

# RUBBER EXPANSION JOINT

## AL 84-MS-I

### Description

AL 84-MS-I is a universal double shafted expansion joint consisting of rubber bellows and rotatable flanges.

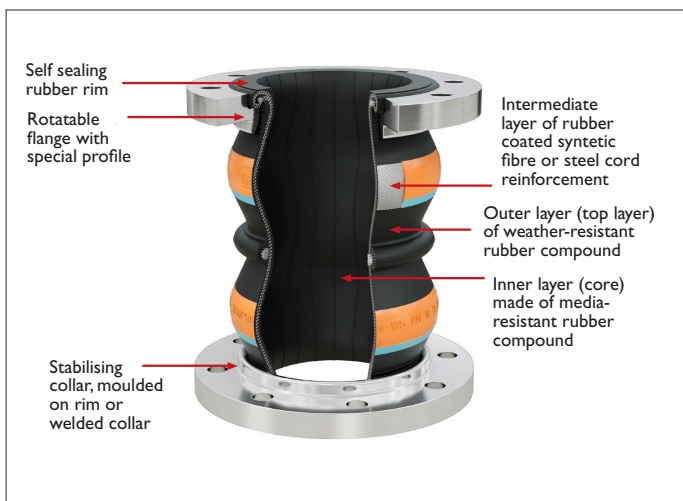
In order to reduce the forces from large movements on pipelines and pipe bearings, a conservative solution consisting of using two rubber expansion joints with an intermediate piece can be replaced by the use of one MS-I double bellows expansion joint. This can lead to a significant reduction in weight (up to 50 %), improvement in vibration behavior and reduction in the force acting on the plain bearings and the fixed points. In addition this solution also requires less maintenance since the visual and rubber hardness tests are limited to a few components.

A special wire fiber, which sits between the individual rubber layers, increases the maximum permissible pressure load and also ensures that the expansion joint will function for a short time in the event of external flaming of 800°C (fire resistant according to ISO 15540).

- Flame proof
- Highly elastic molded bellows in various rubber grades
- Steel wire cord reinforcement
- Wire-reinforced self-sealing rubber rim
- DN 65-250.
- Maximum operating pressure PN 16 (to be set 30 % lower for shock loads. Please consider a decrease of pressure due to temperature.
- Maximum temperature: +130°C
- Bursting pressure:  $\geq 50$  bar
- Vacuum operation: With vacuum supporting ring (at permanent vacuum)

### Applications:

- For compensating large axial, lateral and angular movement by a highly flexible twin-convoluted universal expansion joint
- For reducing thermal and mechanical tension in pipes and their system components
- To comply with fire safety regulations
- To compensate for installation inaccuracies
- In industrial and plant engineering as well as the maritime industry



### Material

Rubber	EPDM	NBR
Colour code	Orange / Blue	Red / Blue
Application	Hot water, acids, lyes	Hydrocarbon containing liquids

\* Check or inquire about the resistance of the rubber grade to temperature and medium.

### Flanges

- Rotatable flanges with stabilizing collar
- Flange drilling for through bolts
- Special machined groove for rubber rim annex

	Standard	Optional
Dimensions	EN 1092	ANSI, BS etc
Material	1.0038 (S235JR)	1.4541, 1.4571 etc
Corrosion protection	Electrogalvanized	Hot-dip galvanized, special varnish, special coating, etc.

