AHB
TOOLING & MACHINERY
COMPLETE METALWORKING SOLUTIONS
(800) 991-4225 www.ahbinc.com
ISO Certified customerservice@ahbinc.com

TBTA-H

Drilling Range:
- .984"-3.268" (25mm - 83mm)

Thread Types:
- STS STS Outer four start thread
- STS STS Inner single start thread
- DTS DTS Outer four start thread

Insert Grades:
- P IN6542
- M IN2005
- K IN1510
- K S IN2510
- M S IN2004 NEW

Chipbreakers:
- **G Chipbreaker** (for General use)
- **B Chipbreaker** (for High-Temp/Stainless) NEW

Guide Pads (new grade names):
IN2040 - Solid Carbide pad - High Wear Resistance; Single/Double Chamfer
IN2005 - Solid Carbide pad - High Toughness; Single/Double Chamfer
IN2030 - Solid Carbide pad - High Toughness, Enhanced Safety; Double Chamfer

INDUSTRY 4.0 UPDATE PRODUCT ANNOUNCEMENT 2021

Member IMC Group
Ingersoll Cutting Tools

Four Important Improvements for Better Performance, Reliability and Body Tool Life in TBTA-H Deep Hole Drilling Heads!

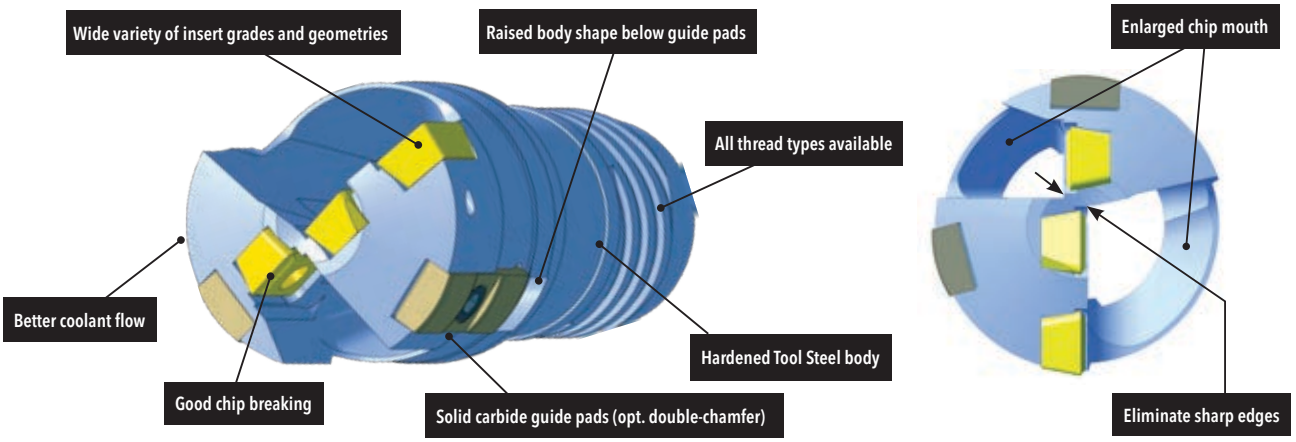
Raised body shape below guide pads prevents guide pad breakage during retraction and also through cross holes.

Upper pilot tolerance has been updated to provide a tighter holding fit to keep the head in place.

Tougher, longer screws for both inserts and guide pads increase the clamping reliability

A new tougher grade (IN2030) is now available for the guide pads that is ideal for applications in water-soluble coolant environments. This grade also includes a double chamfer to allow the guide easier entrance into the drilled hole reducing the risk of damage and increasing it's tool life.

TBTA-H SERIES HEADS



PLUS ALL THE FEATURES YOU HAVE COME TO EXPECT

The TBTA-H series heads range in diameter from .984"-3.268" (25mm-83mm) and provide higher accuracy, improved straightness, better surface finish and longer tool life.

Features & Benefits of the TBTA-H heads include:

Ground peripheral insert
- An 'H' class, peripheral ground insert mounted in the outboard station provides 50% tighter hole variation, providing IT10 accuracy (.0028" total tolerance).
- Superior surface finish (possible Ra 1.2 or less)
- Improved straightness (.001"/ft possible)
- Higher speed and feed capability

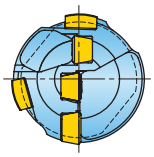
Larger chip mouth
- Wider chip mouth for maximum chip evacuation
- Improved conical shape to improve chip flow

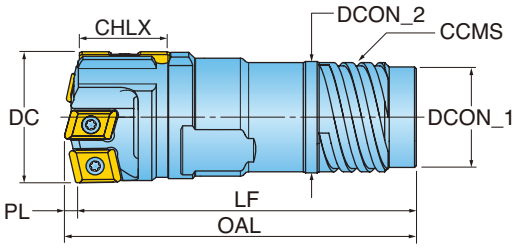
Increased coolant flow
- Additional oil clearance allows smoother delivery of coolant to the cutting edges
- Ensures sufficient cooling of the guide pads

