Adaptor 937C

Annex 8.2

This 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 (∅ 1920) by a bolted connector frame, and also provides for spacecraft separation.

The 937 C adaptor has a mass of 55 kg.

The actual spacecraft pair of values (Mcu, X_G) must remain within admissible limits as defined in figure A8.2.1.

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 18 300 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: 900 N.

This adaptor is equipped either with external or internal springs on user request.

Two microswitches used to detect separation are located inside spring guides (See fig. A8.2.7).

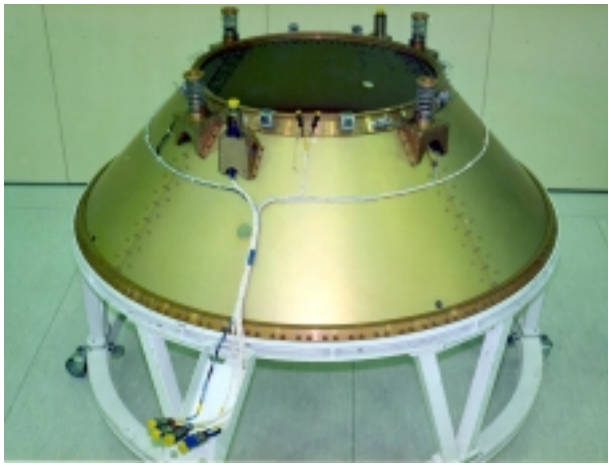
The adaptor assembly provides bearing faces for the spacecraft microswitches aligned on the spring centre lines. (See fig. A8.2.9).

Two microswitches used to detect separation are located inside spring guides (figure A8.1-8).

The adaptor assembly can provide bearing faces for the spacecraft microswitches aligned on the spring centre lines (figure A8.1.10).

Special constraints:

- Following spacecraft/adaptor mating, the displacement of any point of the supports fixed to the spacecraft rear frame and bearing to the separation springs mut be less than 0.5 mm.
- The spacecraft rear frame must be manufactured from aluminium alloy.
- 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.



