

## DAIWA RABIN

**Grinding is sharply and polishing is softly,  
that is "DAIWA RABIN".**

it is applicable from grinding, polishing  
and de-burring after processing to finishing.



**Daiwa Kasei Kogyo  
Co., Ltd**

# Features of the elastic rubber grinding stone: Daiwa Rabin

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An ideal grinding stone must "cut", "polish", and "last long"!

## Daiwa Rabin is a rubber grinding stone.

The expansion of the potential of rubber grinding stones through the rubber design and the special abrasive grain (\*CM type) developed by Daiwa Kasei, as well as the "rubber elasticity", which is a feature of rubber grinding stones, has helped receive a high evaluation indicating that "It's 'Daiwa Rabin' that comes to the mind when one says rubber grinding stones".

- The most prominent feature of Daiwa Rabin is its excellent cutting quality that has changed the image that "rubber grinding stones are for polishing".

⇒ It not only removes the processing marks from direct carving of metal forging dies, cutting marks on difficult-to-cut materials such as SUS and heat resistant alloys, burrs of forged parts such as the crank shaft, and ultra-high hardness, but also processing marks from the grinding and cutting process to provide a fine polished surface.  
⇒ It enables stable bulk processing during de-burring.  
⇒ It is best suited for automation, combined with excellent durability and clog resistance.

- The rubber elasticity ensures smoothening of polishing marks, thereby resolving surface roughness and preventing deep polishing lines from occurring.

⇒ The need for fine engraving of a mesh is done away with, which leads to a reduction in the process. Also, the final finishing task becomes easier.  
⇒ It can also be used safely in turbine blades of aeroplanes and nuclear power generation, where polishing lines and residual stress is not desired, in notched parts where stress gets accumulated, and even in sealing surfaces.

- Operation can be performed continuously without having to worry about clogging.

⇒ It can be used for continuous polishing, without dressing, during polishing of the casting surface of aluminum die cast exterior parts that involve high workload, and also during removal of cutting marks from aluminum metallic molds and compressor sprawl parts.

- By adjusting the usage conditions and making use of rubber elasticity, excellent cutting quality can be exhibited, and by using the grinding stone under less load, the life of the grinding stone can be improved. If operation is performed in accordance with the requirements for Daiwa Rabin, a longer life than other tools can be expected!

⇒ \* Selecting a material that suits the condition of the work piece, and combining together with the processes of other tools is also important.

\*It has been used for a long time in turbine blades of aeroplanes and nuclear power plants, and important components such as precision valves and superchargers, indicating that high reliability is also a big feature of Daiwa Rabin.

- By adjusting the rotation speed and making use of rubber elasticity, the grinding stone can be made to adapt to curved surfaces, and jumping and chattering of the work piece caused by hitting can be eliminated. This not only enables proper alignment with the work piece to achieve a stable polishing surface, but enables polishing with less workload.

⇒ Over-cutting and damage can be avoided, and even an operator who does not possess very high skills can safely perform maintenance of metal dies, de-burring of important sections of the product, as well as polishing.

- Because the binder is of rubber, no dedicated tool and detailed settings are needed for truing and dressing. This means that processing and dressing can be performed easily without too much effort and cost. This proves to be more effective during automation.

- By adjusting the usage conditions, the generation of heat can be controlled to prevent heat damage, and the residual stress can also be reduced to a large extent.

- The powder dust can be reduced to a great extent thus improving the operating environment. Large quantities of the grinding fluid are no longer needed, which contributes to a healthier environment.

- There is a rich collection of rubber compositions that have been developed and accumulated over many years, depending on various operations of manufacturing and the usage purpose.

It is used in various operations due to its compatibility with a wide range of materials including metal-mold material, rubber, resins, and plastic, soft metals, difficult-to-cut materials such as aluminum and SUS, brittle material with high hardness, and also different types of coatings.



# Risks Concerning Rubber Elasticity

## Daiwa Rabin is a grinding stone made of elastic rubber.

It has a specific property called "rubber elasticity" that is not seen in other tools. "Rubber elasticity" is very different from general "elasticity", which is characterized by deformation according to the load as well as a high amount of deformation. Therefore, handling the Daiwa Rabin as a general grinding stone and cutting tool can be very dangerous.

- \* Example: As compared to the maximum allowable rotation speed of 42,000 r.p.m. of a  $\phi$  19 vitrified mounted grinding stone, a  $\phi$  20 to 25 Daiwa Rabin grinding stone has a maximum allowable rotation speed of 20,000 r.p.m., which is very different.
- \* Unlike a grinding wheel and cutting tool, increasing the rotation speed beyond the maximum allowable rotation speed is very dangerous in the case of a rubber grinding stone. **Use the grinding stone at a rotation speed lower than the maximum allowable rotation speed.**



