

WAGEN 和源®

Precision Tooling



WAGEN 和源®

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Ferrotec

Catalogue

Catalogue

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关于我们

和源精密工具

Hangzhou
Wagen Precision Tooling

2000年，FERROTEC 集团在中国成立了“和源”精密工具生产加工及销售基地。
2002年，“和源”已在国内二十多个城市拥有代理商，销售网络迅速覆盖全中国。
2004年，“和源”全面进军国际市场。销售网络覆盖东南亚，东欧，及加拿大，并将继续扩展至欧洲及北美市场。
2005年，“和源”精密工具有限公司从原来的刀具事业部发展为独立公司，注册资本3.82亿日元。并凭借其雄厚的生产及销售能力，成为FERROTEC中国集团中的支柱子公司。

作为中国国内唯一一家专业从事高端精密工具自主研发，生产，销售的切削工具大型企业，“和源”精密工具有限公司拥有从瑞士、德国、日本等国进口的世界先进硬质合金工具加工设备，全套热处理生产线，各种电脑控制刃磨设备及精密检测仪器设备，为客户提供各类标准刀具的现货及售后服务。日本专家的直接操作和监控，确保了公司生产刀具的刃磨和维修与世界尖端产品相同的质量水准。

公司的主导产品“和源”牌硬质合金锯片，“和源”牌金刚石刀具。

“和源”牌硬质合金锯片广泛应用于铝合金、木材加工、家具制造、有机玻璃等行业。由于公司有强大的研发技术及先进的生产技术，因此锯片规格齐全，除常规锯片外，各类特殊规格及超薄锯片3000多种规格，能满足大部分客户的需求。

“和源”金刚石刀具工艺与技术更加成熟，产品特性日臻完美。金刚石刀具拥有比硬质合金刀具高数十倍的寿命和耐磨性，适合切削较难切削的材料，有广泛的适用性与应用性，广泛用于木质与有机材质、塑料与非铁金属材料等加工。同时，高精度的加工能够持续较长时间、加工产品的质量稳定性较高，由于减少了刀具交换时间，大大提高了机器稼动率。另外，金刚石较高的使用寿命，保证了资源有效高能的利用与节约。金刚石系列刀具将在切削行业中发挥出更大的威力，而其耐久加工的特性将在切削工具的领域中独占鳌头，首屈一指。

“和源”精密工具有限公司在八年的发展过程中，已在国内二十多个城市拥有代理商，销售网络覆盖全中国，高端市场占有率国内领先。拥有国内成熟的销售渠道和日本的销售网络及技术背景，使“和源”在国内的每一步发展都领先于同行。2004年，“和源”全面进军国际市场。目前，海外销售网络已经覆盖东南亚，欧洲，北美及拉丁美洲市场。

公司每年四十万枚硬质合金锯片的生产能力，是公司向全球客户及时、高效供货的保证；我们的刀具专家为客户提供刀具选择，配置，使用及维护保养方面的专业技术咨询建议，同时为客户提供解决生产问题的最佳方案。

“和源”精密工具有限公司秉承日本FERROTEC集团传统，坚持勤勉、立志、开拓、创优的企业文化理念，一如既往地为客户奉献最优秀的产品与服务，始终坚持引进、消化、吸收与自主研发并重的发展模式，以用户至上为宗旨，追求完美质量，不断创新，为全球用户提供及时准确的服务。

About

Wagen Precision Tooling China



In 2000, Ferrotec Group set up WAGEN Precision Tools manufacture and sales base in Hangzhou China;

In 2002, WAGEN has agents in more than 20 cities in China domestic.

In April 2005, "WAGEN" Precision Tooling Co., Ltd. had become an independent company from the former department of Hangzhou Da He Thermo - magnetic Electricity Co., Ltd with registered capital 30 million yuan and totally investment 50 million yuan.

As the only good-sized cutting tools manufacturer specialized in R & D, manufacture, and sales independently of High-end exact implements in China, "WAGEN" Precision Tooling Co., Ltd. possess of world-leading manufacturing equipment, whole set of heat treatment product line, and various computer control grinding machine and exact examining equipment imported from Switzerland, Japan and Vollmer Germany, which allows us to provide our clients different kinds of normative products and after sale service. Japanese experts operate and inspect at first hand to assure the quality of products of our company to be same as the world's top end products.

We are capable for independently devising and manufacturing both general and thinner kerf saw blade over 3000 different specifications, as well as custom-tailor and machining on clients' demands that are wildly used in many trades such as woodworking, furniture manufacturing and non-ferrous materials cutting.

The dominate product of our company is not only "WAGEN" T.C.T. Saw blade, but also PCD tools. Polycrystalline Diamond Saw blade and cutters were launched in early of 2007 also. "WAGEN" PCD tools provide the hardness, abrasion resistance and thermal conductivity of diamond combined with the toughness of tungsten carbide. The tool life of a PCD cutting edge is usually 30-50 times greater than that obtained with conventional cemented carbide cutting tools. You can find advantages of PCD tools such as long cutting life, uniform surface finish, reducing high quality parts, increasing productivity, high material removal rate and lower cost per piece.

During its 8 years' development, "WAGEN" Precision Tooling Co., Ltd. has successfully holds agents in more than 20 cities interiorly, cover its sales network over the country, and occupy big share of High-end market. Provided with mature domestic sales channels, and sales network and technical support from Japan, "WAGEN" keep itself in leading position in the domestic market. Since 2004, "WAGEN" accessed international markets comprehensively. The sales network had covered south-east Asia, Europe, North America and Latin America.

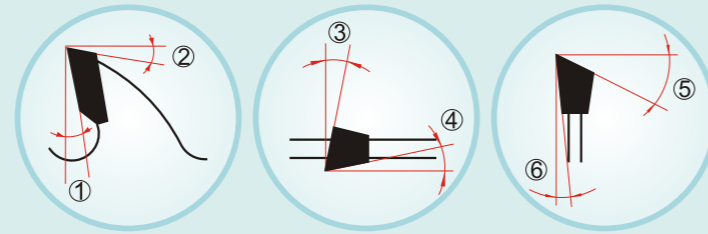
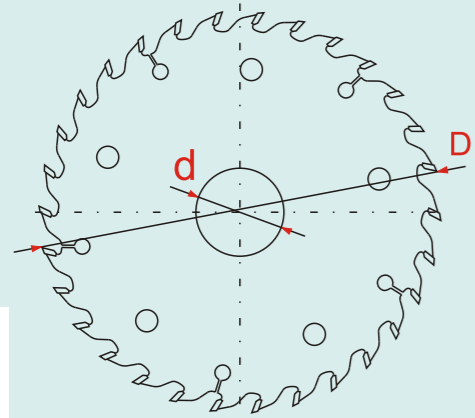
The throughput of 400 thousand pieces of saw blades is the guarantee of the in time and the high efficiency products supply to customers around the world. Our experts are always ready to offer professional and technical advices for our customers on the aspects of choosing, collocate, using and maintenance, meanwhile the best technical advisory service and solution to our customers' problems on production.

"WAGEN" Precision Tooling Co., Ltd. received traditions of Japan FERROTEC Group Corporation including the enterprise culture philosophy of being diligent, ambitious, innovative and creative. We will keep offering best products and services as we always did, insisting in paying equal attention to indraught, assimilation, and independent R&D development pattern. We always take our clients as most paramount ones, keep perfecting the quality of our products, and keep innovating constantly, in order to provide our clients all over the world best services betimes and exactly.

Even higher cutting quality and even longer edge lives, "WAGEN", continuous improvement to excellence.