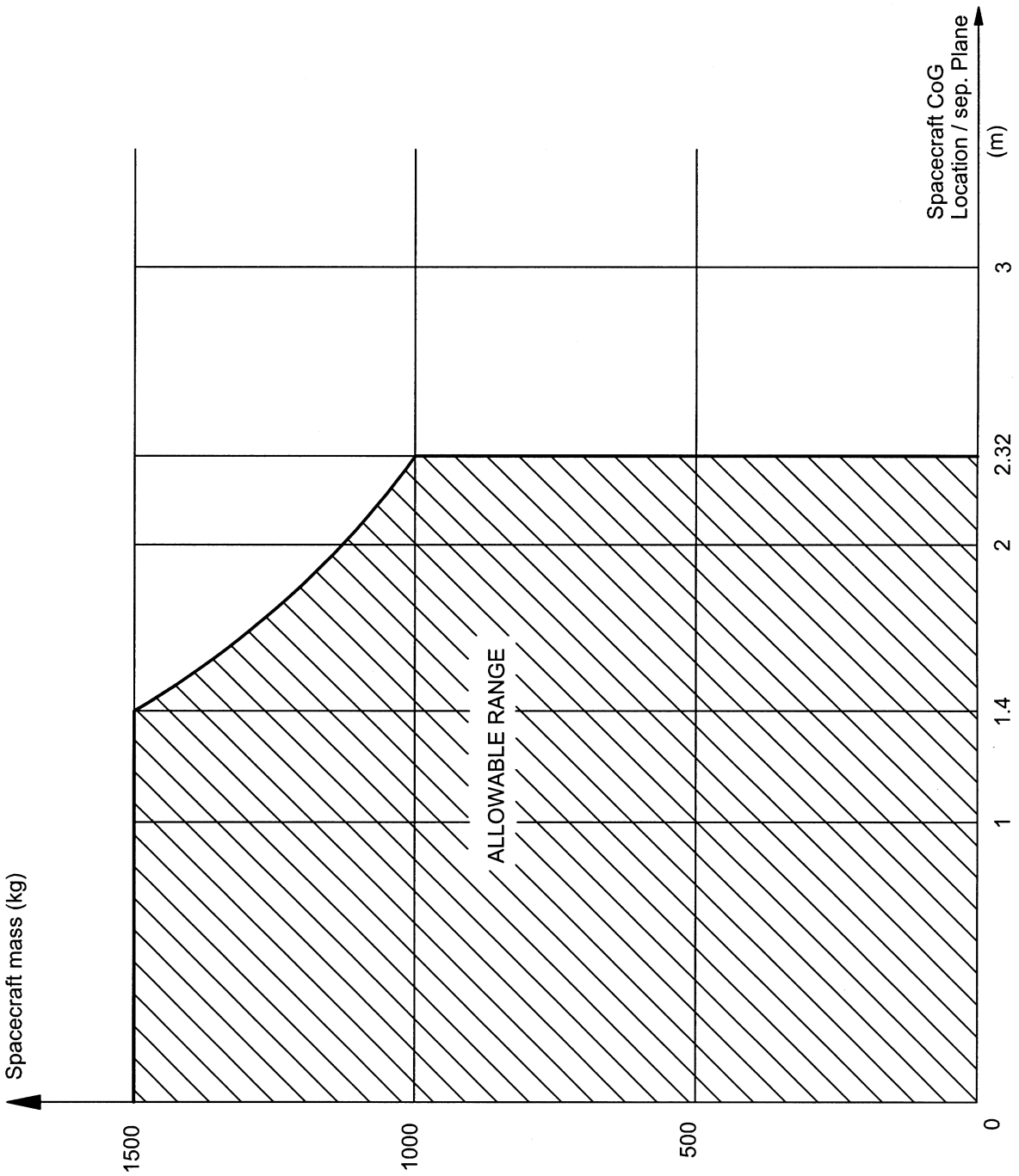


Fig. 8.2.1. – Limit loads of adaptor 937C at separation plane

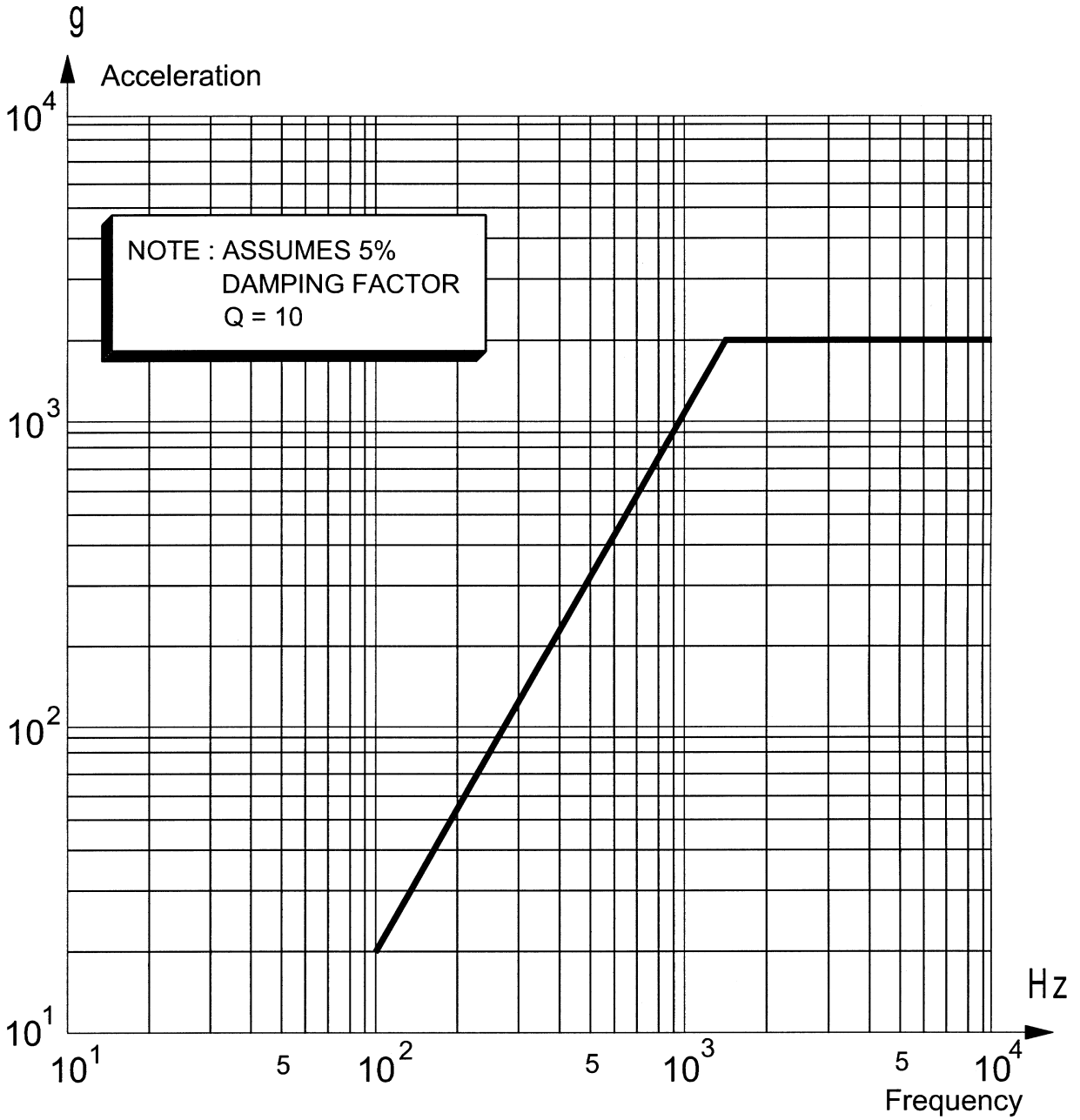