Rubber elasticity deformation

- Because the amount of deformation also increases depending on the load, there is a possibility of damage due to deformation even when the grinding stone is used at a rotation speed below the maximum allowable rotation speed.
    - \* The maximum allowable rotation speed does not guarantee safety.
  - A large amount of deformation may result from the sudden application of load. Take special caution when starting the equipment.
  - Depending on the rotation speed, vibrations in the machine tools suddenly increase the vibration in the grinding stone. Always use the grinding stone with inspected and maintained machine tools.
  - Use a tool in accordance with the condition of the work piece.
    - For grinding purposes, use a general wheel. Unnecessary use of Daiwa Rabin must be avoided.
    - Pressing the grinding stone too forcefully will generate a large amount of heat. If the cutting strength is insufficient, try changing the material of the grinding stone.
    - You can easily contact Daiwa Kasei and request for a test sample.
  - Besides too much pressing force, if the grinding stone is continuously in contact with a wide contact surface, a large amount of heat will be generated, and the strength of the rubber might decline due to the heat.
    - Change the specifications and usage method of the grinding stone, and also examine the use of a coolant.
  - Unlike a grinding wheel, because there is no bubble structure, the penetration of the adhesive is less and the strength of the bonding material (rubber) itself is less, which results in "deformation of rubber elasticity" in response to the load.
    - Depending on how the load is applied, that is, whether the load causes the adhesive joint to come off, or results in twisting, stress may get accumulated in the adhesive joint, causing the shank to fall out. Pay proper attention to the use of Daiwa Rabin in view of rubber elasticity deformation.
    - \*In order to improve the balance between the shank and the grinding stone size, and the specifications of the shank (stone size and hole diameter for a straight grinding stone), which are the basis of stability, as well as the forming method that is particularly important in the case of a rubber grinding stone in terms of safety and stability of the grinding stone performance, revision of standards and specifications, and improvements in metal molds, specifications of the shank, and the manufacturing method are in progress.
- In order to enable you to use Daiwa Rabin, which has a specific property called rubber elasticity, without any concerns, we can provide you with product specifications depending on your specific purpose of use. Feel free to contact us in this regard.

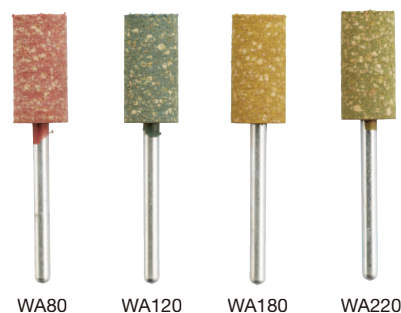
# Features and Usages of Different Material Types

## CM Type

The CM type has a special abrasive grain developed in-house and also an original rubber composition, which enable it to exhibit excellent cutting quality that is unique to Daiwa Rabin.

It is a long-selling type that represents "Daiwa Rabin" not only because of its unique elasticity (softness), but also because of its design that perfectly balances the cutting quality, polished surface, and durability, and its use in various operations involving different types of materials.

- It can remove the processing marks left from direct end-mill carving of metal forging dies, as well as cutting marks on FCD 600 class, SUS, and heat resistant alloys.  
Processes like heat treatment, carburizing, and nitriding are also not difficult to perform even with high hardness (HRC60 level).
- Due to its unique elasticity, it can be aligned with the work piece, which prevents jumping and chattering of the work piece caused by hitting. It can thus be used with ease and can also lessen the workload.
- As a result of the cutting quality and rubber elasticity, the stubborn aluminum and mold wash adhering on to the aluminum die cast molds can be removed without causing scratches on the surface of the mold, or being concerned about surface roughness or over-cutting, and therefore, hassle-free maintenance task can be performed.
- Surface polishing of aluminum die cast products (removing wrinkles and bubbles from the casting surface, sink marks, pinhole correction, and parting line), removal of cutting marks from aluminum and other soft metals, and removal of processing marks from aluminum mass-production products can be performed without worrying about clogging, thus improving the mass-production effect.
  - \* This clog resistance property proves to be very effective during automation at the time of machining and on the CNC lathe.
- For plated products, the material can be finely adjusted to prevent scratches, and the best suited surface finish can be selected for the plating.



## OX Type

**Resolving surface roughness: For your "polishing" work, you may use the OX type that offers a wide range of grain sizes.**

Although this type is used mainly for polishing, from the viewpoint of work piece material having high hardness and different surface conditions, and also in view of durability even in the case of the polishing process, a reasonably tough rubber design has been adopted.

- It can also be used for edge honing of carbide cutting tools, and removal of fine burrs from various materials.
- It is also used widely for removing burn marks, scales, rust, scratches, dents, and chuck marks from resin dies, and depositions on the surface of press and forming dies, and also with electrodes of copper, tungsten, and SUS, and in other maintenance tasks.
- It is also used for removing paint, plating, and coating, as well as tarnish from the glass surface through the adjustment of the rubber material such that the backing is not damaged, and thus scratches can be prevented from occurring.
  - \*As a special use, this type has been used for long in the hairline processing of clock parts and SUS thin boards in home appliances for improving the yield and providing stable and continuous processing.

