



Dunlop Air Bellows . . .

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Introduction

Welcome to the Dunlop *Pneuride* range of air bellows. These bellows are used in a wide variety of applications:

Primary Application:

Suspension media in all sorts of vehicles (buses, trucks, trailers, semi trailers, demountable systems, container handling systems, coaches, ambulances, etc).

Secondary Application:

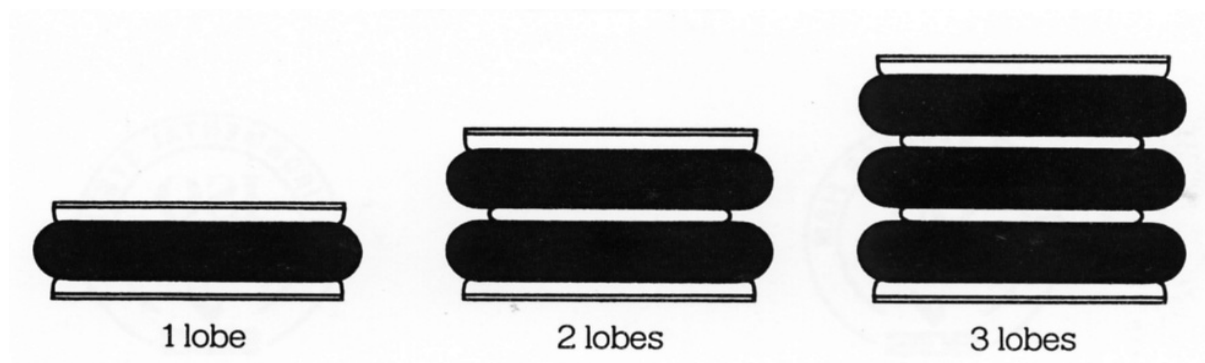
Dunlop *Pneuride* Bellows, whilst originally designed for vehicle applications, have a range of unique characteristics which make them extremely attractive for industrial applications such as pneumatic/hydraulic actuation, isolation mounts, height and level control devices.

Furthermore, although not specifically designed as a noise insulator, *Pneuride* Bellows do reduce noise transmission.

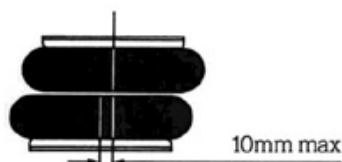
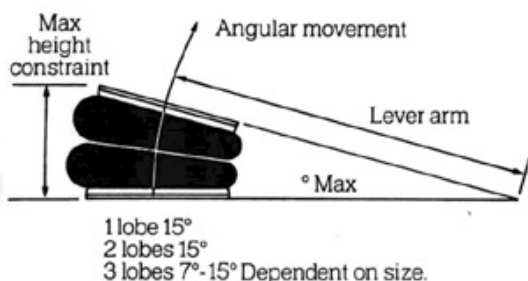
Bellows are produced in a range of sizes from 4½ x 1 up to 21½ x 2.

Lobes

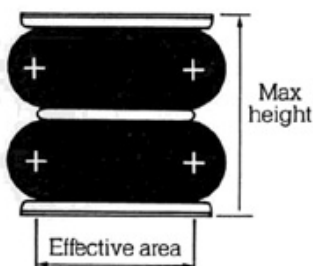
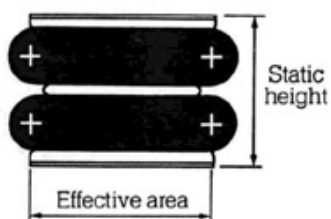
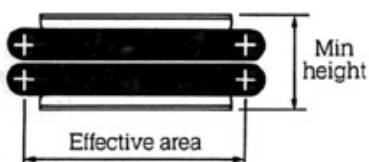
Pneuride Bellows are manufactured using a mixture of elastomers and textile reinforcement which produces a high quality, high performance product. They are frictionless, economical and virtually maintenance free and come packaged in one of three forms: 1, 2, or 3 lobes...



Angular & axial displacement



Key



Conditions of Use

Maximum Working Pressure 8bar

Burst Pressure 25-50bar

Maximum Angle between Top and Bottom Plates, dependent upon size 7°-15°

Maximum Axial Offset 10mm

Precautions to Observe

Do not exceed stated stroke.

