1 Objective:

This Standard Operation Procedure states how 3.5MV Dynamitron Ion Accelerator should be started up and shutting down in a proper manner.

2 Responsibilities:

2.1 Director / HOD / PI

The Director/HOD/PI has overall responsibility for ensuring a system is established for the safe use of the accelerator.

2.2 Designated Person

There shall be a designated person to oversee the correct operation and maintenance of the accelerator.

a. This person shall periodically inspect the accelerator to ensure its operational performance.

b. He/She will arrange for the yearly safety certification by a competent person and keep a copy of the certification report for verification purposes.

c. He/she will make necessary arrangements for repair works of the accelerator.

d. He/she will report to the Director/HOD/PI unsafe practices by accelerator users.

2.3 Staff/ Research personnel

a. Accelerator users shall attend appropriate training on the safe use of the accelerator.

b. Users shall report any injuries, defects or breakdowns to their supervisor.

3 Procedures:

3.1 Starting up:

With the accelerator control in place on the monitor at Panel F1 SET Terminal voltage to 300kV and press ENTER.

GVM(F14) and Drive motor(F9)(at the Main power cabinet): Switch ON

- Open HVI (double click ►◄, it turns **GREEN**)
- Click MAIN COOLING & SW MAGNET COOLING to ON and then click Accelerator Terminal Voltage ON.

(Click RESET if terminal voltage goes up too fast)

. Set the 90 degree magnet and SW Magnet at the desired value early for better stabilization.

. Select GAS from the MACHINE tab.

. Observe the HV1 pressure activity on TRENDING indicator HV1 Value while gradually increasing the Terminal Voltage to the desired value.
. Introduce the gas to the source by setting the Gas Inlet bar to a slightly higher value than the last recorded percentage for the desired gas in order to achieve the same pressure.
. **Print out** a Setting report and **State down** your name, experiment, beam line & gas using, 90 degree magnet value.

3.2 Shutting Down

. SLIT ENABLE: Click OFF
. FARADAY CUP 1: Click IN
. GAS INLET: Reset to zero
. TERMINAL VOLTAGE: Set to zero
. 90° MAGNET: Set to zero
. SW MAGNET: Set to zero
. MAIN COOLING: Click OFF
. PROBE VOLTAGE: Set to lower value (maybe 200 volts)
. EXTRACTION VOLTAGE: Reset to zero
. VACUUM VALVE HV2: Double click to shut (**Red**)
. Turn off blanking power supply (for 10° Proton Beam Writing line)
…….. At the Main Power Control Box**……**.
. GVM(F14) and Drive motor(F9): Switch OFF

4 Records:

a. A copy of the yearly licensing must be kept in a file by the accelerator owner for verification purposes.

5 References:

Manuals kept on the shelves at S7-01-01 near accelerator's control panels.

6 Appendix:

Nil