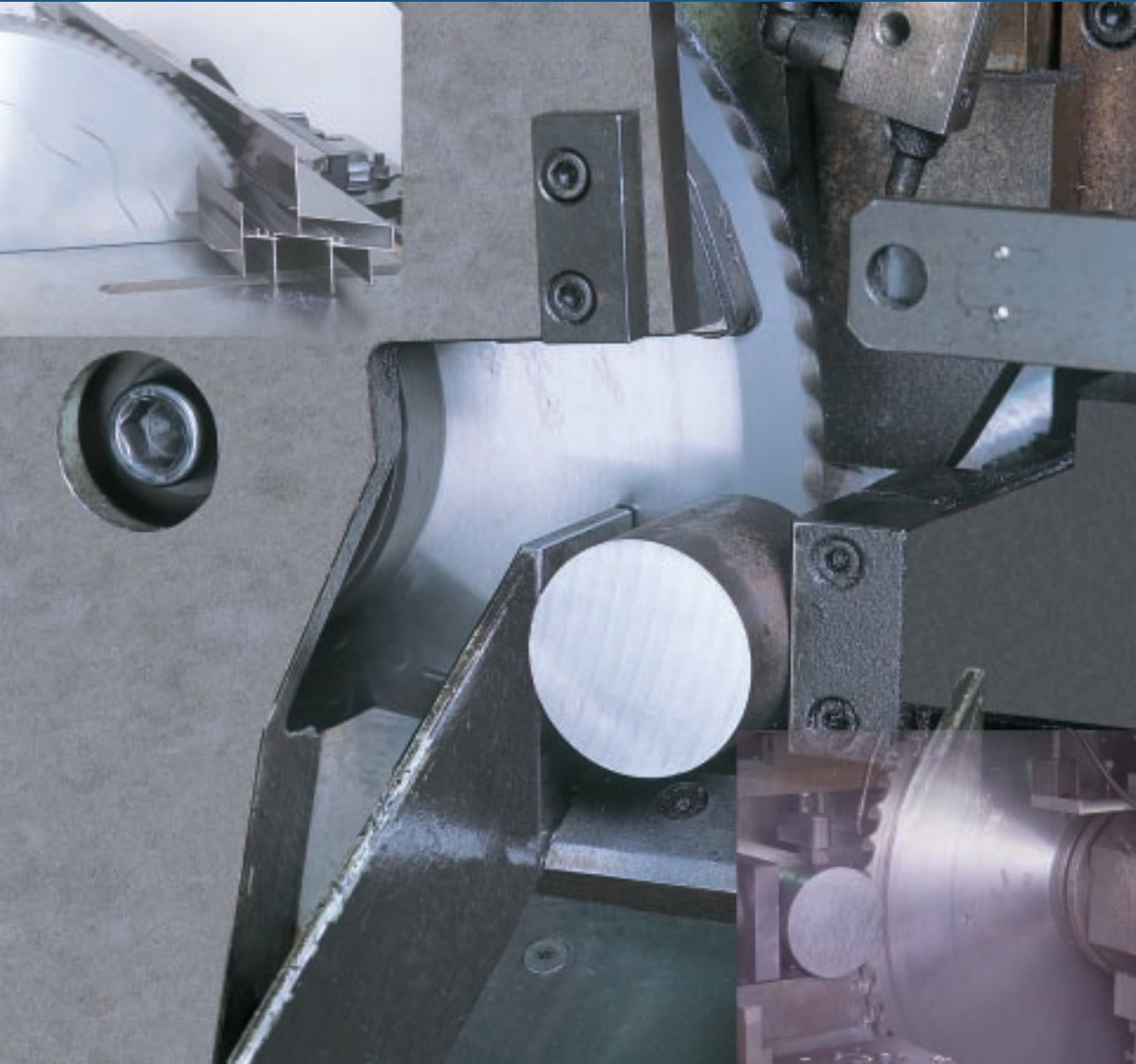


# Catalogue Katalog



# Our Customers

## Ferrous Metal Processing



### Automobile and Machine Parts Manufacturing

- Gears
- DriveShafts
- Intake Manifolds
- Cylinder Liners
- Connection Rods
- Mold Sash
- Bearings
- Interior Parts
- Shock Absorber
- etc.

## Non-Ferrous Metal Processing



### Automobile and Machine Parts Manufacturing

- Engine Cylinders
- Engine Cylinder Heads
- AC Compressors
- Intake Manifolds
- Connecting Rods
- Aluminum Wheels
- etc.

### Housing Industry

- Windows
- Doors
- Facade Elements
- etc.

Kanefusa is Japan's largest manufacturer of high quality industrial tools used in the metalworking, woodworking, paper and plastic processing industries.