Do not inflate assembly when it is unrestricted.

Do not inflate beyond pressures stated without prior consultation with Dunlop.

Respect maximum and minimum heights.

The bellows must be securely fixed.

Do not use without air pressure.

Operating Temperature

Minimum -30°C (-40°C Static)

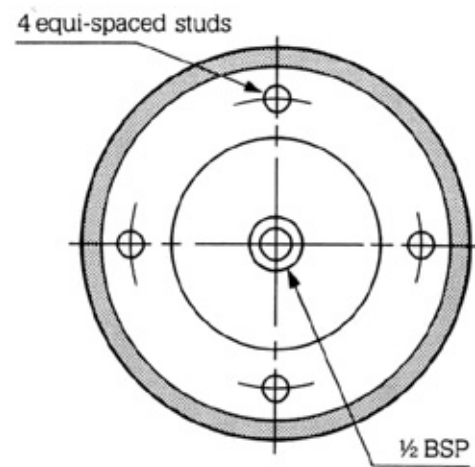
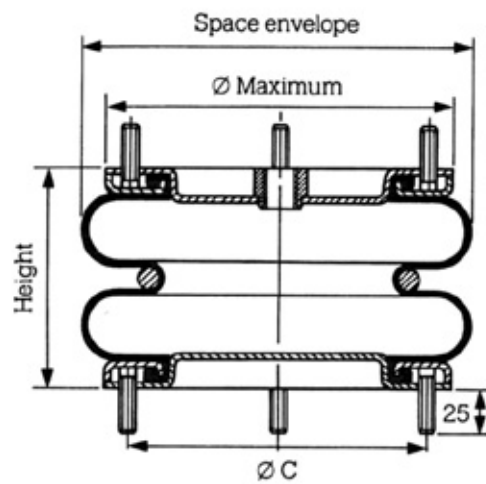
Maximum +70°C (+90°C Static)

Materials

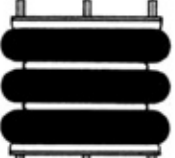
- **Bellows** : Manufactured from various rubbers
- **Metal Parts** : Mild steel protected by zinc passivate and yellow chromate, or cast aluminium

Note

The bellow assemblies can be completely dismantled

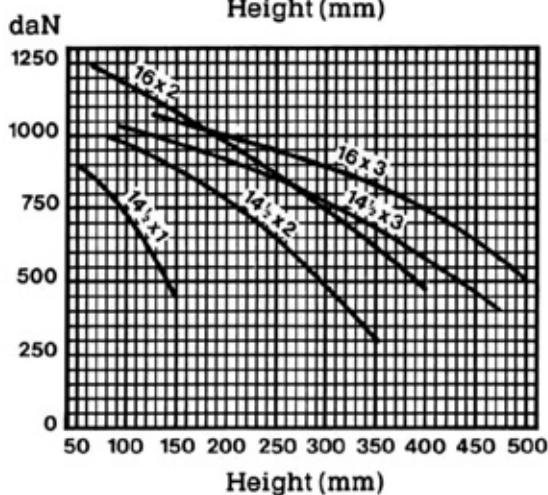
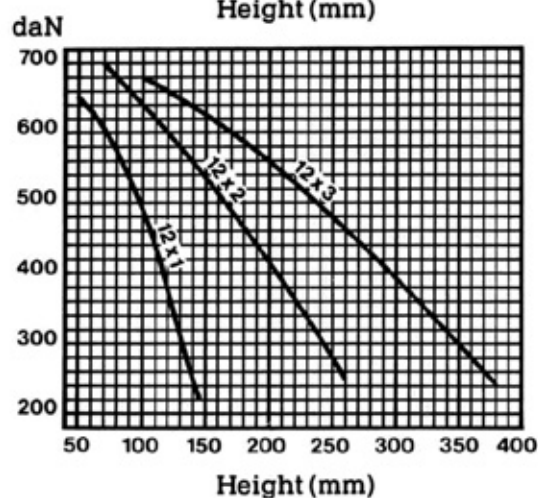
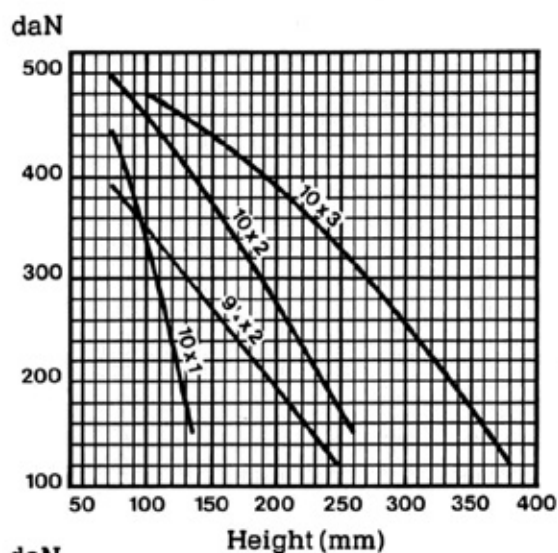
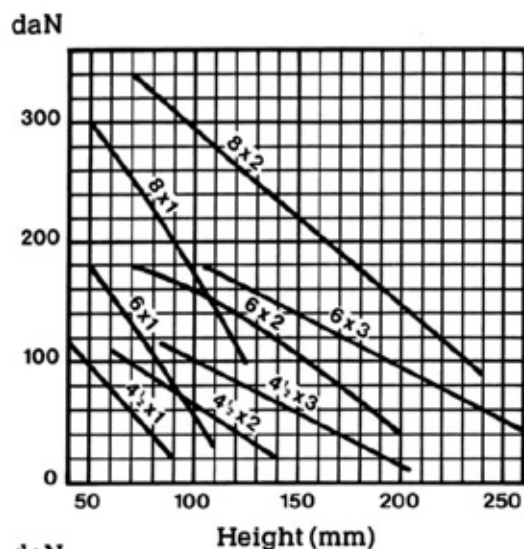