锯片各构成部分名称 Configuration

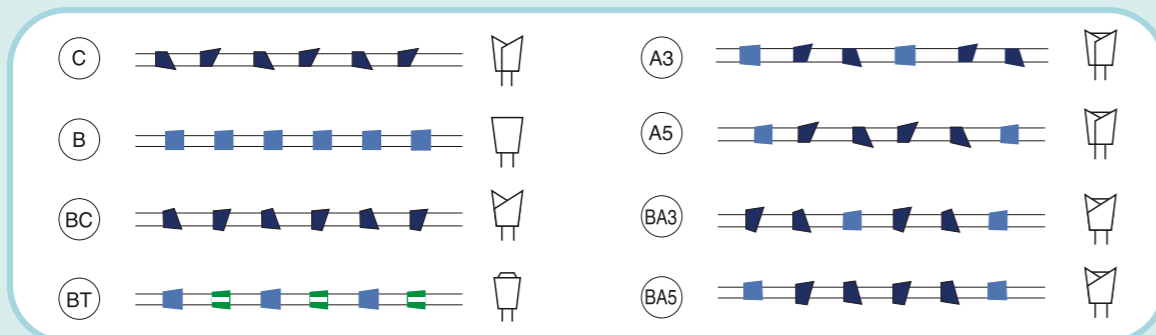


①	径向前角	Hook Angle
②	径向后角	Top Angle
③	横向前角	Face Angle
④	侧面后角	Side Angle
⑤	先端倾角	Top Bevel
⑥	侧面向心角	Side Relief

安全使用极限转速(rpm) Max.rpm For Safety Using

外径(D) Diameter 本体厚(b) Body Width	205	225	305	355	405	510
0.8	5500	●	●	●	●	●
1.2	8200	4500	3600	2300	●	●
1.6	11000	6000	4800	3100	2600	●
2.0	13800	7600	6000	3900	3200	2200
2.4	●	9100	7200	4700	4200	2600
2.8	●	●	8400	5900	4900	3100
3.2	●	●	●	6500	5400	3500
3.8	●	●	●	●	6400	4200
4.4	●	●	●	●	●	4800

刃配列示意图 Teeth Patterns



硬质合金锯片
CARBIDE -
TIPPED SAWBLADE

精密裁板锯锯片 / T.C.T Saw Blade to Cut Laminated Panels

用途 刨花板、中密度板、三聚氰胺贴面板、三氧化二铝贴面板。

Application Chipboard, MDF, Melamine, Aluminum.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
250	3.2	30	60
300	3.2	30	48
300	3.2	30	60
300	3.2	30	72
300	3.2	30	80
300	3.2	30	96
350	3.5	30	84
350	3.5	30	72
400	3.5	30	60
400	3.5	30	84

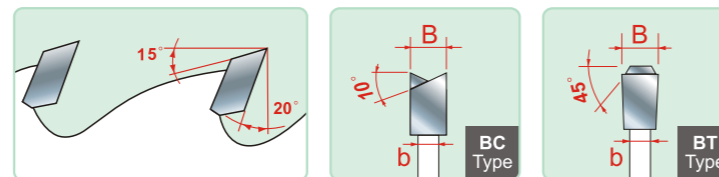


特点 锯片适于切割35mm以下硬质贴面刨花板、密度板、多层板。如有贴面材料，需配带划槽锯片。

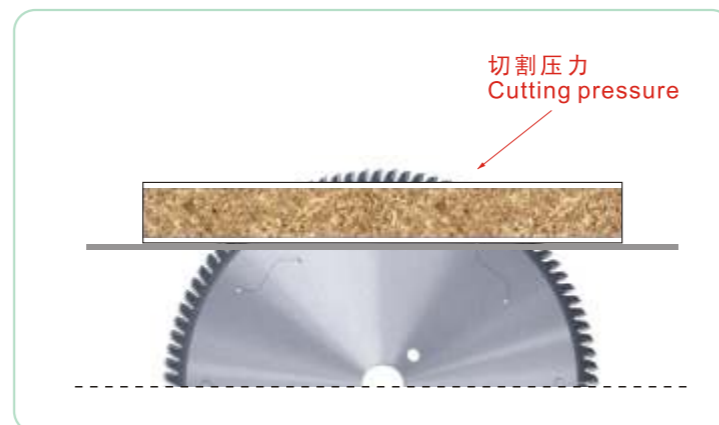
Characters

This kind of products is suitable for cutting laminated chipboard, MDF, multi-board with the thickness of less than 35mm. If for cutting laminated materials, need to together with scoring saw blade.

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements



加工示意图 / Picture for Reference



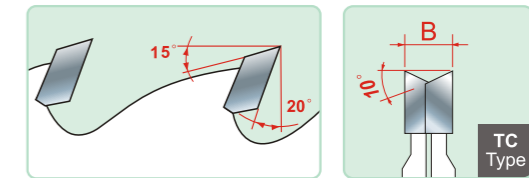
双片划槽锯片 / T.C.T Adjustable Scoring Saw Blade

用途 防贴面崩边划槽、三聚氰胺贴面板、三氧化二铝贴面板。

Application To score the coating on laminated panels.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
80	2.8/3.6	20	10+10
100	2.8/3.6	20/22	12+12
120	2.8/3.6	20/22	12+12
125	2.8/3.6	22	12+12
200	2.8/3.6	20	24+24
200	4.3-5.3	20	24+24



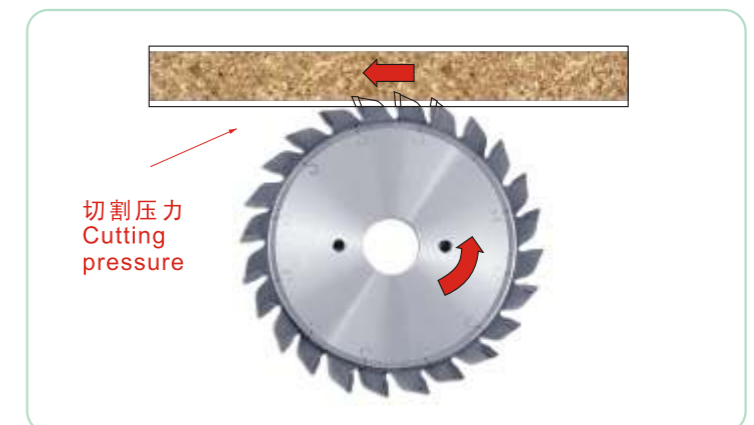
特点 用于双贴面板材的预划槽，通过增减垫片调节划槽宽度。最佳划槽深度2mm以下。

Characters

Used for the scoring of laminated, the scoring width can be adjusted by spacers. The best width can reach less than 2mm.

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

加工示意图 / Picture for Reference



普通裁板锯单片划槽锯片 / T.C.T Conical Scoring Saw Blade

用途 防贴面崩边划槽、三聚氰胺贴面板、三氧化二铝贴面板。

Application To score the coating on laminated panels.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
100	2.8/3.6	20/22	24
120	2.8/4.0	20/22	24
125	2.8/4.0	20/22	24

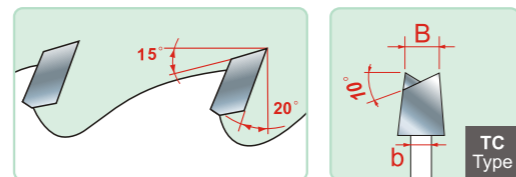


特点 用于双贴面板材的预划槽，通过上下调节锯轴调节划槽宽度。

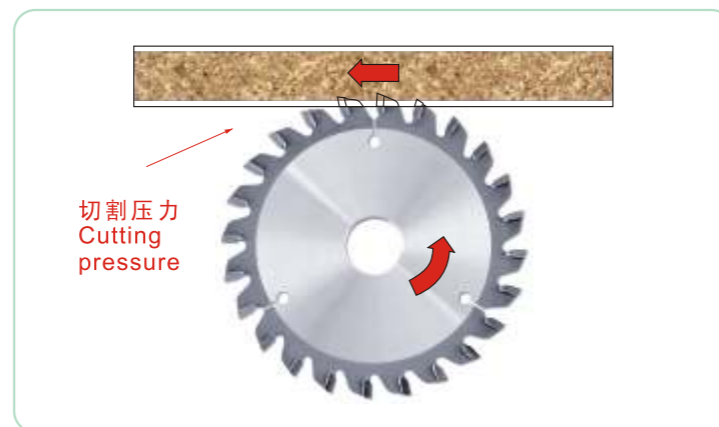
Characters

Used for the scoring of laminated, the scoring width can be adjusted by the spindle.

