

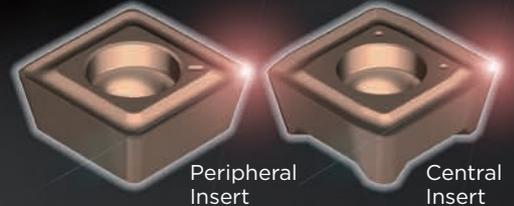
SumiDrill **GDX** series

Rev. 2

# Balancing rigidity and chip evacuation Realises deep hole drilling up to L/D=7



**4-cornered Inserts**



Peripheral Insert

Central Insert

Hole Depth (L/D)	2D	3D	4D	5D	6D	7D
Diameter	ø15.5mm to 27.0mm					

**Expansion** Body: For Insert Size 05, 36 items / For Insert Size 07, 60 items

**Expansion** Insert: Insert Size 05, 8 items / Insert Size 07, 8 items



## ■ Features

The SumiDrill GDX series drastically reduces drilling vibration through a high-rigidity holder design. In addition, insert design is individually optimised for the central and peripheral cutting edges to achieve excellent drilling balance and chip evacuation. Dramatically improved stability for deep hole drilling up to  $L/D=7$ .

## ■ Product Range

Insert Size	GDXT05	GDXT06	GDXT07
Drilling Depth	Compatible Holders (Dia. mm)		
2D	ø15.5 to 18.0	ø18.5 to 22.0	ø22.5 to 27.0
3D	ø15.5 to 18.0	ø18.5 to 22.0	ø22.5 to 27.0
4D	ø15.5 to 18.0	ø18.5 to 22.0	ø22.5 to 27.0
5D	ø15.5 to 18.0	ø18.5 to 22.0	ø22.5 to 27.0
6D	ø15.5 to 18.0	ø18.5 to 22.0	ø22.5 to 27.0
7D	ø15.5 to 18.0	ø18.5 to 22.0	ø22.5 to 27.0

## ■ High-rigidity Holder Design

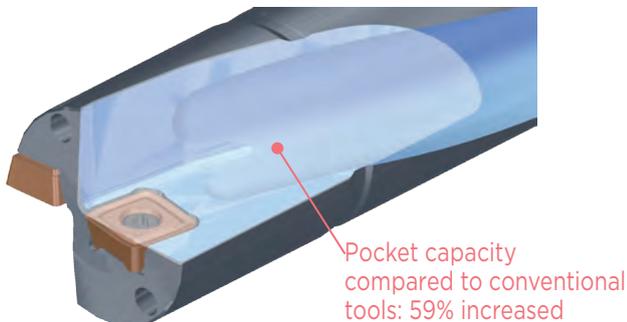
Proprietary flute design balances chip evacuation and holder rigidity at a high level.

Machining vibration is effectively suppressed and cutting force reduced to realise stable deep hole drilling.

### Evacuation flute design

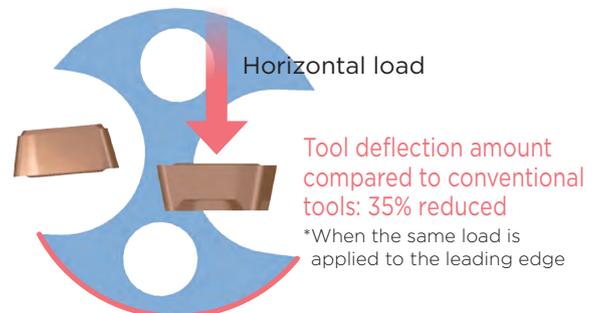


### Wide pocket and smooth connection



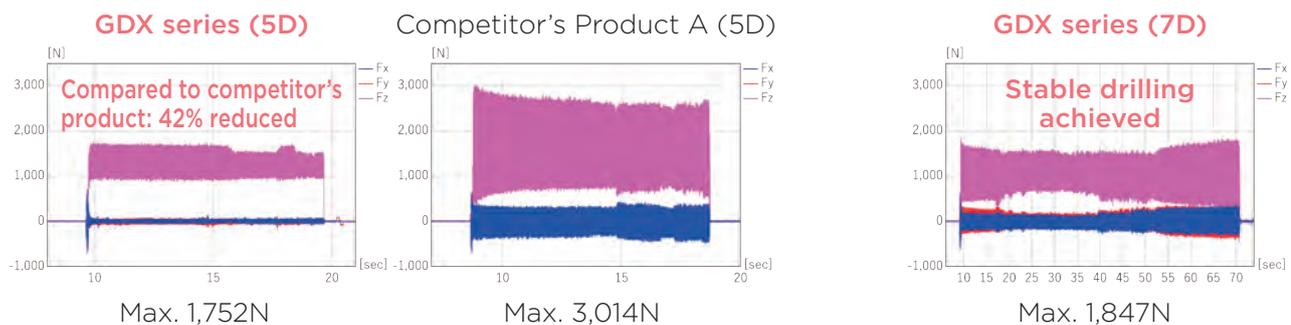
Increased pocket capacity essential for chip evacuation

### High-rigidity evacuation flute design



Cross-section thickness positioned to suppress deformation amount

## Cutting Force

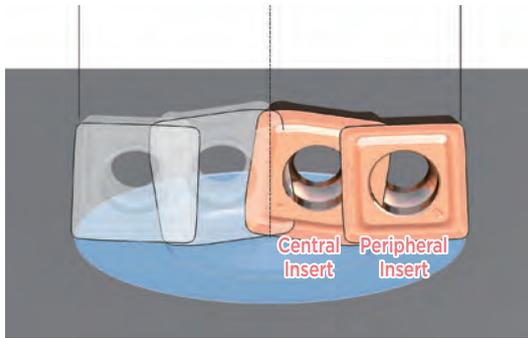


Work Material: S50C Drill: GDXH200D5S25-06 (ø20, 5D) GDXH200D7S25-06 (ø20, 7D)  
 Insert: Peripheral Insert GDXT06T204P-G (ACU2500) Central Insert: GDXT06T206C-G (ACU2500)  
 Cutting Conditions (5D Holder):  $vc = 150\text{m/min}$   $f = 0.10\text{mm/rev}$   $H = 85\text{mm}$  (Stop Hole) Internal Coolant Supply (Water-soluble)  
 (7D Holder):  $vc = 150\text{m/min}$   $f = 0.06\text{mm/rev}$   $H = 140\text{mm}$  (Stop Hole) Internal Coolant Supply (Water-soluble)

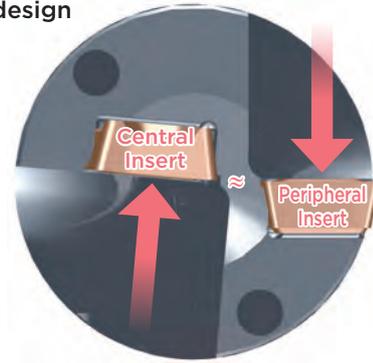
## ■ Dedicated Insert Design

The central and peripheral insert designs have been individually optimised, improving stability with the optimal shape and relative positioning. In addition, the wiper flat shape has been optimised to achieve excellent machined surface quality.

### Dedicated insert design



### Balanced design



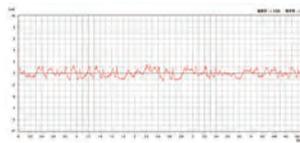
Using simulations to create dedicated designs for the central insert and peripheral insert to ensure uniform cutting resistance

## Drilled Surface Quality

### GDX series

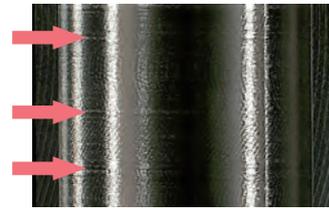


Glossy surface with no scratches

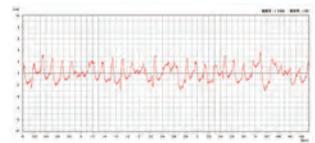


Ra = 0.80µm

### Competitor's Product B



Wavy pattern



Ra = 1.04µm

Work Material: S50C Drill: GDXH200D5S25-06 (ø20, 5D) Insert: Peripheral Insert: GDXT06T204P-G (ACU2500) Central Insert: GDXT06T206C-G (ACU2500)  
Cutting Conditions: vc = 150m/min f = 0.10mm/rev H = 85mm (Stop Hole) Internal Coolant Supply (Water-soluble)

## ■ Insert Combinations

Utilising different chipbreakers for the central and peripheral inserts enables the drilling of stainless steel and general structural rolled steel.

### Peripheral Insert

Chipbreaker	L type	G type
Features	Chip Control	General-purpose
Appearance		
Cross Section		



### Central Insert

Chipbreaker	L type	G type
Features	Chip Control	General-purpose
Appearance		
Cross Section		

## Rolled Steel for General Structure (SS400) Drilling Example

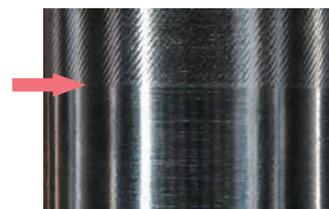
### GDX series



Glossy surface with no scratches



### Competitor's Product C



Wavy pattern

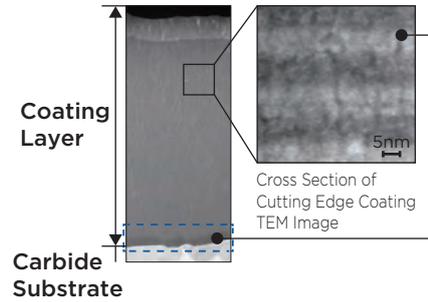


Work Material: SS400, Drill: GDXH200D5S25-06 (ø20, 5D)  
Insert: Peripheral Insert GDXT06T204P-L (ACU2500) Central Insert: GDXT06T206C-L (ACU2500)  
Cutting Conditions: vc = 200m/min, f = 0.05mm/rev, H = 85mm (Stop Hole), Internal Coolant Supply (Water-soluble)

## ■ Insert Grade Features

Utilise ACU2500, the latest general-purpose grade, coupled with dedicated grades for different work materials ACP2000 or ACS3000 for the peripheral insert, to achieve a long tool life.

**ABSOTECH PVD** Applicable Grade: **ACU2500**

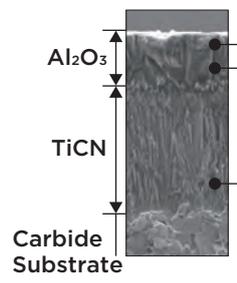


**New Super Multi-Layered Structure**  
Higher hardness and twice the conventional wear resistance due to a fine crystal structure AlTiCrBN-based nano-layered coating

**High Adhesion Strength**  
Significantly improved coating adhesion has more than twice the chipping resistance of conventional coatings.

Coating Layer  
Carbide Substrate  
Cross Section of Cutting Edge Coating TEM Image  
5nm

**ABSOTECH CVD** Applicable Grade: **ACP2000**



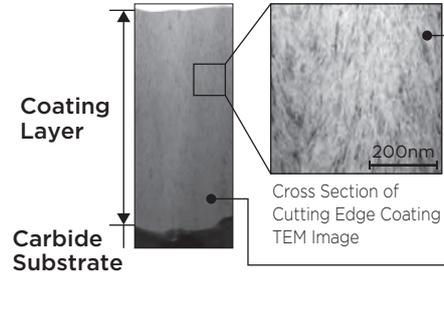
**Special Surface Treatment**  
Suppresses thermal cracking by introducing high compressive stress, resulting in chipping resistance more than twice that of conventional coatings.

**Crystal Orientation Control Al<sub>2</sub>O<sub>3</sub>**  
By controlling the growth direction, Al<sub>2</sub>O<sub>3</sub> is reinforced for crater wear resistance more than twice that of conventional coatings

**High Hardness TiCN**  
Increased TiCN hardness by using a C-rich composition for flank wear resistance more than twice that of conventional coatings

Al<sub>2</sub>O<sub>3</sub>  
TiCN  
Carbide Substrate

**ABSOTECH PVD** Applicable Grade: **ACS3000**

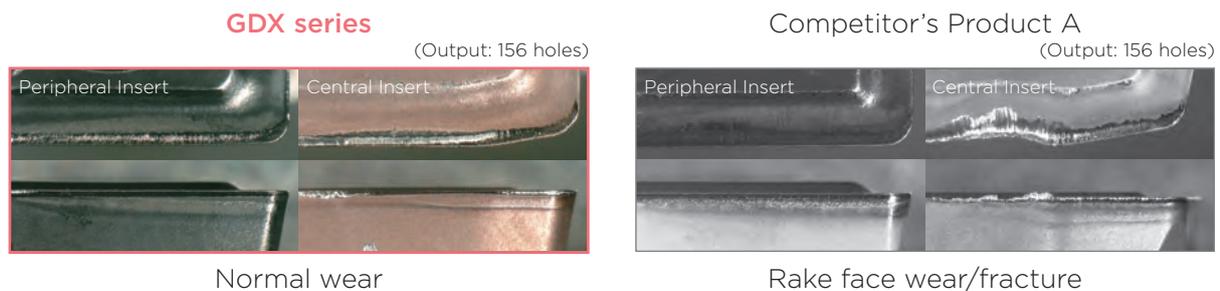


**Ultra-fine Grained B Additive**  
New AlTiBN coating, with an ultra-fine coating structure, achieves high strength and toughness  
Outstanding balance of chipping resistance and wear resistance

**High Adhesion Strength**  
Significantly improved coating adhesion has more than twice the chipping resistance of conventional coatings

Coating Layer  
Carbide Substrate  
Cross Section of Cutting Edge Coating TEM Image  
200nm

## Comparison of Wear Resistance



Work Material: S50C, Drill: GDXH200D5S25-06 (ø20, 5D)  
 Insert: Peripheral Insert GDXT06T204P-G (ACP2000) Central Insert: GDXT06T206C-G (ACU2500)  
 Cutting Conditions: vc = 150m/min, f = 0.10mm/rev, H = 38mm (Through Hole), Internal Coolant Supply (Water-soluble)

■ Possible Drilling Applications/Workpiece Shapes

Depending on the drilling application or workpiece shape, set the cutting conditions with reference to the table below.