Characteristics

Bellows	Type	Ø Max	Minimum height	Maximum height	Total stroke	Static height	Ø C	Ø Space envelope	Weight in kg
 1 lobe	4½ × 1	125	45	90	45	65	93	140	0,75
	6 × 1	168	58	108	50	80	127	180	1,95
	8 × 1	230	47	120	73	90	156	240	3,05
	10 × 1	280	50	135	85	95	181	295	3,8
	12 × 1	330	50	145	95	95	232	345	4,75
	14½ × 1	395	47	165	118	105	283	410	6,9
 2 lobes	4½ × 2	125	65	145	80	100	93	140	0,93
	6 × 2	168	73	170	100	120	127	180	2,25
	8 × 2	230	72	225	153	150	156	240	3,75
	9¾ × 2	260	70	240	170	160	168	275	4,5
	10 × 2	280	70	240	170	160	181	295	4,6
	12 × 2	330	74	240	166	160	232	345	5,85
	14½ × 2	395	70	280	210	180	283	410	8,5
	16 × 2	430	77	320	243	180	283	445	8,8
 3 lobes	4½ × 3	125	100	200	100	145	93	140	1,15
	6 × 3	168	105	255	150	180	127	180	2,55
	10 × 3	280	100	365	265	235	181	295	5,4
	12 × 3	330	100	430	330	222	232	345	7
	14½ × 3	395	100	476	376	280	283	410	10
	16 × 3	430	125	500	375	280	283	445	16

Force Table

The force developed is a function of the bellows crosssectional area. In the tables below the y-axis shows the force produced at one bar pressure for a variety of x-axis height.



Load necessary to obtain the minimum height without air in the bellows

Type	4 1/2" x1	4 1/2" x2	4 1/2" x3	6" x1	6" x2	6" x3	8" x1	8" x2	9 1/4" x2	10" x1	10" x2	10" x3 4 ply	12" x1	12" x2	12" x3 4 ply	14 1/2" x1	14 1/2" x2	14 1/2" x3 4 ply	16" x2	16" x3 4 ply
Static height (mm)	65	100	145	70	120	180	90	150	160	95	160	235	95	160	222	105	180	280	180	280
Min. height (mm)	45	65	100	58	70	102	47	72	70	50	70	100	47	74	100	147	70	100	77	125
Load in daN	12	15	20	15	20	12	13	14	12	12	11	77	10	10	81	9	9	86	9	65

