苏 州 特 鲁 利 电 子 材 料 有 限 公 司
Suzhou Trojan Industry Material Co.，Ltd.

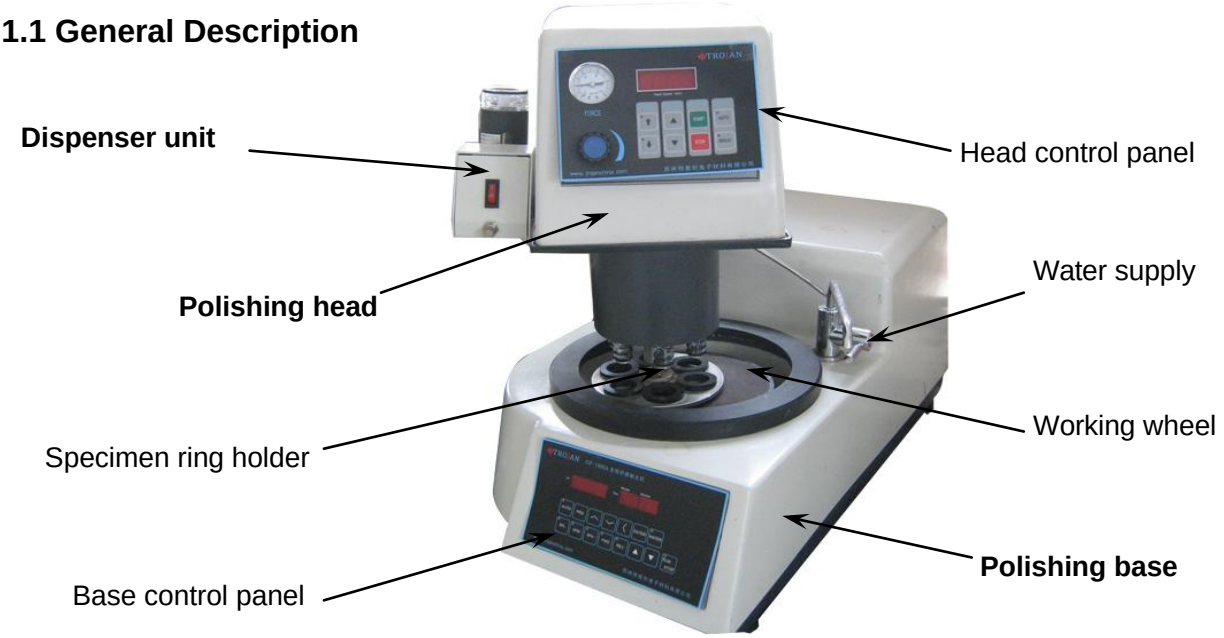
Operating Instructions

GP 1000A
Automated grinder-polisher

地地址：江苏省苏州市工业园区新泽路 53 号 A 幢
电话：0512-67580617　　传真：0512-67508229

1. Product Description

1.1 General Description



The GP 1000A is a variable speed polishing head (0-200 rpm) for use with the grinding/ polishing base machine for automated metallographic specimen preparation. It can also run either automatically with the polishing base or in a manual mode with independent control.

1.2 Technical Specifications

Electrical specifications:	220V single-phase (50/60 Hz)
Number of specimens:	1-6 samples (1-inch to 1.5-inch diameter. 1-3 samples 2-inch diameter (holder and rings sold separately)
Force application:	Individual piston
Head motor power:	125 W
Base motor power:	550 W
Head speed:	0 to 200 rpm variable speed
Base wheel speed:	50 to 600 rpm variable speed
Weight:	Approx. 55 lbs (25 kg)
Dimensions (WxHxD):	Approx. 13” x 18” x 30” (330 mm x 450 mm x 750 mm)
Hook ups:	Air - clean filter air with lubricator (recommended) Electrical - 220V, 50/60 Hz)

