

Automatic Grinder/Polisher

FS/FRS



Instruction



Operation video



Tilt up design

Allow easy, unhindered access to the sample holder and plate

Patent grinding plate

Fix silicon carbide paper easy and quickly

Rotational direction

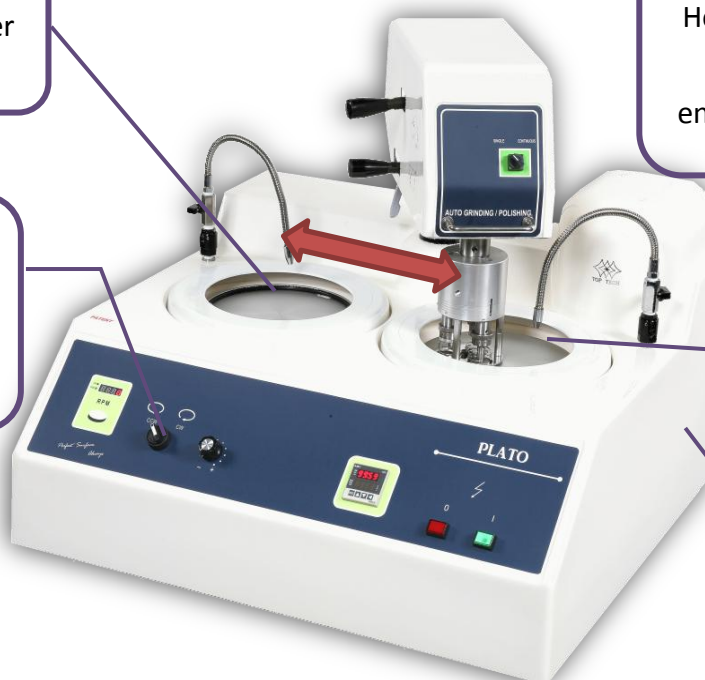
Plate can rotate in both clockwise and anti-clockwise

Dual plate design

Head easy to swing both sides. Separate polish/grinding to enhance preparation efficiency.

New patent polishing plate

Easy to install the polishing cloth, easy to clean and maintain the machine



Variable rotational speed

Adjust the speed according to different sample material

Brushless motor

Low rotational speed with high torque ensure precision

Digital rotational speed display

Specific speed can be read



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Features

P20F0027
Dispenser
one bottle type
Patent



P20F0028
Dispenser
four bottle type



Spec.	Order No.
Ø203.2	D321.001
Ø254	D322.001
Ø304.8	D323.001



Patent grinding plate

or



Polishing platen

Spec.	Order No.
Ø203.2	P20D00020101
Ø254	P25A00010201
Ø304.8	P30E010503

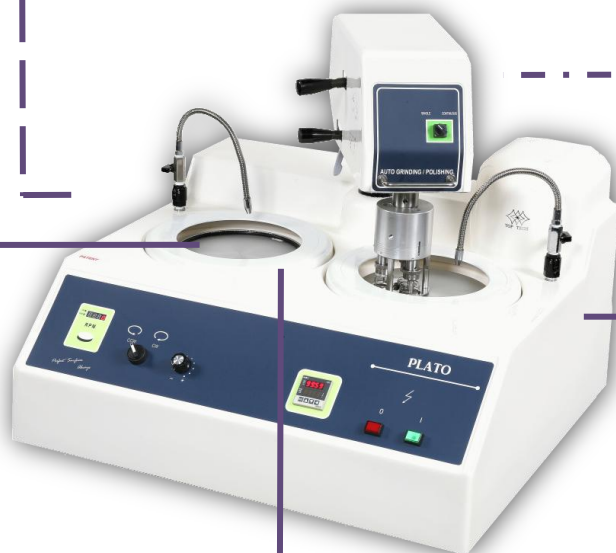
Spec.	Order No.
Ø203.2	CP0501
Ø254	CP0502
Ø304.8	CP0503



