



Manufacturer of shut-off and control valves

TECHNICAL DATA SHEET

Bellows axial compensator ELEPHANT CB-3131-W DN50-300 16 bar stainless steel, under welding



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1. GENERAL PRODUCT INFORMATION

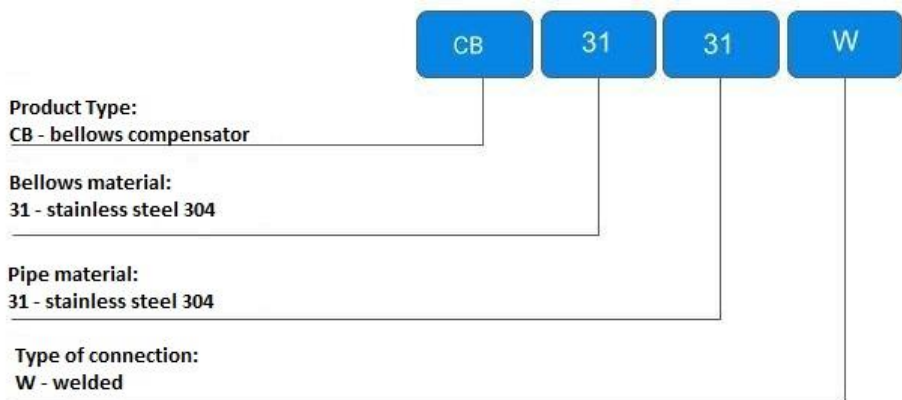
1.1. Product Name: Axial bellows compensator ELEPHANT CB-3131-W DN50-300 16 bar stainless steel, welded-on.

1.2. Purpose: The compensator is designed to reduce vibration and noise in pipelines due to pumps or other equipment. It also compensates for temperature displacements of pipelines and facilitates installation in case of slight misalignment of the connected system elements.

1.3. Principle of operation: The bellows, which is a corrugated elastic asymmetrical shell made of a metal alloy, compensates for shear due to its flexibility. Under the action of transverse, longitudinal forces, bending moments and angles of rotation, the component structure has the ability to stretch and compress, bend and change its shape transversely.



1.4 Deciphering the designation:



2. BASIC TECHNICAL DATA AND CHARACTERISTICS

Table 1

Nominal diameter DN, mm	50 - 300
Working pressure, bar	16
Operating medium temperature t, °C	≤550
Operating medium	steam, oils, hot water, chemically aggressive media, within the performance limits
Bellows material	stainless steel 304
Nozzle material	stainless steel 304
Axial stroke, mm	60 / 80
Connection to pipework	welding/welding
Areas of application	heating and water supply systems; compressed air pipework; steam installations; industrial pipework.