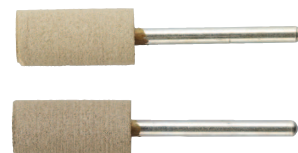


## UN Type

**For the de-burring process, the rubber is hardened to prevent the burrs and edges from eating into the rubber.**

[See ▶](#) Daiwa Rabin is ideal for de-burring

- From the viewpoint of the shape, the design helps control deformation of the rubber, and continuous processing can be performed while maintaining the shape of the stone and preventing damage to the shape of the work piece.
- We provide products that can simultaneously perform de-burring and lap polishing on fine burrs formed on parts possessing important functions in precision components.
- Because of excellent durability of Daiwa Rabin and a design that proves to be strong against burrs, it is also used in the de-burring process at the time of machining and on the CNC lathe.



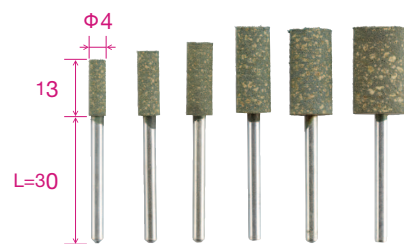
## Diamond Rabin [See ▶](#) p.09



## Daiwa Rabin Mounted Points Grain sizes; 80 to 320; CM Type / 320 to 600; OX Type

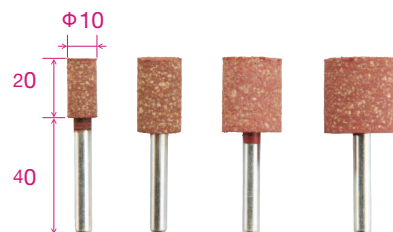
### Mounted Points with 3-mm Shank

Size Outer diameter-Length-Shank diameter	Shank length	Maximum allowable rotation speed (r.p.m.)	Grain size
4-13-3	(L=30)	<b>30000</b>	80, 120, 180, 220, 320/400, 600
5-15-3	(L=30)	<b>30000</b>	80, 120, 180, 220
6-17-3	(L=30)	<b>30000</b>	80, 120, 180, 220, 320/400, 600
8-20-3	(L=30)	<b>30000</b>	80, 120, 180, 220, 320/400, 600
10-20-3	(L=30)	<b>30000</b>	80, 120, 180, 220, 320/400, 600
13-20-3	(L=30)	<b>20000</b>	80, 120, 180, 220



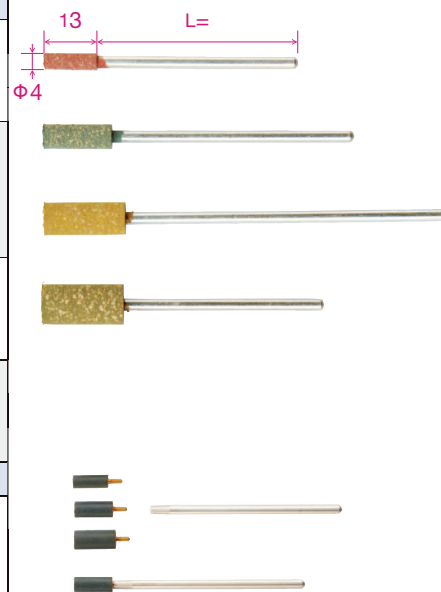
### Mounted Points with 6-mm Shank

Size Outer diameter-Length-Shank diameter	Shank length	Maximum allowable rotation speed (r.p.m.)	Grain size
10-20-6	(L=40)	<b>20000</b>	80, 120, 180, 220, 320/400
15-25-6	(L=35)	<b>20000</b>	80, 120, 180, 220, 320/400
20-25-6	(L=35)	<b>20000</b>	80, 120, 180, 220, 320/400
25-25-6	(L=35)	<b>20000</b>	80, 120, 180, 220, 320/400



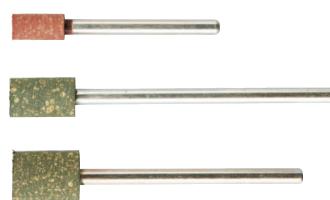
### Mounted Points with 3-mm Shank (Long Shank)

Size Outer diameter-Length-Shank diameter	Shank length	Maximum allowable rotation speed (r.p.m.)	Grain size
4-13-3	L=60	<b>20000</b>	80,120,180,220
	80	<b>15000</b>	
	100	<b>12000</b>	
6-17-3	50	<b>20000</b>	80,120,180,220
	60	<b>20000</b>	
	80	<b>15000</b>	
	100	<b>12000</b>	
8-20-3	50	<b>20000</b>	80,120,180,220
	60	<b>20000</b>	
	80	<b>12000</b>	
10-20-3	50	<b>20000</b>	80,120,180,220
	60	<b>15000</b>	
	80	<b>10000</b>	
*Threaded type with long shank			
4-11(threaded)	L=50,60,70,80		80,120,220
5-12(threaded)			
6-13(threaded)			



### Mounted Points with 6-mm Shank (Long Shank)

Size Outer diameter-Length-Shank diameter	Shank length	Maximum allowable rotation speed (r.p.m.)	Grain size
10-20-6	L=60	<b>18000</b>	80, 120, 180, 220
	80	<b>15000</b>	
	100	<b>12000</b>	
15-20-6	L=60	<b>15000</b>	80, 120, 180, 220
	80	<b>12000</b>	
	100	<b>10000</b>	
20-25-6	L=60	<b>15000</b>	80, 120, 180, 220
	80	<b>10000</b>	



The inventory is limited in terms of size and material. We are ready to manufacture with various materials according to the application.