Kanefusa was established as a company in 1896 and since then it has always been our strategy to continuously develop new products and cutting techniques to achieve one goal:

Higher User Value

Our saw blades, cutters and machine knives are engineered to the highest industrial standards and satisfied users all around the world testify to the reliability of our products.

Today we have over 1000 employees working at 3 production sites and in 12 domestic and 6 international offices.

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## 2 Non-Ferrous Metal Cutting

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# 2

## Non-Ferrous Metal Cutting

KANEFUSA

Non-Ferrous  
Metal Cutting

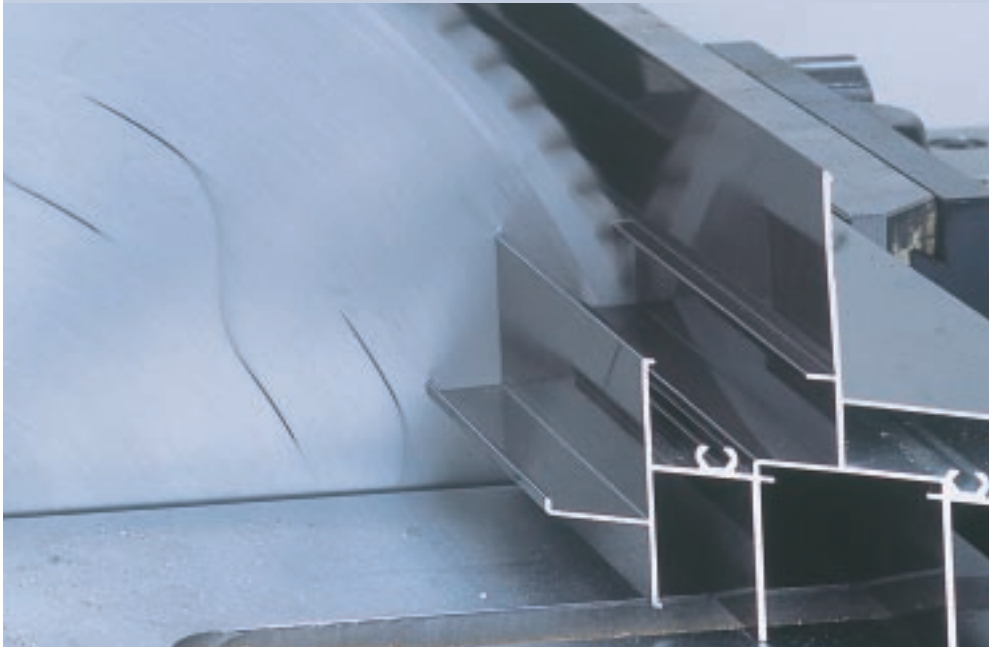
### Tungsten Carbide Tipped Saw Blades

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**Stable Saw Blade** *Thin kerf saw blade* ..... 41

### PCD Tipped Saw Blades

**Novametal Pro DIA** *Solids* ..... 43



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### PCD Tipped End Mills

**PCD Tipped End Mills** ..... 45

# Sash Pro

## APPLICATION

Cutting of extruded profiles, thin sheets and bars

## MACHINE

Cut-off machines, beam saws, miter saws

## MATERIAL

Non-ferrous metals such as aluminum or brass

## LUBRICANT

Dry cut or with lubricant






## EDGE MATERIAL

Tungsten Carbide



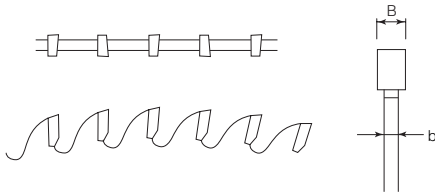
## Features & Benefits

- Runs very quietly due to vibration damping element MS-P in the plate
- Excellent lifetime and cut quality due to flat and even plate
- Special selected carbide quality guarantees long edge life

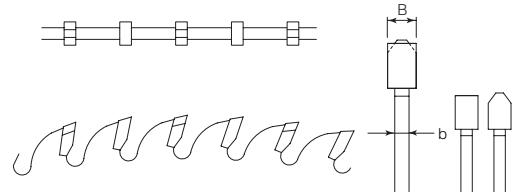
Application	Tooth type	Features
Extruded Profiles 	BC5 	<ul style="list-style-type: none"> <li>■ Does not create high cutting forces and therefore it cuts very lightly</li> <li>■ Cuts cleaner than 3DX or D5</li> <li>■ Almost no bending of the material, especially when cutting thin walled material such as lamellas or radiator fins</li> <li>■ When cutting thick walled material (&gt; 4 mm) vibrations can occur and the cut quality deteriorates</li> </ul>
	D5 	<ul style="list-style-type: none"> <li>■ Due to symmetric tooth geometry, the saw blade runs very straight</li> <li>■ Very suitable when cutting thick walled material (&gt; 4 mm)</li> <li>■ Cut quality is inferior to BC5 and 3DX</li> </ul>
Solids 	D 	<ul style="list-style-type: none"> <li>■ Due to a symmetric tooth geometry, the saw blade runs very straight</li> <li>■ Cut quality is inferior to BC5 and 3DX</li> </ul>

