



BELLOWS AIRSPRINGS

Further Information:

Interflex Hose & Bellows Ltd. • www.interflex.co.uk
Ludlow Eco Park • Ludlow • Shropshire • SY8 1FF • United Kingdom
Tel: +44 (0)1584 878500 • Email: airsprings@interflex.co.uk



Dismountable bellows

Bellows 2 ³ / ₄
Bellows 4 ¹ / ₂
Bellows 6"
Bellows 8"
Bellows 9 ¹ / ₄
Bellows 10"
Bellows 12"
Bellows 14 ¹ / ₂
Bellows 16"
Bellows 21 ¹ / ₂
Bellows 26"



Crimped bellows

(does exist in **stainless steel** version)

Bellows 8"
Bellows 9 ¹ / ₄
Bellows 12"



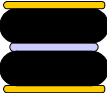
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GEOMETRIC CHARACTERISTICS



	ØMax	Øe	Stroke	Height H (mm)			Load (daN) at 6 bar			nf *	Stiffness*	Weight
	(mm)	(mm)	(mm)	min.	design	Max.	H.min.	H.design	H.Max.	(Hz)	(daN/mm)	(kg)
2"x1 Composite	80	95	20	50	60	70	260	173	92	4.60	133.7	0.22
2"x1 Aluminium	80	95	20	50	60	70	260	173	92	4.60	133.7	0.35
4"x1 Aluminium	125	140	40	50	70	90	550	355	140	3.71	184.9	0.75
6"x1 Composite	175	190	55	55	80	110	1140	755	330	3.33	272.2	0.95
6"x1	175	190	55	55	80	110	1140	755	330	3.33	272.2	1.9
6"x1	175	190	55	50	75	105	1095	710	290	3.30	249.0	2.2
8"x1	230	245	80	50	90	130	1860	1275	535	2.77	342.1	3.0
S.8"x1	225	240	95	60	105	155	1630	1210	460	2.47	265.3	1.8
S.9"x1	255	275	105	55	105	160	1960	1560	825	2.17	281.4	2.3
10"x1	280	300	100	50	100	150	2645	1960	900	2.46	385	3.9
12"x1	330	350	100	50	100	150	3885	2975	1510	2.44	588	5.4
S.12"x1	335	360	105	60	110	165	3900	2950	1385	2.26	530	3.9
14"x1	395	425	125	50	110	175	5760	4555	2155	2.22	784	7.1



	ØMax	Øe	Stroke	Height H (mm)			Load (daN) at 6 bar			nf *	Stiffness*	Weight
	(mm)	(mm)	(mm)	min.	design	Max.	H.min.	H.design	H.Max.	(Hz)	(daN/mm)	(kg)
2"x2 Composite	80	95	45	65	90	110	213	139	54	3.60	72.5	0.26
2"x2 Aluminium	80	95	45	65	90	110	213	139	54	3.60	72.5	0.40
4"x2 Aluminium	125	140	85	65	100	150	575	400	170	2.62	71.4	0.95
6"x2 Composite	175	190	115	80	140	195	1060	685	340	2.25	114.0	1.3
6"x2 Aluminium	175	190	115	80	140	195	1060	685	340	2.25	114.0	2.2
6"x2	175	190	115	75	140	190	1040	635	320	2.25	116.9	2.6
8"x2	220	245	175	75	160	250	1765	1140	445	1.95	128.1	3.7
S.8"x2	220	240	185	80	175	265	1650	1050	395	1.89	125.1	2.5
9"x2	255	270	205	75	160	280	2315	1730	745	1.72	150.4	5.5
S.9"x2 NB	255	275	220	80	175	300	2015	1380	490	1.65	120.6	2.8
S.9"x2 ANB	265	285	290	80	260	370	2790	1475	705	1.51	118	3.1
10"x2	270	300	225	75	170	300	2635	1900	645	1.75	178.8	4.9

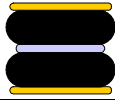
* : Value for recommended height for better isolation at pressure 6 bar

ØMax : Maximun diameter
Øe : Overall diameter
nf : Natural frequency

H.min : minimum height
H.design : Design height
H.Max : maximum height

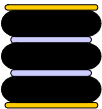
S.xxxxxx : crimped version

GEOMETRIC CHARACTERISTICS



ØMax	Øe	Stroke	Height H (mm)			Load (daN) at 6 bar			nf *	Stiffness*	Weight
(mm)	(mm)	(mm)	min.	design	Max.	H.min.	H.design	H.Max.	(Hz)	(daN/mm)	(kg)