Patent magnetic
platen set

Option

Option

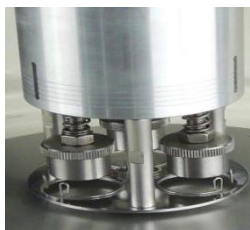


Anti-splash cover
Light and beauty



Quick connector
Main power switch
Built-in fuse wire devices

**A3
or
A5**



Individual force

**B3
or
B5**



Individual force

Individual calibrate

**C3
or
C4**

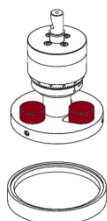


Central force

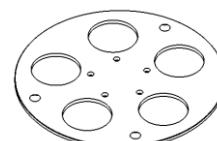
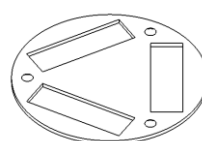
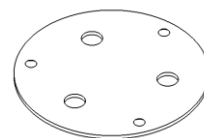
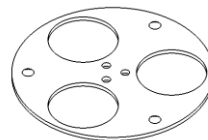
Central calibrate

Standard accessories
for C Type

Leveler

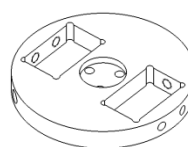
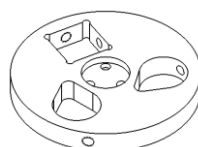
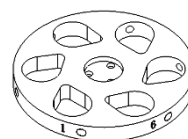
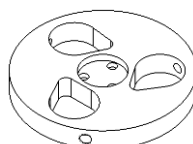


Dosing system/pump



Specification of sample holder

[Appendix 1](#) , [Appendix 2](#)

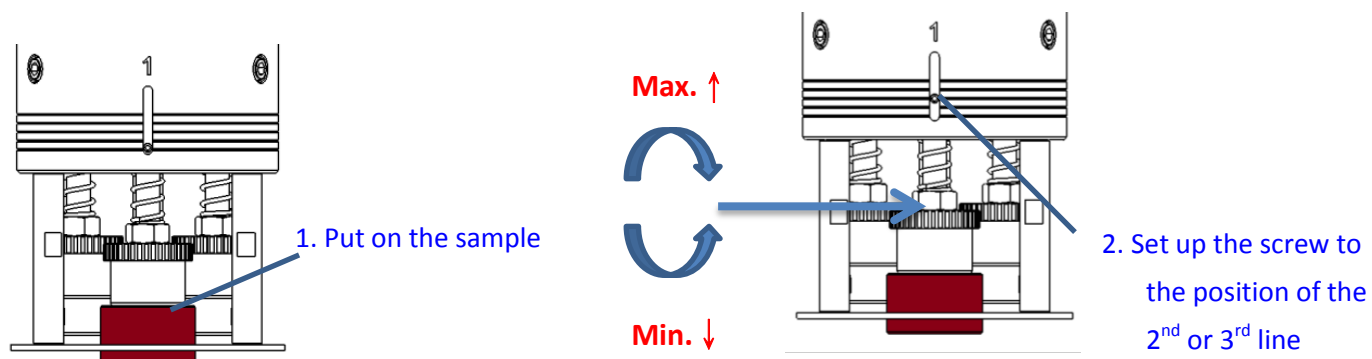


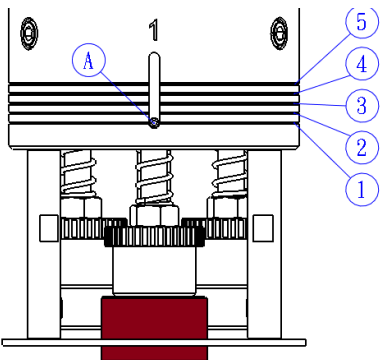
Specification of sample holder

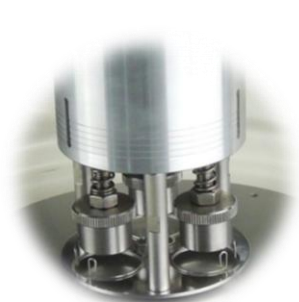
[Appendix 3](#) , [Appendix 4](#)

