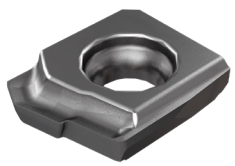


HOLE MAKING

07-2023

FEBRUARY 2023

METRIC / IMPERIAL



Chip Splitting  
Concept Insert



Deep Drilling



Super Surface  
Finish



## **TRIDEEP** DEEP DRILLING

**New 10.00-11.99 mm (.393-.472")  
Gundrills with a Single Chip Splitting  
Cutting Edge Insert**



Chip Splitting  
Concept Insert

Deep Drilling

Super Surface  
Finish

# NPA

New Product Announcement

**TRIDEEP**  
DEEP DRILLING

## Highlights

### GD-DH Gundrill Family Additional Drills in the Diameter Range of 10.0 to 11.99 mm (.393-.472") with ZSGT 060204R-DT Inserts

#### Features

The new gundrills are to be used on milling centers, lathes and dedicated gundrill machines. ZSGT inserts with a single chip splitting cutting edge and wiper for high hole surface quality are mounted on these gundrills.

The new gundrills are available in the diameter range of 10.00-11.99 mm (.393-.472") in 0.5 mm (.020") increments, and in 15, 20 and 25 drilling length to diameter ratios.

Longer gundrills of up to 1650 mm (65") in length are provided on request.

The new ZSGT 060204R-DT IC948 insert features a single chip splitting cutting edge, a positive rake chipbreaker, and a wiper for high hole surface quality.

The new insert made of IC948 features a versatile PVD coated grade.

#### Advantages

- Gundrills with exchangeable inserts feature a single chip splitting cutting edge.
- The highly accurate peripherally ground insert, provides a high hole diameter accuracy of IT10.
- The gundrills produce narrow chips for efficient chip evacuation which enables higher feed rates compared to other gundrills available in the market.
- A wiper on the insert provides an extra fine surface finish.
- Direct insert mounting with no adjustment needed for accurate hole diameter.
- The gundrills mount new economical solid carbide guide pads.

# NPA

## New Product Announcement

HOLE MAKING

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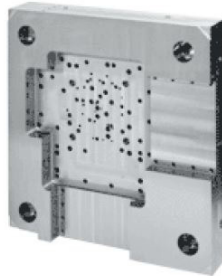
METRIC / IMPERIAL

**TRIDEEP**  
DEEP DRILLING

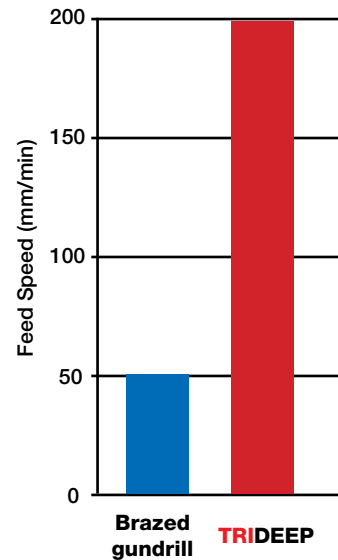


### TEST REPORTS

**Workpiece material:** JIS S50C (AISI 1050)  
**Operation:** Deep hole Solid drilling  
**Part name:** Mold  
**Coolant:** Internal Emulsion



**Productivity:**  
**3.7 times**



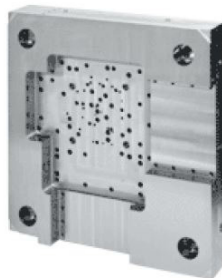
	ISCAR	Competitor
Body	GD-DH 10.00-20D-M20-06	Brazed Gundrill
Insert	ZSGT 060204R-DT IC948	
Guide pad	GPS-04-16-045-DC IC908	
Cutting speed Vc (m/min)	80 (262 sfm)	70 (230 sfm)
Feed rate f (mm/rev)	0.08 (.003 ipr)	0.025 (.001 ipr)
Table feed Vf (mm/min)	<b>204 (8.025 inch/min)</b>	56 (2.194 inch/min)
Hole diameter D (mm)	10 (.394")	10 (.394")
Hole depth	200 (7.874")	200 (7.874")

