

# NPA

September 2015

[www.taegutec.com](http://www.taegutec.com)

New Product Announcement No. 2015-19



## T-DEEP

New Indexable Gundrill & Deep Drilling Heads  
with Unique Trigonal Insert



 **TaeguTec**  
Member IMC Group

## New Product Announcement No. 2015-19

**T-DEEP**

Now available from TaeguTec, a new line of indexable gundrills and deep drilling heads that cover single and double tube systems.

The design of both the gundrill and deep drilling heads' direct mounting systems reduce down time, are offered in a diameter range from 16 mm-28 mm and can be applied in several important industries such as mold and die, power generation, windpower, automotive, ship building, machine tool, railway and oil and gas.

To accompany the new additions to the T-DEEP family, TaeguTec is introducing the TOGT line, a new series of inserts specifically designed for deep hole machining.

The important features of the TOGT insert are highlighted with a three cutting edge chip splitter that generates optimized chip shapes, a positive rake angle as well as a wiper for high hole surface quality and high feed.

Furthermore, the new insert line is available in five sizes – 08 mm-12 mm – and is coated with TaeguTec's versatile TT9030 PVD grade.

### TBTA-TR Deep Drilling Heads type

Both reduce down time due to their direct mounting system design and are available in either a single or double tube system.

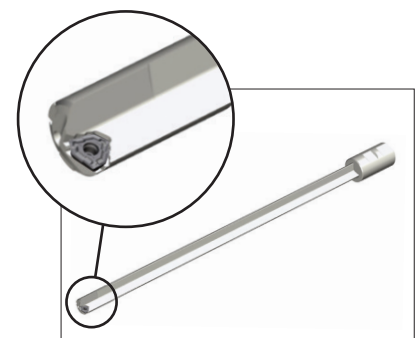
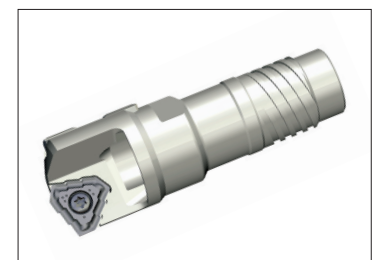
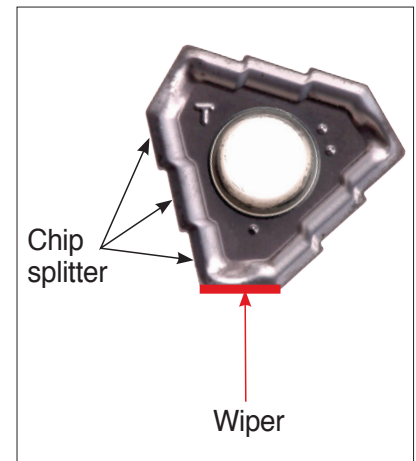
New TBTA-TR head will replace the existing TBTA-B type.

- Single tube diameter range: 16 mm-28 mm
- Double tube diameter range: 18.4 mm-28 mm

### TRGD / TRGDL type - Insert type gundrill

Designed specifically for machining center and gundrill machines, customers can choose by either driver types or flute length.

- Gundrill diameter range: 16 mm-28 mm



## FEATURES

- Unique cutting edge geometry generates optimized chip shape.
- Highly accurate ground insert achieves high hole quality and accurate hole diameters (IT10).
- The TOGT insert's unique wiper guarantees an extra fine surface roughness.
- Reduced down time due to direct mounting system design.

## Potential industries



Mold & Die



Power generation



Windpower



Automotive



Shipbuilding



Machine tool



Railway



Oil & Gas

### Availability

Available upon request. Please contact Unitac.

### Price

Not available in the GAL system, contact Unitac directly.

Sincerely,  
TaeguTec

**Park Hong-sik**

Rotating & Non-Rotating Product Manager

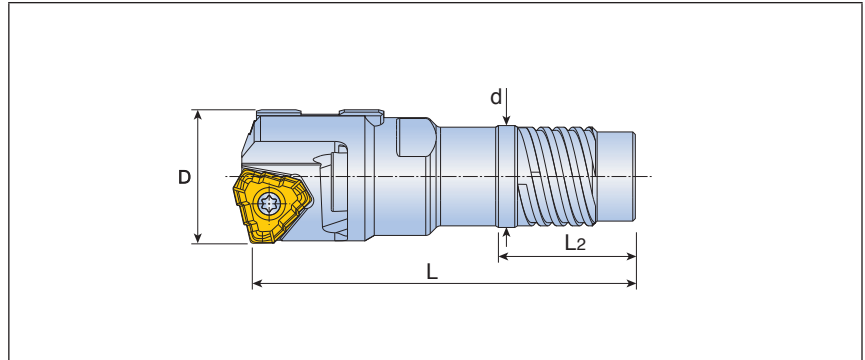
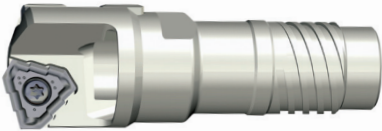
Sincerely,  
TaeguTec

**Sung Chang-ho**

Hole Making Product Manager

## TBTA-TR...SE4

Single tube system

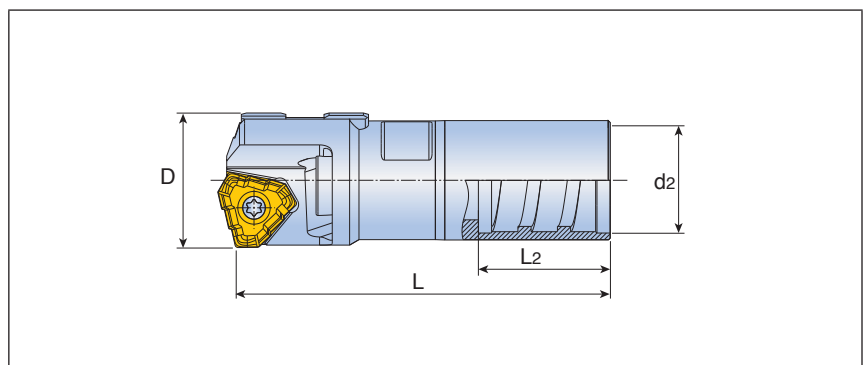
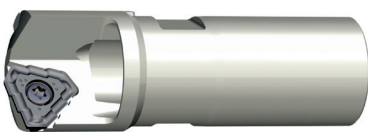


