



XIAMEN GOLDEN EGRET SPECIAL ALLOY CO., LTD.

2000 "Инструмент поставка"

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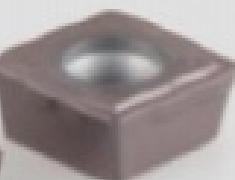
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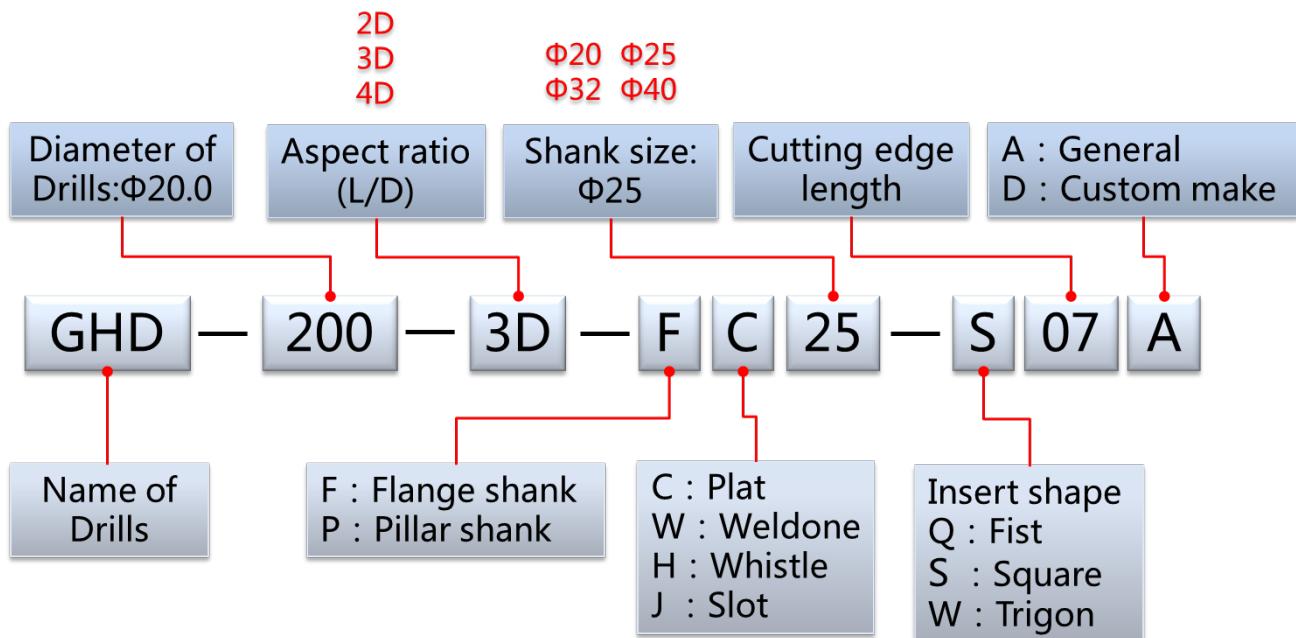
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GHD

Корпусные сверла со сменными пластинами



Система обозначения сверл



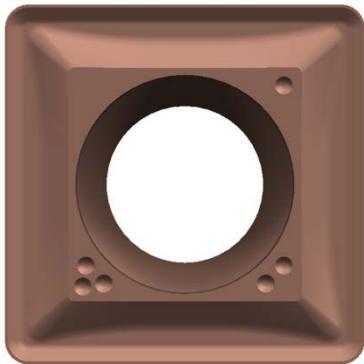
Введение в продукт

➤ Fist edge

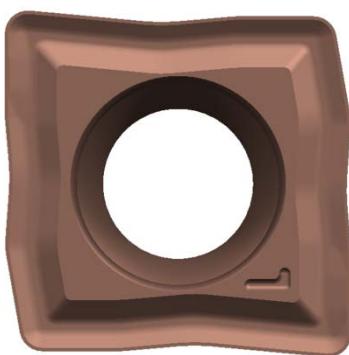


- Четыре режущие кромки, высокая экономичность.
- Режущая кромка с патентной защитой.
- Только один тип пластин для центрального и периферийного положения, облегчает обслуживание.
- Подходит для различных материалов.
- Отличная производительность благодаря оптимизированной конструкции сверла.