12"x2	325	350	225	75	170	300	3850	2910	855	1.78	285	6.7
S.12"x2	325	350	215	85	190	300	3580	2800	1175	1.68	276	5.3
12"x2 NB	325	350	225	75	170	300	3905	2905	930	1.76	277	6.2
S.12"x2ANB	345	370	265	80	270	345	4310	2060	975	1.59	243	5.0
12"x2 ANB	345	370	325	75	270	400	4590	2790	1295	1.45	205	6.9
14"½x2	400	425	265	75	200	340	6195	4445	1690	1.61	373	8.9
14"½x2 Re	390	425	230	90	200	320	5585	4025	1680	1.66	370	9.4
16"x2	440	460	315	75	200	390	6525	5195	2020	1.44	323	9.5
16"x2 Re	430	460	300	90	200	390	6255	5040	1745	1.48	339	10.1
21"½x2	580	630	280	90	200	370	14150	11690	5345	1.50	756	21.0
26"x2	700	750	410	90	200	500	20370	17335	8445	1.23	792	23.7



ØMax	Øe	Stroke	Height H (mm)			Load (daN) at 6 bar			nf *	Stiffness*	Weight
(mm)	(mm)	(mm)	min.	design	Max.	H.min.	H.design	H.Max.	(Hz)	(daN/mm)	(kg)

2"³/4x3 Composite	80	95	60	80	110	140	230	157	70	3.12	50.7	0.3
2"³/4x3 Aluminium	80	95	60	80	110	140	230	157	70	3.12	50.7	0.5
4"¹/2x3 Aluminium	125	140	100	100	145	200	535	375	230	1.96	36.8	1.2
6"x3 Aluminium	175	190	190	100	190	290	1055	725	295	1.85	77.3	2.6
6"x3	175	190	190	95	190	285	1045	690	280	1.85	75.5	2.8
8"x3	215	240	250	100	230	350	1740	1075	465	1.60	85.1	4.4
10"x3	270	300	330	100	250	430	2660	1770	645	1.43	110	5.9
10"x3 Re	270	300	300	120	250	420	2585	1740	685	1.46	107	6.3
12"x3	325	350	330	100	250	430	4060	2930	1090	1.44	189	8.1
S.12"x3	325	350	345	120	265	465	3810	2700	660	1.42	178	7.0
12"x3 NB	335	360	335	100	250	450	4165	2950	985	1.41	178	7.5
12"x3 Re	325	350	300	120	250	420	4145	3065	1130	1.48	273	8.6
12"x3ReNB	325	350	320	120	250	440	3885	2860	855	1.48	187	7.6
S.12"x3RNB	325	350	315	105	265	420	3825	2505	955	1.44	174	7.0
14"¹/2x3	400	425	380	100	290	480	6255	4320	1920	1.31	233	10.5
14"¹/2x3 Re	390	420	330	120	290	450	5715	4090	1940	1.37	254	11.4
16"x3 Re	425	450	430	120	290	550	6495	5145	1905	1.24	244	12.5

* : Value for recommended height for better isolation at pressure 6 bar

ØMax : Maximun diameter
 Øe : Overall diameter
 nf : Natural frequency

H.min : minimum height
 H.design : Design height
 H.Max : maximum height

S.xxxxxx : crimped version

SPRINGRIDE® convoluted bellows have been manufactured since 1960 by **DUNLOP AIRSPRINGS**.

They are used in industry as **rubber actuators** or **vibration isolators** for various applications :

- Lifting,
- Locking device,
- Shock absorber,
- Isolation of vibrating machines,
- Etc.

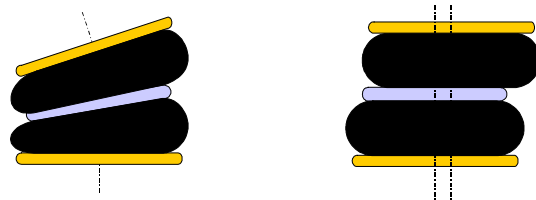
SPRINGRIDE® convoluted bellows are used in most industrial fields, from the smallest lift tables to the largest paper machines, including applications as varied as irrigation systems, garage equipment and childrens roundabouts.

Thanks to a policy of permanent innovation and with one of the largest existing ranges of dismountable and crimped convoluted bellows, from 2" $\frac{3}{4}$ x 1 to 26" x 2, **DUNLOP AIRSPRINGS** is **leader in the European Industrial Market**.

