Air springs

EUROPART Premium Parts

- Air springs
- Air spring bellows
- Screw sets

EUROPE'S NO. 1 FOR TRUCK, TRAILER, VAN AND BUS SPARE PARTS!

EUROPART.NET

Spotlight on ...

EUROPART Premium Parts
Air springs

Your success is our goal!

In the commercial vehicle industry, air suspension offers an efficient solution for improved driving comfort, increased load safety and increased economy. By using compressed air instead of conventional mechanical springs, unevenness on the road is significantly better levelled out. This not only ensures a noticeable reduction in vibrations and shocks in the driver‘s cab, but also protects sensitive goods from damage during transport.

The advantages of our Premium Parts

- Production to the highest automotive standard, certified and continuously monitored, IATF 16949:2016
- State-of-the-art production facilities:
  - 100% controls over the entire production process
  - Continuous improvement of process capability
  - Regular tests such as salt spray test, characteristic line test, burst test, service life test, leakage and deformation test
- High level of product and process expertise; resulting from many years of close cooperation with OE original equipment manufacturers
- Broad product portfolio: Cab bellows/damper, bi-fold and tri-fold bellows, chassis bellows, lift axle bellows
- Ongoing further development of the product range in line with the requirements and needs of the IAM
- Vulcanisation using the „multipoint heating“ (steam process)

3-year manufacturer‘s warranty

A strong performance promise:
Beyond the legal requirements of a one-year warranty.
We grant a full 3-year manufacturer‘s warranty!

>750.000
equipped vehicles in the last 3 years

70 %
Premium Parts quota

28
countries

30
years of Premium Parts expertise

76
years of customer service

200
references and more available from stock

3
years manu-facturer's warranty

View the entire range now at **ewos.net**

You can find all information about our EUROPART Premium Parts here:

EUROPART.NET

How do air and steel springs differ?

EUROPART explains:

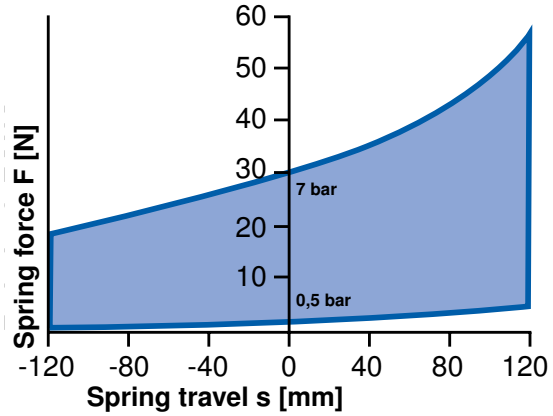
The spring characteristic curve of a steel spring can generally be described by a straight line in the force-displacement diagram. Air and gas springs, on the other hand, are characterised by a set of curves. The maximum operating pressure represents the upper limit in the curve, the minimum operating pressure the lower limit. In the right-hand diagram below, this area is coloured blue.

Steel springs operating according to the moulded suspension principle can therefore only be optimally designed for a specific load condition. This is usually the loaded state. Consequently, this spring is too hard under partial load and when unloaded.

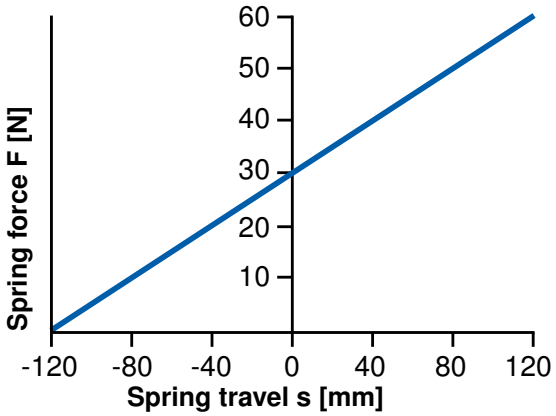
Air or gas springs, which work according to the volume suspension principle, adjust to the load condition of the vehicle by varying the operating pressure.

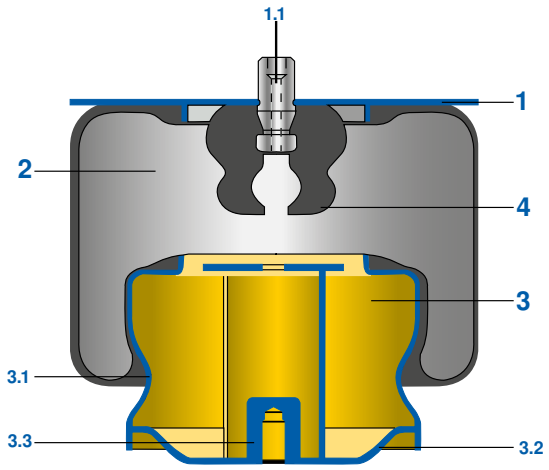
How is an air spring formed?

Characteristic curve of an air spring



Characteristic line of a leaf spring





The figure shows the individual components of an air spring using the example of air bellows with sealing cones on both sides.

1. Cone plate
1.1 Fixing bolts with air connection
2. Air spring bellows
3. Rolling piston
3.1 Piston skirt
3.2 Base plate
3.3 lower attachment
4. Buffer

Overview of the quality benefits of EUROPART air springs

EUROPART checks and documents

All input materials of the EUROPART Premium Parts air springs, such as plastic pistons, metal pistons, rubber bumpers, metal plates and calendered fabric are subjected to comprehensive quality control. Rubber compounds are delivered with material certificates and are additionally tested by authorised external test laboratories. Plastic parts, such as pistons are also examined externally for elasticity and bursting behaviour. The tensile strength and tearing strength of the rubber is ensured by regular tests. One extremely important criterion of rubber is the density of the material. All delivered rubber materials are tested using a rheometer test according to its formula specifications, and are only approved for production if the material complies with the specifications.