Hardened tool steel body
- Increases overall tool life of the head

**Guide Pads and Inserts must be purchased separately*

TBTA-H DRILL HEADS STS Single Tube System OUTER FOUR START THREAD





REFERENCE ITEMS

Description	DC Cutting Dia.	PL Point Length	CHLX Cross-hole Length Max.	LF Functional Length	OAL Overall Length	DCON_1 Connection Dia. 1	DCON_2 Connection Dia. 2	CCMS Connection Code Machine Side
TBTA-HX.XXXSE4-22	.984 – 1.039	0.118	0.55	2.756	2.874	0.768	0.768	BTA SE4-22
TBTA-HX.XXXSE4-24	1.040 – 1.129	0.118	0.55	2.756	2.874	0.827	0.827	BTA SE4-24
TBTA-HX.XXXSE4-26	1.130 – 1.220	0.118	0.55	2.953	3.071	0.925	0.925	BTA SE4-26
TBTA-HX.XXXSE4-28	1.221 – 1.311	0.118	0.55	2.953	3.071	1.004	1.004	BTA SE4-28
TBTA-HX.XXXSE4-30	1.312 – 1.425	0.118	0.55	3.150	3.268	1.102	1.102	BTA SE4-30
TBTA-HX.XXXSE4-33	1.426 – 1.559	0.118	0.55	3.543	3.661	1.181	1.181	BTA SE4-33
TBTA-HX.XXXSE4-36	1.560 – 1.692	0.158	0.77	3.740	3.898	1.299	1.299	BTA SE4-36
TBTA-HX.XXXSE4-39	1.693 – 1.850	0.157	0.77	3.937	4.094	1.417	1.417	BTA SE4-39
TBTA-HX.XXXSE4-43	1.851 – 2.035	0.157	0.83	3.937	4.094	1.535	1.535	BTA SE4-43
TBTA-HX.XXXSE4-47	2.036 – 2.212	0.157	0.83	4.331	4.488	1.693	1.693	BTA SE4-47
TBTA-HX.XXXSE4-51	2.213 – 2.385	0.196	0.83	4.528	4.724	1.870	1.870	BTA SE4-51
TBTA-HX.XXXSE4-56A	2.386 - 2.559	0.196	0.97	4.528	4.724	2.008	2.008	BTA SE4-56A
NEW TBTA-HX.XXXSE4-56B	2.560 - 2.637	0.315	0.97	5.551	5.866	2.047	2.047	BTA SE4-56B
NEW TBTA-HX.XXXSE4-62	2.638 - 2.874	0.315	0.97	5.551	5.866	2.283	2.283	BTA SE4-62
NEW TBTA-HX.XXXSE4-68	2.875 - 3.149	0.355	0.97	5.551	5.906	2.480	2.480	BTA SE4-68
NEW TBTA-HX.XXXSE4-75	3.150 - 3.268	0.354	0.97	6.457	6.811	2.756	2.756	BTA SE4-75

TBTA-H DRILL HEADS STS Single Tube System OUTER FOUR START THREAD

STANDARD ITEMS – INCH

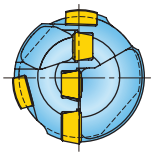
Dia. (in)	Description
1.000	TBTA-H1.000SE4-22
1.024	TBTA-H1.024SE4-22
1.062	TBTA-H1.062SE4-24
1.114	TBTA-H1.114SE4-24
1.125	TBTA-H1.125SE4-24
1.193	TBTA-H1.193SE4-26
1.218	TBTA-H1.218SE4-28
1.235	TBTA-H1.235SE4-28
1.245	TBTA-H1.245SE4-28
1.250	TBTA-H1.250SE4-28
1.260	TBTA-H1.260SE4-28
1.312	TBTA-H1.312SE4-30
1.375	TBTA-H1.375SE4-30
1.378	TBTA-H1.378SE4-30
1.417	TBTA_H1.417SE4-30
1.437	TBTA-H1.437SE4-33
1.496	TBTA-H1.496SE4-33
1.500	TBTA-H1.500SE4-33
1.575	TBTA-H1.575SE4-36
1.594	TBTA-H1.594SE4-36
1.625	TBTA-H1.625SE4-36
1.7125	TBTA-H1.7125SE4-36
1.725	TBTA-H1.725SE4-39
1.750	TBTA-H1.750SE4-39
1.812	TBTA-H1.812SE4-39
1.875	TBTA-H1.875SE4-43

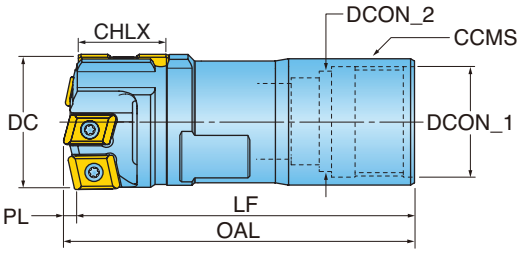
Dia. (in)	Description
1.905	TBTA-H1.905SE4-43
1.940	TBTA-H1.940SE4-43
1.945	TBTA-H1.945SE4-43
1.965	TBTA-H1.965SE4-43
1.985	TBTA-H1.985SE4-43
2.000	TBTA-H2.000SE4-43
2.125	TBTA-H2.125SE4-47
2.187	TBTA-H2.187SE4-47
2.250	TBTA-H2.250SE4-51
2.312	TBTA-H2.312SE4-51
2.335	TBTA-H2.335SE4-51
2.350	TBTA-H2.350SE4-51
2.375	TBTA-H2.375SE4-51
2.380	TBTA-H2.380SE4-51
2.405	TBTA-H2.405SE4-51A
2.441	TBTA-H2.441SE4-56A
2.500	TBTA-H2.500SE4-56A
2.625	TBTA-H2.625SE4-56B NEW
2.750	TBTA-H2.750SE4-62 NEW
2.812	TBTA-H2.812SE4-62 NEW
2.875	TBTA-H2.875SE4-68 NEW
3.000	TBTA-H3.000SE4-68 NEW
3.062	TBTA-H3.062SE4-68 NEW
3.125	TBTA-H3.125SE4-68 NEW
3.250	TBTA-H3.250SE4-75 NEW

STANDARD ITEMS – METRIC

Dia. (mm)	Description
25.00	TBTA-H.984SE4-22
28.00	TBTA-H1.102SE4-24
33.00	TBTA-H1.299SE4-28
44.00	TBTA-H1.732SE4-36
48.00	TBTA-H1.890SE4-43
49.00	TBTA-H1.929SE4-43
49.50	TBTA-H1.949SE4-43
50.00	TBTA-H1.969SE4-43
54.00	TBTA-H2.126SE4-47
58.00	TBTA-H2.283SE4-51
60.00	TBTA-H2.362SE4-51
65.00	TBTA-H2.559SE4-56A