1.3 Features and Benefits

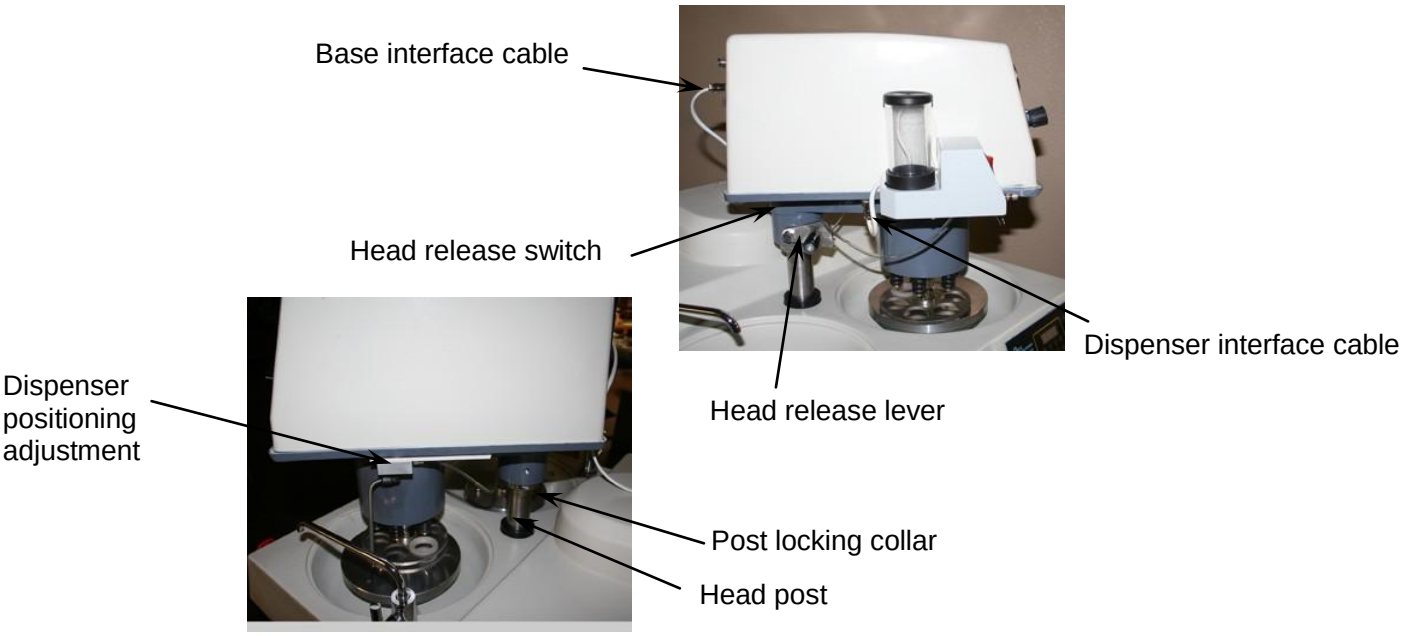
The ***GP 1000A*** is equipped with a 125 W variable 0-200 rpm speed motor. The drive mechanism is connected to the motor via a maintenance-free anti-slip polychain.

The ***GP 1000A*** also has a lubricant dispenser in addition to a high flow water valve for hands free wet grinding with abrasive papers and lubrication for polishing.

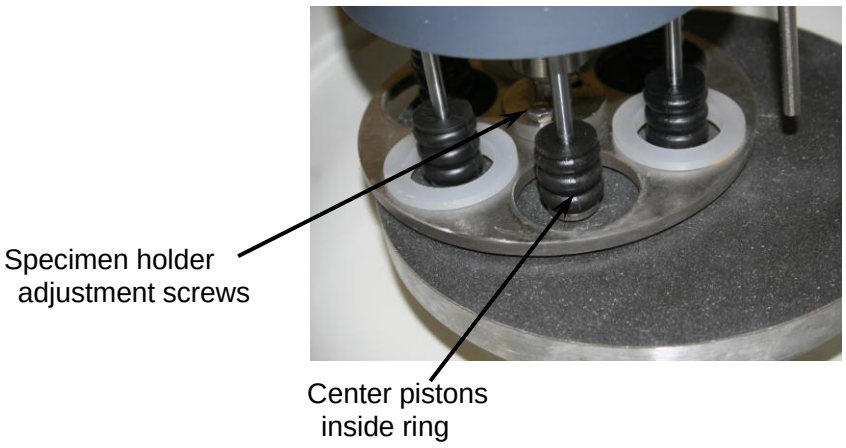
In addition, the ***GP 1000A*** can be operated either automatically or independently of the polishing base.