As a result of the most demanding quality and reliability requirements, **SPRINGRIDE®** air bellows are also employed in the Automotive (air suspensions for industrial vehicles, trucks, trailers and buses) and Railway industries (air suspensions for underground trains and pantographs lifts).

SPRINGRIDE® rubber actuators, compared with traditional products (rigid actuators, spring...) offer numerous advantages such as :

- Flexibility (no angle or alignment problem),
- Compactness,
- Power / price ratio,
- No maintenance or lubrication required,
- Durability,
- Reliability,
- Resistance to aggressive or hot conditions.



The current standard range of **SPRINGRIDE**[®] convoluted rubber bellows is shown.

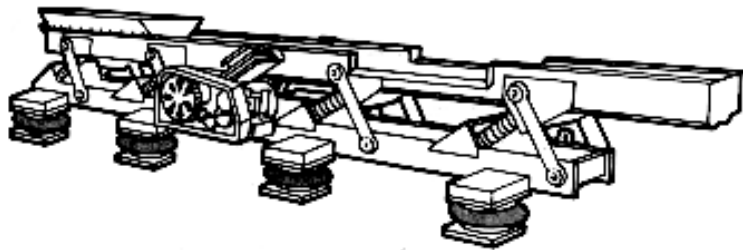
Most of the range can be easily supplied with various options (such as different air inlets, specific fixings, etc.)

The main technical characteristics of each rubber bellows are indicated in order to identify easily and quickly the best product to meet specific requirements.

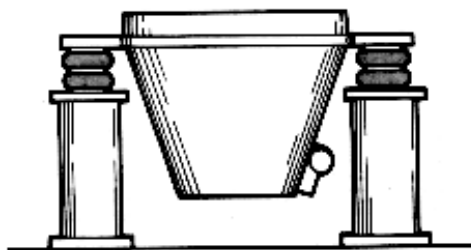
SPRINGRIDE can also supply a choice of specific compounds in order to meet the requirements involved for applications in severe environments (resistance to hydrocarbons, high temperatures, etc.).

EXAMPLES OF APPLICATIONS

ISOLATORS



OSCILLATE CONVEYOR



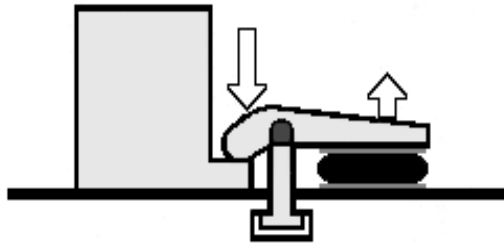
VIBRATING BIN HOPPER

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EXAMPLES OF APPLICATIONS

ACTUATORS



CLAMP DEVICE

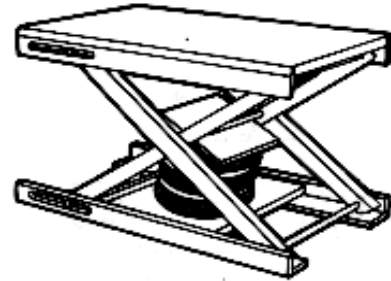
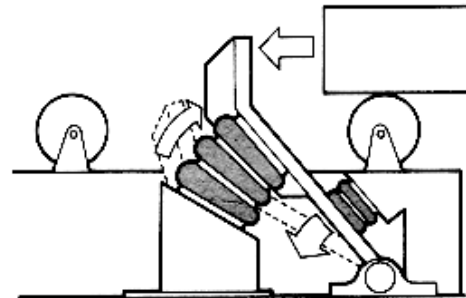


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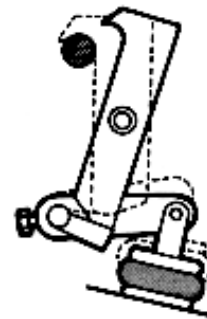
LEVEL PLATFORMS



BUMPER AND ACTUATOR



WEBB TENSIONING DEVICE



QUICK LOCK DEVICE

PRECAUTIONS IN USE

- Airsprings must not be pressurised unless they are restricted by an outside frame or by a suitable load.
- Strokes must be limited by the direct use of bump stops or external stops.
- When stacking airsprings, special care must be taken to ensure the airsprings are guided and fixed.
- An Airspring is a single acting air actuator and must not be used below atmospheric pressure.
- Please check the over-pressure in case of rapid compression.