	OK	OK	OK	OK	OK	OK	NG	NG
Machining Application / Workpiece Shape								
Recommended Holder	See Recommended Cutting Conditions	5D and below	—	—				
Recommended Cutting Conditions	See Recommended Cutting Conditions	Feed Rate 70%	Feed Rate 50%	Feed Rate 70%	Feed Rate 50%	Feed Rate 50%	—	—

■ Insert Selection Guide The GDX insert series has a variety of options

ISO	Work Material	1st Recommendation			2nd Recommendation	
		Peripheral Insert	Central Insert		Peripheral Insert	Central Insert
P	Steel/ Carbon Steel			Initial chipping countermeasures Insufficient wear resistance  Improved chip control (for long chips)		
		G type Chipbreaker ACU2500	G type Chipbreaker ACU2500			
M	Low Carbon Steel / Structural Steel			Insufficient wear resistance  Improved chip control (for poor evacuation)		
		L type Chipbreaker ACU2500	L type Chipbreaker ACU2500			
K	Stainless Steel			Insufficient fracture resistance  Improved chip control (for poor evacuation)		
		L type Chipbreaker ACU2500	L type Chipbreaker ACU2500			
	Cast Iron			Insufficient wear resistance		
		G type Chipbreaker ACU2500	G type Chipbreaker ACU2500		G type Chipbreaker ACP2000	G type Chipbreaker ACU2500

\*If chips from the peripheral insert are long or chips at the central insert cannot be easily evacuated, causing jamming or clogging, select a L type chipbreaker.

# GDX series Recommended Cutting Conditions (2D/3D/4D)

L/D	Classification	Work Material	Work Material Hardness		Chipbreaker		Recommended Peripheral Insert Grade	Cutting Speed, vc (m/min)	Feed Rate, f (mm/rev) (Min. - Optimum - Max.)		
			HB	Peripheral Insert	Central Insert	ø15.5 to ø18.0			ø18.5 to ø22.0	ø22.5 to ø27.0	
2D	P	Steel, Carbon Steel SS400	125	L	L	ACP2000 ACU2500	160 - 220 - 280 120 - 170 - 220	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	
		S15C	125	L	L	ACP2000 ACU2500	160 - 220 - 280 120 - 170 - 220	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	
		S45C	190	G	G	ACP2000 ACU2500	170 - 210 - 250 100 - 160 - 220	0.06 - 0.13 - 0.20	0.06 - 0.13 - 0.20	0.06 - 0.14 - 0.22	
		S45C Hardened	250	G	G	ACP2000 ACU2500	110 - 180 - 250 90 - 140 - 200	0.05 - 0.10 - 0.14	0.05 - 0.10 - 0.14	0.05 - 0.10 - 0.14	
		S75C	270	G	G	ACP2000 ACU2500	110 - 180 - 250 70 - 140 - 200	0.06 - 0.12 - 0.17	0.06 - 0.12 - 0.17	0.06 - 0.12 - 0.17	
		S75C Hardened	300	G	G	ACP2000 ACU2500	100 - 150 - 200 90 - 120 - 150	0.05 - 0.10 - 0.14	0.05 - 0.10 - 0.14	0.05 - 0.10 - 0.14	
		Low-alloy Steel SCM, SNCM	180	G	G	ACP2000 ACU2500	140 - 180 - 220 110 - 140 - 170	0.05 - 0.10 - 0.14	0.05 - 0.10 - 0.14	0.05 - 0.10 - 0.14	
		SCM, SNCM Hardened	275	G	G	ACP2000 ACU2500	130 - 170 - 210 100 - 130 - 140	0.06 - 0.10 - 0.14	0.06 - 0.10 - 0.14	0.06 - 0.10 - 0.14	
		SCM, SNCM Hardened	300	G	G	ACP2000 ACU2500	120 - 150 - 180 65 - 100 - 135	0.06 - 0.10 - 0.14	0.06 - 0.10 - 0.14	0.06 - 0.10 - 0.14	
		SCM, SNCM Hardened	350	G	G	ACP2000 ACU2500	80 - 120 - 160 50 - 80 - 110	0.06 - 0.10 - 0.14	0.06 - 0.10 - 0.14	0.06 - 0.10 - 0.14	
		High-alloy Steel SKD, SKT, SKH	200	G	G	ACP2000 ACU2500	150 - 180 - 210 100 - 150 - 180	0.08 - 0.13 - 0.17	0.08 - 0.13 - 0.18	0.08 - 0.13 - 0.18	
		SKD, SKT, SKH Hardened	325	G	G	ACP2000 ACU2500	120 - 150 - 180 60 - 80 - 100	0.06 - 0.11 - 0.15	0.06 - 0.11 - 0.15	0.06 - 0.11 - 0.15	
	M	Stainless Steel SUS430 and Others (Martensitic/Ferritic)	200	L	L	ACU2500	120 - 160 - 180	0.05 - 0.10 - 0.15	0.05 - 0.10 - 0.15	0.05 - 0.10 - 0.15	
		SUS403 and Others (Martensitic/Hardened)	240	L	L	ACU2500	120 - 150 - 170	0.05 - 0.10 - 0.15	0.05 - 0.10 - 0.15	0.05 - 0.10 - 0.15	
		SUS304, SUS316 (Austenitic)	180	L	L	ACU2500	120 - 180 - 210	0.05 - 0.10 - 0.15	0.05 - 0.10 - 0.15	0.05 - 0.10 - 0.15	
	K	Cast Iron		G	G	ACP2000 ACU2500	150 - 210 - 240 120 - 180 - 210	0.10 - 0.19 - 0.28	0.10 - 0.19 - 0.28	0.09 - 0.21 - 0.32	
		Ductile Cast Iron		G	G	ACP2000 ACU2500	120 - 150 - 180 100 - 125 - 150	0.10 - 0.19 - 0.28	0.10 - 0.19 - 0.28	0.09 - 0.21 - 0.32	
	3D	P	Steel, Carbon Steel SS400	125	L	L	ACP2000 ACU2500	160 - 220 - 280 120 - 170 - 220	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08
S15C			125	L	L	ACP2000 ACU2500	160 - 220 - 280 120 - 170 - 220	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	
S45C			190	G	G	ACP2000 ACU2500	170 - 210 - 250 100 - 160 - 220	0.06 - 0.12 - 0.18	0.06 - 0.12 - 0.18	0.06 - 0.13 - 0.20	
S45C Hardened			250	G	G	ACP2000 ACU2500	110 - 180 - 250 90 - 140 - 200	0.05 - 0.09 - 0.13	0.05 - 0.09 - 0.13	0.05 - 0.09 - 0.13	
S75C			270	G	G	ACP2000 ACU2500	110 - 180 - 250 70 - 140 - 200	0.06 - 0.11 - 0.15	0.06 - 0.11 - 0.15	0.06 - 0.11 - 0.15	
S75C Hardened			300	G	G	ACP2000 ACU2500	100 - 150 - 200 90 - 120 - 150	0.05 - 0.09 - 0.13	0.05 - 0.09 - 0.13	0.05 - 0.09 - 0.13	
Low-alloy Steel SCM, SNCM			180	G	G	ACP2000 ACU2500	140 - 180 - 220 110 - 140 - 170	0.05 - 0.09 - 0.13	0.05 - 0.09 - 0.13	0.05 - 0.09 - 0.13	
SCM, SNCM Hardened			275	G	G	ACP2000 ACU2500	130 - 170 - 210 100 - 130 - 140	0.06 - 0.09 - 0.13	0.06 - 0.09 - 0.13	0.06 - 0.09 - 0.13	
SCM, SNCM Hardened			300	G	G	ACP2000 ACU2500	120 - 150 - 180 65 - 100 - 135	0.06 - 0.09 - 0.13	0.06 - 0.09 - 0.13	0.06 - 0.09 - 0.13	
SCM, SNCM Hardened			350	G	G	ACP2000 ACU2500	80 - 120 - 160 50 - 80 - 110	0.06 - 0.09 - 0.13	0.06 - 0.09 - 0.13	0.06 - 0.09 - 0.13	
High-alloy Steel SKD, SKT, SKH			200	G	G	ACP2000 ACU2500	150 - 180 - 210 100 - 150 - 180	0.07 - 0.11 - 0.15	0.07 - 0.12 - 0.16	0.07 - 0.12 - 0.16	
SKD, SKT, SKH Hardened			325	G	G	ACP2000 ACU2500	120 - 150 - 180 60 - 80 - 100	0.06 - 0.10 - 0.14	0.06 - 0.10 - 0.14	0.06 - 0.10 - 0.14	
M		Stainless Steel SUS430 and Others (Martensitic/Ferritic)	200	L	L	ACU2500	120 - 160 - 180	0.05 - 0.09 - 0.14	0.05 - 0.09 - 0.14	0.05 - 0.09 - 0.14	
		SUS403 and Others (Martensitic/Hardened)	240	L	L	ACU2500	120 - 150 - 170	0.05 - 0.09 - 0.14	0.05 - 0.09 - 0.14	0.05 - 0.09 - 0.14	
		SUS304, SUS316 (Austenitic)	180	L	L	ACU2500	120 - 180 - 210	0.05 - 0.09 - 0.14	0.05 - 0.09 - 0.14	0.05 - 0.09 - 0.14	
K		Cast Iron		G	G	ACP2000 ACU2500	150 - 210 - 240 120 - 180 - 210	0.09 - 0.17 - 0.25	0.10 - 0.18 - 0.25	0.09 - 0.19 - 0.29	
		Ductile Cast Iron		G	G	ACP2000 ACU2500	120 - 150 - 180 100 - 125 - 150	0.09 - 0.17 - 0.25	0.10 - 0.18 - 0.25	0.09 - 0.19 - 0.29	
4D		P	Steel, Carbon Steel SS400	125	L	L	ACP2000 ACU2500	160 - 220 - 280 120 - 170 - 220	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08
	S15C		125	L	L	ACP2000 ACU2500	160 - 220 - 280 120 - 170 - 220	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	
	S45C		190	G	G	ACP2000 ACU2500	170 - 210 - 250 100 - 160 - 220	0.06 - 0.11 - 0.16	0.06 - 0.11 - 0.16	0.06 - 0.12 - 0.18	
	S45C Hardened		250	G	G	ACP2000 ACU2500	110 - 180 - 250 90 - 140 - 200	0.05 - 0.08 - 0.11	0.05 - 0.08 - 0.11	0.05 - 0.08 - 0.11	
	S75C		270	G	G	ACP2000 ACU2500	110 - 180 - 250 70 - 140 - 200	0.06 - 0.10 - 0.14	0.06 - 0.10 - 0.14	0.06 - 0.10 - 0.14	
	S75C Hardened		300	G	G	ACP2000 ACU2500	100 - 150 - 200 90 - 120 - 150	0.05 - 0.08 - 0.11	0.05 - 0.08 - 0.11	0.05 - 0.08 - 0.11	
	Low-alloy Steel SCM, SNCM		180	G	G	ACP2000 ACU2500	140 - 180 - 220 110 - 140 - 170	0.05 - 0.08 - 0.11	0.05 - 0.08 - 0.11	0.05 - 0.08 - 0.11	
	SCM, SNCM Hardened		275	G	G	ACP2000 ACU2500	130 - 170 - 210 100 - 130 - 140	0.06 - 0.09 - 0.11	0.06 - 0.09 - 0.11	0.06 - 0.09 - 0.11	
	SCM, SNCM Hardened		300	G	G	ACP2000 ACU2500	120 - 150 - 180 65 - 100 - 135	0.06 - 0.09 - 0.11	0.06 - 0.09 - 0.11	0.06 - 0.09 - 0.11	
	SCM, SNCM Hardened		350	G	G	ACP2000 ACU2500	80 - 120 - 160 50 - 80 - 110	0.06 - 0.09 - 0.11	0.06 - 0.09 - 0.11	0.06 - 0.09 - 0.11	
	High-alloy Steel SKD, SKT, SKH		200	G	G	ACP2000 ACU2500	150 - 180 - 210 100 - 150 - 180	0.06 - 0.10 - 0.14	0.06 - 0.11 - 0.15	0.06 - 0.11 - 0.15	
	SKD, SKT, SKH Hardened		325	G	G	ACP2000 ACU2500	120 - 150 - 180 60 - 80 - 100	0.06 - 0.09 - 0.12	0.06 - 0.09 - 0.12	0.06 - 0.09 - 0.12	
	M	Stainless Steel SUS430 and Others (Martensitic/Ferritic)	200	L	L	ACU2500	120 - 160 - 180	0.05 - 0.09 - 0.12	0.05 - 0.09 - 0.12	0.05 - 0.09 - 0.12	
		SUS403 and Others (Martensitic/Hardened)	240	L	L	ACU2500	120 - 150 - 170	0.05 - 0.09 - 0.12	0.05 - 0.09 - 0.12	0.05 - 0.09 - 0.12	
		SUS304, SUS316 (Austenitic)	180	L	L	ACU2500	120 - 180 - 210	0.05 - 0.09 - 0.12	0.05 - 0.09 - 0.12	0.05 - 0.09 - 0.12	
	K	Cast Iron		G	G	ACP2000 ACU2500	150 - 210 - 240 120 - 180 - 210	0.09 - 0.16 - 0.23	0.10 - 0.16 - 0.23	0.09 - 0.18 - 0.26	
		Ductile Cast Iron		G	G	ACP2000 ACU2500	120 - 150 - 180 100 - 125 - 150	0.09 - 0.16 - 0.23	0.10 - 0.16 - 0.23	0.09 - 0.18 - 0.26	

· The recommended conditions may not be practical depending on the operating conditions (e.g. machine tool, workpiece shape, clamping system).

