



DONG SAN TOOL Co.

DEEP HOLE DRILLING TOOLS

**BRAZED GUNDRILL
INSERT GUNDRILL
BRAZED BTA TOOL
INSERT BTA TOOL
ACCESSORIES**



COMPANY INTRODUCTION

Welcome to DONGSAN Tool Co.

DONGSAN is a reliable company that specializes in manufacturing deep hole drilling tools. Since the company was founded in 1987, DONGSAN has been concentrating to develop gundrills. In 1990, we first started to produce gundrills for deep hole drilling in Korea.



With about 20 years experience in this specialized field, DONGSAN becomes a leading company manufacturing Single Flute Gundrills in diameter from 2mm to ~ 45mm, Two Flute Gundrills, Stepped Gundrills, Insert Type Gundrills, BTA Drills, BTA Drill Tubes and Deep Hole Tool accessories. Our products are also recognized for their excellent technology and quality in Korea. We believe ourselves to be a highly specialized and respected company and we can promise that we will keep concentrating on manufacturing Deep Hole Drilling Tools to ensure a top position all around the world. In addition, we will do our best to satisfy customer's requirement.

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GUNDRILL INTRODUCTION

GUNDRILL CHARACTERISTIC

The gundrilling process was originally developed in arms technology for purpose of producing the gun barrels. With progress of automotive industries, gundrill was more developed and has more advantages as like high drilling performance, precision exact alignment and roundness, good surface finish. So, it is preferable in many applications to the deep hole drilling process for the automotive, shipbuilding, aircraft, construction, hydraulic and compressed air, die and mold industries and more.

Excellent Deep Hole Drilling

Deep hole drilling(L/D 100 to 200) is available

Good Hole Straightness

Hole center deviation for 1000mm depth is less than 1mm

Excellent Surface Roughness

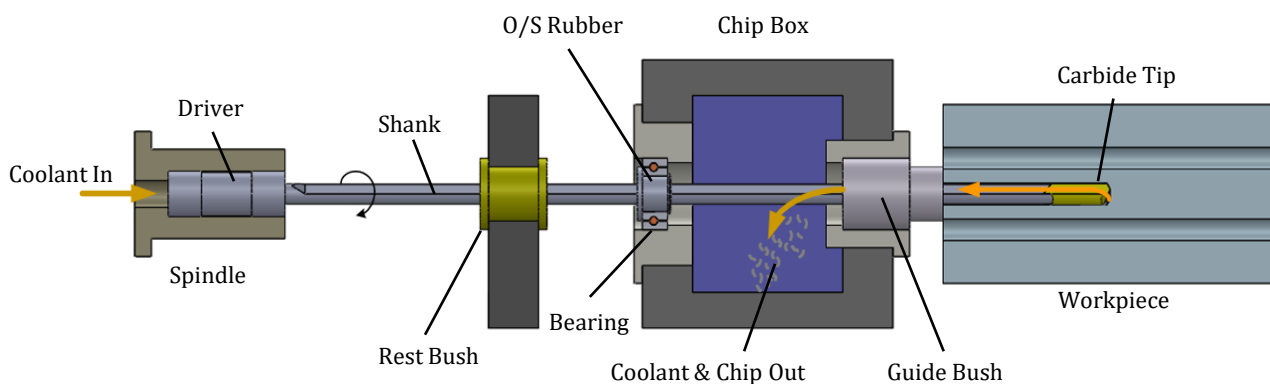
Tolerance of hole diameter is around H7 to H9

High Productivity

Step feeding is not necessary
Eliminating the need for reaming

GUNDRILL SYSTEM COMPONENT

1. The gun drill is a simple basic tool consisting of a carbide tip, a heat treated alloy shank, and a steel driver
2. Coolant is forced from the driver through the center of the shank to the tip.
3. Chip is flushed back along the shank's V-flute



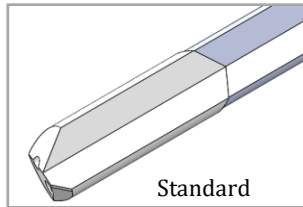
Rest Bush : Supporting the gundrill to suppress vibration

O/S Rubber : Suppressing vibration, blocking the chips at the end of chip box and sealing the coolant leak

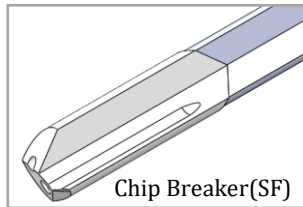
Guide Bush : Inner diameter is $-0 \sim +0.005$ of the gundrill diameter, holding the gundrill when the gundrill getting into the workpiece

BRAZED GUNDRILL PRODUCT

SINGLE FLUTE GUNDRILL



Standard



Chip Breaker(SF)

Suitable for almost every material

Drilling depth more than 10xD

Diameter from 2.0 to 40.0mm

Max length 4000mm

Chip breaker type(SF) for low carbon steel

※ TiN, TiCN, TiAlN Coating Available



Kidney Hole



One Hole



Two Hole

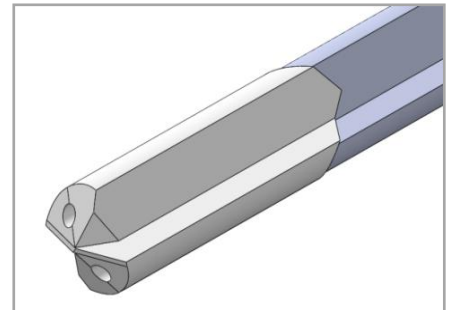
TWO FLUTE GUNDRILL

Two cutting edges & Two flutes

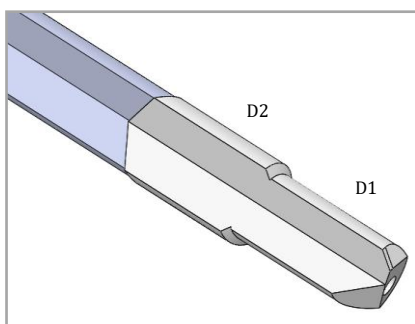
Two times faster feed rate than single flute gundrill

Suitable for cast Iron, aluminum and short-chipping non-ferrous metals

Diameter from 5.0 to 26.0mm



STEP GUNDRILL



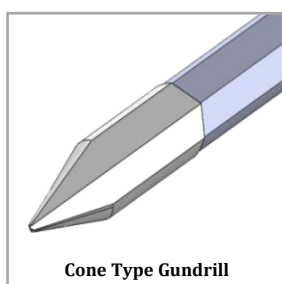
Suitable for almost every material

Eliminate two-three subsequent operations in a single hole

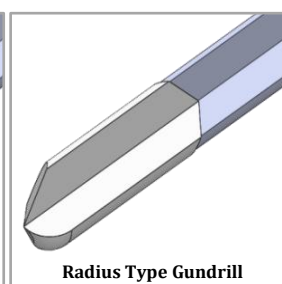
Reduce eccentricity between D1 hole and D2 hole

SPECIAL GEOMETRY GUNDRILL

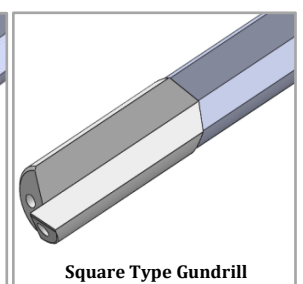
End point drilling for special shape
Other shape gundrill can be manufactured as special



Cone Type Gundrill



Radius Type Gundrill



Square Type Gundrill

GUNDRILL PAD PROFILE

R1
Standard
Bearing Pad



General purpose pad for Steel, Stainless steel, Inconel and Alumiumm

R2
Standard Bearing
&
Guide Pad



Precision drilling for all non-ferrous and cast iron

R3
High
Bearing Pad



Special purpose contour for good size control, where extra burnishing action is required, not for all materials.

R4
High Bearing
&
Guide Pad



Use in aluminum and brass for best hole finish. Recommended for intersecting holes and interrupted cuts or where extra o.d. support and burnishing is required. Do not use in high nickel content materials due to high burnishing forces.

R9
High
Interrupted
Bearing Pad



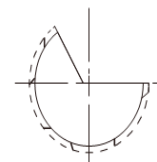
For good size control (including at exit). Special purpose contour where ultra-precision hole processing is required or extra burnishing action required, not for all materials.

R10
Two Flute
Bearing Pad



Two flute bearing pad used for high penetration rates in applications such as lubrication holes.

