Adaptor 937VD

Annex 9.3

This 937VD adaptor is a metallic structure in the form of a truncated cone, with a diameter of 937 mm at the level of the spacecraft separation plane. It is attached to the reference plane (∅ 2624) by a bolted connector frame, and also provides for spacecraft separation.

The 937VD adaptor has a mass of 87.5 kg.

The actual spacecraft pair of values (M_{cu}, X_G) must remain within admissible limits as defined in figure A9.3.1.

The spacecraft is secured to the adaptor interface frame by a clampband. This comprises a metal strip applying a series of clamps to the payload and adaptor frames. The clampband assembly comprises two half clampbands, connected by bolts which are cut pyrotechnically to release the clampband, which is then held captive by the adaptor assembly.

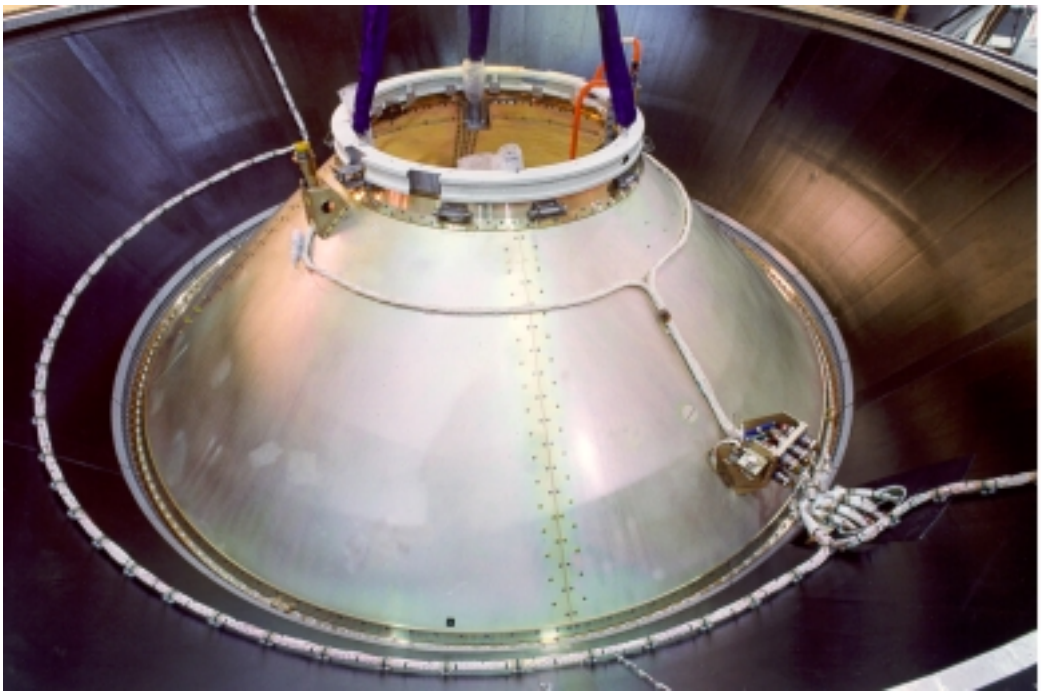
The clampband tension does not exceed 27 700 N at any time, it is defined to ensure no gapping between the spacecraft and adaptor interface frames in ground and flight environment.

The spacecraft is forced away from the launch vehicle by 4 springs part of the adaptor and bearing on supports fixed to the spacecraft rear frame. The relative velocity between the adaptor and the spacecraft is about 0.5 m/s.

The force exerted on the spacecraft by each spring does not exceed: 1 500 N.

Adaptor is equipped with internal springs.
The figure A9.3.7 defines the location and the design of L/V microswitches.

Umbilical connectors brackets: on the spacecraft side, the connectors brackets must be stiff enough to prevent any deformation greater than 0.5 mm under the maximum force of the connector spring.



