Sample Preparation
Metallography Consumable

Metallography & Industrial solution

www.jys-ims.com.tw

Our Passion-Metallography & Industrial solution

Metallography

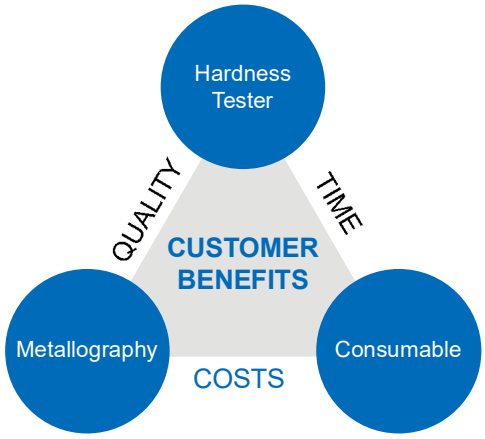
Abrasive & Precision cutter, mounting press, grinder polisher are designed and manufactured by many years experienced engineers.

Hardness Tester

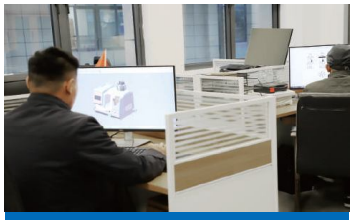
Brinell, Rockwell, Vickers hardness testers are designed and manufactured with ISO, ASTM, JIS ,GB standard.

Consumable

Consumables are utilized in laboratory and production environments where quality assurance, reliability and failure analysis are used as measures for compliance and safety.



JYS FACILITY


Research and Development


Lab


Assembly Workshop

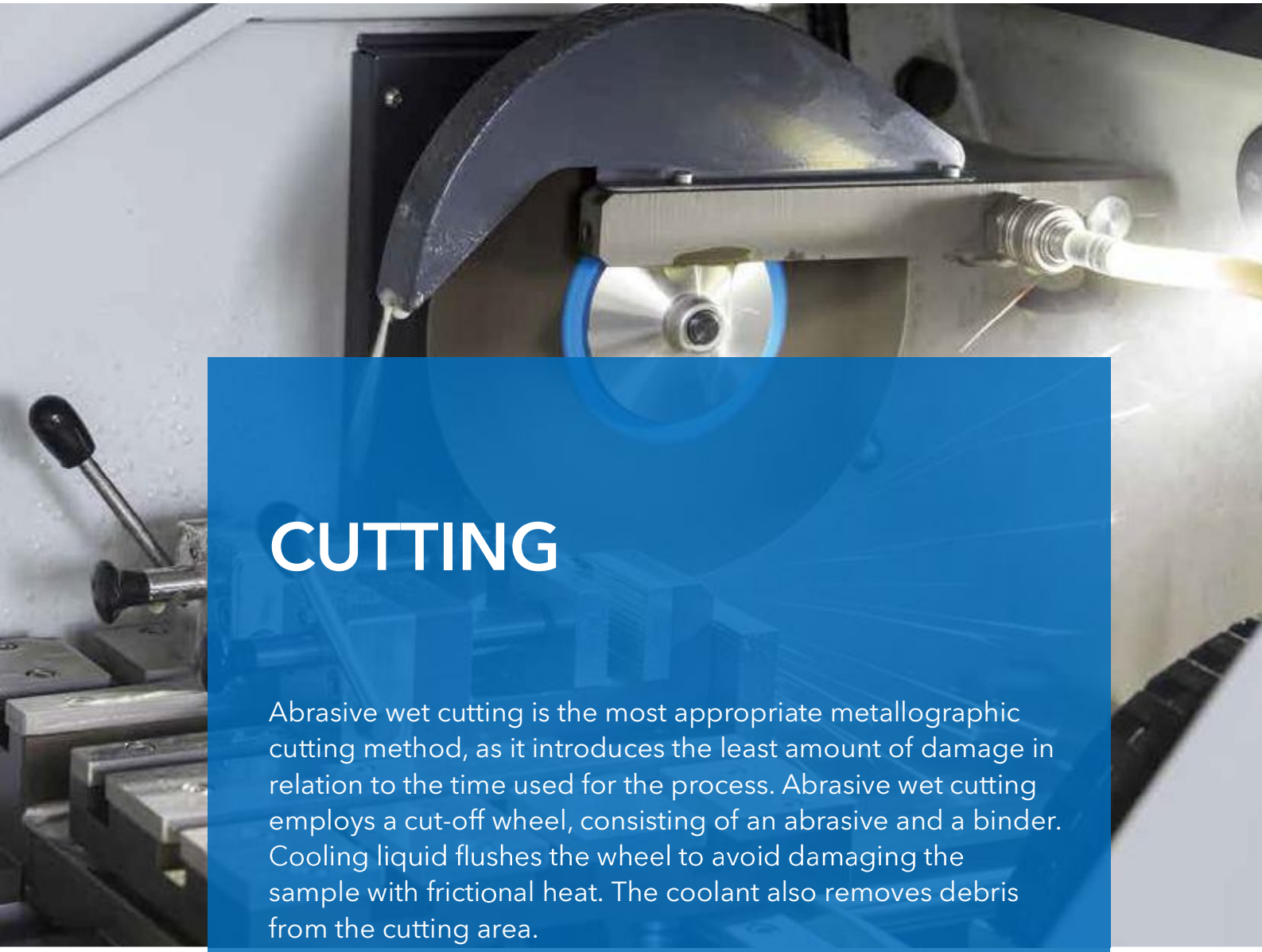

Hardness Tester


Production Workshop


Consumables

*Product availability & specifications contained herein are subject to change without notice.

CONTENT



CUTTING

Abrasive wet cutting is the most appropriate metallographic cutting method, as it introduces the least amount of damage in relation to the time used for the process. Abrasive wet cutting employs a cut-off wheel, consisting of an abrasive and a binder. Cooling liquid flushes the wheel to avoid damaging the sample with frictional heat. The coolant also removes debris from the cutting area.

A prefect sample cutting required combination of cutting machine, clamping tools, cut off wheel, cooling liquid and s set of parameters including cutting mode, feed speed, and rotational speed.

What should be perfect metallographic cutting?

- Specimen must represent the features of the parent piece or component from which it is taken
- There must be no thermal damage/burning of the specimen surface
- Smooth and uniform surface with homogeneous scratches, a minimum of burrs
- Specimen must be cool to touch when taken out of the machine
- Cut-off wheel must not get blocked when cutting, endure only minimal wear

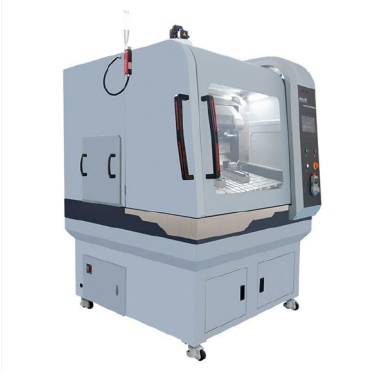
Cut off machines

BEST-250

SAW-180A

FACW-400

AT-2500



BEST-500

ABRASIVE CUT OFF WHEEL

Maimet's abrasive cut-off wheels achieve excellent cutting performance with their high elasticity, high thickness accuracy and high resilience

FS-MAX (type)

250 × 1.5 × 32
outer diameter × thickness × inner diameter

Efficient Cutting & Extended Life

High-quality abrasive particles with the latest resin bond technology to maintain efficient cutting.