Periodic (continuous) tests

Salt spray test

The coatings of metal parts are tested for corrosion resistance by means of a salt spray test before production starts and the series is released. The original equipment manufacturer specification is 250 hours, and series approval only occurs at a value of 400 hours or more.

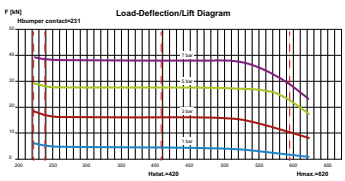
Continuous checks and calibration of tools

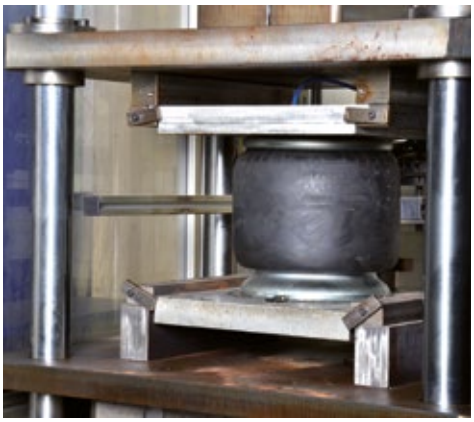
All air spring bellows are fully inspected visually for faults at every workstation.

All metal headplates are fully tested according to the crimping process for concavity and convexity. The air spring must not show any concavity and convexity, as this would mean studs could not be assembled on the chassis.

All crimped air springs are fully checked in the water tank under pressure for imperviousness.

Characteristic curve (space requirement):



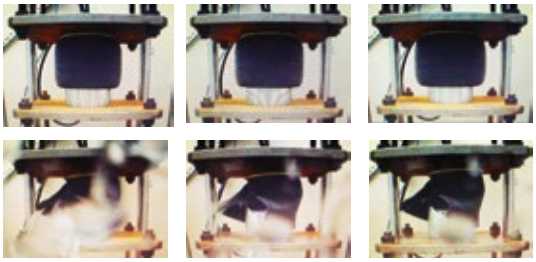


All air springs have a specific space requirement on the vehicle (or chassis). So as not to exceed this space requirement, all air springs are subject to a characteristic curve test before series production. The air spring systems are tested here using the original equipment manufacturer specification at minimum, maximum and static height (installation height) at 1, 3, 5 and 7 bar load changes for specification characteristic curves (volume/force). These are recorded on force path diagrams. This test is to check the space requirement under load change (preventing damage to the air spring caused by contact with the chassis).

Service life test (fatigue test):

The air spring is installed at the target vehicle height and filled with 5 bar air pressure. The fatigue test takes place under the natural frequency of 3.3 Hz at cycles of ± 50 mm. A specification of the original equipment is that air springs carry out at least 3,000,000 cycles without damage to the outer structure or the assembly parts. This fatigue test is carried out for comparative purposes (brand manufacturer vs. EUROPART).

Burst test:



Burst tests are carried out on new air spring systems before series production and in air springs in current series to establish their maximum load capacity and to determine whether these meet the legal requirements. These tests are used both in developing a new air spring design as well as to determine the maximum load capacity. This means specifications of new designs can be determined and the operating conditions of existing designs can be tested.

The air spring is filled with water pressure until they finally burst. The values are recorded and documented by a manometer. This test is carried out and registered under the most stringent safety precautions in a closed area. As air pressure can lead to severe injury or death, water pressure is used instead of air pressure.

The original equipment specification for the maximum load is 20 bar. EUROPART air springs significantly exceed this value (>25 bar).

Brief summary:

- \\\ all production processes are fully checked, documented step-by-step and archived.
- \\\ continuous documentation and labelling on products ensure every individual component, the batch and the individual employee can be accurately traced at all times.
- \\\ We have a quality management system in accordance with the internationally recognised IATF 16949:2016 standard, which is periodically reviewed by independent auditors
- \\\ We have systematically complete documentation of all processes and **continuously improve our process capabilities**

SUITABLE FOR MERCEDES-BENZ


1


2


3


4


5


6


7


8


9


10


11

Air spring

Suitable for	Version	Piston ∅	Screw set	Fig.	Order no	Comparative no
Mercedes-Benz Actros 2/3, Axor 1/2/3	with steel piston	265 mm	K036	1	**1788 418 324**	Conti 4183 N P28
Mercedes-Benz Actros 1/2/3, Arocs, Axor 1/2/3, Atego 1 (18 t), Atego 1, Econic 1	with steel piston	200 mm	K036	2	**1788 439 022**	Conti 4390 N P22
Mercedes-Benz Atego 1/2/4	with steel piston	250 mm	K021	3	**1788 418 521**	Conti 4185 N P21
Mercedes-Benz Atego 1/2/3/4	with steel piston	280 mm	K021	4	**1788 475 729**	Conti 4757 N P29
Mercedes-Benz Atego 1/2	with steel piston	190 mm		5	**1788 478 621**	Conti 4786 N P21
Mercedes-Benz Actros 4, Arocs, Antos	with plastic piston	200 mm		6	**1788 612 246**	Conti 6122 N P46
Mercedes-Benz Actros 4, Arocs, Antos, Econic 2	with plastic piston	225 mm		7	**1788 612 048**	Conti 6120 N P48
Mercedes-Benz Actros 4, Arocs, Antos, Econic 2	with plastic piston	168 mm		8	**1788 612 144**	Conti 6121 N P44
Mercedes-Benz Actros 4, Arocs, Antos	with plastic piston	200 mm		9	**1788 612 247**	Conti 6122 N P47
Mercedes-Benz DCA, DLS	with plastic piston	200 mm	K011	10	**1788 415 704**	Conti 4157 N P14
Mercedes-Benz HT250	with steel piston	260 mm	K027	11	**9463 280 401**	Phoenix 1 DK25-1