**Result:** increases productivity by **3.7** times over the current tool

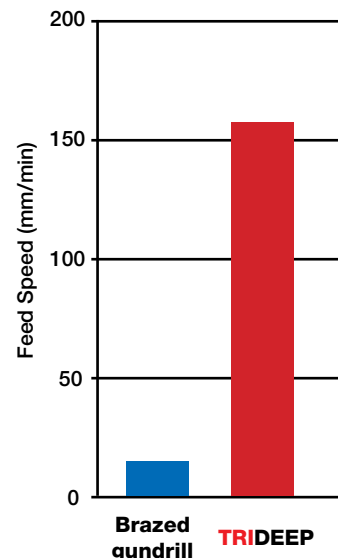


### TEST REPORTS

**Workpiece material:** JIS SKD 61 (AISI H13)  
**Operation:** Deep hole Solid drilling  
**Part name:** Mold  
**Coolant:** Internal Emulsion



**Productivity:**  
**12.5 times**



	ISCAR	Competitor
Body	GD-DH 11.50-15D-M20-06	Brazed Gundrill
Insert	ZSGT 060204R-DT IC948	
Guide pad	GPS-04-16-050-DC IC908	
Cutting speed Vc (m/min)	90 (295 sfm)	30 (98 sfm)
Feed rate f (mm/rev)	0.06 (.0024 ipr)	0.015 (.0006 ipr)
Table feed Vf (mm/min)	<b>150 (5.9 inch/min)</b>	12 (.472 inch/min)
Hole diameter D (mm)	11.5 (.453")	11.5 (.453")
Hole depth	130 (5.118")	130 (5.118")

**Result:** increases productivity by **12.5** times over the current tool

# NPA

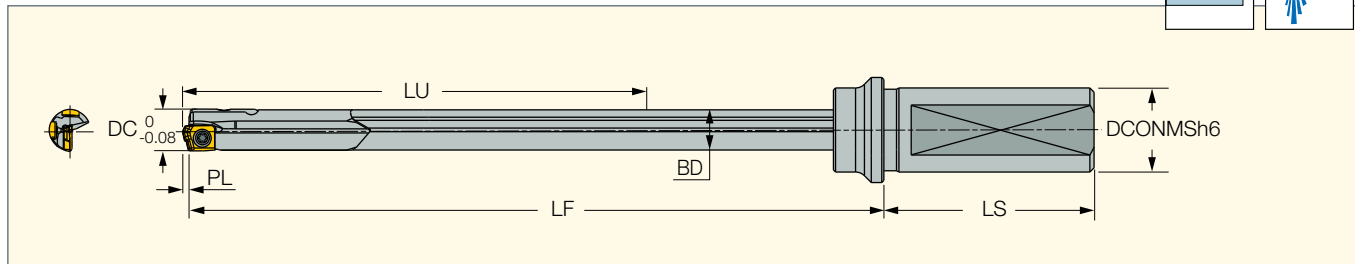
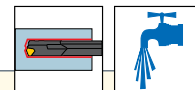
## New Product Announcement



### GD-DH (10.00-11.50) (METRIC)

Gundrills Carrying Indexable Inserts with Single Chip Splitting Cutting Edge and a Wiper for High Hole Surface Quality

<https://www.iscar.com/eCatalog/Family.aspx?fnum=4831&mapp=DR&GFSTYP=M>



Designation	DC	LU	LF	PL	DCONMS	BD	LS	MIID <sup>(1)</sup>
GD-DH 10.00-15D-M20-06	10.00	159.30	184.50	1.800	20.00	9.60	50.0	ZSGT 06
GD-DH 10.00-20D-M20-06	10.00	211.80	237.00	1.800	20.00	9.60	50.0	ZSGT 06
GD-DH 10.00-25D-M20-06	10.00	264.30	289.50	1.800	20.00	9.60	50.0	ZSGT 06
GD-DH 10.50-15D-M20-06	10.50	166.80	193.00	1.800	20.00	10.00	50.0	ZSGT 06
GD-DH 10.50-20D-M20-06	10.50	221.80	248.00	1.800	20.00	10.00	50.0	ZSGT 06
GD-DH 10.50-25D-M20-06	10.50	276.80	303.00	1.800	20.00	10.00	50.0	ZSGT 06
GD-DH 11.00-15D-M20-06	11.00	181.80	209.00	1.800	20.00	10.60	50.0	ZSGT 06
GD-DH 11.00-20D-M20-06	11.00	241.80	269.00	1.800	20.00	10.60	50.0	ZSGT 06
GD-DH 11.00-25D-M20-06	11.00	301.80	329.00	1.800	20.00	10.60	50.0	ZSGT 06
GD-DH 11.50-15D-M20-06	11.50	181.80	209.00	1.800	20.00	11.10	50.0	ZSGT 06
GD-DH 11.50-20D-M20-06	11.50	241.80	269.00	1.800	20.00	11.10	50.0	ZSGT 06
GD-DH 11.50-25D-M20-06	11.50	301.80	329.00	1.800	20.00	11.10	50.0	ZSGT 06

