	11.9	54	115	12		
TLD3DCH1200S12	•	12	54	115	12		
TLD3DCH1250S13	•	12.5	57	125	13		
TLD3DCH1300S13	•	13	59	125	13		
TLD3DCH1350S14	•	13.5	61	130	14		
TLD3DCH1400S14	•	14	63	130	14		



#### ● TLD5D type

- Spot facing drill with point angle of 180 °(flat face)
- Through coolant hole
- Drilling depth 5×Dc
- Helix angle:30°
- Double margin









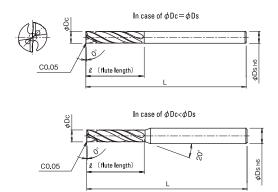


			Dimens	sions (mn	n)
Cat. No.	Stock	φDc	l	L	φDs
TLD5DCH0300S03	0	3	20	70	3
TLD5DCH0310S04	0	3.1	21	70	4
TLD5DCH0320S04	0	3.2	22	70	4
TLD5DCH0330S04	0	3.3	22	70	4
TLD5DCH0340S04	0	3.4	23	70	4
TLD5DCH0350S04	0	3.5	24	70	4
TLD5DCH0360S04	0	3.6	24	70	4
TLD5DCH0370S04	0	3.7	25	70	4
TLD5DCH0380S04	0	3.8	26	70	4
TLD5DCH0390S04	0	3.9	26	70	4
TLD5DCH0400S04	0	4	27	70	4
TLD5DCH0410S05	0	4.1	28	80	5
TLD5DCH0420S05	0	4.2	28	80	5
TLD5DCH0430S05	0	4.3	29	80	5
TLD5DCH0440S05	0	4.4	30	80	5
TLD5DCH0450S05	0	4.5	30	80	5
TLD5DCH0460S05	0	4.6	31	80	5
TLD5DCH0470S05	0	4.7	32	80	5
TLD5DCH0480S05	0	4.8	32	80	5
TLD5DCH0490S05	0	4.9	33	80	5
TLD5DCH0500S05	0	5	34	80	5
TLD5DCH0510S06	0	5.1	34	85	6
TLD5DCH0520S06	0	5.2	35	85	6
TLD5DCH0530S06	0	5.3	36	85	6

<ul> <li>Standard stock item O: Stock in Japan</li> </ul>

			n)			
Cat. No.	Stock	φDc	l	L	φDs	
TLD5DCH0540S06	0	5.4	36	85	6	
TLD5DCH0550S06	0	5.5	37	85	6	
TLD5DCH0560S06	0	5.6	38	85	6	
TLD5DCH0570S06	0	5.7	38	85	6	
TLD5DCH0580S06	0	5.8	39	85	6	
TLD5DCH0590S06	0	5.9	40	85	6	
TLD5DCH0600S06	0	6	40	85	6	
TLD5DCH0610S07	0	6.1	41	95	7	
TLD5DCH0620S07	0	6.2	42	95	7	
TLD5DCH0630S07	0	6.3	42	95	7	
TLD5DCH0640S07	0	6.4	43	95	7	
TLD5DCH0650S07	0	6.5	44	95	7	
TLD5DCH0660S07	0	6.6	44	95	7	
TLD5DCH0670S07	0	6.7	45	95	7	
TLD5DCH0680S07	0	6.8	46	95	7	
TLD5DCH0690S07	0	6.9	46	95	7	
TLD5DCH0700S07	0	7	47	95	7	
TLD5DCH0710S08	0	7.1	48	100	8	
TLD5DCH0720S08	0	7.2	48	100	8	
TLD5DCH0730S08	0	7.3	49	100	8	
TLD5DCH0740S08	0	7.4	50	100	8	
TLD5DCH0750S08	0	7.5	50	100	8	
TLD5DCH0760S08	0	7.6	51	100	8	
TLD5DCH0770S08	0	7.7	52	100	8	