TO BE ISSUED LATER

Typical values : $M_{S/C}$ = 2400 kg

$CoG_{S/C}$ = 1 m

Fig. A9.3.1. – Limit loads of adaptor 937VD at separation plane

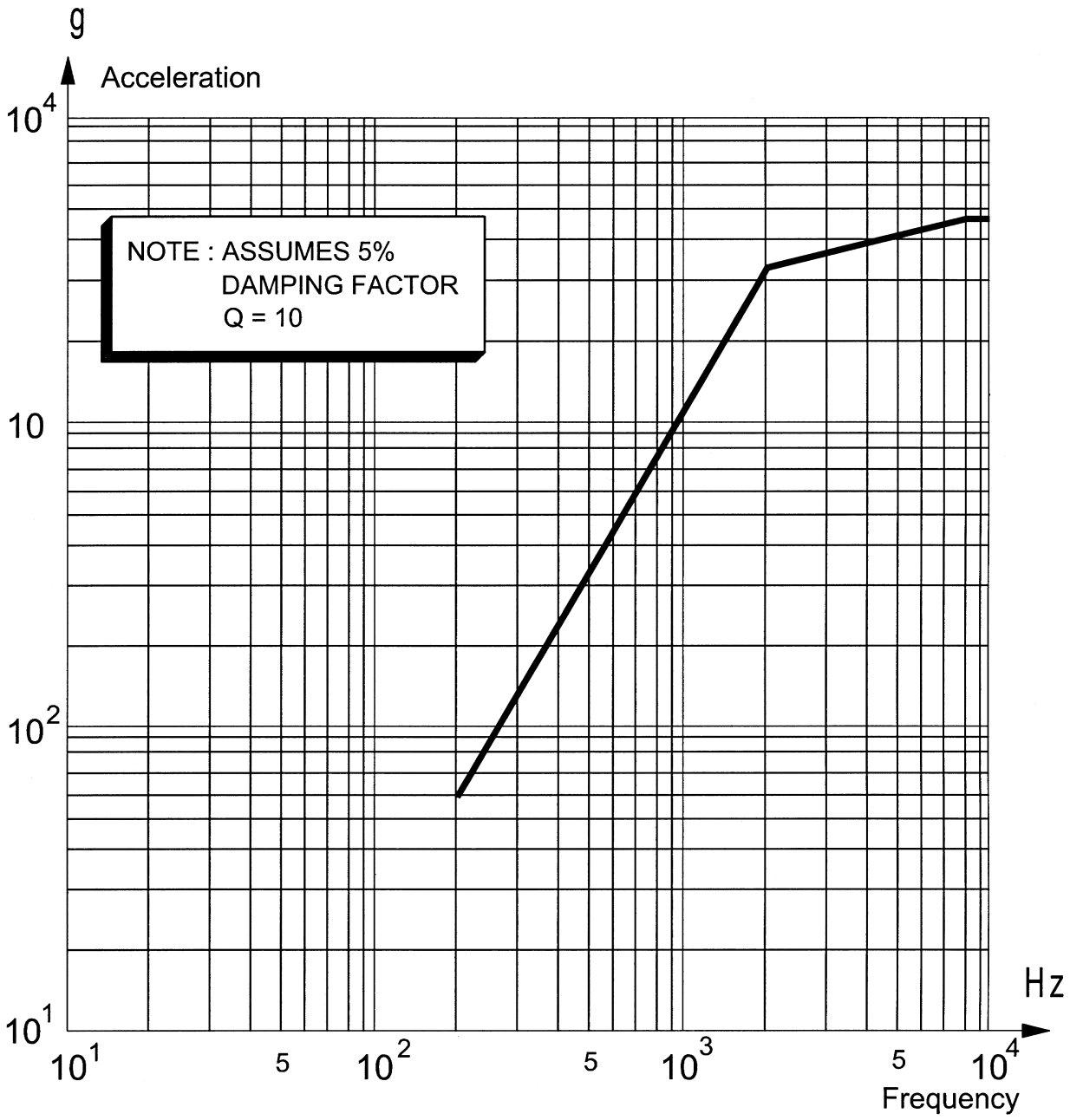


Fig. A9.3.2. – Adaptor 937VD