2. Installation

Install unit carefully!
The ***GP 1000A*** should be placed on a flat stable surface.
Requires air, water supply, drain and electrical connections.
After connecting air, water, drain and electrical supplies the system is ready for operation by activating the main power switches on both the polisher and head for automatic operation.



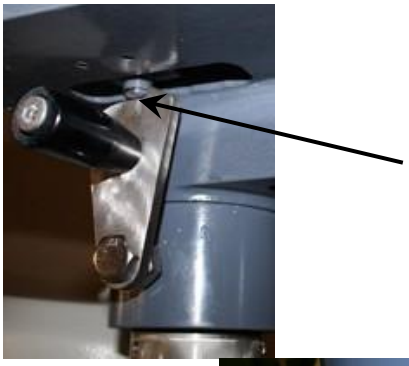
2.1 Specimen Holder Attachment



Specimen holder:

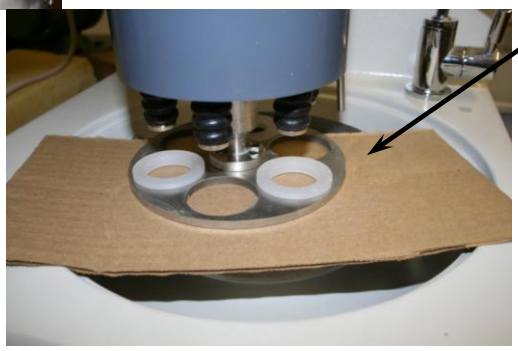
The specimen holder is attached to the head drive shaft via two hex screws that tight on the two flat sides of the shaft.
The specimen holder needs to be adjusted so that the pistons are approximately centered in the holder holes. This adjustment is done by loosening the flange between the holder and shaft coupler and rotating the holder into the correct position. Retighten screws and nuts.

2.2 Height Adjustment for the Head /Specimen Holder



Step 1: Rotate lever to engage piston to lift head

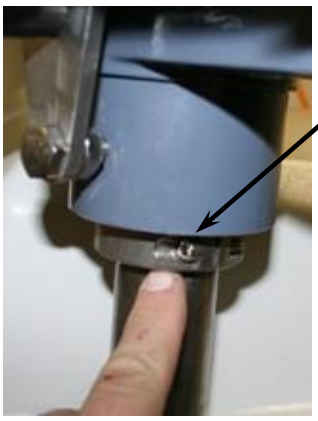
Step 2: Lower head onto a cardboard spacer



The specimen holder height needs to be adjusted to prevent the pistons from being ground during the operation of the machine.

Step 1: Connect air and lift up head.

Step 2: Place the working wheel with the highest profile abrasive/polishing pad on the wheel. Using a single wall box as a spacer, place the cardboard on top of the working wheel/abrasive combination.



Step 3: Loosen and lower post holding collar

Rotate lever to disengage button

Step 3: Loosen holding ring collar on the head post and slide down out of the way.

Step 4. Rotate release lever slightly to lower the head.

Step 5. Slide the holding ring collar up to the bottom of the head and tighten.

Step 6. Lift head by rotating release lever to engage button on bottom of the head. Remove cardboard and lower head.

Step 7. In the head's manual mode, lower pistons with the piston down switch. Verify that the bottom of the pistons are not rubbing against the abrasive surface. (Note it is better to operate the specimen holder as close to the working abrasive wheel as possible in order to get flatter specimens).