如有特殊要求，可按需定制。
Custom-tailor would be available
against customers' requirements



加工示意图 / Picture for Reference



电子开料锯锯片 / T.C.T Panel Sizing Saw Blade

用途 刨花板、中密度板、三聚氰胺贴面板、三氧化二铝贴面板。

Application Chipboard, MDF, melamine, Aluminum.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
300	4.4	75	60
300	4.4	75	72
300	4.4	75	96
350	4.4	75	72
350	4.4	75	84
380	4.8	60	72
380	4.8	60	84
400	4.4	75	72
400	4.4	75	96
430	4.8	60/80	84
430	4.8	60/80	96
450	4.8	60/80	84
450	4.8	60/80	96

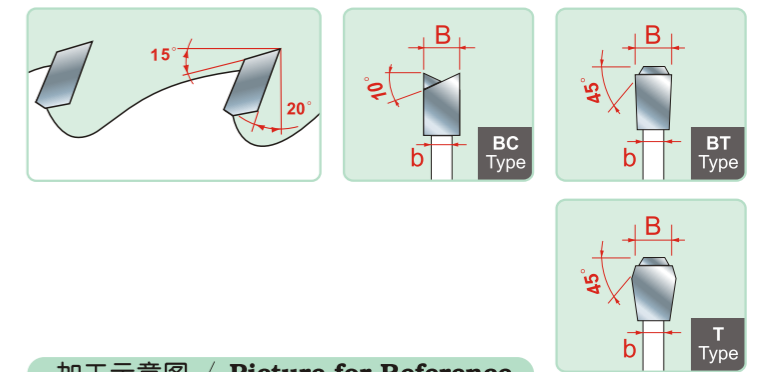


特点 锯片适于切割硬质贴面刨花板、密度板、多层板。板材可多张层叠。如有贴面材料，需配带划槽锯片。

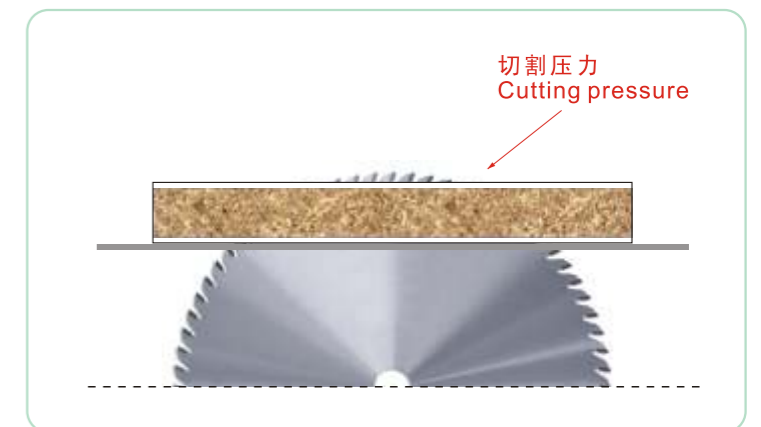
Characters

This kind of saw blade is suitable for hard laminated chipboard panels, HDF, Multi-panels. If for cutting laminated boards, need to together with scoring saw blade.

如有特殊要求，可按需定制。
Custom-tailor would be available
against customers' requirements



加工示意图 / Picture for Reference



电子开料锯划槽锯片 / T.C.T Panel Sizing Scoring Saw Blade

用途 刨花板、中密度板、三聚氰胺贴面板、三氧化二铝贴面板。

Application Chipboard, MDF, melamine, Aluminum.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
125	4.3~5.3	45	24
150	4.3~5.3	30	36
150	4.3~5.3	45	36
160	3.0~4.0	30	36
160	4.3~5.3	45	36
180	3.3~4.3	30	36
180	4.6~5.6	45	36
200	4.6~5.6	45	36
200	4.3~5.3	50	48
200	6.7~7.7	20	36
215	4.3~5.3	50	36
300	4.3~5.3	50	48

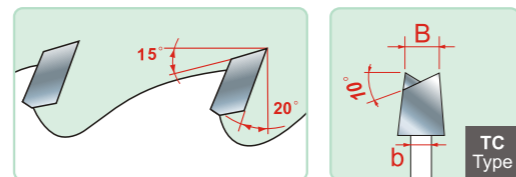


特点 用于双贴面板材的预划槽，通过上下调节锯轴调节划槽宽度。

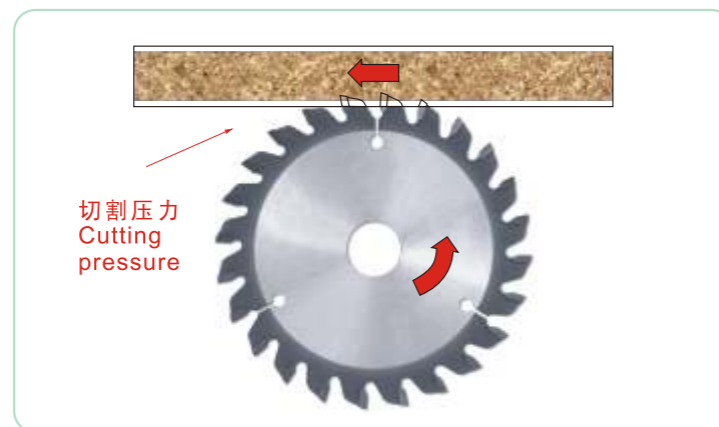
Characters

To score the coating on laminated panels, the scoring width can be adjusted by the spindle.

如有特殊要求，可按需定制。
Custom-tailor would be available
against customers' requirements



加工示意图 / Picture for Reference



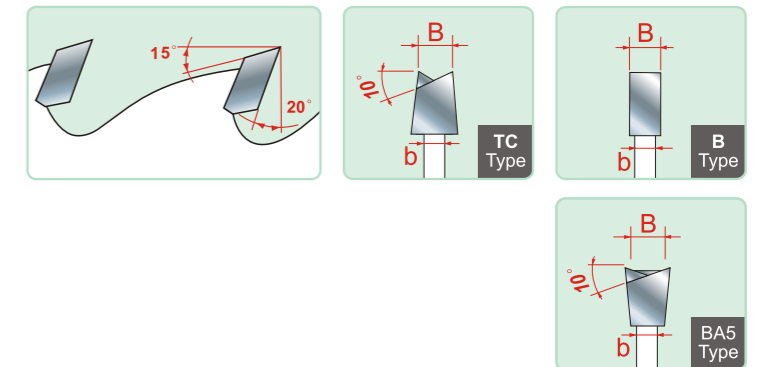
双端铣用槽锯片 / T.C.T Grooving Saw Blade

用途 刨实木开底槽

Application For the sharpen of wood and bottom scoring.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
150	3.2	30	36
150	3.2	55	36
160	3.2	25.4	36
180	3.2	65	48
255	3.0	30	100



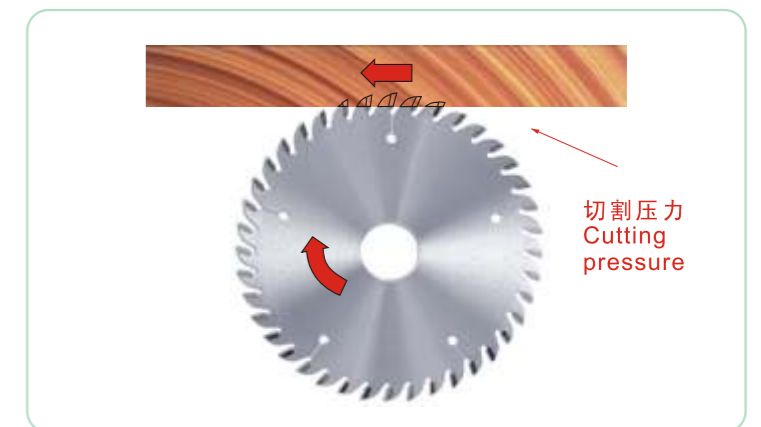
特点 实木开槽，齿型根据齿底要求设计。

Characters

Wood scoring, grooving, the teeth patterns will be designed according to the requirements of teeth bottom.