SP
Special
Contour



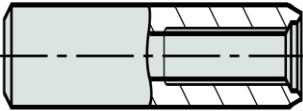
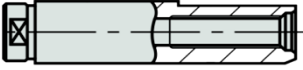
Special pad angles defined by customer requirement

STANDARD GUNDRILL DRIVER

Various drivers for standard gundrill machine and CNC/MC machines

Inch size drivers for standard gundrill machine (12.7/19.05/25.4/31.75/38.1mm)

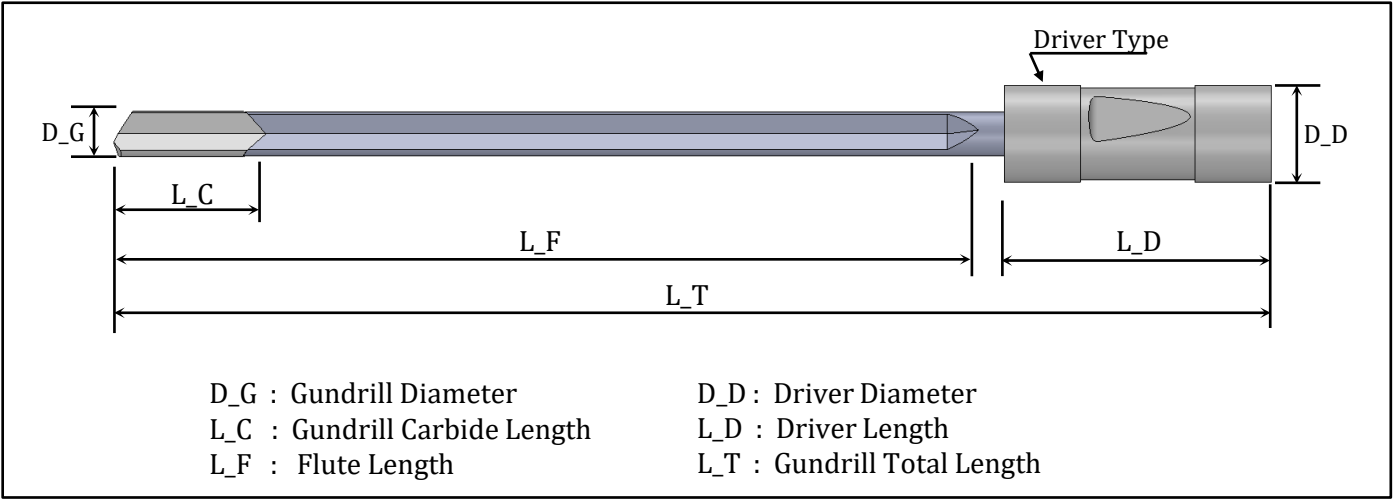
Select driver shape & size after determining what type of collet chuck or side lock chuck

Driver Type	Driver Drawing	Φ D (mm)	L (mm)	Driver Type	Driver Drawing	Φ D (mm)	L (mm)
Central Clamping Tapered 1		6	30	Whistle Notch DIN1835E		10	40
		10	40			16	48
		16	45			20	50
		19.05	70			25	56
		25	70			25	60
		25.4	70			25	70
		31.75	70			32	60
		38.1	70			32	70
Central Clamping Tapered 2		12.7	38.1	Weldon DIN1835B		6	36
		16	70			8	36
		19.05	70			10	40
		20	70			12	45
Cylindrical DIN1835A DIN6535HA		4	28			14	45
		5	28			16	48
		6	36			18	48
		8	36	DIN6535HB		20	50
		10	40			25	56
		12	45			25	60
		14	45			25	70
		16	48			32	60
		18	48			32	70
		20	50			40	70
		25	56	Cylindrical With Thread		10	40
		25	60			12	45
		25	70			14	45
		32	60			16	48
		32	70			18	48
		40	70			20	50
						25	60
						25	70
Whistle Notch DIN6535HE		10	40	VDI Design		10	68
		16	48			16	90
		20	50			25	112
		25	56			36	135
		25	60				
		25	70				
		32	60				
		32	70				

Special Driver available : Drawing required

GUNDRILL INQUIRY FORM

ORDER FOR BRAZED GUNDRILL



Standard Gundrill Carbide Length(L_C)

Gundrill Diameter(mm)	Carbide Length(mm)	Gundrill Diameter(mm)	Carbide Length(mm)	Gundrill Diameter(mm)	Carbide Length(mm)
1.9~2.9	18	7.9~10.3	31	18.5~20.4	44
3.0~3.9	19	10.4~10.7	32	20.5~21.4	46
4.0~4.9	23	10.8~11.7	35	21.5~22.4	49
5.0~5.4	24	11.8~12.3	36	22.5~23.4	51
5.5~5.8	26	12.4~12.8	37	23.5~24.4	52
5.9~6.1	27	12.9~14.3	38	24.5~28.4	54
6.2~6.9	28	14.4~16.8	39	28.5~29.4	56
7.0~7.2	29	16.9~17.8	40	29.5~30.4	59
7.3~7.8	30	17.9~18.4	41	30.5~32	61

GUNDRILL INQUIRY FORM

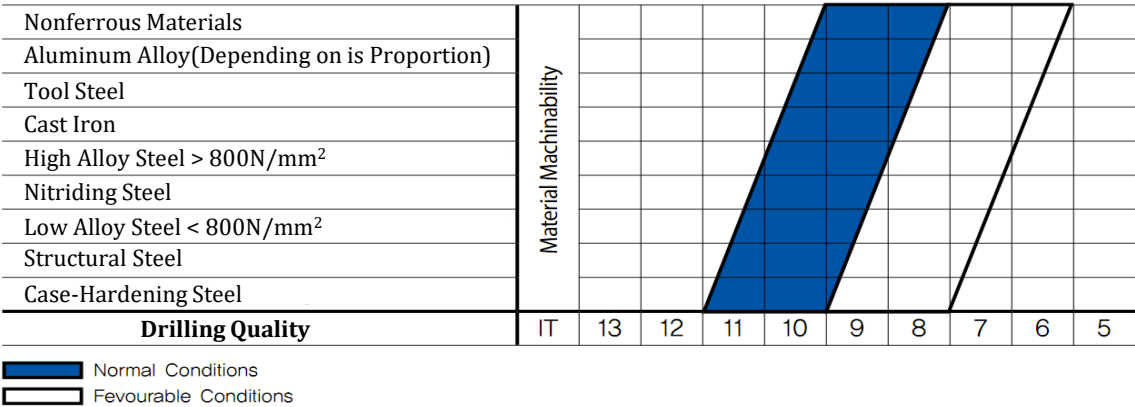
- Gundrill Diameter(D_G)
- Gundrill Carbide Length
 - Standard Length
 - Special Length
- Flute Length(L_F)
- Driver Type
 - See Page. 4
- Driver Diameter(D_D)
- Driver Length(L_D)
- Gundrill Total Length(L_T)
- Coating
 - None
 - TiN/TiCN/TiAlN/Special
- Pad Profile
 - See Page. 3
- Chip Breaker
 - None/SF
- Additional Requests

GUNDRILL INQUIRY FORM Example

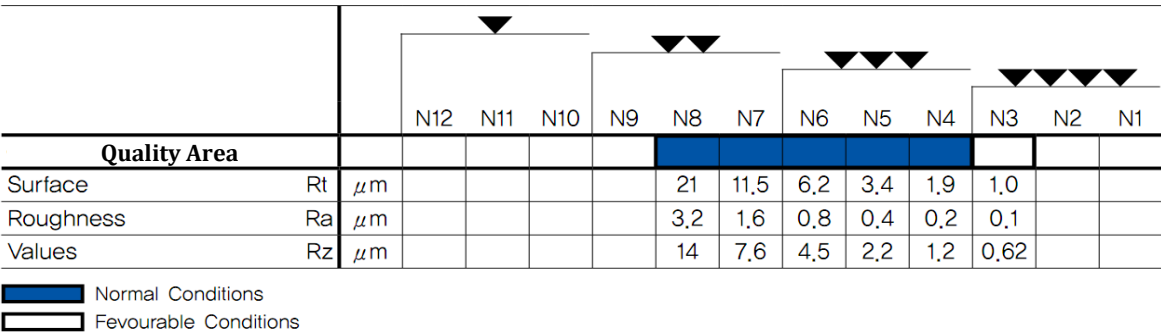
- D_G : 12.02mm
- L_C : Standard Length
- L_F : 920mm
- Driver Type : Central Clamping Tapered 1
- D_D : 19.05mm
- L_D : 70mm
- L_T : 1000mm
- Coating : None
- Pad Profile : R1
- Chip Breaker : None
- Additional Requests : None