## Daiwa Rabin is Ideal for De-burring of Specific Areas!

### "Ensuring absence of burrs!"

De-burring can be performed by various methods and tools, including files, brushes, grinding stones, paper tools, special cutting tools for deburring, cutters, knives, barrels, blast-shot, water-jet, specially-shaped tools, gel (special device), chemicals, heat, and electrolysis, and at the same time, processing methods that do not give rise to burrs are also being researched, however, each of these have certain limitations and issues, which pose a big problem during manufacturing.

## Daiwa Rabin is ideal for performing a stable mass-production de-burring process without involving too much efforts or cost.

- No need to be concerned over secondary burrs. Daiwa Rabin also prevents any burrs from remaining behind or over-cutting of the material.
- Mass production performance ... This is an excellent performance of Daiwa Rabin, which is most different from what can be expected from a rubber grinding stone.  
This is a feature that is unique to Daiwa Rabin that is also widely used in removing cutting marks from metal dies with a high hardness, cutting burrs from forged products, and even cutting marks from difficult-to-cut materials such as SUS and nickel alloys.
- Continuous operation can be performed without being concerned about clogging even in the case of soft metals such as aluminum.
- There is no problem such as chattering, clogging, widening or falling out of the brush, wear-out of the edge of the blade, or a problem with the built-up edge, which are commonly seen with grinding wheels, and therefore, not much efforts are needed for tool management.
- There is no need to make detailed settings with a dedicated dresser in the truing process, which means that dressing can also be performed easily in a short period of time, without having to stop the workflow.
- Because the polishing powder is made into a very fine abrasive powder, the concern over sudden scratches occurring from faceting can be reduced.
  - \* The reason that the state of the polishing powder and the facet is different from that in grinding wheels and cutting tools is that the mechanism of rubber elasticity has a different aspect as compared to these tools.
  - \* Proper care must be taken when there is too much variation in the processing state.
- Because Daiwa Rabin need not be used at a high speed and the cutting quality is also good, heat generation can be controlled to a large extent, thus preventing damage caused by heat.
- We manufacture various shapes and sizes of grinding stones in accordance with areas that are hard to process and limitations of the equipment used.
  - \* We can provide the specifications that will best suit your needs depending on the limitations of the work areas and equipment in order for you to achieve automation and save power during machining and on the NC lathe, and other metal-cutting machine tools and dedicated machines.

## Grinding stones for de-burring, edge processing (rounded), and profile processed-surface polishing

Straight			
Size Outer diameter-Length-Shank diameter	Shank length	Maximum allowable rotation speed (r.p.m.)	Grain size
4-13-3	(L=30)	<b>30000</b>	#120(UN)
5-15-3	(L=30)	<b>30000</b>	#120(UN)
6-17-3	(L=30)	<b>30000</b>	#120(UN)
8-20-3	(L=30)	<b>30000</b>	#120(UN)
10-20-3	(L=30)	<b>30000</b>	#120(UN)
13-20-3	(L=30)	<b>20000</b>	#120(UN)

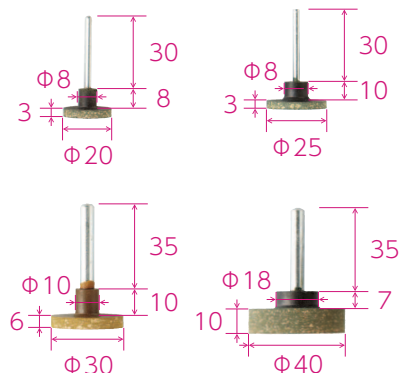
Spherical			
Size Outer diameter-Shank diameter	Shank length	Maximum allowable rotation speed (r.p.m.)	Grain size
5d-3	(Total length=43)	<b>30000</b>	#120(UN)/#120(CM)
6d-3	(Total length=44)	<b>30000</b>	#120(UN)/#120(CM)
8d-3	(Total length=44)	<b>30000</b>	#120(UN)/#120(CM)
10d-3	(Total length=46)	<b>30000</b>	#120(UN)/#120(CM)
13d-3	(Total length=46)	<b>20000</b>	#120(UN)/#120(CM)

20d-6	(Total length=59)	<b>20000</b>	#120(UN)
25d-6	(Total length=62)	<b>20000</b>	#120(UN)



Shape B (with a navel)		
Size Outer diameter-Length-Shank diameter	Maximum allowable rotation speed (r.p.m.)	Grain size
20-3-3	<b>20000</b>	#120,220
25-3-3	<b>18000</b>	#120,180