如有特殊要求，可按需定制。
Custom-tailor would be available
against customers' requirements

加工示意图 / Picture for Reference



双端铣锯片 / T.C.T Bevelled Tooth Scoring Saw Blade

用途 粉碎。

Application Scoring and Trimming.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
180	3.0	30	45
200	4.2	80	48
250	4.2	80	48
250	4.2	80	60
255	3.2/8.2	25.4	72
255	4.5	80	60
255	5.0	40	60
300	4.5	130	72
350	4.5	80	72
350	4.5	80	84

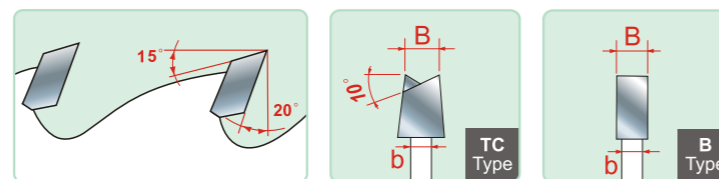


特点 板材规方、修边。单、双轴开榫机或其它修边机。

Characters

Edge sharpen of edge bonding machine.

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements



加工示意图 / Picture for Reference



封边机用修边锯 / T.C.T End Trim Unit for Boarded panels

用途 封边机修边。

Application Trimming.



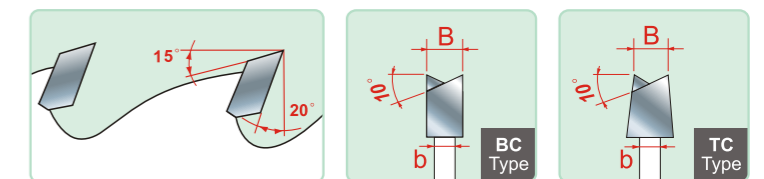
外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
100	3.0	22	20
100	3.0	25.4	26
100	3.2	22/32	30
100	2.6	32	30
100	3.5	20/22	20
110	3.2	40	20
120	3.2	40	24
125	3.5	40	24
150	2.0	20	40
150	3.5	20	30
150	3.5	32	30

特点 封边机封边条齐头。

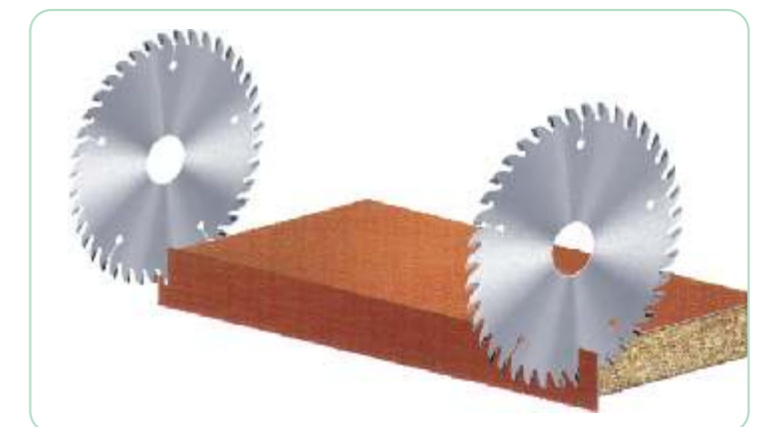
Characters

Trimming of linear edge bonding machine

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements



加工示意图 / Picture for Reference



实木纵截 / T.C.T Ripping Saw Blade

用途 实木开料、纵剖竹子。

Application Ripping cutting of solid wood and bamboo.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
180	3.0	25.4/30	36
200	3.0	25.4/30	40
230	3.0	25.4/30	40
255	3.0	25.4/30	60
255	3.0	25.4/30	80
300	3.2	25.4/30	24
300	3.2	25.4/30	28
300	3.2	25.4/30	48
300	3.2	25.4/30	60
350	3.5	30	32
350	3.5	30	54
400	3.5	30	60

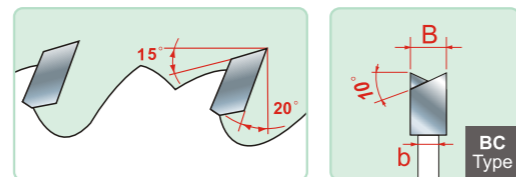


特点 实木纵截锯片，部分规格纵横截兼用。噪音低，锯刃锋利，切割精度高。

Characters

Ripping cutting for wood, some types are used both for ripping and cross cutting.
Low noise, sharp teeth, and high precision.

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements



加工示意图 / Picture for Reference



实木横截 / T.C.T Cross Cutting Saw Blade

用途 实木横截、横截竹子。

Application Wood and bamboo cross cutting.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
255	1.8	30	120
255	3.0	25.4/30	100
255	3.2	25.4/30	100
255	3.0	25.4/30	120
255	3.2	25.4/30	120
305	3.0	25.4/30	100
305	3.0	25.4/30	120
305	3.2	25.4/30	100
305	3.2	25.4/30	120
350	3.5	30	100
350	3.5	30	120
400	3.5	30	100
400	3.5	30	120

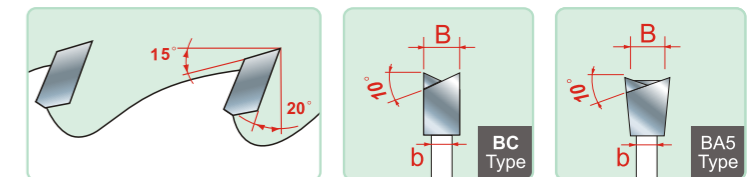


特点 实木横截锯片。噪音低，锯刃锋利，切割精度高。

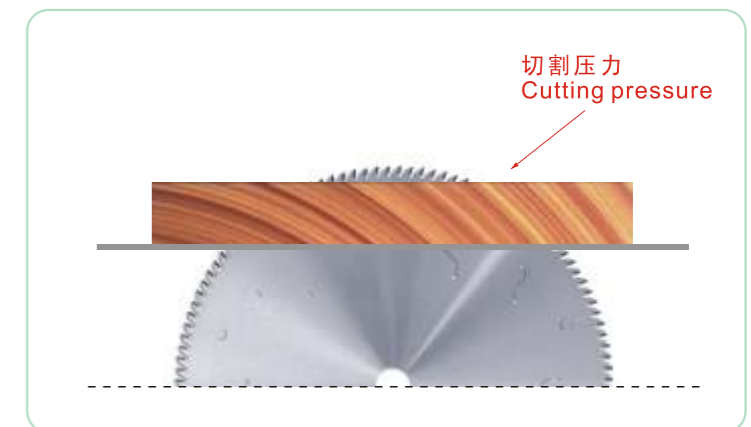
Characters

Wood cross cutting saw blade, low noise, sharp teeth, high precision.