- Outer four start thread

Designation	D range	Dimension (mm)			Tube	
		L	L <sub>2</sub>	d	Part	Diameter (mm)
<b>TBTA- TRXX.XXSE4-14</b>	16.00-16.70	55.0	20.0	12.6	BTSE 014	14
<b>TRXX.XXSE4-15</b>	16.71-17.70	55.0	20.0	13.6	BTSE 015	15
<b>TRXX.XXSE4-16</b>	17.71-18.90	56.0	21.5	14.5	BTSE 016	16
<b>TRXX.XXSE4-17</b>	18.91-20.00	56.0	21.5	15.5	BTSE 017	17
<b>TRXX.XXSE4-18</b>	20.01-21.80	60.0	21.5	16.0	BTSE 018	18
<b>TRXX.XXSE4-20</b>	21.81-21.99	63.5	21.5	18.0	BTSE 020	20
<b>TRXX.XXSE4-20</b>	22.00-24.10	65.5	21.5	18.0	BTSE 020	20
<b>TRXX.XXSE4-22</b>	24.11-26.40	65.5	21.5	19.5	BTSE 022	22
<b>TRXX.XXSE4-24</b>	26.41-28.00	65.6	21.5	21.0	BTSE 024	24

## TBTA-TR...SI1

Single tube system



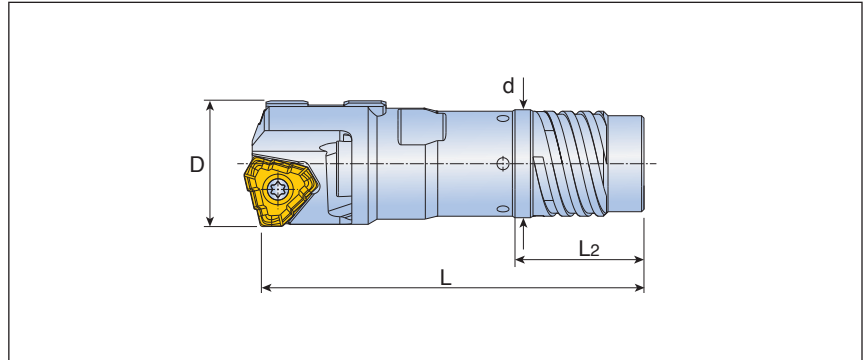
- Inner single start thread

Designation	D range	Dimension (mm)			Tube	
		L	L <sub>2</sub>	d <sub>2</sub>	Part	Diameter (mm)
<b>TBTA- TR16.00SI1-13A</b>	16.00	53.5	22	12.4	BTSE 013A	13
<b>TRXX.XXSI1-13B</b>	16.01-16.50	53.5	22	12.7	BTSE 013B	13
<b>TRXX.XXSI1-14A</b>	16.51-17.25	53.5	22	13.4	BTSE 014A	14
<b>TRXX.XXSI1-14B</b>	17.26-18.00	53.5	22	13.7	BTSE 014B	14
<b>TRXX.XXSI1-15</b>	18.01-19.00	53.5	22	14.4	BTSE 015	15
<b>TRXX.XXSI1-16.5</b>	19.01-19.99	53.5	22	15.4	BTSE 016.5	16.5
<b>TRXX.XXSI1-18</b>	20.00-21.99	58.0	25	16.5	BTSE 018	18
<b>TRXX.XXSI1-20</b>	22.00-24.99	60.0	25	19.0	BTSE 020	20
<b>TR25.00SI1-22</b>	25.00	60.0	25	20.0	BTSE 022	22
<b>TRXX.XXSI1-22</b>	25.01-26.99	65.0	25	20.0	BTSE 022	22
<b>TRXX.XXSI1-24</b>	27.00-28.00	65.0	25	22.0	BTSE 024	24