3. WEIGHT AND DIMENSIONAL PARAMETERS

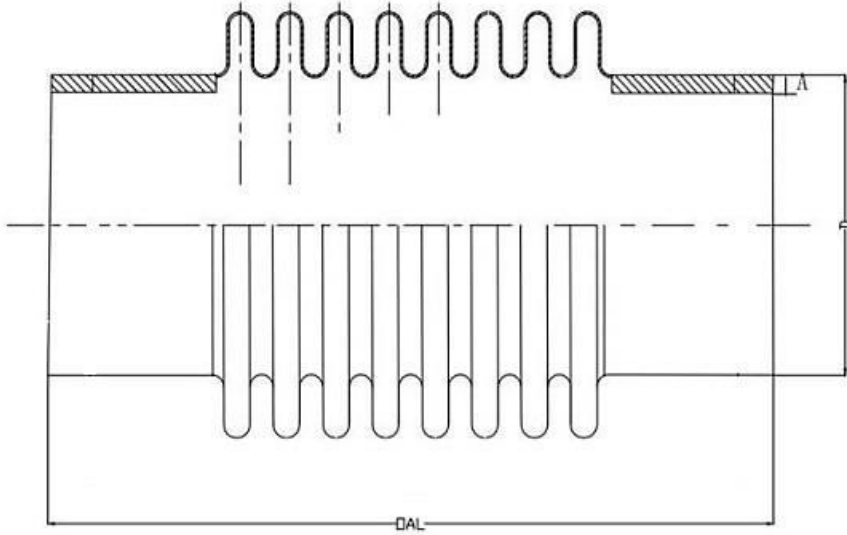


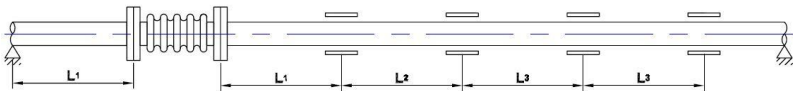
Table 2

DN	Permissible tensile strength, mm	Permissible compression, mm	OAL, mm	D, mm	A, mm	Axial stiffness, N/mm	Weight, kg
50	30	30	240	57	4	150	0,6
65	30	30	240	76	4	184	1,5
80	30	30	250	88,9	4	203	2,1
100	30	30	270	108	4	226	2,5
125	30	30	250	133	4	239	2,6
150	30	30	270	159	5	211	3,8
200	40	40	300	219	6	284	9,2
250	40	40	315	273	6	339	12,6
300	40	40	320	325	8	313	13,8



4. INSTALLATION INSTRUCTION

- 4.1. When organising and carrying out work on the installation of bellows compensators, the requirements of ‘Technological equipment and technological pipelines’ should be complied with according to the internal instructions of the company.
- 4.2. Installation of the SC should be carried out in accordance with the pipeline design performed by an authorised design organisation.
- 4.3. Persons who have studied this manual with general requirements, have been trained in labour protection and have practical experience in installation of similar equipment should be allowed to install the SC.
- 4.4. Before installation, the SC must be checked for compliance with the technical specifications and for defects or damage.
- 4.5. During installation and operation of the expansion joints, the safety standards and requirements applicable at the sites where the expansion joints are used must be complied with.
- 4.6. For all methods of pipeline laying, except for underground ductless laying, the installation of SCs should be provided, as a rule, at one of the fixed supports.
- 4.7. In ductless underground heat networks, the product should be placed in the middle of the pipeline section bounded by fixed supports.
- 4.8. Before and after the compensating device, guide supports must be installed to prevent the pipelines from moving radially.
- 4.9. Only one compensator may be installed in a pipeline section between two fixed supports. The distance from the compensator to the fixed support must not be greater than a length equal to four nominal pipeline diameters. As a rule, the compensator should be installed at a distance equal to two nominal pipeline diameters.
- 4.10. Fixed and floating guide supports must be installed as shown in the illustration.



$$L_1 = 4 \times D_{\max};$$

$$L_{2,3} = 14 \times D_{\max};$$

D – pipeline diameter.

4.10. When installing the SC, it is necessary to avoid torsional loads relative to the longitudinal axis and sagging under the action of its own weight and the weight of adjacent pipelines, as well as to protect the flexible element from mechanical damage and sparks during welding.

4.11. Prior to installation, the supply and return pipelines must be centred by fixing them at a distance of no more than three pipeline diameters from the expansion joint. The axis of the pipeline section where the bellows compensator is to be installed and the compensator axis must be aligned.



4.12. The expansion joint must be stretched before welding. The compensator is released from the transport restraints before stretching. Stretching is carried out to the length of the installation distance L_{ust}

$$L_{ust} = \frac{\Delta L}{2} - \Delta L \times \frac{t_{ust} - t_{min}}{t_{max} - t_{min}}$$

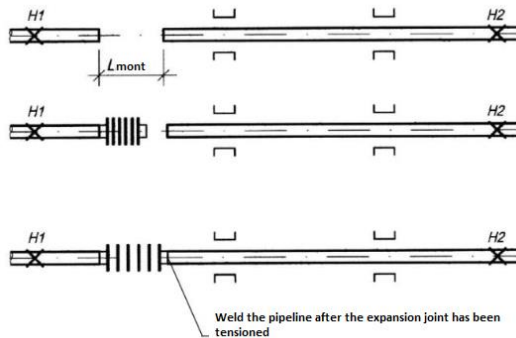
where, ΔL – full axial travel of the compensator,

t_{ust} – ambient temperature during installation,

t_{min} – minimum design operating temperature,

t_{max} – maximum design operating temperature.

4.13. The pipeline sections upstream and downstream of the compensator must be installed and secured in fixed supports H1 and H2 in such a way that the distance between the pipe ends at the compensator installation point corresponds to the installation length of the compensator at the ambient temperature corresponding to the moment of fixing the compensator.



4.14. The ambient temperature and the value of the installation length of the expansion joint must be recorded in the report.