Fig. A8.2.2. – Adaptor 937C

Shock spectrum at separation plane

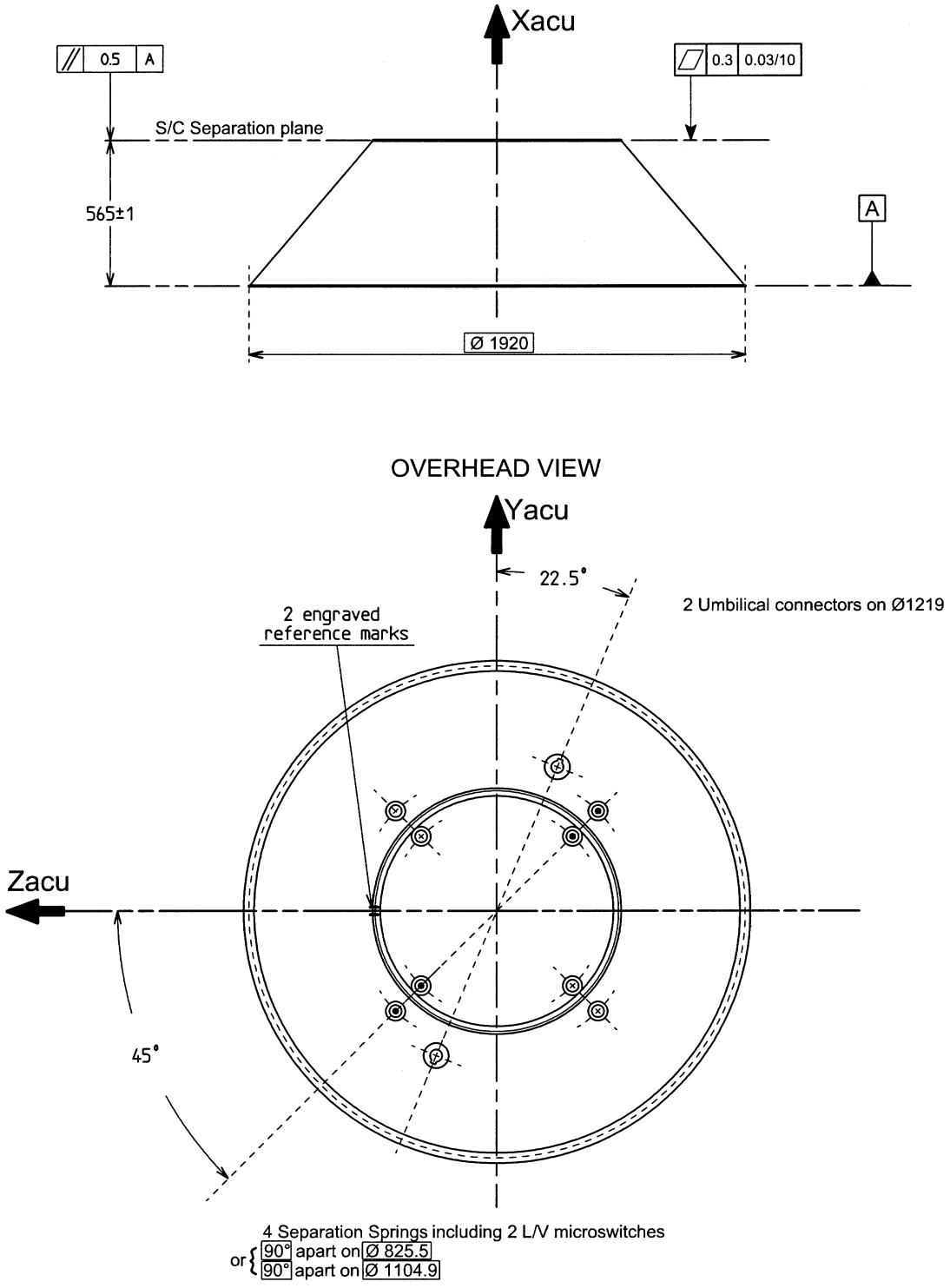


Fig. A8.2.3. – Adaptor 937C