A type

Individual force

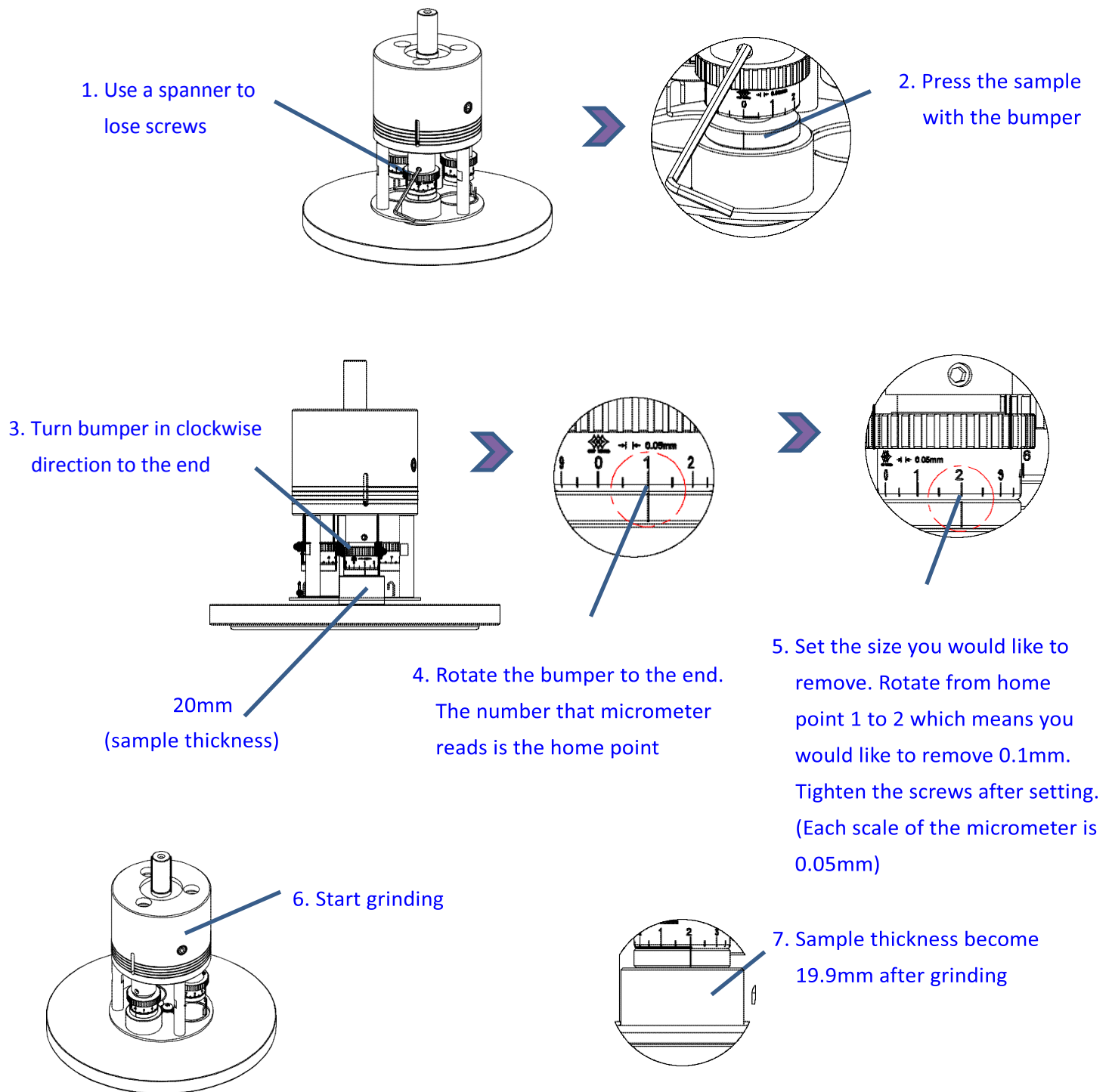


	(A)	Standard type (Kg)	Powerful type (Kg)
	5	2.8	5.0
	4	2.4	4.5
	3	2.0	4.0
	2	1.8	3.5
	1	1.4	3.0
Mounting sample	1.Copper, aluminum 2.Small sample		1. Tungsten steel, steel, titanium, alloy steel... 2. Big sample
Sample height	5mm~25mm Recommended height: 20mm		