TBTA-H DRILL HEADS STS Single Tube System INNER SINGLE START THREAD





REFERENCE ITEMS

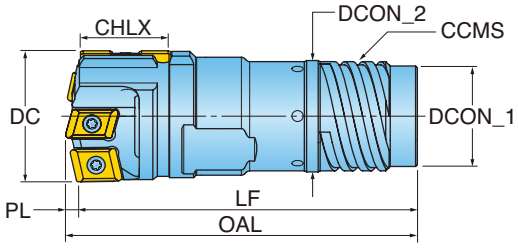
Description	DC Cutting Dia.	PL Point Length	CHLX Cross-hole Length Max.	LF Functional Length	OAL Overall Length	DCON_1 Connection Dia. 1	DCON_2 Connection Dia. 2	CCMS Connection Code Machine Side
TBTA-HX.XXXSI1-22	.984 - 1.062	0.118	0.55	2.756	2.874	0.787	0.787	BTA SI1-22
TBTA-HX.XXXSI1-24	1.063 - 1.141	0.118	0.55	2.756	2.874	0.866	0.866	BTA SI1-24
TBTA-HX.XXXSI1-24	1.142 - 1.181	0.118	0.55	2.756	2.874	0.866	0.866	BTA SI1-24
TBTA-HX.XXXSI1-26	1.182 - 1.259	0.118	0.55	2.953	3.071	0.945	0.945	BTA SI1-26
TBTA-HX.XXXSI1-28	1.260 - 1.338	0.118	0.55	2.953	3.071	1.024	1.024	BTA SI1-28
TBTA-HX.XXXSI1-30	1.339 - 1.456	0.118	0.55	3.543	3.661	1.063	1.063	BTA SI1-30
TBTA-HX.XXXSI1-33	1.457 - 1.574	0.118	0.55	3.740	3.858	1.181	1.181	BTA SI1-33
TBTA-HX.XXXSI1-36	1.575 - 1.732	0.157	0.77	3.937	4.094	1.299	1.299	BTA SI1-36
TBTA-HX.XXXSI1-39	1.733 - 1.850	0.157	0.77	4.134	4.291	1.457	1.457	BTA SI1-39
TBTA-HX.XXXSI1-43	1.851 - 2.047	0.157	0.83	4.134	4.291	1.614	1.614	BTA SI1-43
TBTA-HX.XXXSI1-47	2.048 - 2.244	0.157	0.83	4.331	4.488	1.732	1.732	BTA SI1-47
TBTA-HX.XXXSI1-51	2.245 - 2.401	0.196	0.83	4.528	4.724	1.929	1.929	BTA SI1-51
TBTA-HX.XXXSI1-56	2.402 - 2.559	0.196	0.97	4.528	4.724	2.087	2.087	BTA SI1-56
TBTA-HX.XXXSI1-56	2.560 - 2.667	0.315	0.97	4.094	4.409	2.087	2.087	BTA SI1-56
NEW TBTA-HX.XXXSI1-62	2.678 - 2.952	0.355	0.97	4.094	4.449	2.323	2.323	BTA SI1-62
NEW TBTA-HX.XXXSI1-68	2.953 - 3.189	0.354	0.97	5.276	5.630	2.559	2.559	BTA SI1-68
NEW TBTA-HX.XXXSI1-75	3.190 - 3.268	0.354	0.97	5.276	5.630	2.795	2.795	BTA SI1-75

STANDARD ITEMS

Dia. (mm)	Description
25.00	TBTA-H1.984SI1-22
27.00	TBTA-H1.063SI1-24
28.50	TBTA-H1.122SI1-24
29.00	TBTA-H1.142SI1-24
30.00	TBTA-H1.181SI1-26
31.70	TBTA-H1.248SI1-26
32.00	TBTA-H1.260SI1-28
34.70	TBTA-H1.366SI1-30
35.00	TBTA-H1.378SI1-30
37.00	TBTA-H1.457SI1-33
37.70	TBTA-H1.484SI1-33
40.00	TBTA-H1.575SI1-36
44.00	TBTA-H1.732SI1-39
45.00	TBTA-H1.772SI1-39
47.00	TBTA-H1.850SI1-43

Dia. (mm)	Description
50.00	TBTA-H1.969SI1-43
52.00	TBTA-H2.047SI1-43
55.00	TBTA-H2.165SI1-47
56.00	TBTA-H2.205SI1-47
60.00	TBTA-H2.362SI1-51
65.00	TBTA-H2.559SI1-56A

TBTA-H DRILL HEADS DTS Double Tube System OUTER FOUR START THREAD



REFERENCE ITEMS

Description	DC Cutting Dia.	PL Point Length	CHLX Cross-hole Length Max.	LF Functional Length	OAL Overall Length	DCON_1 Connection Dia. 1	DCON_2 Connection Dia. 2	CCMS Connection Code Machine Side
TBTA-HX.XXXDE4-23.5	.984 - 1.039	0.118	0.55	2.756	2.874	0.827	0.827	BTA DE4-23.5
TBTA-HX.XXXDE4-26	1.040 - 1.129	0.118	0.55	2.953	3.071	0.925	0.925	BTA DE4-26
TBTA-HX.XXXDE4-28	1.130 - 1.220	0.118	0.55	2.953	3.071	1.004	1.004	BTA DE4-28
TBTA-HX.XXXDE4-30.5	1.221 - 1.311	0.118	0.55	3.150	3.268	1.102	1.102	BTA DE4-30.5
TBTA-HX.XXXDE4-33	1.312 - 1.425	0.118	0.55	3.543	3.661	1.181	1.181	BTA DE4-33
TBTA-HX.XXXDE4-35.5	1.426 - 1.559	0.158	0.55	3.740	3.898	1.299	1.299	BTA DE4-35.5
TBTA-HX.XXXDE4-39	1.560 - 1.692	0.157	0.77	3.937	4.094	1.417	1.417	BTA DE4-39
TBTA-HX.XXXDE4-42.5	1.693 - 1.850	0.157	0.77	3.937	4.094	1.535	1.535	BTA DE4-42.5
TBTA-HX.XXXDE4-46.5	1.851 - 2.035	0.157	0.83	4.331	4.488	1.693	1.693	BTA DE4-46.5
TBTA-HX.XXXDE4-51	2.036 - 2.212	0.196	0.83	4.528	4.724	1.870	1.870	BTA DE4-51
TBTA-HX.XXXDE4-55.5	2.213 - 2.385	0.196	0.83	4.528	4.724	2.008	2.008	BTA DE4-55.5
TBTA-HX.XXXDE4-55.5	2.386 - 2.559	0.196	0.97	4.528	4.724	2.008	2.008	BTA DE4-55.5
NEW TBTA-HX.XXXDE4-56	2.560 - 2.756	0.315	0.97	5.551	5.866	2.047	2.047	BTA DE4-56
NEW TBTA-HX.XXXDE4-62	2.757 - 2.874	0.315	0.97	5.551	5.866	2.283	2.283	BTA DE4-62
NEW TBTA-HX.XXXDE4-68	2.875 - 3.149	0.355	0.97	5.551	5.906	2.480	2.480	BTA DE4-68
NEW TBTA-HX.XXXDE4-75	3.150 - 3.268	0.355	0.97	6.456	6.811	2.756	5.520	BTA DE4-75