General view and main characteristics

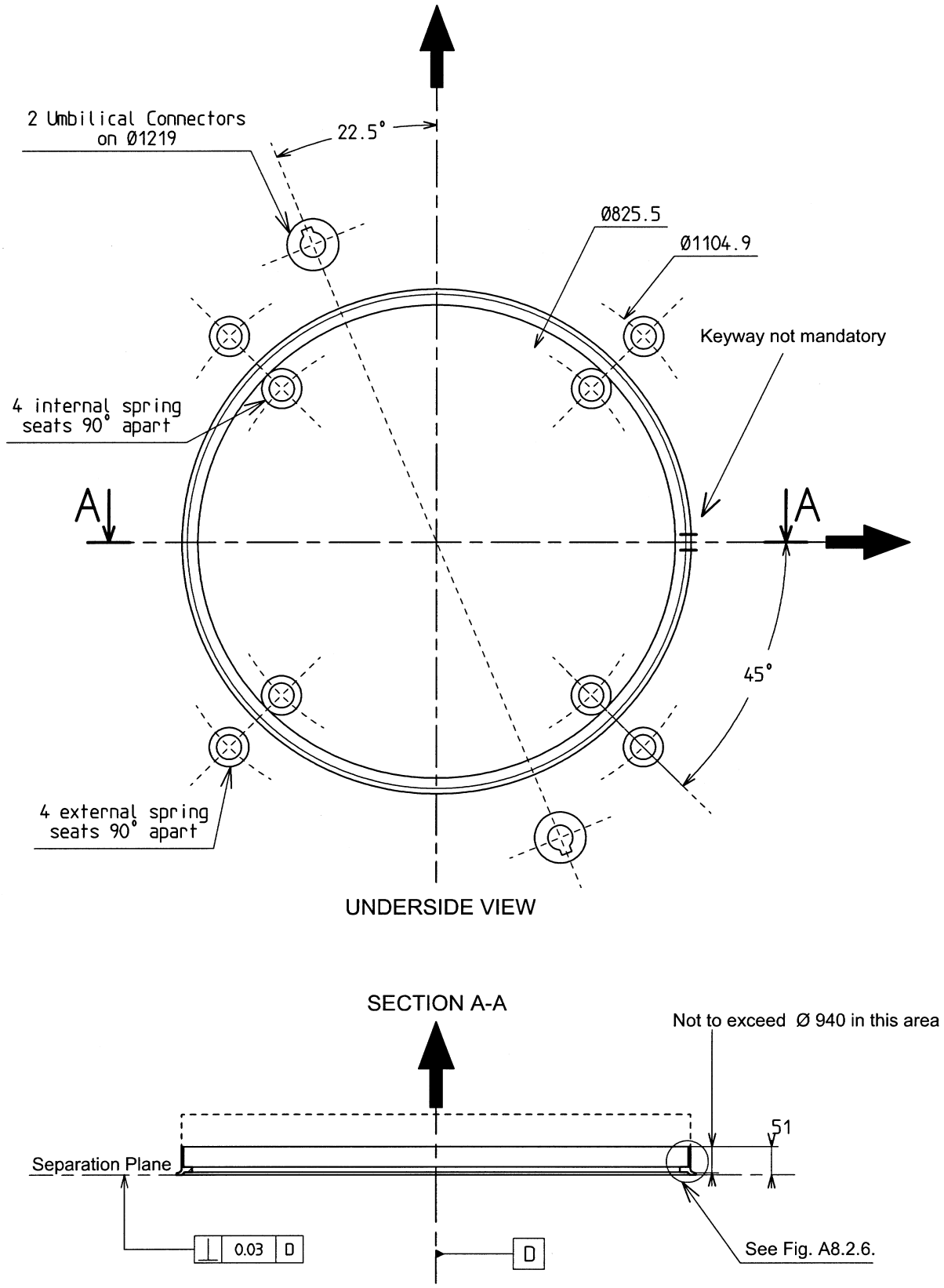


Fig. A8.2.4. – 937C spacecraft configuration view and main characteristics

