

HT 800 WP interchangeable inserts

HT 800 WP interchangeable inserts utilize the perfect combination of carbide substrate, point geometry, and coating to accommodate your specific application. Dull inserts can be reliably changed out while the drill remains in the machine. Therefore, you will consistently achieve optimal machining results with the highest level of performance and economic efficiency.



Technical features and application recommendations

Series	4112	4113	4114	4115	4111	4229
Tool material	solid carbide	solid carbide	solid carbide	solid carbide	solid carbide	solid carbide
Coating	nano-FIREX®	FIREX®	bright	nano-A	nano-A	nano-FIREX®
Point geometry	2-facet	2-facet	relieved cone	relieved cone	2-facet	2-facet
Point angle	140°	140°	140°	140°	145°	125° / 160°
Tolerance	h7	m7	h7	h7	m7	h7
Diameter	11.0 - 40.0	11.0 - 40.0	11.0 - 40.0	11.0 - 40.0	11.0 - 40.0	12.0 - 40.0
Application	steel	cast iron	aluminum	stainl. steel	pilot drilling	steel beams
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- optimal suitability
- limited suitability

Application group	Material examples	4112	4113	4114	4115	4111	4229
P	steel, cast steel, stainless steel (ferritic and martensitic)	●	○		○	○	●
M	stainless steel and cast steel (austenitic and austenitic/ferritic)	○			●	○	
K	grey cast iron, spheroidal graphite and malleable cast iron	○	●		○	○	
N	aluminum and other non-ferrous metals			●		○	
S	Special, Super- and Ti-alloys				○	○	
H	Hardened steels and chilled cast iron				○	○	

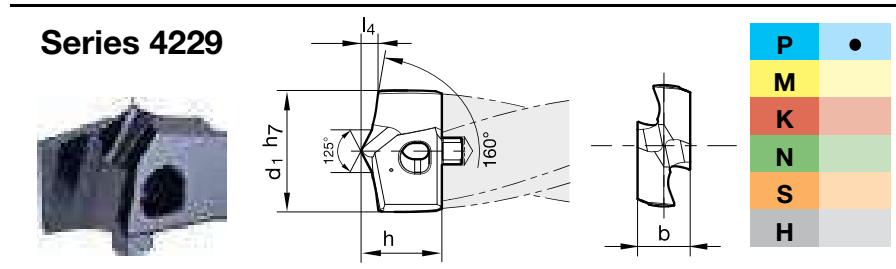
Series	7645	7632	7635
Tool material	solid carbide	solid carbide	solid carbide
Coating	TiN	TiAlN	bright
Type	CPGT ... R	CPGW ...	CPGT ... R
Application	steel	cast iron	aluminum
Page	16	16	16

- optimal suitability
- limited suitability

Application group	Material examples	7645	7632	7635
P	steel, cast steel, stainless steel (ferritic and martensitic)	●	○	
M	stainless steel and cast steel (austenitic and austenitic/ferritic)	○		
K	grey cast iron, spheroidal graphite und malleable cast iron	○	●	
N	aluminum and other non-ferrous metals			●
S	Special, Super- and Ti-alloys	○		
H	Hardened steels and chilled cast iron	○		

Steel beam drill inserts

The steel beam drilling inserts, manufactured from Guhring carbide, utilize a specialized point geometry providing optimal centering characteristics. This compensates for the unstable conditions typically encountered when drilling steel beams. The nano-FIREX coating offers high wear resistance and exceptional tool life, resulting in an economical and efficient drilling process.



