ACE® TECHNOLOGIES

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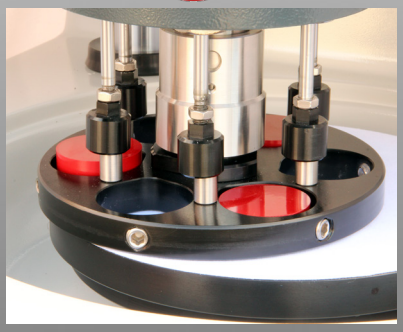
FEMTO 1100S / FEMTO 1500S Autopolishing

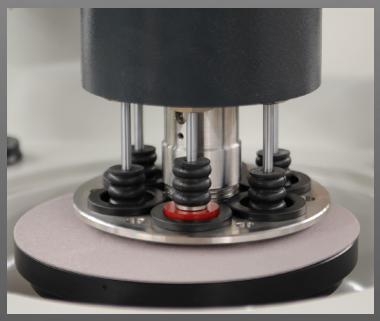
8 and 10-inch Polishers

Benefits:
-Individual Force
-Central Force
-Variable speed head
-Easy to use

PATENT PENDING



Central Force



Individual Force

Automated Polishing

- **FEMTO 1100S is a 1-6 Individual specimens polishing head**
- **FEMTO 1500S is an Individual and Central specimen polishing head**
- **7-inch touchscreen interface**
- **0-300 rpm Variable Speed Head**
- **1 hp high torque dynamic servo motor**
- **Single or Double Wheel Polisher**
- **Retractable water rinse**
- **Manual or Auto operation**
- **Contra or Complementary Direction**
- **User friendly / Easy to Use**

The FEMTO 1100S and FEMTO 1500 polishing heads can be installed at the factory or as a future upgrade for the NANO-1000S and NANO-2000S polishers. The FEMTO 1100S polishing head can polish 1 to 6 specimens individually and independent of the other specimens. This allows for easy removal and inspection of the specimen in-between each polishing step.

For flatter specimen preparation results the FEMTO 1500S offers a central force polishing fixture in addition to being able to polish specimens indivudually.

Individual Force:
Individual specimen force can be applied using the Quick Release Chuck system by screwing down the outside of the coupler so as to lock the specimen mounting plate into a rigid plane. This set-up allows for the individual holder to be removed and cleaned. This holder also eliminates the need to replane the samples if they are removed from the holder.

Central Force:
The individual pistons apply the polishing force to the landing pads and pushes down the holder through the spring loaded central male coupler. For central polishing a minimum of three samples locked into the holder is required; however, flatness is then fixed over all the mounted specimens.

Individual vs. Central Force Automated Polishing

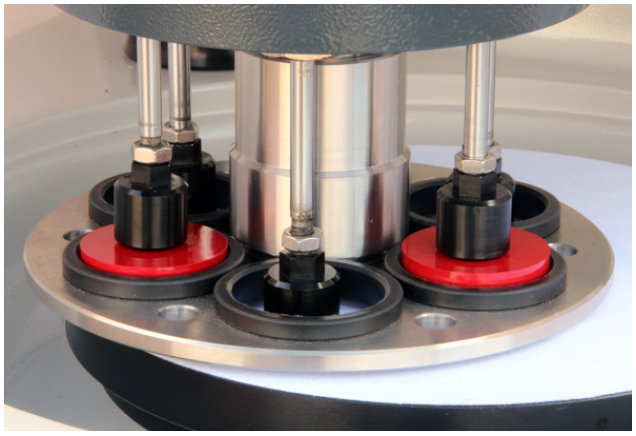
Individual Force: The force is applied to each sample individually. The main advantage for single or individual sample preparation is the elimination of the planar grinding steps. The primary disadvantage is that the specimen plane is not fixed in a rigid position during grinding and can result in loss of flatness across the specimen.

Central Force: For central force holders the specimens are locked into a rigid position or fixed plane so that the specimens cannot rock during sample preparation, especially the planar grinding or coarser grinding steps. The advantage is that the flatness across all the specimen mounts is better than individual force sample preparation. The main disadvantage is that 1-2 more planar grinding steps are required using coarser more damaging abrasives.