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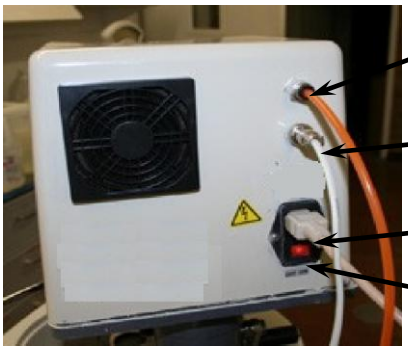
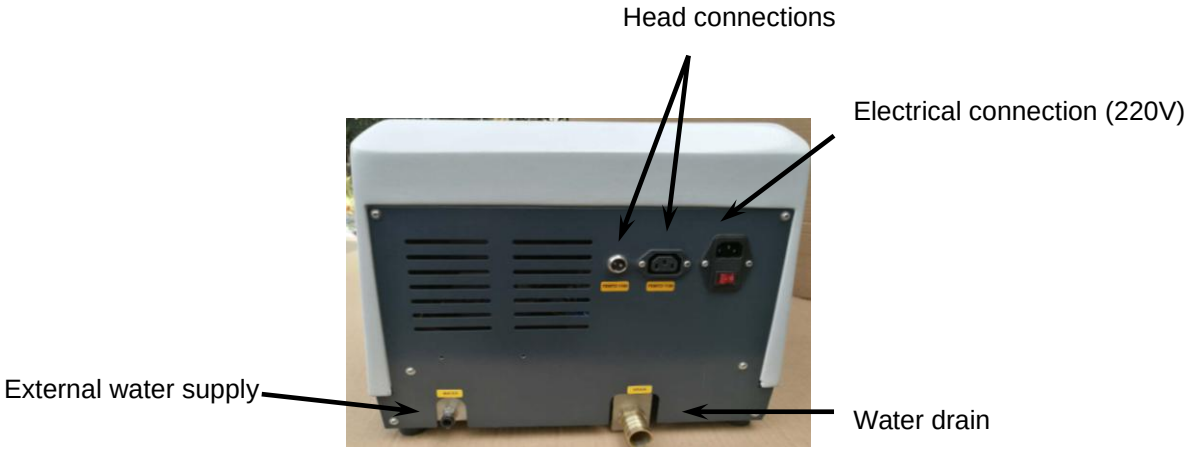
2.3 Backside connections





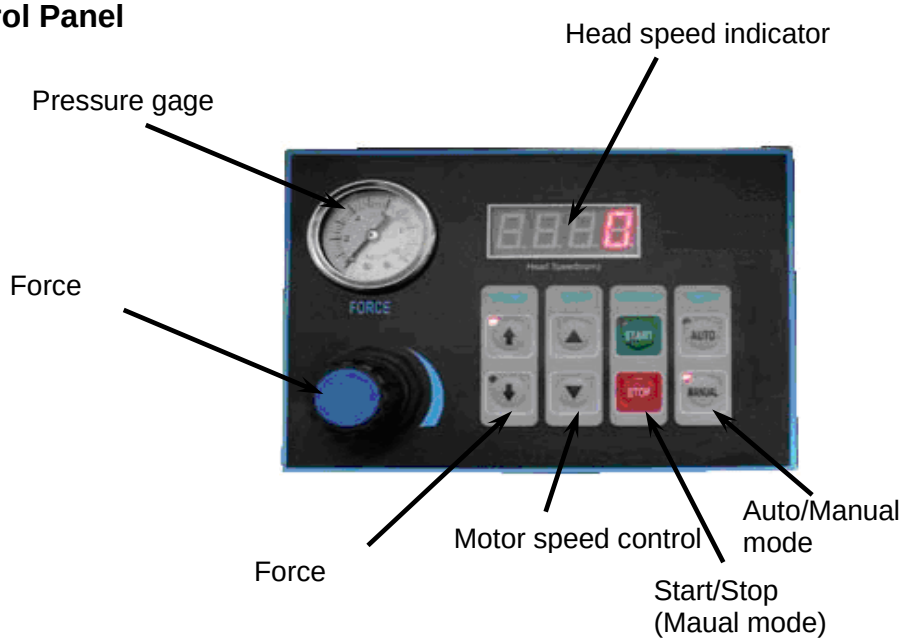
External air supply: It is recommended that the air supply be clean, filtered and lubricated to extend the life and performance of the systems.

Electrical connection: Connect electrical power cable and communications cable.

Note: Inspect the operating voltage on the name plate.

