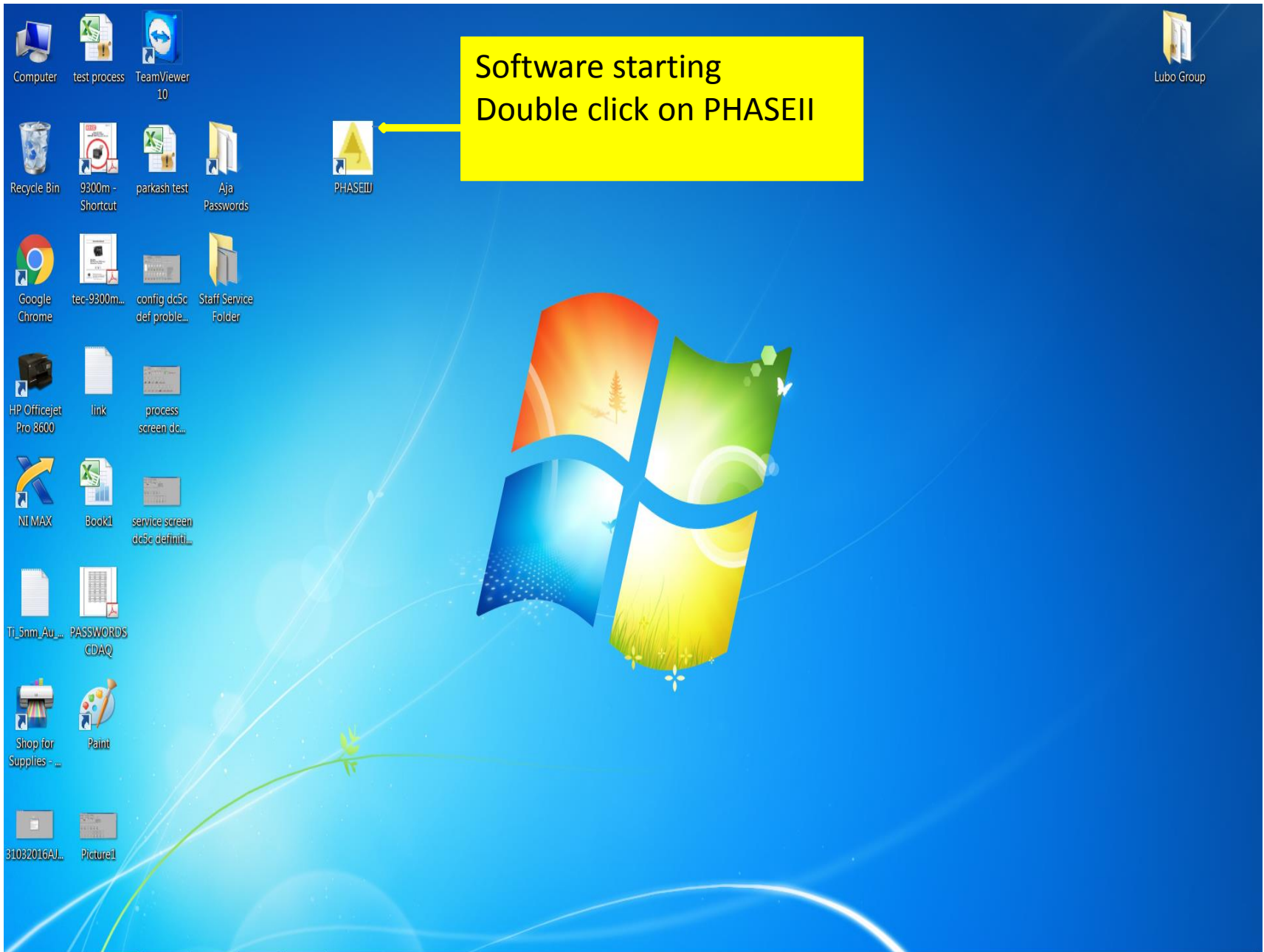


AJA Sputtering SETUP



Enter your own password
(which received from Sharon)