<b>EDGE MATERIAL</b>
Tungsten Carbide

► **BC5-Type**



► **D-Type**



Non-Ferrous  
Metal Cutting

Order no.	D [mm]	B [mm]	Size b [mm]	d [mm]	z	Type	Pin holes	Hook angle [°]
1 681-B480-405	350	3.0	2.4	32	108	BC5	2/14/64	5
2 681-A630-405	400	3.5	3.0	30	120	BC5		5
3 681-B114-405	500	3.5	3.0	30	120	BC5	2/14/64	5
4 681-B482-405	530	4.0	3.4	30	140	BC5	2/14/64	5
5 691-C432-405	215	2.2	1.6	30	60	D		-5
6 691-D207-405	250	3.0	2.4	32	80	D	2/11/63	5
7 691-B207-405	300	3.0	2.4	30	96	D	2/10/60+2/10.5/70	5
8 691-C604-405	300	3.0	2.4	32	96	D	2/11/63	5
9 691-A495-405	300	3.2	2.4	30	72	D	2/10/60	5
10 691-A792-405	300	3.2	2.4	30	96	D	2/12/63	5
11 691-D805-405	350	3.0	2.4	32	108	D	2/11/63	5
12 691-D137-405	350	3.0	2.5	40	84	D	2/11/63	5
13 691-A578-405	350	3.6	2.8	30	108	D	2/10/60	5
14 691-D428-405	352	3.6	2.8	30	108	D	2/10/60	5
15 691-A791-405	400	4.0	3.2	30	96	D	2/12/64	5
16 691-A580-405	420	4.0	3.2	30	100	D		5
17 691-C628-405	430	3.0	2.5	30	60	D		5
18 691-A551-405	450	4.0	3.2	30	108	D	2/12/64	5
19 691-D804-405	450	4.0	3.4	32	140	D		5
20 691-A925-405	500	4.0	3.4	30	120	D	2/10/60+2/13/70	5

# Stable Saw Blade

## APPLICATION

Cutting of extruded profiles and bars

## MACHINE

Cut-off machines, beam saws, miter saws,

## MATERIAL

Non-ferrous metals such as aluminum or brass

## LUBRICANT

Dry cut or with lubricant

## EDGE MATERIAL

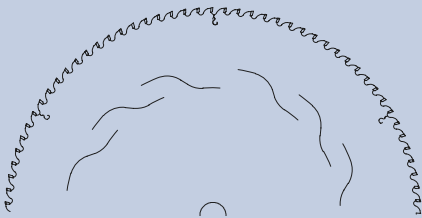
Tungsten Carbide



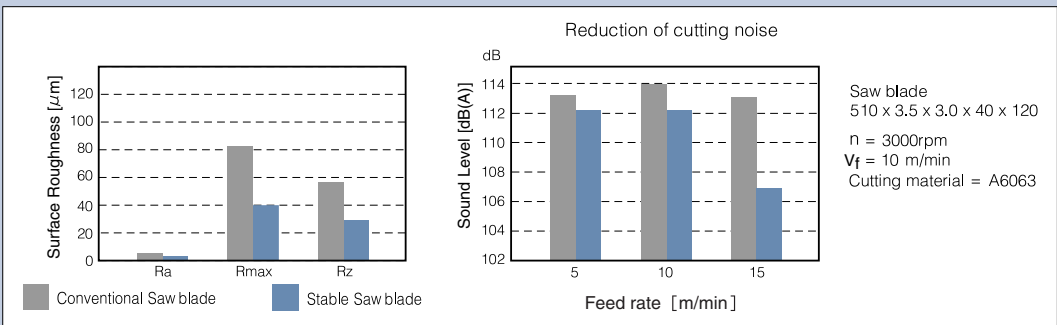
## Features & Benefits

- Thin kerf improves the material recovery rates and reduces the cost of swarf disposal
- Thin kerf reduces the cutting pressure, enabling a better cut quality
- On average, Stable Saw Blades are 20 % thinner than conventional saw blades

Stable Saw Blade



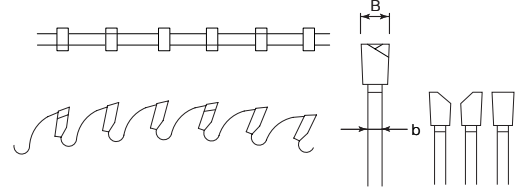
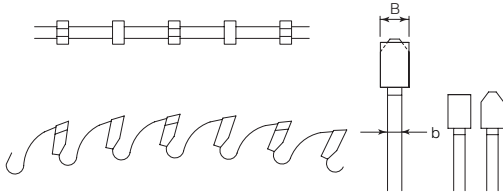
Patented laser slot design reducing the plate thickness without compromising the saw blade's lateral stiffness.