## TBTA-TR...DE4

### Double tube system

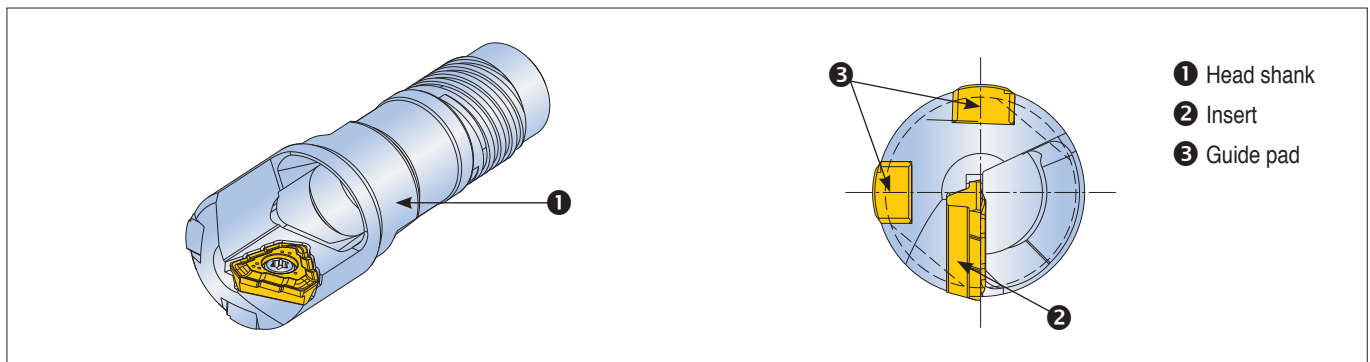


- Outer four start thread

Designation	D range	Dimension (mm)			Tube	
		L	L <sub>2</sub>	d	Part	Diameter (mm)
<b>TBTA- TRXX.XXDE4-18</b>	18.40-20.00	59.0	21.5	16.0	BTDO 018	18
<b>TRXX.XXDE4-19.5</b>	20.01-21.80	63.5	21.5	18.0	BTDO 019.5	19.5
<b>TRXX.XXDE4-21.5</b>	21.81-21.99	63.5	21.5	19.5	BTDO 021.5	21.5
<b>TRXX.XXDE4-21.5</b>	22.00-24.10	65.5	21.5	19.5	BTDO 021.5	21.5
<b>TRXX.XXDE4-23.5</b>	24.11-25.00	65.5	21.5	21.0	BTDO 023.5	23.5
<b>TRXX.XXDE4-23.5</b>	25.01-26.40	67.5	21.5	21.0	BTDO 023.5	23.5
<b>TRXX.XXDE4-26</b>	26.41-28.00	70.5	24.5	23.5	BTDO 026	26

## TBTA-TR Series

### Assembly of TBTA-TR series

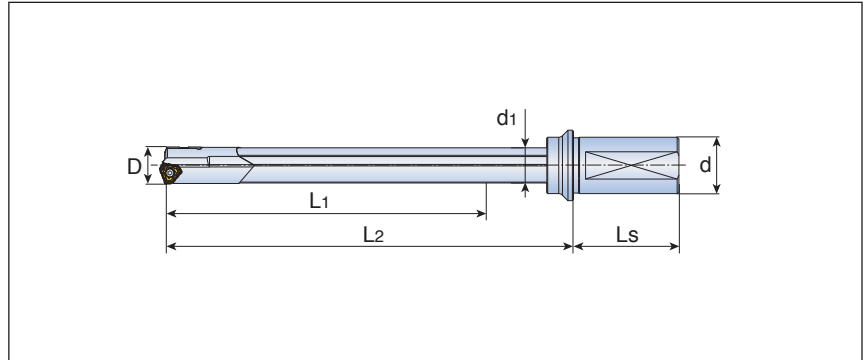


Diameter (mm)	Insert			Guide pad		
	Insert	Screw	Wrench	Guide pad	Screw	Wrench
16.00-18.00	TOGT 080305 RS TT9030	CSTB 2.5S	T-8F	PAD-GO06-075CD-SA PAD-GO06-075CD-SB	CSTB 2.2S	T-7F
18.01-20.00	TOGT 090305 RS TT9030	CSTB 2.5S	T-8F	PAD-GO06-085CD-SA PAD-GO06-085CD-SB	CSTB 2.2S	T-7F
20.01-21.00	TOGT 100305 RS TT9030	CSTB 3S	T-9F			
21.01-21.99	TOGT 100305 RS TT9030	CSTB 3S	T-9F	PAD-GO06-100CD-SA PAD-GO06-100CD-SB	CSTB 2.2S	T-7F
22.00-25.00	TOGT 110405 RS TT9030	CSTB 3.5H	T-15F			
25.01-28.00	TOGT 120405 RS TT9030	CSTB 4S	T-15F	PAD-GO06CD-SA PAD-GO06CD-SB	CSTB 2.2S	T-7F

- Inserts and guide pads must be ordered separately.