GUNDRILLING TOLERANCES

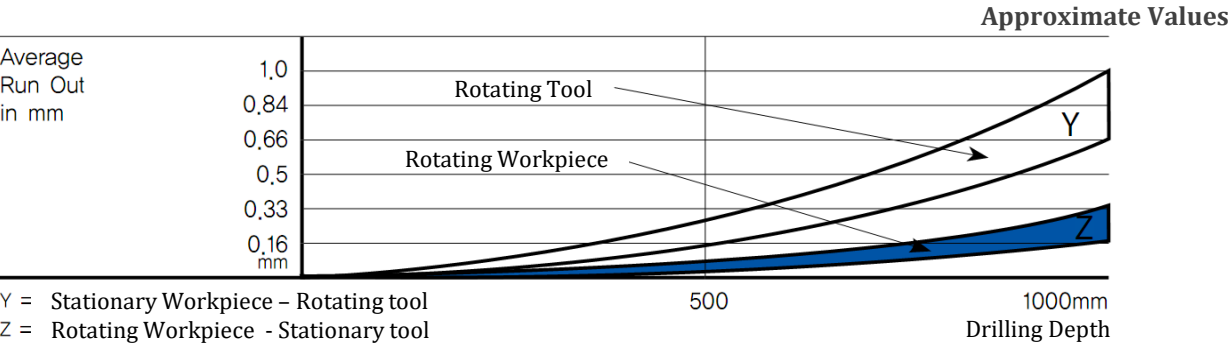
DIMENSIONAL TOLERANCE



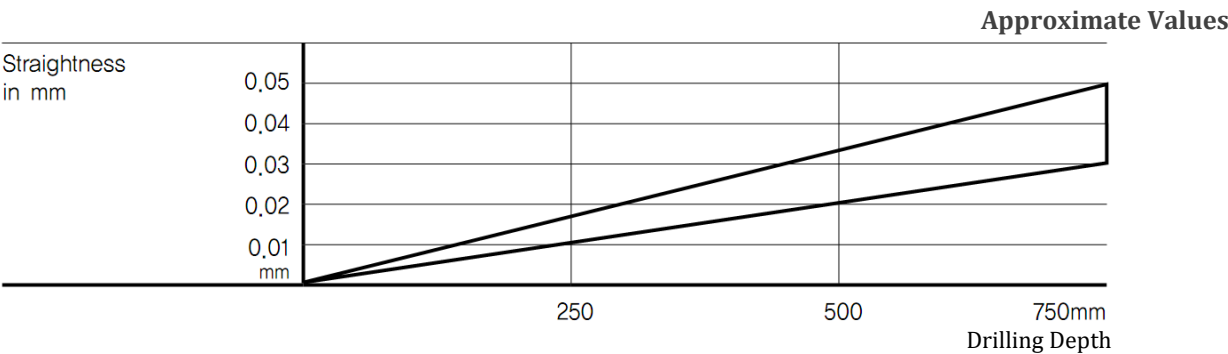
SURFACE QUALITY



CONCENTRICITY



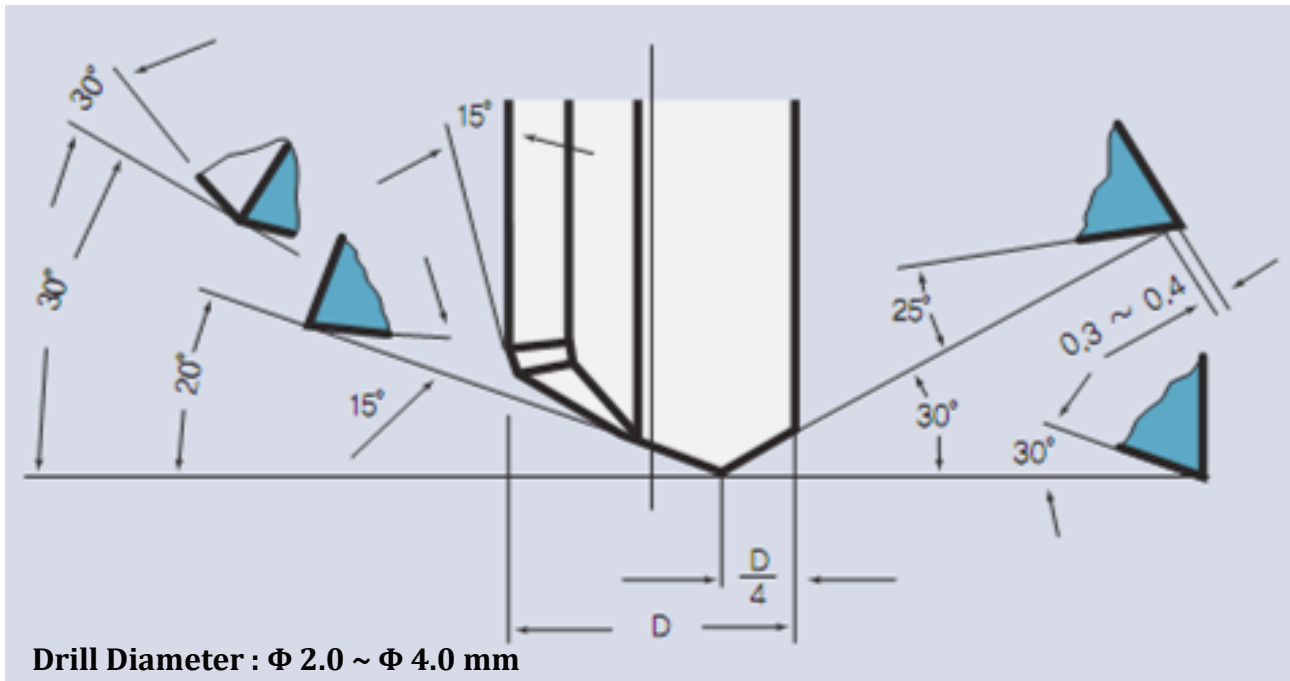
DRILLING HOLE STRAIGHTNESS



GUNDRILL SHARPENING ANGLES

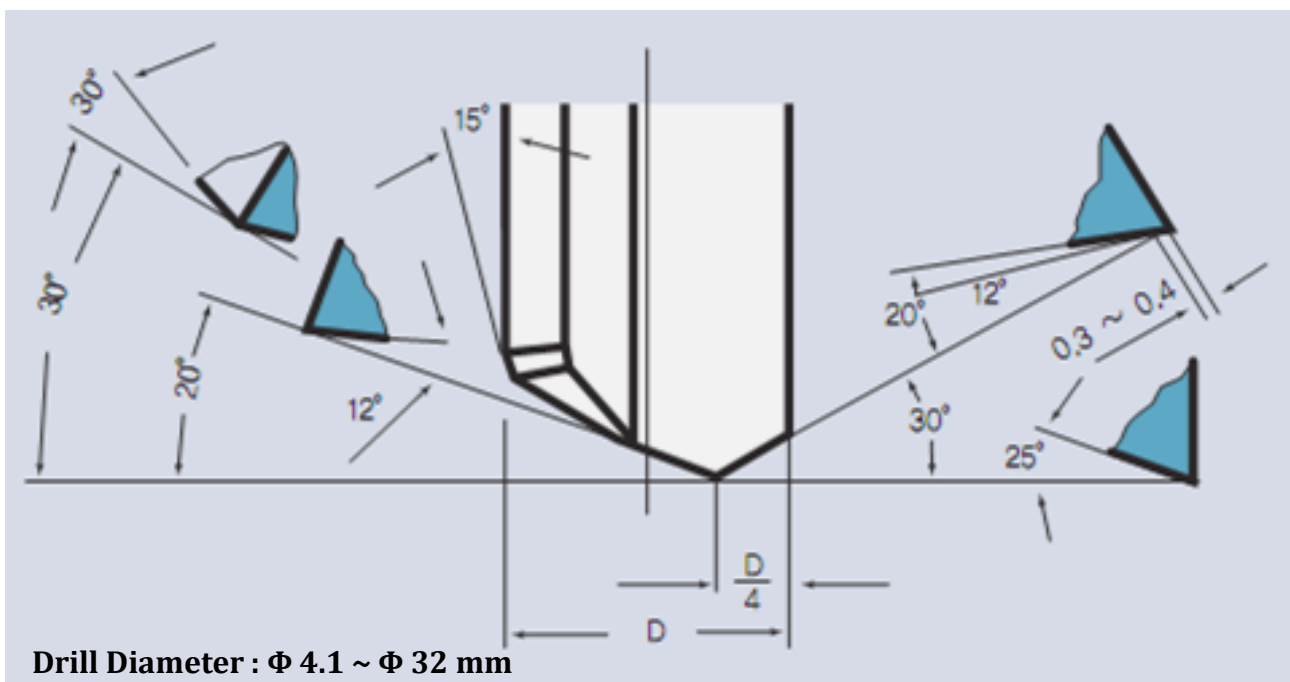
SHARPENING ANGLE : Φ 2.0 ~ Φ 4.0 mm

Apply bigger relief angle for improving drilling performance when drilling small diameter