They are designed to balance wear rate to maintain efficient cutting while extending cut off wheel life.

FS Series - Alumina cut off wheel

AI203/Resin bond, sold 10 pcs/pack

Recommend use	Type/Bond	Dimension	Code
FS-MAX Very hard steel, 60+HRC such as heat treated and hardened steel	AI203 Resin Bond	230×1.2×32	01-011230
	AI203 Resin Bond	250×1.5×32	01-011250
	AI203 Resin Bond	300×2.0×32	01-011300
	AI203 Resin Bond	350×2.5×32	01-011350
	AI203 Resin Bond	400×3.0×32	01-011400
	AI203 Resin Bond	450×3.5×32	01-011450
	AI203 Resin Bond	500×4.0×32	01-011500
FS-MED Hard steel 40-60 HRC such as case hardened, nitrided steels	AI203 Resin Bond	230×1.2×32	01-021230
	AI203 Resin Bond	250×1.5×32	01-021250
	AI203 Resin Bond	300×2.0×32	01-021300
	AI203 Resin Bond	350×2.5×32	01-021350
	AI203 Resin Bond	400×3.0×32	01-021400
	AI203 Resin Bond	450×3.5×32	01-021450
	AI203 Resin Bond	500×4.0×32	01-021500
FS-SOFT Soft ferrous metals 25-40 HRC such as Zinc Coated Steel	AI203 Resin Bond	230×1.2×32	01-031230
	AI203 Resin Bond	250×1.5×32	01-031250
	AI203 Resin Bond	300×2.0×32	01-031300
	AI203 Resin Bond	350×2.5×32	01-031350
	AI203 Resin Bond	400×3.0×32	01-031400
	AI203 Resin Bond	450×3.5×32	01-031450
	AI203 Resin Bond	500×4.0×32	01-031500

NF Series - Sic abrasive cut off wheel

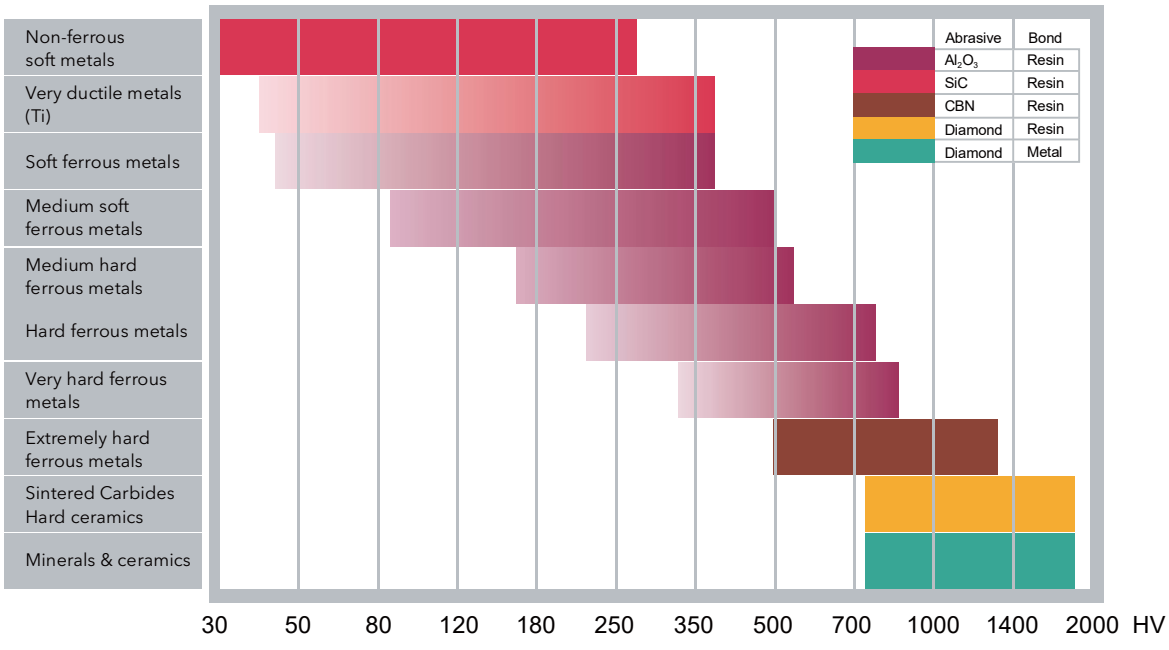
Resin bond, sold 10pcs/pack

Recommend use	Type/Bond	Dimension	Code
NF-MED Medium Hard Non-ferrous Materials, such as Titanium, Titanium Alloys, refractory metals	SiC / Resin Bond	230×1.2×32	01-041230
	SiC / Resin Bond	250×1.5×32	01-041250
	SiC / Resin Bond	300×2.0×32	01-041300
	SiC / Resin Bond	350×2.5×32	01-041350
	SiC / Resin Bond	400×3.0×32	01-041400
	SiC / Resin Bond	450×3.5×32	01-041450
	SiC / Resin Bond	500×4.0×32	01-041500
NF-SOFT For Soft Non-Ferrous/Al/Cu Alloys, (30-300HV)	SiC / Resin Bond	230×1.2×32	01-051230
	SiC / Resin Bond	250×1.5×32	01-051250
	SiC / Resin Bond	300×2.0×32	01-051300
	SiC / Resin Bond	350×2.5×32	01-051350
	SiC / Resin Bond	400×3.0×32	01-051400
	SiC / Resin Bond	450×3.5×32	01-051450
	SiC / Resin Bond	500×4.0×32	01-051500

Guidance for choosing cutting

Choosing the right cutting disc can ensure the quality of sampling reduce time and cost

- Find the hardness value of the sample along the X axis, and intersect the corresponding cutting piece horizontally upward
- Gradient colors indicate that the same applies to lower or higher hardness values
- When the hardness value is unknown, you can select the cutting blade according to the material description on the left in the table below



WAFERING BLADE

Maimet's bonded blade are composed of an inner metal core and an outer rim. The rim consists of either metal or resin mixed with abrasive, cured under high temperature and pressure to bond the matrix together

Excellent Precision Cutting

High concentration metal matrix diamond rim. Excellent cutting rate and a long life time is achieved as the bond breaks down to expose new cutting facets. Designed for very hard or brittle materials

Dia Series - diamond blade

Metal bond / resin bond, sold 1 pc/pack

Bonded blades are composed of an inner metal core and an outer rim. The rim consists of either metal or resin mixed with abrasive, cured under high temperature and pressure to bond the matrix together.

Metal bonding offers long life and durability, while resin bonding creates less heat, provides better surface finish and is well suited for cutting hard, delicate or brittle materials.

