Tooling News No.555

SUMITOMO

CARBIDE - CBN - DIAMOND

Global Support, Global Solutions.

Indexable Insert type Drill

New

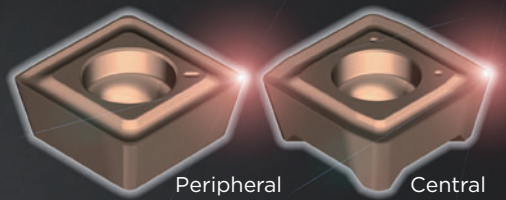
SumiDrill GDX series

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

■ Diameter

2D ø15.5mm to 27.0mm
3D ø15.5mm to 27.0mm
4D ø15.5mm to 27.0mm
5D ø15.5mm to 27.0mm
6D ø15.5mm to 27.0mm
7D ø15.5mm to 27.0mm

4-cornered Inserts



Peripheral Insert

Central Insert

P M K N S H

SUMITOMO ELECTRIC GROUP

GDX series

■ 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

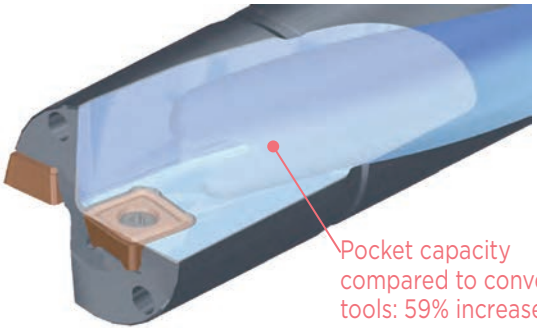
Insert Size	GDXT05	GDXT06	GDXT07
Drilling Depth	Compatible Holders (Dia. mm)		
2D	ø15.5 to 18.0	ø18.5 to 22.0	ø22.5 to 27.0
3D	ø15.5 to 18.0	ø18.5 to 22.0	ø22.5 to 27.0
4D	ø15.5 to 18.0	ø18.5 to 22.0	ø22.5 to 27.0
5D	ø15.5 to 18.0	ø18.5 to 22.0	ø22.5 to 27.0
6D	ø15.5 to 18.0	ø18.5 to 22.0	ø22.5 to 27.0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

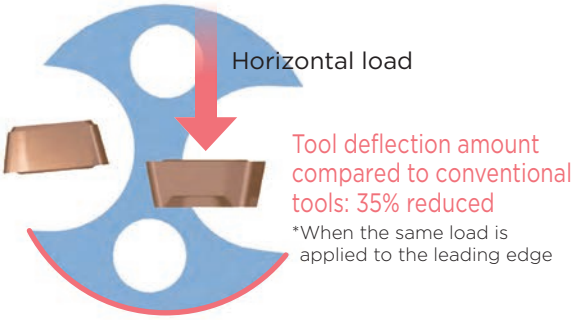
Evacuation flute design

Wide pocket and smooth connection



Increased pocket capacity
essential for chip evacuation

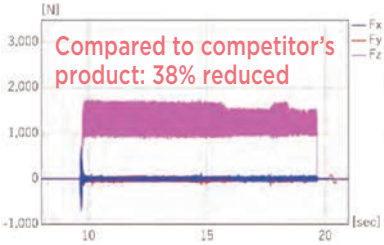
High-rigidity evacuation flute design



Cross-section thickness positioned
to suppress deformation amount

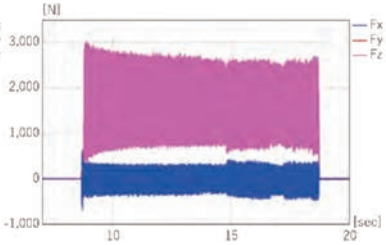
Cutting Force

GDX series (5D)



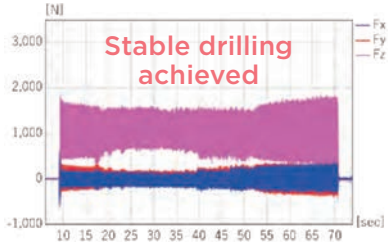
Max. 1,752N

Competitor's Product A (5D)



Max. 3,014N

GDX series (7D)



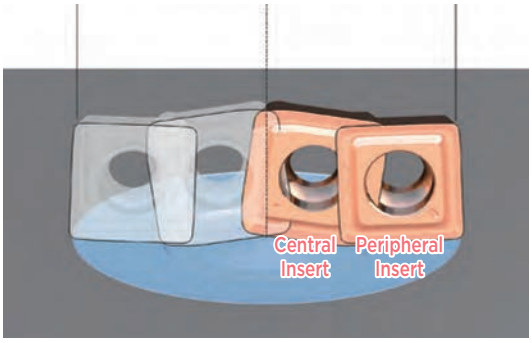
Max. 1,847N

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 = 150m/min f = 0.10mm/rev H = 85mm (Stop Hole) Internal Coolant Supply (Water-soluble)
(7D Holder): vc = 150m/min f = 0.06mm/rev H = 140mm (Stop Hole) Internal Coolant Supply (Water-soluble)

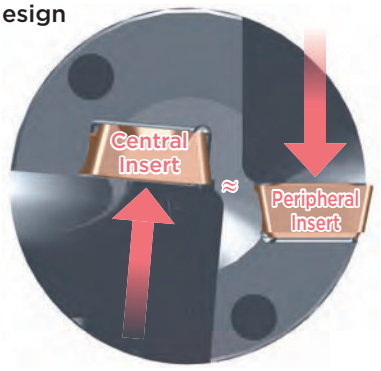
■ Dedicated Insert Design

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

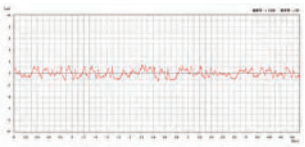


Using simulations to create dedicated designs for the central insert and peripheral insert to ensure uniform cutting resistance

Drilled Surface Quality

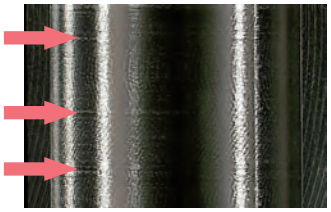
GDX series

Glossy surface with no scratches

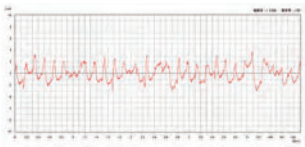


Ra = 0.80μm

Competitor's Product B



Wavy pattern



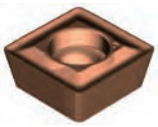
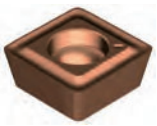
Ra = 1.04μm

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

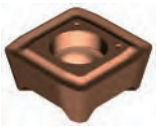
Utilising different chipbreakers for the central and peripheral inserts enables the drilling of stainless steel and general structural rolled steel.

Peripheral Insert

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

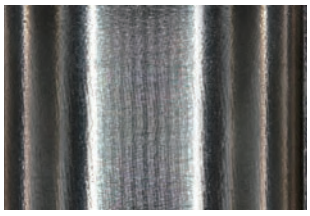
×

Central Insert

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

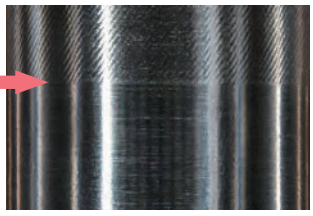
SS400 Drilling Example

GDX series



Glossy surface with no scratches

Competitor's Product C



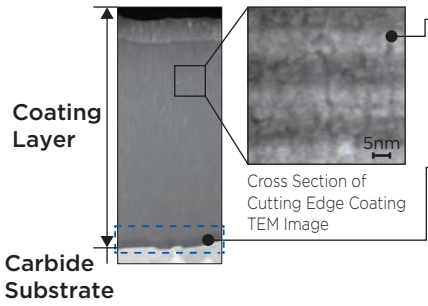
Wavy pattern

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.