SHARPENING ANGLE : Φ 4.1 ~ Φ 32.0 mm

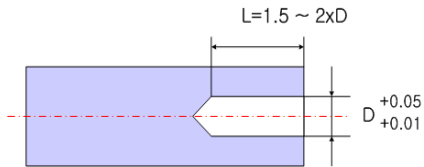
Apply small relief angle for acquiring higher cutting edge strength when drilling larger than Φ 4.0mm



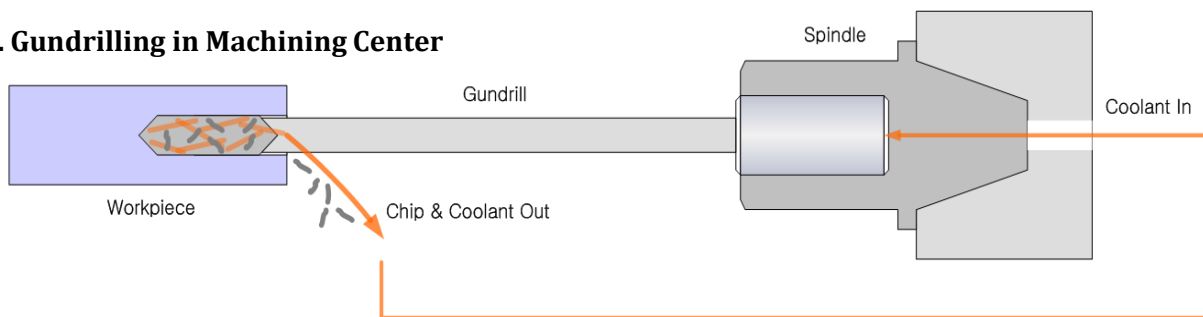
GUNDRILLING in MACHINING CENTER

GUNDRILLING in MACHINING CENTER

1. Drilling or boring for guide hole



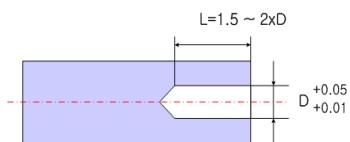
2. Gundrilling in Machining Center



- Need guide hole made by drilling, instead of guide bush in gundrill machine
- Deep hole drilling(MAX L = 40 x D) is available

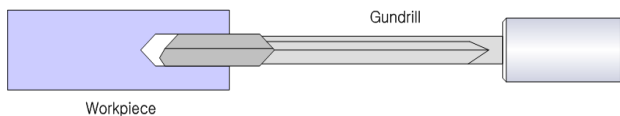
DETAIL PROCESS in MACHINING CENTER

1. Guide Hole Process



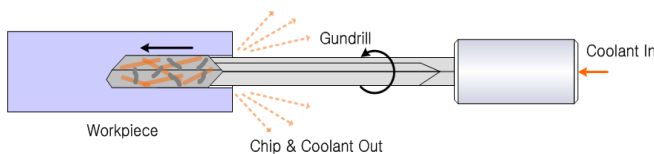
- Need a guide hole made by drilling, instead of guide bush in gundrill machine
- Drill a guide hole with the tolerance +0.01 to +0.05 larger than gundrill diameter
- Drill a guide hole to the depth of 1.5 to 2 times of gundrill diameter or deeper than 10mm

2. Insert Gundrill into guide hole



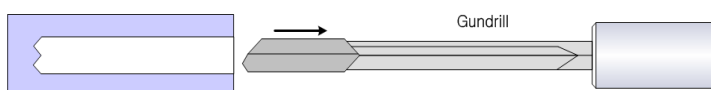
- Insert gundrill into guide hole without rotation
- Stop feeding at 3~5mm away from the bottom of the guide hole

3. Start gundrilling



- Start feeding while supplying cutting fluid and rotating gundrill
- After feeding gundrill for 10mm depth with Initial feed rate of 1/3 ~ 1/2 of normal feed rate, increase to normal feed rate

4. Finish gundrilling

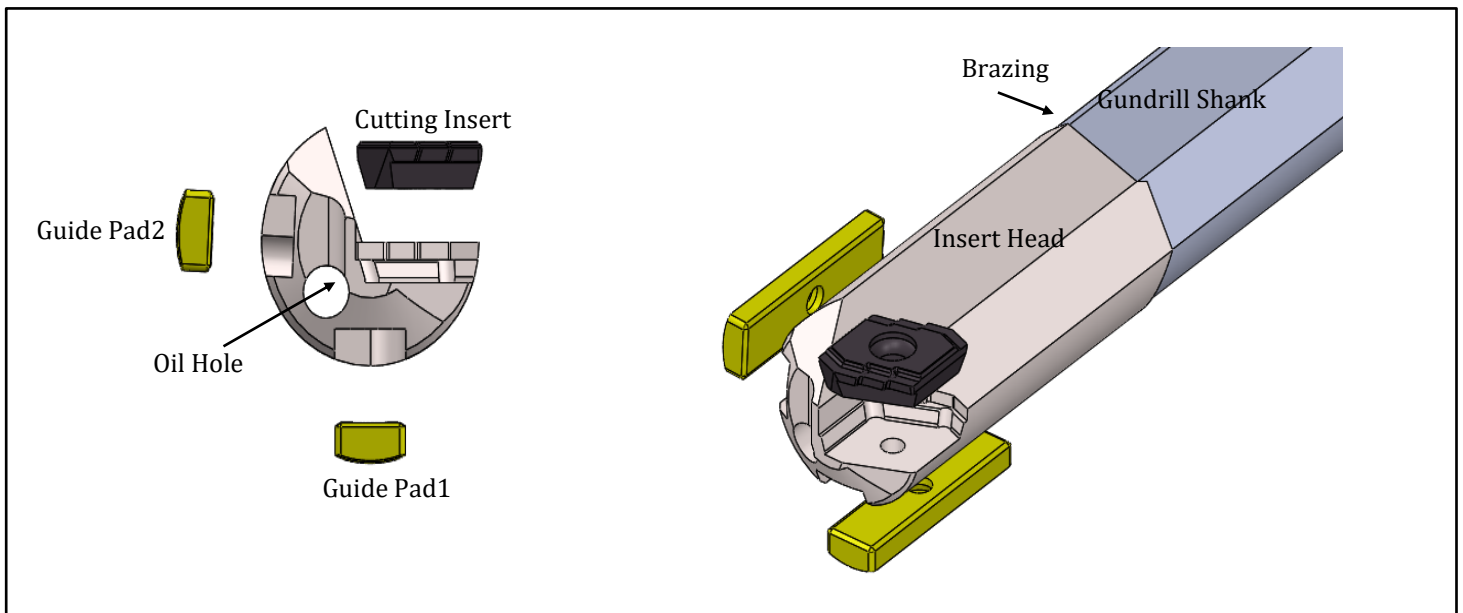
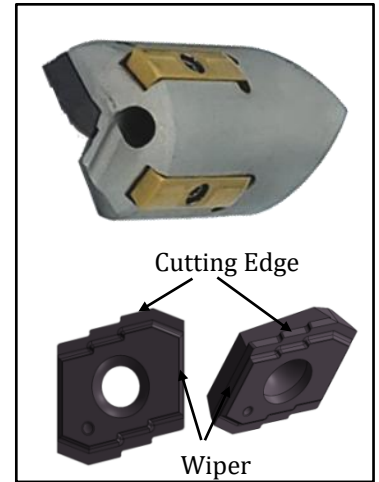


- When drill reached to the designated depth, stop feeding
- Turn off coolant circulation and pull it out to the initial position

HYPER INSERT GUNDRILL – IDH SERIES

HYPER INSERT GUNDRILL CHARACTERISTIC

- INSERT GUNDRILL with one cutting Insert & two guide pads
- Cutting insert has two cutting edges & two polished guide wipers for high hole surface quality.
- Longer guide pad provides better straightness & hole size accuracy compared with other companies
- Chip breaker makes Improved drilling performance & smooth surface roughness by splitting long chip into 4 small chips
- **Diameter Range : $\Phi 14\text{mm} \sim \Phi 33\text{mm}$**
- **Hole Diameter Accuracy : $- 0.03 \sim + 0.02 \text{ mm}$**