Shock spectrum at separation plane

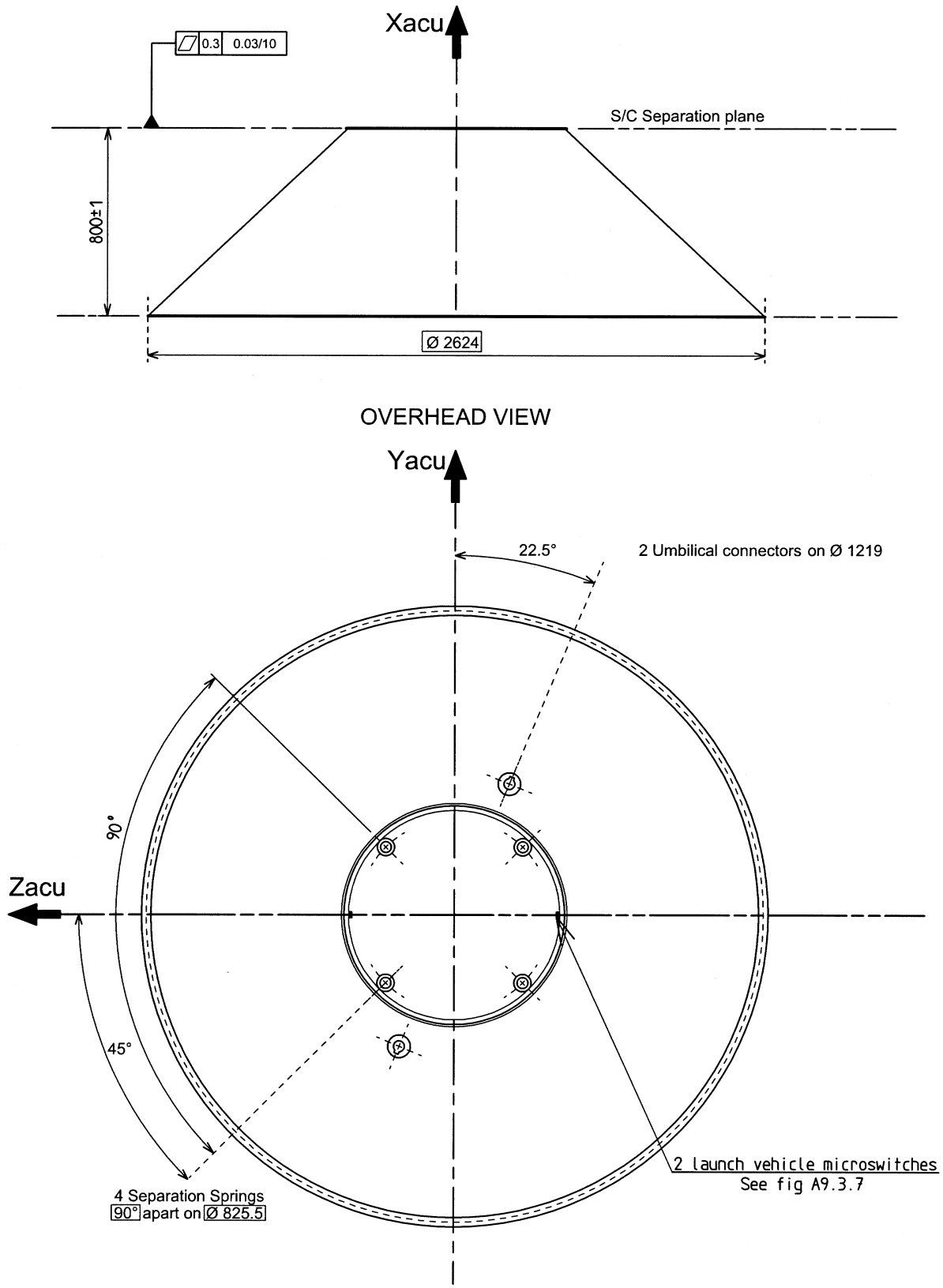


Fig. A3.3.3. – Adaptor 937VD

General view and main characteristics

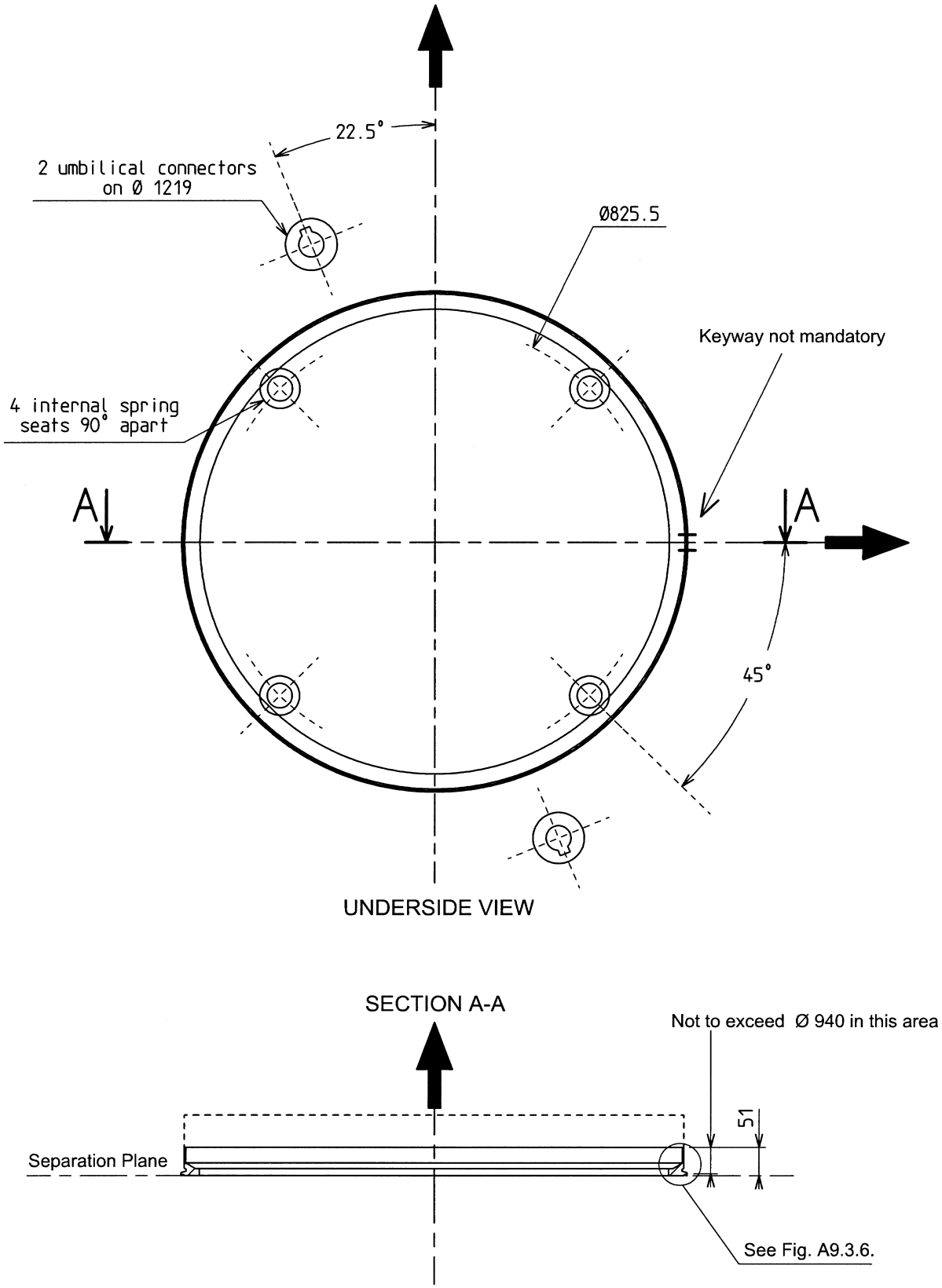
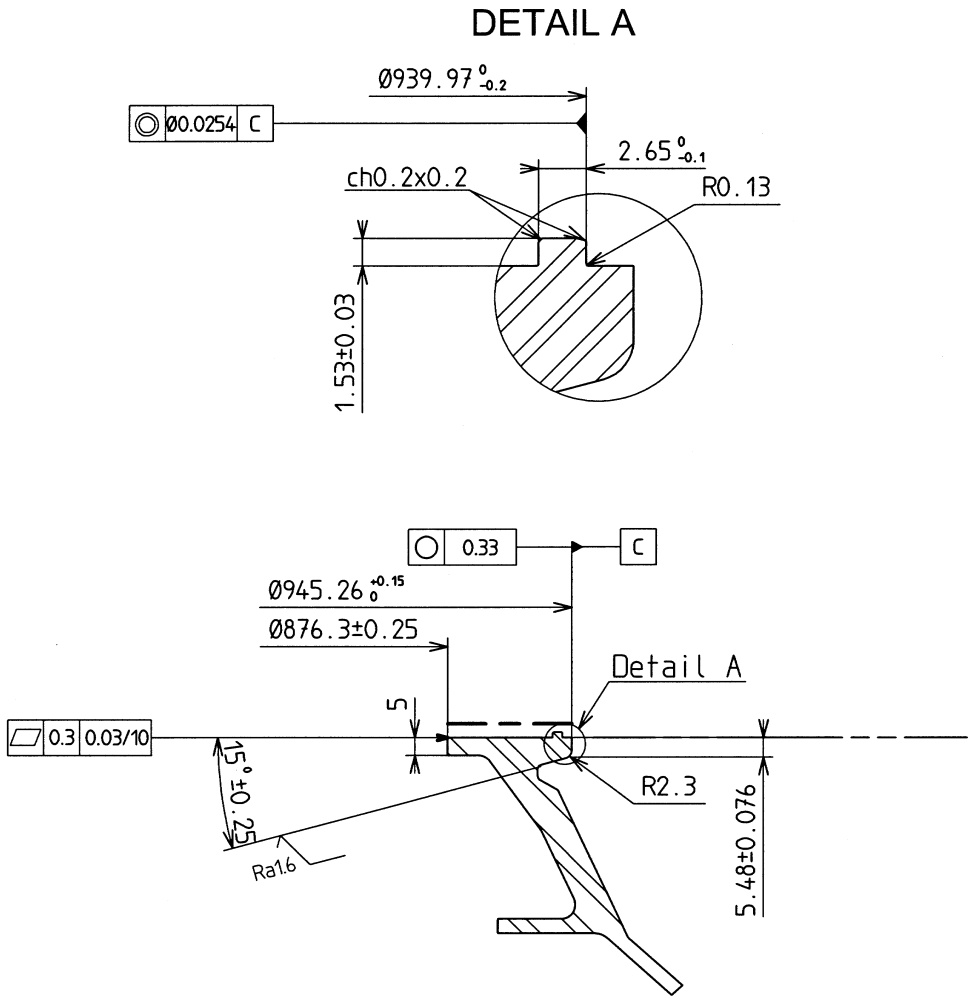