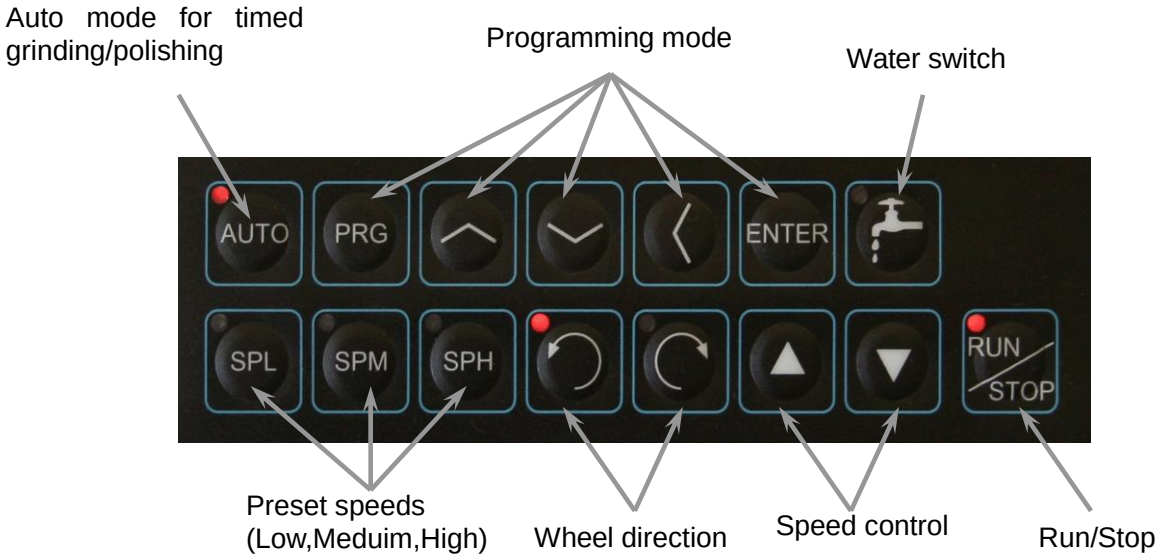
3. Start-up and Operation

3.1 Head Control Panel



Start / stop buttons: Start or stops the head in the manual mode. Note the Start/Stop button on the base polisher controls the Automatic polishing operation.
Auto/ manual: Manual mode operates the head independent of the polisher. Auto mode operates head in conjunction with the polisher.
Pistons Up/Down: UP/DOWN controls the pistons in the manual mode.
Motor speed: UP/DOWN arrows for increasing or decreasing the speed.
Head speed indicator: Displays the motor speed (0-200 rpm).
Pressure adjustment: Controls the pressure applied to the pistons.

3.2 Base Polisher Control Panel



Wheel direction: Clockwise rotation or counter clockwise rotation.
Run / stop buttons: Start/stop the polishing wheel in both manual and auto mode.
Water switch: Activates the water solenoid for the rinse bowl and rinse spout.
Preset speeds: Allows for faster speed control, SPL - low speed, SPM - medium speed, SPH - high speed.
Auto-mode: Allows for running pre-programmed speeds and times.

3.3 AUTO Polishing Mode

1. Install working wheel and attach grinding papers / polishing cloths.

   Position the specimen holder so that the sample tracks over the entire diameter of the grinding papers in order to break the grinding papers uniformly. Note positioning is not as significant for polishing pads.
2. Switch on the head and the base at the back.

   Set the button on the head control panel to AUTO.

   Set an approximate pressure and head speed on the head.

3. Set the base speed, time and direction on the base controller (see next page for instructions)

4. Position flexible water spout over working wheel. During sample preparation adjust water flow by turning water control knob as required. Note: Initial operation of water valve may contain air in the lines. Turn water on slowly to purge air from system.

5. Turn on AUTO mode so light is lit. To start operation press START/STOP button to begin.

TIP: It is recommended that the head speed match or exceed the base speed, running in the same direction. This provides flatter specimen samples, especially for coarse grinding.

3.4 Programmable Mode

1. The programming mode can be used to pre-set the polishing speed, direction and time for automated polishing. It can also be used to change the fast speed buttons.

2. To change the speed of the wheel:

Press the PRG button and use the up and down keys to SP1 and press ENTER. Use the up, down and < key to change the speed. Press ENTER to save.

3. To program a grinding/ polishing time:

Press the PRG button and use the up and down keys to display t1 and press ENTER. Use the up, down and < key to change the time (enter in seconds - displayed min-sec)

4. To operate the pre-programmed conditions:

PRESS the AUTO button and then start the program with the RUN/STOP button. The pre-programmed conditions will be executed.

3.5 MANUAL Polishing Mode

1. Install working wheel and attach grinding papers / polishing cloths.
2. Switch on the head and the base at the back.

Set the toggle switch on the head control panel to MANUAL
Set an approximate pressure and head speed on the head.

Load samples and press the UP/DOWN key to the DOWN .