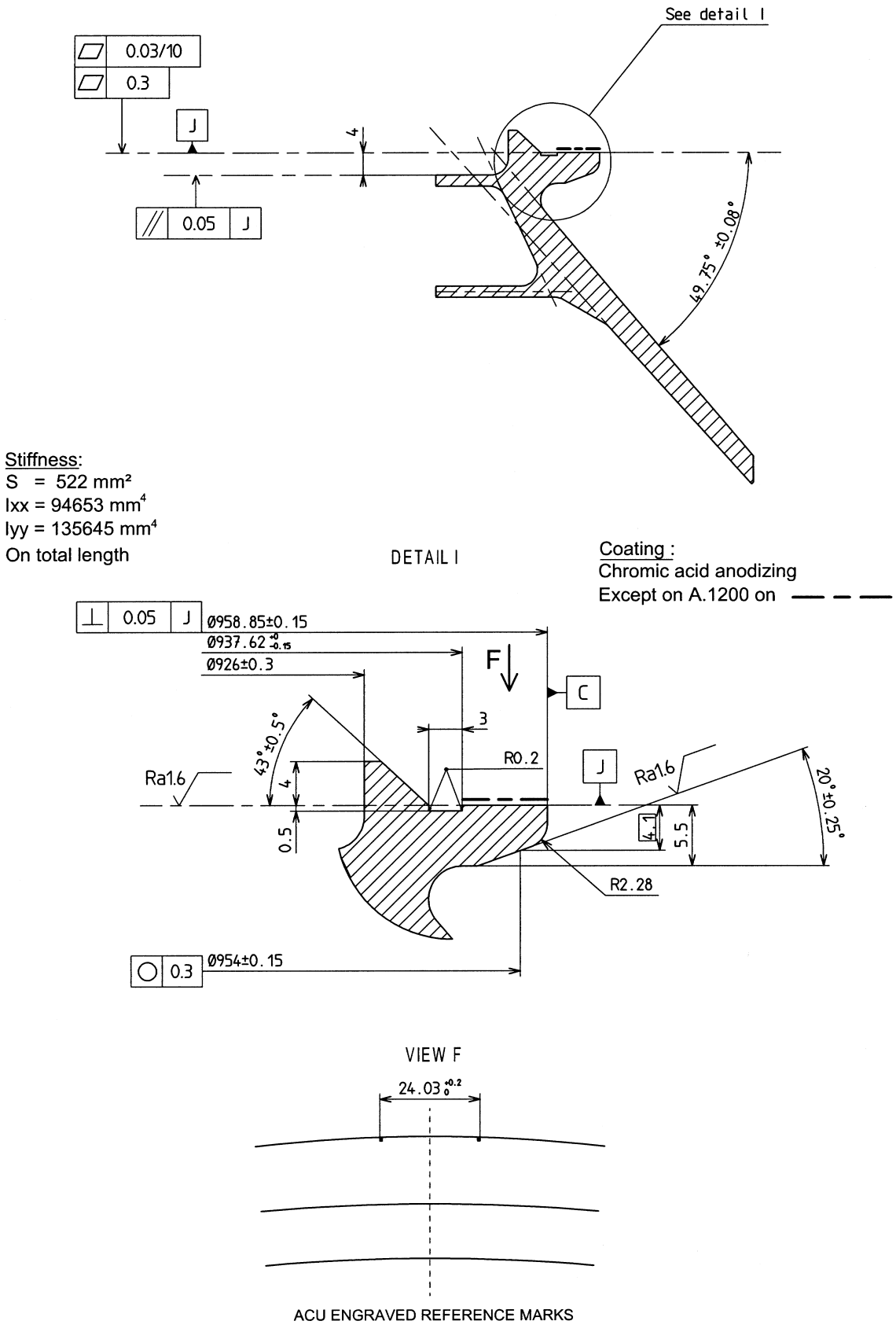
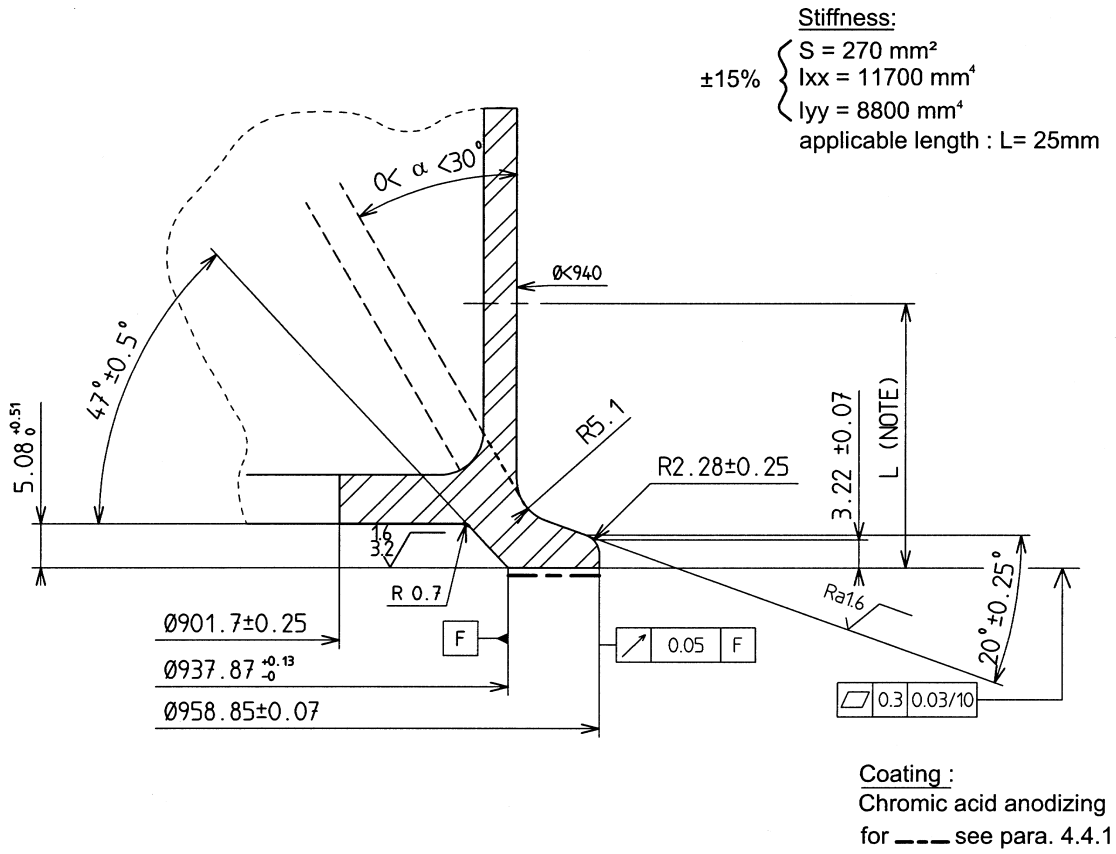
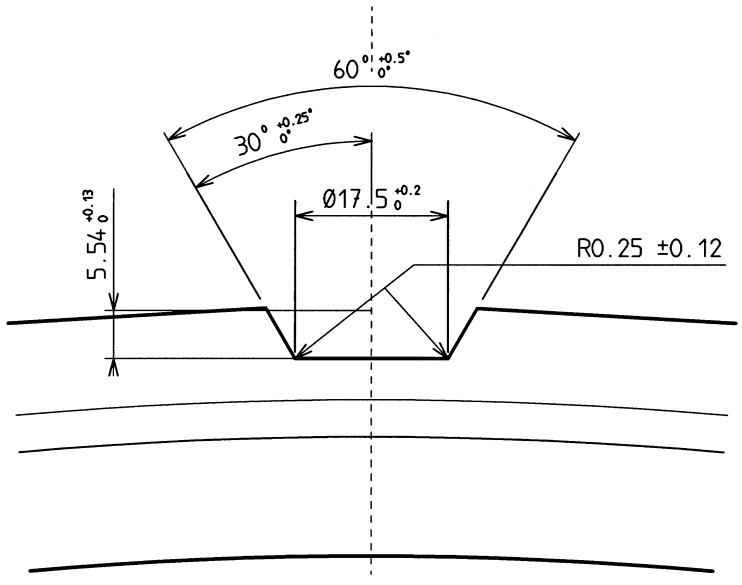