Individual Force Automated Polishing

Individual Force: Individual specimen force can be applied using the Quick Release Chuck system by screwing down the outside of the coupler so as to lock the specimen mounting plate into a rigid plane. This set-up allows for the individual holder to be removed and cleaned. This holder also eliminates the need to replane the samples if they are removed from the holder.

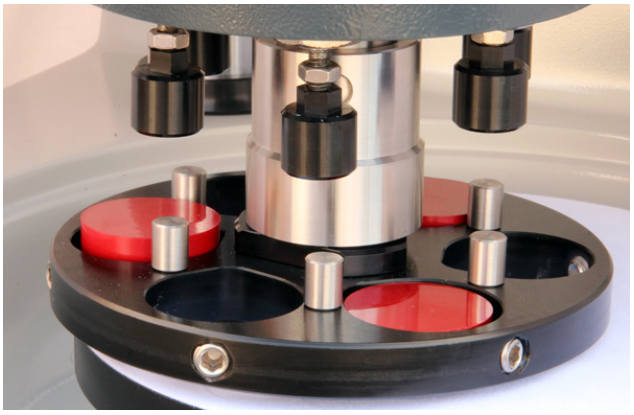
Individual Force Pistons in the off position



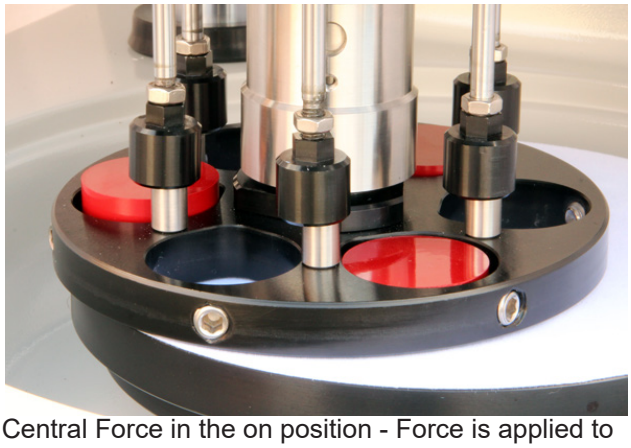
Individual Force Pistons in the on position - Force is applied to each specimen individually

Central Force Automated Polishing

Central Force: The individual pistons apply the polishing force to the landing pads and pushes down the holder through the spring loaded central male coupler. For central polishing a minimum of three samples locked into the holder is required; however, flatness is then fixed over all the mounted specimens.



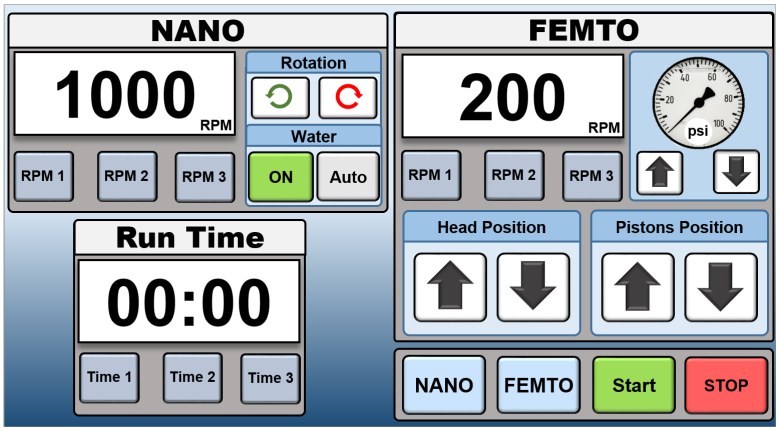
Central Force in the off position



Central Force in the on position - Force is applied to the rigid specimen sample holder

ADVANTAGES

FEMTO 1100S	FEMTO 1500S
Individual force	Central and Individual force
Reduced number of preparation steps and lower cost for consumables	Flatter specimens
Sample can be re-polished without having to planarize specimens in the holder	Specimens can be polished in both the contra and complementary head / base directions