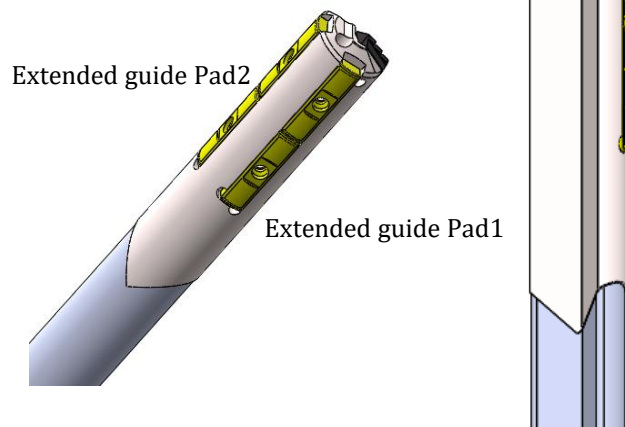
Advantage of Insert Gundrill with chip breaker and PVD coating

1. Drilling speed improved
2. Hole surface quality improved
3. Tool life improved

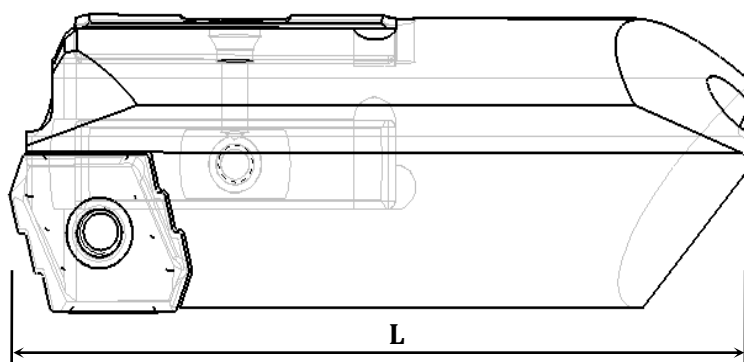
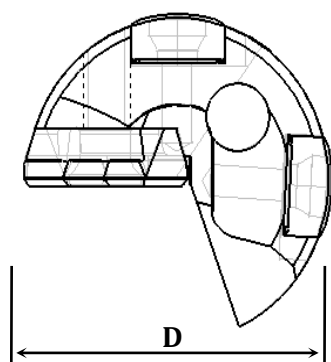
HYPER INSERT GUNDRILL – IDH SERIES

INSERT GUNDRILL for CROSS-HOLE DRILLING

- Vibration reduction with extended two guide pads for cross Hole drilling
- 45mm guide length for better performance during cross drilling



INSERT GUNDRILL HEAD Spec.

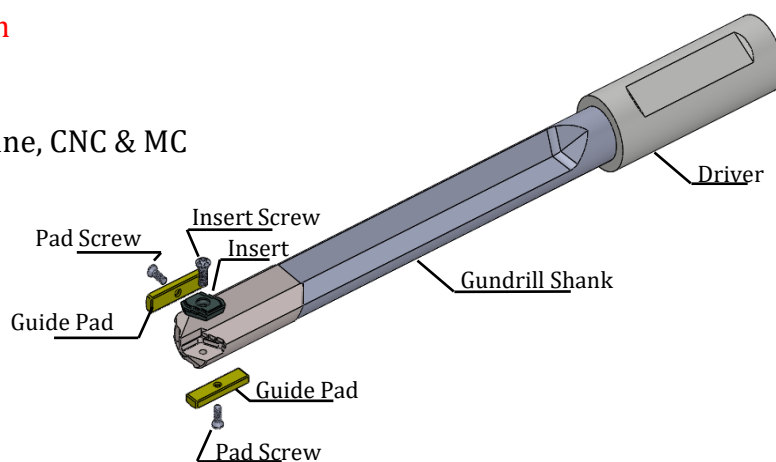


Diameter D(mm)	Head Length L(mm)	INSERT (IDI Series)			Guide Pad (IDP Series)		
		Insert	Insert Screw	Wrench	Pad	Pad Screw	Wrench
14.00 ~ 16.59	44	IDI1516	DST-2505S (M2.5)	T8	IDP1516	DST-2252 (M2.2)	T7
16.60 ~ 18.59	47.5	IDI1718	DST-2555S (M2.5)	T8	IDP1718	DST-2555 (M2.5)	T7
18.60 ~ 20.59	52.5	IDI1920	DST-3062 (M3.0)	T9	IDP1920	DST-2555 (M2.5)	T7
20.60 ~ 22.59	52.5	IDI2122	DST-3072 (M3.0)	T9	IDP2122	DST-2565 (M2.5)	T7
22.60 ~ 25.59	52.5	IDI2325	DST-3508 (M3.5)	T15	IDP2325	DST-2565 (M2.5)	T7
25.60 ~ 28.59	52.5	IDI2628	DST-3585 (M3.5)	T15	IDP2628	DST-2565 (M2.5)	T7
28.60 ~ 33.02	58	IDI2932	DST-0510 (M5.0)	T20	IDP2932	DST-3072 (M3.0)	T9

HYPER INSERT GUNDRILL – IDH SERIES

ORDER SPECIFICATION for INSERT GUNDRILL

- Diameter Range : $\Phi 14\text{mm} \sim \Phi 33\text{mm}$
- Maximum Length : 3000mm
- Application Machine : Gundrill Machine, CNC & MC
- Special size available



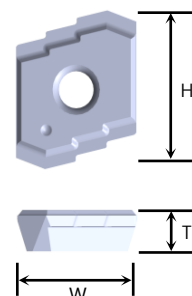
Diameter Range(mm)	Main Diameter(mm)	INSERT (IDI Series)			Guide Pad (IDP Series)		
		Insert	Insert Screw	Wrench	Pad	Pad Screw	Wrench
14.00 ~ 16.59	IDH_14.00/IDH_14.02	IDI1516	DST-2505S (M2.5)	T8	IDP1516	DST-2252 (M2.2)	T7
	IDH_15.00/IDH_15.02						
	IDH_16.00/IDH_16.02						
16.60 ~ 18.59	IDH_17.00/IDH_17.02	IDI1718	DST-2555S (M2.5)	T8	IDP1718	DST-2555 (M2.5)	T7
	IDH_18.00/IDH_18.02						
18.60 ~ 20.59	IDH_19.00/IDH_19.02	IDI1920	DST-3062 (M3.0)	T9	IDP1920	DST-2555 (M2.5)	T7
	IDH_19.50/IDH_19.52						
	IDH_20.00/IDH_20.02						
20.60 ~ 22.59	IDH_21.00/IDH21.02	IDI2122	DST-3072 (M3.0)	T9	IDP2122	DST-2565 (M2.5)	T7
	IDH_22.00/IDH_22.02						
22.60 ~ 25.59	IDH_23.00/IDH_23.02	IDI2325	DST-3508 (M3.5)	T15	IDP2325	DST-2565 (M2.5)	T7
	IDH_24.00/IDH_24.02						
	IDH_24.50/IDH_24.52						
	IDH_25.00/IDH_25.02						
25.60 ~ 28.59	IDH_26.00/IDH_26.02	IDI2628	DST-3585 (M3.5)	T15	IDP2628	DST-2565 (M2.5)	T7
	IDH_27.00/IDH_27.02						
	IDH_28.00/IDH_28.02						
28.60 ~ 33.02	IDH_29.00/IDH_29.02	IDI2932	DST-0510 (M5.0)	T20	IDP2932	DST-3072 (M3.0)	T9
	IDH_30.00/IDH_30.02						
	IDH_31.00/IDH_31.02						
	IDH_32.00/IDH_32.02						
	IDH_33.00/IDH_33.02						



IDI & IDP INSERT INFORMATION

IDI INSERT SPECIFICATION

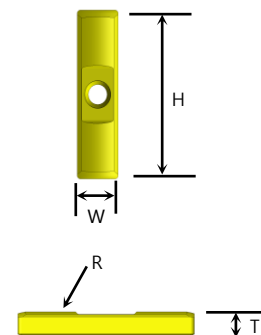
- Precise Insert tip with five-polished surfaces for hole size accuracy
- Super micro grain carbide & hybrid multi-layer PVD coating for improved deep-hole drilling performance
- Applicable to various materials such as general carbon steel, cast iron, difficult-to-cut material & STS



Insert	Diameter Range (mm)	W	H	T	Screw		Wrench
IDI1516	14.00~16.59	8.6	10.5	2.75	DST-2505S	M2.5	T8
IDI1718	16.60~17.59	9.6	11.5	3.25	DST-2555S	M2.5	T8
IDI1920	18.60~19.59	10.6	13	3.45	DST-3062	M3.0	T9
IDI2122	20.60~22.59	11.7	14.5	3.8	DST-3072	M3.0	T9
IDI2325	22.60~25.59	13.2	15	4.25	DST-3508	M3.5	T15
IDI2628	25.60~28.59	14.7	15	4.5	DST-3585	M3.5	T15
IDI2932	28.60~33.02	16.9	18	5	DST-0510	M5.0	T20