Fig. A8.2.5. – Adaptor 937C interface frame (details)





Keyway Details
(Not mandatory)

Fig. A8.2.6. – 937C spacecraft interface frame (details)

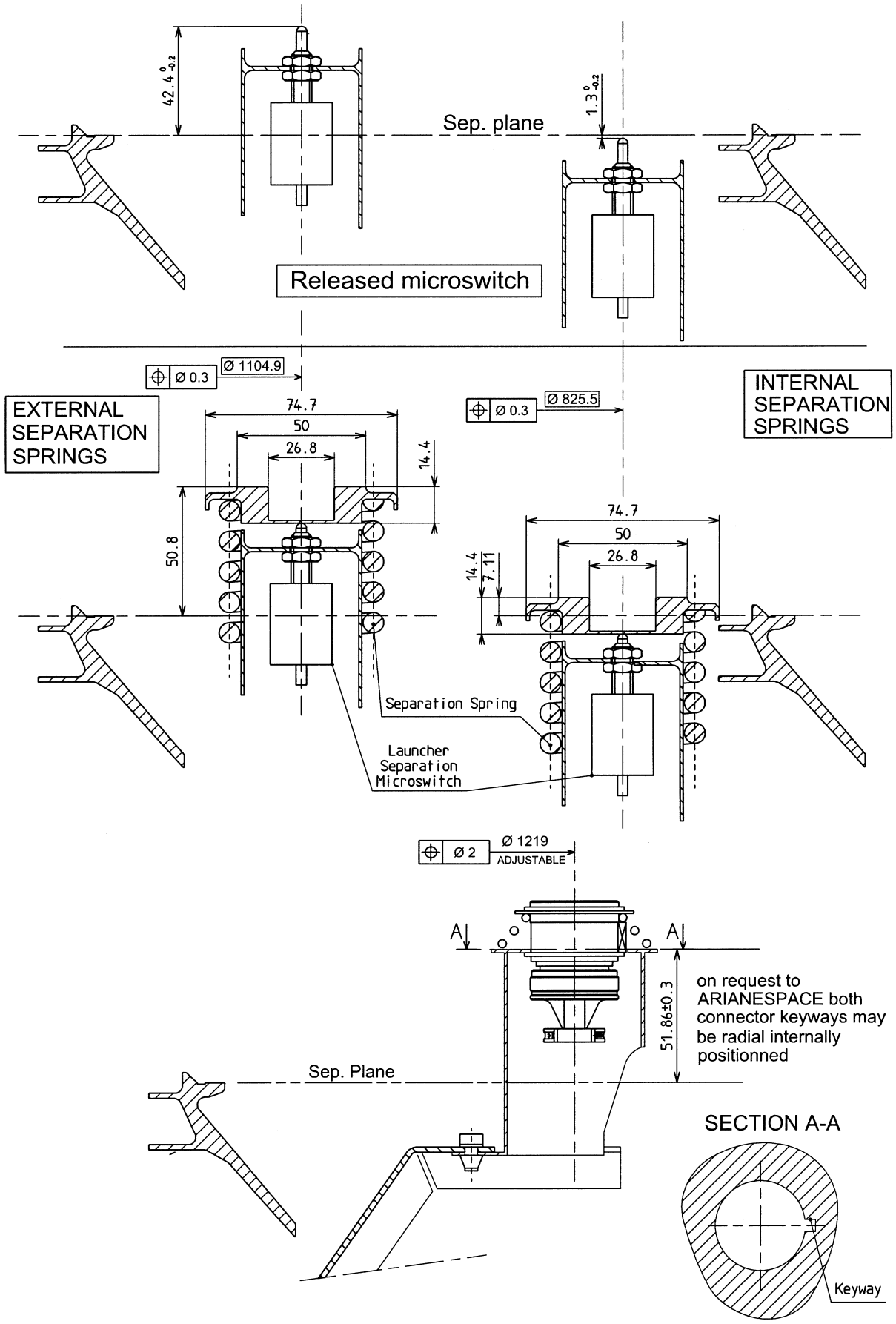
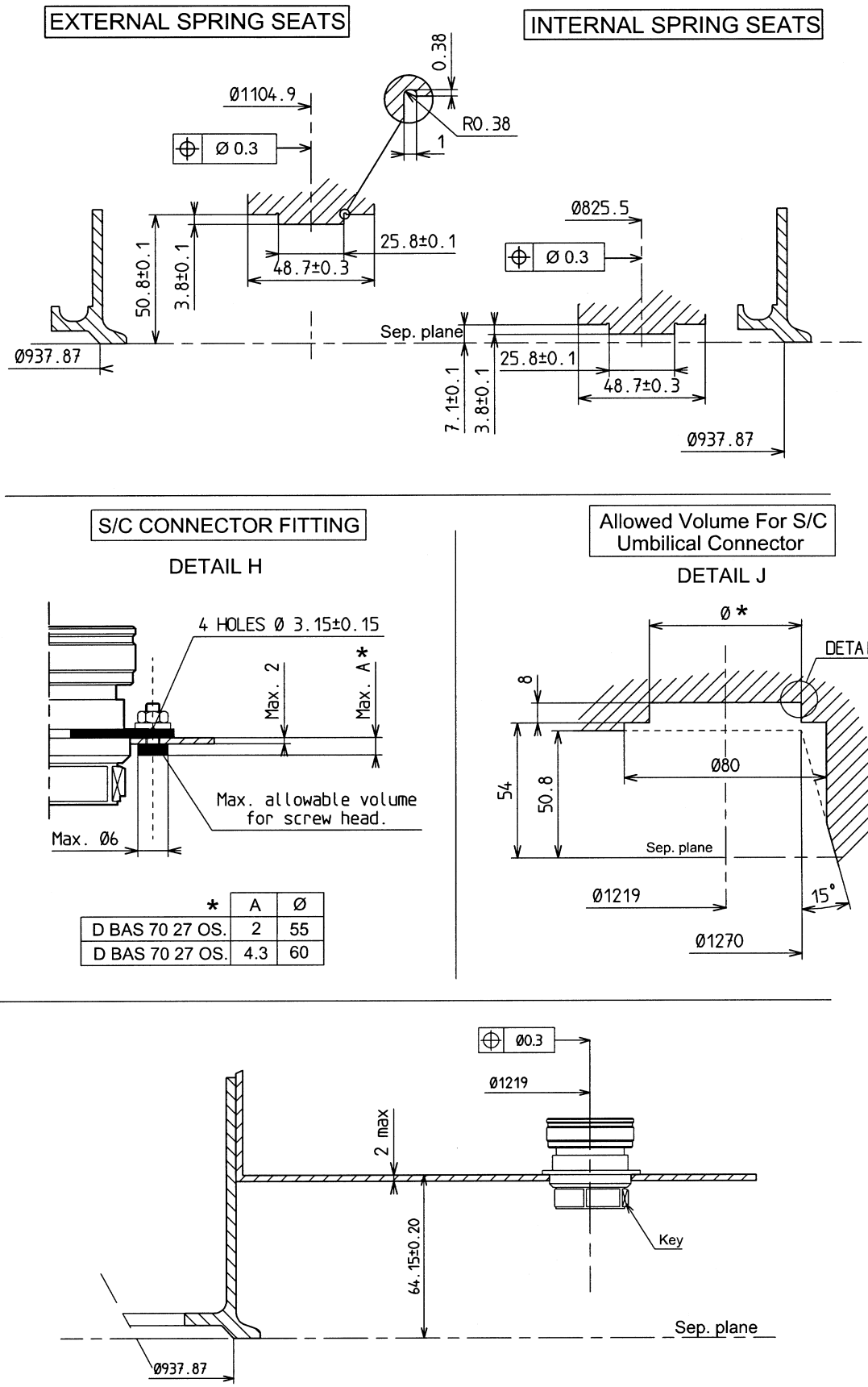