<b>EDGE MATERIAL</b>
Tungsten Carbide

► D-Type

► 3DX-Type



Non-Ferrous  
Metal Cutting

Order no.	D [mm]	B [mm]	Size b [mm]	d [mm]	z	Type	Pin holes	fl [mm]	RPM [1/min]
1	300	3.0	2.0		30	D		93	2700
2	350	3.5	2.5		36	D		108	3200
3	400	3.5	2.5		42	D		124	2800
4	450	3.5	2.5		48	D		140	2500
5	500	3.5	2.5		54	D		155	2250
6	550	4.0	3.0		60	D		170	2000
7	600	4.0	3.0		66	D		186	1850
8	300	2.0	1.5		72	3DX		93	5100
9	350	2.5	2.0		84	3DX		108	4350
10	400	2.5	2.0		96	3DX		124	3800
11	450	2.5	2.0		108	3DX		140	3400
12	500	2.5	2.0		120	3DX		155	3000
13	550	3.0	2.5		132	3DX		170	2800
14	600	3.0	2.5		138	3DX		186	2500

fl=flange diameter

# Novametal Pro DIA

## APPLICATION

Cuts solids

## MACHINE

Cold saw machine

## MATERIAL

Non-ferrous metal alloys with high silicon content

## LUBRICANT

Dry cut or with lubricant

## EDGE MATERIAL

Polycrystalline Diamond



## Features & Benefits

- Novametal Pro DIA are saw blades for single use
- Novametal Pro DIA saw blades enable high process reliability
- Novametal Pro DIA saw blades clearly outlast Tungsten Carbide Tipped saw blades

# PCD Saw Blade

## APPLICATION

Cuts solids

## MACHINE

Cold saw machine

## MATERIAL

Non-ferrous metal alloys with high silicon content

## LUBRICANT

Dry cut or with lubricant

## EDGE MATERIAL

Polycrystalline Diamond



Non-Ferrous  
Metal Cutting

## Features & Benefits

- PCD Saw Blades can be reground several times
- The saw blades are manufactured upon order and designed according to the application
- Kanefusa anti-impact brazing technology reduces edge chipping of the teeth
- Saw plate withstands heaviest loads

# PCD Tipped End Mills

## APPLICATION

Cuts solids

## MACHINE

Milling machines

## MATERIAL

Non-ferrous metal alloys with high silicon content

## LUBRICANT

Dry cut or with lubricant

## EDGE MATERIAL

Polycrystalline Diamond



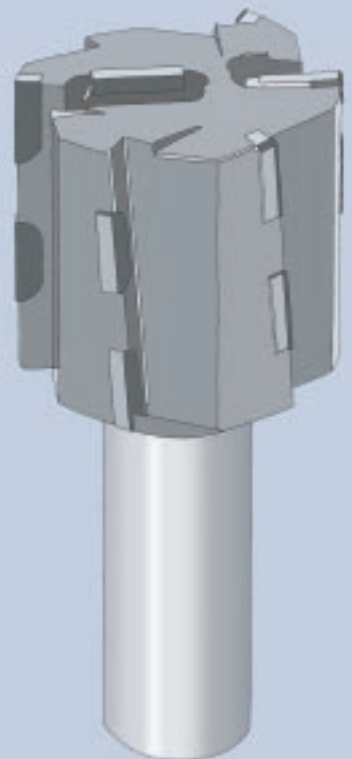
## Features & Benefits

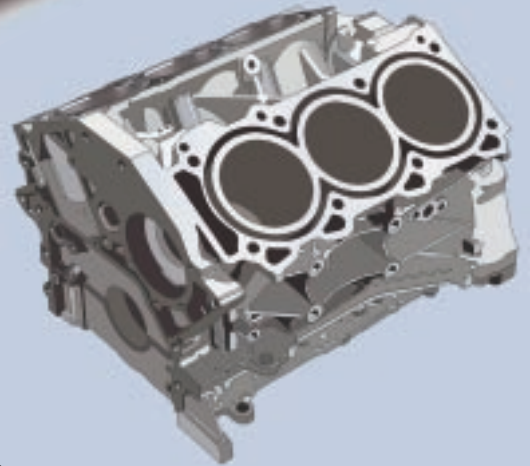
- PCD end mills have up to 50 times longer life than tungsten carbide tooling
- PCD tools allow twice the cutting speed compared with tungsten carbide tooling
- PCD tooling is more economical than tungsten carbide tooling





***Aero Space  
Automotive  
Marine  
Train  
Construction***





“Aluminium use is skyrocketing in automobiles. In 2006, aluminium overtook iron to become the second most used material in new cars and trucks.”