AJA INTERNATIONAL PHASE II J COMPUTER CONTROL



PHASE II J
COMPUTER CONTROL

REV. 1507-1 #10065

ENTER YOUR PASSWORD

Please verify and set all of parameter as below

AJA INTERNATIONAL PHASE II J COMPUTER CONTROL

PRESSURE UNITS SETUP INFO.
CHANGING UNITS REQUIRES SETTING
THE GAUGE CONTROLLER PRESSURE UNITS
AND VAT CONTROLLER DISPLAY UNITS

SYSTEM CONFIGURATION

OPERATOR <input type="text"/>	MAX TEMP HEATER 850 °C	GAS 1 1.39 FACTOR 100 MFC GAS INFO Ar VALVE POSITION 7	GAS 2 2 FACTOR 20 MFC GAS INFO O2 VALVE POSITION 8	GAS 3 2 FACTOR 20 MFC GAS INFO N2 VALVE POSITION 9	GAS 4 0 FACTOR 0 MFC GAS INFO VALVE POSITION 0	SP1 INFO spare1 8	SP2 INFO spare2 11	SP3 INFO spare3 12	SP4 INFO 0	SP5 INFO 0	SP6 INFO	SP7 INFO	SP8 INFO	SP9 INFO	SP10 INFO
CONFIG SAVE/CLOSE	CM HEAD SIZE 100 mTorr PRESSURE UNITS mTorr	VALVE POSITION													
CANCEL	PRINT SCREEN														

NOTES

RF1 Bias TGT cleaning W 50 V 300 VALVE POSITION 0 ACTIVE/INACTIVE ACTIVE	RF2 Gun 5 TGT Sm2O3 W 300 V 1000 VALVE POSITION 5 ACTIVE/INACTIVE ACTIVE	RF3 TGT W 0 V 0 VALVE POSITION 0 ACTIVE/INACTIVE INACTIVE	RF4A Gun 3 TGT au W 600 V 1000 VALVE POSITION 3 ACTIVE/INACTIVE ACTIVE	RF4B Gun 4 TGT Cu W 600 V 1000 VALVE POSITION 4 ACTIVE/INACTIVE ACTIVE	RF4C Gun 6 TGT CeO2 W 600 V 1000 VALVE POSITION 6 ACTIVE/INACTIVE ACTIVE
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DC1 TGT W 0 V 0 mA 0 VALVE POSITION 0 ACTIVE/INACTIVE INACTIVE	DC2 TGT W 0 V 0 mA 0 VALVE POSITION 0 ACTIVE/INACTIVE INACTIVE	DC3 TGT W 0 V 0 mA 0 VALVE POSITION 0 ACTIVE/INACTIVE INACTIVE	DC4 TGT W 0 V 0 mA 0 VALVE POSITION 0 ACTIVE/INACTIVE INACTIVE	DC5A Gun 1 TGT pd W 1500 V 1000 mA 2000 VALVE POSITION 1 ACTIVE/INACTIVE ACTIVE	DC5B Gun 2 TGT Ti W 1500 V 1000 mA 2000 VALVE POSITION 2 ACTIVE/INACTIVE ACTIVE	DC5C TGT W 0 V 0 mA 0 VALVE POSITION 0 ACTIVE/INACTIVE INACTIVE	DC5D TGT W 0 V 0 mA 0 VALVE POSITION 0 ACTIVE/INACTIVE INACTIVE
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CONFIG SCREEN POWER SUPPLY SETUP INFO.
MDX 500 - 500W, 600V, 1000mA - STANDARD
MDX 500 - 500W, 1000V, 500mA - HIGH OUTPUT
MDX 1K - 1000W, 1000V, 1000mA - STANDARD
MDX 1.5K - 1500W, 750V, 2000mA - STANDARD
MDX 1.5K - 1500W, 500V, 3000mA - SPECIAL
MDX 5K - 5000W, 1000V, 10000mA - STANDARD
MDX 5K - 5000W, 1000V, 12500mA - LO Z
MDX5K - 5000W, 1250V, 7750mA - HI Z
PINNACLE +5K - 5000W, 1500V, 20000mA
DCXS750 - 750W, 1000V, 1000mA
DCXS1500 - 1500W, 1000V, 2000mA
A3DC - 600W, 1000V, 1000mA
RF55 - 500W, 1000V,
R301 - 300W, 1000V
R301 - 50W, ???V - BIASING, SET VOLTS PER JOB
R601 - 600W, 1000V
TDK DC BIAS SUPPLY - 1000V

CONFIG SCREEN GAS SETUP INFO.
2,20,200 SCCM MASS FLO - 2X GAS FACTOR
5,50,500 SCCM MASS FLO - 5X GAS FACTOR

Then press save button

Then you get main screen
please check if Max power in all of power (DC , RF) Set correctly

PHASE II J
COMPUTER CONTROL

AJA INTERNATIONAL, Inc.