Fig. A8.2.7. – 937C adaptor mechanical interfaces (details)



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

Fig. A8.2.8. – 937C spacecraft mechanical interface (details)

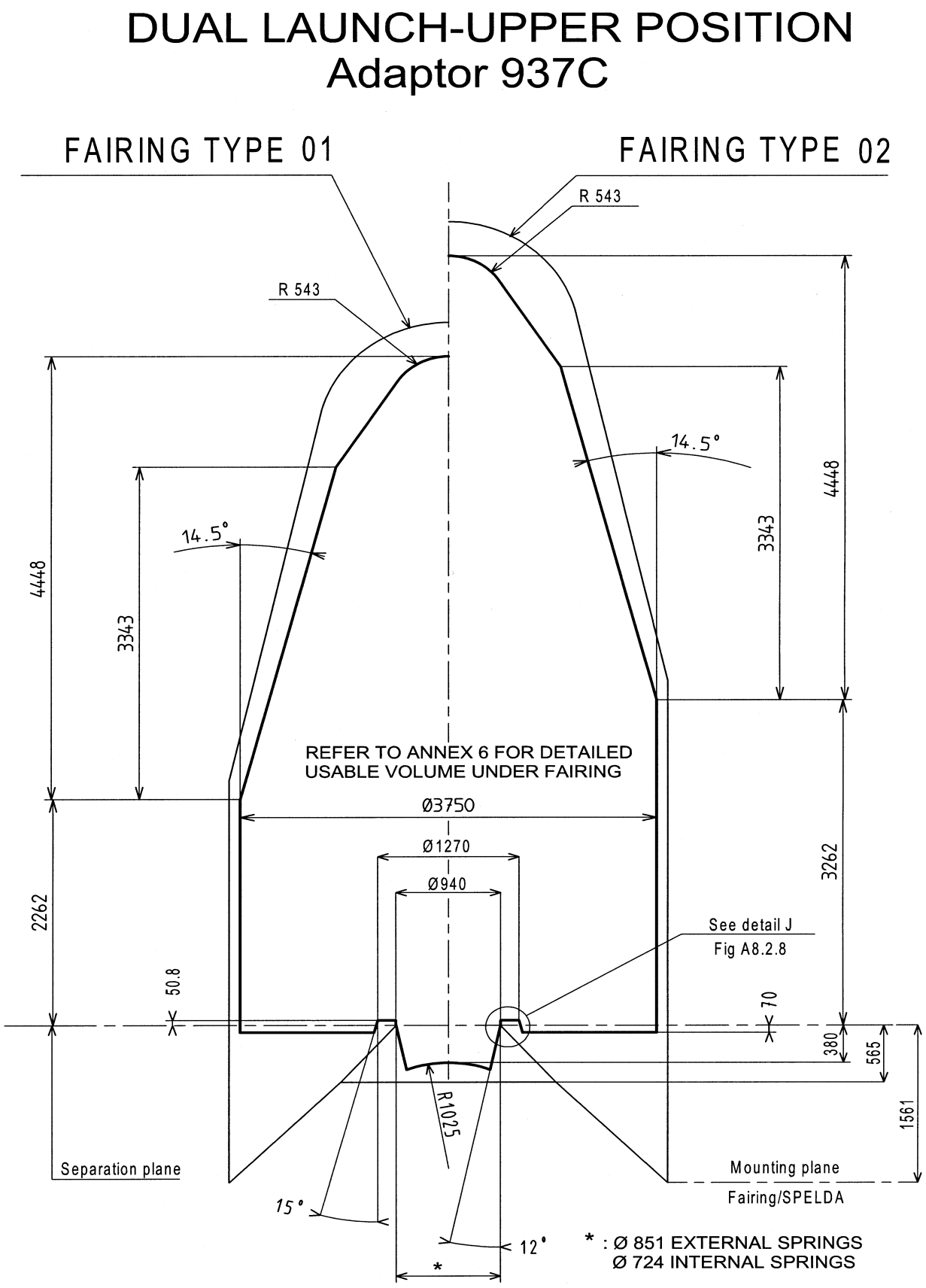


Fig. A8.2.9. – Usable volumes beneath fairings 01 and 02

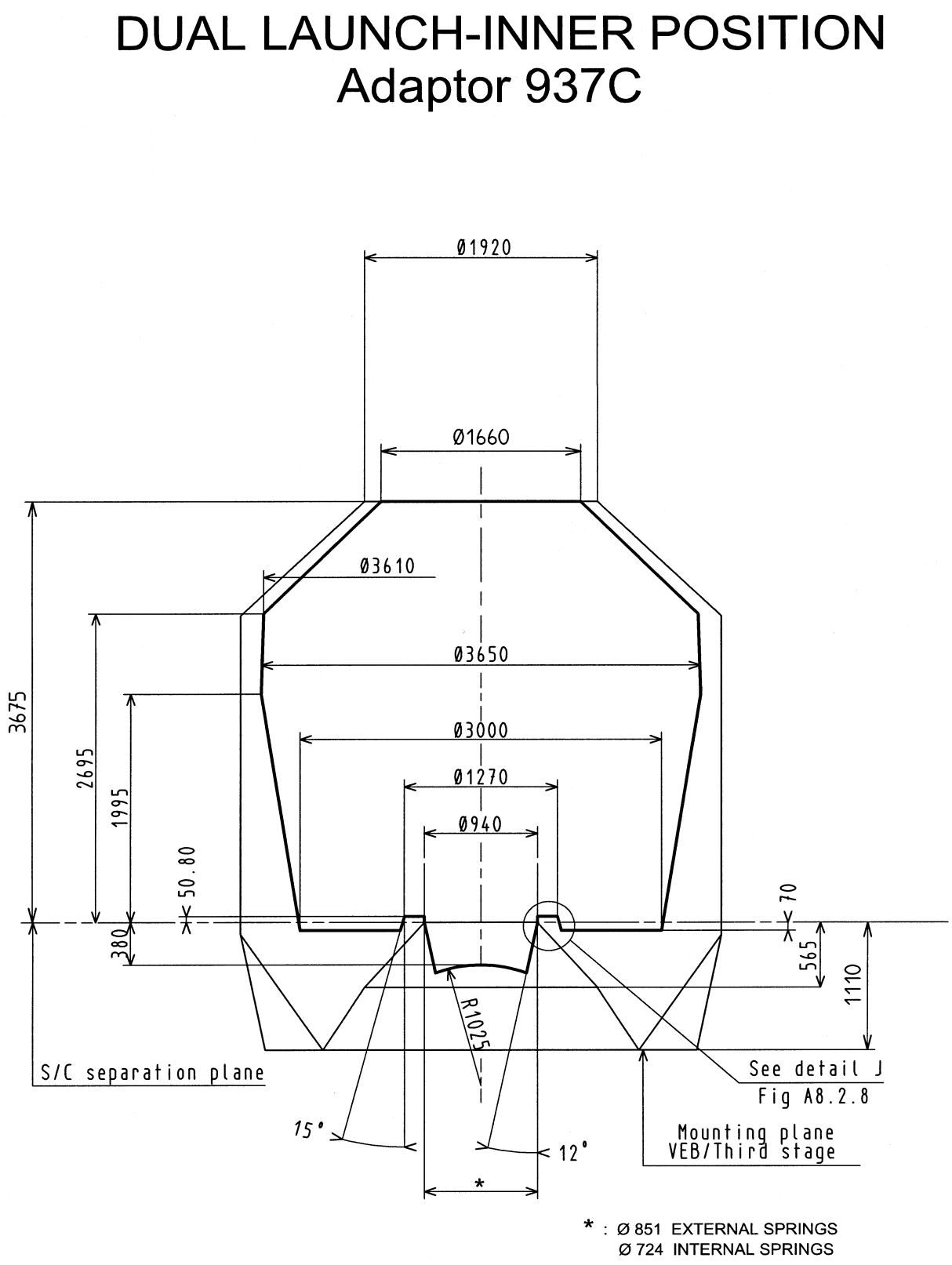


Fig. A8.2.10. – Usable volume beneath short SPELDA (type 10)