Isolation

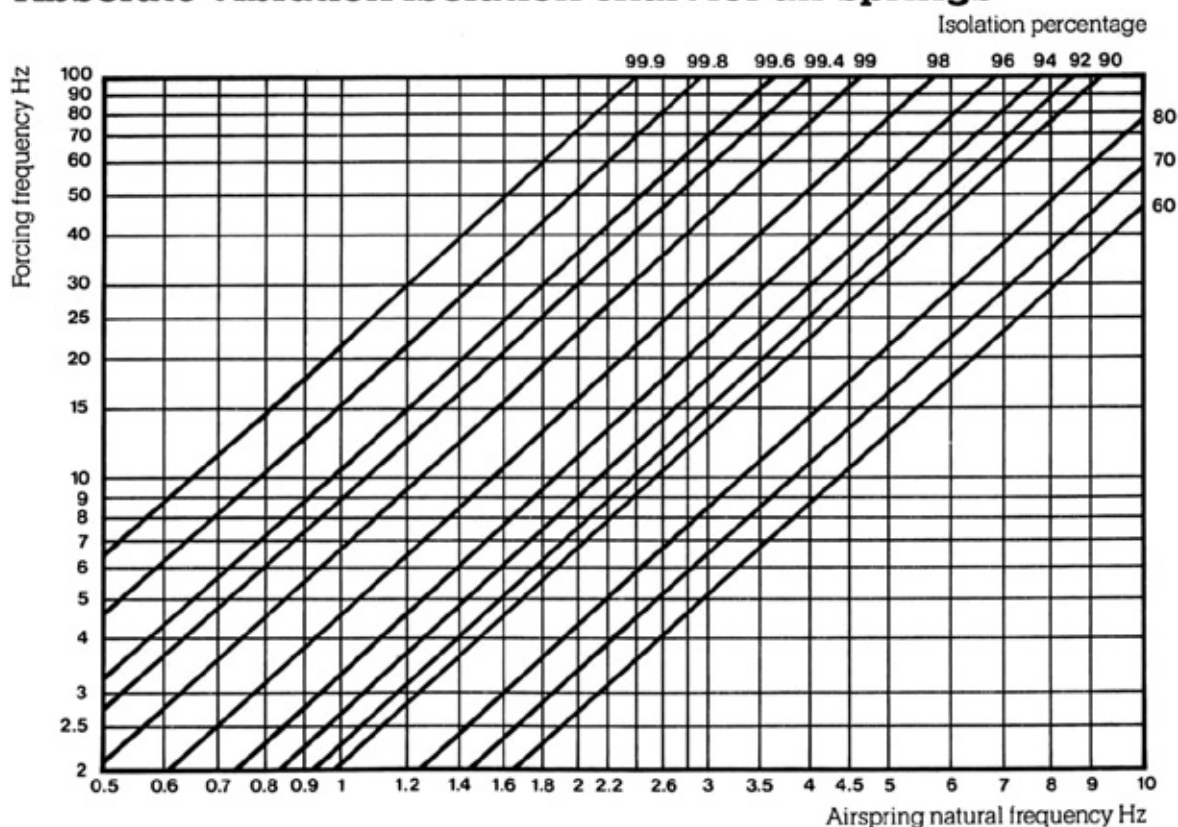
Dunlop *Pneuride* Bellows are an excellent solution to vibration isolation problems.

The table opposite shows the natural frequency of the bellows at static height when pressurised at 4 bar (0.4 Mpa).

Dimension	Frequency (Hz) at static height	Static height (mm)	Load in kg at 4 bar at static height
4½ × 1	4,80	65	265
4½ × 2	2,80	100	265
4½ × 3	2,26	145	265
6 × 1	4,25	80	490
6 × 2	2,28	120	522
6 × 3	1,75	180	580
8 × 1	2,98	90	816
8 × 2	1,99	150	897
9½ × 2	1,95	160	1088
10 × 1	2,84	95	1428
10 × 2	1,88	160	1448
10 × 3	1,65	235	1387
12 × 1	2,81	95	2080
12 × 2	1,66	160	2080
12 × 3	1,54	222	2040
14½ × 1	2,54	105	3060
14½ × 2	1,71	180	3100
14½ × 3	1,44	280	3264
16 × 2	1,45	180	3672
16 × 3	1,21	280	3451

The table below allows the calculation of the percentage isolation at given forcing frequencies and natural air spring frequencies.