CREATE LAYERS CREATE PROCESS RUN PROCESS

ABOUT
AJA INTERNATIONAL

SYSTEM CONFIG LOGOUT PRINT SCREEN

HEAT OFF
MAX TEMP 850 °C
STPT 0 °C
RAMP 0 °C/sec
ACT. TEMP 20 °C

GAS 1 OFF GAS 2 OFF GAS 3 OFF GAS 4 OFF
Ar O2 N2
0 STPT 0 STPT 0 STPT 0 STPT
0.11 FLOW 0.02 FLOW 0.15 FLOW 0 FLOW

PRESSURE CONTROL
OPEN CLOSED
POSITION 0 0-1000
PRESSURE 0 mTorr
CAP MAN 107.6 mTorr

spare1 spare2 spare3
CLOSED CLOSED CLOSED
CLOSED CLOSED CLOSED

RF1 Bias RF2 Gun 5 RF3 RF4A Gun 3 RF4B Gun 4 RF4C Gun 6
TGT cleaning TGT Sm2O3 TGT au TGT Cu TGT CeO2
MAX POWER 50 W MAX POWER 300 W MAX POWER 0 W MAX POWER 600 W MAX POWER 600 W MAX POWER 600 W
0 STPT 0 W. FDBK 0 STPT 0 W. FDBK 0 STPT 0 W. FDBK 0 STPT 0 W. FDBK 0 STPT 0 W. FDBK 0 STPT 0 W. FDBK 0 STPT 0 W. FDBK
0 RAMP 0 V. FDBK 0 RAMP 0 V. FDBK 0 RAMP 0 V. FDBK 0 RAMP 0 V. FDBK 0 RAMP 0 V. FDBK 0 RAMP 0 V. FDBK
PLASMA PLASMA PLASMA PLASMA PLASMA PLASMA
OFF CLOSED OFF CLOSED ON OFF CLOSED OFF OFF
OUTPUT SHUTTER OUTPUT SHUTTER SW OUTPUT SHUTTER SW OUTPUT SHUTTER SW

DC1 DC2 DC3 DC4 DC5A Gun 1 DC5B Gun 2 DC5C DC5D
TGT TGT TGT TGT TGT pd TGT Ti TGT TGT
WATTS 0 MAX WATTS 0 MAX WATTS 0 MAX WATTS 0 MAX WATTS 1500 MAX WATTS 1500 MAX WATTS 0 MAX WATTS 0 MAX
MODE MODE MODE MODE MODE MODE MODE
0 STPT 0 W. FDBK 0 STPT 0 W. FDBK 0 STPT 0 W. FDBK 0 STPT 0 W. FDBK 0 STPT 0 W. FDBK 0 STPT 0 W. FDBK 0 STPT 0 W. FDBK
0 RAMP 0 V. FDBK 0 RAMP 0 V. FDBK 0 RAMP 0 V. FDBK 0 RAMP 0 V. FDBK 0 RAMP 0 V. FDBK 0 RAMP 0 V. FDBK 0 RAMP 0 V. FDBK 0 RAMP 0 V. FDBK
PLASMA PLASMA PLASMA PLASMA PLASMA PLASMA PLASMA PLASMA
OFF CLOSED OFF CLOSED ON OFF CLOSED OFF OFF
OUTPUT SHUTTER OUTPUT SHUTTER SW OUTPUT SHUTTER SW OUTPUT SHUTTER SW

If not logout from software and log in again in service mode (password : service)

Please set up the software like below (Max power ,Max AMPS.....)

