

# Metallographic Consumables





Metallographic Sample Preparation Equipment Cutting/ Mounting/ Grinding & Polishing

## Corporate

## **About Top Tech**

Established in 1995, Top Tech Machines Co., Ltd. operates on four management principles: Quality, Speed, Innovation, and Responsibility. Top Tech continues to be devoted to innovation and Research & Development. Our growing staff has many years of experience in design and manufacturing.

Our experience has led to the development of the equipment that combines the highest levels of preparation quality with outstanding user-friendliness. Our machines incorporate a number of revolutionary patented features, and are sold throughout the world. Top Tech was certified with the ISO 9001 International Quality Assurance Operation System in 2003 and CE certificate, leading to further enhancement of our quality management systems. We continue to obtain international and domestic patents for our innovative products.

Our primary focus is the design, manufacture, distribution of metallographic examination & preparation equipment and related consumables. We insist on the best quality and believe in the long-term relationships with our customers. Our customer service team is trained to respond to the needs of our customers rapidly and accurately. We provide our customers with not only the optimal and the most useful equipment, but also the most professional technical support and solutions.

## Innovation, Quality, Speed, Responsibility

#### Research & Development (R&D)

 Professional R&D Team designs new products and collaborates with customers in satisfying their demands.

#### **Patents**

 We have nearly 30 years of experience in the field of metallography and obtain more than 50 patents worldwide. We are constantly optimizing our products for innovation, humanization, intelligent, and reliability.

## **Quality Control (QC)**

- Quality Control Management is guided by the principles of ISO 9001 and regulations of Conformite Europeenne (CE), which has been adopted to develop, implement and improve the quality control system.
- Systematic archives comprehensively storage the profile of every machine, including the drawings, pictures, customer's demands, and production history, etc.

## **3R Principles**

- Rapid- Reply within 24 hours.
- Reliable- Accurately meet customers' demands with good quality.
- Responsible- Technical support and after service.







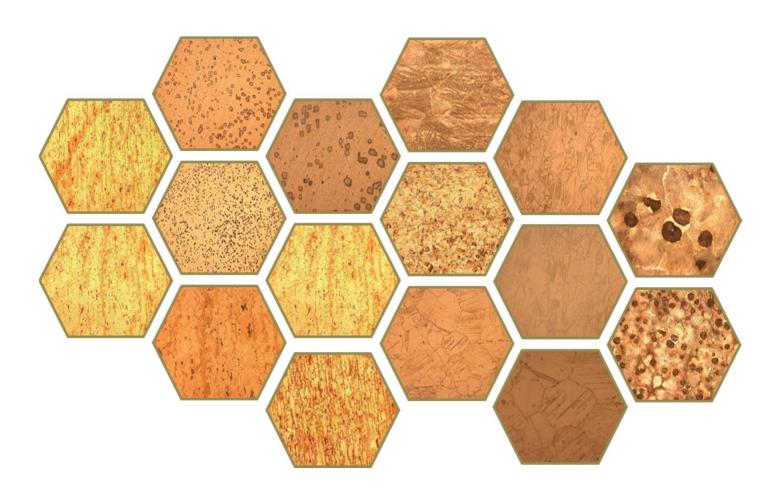


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# **Sample Preparation Procedure**

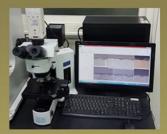


## Metallographic Flowchart



#### Observation

Etching the surface of the specimen and observing the microstructure under microscope.





## **Grinding & Polishing**

Grinding/Polishing the surface as high reflective as possible.





#### Cutting

Cutting the specimen to the moderate size.







Mounting

specimen and easier

polishing process.

Mounting the

for grinding &





## Aluminum

(Aluminum, 5052, 6061, 7075, and etc.)

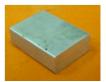
#### 1. Cutting

Model	CL50
	Parameter
Cutting Fluid	S01003 (Transparent)
Diameter	6" Ø152mm
Order No.	HW21120702L
Rotational Speed	2000 rpm
Time of Cutting	3-5 min

#### 2. Cold Mounting

Model	MV02
	Parameter
Epoxy Resin	15 g
Hardener	0.3 g
Time	45-60 min

## Specimen (Aluminum)

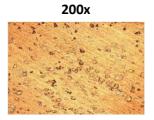


#### 3. Grinding/Polishing

Model	FRSD-A3							
Grinding/Polishing	Lubricant or Grinding Material	Rotational Speed of Platen (rpm)	Rotational Speed of Head (rpm)	Rotational Direction	Order No.	Grit (ANSI)	Force (kg)	Time (min)
G1	Water, SiC paper	300	60	cw/ccw	S0520080240AU	#240	4-5	4-8*
G2	Water, SiC paper	300	60	cw/ccw	S0520080400AU	#400	4-5	3-6
G3	Water, SiC paper	300	60	cw/ccw	S0520080600AU	#600	4-5	3-4
G4	Water, SiC paper	300	60	cw/ccw	S0520080800AU	#800	4-5	3-4
P1	Polishing Cloth Diamond Suspension	150	60	cw/cw	S060101 S0703030902	- 1μm	2-3	3-5
P2	Polishing Cloth Diamond Suspension	150	60	CW/CW	S060101 S0704C10902	- 0.04μm	2-3	3-5

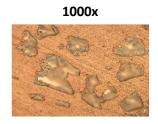
% Surface must be grinded to plane

#### 4. Metallographic Diagram



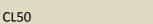
MV02





### 5. Metallographic Equipment of Analysis







FRSD-A3



Microscopy

## Iron

(Forge Iron, Gray Forged Iron, Ductility Forge Iron, and etc.)



#### 1. Cutting

Model	СК260В				
	Parameter				
Cutting Fluid	S01001 (Milky)				
Diameter	12" Ø305mm				
Order No.	S02D0302				
Rotational Speed	2500 rpm				
Time of Cutting	8-10 min				

#### 2. Mounting

Model	ML-L1 Φ32				
	Parameter				
Max Pressure Force	100 kg/cm <sup>2</sup>				
Heating Temperature	180° C				
Heating Time	8 min				
Cooling Time	6 min				
Mounting Resin	Bakelite Powder (S03001)				

Specimen (Forged Iron)



#### 3. Grinding/Polishing

Model	FRSD-A3							
Grinding/Polishing	Lubricant or Grinding Material	Rotational Speed of Platen (rpm)	Rotational Speed of Head (rpm)	Rotational Direction	Order No.	Grit (ANSI)	Force (kg)	Time (min)
G1	Water, SiC paper	300	60	cw/ccw	S0520080240AU	#240	4-5	4-8*
G2	Water, SiC paper	300	60	cw/ccw	S0520080400AU	#400	4-5	3-6
G3	Water, SiC paper	300	60	cw/ccw	S0520080600AU	#600	4-5	3-4
G4	Water, SiC paper	300	60	cw/ccw	S0520080800AU	#800	4-5	3-4
P1	Polishing Cloth Diamond Suspension	150	60	CW/CW	S060101 S0703040902	- 3μm	2-3	3-5
P2	Polishing Cloth Diamond Suspension	150	60	cw/cw	S060101 S0703030902	- 1μm	2-3	3-5

#### 4. Metallographic Diagram







1000x



#### 5. Metallographic Equipment of Analysis





ML-L1 Φ32



FRSD-A3



Microscopy

<sup>%</sup> If customized fixture and special consumables are needed, additional charge will be applied.