			Dimens	sions (mn	1)
Cat. No.	Stock	φDc	l	L	φDs
TLD5DCH0780S08	0	7.8	52	100	8
TLD5DCH0790S08	0	7.9	53	100	8
TLD5DCH0800S08	0	8	54	100	8
TLD5DCH0810S09	0	8.1	54	110	9
TLD5DCH0820S09	0	8.2	55	110	9
TLD5DCH0830S09	0	8.3	56	110	9
TLD5DCH0840S09	0	8.4	56	110	9
TLD5DCH0850S09	0	8.5	57	110	9
TLD5DCH0860S09	0	8.6	58	110	9
TLD5DCH0870S09	0	8.7	58	110	9
TLD5DCH0880S09	0	8.8	59	110	9
TLD5DCH0890S09	0	8.9	60	110	9
TLD5DCH0900S09	0	9	60	110	9
TLD5DCH0910S10	0	9.1	61	120	10
TLD5DCH0920S10	0	9.2	62	120	10
TLD5DCH0930S10	0	9.3	62	120	10
TLD5DCH0940S10	0	9.4	63	120	10
TLD5DCH0950S10	0	9.5	64	120	10
TLD5DCH0960S10	0	9.6	64	120	10
TLD5DCH0970S10	0	9.7	65	120	10
TLD5DCH0980S10	0	9.8	66	120	10
TLD5DCH0990S10	0	9.9	66	120	10
TLD5DCH1000S10	0	10	67	120	10
TLD5DCH1010S11	0	10.1	68	130	11

• Standard stock item O:Stock in Japan

#### ●Tolerance of drill diameter (mm)

Drill dia.	Tolerance
Dc ≤ 3	0 -0.010
3 < Dc ≤ 6	0 -0.012
6 < Dc ≤ 10	0 -0.015
10 < Dc ≤ 18	0 -0.018

			Dimen	sions (mn	n)
Cat. No.	Stock	φDc	l	L	φDs
TLD5DCH1020S11	0	10.2	68	130	11
TLD5DCH1030S11	0	10,3	69	130	11
TLD5DCH1040S11	0	10.4	70	130	11
TLD5DCH1050S11	0	10.5	70	130	11
TLD5DCH1060S11	0	10.6	71	130	11
TLD5DCH1070S11	0	10.7	72	130	11
TLD5DCH1080S11	0	10.8	72	130	11
TLD5DCH1090S11	0	10.9	73	130	11
TLD5DCH1100S11	0	11	74	130	11
TLD5DCH1110S12	0	11.1	74	145	12
TLD5DCH1120S12	0	11.2	75	145	12
TLD5DCH1130S12	0	11.3	76	145	12
TLD5DCH1140S12	0	11.4	76	145	12
TLD5DCH1150S12	0	11.5	77	145	12
TLD5DCH1160S12	0	11.6	78	145	12
TLD5DCH1170S12	0	11.7	78	145	12
TLD5DCH1180S12	0	11.8	79	145	12
TLD5DCH1190S12	0	11.9	80	145	12
TLD5DCH1200S12	0	12	80	145	12
TLD5DCH1250S13	0	12.5	84	155	13
TLD5DCH1300S13	0	13	87	155	13
TLD5DCH1350S14	0	13.5	90	160	14
TLD5DCH1400S14	0	14	94	160	14



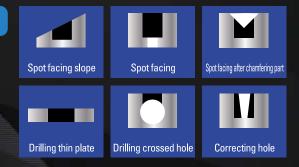






- Flat face
- Achieved non-step drilling
- $lue{}$  Size range:  $\phi$ 14- $\phi$ 32mm dia.(Drilling depth: 1.5D)

#### **Application**



#### **Feature of product**

#### Features 1

TLZD can be used repeatedly only by exchanging insert. Easy assembly of insert & body.

#### Features **2**

Achieved non-step drilling without pilot hole even if drilling slope surface and crossed hole.

#### Features **3**

By adopting new PVD coated grade "JC7550" and unique coolant system, achieved longer tool life even if drilling mold steel or stainless steel.