Kanefusa offers a wide range of PCD tipped tooling for use machining of aluminium, aluminium Alloys and other nonferrous metals efficiently.

For instance ; PCD tipped tooling outlast Tungsten Carbide tipped tooling when machining cylinder bores by 6 to 7 times.

# 3

## Company Profile

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# Business Activities

Cutting tool is an essential part in the manufacturing process of almost any product in any industry all around the world. Productivity, product quality, quality rates and the effective use of resources depend on the quality of the tools used.

Kanefusa develops, manufactures and supplies value-added tools and services to users in the woodworking, metalworking, plastic and paper industries.

## Woodworking Industry



## Metalworking Industry



## Research & Development

In August 1995, the new Technical Center for enhanced research and development activities was completed. In order to carry out intense research activities in areas of material science, cutting and grinding technology, state of the art equipment such as scanning electron microscopes (SEM), experimental furnaces, CNC-router machines, moulder and various sawing machines are available to our dedicated engineers.

## Activities

- Developing products with clear user value and testing of tooling in respect to performance, safety and function
- Joint research, development and experimentation with users and machine builders
- Research and development of cutting and grinding technologies
- Rapid prototyping

## Manufacturing Techniques

Our motto is "quality products arrive from quality equipment and techniques". We have been proactively developing various manufacturing technologies. Parallel fulfillment of the detailed pursuit of quality and reduction of cost is our focus when developing equipment. Awareness of further improvements leads to in-house development of machines designed with the originality and ingenuity of our engineers. Approximately 40% of equipment used at our factory has been developed by our engineers. We are dedicated to supplying reliable tools and service by further development of equipment and manufacturing techniques aimed at improved quality, reduction of costs higher precision and better function.

## Sales Activities

Knowledge, responsiveness and reliable customer support have become key drivers in today's business. It is therefore of utmost importance to transfer the technical know-how of our R&D Center as well as commercial information into our subsidiaries and distributor network. Besides providing appropriate literature and demonstration models, hands-on seminars have proven to be one of the most effective ways of enhancing the competence of our Distribution Network. We offer seminars and practical training courses for all knowledge levels, from the beginner to the professional.

On a regular basis we inform the consumer as well as our sales network through our website newsletter of the participation in trade shows and the organization of conferences about newly developed products and technologies, market news and intra-company information. Opinion and experience exchanges are vital parts in our development of new products, technologies and services.

### Paper Industry



### Plastic Industry & Special Projects



# Global Network

Our world-spanning network guarantees local user satisfaction

P.T. KANEFUSA INDONESIA, and KANEFUSA CHINA CORPORATION are offshore manufacturing sites. To ensure highest product quality, raw materials and semi-finished products are supplied from Japan and processed on state of the art machinery from Japan and Germany.

KANEFUSA USA, INC., KANEFUSA EUROPE B.V., Malaysia Office, P.T. KANEFUSA INDONESIA and KUNSHAN KANEFUSA CORPORATION support our distributor network in commercial and technical issues and carry out grinding services in (except KFE and Malaysia Office) order to ensure highest user satisfaction and customer retention.



**KANEFUSA EUROPE B.V.**  
Main Office (The Netherlands)  
German Office



**KANEFUSA CHINA CORPORATION**  
**KUNSHAN KANEFUSA CORPORATION**



**KANEFUSA USA, INC.**



**KANEFUSA CORPORATION JAPAN**

- Nagoya Head Office & Factory
- Osaka Office
- Tokyo Office
- Sapporo Office
- Sendai Office
- Hiroshima Office
- Fukuoka Office

Malaysia Office



**P.T. KANEFUSA INDONESIA**  
Surabaya Service Center

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E-mail: [kanefusamal@myjaring.net](mailto:kanefusamal@myjaring.net)

# Quality

**Quality is when the customer comes back and not the product**

Kanefusa is recognized throughout the world as a premium tool manufacturer and satisfied users testify to the reliability of our products and services.

It is also acknowledged by the market that we are continually striving to improve our company (Kaizen) and the quality of our processes, products and services. An essential factor in improving quality is the employee and the key words here are learning, knowledge and motivation. By way of regular seminars and training, our employees are updated with the latest machine, process, product, market and management knowledge enabling them to respond flexibly to the ever-changing market demands and ensuring the highest product and service quality.

Each department forms a Quality Improvement Team, which is part of the Kanefusa Quality Circle. The teams compete with each other, which keeps motivation high and ensures that the continuous improvement process does not stop. Occasionally, the teams compete with teams from other companies.



Technical Seminar



Kaizen Discussion



Quality Circle Team

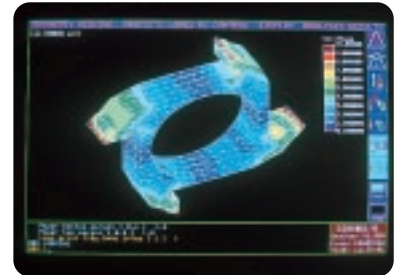
Besides highly qualified and motivated employees, we are constantly investing in the latest machine and manufacturing equipment, computer systems and R&D equipment. If there is no technology available that satisfies our needs, we develop it. Our dedicated engineers develop about 40 % of our equipment.