AJA INTERNATIONAL PHASE II J COMPUTER CONTROL

HEATER

ENTER TIME ALLOWED TO REACH SETPOINT: 1200 SECONDS

ENTER TEMP. FOR IN RANGE SAME VALUE IS FOR +/-: 7 DEGREES

ENTER TEMP. DEVIATION SAME VALUE IS FOR +/-: 5 DEGREES

ENTER TIME BEFORE ABORT AFTER A TEMP. DEVIATION: 120 SECONDS

SIC HEATER

MFC'S

ENTER TIME ALLOWED TO REACH SETPOINT: 30 SECONDS

VAT

ENTER TIME ALLOWED TO REACH SETPOINT: 15 SECONDS

vat ao x: 1.00000

POWER SUPPLY PLASMA DETECTION:
 POWER SUPPLIES ARE SHUTDOWN IF DCV ANALOG FEEDBACK IS LESS THAN VALUE ENTERED.
 RF POWER SUPPLY TYPICAL SETTING IS 0.01
 DC POWER SUPPLY TYPICAL SETTING IS 0.05

RF#1 MAX WATTS 50	RF#2 MAX WATTS 300	RF#3 MAX WATTS 0	RF#4A MAX WATTS 600	RF#4B MAX WATTS 600	RF#4C MAX WATTS 600
RF#1 DEF RAMP 0 SECONDS	RF#2 DEF RAMP 0 SECONDS	RF#3 DEF RAMP 0 SECONDS	RF#4 DEF RAMP 0 SECONDS	RF#5 DEF RAMP 0 SECONDS	RF#6 DEF RAMP 0 SECONDS
RF1 FDBK VOLTS 0.01 ANALOG FDBK FOR PLASMA DET.	RF2 FDBK VOLTS 0.01 ANALOG FDBK FOR PLASMA DET.	RF3 FDBK VOLTS 0.01 ANALOG FDBK FOR PLASMA DET.	RF4 FDBK VOLTS 0.01 ANALOG FDBK FOR PLASMA DET.	RF5 FDBK VOLTS 0.01 ANALOG FDBK FOR PLASMA DET.	RF6 FDBK VOLTS 0.01 ANALOG FDBK FOR PLASMA DET.