Press Start/Stop button to start the head (the base will not start automatically in this mode, it must be started separately).

3. Start the base by using preset speeds (SPL, SPM, SPH) and pressing Run/STOP button. Note speed can be adjusted with up and down arrow keys.

4. Position flexible water spout over working wheel. During sample preparation adjust water flow by turning water control knob as required. Note: Initial operation of water valve may contain air in the lines. Turn water on slowly to purge air from system.

5. Both the base and the heads need to be stopped by pressing the red button on the head and the RUN/STOP button on the base controller.

3.6 Programming Menu

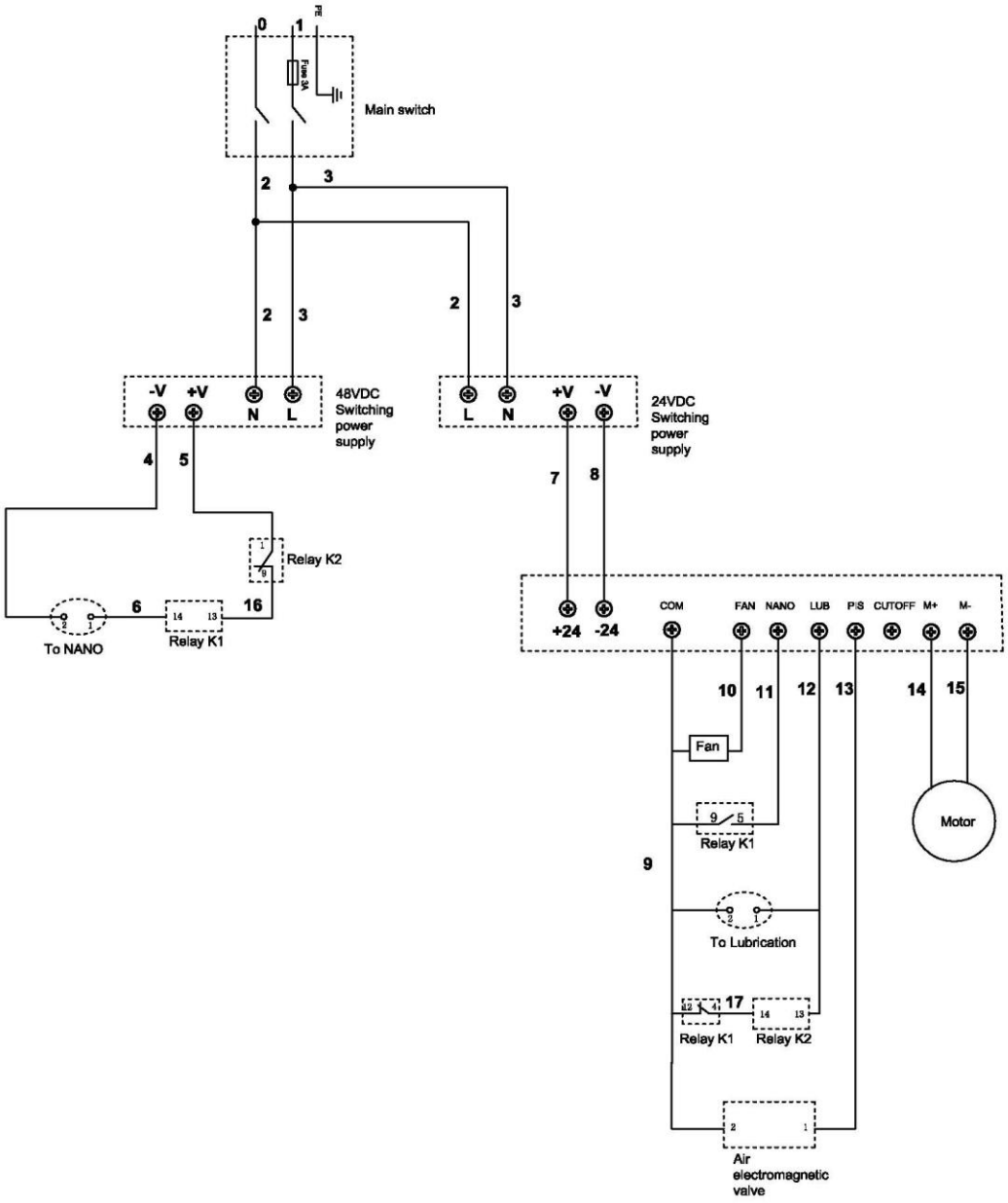
Menu	Description	Note
SP1	Speed 1. Unit：rpm	Press  or  to increanse and reduce number. Press  or  to select wheel directions.
t1	Runtime of SP1 .Unit：second	
SP2	Speed 2	
t2	Runtime of SP2	
SP3	Speed 3	
t3	Runtime of SP3	
SP4	Speed 4	
t4	Runtime of SP4	
SP5	Speed 5	
t5	Runtime of SP5	
SP6	Speed 6	
t6	Runtime of SP6	
SP7	Speed 7	
t7	Runtime of SP7	
SP8	Speed 8	
t8	Runtime of SP8	
Cn	Cycle numbers from SP1 to SP8	
SL	Low speed	
Sn	Meduim speed	
SH	High speed	
Sr	Ratio between pulley and the motor	Need passwords
dF	Default value	
U	Set frequency vs. voltage relations	Need passwords
St	Set shut off temperature of the convertor	
Ct	Display current temperature of the convertor	
nS	Number of the pole-pairs of the motor	Need passwords
CD1	Control mode of the convertor	Need passwords
CD2	Select speed/frequency to display on the LED board	
CD3	Set motor control method	Need passwords