30-6-6	<b>15000</b>	#120
40-10-6	<b>10000</b>	#120



Example of profile processing



\* Simple dressing recommended

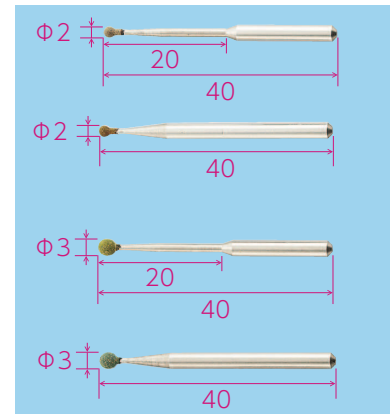


# Grinding stones for narrow and minute areas

## Small-dia. spherical type For cross burrs and fine burrs in minute areas

Size Outer diameter-Length-Shank diameter		Maximum allowable rotation speed (r.p.m.)	Grain size
2d-3	* Slim neck	<b>30000</b>	120
	* Normal neck	<b>30000</b>	120

3d-3	* Slim neck	<b>50000</b>	120
	* Normal neck	<b>50000</b>	120



## Small-dia. straight type

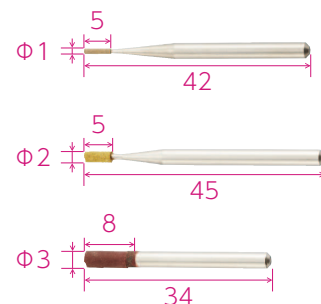
Size Outer diameter-Length-Shank diameter	Maximum allowable rotation speed (r.p.m.)	Grain size
1-5-3	<b>50000</b>	120,220,320

2-5-3	<b>80000</b>	80,120,180,220,320
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3-8-3	<b>20000</b>	80,120,180,220,320
{3-13-3}	<b>20000</b>	* For de-burring (120)

## \* One-touch Rabin

3-7-1.6	<b>50000</b>	80,120,180,320
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With the holder chucked in the grinder,  
you can easily change only the grinding stone at the tip.



## For air grinders Rapid Rabin

Maximum allowable rotation speed (r.p.m.) 50000

Size Outer diameter-Length-Shank diameter	Grain size
4-13-3	#80,120,220
6-16-3	#80,120,220
8-17-3	#80,120,220
10-17-3	#80,120,220



- \* We can receive orders and manufacture grinding stones according to the material of the work piece, operation details, and special requirements.

## Straight

Size	Outer diameter (D) - Thickness (T) - Hole diameter (H)	Maximum allowable rotation speed (r.p.m.)
	15-1-1.8	22000
	15-2-1.8	18000
	18-3-1.8	15000
	20-2-1.8	18000
	25-1.5-1.8	15000
	25-2-1.8	15000
	25-3-1.8	15000
	30-3-1.8	15000
	40-4-3	12000
	50-6-6	9000
	50-10-6	9000
	75-3-6	6000
	90-3-9.53	5500
	100-10-6, 12.7	4500
	100-13-12.7, 15.88	4500

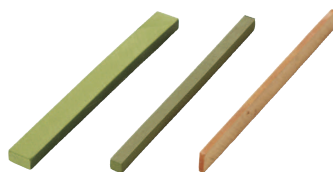


\*  $\phi 150$  onwards

The material and size shall be selected from Daiwa Light and Daiwa Rabin depending on the rotation speed of the equipment used and the purpose of use.

## Square bar

Size	T-W-L
	5-5-100
	5-10-100
	10-10-100
	10-15-100
	20-25-100



## Round bar

Size	$\phi$ -L
	$\phi$ 2.35-120
	3-120
	5-120
	6-150
	8-150
	10-150
	20-150
	25-150



We are ready to manufacture with various materials according to the application.

## Square sheet

Sheet thickness	
1.5mm	200sq.
3mm	300sq.

You can process it into a flat shape for use.  
The abrasive grains do not protrude out like in sand paper.

# Diamond Rabin

**Diamond Rabin is the result of an ideal combination of excellent rubber features of Daiwa Rabin and a diamond abrasive grain, which offers much greater performance and improves the processing as a new diamond tool that was not seen until now.**

While "high-speed grinding" and "high-speed milling" have evolved remarkably as processing methods for improving the product quality and increasing the mass production performance, it is necessary to simultaneously increase the rigidity and precision (... increase in cost) of tools and usage equipment, select tools and manage their status, and seek refinement in truing and dressing processes, as well as the drive programs.

There are also inevitable problems such as heat generation, and other problems of processing damage, and occurrence of burrs due to difficulty in processing as a result of a minute size.

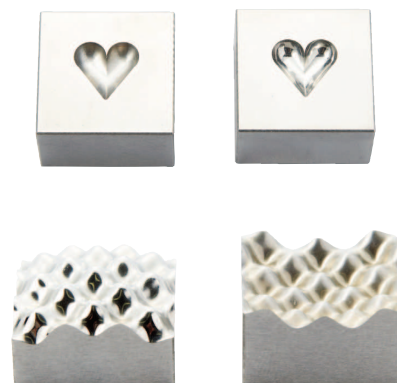
The grinding and polishing processes that make use of rubber elasticity have opened the path to an approach that is different from the high-speed technique, and have greatly reduced the problems and the cost factor accompanying high speed, which has made the superiority of Diamond Rabin stand out.