# Copper

(C1020, C2720, C4430, and etc.)

#### 1. Cutting

Model	CL50					
Parameter						
Cutting Fluid	S01003 (Transparent)					
Diameter	6" Ø152mm					
Order No.	HW21120702L					
Rotational Speed	2000 rpm					
Time of Cutting	3-5 min					

#### 2. Cold Mounting

Model	MV02
	Parameter
Epoxy Resin	15 g
Hardener	0.3 g
Time	45-60 min

## Specimen (Brass)

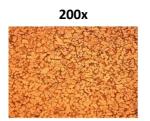


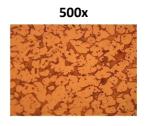
#### 3. Grinding/Polishing

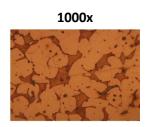
Model	FRSD-A3							
Grinding/Polishing Process	Lubricant or Grinding Material	Rotational Speed of Platen (rpm)	Rotational Speed of Head (rpm)	Rotational Direction	Order No.	Grit (ANSI)	Force (kg)	Time (min)
G1	Water, SiC paper	300	60	cw/ccw	S0520080240AU	#240	4-5	4-8*
G2	Water, SiC paper	300	60	cw/ccw	S0520080400AU	#400	4-5	3-6
G3	Water, SiC paper	300	60	cw/ccw	S0520080600AU	#600	4-5	3-4
G4	Water, SiC paper	300	60	CW/CCW	S0520080800AU	#800	4-5	3-4
P1	Polishing Cloth Diamond Suspension	150	60	CW/CW	S060101 S0703040902	- 3μm	2-3	3-5
P2	Polishing Cloth Diamond Suspension	150	60	cw/cw	S060101 S0703030902	- 1μm	2-3	3-5

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#### 4. Metallographic Diagram







### 5. Metallographic Equipment of Analysis







MV02



FRSD-A3



Microscopy

## **Carbon Steel**

(Bearing, Rail, Tool, Bolt, and etc.)



#### 1. Cutting

Model	CL50					
Parameter						
Cutting Fluid	S01003 (Transparent)					
Diameter	6" Ø152mm					
Order No.	HW21220702L					
Rotational Speed	1000 rpm					
Time of Cutting	3-5 min					

#### 2. Hot Mounting

Model	ML-L1 Φ32				
	Parameter				
Max Pressure Force	100 kg/cm <sup>2</sup>				
Heating Temperature	180° C				
Heating Time	8 min				
Cooling Time	6 min				
Mounting Resin	Bakelite Powder (S03001)				

Specimen (Carbon Steel)

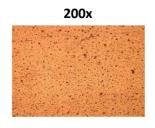


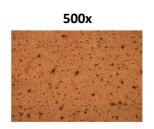
#### 3. Grinding/Polishing

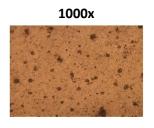
Model	FRSD-A3							
Grinding/Polishing Process	Lubricant or Grinding Material	Rotational Speed of Platen (rpm)	Rotational Speed of Head (rpm)	Rotational Direction	Order No.	Grit (ANSI)	Force (kg)	Time (min)
G1	Water, SiC paper	300	60	cw/ccw	S0520080240AU	#240	4-5	4-8*
G2	Water, SiC paper	300	60	cw/ccw	S0520080400AU	#400	4-5	3-6
G3	Water, SiC paper	300	60	cw/ccw	S0520080600AU	#600	4-5	3-4
G4	Water, SiC paper	300	60	CW/CCW	S0520080800AU	#800	4-5	3-4
P1	Polishing Cloth Diamond Suspension	150	60	CW/CW	S060101 S0703050902	- 6μm	2-3	3-5
P2	Polishing Cloth Diamond Suspension	150	60	cw/cw	S060101 S0703030902	- 1μm	2-3	3-5

4. Metallographic Diagram

☆Surface must be grinded to plane







#### 5. Metallographic Equipment of Analysis



CL50 ML-L1 Φ32







Microscopy

## Plastic

(PC, PE, PP,PS, and etc.)

## 1. Cutting

Model	CL50
	Parameter
Cutting Fluid	S01003(Transparent)
Diameter	6" Ø152mm
Order No.	HW21110808
Rotational Speed	2000 rpm
Time of Cutting	1 min

## 2.Cold Mounting

Model	MV02
	Parameter
Epoxy Resin	15 g
Hardener	0.3 g
Time	45-60 min

## Specimen (Plastic)

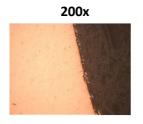


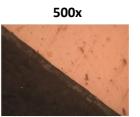
## 3. Grinding/Polishing

Model				P20G-2-A3				
Grinding/Polishing	Lubricant or Grinding Material	Rotational Speed of Platen (rpm)	Rotational Speed of Head (rpm)	Rotational Direction	Order No.	Grit (ANSI)	Force (kg)	Time (min)
G1	Water, SiC paper	300	60	cw/ccw	S0520080240AU	#240	3	3**
G2	Water, SiC paper	300	60	cw/ccw	S0520080400AU	#400	4	3
G3	Water, SiC paper	300	60	cw/ccw	S0520080600AU	#600	3	3
G4	Water, SiC paper	300	60	cw/ccw	S0520080800AU	#800	3	3

<sup>☆</sup>Surface must be grinded to plane

## 4. Metallographic Diagram







## **Ceramics**

(Cement, Glass, Tile, and etc.)



#### 1.Cutting

Model	CL50
	Parameter
Cutting Fluid	S01003 (Transparent)
Diameter	6" Ø152mm
Order No.	HW21130702L
Rotational Speed	2000 rpm
Time of Cutting	1 min

#### 2.Cold Mounting

Model	MV02
	Parameter
Epoxy Resin	15 g
Hardener	0.3 g
Time	45-60 min



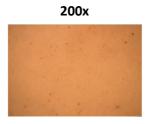


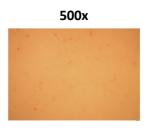
#### 3. Grinding/Polishing

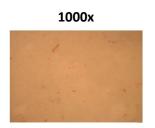
Model			P2	0G-2-A3				
Grinding/Polishing	Lubricant or Grinding Material	Rotational Speed of Platen (rpm)	Rotational Speed of Head (rpm)	Rotational Direction	Order No.	Grit (ANSI)	Force (kg)	Time (min)
G1	Water, SiC paper	300	60	cw/ccw	S0520080400AU	#400	4	3**
G2	Water, SiC paper	300	60	CW/CCW	S0520080600AU	#600	3	3
P1	Polishing Cloth Diamond Suspension	150	60	CW/CW	S060101 S0703050902	- 6μm	3	5
P2	Polishing Cloth Diamond Suspension	150	60	CW/CW	S060101 S0703030902	- 1μm	3	5

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#### 4. Metallographic Diagram







#### 5. Metallographic Equipment of Analysis



CL50 MV02







Microscopy

 $<sup>\</sup>label{thm:confidential} \begin{tabular}{ll} \ragged \ragg$ 

# Composite Materials

(Graphite, Carbon Fiber, Laminated Board, Glass Fiber, and etc.)