Recommend use	Type/Bond	Dimension	Code
DIA-M cutting aggressive material such as ceramics, refractories, glass and rock	Metal Bond	100×0.4×12.7	01-081100
	Metal Bond	125×0.4×12.7	01-081125
	Metal Bond	150×0.5×12.7	01-081150
	Metal Bond	180×0.8×12.7	01-081180
	Metal Bond	200×0.8×12.7	01-081200
	Metal Bond	200×1.2×32	01-082200
	Metal Bond	250×1.3×32	01-081250
DIA-R hard, brittle or delicate materials including ceramics, carbides, composites and exotic metals	Resin Bond	100×0.4×12.7	01-101100
	Resin Bond	125×0.4×12.7	01-101125
	Resin Bond	150×0.5×12.7	01-101150
	Resin Bond	180×0.8×12.7	01-101180
	Resin Bond	200×0.8×12.7	01-101200
	Resin Bond	200×1.2×32	01-102200
	Resin Bond	250×1.3×32	01-101250

CBN Series - CBN blade

Metal bond/ resin bond, sold 1 pc/pack

Recommend use	Type/Bond	Dimension	Code
CBN-M Cutting hard steel, and iron, cobalt, nickel and lead based alloys. Most commonly used at lower (<1,000 RPM) speeds.	Metal Bond	100×0.4×12.7	01-111100
	Metal Bond	125×0.4×12.7	01-111125
	Metal Bond	150×0.5×12.7	01-111150
	Metal Bond	180×0.8×12.7	01-111180
	Metal Bond	200×0.8×12.7	01-111200
	Metal Bond	200×1.2×32	01-112200
	Metal Bond	250×1.3×32	01-111250
CBN-R Cutting hard steel above HRC 60. Most commonly used at higher (>1,000 RPM) speeds.	Resin Bond	100×0.4×12.7	01-121100
	Resin Bond	125×0.4×12.7	01-121125
	Resin Bond	150×0.5×12.7	01-121150
	Resin Bond	180×0.8×12.7	01-121180
	Resin Bond	200×0.8×12.7	01-121200
	Resin Bond	200×1.2×32	01-122200
	Resin Bond	250×1.3×32	01-121250

Guidelines for Wafering Cutting Various Materials

Most wafer cutting is done at speeds between 50 rpm and 5000 rpm with loads varying from 10-1000 grams.

Generally, harder specimens are cut at higher loads and speeds (e.g. ceramics and minerals) and more brittle specimens are cut at lower loads and speeds (e.g. electronic silicon substrates).

It is interesting to note that the cutting efficiency for sectioning hard/tough ceramics improves at higher speeds and higher loads.

Item	Characteristic	Speed (rpm)	Load (grams)
Silicon substrate	soft / brittle	<300	<100
Gallium arsenide	soft / brittle	<200	<100
Boron composites	very brittle	500	250
Ceramic fiber composites	very brittle	1000	500
Glasses	brittle	1000	500
Minerals	friable / brittle	>1500	>500
Alumina ceramic	hard / tough	>1500	>500
Zirconia (PSZ)	hard / tough	>1500	>800
Silicon nitride	hard / tough	>3500	>800
Metal matrix composites	hard / tough	>3500	>500

COOLANT & STICKER

Cutting accessories for abrasive cut off wheels and diamond and CBN blades

Cutting coolant

It uses with all wet abrasive cut-off wheels and blades

It enhances blade performance, extends blade life and minimizes material deformation by reducing heat during cutting

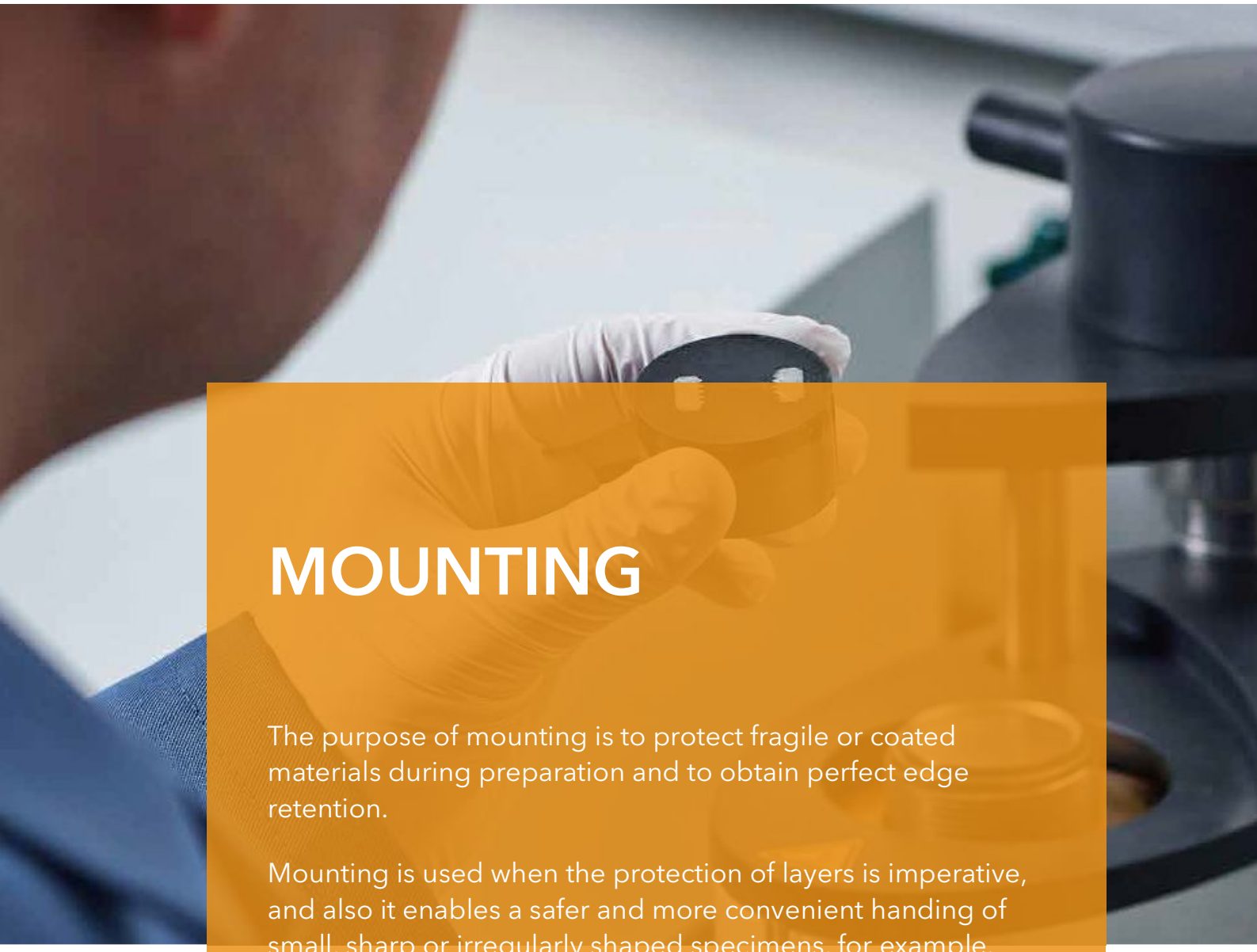
Description	Pack	Code
CutCol-100W	1L	01-201000
CutCol-100W	4.5L	01-204500
CutCol-120A	1L	01-211000
CutCol-120A	4.5L	01-214500

Dressing Stick

It uses with all wafering blade ,10pcs/pack

Used to clean the rim and expose new abrasive on all wafering blades.

Description	Pack	Code
Alumina	12*12*150mm	01-251150
SiC	12*12*150mm	01-252150



MOUNTING

The purpose of mounting is to protect fragile or coated materials during preparation and to obtain perfect edge retention.

Mounting is used when the protection of layers is imperative, and also it enables a safer and more convenient handing of small, sharp or irregularly shaped specimens, for example.