IDP GUIDE PAD SPECIFICATION

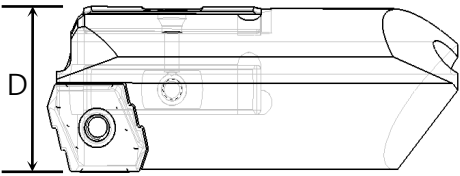
- Precise pad tip with six-polished surfaces for hole size accuracy
- Good wear materials with a low coefficient of friction for improved guide performance



Pad	Diameter Range (mm)	W	H	T	R	Screw		Wrench
IDP1516	14.00~16.59	5.19	20	2.5	7	DST-2252	M2.2	T7
IDP1718	16.60~17.59	5.99	23.2	3	8	DST-2555	M2.5	T7
IDP1920	18.60~19.59	5.99	23.2	3	9	DST-2555	M3.0	T7
IDP2122	20.60~22.59	5.99	23.2	3.4	10	DST-2565	M3.0	T7
IDP2325	22.60~25.59	5.99	23.2	3.4	11	DST-2565	M3.5	T7
IDP2628	25.60~28.59	5.99	23.2	3.4	12	DST-2565	M3.5	T7
IDP2932	28.60~33.02	7.5	26	3.8	14	DST-3072	M5.0	T9

INSERT GUNDRILL INQUIRY FORM

ORDER FOR INSERT GUNDRILL HEAD



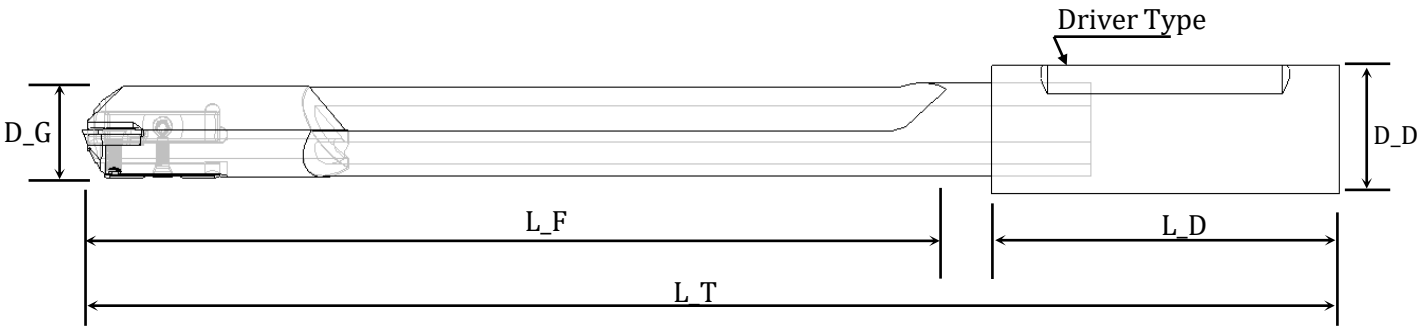
Only insert gundrill heads can be ordered separately

IDH_XX.XX

Insert Gundrill Diameter (mm)

Ex) 15.02, 25.02

ORDER FOR HYPER IDH INSERT GUNDRILL



D_G : Gundrill Diameter
L_F : Flute Length
D_D : Driver Diameter
L_D : Driver Length
L_T : Gundrill Total Length

INSERT GUNDRILL INQUIRY FORM

1. Insert Gundrill Diameter(D_G)
2. Flute Length(L_F)
3. Driver Type
- See Page. 4
4. Driver Diameter(D_D)
5. Driver Length(L_D)
6. Gundrill Total Length(L_T)
7. Additional Requests

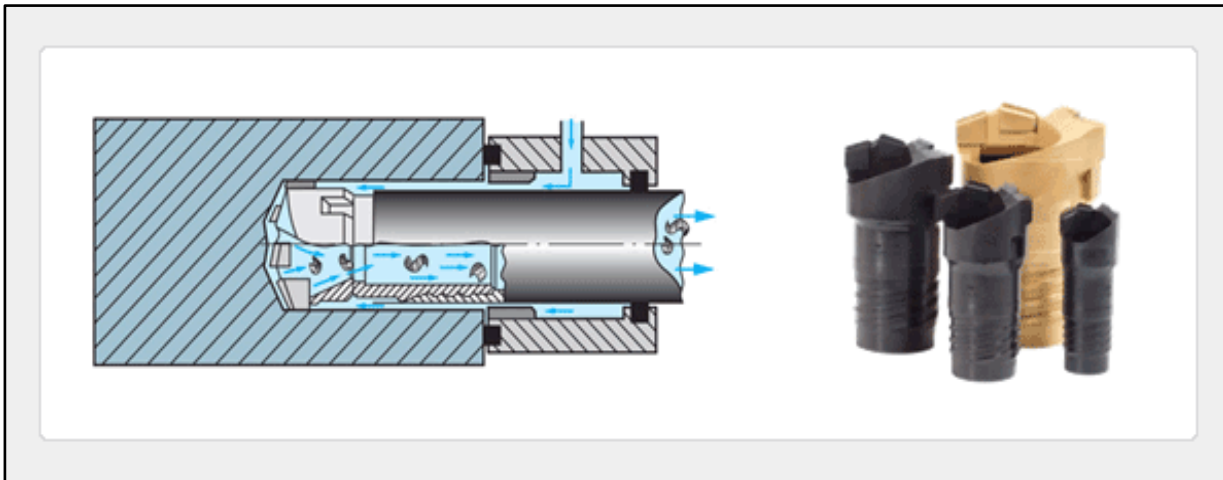
INQUIRY FORM Example

1. D_G : 15.02mm
2. L_F : 1120mm
3. Driver Type : Whistle Notch DIN6535HE
4. D_D : 25.00mm
5. L_D : 70mm
6. L_T : 1200mm
7. Additional Requests : None

STS BRAZED TYPE BTA DRILL

STS BRAZED BTA DRILL FEATURES & CHARACTERISTIC

- STS-BTA Drill is a Single Tube Drilling system used in deep hole drilling applications where fast metal removal is needed.
- High-Pressure coolant is forced down the gap between the drilling tube and inside surface of the hole. Chips are evacuated through the centre of the drill.
- Very high penetration rates can be achieved with this system along with good surface finish

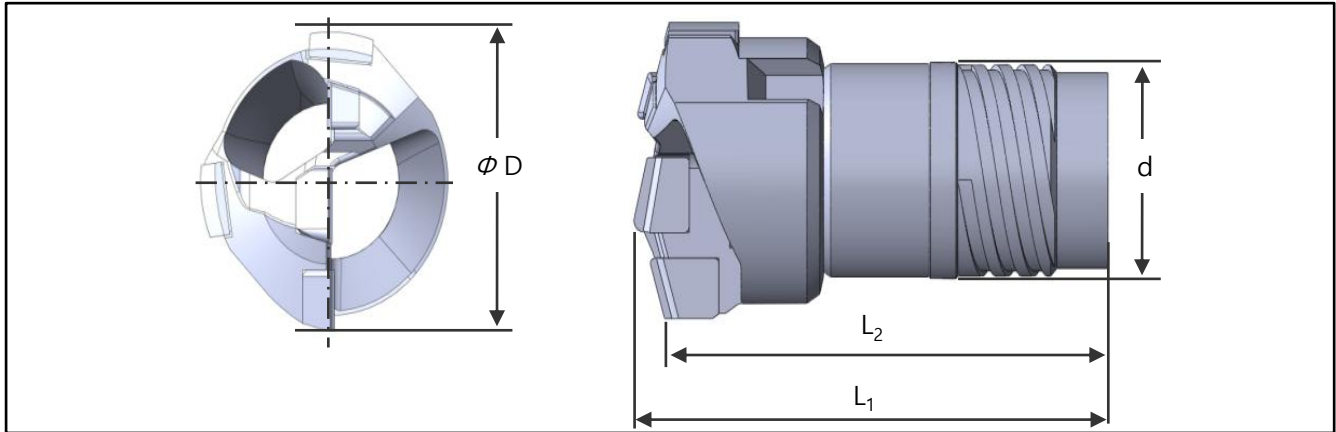


STS BRAZED BTA DRILL Spec.