d1 fract.	d1 mm	h mm	b mm	l4 mm	Series 4229 nano-FIREX® EDP No.	Drill Body Size	Pilot Drill Body Size
	12.000	7.500	5.000	1.700	9042290120000	120	120
	14.000	9.600	6.000	2.000	9042290140000	140	140
	16.000	10.800	7.000	2.300	9042290160000	160	160
	18.000	12.300	8.000	2.600	9042290180000	180	180
	20.000	13.600	9.000	2.900	9042290200000	200	200
	21.000	13.600	9.000	3.000	9042290210000	210	200
	22.000	14.900	10.000	3.200	9042290220000	220	220
	24.000	15.500	11.000	3.500	9042290240000	240	240
63/64	25.000	15.500	11.000	3.600	9042290250000	250	240
	26.000	18.500	12.000	3.800	9042290260000	260	260
	27.000	18.600	12.000	3.900	9042290270000	270	260
	28.000	19.200	13.000	4.100	9042290280000	280	280
	29.000	19.600	13.000	4.200	9042290290000	290	280
	30.000	19.900	14.000	4.400	9042290300000	300	300
	32.000	21.300	15.000	4.600	9042290320000	320	320
	33.000	21.900	15.000	4.800	9042290330000	330	320
	34.000	22.000	15.000	4.900	9042290340000	340	320
	36.000	22.500	16.000	5.200	9042290360000	360	360
	38.000	22.700	16.000	5.500	9042290380000	380	360
	40.000	23.300	16.000	5.800	9042290400000	390	360

Body 4107 through 4109

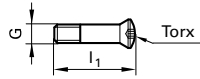
Material group	Hardness		SFM	Feed Rate - IPR									
	HRc	Bhn		1/16 in. 1.590 mm	1/8 in. 3.170 mm	1/4 in. 6.350 mm	3/8 in. 9.520 mm	1/2 in. 12.700 mm	5/8 in. 15.870 mm	3/4 in. 19.050 mm	1 in. 25.400 mm	1 1/4 in. 31.750 mm	1 1/2 in. 38.100 mm
Common structural steels	-	≤ 150	330				0.0080	0.0080	0.0100	0.0125	0.0155	0.0155	0.0195
	< 32	< 301	260				0.0080	0.0080	0.0100	0.0125	0.0155	0.0155	0.0195
Free-cutting steels	≤ 25	≤ 255											
	< 32	< 301											
Unalloyed heat-treatable steels	≤ 20	≤ 220											
	≤ 25	≤ 255											
	< 32	< 301											
Alloyed heat-treatable steels	≤ 32	≤ 301											
	< 43	< 402											
Unalloyed case hardened steels	≤ 25	≤ 255											
Alloyed case hardened steels	≤ 32	≤ 301											
	< 43	< 402											
Nitriding steels	≤ 32	≤ 301											
	< 43	< 402											
Tool steels	≤ 25	≤ 255											
	< 43	< 402											
High speed steels	≤ 43	≤ 402											
Spring steels	≤ 38	≤ 354											

Body 4110

Material group	Hardness		SFM	Feed Rate - IPR									
	HRc	Bhn		1/16 in. 1.590 mm	1/8 in. 3.170 mm	1/4 in. 6.350 mm	3/8 in. 9.520 mm	1/2 in. 12.700 mm	5/8 in. 15.870 mm	3/4 in. 19.050 mm	1 in. 25.400 mm	1 1/4 in. 31.750 mm	1 1/2 in. 38.100 mm
Common structural steels	-	≤ 150	280				0.0065	0.0065	0.0080	0.0100	0.0125	0.0125	0.0155
	< 32	< 301	230				0.0065	0.0065	0.0080	0.0100	0.0125	0.0125	0.0155
Free-cutting steels	≤ 25	≤ 255											
	< 32	< 301											
Unalloyed heat-treatable steels	≤ 20	≤ 220											
	≤ 25	≤ 255											
	< 32	< 301											
Alloyed heat-treatable steels	≤ 32	≤ 301											
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Nitriding steels	≤ 32	≤ 301											
	< 43	< 402											
Tool steels	≤ 25	≤ 255											
	< 43	< 402											
High speed steels	≤ 43	≤ 402											
Spring steels	≤ 38	≤ 354											

HT 800 WP spare parts & accessories

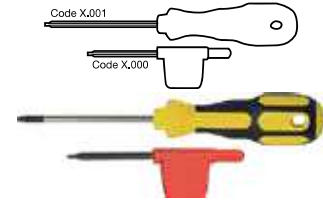
Clamping screws for HT 800 inserts



Series 4071

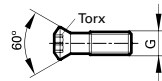
For body size	Size	OAL	with Torx	EDP No.
110/115	M2.2	9.50	T7	9040710022000
120/125	M2.2	10.50	T7	9040710022010
130/135	M2.5	11.40	T8	9040710025000
140/145	M3	12.10	T9	9040710030000
150/155	M3	13.10	T9	9040710030010
160 - 175	M3.5	14.25	T10	9040710035000
180 - 195	M4	16.00	T15	9040710040000
200 - 215	M4.5	18.00	T15	9040710045000
220 - 235	M5	19.75	T20	9040710050000
240 - 255	M5	21.75	T20	9040710050010
260 - 295	M5	23.40	T20	9040710050030
300 - 315	M6	27.00	T25	9040710060000
320 - 350	M6	28.50	T25	9040710060010
360 - 390	M6	32.50	T25	9040710060020