## "Rubber elasticity" is a feature of this tool

- There is no need to take measures against the large amount of heat generated during high-speed grinding and cutting.
  - The residual stress and heat damage are reduced to a great extent, and as a result, micro-cracks can be prevented.
  - Because Diamond Rabin exhibits excellent cutting quality even at medium and low speeds, there isn't too much need for high rigidity and high precision of devices and tools used for high-speed rotation, which reduces the special additional cost for metal cutting machine tools.
  - The excellent durability that Daiwa Rabin possesses is further improved thus increasing the life as compared to other tools.
  - Large quantities of grinding fluid are not needed, and in some cases, semi-dry or dry processing is also possible.
  - The grinding and cutting mechanism of a rubber stone is different from that of a grinding wheel and cutting tools, and ductile breaking may be expected to be a failure mode. An improvement in the surface finish is naturally expected, but at the same time, the concern over scratches from the polishing powder are also reduced. The cost involved can be reduced through the stability of quality and improvement in the yield.
  - A dedicated dresser is not needed for truing or dressing. The dressing interval is also long, which reduces the cost of tool management.
  - Another interesting point is that non-suitability to ferrous materials is rarely seen because of which a CbN wheel is not needed.
- \* These features can be expected when the ideal grinding stone material is selected and the usage conditions are set in accordance with the work piece. The amount of efforts needed for the process can also be reduced to a large extent.
- \* Diamond Rabin is also opening the path to automatic mirror polishing of aspherical areas as well as automation of mirror polishing of plastic molds, which has long been sought after, only by mounting a holder having a low-pressure and an eccentric mechanism on to the present unit.

Mounted Pointsa		
Size Outer diameter-Length-Shank diameter	Maximum allowable rotation speed (r.p.m.)	Grain size
2-5-3	80000	320,600,1000,3000
4-13-3	30000	320,600,1000,3000
5-15-3	30000	320,600,1000,3000
6-17-3	30000	320,600,1000,3000
8-20-3	30000	320,600,1000,3000
10-20-3	30000	320,600,1000,3000

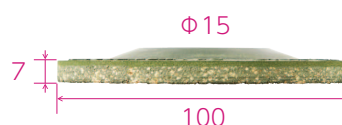
We are ready to manufacture grinding stones according to the sharp of grinding part in the work material and the device.





## Rabin Offset

Size	100-7-15
Maximum allowable rotation speed	<b>13000 r.p.m.</b>
Grain sizes	60,80,120,180,220,320



- In the canning and sheet metal fields, which require several processes and also involve a difficult-to-perform final buffed mirror finishing process, if Daiwa Rabin Offset is used after removing the hardness with a belt sander and resinoid, the processing marks can be removed and a fine surface finish without any deep scratches can be obtained, because of which the process of removing polishing marks is no longer needed, and the workload of the final buff polishing can be reduced. If a deep glossy surface is not needed, finish polishing can also be performed.
- \*Because the Rabin Offset is based on the CM-type Daiwa Rabin, it has excellent cutting quality and durability.
- Besides polishing for removal of the processing marks after bead cutting, it can be used directly in nuggets having a thin spot welding.
- It can also be used for de-burring of edges after punching or on a laser cut surface.
- By reducing the rotation speed, the elasticity of rubber can be put to use, the contact can be softened, and burns can also be prevented.
- Due to excellent cutting quality and durability, besides sheet metals, you can try Rabin Offset for de-burring in gear grinding and rounding the edges of large dies, and also for build up welded parts for repair.
- By performing operation at a low speed to prevent the generation of heat, it can also be used for edge processing of flat drawn sheet glass.
- \* Always be sure to take safety measures for a possible problem or damage.
- \* **Although you can use Rabin Offset with a normal 13,000-r.p.m. grinder, we recommend using it with low-speed grinders. This will not only improve the polishing surface, but also increase the abrasion resistance.**

## IT Cup

Size	30 X 11 X 6.3(M7)
Maximum allowable rotation speed	<b>23000 r.p.m.</b>
Grain sizes	80,120,180,220



\* Dedicated use with angle grinders

## Fit Disk

Size	30-2-10 *Double-sided tape type
Maximum allowable rotation speed	<b>Dedicated rubber pad 3-mm shank</b>
Grain sizes	80,120



# Senrap Cerium oxide grinding stone for glass mirror finishing



Due to an increase in the cost of cerium, revision of the methods of glass mirror polishing and a reduction in cost is desired.

"Senrap", in which cerium oxide is blended into rubber, has enabled continuous polishing over very long periods to give a glass mirror finishing only with the use of water.

- It enables the shift from the free abrasive grain method to the fixed abrasive grain method, reduces various costs involved in the use of large amounts of cerium, management of tools to check wearing of pads and deviations, management of the water temperature, and difficult tasks of disposal and equipment maintenance, and exhibits a high cost performance matching high-cost tools with outstanding durability and stable processing quality.
- When considering the ideal process for mirror polishing of glass, the processing state of the work piece prior to the final polishing is also important.

**By combining together a general diamond tool and Diamond Rabin developed by Daiwa Kasei, the surface condition can be improved, and the workload of final polishing with Senrap is reduced. To examine the problem of final polishing, pre-processing must also be taken into consideration.**

\*We offer customized designing in accordance with your equipment and the size and shape of the polishing area. Feel free to contact us in this regard.