HOT MOUNTING

- Ideal for large numbers of specimens
- Uniform size and shape
- Better edge preservation
- Highest throughput and quality

COLD MOUNTING

- Ideal for large series of specimens
- Low exotherm
- Sensitive by heat and pressure
- Better for ceramics, plasma sprayed coatings

Mounting Press

UV Mounting

AMT-2H

AMT-1H

VAC-252

VC-250M

HOT MOUNTING COMPOUND

Formulated resins offer excellent edge retention and hardness. All compound are designed to polymerize between 150 and 180℃ at specific molding pressures

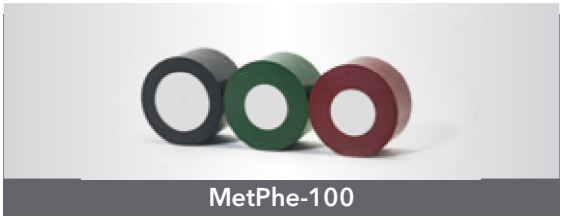
Hot Mounting Comparison Chart

Pack	MetPhe-100	MetSEM-120	MetEpo-200	MetTrans-300	MetDAP-400
heating TEMP	150-180 ℃	150-180 ℃	150-180 ℃	160-180 ℃	140-180 ℃
heading time	4-6 mins	4-6 mins	5-7 mins	6-8 mins	4-6 mins
cooling time	2-3 mins	4-6 mins	5-7 mins	7-10 mins	2-3 mins
pressure	100-300 bar	100-300 bar	100-300 bar	100-150 bar	100-150 bar
hardness	82-86 shore D	85-90 shore D	92-94 shore D	75-85 shore D	82-86 shore D

* Data is based on the diameter of 30mm heating mold, for reference only.

General Purpose Compounds

It can use with most ferrous and non-ferrous metal



MetPhe-100

Phenolic resins are cost-effective, economic ones. They exhibit good edge retention and hardness properties.

Pack	Black	Red	Green
1kg	02-011001	02-012001	02-013001
4kg	02-011004	02-012004	02-013004
20kg	02-011020	02-012020	02-013020

MetDAP-400

This compound with glass or mineral and provides excellent edge retention and chemical resistance.

Pack	Code
1kg	02-051001
4kg	02-051004

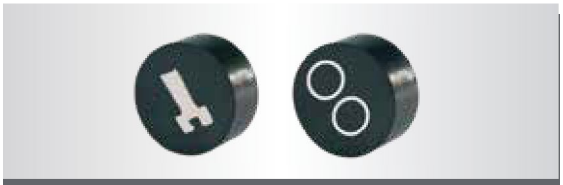
MetEpo-200

Epoxy compound have high hardness and chemical resistance , excellent edge retention ypically chosen for mounting the hardest materials.

Pack	Code
1kg	02-031001
4kg	02-031004

Specialty Compounds

It can use with most ferrous and non-ferrous metal



MeSEM-300

A black carbon filled thermosetting compound for conductive mounting used in SEM work.

Pack	Code
1kg	02-021001
4kg	02-021004

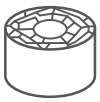
MetTrans-500

Fair edge retention, moderate shrinkage, transparent mounting, allows easy sample observation.

Pack	Code
1kg	02-041001
4kg	02-041004

Guidance for Hot Mounting Compound

Before sample mounting process, the grease on the sample needs to be removed so that the mounting resin can perfectly adhere to the surface of the sample. If burrs are generated during the cutting process, you can use sandpaper to remove the burrs on the edge of the sample

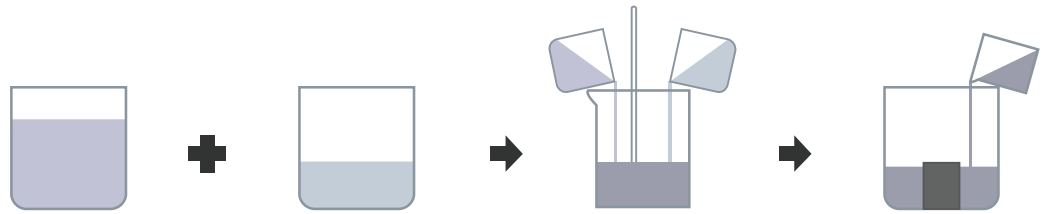
	Problem	Causes	Solutions
	Bulge	Less cooling time	Increase the cooling time
	Primer cracks	Oversized Coated part according to the chosen mounting mould	Reduce the size of the sample or increase the size of the mounting mould
	Shrinkage	Inadequate mounting resins	Choose less shrinkage resins
		Insufficient heating time	Increase the temperature during the heating time
		Insufficient pressure	Increase the mounting pressure
	" Smoke" visible	Wrong pressure choice	Pressurisation only during cooling cycle
		Too much resin than sample diamensioni	Reduce resin quantity or mould diamension
		Insufficient heating time	Increase the heating time
	Resins grains visible	Insufficient pressure	Increase the pressure during the mounting cycle
		Insufficient heating time	Increase the heating time

COLD MOUNTING SYSTEM

Whether the priority is speed, pore penetration, or low curing temperature, there is a Maimet cold mounting system suited for every sample type.

	AcryFast-100	AcryPlus-120	EpoFast-400	EpoMed-500	EpoSlow-600
Material	Acrylic	Acrylic	Epoxy	Epoxy	Epoxy
Mixing A:B	5:4	2:1	2:1	3:1	3:1
Curing time	10-15 mins	10-15 mins	35-60 mins	3-4 hours	18-22 hours
Pot life	2-5 mins	2-5 mins	4-8 mins	10-20 mins	10-20 mins
Shrinkage	Low	Low	Low	Low	Low
Peaking Temp	85 ℃	85 ℃	145 ℃	120 ℃	60 ℃
Hardness Shore	80	100	100	76	76

* Data is based on the diameter of 30mm heating mold, for reference only.



Resin A | Hardener B | Mixing up | Curing

Acrylic Cold Mounting

Quick mounting for mass sample preparation

AcryFast-100

Very quick cure times and excellent wetting characteristics making it ideal for electronics and PCB applications.

Item	Pack	Code
ArcyFast-100A	1kg	02-111000
ArcyFast-100B	800ml	02-111800

AcryPlus-120

General purpose acrylic system offering a semitransparent mount with a reduced odor while curing.

Item	Pack	Code
ArcyPlus-120A	1kg	02-121000
ArcyPlus-120B	500ml	02-121500

Epoxy Cold Mounting System

Epoxy priority is speed, pore penetration, or low curing temperature

EpoFast-400

Mix weight A:B : 2:1
Curing Time: 35-45 mins
Fast curing, transparent, low odor, yellowish.

Item	Pack	Code
EpoFast-400A	2000ml	02-152000
EpoFast-400B	1000ml	02-151000

EpoMed-500

Mix weight A:B : 3:1
Curing Time: 3-4 hours
Very low viscosity, good permeability, transparent, odorless.

Item	Pack	Code
EpoMed-500A	1000ml	02-161000
EpoMed-500B	300ml	02-160300

EpoSlow-600

Mix weight A:B : 3:1
Curing Time: 18-22 hours
Low peak temperature, viscosity and shrinkage with good hardness, transparent.

