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CUSTOMER: C.F Roark

MACHINE S/N: 10251

DATE PERFORMED: 5-12-11

PERFORMED BY: Robbie Cherry

PROCEDURE FOR PERFORMING PREVENTIVE MAINTENANCE ON VX-EB

1 PUMPING SYSTEM

- A. Check roughing , blower , holding and turbo pump oil/grease levels
- B. Check the oil level and current of the diffusion pump
(Diff pump A has a bad Circuit Breaker 804 CB. Diff pump not heating up properly)
- C. Check operating levels of the holding , turbo , roughing pumps , Polycold
- D. Check the high vacuum levels
- E. Check the operation of poppet , roughing , backing , holding , etc. Valve's
- F. Check out the condition of the Chamber
 - 1. Does it have large amounts of deposits ? NO
 - 2. When was the last time the chamber was cleaned ? The Chamber is clean.
 - 3. What steps need to be taken to clean the chamber ? None
 - 4. Is the condition of the chamber affecting pumpdown speed ? NO
- G. Check the door seal and surface for cleanness and no scratches or pits
(The surface has been cleaned and the door O-ring re-greased, there are scratches not bad)
- H. Check the door and window glass
 - 1. Is the glass cracked? NO
 - 2. Has the glass been replaced recently ? Not by Sciaky.
- I. Check the general conditions of the chamber feed through's

2 COMPUTER CONTROLS

- A. Check the conditions of all interface cabling.
- B. Check the condition of the ethernet network (if applicable)
- C. Check calibration of D/A Boards. (if applicable) (Welder has been Calibrated.)

- D. Check calibration of power supplies.
 - 1. + & - 12 volt D.C. and 5 volt D.C. for the vme rack (5.26 VDC Set high purposely)
 - 2. + & - 15 volt D.C. for beam control (+/- 15.09 VDC)
 - 3. + 5 volt D.C. for encoders. (5.19 VDC Set high purposely)
 - 4. + 24 volt D.C for I/O rack (+ 24.09 VDC)
- E. Check the condition of all PLC's (There is a TI controller in the pumping cabinet)
- F. Check for proper air flow and cooling
 - 1. Check air conditioner and cooling fans
 - 2. Verify that the fans are free from dirt, chad and other obstructions

3 DRIVE SYSTEM

- A. Check the open loop speeds of the X,Y,Z,R,T and HF
(Missing Drive Top Software on computer, Can't talk to R,T & RH Amplifiers)
- B. Check the condition of drive belts and encoders.
- C. Check for abnormal wear or backlash of ballscrews,bearings etc.

4 BEAM CONTROL

- A. Check High Voltage calibration and performance.
- B. Check beam current calibration.
- C. Check bias voltage.
- D. Check focus calibration.
- E. Check filament calibration.

Note: Consult with the customer before re-calibrating any of the above, any calibrations could result in weld parameters being changed.

5 BEAM DEFLECTION

- A. Check the scanner for noise and advise the customer
- B. Check the auto correction system (if applicable)
- C. Check beam Deflection (if applicable)

6 GUN OPTICS (If Applicable)

- OK** A. Check the optics focus for proper operation
- OK** B. Check the prism tilt for proper operation
- OK** C. Check the Iris for proper operation
- OK** D. Check the camera for proper alignment and operation.

7 ELECTRON BEAM GUN

- OK** A. Check the condition of the anode
- OK** B. Check the condition of the cathode
- OK** C. Check the condition of the gun cartridge. (Removed and cleaned the cartridge)
- OK** D. Check for gun arcing (Removed and cleaned the EB gun)

8 E.B GUN CABLES

- OK** A. Check the outside cable for proper routing
- OK** B. Check the outside cable corona ring and spark gap. (Removed and cleaned)
- OK** C. Check the inside cable for proper routing
- OK** D. Check the inside cable for arcing

Note: Many of the above items may be defective and replacement part's may be needed The customer will be responsible for the repair or replacement of any of these items if not covered under Sciaky warranty. Preventive Maintenance should be conducted two time a year to ensure that your equipment is running as optimally as possible and to identify and fix problems before they impact your workload. This visit can be schedule at your convenience