Absolute vibration isolation chart for air springs



Bellow Assembly Data Sheets

Technical Data

General Dimensions

Bellows Schematic

Bellows Mounting Data

Effective Area Curves

Volume Curves

Section 1

Bellows with Aluminium Alloy Clamping Plates

2 3/4 " X 2

PART NUMBER	TYPE	RUBBER	INLET
A 3 1329 02 00	Assembly	Standard	1/4" BSP
A 3 1329 B4 00	Assembly	Butyl	1/4" BSP

Conditions of Use

Maximum Working Pressure	10bar
Burst Pressure	30bar
Maximum Angle between Top & Bottom Plates	10°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

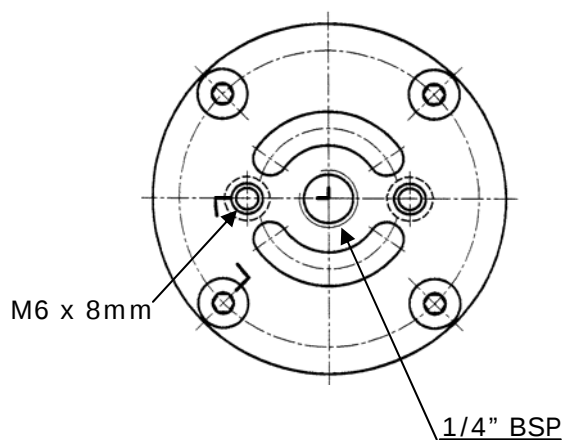
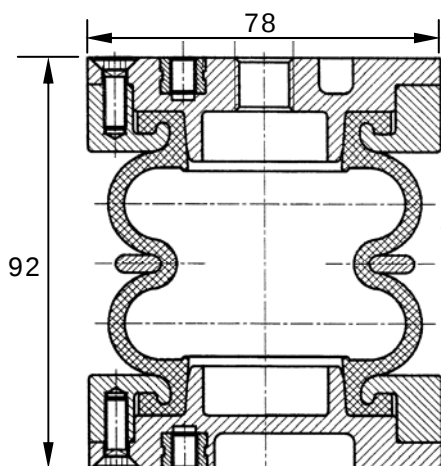
- Bellows : various rubbers
- Metal parts : aluminium alloy