- Note: Gundrills supplied with up to 1650 mm length on request
- Inserts and guide pads to be ordered separately (not included with the tools)
- Preventative measures: Do NOT operate the deep hole drill at full speed before engaging the guide hole. Enter the guide hole slowly at a speed of 50 - 100 rpm

<sup>(1)</sup> Master insert identification

Spare Parts							
Tool Diameter		Insert			Guide Pad		
Min	Max	Insert	Screw	Wrench	GP X 2pcs	Screw X 2pcs	Wrench
10.00	10.99	ZSGT 060204R-DT	SR-M2.5X0.35L3.8	T-7/5	GPS-04-16-045-DC	CSTB-2	T-6/5
11.00	11.80				GPS-04-16-050-DC		
11.81	11.99	LOGT 060204R-DT	SR 10503833L040				

Recommended tightening torque: SR-M2.5X0.35L3.8=1.1 Nm, SR 10503833L040=1.3 Nm, CSTB-2=0.6 Nm

# NPA New Product Announcement

HOLE MAKING

07-2023

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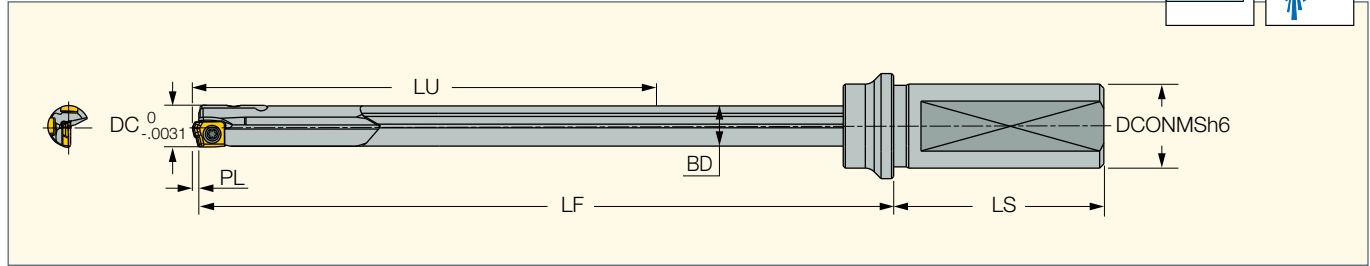
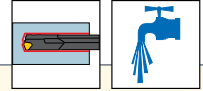
METRIC / IMPERIAL

**TRIDEEP**  
DEEP DRILLING

## GD-DH (.437) (INCH)

Gundrills Carrying Indexable Inserts with Single Chip Splitting Cutting Edge and a Wiper for High Hole Surface Quality

<https://www.iscar.com/eCatalog/Family.aspx?fnum=4830&mapp=DR&GFSTYP=I>



Designation	DC	LU	LF	PL	DCONMS	BD	LS	MIID <sup>(1)</sup>
GD-DH 0.437-15D-I0.75-06	.437	7.1570	8.228	.07080	.750	.4170	1.968	ZSGT 06
GD-DH 0.437-20D-I0.75-06	.437	9.5200	10.590	.07080	.750	.4170	1.968	ZSGT 06
GD-DH 0.437-25D-I0.75-06	.437	11.8820	12.952	.07080	.750	.4170	1.968	ZSGT 06
GD-DH 0.437-35D-I0.75-06	.437	16.6060	17.677	.07080	.750	.4170	1.968	ZSGT 06
GD-DH 0.437-40D-I0.75-06	.437	18.9690	20.039	.07080	.750	.4170	1.968	ZSGT 06
GD-DH 0.437-45D-I0.75-06	.437	21.3310	22.401	.07080	.750	.4170	1.968	ZSGT 06