#### Features 4

Controlled burr in case of drilling thin plate.



Achieved low cutting force

Exclusive design body for TLZD.





# TLZD





Series expansion, new modular head TLZD type (flat face).

Suitable for spot facing in case of long overhung length such as stamping die or large-sized mold part.

#### **Feature of product**

#### Features 1

Size range:  $\phi$ 14- $\phi$ 32mm dia. And even in case of long overhung length, stable machining can be possible by combination with MSN carbide shank arbor.



#### Features 2

Achieved non-step drilling without pilot hole even if drilling slope surface and crossed hole.

#### Features 3

By adopting new PVD coated grade "JC7550" and unique coolant system, achieved longer tool life even if drilling mold steel or stainless steel.

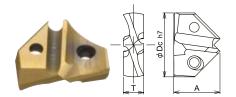
#### Features 4

Drilling depth: 0.7-1D.









Through coolant holeDrilling depth: 1.5×Dc

SS type (1.5D)



Drift   Drif	Insert					■Body									■ Parts	1/2					
Charge Street   Charge Stree			In	sert					Body						Par	s					
Second   S			PVD coated			Applica	able dia.		SS ty	pe (1.5l	D)				Clamp screw	Wrench					
14.1 T.Z1410	<i>ΦD</i> c	Insert No.	JC7550	А	Т	Over	Or under	Tool No.	Stock	l				φDs							
14.1   TLZ1410	14	TLZ1400	•													-					
14.4 T.Z1430	14.1																				
14.4 T21440	14.2		•	100				=, ==, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			40	4.0	0.4	4.0	DOM: 00 4511						
14.4 TLZ1440	14.3	TLZ1430	•	10.6	4.5	13.5	14.5	TLZD1400S16-SS	•	29	29   43	48	91	16	DSW-2045H	A-07					
14.6 TLZ1450	14.4		•																		
14.6 TL21400	14.5		•																		
14.7   T.121470   ●	14.6		•																		
14.8			•																		
14.9   TLZ1490	14.8		•																		
15.			•																		
15.1 TLZ1510			•	11.3	4.0		1.55	TI 7D / FCCCCC		31		F.0	00	00	DOM 60 15::	4.67					
15.2 TL21520					4.8	14.5	15.5	1LZD1500S20-SS			31   46	50	96	20	DSW-2045H	A-07					
15.3 TL21530																					
15.4 TL21540 ● 15.5 TL21550 ● 15.5 TL21550 ● 15.6 TL21550 ● 15.7 TL21570 ● 15.8 TL21580 ● 15.9 TL21580 ● 15.9 TL21580 ● 16.1 TL21610 ● 16.1 TL21610 ● 16.2 TL21620 ● 16.3 TL21630 ● 16.4 TL21630 ● 16.4 TL21630 ● 16.6 TL21660 ● 16.6 TL21690 ● 17.1 TL21700 ● 12.6 16.9 TL21690 ● 17.1 TL21710 ●																					