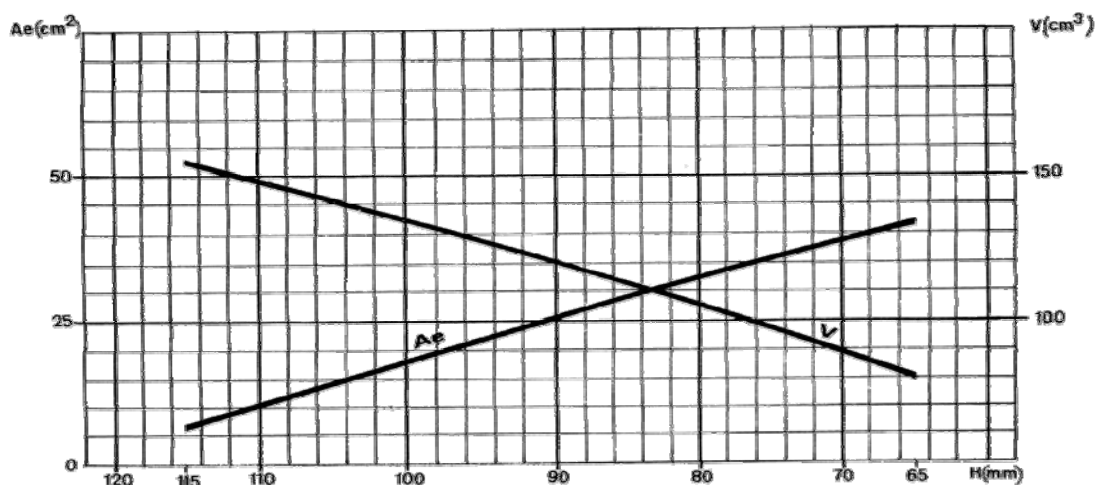
Note

This bellow assembly can be completely dismantled

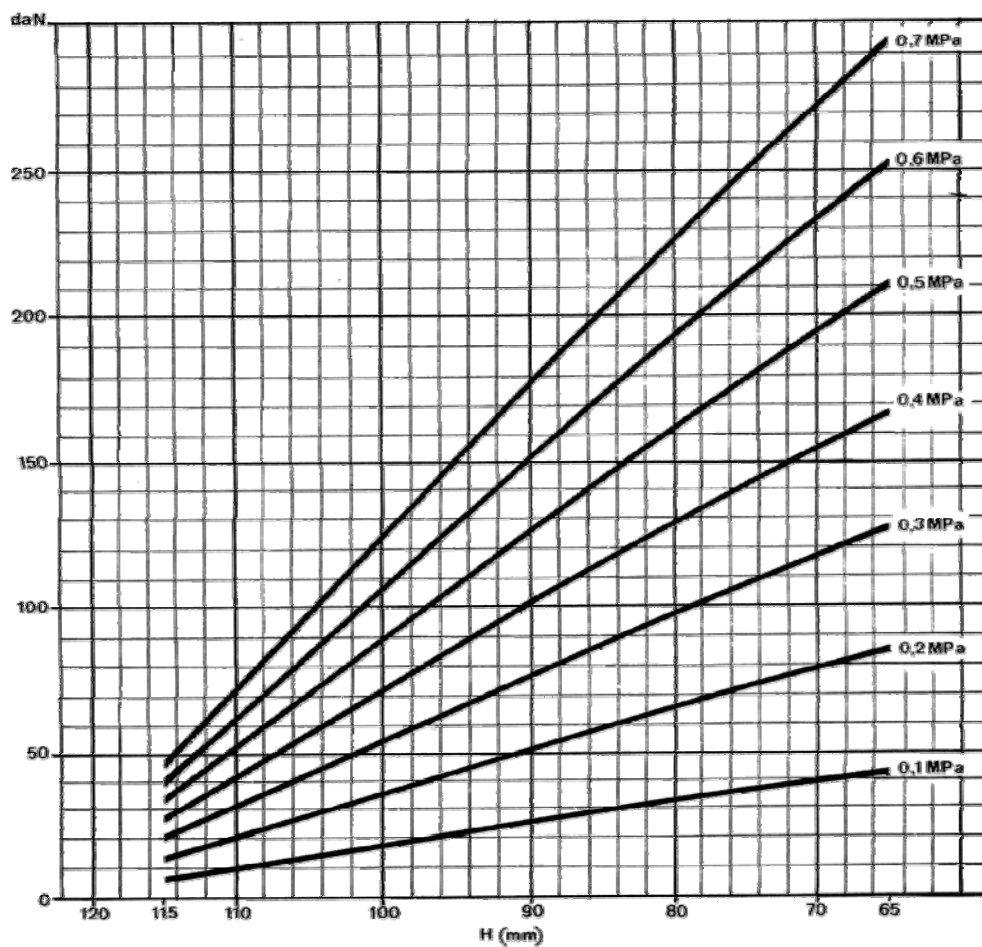
Dimensions

Maximum Diameter	78mm
Minimum Height	65mm
Maximum Height	115mm
Total Stroke	50mm
Static Height	92mm
Effective Area at Static Height	25.5cm ²
Bellows Weight	





A_e : Effective Area
 H : Spring Height
 V : Volume



2 3/4 " X 3

PART NUMBER	TYPE	RUBBER	INLET
A 3 1329 03 00	Assembly	Standard	1/4" BSP
A 3 1329 B5 00	Assembly	Butyl	1/4" BSP

Conditions of Use

Maximum Working Pressure	10bar
Burst Pressure	30bar
Maximum Angle between Top & Bottom Plates	10°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