STANDARD ITEMS

Dia. (mm)	Description
25.00	TBTA-H.98DSE4-23.5
25.40	TBTA-H1.000DE4-23.5
27.00	TBTA-H1.063DE4-26
30.00	TBTA-H1.181DE4-28
32.00	TBTA-H1.260DE4-30.5
37.00	TBTA-H1.457DE4-35.5
38.10	TBTA-H1.500DE4-35.5
42.00	TBTA-H1.654DE4-39
45.00	TBTA-H1.772DE4-2.5
50.00	TBTA-H1.969DE4-2.5

SOLID CARBIDE INSERTS - NEW DESIGNATION CODE KEY

In the new Insert designation, the components of the description represent the following;

NPHT 06 03 04 R - G

NPHT = Insert Series

06 = length in mm

03 = thickness in mm

04 = radius in mm

R = hand

-G = chipbreaker

SOLID CARBIDE GUIDE PADS - NEW DESIGNATION CODE KEY

In the new Guide Pad designation, the components of the description represent the following;

PAD - GP06 - 020 - 120DC IN2040

PAD-GP = All guide pads for all BTA product lines will now have PAD-GP for the prefix as they are one family of solid carbide guide pads. Pads for each style of tool will be listed with that style of tool in the NPA's and the BTA catalog. Older brazed guide pads and the plus guide pads will not be updated to the new description at this time.

06 = width in mm

020 = length in mm

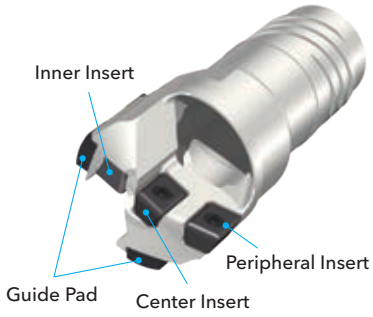
120 = radius in mm

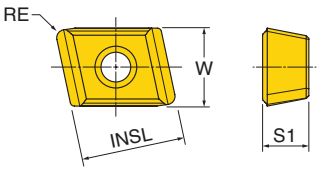
DC = Double Chamfer. Pads with the single chamfer will have no designation.

The grade is also included now in the description. Options are as follows;

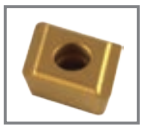
IN2040 (formerly SA): High Wear Resistance
IN2005 (formerly SB): Combination of Wear & Toughness
IN2030 (formerly SC): High Toughness

TBTA-H DRILL HEAD INSERTS

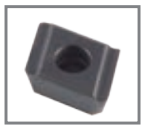




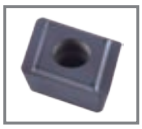
Right-Hand insert shown



IN6542



IN2005



IN1510

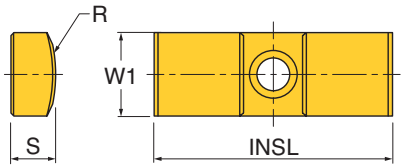
Chipbreaker		Description	Old Description	Dimensions (in)				Grade				
				W	INSL	S1	RE	IN6542	IN2004	IN2005	IN1510	IN2510
G (General Use)	Center	NPMT060308L-G	NPMT05503L-G	0.217	0.315	0.118	0.031			•	•	
		NPMT070408L-G	NPMT06504L-G	0.256	0.394	0.157	0.031	•		•	•	•
		NPMT080408L-G	NPMT08004L-G	0.315	0.394	0.157	0.031	•		•	•	•
		NPMT100408L-G	NPMT09504L-G	0.374	0.394	0.157	0.031	•		•	•	•
		NPMT130408L-G	NPMT12504L-G	0.492	0.394	0.157	0.031	•		•	•	•
	Inner	NPMT060304R-G	NPMT05503R-G	0.217	0.315	0.118	0.016			•	•	
		NPMT070404R-G	NPMT06504R-G	0.256	0.394	0.157	0.016	•		•	•	•
		NPMT080404R-G	NPMT08004R-G	0.315	0.394	0.157	0.016	•		•	•	•
		NPMT100404R-G	NPMT09504R-G	0.374	0.394	0.157	0.016	•		•	•	•
		NPMT130404R-G	NPMT12504R-G	0.492	0.394	0.157	0.016	•		•	•	•
	Peripheral	NPHT060304R-G	NPHT06003R-G	0.236	0.315	0.118	0.016			•	•	
		NPHT080404R-G	NPHT07504R-G	0.295	0.394	0.157	0.016			•	•	
		NPHT090404R-G	NPHT09004R-G	0.354	0.394	0.157	0.016			•	•	
		NPHT110404R-G	NPHT11004R-G	0.433	0.394	0.157	0.016			•	•	
		NPHT130404R-G	NPHT13004R-G	0.512	0.394	0.157	0.016			•	•	
NEW B (High-Temp/ Stainless)	Center	NPMT060308L-B		0.217	0.315	0.118	0.031		•	•		
		NPMT070408L-B		0.256	0.394	0.157	0.031		•	•		
		NPMT080408L-B		0.315	0.394	0.157	0.031		•	•		
		NPMT100408L-B		0.374	0.394	0.157	0.031		•	•		
		NPMT130408L-B		0.492	0.394	0.157	0.031		•	•		
	Inner	NPMT060304R-B		0.217	0.315	0.118	0.016		•	•		
		NPMT070404R-B		0.256	0.394	0.157	0.016		•	•		
		NPMT080404R-B		0.315	0.394	0.157	0.016		•	•		
		NPMT100404R-B		0.374	0.394	0.157	0.016		•	•		
		NPMT130404R-B		0.492	0.394	0.157	0.016		•	•		
	Peripheral	NPHT060308R-B		0.236	0.315	0.118	0.031		•	•		
		NPHT080408R-B		0.295	0.394	0.157	0.031		•	•		
		NPHT090408R-B		0.354	0.394	0.157	0.031		•	•		
		NPHT110408R-B		0.433	0.394	0.157	0.031		•	•		
		NPHT130408R-B		0.512	0.394	0.157	0.031		•	•		