4.15. After jointing with one end of the pipeline, the joint deviations of the expansion joint and the pipeline are checked, which must not exceed the following values:

- A. spigot alignment tolerance – 2 mm;
- B. B. Parallelism tolerance of the end faces of the connection sockets and the pipes to be connected – 3 mm.
- C. maximum welding gap between spigot and pipeline – 2 mm.



- 4.16. Once the errors have been eliminated, the expansion joint is connected to the other end of the pipeline.
- 4.17. During welding work, when installing the expansion joint without a protective cover, the possibility of metal splashing on the surface of the expansion joint bellows must be completely excluded.
- 4.18. If the expansion joint is delivered in pre-stretched form, the expansion joint is mounted as a pipeline element after the Lmont has been adapted to the installation conditions, observing all requirements for alignment of the pipeline and the expansion joint. The transport restraints are only removed after the installation has been completed.
- 4.19. Hydraulic tests are carried out in accordance with the company's internal instructions. The test pressure must not exceed the following values: $P_{isp} = 1,25PN$.
- 4.20. It is not allowed to carry out hydraulic tests of pipelines with installed SC before completion of all works on fabrication and installation of fixed and guiding supports and fixing of the pipeline on them, as well as with the pipeline not backfilled with soil (in case of channelling).
- 4.21. If during testing it is found that the compensator is not tight, it is dismantled and a new SC is installed, as such products are not subject to repair and maintenance.



5. TRANSPORTATION AND STORAGE CONDITIONS

5.1. The compensators can be transported by any type of transport. The compensators must be mounted on transport vehicles to prevent mechanical damage and the internal surfaces must be protected from contamination.

5.2. Compensators should be stored in warehouses, protected from direct sunlight and removed at least 1 metre from heat-emitting devices, and should not be exposed to oil, petrol, substances aggressive to the materials of the product.

6. UTILISATION

6.1. The product is disposed of in accordance with the procedure established at the enterprise (remelting, burial, resale).



7. WARRANTY OBLIGATIONS

7.1. Warranty period - 12 months from the date of commissioning, but not more than 18 months from the date of sale.

7.2. The warranty applies to equipment installed and used in accordance with the installation instructions and product specifications described in this data sheet.

7.3. The manufacturer guarantees compliance of the product with safety requirements, provided that the consumer complies with the rules of transport, storage, installation and operation.

7.4. The warranty covers all defects caused by the fault of the manufacturer.

7.5. The warranty does not apply:

- parts and materials of the product subject to wear and tear;
- for cases of damage caused by:
 - modifications to the original design of the product;
 - violation of general installation recommendations;
 - faults caused by improper maintenance and storage; improper operation and use of the equipment.

8. WARRANTY TERMS

8.1. Claims to the quality of the goods may be made during the warranty period.

8.2. Defective products are repaired or exchanged for new ones free of charge during the warranty period. ELEPHANT decides whether to replace or repair the product. The replaced product or its parts resulting from the repair shall become the property of 'ELEPHANT'.

8.3. Costs related to dismantling, installation and transport of the defective product during the warranty period shall not be reimbursed to the Buyer.

8.4. If the claim is unfounded, the Buyer shall pay the costs of diagnostics and expertise of the product.

8.5. Products are accepted for warranty repair (as well as for return) fully assembled.



WARRANTY CARD № _____

№	Product Name	Packs

Name and address of the trading organisation _____

Date of sale _____ Seller's signature _____

Stamp or seal of the trading organisation _____ Acceptance stamp _____

I agree with the terms and conditions of the warranty:

Buyer _____ (signature)

Warranty period - 12 months from the date of commissioning, but not more than 18 months from the date of sale.

For warranty repairs, complaints and product quality claims, please contact ELEPHANT at: Carrer d'Aragó,264,3-1,08007 Barcelona, Spain_E-mail address: sales@valveelephant.com.

When making a complaint about the quality of goods, the buyer shall present the following documents:

1. A free-form application, which shall specify:
 - name of the organisation or full name of the buyer, actual address, contact telephone numbers;
 - name and address of the organisation that carried out the installation;
 - basic parameters of the system in which the product was used;
 - a brief description of the defect.
2. Document confirming the purchase of the product (delivery note, receipt)..
3. Act of hydraulic test of the system in which the product was installed.
4. This completed warranty card.

A note on the return or exchange of goods _____

Date: « ___ » _____ 202__ r. Caption _____