## TRGD

### Standard gundrill holder

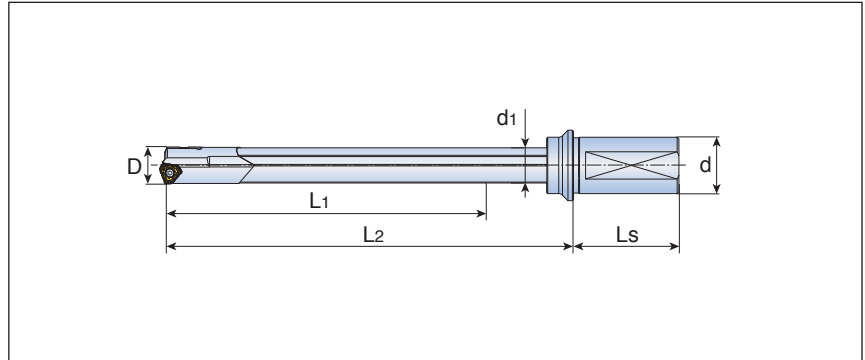


- Drilling depth: 10xD - 25xD

Designation	Dimension (mm)						
	D	d1	L1	L2	Ls	d	L/D
<b>TRGD 16.00XM25-10</b>	16.0	15.5	170	209	56	25	10
<b>16.50XM25-10</b>	16.5	15.5	170	209	56	25	10
<b>17.00XM25-10</b>	17.0	16.2	180	220	56	25	10
<b>18.00XM25-10</b>	18.0	17.2	190	232	56	25	10
<b>19.00XM25-10</b>	19.0	18.2	200	243	56	25	10
<b>20.00XM32-10</b>	20.0	19.0	210	255	60	32	10
<b>16.00XM25-15</b>	16.0	15.5	255	294	56	25	15
<b>16.50XM25-15</b>	16.5	15.5	255	294	56	25	15
<b>17.00XM25-15</b>	17.0	16.2	270	310	56	25	15
<b>17.50XM25-15</b>	17.5	16.2	270	310	56	25	15
<b>18.00XM25-15</b>	18.0	17.2	285	327	56	25	15
<b>18.50XM25-15</b>	18.5	17.2	285	327	56	25	15
<b>19.00XM25-15</b>	19.0	18.2	300	343	56	25	15
<b>19.50XM25-15</b>	19.5	18.2	300	343	56	25	15
<b>20.00XM32-15</b>	20.0	19.0	315	360	60	32	15
<b>21.00XM32-15</b>	21.0	20.0	330	376	60	32	15
<b>22.00XM32-15</b>	22.0	21.0	345	393	60	32	15
<b>23.00XM32-15</b>	23.0	22.0	360	409	60	32	15
<b>24.00XM32-15</b>	24.0	23.0	375	426	60	32	15
<b>25.00XM32-15</b>	25.0	24.0	390	442	60	32	15
<b>26.00XM40-15</b>	26.0	25.0	405	449	70	40	15
<b>27.00XM40-15</b>	27.0	26.0	420	465	70	40	15
<b>28.00XM40-15</b>	28.0	27.0	420	467	70	40	15
<b>16.00XM25-25</b>	16.0	15.5	425	464	56	25	25
<b>16.50XM25-25</b>	16.5	15.5	425	464	56	25	25
<b>17.00XM25-25</b>	17.0	16.2	450	490	56	25	25
<b>17.50XM25-25</b>	17.5	16.2	450	490	56	25	25
<b>18.00XM25-25</b>	18.0	17.2	475	517	56	25	25
<b>18.50XM25-25</b>	18.5	17.2	475	517	56	25	25
<b>19.00XM25-25</b>	19.0	18.2	500	543	56	25	25
<b>19.50XM25-25</b>	19.5	18.2	500	543	56	25	25
<b>20.00XM32-25</b>	20.0	19.0	525	570	60	32	25
<b>21.00XM32-25</b>	21.0	20.0	550	596	60	32	25
<b>22.00XM32-25</b>	22.0	21.0	575	623	60	32	25
<b>23.00XM32-25</b>	23.0	22.0	600	649	60	32	25
<b>24.00XM32-25</b>	24.0	23.0	625	676	60	32	25
<b>25.00XM32-25</b>	25.0	24.0	650	702	60	32	25
<b>26.00XM40-25</b>	26.0	25.0	675	719	70	40	25
<b>27.00XM40-25</b>	27.0	26.0	700	745	70	40	25
<b>28.00XM40-25</b>	28.0	27.0	700	747	70	40	25

## TRGD

### Special gundrill holder



Designation	Dimension (mm)					
	D	d1	L1	L2	Ls	d
TRGD □□.□□x□□□□-□□	16.00-16.79	15.5	136-425	175-464	56	25
	16.80-17.69	16.2	144-450	184-490	56	25
	17.70-18.69	17.2	152-475	194-517	56	25
	18.70-19.69	18.2	160-500	203-543	56	25
	19.70-20.69	19.0	168-525	213-570	60	32
	20.70-21.69	20.0	176-550	222-596	60	32
	21.70-22.69	21.0	184-575	232-623	60	32
	22.70-23.69	22.0	192-600	241-649	60	32
	23.70-24.69	23.0	200-625	251-676	60	32
	24.70-25.69	24.0	208-650	260-702	60	32
	25.70-26.69	25.0	216-675	270-719	70	40
	26.70-27.69	26.0	224-700	279-745	70	40
	27.70-28.00	27.0	224-700	281-747	70	40

Available upon request.

## Tool designation system

TRGD □□.□□x□□□□-□□

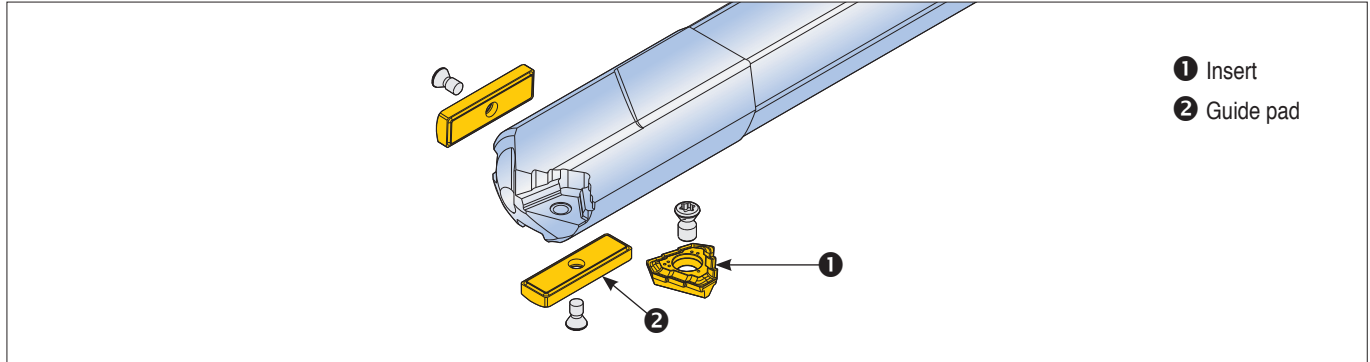
Diameter (D)

Drilling depth (L1)

Shank diameter (d)