\*Caution · The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, and other factors.

# GDX series Recommended Cutting Conditions (5D/6D/7D)

L/D	Classification	Work Material	Work Material Hardness		Chipbreaker		Recommended Peripheral Insert Grade	Cutting Speed, vc (m/min)	Feed Rate, f (mm/rev) (Min. - Optimum - Max.)		
			HB	Peripheral Insert	Central Insert	ø15.5 to ø18.0			ø18.5 to ø22.0	ø22.5 to ø27.0	
5D	P	Steel, Carbon Steel SS400	125	L	L	ACP2000 ACU2500	160 - 200 - 280 120 - 170 - 220	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	
		S15C	125	L	L	ACP2000 ACU2500	160 - 200 - 280 120 - 170 - 220	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	
		S45C	190	G	G	ACP2000 ACU2500	170 - 210 - 250 100 - 160 - 220	0.06 - 0.10 - 0.14	0.06 - 0.10 - 0.14	0.06 - 0.11 - 0.15	
		S45C Hardened	250	G	G	ACP2000 ACU2500	110 - 180 - 250 90 - 140 - 200	0.05 - 0.07 - 0.10	0.05 - 0.07 - 0.10	0.05 - 0.07 - 0.10	
		S75C	270	G	G	ACP2000 ACU2500	110 - 180 - 250 70 - 140 - 200	0.06 - 0.09 - 0.12	0.06 - 0.09 - 0.12	0.06 - 0.09 - 0.12	
		S75C Hardened	300	G	G	ACP2000 ACU2500	100 - 150 - 200 90 - 120 - 150	0.05 - 0.07 - 0.10	0.05 - 0.07 - 0.10	0.05 - 0.07 - 0.10	
		Low-alloy Steel SCM, SNCM	180	G	G	ACP2000 ACU2500	140 - 180 - 220 110 - 140 - 170	0.05 - 0.07 - 0.10	0.05 - 0.07 - 0.10	0.05 - 0.07 - 0.10	
		SCM, SNCM Hardened	275	G	G	ACP2000 ACU2500	130 - 170 - 210 100 - 130 - 140	0.06 - 0.08 - 0.10	0.06 - 0.08 - 0.10	0.06 - 0.08 - 0.10	
		SCM, SNCM Hardened	300	G	G	ACP2000 ACU2500	120 - 150 - 180 65 - 100 - 135	0.06 - 0.08 - 0.10	0.06 - 0.08 - 0.10	0.06 - 0.08 - 0.10	
		SCM, SNCM Hardened	350	G	G	ACP2000 ACU2500	80 - 120 - 160 50 - 80 - 110	0.06 - 0.08 - 0.10	0.06 - 0.08 - 0.10	0.06 - 0.08 - 0.10	
	High-alloy Steel SKD, SKT, SKH	200	G	G	ACP2000 ACU2500	150 - 180 - 210 100 - 150 - 180	0.06 - 0.09 - 0.12	0.06 - 0.09 - 0.12	0.06 - 0.09 - 0.12		
	SKD, SKT, SKH Hardened	325	G	G	ACP2000 ACU2500	120 - 150 - 180 60 - 80 - 100	0.06 - 0.08 - 0.10	0.06 - 0.08 - 0.10	0.06 - 0.08 - 0.10		
	M	Stainless Steel SUS430 and Others (Martensitic/Ferritic)	200	L	L	ACU2500	120 - 160 - 180	0.05 - 0.08 - 0.10	0.05 - 0.08 - 0.10	0.05 - 0.08 - 0.10	
		SUS403 and Others (Martensitic/Hardened)	240	L	L	ACU2500	120 - 150 - 170	0.05 - 0.08 - 0.10	0.05 - 0.08 - 0.10	0.05 - 0.08 - 0.10	
SUS304, SUS316 (Austenitic)		180	L	L	ACU2500	120 - 180 - 210	0.05 - 0.08 - 0.10	0.05 - 0.08 - 0.10	0.05 - 0.08 - 0.10		
K	Cast Iron		G	G	ACP2000 ACU2500	150 - 210 - 240 120 - 180 - 210	0.09 - 0.14 - 0.19	0.10 - 0.15 - 0.19	0.09 - 0.16 - 0.22		
	Ductile Cast Iron		G	G	ACP2000 ACU2500	120 - 150 - 180 100 - 125 - 150	0.09 - 0.14 - 0.19	0.10 - 0.15 - 0.19	0.09 - 0.16 - 0.22		
6D	P	Steel, Carbon Steel SS400	125	L	L	ACP2000 ACU2500	160 - 200 - 240 120 - 150 - 180	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	
		S15C	125	L	L	ACP2000 ACU2500	160 - 200 - 240 120 - 150 - 180	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	
		S45C	190	G	G	ACP2000 ACU2500	170 - 190 - 210 100 - 140 - 180	0.05 - 0.07 - 0.09	0.05 - 0.07 - 0.09	0.05 - 0.07 - 0.09	
		S45C Hardened	250	G	G	ACP2000 ACU2500	110 - 160 - 210 90 - 120 - 160	0.05 - 0.06 - 0.07	0.05 - 0.06 - 0.07	0.05 - 0.06 - 0.07	
		S75C	270	G	G	ACP2000 ACU2500	110 - 160 - 210 70 - 120 - 160	0.06 - 0.07 - 0.09	0.06 - 0.07 - 0.09	0.06 - 0.07 - 0.09	
		S75C Hardened	300	G	G	ACP2000 ACU2500	100 - 130 - 160 90 - 100 - 110	0.05 - 0.06 - 0.07	0.05 - 0.06 - 0.07	0.05 - 0.06 - 0.07	
		Low-alloy Steel SCM, SNCM	180	G	G	ACP2000 ACU2500	140 - 160 - 180 110 - 120 - 130	0.05 - 0.06 - 0.07	0.05 - 0.06 - 0.07	0.05 - 0.06 - 0.07	
		SCM, SNCM Hardened	275	G	G	ACP2000 ACU2500	130 - 150 - 170 100 - 110 - 100	0.06 - 0.07 - 0.07	0.06 - 0.07 - 0.07	0.06 - 0.07 - 0.07	
		SCM, SNCM Hardened	300	G	G	ACP2000 ACU2500	120 - 130 - 140 65 - 80 - 95	0.06 - 0.07 - 0.07	0.06 - 0.07 - 0.07	0.06 - 0.07 - 0.07	
		SCM, SNCM Hardened	350	G	G	ACP2000 ACU2500	80 - 100 - 120 50 - 60 - 70	0.06 - 0.07 - 0.07	0.06 - 0.07 - 0.07	0.06 - 0.07 - 0.07	
	High-alloy Steel SKD, SKT, SKH	200	G	G	ACP2000 ACU2500	150 - 170 - 190 100 - 140 - 160	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08		
	SKD, SKT, SKH Hardened	325	G	G	ACP2000 ACU2500	120 - 140 - 160 60 - 70 - 80	0.06 - 0.07 - 0.08	0.06 - 0.07 - 0.08	0.06 - 0.07 - 0.08		
	M	Stainless Steel SUS430 and Others (Martensitic/Ferritic)	200	L	L	ACU2500	120 - 150 - 160	0.05 - 0.06 - 0.08	0.05 - 0.06 - 0.08	0.05 - 0.06 - 0.08	
		SUS403 and Others (Martensitic/Hardened)	240	L	L	ACU2500	120 - 140 - 150	0.05 - 0.06 - 0.08	0.05 - 0.06 - 0.08	0.05 - 0.06 - 0.08	
SUS304, SUS316 (Austenitic)		180	L	L	ACU2500	120 - 170 - 190	0.05 - 0.06 - 0.08	0.05 - 0.06 - 0.08	0.05 - 0.06 - 0.08		
K	Cast Iron		G	G	ACP2000 ACU2500	150 - 200 - 220 120 - 170 - 190	0.09 - 0.12 - 0.14	0.10 - 0.12 - 0.14	0.09 - 0.13 - 0.16		
	Ductile Cast Iron		G	G	ACP2000 ACU2500	120 - 140 - 160 100 - 115 - 130	0.09 - 0.12 - 0.14	0.10 - 0.12 - 0.14	0.09 - 0.13 - 0.16		
7D	P	Steel, Carbon Steel SS400	125	L	L	ACP2000 ACU2500	160 - 200 - 240 120 - 150 - 180	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	
		S15C	125	L	L	ACP2000 ACU2500	160 - 200 - 240 120 - 150 - 180	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	
		S45C	190	G	G	ACP2000 ACU2500	170 - 190 - 210 100 - 140 - 180	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	0.04 - 0.06 - 0.08	
		S45C Hardened	250	G	G	ACP2000 ACU2500	110 - 160 - 210 90 - 120 - 160	0.05 - 0.06 - 0.07	0.05 - 0.06 - 0.07	0.05 - 0.06 - 0.07	
		S75C	270	G	G	ACP2000 ACU2500	110 - 160 - 210 70 - 120 - 160	0.06 - 0.07 - 0.08	0.06 - 0.07 - 0.08	0.06 - 0.07 - 0.08	
		S75C Hardened	300	G	G	ACP2000 ACU2500	100 - 130 - 160 90 - 100 - 110	0.05 - 0.06 - 0.07	0.05 - 0.06 - 0.07	0.05 - 0.06 - 0.07	
		Low-alloy Steel SCM, SNCM	180	G	G	ACP2000 ACU2500	140 - 160 - 180 110 - 120 - 130	0.05 - 0.06 - 0.07	0.05 - 0.06 - 0.07	0.05 - 0.06 - 0.07	
		SCM, SNCM Hardened	275	G	G	ACP2000 ACU2500	130 - 150 - 170 100 - 110 - 100	0.06 - 0.07 - 0.07	0.06 - 0.07 - 0.07	0.06 - 0.07 - 0.07	
		SCM, SNCM Hardened	300	G	G	ACP2000 ACU2500	120 - 130 - 140 65 - 80 - 95	0.06 - 0.07 - 0.07	0.06 - 0.07 - 0.07	0.06 - 0.07 - 0.07	
		SCM, SNCM Hardened	350	G	G	ACP2000 ACU2500	80 - 100 - 120 50 - 60 - 70	0.06 - 0.07 - 0.07	0.06 - 0.07 - 0.07	0.06 - 0.07 - 0.07	
	High-alloy Steel SKD, SKT, SKH	200	G	G	ACP2000 ACU2500	150 - 170 - 190 100 - 140 - 160	0.04 - 0.06 - 0.08	0.04 - 0.07 - 0.08	0.04 - 0.07 - 0.08		
	SKD, SKT, SKH Hardened	325	G	G	ACP2000 ACU2500	120 - 140 - 160 60 - 70 - 80	0.06 - 0.07 - 0.08	0.06 - 0.07 - 0.08	0.06 - 0.07 - 0.08		
	M	Stainless Steel SUS430 and Others (Martensitic/Ferritic)	200	L	L	ACU2500	120 - 150 - 160	0.05 - 0.06 - 0.08	0.05 - 0.06 - 0.08	0.05 - 0.06 - 0.08	
		SUS403 and Others (Martensitic/Hardened)	240	L	L	ACU2500	120 - 140 - 150	0.05 - 0.06 - 0.08	0.05 - 0.06 - 0.08	0.05 - 0.06 - 0.08	
SUS304, SUS316 (Austenitic)		180	L	L	ACU2500	120 - 170 - 190	0.05 - 0.06 - 0.08	0.05 - 0.06 - 0.08	0.05 - 0.06 - 0.08		
K	Cast Iron		G	G	ACP2000 ACU2500	150 - 200 - 220 120 - 170 - 190	0.09 - 0.12 - 0.14	0.10 - 0.12 - 0.14	0.09 - 0.13 - 0.16		
	Ductile Cast Iron		G	G	ACP2000 ACU2500	120 - 140 - 160 100 - 115 - 130	0.09 - 0.12 - 0.14	0.10 - 0.12 - 0.14	0.09 - 0.13 - 0.16		

· The recommended conditions may not be practical depending on the operating conditions (e.g. machine tool, workpiece shape, clamping system).  
· For 6D and 7D drilling, reduce the feed to 75% of recommended conditions at engagement (3mm from entrance). Use the lower recommended limit feed at the exit of through holes (5mm from exit).