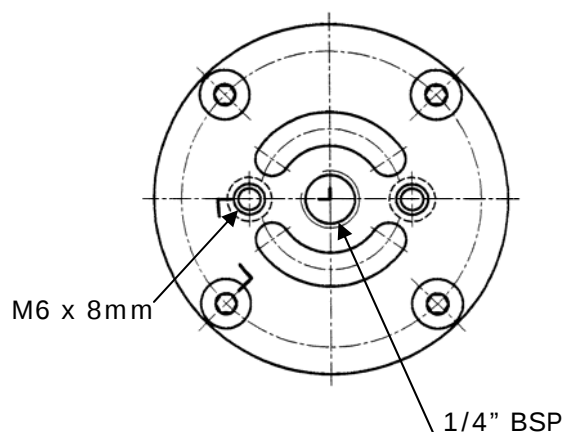
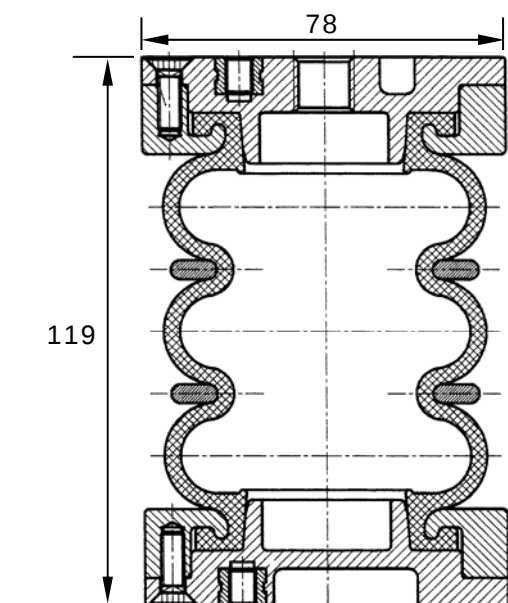
- Bellows : various rubbers
- Metal parts : aluminium alloy