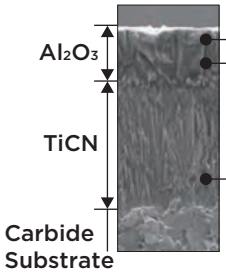
ABSOTECH PVD — Applicable Grade: **ACU2500**



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.

ABSOTECH CVD — Applicable Grade: **ACP2000**

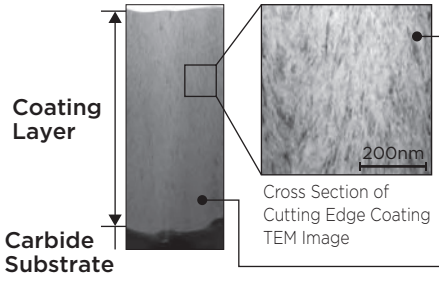


Special Surface Treatment
Suppresses thermal cracking by introducing high compressive stress, resulting in chipping resistance more than twice that of conventional coatings.

Crystal Orientation Control Al_2O_3
By controlling the growth direction, Al_2O_3 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

ABSOTECH PVD — Applicable Grade: **ACS3000**

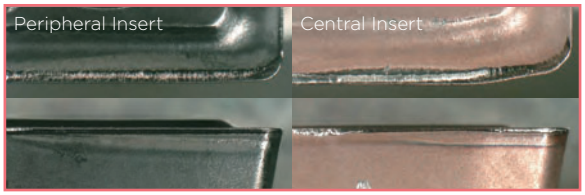


Ultra-fine Grained B Additive
New AlTiBN coating, with an ultra-fine coating structure, achieves high strength and toughness
Outstanding balance of chipping resistance and wear resistance

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

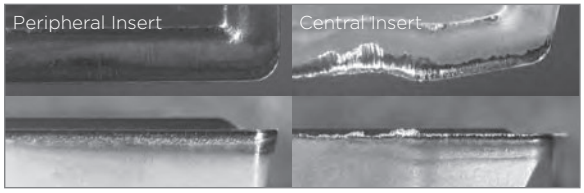
Comparison of Wear Resistance

GDX series
(Output: 156 holes)



Normal wear

Competitor's Product A
(Output: 156 holes)

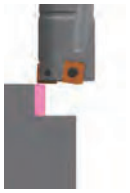
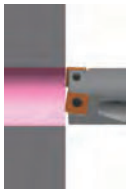


Rake face wear/fracture

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	Flat Surface 	Inclined Surface 	Intersecting Holes 	Plunge Drilling 	Boring 	Irregular Surface 	Stacked Plates 	Back Boring 
Recommended Holder	See Recommended Cutting Conditions	5D and below	5D and below	5D and below	5D and below	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	G type Chipbreaker ACU2500	G type Chipbreaker ACU2500	G type Chipbreaker ACP2000	G type Chipbreaker ACU2500
				L type Chipbreaker ACU2500	L type Chipbreaker ACU2500
	Low Carbon Steel / Structural Steel	L type Chipbreaker ACU2500	L type Chipbreaker ACU2500	L type Chipbreaker ACP2000	L type Chipbreaker ACU2500
				G type Chipbreaker ACU2500	L type Chipbreaker ACU2500
M	Stainless Steel	L type Chipbreaker ACU2500	L type Chipbreaker ACU2500	L type Chipbreaker ACS3000	L type Chipbreaker ACU2500
				G type Chipbreaker ACU2500	L type Chipbreaker ACU2500
K	Cast Iron	G type Chipbreaker ACU2500	G type Chipbreaker ACU2500	G type Chipbreaker ACP2000	G type Chipbreaker ACU2500

Initial chipping countermeasures
Insufficient wear resistance
→ Improved chip control (for long chips)

Insufficient wear resistance
→ Improved chip control (for poor evacuation)

Insufficient fracture resistance
→ Improved chip control (for poor evacuation)