Item	Pack	Code
EpoSlow-600A	1000ml	02-171000
EpoSlow-600B	300ml	02-170300

Guidance for Cold Mounting

Before sample mounting process, the grease on the sample needs to be removed so that the mounting resin can perfectly adhere to the surface of the sample. If burrs are generated during the cutting process, you can use sandpaper to remove the burrs on the edge of the sample.

- Acrylics cure quickly so it is recommended to pour the mixture into the mold immediately after mixing to prevent "gelling".
- Acrylic systems are not for use with Vacuum Systems or Disposable Mounting Cups.
- To improve edge retention for acrylic systems, coat the sample in the liquid hardener before pouring in mixed compound.

- Epoxies can be cured more quickly by gently heating, typically at 30-40℃. It cause excessive heating during curing.
- Use a vacuum system to evacuate air trapped in epoxy systems and samples. This reduces or eliminates the gap at the sample/epoxy interface.
- Epoxies are sensitive to the ratio of resin and hardener. Be sure to follow the recommended ratio for each product.

MOUNTING ACCESSORY

MAIMET provides the most complete accessories required in the cold mounting and hot mounting process to obtain perfect sample preparation.

Support Clips

Fixing special-shaped specimens

Plasitc Coil Clip

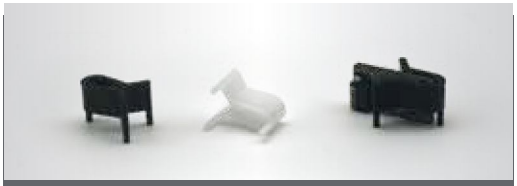
Plastic support clip best for castable mount systems. Easy operation and low cost.
Material: **PET**

Item	Pack	Code
6.0×100 mm	100 pcs	02-310100
6.0×100 mm	1000 pcs	02-311000

Stainless Steel Clip

Stainless Steel support clip can be used with all mounting systems.
Material: **304 stainless steel**

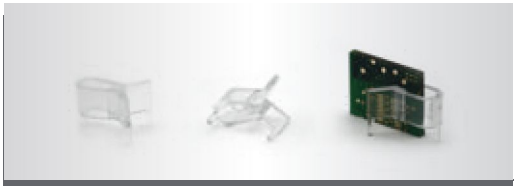
Item	Pack	Code
6.5×150 mm	100 pcs	02-300100
6.5×150 mm	1000 pcs	02-301000



Triangle Plastic Clip

Black/White plastic support clip best for castable mount systems.
Material: **POM**

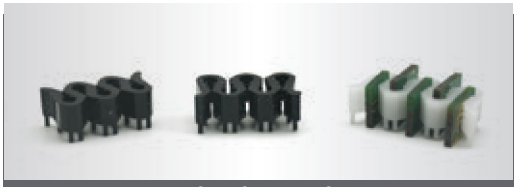
Item	Pack	Code
13×10×10 mm	100 pcs	02-330100
13×10×10 mm	1000 pcs	02-331000



Triangle Plastic Clip

Transparent plastic support clip best for castable mount systems. Easy observation.
Material: **PMMA**

Item	Pack	Code
13×10×10 mm	100 pcs	02-350100
13×10×10 mm	1000 pcs	02-351000



Multi Plastic Clip

Black/White multi plastic support clip best for cold mount systems. It can hold 5 samples at a time.
Material: **POM**

Item	Pack	Code
22×12×8 mm	100 pcs	02-370100
22×12×8 mm	100 pcs	02-371100

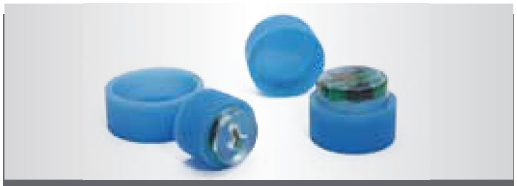
Multi Plastic Clip

Best for cold mount systems. It can hold 5 samples at a time. Easy observation.
Material: **PMMA**

Item	Pack	Code
22×12×8 mm	100 pcs	02-380100
22×12×8 mm	1000 pcs	02-381000

Mounting Molds

For different materials and different sizes, maimet provides a variety of molds



Silicone Mold Cup

Durable, reusable silicone mold cups are suitables for epoxy or acrylic mounting samples.
Material: Blue Silicone

Item	Pack	Code
Ø 25 mm	10 pcs	02-221125
Ø 30 mm	10 pcs	02-221130
Ø 32 mm	10 pcs	02-221132
Ø 40 mm	10 pcs	02-221140
Ø 50 mm	10 pcs	02-221150

2- Part Plastic Cup

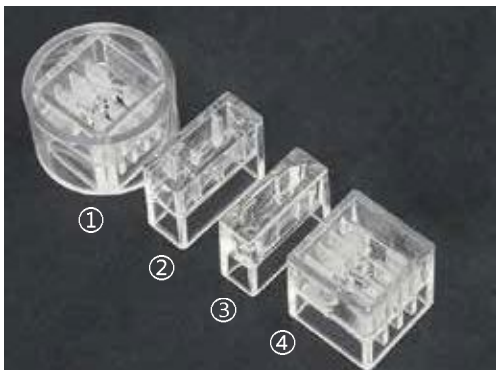
Reusable cup with a separable bottom, easy to mount removal after curing.
Material: POM

Item	Pack	Code
Ø 25 mm	10 pcs	02-231125
Ø 30 mm	10 pcs	02-231130
Ø 32 mm	10 pcs	02-231132
Ø 40 mm	10 pcs	02-231140
Ø 50 mm	10 pcs	02-231150

Rectangular Silicone Mold

Durable, reusable silicone mold cups are suitables for epoxy or acrylic mounting samples.
Material: Blue Silicone

Item	Pack	Code
22*55*18 mm	10 pcs	02-222020
30*55*18 mm	10 pcs	02-222030
70*40*18 mm	10 pcs	02-222070
100*50*18 mm	10 pcs	02-222100



Disposable Mounting Mold

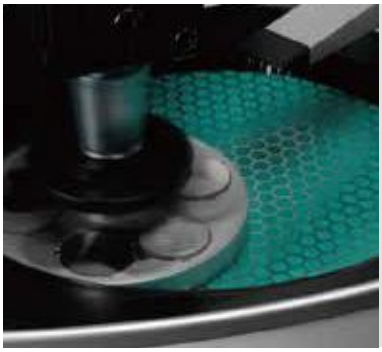
Most are used for PCB/PWS, easy to mount and reduce resin quantity.
Material: PS

	Item	Pack	Code
①	Ø 30 / H 19 mm	200 pcs	02-231125
②	24*10*20 mm	200 pcs	02-231130
③	23*8*19 mm	200 pcs	02-231132
④	21*21*18 mm	200 pcs	02-231140

GRINDING POLISHING

The goal of the grinding and polishing steps is to prepare a final polished sample that is free of deformation and suitable for analysis.

In this step, the surface damage generated during the cutting or grinding process can be removed, and a smooth surface that is convenient for microscopic observation.