- Square and multistage edge



- Заменимо с T-Drill компании Taegutec и ZTD компаний ZZC
- Четыре режущие кромки, высокая экономичность
- Только один тип пластин для центральной и периферийной областей.
- Подходит для различных материалов.
- Увеличенный срок службы со сплавом GA4230.



- Четыре режущие кромки, переменная поверхность режущей кромки.
- Только один тип пластин для центральной и периферийной областей.
- Подходит для различных материалов.
- Отличная производительность благодаря конструкции сверла.

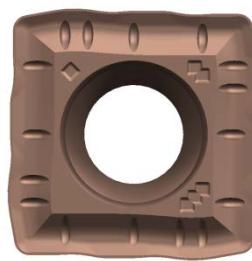
➤ Описание сплавов

Зерно	Режущие параметры	Покрытие	Характеристики
GA4225	Получистовая - Получерновая	Scanning electron micrograph showing the surface morphology of the AlCrN coating. The surface appears relatively smooth with some fine, irregular features. Technical data at the bottom: S3700 15.0kV 5.6mm x15.0k SE 3.00μm.	<ul style="list-style-type: none">● AlCrN покрытие на особо мелкой основе.● Подходит для сверления материалов группы P и K со средней и низкой скоростью резания.
GA4230	Получистовая - Черновая	Scanning electron micrograph showing the surface morphology of the TiAlN+ coating. The surface has a distinctively rougher and more textured appearance compared to the AlCrN coating. Technical data at the bottom: S3700 15.0kV 5.9mm x15.0k SE 3.00μm.	<ul style="list-style-type: none">● TiAlN+ покрытие обладает отличной термостойкостью и стойкостью к окислению.● Подходит для сверления материалов группы P, K, M при различных условиях резания.

● Описание продукта

➤ Fist edge

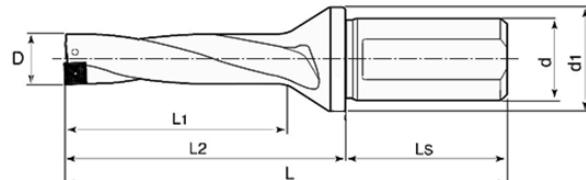
● Пластины



Код для заказа	Сплав	Размеры (мм)				Диапазон диаметров	Наличие
		IC	t	r	d1		
QPMG07T306-DP	GA4230	7.94	3.2	0.6	2.85	Φ 22.6～Φ 27.0	●
QPMG09T308-DP	GA4230	9.7	3.5	0.8	3.5	Φ 27.1～Φ 33.0	●
QPMG110408-DP	GA4230	11.5	4.76	0.8	4.4	Φ 33.1～Φ 40.0	●

※ Подходит для различных материалов

● Сверла



Диаметр	Код для заказа	Размеры (мм)							Наличие	Пластины
		D	d	d ₁	L _s	L ₂	L ₁	L		
Φ 23	GHD-230-3D-FC25- Q07A	23.0	25	32	56	69	49	125	●	QPMG07T306
Φ 24	GHD-240-3D-FC32- Q07A	24.0	25	32	56	71	51	127	●	
Φ 25	GHD-250-3D-FC32- Q07A	25.0	25	32	56	73	53	129	●	
Φ 26	GHD-260-3D-FC32- Q07A	26.0	32	42	60	81	56	141		
Φ 27	GHD-270-3D-FC32- Q07A	27.0	32	42	60	83	58	143	●	
Φ 28	GHD-280-3D-FC32- Q09A	28.0	32	42	60	85	60	145	●	QPMG09T308
Φ 29	GHD-290-3D-FC32- Q09A	29.0	32	42	60	87	62	147	●	
Φ 30	GHD-300-3D-FC32- Q09A	30.0	32	42	60	89	64	149	●	
Φ 31	GHD-310-3D-FC32- Q09A	31.0	32	42	60	91	66	151	●	
Φ 32	GHD-320-3D-FC32- Q09A	32.0	32	42	60	93	68	153	●	
Φ 33	GHD-330-3D-FC32- Q09A	33.0	32	42	60	95	70	155	●	