SUITABLE FOR MERCEDES-BENZ/ EVOBUS


1


2


3

Air spring bellow

Suitable for	Fig.	Order no	Comparative no
Mercedes-Benz Sprinter Minibus, Vario	1	**1780 819 003**	Conti 819 N
Mercedes-Benz Tourismo, Cityliner	2	**1715 661 003**	Conti 661 N
Mercedes-Benz Integro, Intouro, Tourismo, Travego	3	**1780 782 003**	Conti 782 N

SUITABLE FOR MAN


1


2

Air spring

Suitable for	Version	Piston ∅	Screw set	Fig.	Order no	Comparative no
MAN TGA, TGS	with steel piston	200 mm	K033	1	**1788 488 406**	Conti 4884 N1 P06
MAN TGX, TGA, TGS	with steel piston	176 mm	K033	2	**1788 488 205**	Conti 4882 N1 P05

SUITABLE FOR MAN


1


2


3


4

Air spring bellow

Suitable for	Version	Screw set	Fig.	Order no	Comparative no
MAN TGX (2013-), TGX, TGS, TGA	without fastening element	K033	1	**1788 188 800**	Conti 1888 N
MAN F2000, M2000M/L, L2000, F90	without fastening element	K033	2	**1716 162 002**	Conti 882 N1
MAN TGX, TGS, TGA	with plate, without piston	K033	3	**1788 470 501**	Conti 4705 N1 P01
MAN F2000, M2000, L2000	without fastening element		4	**1716 202 002**	Conti 1885 N1

SUITABLE FOR IVECO


1


2


3


4


5

Air spring bellow

Suitable for	Fig.	Order no	Comparative no
Iveco EuroCargo I/II	1	**2590 002 127**	CF Gomma 1SC 260-32
Iveco Stralis II/III (Hi-Way), EuroStar, EuroTech	2	**1715 250 190**	CF Gomma 1SC 250-19
Iveco Stralis II AD	3	**1715 323 360**	CF Gomma 1S 323-36
Iveco Stralis II AS, EuroTech	4	**1715 270 190**	CF Gomma 1S 270-19
Iveco Eurostar	5	**1788 787 003**	Conti 945 N

Life cycle of an air spring explained in diagrams

An air bellow changes its shape when in operation. It moves away from the vulcanisation shape and goes into operating shape. A new part (Fig. 1) therefore often looks different to the bellows being replaced (Figs. 2, 3). The diameter increases in comparison to the new part and approaches the operating diameter. In contrast with the diameter, the height decreases.


1


2


3

SUITABLE FOR RENAULT, VOLVO, IVECO


1


2


3


4


9


10


11


12


17


18


19

EURO PART

Air spring

Suitable for	Version	Piston ∅	Screw set	Fig.	Order no	Comparative no
Volvo FH III (2013-), FH II (2002-2013), FH12 (1994-), FH16 II (-2006), FM III (2013-), FM II (2002-2013), FM12, FM10, FM9, FM7 (1999-)	with steel piston	168 mm	K005	1	**1700 036 416**	Conti 6608 N P01
Volvo FH III (2013-), FH16 III (2013-), FM III (2012-), FMX II (2012-), FMX I (2010-)	with steel piston	197 mm		2	**1788 456 002**	Conti 4560 N P02
Volvo FH III (2013-), FH16 III (2013-), FM III (2012-), FMX II (2012-), FMX I (2010-)	with steel piston	197 mm		3	**1788 456 102**	Conti 4561 N P02
Volvo FH III (2013-), FH16 III (2013-), FM III (2012-), FMX II (2012-), FMX I (2010-)	with steel piston	168 mm		4	**1788 457 002**	Conti 4570 N P02
Volvo FH III (2013-), FH16 III (2013-), FM III (2012-), FMX II (2012-), FMX I (2010-)	with steel piston	168 mm		5	**1788 457 102**	Conti 4571 N P02
Volvo FH II (2002-2013), FH16 II (2002-2006), FH12 (1993-), FM II (2002-2013), FM12, FM10, FM9, FM7 (1999-)	with steel piston	197 mm	K005	6	**6170 582 206**	Conti 6605 N P01
Volvo FH II (2002-2013), FH12 (1993-), FM II (2002-2013), FM12, FM10, FM9, FM7 (1999-), FL6 (-2002)	with steel piston	197 mm	K005	7	**1788 660 601**	Conti 6606 N P01
Volvo FH II (2002-2013), FH12 (1993-), FM II (2002-2013), FM12, FM10, FM9, FM7 (1999-), FL6 (-2002)	with steel piston	168 mm	K005	8	**1788 660 701**	Conti 6607 N P01
Volvo FH12, FH16 I, FM7 I (-2001), FM12, FL7, FL10, FL12	with steel piston and cover	189 mm	K006	9	**1788 471 300**	Conti 4713 N P02
Volvo FH, FM	with steel piston	225 mm		10	**1788 458 002**	Conti 4580 N P02
Volvo FH, FM	with steel piston	197 mm	K018	11	**1788 456 203**	Conti 4562 N P03
Renault Magnum II, Premium I **Volvo** FH, FM	with steel piston	187 mm	K018	12	**1714 191 002**	Conti 4915 N P06
Volvo B7R LE, B12B, B12R	with steel piston	197 mm		13	**1788 135 832**	Conti 6604 N P01


