

EQUIPMENT FOR SS 64

(3S64--000-3)

A SPECIFICATION

The ss 64 is equipped with a vertical dipole (4C02-200-3) upstream and a vertical octupole (4C02-400-3) downstream (F. Rohner). For the vacuum chamber, a standard all welded type with two-point quick-couplings up- and downstream has been required (P. Riboni).

1. The requirements for precision and stability of alignment for any of these elements is :

$$\left\{ \begin{array}{l} \pm 1 \text{ mm radially,} \\ \pm 0,5 \text{ mm vertically,} \\ \pm 1 \text{ mrad in angle perpendicular to the beam.} \end{array} \right.$$

It follows that the precision of the initial installation (because of the rigidity of the supporting structure) is only a fraction of the given values.

2. The vertical dipole is a split magnet. The dipole cannot be dismantled individually as the external beam e_g does not give enough space for the required horizontal movement.

3. The octupole encloses the vacuum chamber. The chamber has to be welded into the element.

4. All elements are sitting on one main support, but each has its individual alignment system.

5. The main support is aligned in height to $\pm 0,2$ mm in the PS ring by means of shims. The elements are adjusted in the laboratory to the required height. The angular and radial movements are done in the ring.

6. At first, it is necessary to built in the octupole which encloses the vacuum chamber with the vacuum chamber loosely held. Then the split dipole is assembled in situ. The vacuum chamber necessitates to approach the straight section from the outside. This means that the part of the e_g beam which is closing in the section has to be removed for the installation.

B ALIGNMENT AND ASSEMBLY PROCEDURE

a) Work in the laboratory and workshop

1. Assembly of the vertical dipole and the octupole on their individual support mechanisms.

Alignment in horizontal plane with shims : $\pm 0,2$ mm.

2. Welding in the vacuum chamber in the octupole.

3. Vacuumtest of assembly

b) Work in the PS ring

1. Installation and alignment of the main support by means of shims. The reference-faces are the two rails on top of the bedplate.

Alignment in horizontal plane : $\pm 0,2$ mm with spirit levels and for the absolute height the surveyors.

Radial positionning : ± 2 mm with the jig (3T04-000-S4)

Drawing : 4C02-600-3.

