



BNL-104586-2014-TECH

AGS/AD/Tech Note No. 158;BNL-104586-2014-IR

NOTES ON SPECIAL AGS MAIN RING VACUUM CHAMBERS

J. R. Jahelka

December 1979

Collider Accelerator Department
Brookhaven National Laboratory

U.S. Department of Energy

USDOE Office of Science (SC)

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Accelerator Department
BROOKHAVEN NATIONAL LABORATORY
Associated Universities, Inc.
Upton, New York 11973

AGS DIVISION TECHNICAL NOTE

No. 158

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J.R. Jahelka
December 14, 1979

- I. The purpose of this note is to serve as an information consolidator in regard to special AGS vacuum chambers. In the past, special vacuum chambers have been used in the beam extraction areas or whenever a special device needed to be part of the vacuum system and space would not allow connection to the main ring vacuum chambers in the normal manner with marmon flanges.
- II. The locations of special chambers as of this writing are as follows:
 - A. Extraction area for the Slow External Beam:
F8, F9, F10, F11 and F12
 - B. Extraction area for the Fast External Beam:
H8, H9, H10, H11 and H12
 - C. Old extraction area for the beam line to the 80" Bubble Chamber:
I8, I9, I10, I11 and I12
 - D. The flag box at J19 requires a special chamber without downstream bellows.
- III. Locations of information regarding these chambers are as follows:
 - A. The special chambers for Fast and Slow Beam extraction are identical and are found on the following drawings:

C-D05-M-1150-6 Assembly of (F, H 8-12)
and D11-M-6699-6 Assembly of H8 to E H-13

F, H-8 C-D05-M-1145-4 and C-D05-M-985-5 and D05-M-1931-5

F, H-9 C-D05-M-986-5 and D05-M-1933-5

F, H-10 C-D05-M-987-5 and D05-M-1934-5

F, H-11 C-D05-M-988-6

F, H-12 C-D05-M-1146-4 and C-D05-M-989-5

The specifications for the F, H special chambers are AGSCD Spec. 563 and AGS 678.

- B. The special chambers in I superperiod are listed by the following drawing numbers:

Assembly of I-10 ejection area D11-M-7642-6

I-8 D11-M-7613-5

I-9 D11-M-7212-5

I-10 D11-M-7239-5

I-11 D11-M-7247-5

I-12 D11-M-7249-5

These chambers are not part for part interchangeable with those listed for F and H superperiods.

- C. The special chamber required for the J-19 flag box is listed by drawing number D11-M-8234-5.

- D. In addition, the following drawings for special pre-conversion vacuum chambers are listed as follows:

D11-M-774-5 Special Chamber #1

D11-M-775-4 Special Chamber #2

D11-M-2272-5 Special Chamber for F-11

D11-M-2308-5 Special Chamber for F-12

D11-M-2316-5 Special Chamber for F-9 and F-10

- E. There are special bellows used with these special vacuum chambers and their drawings are listed as follows:

C-D05-M-990-3 Upstream conversion chamber wide bellows
(F, H-9, 10, 11)

C-D05-M-991-3 Downstream conversion chamber wide bellows
(F, H-9, 10)

C-D05-M-663-3 Upstream conversion chamber bellows (F, H-12)

D11-M-7288-3 Upstream bellows I-9, 10

D11-M-7289-3 Downstream bellows I-9

D11-M-7287-3 Downstream bellows I-10
D11-M-7285-3 Upstream bellows I-11

Note: Although the drawings are for hydroformed bellows, the parts installed have welded bellows.

IV. Spare chambers to replace those currently in use are generally not available. They have been requested in proposed budgets, but were never approved for purchase. However, there are the following spare chambers available and they are stored in the Old Theater opposite Berkner Hall.

- 2 ea. D11-M-774-5
- 2 ea. D11-M-775-4
- 2 ea. C-D05-M-989-5
- 1 ea. C-D05-M-988-6

V. General Notes:

A. It is reminded that these special vacuum chambers are not directly interchangeable with standard chambers and vice versa without the related mounting hardware. The following drawings numbers should be consulted concerning installation details:

Special chambers for F and H superperiod:

C-D05-M-1150-6 and D11-M-6699-6

Special chambers for I superperiod:

D11-M-7642-6

Standard vacuum chambers, typical superperiod:

C-D05-M-842-3 and C-D05-M-843-3

B. When deciding on building new special chambers, cost estimates should be obtained from selected vendors, since one-piece type production of these specialized chambers is extremely costly. At current prices a typical special chamber could easily cost \$20,000.

C. Vendors who have made these chambers in the past are:

Youngstown Welding & Engineering Co.
3700 Oakwood Avenue
Youngstown, OH 44509
Telephone (216) 799-3215

CVI Corporation
930 Kinnear Road
Columbus, OH 43212

mn

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