Screw driver Series 1612



For body size	for Torx	EDP No.
Pilot Body 110 - 140	T6	9016120060000
Pilot Body 160 - 280	T7	9016120070000
110 - 125	T7	9016120070010
130/135	T8	9016120080010
140 - 155	T9	9016120090010
160 - 175	T10	9016120100010
Pilot Body 300 - 360	T15	9016120150000
180 - 215	T15	9016120150010
220-295	T20	9016120200010
300 - 390	T25	9016120250000

Clamping screws for chamfering inserts



Series 6128

For body size	Size	OAL	with Torx	EDP No.
110 - 140	M2.0	5.5	T6	9061280020000
160 - 240	M2.5	5.3	T7	9061280025000
300 - 360	M4.0	9.5	T15	9061280040000

Torx Bits Series 4917



for Torx	Drive	l1 mm	EDP No.
T7	1/4"	25	9049170070000
T8	1/4"	25	9049170080000
T9	1/4"	25	9049170090000
T10	1/4"	25	9049170100000
T15	1/4"	25	9049170150000
T20	1/4"	25	9049170200000
T25	1/4"	25	9049170250000

Torque wrench Series 4915



Type	Drive	l1 mm	Tightening torque (Nm)	EDP No.
A	1/4"	160.00	0.8 - 2	9049150020000
A	1/4"	160.00	2 - 8	9049150080000
A	1/4"	200.00	5 - 14	9049150140000

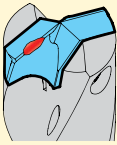
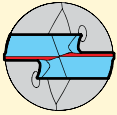
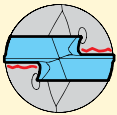
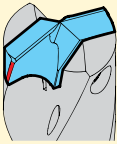
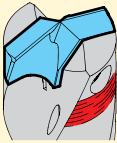
Torque values for clamping screws

Diameter range (mm)	11.0 - 12.99	13.0 - 13.99	14.0 - 15.99	16.0 - 17.99	18.0 - 19.99	20.0 - 21.99	22.0 - 29.99	30.0 - 40.00
Thread	M2.2	M2.5	M3	M3.5	M4	M4.5	M5	M6
Torx size	T7	T8	T9	T10	T15	T15	T20	T25
Tightening torque [Nm]	0.80	1.00	1.70	2.70	4.00	6.0	8.00	14.0

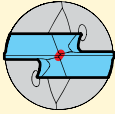
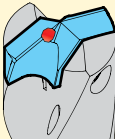

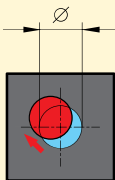
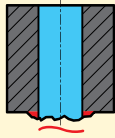
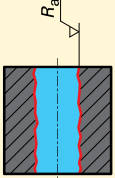
The information above applies to screws containing thread locker (Loctite). Guhring HT800 drill tip insert screws are supplied containing thread locker.

Bodies are supplied with clamping screw, series 4071, and screwdriver, series 1612.

