

Ground Support Equipment Clampband PAS 937 S

RUAG Space delivers GSE Clampbands for spacecraft on-ground handling and testing. The GSE Clampband is designed to connect the S/C Interface Ring to any different Test-Adapter during the AIT campaign. The main focus of the design of the GSE Clampband has been set to achieve a high product reliability and easy handling.



**“30 years of high performance, high reliable
and high end GSE Clampbands”**

HERITAGE

More than 50 GSE Clampbands have been delivered to institutional and commercial customers worldwide.

KEY FEATURES

S/C Interface	PAS 937 S	acc. to: Ariane 5 User's Manual (Issue 5, Revision 2) Soyuz User's Manual (Issue 2, Revision 1) Vega User's Manual (Issue 4, Revision 0)
Temperature	-100°C to +100°C (operational)	
Factors of Safety	Yield/Ultimate	2/3 or 3/5
Cleanliness	Class ISO 8 (ISO 14644-1)	
Advantages	no grease vacuum compatible temperature compensation easy application	

PHYSICAL PROPERTIES

Dimensions	CB (Item) [L x W x H]	1010 x 1125 x 90 mm 39.8 x 44.3 x 3.6 in
	Transportbox [L x W x H]	1560 x 880 x 680 mm 61.4 x 34.7 x 27 in
Item mass	30 kg / 66 lbs	
Item in Transportbox	95 kg / 210 lbs	
Transportation	road, rail, sea, air compatible	

OPTIONS

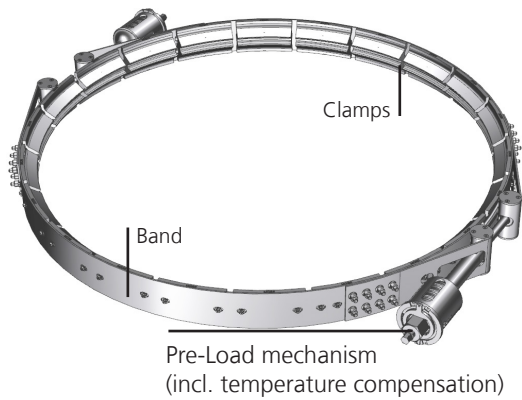
Monitoring	online measurement of acting band pre-load
Spare Parts	relevant spares included
Clampband Tools	application tools included
Operator Training	in house or external site

DELIVERABLE HARDWARE:

2 x Clampband-Half/2 x Tapping Tool/1 x Transportbox/2 x Strain Gauges (optional)/Readout Equipment (optional)/Tools (optional)

DELIVERABLE DOCUMENTS:

User Manual/Certificates/Interface Control Drawing/Test Report/Proof-Load Certification



Readout Equipment



Transportbox

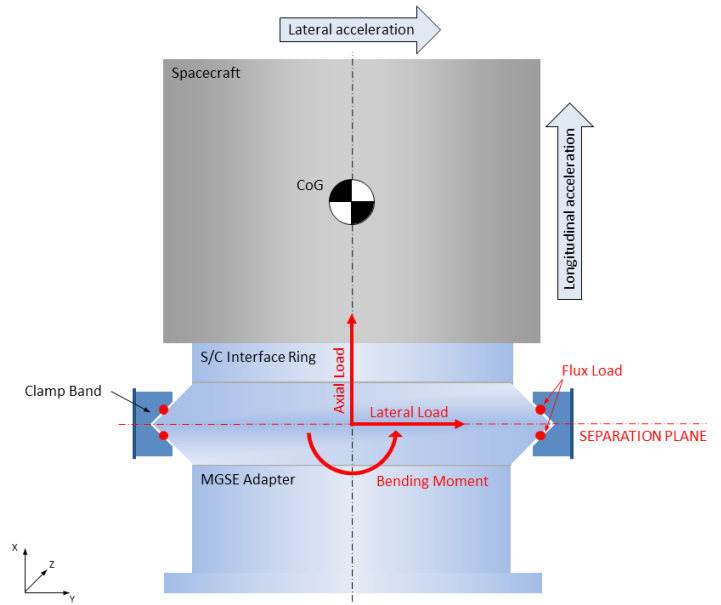
LOAD CONFIGURATION

The following three load input parameters are required to determine the achievable safety factors of the Clampband:

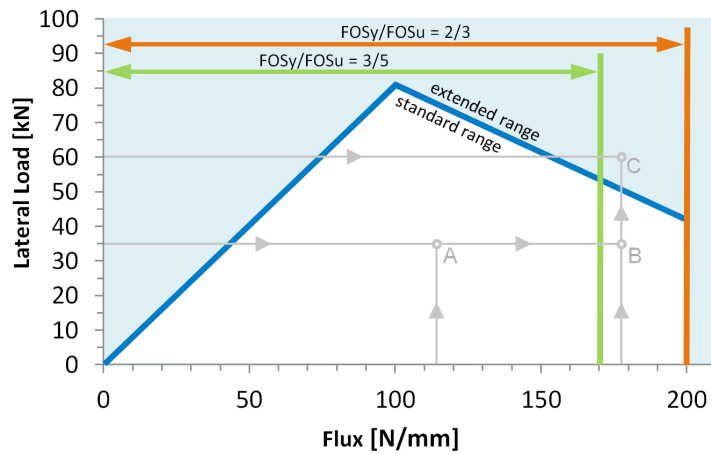
- Axial Load [kN]
- Bending Moment [kNm]
- Lateral Load [kN]

Safety Factors:

FOSy ... Factor of Safety - Yield
FOSu ... Factor of Safety - Ultimate



CLAMPBAND SELECTION DIAGRAM



Instructions for use:

1. Calculate the Flux using Axial Load and Bending Moment.
2. Determine the intersection between flux and lateral load in the diagram.
3. The position of the intersection of flux and lateral load in the diagram provides information about the achievable safety factors of the Clampband.
4. If the point of intersection is in the white area (standard range), the load combination can be met by RUAG Space.
5. If the point of intersection is in the blue area (extended range), the load combination has to be checked individually by RUAG Space.

Examples of how the use the diagram:

Name	Unit	Example A	Example B	Example C
Axial Load	[kN]	200	300	217
Bending Moment	[kNm]	30	50	70
Flux	[N/mm]	114	178	178
Lateral Load	[kN]	35	35	60

Formula to estimate Flux due to given loads:
 $Flux [N/mm] = 0.35 * Axial Load [kN] + 1.45 * Bending Moment [kNm]$

Example A:

The given load combination lies in the envelope of the standard range of the Clampband. The Clampband is feasible with a combination of $FOSy/FOSu = 2/3$ and also $FOSy/FOSu = 3/5$.

Example B:

The given load combination lies in the envelope of the standard range of the Clampband. The Clampband is feasible with a combination of $FOSy/FOSu = 2/3$.

Example C:

The given load combination lies outside the envelope of the standard range of the Clampband. RUAG Space has to check the load combination individually to see if the Clampband is feasible and fulfills customer needs.