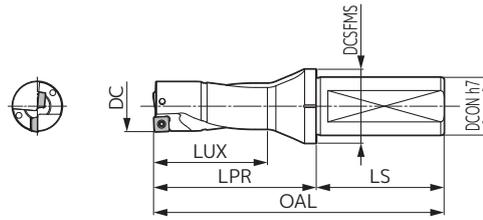
\*Caution · The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, and other factors.



Drilling tolerance: -0.05 to +0.15mm

\*For h7 tolerance, refer to the General Catalogue.

Fig 1



### ■ Diameter ø15.5 to 27.0mm

Dimensions (mm)

Dia. DC	Stock	Cat. No.	Neck Length LUX	Overhang Length LPR	Overall Length OAL	Shank LS	Boss DCSFMS	Shank Dia. DCON	Applicable Insert (Peripheral Insert)	Applicable Insert (Central Insert)	Fig
15.5	●	GDXH 155D2S20-05	36.0	53.75	102.75	49.0	25.0	20.0	GDXT050203P	GDXT050205C	1
16.0	●	160D2S20-05	37.0	55.00	104.00	49.0	25.0	20.0			1
16.5	●	165D2S20-05	38.0	56.25	105.25	49.0	25.0	20.0			1
17.0	●	170D2S20-05	39.0	57.50	106.50	49.0	25.0	20.0			1
17.5	●	GDXH 175D2S25-05	40.0	58.75	113.75	55.0	32.0	25.0	GDXT06T204P	GDXT06T206C	1
18.0	●	180D2S25-05	41.0	60.00	115.00	55.0	32.0	25.0			1
18.5	●	GDXH 185D2S25-06	42.0	61.25	116.25	55.0	32.0	25.0			1
19.0	●	190D2S25-06	43.0	62.50	117.50	55.0	32.0	25.0			1
19.5	●	195D2S25-06	44.0	63.75	118.75	55.0	32.0	25.0			1
20.0	●	200D2S25-06	45.0	65.00	120.00	55.0	32.0	25.0			1
20.5	●	205D2S25-06	46.0	66.25	121.25	55.0	32.0	25.0			1
21.0	●	210D2S25-06	47.0	67.50	122.50	55.0	32.0	25.0			1
21.5	●	215D2S25-06	48.0	68.75	123.75	55.0	32.0	25.0			1
22.0	●	220D2S25-06	49.0	70.00	125.00	55.0	32.0	25.0			1
22.5	●	GDXH 225D2S25-07	50.0	71.25	126.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
23.0	●	230D2S25-07	51.0	72.50	127.50	55.0	32.0	25.0			1
23.5	●	235D2S25-07	52.0	73.75	128.75	55.0	32.0	25.0			1
24.0	●	240D2S25-07	53.0	75.00	130.00	55.0	32.0	25.0			1
24.5	●	245D2S25-07	54.0	76.25	131.25	55.0	32.0	25.0			1
25.0	●	250D2S25-07	55.0	77.50	132.50	55.0	32.0	25.0			1
25.5	●	255D2S25-07	56.0	78.75	133.75	55.0	32.0	25.0			1
26.0	●	GDXH 260D2S32-07	57.0	80.00	139.00	59.0	40.0	32.0			1
26.5	●	265D2S32-07	58.0	81.25	140.25	59.0	40.0	32.0			1
27.0	●	270D2S32-07	59.0	82.50	141.50	59.0	40.0	32.0			1

Cutting Diameter Adjustment (Offset) **P21** Recommended Cutting Conditions **P6**

### ■ Parts

Applicable Holder	Flat Insert Screw		Wrench	Wrench	Anti-seizure Cream
GDXH155D2S20-05 to GDXH180D2S25-05	BFTX0204IP	<b>0.5</b>	TRX06IP	—	SUMI-P
GDXH185D2S25-06 to GDXH220D2S25-06	BFTX02205IP	<b>1.0</b>	—	TRDR07IP	
GDXH225D2S25-07 to GDXH270D2S32-07	BFTX02506IP	<b>1.5</b>	—	TRDR08IP	

### ■ Identification Code

# GDXH 200 D2 S25 - 06

Series Code	Diameter (ø20.0)	L/D (2D)	Shank Dia (ø25.0)	Insert Size
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Dimensions (mm)

## ■ Insert

Grade Classification		Coated Carbide								
Process	High-speed/Light Cutting									
	Medium Cutting									
	Roughing									
Cat. No.		ACU2500	ACP2000	ACS3000	Width W1	Thickness S	Corner Radius RE	Fig	Applicable Holder	
Peripheral Insert	GDXT 050203P-L	●	●	●	5.1	2.38	0.3	1	GDXH155D2S20-05 to GDXH180D2S25-05	
	050203P-G	●	●	●	5.1	2.38	0.3	2		
	GDXT 06T204P-L	●	●	●	6.3	2.78	0.4	1	GDXH185D2S25-06 to GDXH220D2S25-06	
	06T204P-G	●	●	●	6.3	2.78	0.4	2		
Central Insert	GDXT 070305P-L	●	●	●	7.7	3.18	0.5	1	GDXH225D2S25-07 to GDXH270D2S32-07	
	070305P-G	●	●	●	7.7	3.18	0.5	2		
	GDXT 050205C-L	●	—	—	5.6	2.38	0.5	3	GDXH155D2S20-05 to GDXH180D2S25-05	
	050205C-G	●	—	—	5.6	2.38	0.5	4		
Central Insert	GDXT 06T206C-L	●	—	—	6.9	2.78	0.6	3	GDXH185D2S25-06 to GDXH220D2S25-06	
	06T206C-G	●	—	—	6.9	2.78	0.6	4		
	GDXT 070308C-L	●	—	—	8.6	3.18	0.8	3	GDXH225D2S25-07 to GDXH270D2S32-07	
	070308C-G	●	—	—	8.6	3.18	0.8	4		

Fig1 Peripheral L type Insert

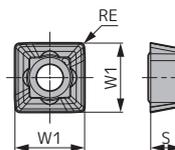


Fig2 Peripheral G type Insert

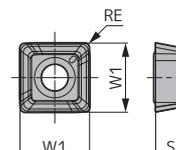


Fig3 Central L type Insert

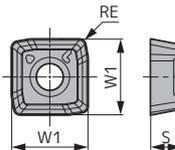
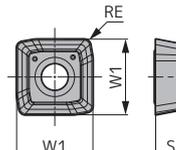


Fig4 Central G type Insert



\*Please note that the thickness "S" shown above in red differs from the specifications listed in the "Tooling News No.555 GDX series Rev.1." However, this has no impact on performance.

Precautions for Mounting and Removing Inserts

## ■ Identification Code

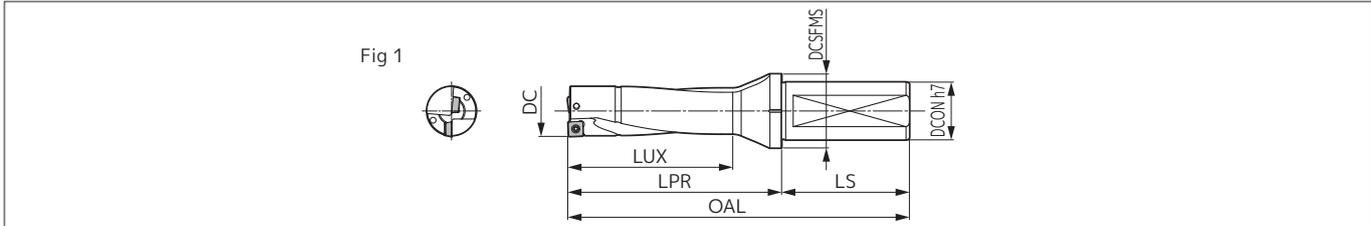
## GDXT 06 T2 04 P - G

Series Code	Insert Size	Thickness	Corner Radius	P: Peripheral Insert C: Central Insert	Chipbreaker type
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Drilling tolerance: 0 to +0.20mm

\*For h7 tolerance, refer to the General Catalogue.



### ■ Diameter ø15.5 to 27.0mm

Dimensions (mm)

Dia. DC	Stock	Cat. No.	Neck Length LUX	Overhang Length LPR	Overall Length OAL	Shank LS	Boss DCSFMS	Shank Dia. DCON	Applicable Insert (Peripheral Insert)	Applicable Insert (Central Insert)	Fig
15.5	●	GDXH 155D3S20-05	51.5	69.25	118.25	49.0	25.0	20.0	GDXT050203P	GDXT050205C	1
16.0	●	160D3S20-05	53.0	71.00	120.00	49.0	25.0	20.0			1
16.5	●	165D3S20-05	54.5	72.75	121.75	49.0	25.0	20.0			1
17.0	●	170D3S20-05	56.0	74.50	123.50	49.0	25.0	20.0			1
17.5	●	GDXH 175D3S25-05	57.5	76.25	131.25	55.0	32.0	25.0	GDXT06T204P	GDXT06T206C	1
18.0	●	180D3S25-05	59.0	78.00	133.00	55.0	32.0	25.0			1
18.5	●	GDXH 185D3S25-06	60.5	79.75	134.75	55.0	32.0	25.0			1
19.0	●	190D3S25-06	62.0	81.50	136.50	55.0	32.0	25.0			1
19.5	●	195D3S25-06	63.5	83.25	138.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
20.0	●	200D3S25-06	65.0	85.00	140.00	55.0	32.0	25.0			1
20.5	●	205D3S25-06	66.5	86.75	141.75	55.0	32.0	25.0			1
21.0	●	210D3S25-06	68.0	88.50	143.50	55.0	32.0	25.0			1
21.5	●	215D3S25-06	69.5	90.25	145.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
22.0	●	220D3S25-06	71.0	92.00	147.00	55.0	32.0	25.0			1
22.5	●	GDXH 225D3S25-07	72.5	93.75	148.75	55.0	32.0	25.0			1
23.0	●	230D3S25-07	74.0	95.50	150.50	55.0	32.0	25.0			1
23.5	●	235D3S25-07	75.5	97.25	152.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
24.0	●	240D3S25-07	77.0	99.00	154.00	55.0	32.0	25.0			1
24.5	●	245D3S25-07	78.5	100.75	155.75	55.0	32.0	25.0			1
25.0	●	250D3S25-07	80.0	102.50	157.50	55.0	32.0	25.0			1
25.5	●	255D3S25-07	81.5	104.25	159.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
26.0	●	GDXH 260D3S32-07	83.0	106.00	165.00	59.0	40.0	32.0			1
26.5	●	265D3S32-07	84.5	107.75	166.75	59.0	40.0	32.0			1
27.0	●	270D3S32-07	86.0	109.50	168.50	59.0	40.0	32.0			1

Cutting Diameter Adjustment (Offset) **P21** Recommended Cutting Conditions **P6**

### ■ Parts

Applicable Holder	Flat Insert Screw		Wrench	Wrench	Anti-seizure Cream
GDXH155D3S20-05 to GDXH180D3S25-05	BFTX0204IP	0.5	TRX06IP	—	SUMI-P
GDXH185D3S25-06 to GDXH220D3S25-06	BFTX02205IP	1.0	—	TRDR07IP	
GDXH225D3S25-07 to GDXH270D3S32-07	BFTX02506IP	1.5	—	TRDR08IP	

### ■ Identification Code

# GDXH 200 D3 S25 - 06

Series Code	Diameter (ø20.0)	L/D (3D)	Shank Dia (ø25.0)	Insert Size
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Dimensions (mm)

## ■ Insert

Grade Classification		Coated Carbide							
Process	High-speed/Light Cutting								
	Medium Cutting								
	Roughing								
Cat. No.		ACU2500	ACP2000	ACS3000	Width W1	Thickness S	Corner Radius RE	Fig	Applicable Holder
Peripheral Insert	<b>GDXT 050203P-L</b>				5.1	<b>2.38</b>	0.3	1	GDXH155D3S20-05
	<b>050203P-G</b>				5.1	<b>2.38</b>	0.3	2	to GDXH180D3S25-05
	<b>GDXT 06T204P-L</b>				6.3	<b>2.78</b>	0.4	1	GDXH185D3S25-06
	<b>06T204P-G</b>				6.3	<b>2.78</b>	0.4	2	to GDXH220D3S25-06
Central Insert	<b>GDXT 070305P-L</b>				7.7	<b>3.18</b>	0.5	1	GDXH225D3S25-07
	<b>070305P-G</b>				7.7	<b>3.18</b>	0.5	2	to GDXH270D3S32-07
	<b>GDXT 050205C-L</b>		—	—	5.6	2.38	0.5	3	GDXH155D3S20-05
	<b>050205C-G</b>		—	—	5.6	<b>2.38</b>	0.5	4	to GDXH180D3S25-05
Central Insert	<b>GDXT 06T206C-L</b>		—	—	6.9	2.78	0.6	3	GDXH185D3S25-06
	<b>06T206C-G</b>		—	—	6.9	<b>2.78</b>	0.6	4	to GDXH220D3S25-06
	<b>GDXT 070308C-L</b>		—	—	8.6	3.18	0.8	3	GDXH225D3S25-07
	<b>070308C-G</b>		—	—	8.6	<b>3.18</b>	0.8	4	to GDXH270D3S32-07

Fig1 Peripheral L type Insert

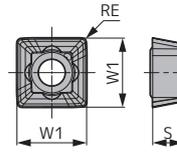


Fig2 Peripheral G type Insert

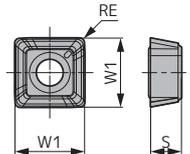


Fig3 Central L type Insert

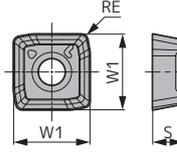
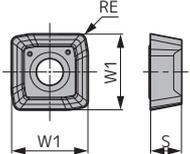


Fig4 Central G type Insert



\*Please note that the thickness "S" shown above in red differs from the specifications listed in the "Tooling News No.555 GDX series Rev.1." However, this has no impact on performance.