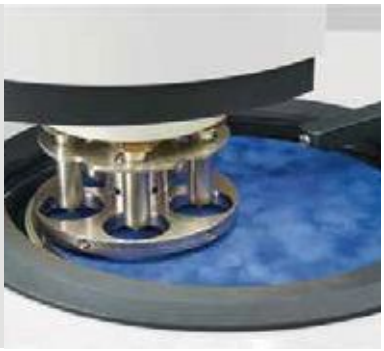


GRINDING

- Silicone Carbide Abrasive Paper
- Diamond Gringding Disc
- Diamond Gringding Film
- Magnetic Transfer System

POLISHING

- Diamond Suspension
- Alumina Powder / Suspension
- SiO_2 Suspension
- Polishing Cloth / Pad



Many factors influence the surface finish, such as:

- Abrasive size and type
- Cloth texture
- Polish time
- Specimen load
- Rotational direction
- Rotational speed

Grinding polishing

AL-610

AL-606

AL-108

ABRASIVE PAPER / DISC

It is a specialized silicon carbide grinding paper that offers quick and efficient material removal with minimal surface damage.

High Material Removal

High-quality silicon carbide abrasive grains to ensure the grinding rate, saving valuable time in the next preparation process.

Superior Surface Finish

Quick grinding times with minimal surface damage during the grinding process. Since there is less damage to remove, the amount of subse-quent processing may possibly be reduced.

Quick Change-Overs

Fast changeovers between different steps. Simply remove the previous paper and apply the next stage without needing to remove any backings or liners.

SiC Abrasive Paper, Plain Back

C-Weight-Wet/Dry, sold 100 pcs/pack

Grit	8 inch / 200 mm	10 inch / 250 mm	12 inch / 300 mm
80	03-010080	03-050080	03-070080
120	03-010120	03-050120	03-070120
180	03-010180	03-050180	03-070180
240	03-010240	03-050240	03-070240
320	03-010320	03-050320	03-070320
400	03-010400	03-050400	03-070400
600	03-010600	03-050600	03-070600
800	03-010800	03-050800	03-070800
1000	03-011000	03-051000	03-071000
1200	03-011200	03-051200	03-071200
1500	03-011500	03-051500	03-071500
2000	03-012000	03-052000	03-072000
2500	03-012500	03-052500	03-072500
4000	03-014000	03-054000	03-074000
5000	03-015000	03-055000	03-075000

SiC Abrasive Paper, PSA Back

C-Weight-Wet/Dry, sold 100 pcs/pack

Grit	8 inch / 200 mm	10 inch / 250 mm	12 inch / 300 mm
80	03-020080	03-060080	03-080080
120	03-020120	03-060120	03-080120
180	03-020180	03-060180	03-080180
240	03-020240	03-060240	03-080240
320	03-020320	03-060320	03-080320
400	03-020400	03-060400	03-080400
600	03-020600	03-060600	03-080600
800	03-020800	03-060800	03-080800
1000	03-021000	03-061000	03-081000
1200	03-011200	03-061200	03-081200
1500	03-011500	03-061500	03-081500
2000	03-012000	03-062000	03-082000
2500	03-012500	03-062500	03-082500
4000	03-014000	03-064000	03-084000
5000	03-015000	03-065000	03-085000

DIAMOND GRINDING DISC

Diamond grinding discs offer a long-wear surface that provides excellent surface flatness for a wide variety of materials.

Faster Material Removal

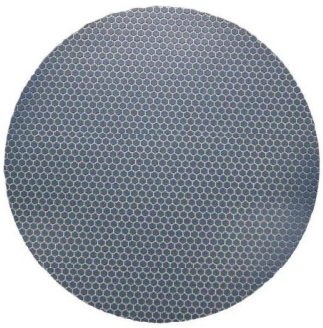
High-quality diamond abrasive grains to ensure the grinding rate faster than conventional SiC or Alumina abrasive grains.

Superior Surface Flatness

Diamond Grinding Discs offer superb edge retention and excellent flatness making them the perfect choice for controlled material removal on automated systems.

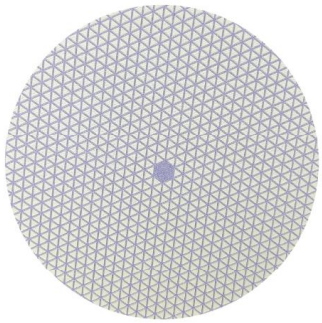
Long Life Service

Fixed diamond particles provide consistent removal rates and extended lifetime with only an occasional dressing to maintain the surface.



Dia-M metal bond series

Recommended for materials including ceramics, carbides and metal matrix composites.



Dia-R resin bond series

Recommended for a wide variety of materials including hard metals and non-metal coatings.

Dia-M Diamond Disc

Metal Bond, PSA back, sold 1 pc/pack

Grit	8 inch / 200 mm	10 inch / 250 mm	12 inch / 300 mm
60	03-100060	03-120060	03-140060
120	03-100120	03-120120	03-140120
200	03-100200	03-120200	03-140200
400	03-100400	03-120400	03-140400
800	03-100800	03-120800	03-140800
1500	03-101500	03-121500	03-141500
3000	03-103000	03-123000	03-143000

Dia-R Diamond Disc

Resin Bond, PSA back, sold 1 pc/pack

Grit	8 inch / 200 mm	10 inch / 250 mm	12 inch / 300 mm
60	03-160060	03-180060	03-200060
120	03-160120	03-180120	03-200120
200	03-160200	03-180200	03-200200
400	03-160400	03-180400	03-200400
800	03-160800	03-180800	03-200800
1500	03-161500	03-181500	03-201500
3000	03-163000	03-183000	03-203000

MAGNETIC TRANSFER SYSTEM

MTS system provides the fastest solution for changing between grinding papers, while a magnetic system can be adapted for use with nearly all products.

Reduce Changeover Times

Magnetic Transfer System is the ideal choice to reduce changeover times between grinding paper steps, allows easy removal and storage of grinding and polishing consumables (abrasive paper, diamond disc, polishing cloth).

Options for Auto Grinder Polisher

The choice of platen system depends on the goals of lab and products being used in the preparation process, offers the fastest solution for changing between grinding papers, while a magnetic system can be adapted for use with almost products.

Magnetic Disc

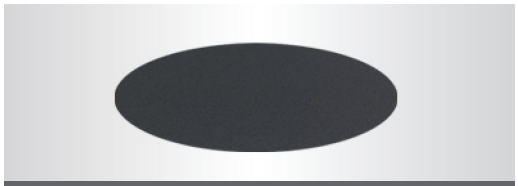
Flexible, long lasting magnet discs, PSA backing and use to convert a conventional platen.

Diameter	Pack	Order No.
200 mm	1 pc	03-500200
250 mm	1 pc	03-500250
300 mm	1 pc	03-500300

PSA Back Surface
PSA abrasive paper, grinding disc, polishing cloth

Magnetic Platen

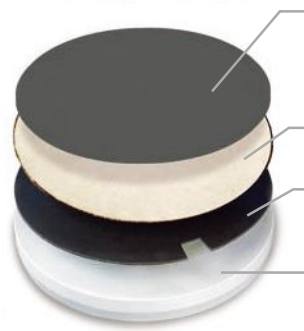
Working Platen



MTS-PSA Disc

Wear-resistant high-quality stainless steel material with Teflon coating on the surface.