#### 1. Cutting

Model	CL50
	Parameter
Cutting Fluid	S01003 (Transparent)
Diameter	6" Ø152mm
Order No.	HW21220702L
Rotational Speed	1000 rpm
Cutting Time	15 s

#### 2.Cold Mounting

Model	MV02
	Parameter
Epoxy Resin	15 g
Hardener	0.3 g
Curing Time	45-60 min

#### Specimen (Carbon Fiber)



#### 3. Grinding/Polishing

Model	P20G-1-B3							
Grinding/Polishing	Lubricant or Grinding Material	Rotational Speed of Platen (rpm)	Rotational Speed of Head (rpm)	Rotational Direction	Order No.	Grit (ANSI)	Force (kg)	Time (min)
G1	Water, SiC paper	300	60	cw/ccw	S0520080240AU	#240	3	3**
G2	Water, SiC paper	300	60	cw/ccw	S0520080400AU	#400	4	3
G3	Water, SiC paper	300	60	cw/ccw	S0520080600AU	#600	3	3
P1	Polishing Cloth Diamond Suspension	150	60	cw/cw	S060101 S0703040902	- 3μm	3	3

☆Surface must be grinded to plane

## 4. Metallographic Diagram



#### 500x (Vertical)



#### 5. Metallographic Equipment of Analysis



**CL50** 



MV02



P20G-1-B3



Microscopy

## **Electronic Components**

(Battery, Fuse, PCB, IC, and etc.)



#### 1.Cutting

Model	CL50
	Parameter
Cutting Fluid	S01003 (Transparent)
Diameter	6" Ø152mm
Order No.	HW21120702L
Rotational Speed	2000 rpm
Cutting Time	15 s

#### 2. Cold Mounting

Model	MV02
	Parameter
Epoxy Resin	15 g
Hardener	0.3 g
Curing Time	45-60 min

#### **Specimen** (PCB)

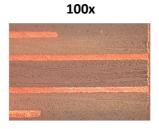


#### 3. Grinding/Polishing

Model			P2	0G-2-A3				
Grinding/Polishing	Lubricant or Grinding Material	Rotational Speed of Platen (rpm)	Rotational Speed of Head (rpm)	Rotational Direction	Order No.	Grit (ANSI)	Force (kg)	Time (min)
G1	Water, SiC paper	300	60	cw/ccw	S0520080240AU	#240	4	3**
G2	Water, SiC paper	300	60	cw/ccw	S0520080400AU	#400	3	3
G3	Water, SiC paper	150	60	cw/ccw	S0520080600AU	#600	3	3
P1	Polishing Cloth Diamond Suspension	150	60	CW/CW	S060101 S0703040902	- 3μm	3	3

☆Surface must be grinded to plane

#### 4. Metallographic Diagram







## 5. Metallographic Equipment of Analysis **CL50** MV02 P20G-2-A3 Microscopy

- % Top Tech provides the service of sample preparation for customers with confidential report.
- % If customized fixture and special consumables are needed, additional charge will be applied.

# Cutting Consumables Selection Guides & Specifications



## Cutting

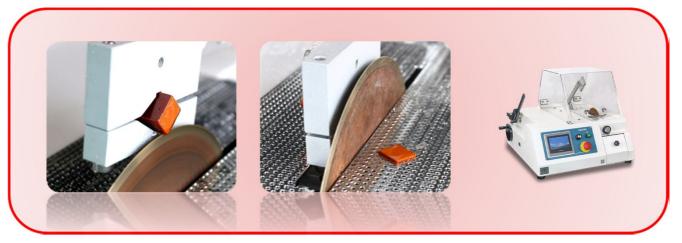


TOP TECH offers a wide range of cutting consumables for various materials, sizes, and characteristics of metallographic specimens. Employing our Precision Cutting Machines or Precision Diamond Saws and along with suggested parameters & consumables will be able to satisfy most cutting demands.

#### Selection

- · Abrasive Cut-Off Wheel:
  - The most common cut-off wheel in the metallographic industry. Significantly affect the cutting efficiency and wear rate based on the material, grain size, grain density, bonding method, and etc.
- · Diamond Cut-Off Wheel:
  - The most durable and the hardest cut-off wheel, includes metal bonds, electroplating, and resin bonds. Apply to non-carbon materials and hard alloys, ceramics, composites, minerals, plastics, resin, PCB, and etc.
- · CBN Cut-Off Wheel:
  - Similar to diamond cut-off wheel, but the hardness is less, includes metal bonds, electroplating, and resin bonds. Apply to high hardness carbon steels, alloy steels, and etc.





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\*If customized fixture and special consumables are needed, additional charge will be applied.

# Selection Guide

Туре	Size	e (mm)	Machine Model
	2.95"	Ø75	CH75
	3.35"	Ø85	CH85
	3"	Ø76.2	CL40
	3	ψ70.Z	CLM50
	4"	Ø102	CL40
	_	Ø102	CLM50
	5"		CL40
Diamond or CBN		Ø127	CL50
Cut-off Wheel			CLM50
	6"	Ø152	CL50
		<i>p</i>	CLM50
	7"	Ø178	CL50
	<i>'</i>	ψ176	CLM50
			CLM50
	8"	Ø203	CLM35B
			CLM35C



Туре	Size	(mm)	Machine Model
	6"	Ø152	CL50 CLM50
	8"	Ø203	CLM50
	9"	Ø229	CK200B(M)-1HP
	10"	Ø254	CK200B(M)-2HP CK200B(M)-3HP CL50C CL60A
Abrasive Cut-off Wheel	12"	Ø305	CK260B-3HP CK260B-5HP CK360B-5HP CF260S-3HP CK-2S-60 CF250B-3HP CL70C CL80A
	14"	Ø356	CF260S-5HP CL100A
	16"	Ø406	CK360B-7.5HP CK460B-10HP CF360S-10HP CK-2S-100
	20"	Ø508	CF450S-15HP



## **Abrasive Cut-Off Wheel**



The most common cut-off wheel in the metallographic industry. Significantly affect the cutting efficiency and wear rate based on the material, grain size, grain density, bonding method, and etc.