Insufficient wear resistance

*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 HB	Chipbreaker: Peripheral Insert	Chipbreaker: Central Insert	Recommended Peripheral Insert Grade	Cutting Speed, vc (m/min)	Feed Rate, f (mm/rev) (Min. - **Optimum** - Max.) 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	160 - **220** - 280	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08
						ACU2500	120 - **170** - 220			
		S15C	125	L	L	ACP2000	160 - **220** - 280	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08
						ACU2500	120 - **170** - 220			
		S45C	190	G	G	ACP2000	170 - **210** - 250	0.06 - **0.10** - 0.14	0.06 - **0.10** - 0.14	0.06 - **0.11** - 0.15
						ACU2500	100 - **160** - 220			
		S45C Hardened	250	G	G	ACP2000	110 - **180** - 250	0.05 - **0.07** - 0.10	0.05 - **0.07** - 0.10	0.05 - **0.07** - 0.10
						ACU2500	90 - **140** - 200			
		S75C	270	G	G	ACP2000	110 - **180** - 250	0.06 - **0.09** - 0.12	0.06 - **0.09** - 0.12	0.06 - **0.09** - 0.12
						ACU2500	70 - **140** - 200			
		S75C Hardened	300	G	G	ACP2000	100 - **150** - 200	0.05 - **0.07** - 0.10	0.05 - **0.07** - 0.10	0.05 - **0.07** - 0.10
						ACU2500	90 - **120** - 150			
		Low-alloy Steel SCM, SNCM	180	G	G	ACP2000	140 - **180** - 220	0.05 - **0.07** - 0.10	0.05 - **0.07** - 0.10	0.05 - **0.07** - 0.10
						ACU2500	110 - **140** - 170			
		SCM, SNCM Hardened	275	G	G	ACP2000	130 - **170** - 210	0.06 - **0.08** - 0.10	0.06 - **0.08** - 0.10	0.06 - **0.08** - 0.10
						ACU2500	100 - **130** - 140			
		SCM, SNCM Hardened	300	G	G	ACP2000	120 - **150** - 180	0.06 - **0.08** - 0.10	0.06 - **0.08** - 0.10	0.06 - **0.08** - 0.10
						ACU2500	65 - **100** - 135			
		SCM, SNCM Hardened	350	G	G	ACP2000	80 - **120** - 160	0.06 - **0.08** - 0.10	0.06 - **0.08** - 0.10	0.06 - **0.08** - 0.10
						ACU2500	50 - **80** - 110			
		High-alloy Steel SKD, SKT, SKH	200	G	G	ACP2000	150 - **180** - 210	0.06 - **0.09** - 0.12	0.06 - **0.09** - 0.12	0.06 - **0.09** - 0.12
						ACU2500	100 - **150** - 180			
		SKD, SKT, SKH Hardened	325	G	G	ACP2000	120 - **150** - 180	0.06 - **0.08** - 0.10	0.06 - **0.08** - 0.10	0.06 - **0.08** - 0.10
						ACU2500	60 - **80** - 100			
	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	150 - **210** - 240	0.09 - **0.14** - 0.19	0.10 - **0.15** - 0.19	0.09 - **0.16** - 0.22
						ACU2500	120 - **180** - 210			
		Ductile Cast Iron		G	G	ACP2000	120 - **150** - 180	0.09 - **0.14** - 0.19	0.10 - **0.15** - 0.19	0.09 - **0.16** - 0.22
						ACU2500	100 - **125** - 150			
6D	P	Steel, Carbon Steel SS400	125	L	L	ACP2000	160 - **200** - 240	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08
						ACU2500	120 - **150** - 180			
		S15C	125	L	L	ACP2000	160 - **200** - 240	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08
						ACU2500	120 - **150** - 180			
		S45C	190	G	G	ACP2000	170 - **190** - 210	0.05 - **0.07** - 0.09	0.05 - **0.07** - 0.09	0.05 - **0.07** - 0.09
						ACU2500	100 - **140** - 180			
		S45C Hardened	250	G	G	ACP2000	110 - **160** - 210	0.05 - **0.06** - 0.07	0.05 - **0.06** - 0.07	0.05 - **0.06** - 0.07
						ACU2500	90 - **120** - 160			
		S75C	270	G	G	ACP2000	110 - **160** - 210	0.06 - **0.07** - 0.09	0.06 - **0.07** - 0.09	0.06 - **0.07** - 0.09
						ACU2500	70 - **120** - 160			
		S75C Hardened	300	G	G	ACP2000	100 - **130** - 160	0.05 - **0.06** - 0.07	0.05 - **0.06** - 0.07	0.05 - **0.06** - 0.07
						ACU2500	90 - **100** - 110			
		Low-alloy Steel SCM, SNCM	180	G	G	ACP2000	140 - **160** - 180	0.05 - **0.06** - 0.07	0.05 - **0.06** - 0.07	0.05 - **0.06** - 0.07
						ACU2500	110 - **120** - 130			
		SCM, SNCM Hardened	275	G	G	ACP2000	130 - **150** - 170	0.06 - **0.07** - 0.07	0.06 - **0.07** - 0.07	0.06 - **0.07** - 0.07
						ACU2500	100 - **110** - 100			
		SCM, SNCM Hardened	300	G	G	ACP2000	120 - **130** - 140	0.06 - **0.07** - 0.07	0.06 - **0.07** - 0.07	0.06 - **0.07** - 0.07
						ACU2500	65 - **80** - 95			
		SCM, SNCM Hardened	350	G	G	ACP2000	80 - **100** - 120	0.06 - **0.07** - 0.07	0.06 - **0.07** - 0.07	0.06 - **0.07** - 0.07
						ACU2500	50 - **60** - 70			
		High-alloy Steel SKD, SKT, SKH	200	G	G	ACP2000	150 - **170** - 190	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08
						ACU2500	100 - **140** - 160			
		SKD, SKT, SKH Hardened	325	G	G	ACP2000	120 - **140** - 160	0.06 - **0.07** - 0.08	0.06 - **0.07** - 0.08	0.06 - **0.07** - 0.08
						ACU2500	60 - **70** - 80			
	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	150 - **200** - 220	0.09 - **0.12** - 0.14	0.10 - **0.12** - 0.14	0.09 - **0.13** - 0.16
						ACU2500	120 - **170** - 190			
		Ductile Cast Iron		G	G	ACP2000	120 - **140** - 160	0.09 - **0.12** - 0.14	0.10 - **0.12** - 0.14	0.09 - **0.13** - 0.16
						ACU2500	100 - **115** - 130			
7D	P	Steel, Carbon Steel SS400	125	L	L	ACP2000	160 - **200** - 240	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08
						ACU2500	120 - **150** - 180			
		S15C	125	L	L	ACP2000	160 - **200** - 240	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08
						ACU2500	120 - **150** - 180			
		S45C	190	G	G	ACP2000	170 - **190** - 210	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08	0.04 - **0.06** - 0.08
						ACU2500	100 - **140** - 180			
		S45C Hardened	250	G	G	ACP2000	110 - **160** - 210	0.05 - **0.06** - 0.07	0.05 - **0.06** - 0.07	0.05 - **0.06** - 0.07
						ACU2500	90 - **120** - 160			
		S75C	270	G	G	ACP2000	110 - **160** - 210	0.06 - **0.07** - 0.08	0.06 - **0.07** - 0.08	0.06 - **0.07** - 0.08
						ACU2500	70 - **120** - 160			
		S75C Hardened	300	G	G	ACP2000	100 - **130** - 160	0.05 - **0.06** - 0.07	0.05 - **0.06** - 0.07	0.05 - **0.06** - 0.07
						ACU2500	90 - **100** - 110			
		Low-alloy Steel SCM, SNCM	180	G	G	ACP2000	140 - **160** - 180	0.05 - **0.06** - 0.07	0.05 - **0.06** - 0.07	0.05 - **0.06** - 0.07
						ACU2500	110 - **120** - 130			
		SCM, SNCM Hardened	275	G	G	ACP2000	130 - **150** - 170	0.06 - **0.07** - 0.07	0.06 - **0.07** - 0.07	0.06 - **0.07** - 0.07
						ACU2500	100 - **110** - 100			
		SCM, SNCM Hardened	300	G	G	ACP2000	120 - **130** - 140	0.06 - **0.07** - 0.07	0.06 - **0.07** - 0.07	0.06 - **0.07** - 0.07
						ACU2500	65 - **80** - 95			
		SCM, SNCM Hardened	350	G	G	ACP2000	80 - **100** - 120	0.06 - **0.07** - 0.07	0.06 - **0.07** - 0.07	0.06 - **0.07** - 0.07
						ACU2500	50 - **60** - 70			
		High-alloy Steel SKD, SKT, SKH	200	G	G	ACP2000	150 - **170** - 190	0.04 - **0.06** - 0.08	0.04 - **0.07** - 0.08	0.04 - **0.07** - 0.08
						ACU2500	100 - **140** - 160			
		SKD, SKT, SKH Hardened	325	G	G	ACP2000	120 - **140** - 160	0.06 - **0.07** - 0.08	0.06 - **0.07** - 0.08	0.06 - **0.07** - 0.08
						ACU2500	60 - **70** - 80			
	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	150 - **200** - 220	0.09 - **0.12** - 0.14	0.10 - **0.12** - 0.14	0.09 - **0.13** - 0.16
						ACU2500	120 - **170** - 190			
		Ductile Cast Iron		G	G	ACP2000	120 - **140** - 160	0.09 - **0.12** - 0.14	0.10 - **0.12** - 0.14	0.09 - **0.13** - 0.16
						ACU2500	100 - **115** - 130			

· 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.