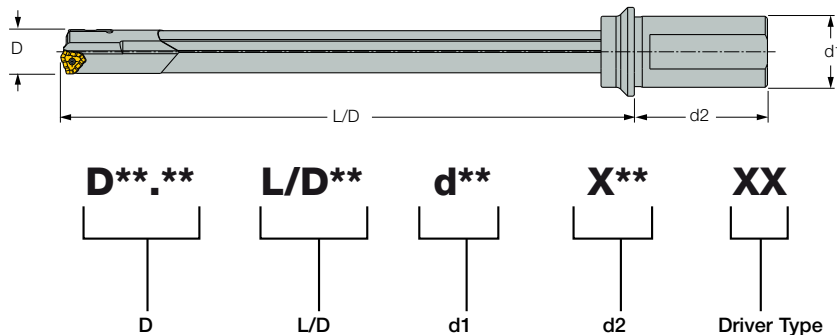
- Note: Gundrills supplied with up to 65" length on request
- Inserts and guide pads to be ordered separately (not included with the tools)
- Preventative measures: Do NOT operate the deep hole drill at full speed before engaging the guide hole. Enter the guide hole slowly at a speed of 50 - 100 rpm
- <sup>(1)</sup> Master insert identification

## Spare Parts

Tool Diameter		Insert			Guide Pad		
Min	Max	Insert	Screw	Wrench	GP X 2pcs	Screw X 2pcs	Wrench
10.00 (.3937")	10.99 (.4327")	ZSGT 060204R-DT	SR-M2.5X0.35L3.8	T-7/5	GPS-04-16-045-DC	CSTB-2	T-6/5
11.00 (.4331")	11.80 (.4646")				GPS-04-16-050-DC		
11.81 (.4650")	11.99 (.4720")	LOGT 060204R-DT	SR 10503833L040				

Recommended tightening torque: SR-M2.5X0.35L3.8=1.1 Nm (9.7 lbf\*in), SR 10503833L040=1.3 Nm (11.5 lbf\*in), CSTB-2=0.6 Nm (5.3 lbf\*in)

## Universal Marking for Deep Drilling Tools



### Example:

Metric: D14.00 L/D15 d25X56M  
Inch: D0.551 L/D15 d0.984X2.205M

\*\*\*\*\* [Lot no.]

# NPA

## New Product Announcement

HOLE MAKING

07-2023

FEBRUARY 2023

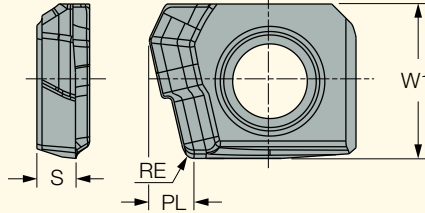
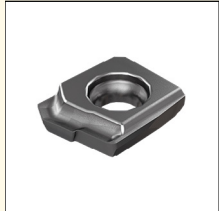
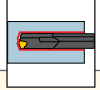
METRIC / IMPERIAL

**TRIDEEP**  
DEEP DRILLING

### ZSGT (METRIC)

Deep Drilling Inserts with Single Chip Splitting Cutting Edge and a Wiper

<https://www.iscar.com/eCatalog/Family.aspx?fnum=4832&mapp=DR&GFSTYP=M>



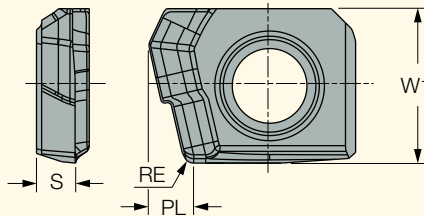
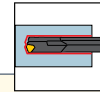
#### Dimensions

Designation	W1	RE	PL	S	IC948
ZSGT 060204R-DT	6.00	0.40	1.800	1.50	•

### ZSGT (INCH)

Deep Drilling Inserts with Single Chip Splitting Cutting Edge and a Wiper

<https://www.iscar.com/eCatalog/Family.aspx?fnum=4832&mapp=DR&GFSTYP=I>



#### Dimensions

Designation	W1	RE	PL	S	IC948
ZSGT 060204R-DT	.236	.0157	.07086	.059	•

# NPA

## New Product Announcement

HOLE MAKING

07-2023

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METRIC / IMPERIAL

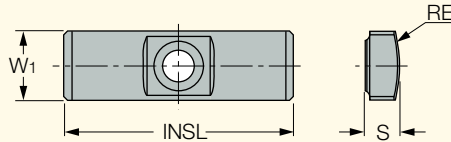
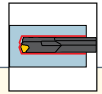
### TRIDEEP