Diameter	Pack	Order No.
200 mm	1 pc	03-510200
250 mm	1 pc	03-510250
300 mm	1 pc	03-510300



PSA Back Surface
PSA abrasive paper, grinding disc, polishing cloth

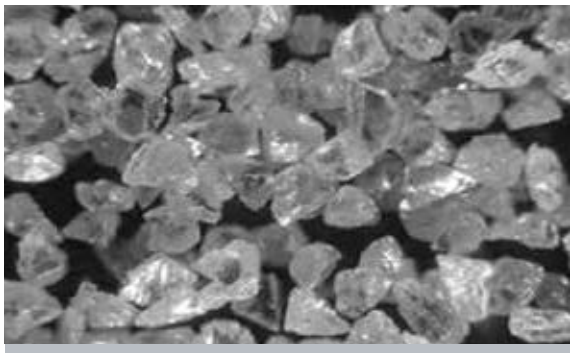
MTS-PSA Platen

Magnetic Platen

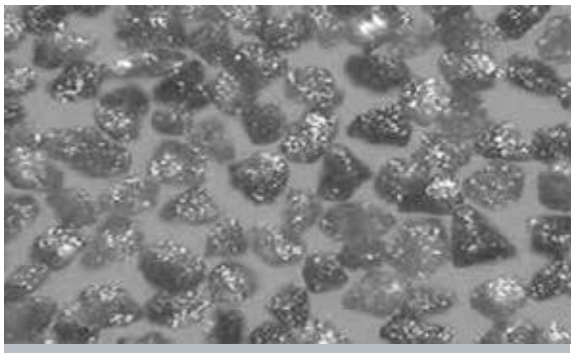
Working Platen

DIAMOND SUSPENSION

They are excellent for distributing diamond easily and uniformly over the cloth or platen surface, and made with either alcohol (water-free), or water based.



Monocrystalline diamond is made of a single crystal structure, very blocky and strong. This type of diamond provides a high removal rate and is best used for all-purpose grinding and polishing.



Polycrystalline Diamond is made of muti-faceted crystallites. This type of diamond has a high removal rate with minimal scratch depth. Polycrystalline diamonds are recommended for the most exacting standards.

Dia-M Diamond Suspension

Monocrystalline, water/oil based, sold 500 ml/pack

Grit (um)	Color	Water Based	Oil Based
0.25	Grey	04-300125	04-300225
0.5	Grey	04-300105	04-300205
1	Blue	04-300101	04-300201
3	Green	04-300103	04-300203
6	Yellow	04-300106	04-300206
9	Red	04-300109	04-300209

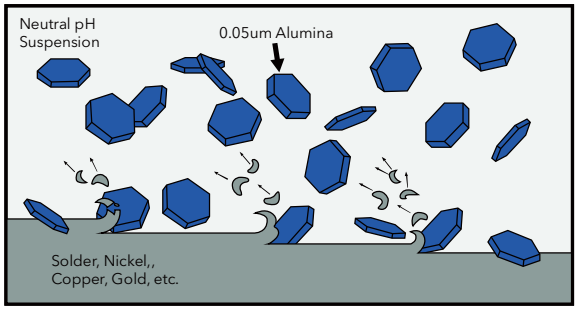
Dia-P Diamond Suspension

Polycrystalline, water/oil based, sold 500 ml/pack

Grit (um)	Color	Water Based	Oil Based
0.25	Dark Grey	04-310125	04-311125
0.5	Dark Grey	04-310105	04-311105
1	Dark Grey	04-310101	04-311101
3	Dark Grey	04-310103	04-311103
6	Dark Grey	04-310106	04-311106
9	Dark Grey	04-310109	04-311109

ALUMINA POWDER/SUSPENSION

Alumina powders and suspension are made to the tightest quality specifications and are used for final polishing of metallographic specimens.



Alumina contains seeded gel alumina, which provides efficient material removal combined with superior surface finish via a purely mechanical, abrasive process.

- Preferred for Iron, Steel, Copper, Polymers, Minerals, Micro-electronics (PCB/PWB).
- Best alumina quality due to sol-gel suspension.

AP-200 Aluminum Oxide Powder

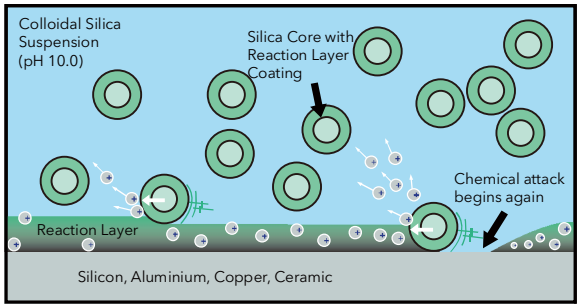
Deagglomerated, sold 500 g/pack

High quality deagglomerated alumina powders offering good surface finish. **Mixed with DI water**.
Used for electronic parts, PCB/PWB, semiconductor, copper, Tin, steel, iron, minerals, polyers, metals.

Grit (um)	Particle Type	Type
0.05	γ Gamma	04-410005
0.3	α Alpha	04-410030
1	α Alpha	04-410100

SILICA POLISHING SUSPENSION

Formulated with quality diamond. The tight tolerance particle size distribution guarantees consistent results.
The water/oil soluble paster not only cleans easily, and works well with most lubricants.



Use a chemical reaction to attack top layer, then mechanical removal to sweep away.

- Preferred for Aluminum, Refractory metals, silicon in micro-electronics, ceramic.
- Non-crystallizing for a superior, scratch-free finish.

CMP-300 Silica Suspension

Final polishing suspension, used for Chemical Mechanical Polishing

This non-crystallizing silica suspension with 9.8 pH produces an excellent final polish for a wide variety of materials, especially **nonferrous metals, PCBs and ICs**.

Grit(um)	Pack	Order No.
0.05	500 ml	04-450500
0.05	1000 ml	04-451000
0.05	5000 ml	04-455000

CMP-400 Silica Suspension

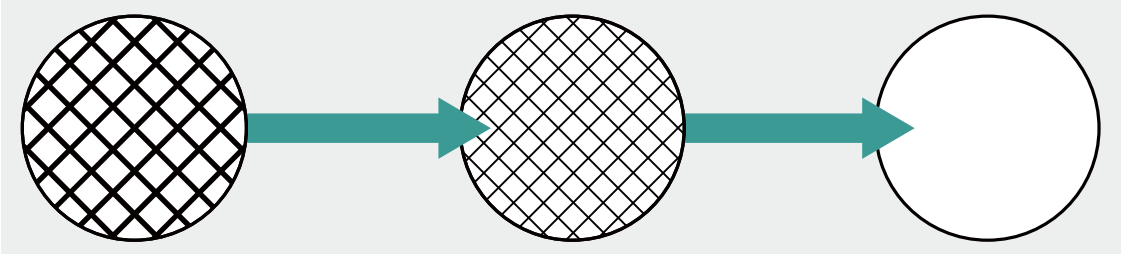
Final polishing suspension, used for Chemical Mechanical Polishing

This non-crystallizing silica suspension with 10.2 pH produces an excellent final polish.
Especially for **Titanium, iron, steel**.

Grit(um)	Pack	Order No.
0.05	500 ml	04-460500
0.05	1000 ml	04-461000
0.05	5000 ml	04-465000

POLISHING CLOTH

A wide range of polishing cloths are available for coarse, intermediate and final polishing of all materials. They are available with adhesive backing, rigid (steel) or flexible (rubber) ferromagnetic backing.



Coarse	Intermediate	Final
• Many large scratches • Abrasive is added to a hard or medium napless polishing cloth	• Many light scratches • Abrasive is added to a hard, medium, or soft cloth	• Scratch-free finish • Suspended abrasives are applied to a softer, more resilient surface

Woven Polishing Cloth

Woven cloths feature a cross-weave pattern, where abrasives particles embed and provide efficient material removal. The cross-weave pattern is ideal for ***coarse and intermediate polishing***.