Fig. A.3.4. – 937VB spacecraft configuration

General view and main characteristics



Stiffness :
S = 430 mm ²
Ixx = 24600mm⁴
Iyy = 29200mm⁴
applicable length = 25.4mm

Coating : A 1200

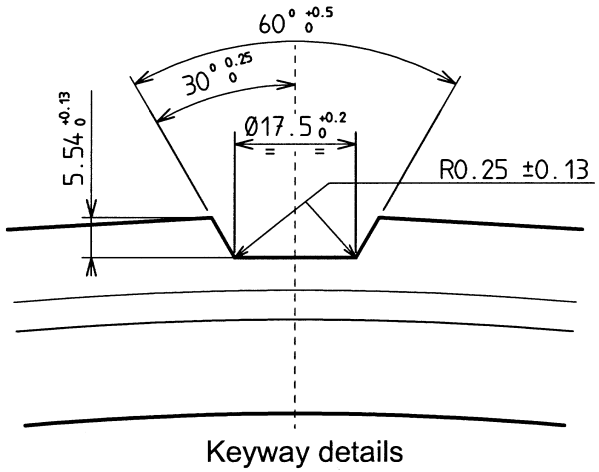
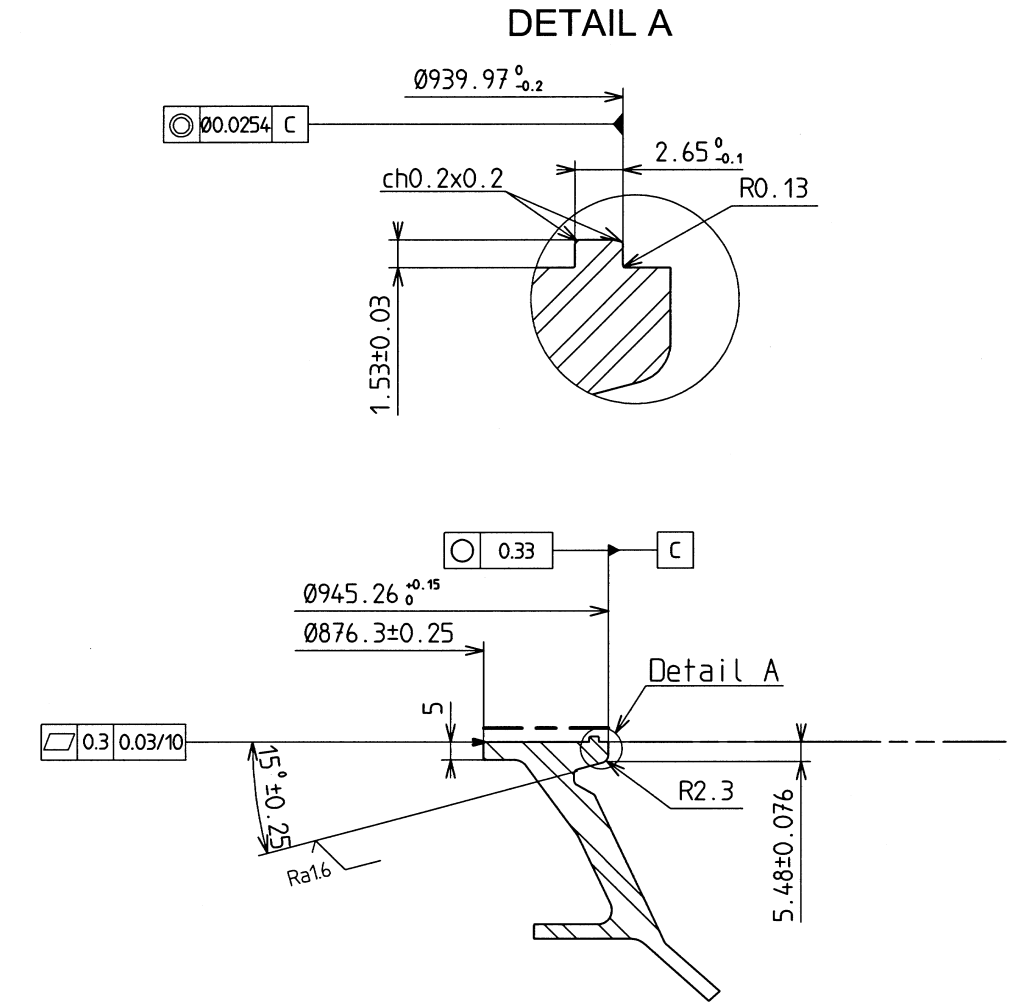