GDXH type 2D (Internal Coolant Supply)

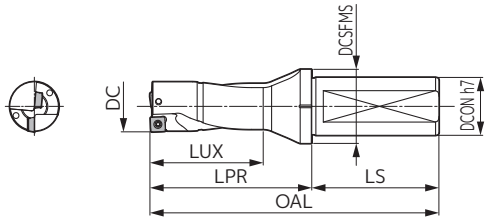
Carbon Steel/ Alloy Steel up to 0.28% | Carbon Steel/ Alloy Steel from 0.29% | Stainless Steel | Cast Iron | Ductile Cast Iron

CVD Coat | PVD Coat | Coolant Hole | 2D | Indexable insert type

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			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	GDXT06T204P	GDXT06T206C	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

Recommended Cutting Conditions P6

■ Parts

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

■ Identification Code

GDXH 200 D2 S25 - 06

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

● mark: Standard stocked item ○ mark: Stock or planned stock (please confirm stock availability) N·m Recommended Tightening Torque (N·m)

GDXH type 2D (Internal Coolant Supply)

■ Insert

Dimensions (mm)

Grade Classification		Coated Carbide							
Process	High-speed/Light Cutting	P K M	P						
	Medium Cutting	P K M		M					
	Roughing	P K M		M					
	Cat. No.	ACU2500	ACP2000	ACS3000	Width W1	Thickness S	Corner Radius RE	Fig	Applicable Holder
Peripheral Insert	**GDXT 050203P-L**	○	○	○	5.1	2.56	0.3	1	GDXH155D2S20-05 to GDXH180D2S25-05
	050203P-G	○	○	○	5.1	2.51	0.3	2	
	GDXT 06T204P-L	●	●	●	6.3	2.98	0.4	1	GDXH185D2S25-06 to GDXH220D2S25-06
	06T204P-G	●	●	●	6.3	2.93	0.4	2	
	GDXT 070305P-L	○	○	○	7.7	3.38	0.5	1	GDXH225D2S25-07 to GDXH270D2S32-07
	070305P-G	○	○	○	7.7	3.33	0.5	2	
Central Insert	**GDXT 050205C-L**	○	—	—	5.6	2.38	0.5	3	GDXH155D2S20-05 to GDXH180D2S25-05
	050205C-G	○	—	—	5.6	2.48	0.5	4	
	GDXT 06T206C-L	●	—	—	6.9	2.78	0.6	3	GDXH185D2S25-06 to GDXH220D2S25-06
	06T206C-G	●	—	—	6.9	2.88	0.6	4	
	GDXT 070308C-L	○	—	—	8.6	3.18	0.8	3	GDXH225D2S25-07 to GDXH270D2S32-07
	070308C-G	○	—	—	8.6	3.31	0.8	4	

Fig 1 Peripheral insert L type

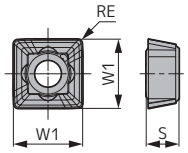


Fig 2 Peripheral insert G type

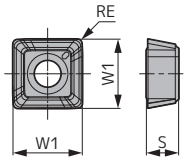


Fig 3 Central insert L type

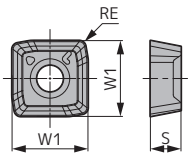
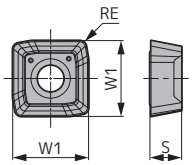


Fig 4 Central insert G type



Precautions for Mounting and Removing Inserts P21

■ Identification Code

GDXT 06 T2 04 P - G

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

● mark: Standard stocked item ○ mark: Stock or planned stock (please confirm stock availability) — mark: Not available

GDXH type 3D (Internal Coolant Supply)

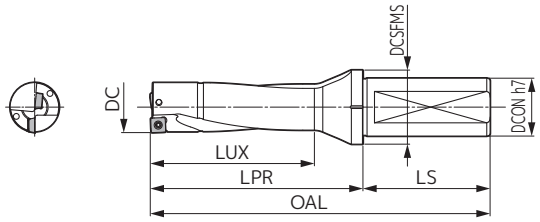
Carbon Steel/ Alloy Steel up to 0.28% | Carbon Steel/ Alloy Steel from 0.29% | Stainless Steel | Cast Iron | Ductile Cast Iron

CVD Coat | PVD Coat | Coolant Hole | 3D | Indexable insert type

Drilling tolerance: 0 to +0.20mm

*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 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			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	GDXT06T204P	GDXT06T206C	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			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			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	GDXT070305P	GDXT070308C	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			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			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

Recommended Cutting Conditions P6

■ Parts

Applicable Holder	Flat Insert Screw	N·m	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

● mark: Standard stocked item ○ mark: Stock or planned stock (please confirm stock availability) N·m Recommended Tightening Torque (N·m)

GDXH type 3D (Internal Coolant Supply)

■ Insert

Dimensions (mm)

Grade Classification		Coated Carbide							
Process	High-speed/Light Cutting	P K M	P						
	Medium Cutting	P K M		M					
	Roughing	P K M		M					
	Cat. No.	ACU2500	ACP2000	ACS3000	Width W1	Thickness S	Corner Radius RE	Fig	Applicable Holder
Peripheral Insert	**GDXT 050203P-L**	○	○	○	5.1	2.56	0.3	1	GDXH155D3S20-05 to GDXH180D3S25-05
	050203P-G	○	○	○	5.1	2.51	0.3	2	
	GDXT 06T204P-L	●	●	●	6.3	2.98	0.4	1	GDXH185D3S25-06 to GDXH220D3S25-06
	06T204P-G	●	●	●	6.3	2.93	0.4	2	
	GDXT 070305P-L	○	○	○	7.7	3.38	0.5	1	GDXH225D3S25-07 to GDXH270D3S32-07
	070305P-G	○	○	○	7.7	3.33	0.5	2	
Central Insert	**GDXT 050205C-L**	○	—	—	5.6	2.38	0.5	3	GDXH155D3S20-05 to GDXH180D3S25-05
	050205C-G	○	—	—	5.6	2.48	0.5	4	
	GDXT 06T206C-L	●	—	—	6.9	2.78	0.6	3	GDXH185D3S25-06 to GDXH220D3S25-06
	06T206C-G	●	—	—	6.9	2.88	0.6	4	
	GDXT 070308C-L	○	—	—	8.6	3.18	0.8	3	GDXH225D3S25-07 to GDXH270D3S32-07
	070308C-G	○	—	—	8.6	3.31	0.8	4	

Fig 1 Peripheral insert L type

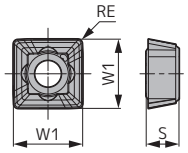


Fig 2 Peripheral insert G type

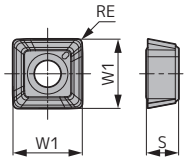


Fig 3 Central insert L type

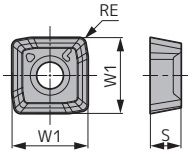
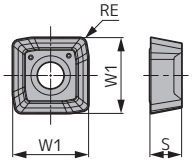


Fig 4 Central insert G type



Precautions for Mounting and Removing Inserts P21

■ Identification Code

GDXT 06 T2 04 P - G

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

● mark: Standard stocked item ○ mark: Stock or planned stock (please confirm stock availability) — mark: Not available

GDXH type 4D (Internal Coolant Supply)

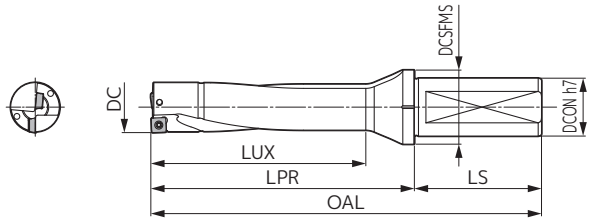
Carbon Steel/ Alloy Steel up to 0.28% | Carbon Steel/ Alloy Steel from 0.29% | Stainless Steel | Cast Iron | Ductile Cast Iron

CVD Coat | PVD Coat | Coolant Hole | 4D | Indexable insert type

Drilling tolerance: 0 to +0.25mm

*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 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			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	GDXT06T204P	GDXT06T206C	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			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			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	GDXT070305P	GDXT070308C	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			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			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