TEMPERATURE

According to the temperature conditions, the rubber compound must be chosen as follows :

STANDARD :	- 40°C to + 70°C
BUTYL :	- 25°C to + 90°C
EPICHLOR :	- 20°C to + 115°C

ENVIRONMENT

Some products such as acids or hydrocarbons may cause problems to the air bellows. The resistance of air bellows depends on the compound. Epichlorohydrin, for the instance, is the best with hydrocarbons. A special treatments is available to increase the resistance against ozone and U.V.

In any case, please contact our technical sales department.

IMPORTANT :

The information contained in this document was determined from real situation tests and measures which were carried out in a laboratory. This information should help to guide our customers in defining the best solution for its application and was subject to validation at the time when the present document was published. However, DUNLOP AIRSPRINGS reserves the right to change or modify this information without prior notice.

Extract from general terms of sale :

" The acquisition, marketing or the use of DUNLOP merchandise imply the knowledge of and compliance with their characteristics and with the conditions of their implementation.

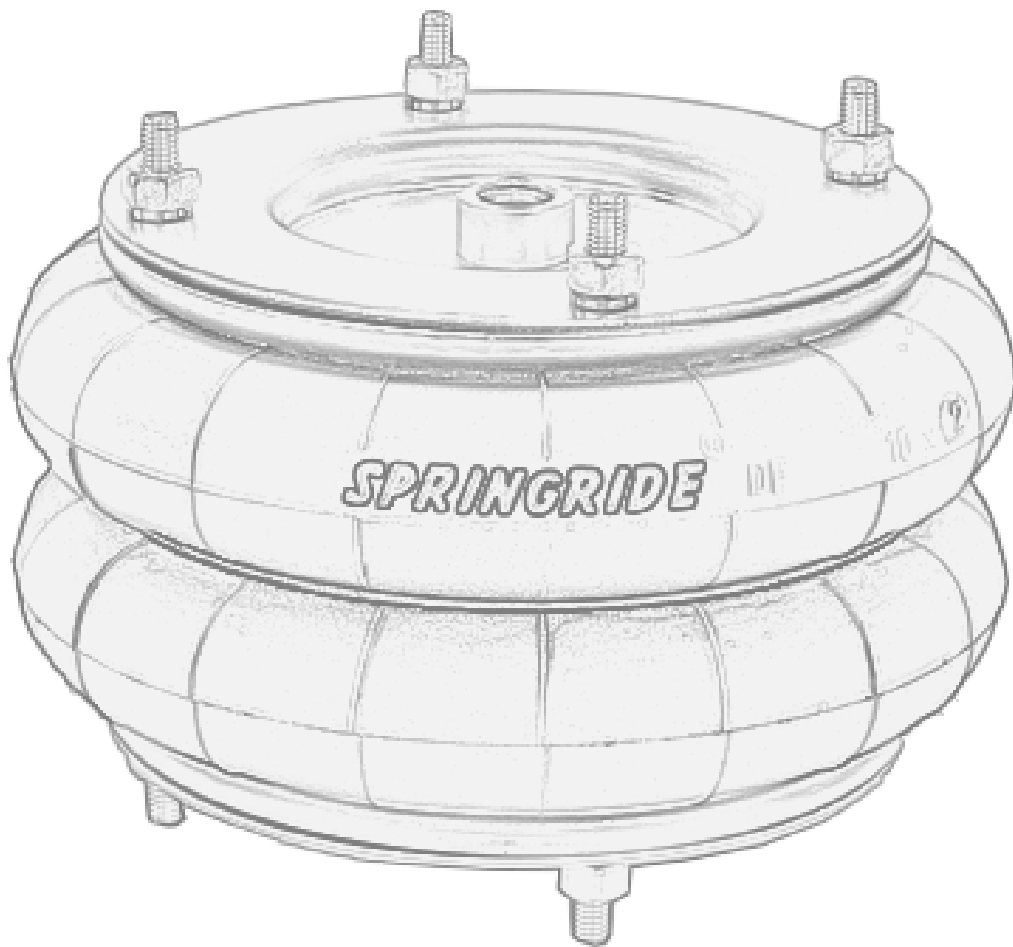
It is the responsibility of customers to be perfectly informed of these characteristics, to take these characteristics into consideration and to ensure the passing on of this information to users. No modification can be brought to DUNLOP merchandise which are intended to be resold or used in their present state.

The liability of DUNLOP cannot be incurred in the event of an unsuitable and/or abnormal installation or use of the said products."

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