## TRGD Series

### Assembly of TRGD gundrill series



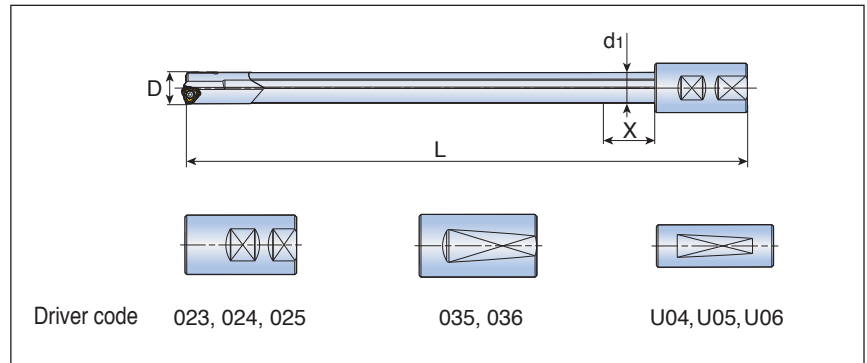
Diameter (mm)	Insert			Guide pad		
	Insert	Screw	Wrench	Guide pad	Screw	Wrench
16.00-18.00	TOGT 080305 RS TT9030	CSTB 2.5S	T-8F	PAD-GO06-075CD-SA PAD-GO06-075CD-SB	CSTB 2.2S	T-7F
18.01-20.00	TOGT 090305 RS TT9030	CSTB 2.5S	T-8F	PAD-GO06-085CD-SA PAD-GO06-085CD-SB	CSTB 2.2S	T-7F
20.01-21.00	TOGT 100305 RS TT9030	CSTB 3S	T-9F			
21.01-21.99	TOGT 100305 RS TT9030	CSTB 3S	T-9F	PAD-GO06-100CD-SA PAD-GO06-100CD-SB	CSTB 2.2S	T-7F
22.00-25.00	TOGT 110405 RS TT9030	CSTB 3.5H	T-15F			
25.01-28.00	TOGT 120405 RS TT9030	CSTB 4S	T-15F	PAD-GO06CD-SA PAD-GO06CD-SB	CSTB 2.2S	T-7F

Guide pad with "SB" is the first choice in general purpose machining.  
 "SA" is a supplementary grade used only with oil based coolant.  
 Inserts and guide pads must be ordered separately.



## TRGDL

### Standard gundrill holder

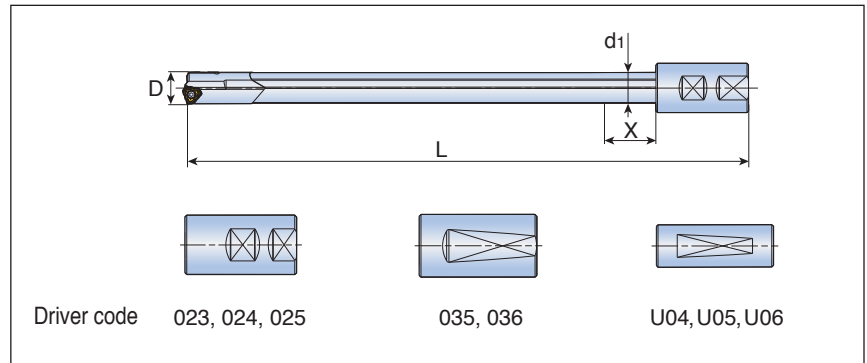


Designation	Driver code	Dimension (mm)				Insert	
		D	L	d1	x		
<b>TRGDL 16.00X800-XXX</b>	U04 023 035	16	800	15.5	24	TOGT 080305 RS	
<b>16.00X1000-XXX</b>		16	1000	15.5	24		
<b>16.00X1500-XXX</b>		16	1500	15.5	24		
<b>17.00X1000-XXX</b>		17	1000	16.2	25		
<b>17.00X1500-XXX</b>		17	1500	16.2	25		
<b>18.00X800-XXX</b>		18	800	17.2	27		
<b>18.00X1000-XXX</b>		18	1000	17.2	27		
<b>18.00X1500-XXX</b>		18	1500	17.2	27		
<b>19.00X800-XXX</b>		19	800	18.2	28		TOGT 090305 RS
<b>19.00X1000-XXX</b>		19	1000	18.2	28		
<b>19.00X1500-XXX</b>	19	1500	18.2	28			
<b>20.00X800-XXX</b>	U05 024 036	20	800	19.0	30	TOGT 100305 RS	
<b>20.00X1000-XXX</b>		20	1000	19.0	30		
<b>20.00X1500-XXX</b>		20	1500	19.0	30		
<b>21.00X1000-XXX</b>		21	1000	20.0	31	TOGT 110405 RS	
<b>21.00X1500-XXX</b>		21	1500	20.0	31		
<b>22.00X1000-XXX</b>		22	1000	21.0	33		
<b>22.00X1500-XXX</b>		22	1500	21.0	33		
<b>23.00X1000-XXX</b>		23	1000	22.0	34		
<b>23.00X1500-XXX</b>		23	1500	22.0	34		
<b>24.00X1000-XXX</b>		24	1000	23.0	36		
<b>24.00X1500-XXX</b>	24	1500	23.0	36			
<b>25.00X1000-XXX</b>	25	1000	24.0	37	TOGT 120405 RS		
<b>25.00X1500-XXX</b>	25	1500	24.0	37			
<b>26.00X1000-XXX</b>	26	1000	25.0	39			
<b>26.00X1500-XXX</b>	26	1500	25.0	39			
<b>27.00X1000-XXX</b>	27	1000	26.0	40			
<b>27.00X1500-XXX</b>	27	1500	26.0	40			
<b>28.00X1000-XXX</b>	28	1000	27.0	42	TOGT 120405 RS		
<b>28.00X1500-XXX</b>	28	1500	27.0	42			

• Select "XXX" driver code.

## TRGDL

### Special gundrill holder



Designation	Dimension (mm)			
	D	L	d <sub>1</sub>	X
TRGDL □□.□□x□□□□-XXX	16.00-16.79	400-2400	15.5	24
	16.80-17.69	400-2400	16.2	25
	17.70-18.69	400-2400	17.2	27
	18.70-19.69	400-2400	18.2	28
	19.70-20.69	400-2400	19.0	30
	20.70-21.69	400-2400	20.0	31
	21.70-22.69	400-2400	21.0	33
	22.70-23.69	400-2400	22.0	34
	23.70-24.69	400-2400	23.0	36
	24.70-25.69	400-2400	24.0	37
	25.70-26.69	400-2400	25.0	39
	26.70-27.69	400-2400	26.0	40
27.70-28.00	400-2400	27.0	42	

- Available upon request.
- Select "XXX" driver code.