Fig. A9.3.5. – Adaptor 937VD forward frame



Stiffness :
S = 430 mm ²
Ixx = 24600mm⁴
Iyy = 29200mm⁴
applicable length = 25.4mm

Coating : A 1200

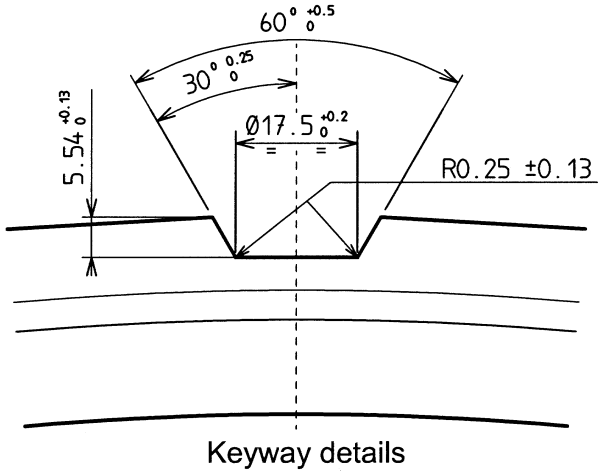
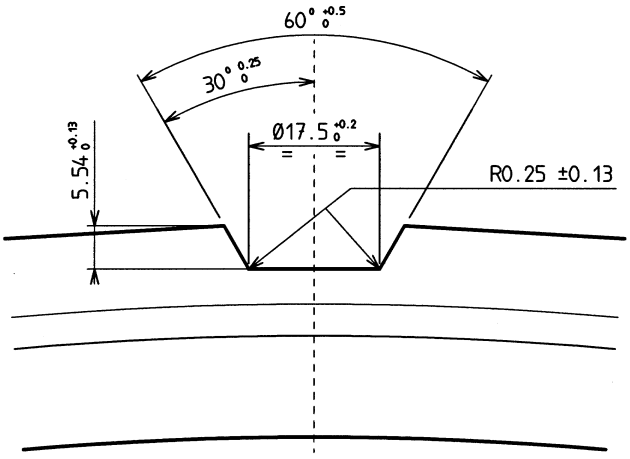
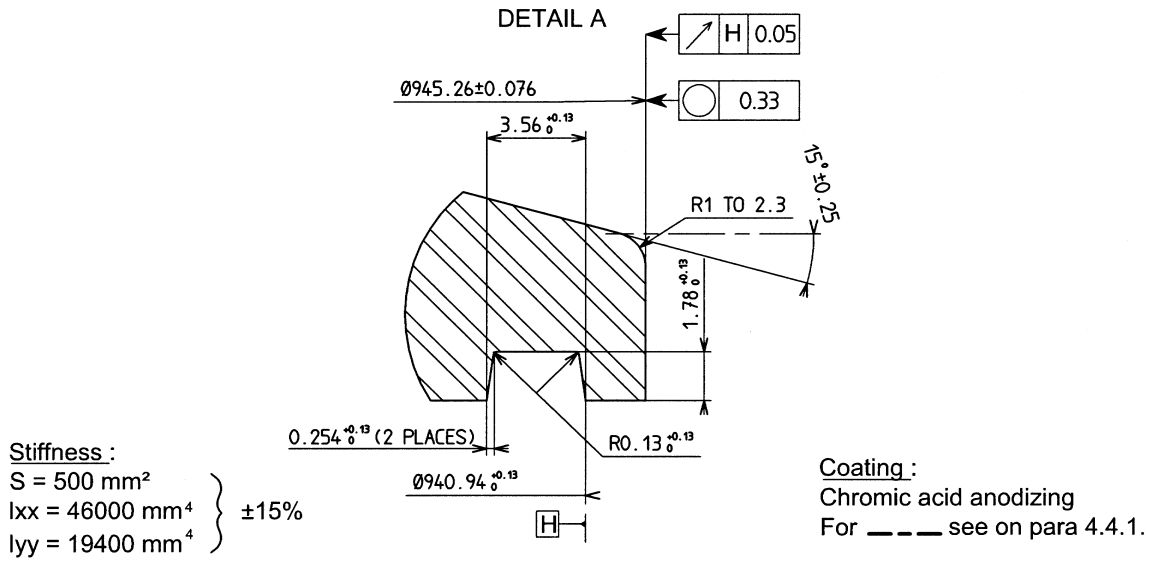


Fig. A9.3.6. – 937VD spacecraft interface frame (details)



Keyway Detail (Not Mandatory)