Another part of our commitment to quality is to invent, produce and sell only products that are safe to use. One very important sales point of our products is that they run quieter, produce less dust, are easier to handle and have higher durability than other makes.

Naturally we are ISO 9001 and ISO 14001 certified.



Grinding Centre



Tool Structure Analysis by FEM-technology



JQA-QM3710



JQA-EM3137

Head Office Factory

# History

- 1896** The blacksmith Kankichi Kamiya establishes "Uchihamonoshi Kanefusa" (Forging Master of Agricultural Tools) in Goheizou, Nagoya.
- 1931** Suzuo Watanabe, son of the founder, succeeds the business of his father and makes extensive improvements to High Speed Steel machine knives.
- 1937** Kanefusa Hamono Ltd. is established.
- 1948** A new factory is built in Rokuban-cho, Atsuta-ku, Nagoya and the company is renamed Kanefusa Hamono Kogyo Co., Ltd.
- 1957** Suzuo Watanabe travels to Europe to research European knife manufacturing and steel refining technologies.
- 1959** Kanefusa is the first Japanese machine tool manufacturer to use a High Frequency Induction Heating System for mass production of quality knives.
- 1964** A new state of the art factory is built in Ohguchi-cho, Niwa-gun, Aichi Prefecture.
- 1965** The main factory in Ohguchi-cho receives JIS certification ( JIS = Japan Industrial Standards ).
- 1967** The first Research and Development Center is completed.
- 1968** For product distribution, Kanefusa Knife & Saw Co., Ltd. is established.
- 1969** Kanefusa receives the Contribution Award from the Minister of International Trade and Industry.
- 1970** The capacity of the heat treatment facility is largely increased.
- 1971** Suzuo Watanabe is inaugurated as chairman of the Japan Saw Blade & Knife Industrial Association (JSK). Kanefusa receives the Contribution Award from the Minister of International Trade and Industry for the second time.
- 1972** The production capacity of the T.C.T. saw blade plant is expanded.
- 1976** The Ministry of International Trade and Industry acknowledges Kanefusa Hamono Ltd. as a factory of superior industrial standard.
- 1981** Hiroshi Watanabe becomes President. Suzuo Watanabe becomes Chairman. The production of PCD tooling begins.
- 1982** A new cold saw blade plant is completed. Production and sales of the ACE insert tooling system starts.



Kankichi Kamiya



Inside the factory in Rokuban-cho (1957)



Prayer for safety before construction of the Main Factory (Early 1960's)



20th Anniversary (1968)



Suzuo Watanabe



TA Cold Saw Blade

- 1985** The production capacity of the cold saw blade plant is expanded. The Head Office moves to Ohguchi-cho, where the Main Factory is located.
- 1986** P.T. Kanefusa Indonesia, the first offshore production facility, is established in Jakarta, Indonesia. An office in Singapore is set up.
- 1990** Kanefusa Hamono Ltd. and Kanefusa Knife and Saw Co., Ltd. merge to become KANEFUSA CORPORATION. A new T.C.T. saw blade production site is completed.
- 1995** Kanefusa Corporation is listed at the Nagoya Stock Exchange, Second Section. The production capacity of P.T. Kanefusa Indonesia is sharply increased.
- 1996** The new Technical Center for comprehensive Research and Development is completed.
- 1998** A liaison office in Eindhoven, The Netherlands, is set up.
- 1999** Kanefusa U.S.A. is established. Kanefusa Head Office and factory receive ISO 9001 certification.
- 2000** Masato Watanabe becomes President. Hiroshi Watanabe becomes Chairman.
- 2001** Kanefusa EUROPE B.V. is founded in Eindhoven, The Netherlands.
- 2002** Kanefusa China Corporation, the second offshore production facility, is established in Kunshan city, near Shanghai.
- 2003** Kunshan Kanefusa Corporation is set up. Kanefusa Head Office and Factory receive ISO 14001 certification.
- 2004** Kanefusa China Corporation receives ISO 9001 certification. The office in Singapore moves to Kuala Lumpur, Malaysia. A liaison office in Germany, which is under the jurisdiction of Kanefusa Europe B.V., is established. P.T. Kanefusa Indonesia receives ISO 9001 certification.
- 2005** Kanefusa China Corporation receives ISO 14001 certification.
- 2006** Kanefusa Corporation is listed at the Tokyo Stock Exchange, second Section. Kunshan Kanefusa Corporation acquires sales rights in China.