## Tool designation system

**TRGDL** □□.□□x□□□□-XXX

Diameter (D)

Length (L)

Driver code

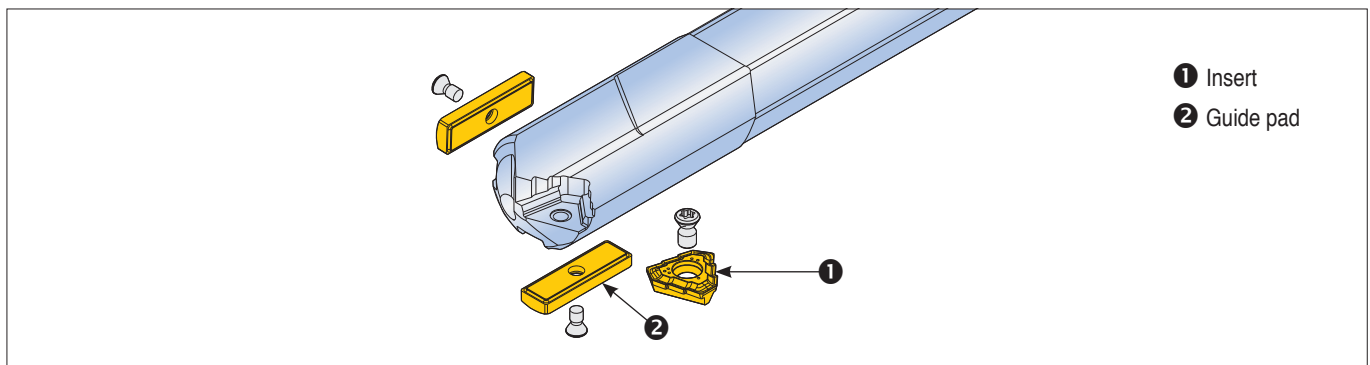
## Driver for TRGDL Type

### Driver

Driver	Tool Diameter	Driver Code	Dimension (mm)	
			Ls	d
	16.00-19.69	023	56	25.00
	16.00-25.69	024	60	32.00
	16.00-28.00	025	70	40.00
	16.00-28.00	026	80	50.00
	16.00-19.69	035	56	25.00
	16.00-25.69	036	60	32.00
	16.00-19.69	U04	70	25.40
	16.00-25.69	U05	70	31.75
	16.00-28.00	U06	70	38.10

## TRGDL Series

### Assembly of TRGDL gundrill series



Diameter (mm)	Insert			Guide pad		
	Insert	Screw	Wrench	Guide pad	Screw	Wrench
16.00-18.00	TOGT 080305 RS TT9030	CSTB 2.5S	T-8F	PAD-GO06-075CD-SA PAD-GO06-075CD-SB	CSTB 2.2S	T-7F
18.01-20.00	TOGT 090305 RS TT9030	CSTB 2.5S	T-8F	PAD-GO06-085CD-SA PAD-GO06-085CD-SB	CSTB 2.2S	T-7F
20.01-21.00	TOGT 100305 RS TT9030	CSTB 3S	T-9F			
21.01-21.99	TOGT 100305 RS TT9030	CSTB 3S	T-9F	PAD-GO06-100CD-SA PAD-GO06-100CD-SB	CSTB 2.2S	T-7F
22.00-25.00	TOGT 110405 RS TT9030	CSTB 3.5H	T-15F			
25.01-28.00	TOGT 120405 RS TT9030	CSTB 4S	T-15F	PAD-GO06CD-SA PAD-GO06CD-SB	CSTB 2.2S	T-7F

- Guide pad with "SB" is the first choice in general purpose machining. "SA" is a supplementary grade used only with oil based coolant.
- Inserts and guide pads must be ordered separately.

## TOGT...RS

### Insert

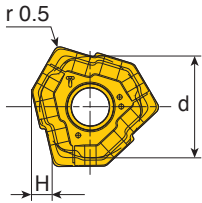


Fig.1

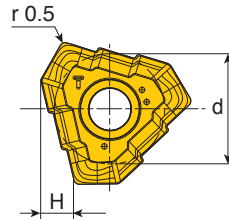


Fig.2



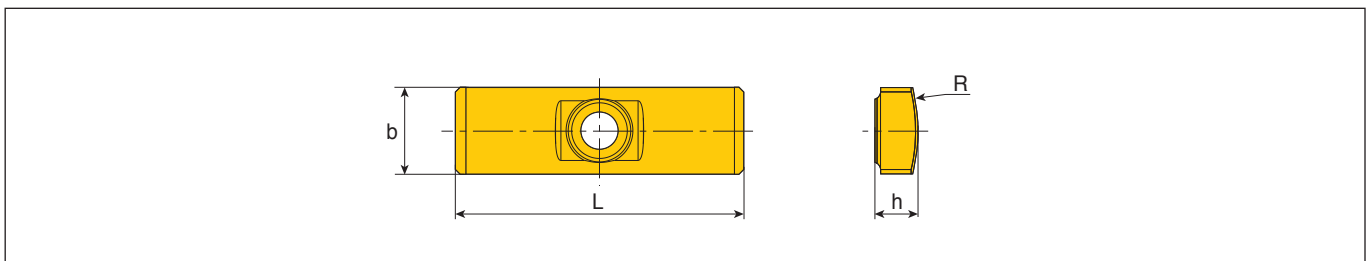
Size	Dimension (mm)		
	d	t	H
08	8.55	2.8	2.2
09	8.32	3.0	3.0
10	9.23	3.3	3.2
11	10.40	3.8	3.4
12	11.59	4.3	3.6