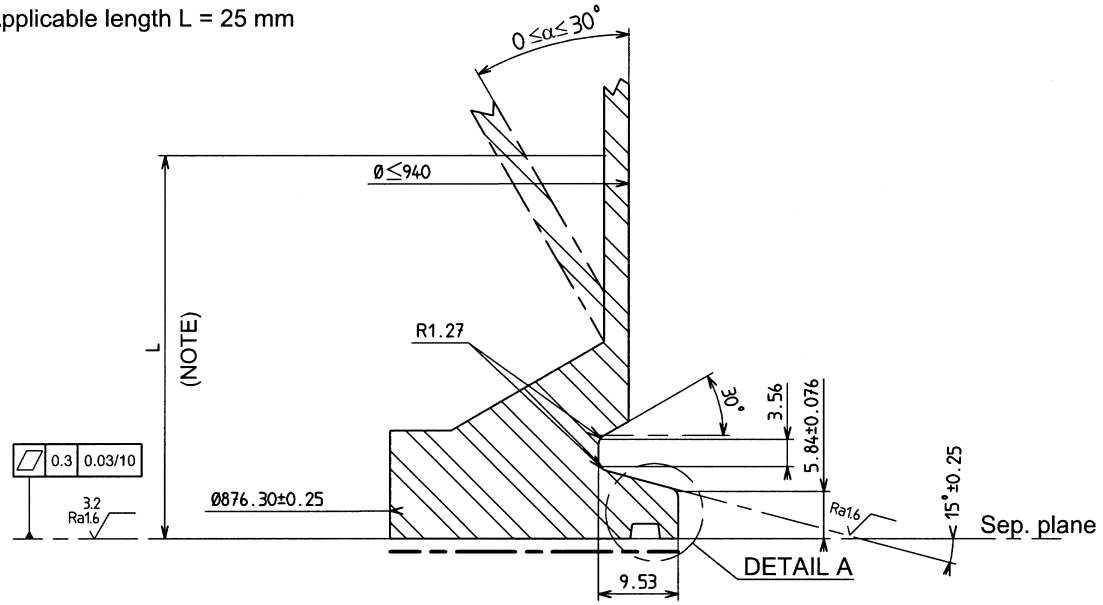
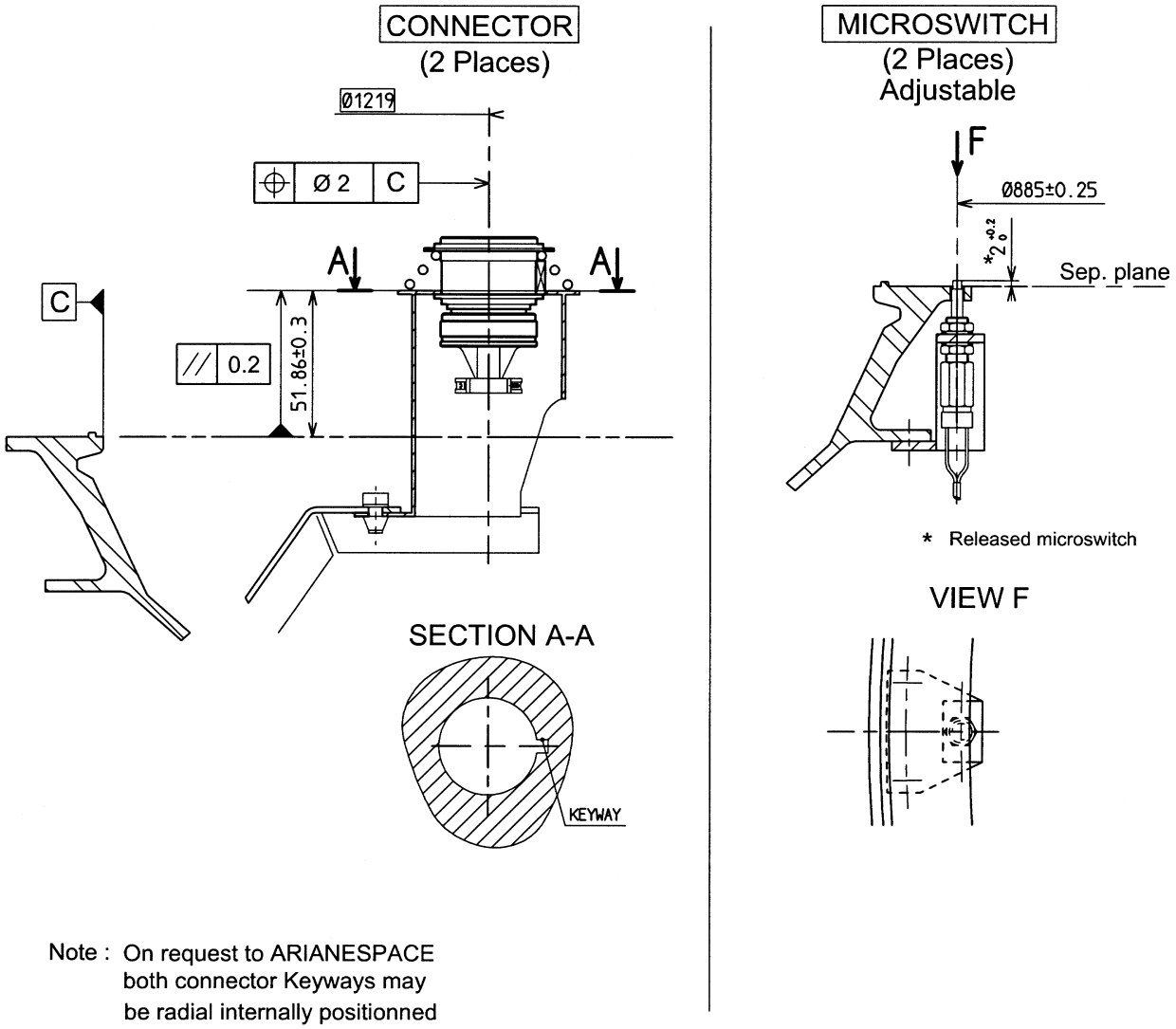


Fig. A9.3.6. – 937VD spacecraft interface frame (details)