Precautions for Mounting and Removing Inserts

## ■ Identification Code

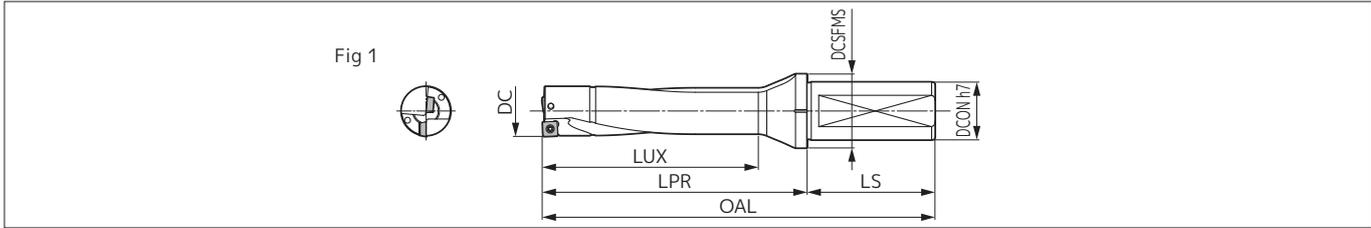
### **GDXT 06 T2 04 P - G**

Series Code	Insert Size	Thickness	Corner Radius	P: Peripheral Insert C: Central Insert	Chipbreaker type
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Drilling tolerance: 0 to +0.25mm

\*For h7 tolerance, refer to the General Catalogue.



### ■ Diameter ø15.5 to 27.0mm

Dimensions (mm)

Dia. DC	Stock	Cat. No.	Neck Length LUX	Overhang Length LPR	Overall Length OAL	Shank LS	Boss DCSFMS	Shank Dia. DCON	Applicable Insert (Peripheral Insert)	Applicable Insert (Central Insert)	Fig
15.5	●	GDXH 155D4S20-05	67.0	84.75	133.75	49.0	25.0	20.0	GDXT050203P	GDXT050205C	1
16.0	●	160D4S20-05	69.0	87.00	136.00	49.0	25.0	20.0			1
16.5	●	165D4S20-05	71.0	89.25	138.25	49.0	25.0	20.0			1
17.0	●	170D4S20-05	73.0	91.50	140.50	49.0	25.0	20.0			1
17.5	●	GDXH 175D4S25-05	75.0	93.75	148.75	55.0	32.0	25.0	GDXT06T204P	GDXT06T206C	1
18.0	●	180D4S25-05	77.0	96.00	151.00	55.0	32.0	25.0			1
18.5	●	GDXH 185D4S25-06	79.0	98.25	153.25	55.0	32.0	25.0			1
19.0	●	190D4S25-06	81.0	100.50	155.50	55.0	32.0	25.0			1
19.5	●	195D4S25-06	83.0	102.75	157.75	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
20.0	●	200D4S25-06	85.0	105.00	160.00	55.0	32.0	25.0			1
20.5	●	205D4S25-06	87.0	107.25	162.25	55.0	32.0	25.0			1
21.0	●	210D4S25-06	89.0	109.50	164.50	55.0	32.0	25.0			1
21.5	●	215D4S25-06	91.0	111.75	166.75	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
22.0	●	220D4S25-06	93.0	114.00	169.00	55.0	32.0	25.0			1
22.5	●	GDXH 225D4S25-07	95.0	116.25	171.25	55.0	32.0	25.0			1
23.0	●	230D4S25-07	97.0	118.50	173.50	55.0	32.0	25.0			1
23.5	●	235D4S25-07	99.0	120.75	175.75	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
24.0	●	240D4S25-07	101.0	123.00	178.00	55.0	32.0	25.0			1
24.5	●	245D4S25-07	103.0	125.25	180.25	55.0	32.0	25.0			1
25.0	●	250D4S25-07	105.0	127.50	182.50	55.0	32.0	25.0			1
25.5	●	255D4S25-07	107.0	129.75	184.75	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
26.0	●	GDXH 260D4S32-07	109.0	132.00	191.00	59.0	40.0	32.0			1
26.5	●	265D4S32-07	111.0	134.25	193.25	59.0	40.0	32.0			1
27.0	●	270D4S32-07	113.0	136.50	195.50	59.0	40.0	32.0			1

Cutting Diameter Adjustment (Offset) P21 Recommended Cutting Conditions P6

### ■ Parts

Applicable Holder	Flat Insert Screw	Wrench	Wrench	Anti-seizure Cream
GDXH155D4S20-05 to GDXH180D4S25-05	BFTX0204IP <b>0.5</b>	TRX06IP	—	SUMI-P
GDXH185D4S25-06 to GDXH220D4S25-06	BFTX02205IP <b>1.0</b>	—	TRDR07IP	
GDXH225D4S25-07 to GDXH270D4S32-07	BFTX02506IP <b>1.5</b>	—	TRDR08IP	

### ■ Identification Code

# GDXH 200 D4 S25 - 06

Series Code	Diameter (ø20.0)	L/D (4D)	Shank Dia (ø25.0)	Insert Size
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Dimensions (mm)

## ■ Insert

Grade Classification		Coated Carbide								
Process	High-speed/Light Cutting									
	Medium Cutting									
	Roughing									
Cat. No.		ACU2500	ACP2000	ACS3000	Width W1	Thickness S	Corner Radius RE	Fig	Applicable Holder	
Peripheral Insert	<b>GDXT 050203P-L</b>	●	●	●	5.1	<b>2.38</b>	0.3	1	GDXH155D4S20-05 to GDXH180D4S25-05	
	<b>050203P-G</b>	●	●	●	5.1	<b>2.38</b>	0.3	2		
	<b>GDXT 06T204P-L</b>	●	●	●	6.3	<b>2.78</b>	0.4	1	GDXH185D4S25-06 to GDXH220D4S25-06	
	<b>06T204P-G</b>	●	●	●	6.3	<b>2.78</b>	0.4	2		
Central Insert	<b>GDXT 070305P-L</b>	●	●	●	7.7	<b>3.18</b>	0.5	1	GDXH225D4S25-07 to GDXH270D4S32-07	
	<b>070305P-G</b>	●	●	●	7.7	<b>3.18</b>	0.5	2		
	<b>GDXT 050205C-L</b>	●	—	—	5.6	2.38	0.5	3	GDXH155D4S20-05 to GDXH180D4S25-05	
	<b>050205C-G</b>	●	—	—	5.6	<b>2.38</b>	0.5	4		
Central Insert	<b>GDXT 06T206C-L</b>	●	—	—	6.9	2.78	0.6	3	GDXH185D4S25-06 to GDXH220D4S25-06	
	<b>06T206C-G</b>	●	—	—	6.9	<b>2.78</b>	0.6	4		
	<b>GDXT 070308C-L</b>	●	—	—	8.6	3.18	0.8	3	GDXH225D4S25-07 to GDXH270D4S32-07	
	<b>070308C-G</b>	●	—	—	8.6	<b>3.18</b>	0.8	4		

Fig1 Peripheral L type Insert

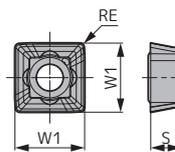


Fig2 Peripheral G type Insert

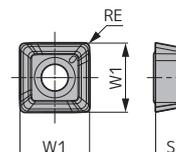


Fig3 Central L type Insert

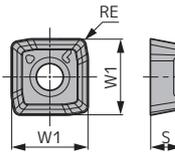
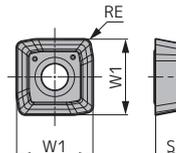


Fig4 Central G type Insert



\*Please note that the thickness "S" shown above in red differs from the specifications listed in the "Tooling News No.555 GDX series Rev.1." However, this has no impact on performance.

Precautions for Mounting and Removing Inserts

## ■ Identification Code

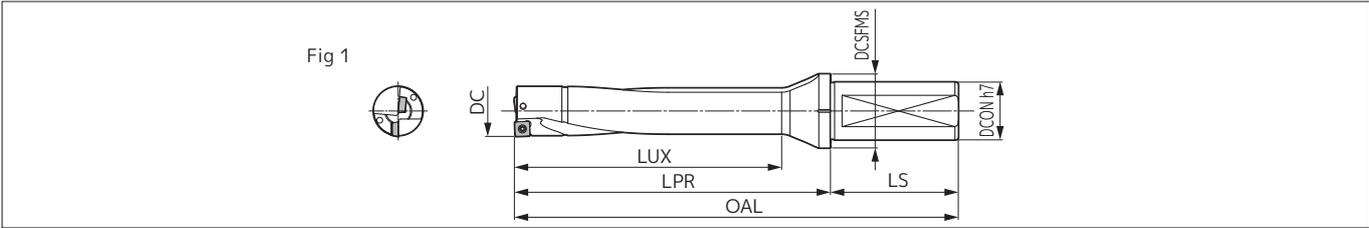
**GDXT 06 T2 04 P - G**

Series Code	Insert Size	Thickness	Corner Radius	P: Peripheral Insert C: Central Insert	Chipbreaker type
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Drilling tolerance: 0 to +0.25mm

\*For h7 tolerance, refer to the General Catalogue.



### ■ Diameter ø15.5 to 27.0mm

Dimensions (mm)

Dia. DC	Stock	Cat. No.	Neck Length LUX	Overhang Length LPR	Overall Length OAL	Shank LS	Boss DCSFMS	Shank Dia. DCON	Applicable Insert (Peripheral Insert)	Applicable Insert (Central Insert)	Fig
15.5	●	<b>GDXH 155D5S20-05</b>	82.5	100.25	149.25	49.0	25.0	20.0	GDXT050203P	GDXT050205C	1
16.0	●	<b>160D5S20-05</b>	85.0	103.00	152.00	49.0	25.0	20.0			1
16.5	●	<b>165D5S20-05</b>	87.5	105.75	154.75	49.0	25.0	20.0			1
17.0	●	<b>170D5S20-05</b>	90.0	108.50	157.50	49.0	25.0	20.0			1
17.5	●	<b>GDXH 175D5S25-05</b>	92.5	111.25	166.25	55.0	32.0	25.0	GDXT06T204P	GDXT06T206C	1
18.0	●	<b>180D5S25-05</b>	95.0	114.00	169.00	55.0	32.0	25.0			1
18.5	●	<b>GDXH 185D5S25-06</b>	97.5	116.75	171.75	55.0	32.0	25.0			1
19.0	●	<b>190D5S25-06</b>	100.0	119.50	174.50	55.0	32.0	25.0			1
19.5	●	<b>195D5S25-06</b>	102.5	122.25	177.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
20.0	●	<b>200D5S25-06</b>	105.0	125.00	180.00	55.0	32.0	25.0			1
20.5	●	<b>205D5S25-06</b>	107.5	127.75	182.75	55.0	32.0	25.0			1
21.0	●	<b>210D5S25-06</b>	110.0	130.50	185.50	55.0	32.0	25.0			1
21.5	●	<b>215D5S25-06</b>	112.5	133.25	188.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
22.0	●	<b>220D5S25-06</b>	115.0	136.00	191.00	55.0	32.0	25.0			1
22.5	●	<b>GDXH 225D5S25-07</b>	117.5	138.75	193.75	55.0	32.0	25.0			1
23.0	●	<b>230D5S25-07</b>	120.0	141.50	196.50	55.0	32.0	25.0			1
23.5	●	<b>235D5S25-07</b>	122.5	144.25	199.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
24.0	●	<b>240D5S25-07</b>	125.0	147.00	202.00	55.0	32.0	25.0			1
24.5	●	<b>245D5S25-07</b>	127.5	149.75	204.75	55.0	32.0	25.0			1
25.0	●	<b>250D5S25-07</b>	130.0	152.50	207.50	55.0	32.0	25.0			1
25.5	●	<b>255D5S25-07</b>	132.5	155.25	210.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
26.0	●	<b>GDXH 260D5S32-07</b>	135.0	158.00	217.00	59.0	40.0	32.0			1
26.5	●	<b>265D5S32-07</b>	137.5	160.75	219.75	59.0	40.0	32.0			1
27.0	●	<b>270D5S32-07</b>	140.0	163.50	222.50	59.0	40.0	32.0			1

Cutting Diameter Adjustment (Offset) **P21** Recommended Cutting Conditions **P7**