Insert	Designation	Diameter	Fig.	Coated
				TT9030
	<b>TOGT 080305 RS</b>	16.00-18.00	1	●
	<b>090305 RS</b>	18.01-20.00	2	●
	<b>100305 RS</b>	20.01-21.99	2	●
	<b>110405 RS</b>	22.00-25.00	2	●
	<b>120405 RS</b>	25.01-28.00	2	●

● : Standard items

## Pad

### Deep drilling head solid carbide guide pads

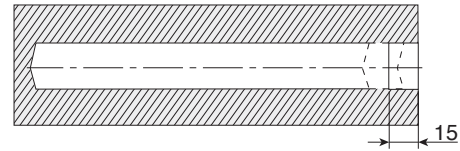


Designation	Dimension (mm)			
	b	h	L	R
<b>PAD- G006CD-SA</b>	6	3	20	12
<b>G006CD-SB</b>	6	3	20	12
<b>G006-075CD-SA</b>	6	3	20	7.5
<b>G006-075CD-SB</b>	6	3	20	7.5
<b>G006-085CD-SA</b>	6	3	20	8.5
<b>G006-085CD-SB</b>	6	3	20	8.5
<b>G006-100CD-SA</b>	6	3	20	10
<b>G006-100CD-SB</b>	6	3	20	10

- Guide pad with "SB" is the first choice in general purpose machining.
- "SA" is a supplementary grade used only with oil based coolant.

## Drilling process on machining centers and lathe machines

1. Make a pilot hole  $D^{+0.10}_{+0.03}$  with 15 mm depth.

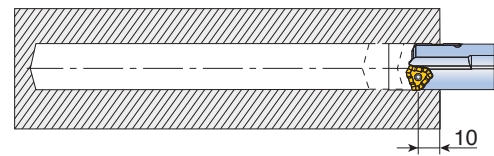


2. Insert then set the TRGD drill into the pilot hole (10 mm depth).

$V_c=5-10$  m/min

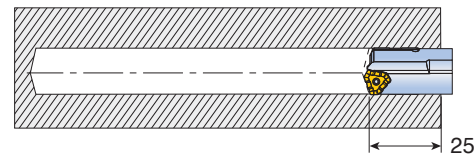
$f=0.5-1.0$  mm/rev

Activate coolant system and increase cutting speed up to 100%.

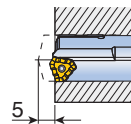


3. Initial cutting at a 25 mm depth with 80% feed rate.

To the end of the hole, increase feed rate up to 100%.



4. In case of through hole, drill the full hole to a depth of +5 mm.



5. Retract with slow rotation (5-10 m/min).

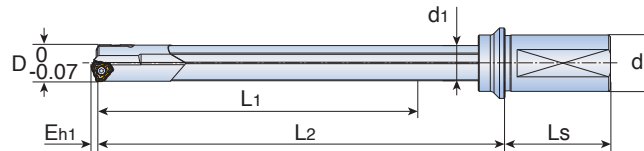


## Recommended Cutting Conditions

ISO	Material	Condition	Tensile strength (N/mm <sup>2</sup> )	Hardness HB	TRGD/TRGDL		TBTA-TR	
					Cutting Speed Vc (m/min)	Feed (mm/rev) vs. drill diameter Ø16.00-Ø28.00	Cutting speed (m/min)	Feed (mm/rev) vs. drill diameter Ø16.00-Ø28.00
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C Annealed	420	125	80-140	0.10-0.20	90-130	0.15-0.20
		>=0.25%C Annealed	650	190	80-140	0.10-0.20	90-130	0.15-0.20
		<0.55%C Quenched and tempered	850	250	80-140	0.10-0.20	90-130	0.15-0.20
		>=0.55%C Annealed	750	220	80-140	0.10-0.20	70-130	0.10-0.25
		>=0.55%C Quenched and tempered	1000	300	80-140	0.10-0.20	70-130	0.10-0.25
	Low alloy steel and cast steel (Less than 5% of alloying elements)	Annealed	600	200	80-120	0.10-0.20	70-120	0.10-0.25
		Quenched and tempered	930	275	80-120	0.10-0.20	60-120	0.10-0.25
			1000	300	80-120	0.10-0.20	60-120	0.10-0.25
			1200	350	80-120	0.10-0.20	60-120	0.10-0.25
	High alloy steel, cast steel and tool steel	Annealed	680	200	80-120	0.10-0.20	70-130	0.10-0.25
Quenched and tempered		1100	325	80-120	0.10-0.20	70-130	0.10-0.25	
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	80-140	0.08-0.10	80-130	0.06-0.10
		Martensitic	820	240	80-140	0.08-0.10	80-130	0.06-0.10
		Austenitic	600	180	80-140	0.08-0.10	80-130	0.06-0.10
K	Gray cast iron (GG)	Ferritic		160	80-140	0.10-0.30	50-110	0.10-0.20
		Pearlitic		250	80-140	0.10-0.30	50-110	0.10-0.20
	Cast iron nodular (GGG)	Ferritic		180	80-140	0.10-0.30	60-110	0.10-0.20
		Pearlitic		260	80-140	0.10-0.30	60-110	0.10-0.20
	Malleable cast iron	Ferritic		130	80-140	0.10-0.30	70-110	0.10-0.20
		Pearlitic		230	80-140	0.10-0.30	70-110	0.10-0.20
N	Aluminum - Wrought alloy	Not cureable		60	65-130	0.08-0.18	65-130	0.08-0.18
		Cured		100	65-130	0.08-0.18	65-130	0.08-0.18
	Aluminum-cast, alloyed	<=12% Si Not cureable		75	65-130	0.08-0.18	65-130	0.08-0.18
		Cured		90	65-130	0.08-0.18	65-130	0.08-0.18
		>12% Si High temp.		130	65-130	0.08-0.18	65-130	0.08-0.18
	Copper alloys	>1% Pb Free cutting		110	65-130	0.08-0.18	65-130	0.08-0.18
		Brass		90	65-130	0.08-0.18	65-130	0.08-0.18
		Electrolitic copper		100	65-130	0.08-0.18	65-130	0.08-0.18
Non-metallic	Duroplastics, fiber plastics			65-130	0.08-0.18	65-130	0.08-0.18	
	Hard rubber			65-130	0.08-0.18	65-130	0.08-0.18	
S	High temp. alloys	Fe based Annealed		200	20-50	0.08-0.18	20-50	0.08-0.18
		Cured		280	20-50	0.08-0.18	20-50	0.08-0.18
		Ni or Co based Annealed		250	20-50	0.08-0.18	20-50	0.08-0.18
		Cured		350	20-50	0.08-0.18	20-50	0.08-0.18
		Cast		320	20-50	0.08-0.18	20-50	0.08-0.18
	Titanium, Ti alloys		Rm 400		30-60	0.08-0.18	30-60	0.08-0.18
Alpha+beta alloys cured		Rm 1050		30-60	0.08-0.18	30-60	0.08-0.18	

