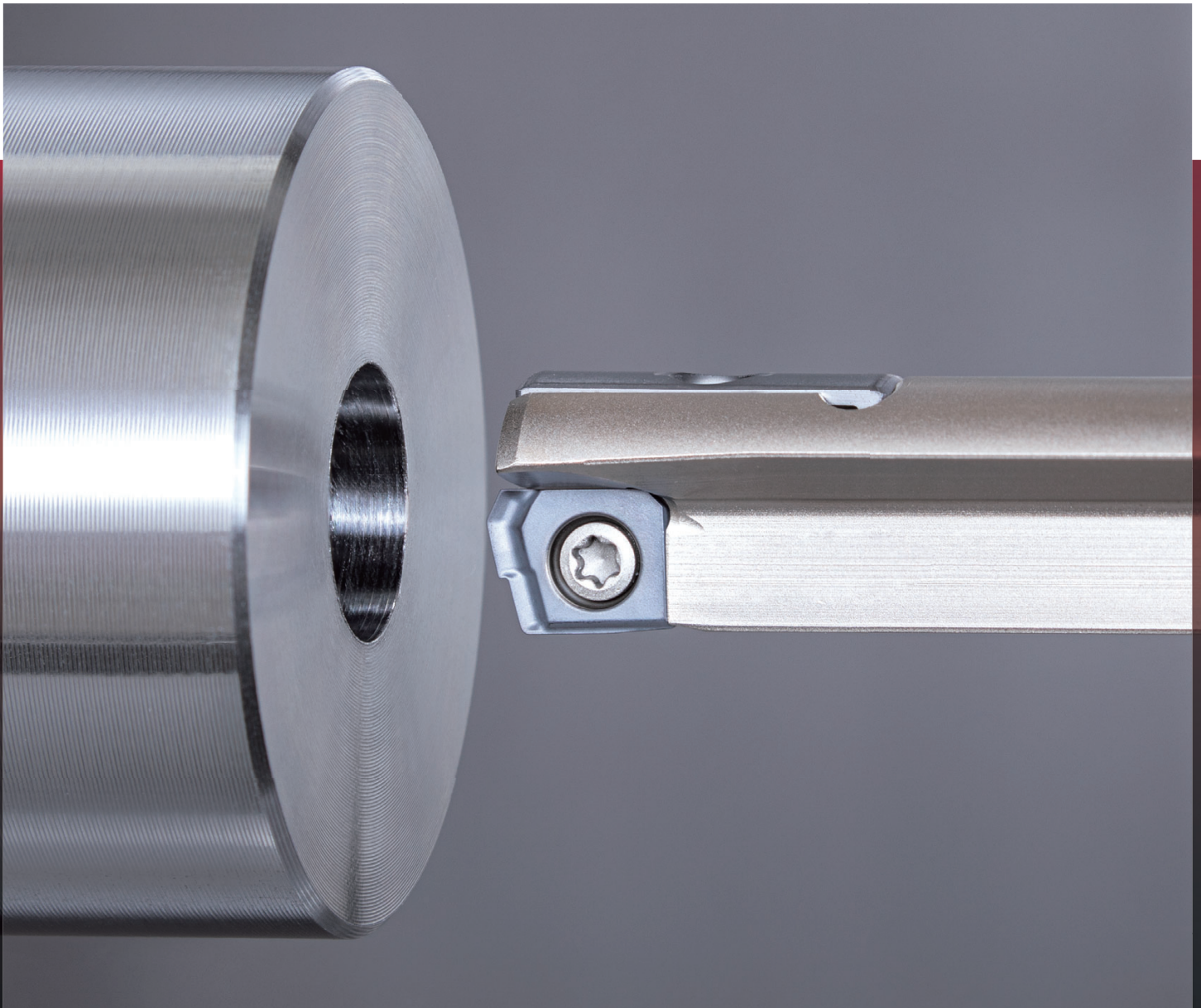


Deep hole drill

# DEEPT<sup>RI</sup>DRILL

Tungaloy Report No. 430S3-G

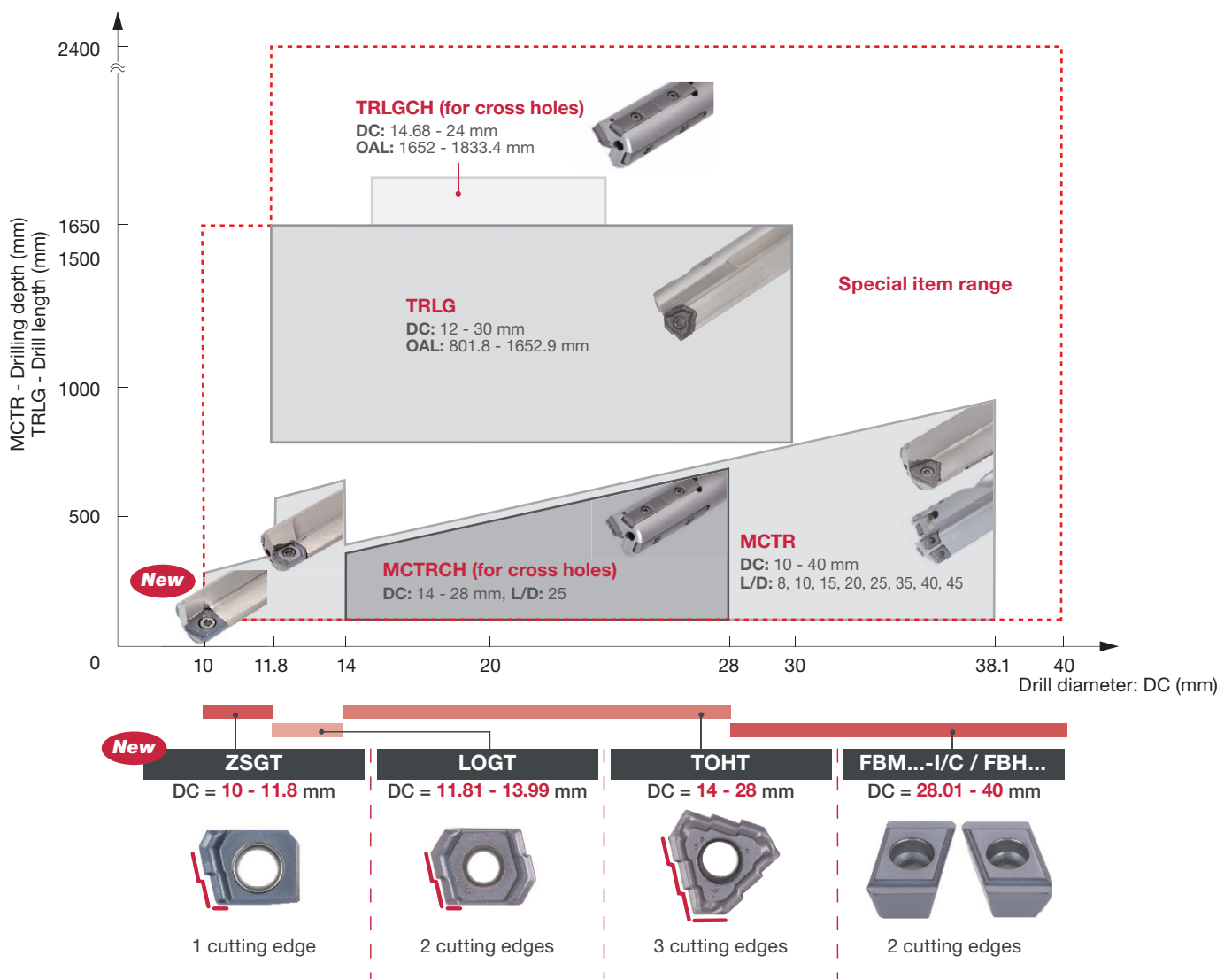
Smallest diameter indexable gun drill  
- **DeepTri-Drill expansion**  
**down to  $\varnothing 10$  mm**





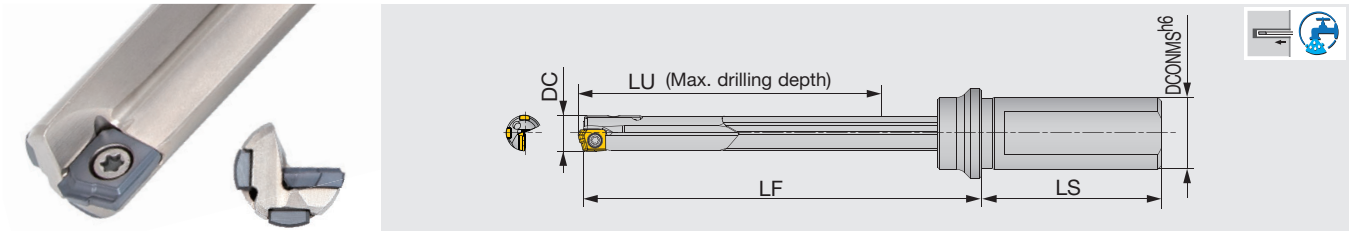
## DeepTri-Drill for lathe and CNC machining centers in the diameter range **ø10 - ø11.8 mm**

### Wide range of solutions for various deep hole applications



MCTR L/D=25

Drill body for lathes and machining centers, L/D = 25, Tool diameter  $\phi 10 - \phi 11.5$  mm



Designation	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR10.00XM20-25	10	20	264.2	50	289.5	ZSGT06...	GP04-16-045-DC
MCTR11.00XM20-25	11	20	301.7	50	329	ZSGT06...	GP04-16-050-DC
MCTR11.50XM20-25	11.5	20	301.7	50	329	ZSGT06...	GP04-16-050-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
10 - 11.5	0 / - 0.08	+ 0.05 / - 0.11

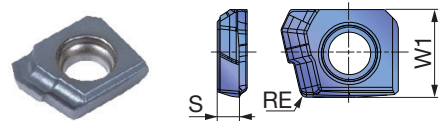
SPARE PARTS

Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR10... - MCTR11.5...	SR-M2.5X0.35L3.8	T-7F	CSTB-2	T-6F

Recommended torque (N·m) for clamping: SR-M2.5X0.35L3.8=0.9, CSTB-2=0.7

INSERT

ZSGT-NDJ

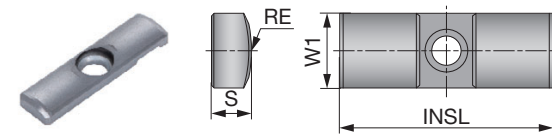


Designation	Coated			
		W1	S	RE
ZSGT060204R-NDJ	●	6	1.5	0.4

● : Line up  
Package quantity = 10 pcs.