DEEP DRILLING

#### GPS (METRIC)

Deep Drilling Solid Carbide Guide Pads

<https://www.iscar.com/eCatalog/Family.aspx?fnum=3801&mapp=DR&GFSTYP=M>



#### Dimensions

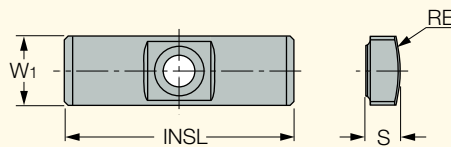
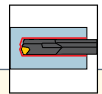
Designation	W1	INSL	S	RE	IC908
GPS-04-16-045-DC	4.0	16.00	1.80	4.50	•
GPS-04-16-050-DC	4.0	16.00	1.80	5.00	•

• DC- Double Chamfer

#### GPS (INCH)

Deep Drilling Solid Carbide Guide Pads

<https://www.iscar.com/eCatalog/Family.aspx?fnum=3801&mapp=DR&GFSTYP=I>

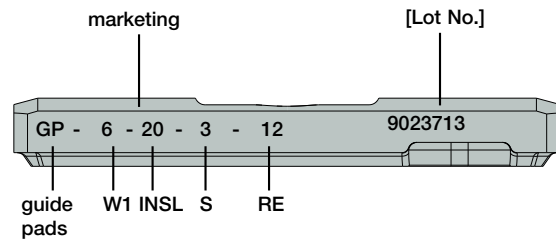
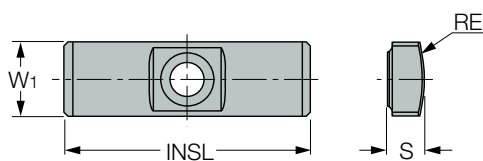


#### Dimensions

Designation	W1	INSL	S	RE	IC908
GPS-04-16-045-DC	.157	.630	.071	.1772	•
GPS-04-16-050-DC	.157	.630	.071	.1969	•

• DC- Double Chamfer

#### Universal Marking for Deep Drilling Tools



# NPA

New Product Announcement

HOLE MAKING

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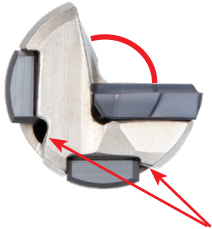
FEBRUARY 2023

METRIC / IMPERIAL

**TRIDEEP**  
DEEP DRILLING

**Wide Flute Angle**

- Smooth chip evacuation



**Double coolant along the guide pads**

- Efficient lubrication
- Longer tool life for inserts and guide pads

**Brazed Body**



**Steel Body**

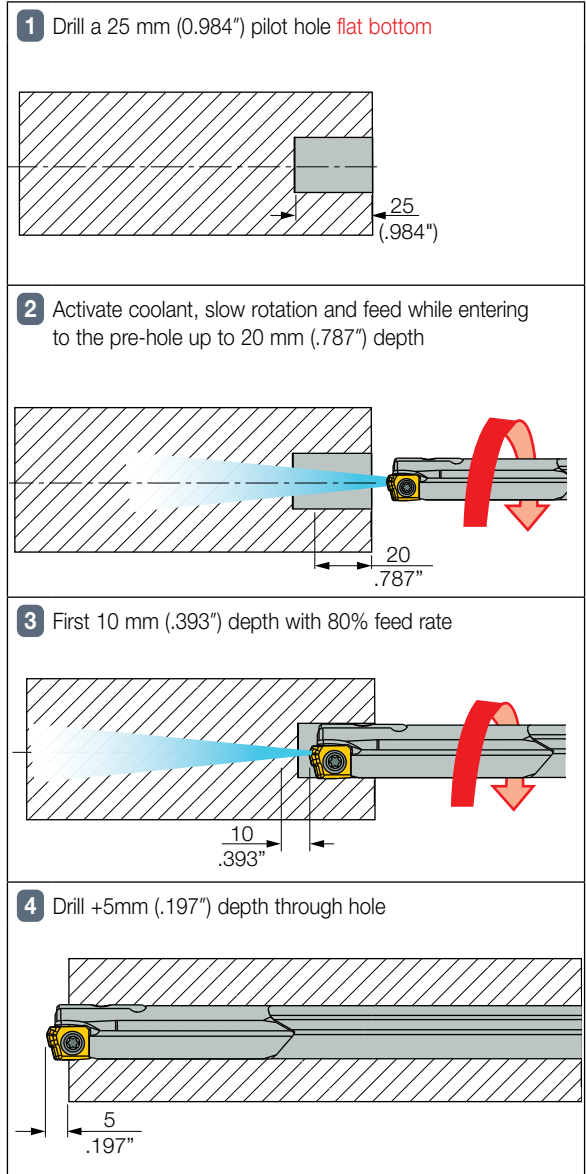
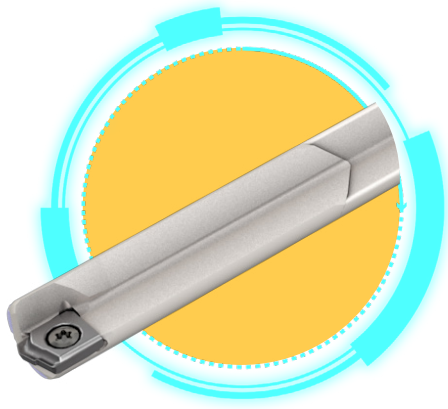
- Extremely high rigidity
- Simple direct mounting setup