Φ 34	GHD-340-3D-FC40- Q11A	34.0	40	48	70	101	73	171	●	
Φ 35	GHD-350-3D-FC40- Q11A	35.0	40	48	70	103	75	173	●	
Φ 36	GHD-360-3D-FC40- Q11A	36.0	40	48	70	105	77	175	●	
Φ 37	GHD-370-3D-FC40- Q11A	37.0	40	48	70	107	79	177	●	
Φ 38	GHD-380-3D-FC40- Q11A	38.0	40	48	70	109	81	179	●	
Φ 39	GHD-390-3D-FC40- Q11A	39.0	40	48	70	111	83	181	●	
Φ 40	GHD-400-3D-FC40- Q11A	40.0	40	48	70	113	85	183	●	

Note:

- ※ Возможно предоставление инструмента для тестирования
- ※ Доступно изготовление и наличие сверл с длиной 2D/3D/4D от диаметра.

➤ Square edge

● Пластины



Код для заказа	Сплав	Размеры (мм)				Диапазон диаметров	Наличие
		IC	t	r	d1		
SPMG050204-DP	GA4230	5.0	2.38	0.4	2.2	Φ 13.0～Φ 15.0	●
	GA4225						
SPMG060204-DP	GA4230	6.0	2.38	0.4	2.6	Φ 16.0～Φ 21.0	●
	GA4225						

Note:

- ※ Взаимозаменяемо с T-Drill компании Taegutec и ZTD компании ZZC
- ※ Подходит для различных материалов

➤ Multistage edge

● Пластины

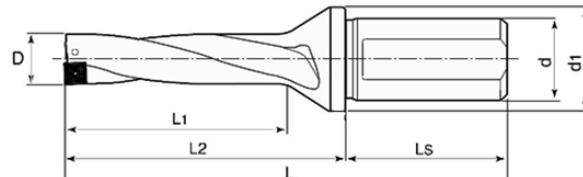


Код для заказа	Сплав	Размеры (мм)				Диапазон диаметров	Наличие
		IC	t	r	d1		
SPMT050204-DP	GA4230	5.0	2.38	0.4	2.2	Φ 14.0～Φ 16.9	●
SPMT060204-DP	GA4230	5.8	2.38	0.4	2.6	Φ 17.0～Φ 20.0	●

Note:

- ※ Кромка выполнена в виде ломаной линии
- ※ Подходит для различных материалов

● Drill



Dia	Ordering Code	Dimension(mm)							Stock	Insert
		D	d	d ₁	L _s	L ₂	L ₁	L		
Φ 14	GHD-140-3D-FC20- S05B	14.0	20	25	50	46	58	134	●	SPMT050204
Φ 17	GHD-170-3D-FC25- S06B	17.0	25	32	56	54	70	136	●	
Φ 18	GHD-180-4D-FC25- S06B	18.0	25	32	56	59	39	115	●	SPMT060204
Φ 20	GHD-200-3D-FC25- S06B	20.0	25	32	56	63	43	119	●	

Note:

- ※ Возможно предоставление инструмента для тестирования
- ※ Доступно изготовление и наличие сверл с длиной 2D/3D/4D от диаметра.