Ordering Example: NPHT060304R-G IN2005 10pcs

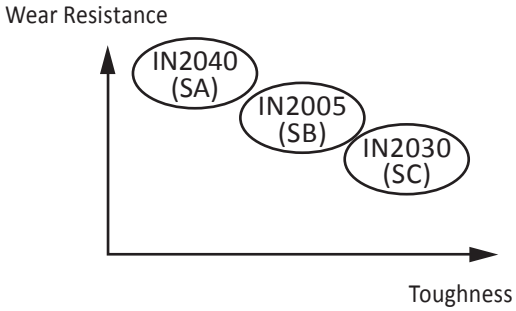
•: Standard stock item

TBTA-H DRILL HEAD GUIDE PADS

Solid Carbide



GRADE APPLICATION



New Designation	Old Designation	W Width	S Thickness	INSL Length	R Radius	Screw
PAD-GP06-020-120 IN2040	PAD-GO06CD-SA	0.236	0.118	0.787	0.472	CSTB2.2S
PAD-GP06-020-120 IN2005	PAD-GO06CD-SB					
NEW PAD-GP06-020-120-DC IN2005	-					
NEW PAD-GP06-020-120-DC IN2030	PAD-GO06CD-SC					
PAD-GP07-020-120 IN2040	PAD-GO07CD-SA	0.276	0.138	0.787	0.472	CSTB3S
PAD-GP07-020-120 IN2005	PAD-GO07CD-SB					
NEW PAD-GP07-020-120-DC IN2005	-					
NEW PAD-GP07-020-120-DC IN2030	PAD-GO07CD-SC					
PAD-GP08-025-155 IN2040	PAD-GO08CD-SA	0.315	0.177	0.984	0.610	CSTB3S
PAD-GP08-025-155 IN2005	PAD-GO08CD-SB					
NEW PAD-GP08-025-155-DC IN2005	-					
NEW PAD-GP08-025-155-DC IN2030	PAD-GO08CD-SC					
PAD-GP10-030-200 IN2040	PAD-GO10CD-SA	0.394	0.177	1.181	0.787	CSTB3.5
PAD-GP10-030-200 IN2005	PAD-GO10CD-SB					
NEW PAD-GP10-030-200-DC IN2005	-					
NEW PAD-GP10-030-200-DC IN2030	PAD-GO10CD-SC					
PAD-GP12-035-250 IN2040	PAD-GO12CD-SA	0.472	0.216	1.378	0.984	CSTB3.5
PAD-GP12-035-250 IN2005	PAD-GO12CD-SB					
NEW PAD-GP12-035-250-DC IN2005	-					
NEW PAD-GP12-035-250-DC IN2030	PAD-GO12CD-SC					

Ordering Example: PAD-GP08-025-155 5pcs

INSERT SCREWS - CAUTION!

The design of TBTA-H heads is upgraded to eliminate tool damage when retracting the drill from the hole or guide bushing.

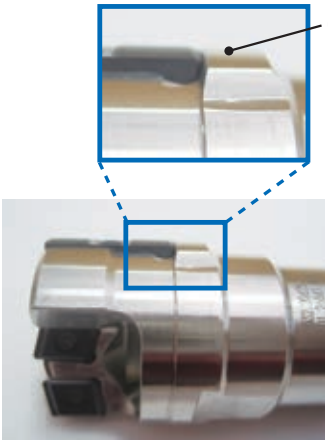
The insert clamping screw for the new drill head has a different thread profile from the conventional version. Always use the correct type of clamping screws as the use of a wrong screw type may cause a tool/machine damage. Please confirm the head type before ordering the screws by checking whether or not the drill head has a guide pad protector:

If the drill head has the guide pad protector: New version

If NO guide pad protector: Conventional version

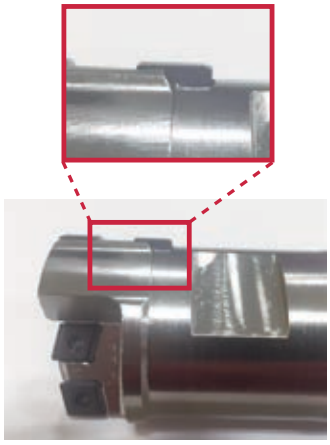
New

With guide pad protector



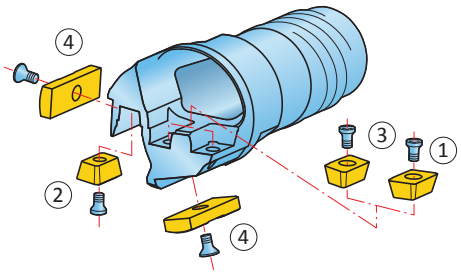
Conventional

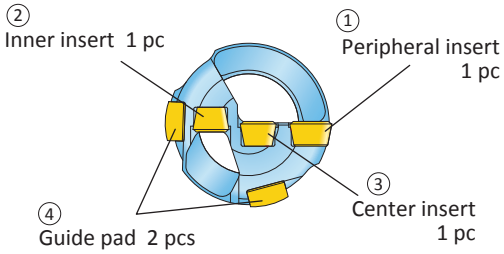
Without guide pad protector



Tool diameter DCN - DCX (inch)	Peripheral insert		Intermediate insert		Central insert	
	Screw		Screw		Screw	
	New	Conventional	New	Conventional	New	Conventional
.984-1.102	CSTB-2.2	CSTB-2.2	CSTB-2.2	CSTB-2.2	CSTB-2.2	CSTB-2.2
1.103-1.180	CSTB-2.2	CSTB-2.2	CSTB-2.2	CSTB-2.2	CSTB-2.2	CSTB-2.2
1.181-1.377	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5
1.378-1.496	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5
1.497-1.535	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5
1.536-1.614	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5
1.615-1.732	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5
1.733-1.771	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5
1.772-1.850	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5
1.851-2.007	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5
2.008-2.125	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5
2.126-2.244	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5
2.245-2.362	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5
2.363-2.519	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5
2.520-2.559	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5	SR14-560-HG	CSTB2.5