**Flange**

- Superior rigidity for higher speeds and feeds

**Drilling Process on Machining Centers and Lathe Machines**

1. Drill a 25 mm (.984") pilot hole  $D^{+0.05}_{+0.01}$  ( $D^{+0.0019}_{+0.0004}$ ) flat bottom
2. Activate coolant and slowly set the tool into the pilot hole up to 20 mm (.787") depth.  
Vc=5-10 m/min (16-35 SFM) f=0.5-1.0 mm/rev (.020-.039 IPR)  
Stop the tool, start rotation at full machining speed  
Note: Do not rotate the drill at full machining speed before engaging the pilot hole.
3. After a full machining speed activation, the first 10 mm (.393") should be done at 80% feed rate. Thereafter, by gradual increase in feed up to 100% finish drilling to the required depth.
4. In case of through hole, drill the full hole to a depth of +5 mm (.197").  
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.
5. Stop the rotation and coolant  
Retract the tool.





# NPA

## New Product Announcement

HOLE MAKING

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METRIC / IMPERIAL

**TRIDEEP**  
DEEP DRILLING

### Standard Gundrill Drivers for Machining Centers, Lathes, etc.

#### Drivers

Drivers are available for dedicated and CNC machines, for any specified diameter and length. Below are the driver codes and technical data.

Driver Type	Drawing	øD x L	Driver Code
Cylindrical		.75x2.03"	95
		20x50	10
		25x56	11
		1.00x2.28"	96
		1.25x2.28"	97
		32x60	12
Weldon		.75x2.03"	99
		20x50	22
		25x56	23
		1.00x2.28"	100
		1.25x2.28"	101
		32x60	24
Whistle Notch		20x50	34
		25x56	35
		32x60	36
		40x70	37

#### Standard Drivers for Gundrill Machines

Driver Type	Drawing	øD x L	Driver Code
DIN228AK		CM1	45
		CM2	46
		CM3	47
		CM4	48
DIN228BK		CM1	49
		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
		25x112 M16x1.5	70
VDI Design		36x135 M24x1.5	71
		25x70	72
Central Clamping Hexagonal		32x70	73
		25x70	76
Central Clamping Tapered		20x70	77
		1.00x2.75"	80
Frontal Clamping Surface 2°		1.00x3.94"	81
		1.25x2.75"	82
		1.25x3.94"	83
		1.50x2.75"	84
		1.50x3.94"	85
Trapezoidal Thread		28x126 Tr 28x2	88
		36x162 Tr 36x2	89
		25x50	91
Spraymist Driver		35x60	92