Order No.	Size (mm)	Diameter x Arbor x Thickness	Package (pcs/box)
		heat treated steel-alloy tool steel T, SK3, SUP, S45C, SCM415, SNCM4 (HRC50~60)	139
S02A0705	6"	Ø152xØ12.7x0.5	10
S02A1401	8"	Ø203xØ25.4x1.0	10
S02A0101	9"	Ø229xØ31.75x1.0	10
S02A0202	10"	Ø254xØ31.75x1.2	10
S02A0302	12"	Ø305xØ31.75x1.2	10
S02A0403	14"	Ø356xØ31.75x1.5	10
S02A0504	16"	Ø406xØ31.75x3.0	10



	Suitable	Suitable for non-heat treated steel				
	Carbon S	teel, Stainless Steel, S-C Series	Tool Steel, SK Series,			
	SS Series	SS Series Mild Steel				
	HV380 ~	495 (HRC40 ~ 50)				
S02B0101	9"	Ø229xØ31.75x1.0	10			
S02B0202	10"	Ø254xØ31.75x1.2	10			
S02B0302	12"	Ø305xØ31.75x1.2	10			
S02B0403	14"	Ø356xØ31.75x1.5	10			
S02B0504	16"	Ø406xØ31.75x3.0	10			

	Special A	for hard heat treated steel Illoy Steel, SKD, SKH, SKS3, SCN 780 (HRC58 ~ 64)	M415, SACM , SNCM439
S02C0708	6"	Ø152xØ12.7x0.8	10
S02C1401	8"	Ø203xØ25.4x1.0	10
S02C0101	9"	Ø229xØ31.75x1.0	10
S02C0202	10"	Ø254xØ31.75x1.2	10
S02C0302	12"	Ø305xØ31.75x1.2	10
S02C0403	14"	Ø356xØ31.75x1.5	10
S02C0504	16"	Ø406xØ31.75x3.0	10
		/O · · · · · · F."	c" · cc · · · · · · · · · · · ·

(Customization for 5" or 6" cut-off wheel is available.)

<sup>%</sup>Top Tech provides the service of sample preparation for customers with confidential report.

<sup>%</sup> If customized fixture and special consumables are needed, additional charge will be applied.

## **Abrasive Cut-Off Wheel**

Order No.	Size (mm)	Diameter x Arbor x Thickness	Package (pcs/box)
		cast iron FC and forged cast iron (HRC40~63)	
S02D0101	9"	Ø229xØ31.75x1.0	10
S02D0202	10"	Ø254xØ31.75x1.2	10
S02D0302	12"	Ø305xØ31.75x1.2	10
S02D0403	14"	Ø356xØ31.75x1.5	10
S02D0504	16"	Ø406xØ31.75x3.0	10



	Suitable for r HV45 ~196 (I	non-ferrous metal HRB10~93)	
S02E0101	9"	Ø229xØ31.75x1.0	10
S02E0202	10"	Ø254xØ31.75x1.2	10
S02E0302	12"	Ø305xØ31.75x1.2	10
S02E0403	14"	Ø356xØ31.75x1.5	10
S02E0504	16"	Ø406xØ31.75x3.0	10

	tungsten	Suitable for bakelite, plastic, resin, mounting specimen, sapphire, tungsten steel, aluminum, copper, glass, and ceramics (aluminum oxide ceramics, zirconium oxide ceramics)				
S02F0705	6"	Ø152xØ12.7x0.5	10			
S02F1401	8"	Ø203xØ25.4x1.0	10			
S02F0101	9"	Ø229xØ31.75x1.0	10			
S02F0202	10"	Ø254xØ31.75x1.2	10			
S02F0302	12"	Ø305xØ31.75x1.2	10			
S02F0403	14"	Ø356xØ31.75x1.5	10			
S02F0504	16"	Ø406xØ31.75x3.0	10			

(Customization for  $5^{\prime\prime}$  or  $6^{\prime\prime}$  cut-off wheel is available.)

## **Diamond Cut-Off Wheel**



Durable, less deformed, and efficient.

## **Electroplating**

- Single layer grain
- Strong cutting ability, but more abrasion.



Order No.	Size (mm)	Diameter x Arbor x Thickness	Package (pcs/box)
	Suitable for	glass, ceramics, gem, asbestos, allo	y, and rubber
HW21110107	2.95"	Ø75xØ11.5x1.0	10
HW21110307	3.35"	Ø85xØ11.5x1.0	10
HW21110407	4"	Ø102xØ11.5x1.0	1
HW21110607	5"	Ø127xØ12.7x1.0	1
HW21110808	6"	Ø152xØ25.4x1.2	1
HW21111008	7"	Ø178xØ25.4x1.2	1
HW21111208H	8"	Ø203xØ25.4x1.2	1

## **Metal Bond**

- Best grain with good wear resistance
- Smooth cutting surface and long life span



Order No.	Size (mm)	Diameter x Arbor x Thickness	Package (pcs/box)
	Suitable for components	cement, non-metal material, alloy,	and electronic
HW21120502L	4"	Ø102xØ12.7x0.5	1
HW21120602L	5"	Ø127xØ12.7x0.5	1
HW21120702L	6"	Ø152xØ12.7x0.5	1
HW21121003L	7"	Ø178xØ25.4x0.6	1
HW21121207L	8"	Ø203xØ25.4x1.0	1
HW21121510L	10"	Ø254xØ31.75x2.0	1
HW21121610L	12"	Ø305xØ31.75x2.0	1

(Customized cut-off wheel is also available)

 $<sup>\% \ \</sup>mathsf{Top} \ \mathsf{Tech} \ \mathsf{provides} \ \mathsf{the} \ \mathsf{service} \ \mathsf{of} \ \mathsf{sample} \ \mathsf{preparation} \ \mathsf{for} \ \mathsf{customers} \ \mathsf{with} \ \mathsf{confidential} \ \mathsf{report}.$ 

<sup>%</sup> If customized fixture and special consumables are needed, additional charge will be applied.

## **Diamond Cut-Off Wheel**

## **Resin Bond**

• Flexible and suitable for brittle specimen



Order No.	Size (mm)	Diameter x Arbor x Thickness	Package (pcs/box)
	Suitable for	quartz, glass, non iron metal, cerar	nics, and silicon wafer
HW21130502L	4"	Ø102xØ12.7x0.5	1
HW21130602L	5"	Ø127xØ12.7x0.5	1
HW21130702L	6"	Ø152xØ12.7x0.5	1
HW21131003L	7"	Ø178xØ25.4x0.6	1

## **CBN Cut-Off Wheel**

## **Electroplating**

- Single layer grain
- Strong cutting ability, but more abrasion.