## Various special shapes



We offer suggestions on polishing of spherical surfaces by the spherical-surface processing machine, and also on the use of the unique features and excellent performance of Daiwa Rabin for polishing and lapping of precision parts having a complex shape, and in special dedicated tools, or special products used in dedicated equipment for lesser power consumption and automation, at a reasonable cost. We can arrange for detailed operation content and requirements.

# Daiwa Rabin is being used in various operations

Daiwa Rabin is being used in various operations across a wide-range of "manufacturing" fields. We understand that you may be using a wide-range of materials, and to match their different processing conditions and requirements, we manufacture various types of products. (This catalog lists only the products that are used more frequently.)

## ■ [Metal molds and molding]:

Daiwa Rabin is also used in the manufacturing process, molding, and maintenance of metal molds and mold components. **"Daiwa Rabin" is known as a rubber grinding stone for polishing of metal molds. "It can be used regardless of the type and material of the metal mold"**

- \* Forging, aluminum die casting, press fine blanking, forming, extrusion, plastic molds, glass, rubber, powder metallurgy, MIM
- \* It can be used with general metals as well as SUS and super-hard materials, and is not affected negatively by clogging of aluminum and brass, and heat-treated high hardness materials.

Also used for removal of the hardened layer in die milling electric discharge machining and scale removal in wire cutting, removal of processing marks during machining or on the grinding machine, scale removal during heat treatment, and also for "polishing", including mirror finishing of some parts, as well as polishing before and after flame spraying and coating.

- \* Also used for polishing of molded parts, such as polishing of the casting surface of aluminum die casts, and correction of molding burrs, scratches, and chuck marks.
- \* Also in removal of adhering substances (\*), mending and repair of burns, heat cracks, chipping, and breakages, and maintenance task for correction of depositions, rusting, and scratches.

We adjust the material of the grinding stone in accordance with the condition of the work piece and requirements of the processing surface.

\* Even stubborn substances such as the aluminum and mold wash of aluminum die cast molds can be removed easily without damaging the mold.

## ■ "\*\* De-burring" [Machining] [See▶](#) p.05

\* The performance of Daiwa Rabin is being put to use in the de-burring process that involves certain efforts and cost.

\* We can provide details of sizes and shapes in accordance with the operation area or limitations of the equipment and tools used.

**"Edge processing and edge honing of cutting tools and blades"**

Rubber elasticity helps round up edges. When the requirements of the edge quality are not high, then as the final process important for the performance of the product, Daiwa Rabin can also be used in edge honing, which requires the setting of the operation method and detailed usage conditions.

## ■ "Sheet metals and canning" [Welding, die molding, press fine blanking, forming, laser processing, "polishing"]

- \* Daiwa Rabin is used in various operations such as removal of processing burrs, molding scratches, burns, and depositions, as well as polishing.

If Daiwa Rabin is used after the rough processing, the process time is saved, and the workload of mirror finishing is reduced.

If a high level of mirrored finish is not desired, Daiwa Rabin can also be used for finishing.

Used for finishing of the welded bead cut. Daiwa Rabin can be used as is in a spot-welded nugget.

Also used for back burns and sputter removal.

Press and cutting burrs (thin materials).

Also for curves and correction of scratches from forming.

\* We can also provide details on sizes and shapes to match difficult-to-process joints and corner pockets, or specifications matching your tools.

## ■ [Flame spray, coating / surface treatment / plating, painting]

- \* Also used for flame spraying and coating of products and die components, specially super hardening and ceramic spraying where a lot of efforts are required for polishing.
- \* Prevents improper backing finish during polishing before plating or painting, and can adjust the polished surface to the ideal adhesive strength.
- \* The process of removal of substances adhering to the surface is best performed by a rubber grinding stone
- \* Can efficiently remove the stubborn aluminum and mold wash adhering on to aluminum die cast dies without damaging the surface of the die.
- \* Also in the process of removal of plating, paint-peeling and galvanized steel plates, alumite, coating, and sprayed surface. We also offer adjustment of the material in fine processes such as removal of dirt from soft metals and glass surfaces.
- \* Hairline processing  
Also known by another beautiful word like "Star line processing". Used in components of clock and thin-sheet SUS of digital home appliances.
- \* Helps achieve a form according to the design, controls scratches, and adjusts products for which stable mass production processing can be performed.
- \* Also for polishing in order to perform inspection.

We provide products for automotive glass inspection, and for inspection equipment such as devices for steel plate inspection.

Can also be used in polishing for inspection of the state of a structure, and polishing for mounting of inspection equipment.

**We also use dedicated products for other special individual purposes. Feel free to contact us in this regard.**



**In order to select the ideal product for your work  
you may go for actual testing of the product for fast and accurate selection!  
We can provide you with a test sample. You may contact us on phone.**

Daiwa Rabin is an "elastic rubber grinding stone" in which rubber is used as the binding material.

It is difficult to identify a product from the work piece and requirements, and there may be several products used for the same process.