5


6


7


8


13


14


15


16


20


21


22


23

Suitable for	Version	Piston ∅	Screw set	Fig.	Order no	Comparative no
Renault Magnum II, Premium I/II, Midlum I/II (18 t) **Volvo** FH, FM, FL I/II	with steel piston	228 mm		14	**1788 491 210**	Conti 4912 N P10
Renault Magnum, Premium **Volvo** FE II (2013-)	with steel piston	200 mm		15	**1788 491 901**	Conti 4919 N P01
Renault Magnum I, Premium I	with steel piston	228 mm		16	**1788 491 207**	Conti 4912 N P07
Iveco EuroCargo I/II	with steel piston	175 mm		17	**1788 490 464**	CF Gomma 1SC 260-32
Iveco Stralis 400/440 EFP/P4x2	with plastic piston	195 mm		18	**1789 588 662**	
Iveco EuroCargo	with plastic piston	240 mm		19	**1788 587 313**	Firestone W01 M58 7313
Iveco Stralis 400/440 EFP/P4x2	with plastic piston	195 mm		20	**1789 588 663**	Firestone W01 M58 8558
Iveco Stralis 400/440 EFP/P4x2	with plastic piston	195 mm		20	**1789 588 660**	Firestone W01 M58 8555
Iveco Stralis 400/440 EFP/P4x2	with plastic piston	195 mm		21	**1789 588 661**	Firestone W01 M58 8556
Iveco EuroCargo I/II/III/IV	with steel piston			22	**1788 077 415**	
Iveco Stralis II AS, EuroTech	without fastening element			23	**1789 786 003**	Conti 944 N

SUITABLE FOR DAF


1


2


3


4


5


6


7


8


9

EURO PART

Air spring

Suitable for	Version	Piston ∅	Screw set	Fig.	Order no	Comparative no
DAF XF105, XF95, CF85, CF75, CF65, LF55, LF45	with steel piston	192 mm	K008	1	**1788 889 002**	Conti 889 M K2
DAF XF105, XF95, CF85, CF75, CF65, LF55, LF45	with steel piston	230 mm		2	**1780 836 021**	Conti 836 M2 K1
DAF XF105, XF95, CF85, CF75, CF65	with steel piston	230 mm		3	**1780 836 001**	Conti 836 M K1
DAF XF105, XF95, CF85, CF75	with steel piston	192 mm	K008	4	**1788 588 683**	Conti 887 M K1
DAF LF Euro 6 (2013-), LF45 II (2006-)	with steel piston	240 mm		5	**1788 012 301**	Phoenix 1 D 23 G-1
DAF CF 65, CF 75, CF 85, LF 55, LF Euro 6, XF 105, XF Euro 6	with steel piston	230 mm		6	**1788 836 010**	Conti 836 N P10
DAF XF 95, XF 105, CF	with steel piston			7	**1788 391 318**	Pirelli 1 T 19 E-2
DAF CF Euro 6, XF Euro 6	with steel piston	192 mm		8	**1789 643 101**	Conti 6431 N P01
DAF CF Euro 6, XF Euro 6	with steel piston	230 mm		9	**1789 675 402**	Conti 6754 N P02

The manufacture of air springs under the microscope: Textile cutting process

- high-grade raw material composition
- continuous incoming goods inspections ensure the highest quality
- exclusive use of raw materials from the same sources such as renowned manufacturers