Order No.	Size (mm)	Diameter x Arbor x Thickness	Package (pcs/box)
	Suitable for and magnet	high speed steel, alloy steel, tool sic material	teel, stainless steel,
HW21210607L	5"	Ø127xØ12.7x1.0	1
HW21210808L	6"	Ø152xØ25.4x1.2	1
HW21211008L	7"	Ø178xØ25.4x1.2	1

## **Metal Bond**

- Best grain with good wear resistance
- Smooth cutting surface and long life span



Order No.	Size (mm)	Diameter x Arbor x Th	ickness Package (pcs/box	)
	Suitable for hig and magnetic		tool steel, stainless steel,	
HW21220602L	5"	Ø127xØ12.7x0.5	1	
HW21220702L	6"	Ø152xØ12.7x0.5	1	
HW21221003L	7"	Ø178xØ25.4x0.6	1	

## **CBN Cut-Off Wheel**



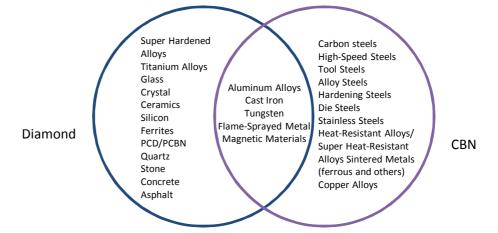
## **Resin Bond**

Flexible and suitable for brittle specimen



Order No.	Size (mm)	Diameter x Arbor x Thickness	Package (pcs/box)
	Suitable for and forged in	hard steel, ferrous sintered metal, on	bearing, hard alloy,
HW21230602L	5"	Ø127xØ12.7x0.5	1
HW21230702L	6"	Ø152xØ12.7x0.5	1
HW21231005L	7"	Ø178xØ25.4x0.8	1

(Customized cut-off wheel is also available)



## **Cutting Fluid**

Ensuring cutting efficiency, and maximizing the cutting ability. There are two types of cutting fluid, one is for abrasive cut-off wheel, and the other is for diamond/CBN cut-off wheel.



	Description			Package
Order No.	Cutting Fluid (Fo	or Abrasive Cut-off	Blade)	
S01001	Oily	Milky	Blue Cap	20L
S01002	Oily	Milky	Blue Cap	1L

Order No.	Cutting Fluid	Cutting Fluid (For Diamond/CBN Cut-off Blac		)
S01003	Water	Transparent	Red Cap	20L
S01004	Water	Transparent	Red Cap	1L

 $<sup>\</sup>label{thm:confidential} \parbox{\@scale=}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}$ 

<sup>\*</sup>If customized fixture and special consumables are needed, additional charge will be applied.

# Mounting Consumables Selection Guides & Specifications



## Mounting



Variety of consumables are suitable for the metallographic preparation of all industries. Employing with Top Tech mounting machines can reduce the time of process and lower the cost of consumables. Based on characteristics of specimens, the mounting process can be separated by hot mounting and cold mounting.

Comparison o	Comparison of Hot Mounting and Cold Mounting		
Hot Mounting	Feature	Strength	
	Thermostable Material	Short mounting time. Adjusting the parameters according to requirement.	
	High Pressure Resistant Material	Specimen will not contract easily at room temperature, and good stability.	
	Non Fragile Material	The scrap of mounting specimen is easy to clean and no remaining.	
		Lower cost and eco-friendly.	
		Not easily be deformed by external force.	

Cold Mounting Feature	Strength
Non Thermostable Material	A quantity of production capacity for multiple specimen per each time, and make up for spending long time in curing.
Non High Pressure Resistant Material	Specimen is not easy to deteriorate or becomes shattered by temperature or pressure.
Fragile Material	Easy to mount the specimen with required height and will not restrict by the size.
	Easy to mount the various shape and size specimen based on requirement.
	Greater adhesion of epoxy resin, tightly combine with specimen.



Parameter			
Hot Mounting	Temperature (°C)	Heating Time (s)	Cooling Time (s)
Conductive Bakelite Powder	180	480	360
Bakelite Powder	180	480	360
Acrylic Powder	Acrylic mode is av ML-L2	ailable for Mode	of ML-L, ML-L1,



Cold (Vacuum) Mounting	Epoxy Resin: Hardener	Curing Time (hr.)
High Flow Epoxy Resin	100 : 35	24

 $<sup>\</sup>label{thm:confidential} \parbox{$\stackrel{?}{$\times$}$ Top Tech provides the service of sample preparation for customers with confidential report.}$ 

<sup>%</sup> If customized fixture and special consumables are needed, additional charge will be applied.

# **Hot Mounting**



	Description	Package (kg/pack)
Order No.	Acrylic Powder Thermoplastic, High Transparent and Easy (30g per time)	to Observe.
S030202-1		1 kg
S030202-5		5 kg
S030202-10		10kg

Remark: Able to be employed with model ML-L1, ML-L2 series.



Order No.	Bakelite Powder (Phenolic Formaldehyde Resin) Thermosetting and High hardness. (30g per time)		
S03001-1		Black	1 kg
S03001		Black	25 kg
S03002-1		Brown	1 kg
S03002		Brown	25 kg
S03003-1		Green	1 kg
S03003		Green	25 kg
S03004-1		Red	1 kg
S03004		Red	25 kg



Order No.	Conductive Bakelite Powder Thermosetting, and Phenolic for (30g per time)	rmaldehyde resin.
S030106	Carbon-based	0.45kg
S0301061	Copper-based	0.45kg





# **Cold Mounting**



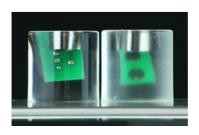


Order No.	about 24 ho	eased du urs)	sin uring curing. (Curing at room tempera rmostable specimen, ex. IC board, pl		
	Epoxy Resin	950ml		1	Bottle
S0303A-2	Hardener	350ml		1	Bottle
	Mixer bag		(Straw, Cup, Measure Cup, Stick)	1	set

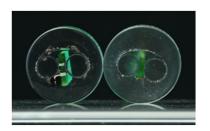


Order No.	High Transpare	•	and surrounding	Package (pcs/pack)
S10A011	Ø 25mm	Height 25mm	(Capacity 12ml)	10
S10A021	Ø 32mm	Height 25mm	(Capacity 20ml)	10
S10A031	Ø 40mm	Height 25mm	(Capacity 30ml)	10
S10A041	Ø 50mm	Height 25mm	(Capacity 45ml)	10
S10B01	70x40mm	Height 23mm	(Capacity 50ml)	10
S10B02	100x50mm	Height 25mm	(Capacity 75ml)	10

High Transparency General



High Transparency General



 $<sup>\</sup>label{thm:confidential} \begin{tabular}{ll} \ragged \ragg$ 

¾ If customized fixture and special consumables are needed, additional charge will be applied.