Recommended Cutting Conditions P6

■ Parts

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

■ Identification Code

GDXH 200 D4 S25 - 06

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

● mark: Standard stocked item ○ mark: Stock or planned stock (please confirm stock availability) N·m Recommended Tightening Torque (N·m)

GDXH type 4D (Internal Coolant Supply)

■ Insert

Dimensions (mm)

Grade Classification		Coated Carbide							
Process	High-speed/Light Cutting	KM	P						
	Medium Cutting	KM		M					
	Roughing	KM		M					
	Cat. No.	ACU2500	ACP2000	ACS3000	Width W1	Thickness S	Corner Radius RE	Fig	Applicable Holder
Peripheral Insert	**GDXT 050203P-L**	○	○	○	5.1	2.56	0.3	1	GDXH155D4S20-05 to GDXH180D4S25-05
	050203P-G	○	○	○	5.1	2.51	0.3	2	
	GDXT 06T204P-L	●	●	●	6.3	2.98	0.4	1	GDXH185D4S25-06 to GDXH220D4S25-06
	06T204P-G	●	●	●	6.3	2.93	0.4	2	
	GDXT 070305P-L	○	○	○	7.7	3.38	0.5	1	GDXH225D4S25-07 to GDXH270D4S32-07
	070305P-G	○	○	○	7.7	3.33	0.5	2	
Central Insert	**GDXT 050205C-L**	○	—	—	5.6	2.38	0.5	3	GDXH155D4S20-05 to GDXH180D4S25-05
	050205C-G	○	—	—	5.6	2.48	0.5	4	
	GDXT 06T206C-L	●	—	—	6.9	2.78	0.6	3	GDXH185D4S25-06 to GDXH220D4S25-06
	06T206C-G	●	—	—	6.9	2.88	0.6	4	
	GDXT 070308C-L	○	—	—	8.6	3.18	0.8	3	GDXH225D4S25-07 to GDXH270D4S32-07
	070308C-G	○	—	—	8.6	3.31	0.8	4	

Fig 1 Peripheral insert L type

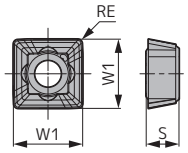


Fig 2 Peripheral insert G type

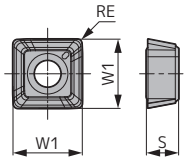


Fig 3 Central insert L type

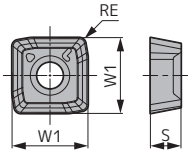
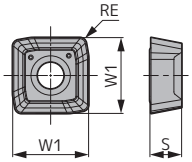


Fig 4 Central insert G type



Precautions for Mounting and Removing Inserts P21

■ Identification Code

GDXT 06 T2 04 P - G

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

● mark: Standard stocked item ○ mark: Stock or planned stock (please confirm stock availability) — mark: Not available

GDXH type 5D (Internal Coolant Supply)

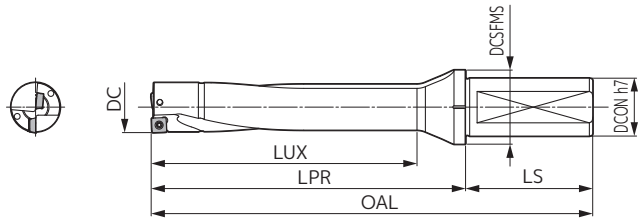
Carbon Steel/ Alloy Steel up to 0.28% | Carbon Steel/ Alloy Steel from 0.29% | Stainless Steel | Cast Iron | Ductile Cast Iron

CVD Coat | PVD Coat | Coolant Hole | 5D | Indexable insert type

Drilling tolerance: 0 to +0.25mm

*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 155D5S20-05**	82.5	100.25	149.25	49.0	25.0	20.0	GDXT050203P	GDXT050205C	1
16.0	○	**160D5S20-05**	85.0	103.00	152.00	49.0	25.0	20.0			1
16.5	○	**165D5S20-05**	87.5	105.75	154.75	49.0	25.0	20.0			1
17.0	○	**170D5S20-05**	90.0	108.50	157.50	49.0	25.0	20.0			1
17.5	○	**GDXH 175D5S25-05**	92.5	111.25	166.25	55.0	32.0	25.0			1
18.0	○	**180D5S25-05**	95.0	114.00	169.00	55.0	32.0	25.0			1
18.5	●	**GDXH 185D5S25-06**	97.5	116.75	171.75	55.0	32.0	25.0	GDXT06T204P	GDXT06T206C	1
19.0	●	**190D5S25-06**	100.0	119.50	174.50	55.0	32.0	25.0			1
19.5	●	**195D5S25-06**	102.5	122.25	177.25	55.0	32.0	25.0			1
20.0	●	**200D5S25-06**	105.0	125.00	180.00	55.0	32.0	25.0			1
20.5	●	**205D5S25-06**	107.5	127.75	182.75	55.0	32.0	25.0			1
21.0	●	**210D5S25-06**	110.0	130.50	185.50	55.0	32.0	25.0			1
21.5	●	**215D5S25-06**	112.5	133.25	188.25	55.0	32.0	25.0			1
22.0	●	**220D5S25-06**	115.0	136.00	191.00	55.0	32.0	25.0			1
22.5	○	**GDXH 225D5S25-07**	117.5	138.75	193.75	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
23.0	○	**230D5S25-07**	120.0	141.50	196.50	55.0	32.0	25.0			1
23.5	○	**235D5S25-07**	122.5	144.25	199.25	55.0	32.0	25.0			1
24.0	○	**240D5S25-07**	125.0	147.00	202.00	55.0	32.0	25.0			1
24.5	○	**245D5S25-07**	127.5	149.75	204.75	55.0	32.0	25.0			1
25.0	○	**250D5S25-07**	130.0	152.50	207.50	55.0	32.0	25.0			1
25.5	○	**255D5S25-07**	132.5	155.25	210.25	55.0	32.0	25.0			1
26.0	○	**GDXH 260D5S32-07**	135.0	158.00	217.00	59.0	40.0	32.0			1
26.5	○	**265D5S32-07**	137.5	160.75	219.75	59.0	40.0	32.0			1
27.0	○	**270D5S32-07**	140.0	163.50	222.50	59.0	40.0	32.0			1

Recommended Cutting Conditions P7

■ Parts

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

■ Identification Code

GDXH 200 D5 S25 - 06

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

● mark: Standard stocked item ○ mark: Stock or planned stock (please confirm stock availability) N·m Recommended Tightening Torque (N·m)

GDXH type 5D (Internal Coolant Supply)

■ Insert

Dimensions (mm)

Grade Classification		Coated Carbide							
Process	High-speed/Light Cutting	P K M	P						
	Medium Cutting	P K M		M					
	Roughing	P K M		M					
	Cat. No.	ACU2500	ACP2000	ACS3000	Width W1	Thickness S	Corner Radius RE	Fig	Applicable Holder
Peripheral Insert	**GDXT 050203P-L**	○	○	○	5.1	2.56	0.3	1	GDXH155D5S20-05 to GDXH180D5S25-05
	050203P-G	○	○	○	5.1	2.51	0.3	2	
	GDXT 06T204P-L	●	●	●	6.3	2.98	0.4	1	GDXH185D5S25-06 to GDXH220D5S25-06
	06T204P-G	●	●	●	6.3	2.93	0.4	2	
	GDXT 070305P-L	○	○	○	7.7	3.38	0.5	1	GDXH225D5S25-07 to GDXH270D5S32-07
	070305P-G	○	○	○	7.7	3.33	0.5	2	
Central Insert	**GDXT 050205C-L**	○	—	—	5.6	2.38	0.5	3	GDXH155D5S20-05 to GDXH180D5S25-05
	050205C-G	○	—	—	5.6	2.48	0.5	4	
	GDXT 06T206C-L	●	—	—	6.9	2.78	0.6	3	GDXH185D5S25-06 to GDXH220D5S25-06
	06T206C-G	●	—	—	6.9	2.88	0.6	4	
	GDXT 070308C-L	○	—	—	8.6	3.18	0.8	3	GDXH225D5S25-07 to GDXH270D5S32-07
	070308C-G	○	—	—	8.6	3.31	0.8	4	