B type

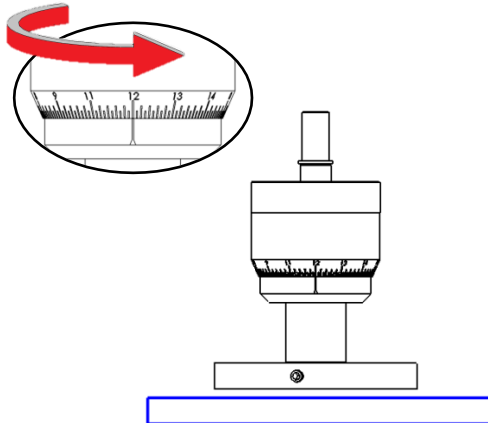
Individual force & Individual calibrate



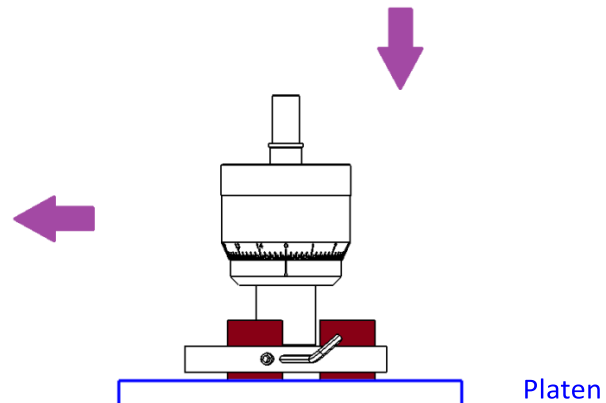
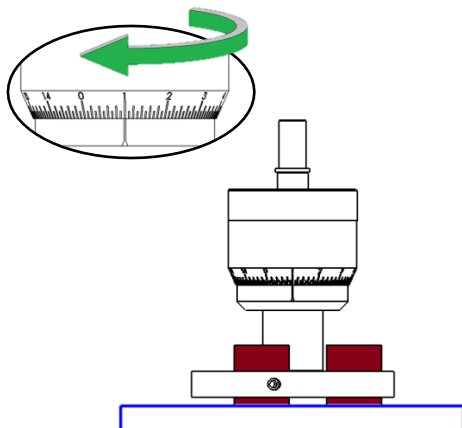
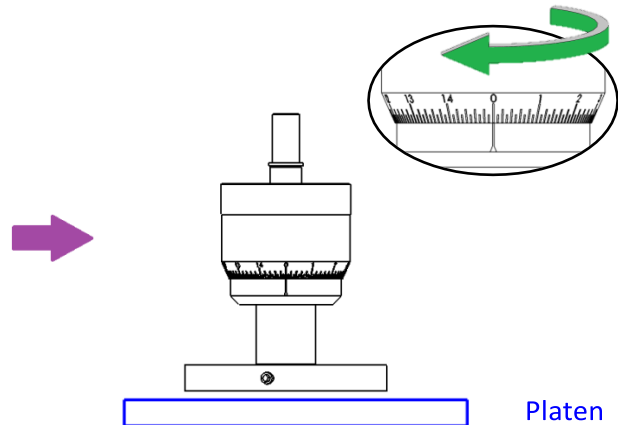
C type

Central force & Central calibrate

1. Rotate the micrometer to the top



2. Return to zero



4. Set the size you would like to remove

3. Put on the sample and tighten the screws

5. Start grinding

Remark:

Micrometer (Central calibrate)

- Each scale of the micrometer is 0.01mm
- Max. sample thickness is 4mm

1. Plain-back SIC paper: Max. size advise for grinding each time is 0.2mm.
2. Adhesive SIC paper: Max. size advise for grinding each time is 0.5mm.

Worthy Options - Working Table



Working Table

Multifunctional working table, it supplies you a place to put your machine and store your accessories. It can be moved easily.