- Drill Size Range : 17.71mm ~ 65.00mm
- Coating Option : TiN, TiCN, TiAlN & Special Multi-layer Coating
- Retipping Service for All Industry Standard Drill Head
- Excellent Hole Tolerance, Surface Finish, & Hole Straightness For Deep Drilling Process

STS BRAZED TYPE BTA DRILL

ORDER Spec. for STS BRAZED BTA DRILL

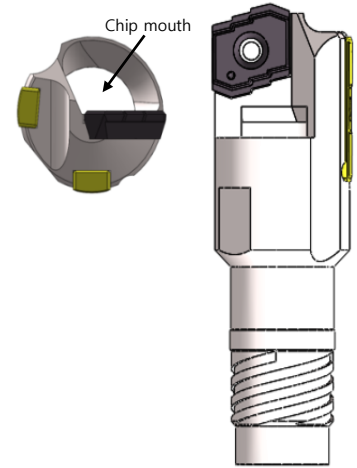


Designation	$\phi D_{\min}(\text{mm})$	$\phi D_{\max}(\text{mm})$	$L_1(\text{mm})$	$L_2(\text{mm})$	$d(\text{mm})$	Drill Tube Dia.(mm)
DS-BTA-1771840	17.71	18.40	47.0	44.2	14.5	16.0
DS-BTA-1841890	18.41	18.90	47.0	44.1	14.5	16.0
DS-BTA-1891920	18.91	19.20	47.0	44.1	15.5	17.0
DS-BTA-1921000	19.21	20.00	47.0	44.0	15.5	17.0
DS-BTA-2001090	20.01	20.90	52.5	49.4	16.0	18.0
DS-BTA-2091180	20.91	21.80	52.5	49.2	16.0	18.0
DS-BTA-2181290	21.81	22.90	56.0	52.8	18.0	20.0
DS-BTA-2291410	22.91	24.10	56.0	52.6	18.0	20.0
DS-BTA-2411520	24.11	25.20	57.5	54.0	19.5	22.0
DS-BTA-2521640	25.21	26.40	57.5	54.0	19.5	22.0
DS-BTA-2641750	26.41	27.50	57.5	53.8	21.0	24.0
DS-BTA-2751870	27.51	28.70	57.5	53.8	21.0	24.0
DS-BTA-2871980	28.71	29.80	63.5	59.5	23.5	26.0
DS-BTA-2981100	29.81	31.00	63.5	59.3	23.5	26.0
DS-BTA-3101210	31.01	32.10	63.5	59.4	25.5	28.0
DS-BTA-3211330	32.11	33.30	63.5	59.1	25.5	28.0
DS-BTA-3331480	33.31	34.80	63.5	59.0	28.0	30.0
DS-BTA-3481620	34.81	36.20	63.5	58.9	28.0	30.0
DS-BTA-3621730	36.21	37.30	73.5	68.7	30.0	33.0
DS-BTA-3731840	37.31	38.40	73.5	68.5	30.0	33.0
DS-BTA-3841960	38.41	39.60	73.5	68.3	30.0	33.0
DS-BTA-3961060	39.61	40.60	73.5	68.2	33.0	36.0
DS-BTA-4061180	40.61	41.80	73.5	68.0	33.0	36.0
DS-BTA-4181300	41.81	43.00	73.5	67.8	33.0	36.0
DS-BTA-4301430	43.01	44.30	75.0	69.5	36.0	39.0
DS-BTA-4431560	44.31	45.60	75.0	69.3	36.0	39.0
DS-BTA-4561700	45.61	47.00	75.0	69.1	36.0	39.0
DS-BTA-4701850	47.01	48.50	75.0	68.8	39.0	43.0
DS-BTA-4851010	48.51	50.10	75.0	68.7	39.0	43.0
DS-BTA-5011170	50.11	51.70	75.0	68.5	39.0	43.0
DS-BTA-5171320	51.71	53.20	82.0	75.2	43.0	47.0
DS-BTA-5321470	53.21	54.70	82.0	75.5	43.0	47.0
DS-BTA-5471620	54.71	56.20	82.0	75.2	43.0	47.0
DS-BTA-5621840	56.21	58.40	84.0	77.2	47.0	51.0
DS-BTA-5841060	58.41	60.60	84.0	76.7	47.0	51.0
DS-BTA-6061280	60.61	62.80	84.0	76.8	47.0	51.0
DS-BTA-6281500	62.81	65.00	84.0	76.5	47.0	51.0

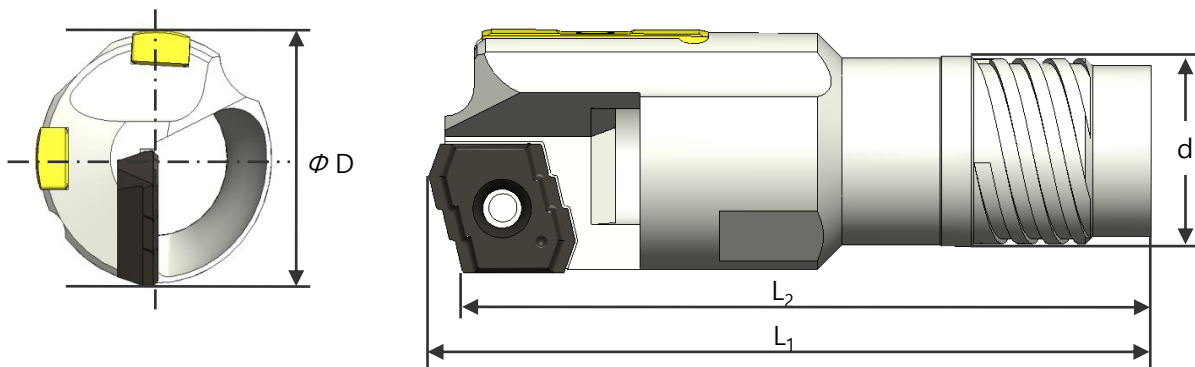
INSERT BTA DRILL – IBH SERIES

STS INSERT BTA DRIL CHARACTERISTIC

- INSERT BTA having one cutting Insert & one chip-mouth when compared with Brazed BTA
- Improved chip evacuation through one chip-mouth by dividing long chip into 4 small segments
- Hole drilling accuracy - 0.03 ~ + 0.02mm by applying polished insert and guide pads
- **Diameter Range : $\Phi 16\text{mm} \sim \Phi 33\text{mm}$**



DETAIL IBH BTA HEAD Spec.

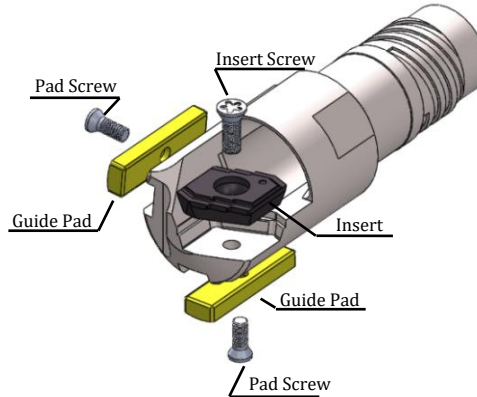


Diameter Range(mm)	Main Diameter $\Phi D(\text{mm})$	$L_1(\text{mm})$	$L_2(\text{mm})$	$d(\text{mm})$	Drill Tube
15.60~16.59	16	63.0	60.4	12.6	14
16.60~17.70	17	66.3	63.3	13.6	15
17.71~18.59	18	67.3	64.3	14.5	16
18.60~20.59	19	67.3	64.2	15.5	17
	20	67.3	64.2	15.5	
20.60~21.80	21	70.4	67.0	16	18
21.81~22.59	22	73.8	70.4	18	20
22.60~24.10	23	74.1	70.5	18	
	24	74.1	70.5	18	
24.11~25.59	25	74.1	70.5	19.5	22
25.60~26.40	26	74.2	70.3	19.5	
26.41~28.59	27	74.2	70.3	21	24
	28	74.2	70.3	21	
28.60~31.00	29	81.5	77.4	23.5	26
	30	81.5	77.4	23.5	
	31	81.5	77.4	23.5	
31.01~33.30	32	81.5	77.4	25.5	28
	33	81.5	77.4	25.5	

INSERT BTA DRILL – IBH SERIES

ORDER Spec. for IBH BTA HEAD

- Diameter Range : $\Phi 16\text{mm} \sim \Phi 33\text{mm}$
- Special size available