### ■ Parts

Applicable Holder	Flat Insert Screw	Wrench	Wrench	Anti-seizure Cream
GDXH155D5S20-05 to GDXH180D5S25-05	BFTX0204IP <b>0.5</b>	TRX06IP	—	SUMI-P
GDXH185D5S25-06 to GDXH220D5S25-06	BFTX02205IP <b>1.0</b>	—	TRDR07IP	
GDXH225D5S25-07 to GDXH270D5S32-07	BFTX02506IP <b>1.5</b>	—	TRDR08IP	

### ■ Identification Code

# GDXH 200 D5 S25 - 06

Series Code	Diameter (ø20.0)	L/D (5D)	Shank Dia (ø25.0)	Insert Size
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## ■ Insert

Dimensions (mm)

Grade Classification		Coated Carbide							
Process	High-speed/Light Cutting								
	Medium Cutting								
	Roughing								
Cat. No.	ACU2500	ACP2000	ACS3000	Width W1	Thickness S	Corner Radius RE	Fig	Applicable Holder	
Peripheral Insert	<b>GDXT 050203P-L</b>				5.1	<b>2.38</b>	0.3	1	GDXH155D5S20-05
	<b>050203P-G</b>				5.1	<b>2.38</b>	0.3	2	to GDXH180D5S25-05
	<b>GDXT 06T204P-L</b>				6.3	<b>2.78</b>	0.4	1	GDXH185D5S25-06
	<b>06T204P-G</b>				6.3	<b>2.78</b>	0.4	2	to GDXH220D5S25-06
Central Insert	<b>GDXT 070305P-L</b>				7.7	<b>3.18</b>	0.5	1	GDXH225D5S25-07
	<b>070305P-G</b>				7.7	<b>3.18</b>	0.5	2	to GDXH270D5S32-07
	<b>GDXT 050205C-L</b>		—	—	5.6	2.38	0.5	3	GDXH155D5S20-05
	<b>050205C-G</b>		—	—	5.6	<b>2.38</b>	0.5	4	to GDXH180D5S25-05
Central Insert	<b>GDXT 06T206C-L</b>		—	—	6.9	2.78	0.6	3	GDXH185D5S25-06
	<b>06T206C-G</b>		—	—	6.9	<b>2.78</b>	0.6	4	to GDXH220D5S25-06
	<b>GDXT 070308C-L</b>		—	—	8.6	3.18	0.8	3	GDXH225D5S25-07
	<b>070308C-G</b>		—	—	8.6	<b>3.18</b>	0.8	4	to GDXH270D5S32-07

Fig1 Peripheral L type Insert

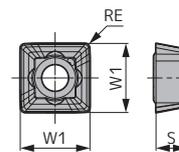


Fig2 Peripheral G type Insert

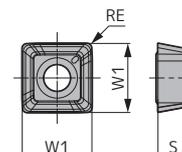


Fig3 Central L type Insert

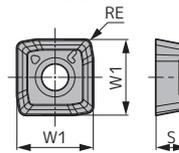
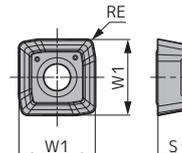


Fig4 Central G type Insert



\*Please note that the thickness "S" shown above in red differs from the specifications listed in the "Tooling News No.555 GDX series Rev.1." However, this has no impact on performance.

Precautions for Mounting and Removing Inserts

## ■ Identification Code

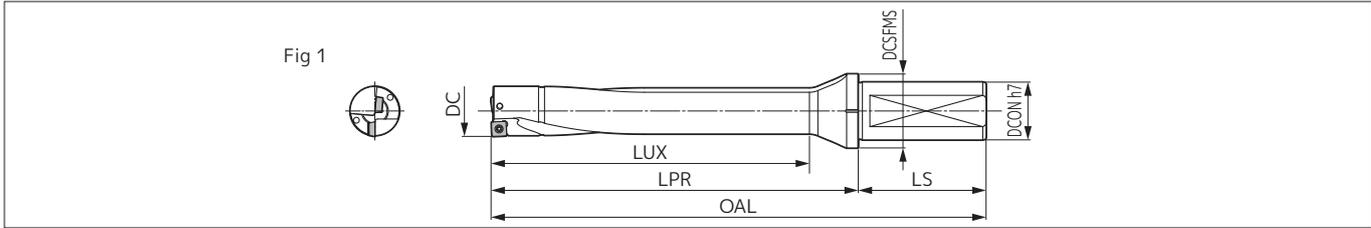
**GDXT 06 T2 04 P - G**

Series Code	Insert Size	Thickness	Corner Radius	P: Peripheral Insert C: Central Insert	Chipbreaker type
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Drilling tolerance: 0 to +0.40mm

\*For h7 tolerance, refer to the General Catalogue.



### ■ Diameter ø15.5 to 27.0mm

Dimensions (mm)

Dia. DC	Stock	Cat. No.	Neck Length LUX	Overhang Length LPR	Overall Length OAL	Shank LS	Boss DCSFMS	Shank Dia. DCON	Applicable Insert (Peripheral Insert)	Applicable Insert (Central Insert)	Fig
15.5	●	<b>GDXH 155D6S20-05</b>	98.0	115.75	164.75	49.0	25.0	20.0	GDXT050203P	GDXT050205C	1
16.0	●	<b>160D6S20-05</b>	101.0	119.00	168.00	49.0	25.0	20.0			1
16.5	●	<b>165D6S20-05</b>	104.0	122.25	171.25	49.0	25.0	20.0			1
17.0	●	<b>170D6S20-05</b>	107.0	125.50	174.50	49.0	25.0	20.0			1
17.5	●	<b>GDXH 175D6S25-05</b>	110.0	128.75	183.75	55.0	32.0	25.0	GDXT06T204P	GDXT06T206C	1
18.0	●	<b>180D6S25-05</b>	113.0	132.00	187.00	55.0	32.0	25.0			1
18.5	●	<b>GDXH 185D6S25-06</b>	116.0	135.25	190.25	55.0	32.0	25.0			1
19.0	●	<b>190D6S25-06</b>	119.0	138.50	193.50	55.0	32.0	25.0			1
19.5	●	<b>195D6S25-06</b>	122.0	141.75	196.75	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
20.0	●	<b>200D6S25-06</b>	125.0	145.00	200.00	55.0	32.0	25.0			1
20.5	●	<b>205D6S25-06</b>	128.0	148.25	203.25	55.0	32.0	25.0			1
21.0	●	<b>210D6S25-06</b>	131.0	151.50	206.50	55.0	32.0	25.0			1
21.5	●	<b>215D6S25-06</b>	134.0	154.75	209.75	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
22.0	●	<b>220D6S25-06</b>	137.0	158.00	213.00	55.0	32.0	25.0			1
22.5	●	<b>GDXH 225D6S25-07</b>	140.0	161.25	216.25	55.0	32.0	25.0			1
23.0	●	<b>230D6S25-07</b>	143.0	164.50	219.50	55.0	32.0	25.0			1
23.5	●	<b>235D6S25-07</b>	146.0	167.75	222.75	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
24.0	●	<b>240D6S25-07</b>	149.0	171.00	226.00	55.0	32.0	25.0			1
24.5	●	<b>245D6S25-07</b>	152.0	174.25	229.25	55.0	32.0	25.0			1
25.0	●	<b>250D6S25-07</b>	155.0	177.50	232.50	55.0	32.0	25.0			1
25.5	●	<b>255D6S25-07</b>	158.0	180.75	235.75	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
26.0	●	<b>GDXH 260D6S32-07</b>	161.0	184.00	243.00	59.0	40.0	32.0			1
26.5	●	<b>265D6S32-07</b>	164.0	187.25	246.25	59.0	40.0	32.0			1
27.0	●	<b>270D6S32-07</b>	167.0	190.50	249.50	59.0	40.0	32.0			1

Cutting Diameter Adjustment (Offset) P21 Recommended Cutting Conditions P7

### ■ Parts

Applicable Holder	Flat Insert Screw	Wrench	Wrench	Anti-seizure Cream
GDXH155D6S20-05 to GDXH180D6S25-05	BFTX0204IP <b>0.5</b>	TRX06IP	—	SUMI-P
GDXH185D6S25-06 to GDXH220D6S25-06	BFTX02205IP <b>1.0</b>	—	TRDR07IP	
GDXH225D6S25-07 to GDXH270D6S32-07	BFTX02506IP <b>1.5</b>	—	TRDR08IP	

### ■ Identification Code

# GDXH 200 D6 S25 - 06

Series Code	Diameter (ø20.0)	L/D (6D)	Shank Dia (ø25.0)	Insert Size
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Dimensions (mm)

## ■ Insert

Grade Classification		Coated Carbide								
Process	High-speed/Light Cutting									
	Medium Cutting									
	Roughing									
Cat. No.		ACU2500	ACP2000	ACS3000	Width W1	Thickness S	Corner Radius RE	Fig	Applicable Holder	
Peripheral Insert	<b>GDXT 050203P-L</b>				5.1	<b>2.38</b>	0.3	1	GDXH155D6S20-05 to GDXH180D6S25-05	
	<b>050203P-G</b>				5.1	<b>2.38</b>	0.3	2		
	<b>GDXT 06T204P-L</b>				6.3	<b>2.78</b>	0.4	1	GDXH185D6S25-06 to GDXH220D6S25-06	
	<b>06T204P-G</b>				6.3	<b>2.78</b>	0.4	2		
Central Insert	<b>GDXT 070305P-L</b>				7.7	<b>3.18</b>	0.5	1	GDXH225D6S25-07 to GDXH270D6S32-07	
	<b>070305P-G</b>				7.7	<b>3.18</b>	0.5	2		
	<b>GDXT 050205C-L</b>		—	—	5.6	2.38	0.5	3	GDXH155D6S20-05 to GDXH180D6S25-05	
	<b>050205C-G</b>		—	—	5.6	<b>2.38</b>	0.5	4		
Central Insert	<b>GDXT 06T206C-L</b>		—	—	6.9	2.78	0.6	3	GDXH185D6S25-06 to GDXH220D6S25-06	
	<b>06T206C-G</b>		—	—	6.9	<b>2.78</b>	0.6	4		
	<b>GDXT 070308C-L</b>		—	—	8.6	3.18	0.8	3	GDXH225D6S25-07 to GDXH270D6S32-07	
	<b>070308C-G</b>		—	—	8.6	<b>3.18</b>	0.8	4		

Fig1 Peripheral L type Insert

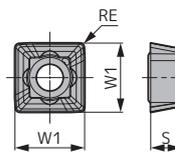


Fig2 Peripheral G type Insert

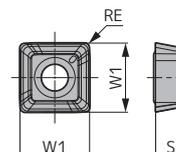


Fig3 Central L type Insert

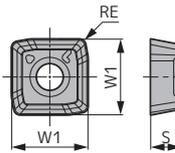
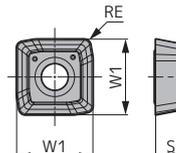


Fig4 Central G type Insert



\*Please note that the thickness "S" shown above in red differs from the specifications listed in the "Tooling News No.555 GDX series Rev.1." However, this has no impact on performance.

Precautions for Mounting and Removing Inserts

## ■ Identification Code

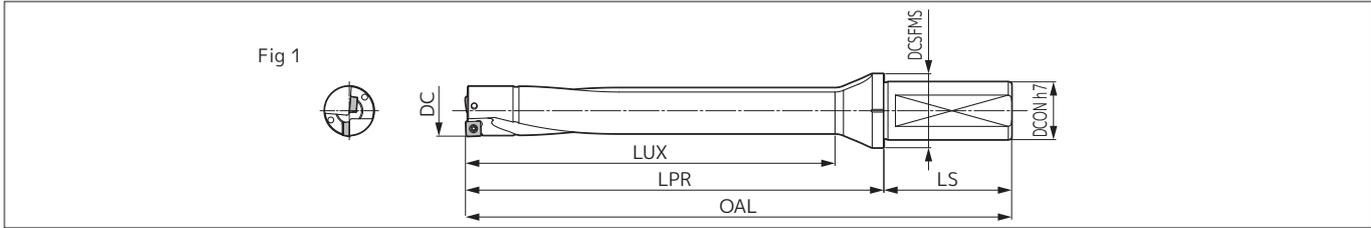
### GDXT 06 T2 04 P - G

Series Code	Insert Size	Thickness	Corner Radius	P: Peripheral Insert C: Central Insert	Chipbreaker type
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Drilling tolerance: 0 to +0.50mm

\*For h7 tolerance, refer to the General Catalogue.