Fig 1 Peripheral insert L type

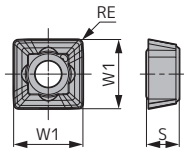


Fig 2 Peripheral insert G type

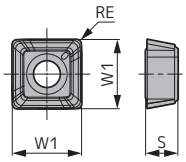


Fig 3 Central insert L type

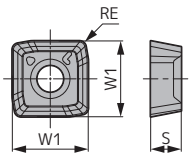
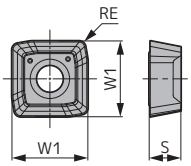


Fig 4 Central insert G type



Precautions for Mounting and Removing Inserts P21

■ Identification Code

GDXT 06 T2 04 P - G

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

● mark: Standard stocked item ○ mark: Stock or planned stock (please confirm stock availability) — mark: Not available

GDXH type 6D (Internal Coolant Supply)

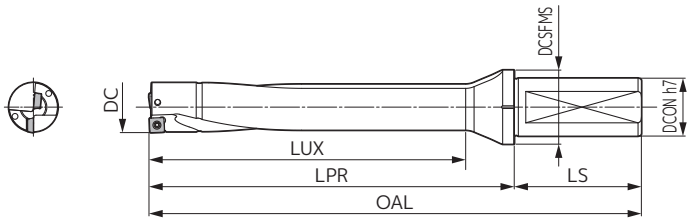
Carbon Steel/ Alloy Steel up to 0.28% | Carbon Steel/ Alloy Steel from 0.29% | Stainless Steel | Cast Iron | Ductile Cast Iron

CVD Coat | PVD Coat | Coolant Hole | 6D | Indexable insert type

Drilling tolerance: 0 to +0.40mm

*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 155D6S20-05**	98.0	115.75	164.75	49.0	25.0	20.0	GDXT050203P	GDXT050205C	1
16.0	○	**160D6S20-05**	101.0	119.00	168.00	49.0	25.0	20.0			1
16.5	○	**165D6S20-05**	104.0	122.25	171.25	49.0	25.0	20.0			1
17.0	○	**170D6S20-05**	107.0	125.50	174.50	49.0	25.0	20.0			1
17.5	○	**GDXH 175D6S25-05**	110.0	128.75	183.75	55.0	32.0	25.0			1
18.0	○	**180D6S25-05**	113.0	132.00	187.00	55.0	32.0	25.0			1
18.5	●	**GDXH 185D6S25-06**	116.0	135.25	190.25	55.0	32.0	25.0	GDXT06T204P	GDXT06T206C	1
19.0	●	**190D6S25-06**	119.0	138.50	193.50	55.0	32.0	25.0			1
19.5	●	**195D6S25-06**	122.0	141.75	196.75	55.0	32.0	25.0			1
20.0	●	**200D6S25-06**	125.0	145.00	200.00	55.0	32.0	25.0			1
20.5	●	**205D6S25-06**	128.0	148.25	203.25	55.0	32.0	25.0			1
21.0	●	**210D6S25-06**	131.0	151.50	206.50	55.0	32.0	25.0			1
21.5	●	**215D6S25-06**	134.0	154.75	209.75	55.0	32.0	25.0			1
22.0	●	**220D6S25-06**	137.0	158.00	213.00	55.0	32.0	25.0			1
22.5	○	**GDXH 225D6S25-07**	140.0	161.25	216.25	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
23.0	○	**230D6S25-07**	143.0	164.50	219.50	55.0	32.0	25.0			1
23.5	○	**235D6S25-07**	146.0	167.75	222.75	55.0	32.0	25.0			1
24.0	○	**240D6S25-07**	149.0	171.00	226.00	55.0	32.0	25.0			1
24.5	○	**245D6S25-07**	152.0	174.25	229.25	55.0	32.0	25.0			1
25.0	○	**250D6S25-07**	155.0	177.50	232.50	55.0	32.0	25.0			1
25.5	○	**255D6S25-07**	158.0	180.75	235.75	55.0	32.0	25.0			1
26.0	○	**GDXH 260D6S32-07**	161.0	184.00	243.00	59.0	40.0	32.0			1
26.5	○	**265D6S32-07**	164.0	187.25	246.25	59.0	40.0	32.0			1
27.0	○	**270D6S32-07**	167.0	190.50	249.50	59.0	40.0	32.0			1

Recommended Cutting Conditions P7

■ Parts

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

■ Identification Code

GDXH 200 D6 S25 - 06

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

● mark: Standard stocked item ○ mark: Stock or planned stock (please confirm stock availability) N·m Recommended Tightening Torque (N·m)

GDXH type 6D (Internal Coolant Supply)

■ Insert

Dimensions (mm)

Grade Classification		Coated Carbide							
Process	High-speed/Light Cutting	P K M	P						
	Medium Cutting	P K M		M					
	Roughing	P K M		M					
	Cat. No.	ACU2500	ACP2000	ACS3000	Width W1	Thickness S	Corner Radius RE	Fig	Applicable Holder
Peripheral Insert	**GDXT 050203P-L**	○	○	○	5.1	2.56	0.3	1	GDXH155D6S20-05 to GDXH180D6S25-05
	050203P-G	○	○	○	5.1	2.51	0.3	2	
	GDXT 06T204P-L	●	●	●	6.3	2.98	0.4	1	GDXH185D6S25-06 to GDXH220D6S25-06
	06T204P-G	●	●	●	6.3	2.93	0.4	2	
	GDXT 070305P-L	○	○	○	7.7	3.38	0.5	1	GDXH225D6S25-07 to GDXH270D6S32-07
	070305P-G	○	○	○	7.7	3.33	0.5	2	
Central Insert	**GDXT 050205C-L**	○	—	—	5.6	2.38	0.5	3	GDXH155D6S20-05 to GDXH180D6S25-05
	050205C-G	○	—	—	5.6	2.48	0.5	4	
	GDXT 06T206C-L	●	—	—	6.9	2.78	0.6	3	GDXH185D6S25-06 to GDXH220D6S25-06
	06T206C-G	●	—	—	6.9	2.88	0.6	4	
	GDXT 070308C-L	○	—	—	8.6	3.18	0.8	3	GDXH225D6S25-07 to GDXH270D6S32-07
	070308C-G	○	—	—	8.6	3.31	0.8	4	

Fig 1 Peripheral insert L type

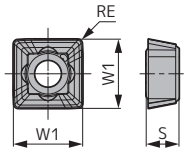


Fig 2 Peripheral insert G type

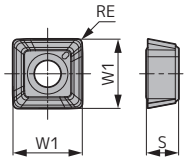


Fig 3 Central insert L type

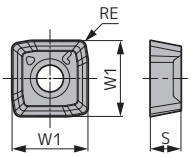
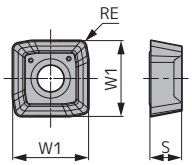