15.5 TLZ1550	15.4		•																		
15.6 TLZ1560			•																		
15.7 TLZ1570																					
15.8 TLZ1580																					
15.9 TLZ1590				-																	
16. TLZ1600																					
16.1 TLZ1610									_			10 50	99		TSW-2556H	A-08					
16.2 TLZ1620				12.1	5.0	15.5	16.5	TLZD1600S20-SS	•	33	49	50		20							
16.3 TLZ1630																					
16.4 TLZ1640 ● 16.5 TLZ1650 ● 16.6 TLZ1660 ● 16.7 TLZ1670 ● 16.8 TLZ1680 ● 17 TLZ1700 ● 17.1 TLZ1710 ● 17.2 TLZ1720 ● 17.3 TLZ1730 ● 17.4 TLZ1730 ● 17.5 TLZ1750 ● 17.6 TLZ1750 ● 17.7 TLZ1700 ● 17.8 TLZ1750 ● 17.9 TLZ1790 ● 17.9 TLZ1790 ● 18.1 TLZ1810 ● 18.2 TLZ1820 ● 18.3 TLZ1820 ● 18.3 TLZ1830 ● 18.4 TLZ1840 ●																					
16.5 TLZ1650																					
16.6 TLZ1660																					
16.7 TLZ1670																					
16.8 TLZ1680																					
16.9 TLZ1690																					
17 TLZ1700		_																			
17.1 TLZ1710				400				TI 70 1700000		6-		F.0	100	00	TOW 6550:	4.60					
17.2 TLZ1720 ● 17.3 TLZ1730 ● 17.4 TLZ1740 ● 17.5 TLZ1750 ● 17.6 TLZ1760 ● 17.7 TLZ1770 ● 17.8 TLZ1780 ● 17.9 TLZ1790 ● 18 TLZ180 ● 18.1 TLZ1810 ● 18.2 TLZ1820 ● 18.3 TLZ1830 ● 18.4 TLZ1840 ●				12.6	5.5	16.5	1/.5	1LZD1700S20-SS		35	52	50	102	20	1SW-2556H	A-08					
17.3 TLZ1730																					
17.4 TLZ1740																					
17.5 TLZ1750			_																		
17.6 TLZ1760			•																		
17.7 TLZ1770			•																		
17.8 TLZ1780																					
17.9     TLZ1790     ●       18     TLZ1800     ●       18.1     TLZ1810     ●       18.2     TLZ1820     ●       18.3     TLZ1830     ●       18.4     TLZ1840     ●																					
18     TLZ1800     ●       18.1     TLZ1810     ●       18.2     TLZ1820     ●       18.3     TLZ1830     ●       18.4     TLZ1840     ●																					
18.1 TLZ1810				46.5		,	1.5 -			-			4.6.=	0.5	TOW 6 = = 5:						
18.2       TLZ1820       ●         18.3       TLZ1830       ●         18.4       TLZ1840       ●				13.2	5.8	17.5	18.5	1LZD1800S20-SS		37	55	50	105	20	1SW-2556H	A-08					
18.3 TLZ1830																					
18.4 TLZ1840 ●					-																
		_																			
	18.5	TLZ1850	•																		