DISADVANTAGES

FEMTO 1100S	FEMTO 1500S
Can result in loss of flatness across the specimen if heavy duty grinding is required	Minimum of 3-sample are required in the holder
It is recommended that the grinding and polishing steps only be done at matching head and base speeds with the rotation being in the same direction	Typically requires 1-3 additional coarser grinding steps to planarize all specimens
Fewer grinding steps	Additional grinding steps increase both consumables cost and total preparation time
Less grinding and subsurface damage	Coarser grinding can result in more surface and subsurface damage to the specimen
Do not need to planarize multiple samples	Need to planarize specimens again if they are removed from the fixed holder

Technical Specifications:

Specifications	FEMTO 1100S	FEMTO 1500S
Application of Force	Individual pistons (1-6 samples)	Individual pistons (1-6 samples) Central force (3-6 samples)
Specimen Holder	Fixed Invidivual Holder	Quick Release Chuck for Interchangeable Holders
Head Speed	0-300 rpm	0-300 rpm
Force	1.1 - 13.5 lbs (5 - 60N)	1.1 - 13.5 lbs (5 - 60N)
Power Supply	110 / 220V	110 / 220V
Motor	1 hp dynamic torque servo motor	1 hp dynamic torque servo motor
Weight	60 lbs (28 kg)	60 lbs (28 kg)
Dimensions (W x D x H)	10 x 18 x 22-inch (254 x 457 x 560 mm)	10 x 18 x 22-inch (254 x 457 x 560 mm)
Part No.	FEMTO-1100S	FEMTO-1500S

FEMTO 1100S and FEMTO 1500S Individual Specimen Holders	Part Number
Individual Specimen holder for FEMTO 1100S (6 slots for 1 to 1.5-inch diameter rings)	SH-1100
Individual Specimen holder for FEMTO 1500S with Quick Release Chuck (6 slots for 1 to 1.5-inch diameter rings)	SH-1150
1-inch diameter rings (6/set) 25 mm diameter rings (6/set)	SR-0100 SR-25mm
1.25-inch diameter rings (6/set) 30 mm diameter rings (6/set)	SR-0125 SR-30mm
1.5-inch diameter rings (6/set) 40 mm diameter rings (6/set)	SR-0150 SR-40mm
Individual Specimen holder for FEMTO 1100S (3 slots for 2-inch diameter specimens)	SH-1200
Individual Specimen holder for FEMTO 1500S with Quick Release Chuck (3 slots for 2-inch diameter specimens)	SH-1250
2-inch diameter rings (3/set) 50 mm diameter rings (3/set)	SR-0200 SR-50mm

FEMTO 1500S Central Specimen Holders	Part Number
1-inch / 25 mm central specimen holder (3-6 samples)	QRC-SH100A-1500
1.25-inch / 30 mm central specimen holder (3-6 samples)	QRC-SH125A-1500
1.5-inch / 40 mm central specimen holder (3-6 samples)	QRC-SH150A-1500
2-inch / 50 mm central specimen holder (3 samples)	QRC-SH200A-1500
Central Force Loading plate for FEMTO 1500S central holders	CF-LP-1500

FEMTO 1500S	Part Number
Quick Release Chuck for dual central / individual specimens	QRC
Central holder male coupler for use with quick release chuck	QRC-CFC-V2
Individual holder male coupler for use with quick release chuck	QRC-IFC-V2

CE Machinery directive 2006/42/EC
Low Voltage Directive 2006/95/EC
Electromagnetic Compatibility directive 2004/108/EC

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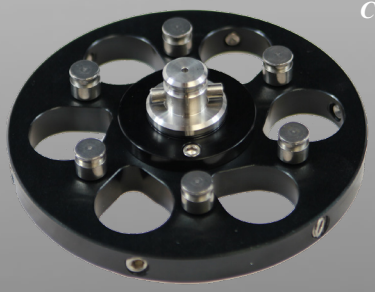
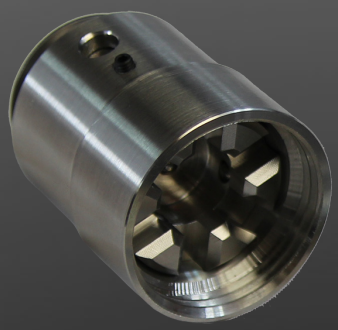
Central specimen holder



Individual specimen holder

Central specimen male coupler adapter



Quick Release Chuck

Individual specimen male coupler adapter