Model No.	TF01	TF02
Size	1000*800*700 mm	1200*1000*700 mm
Sample		

Specification

Model No.	FS-A 、FS-B			FRS-A 、FRS-B		
Platen dia. (mm)	Ø203.2mm(8")	Ø254mm(10")	Ø304.8cm(12")	Ø203.2mm(8")	Ø254mm(10")	Ø304cm.8(12")
Plate Qty.	1			2		
Sample qty./size	A3/B3：3pc，Ø25/Ø32/Ø40mm			A3/B3：3pc，Ø25/Ø32/Ø40mm		
	A5/B5：5pc，Ø25/Ø32mm			A5/B5：5pc，Ø25/Ø32mm		
Operation method	Auto			Auto		
Noise level (idling)	46~51dB	47~53dB	52~57dB	52~57dB	53~58dB	54~61dB
Motor power of platen	275W		395W	275W		395W
Rotational speed	50~600rpm			50~600rpm		
Motor power of head	25W			25W		
Head rotational speed (rpm)	60rpm			60rpm		
Cooling system	1 pc			2 pc		
Timer	Max. 99 minutes 59 seconds			Max. 99 minutes 59 seconds		
Machine type	Table top			Table top		
Weight (kg)	54Kg	56Kg	76Kg	90Kg	95Kg	135Kg
Machine Size (W x D x H)	45x65x60cm		50x80 x67cm	75x69x66cm		85x75 x66cm
Water inlet pipe	10mm pipe(internal diameter- Ø10mm / external diameter- Ø15mm)					
Water outlet pipe	26mm pipe (internal dim.-Ø26mm / external dim.-Ø30mm)			32mm pipe (internal dim.-Ø32mm / external dim.-Ø36mm)		
Power supply	AC110/220V-1Ø			AC110/220V-1Ø		
Standard accessories	Grinding platen1pc		O ring 1pc	Grinding platen1pc		O ring 1pc
	Anti-splash cover 1pc		SIC paper 8pcs	Polishing platen1pc		Anti-splash cover 2pcs
	Polishing cloth 2pcs		Aluminum oxide powder 100g	SIC paper 8pcs		SIC paper 8pcs
	500g Bottle 1pc			Aluminum oxide powder 100g		500g Bottle 1pc

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Specification

Model No.	FS-C			FRS-C		
Platen dia. (mm)	Ø203.2(8")	Ø254(10")	Ø304.8(12")	Ø203.2(8")	Ø250(10")	Ø304.8(12")
Plate Qty.	1			2		
Sample qty./size	C3 : 3 pc,Ø15~Ø32mm			C3 : 3 pc,Ø15~Ø32mm		
	C4 : 4 pc,Ø20~Ø40mm			C4 : 4 pc,Ø20~Ø40mm		
Operation method	Auto			Auto		
Noise level (idling)	46~51dB	47~53dB	52~57dB	52~57dB	53~58dB	54~61dB
Motor power of platen	275W		395W	275W		395W
Rotational speed (rpm)	50~600 (Special specification can be ordered)			50~600 (Special specification can be ordered)		
Head rotational speed (rpm)	60rpm			60rpm		
Cooling system	1 pc			2 pcs		
Timer	Max. 99 minutes 59 seconds			Max.99 minutes 59 seconds		
Machine type	Table top			Table top		
Weight (kg)	54Kg	56Kg	76Kg	90Kg	95Kg	135Kg
Machine Size (W x D x H)	45x65x60cm		50x80x67cm	75x69x66cm		85x75x66cm
Water inlet pipe	10mm pipe(internal diameter- Ø10mm / external diameter- Ø15mm)					
Water outlet pipe	26mm pipe (internal dim.-Ø26mm / external dim.-Ø30mm)			32mm pipe (internal dim.-Ø32mm/ external dim.-Ø36mm)		
Power supply	AC110/220V-1Ø			AC110/220V-1Ø		
Standard Accessories	Grinding plate 1pc	O ring 1pc		Grinding plate 1pc	O ring 1pc	
	Anti-splash cover 1pc	SIC paper 8pcs		Polishing plate 1pc	Anti-splash cover 2pcs	
	Polishing cloth 2pcs	Aluminum oxide powder 100g		SIC paper 8pcs	Polishing cloth 2pcs	
	500g Bottle 1pc	-		Aluminum oxide powder 100g	Dispenser 1 pc	

Note: Special sample sizes shapes and quantities can be ordered.