Fig 4 Central insert G type



Precautions for Mounting and Removing Inserts P21

■ Identification Code

GDXT 06 T2 04 P - G

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

● mark: Standard stocked item ○ mark: Stock or planned stock (please confirm stock availability) — mark: Not available

GDXH type 7D (Internal Coolant Supply)

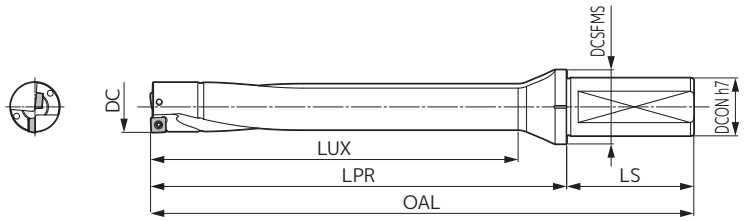
Carbon Steel/ Alloy Steel up to 0.28% | Carbon Steel/ Alloy Steel from 0.29% | Stainless Steel | Cast Iron | Ductile Cast Iron

CVD Coat | PVD Coat | Coolant Hole | 7D | Indexable insert type

Drilling tolerance: 0 to +0.50mm

*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 155D7S20-05**	113.5	131.25	180.25	49.0	25.0	20.0	GDXT050203P	GDXT050205C	1
16.0	○	**160D7S20-05**	117.0	135.00	184.00	49.0	25.0	20.0			1
16.5	○	**165D7S20-05**	120.5	138.75	187.75	49.0	25.0	20.0			1
17.0	○	**170D7S20-05**	124.0	142.50	191.50	49.0	25.0	20.0			1
17.5	○	**GDXH 175D7S25-05**	127.5	146.25	201.25	55.0	32.0	25.0			1
18.0	○	**180D7S25-05**	131.0	150.00	205.00	55.0	32.0	25.0			1
18.5	●	**GDXH 185D7S25-06**	134.5	153.75	208.75	55.0	32.0	25.0	GDXT06T204P	GDXT06T206C	1
19.0	●	**190D7S25-06**	138.0	157.50	212.50	55.0	32.0	25.0			1
19.5	●	**195D7S25-06**	141.5	161.25	216.25	55.0	32.0	25.0			1
20.0	●	**200D7S25-06**	145.0	165.00	220.00	55.0	32.0	25.0			1
20.5	●	**205D7S25-06**	148.5	168.75	223.75	55.0	32.0	25.0			1
21.0	●	**210D7S25-06**	152.0	172.50	227.50	55.0	32.0	25.0			1
21.5	●	**215D7S25-06**	155.5	176.25	231.25	55.0	32.0	25.0			1
22.0	●	**220D7S25-06**	159.0	180.00	235.00	55.0	32.0	25.0			1
22.5	○	**GDXH 225D7S25-07**	162.5	183.75	238.75	55.0	32.0	25.0	GDXT070305P	GDXT070308C	1
23.0	○	**230D7S25-07**	166.0	187.50	242.50	55.0	32.0	25.0			1
23.5	○	**235D7S25-07**	169.5	191.25	246.25	55.0	32.0	25.0			1
24.0	○	**240D7S25-07**	173.0	195.00	250.00	55.0	32.0	25.0			1
24.5	○	**245D7S25-07**	176.5	198.75	253.75	55.0	32.0	25.0			1
25.0	○	**250D7S25-07**	180.0	202.50	257.50	55.0	32.0	25.0			1
25.5	○	**255D7S25-07**	183.5	206.25	261.25	55.0	32.0	25.0			1
26.0	○	**GDXH 260D7S32-07**	187.0	210.00	269.00	59.0	40.0	32.0			1
26.5	○	**265D7S32-07**	190.5	213.75	272.75	59.0	40.0	32.0			1
27.0	○	**270D7S32-07**	194.0	217.50	276.50	59.0	40.0	32.0			1

Recommended Cutting Conditions P7

■ Parts

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

■ Identification Code

GDXH 200 D7 S25 - 06

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

● mark: Standard stocked item ○ mark: Stock or planned stock (please confirm stock availability) N·m Recommended Tightening Torque (N·m)

GDXH type 7D (Internal Coolant Supply)

■ Insert

Dimensions (mm)

Grade Classification		Coated Carbide							
Process	High-speed/Light Cutting	P K M	P						
	Medium Cutting	P K M		M					
	Roughing	P K M		M					
	Cat. No.	ACU2500	ACP2000	ACS3000	Width W1	Thickness S	Corner Radius RE	Fig	Applicable Holder
Peripheral Insert	**GDXT 050203P-L**	○	○	○	5.1	2.56	0.3	1	GDXH155D7S20-05 to GDXH180D7S25-05
	050203P-G	○	○	○	5.1	2.51	0.3	2	
	GDXT 06T204P-L	●	●	●	6.3	2.98	0.4	1	GDXH185D7S25-06 to GDXH220D7S25-06
	06T204P-G	●	●	●	6.3	2.93	0.4	2	
	GDXT 070305P-L	○	○	○	7.7	3.38	0.5	1	GDXH225D7S25-07 to GDXH270D7S32-07
	070305P-G	○	○	○	7.7	3.33	0.5	2	
Central Insert	**GDXT 050205C-L**	○	—	—	5.6	2.38	0.5	3	GDXH155D7S20-05 to GDXH180D7S25-05
	050205C-G	○	—	—	5.6	2.48	0.5	4	
	GDXT 06T206C-L	●	—	—	6.9	2.78	0.6	3	GDXH185D7S25-06 to GDXH220D7S25-06
	06T206C-G	●	—	—	6.9	2.88	0.6	4	
	GDXT 070308C-L	○	—	—	8.6	3.18	0.8	3	GDXH225D7S25-07 to GDXH270D7S32-07
	070308C-G	○	—	—	8.6	3.31	0.8	4	

Fig 1 Peripheral insert L type

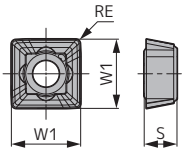


Fig 2 Peripheral insert G type

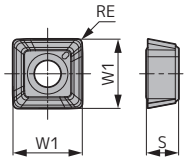


Fig 3 Central insert L type

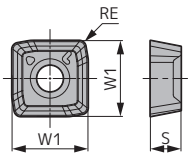
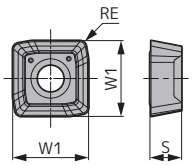