# **Cold Mounting**



Order No.	Transparen	t Acrylic Mounting Ring (Hollow)	Package (pcs/pack)
S16025-1	Ø25 mm	Height 20 mm (Capacity 7ml)	10
S16030-1	Ø30 mm	Height 20 mm (Capacity 10ml)	10
S16040-1	Ø40 mm	Height 20 mm (Capacity 20ml)	10
S16050-1	Ø50 mm	Height 20 mm (Capacity 33ml)	10



Order No.	Transparent Acrylic Mounting Cup			Package (pcs/pack)
S16025A02-1	Ø25.4mm	Height 23mm	(Capacity 11ml)	50
S16032A02-1	Ø31.75mm	Height 23mm	(Capacity 18ml)	50



Order No.	Specimen Clip	Package (pcs/pack)
S17003	Stainless clip for metal specimen. Able to be employed with hot mounting machines. Size Ø10 x 7 H (mm)	100
S17004	Plastic clip for non-metal specimen. Size Ø 7 x 6 H (mm)	100
S0805A-1	Square mold for PCB specimen Outer 20 L x 20 W x 20 H (mm) Inner 16 L x 2 or 3 W (mm)	100
S0806A-1	Square mold for PCB specimen Outer (round shape) 30 L x 30 W x 20 H (mm) Inner (square) 16 L x 2 or 3 W (mm)	100
S0807A-1	Rectangle mold for PCB specimen Outer 25 L x 10 W x 20 H (mm) Inner 20 L x 2 W (mm)	100

# **Cold Mounting**





Order No.	Specimen Clip	Package (pcs/pack)
S17006	Black Plastic Clip for non-metal specimen	100
S17007	Transparent Plastic Clip for non-metal specimer	100



\*Top Tech provides the service of sample preparation for customers with confidential report.

# Grinding/Polishing Consumables Selection Guides & Specifications



## **Grinding & Polishing**



Top Tech offers a wide range of consumables for grinding and polishing, which is suitable for sample preparation in various industries. Employing with Top Tech's grinding/polishing machine(s) will meet the demands and lower the cost of consumables. Moderate grinding can eliminate the deformation and damage of the sample surface, and shorten the time of polishing process. The selection and use of consumables and equipment are depending on the characteristic of specimen for each industry and it will significantly affect the final result.

#### Selection of SiC Paper

Two types of SiC Paper, ordinary SiC Paper and water-resistance SiC Paper. During the process of sample preparation, commonly employing with water-resistance, which can reduce the scratches and remove the dust. However, the surface of the sample will still have some scratches after grinding, so the sample still needs to be polished to get a better surface.

There are many kinds of abrasives for sandpaper, for example, white fused alumina, silicon carbide, brown fused alumina, and etc. Silicon Carbide paper is commonly used in sample preparation, and water can be used as a lubricant either in manual or automatic grinding method. The grinding sequence for SiC Paper is suggested from #240, #400, #600, to #800. Soft material requires even fine SiC paper in grinding process before polishing.





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# **Diamond Disc**



Order No.	Description		Magnetic Pad	Package (pc/box)
No. 1	Equivalent to Si	C Paper of P120		
SAA09CA54020	8"	(203mm)	•	1
SAA09CA54040	10"	(254mm)	•	1
SAA09CA54050	12"	(305mm)	•	1



No. 2	Equivalent to SiC	Paper of P240		
SAA09CA55020	8"	(203mm)	•	1
SAA09CA55040	10"	(254mm)	•	1
SAA09CA55050	12"	(305mm)	•	1



No. 3	Equivalent to SiC	Paper of P600		
SAA09CA56020	8"	(203mm)	•	1
SAA09CA56040	10"	(254mm)	•	1
SAA09CA56050	12"	(305mm)	•	1



No. 4	Equivaler	nt to SiC Paper of P1200		
SAA09CA58020	8"	(203mm)	•	1
SAA09CA58040	10"	(254mm)	•	1
SAA09CA58050	12"	(305mm)	•	1



No. 5		Without diamond particles, applied with diamond suspension for polishing (Suitable for general material)			
SAA09CA53020	8"	(203mm)	•	2	
SAA09CA53040	10"	(254mm)	•	2	
SAA09CA53050	12"	(305mm)	•	2	



No. 6	Without diamond particles, applied with diamond suspension for polishing (Suitable for harder material)				
SAA09CA52020	8"	(203mm)	•	2	
SAA09CA52040	10"	(254mm)	•	2	
SAA09CA52050	12"	(305mm)	•	2	

# SiC Paper



Conversion chart to view the different standards between FEPA P and ASIN, and as a guide to choose suitable grinding paper.

## Grits

#### Conversion chart

	Average Abra	asive Grain Size	
FEPA P Standard 43-GB-1984 R 1993	Europe (FEPA P) um	U.S. (ANSI) um	ANSI B74.18-2006
P60	269	268	#60
P80	201		
P100	162		
P120	125	116	#120
P150	100		
P180	82	80	#180
P240	59	52	#240
P320	46		
P400	35	34	#320
P600	26		
P800	22	22	#400
P1000	18		
P1200	15		
P1500	13	13	#600
P2000	10		
P2500	8.4	6.5	#800
P4000		2.5	#1200



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# SiC Paper (Plain Back)

## FEPA P

• Grain size different from ANSI

	3126		GIILS	Package (pcs/pack)
Order No.	Ф 203mm	SiC Paper		
S0520002	8"	(203mm)	P80	100
S0520003	8"	(203mm)	P100	100
S0520004	8"	(203mm)	P120	100
S0520005	8"	(203mm)	P150	100
S0520006	8"	(203mm)	P180	100
S0520007	8"	(203mm)	P240	100
S0520008	8"	(203mm)	P320	100
S0520009	8"	(203mm)	P400	100
S0520010	8"	(203mm)	P600	100
S0520011	8"	(203mm)	P800	100
S0520012	8"	(203mm)	P1000	100
S0520013	8"	(203mm)	P1200	100
S0520014	8"	(203mm)	P1500	100
S0520015	8"	(203mm)	P2000	100



Order No.	Φ 254mm SiC Pa	per		
S0525002	10"	(254mm)	P80	100
S0525003	10"	(254mm)	P100	100
S0525006	10"	(254mm)	P180	100
S0525007	10"	(254mm)	P240	100
S0525008	10"	(254mm)	P320	100
S0525009	10"	(254mm)	P400	100
S0525010	10"	(254mm)	P600	100
S0525011	10"	(254mm)	P800	100
S0525012	10"	(254mm)	P1000	100
S0525013	10"	(254mm)	P1200	100
S0525014	10"	(254mm)	P1500	100
S0525015	10"	(254mm)	P2000	100

# SiC Paper (Plain Back)



## FEPA P

Grain size different from ANSI



	Size		Grits	Package (pcs/pack)
Order No.	Ф 305mm	SiC Paper		
S0530001	12"	(305mm)	P60	100
S0530004	12"	(305mm)	P120	100
S0530007	12"	(305mm)	P240	100
S0530008	12"	(305mm)	P320	100
S0530009	12"	(305mm)	P400	100
S0530010	12"	(305mm)	P600	100
S0530011	12"	(305mm)	P800	100
S0530012	12"	(305mm)	P1000	100
S0530013	12"	(305mm)	P1200	100
S0530014	12"	(305mm)	P1500	100
S0530015	12"	(305mm)	P2000	100