### Cutting Conditions for GD-DH (10.00-11.50) (METRIC)

ISO	Material	Condition	Material Group No.	Cutting Speed V <sub>c</sub> [m/min]	ZSGT 06	
					Feed [mm/rev]	
P	non-alloy steel and cast steel, free cutting steel	<0.25% C	annealed	1	80-140	0.05-0.08
		≥0.25% C	annealed	2		
		<0.55% C	quenched and tempered	3		
		≥0.55% C	annealed	4		0.05-0.14
			quenched and tempered	5		
			annealed	6		
	low alloy and cast steel (less than 5% of alloying elements)	quenched and tempered		7	80-120	0.05-0.08
				8		
				9		
	high alloyed steel, cast steel and tool steel	annealed	10	80-120	0.05-0.14	
		quenched and tempered	11			
	stainless steel and cast steel	ferritic / martensitic	12	60-100	0.05-0.08	
		martensitic	13			
M	stainless steel and cast steel	austenitic, duplex	14	60-100	0.05-0.08	
K	gray cast iron (GG)	ferritic / pearlitic	15	80-140	0.05-0.20	
		pearlitic / martensitic	16			
	nodular cast iron (GGG)	ferritic	17			
		pearlitic	18			
	malleable cast iron	ferritic	19			
	pearlitic	20				
N	aluminum-wrought alloys	not hardenable	21	100-200	0.05-0.18	
		hardenable	22			
	aluminum-cast alloys	≤12% Si	not hardenable			23
		hardenable	24			
	>12% Si	high temperature	25			
		free cutting	26			
	copper alloys	brass	27			
		electrolytic copper	28			
non metallic	duroplastics, fiber plastics	29				
	hard rubber	30				
S	high temperature alloys	Fe based	annealed	31	20-50	0.04-0.06
			hardened	32		
		Ni or Co based	annealed	33		
			hardened	34		
			cast	35		
	titanium alloys	pure	36	30-60	0.04-0.10	
		alpha+beta alloys, hardened	37			
H	hardened steel	hardened	38	50-100	0.04-0.06	
		hardened	39			
	chilled cast iron	cast	40			
	cast iron	hardened	41			

- steel
- stainless steel
- cast iron
- non-ferrous metals
- superalloys and titanium
- hard materials

(1) Specific cutting force for 1 mm<sup>2</sup> chip section  
 (2) Chip thickness factor



### Cutting Conditions for GD-DH (.437") (INCH)

ISO	Material	Condition	Material Group No.	Cutting Speed V <sub>c</sub> [SFM]	ZSGT 06	
					Feed [IPR]	
P	non-alloy steel and cast steel, free cutting steel	<0.25% C	annealed	1	262-460	.0020-.0031
		≥0.25% C	annealed	2		
		<0.55% C	quenched and tempered	3		
		≥0.55% C	annealed	4		
			quenched and tempered	5		
	low alloy and cast steel (less than 5% of alloying elements)	quenched and tempered	annealed	6	262-395	.0020-.0031
			7			
			8			
	high alloyed steel, cast steel and tool steel	quenched and tempered	annealed	10	262-395	.0020-.0055
			11			
	stainless steel and cast steel		ferritic / martensitic	12	197-330	.0020-.0031
			martensitic	13		
	M	stainless steel and cast steel	austenitic, duplex	14	197-330	.0020-.0031
K	gray cast iron (GG)	ferritic / pearlitic	15	262-460	.0020-.0079	
		pearlitic / martensitic	16			
	nodular cast iron (GGG)	ferritic	17			
		pearlitic	18			
	malleable cast iron	ferritic	19			
		pearlitic	20			
N	aluminum-wrought alloys	not hardenable	21	330-656	.0020-.0071	
		hardenable	22			
	aluminum-cast alloys	≤12% Si	not hardenable			23
		hardenable	24			
		>12% Si	high temperature			25
	copper alloys	>1% Pb	free cutting			26
			brass			27
			electrolytic copper			28
non metallic		duroplastics, fiber plastics	29			
		hard rubber	30			
S	high temperature alloys	Fe based	annealed	31	66-165	.0016-.0024
			hardened	32		
		Ni or Co based	annealed	33		
			hardened	34		
			cast	35		
	titanium alloys		pure	36	98-197	.0016-.0039
			alpha+beta alloys, hardened	37		
H	hardened steel		hardened	38	165-330	.0016-.0024
			hardened	39		
	chilled cast iron	cast	40			
	cast iron	hardened	41			

- steel
- stainless steel
- cast iron
- non-ferrous metals
- superalloys and titanium
- hard materials

(1) Specific cutting force for .0016 in<sup>2</sup> chip section

(2) Chip thickness factor