φDc≥φ30

φDc>φ30

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							

Insert					Boo	ly			Parts 2/2								
		Insert						Body						Par	ts		
Drill dia. (mm)		PVD coated		Dimensions (mm)		ble dia.		SS ty	pe (1.5[	0)				Clamp screw	Wrench		
	Insert No.	107550		_						Dimensio		ns (mm)		ons (mm)		R	(Not be included)
φ <b>D</b> c		JC7550	Α	Т	Over	Or under	Tool No.	Stock	l	<b>l</b> 2	<b>ℓ</b> s	L	φDs				
18,6	TLZ1860	•															
18.7	TLZ1870	•															
18.8	TLZ1880	•															
18.9	TLZ1890	•															
19	TLZ1900	•	13.6	6.0	18.5	19.5	TLZD1900S25-SS		39	58	56	114	25	TSW-2567H	A-08		
19.1	TLZ1910	•	13.6	0.0	10.5	19.5	12201300323-33		39	30	30	' ' 4	23	13W-230711	A-00		
19.2	TLZ1920	•															
19.3	TLZ1930	•															
19.4	TLZ1940	•															
19.5	TLZ1950	•															
19.6	TLZ1960	•															
19.7	TLZ1970	•															
19.8	TLZ1980	•	14.6	6.5	19.5	20.5	TLZD2000S25-SS		41	61	EG	117	25	TSW-2567H	A-08		
19.9	TLZ1990	•	14.6	0.5	19.5	20.5	11202000323-33		41	01	56	117	25	13W-2307H	A-00		
20	TLZ2000	•															
20.5	TLZ2050	•															
21	TLZ2100	•	150	6.7	20.5	21.5	TLZD2100S25-SS	•	43	64	EG	120	O.E.	TOW OF CTU	A-08		
21.5	TLZ2150	•	15.2	0.7	20.5	21.5	11202100325-33		43	04	56	120	25	TSW-2567H			
22	TLZ2200	•	15.9	7.5	21.5	22.5	TLZD2200S25-SS	•	45	67	EC	123	OF	DCW/ 20711	A-10		
22.5	TLZ2250	•	15.9	/.5	21.5	22.5	11202200323-33		45	0/	56	123	25	DSW-307H	A-10		
23	TLZ2300	•	10.7	7.5	00.5	00.5	TLZD2300S25-SS		47	70	70 56	126	25	DCW/ 20711	A 10		
23.5	TLZ2350	•	16.7	7.5	22.5	23.5	11202300325-33		47	7   70	0   56	126	25	DSW-307H	A-10		
24	TLZ2400	•	17.4	8.0	23.5	04.5	TLZD2400S32-SS	•	49	73	60	133	32	DCW 20711	A 10		
24.5	TLZ2450	•	17.4	0.0	23.5	24.5	11202400332-33		49	/3	60	133	32	DSW-307H	A-10		
25	TLZ2500	•	100		04.5	OF F	TI 7D2500022 00		E 1	76	60	100	20	DCM 20011	A 10		
25.5	TLZ2550	•	18.3	8.0	24.5	25.5	TLZD2500S32-SS		51	76	60	136	32	DSW-309H	A-10		
26	TLZ2600	•	18.8	8.5	25.5	26.5	TLZD2600S32-SS		53	79	60	139	32	DSM 30011	A-10		
26.5	TLZ2650	•	10.8	0.5	∠3.5	∠0.5	11202000332-55		53	/9	60	139	ა∠	DSW-309H	A-10		
27	TLZ2700	•	19.5	8.5	26.5	27 E	TLZD2700S32-SS		55	82	60	142	20	Dem 20011	۸ 10		
27.5	TLZ2750	•	19.5	6.5	20.5	27.5	11202100332-33		33	02	60	142	32	DSW-309H	A-10		
28	TLZ2800	•	20.3	9.0	27.5	28.5	TLZD2800S32-SS	•	57	85	60	145	32	TSW-3510H	A 15		
28.5	TLZ2850	•	20.3	9.0	27.5	20.5	1220000002-00		37	65	00	145	ა∠	13W-35TUH	A-15		
29	TLZ2900	•	21.1	9.0	28.5	20 E	TLZD2900S32-SS	•	EO	00	60	148	20	TCW 251011	A 15		
29.5	TLZ2950	•	21.1	9.0	28.5	29.5	15202900002-00		59	88	60	148	32	TSW-3510H	A-15		
30	TLZ3000	•	01.5	0.5	20.5	20.5	TLZD3000S32-SS		64	0.1	60	151	20	TOW 051011	۸ . ۲		
30.5	TLZ3050	•	21.5 9.5		29.5	30.5	11203000532-88	•	61	91	60	151	32	TSW-3510H	A-15		
31	TLZ3100	•	00.0	100	20.5	04.5	TI 7D2100020 00				-00	454	00	TOW 054611	A 4.5		
31.5	TLZ3150	•	22.3	10.0	30.5	31.5	TLZD3100S32-SS		_	94	60	154	32	TSW-3512H	A-15		
32	TLZ3200	•	23.1	10.0	31.5	32.5	TLZD3200S32-SS	•	_	97	60	157	32	TSW-3512H	A-15		

1 insert per case Standard stock items

Note) All cutters are supplied without inserts, wrench and MOLY.