SUITABLE FOR SCANIA


1


2


3


4


5


6


7


8


9

EUROPART

Air spring

Suitable for	Version	Piston ∅	Screw set	Fig.	Order no	Comparative no
Scania R 730, R 620, R 580, R 560, R 500, R 480, R 470, R 440, R 420, R 400, R 380, R 360, R 340, R 320, R 310, R 270, R 230, G 480, G 470, G 440, G 420, G 400, G 380, G 360, G 340, G 320, G 310, G 280, G 270, G 230, P 500, P 420, P 400, P 380, P 360, P 340, P 320, P 310, P 280, P 270, P 230, T 580, T 500, T 470, T 420, T 380, T 340, 164, 144, 124, 114, 94	with steel piston	228 mm	K004	1	**1788 491 302**	Conti 4913 N P02
Scania R 730, R 620, R 580, R 560, R 520, R 500, R 490, R 480, R 470, R 460, R 450, R 440, R 420, R 410, R 400, R 380, R 370, R 360, R 340, R 310, R 270, R 230, G 620, G 490, G 480, G 470, G 460, G 450, G 440, G 420, G 410, G 400, G 380, G 370, G 360, G 340, G 320, G 310, G 280, G 270, G 250, G 230, P 480, P 460, P 450, P 440, P 420, P 410, P 400, P 380, P 370, P 360, P 340, P 320, P 310, P 280, P 270, P 250, P 230	steel piston	228 mm	K004	2	**1788 670 002**	Conti 6700 N P02
Scania R, G, P, 164, 124, 114, 94, 143, 113, 93	with plastic piston	238 mm		3	**1788 362 510**	Firestone W01 M58 8124
Scania R 730, R 620, R 580, R 560, R 520, R 500, R 490, R 480, R 470, R 450, R 440, R 420, R 410, R 400, R 380, R 370, R 360, R 340, R 310, R 270, R 230, G 490, G 480, G 450, G 440, G 420, G 410, G 400, G 380, G 370, G 360, G 340, G 320, G 310, G 280, G 270, G 250, G 230, P 500, P 450, P 440, P 420, P 410, P 400, P 380, P 370, P 360, P 340, P 320, P 310, P 280, P 270, P 250, P 230, T 580, T 500, T 470, T 420, T 380, 164, 144, 124, 114, 94	with steel piston	249 mm		4	**8000 012 731**	Phoenix 1 DF 23 D-1
Scania R 730, R 620, R 580, R 560, R 500, R 480, R 470, R 440, R 420, R 400, R 380, R 360, R 340, R 310, R 270, R 230, G 480, G 440, G 420, G 400, G 380, G 360, G 340, G 320, G 310, G 280, G 270, G 230, P 230, P 250, P 270, P 280, P 420, P 400, P 380, P 360, P 340, P 320, P 310, T 580, T 500, T 470, T 420, 164, 144, 124, 114, 94	with steal piston	249 mm		5	**8000 012 741**	Phoenix 1 DF 23 C-1
Scania R, G, P	with plastic piston	222 mm		6	**1788 932 592**	Firestone W01 M58 8653
Scania 3, 4, G, K, L, P, R, S, P/R/T, LE, LF, Citywide LE, LF, Omnicity, Omnilink, Oniexpress, Touring	with steel piston	222 mm		7	**3002 421 410**	Firestone W01 M58 8633 Firestone 1T 17HR
Scania 144, 124, 143, 113, 93	with steel piston	260 mm		8	**1788 785 003**	Conti 4813 N P07
Scania F, K, N, P, G, R, T, K94, K114, K124	with steel piston	205 mm		9	**8000 012 752**	Phoenix 1 DF 20 A-2

SUITABLE FOR SAF


1


2


3


4


5


6


7


8


9


10


11


12


13


14


15

Air spring

Suitable for	Version	Piston ∅	Screw set	Fig.	Order no	Comparative no
SAF 1608	double bellows, with plate		K023	1	**5053 302 115**	SAF 4 229 1004 00
SAF 2618	with plastic piston	240 mm	K014	2	**5043 303 718**	SAF 3 229 0007 02
SAF 2618 V	with plastic piston	240 mm	K014	3	**5043 303 230**	SAF 3 229 0029 00
SAF 2619 V	with plastic piston	240 mm	K013	4	**5043 301 144**	SAF 3 229 0033 00
SAF 2621 V	with plastic piston	240 mm	K013	5	**5043 301 149**	SAF 3 229 0038 00
SAF 2626 V	with plastic piston	240 mm	K013	6	**5043 301 140**	SAF 3 229 0039 00
SAF 2918 V	with steel piston	260 mm	K001	7	**5043 301 138**	SAF 3 229 0027 00
SAF 2918 V	with steel piston	260 mm		8	**5043 391 113**	SAF 2 229 2102 00
SAF 2919 V	with plastic piston	260 mm	K014	9	**5043 301 153**	SAF 3 229 0042 00
SAF 2923 VK	with steel piston	260 mm	K001	10	**5043 301 142**	SAF 3 229 0031 00
SAF 2923 E2	with steel piston	240 mm	K013	11	**5043 391 114**	SAF 2 229 0003 00
SAF 2924 V	with plastic piston	250 mm	K014	12	**5043 301 152**	SAF 3 229 0041 00
SAF 2926	with steel piston	260 mm	K002	13	**5043 301 124**	SAF 3 229 0013 00
SAF 2926 V	with steal piston	260 mm	K001	14	**5043 301 141**	SAF 3 229 0030 00
SAF 2972 V	with plastic piston	260 mm		15	**5043 301 158**	SAF 3 229 0047 00

SUITABLE FOR BPW

Air spring

Suitable for	Version	Piston ∅	Screw set	Fig.	Order no	Comparative no
BPW 30 K	with plastic piston	200 mm	K029	1	**6165 305 432**	BPW 05.429.43.21.0
BPW 36	with plastic piston	250 mm	K029	2	**6165 305 462**	BPW 05.429.43.51.0
BPW 30	with plastic piston	200 mm	K029	3	**6165 305 431**	BPW 05.429.43.20.0
BPW 36 K	with plastic piston	250 mm	K029	4	**6165 305 452**	BPW 05.429.43.41.0
BPW 36-1	with steel piston	250 mm	K029	5	**6165 305 270**	BPW 05.429.41.69.0
BPW 30 K	with plastic piston	197 mm	K029	6	**6165 305 434**	BPW 05.429.43.23.0
BPW 30 K	with plastic piston	203 mm		7	**6165 305 497**	BPW 05.429.43.86.0
BPW 30	with plastic piston	200 mm		8	**6165 305 496**	BPW 05.429.43.85.0
BPW 30	with plate, without piston		K029	9	**6165 305 114**	BPW 05.429.40.03.0

The manufacture of air springs under the microscope: Winding process

Coiling process/manufacturing (manual)

\\\ Air spring bellows can be coiled both manually and automatically

\\\ Trapped air between the individual layers must be avoided

Coiling process/manufacturing (automatic)