2. Mounting of the welded in unit on the main support

3. Mounting of the vertical dipole.

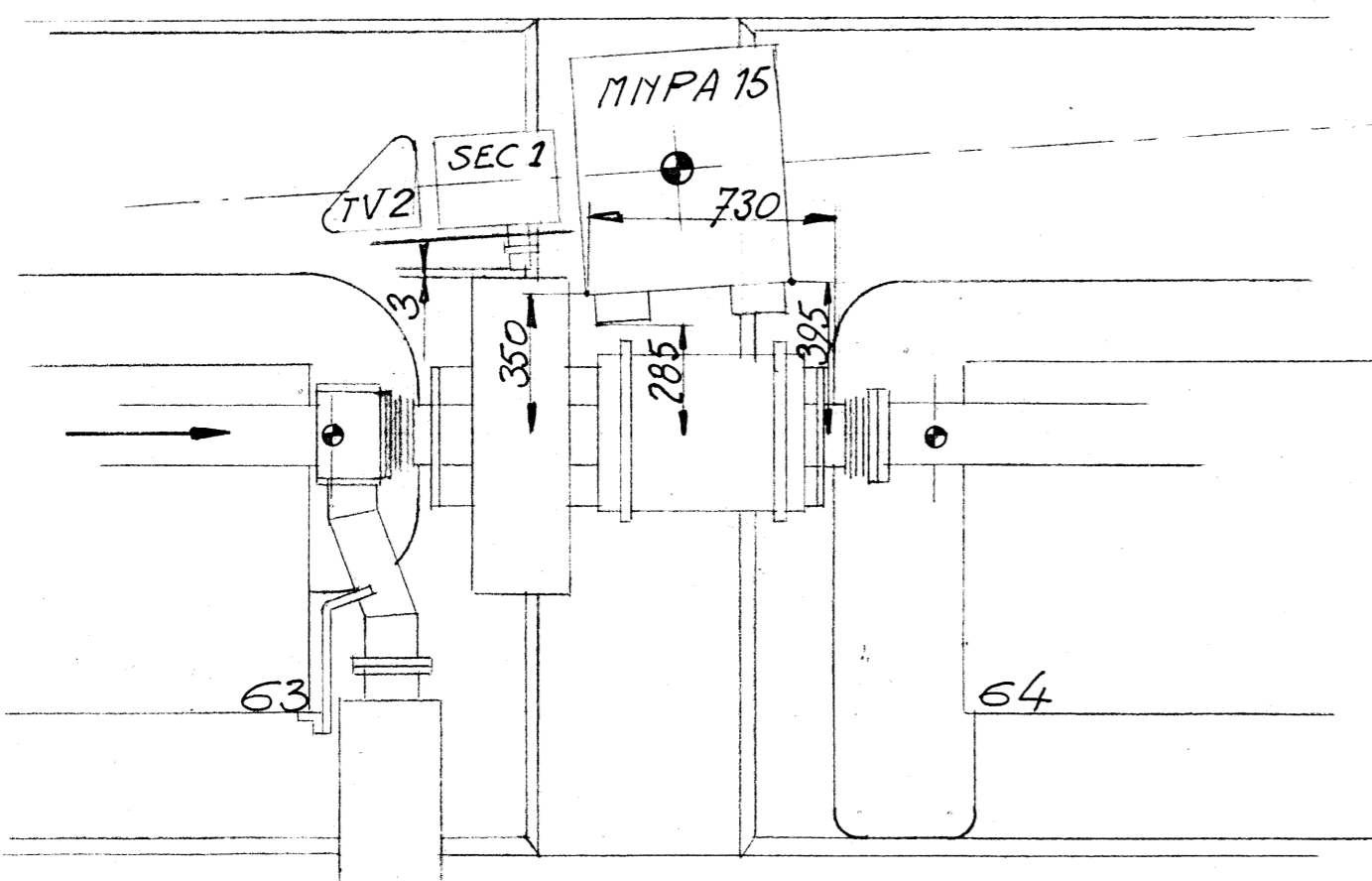
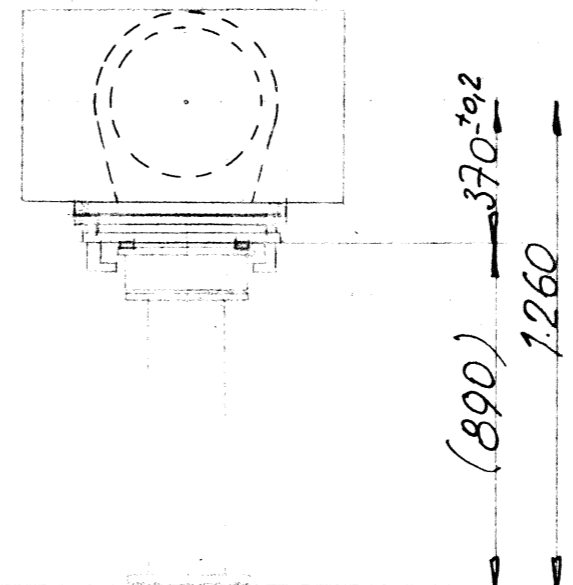
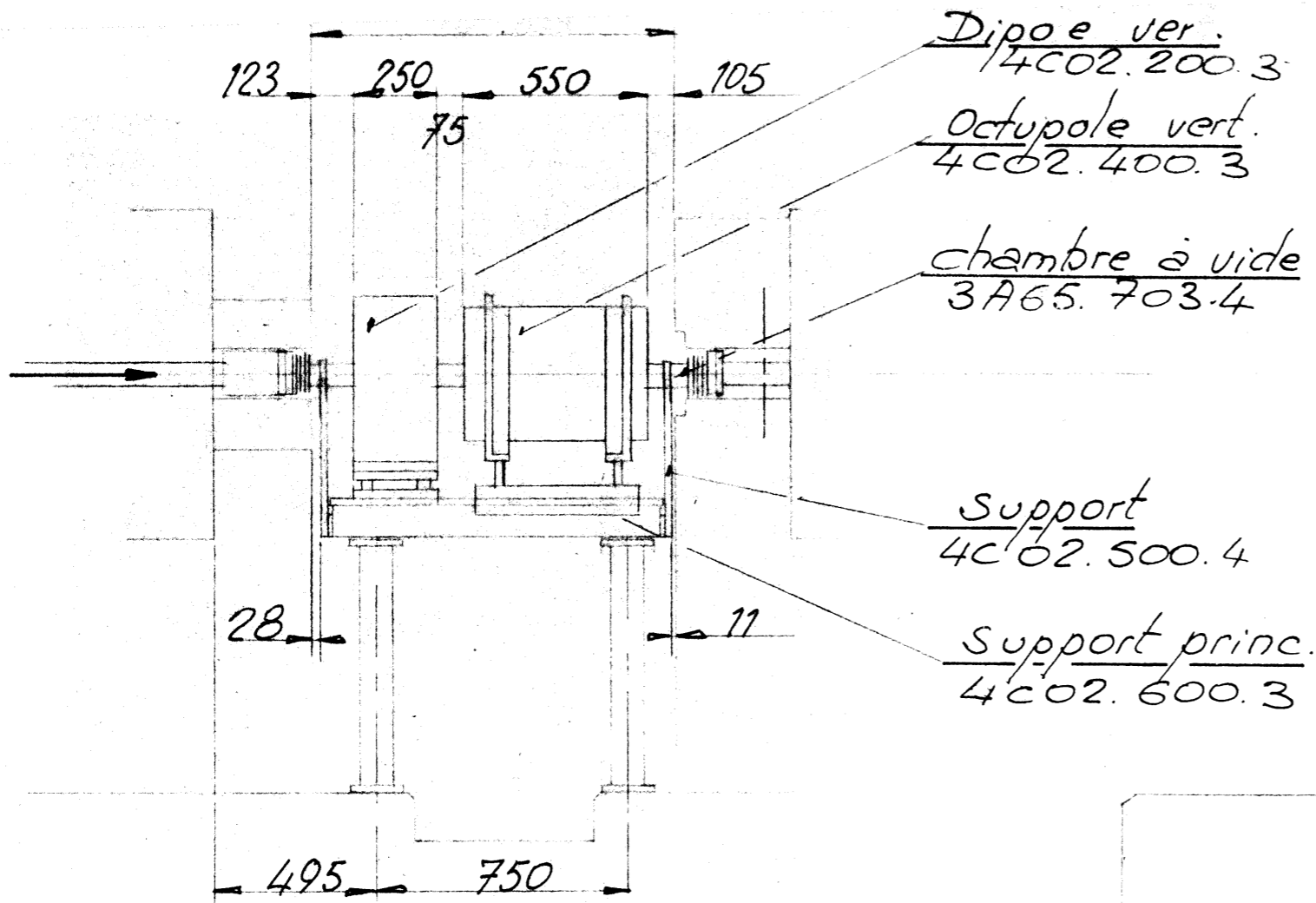
4. Alignment of elements in radial sense with jigs (4T-003-2, and 7-405-0).

B. Szeless

ANNEX : 3564-000-3

Distribution

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Gabarit d'alignement: { pour dip. vert. 4T.003.2
 " oct. vert. 7.405.0

NOMBRE DE PIÈCES	DÉSIGNATION		POS.	MATIÈRE	OBSERVATIONS		
		section droite 64				ECHELLE	DESSINÉ 12.1.72 J.
	Dipole vertical Octupol vertical				1/20	CONTROLÉ 1.72 R. S.	
						VU	
						REPLACE	
						REPLACÉ PAR	
						RÉDUCTION	