Fig 4 Central insert G type



Precautions for Mounting and Removing Inserts P21

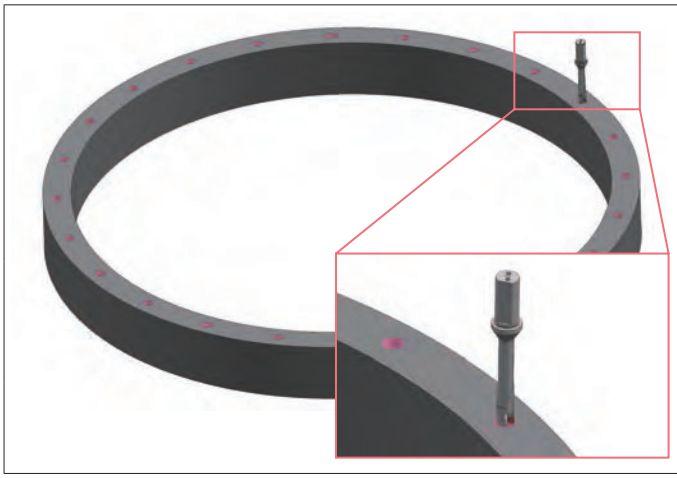
■ Identification Code

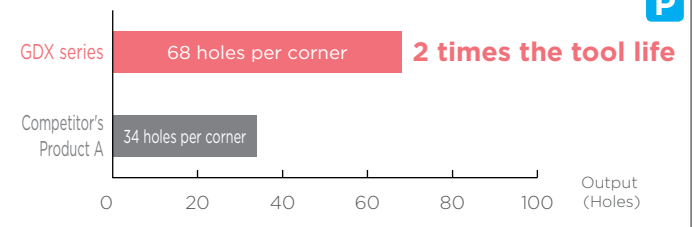
GDXT 06 T2 04 P - G

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

● mark: Standard stocked item ○ mark: Stock or planned stock (please confirm stock availability) — mark: Not available

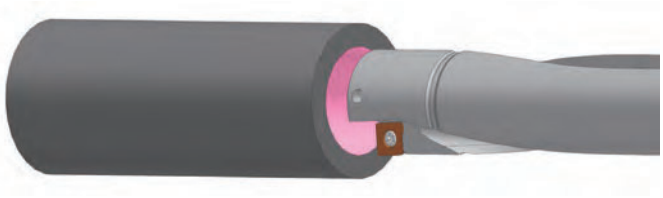
■ Application Examples





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

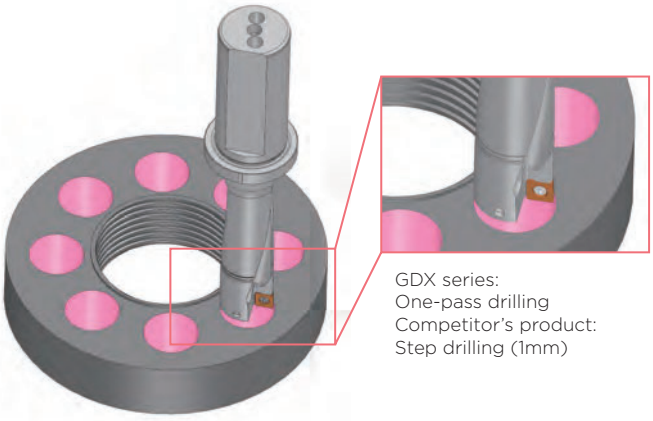
Realises stable drilling and doubled tool life compared to competitor's products



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 = 80m/min, f = 0.03→0.05mm/rev, H = 75mm x 2 (Flipped Drilling, Through), Internal Coolant Supply (Water-soluble)

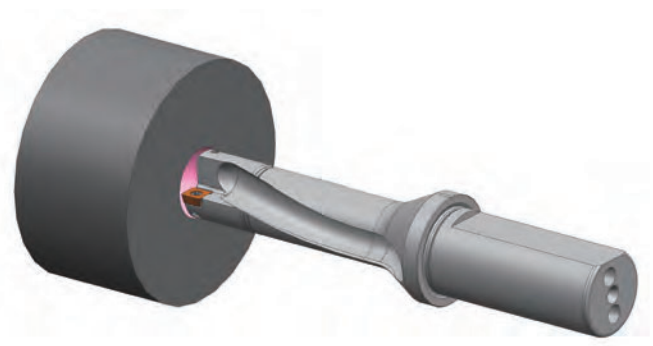
Compared to competitor's product, stable drilling is realised with short chips

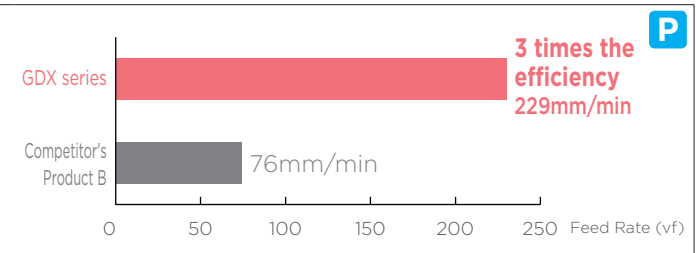


GDX series:
One-pass drilling
Competitor's product:
Step drilling (1mm)

Work Material: Flange (SS400)
Drill: GDXH190D3S25-06 (ø19, 3D)
Insert: Peripheral Insert GDXT06T204P-L (ACU2500)
Central Insert: GDXT06T206C-L (ACU2500)
Cutting Conditions: vc = 240m/min, f = 0.055mm/rev, H = 22mm (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.





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

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

■ Lathe Drilling Guidelines

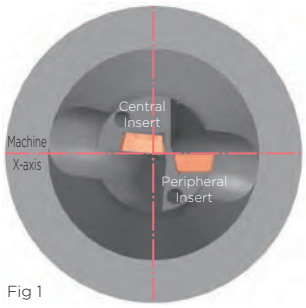


Fig 1

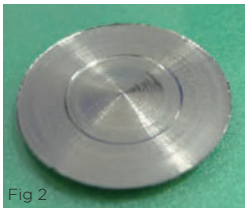


Fig 2

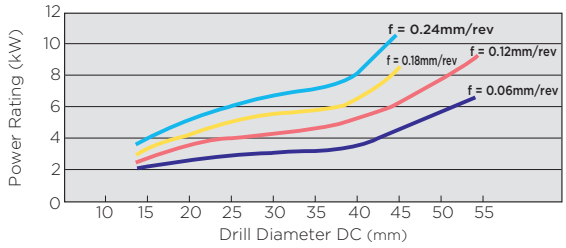
Drill installation

· 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

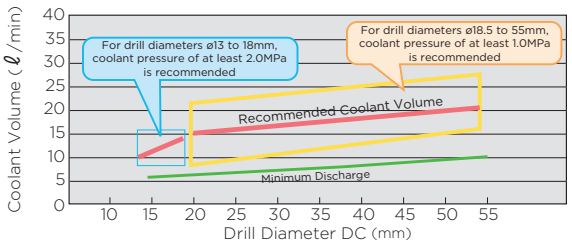
· When the drill is mounted on a lathe, the centre of the central insert is designed to be 0.1 to 0.2mm below the centre of the spindle.
· If the spindle deviates so far off centre that the centre of the central insert lies above the spindle centre, the central insert will break.
Also take note that, if the off-centre amount is larger than the normal value, the pip at the bottom of the hole will become larger (ø1mm 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 ø20.0mm, depth of cut 4mm or below)
Also, use a feed rate 30% to 70% lower than the recommended rate.

■ 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 = 150m/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 ø18.0mm)
- 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.

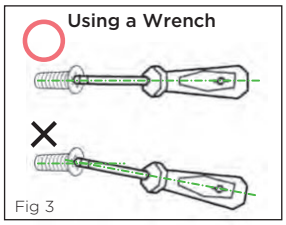


Fig 3

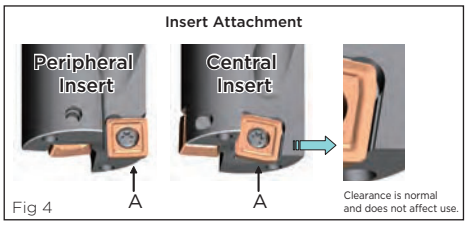


Fig 4

■ 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 = 50m/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

< SAFETY NOTES >

- 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.
- 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.

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