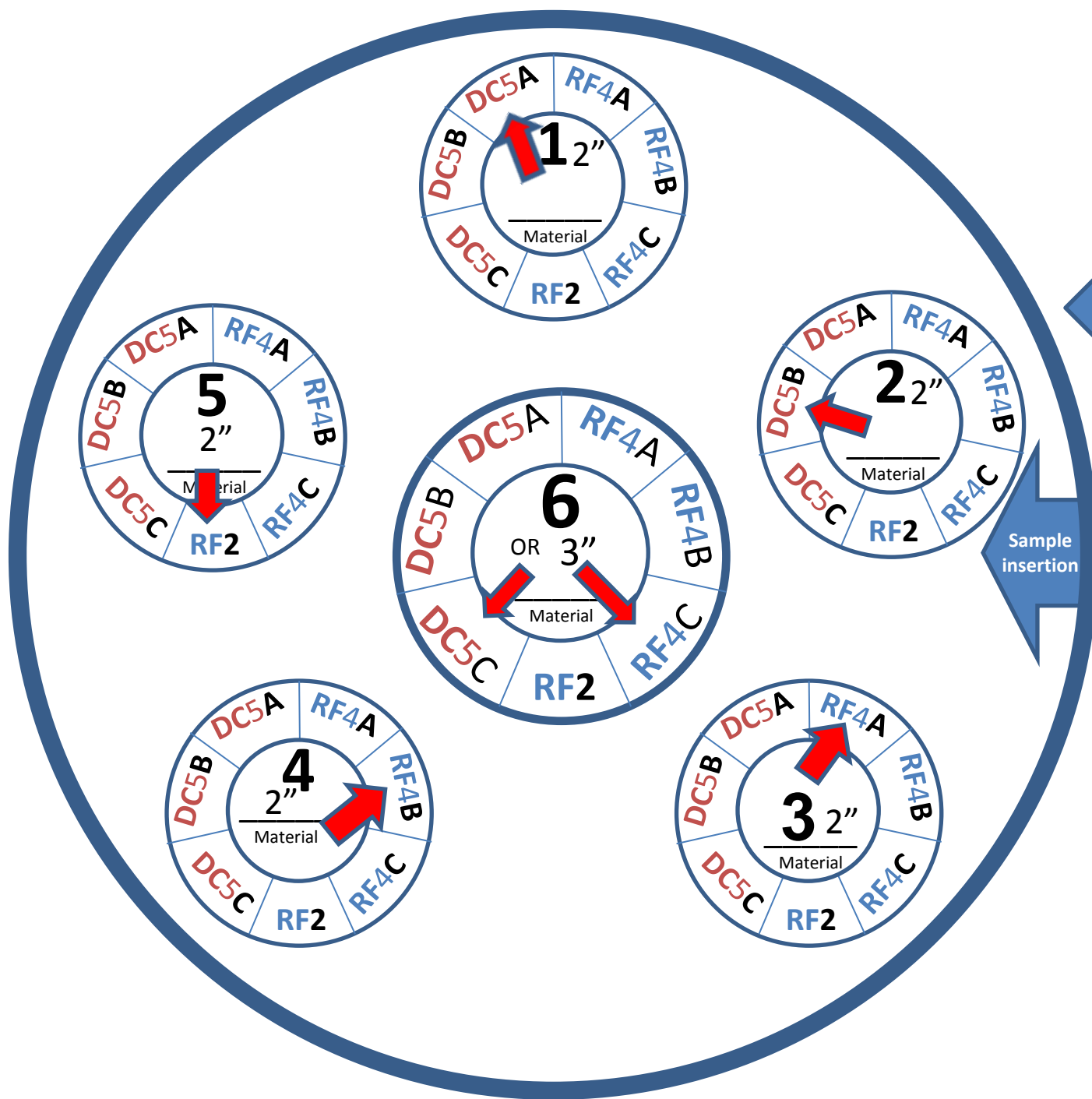
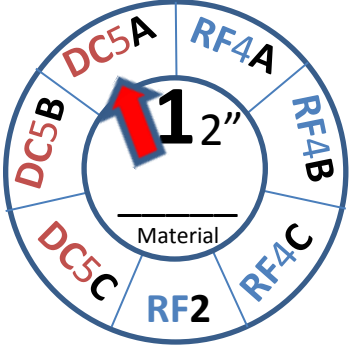
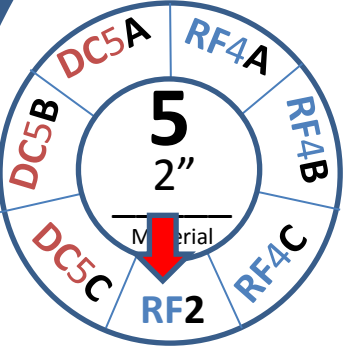
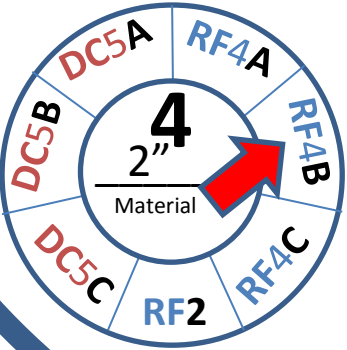
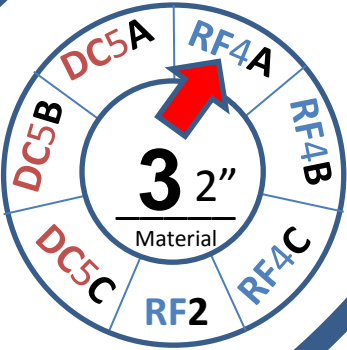
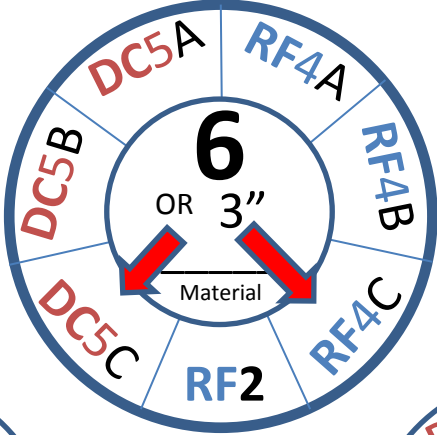
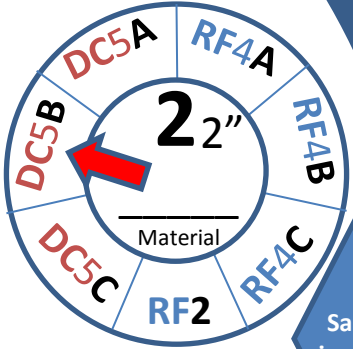
DC#1 MAX WATTS 0	DC#2 MAX WATTS 0	DC#3 MAX WATTS 0	DC#4 MAX WATTS 0	DC#5A MAX WATTS 1500	DC#5B MAX WATTS 1500	DC#5C MAX WATTS 0	DC#5D MAX WATTS 0
DC#1 MAX VOLTS 0	DC#2 MAX VOLTS 0	DC#3 MAX VOLTS 0	DC#4 MAX VOLTS 0	DC#5 MAX VOLTS 1000	DC#6 MAX VOLTS 1000	DC#7 MAX VOLTS 0	DC#8 MAX VOLTS 0
DC#1 MAX mAMPS 0	DC#2 MAX mAMPS 0	DC#3 MAX mAMPS 0	DC#4 MAX mAMPS 0	DC#5 MAX mAMPS 2000	DC#6 MAX mAMPS 2000	DC#7 MAX mAMPS 0	DC#8 MAX mAMPS 0
DC#1 DEF RAMP 0 SECONDS	DC#2 DEF RAMP 0 SECONDS	DC#3 DEF RAMP 0 SECONDS	DC#4 DEF RAMP 0 SECONDS	DC#5 DEF RAMP 0 SECONDS	DC#6 DEF RAMP 0 SECONDS	DC#7 DEF RAMP 0 SECONDS	DC#8 DEF RAMP 0 SECONDS
DC1 FDBK VOLTS 0.05 ANALOG FDBK FOR PLASMA DET.	DC2 FDBK VOLTS 0.05 ANALOG FDBK FOR PLASMA DET.	DC3 FDBK VOLTS 0.05 ANALOG FDBK FOR PLASMA DET.	DC4 FDBK VOLTS 0.05 ANALOG FDBK FOR PLASMA DET.	DC5 FDBK VOLTS 0.05 ANALOG FDBK FOR PLASMA DET.	DC6 FDBK VOLTS 0.05 ANALOG FDBK FOR PLASMA DET.	DC7 FDBK VOLTS 0.05 ANALOG FDBK FOR PLASMA DET.	DC8 FDBK VOLTS 0.05 ANALOG FDBK FOR PLASMA DET.