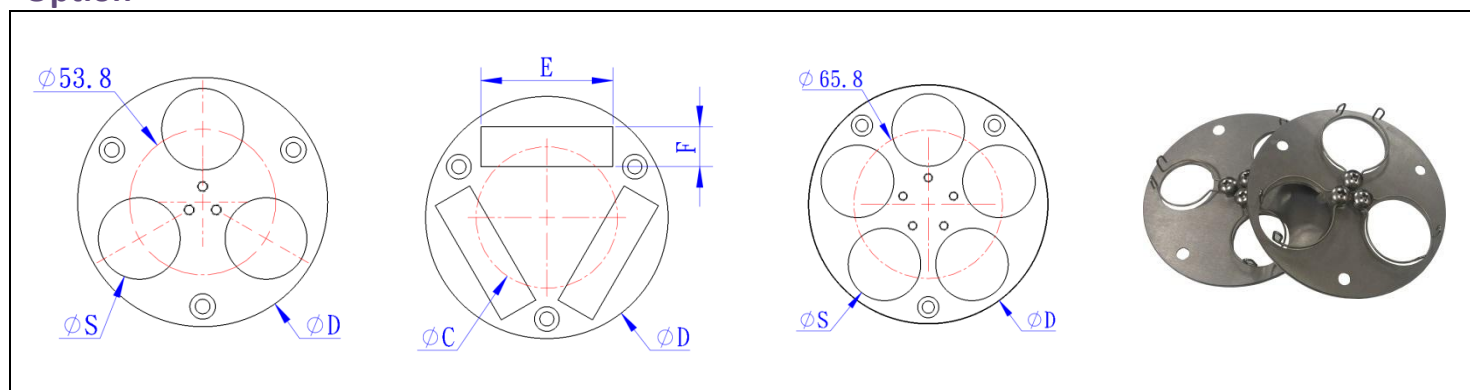
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Appendix 1: Sample holder

A/B type: Standard

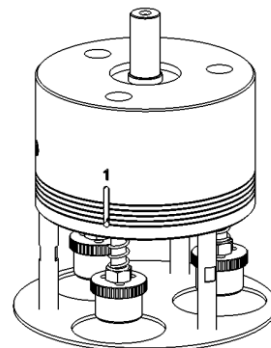
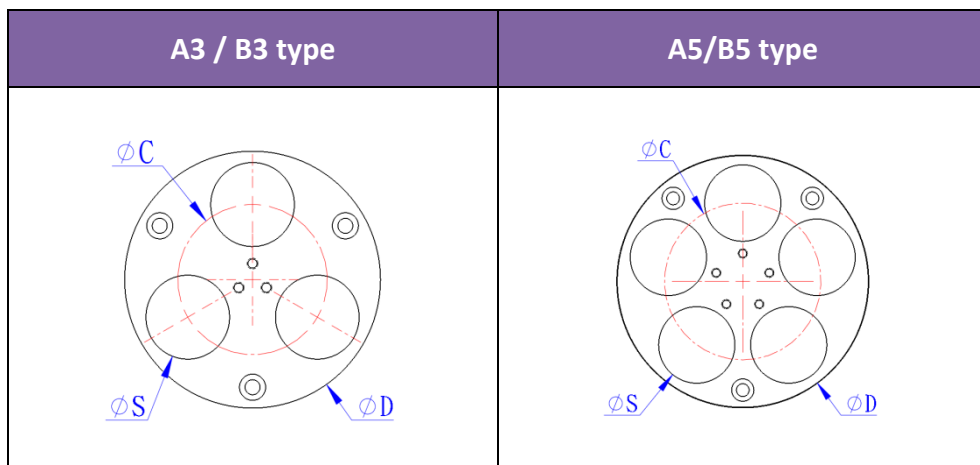
Plate size	Grinding head(H)	Sample size(standard-S) mm			Leveler
$\varnothing 203.2\text{mm}$ $\varnothing 254\text{mm}$ $\varnothing 304.8\text{mm}$	A3/B3	$\varnothing 25(25.4)$	$\varnothing 32(31.75)$	$\varnothing 40$	-
	A5/B5	$\varnothing 25(25.4)$	$\varnothing 32(31.75)$	-	

Option



NO.	Order No.	Sample (S) mm	Outer dia. (D) mm	Order no.	Sample(S) mm E x F	Out Dia. (D) mm
A3 B3	P20C0121	30	$\varnothing 92$	P20C012108	18	$\varnothing 92$
	P20C012101	32	$\varnothing 92$	P20C012109	25.4	$\varnothing 92$
	P20C012102	40	$\varnothing 105$	P20C012111	35	$\varnothing 96$
	P20C012103	20	$\varnothing 92$	P20C012113	10	$\varnothing 92$
	P20C012104	25	$\varnothing 92$	P20C012114	24	$\varnothing 92$
	P20C012105	38	$\varnothing 105$	P20C012115	31.75	$\varnothing 92$
	P20C012106	23	$\varnothing 92$	P20C012116	38.1	$\varnothing 105$
A5 B5	P20C012107	26	$\varnothing 92$	P20C012112	50x15	$\varnothing 92$
	P20C0201	32	$\varnothing 106$	P20C020103	25	$\varnothing 106$
	P20C020101	30	$\varnothing 106$	P20C020104	28	$\varnothing 106$