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements



加工示意图 / Picture for Reference



修边锯 / T.C.T Trimming Saw Blade

用途 修边。

Application End trimming.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
255	4.0	50	80
255	5.0	25.4	60
300	4.0	30	66
305	3.0	25.4	48
305	4.0	25.4	48
305	5.0	50.8	60
355	4.0	50.8	70
355	4.5	50.8	70
355	5.0	50.8	70
405	5.0	30	70
455	5.0	50.8	80

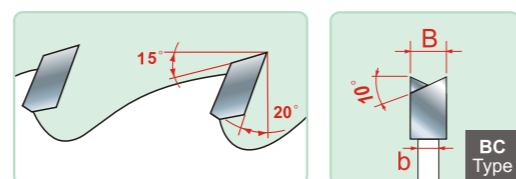


特点 板材规方，修边。切割质量高。

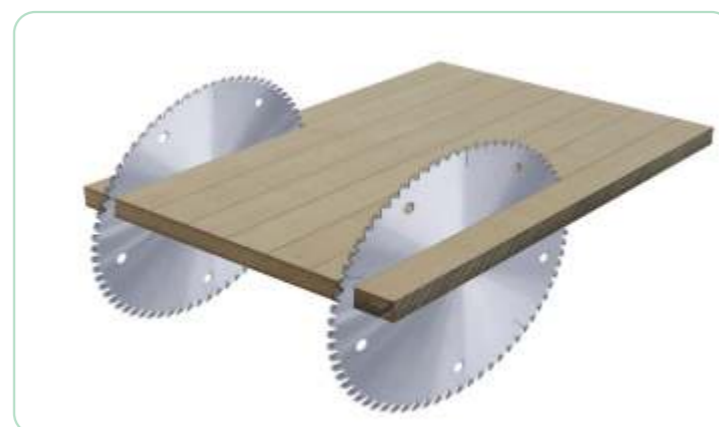
Characters

Standardized the materials, ending trimming, high quality finishing.

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements



加工示意图 / Picture for Reference



音箱V机专用锯片 / T.C.T V-cutting Saw Blade

用途 音箱V槽。

Application V cutting of speaker.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
200	3.0	25.4	40
200	3.0	25.4	60
230	3.0	25.4	40
230	3.0	25.4	60
250	3.2	30	60
250	3.0	25.4	80
280	3.0	25.4	90
300	3.2	25.4	72

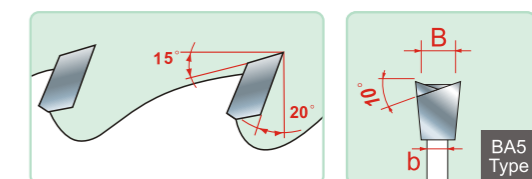


特点 专用于音箱及各箱体V角切割，精度高，耐用。

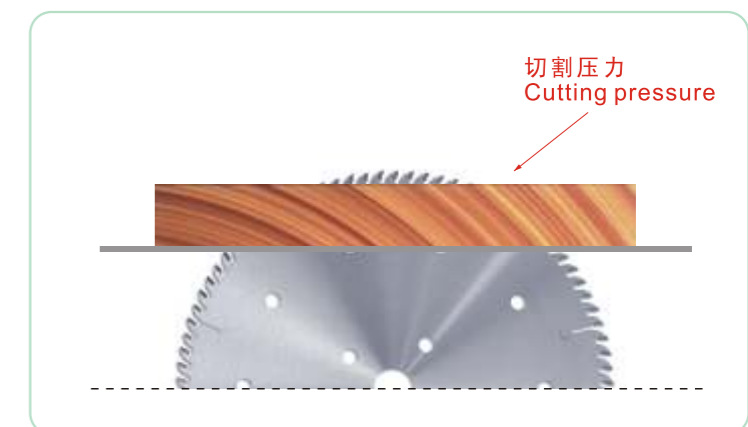
Characters

Mainly used for v cutting of speaker and other box, high precision, long cutting life.

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements



加工示意图 / Picture for Reference

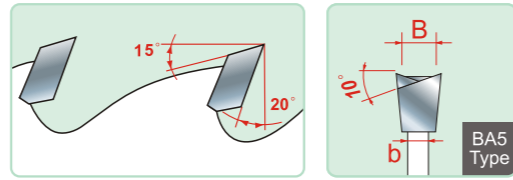


相框专用锯 / T.C.T Saw Blade to Cut Picture Frame

用途 相框45度斜切。
Application 45 degree of Picture frame cutting.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
250	2.2	25.4/30	100
255	2.8	25.4/30	80
255	3.0	25.4/30	100
255	3.0	25.4/30	120
305	3.2	25.4/30	100
305	3.2	25.4/30	120



特点 专用于实木、石膏、油涂等材料相框及各类框体45度斜切，精度高，耐用。

Characters Specially used for 45 degrees angle cutting of solid wood, gypsum, plastic and other materiel's picture frame High precision and long cutting life.

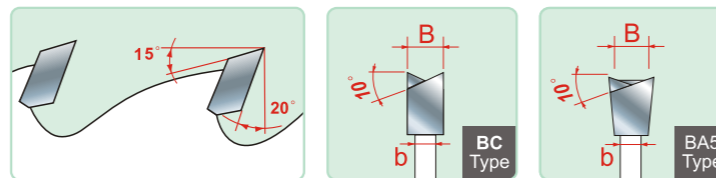
如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

胶合板锯片 / T.C.T Saw Blade to Cut Plywood

用途 胶合板、多层板。
Application Plywood, multi-panels.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
250	3.0	30	100
250	3.2	30	100
250	3.2	30	120
255	3.2	30	100
255	3.2	30	120
300	3.2	30	100
300	3.2	30	120
355	3.0	30	100
355	3.2	30	120



特点 适用于胶合板，多层板等含胶高的板材。
Characters Used in plywood cutting, multi-panels which have much glues.

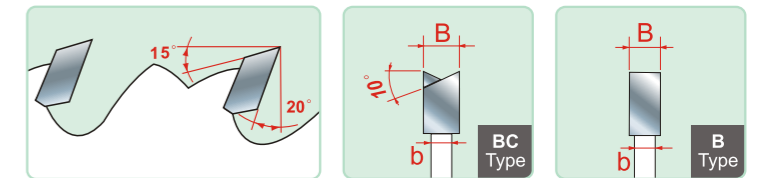
如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

多片锯 / T.C.T Multi-ripping Saw Blade

用途 实木开料、细木工板芯板锯、实木复合地板芯板锯、实木复合地板表板对剖锯。
Application Multi-ripping.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
230	1.6	50	36
250	2.0	80	24
255	2.2	30	40
255	2.2	30	60
255	2.4	30	40
255	2.6	30	36
255	2.8	30	40
305	2.6	70	36
350	3.5	70	30



特点 适用于实木纵切开料，成组使用提高效率。切割效果好，耐用。

Characters Used for multi-ripping with fine profile and long cutting life.

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

加工示意图 / Picture for Reference



刮刀锯 / T.C.T Saw Blade with Rakers

用途 实木开料。

Application Hard and wet wood cutting.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
255	2.5	40	30+3
255	5.5	80	24+4
280	2.2	50	26+4
300	3.4	80	24+4
300	2.8	70	36+2
300	3.2	70	24+3
350	3.2	70	28+6
350	3.5	60	28+4
350	5.0	60	28+4
380	3.2	70	36+4
400	4.0	60	28+6
500	4.8	50	36+3

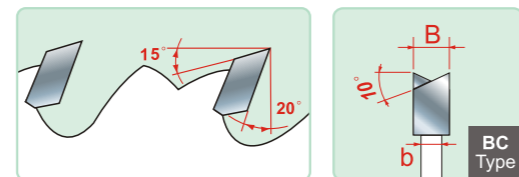


特点 适于厚度较大，湿度偏高的实木纵切。含水率不得高于15%。薄锯片能减少材料浪费，但含水率不得高于10%。

Characters

Suitable for thick, higher humidity wood cross cutting. The containing of water should less than 15%. Thin saw blade will do less material waste, but the containing of water should less than 10%.