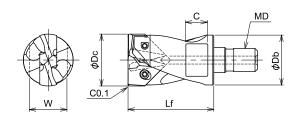


Through coolant holeHole Depth: 0.7~1×Dc



Inse	ert				Во	dy								■ Parts		Recommended arbor 1/2				
		Insert						Во	ody					Pari	ts	Arbor				
Drill dia. (mm)		PVD coated	Dimei (m	nsions m)		cable ia.	TL	ZD typ	e (0.7-	1D)				Clamp screw	Wrench					
	Insert No.	ICZEEO	_	_		0r				Dime	nsions	(mm)	1	(B)						
<i>ΦD</i> c	msert ivo.	JC7550	Α	T	Over	under	Tool No.	Tool No. Stock Lf φDb ME				С	W							
14	TLZ1400	•													•					
14.1	TLZ1410	•	1																	
14.2	TLZ1420	•	1.00	, ,	40.5	445	TI 704 400 MG		07.5			_	10	DOW 00 4511	4.07	MONI MO district Od CO				
14.3	TLZ1430	•	10.6	4.5	13.5	14.5	TLZD1400-M6	•	27.5	13.1	M6	7	10	DSW-2045H	A-07	MSN-M6-**-S16C				
14.4	TLZ1440	•	1																	
14.5	TLZ1450	•	1																	
14.6	TLZ1460	•																		
14.7	TLZ1470	•																		
14.8	TLZ1480	•	11.3																	
14.9	TLZ1490	•		11.3	11.3															
15	TLZ1500	•				4.8	14.5	15.5	TLZD1500-M8	•	29.5	14	M8	8	12	DSW-2045H	A-07	MSN-M8-**S-S14C		
15.1	TLZ1510	•																		
15.2	TLZ1520	•																		
15.3	TLZ1530	•																		
15.4	TLZ1540	•																		
15.5	TLZ1550	•																		
15.6	TLZ1560	•																		
15.7	TLZ1570	•																		
15.8 15.9	TLZ1580	•																		
16	TLZ1590 TLZ1600	•		5.0																
16.1	TLZ1600	•	12.1		15.5	16.5	TLZD1600-M8	•	29.5	15	M8	8	12	TSW-2556H	A-08	MSN-M8-**S-S15C				
16.2	TLZ1610						. 222 1838 1118													
16.3	TLZ1630		1																	
16.4	TLZ1640	•	1																	
16.5	TLZ1650	•	1																	
16.6	TLZ1660	•																		
16.7	TLZ1670	•																		
16.8	TLZ1680	•																		
16.9	TLZ1690	•	1																	
17	TLZ1700	•	126	5.5	16.5	175	TLZD1700-M8		30.5	16	MO	8	12	   TSW-2556H	A-08	MSN-M8-**S-S16C				
17.1	TLZ1710	•	]12.0	5.5	10.5	17.5	11201700-1018	•	30.5	16	M8	0	12	H0CC2-700H	A-08	1019-1010-449-910C				
17.2	TLZ1720	•																		
17.3	TLZ1730	•																		
17.4	TLZ1740	•																		
17.5	TLZ1750	•																		
17.6	TLZ1760	•																		
17.7	TLZ1770	•																		
17.8	TLZ1780	•																		
17.9	TLZ1790	•																		
18	TLZ1800	•	13.2	5.8	17.5	18.5	TLZD1800-M8	•	30.5	17	M8	8	12	TSW-2556H	A-08	MSN-M8-**S-S16C				
18.1	TLZ1810	•																		
18.2	TLZ1820	•																		
18.3	TLZ1830	•																		
18.4	TLZ1840	•	-																	
18.5	TLZ1850																			