Outside view of KFI (1986)



R&amp;D Technical Center (1996)



Hiroshi Watanabe



Masato Watanabe

# 4

## Technical Information

KANEFU S A

### Ferrous Metal Cutting

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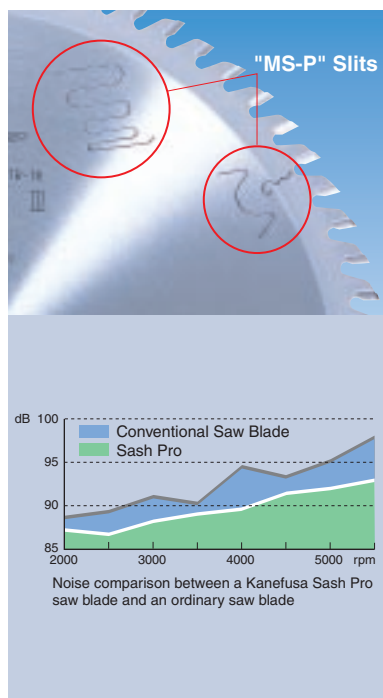
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### Non-Ferrous Metal Cutting

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# Saw Blade Technology



Kanefusa uses only the very best steel for its saw blades. After heat treatment, the saw plate is very flat. Kanefusa's proprietary flattening and surface grinding processes ensure plates that are distortion free and have uniform thickness. A good plate with high stiffness is essential for straight running of the saw.


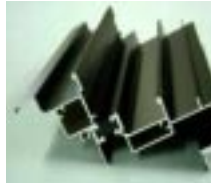


Kanefusa Sash Pro saw blades have polymer-injected vibration damping elements incorporated into the plate (MS-P Slits).

Vibrations are responsible for high and tone noise, which can cause hearing problem bad performance due to damage to carbide, and bad cut quality because of edge chipping and waving cut.

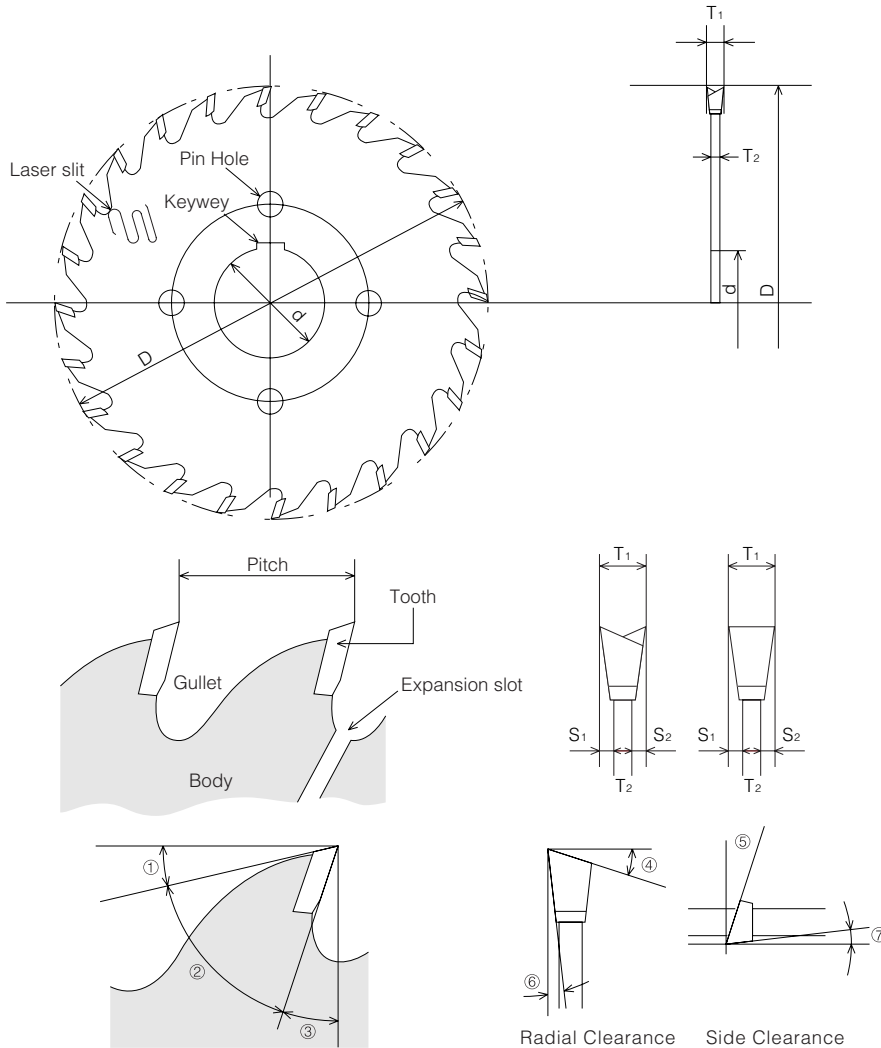
Special carbide, which is exclusively available to Kanefusa, was developed in cooperation with a leading carbide manufacturer.