Appendix 2 : Option sample holder for A/B type



A3/B3 type - Option

Order no.	Spec.(S) mm	Outer Dia.(D) mm	PCD(C) mm	Remark
P20C012110	3 samples-60mm	$\phi 155$	$\phi 80$	
P20C012110-1	3 samples-50mm	$\phi 140$	$\phi 80$	
P20C012110-2	3 samples-45mm	$\phi 135$	$\phi 80$	


A5/B5 type - Option

Order no.	Spec.(S) mm	Outer Dia.(D)mm	PCD(C)mm	Remark
P20C020105	5 samples-40mm	$\phi 122$	$\phi 74$	

Remark:

1. The standard and special sample holder is not allowed to share the same grinding head.
2. It is requested to purchase an additional grinding head for special sample holder

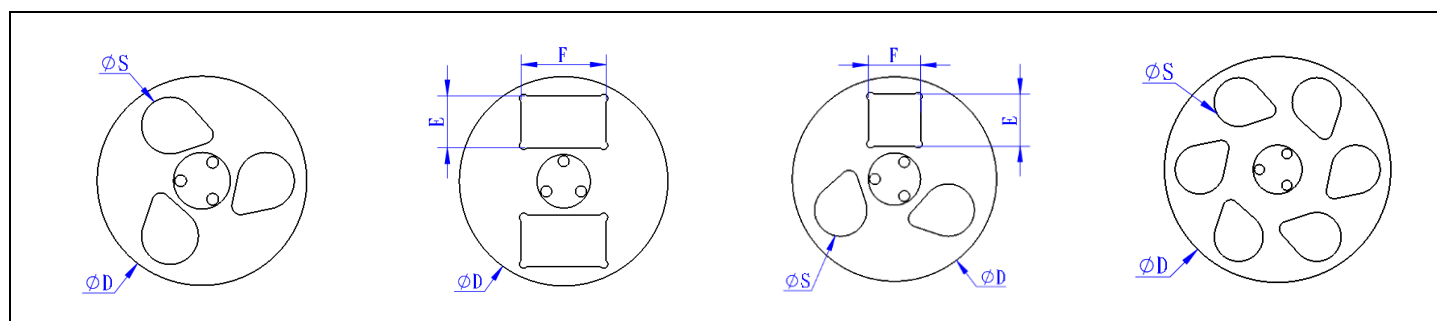
Option – Spring holder

Order no.	Capacity mm	Qty.	
HU02034A	$\phi 30 - \phi 32$	1 set	
HU02034A-1	$\phi 38 - \phi 40$	1 set	
HU02034A-2	$\phi 25 - \phi 26$	1 set	

Appendix 3 : Option sample holder for C type

C type - Standard

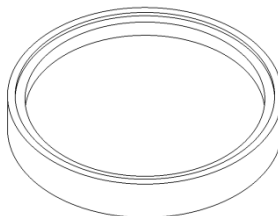
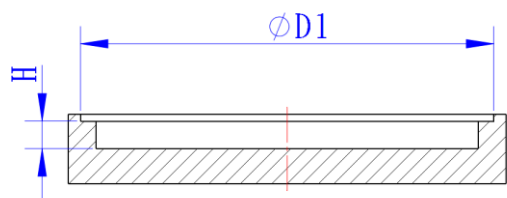
Plate size	Grinding head(H)	Sample size(standard-S) mm		Leveler
Ø203.2mm	C3	Ø25 or Ø25.4	Ø32 or Ø31.75	Standard accessory
Ø254mm				
Ø304.8mm	C4	Ø25 or Ø25.4	Ø32 or Ø31.75	