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements



加工示意图 / Picture for Reference



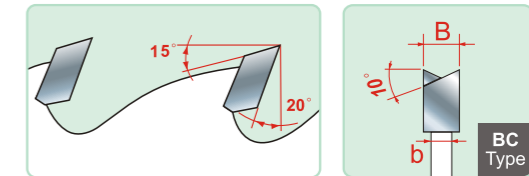
有机玻璃 / T.C.T Saw Blade to Cut Organic Glass (Plexiglas)

用途 切割有机玻璃。

Application Organic glass (Plexiglas) cutting.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
205	2.0	25.4	100
255	2.0	25.4	100
255	2.0	25.4	120
305	3.0	25.4	100
305	3.2	30	100



特点 适于工艺品，装饰，电子业有机玻璃切割。切割质量高，耐用。

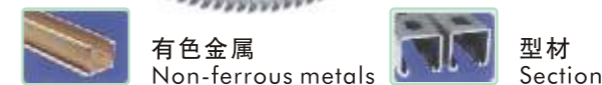
Characters

Suitable for crafts, decorations, plexiglas cutting. High cut finishing and long cutting life.

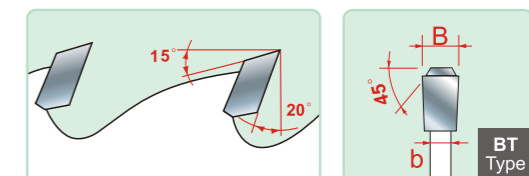
铝合金用锯片 / T.C.T Saw Blade to Cut Non-ferrous Metals

用途 铝型材、铝合金45度斜切。

Application Used for 45 degrees cutting of aluminum and aluminum alloy.



外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
300	2.8	30	100
250	2.8	25.4	100
250	3.0	30	100
350	3.2	30	100
400	3.4	30/60	120
420	3.6	30	120
420	3.6	30	108
420	4.0	30	80
450	4.0	30/40	120
500	4.4	30	120



特点 适于切割铝合金型材、有色金属等。切割质量高，耐用。

Characters

Suitable for the cutting of aluminum alloy materials, non-ferrous metals and some other materials with high quality and long cutting life.

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

超薄多片锯 / T.C.T Saw Blade of Thinner Kerf Multi-ripping

用途 百叶片多片锯、细木工板芯板锯、实木复合地板芯板锯、实木复合地板表板对剖锯。

Application Multi-ripping cutting.

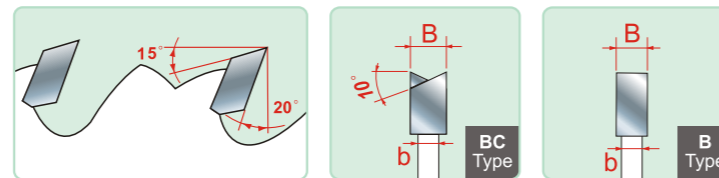


外径(D) Diameter	齿厚(B) Width	孔径(d) Bore Diameter	齿数(Z) Number of Teeth
160	1.2	50	36
175	1.6	40	32
180	1.2	40	40/30
180	1.6	40	40/30
180	1.8	65	40/30
200	1.6	50	40
200	1.8	●	40
200	2.0	●	40/36
220	1.8	65	40
250	2.0	70	40/36
250	2.2	●	40/36
250	1.8	●	30
300	2.2	●	60
300	2.4	●	40
305	2.0	●	48
325	2.2	●	60
355	2.2	●	70

特点 超薄锯片出材率高，效率高。切割效果好、刀头及锯板耐用。

Characters

Ultra-saw blade can assure the quantity of cutting, high efficiency. Good cutting effect, the head of saw blade and the saw blade itself have long-time usage.



加工示意图 / Picture for Reference



如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

金刚石刀具系统

POLYCRYSTALLINE
DIAMOND TOOLING SYSTEMS

PCD金刚石刀具 / PCD Tools

- 特点** · 超长使用寿命 · 加工非铁合金超高线速度 · 极佳表面光洁度
· 性价比远高于硬质合金刀具 · 按需定制

- Advantages** · Long life tool · Uniform surface finish · Reduces machine down time · Increase productivity
· Produce high quality parts · High material removal rate · Lower cost per piece



德国德马吉(DMG)五轴五联动加工中心
DMG 5-axis machining centre



德国威猛(Vollmer)放电成型加工机
Vollmer Electric discharge machine

地板倒角预切刀 / PCD Cutter of flooring pre-cutting

- 用途** 30度预切刀，铣去部分硬质层，预切部分基材，减小成型刀的加工量，提高刀具使用寿命；倒角刀，用于地板V槽加工，主要有30、40、45度等之分主要用于地板的立轴预切（或者倒角）加工，可单独使用，也可与液压轴套配合使用。

- Application** 30 degrees pre-cutting angle, delete some hard frame, pre-cutting some basic materials to make the finished saw blade has less work quantity and the life of saw blade longer. Chamfer cutter for the use of V groove of floor. The mainly angle have 30, 40, 45 degrees. It can be used separately or can together with spindle.



外径 ($\varnothing D$,mm)	齿宽 (S_b ,mm)	孔径 ($\varnothing d$,mm)	齿数 (P)
160	6/7/8/10	40	6,12
200	7	40	16
250	8	40	32,36

- 特点** 高尺寸精度，锋利性好，经过严格的动平衡检测，刀具使用寿命长。

- Characters** High dimensions precision, good sharpen quality, having passed strict dynamic balance test, long cutting life.



如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

地板精修刀 / PCD Cutter of flooring fine-finishing

- 用途** 用于地板主要配合面或硬质层的精加工；用于地板的立轴或横轴，对地板的主要配合面进行精加工。

- Application** Used for doing the joint part of floor. It can be adjusted by the spacer and spindle. Turn precision is adjusted by the spindle which is controlled by a 0.01mm dial. Then it can have the main frame of floor.



外径 ($\varnothing D$,mm)	齿宽 (S_b ,mm)	孔径 ($\varnothing d$,mm)	齿数 (P)
160	7/5	40	12
200	5	40	18
220	4/7	40/60	24
250	4/6/8	40/60	30
275	6/8	60	30
285	6/8	60	36

- 特点** 高尺寸精度，锋利性好，经过严格的动平衡检测，刀具使用寿命长。

- Characters** High dimensions precision, good sharpen quality, having passed strict dynamic balance test, long cutting life.



如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

地板锁扣刀具 / PCD Cutter for Molding

- 用途** 用于加工地板锁扣。

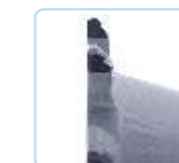
- Application** Flooring locking molding.



外径 ($\varnothing D$,mm)	齿宽 (S_b ,mm)	孔径 ($\varnothing d$,mm)	齿数 (P)
200	5/8	40	16
200	6/8	40	8

- 特点** 高尺寸精度，锋利性好，经过严格的动平衡检测，刀具使用寿命长。

- Characters** High dimensions precision, sharp, having passed strict dynamic balance test, long-time usage.



如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

金刚石成型刀 / PCD Profiling Cutter (with HGS)

用途 地板榫头和榫槽的成型加工。

Application Groove and tongue profiling for flooring.