They feature low compression, applying effective pressure to the loose abrasive particles for maximum material removal and flatness.

Wov-100 Polishing Cloth

Woven polyester, White, PSA back, sold 10pcs/pack

Hard, resin coated, durable, coarse woven polyester. High material removal rate and excellent flatness.
For use with diamond (3-20 µm).
Suitable for coarse, intermediate grinding of ferrous metals, ceramics, cemented carbides, thermal

Diameter	Order Code
200 mm	04-610200
250 mm	04-610250
300 mm	04-610300

Wov-200 Polishing Cloth

Woven canvas, White, PSA back, sold 10pcs/pack

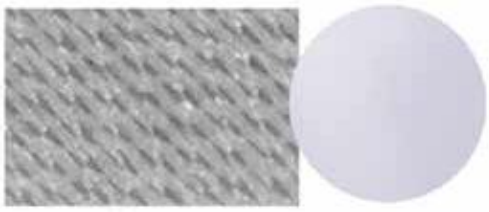
Hard, thick cotton fabric, woven canvas. Produce high material removal rate and excellent flatness.
For use with diamond (5-20 µm).
Suitable for coarse, intermediate grinding of ferrous metals, ceramics, cemented carbides, thermal spraying, minerals.

Diameter	Order Code
200 mm	04-620200
250 mm	04-620250
300 mm	04-620300

Wov-300 Polishing Cloth

Woven synthetic silk, white, PSA back, sold 10 pcs/pack

Dense, woven synthetic silk for use with diamond (1-9 μm). Produces very good edge retention and provides excellent finish and flatness. Used for ferrous and non-ferrous metal, especially good for coating and samples composed of materials with varying hardness coarse and intermediate polishing.



Diameter	Order Code
200 mm	04-630200
250 mm	04-630250
300 mm	04-630300

Wov-400 Polishing Cloth

Woven wool, white, PSA back, sold 10 pcs/pack

Woven wool with a medium nap and low resilience for use with diamond (1-6 μm).
Intermediate and fine polishing for cast iron, powder metallurgy, thermal spray metal, non-ferrous metal, such as Copper, Aluminium, Tin.

Diameter	Order Code
200 mm	04-640200
250 mm	04-640250
300 mm	04-640300

Non-Woven Polishing Cloth

Non-woven cloths feature low compression, with surfaces that tend to be softer than woven cloths.

A non-woven cloth can have fibers interlaced throughout the surface, but the pattern is random rather than a cross-weave. Non-woven cloths are less agressive, so they are better suited for intermediate and final polishing steps.

NWov-100 Polishing Cloth

Polyurethane, black, sold 10 pcs/pack

Dense, non-woven, low-nap porous polyurethane for polishing with alumina or silica suspension(0.02-1um).
Suitable for final grinding of titanium alloy, stainless steel, lead, zinc, PCB, electronic sealing products, non-ferrous metals, plastics, etc.

Diameter	Order Code
200 mm	04-700200
250 mm	04-700250
300 mm	04-700300

Napped (Flocked) Polishing Cloth

Napped cloths, also known as flocked cloths, have various length fibers and fabric stiffness. They are mostly used for final polishing, as the flock pattern brushes the sample to clean and remove intermediate polishing scratches.

Firm fibers are commonly used for polishing softer metals and materials, while soft fibers are useful preparing harder materials.

Nap-100 Polishing Cloth

Nap, brown, PSA back, sold 10 pcs/pack

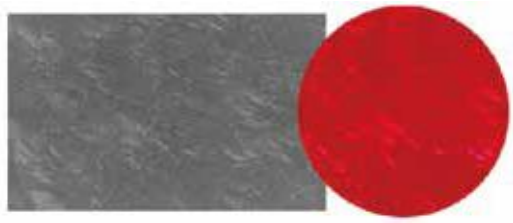
Very durable, soft, low-nap synthetic flock. Used with 0.05-3 µm diamond or alumina suspension.
Excellent for final polishing ferrous metals and composites, electronic parts.

Diameter	Order Code
200 mm	04-710200
250 mm	04-710250
300 mm	04-710300

Nap-200 Polishing Cloth

Nap, Red, PSA back, sold 10 pcs/pack

Soft, low-nap rayon flock for use with diamond (3-0.25 µm) or alumina. Provides excellent finish and flatness, especially with hard materials, ferrous metals and glass.

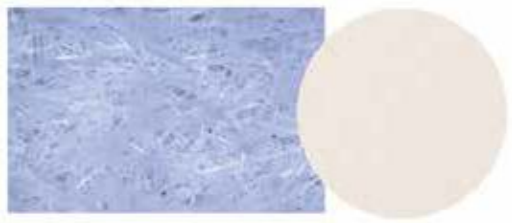


Diameter	Order Code
200 mm	04-720200
250 mm	04-720250
300 mm	04-720300

Nap-300 Polishing Cloth

Nap, White, PSA back, sold 10 pcs/pack

Soft, medium-low nap synthetic flock for use with diamond (1-0.25 µm) or alumina. Provides very good flatness on a wide variety of materials. Excellent for fine and final polishing soft material such as Copper, Tin, PCB, Semiconductor.



Diameter	Order Code
200 mm	04-730200
250 mm	04-730250
300 mm	04-730300

Application Table

Model	Coarse Polishing		Intermediate Polishing				Final Polishing			
	Wov-200	Wov-100	Wov-400	Wov-300	Nap-200	Nap-100	NWov-100	Nap-100	Nap-300	Nap-100
Recommended Grit	6~15μm	3~9μm	1~6μm	1~6μm	1~6μm	0.3~3μm	0.05~1μm	0.05~1μm	0.05~1μm	0.05~0.3μm
Alumina Polishing Suspension	-	-	-	★	★	★★	★★	★★	★★	★★
Silica Polishing Suspension	-	-	-	-	-	-	★	★	★★	★★
Diamond Polishing Suspension	★★	★★	★★	★★	★★	★★	★	★	-	-
Ceramics	★★	★	★★	-	★	★	★	★	-	★★
Hard Metals	★★	★★	★★	★	★★	★★	★	-	-	★★
Steel	★★	★★	★★	★★	★★	★★	★	★	★	★★
Composite Materials	-	★	★★	★	★	★	★★	★★	★★	★★
Minerals	★★	★	★	★	★★	★	★	★	-	★
Coating	-	★★	★	★	★★	★★	★★	★★	-	★★
Gray Cast Iron	★★	★★	★★	★★	★★	★★	★	★	-	★★
Copper Alloys	-	★	★	★★	★★	★★	★★	★★	★★	★★
Aluminum Alloys	-	★	★	★★	★★	★★	★★	★★	★★	★★
Soft Metals	-	★	★	★★	★★	★★	★★	★★	★★	★★
Non-ferrous Materials	-	★	★★	★★	★	★	★	★	-	★★
Electronic Materials	-	★★	★	-	★	★★	★★	★★	★★	★★
Plastics	-	-	★	-	★	★★	★★	★★	★	★★

★★ Excellent ★ Good

Recommended Method

Due to varying demands and applications, the polishing methods for each material differ. The following table presents the polishing methods recommended by years of experience, which can yield excellent polishing results. For more detailed information and polishing techniques, please contact our company by phone or email us.

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