### ■ Diameter ø15.5 to 27.0mm

Dimensions (mm)

Dia. DC	Stock	Cat. No.	Neck Length LUX	Overhang Length LPR	Overall Length OAL	Shank LS	Boss DCSFMS	Shank Dia. DCON	Applicable Insert (Peripheral Insert)	Applicable Insert (Central Insert)	Fig
15.5	●	<b>GDXH 155D7S20-05</b>	113.5	131.25	180.25	49.0	25.0	20.0	GDXT050203P	GDXT050205C	1
16.0	●	<b>160D7S20-05</b>	117.0	135.00	184.00	49.0	25.0	20.0			1
16.5	●	<b>165D7S20-05</b>	120.5	138.75	187.75	49.0	25.0	20.0			1
17.0	●	<b>170D7S20-05</b>	124.0	142.50	191.50	49.0	25.0	20.0			1
17.5	●	<b>GDXH 175D7S25-05</b>	127.5	146.25	201.25	55.0	32.0	25.0	GDXT06T204P	GDXT06T206C	1
18.0	●	<b>180D7S25-05</b>	131.0	150.00	205.00	55.0	32.0	25.0			1
18.5	●	<b>GDXH 185D7S25-06</b>	134.5	153.75	208.75	55.0	32.0	25.0			1
19.0	●	<b>190D7S25-06</b>	138.0	157.50	212.50	55.0	32.0	25.0			1
19.5	●	<b>195D7S25-06</b>	141.5	161.25	216.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
20.0	●	<b>200D7S25-06</b>	145.0	165.00	220.00	55.0	32.0	25.0			1
20.5	●	<b>205D7S25-06</b>	148.5	168.75	223.75	55.0	32.0	25.0			1
21.0	●	<b>210D7S25-06</b>	152.0	172.50	227.50	55.0	32.0	25.0			1
21.5	●	<b>215D7S25-06</b>	155.5	176.25	231.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
22.0	●	<b>220D7S25-06</b>	159.0	180.00	235.00	55.0	32.0	25.0			1
22.5	●	<b>GDXH 225D7S25-07</b>	162.5	183.75	238.75	55.0	32.0	25.0			1
23.0	●	<b>230D7S25-07</b>	166.0	187.50	242.50	55.0	32.0	25.0			1
23.5	●	<b>235D7S25-07</b>	169.5	191.25	246.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
24.0	●	<b>240D7S25-07</b>	173.0	195.00	250.00	55.0	32.0	25.0			1
24.5	●	<b>245D7S25-07</b>	176.5	198.75	253.75	55.0	32.0	25.0			1
25.0	●	<b>250D7S25-07</b>	180.0	202.50	257.50	55.0	32.0	25.0			1
25.5	●	<b>255D7S25-07</b>	183.5	206.25	261.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
26.0	●	<b>GDXH 260D7S32-07</b>	187.0	210.00	269.00	59.0	40.0	32.0			1
26.5	●	<b>265D7S32-07</b>	190.5	213.75	272.75	59.0	40.0	32.0			1
27.0	●	<b>270D7S32-07</b>	194.0	217.50	276.50	59.0	40.0	32.0			1

Cutting Diameter Adjustment (Offset) P21 Recommended Cutting Conditions P7

### ■ Parts

Applicable Holder	Flat Insert Screw	Wrench	Wrench	Anti-seizure Cream
GDXH155D7S20-05 to GDXH180D7S25-05	BFTX0204IP <b>0.5</b>	TRX06IP	—	SUMI-P
GDXH185D7S25-06 to GDXH220D7S25-06	BFTX02205IP <b>1.0</b>	—	TRDR07IP	
GDXH225D7S25-07 to GDXH270D7S32-07	BFTX02506IP <b>1.5</b>	—	TRDR08IP	

### ■ Identification Code

# GDXH 200 D7 S25 - 06

Series Code	Diameter (ø20.0)	L/D (7D)	Shank Dia (ø25.0)	Insert Size
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Dimensions (mm)

## ■ Insert

Grade Classification		Coated Carbide							
Process	High-speed/Light Cutting								
	Medium Cutting								
	Roughing								
Cat. No.		ACU2500	ACP2000	ACS3000	Width W1	Thickness S	Corner Radius RE	Fig	Applicable Holder
Peripheral Insert	<b>GDXT 050203P-L</b>				5.1	<b>2.38</b>	0.3	1	GDXH155D7S20-05
	<b>050203P-G</b>				5.1	<b>2.38</b>	0.3	2	to GDXH180D7S25-05
	<b>GDXT 06T204P-L</b>				6.3	<b>2.78</b>	0.4	1	GDXH185D7S25-06
	<b>06T204P-G</b>				6.3	<b>2.78</b>	0.4	2	to GDXH220D7S25-06
Central Insert	<b>GDXT 070305P-L</b>				7.7	<b>3.18</b>	0.5	1	GDXH225D7S25-07
	<b>070305P-G</b>				7.7	<b>3.18</b>	0.5	2	to GDXH270D7S32-07
	<b>GDXT 050205C-L</b>		—	—	5.6	2.38	0.5	3	GDXH155D7S20-05
	<b>050205C-G</b>		—	—	5.6	<b>2.38</b>	0.5	4	to GDXH180D7S25-05
Central Insert	<b>GDXT 06T206C-L</b>		—	—	6.9	2.78	0.6	3	GDXH185D7S25-06
	<b>06T206C-G</b>		—	—	6.9	<b>2.78</b>	0.6	4	to GDXH220D7S25-06
	<b>GDXT 070308C-L</b>		—	—	8.6	3.18	0.8	3	GDXH225D7S25-07
	<b>070308C-G</b>		—	—	8.6	<b>3.18</b>	0.8	4	to GDXH270D7S32-07

Fig1 Peripheral L type Insert

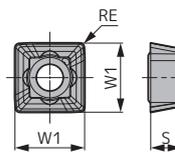


Fig2 Peripheral G type Insert

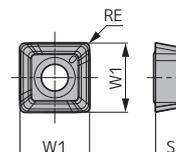


Fig3 Central L type Insert

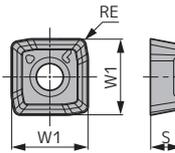
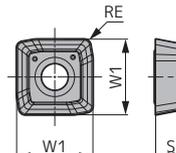


Fig4 Central G type Insert



\*Please note that the thickness "S" shown above in red differs from the specifications listed in the "Tooling News No.555 GDX series Rev.1." However, this has no impact on performance.

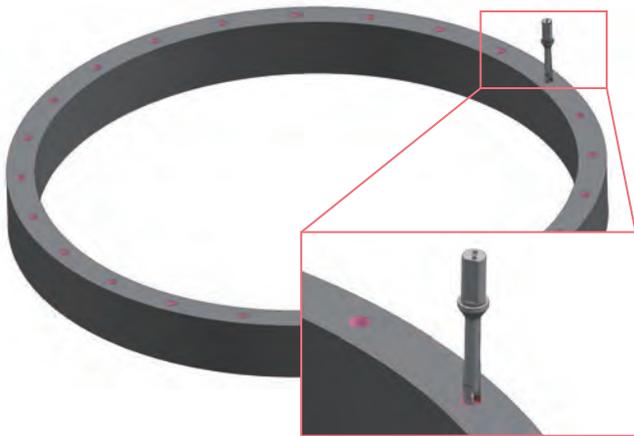
Precautions for Mounting and Removing Inserts

## ■ Identification Code

### GDXT 06 T2 04 P - G

Series Code	Insert Size	Thickness	Corner Radius	P: Peripheral Insert C: Central Insert	Chipbreaker type
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## Application Examples



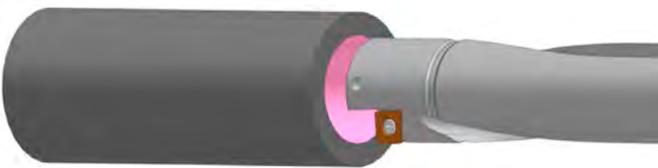
**68 holes per corner** **2 times the tool life**

Output (Holes)

Product	Output (Holes)
GDX series	68
Competitor's Product A	34

Work Material: Flange (S48C [230HB])  
 Drill: GDXH190D5S25-06 (ø19, 5D)  
 Insert: Peripheral Insert GDXT06T204P-G (ACU2500)  
 Central Insert: GDXT06T206C-G (ACU2500)  
 Cutting Conditions:  $vc = 120\text{m/min}$ ,  $f = 0.085\text{mm/rev}$ ,  $H = 76\text{mm}$  (Through), Internal Coolant Supply (Water-soluble)

**Realises stable drilling and doubled tool life compared to competitor's products**

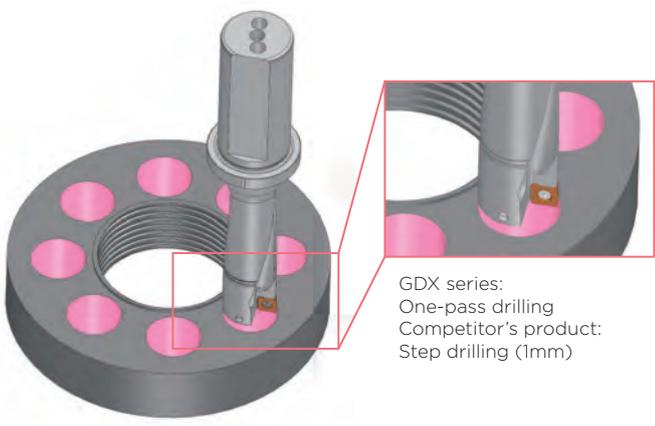


Deep hole drilling of H75mm from both ends



Work Material: Nut (SS400)  
 Drill: GDXH210D6S25-06 (ø21, 6D)  
 Insert: Peripheral Insert GDXT06T204P-L (ACU2500)  
 Central Insert: GDXT06T206C-L (ACU2500)  
 Cutting Conditions:  $vc = 80\text{m/min}$ ,  $f = 0.03\text{-}0.05\text{mm/rev}$ ,  $H = 75\text{mm} \times 2$  (Flipped Drilling, Through), Internal Coolant Supply (Water-soluble)

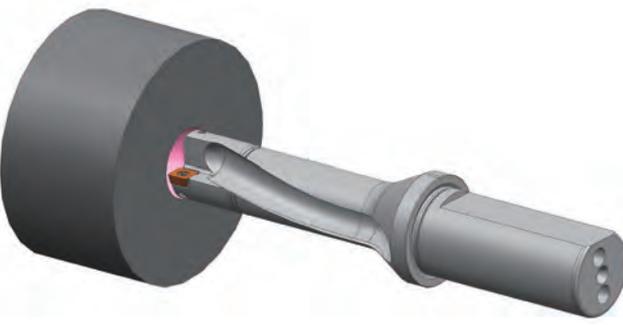
**Compared to competitor's product, stable drilling is realised with short chips**



GDx series:  
 One-pass drilling  
 Competitor's product:  
 Step drilling (1mm)

Work Material: Flange (SS400)  
 Drill: GDXH190D3S25-06 (ø19, 3D)  
 Insert: Peripheral Insert GDXT06T204P-L (ACU2500)  
 Central Insert: GDXT06T206C-L (ACU2500)  
 Cutting Conditions:  $vc = 240\text{m/min}$ ,  $f = 0.05\text{mm/rev}$ ,  $H = 22\text{mm}$  (Through), Internal Coolant Supply (Water-soluble)

**While competitor's product performs step drilling (1mm per step), the GDx series breaks chips into small pieces even with one-pass drilling, achieving stable high-efficiency drilling.**



**3 times the efficiency**  
**229mm/min**

Feed Rate (vf)

Product	Feed Rate (vf)
GDX series	229
Competitor's Product B	76

Work Material: Flange (S25C, S45C)  
 Drill: GDXH200D3S25-06 (ø20, 3D)  
 Insert: Peripheral Insert GDXT06T204P-G (ACU2500)  
 Central Insert: GDXT06T206C-G (ACU2500)  
 Cutting Conditions:  $vc = 180\text{m/min}$ ,  $f = 0.08\text{mm/rev}$ ,  $H = 38\text{mm}$  (Through), Internal Coolant Supply (Water-soluble)

**Significantly improved chip control as compared to competitor's product, with 3 times higher efficiency**

## ■ Lathe Drilling Guidelines

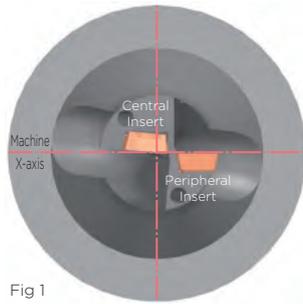


Fig 1

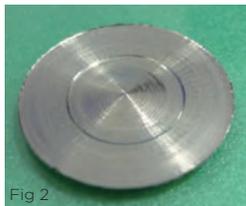


Fig 2

### Drill installation

- Set the drill so that the peripheral insert is parallel to the X-axis of the machine. (Fig 1)
- We also recommend mounting in an orientation such that the worker can see the peripheral insert. (although usage is possible even at 180° in reverse orientation)

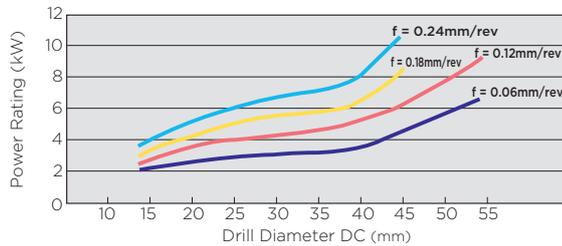
### Other notes

- When the drill is mounted on a lathe, the centre of the central insert is designed to be 0.1 to 0.2mm below the centre of the spindle.
- If the spindle deviates so far off centre that the centre of the central insert lies above the spindle centre, the central insert will break.
- Also take note that, if the off-centre amount is larger than the normal value, the pip at the bottom of the hole will become larger ( $\phi$ 1mm or more) and wall precision will suffer.
- Install a cover to prevent injury from possible chip fly-out (see disc-shaped chip in Figure 2) when through drilling on a lathe.
- If your lathe has no cover, attach a cover or similar part for your safety.
- Set the depth of cut for external turning or internal boring work to 20% or less of the drill diameter. (Ex.: For  $\phi$ 20.0mm, depth of cut 4mm or below)
- Also, use a feed rate 30% to 70% lower than the recommended rate.