SUITABLE FOR WEWELER/SCHMITZ


1


2


3


4


5

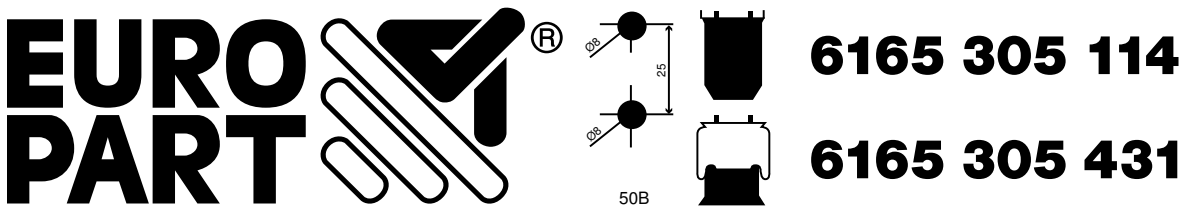

6


7

Air spring

Version	Piston ∅	Screw set	Fig.	Order no	Comparative no
double bellows, with plate		K023	1	**1788 586 910**	Schmitz 016793 Weweler US06910F
with steel piston	260 mm	K028	2	**1722 012 805**	Schmitz 017685 Weweler US04031
with plastic piston	262 mm	K009	3	**1788 750 999**	Schmitz 750999 Weweler US06285
with steel piston	260 mm	K028	4	**1788 402 800**	Schmitz 015323 Weweler US04028G
with plastic piston	262 mm	K009	5	**7777 510 650**	Schmitz 751065 Weweler US06316
with plastic piston	205 mm	K038	6	**1788 375 396**	Schmitz 1375396
with plastic piston	229 mm		7	**1788 077 929**	Schmitz 1077929

Identification



In future on selected air springs and air bellows suitable for BPW you will find both item numbers, those of the complete air spring and of the air bellows. In the example shown, item number 6165 305 114 is for the air bellows without piston and 6165 305 431 for the complete air bellows with piston.
All types are also obtainable without piston.

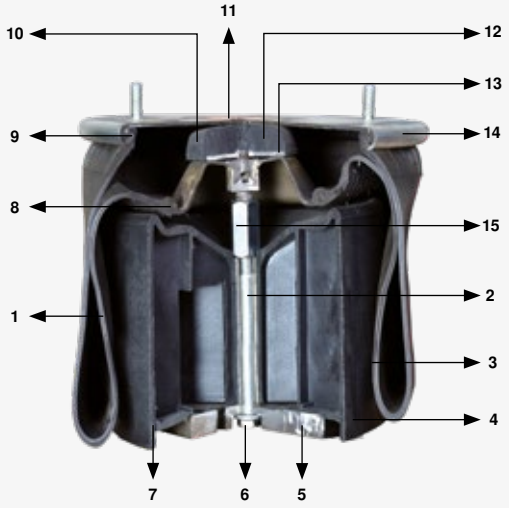
Comparing air springs

The air springs are installed at the target vehicle height and filled with 5 bar air pressure. The fatigue test takes place under the natural frequency of 3.3 Hz at cycles of ± 50 mm. A specification of the original equipment is that air springs carry out at least 3,000,000 cycles without damage to the outer structure or the assembly parts. This fatigue test is carried out for comparative purposes (EUROPART original equipment).

EUROPART air spring

Weight: 13.6 kg

The EUROPART air spring was assembled together with an air spring from a well-known brand manufacturer. Both air springs were tested at a natural frequency of 3.3 Hz with cycles of ± 50 mm at 5 bar internal pressure on the rocker. Both air springs outperformed the specification of the original equipment. Both air springs were disassembled after 4,250,000 cycles

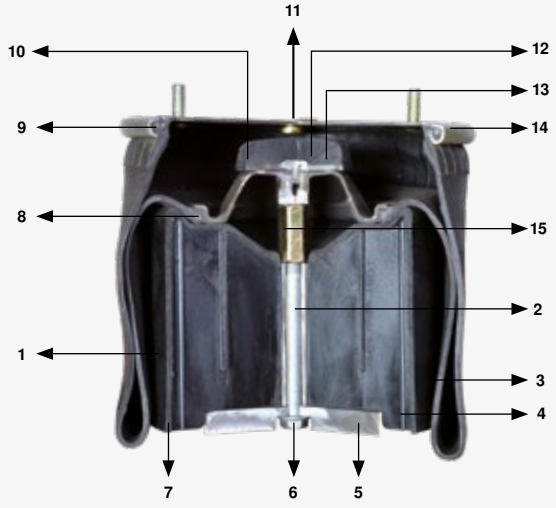


1 Rubber material: NR/BR (natural rubber/ butadiene rubber)
2 Length of threaded bolts: 160.09 mm
3 1 x inner rubber, 2 x fabric ply
1 x outer rubber (wall thickness 4.32 mm)
4 Material: Polyamide 66 + 30 % glass fibre (PA66 + 30 % glass fibre)
5 Flank thickness: 20 mm
6 Hardness class: 10.9 HR
Plating: Zn DIN 960
7 Wall thickness: 5.5 mm
8 Solid wire core: ∅ 6 mm
9 Solid wire core: ∅ 5 mm
10 Buffer height: 30.09 mm
11 Steel plates: 3 mm
12 Hardness of rubber buffer: 80 shore
13 Buffer rim: 3.5 mm
14 Plating: Chrome III
Thickness of plating: 8 – 30 µm
15 Length of hexagonal bolts: 51.11 mm

Air spring from a well-known manufacturer

Weight: 13.6 kg

Neither air springs malfunctioned in the test and did not lose any compressed air. Assembly parts, such as headplates and pistons, did not exhibit any damage. Small blisters formed only on the lower shoulder area as a result of the piston being rubbed. Both air springs had the same appearance following the fatigue test and the same properties during use.