● Рекомендуемые режущие параметры

ISO	Обрабатываемый материал	Твердость (HB)	Скорость резания (m/min)	Подача (mm/rev)			
				(2D, 3D, 4D) *зависит от длины и диаметра *	14.0 – 22.5	23.0 – 27.0	27.5 – 33.0
P	Low steel	80 – 170	160 – 300	0.04-0.06	0.04-0.06	0.04-0.08	0.04-0.08
	High steel	170 – 250	140 – 220	0.04-0.10	0.04-0.12	0.06-0.16	0.08-0.18
	Low alloy steel	140 – 260	160 – 250	0.04-0.10	0.06-0.12	0.08-0.16	0.08-0.18
	High alloy steel	180 – 300	140 – 200	0.04-0.10	0.06-0.12	0.08-0.16	0.08-0.18
	Cast steel	180 – 300	140 – 200	0.05-0.08	0.06-0.12	0.08-0.14	0.08-0.16
M	Ferritic/martensitic	150 – 270	140 – 250	0.04-0.10	0.06-0.12	0.06-0.14	0.06-0.16
	Stainless steel	150 – 270	150 – 250	0.04-0.10	0.06-0.12	0.06-0.14	0.06-0.16
K	Forged cast iron	150 – 230	120 – 220	0.04-0.10	0.06-0.14	0.06-0.16	0.08-0.2
	Gray cast iron	150 – 230	160 – 250	0.04-0.10	0.06-0.14	0.06-0.16	0.08-0.2
	Nodular cast iron	160 – 260	150 – 220	0.04-0.12	0.06-0.16	0.08-0.18	0.08-0.2
S	Ni+/Fe+/Co+ HRSA	130 – 400	30 – 80	0.04-0.06	0.04-0.08	0.04-0.10	0.06-0.12
	Ti+ HRSA	130 – 400	30 – 70	0.04-0.08	0.04-0.10	0.06-0.12	0.08-0.11
H	Hardened steel	400 –	30 – 60	0.04-0.08	0.04-0.10	0.06-0.12	0.08-0.14

● Варианты замены

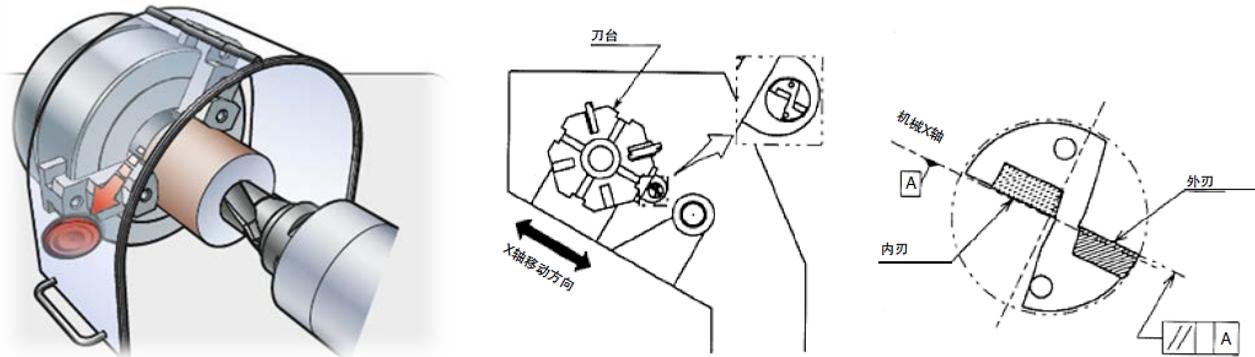
Eur & USA		Jan & Korea		china	
Company	Product	Company	Product	Company	Product
SANDVIK	880	TAUGUTEC	TOP	ZZC	ZTD
	881		T Drill		ZD03
ISCAR	DR	KORLOY	King Drill		
	DZ		LPD、SPD、NPD		
KENNAMETAL	DFR	SUMITOMO	WDX		
	DRS	TUNGALOY	TDX		
	DFT		TDS		
SECO	SD50	KYOCERA	DRZ		

● Приложение

➤ Сервисное обслуживание свёрл

● Safety precautions

When drilling through holes with an indexable insert drill, a disc can be ejected at high speed.
Recommendation – enclose chuck or machine



