

Date: April 15, 2004

Subj: APS drawings [25030101-00015](#) PAR flag/scrapper chamber S-6A
[25030101-200001](#) PAR spare chamber SP-6A (spare flag)

Spare status: Spare chamber SP-6A: chamber design complete;
beam tube being fabricated



Fig. 1: Eventual storage location of SP-6 chamber in 382

Further details:

- **General information about flag (fluorescent screen) chamber and spares**

There are six flag (fluorescent screen) chambers installed in PAR. There are installed as parts of the following chambers:

- S-5 (located in two places, one on each equator)
- S-6 (located in one place on extraction side of septum)
- S-6A (located in one place on injection side of septum)
- S-9 (located in two places)

The flags are of critical value during beam startup operations. Dr. M. Borland has stated that at least one of the two S-5 flags must be present at all times. Since there are two S-5 chambers, the spare chamber for S-5 (SP-5) is a section of beamtube only (spool piece).

The flags that are part of the S-6 and S-6A chambers are critical and a spare for each of these two chambers is essential. Each of these two chambers is intended to have a dedicated spare.

The S-9 flags are not critical and are spared by S-3 beamtube chamber which is essentially a spool piece.

- **Spares for scrapers**

Spares for scrapers have not been provided.

- **S-6A Flag/Tuner Chamber (APS drawing [25030101-00015](#))**

This chamber is installed in PAR in one place as shown in Fig. 3 on injection side of septum.

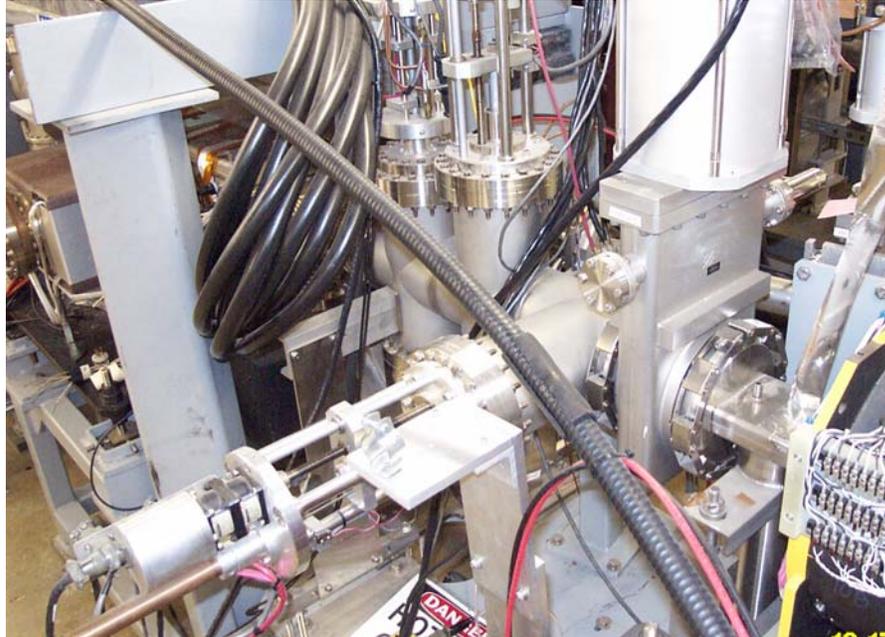


Fig. 3: S-6 flag/tuner chamber installed in PAR
(located left of vacuum valve, showing - left to right – h-scraper, v-scraper and flag)

Use spare vacuum chamber SP-6A (APS drawing [25030101-200001](#)) to replace an original S-6 chamber if necessary.