DUAL LAUNCH - INNER POSITION
Adaptor 937C

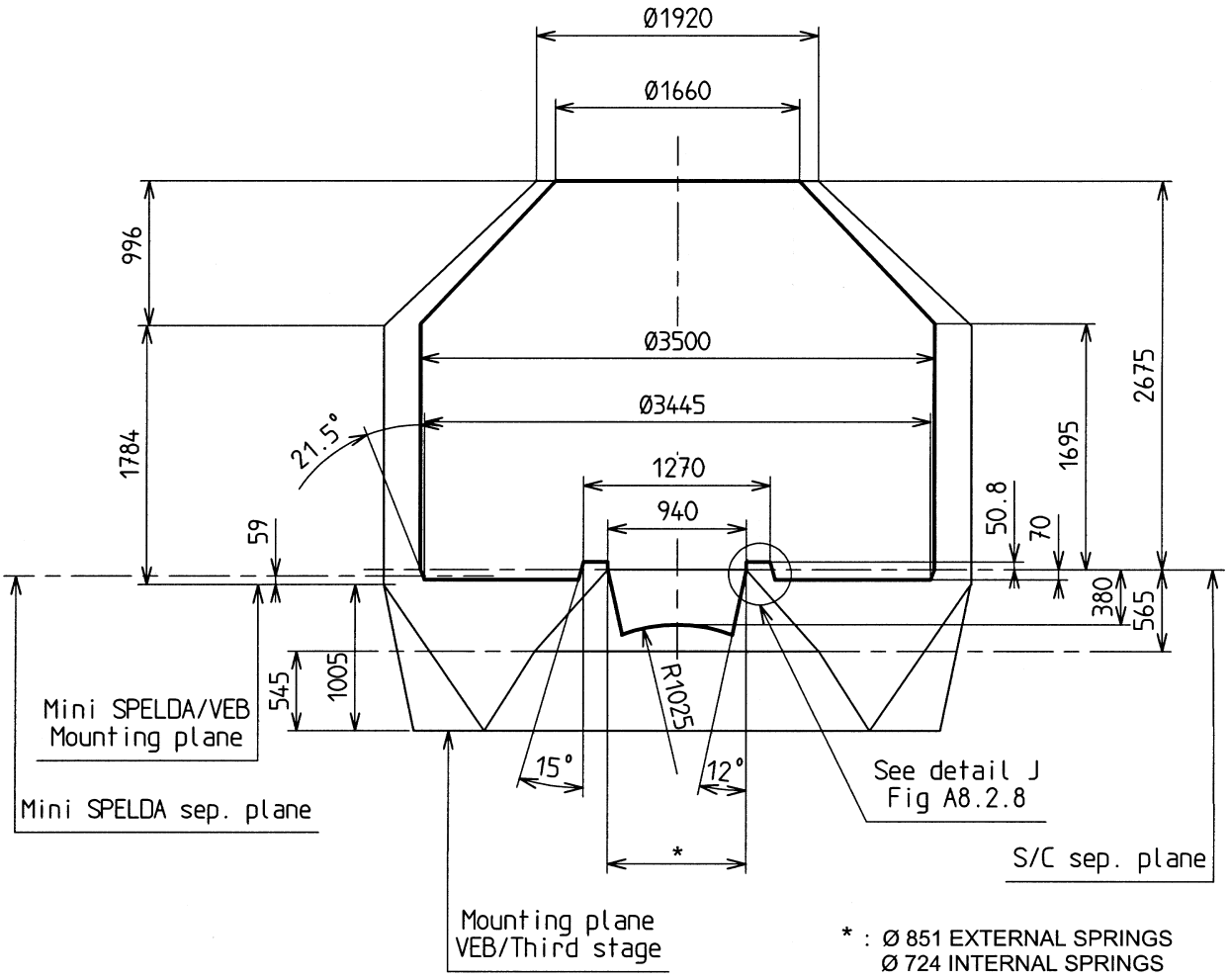


Fig. A8.2.11. – Usable volume beneath mini SPELDA (type 30)

DUAL LAUNCH - INNER POSITION
Adaptor 937C

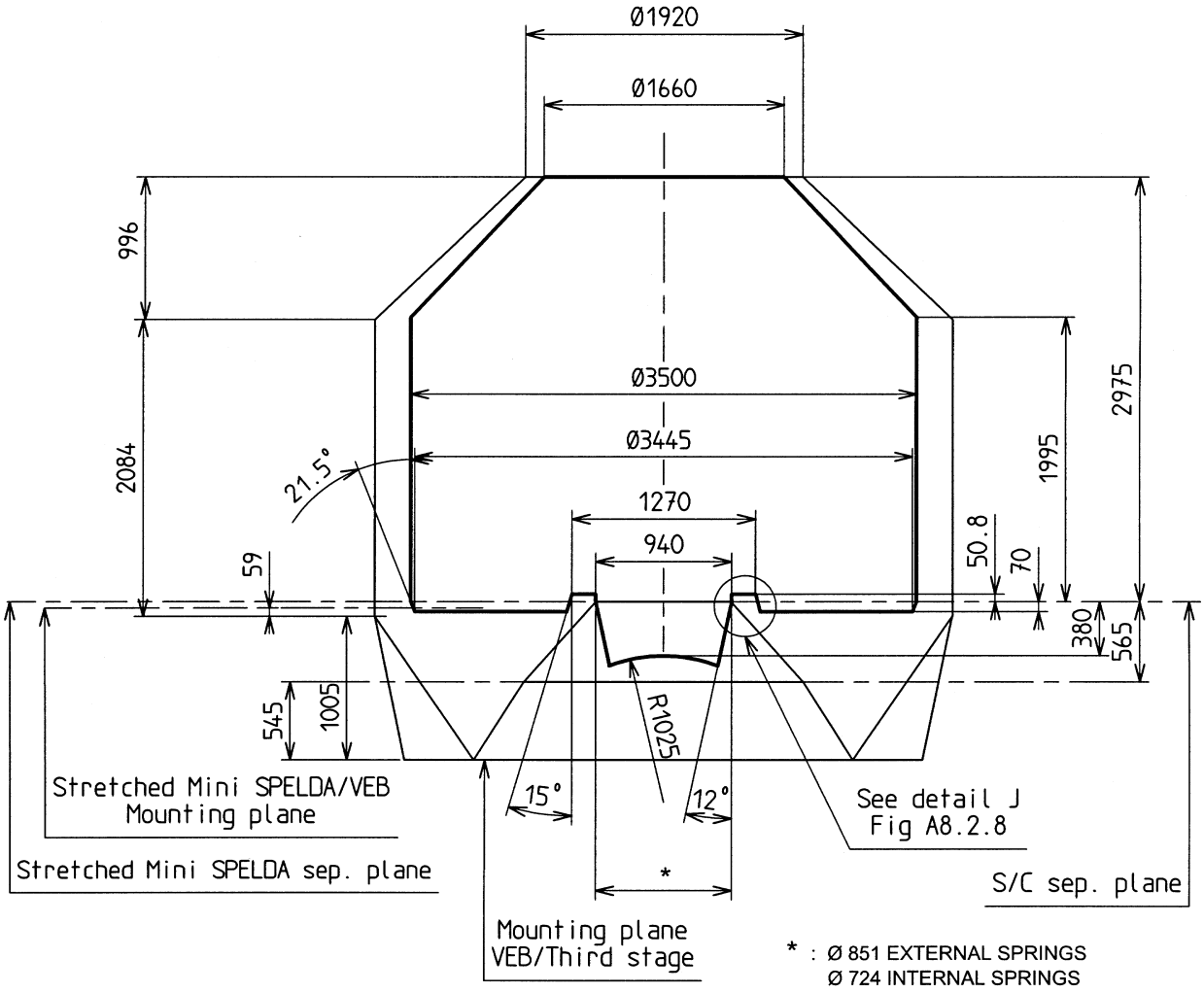


Fig. A8.2.12. – Usable volume beneath stretched mini SPELDA (type 40)