The carbide was designed for cutting non-ferrous metals such as aluminium and clearly outlasts conventional carbides.

## Tooth Geometries

Extruded Profiles		<ul style="list-style-type: none"> <li>Does not create high cutting forces and therefore cuts very lightly.</li> <li>Almost no bending of the material especially when cutting thin walled material such as lamellas or radiator fins</li> <li>The cut quality is very consistent throughout the entire time of use</li> <li>Runs very straight and does not create vibrations</li> </ul>
		<ul style="list-style-type: none"> <li>Does not create high cutting forces and therefore it cuts very light</li> <li>Cuts cleaner than 3DX or D5</li> <li>Almost no bending of the material especially when cutting thin walled material such as lamellas or radiator fins</li> <li>When cutting thick walled material (&gt; 4 mm) vibrations can occur, the cut quality deteriorates and chipping of the cutting edge can appear</li> </ul>
		<ul style="list-style-type: none"> <li>Due to symmetric tooth geometry the saw blade runs very straight</li> <li>Very suitable when cutting thick walled material (&gt; 4 mm)</li> <li>Cut quality is inferior to BC5 and 3DX</li> </ul>
Solids		<ul style="list-style-type: none"> <li>Due to a symmetric tooth geometry the saw blade runs very straight</li> <li>Cut quality is inferior to BC5 and 3DX</li> </ul>

# Saw Blade Specifications



## Angle Designation

- ① Clearance Angle [  $\alpha$  ]
- ② Included Angle [  $\beta$  ]
- ③ Hook Angle [  $\gamma$  ]
- ④ Top Bevel Angle [  $\varepsilon$  ]
- ⑤ Face Bevel Angle [  $\lambda$  ]
- ⑥ Radial Clearance Angle [  $\alpha_r$  ]
- ⑦ Tangential Clearance Angle [  $\alpha_t$  ]

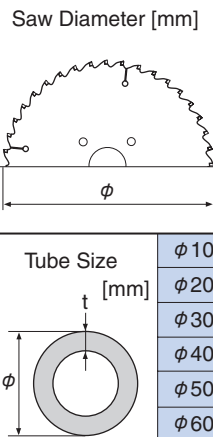
Diameter	D
Bore	d
Kerf	T <sub>1</sub>
Body Thickness	T <sub>2</sub>
Number of Teeth	Z
Radial Clearance Angle	S <sub>1</sub> , S <sub>2</sub>

# Saw Blade Application Chart

## Saw Blade Application chart

	JIS	Material Group	ST-4	ST-4P	Ti-4	TA-4SUS	Ferro Max SUS	Ferro Max Speed	Ferro Max Tube	Novametal Pro (Copper)	Novametal Pro (Alumi)	Novametal Pro DIA
Carbon Steels Alloy Steels	S-C	Case hardend steel	○		○			○				
	SNC	Nickel chrome steel	○									
	SNCM	Nickel chrome molybdenum steel	○									
	SCr	Chrome steel	○		○							
	SCM	Chrome molybdenum steel	○		○							
	SMn	Manganese steel	○		○							
Steel Tube	STKS	Alloy steels		○					○			
	STK	Carbon steel		○					○			
	STKM	Carbon steel		○					○			
	STKR	Square steel tube for general structure		○					○	○		
Special - Purpose Steel	SUS	Stainless steel				○	○					
	SUP	Spring steel			○							
	SUM	Sulfur free cutting steel			○							
	SUJ	High carbon chromium ball bearing steel			○							
Nonferrous Casting	YBsC	Brass cast								○		
	HBsC	High-strength brass cast								○		
	BC	Bronze cast								○		
	PBC	Phosphorus bronze cast								○		
	AIBC	Aluminium bronze cast								○		
	AC	Aluminium alloy casting									○	○
	ZDC	Die cast zinc alloy									○	○
	ADC	Die cast aluminum zinc alloy									○	○
	WJ	White metal									○	○
	KJ	Lead alloy bronze cast									○	○
TB , TF	Titanium alloy									○	○	

## Tubes Recommended number of teeth

Saw Diameter [mm]	φ 285		
	140Z (Ferro Max Tube)	120Z (Ferro Max Tube)	
	φ 10	—	—
	φ 20	t 6.8	—
	φ 30	t 3.1	t 9.3
	φ 40	t 2.1	t 5.2
	φ 50	t 1.6	t 3.7
	φ 60	t 1.2	t 2.8
	φ 70	t 1.0	t 2.3

## Solids Material diameter [mm]

Saw blade diameter [mm]	Number of teeth	Material diameter [mm]														
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
250	54															
	72															
285	60															
	80															
315	48															
	60															
360	80															
	100															
425	50															
	80															
460	40															
	60															



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