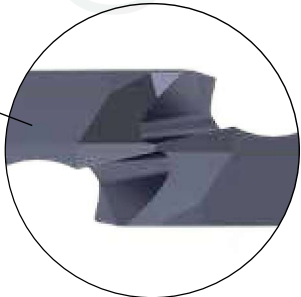
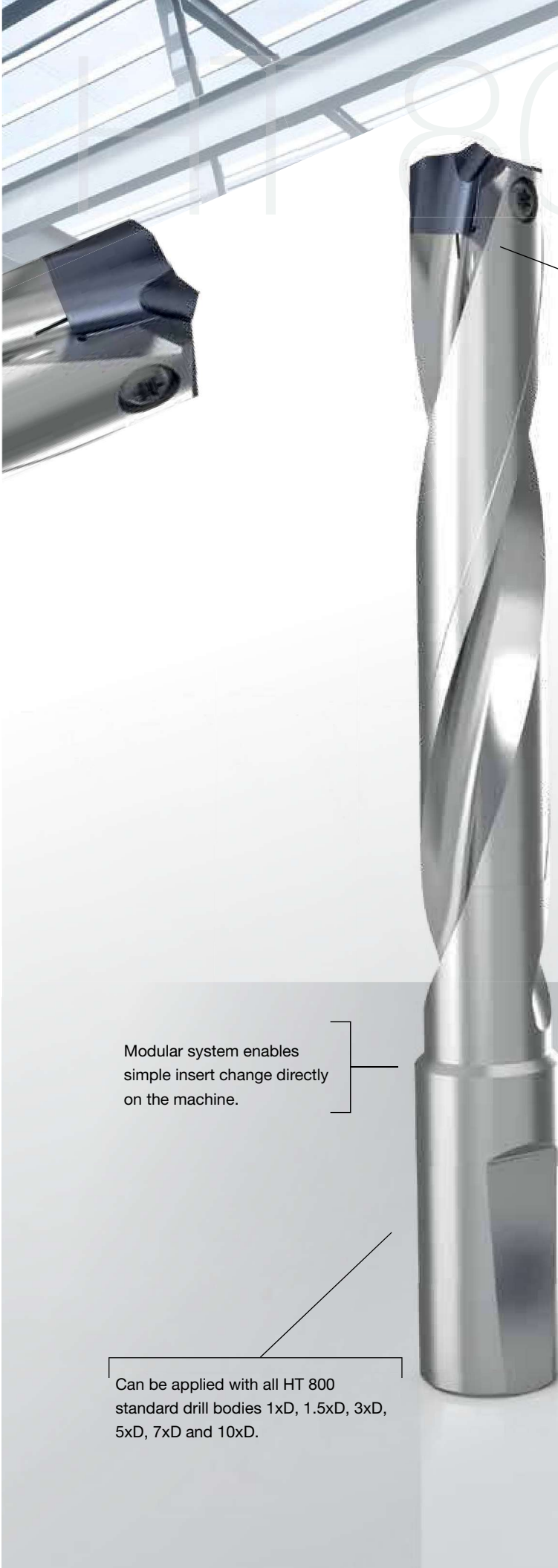
12 tips to help diagnose problems

Problem	Cause	Remedy
1 Cutting edge build up 	<ul style="list-style-type: none"> ■ low cutting speed ■ excessive honing of cutting lip ■ bright finish cutting lip 	<ul style="list-style-type: none"> ■ increase cutting speed ■ reduce cutting lip honing ■ have tool coated
2 Crumbling of outer corners 	<ul style="list-style-type: none"> ■ non-rigid conditions, insufficient workpiece clamping ■ deviation from concentricity too large ■ interrupted cut 	<ul style="list-style-type: none"> ■ rigid clamping of workpiece ■ check and correct concentricity if possible ■ reduce feed
3 Heavy wear at flank 	<ul style="list-style-type: none"> ■ cutting speed too high ■ feed too low ■ clearance angle too small 	<ul style="list-style-type: none"> ■ reduce cutting speed ■ increase feed ■ increase clearance angle
4 Crumbling on cutting lips 	<ul style="list-style-type: none"> ■ non-rigid conditions, insufficient workpiece clamping ■ interrupted cut ■ max. wear values exceeded ■ incorrect tool type 	<ul style="list-style-type: none"> ■ rigid clamping of workpiece ■ reduce feed ■ reduce tool change intervals ■ apply suitable tool
5 Land wear 	<ul style="list-style-type: none"> ■ non-rigid conditions, insufficient workpiece clamping ■ deviation from concentricity too large ■ back taper too small ■ incorrect coolant (oil), coolant too weak 	<ul style="list-style-type: none"> ■ rigid clamping of workpiece ■ check and correct concentricity if possible ■ increase back taper ■ increase strength of coolant or use neat oil
6 Scoring on tool body 	<ul style="list-style-type: none"> ■ non-rigid conditions, insufficient workpiece clamping ■ deviation from concentricity too large ■ interrupted cut ■ abrasive workpiece material 	<ul style="list-style-type: none"> ■ rigid clamping of workpiece ■ check and correct concentricity if possible ■ reduce feed ■ increase strength of coolant or use neat oil