1 Rubber material: NR/BR (natural rubber/ butadiene rubber)
2 Length of threaded bolts: 160.01 mm
3 1 x inner rubber, 2 x fabric ply
1 x outer rubber (wall thickness 4.31 mm)
4 Material: Polyamide 66 + 30 % glass fibre (PA66 + 30 % glass fibre)
5 Flank thickness: 20 mm
6 Hardness class: 10.9 HR
Plating: Zn DIN 960
7 Wall thickness: 5.5 mm
8 Solid wire core: ∅ 6 mm
9 Solid wire core: ∅ 5 mm
10 Buffer height: 30.11 mm
11 Steel plates: 3 mm
12 Hardness of rubber buffer: 80 shore
13 Buffer rim: 3.5 mm
14 Plating: Chrome III
Thickness of plating: 8 – 30 µm
15 Length of hexagonal bolts: 51.15 mm

SUITABLE FOR GIGANT


1


2


3

Air spring

Version	Piston ∅	Fig.	Order no	Comparative no
with plastic piston		1	**1723 012 005**	Gigant 709377003
with steel piston	256 mm	2	**5210 166 252**	Gigant 700166252
with steel piston		3	**5210 166 228**	Gigant 700166228

SUITABLE FOR MERITOR


1


2


3


4

Air spring

Version	Piston ∅	Screw set	Fig.	Order no	Comparative no
double bellows, with plate		K023	1	**1788 586 910**	Meritor 21221395
with plastic piston	200 mm	K025	2	**7600 001 080**	Meritor 21222442
with plastic piston	200 mm	K011	3	**1788 415 704**	Meritor 21221307
with plastic piston	205 mm		4	**1788 038 608**	Meritor 21229214

SUITABLE FOR FRUEHAUF


1


2


3

Air spring

Version	Piston ∅	Screw set	Fig.	Order no	Comparative no
with aluminium piston	258 mm	K030	1	**1700 012 015**	Fruehauf U-JB 0203001
with plastic piston	260 mm		2	**9180 003 688**	Fruehauf UJB 0358001
triple bellows			3	**1700 026 660**	Conti FT 412-32 S Dunlop SP 2666 (12 x 3)

SUITABLE FOR ROLFO


1


2

Air spring

Version	Piston ∅	Fig.	Order no	Comparative no
with steel piston	260 mm	1	**9180 001 190**	Phoenix 1DK 23 K-28
3-fold		2	**1788 000 033**	Dunlop SP12350

SUITABLE FOR AXLE LIFTS


1

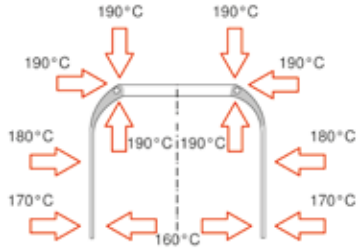

2


3

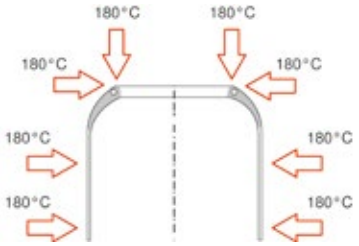
Air spring

Suitable for	Version	Piston ∅	Screw set	Fig.	Order no	Comparative no
SAF	double bellows, with plate		K023	1	**5053 302 115**	Conti 62711
Fruehauf	with steel piston	260 mm		2	**9180 001 190**	Phoenix 1DK 23 K-28
Rolfo	3-fold			3	**1788 000 033**	Dunlop SP12350

The manufacture of air springs under the microscope: Vulcanisation



Multipoint heating process
Different temperatures act on the air springs



Elektronic process
Uniform temperature

All EUROPART air springs are produced according to the multipoint heating process. This is a gas process where different parts of the air springs may be heated to varying high temperatures over a period of 9 to 11 minutes. As a result, some areas are heated to higher temperatures than others, for example areas where rubber is in contact with metal. The process therefore has considerable advantages over the electric procedure, which lasts 30 minutes and during which a single temperature is used. If the air springs are heated too much, the rubber burns; too low a temperature can result in unheated patches and therefore premature failure of the air springs.

The manufacture of air springs under the microscope:

Crimping process

Crimped plate (headplate) is tensioned in the crimping machine (magnetic uptake).

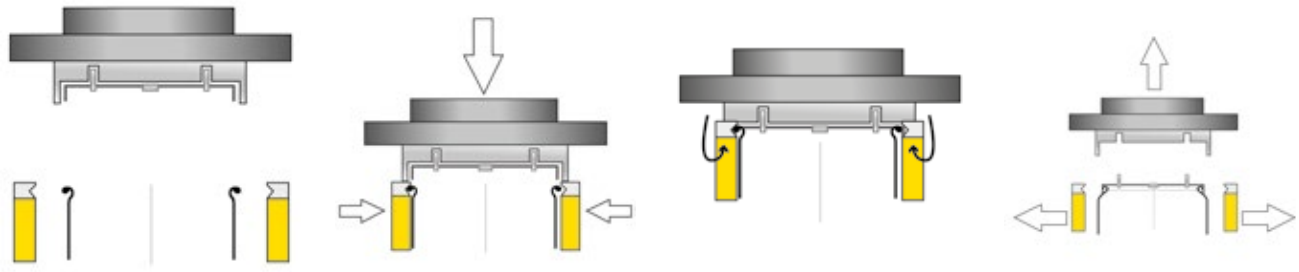
The air spring is put into the press.