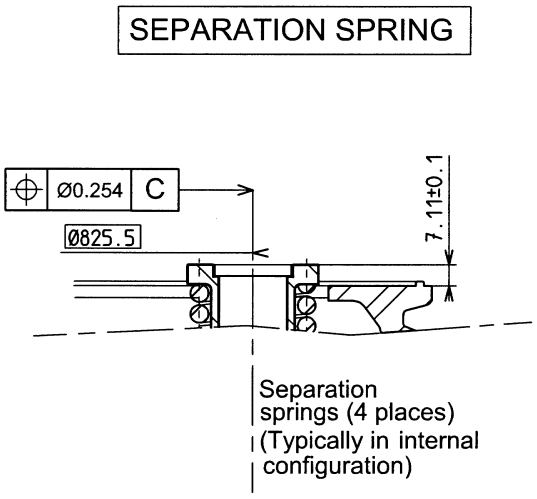
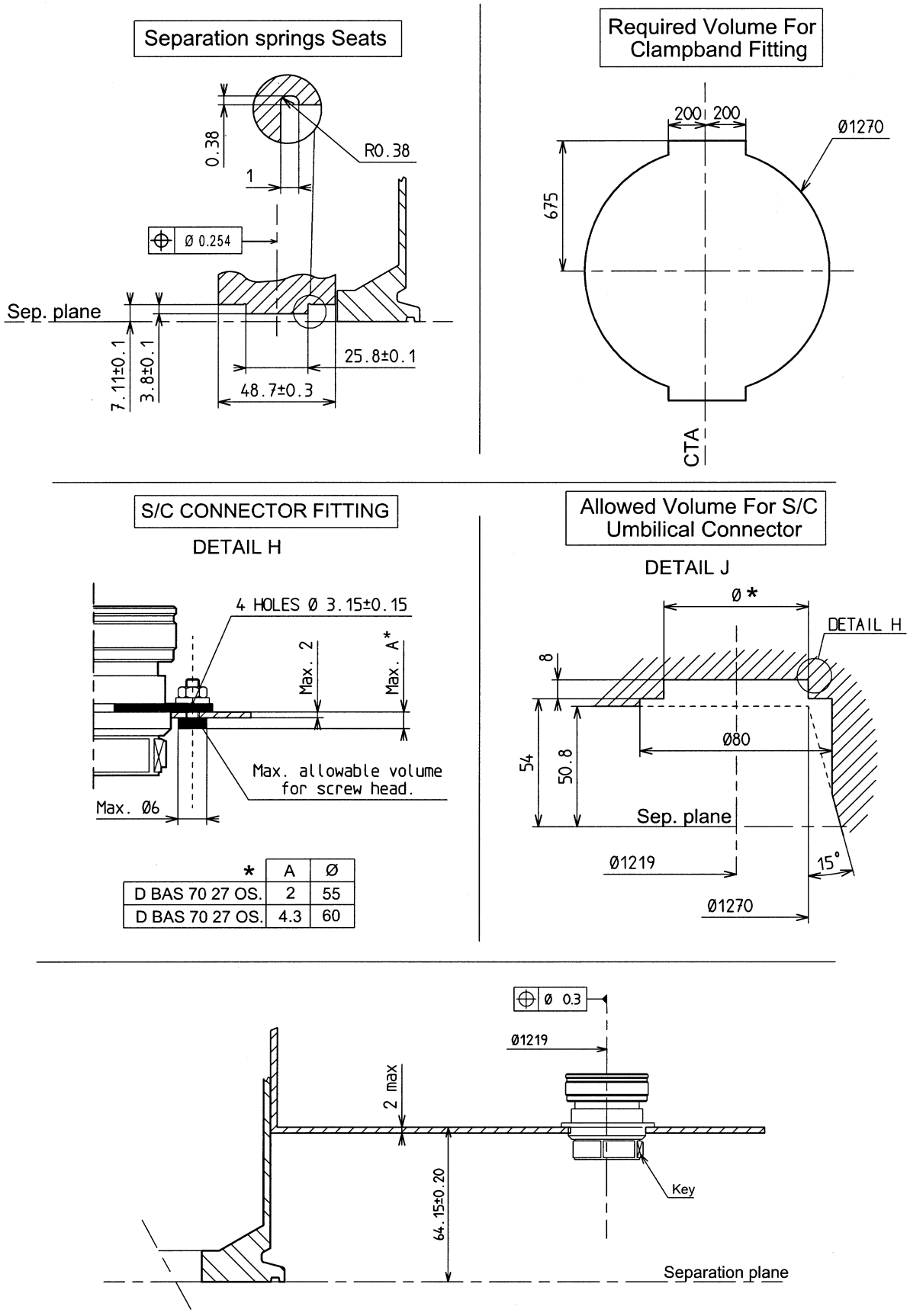


Fig. A9.3.7. – Adaptor 937VD mechanical interfaces (details)



*	A	Ø
D BAS 70 27 OS.	2	55
D BAS 70 27 OS.	4.3	60

Fig. A9.3.8. – 937VD spacecraft mechanical interface (details)

