

TECHNICAL NOTE

EJECTION UNITS SS 58 AND 62

Present Situation

Both straight sections are identical except for the type of magnet used. Septum magnets type MPS 2A08-000-1 and MPS 2A17-000-2 are used in straight section 62 and one magnet type MPS-2A19-000-0 is used in straight section 58. The magnets in both straight sections are mounted in a vacuum tank type MPS 2A09-100-0B which is carried on a support type MPS 2A09-003-0. Underneath the vacuum tanks are two flanged vacuum connections, both of which are connected to standard Balzer's units consisting of a roughing pump and an oil diffusion pump. In both straight sections the downstream connection to the vacuum tank is somewhat devious owing to the lack of space, due to the close proximity of the CPS magnet electrical connections. The general disposition of the straight sections is shown in drawing MPS 2A09-000-0B. The support frame MPS 2A09-003-0 is fixed to the straight section floor by means of a toggle clamping mechanism which does not ensure the positioning of the septum magnets with sufficient accuracy.

Changes to be made

The main purpose of the change is to replace the existing pumping units by ionic pumps, (Varian type 500 L), but due to the space required for these pumps the support frame for the septum magnet tank must also be modified. The upper part of the support together with the mechanism for the alignment of the septum magnet tank will be used without any changes. The septum magnet tank will not be modified either, and the rubber sealing system connecting it to the CPS vacuum chambers will continue to be used. The changes to be made consist of the following

1. Replacement of standard pumps by ionic pumps

a) The ionic pumps will be placed directly underneath the vacuum tanks and connected to the existing \emptyset 100 tube by means of a bellows and the existing

rapid connection MPS 3A48-000-1 with a metallic C-joint replacing the rubber O ring. The bellows will be compressed by a simple lever system to allow mounting and dismounting.

b) The pumps will be mounted on a four-wheeled trolley with two pivoting wheels. This trolley will stand on a base plate which will be anchored in the concrete. The pump units will be guided into their correct position by means of a slider and rail and a locking device will ensure their fixed location.

c) The pumps will be removed from the CPS ring by crane after being disconnected and rolled out of position.

2. Modification of support frame

This frame must be modified for two reasons i) to provide greater stability ii) to provide more space as stated above.

The modifications will be as follows :

- a) removal of the existing pump unit support beams, which will no longer be required.
- b) the existing toggle clamping mechanism will not be used. A steel plate will be embedded into fresh concrete, secured by anchor bolts and the modified frame bolted to it.

Work to be done

- New base frame (MPS-2A09-006-0).
- Ionic pump supports (MPS-3A64-000-0).
- Bellows connecting mechanism (MPS-3A65-000-0).

Installation procedure for modified system

- i) Dismount existing straight section.
- ii) Mount vacuum tank base frame.
- iii) Mount vacuum pump base frames.
- iv) Align tank base frame to accept tank in correct position relative to CPS vacuum chambers.

- v) Mount tank into correct position.
- vi) Mount vacuum pumps.
- vii) Connect electrical and water connections.
- viii) Measure position of tank with respect to CPS magnets.

It is estimated that the installation as described above, including concrete drying time, could be carried out during a normal three day shut-down.

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