The holding jaws close and the tool prepares the upper cone bead for the process.

The plate holder moves down and flares the air spring.

The press is then opened. The crimped air spring can now be removed.

The illustrations below summarise the crimping process:



Check for concavity/convexity after crimping process

The air springs and air bellows shown here are just a selection from our extensive range. You can find more items for your vehicle in EWOS at **www.europart.net** or at your EUROPART branch.

A close look at the manufacture of an air spring: piston assembly

Piston assembly machine - air springs without base plate

Piston assembly machine - air springs with vulcanised base plate or clamping plate

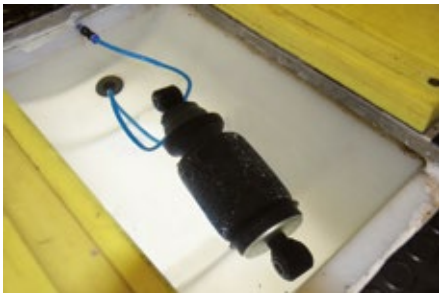
The manufacture of air springs under the microscope:

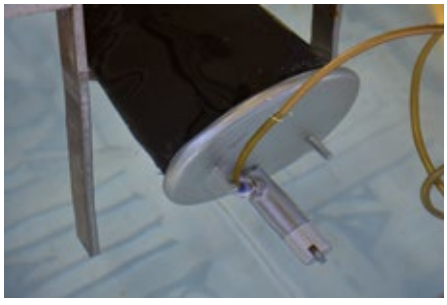
Assembly process

Ring clamping machine

Carding machine

Total leakage monitoring in the water tank under 1.0–1.5 bar air pressure





All air spring bellows are fully inspected visually for faults at every workstation.

All crimped air springs are fully checked in the water tank under pressure for imperviousness.

Recommendations for storing air bellows

Extract from DIN 7716

The regulations for storing elastomers refer to the DIN standard 7716 (Rubber products, requirements for storage, cleaning and maintenance). Here you will find an extract with the most important conditions.

1. General information on storage

Properly stored and treated rubber products - excluding unvulcanised rubber compounds - generally retain their properties for several years. A large proportion of rubber products undergo changes to their physical properties when not handled correctly or are kept in unfavourable storage conditions.

For example, the effect of heat, moisture, light, oxygen, ozone, solvents or storing under tension can cause their service life to shorten or can become unusable due to:

– excessive hardening
– softening
– permanent deformation
– flaking
– tearing
– other surface damage

2. Storage rooms

The storage room should be dry and cool with as little dust as possible and only moderately ventilated. Storage in the open air without sufficient protection from the elements is prohibited.

3. Heating

If rubber products are stored in heated storage rooms, they have to be shielded from heat sources, whereby there should be at least one metre between the stored goods and the heat source. This distance must be larger in rooms heated by a hot blast stove.

4. Moisture

Storage in damp rooms and the formation of condensation must be avoided. Ideally, the humidity in the storage room will be below 65 %.

5. Lighting

Light can damage the products. For this reason, they should be protected from strong artificial light with a high ultraviolet component and from direct sunlight. Lighting with normal light bulbs is favoured. A red or orange protective coating on the window panes of the storage rooms - but under no circumstances a blue coating - can help to prevent damage caused by light.

6. Oxygen and ozone

The products must also be protected from intensive circulation of air, in particular draughts. Ideally this will be by storage in airtight containers, by packaging or other means. This particularly applies to products such as rubberised materials or cellular materials which have a large surface in relation to their volume. Ozone is particularly harmful to the products. Therefore there must be no facilities which produce ozone in the storage areas. This includes, for example, electric motors or other devices that may cause sparks or other electrical discharges. Vapours and combustion gases that can cause ozone formation by photochemical process must be avoided.

7. Other

Fuel, lubricants, acids, disinfectants, solvents or other chemicals must not be be kept in the storage room under any circumstances. The legal regulations for the storage and transport of flammable liquids apply to rubber solutions. They must be stored in a separate room.

8. Storage and handling

Pressure, draughts or other influences create stresses which can cause permanent deformation of the products and also the formation of cracks. For this reason the products must be stored without stress and without any mechanical influences.

Certain metals, in particular manganese and copper, also have a harmful effect on rubber products. Storing products where they might come into contact with these metals should therefore be prevented. Alternatively, the products can be protected by closure or packaging in a suitable material. This includes anti-static foils or bags made of paper, nylon or polyethylene.

Foils containing plasticisers must also be avoided, as should packaging and covering containing materials whose components contain substances harmful to the products, such as copper or copper alloys, petrol, oil and similar products.

Storage time should be kept as short as possible.

Please observe the safety and storage instructions.

VEHICLE PARTS

- Truck spare parts
- Trailer spare parts
- Light commercial spare parts
- Bus spare parts

WORKSHOP REQUIREMENTS

- Fastening technology
- Workshop utilities
- Workshop Equipment
- Operational safety and environmental protection
- Chemical-technical products
- Tools

Click here to go to our pages

MAY 2025

EUROPART.NET