TBTA-H DRILL

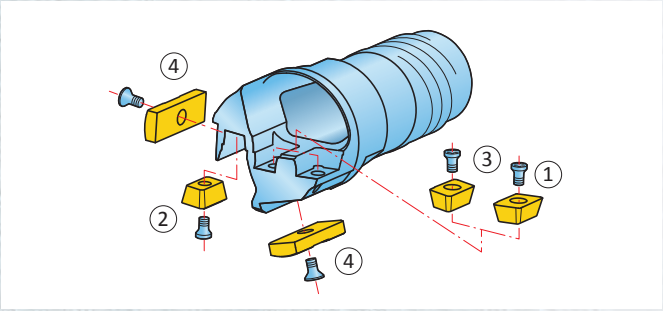


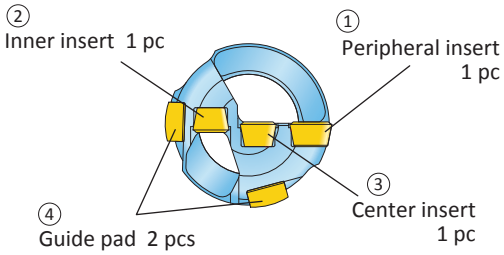


Parts		.984 – 1.102	1.103 – 1.181	1.182 – 1.377	1.378 – 1.496	1.497 – 1.535
Inserts	Outer	NPHT060304R	NPHT060304R	NPHT080404R	NPHT080404R	NPHT090404R
	Insert Screw	CSTB2.2	CSTB2.2	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Wrench	T-7F	T-7F	T-8F	T-8F	T-8F
	Inner	NPMT060304R	NPMT060304R	NPMT070404R	NPMT070404R	NPMT070404R
	Insert Screw	CSTB2.2	CSTB2.2	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Wrench	T-7F	T-7F	T-8F	T-8F	T-8F
	Center	NPMT060308L	NPMT070408L	NPMT070408L	NPMT080408L	NPMT080408L
	Insert Screw	CSTB2.2	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Wrench	T-7F	T-8F	T-8F	T-8F	T-8F
Pads	Guide Pad	PAD-GP06-020-120	PAD-GP06-020-120	PAD-GP07-020-120	PAD-GP07-020-120	PAD-GP07-020-120
	Screw	CSTB2.2S	CSTB2.2S	CSTB3S	CSTB3S	CSTB3S
	Wrench	T-7F	T-7F	T-9F	T-9F	T-9F

Parts		1.536 – 1.614	1.615 – 1.732	1.733 – 1.771	1.772 – 1.850	1.851 – 2.007
Inserts	Outer	NPHT090404R	NPHT090404R	NPHT090404R	NPHT090404R	NPHT110404R
	Insert Screw	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Wrench	T-8F	T-8F	T-8F	T-8F	T-8F
	Inner	NPMT070404R	NPMT080404R	NPMT080404R	NPMT080404R	NPMT080404R
	Insert Screw	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Wrench	T-8F	T-8F	T-8F	T-8F	T-8F
	Center	NPMT080404L	NPMT080408L	NPMT100408L	NPMT100408L	NPMT100408L
	Insert Screw	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Wrench	T-8F	T-8F	T-8F	T-8F	T-8F
Pads	Guide Pad	PAD-GP08-025-155	PAD-GP08-025-155	PAD-GP08-025-155	PAD-GP10-30-200	PAD-GP10-30-200
	Screw	CSTB3S	CSTB3S	CSTB3S	CSTB3.5	CSTB3.5
	Wrench	T-9F	T-9F	T-9F	T-15F	T-15F

TBTA-H DRILL





Parts		2.008 – 2.125	2.126 – 2.244	2.245 – 2.362	2.363 – 2.519	2.520 – 2.559
Inserts	Outer	NPHT110404R	NPHT110404R	NPHT110404R	NPHT130404R	NPHT130404R
	Insert Screw	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Wrench	T-8F	T-8F	T-8F	T-8F	T-8F
	Inner	NPMT100404R	NPMT100404R	NPMT100404R	NPMT100404R	NPMT130404R
	Insert Screw	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Wrench	T-8F	T-8F	T-8F	T-8F	T-8F
	Center	NPMT100408L	NPMT130408L	NPMT130408L	NPMT130408L	NPMT130408L
	Insert Screw	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Wrench	T-8F	T-8F	T-8F	T-8F	T-8F
Pads	Guide Pad	PAD-GP10-30-200	PAD-GP10-30-200	PAD-GP12-35-250	PAD-GP12-35-250	PAD-GP12-35-250
	Screw	CSTB3.5	CSTB3.5	CSTB3.5	CSTB3.5	CSTB3.5
	Wrench	T-15F	T-15F	T-15F	T-15F	T-15F