12 tips to help diagnose problems

Problem	Cause	Remedy
7 Heavy chisel edge wear 	<ul style="list-style-type: none"> ■ cutting speed too low ■ feed too high ■ excessive honing of cutting lip 	<ul style="list-style-type: none"> ■ increase cutting speed ■ reduce feed ■ reduce cutting lip honing
8 Crumbling at intersection, web thinning and cutting lip 	<ul style="list-style-type: none"> ■ clearance angle too small ■ excessive honing of cutting lip ■ incorrect tool type 	<ul style="list-style-type: none"> ■ increase clearance angle ■ reduce cutting lip honing ■ apply suitable tool
9 Plastic deformation of outer corner 	<ul style="list-style-type: none"> ■ cutting speed too high ■ insufficient coolant volume ■ incorrect or no honing at corner 	<ul style="list-style-type: none"> ■ reduce cutting speed ■ increase volume/pressure ■ correct honing
10 Misalignment 	<ul style="list-style-type: none"> ■ non-rigid conditions, insufficient workpiece clamping ■ deviation from concentricity too large ■ spotting area not flat ■ chisel edge too large 	<ul style="list-style-type: none"> ■ rigid clamping of workpiece ■ check and correct concentricity if possible ■ use milling cutter (2-fluted) for spotting ■ reduce chisel edge
11 Heavy burring on break-through 	<ul style="list-style-type: none"> ■ feed too high ■ max. wear values exceeded ■ excessive honing of cutting lip 	<ul style="list-style-type: none"> ■ reduce feed ■ reduce tool change intervals ■ reduce cutting lip honing
12 Unsatisfactory surface quality 	<ul style="list-style-type: none"> ■ non-rigid conditions, insufficient workpiece clamping ■ deviation from concentricity too large ■ insufficient coolant volume 	<ul style="list-style-type: none"> ■ rigid clamping of workpiece ■ check and correct concentricity if possible ■ increase volume/pressure

HT 800 WFP



The point geometry of the new indexable inserts ensures optimal centering characteristics and therefore compensates non-rigid machining conditions in the manufacture of steel beams.

- new interchangeable inserts especially for the machining of steel beams
- reduced burr development
- optimal centering characteristics
- smooth drilling performance

Modular system enables simple insert change directly on the machine.

Can be applied with all HT 800 standard drill bodies 1xD, 1.5xD, 3xD, 5xD, 7xD and 10xD.

Minimized burr development thanks to reduced point angle in outer area.



Interchangeable insert for the machining of steel beams
HT 800 series 4229

With the HT 800 WP replaceable tip drilling system Guhring provides high-performance and cost-efficient drilling options for holes with a diameter range of 11.00 to 40.0 mm (0.433 - 1.575 in.) These drills excel thanks to the following advantages:

A Extended tool life

Thanks to application-specific, precision-ground cutting edge geometries and coatings, the interchangeable inserts of the HT 800 WP drilling system are especially wear resistant.

The hardened tool steel and nickel-plated surface treatment utilized during the manufacturing process for the drill bodies, combined with incremental body sizes in steps of 0.5mm up to 31.99mm diameter and 1.0mm above 32.00mm diameter, results in optimal wear resistance on the drill bodies as well.

B Effective chip evacuation

The optimized flute geometry of the drill bodies results in outstanding chip evacuation capabilities, even while drilling deeper holes.

C Optimal cooling and lubrication

Optimal cooling and lubrication is applied through coolant ducts which exit into the flutes and directly onto the cutting edge, resulting in longer tool life and better chip evacuation.

D Highly accurate and rigid insert seat

The precise and easily accessible insert seat allows the insert to be changed while the drill remains in the machine spindle. Due to the unique clamping design, the insert can be changed more times than with competitors' systems before the body needs to be replaced due fatigue of the insert seat. The heavy-duty Torx clamping screws containing thread locker ensure secure clamping of the inserts, even during applications subject to high levels of vibration.

Rigid drill bodies

The small incremental diameter transitions of the drill bodies provide additional benefits other than simply reducing wear on the bodies. Due to the improved guidance and stabilization from margin contact while drilling, the rigidity is also increased, resulting in longer tool life and improved workpiece finishes.