1. Turning-lathe

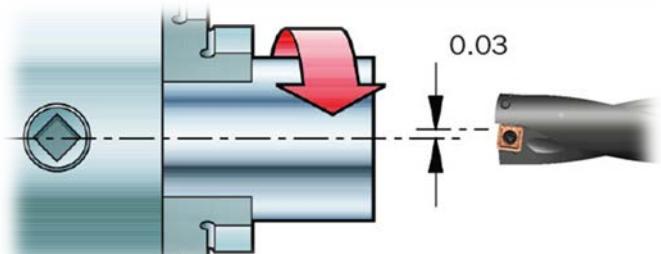
a) Installation

The edge of Peripheral insert should be parallel to X axis, while Peripheral insert face toward the operator.

b) alignment

Runout cannot exceed the values in the figures,
alignment must be parallel to:

- Close hole tolerance and straightness
- Good surface finish
- Long and consistent tool life

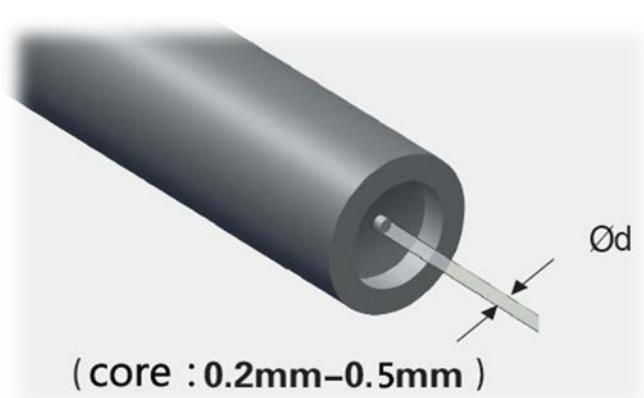


c) Hole core diameter

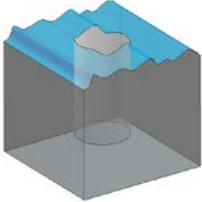
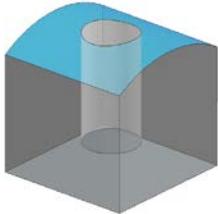
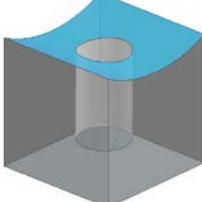
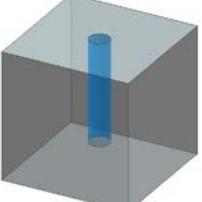
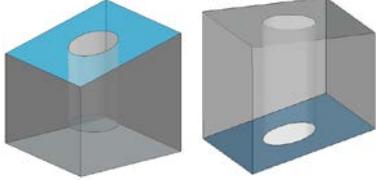
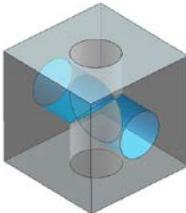
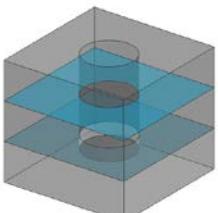
Diameter of hole core :0.2mm – 0.5mm

Measurement: Check hole core when the depth of hole achieves 5mm.

- If hole core is not existed
 - Edge break and shake would be a problem
 - Please rotate the drill to 180° ,and test again.
- If the diameter of hole core is beyond suggest values.
 - It will lead to overload and shake
 - Adjust deviation to suggest value range