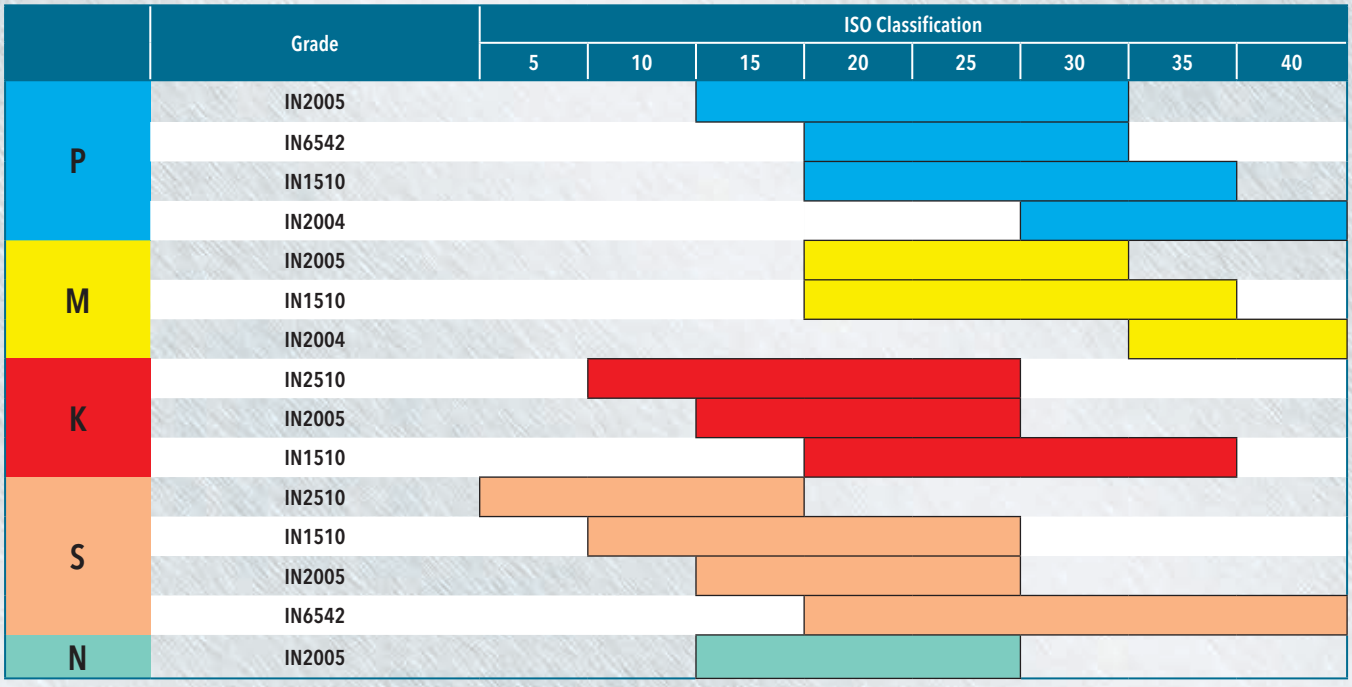
Parts		2.560 - 2.795	2.796 - 3.268
Inserts	Outer	NPHT110408R	NPHT130408R
	Insert Screw	SR14-560-HG	SR14-560-HG
	Wrench	T-8F	T-8F
	Inner 1	NPMT080404R	NPMT080404R
	Insert Screw	SR14-560-HG	SR14-560-HG
	Wrench	T-8F	T-8F
	Inner 2	NPMT080404R	NPMT080404R
	Insert Screw	SR14-560-HG	SR14-560-HG
	Wrench	T-8F	T-8F
	Inner 3	NPMT070404R	NPMT080404R
	Insert Screw	SR14-560-HG	SR14-560-HG
	Wrench	T-8F	T-8F
	Center	NPMT100408L	NPMT100408L
	Insert Screw	SR14-560-HG	SR14-560-HG
	Wrench	T-8F	T-8F
Pads	Guide Pad	PAD-GP12-35-250	PAD-GP12-35-250
	Screw	CSTB3.5	CSTB3.5
	Wrench	T-15F	T-15F