外径 (ØD,mm)	齿宽 (Sb,mm)	孔径 (Ød,mm)	齿数 (P)	枚/组 (Ps/Set)
220	●	60	8	2
250	●	60	12	2
275	●	60	12	2

特点 调节方便，刃口锋利，尺寸精度高，切削效果好，使用寿命长。

Characters Adjusting easily;The cutter with sharp and precise dimension to ensure optimum cutting quality and longer edge life .



如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

金刚石成型刀 / PCD Profiling Cutter (with HGS)

用途 地板榫头和榫槽的成型加工(与倒角一起)。

Application Groove and tongue profiling for flooring (with trimming) .



外径 (ØD,mm)	齿宽 (Sb,mm)	孔径 (Ød,mm)	齿数 (P)	枚/组 (Ps/Set)
180	●	60	6	3,4
220	●	60	8	3,4
250	●	60	8,12	3,4

特点 一次完成成型和倒角加工，刃口锋利，尺寸精度高，切削效果好，使用寿命长。

Characters The cutter with sharp and precise dimension to ensure optimum cutting quality and longer edge life .



如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

金刚石倒角刀 / PCD Trimming Cutter (with HGS)

用途 地板表板和背板的倒角加工。

Application Trimming cutter.



外径 (ØD,mm)	齿宽 (Sb,mm)	孔径 (Ød,mm)	齿数 (P)
250	7	60	16

特点 刃口锋利，尺寸精度高，切削效果好，使用寿命长。

Characters The cutter with sharp and precise dimension to ensure optimum cutting quality and longer edge life.



如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

金刚石预切刀 / PCD Pre-Cutter (with HGS)

用途 地板廓形的预切加工。

Application Pre-cutting.



外径 (ØD,mm)	齿宽 (Sb,mm)	孔径 (Ød,mm)	齿数 (P)
250	11	60	16+8

特点 刃口锋利，尺寸精度高，切削效果好，使用寿命长。

Characters The cutter with sharp and precise dimension to ensure optimum cutting quality and longer edge life .



如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

金刚石精修刀 / PCD Finishing Cutter (with HGS)

用途 地板榫头榫槽配合面的精修加工。

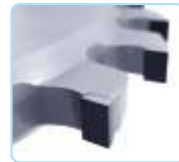
Application Finish cutting.



外径 ($\varnothing D$,mm)	齿宽 (S_b ,mm)	孔径 ($\varnothing d$,mm)	齿数 (P)
250	6,7	60	24
275	6,7	60	30

特点 刃口锋利，尺寸精度高，切削效果好，使用寿命长。

Characters The cutter with sharp and precise dimension to ensure optimum cutting quality and longer edge life.



如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

金刚石刨刀 / PCD Cutters for Trimming

用途 封边机上基材精修加工。

Application Trimming on Linear Edge Bonding Machine.



外径 ($\varnothing D$,mm)	刃宽 (B,mm)	孔径 ($\varnothing d$,mm)	齿数 (P)
91	30	35	6
125	34	30	6,12
125	63	30	18
150	36,45	30	8

特点 刀齿左右对称设计并具有相反的轴向角。刃口锋利，尺寸精度高，切削效果好，使用寿命长。

Characters Symmetrical design applicable left and right with alternative shear angle. The cutter with sharp and precise dimension to ensure optimum cutting quality and longer edge life.

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

金刚石铣刀 / PCD Routers

用途 贴面板材、MDF、硬木、刨花板等材料的钻孔，修边，开槽加工。

Application Boring, Peripheral cutting.



切削直径 ($\varnothing D$,mm)	刃长 (l,mm)	柄径 ($\varnothing d$,mm)	总长 (L,mm)	齿数 (P)
12	35	12.7	95	3+1
12.7	30	12.7	75	3+1
12.7	30	12.7	95	4+1
14	16	16	85	2
15	40	16	95	5+1
16	35/40	16	95	4+1
18	26	25	95	3+1
25	48	25	120	9+1

特点 刃口锋利，尺寸精度高，切削效果好，使用寿命长。

Characters The cutter with sharp and precise dimension to ensure optimum cutting quality and longer edge life .

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

金刚石V槽柄铣刀 / PCD Cutters for Trimming

用途 贴面板材、MDF、硬木等材料的V槽加工。

Application For the end trimming when doing laminated panels.



切削直径 ($\varnothing D$,mm)	刃长 (l,mm)	柄径 ($\varnothing d$,mm)	总长 (L,mm)	齿数 (P)
30	15	12.7	75	2

特点 刃口锋利，尺寸精度高，切削效果好，使用寿命长。

Characters The cutter with sharp and precise dimension to ensure optimum cutting quality and longer edge life .

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

金刚石锯片 / PCD Saw Blade

用途 强化地板、刨花板、硬木板、合成木材、层压板、印刷电路板、强化塑料等。

Application For the end trimming when doing laminated panels.



外径 ($\varnothing D$,mm)	齿宽 (S_b ,mm)	孔径 ($\varnothing d$,mm)	齿数 (P)
255	3.0	30	40,60
305	3.0	30	40,60,80
100 (V-cutter)	2.0	25.4	20 (30° 45° 60°)
200 (V-cutter)	2.0	40	20 (30° 45°)

特点 刃口锋利，尺寸精度高，切削效果好，使用寿命长。

Characters The cutter with sharp and precise dimension to ensure optimum cutting quality and longer edge life .

如有特殊要求，可按需定制。
Custom-tailor would be available against customers' requirements

液压轴套 / Hydraulic Grasp Sleeves (HGS)

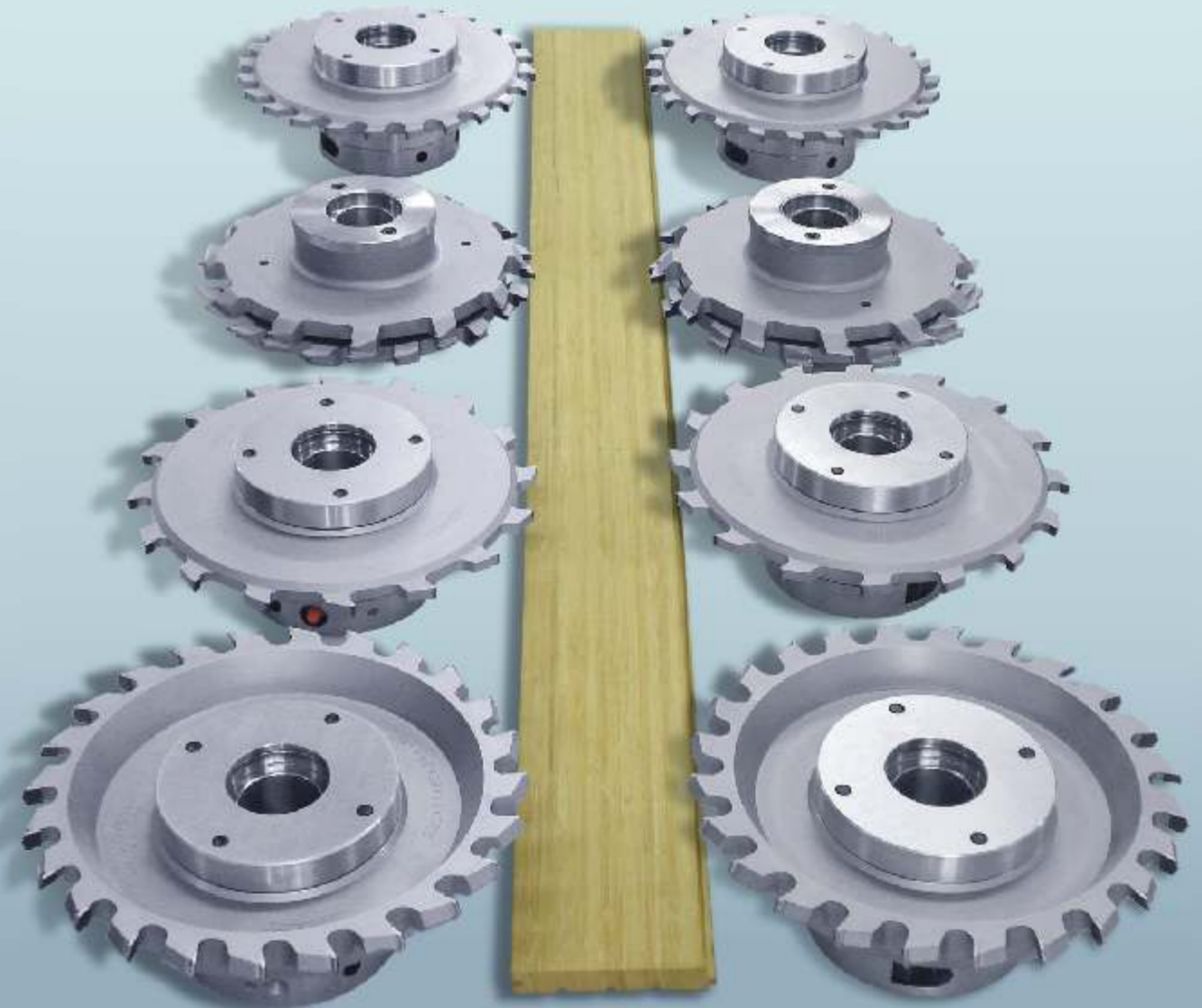
用途 通常情况下，刀具和刀轴之间的配合间隙可达0.05mm，液压轴套能从根本上解决由此配合间隙引起的刀齿径向跳动，配备了液压轴套的刀具，具有装夹精度高，刀具拆装方便，夹紧安全可靠的特点，适应了高速切削的加工要求。