In the case of a grinding wheel, the abrasive grain is selected based on the material to be cut, however, this method is not applicable to Daiwa Rabin.

Example: For aluminum, the C-series abrasive grain is selected in the case of a grinding wheel, but in the case of Daiwa Rabin, there are several abrasive grains such as WA, A, GC, and C.

As Daiwa Rabin is an elastic grinding stone, it can be easily affected by the various different states of the work piece, because of which anticipation may be difficult in some cases.

**Please inform us in brief about the material of the work piece, operation details (such as removal of processing marks and burrs, or maintenance, etc.), and the desired grinding stone size.**

We will provide details on products that can be tested and can be provided in a short period of time.

Try it out!

**1. First of all, perform the basic task of confirming the grain size of the grinding stone (surface alignment)**

In the case of a rubber grinding stone, the selection of the grain size may turn out to be a risky task.

Before considering the grain size from the surface hardness, it is important to confirm the grain size in accordance with the condition of the work piece. Using a grain size that is too small would take up a lot of time, and due to the exertion of too much load, the wear-out of the grinding stone might increase.

**2. "Cutting quality", "Polishing surface", and "Life of the grinding stone" are all inter-related**

In addition, you can confirm the ease of fitting into the work piece, and the absence of occurrence of burns and clogging.

**Since the requested sample might not be the answer to your requirements, in most cases, we ask you to evaluate the samples, so you can select the most suitable stone material.**

**We will select the grinding stone material (rubber features) based on a frank evaluation and in response to your requirements.**

**3. Once the standard of the grinding stone material has been estimated, we will also examine the formal test sample for you.**

You can also evaluate the life of the grinding stone.

**\* If the ideal grinding stone for your operation can be provided, it will exhibit a high cost performance over a long period of time.**

- When performing the test, also confirm how to handle Daiwa Rabin: rubber elasticity.

Daiwa Rabin, which is characterized by its "rubber elasticity", is different from grinding wheels and cutting tools for which the maximum allowable rotation speed can be considered as a recommended condition. It is difficult to provide the recommended conditions for Daiwa Rabin.

- If you can give some time to selecting the grinding stone to be used by trying out different conditions and lowering the rotation speed and load, in addition to a stable polished surface and operation, the life of the grinding stone can be increased.

It is not rare to spot examples where the life of the grinding stone has increased a few number of times only by changing the usage conditions. With features like rubber elasticity and the ability to be deformed according to the load, setting of favorable conditions acts like the main point that increases the performance of Daiwa Rabin.

- You can confirm the excellent cutting quality that is unique to Daiwa Rabin and also the fact that the contact becomes soft as a result of adjustment of the rotation speed, and you can also note that because no dedicated dresser is needed, profile processing can be performed easily, and extra efforts for dressing are not required.



**"DAIWA RABIN" is an elastic rubberized grinding stone.**

## **WARNING**

### ***Operate your devices at the speed less than the maximum r.p.m.***

(The maximum r.p.m. will be found on the package box, enclosed product description label (red) or posted seal.)

- In general, the "DAIWA RABIN" products are heavier than elastic grinding stones of other types with an exception of Type AF. Pay attention to the maximum r.p.m., in particular, when using a "DAIWA RABIN" as a substitute.
- Even when a "DAIWA RABIN" is used within the maximum r.p.m., it may be bent and damaged if pressed too hard.
- Uneven wear or a degree of wear may cause the grinding stone to be damaged. Since the product suffers uneven wear, it will become run out more because of elasticity than grinding stones of other types. Stop using and put it to the adjustment.
- Turn it at a low speed and nothing is wrong, including run out, before put it into operation.
- Take a safe position or orient the grinding stone to a safety position when starting using a tool or device.
- The grinding stone has rubber elasticity, and take care not to apply a sudden load to it.
- It may be damaged or cause an accident because overheat reduces rubber strength when the grinding stone has a large contact area, is applied a heavy load or used continuously. Let it be radiated and cooled.
- Ultra-violet rays deteriorate the grinding stone. Don't expose it to the sun when it is stocked.
- Putting on safety glasses, a safety helmet and gloves is indispensable for using a grinding stone.

### ***On top of the above, observe such instructions on using and stocking grinding stone as given below.***

- Use a grinder and any other devices which are well checked and maintenance. Use a specific covers for grinding stone.
- Fit your grinder and any other devices with a grinding stone in a proper and sure manner. Take care not to tighten the flange of a wheel type grinding stone too much.
- "DAIWA RABIN" grinding stones generate less dust than grinding stones of other types, but never fail to put on a dust protective mask. (The operator may suffer from a respiratory disease.)
- Sparks may set dust on fire. Take proper measures to remove dust and prevent sparking.
- Observe the basic instructions on stocking: Do not stock any grinding stone as it is left bent; Do not immerse it in water; Do not stock it in a highly humid place for a long period of time; Do not expose it to the direct sun; When unpacked, the grinding stone must be wrapped in a vinyl bag.

*When subdividing grinding stones, show the operator the maximum r.p.m., hand in him such a guide book to safety attached to the product, and tell him to start using after being familiarized with how to use.*

MADE IN JAPAN