4. Trouble Shooting

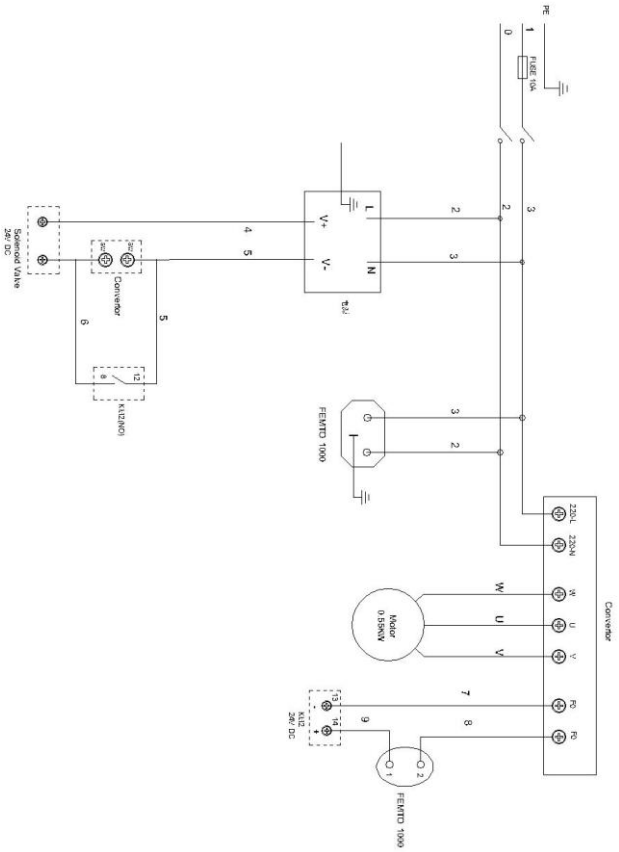
Problem	Cause	Solution
No power or function	a. Unit is disconnected from main electrical power supply b. Main power switch is off c. Blown fuse	a. Verify electrical source and connection. b. Turn on main power switch. c. Replace fuse
No air supply	a. Air regulator blocked	a. Clean air connections
Specimens not polished evenly across sample	A. Specimen not breaking down grinding paper uniformly B. Relative velocity of base and head does not match.	A. Position specimen holder so that specimen tracks over the entire radius of the grinding paper. B. Match head and base speed

5. Electrical Drawings

5.1. Drawings of the head.



5.2 Drawings of the base



Packing List

NO	Name	Unit	Quality	Remark
1	Working Wheel	Pc	1	
2	Abrasive disc	Pc	2	
3	Polish Cloth	Pc	1	
4	Pu 8, water Inlet	Pc	1	
5	25mm water outlet	Pc	1	
6	Pu 6, air inlet	Pc	1	
7	power line	Pc	1	
8	Instruction Manual	Pc	1	
9	Packing List	Pc	1	

Packer: _____ Inspector：_____
Date: _____

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