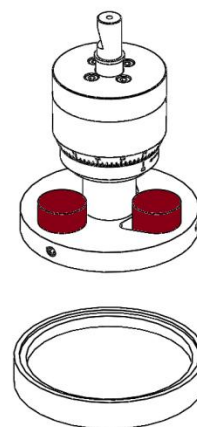
Order no.	Sample Qty.	Sample(S) mm (E x F)	Outer Dia. (D) mm	Platens mm
FA000101	3	Ø15 ~ Ø32	Ø118	Ø200/Ø250/Ø300
FA000101-1	-	-	Ø118	Ø250/Ø300
FA000201	3	Ø15 ~ Ø50	Ø154	Ø250/Ø300
FA000301	3	Ø15 ~ Ø45	Ø144	Ø250/Ø300
FA000401	3	Ø5 ~ Ø40	Ø134	Ø250/Ø300
FA000501	3	30x30	Ø118	Ø200/Ø250/Ø300
FA010202	4	Ø15 ~ Ø40	Ø134	Ø250/Ø300
FA010202-1	4	Ø15 ~ Ø41	Ø134	Ø250/Ø300
FA010203	3	2- Ø32 & 1-□32	Ø125	Ø200/Ø250/Ø300
FA010205	4	Ø15 ~ Ø50	Ø154	Ø250/Ø300
FA020101	6	Ø15 ~ Ø32	Ø148	Ø250/Ø300
FA030101	2	31x51	Ø125	Ø200/Ø250/Ø300
FA040201	5	Ø15 ~ Ø40	Ø150	Ø250/Ø300
FA0501	1	□ 42.7	Ø70	Ø200/Ø250/Ø300
FA0502	1	43x3.5	Ø58	Ø200/Ø250/Ø300

Appendix 4 : Option leveler

Leveler



Order no.	D1 x H(mm)	Applicable sample holder OD(D1) mm	Remark
FA000111	$\phi 119 \times 7.9$	$\phi 118$	
FA000202	$\phi 155 \times 7.9$	$\phi 154$	
FA000302	$\phi 145 \times 7.9$	$\phi 144$	
FA010201	$\phi 135 \times 7.9$	$\phi 134$	
FA010204	$\phi 126 \times 7.9$	$\phi 125$	
FA020102	$\phi 149 \times 7.9$	$\phi 148$	
FA030102	$\phi 127 \times 7.9$	$\phi 125$	
FA040202	$\phi 150 \times 7.9$	$\phi 150$	



Consumables

	Model	Spec.	Materials
Grinding	Platinum diamond discs	No.1 、 No.2 No.3 、 No.4	The discs are suitable to grind a wide range of ferrous metal as well as copper and other metals.
	Silicon carbide papers (PSA backed)	#60~#2000	Made in Taiwan (Good values for money) Made in USA (Perfect quality)
	Silicon carbide papers (Plain backed)	#180~#2000	Made in Taiwan (Good values for money) Made in USA (Perfect quality)
Polishing (Diamond)	Poly-crystalline suspension	1 μ m 、 3 μ m 、 6 μ m 、 9 μ m 、 15 μ m	Diamond is the best way for the grinding to obtain a perfect surface in the short time.
	Bio Diamante Poly-crystalline suspension	1 μ m 、 3 μ m 6 μ m 、 9 μ m	Bio Diamante series, which is with higher viscosity and useless consumption during grinding. The liquid to stay a long time on the surface of sample, it is suitable for low usage.
	Mono-crystalline suspension	0.5 μ m 、 1 μ m 、 3 μ m 6 μ m 、 9 μ m 、 15 μ m	Diamond is the best way for the grinding to obtain a perfect surface in the short time.
	Bio Diamante Poly-crystalline suspension	1 μ m 、 3 μ m 6 μ m 、 9 μ m	Bio Diamante series, which is with higher viscosity and useless consumption during grinding. The liquid to stay a long time on the surface of sample, it is suitable for low usage.
	Diamond paste	1 μ m 、 3 μ m 6 μ m 、 9 μ m	Use before diamond suspension It content higher percentage of diamond and offer better abrasive ability than suspension
Polishing (Oxide)	Aluminum oxide powder	0.05 μ m 、 0.3 μ m 1 μ m 、 3 μ m 、 5 μ m	The soft, toughness specimens like aluminum, copper or PCB board are requested to do the final polishing by oxide particles to get perfect results.
	Final polishing suspension	0.05 μ m 、 colloidal solution	Aluminum oxide is suitable for the application of low alloy steel, high alloy steel and plastic material.
Polishing	Polishing cloth	Rough polishing 、 fine polishing	The initial polishing is usually conducted with short hair polishing cloth, and the long-hair polishing cloth is used at the step of final polishing.

Remark: Welcome to get the more detail information of consumables in the follow link

<http://toptech.synology.me/Consumables/PolisherEN.pdf>





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Cutting / Mounting / Grinding & Polishing / Spin Coater

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