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

Inse	ert				■Body								■ Parts		Recommended arbor 2/2	
		Insert						Во	dy					Parts		Arbor
Drill dia. (mm)		PVD coated Dimensions (mm) Applicable dia. TLZD type (0.7-1D)								Clamp screw	Wrench (Not be included)					
φDc	Insert No.	JC7550	А	Т	Over	Or under	Tool No.	Stock	Lf	Dime φDb	nsions MD	(mm)	W			
18.6	TLZ1860	•														
18.7	TLZ1870	•			18.5	19.5	TLZD1900-M10	•	38.5				14	TSW-2567H	A-08	MSN-M10-**S-S18C
18.8	TLZ1880	•		6.0						18 M						
18.9	TLZ1890	•	13.6								M10	9				
19	TLZ1900	•														
19.1	TLZ1910	•														
19.2	TLZ1920	•	-													
19.3 19.4	TLZ1930	•	-													
19.4	TLZ1940 TLZ1950	•														
19.6	TLZ1950															
19.7	TLZ1970	•			19.5	20.5	TLZD2000-M10	•	38.5			9	14	TSW-2567H	A-08	MSN-M10-**-S20C
19.8	TLZ1980	•	1	6.5												
19.9	TLZ1990	•	14.6							19 M	M10					
20	TLZ2000	•	1													
20.5	TLZ2050	•														
21	TLZ2100	•	15.2	6.7	20.5	21.5	TLZD2100-M10		38.5	20	M10	9	14	TSW-2567H	A-08	MSN-M10-**S-S20C
21.5	TLZ2150	•	10.2	0.7	20.3	21.5	TLZDZ 100-W10		00.0		IVITO		14	10W 230711	7,00	WON WITO 440 0200
22	TLZ2200	•	15.9	7.5	21.5	22.5	TLZD2200-M10		38.5	21	м10	9	14	DSW-307H	A-10	MSN-M10-**S-S20C
22.5	TLZ2250	•						Ľ	-							
23	TLZ2300	•	16.7	7.5	22.5	23.5	TLZD2300-M10	•	38.5	22	M10	9	14	DSW-307H	A-10	MSN-M10-**S-S20C
23.5	TLZ2350	•			-											
24.5	TLZ2400	•	17.4	8.0	23.5	24.5	TLZD2400-M12	•	43	23	M12	11	19	DSW-307H	A-10	MSN-M12-**S-S23C
25	TLZ2450 TLZ2500	•			-											
25.5	TLZ2500 TLZ2550		18.3	8.0	24.5	25.5	TLZD2500-M12	•	43	24	M12	11	19	DSW-309H	A-10	MSN-M12-**-S25C
26	TLZ2530	•			25.5	26.5	TLZD2600-M12	•						DSW-309H	A-10	
26.5	TLZ2650	•	18.8	8.5					43	25	M12	11	19			MSN-M12-**S-S25C
27	TLZ2700	•	10 -	0.5	26.5	27.5	TLZD2700-M12	•	43	00	N44 C	4.4	10	DSW-309H	A-10	MSN-M12-**S-S25C
27.5	TLZ2750	•	19.5	8.5						26	M12	11	19			
28	TLZ2800	•	20.3	9.0	27 5	28.5	TI 7D2900 M40		43	27	M12	11	19	TOW 251011	A 15	MONIMIO *** COEC
28.5	TLZ2850	•	20.3	9.0	27.5	∠8.5	TLZD2800-M12		43		10112	11	19	TSW-3510H	A-15	MSN-M12-**S-S25C
29	TLZ2900	•	21.1	9.0	28 5	29.5	TLZD2900-M16		51	28	M16	12	22	TSW-3510H	A-15	MSN-M16-**S-S28C
29.5	TLZ2950	•	_ '- '	3.0	20.5	25.5	1 LZDZ300-W10		J .	20	WITO	'-	~~	1300-33100	A-15	1VIOIN-1VII 0-773-3200
30	TLZ3000	•	21.5	9.5	29.5	30.5	TLZD3000-M16		51	29	М16	12	22	TSW-3510H	A-15	MSN-M16-**-S32C
30.5	TLZ3050	•		5.5		55.5								. 5 55.011	7.10	
31	TLZ3100	•	22.3	10.0	30.5	31.5	TLZD3100-M16	•	51	30	M16	12	22	TSW-3512H	A-15	MSN-M16-**-S32C
31.5	TLZ3150	•	00.4						F.4	0.1	1440	4.4	00			MONI MAIO destriction COCC
32	TLZ3200		23.1	10.0	31.5	32.5	TLZD3200-M16		51	31	M16	14	26	TSW-3512H	A-15	MSN-M16-**-S32C

1 insert per case Standard stock items

Note) All cutters are supplied without inserts, wrench and MOLY.





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