OPERATING GUIDELINES

ISO	Material	Condition		Hardness (HB)	Chipbreaker	Cutting Speed SFM	Feed Rate fn (in/rev) Drill Dia. (in) .984 – 1.693	Feed Rate fn (in/rev) Drill Dia. (in) 1.694 –3.268
P	Carbon Steel High Carbon Cutting Steel	0.1 – 0.25 %C Non-Hardened		125	B	230 – 427	0.004 – 0.016	0.005 – 0.018
					G	230 – 427	0.004 – 0.012	0.005 – 0.014
		0.25 – 0.25 %C Non-Hardened		190	B	230 – 427	0.004 – 0.016	0.005 – 0.018
					G	230 – 427	0.004 – 0.012	0.005 – 0.014
		0.25 – 0.25 %C Hardened/Tempered		250	B	230 – 427	0.004 – 0.016	0.005 – 0.018
					G	230 – 427	0.004 – 0.012	0.005 – 0.014
		0.55 – 0.80 %C Non-Hardened		220	B	230 – 427	0.004 – 0.016	0.005 – 0.018
					G	230 – 427	0.004 – 0.012	0.005 – 0.014
		0.55 – 0.80 %C Hardened/Tempered		300	B	230 – 427	0.004 – 0.016	0.005 – 0.018
					G	230 – 427	0.004 – 0.012	0.005 – 0.014
	Low Alloyed (Alloying Element < 5%)	Non-Hardened		200	B	230 – 394	0.004 – 0.012	0.008 – 0.018
					G	230 – 394	0.004 – 0.012	0.005 – 0.014
		Hardened and Tempered		275	B	180 – 361	0.004 – 0.012	0.008 – 0.018
					G	197 – 394	0.004 – 0.012	0.005 – 0.014
				300	B	180 – 361	0.004 – 0.012	0.008 – 0.018
					G	197 – 394	0.004 – 0.012	0.005 – 0.014
				350	B	180 – 361	0.004 – 0.012	0.008 – 0.018
					G	197 – 394	0.004 – 0.012	0.005 – 0.014
	High Alloyed Cast Iron Tool Steel	Non-Hardened		200	B	180 – 361	0.004 – 0.012	0.008 – 0.016
					G	230 – 427	0.004 – 0.012	0.005 – 0.014
		Hardened and Tempered		325	B	180 – 361	0.004 – 0.012	0.008 – 0.016
					G	230 – 427	0.004 – 0.012	0.005 – 0.014
M	Stainless Steel	Ferritic		200	B	131 - 361	0.004 – 0.016	0.008 – 0.018
					G	230 – 426	0.004 – 0.012	0.005 – 0.014
		Martensite		240	B	131 - 361	0.004 – 0.016	0.008 – 0.018
					G	230 – 426	0.004 – 0.012	0.005 – 0.014
		Austenite		180	B	131 - 361	0.004 – 0.016	0.008 – 0.018
					G	230 – 426	0.004 – 0.012	0.005 – 0.014
K	Nodular Cast Iron	Ferritic/Pearlitic		180	B	164 – 361	0.004 – 0.015	0.009 – 0.016
					G	164 – 361	0.004 - 0.010	0.005 – 0.014
		Pearlitic		260	B	164 – 361	0.004 – 0.015	0.009 – 0.016
					G	164 – 361	0.004 - 0.010	0.005 – 0.014
	Gray Cast Iron	Low Tensile Strength		160	B	197 – 361	0.004 – 0.015	0.009 – 0.016
					G	197 – 361	0.004 - 0.010	0.005 – 0.014
		High Tensile Strength		250	B	197 – 361	0.004 – 0.015	0.009 – 0.016
					G	197 – 361	0.004 - 0.010	0.005 – 0.014
	Malleable Cast Iron	Ferritic		130	B	262- 394	0.004 – 0.015	0.009 – 0.016
					G	230 - 361	0.004 - 0.010	0.005 – 0.014
		Pearlitic		230	B	262- 394	0.004 – 0.015	0.009 – 0.016
					G	230 - 361	0.004 - 0.010	0.005 – 0.014
N	Aluminum Alloy Forging	Non-Aged		60	B	213 – 492	0.004 – 0.013	0.009 – 0.014
					G	213 – 427	0.004 - 0.010	0.005 – 0.014
		Soluted, Aged		100	B	213 – 492	0.004 – 0.013	0.009 – 0.014
					G	213 – 427	0.003 - 0.009	0.005 – 0.011
	Aluminum Alloy Casting	Non-Aged		75	B	213 – 492	0.004 – 0.013	0.009 – 0.014
					G	213 – 427	0.003 - 0.009	0.005 – 0.011
		Soluted, Aged		90	B	213 – 492	0.004 – 0.013	0.009 – 0.014
					G	213 – 427	0.003 - 0.009	0.005 – 0.011
		High Silicon		130	B	213 – 492	0.004 – 0.013	0.009 – 0.014
					G	213 – 427	0.003 - 0.009	0.005 – 0.011
	Copper Alloy	Free-Cutting Copper		110	B	213 – 492	0.004 – 0.013	0.009 – 0.014
					G	213 – 427	0.003 - 0.009	0.005 – 0.011
		Brass, Red Brass		90	B	213 – 492	0.004 – 0.013	0.009 – 0.014
					G	213 – 427	0.003 - 0.009	0.005 – 0.011
		Electrolytic Copper		100	B	213 – 492	0.004 – 0.013	0.009 – 0.014
					G	213 – 427	0.003 - 0.009	0.005 – 0.011
S	Heat Resistant super alloy	Fe base	Non-Aged	200	B	66 - 180	0.004 – 0.012	0.008 – 0.013
					G	66 - 164	0.003 - 0.009	0.005 – 0.011
			Soluted, Aged	280	B	66 - 180	0.004 – 0.012	0.008 – 0.013
					G	66 - 164	0.003 - 0.009	0.005 – 0.011
		Ni / Co base	Non-Aged	250	B	66 - 180	0.004 – 0.012	0.008 – 0.013
					G	66 - 164	0.003 - 0.009	0.005 – 0.011
			Soluted, Aged	350	B	66 - 180	0.004 – 0.012	0.008 – 0.013
					G	66 - 164	0.003 - 0.009	0.005 – 0.011
			Casted	320	B	66 - 180	0.004 – 0.012	0.008 – 0.013
					G	66 - 164	0.003 - 0.009	0.005 – 0.011
	Titanium Alloy			Rm400	B	98 - 197	0.004 – 0.012	0.008 – 0.013
					G	98 - 197	0.003 - 0.009	0.005 – 0.011
				Rm1050	B	98 - 197	0.004 – 0.012	0.008 – 0.013
					G	98 - 197	0.003 - 0.009	0.005 – 0.011
H	Hardened Steel				B	98 - 197	0.004 – 0.012	0.008 – 0.013
					G	98 - 197	0.003 - 0.009	0.005 – 0.011

Cutting parameters shown here are relating to the basic recommendations for cutting materials given.
Cutting conditions, material hardness, and other relevant variables must be taken into considerations to determine the actual cutting parameters.

OPERATING PARAMETERS



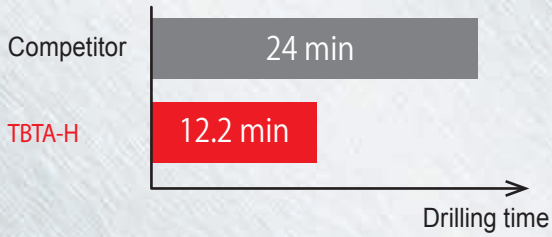
CASE STUDIES

Success Case 1 Spindle

High Productivity • **Drilling time reduced by 50%!**

High Accuracy • **Hole straightness improved by 30%!**

Drilling Time



Hole Straightness

Hole Straightness

Competitor	.010" / 59.06"
TBTA-H	Less than .0073 / 59.06"

Component	Spindle
Material	Alloyed steel
Application	Solid drilling
Machine	BTA machine
Coolant	Oil based
Tool diameter	1.268"
Drilling length	59.06"

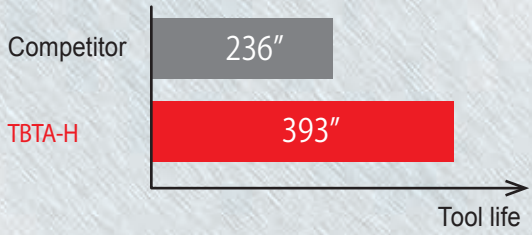
	TBTA-H	Competitor
Chip Breaker	G	General
Grade (peripheral)	IN2005	ISO P
Cutting Speed Vc	226 SFM	207 SFM
Feed per Revolution fn	.007 in/rev	.004 in/rev

Success Case 2 Shaft

Economic • **Longer tool life!**

High Accuracy • **Hole straightness improved by 80%!**

Tool Life (Peripheral insert)



Hole Straightness

Hole Straightness

Competitor	.059″ / 39.37″
TBTA-H	Less than .012″ / 39.37″

Component	Shaft
Material	Alloyed steel
Application	Solid drilling
Machine	BTA machine
Coolant	Oil based
Tool diameter	2.352″
Drilling length	39.37″

	TBTA-H	Competitor
Chip Breaker	G	General
Grade (peripheral)	IN2005	ISO P
Cutting Speed Vc	184 SFM	184 SFM
Feed per Revolution fn	.0063 in/rev	.0063 in/rev