CARBIDE GUIDE PADS

GP04



Designation	Coated				
		W1	INSL	S	RE
GP04-16-045-DC	●	4	16	1.8	4.5
GP04-16-050-DC	●	4	16	1.8	5

● : Line up  
Package quantity = 5 pcs.

## STANDARD CUTTING CONDITIONS

Drill diameter: DC = 10 - 11.8 mm

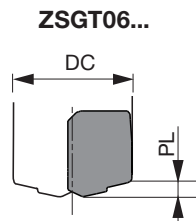
ISO	Workpiece material	Cutting speed Vc (m/min)	Feed f (mm/rev)
<b>P</b>	Low carbon steel (C < 0.3) SS400, SM490, S25C, etc. E275A, C25, etc.	80 - 140	0.05 - 0.08
	Carbon steel (C > 0.3) S45C, S55C, etc. C45, C55, etc.	80 - 140	0.05 - 0.14
	Low alloy steel (C < 0.3) SCM415, 18CrMo4, etc.	80 - 140	0.05 - 0.08
	Alloy steel (C > 0.3) SCM440, SCR420, 42CrMo4, 20Cr4, etc.	80 - 120	0.05 - 0.14
<b>M*</b>	Stainless steel (Austenitic) SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-3, etc.	60 - 100	0.05 - 0.08
	Stainless steel (Martensitic, Ferritic) SUS430, SUS416, etc. X6Cr17, X12CrS13, etc.	60 - 100	0.05 - 0.08
	Stainless steel (Precipitation hardening) SUS630, X5CrNiCuNb16-4, etc.	60 - 100	0.05 - 0.08
<b>K</b>	Grey cast iron FC250, GG25, 250, etc.	80 - 140	0.05 - 0.2
	Ductile cast iron FCD700, 700-2, etc.	80 - 140	0.05 - 0.2
<b>N</b>	Aluminium alloys	100 - 200	0.05 - 0.18
<b>S</b>	Heat-resistant alloys Inconel 718, etc.	20 - 50	0.04 - 0.06
	Titanium alloys Ti-6Al-4V, etc.	30 - 60	0.04 - 0.1
<b>H</b>	Hardened steel ≥ 40HRC	50 - 100	0.04 - 0.06

\*Coolant recommendations for drilling stainless steel:

- Oil coolant is first priority
- Water soluble coolant requires at least 20% oil concentration

## BLIND HOLE SHAPES OF THE HOLE BOTTOM

DC	Insert	Maximum difference PL
10 - 11.8	ZSGT06...	1.7



## DRILLING PROCEDURE ON MACHINING CENTERS AND LATHES

Proceed as instructed below in order to maximize the tool performance.

	<p>① <b>Drill a pilot hole</b>            Hole diameter tolerance: +0.01 - +0.05 mm            Hole depth: H = 25 mm            Note: Drill H = 45 mm when using an MCTRCH drill (for cross-hole).</p> <p>Please use DrillMeister or DrillForce-Meister for a pilot hole.            Use a drill with 3xD or smaller.            Note: Recommend to use a drill with 5xD when using an MCTRCH drill.</p>
	<p>② <b>Start coolant</b>            ③ <b>Slowly insert DeepTri-Drill into the pilot hole</b>            No. of revolution: <math>n = 50 - 100 \text{ min}^{-1}</math>            Feed rate: <math>V_f = 100 - 300 \text{ mm/min}</math>  <b>Note: Do not rotate the drill at full machining speed before engaging the pilot hole.</b></p>
	<p>④ <b>Stop the drill at H = 20 mm depth</b>            Note: Stop at H = 40 mm when using an MCTRCH drill.            ⑤ <b>Start rotating at full machining speed</b></p>
	<p>⑥ <b>Start feeding</b>            At the entry (H = 20 - 30 mm) → Feed: <math>f = 80\%</math> of programmed feed            Note: Drill H = 40 - 50 mm when using an MCTRCH drill.            Hole depth: H ≥ 30 mm → Feed: <math>f = 100\%</math>            Note: Drill H = 50 mm or more when using an MCTRCH drill.</p>
	<p>⑦ <b>For a through hole</b>            Continue drilling until the drill head passes through the workpiece by 5 mm.  <b>Note: When machining gummy materials such as low carbon steel, reduce the feed rate to 70% of the normal level right before exiting the material to prevent chips from scattering.</b></p> <p>⑧ <b>Stop the rotation and coolant</b>            ⑨ <b>Return the drill, and operation finished</b></p>



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