## **ANSI**

Grain size different from FEPA P



	Size		Grits	Package (pcs/pack)
Order No.	Φ 203mm SiC Pa	aper		
S0520080060AU	8"	(203mm)	#60	100
S0520080120AU	8"	(203mm)	#120	100
S0520080180AU	8"	(203mm)	#180	100
S0520080240AU	8"	(203mm)	#240	100
S0520080320AU	8"	(203mm)	#320	100
S0520080400AU	8"	(203mm)	#400	100
S0520080600AU	8"	(203mm)	#600	100
S0520080800AU	8"	(203mm)	#800	100
S0520081000AU	8"	(203mm)	#1000	100
S0520081200AU	8"	(203mm)	#1200	100

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# SiC Paper (Plain Back)

## **ANSI**

Grain size different from FEPA P

Size

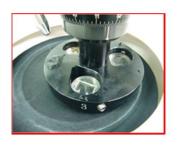
Order No.	Ф 254	mm SiC Paper			
S05251000	60AU 10"	(254mm)	#60	100	
S05251001	20AU 10"	(254mm)	#120	100	
S05251001	80AU 10"	(254mm)	#180	100	
S05251002	40AU 10"	(254mm)	#240	100	
S05251003	20AU 10"	(254mm)	#320	100	
S05251004	00AU 10"	(254mm)	#400	100	
S05251006	00AU 10"	(254mm)	#600	100	
S05251008	00AU 10"	(254mm)	#800	100	
S05251010	00AU 10"	(254mm)	#1000	100	
S05251012	00AU 10"	(254mm)	#1200	100	

Grits

Package (pcs/pack)



Order No.	Φ 305mm SiC Paper				
S0530120060AU	12"	(305mm)	#60	100	
S0530120120AU	12"	(305mm)	#120	100	
S0530120180AU	12"	(305mm)	#180	100	
S0530120240AU	12"	(305mm)	#240	100	
S0530120320AU	12"	(305mm)	#320	100	
S0530120400AU	12"	(305mm)	#400	100	
S0530120600AU	12"	(305mm)	#600	100	
S0530120800AU	12"	(305mm)	#800	100	
S0530121200AU	12"	(305mm)	#1200	100	



## SiC Paper (PSA Back)



Package (pcs/pack)

Grits

## FEPA P

Grain size different from ANSI

Size

		5.25			· deliage (pes, paell)
	Order No.	Φ 203mm SiC Pa	per		
	S05A20006	8"	(203mm)	P180	100
	S05A20007	8"	(203mm)	P240	100
	S05A20008	8"	(203mm)	P320	100
	S05A20009	8"	(203mm)	P400	100
	S05A20010	8"	(203mm)	P600	100
	S05A20011	8"	(203mm)	P800	100
	S05A20012	8"	(203mm)	P1000	100
1	S05A20013	8"	(203mm)	P1200	100
	S05A20014	8"	(203mm)	P1500	100
7	S05A20015	8"	(203mm)	P2000	100



Order No.	Φ 254mm SiC Paper				
S05A25006	10"	(254mm)	P180	100	
S05A25007	10"	(254mm)	P240	100	
S05A25008	10"	(254mm)	P320	100	
S05A25009	10"	(254mm)	P400	100	
S05A25010	10"	(254mm)	P600	100	
S05A25011	10"	(254mm)	P800	100	
S05A25012	10"	(254mm)	P1000	100	
S05A25013	10"	(254mm)	P1200	100	
S05A25014	10"	(254mm)	P1500	100	
S05A25015	10"	(254mm)	P2000	100	



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# SiC Paper (PSA Back)

## FEPA P

Grain size different from ANSI



	Size		Grit	Package (pcs/pack)
Order No.	Ф 305mm	SiC Paper		
S05A30004	12"	(305mm)	P120	100
S05A30006	12"	(305mm)	P180	100
S05A30007	12"	(305mm)	P240	100
S05A30010	12"	(305mm)	P600	100
S05A30011	12"	(305mm)	P800	100
S05A30012	12"	(305mm)	P1000	100
S05A30013	12"	(305mm)	P1200	100
S05A30014	12"	(305mm)	P1500	100
S05A30015	12"	(305mm)	P2000	100

## **ANSI**

Grain size different from FEPA P



	Size		Grit	Package (pcs/pack)
Order No.	Φ 254mm SiC Pa	iper		
S05A25100600AU	10"	(254mm)	#600	100
S05A25100800AU	10"	(254mm)	#800	100
S05A25101000AU	10"	(254mm)	#1000	100
S05A25101200AU	10"	(254mm)	#1200	100

Order No.	Φ 305mm Sic Paper				
S05A30120600AU	12"	(305mm)	#600	100	
S05A30120800AU	12"	(305mm)	#800	100	
S05A30121000AU	12"	(305mm)	#1000	100	
S05A30121200AU	12"	(305mm)	#1200	100	

## **Grinding Belt**





	Size		Grits	Package (pcs/pack)
Order No.	Aluminum oxide			
HW04068-80	4"		P80	25
HW04068-120	4"		P120	25
HW04068-180	4"		P180	25
HW04068-240	4"		P240	25
HW04068-320	4"		P320	25
HW04068-400	4"		P400	25
HW04068-600	4"		P600	25
HW04068-1000	4"	With seam	P1000	25

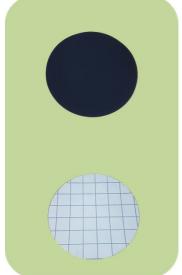


Order No.	Zirconium oxide (With seam)		
HW04068A-80	4"	P80	25
HW04068A-180	4"	P180	25

※Please contact us for customized specification

# **Polishing Cloths**

In generally, cloth with low resilience is for the polishing of hard material, while high resilient cloth is for the polishing of soft material.



Order No.		or planar and medium polishing such as copper, steel, and alloy	Package (pcs/pack)
S060101	8"	(203mm)	10
S060102	10"	(254mm)	10
S060103	12"	(305mm)	10

Order No.		or planar and medium polishing of stainless steel and hard steel	Package (pcs/pack)
S060201	8"	(203mm)	10
S060202	10"	(254mm)	10
S060203	12"	(305mm)	10

<sup>%</sup>Top Tech provides the service of sample preparation for customers with confidential report.