DUAL LAUNCH - INNER POSITION
Adaptor 937VD

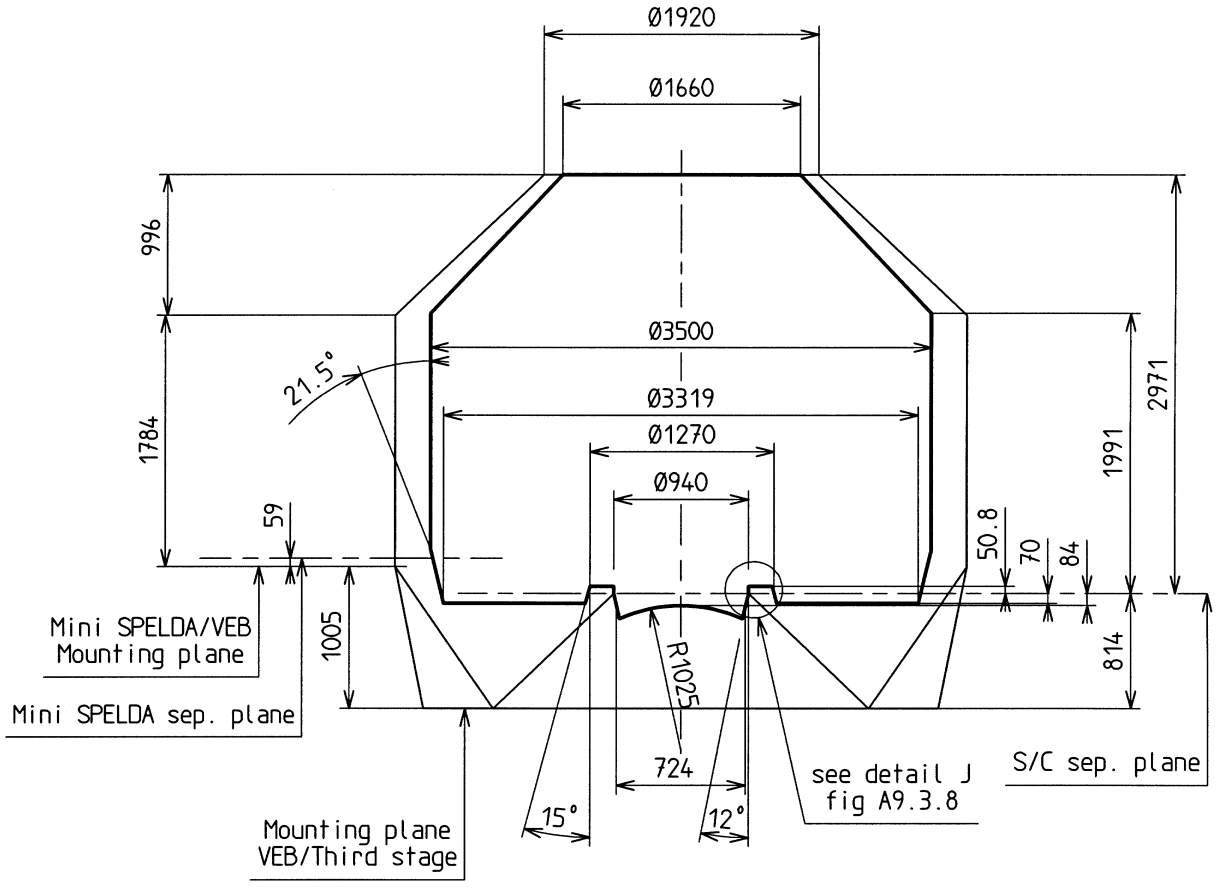


Fig. A9.3.9. – Usable volume beneath mini SPELDA (type 30)

DUAL LAUNCH - INNER POSITION
Adaptor 937VD

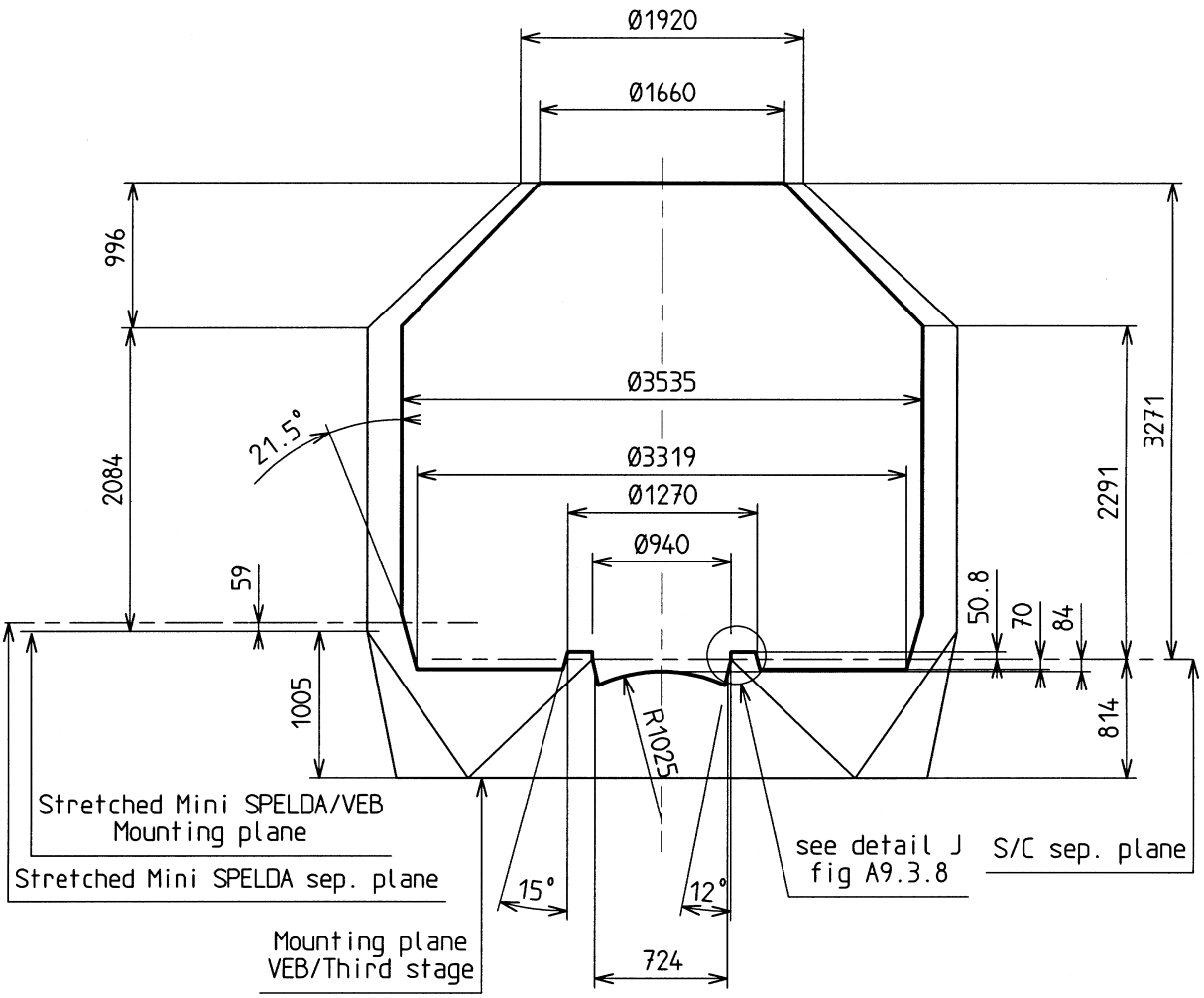


Fig. A9.3.10. – Usable volume beneath stretched mini SPELDA (type 40)