Application The pressure medium in the hydraulic system is forced into the narrow space around the clamping part, which then centers and clamps the tool. When the pressure screw is tightened to the end position the system is fully pressurized and maximum clamping power is obtained. Releasing the pressure screw reduces the pressure and the clamping part returns to its original measurements. The tool can then be removed.



我们可根据客户设备情况和加工要求，提供相应规格形式的液压轴套。

Custom-tailor would be available against customers' requirements





锯片使用注意事项 Attention

1. 作业环境

- 机械要安装保护罩，防止因锯片破损、碎片飞散等造成伤害。
- 无关人员禁止靠近作业场所。
- 作业场所应远离易燃、易爆品。

2. 服装、防护用具

- 作业者必须佩戴保护眼镜，防止因锯片破损、碎片飞散等造成伤害。
- 作业者必须注意领带及袖口，不能戴手套，长发要置于工作帽内，防止被卷入机器，发生危险。



3. 使用前的准备

- 确保机器状态良好，主轴无变形、无振动，轴径公差为h7。
- 检查锯片有无欠损、脱落、异常磨损以及本体的弯曲、扭曲、破裂等异常现象，以防锯片破损、飞散造成伤害。
- 确认所选锯片是否适合被切削材料，防止锯片的异常磨损、脱落、切削不良、过热等异常状况发生。如选择错误，可能造成锯片破损、碎片飞散，发生意外事故。

4. 安装

- 保证锯片回转方向与机器主轴回转方向一致。如果方向相反，会造成刀片脱落、碎片飞散，发生意外事故。
- 选择内径与锯片内径一致、外径为锯片外径1/3略大（多片锯宜采用锯片外径1/2）的法兰盘，确认其无异常磨损、弯曲变形、表面洁净无异物附着。
- 保证锯片内径与机器轴径之间无过大间隙，安装好法兰盘，拧紧螺母。
- 作业前，确认锯片前方无人。然后空转，检查机器有无振动、锯片有无横向及径向摆动等异常现象。
- 锯片的再加工（内径修正、定位孔加工等）必须由厂方进行。如果加工不良，会影响产品使用效果，并且可能产生危险。
- 安装时，一般锯片高出板材5-6锯齿为宜。

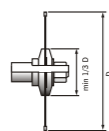


图 1

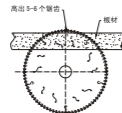


图 2

5. 使用中

- 使用时，被切削材料需要固定，以免造成异常切入，从而导致锯片破损、碎片飞散，发生意外事故。
- 使用时，发现声音和振动异常、切削面粗糙、弯曲时，必须终止作业，及时检查，排除故障。如继续使用，会造成锯片破损、碎片飞散，发生意外事故。

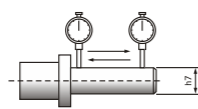


图 3

6. 使用后

- 当锯片不再锋利、切断面粗糙时，必须及时进行再研磨。否则，会影响使用效果，并可能造成锯片报废，发生意外事故。
- 再研磨必须由可信赖的专门厂家进行，不能改变原角度。

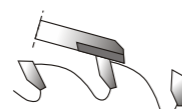


图 4

1. Operating Conditions

- Machine cover is essential to minimize the injuries by flying broken blades.
- Irrelevant people are not allowed in the work shop.
- Flammables and explosives should be kept away from the work floor.

2. Safety Measures

- Wear glasses when working, to prevent from injuries by broken blades.
- Watch out for your ties and sleeves. Long hair should be kept inside the cap, and no gloves are allowed during operation.

3. Before Use

- Ensure the machines are in good condition with no deformation and no spindle vibration, the spindle's running tolerance can be h7.
- Make sure the blades are not excessively worn-out, blade body has no deformation or breaks lest injuries occur.
- Make sure appropriate sawblades are used.

4. Installation

- Ensure the sawblade turns in the same direction as the spindle does. If not, accidents are likely to occur.
- Choose the flange whose inner diameter is the same as that of the sawblade but the outer diameter is a little larger than 1/3 (for multi-rip sawblade is 1/2) of the sawblade. Ensure the flange is clean, not over worn, bent and distorted shape.
- Check the tolerance between the sawblade and the spindle. Install the flange and fasten the screw.
- Be sure no people stand in front of the machine when starting the machine. Do not feed, just to check whether there is any vibration, radial or axial run out.
- Sawblade reprocessing such as bore trimming or reboring, should be finished by the factory. Poor reprocessing would lead to poor quality and may cause injuries.
- While installation, the sawblade should be 5-6 teeth higher than the board surface.

5. In Use

- In operation wood materials should be properly fixed lest abnormal cutting occurs.
- The operation must be stopped rightly once unusual noise and vibration occurs, if not, rough surface and tip-breaking may occur.

6. After Use

- Sawblades should be resharpened because dull sawblades may affect cutting effect and lead to accidents.
- Resharpening should be made by professional factories, not changing the original angle degrees.

和源的服务 / WAGEN Service

采用领先的日本技术以及先进的刀具制造、检测设备，我们向客户提供优质的刀具制作和刀具修磨服务，主要包括地板刀具配置方案的制定，刀具的定做加工、安装和精度调试，刀具的检测、修磨等。
WAGEN的产品主要有硬质合金锯片、金刚石圆锯片，粉碎刀，金刚石成型铣刀，金刚石刨刀，金刚石镗铣刀等。

WAGEN致力于提供高质量的切削工具系统，竭诚为您服务！

"WAGEN" Precision Tooling Co., Ltd. received traditions of Japan FERROTEC Group Corporation including the enterprise culture philosophy of being diligent, ambitious, innovative and creative. We will keep offering best products and services as we always did, insisting in paying equal attention to indraught, assimilation, and independent R&D development pattern. We always take our clients as most paramount ones, keep perfecting the quality of our products, and keep innovating constantly, in order to provide our clients all over the world best services betimes and exactly.

Even higher cutting quality and even longer edge lives, "WAGEN", continuous improvement to excellence.