<sup>%</sup> If customized fixture and special consumables are needed, additional charge will be applied. ■

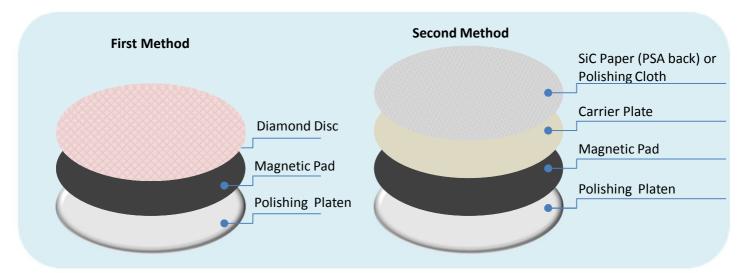
# **Polishing Cloths**

Order No.	_	r medium polishing of material and rock	Package (pcs/pack)
S060301	8"	(203mm)	10
S060302	10"	(254mm)	10
S060303	12"	(305mm)	10
Order No.		r medium polishing of as copper and aluminum	Package (pcs/pack)
S060401	8"	(203mm)	10
S060402	10"	(254mm)	10
S060403	12"	(305mm)	10
Order No.	MicroPad Polishing cloth fo such as aluminum	r medium polishing of all materials, n and soft steel	Package (pcs/pack)
S060501	8"	(203mm)	10
S060502	10"	(254mm)	10
S060503	12"	(305mm)	10
	PolyPadL		
Order No.	Polishing cloth for fine polishing of metals, such as stainless steel and hard steel (pcs/pack		
S060701	8"	(203mm)	10
S060702	10"	(254mm)	10
S060703	12"	(305mm)	10
	Dal Dalli		
Order No.	PolyPadH Polishing cloth fo alloy and stainles	r fine polishing of metals, such as steel	Package (pcs/pack)
S060801	8"	(203mm)	10
S060802	10"	(254mm)	10
S060803	12"	(305mm)	10
Order No.	FinalPad Polishing cloth fo	r fine polishing of all materials	Package (pcs/pack)
S060901	8"	(203mm)	10
S060902	10"	(254mm)	10
S060903	12"	(305mm)	10

# Magnetic Pad & Carrier Plate



Magnetic system is easier to change SiC paper or polishing cloth. Two methods are available for magnetic disc. First method, stick the diamond disc directly to the magnetic pad. Second method, stick SiC paper or polishing cloth to the carrier plate in advance, and then stick the carrier plate to the magnetic pad, illustrated as bellow.





Order No.	Magnetic Pad		Package (pcs/pack)
S080101	8"	(203mm)	1
S080102	10"	(254mm)	1
S080103	12"	(305mm)	1

Order No.	Carrier Plate		Package (pcs/pack)
S090101	8"	(203mm)	1
S090102	10"	(254mm)	1
S090103	12"	(305mm)	1

<sup>\*</sup>Top Tech provides the service of sample preparation for customers with confidential report.

<sup>%</sup> If customized fixture and special consumables are needed, additional charge will be applied.

## **Diamond Suspension**

Diamond Supsension includes monocrystalline diamond suspensions and polycrystalline diamond suspensions. Polycrystalline diamonds will break into several pieces with sharp cutting points during polishing which is good for the application of hard and brittle materials.



Order No.	Monocrystalline Diamond	Color	Capacity (ml/btl)
S0703080902	0.1um	Dark Gray	300ml
S0703030902	1um	Blue	300ml
S0703040902	3um	Green	300ml
S0703050902	6um	Yellow	300ml
S0703060902	9um	Red	300ml

Order No.	Polycrystalline Diamond	Color	Capacity (ml/btl)
S0708080402	0.1um	Black	470ml
S0708030902	1um	Milky	300ml
S0708030402	1um	Black	470ml
S0708040402	3um	Black	470ml
S0708050402	6um	Black	470ml
S0708060402	9um	Black	470ml
S0708070402	15um	Black	470ml

## **Diamond Paste**



Order No.	Diamond Paste	Capacity (gram/stick)
S0702030502	1um	5g
S0702040502	3um	5g
S0702050502	6um	5g
S0702060502	9um	5g



## Oxide Powder



Final polishing suspension can obtain the perfect surface for polishing. Aluminum oxide powder is suitable for the application of soft and ductile materials, such as aluminum, coppers and PCB boards. Magnesium oxide powder is suitable for the application of steels, alloys and nonferrous metals. Zirconium oxide powder is suitable for the application of glasses, lenses and ceramics.



Order No.	Aluminum oxide powder	Capacity (lb/btl)
S0701010102	0.05um	1 lb
S07010201	0.32um	1 lb
S07010211	0.32um	2 lb
S07010301	1um	1 lb
S07010311	1um	2 lb
S07010401	3um	1 lb
S07011201	5um	1 lb
Order No.	Magnesium oxide powder	
S0705030102	1um	1 lb
Order No.	Zirconium oxide powder	
S07061009	0.5um	1 lb
S07061109	1.5um	1 lb

## Oxide and Final Suspension



Order No.	Aluminum oxide suspension	Capacity (ml/btl)
S0707010902	0.05um	300ml
S0707020902	0.3um	300ml
Order No.	Final polishing suspension	
S0704C10902	0.04um	300ml

 $<sup>\</sup>label{thm:confidential} \parbox{\@scale=}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}$ 

¾ If customized fixture and special consumables are needed, additional charge will be applied.

# Accessories (Option)



Model	Metallographic Desk	Package (set)
TF01	1000x800x700 (mm)	1



Model	Metallographic Desk	Package (set)
TF02	1200x1000x700 (mm)	1



Model	Mount Storage Cabinet with pointer display	Package (set)
TC-82A	595x400x410 (mm), Capacity 84L	1



Model	Mount Storage Cabinet with digital display	Package (set)
TC-86A	640x400x410 (mm), Capacity 90L	1



Model	Storage Case (Special for diamond discs, SiC papers, polishing cloths between Ø200 to Ø300)	Package (set)
00160	320x325x220 (mm), including six layers	1

## **Metallographic Equipment**



#### **Precision Cutting Machines/ Precision Diamond Saw**



PRECISO-CL SERIES Model: CL50



PRECISO-CL SERIES Model: CL40



PRECISO-CH SERIES Model: CH75



**PRECISO-CL SERIES** Model: CL50C



PRECISO-CL SERIES Model: CLM35B



**PRECISO-CL SERIES** Model: CLM50



**ALTOCUT-CK SERIES** Model: CK200B



**ALTOCUT-CK SERIES** Model: CK260B



**ALTOCUT-CF SERIES** Model: CF450S



**PRECISO-CL SERIES** Model: CLM35C

#### **Mounting Machines**



**PRESIDON-ML SERIES** Model:ML-L1



PRESIDON-ML SERIES Model: ML-C



Model: ML-MA



PRESIDON-ML SERIES PRESIDON-ML SERIES Model: ML-L2



PRESIDON-ML SERIES Model: ML-L



Model: MV01



PRESIDON-MV SERIES PRESIDON-MV SERIES Model: MV02



PRESIDON-MV SERIES Model: MV01A



PRESIDON-MV SERIES Model: MV02A

#### **Grinding & Polishing Machines**



**PLATO-R SERIES** Model: P20G-1-R6



**PLATO-E SERIES** Model: P20G-1



**PLATO-E SERIES** Model: P20G-2



**PLATO-E SERIES** Model: E-FRD Ø200



**PLATO-E SERIES** Model: P20G-1-M1



**PLATO-HA SERIES** Model: P20G-1-A3



**PLATO-HA SERIES** Model: P20G-2-A3



**PLATO-R SERIES** Model: R-FS Ø200



**PLATO-MP SERIES** Model: M-P100WR

## **Worldwide Locations**





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EB1-C01