■ Steel   
 ■ Stainless steel   
 ■ Cast iron   
 ■ Nonferrous   
 ■ High temp. alloys

## Special inquiry form



### 1. Tool

Quantity \_\_\_\_\_

Nominal diameter and tolerance \_\_\_\_\_

Please fill in dimensions on the sketch above.

### Driver

- For standard drivers, please use codes from pages 16-17.

Code No \_\_\_\_\_

- For special drivers, please attach sketch and specifications.

### 2. Workpiece

(If possible, please attach a drawing)

#### 2.1 Material

Material description

(DIN material number or any other standard):

\_\_\_\_\_

Hardness and properties:

\_\_\_\_\_

#### 2.2 Hole type

- Blind hole  Through hole  Drilling into pre-hole  
 Angled entry  Drilling into solid  Boring  
 Angled exit

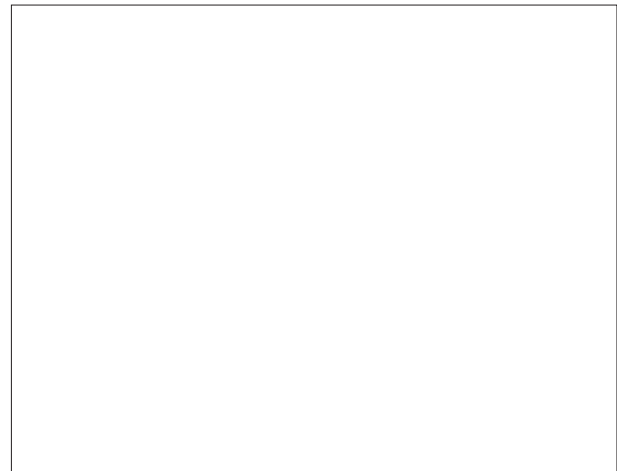
2.3 Drilling depth \_\_\_\_\_ mm / Hole tolerance \_\_\_\_\_

#### 2.4 Application

Workpiece  Stationary  Rotating

Tool  Stationary  Rotating

### Sketch of drilling application



Note: It may be necessary to change several of the parameters that you indicated based on our experience with your application.

### 3. Machine

#### 3.1 Technical data

Machine type \_\_\_\_\_

Power: \_\_\_\_\_ kW

#### 3.2 Cutting data

Cutting speed  $V_c$  \_\_\_\_\_ m/min

Revolutions  $N_{min}$  \_\_\_\_\_ RPM,  $N_{max}$  \_\_\_\_\_ RPM

Feed  $F_{min}$  \_\_\_\_\_ mm/rev,  $F_{max}$  \_\_\_\_\_ mm/rev

Feed rate  $VF$  \_\_\_\_\_ mm/min

#### 3.3 Coolant

Oil  Soluble oil  Other \_\_\_\_\_

Coolant pressure: \_\_\_\_\_ Bar

Volume: \_\_\_\_\_ liter/min

## Standard gundrill drivers for machining centers and lathes

### Drivers

Drivers are available for dedicated and CNC machines as well as any specified diameter or length.

Please note that the driver codes and technical data can be found in the chart below.

Driver type	Drawing	ØD x L	Driver code
Cylindrical DIN1835A DIN6535HA		20x50	10
		25x56	11
		32x60	12
		40x70	13
		.75x2.03"	95
		1.00x2.28"	96
		1.25x2.28"	97
Weldon DIN1835B DIN6535HB		20x50	22
		25x56	23
		32x60	24
		40x70	25
		.75x2.03"	99
		1.00x2.28"	100
Whistle notch DIN1835E		20x50	34
		25x56	35
		32x60	36
		40x70	37

## Standard drivers for gundrill machines

Driver type	Drawing	ØD x L	Driver code
DIN228AK		CM2	46
		CM3	47
		CM4	48
DIN228BK		CM2	50
		CM3	51
		CM4	52
Central clamping surface 15°		.750x2.75"	56
		25x70	57
		1.00x2.75"	58
		1.25x2.75"	59
		1.50x2.75"	60
Frontal clamping surface 15°		16x50	61
Cylindrical with thread		25x100 M16x1.5	66
		36x120 M24x1.5	67
VDI Design		25x112 M16x1.5	70
		36x135 M24x1.5	71
Central clamping hexagonal		25x70	72
		32x70	73
Central clamping tapered		.75x2.75"	76
		20x70	77
Frontal clamping surface 2°		1.00x2.75"	80
		1.00x3.94"	81
		1.25x2.75"	82
		1.25x3.94"	83
		1.50x2.75"	84
Trapezoidal thread		28x126 Tr 28x2	88
		36x162 Tr 36x2	89
Spraymist driver		25x50	91
		35x60	92