Warning : Before you press save check all of the parameter set correctly like above. If not you can cause damage to the Machine.

The following is Gun set up Hardware/software

RF1	RF2	RF4	DC5
		A,B,C	A,B,C
50W	300W	600W	1500W
300V	1000V	1000V	1000V
			2000mA

Wiring gun
set up
configuration



The following is Gun set up Hardware/software

RF1	RF2	RF4 A,B,C	DC5 A,B,C
50W	300W	600W	1500W
300V	1000V	1000V	1000V
			2000mA

Gun1: DC5A

Gun2:DC5B

Gun3:RF4A

Gun4:RF4B

Gun5:RF2

Gun6 :RF4C/DC5C

- Please do not change the order of the source wiring.
- Check if wiring order matches the recipe processes, if not you have to change accordingly.
- Gun 6 can be used either in DC5C...or RF4C .
- Each user has to remove his targets after use and install Copper target instead.
- The target setting (software/hardware) required Sharon approval.

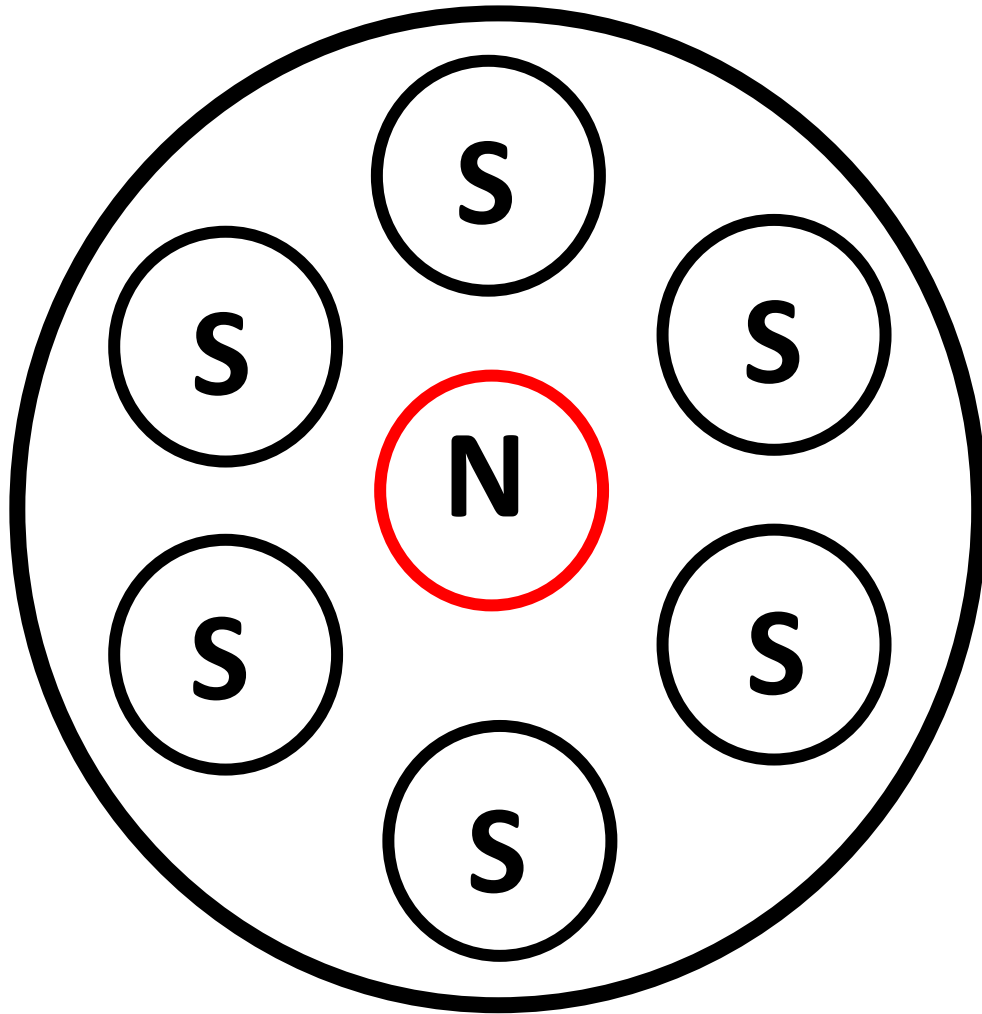
Magnet Removal Tool

Dear Users : when you deposit metal targets you have to remove central magnet (with magnet removal tool) and install Blank metal in the picture

Blank Metal for central magnet target

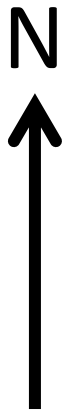
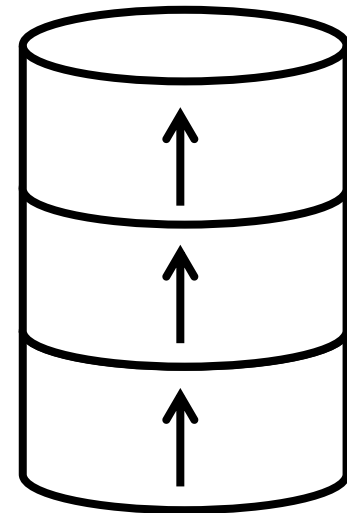


Magnetron polarity configuration



Central
magnets

Polarity
direction



Vent procedure in AJA Sputter Main Chamber

Make sure that GATE VALVE .. in open position in the Main screen

Toggle MAIN CHAMBER PUMP breaker to vent position.

Wait until appears - on the MKS controller ... atmospheric pressure ($7.5E+2$.) as picture

Also check if there is a small gap between the chamber and the lid.

Then you can lift the lid