### Cutting Diameter Adjustment (Offset)

- When used on a lathe, the cutting diameter can be adjusted by moving the X-axis.
- Please adjust in the positive X-axis direction (to enlarge the inner diameter).
- Adjustment in the negative direction (to reduce the inner diameter) is not recommended, as it may cause the holder to interfere with the hole.
- For details, refer to "Radial Offset Amount (Max.)" in the main body dimension tables on pages P8-P18.

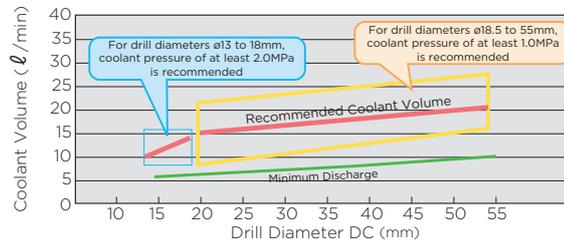
## ■ Typical Power Ratings



#### <CAUTIONS>

- Power ratings are subject to change based on conditions such as work material and cutting speed, and should only be used for reference.
- Cutting Conditions (Reference)  
Work Material: S50C (230HB)  
Cutting Speed:  $vc = 150\text{m/min}$

## ■ Typical Coolant Volume



#### <CAUTIONS>

- Coolant volume is a factor that affects drilling performance, particularly with respect to chip evacuation and lubricity. This is particularly important for chip evacuation and lubricity.
- Coolant pressure should be set higher for small drills. (Below  $\phi$ 18.0mm)
- Coolant volume is usually adjusted by changing the coolant pressure provided on most CNC machine tools.
- This table provides guideline values only. More coolant may be required depending on the machine, coolant and work material.
- Internal coolant supply is recommended.
- Dry machining and external coolant supply are not recommended, as chips will not be evacuated.



## ■ Precautions for Attaching and Removing Inserts

- Before mounting the insert, remove all traces of foreign matter on the insert seat surface using air or other means.
- When using the wrench, align it to the axis of the screw and press while turning. (Fig 3)
- If the wrench is not aligned with the screw, the insert will be insufficiently clamped and the tip of the wrench and/or the torx hole of the screw may become deformed.
- Do not allow clearance between the insert seat and drill when mounting the insert. (Fig 4, A)
- Figure 4 shows a properly attached insert.

\*It is normal for the outer side of the central insert to have clearance as the insert retaining surfaces are on the inside and back.

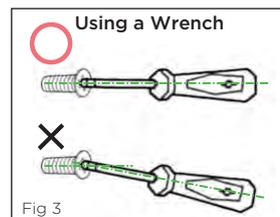


Fig 3

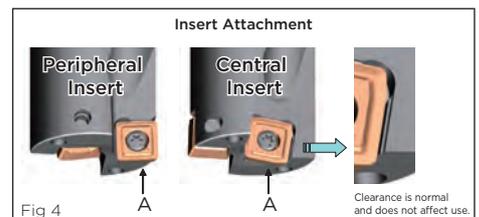
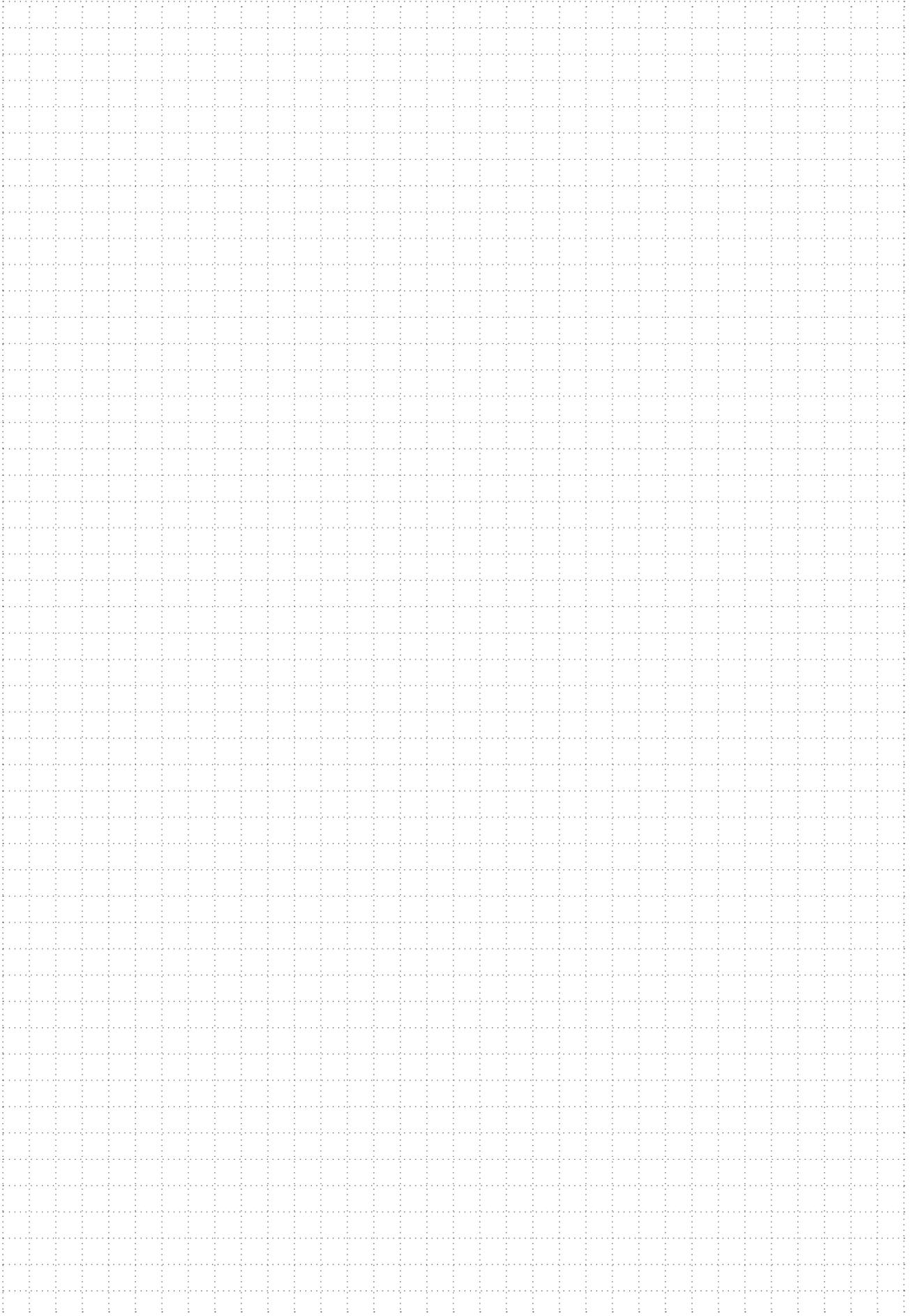


Fig 4

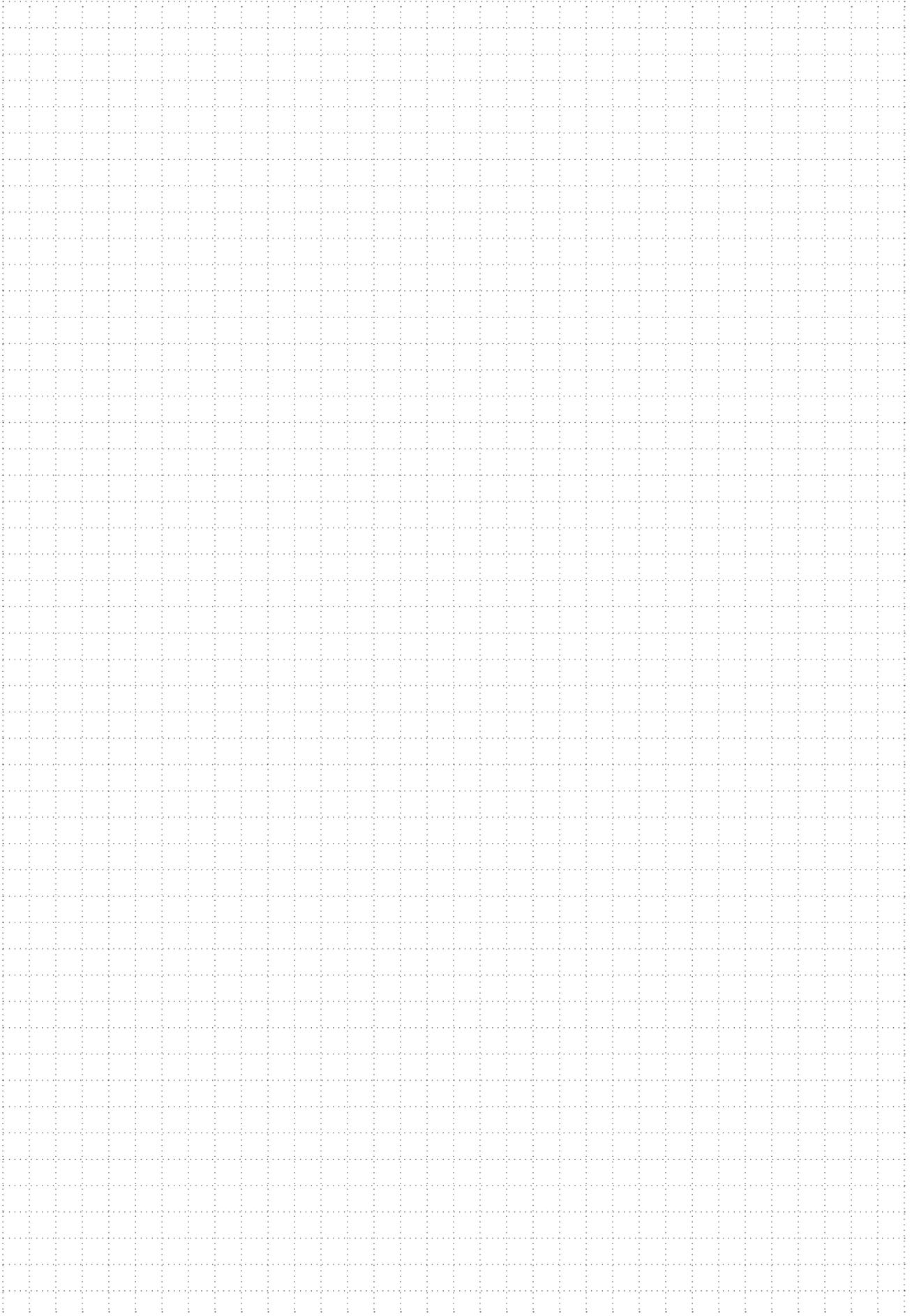
## ■ Troubleshooting

Problem	Phenomenon	Cause	Countermeasures
Too much variation in hole diameter	Drilled hole diameter is larger than desired	· Deflection of the holder due to high cutting force	· Decrease the feed speed to decrease cutting force · When using the drill on a lathe, adjust by moving in the X-axis direction
	Drilled hole diameter is smaller than desired	· The cutting edge backs off and does not enter the workpiece	· Increase the feed rate · When using the drill on a lathe, adjust by moving in the X-axis direction
	Significant difference in hole diameter at entrance and bottom	· Packing of chips	· Increase the feed rate to improve chip evacuation · Use an L type chipbreaker for chip control
Poor quality machined hole surface	Poor machined surface from entrance to bottom of hole	· High cutting force · Low rigidity of workpiece	· Decrease cutting speed · Review tooling to improve rigidity
	Poor machined surface at bottom of hole	· Machined surfaces damaged by chips	· Increase the feed rate to improve chip evacuation · Use an L type chipbreaker for chip control
	Scratches around hole exit	· Holder is vibrating during through cutting	· Drop cutting speed at hole exit to $vc = 50\text{m/min}$ · Drop feed rate at hole exit to 0.05mm/rev
	Return scratches are generated	· Machining diameter is shrinking	· Increase feed rate
Insert is broken	Breakage on central insert (centre)	· Central insert centre is rising · Insert is not strong enough	· Reconfirm and adjust centre height · When using with a lathe, rotate the drill 180° to mount · Decrease the feed rate to decrease cutting load
	Fracture on peripheral insert	· High cutting load on cutting edge	· Decrease the feed rate to decrease cutting load

# MEMO



# MEMO





- Very hot or lengthy chips may be discharged while the machine is in operation. Therefore, machine guards, safety goggles or other protective covers must be used. Fire safety precautions must also be considered.

**< SAFETY NOTES >**

- Please handle with care as this product has sharp edges.
- Improper cutting conditions or mis-handling of the tool may result in breakages or projectiles. Therefore, please use the tool within its recommended conditions.

- When using non-water soluble cutting oil, precautions against fire must be taken and please ensure that a fire extinguisher is placed near the machine.

 **Sumitomo Electric Industries, Ltd.**

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<https://www.sumitool.com/global>