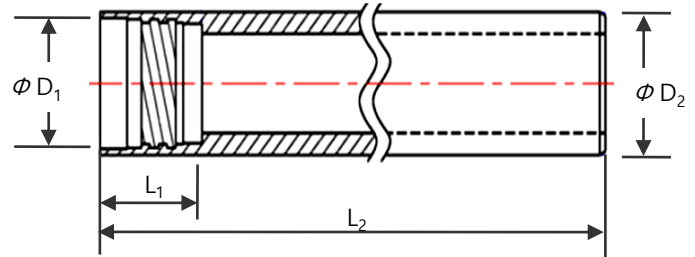
Diameter Range(mm)	Insert BTA Diameter(mm)	INSERT (IDI Series)			Guide Pad (IDP Series)		
		Insert	Insert Screw	Wrench	Pad	Pad Screw	Wrench
15.60 ~ 16.59	16	IDI1516	DST-2505S (M2.5)	T8	IDP1516	DST-2252 (M2.2)	T7
16.60 ~ 17.70	17	IDI1718	DST-2555S (M2.5)	T8	IDP1718	DST-2555 (M2.5)	T7
17.71 ~ 18.59	18						
18.60 ~ 20.59	19	IDI1920	DST-3062 (M3.0)	T9	IDP1920	DST-2555 (M2.5)	T7
	20						
20.60 ~ 21.80	21	IDI2122	DST-3072 (M3.0)	T9	IDP2122	DST-2565 (M2.5)	T7
21.81 ~ 22.59	22						
22.60 ~ 24.10	23	IDI2325	DST-3508 (M3.5)	T15	IDP2325	DST-2565 (M2.5)	T7
	24						
24.11 ~ 25.59	25						
25.60 ~ 26.40	26	IDI2628	DST-3585 (M3.5)	T15	IDP2628	DST-2565 (M2.5)	T7
26.41 ~ 28.59	27						
	28						
28.60 ~ 31.00	29	IDI2932	DST-0510 (M5.0)	T20	IDP2932	DST-3072 (M3.0)	T9
	30						
	31						
31.01 ~ 33.30	32						
	33						

※ See Page 12 for Insert Tip & Pad detail information

STS BTA TUBE

STS BTA TUBE Spec.

- Tube Diameter Range : $\Phi 14\text{mm} \sim \Phi 51\text{mm}$
- Maximum Tube length : 3000mm
- Cutting Fluid Supply and Chip Transport
- Inner Four Start Thread
- Other lengths are manufactured as special

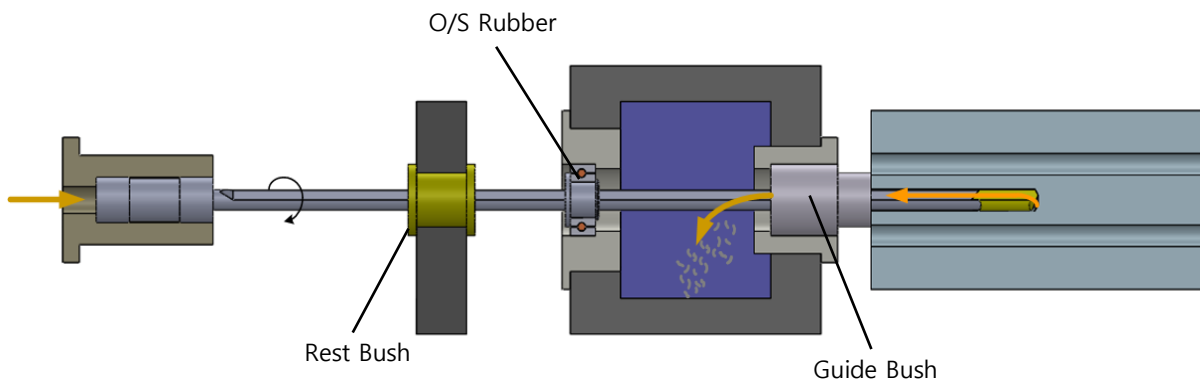


Designation	$\Phi D_1(\text{mm})$	$\Phi D_2(\text{mm})$	$L_1(\text{mm})$	$L_2(\text{mm})$
15.60 - 16.20	12.6	14.0	21.0	1600
16.21 - 16.70				
16.71 - 17.20				
17.21 - 17.70				
17.71 - 18.40	13.6	15.0	21.0	1600
18.41 - 18.90				
18.91 - 19.20				
19.21 - 20.00	14.5	16.0	22.0	1600
20.01 - 20.90				
20.91 - 21.80				
21.81 - 22.90	15.5	17.0	22.0	1600
22.91 - 24.10				
24.11 - 25.20				
25.21 - 26.40	16.0	18.0	25.0	2600
26.41 - 27.50				
27.51 - 28.70				
28.71 - 29.80	18.0	20.0	26.0	2600
29.81 - 31.00				
31.01 - 32.10				
32.11 - 33.30	19.5	22.0	26.0	2600
33.31 - 34.80				
34.81 - 36.20				
36.21 - 37.30	21.0	24.0	26.0	2600
37.31 - 38.40				
38.41 - 39.60				
39.61 - 40.60	23.5	26.0	29.0	2600
40.61 - 41.80				
41.81 - 43.00				
43.01 - 44.30	25.5	28.0	29.0	2600
44.31 - 45.60				
45.61 - 47.00				
47.01 - 48.50	28.0	30.0	29.0	2600
48.51 - 50.10				
50.11 - 51.70				
51.71 - 53.20	30.0	33.0	36.0	2600
53.21 - 54.70				
54.71 - 56.20				
56.21 - 58.40	33.0	36.0	36.0	2600
58.41 - 60.60				
60.61 - 62.80				
62.81 - 65.00	36.0	39.0	36.0	2600
	39.0	43.0	36.0	2600
	43.0	47.0	40.0	2600
	47.0	51.0	40.0	2600

DEEP HOLE MACHINE ACCESSORIES

GUNDRILL & BTA MACHINE ACCESSORIES

- **Guide Bush** : As the gundrill & BTA tools are not self-centering tools, a guide bushing is an essential component for a proper gundrill & BTA drilling operation.
The inner diameter is $-0 \sim +0.005$ of the gundrill & BTA diameter, suppressing vibration and guiding at start point.
- **O/S Rubber** : Suppressing vibration and blocking the chips at the end of chip box and sealing the coolant leak
- **Rest Bush** : Supporting the gundrill & BTA to suppress vibration



GUNDRILL ACCESSORIES

- Guide Bush, O/s Rubber, Rest Bush Manufacturing
- Korea Gundrill Co. & SHIN-IL Machinery Co. Standard Bush Manufacturing
- Special Size Bush Available

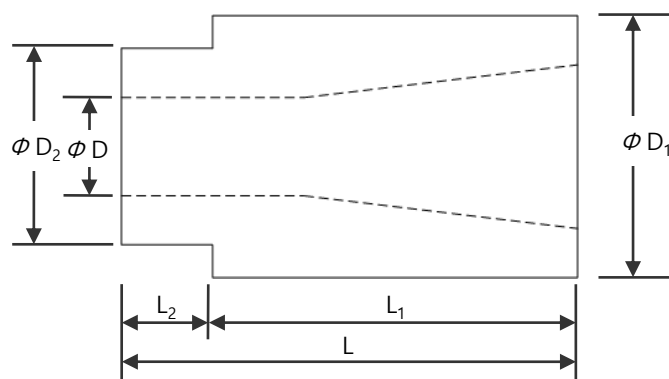
BTA ACCESSORIES

- BTA Tube, BTA Guide Bush, BTA Tube Rest Bush Manufacturing
- Korea Gundrill Co. & SHIN-IL Machinery Co. Standard Bush Manufacturing
- Special Size Bush Available



DEEP HOLE MACHINE ACCESSORIES

GUNDRILL & BTA GUIDE BUSH Spec.



Korea Gundrill Co. Type Guide Bush

Gundrill Guide Bush

Bush Inner Diameter D(mm)	D1	D2	L1	L2	L
Φ2.0 ~ Φ12.5	25	20	43	12	55
Φ2.0 ~ Φ25.0	35	30	58	12	70
Φ26.0 ~ Φ32.0	45	40	72	13	85

BTA Guide Bush

Bush Inner Diameter D(mm)	D1	D2	L1	L2	L
Φ16.0 ~ Φ40.0	55	50	50	16	66
Φ41.0 ~ Φ65.0	80	75	50	21	71

SHIN-IL Machinery Co. Type Guide Bush

Gundrill Guide Bush

Bush Inner Diameter D(mm)	D1	D2	L1	L2	L
Φ2.0 ~ Φ12.5	25	20	55	11	66
Φ2.0 ~ Φ25.0	40	30	55	11	66
Φ26.0 ~ Φ32.0	40	36	55	11	66

BTA Guide Bush

Bush Inner Diameter D(mm)	D1	D2	L1	L2	L
Φ16.0 ~ Φ40.0	65	56	45	20	65
Φ41.0 ~ Φ65.0	78	73	45	25	70

Special Size Guide Bush Available : Drawing required



DONG SAN TOOL Co.

Address : 180 GongDan 2 Dae Ro JeongWang-Dong, Siheung-Si, Gyeonggi-Do, KOREA

TEL : 82-31-431-6430 FAX : 82-31-431-6435

E-mail : dstool90@hanmail.net / newdstool90@naver.com

Homepage : www.dsgundrill.com