➤ Application announcements

Workpiece shape	announcements	
	Irregular	<ul style="list-style-type: none"> Irregular surfaces can damage inserts, when penetrating or exiting the surface. Feed should be reduced to 1/3 normal rate.
	Convex surface	<ul style="list-style-type: none"> The centre of the drill contacts the workpiece first Giving normal feed rate
	Concave surface	<ul style="list-style-type: none"> If the radius of the concave surface is small in relation to hole diameter, the periphery of the drill will be engaged first. To reduce the tendency for the drill to deflect Feed should be reduced to 1/2 normal rate.
	Pre-drilled holes	<ul style="list-style-type: none"> To keep the cutting force balance between the central and peripheral insert on an acceptable level Feed should be reduced to 1/2 normal rate. <p>※ pre-drilled hole should not be larger than $D_c/4$.</p>
	Inclined surface	<ul style="list-style-type: none"> Uneven forces on drill cutting edges, which wear the drill, cause vibrations and distort the drilling profile. Feed should be reduced to 1/2 normal rate.
	Crossing holes	<ul style="list-style-type: none"> The stability of drill will be disturbed Feed should be reduced to 1/2 normal rate.
	Overlap holes	<ul style="list-style-type: none"> May be chipping or Plastic deformation Feed should be reduced to 1/2 normal rate

➤ Устранение неисправностей

Неисправность	Деталь	Рекомендации
Hole diameter change	Diameter at bottom of the hole change larger (stock of the chip at central insert)	<ul style="list-style-type: none"> ● Increase coolant flow, clean filter, clear coolant holes in drill ● Shorten drill overhang ● Improve the chip control, choose other cutting data
Wrong hole	Hole diameter oversized or undersized	<ol style="list-style-type: none"> 1. Rotating drill <ul style="list-style-type: none"> ● Increase coolant flow, clean filter, clear coolant holes in drill 2. Non-rotating drill <ul style="list-style-type: none"> ● Check alignment on lathe ● Rotate drill 180 degrees
Vibrations	Vibration when drilling	<ul style="list-style-type: none"> ● Shorten drill overhang ● Induce feed and cutting speed ● Check the machine and
Chip jamming in the drill flutes	Preduce long chip	<ul style="list-style-type: none"> ● Increase coolant flow and check the coolant holes in drill Low carbon steel : <ul style="list-style-type: none"> ● Induce feed or improve cutting speed Alloy steel and carbon steel: <ul style="list-style-type: none"> ● Improve feed and cutting speed
Pin in hole	Pin too big or small	<ul style="list-style-type: none"> ● Increase coolant flow and check the coolant holes in drill ● Shorten drill overhang
Bad surface	Hole surface have track of tool	<ul style="list-style-type: none"> ● Change cutting data recommendation ● Induce feed or improve cutting speed ● Increase coolant flow and check the coolant holes in drill ● Shorten drill overhang
Broken insert screws	Screws broken fast	※ Use torque wrench to fasten the screw together,apply Molykote
Poor tool life	Insert wear or chipping	<ul style="list-style-type: none"> ● Change cutting data recommendation ● Increase coolant flow ,clean filter,clean coolant holes in drill ● Shorten drill overhang

Износ инструмента и решения

Внешний вид	Причина	Рекомендации
Flank wear	a) Cutting speed too high	a) Reduce cutting speed
Crater wear	Peripheral insert: Diffusion wear caused by temperature too high on rake face Central insert: Abrasive wear caused by built-up-edge and smearing.	Peripheral insert: <ul style="list-style-type: none">Reduce speed Central insert: <ul style="list-style-type: none">Reduce feed
Plastic deformation	a) Cutting temperature (cutting speed) too high, combined with a high pressure (feed, hardness of workpiece) b) As a final result of excessive flank wear and/or crater wear	a) Reduce cutting speed b) Reduce feed
Chipping	a) Built-up-edge (BUE) b) Irregular surface c) Bad stability d) Sand inclusions (cast iron)	a) Increase cutting speed b) Reduce feed at entrance. c) Improve stability
Built-up-edge	a) Low cutting speed (temperature too low at the cutting edge) c) Very sticky material, such as certain stainless steels and pure aluminium d) Percent of oil mixture in cutting fluid too low	a) Increase cutting speed or change to a coated grade b) Increase oil mixture and volume/pressure in cutting fluid

WELCOME TO TESTING !

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