### Approvals

- CE/PED 2014/68/EU
- DNV GL / DNV

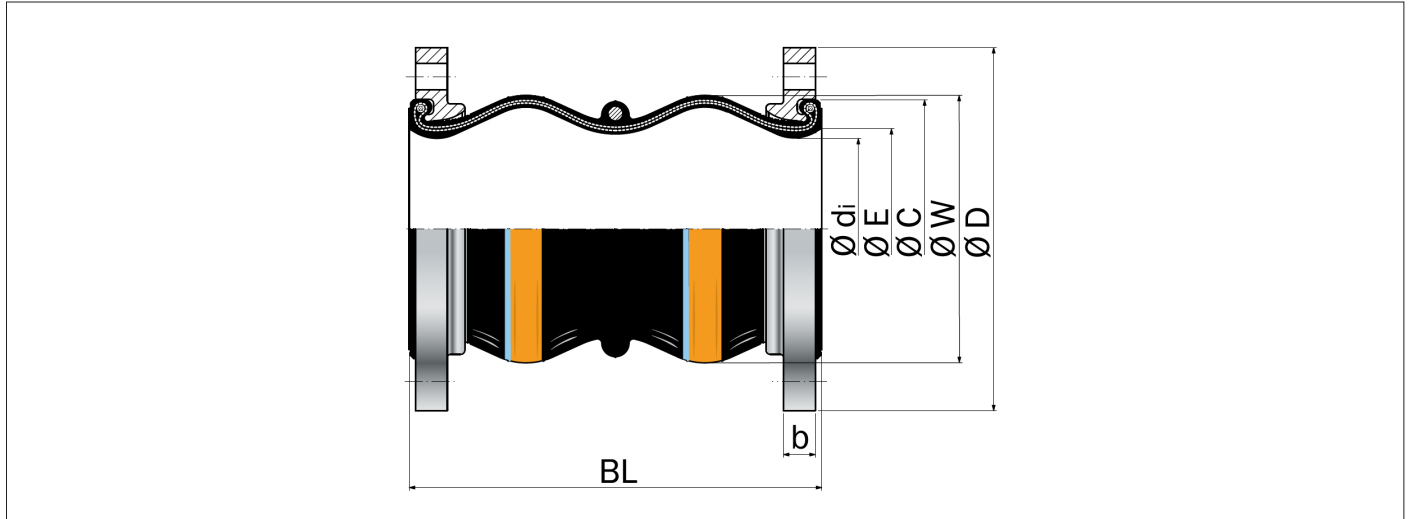
### Accessories

- Vacuum supporting ring
- Internal guide sleeve

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### Dimensions



DN	BL mm	Pressure rate bar	Ø Di Bellow inner Ø mm	Ø C Raised face outer Ø mm	Ø E Raised face inner Ø mm	Ø W* Convolution Ø mm	PN Flange connection EN 1902	Ø D Flange outer Ø mm	b Flange thickness mm
65	220	16	63+5/63-1	115	72 ± 1	113	16	185	18
80	250	16	75+5/75-1	127	84 ± 1	135	16	200	20
100	275	16	98+5/98-1	151	109 ± 1	160	16	220	20
125	275	16	125+5/125-1	178	133 ± 1	184	16	250	22
150	275	16	151+5/151-1	206	161 ± 1	212	16	285	22
200	275	10	200+5/200-1	260	209 ± 1	265	10	340	25
250	275	10	250+5/250-1	313	262 ± 1	218	10	395	25

\* Unpressurized

Please contact us for further flange dimensions.

### Movement compensation

DN	BL mm	Δ ax Axial movement		Δ lat Lateral movement ± mm	Δ ang* Angular movement ± degrees	A** Effective bellows cross sectional area at 16 bar cm <sup>2</sup>	Permissible vacuum w/o supporting ring at length BL bar absolute	Weight kg
		Compression - mm	Elongation + mm					
65	220	60	20	30	30	14	0,0	6,1
80	250	80	20	30	30	12	0,0	7,9
100	275	80	20	30	30	16	0,4	9,2
125	275	80	20	30	30	15	0,5	11,8
150	275	80	20	30	24	29	0,4	14,4
200	275	90	30	30	16	152	0,7	20,4
250	275	90	30	15	10	328	1,0	28,0

\* Larger Δ ang possible for compressed installation length.

\*\* Effective bellows cross sectional area is a theoretical value.

Please inquire for simultaneous (different) movement.

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