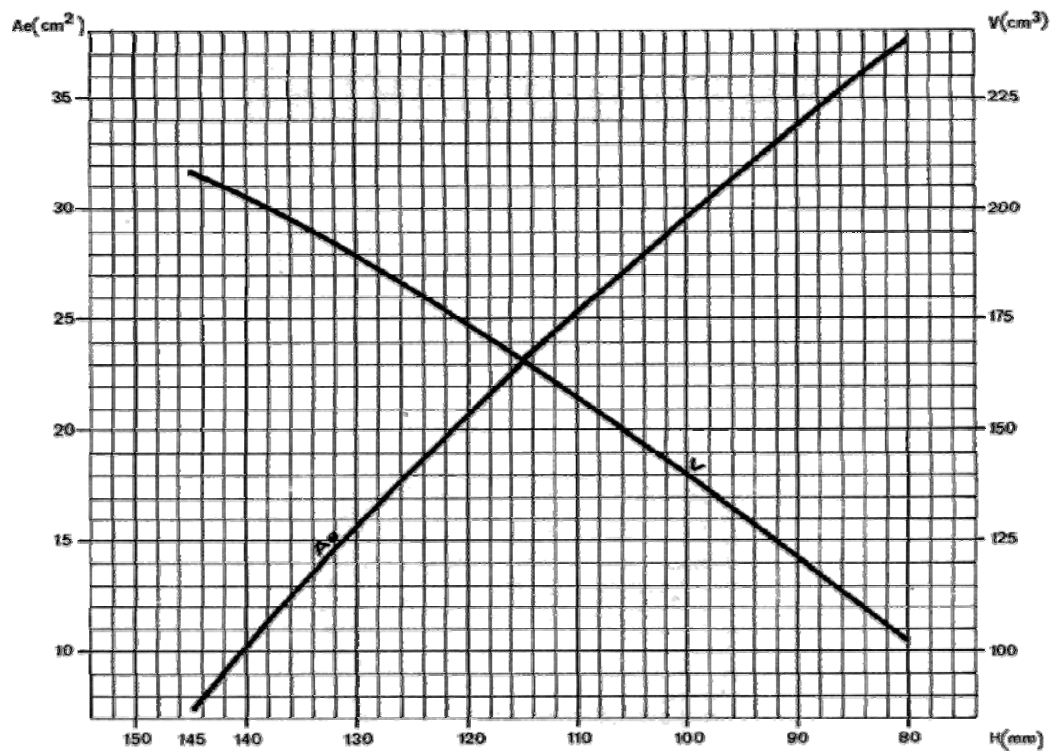
Note

This bellow assembly can be completely dismantled

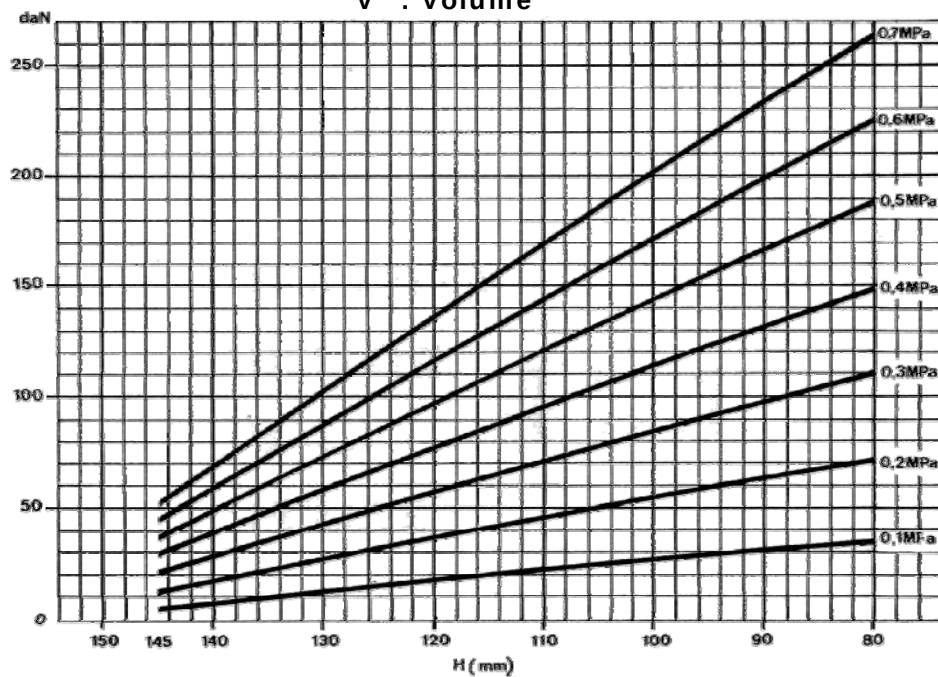
Dimensions

Maximum Diameter	78mm
Minimum Height	80mm
Maximum Height	145mm
Total Stroke	65mm
Static Height	119mm
Effective Area at Static Height	23cm ²
Bellows Weight	0.57kg



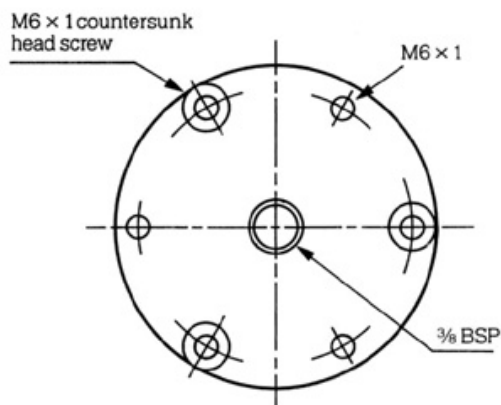
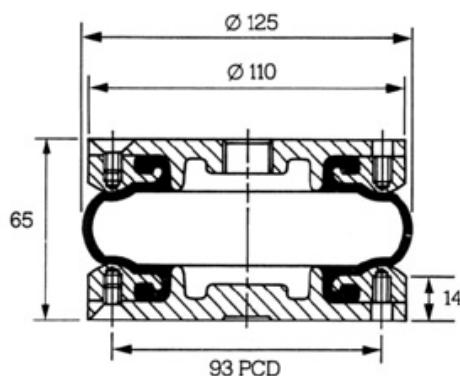
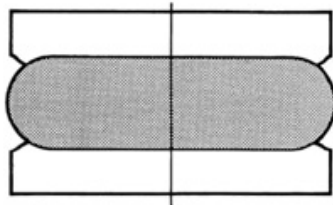


Ae : Effective Area
H : Spring Height
V : Volume



4 1/2 " x 1

PART NUMBER	TYPE	RUBBER	INLET
A 3 1337 00 32	Bellow	Standard	N/A
PNP 30559 01 06	Assembly	Standard	3/8" BSP
A 3 1469 0B 20	Bellow	Butyl	N/A
PNP 30559 B1 05	Assembly	Butyl	3/8" BSP



Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	50bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

- Bellows : various rubbers
- Metal parts : aluminium alloy

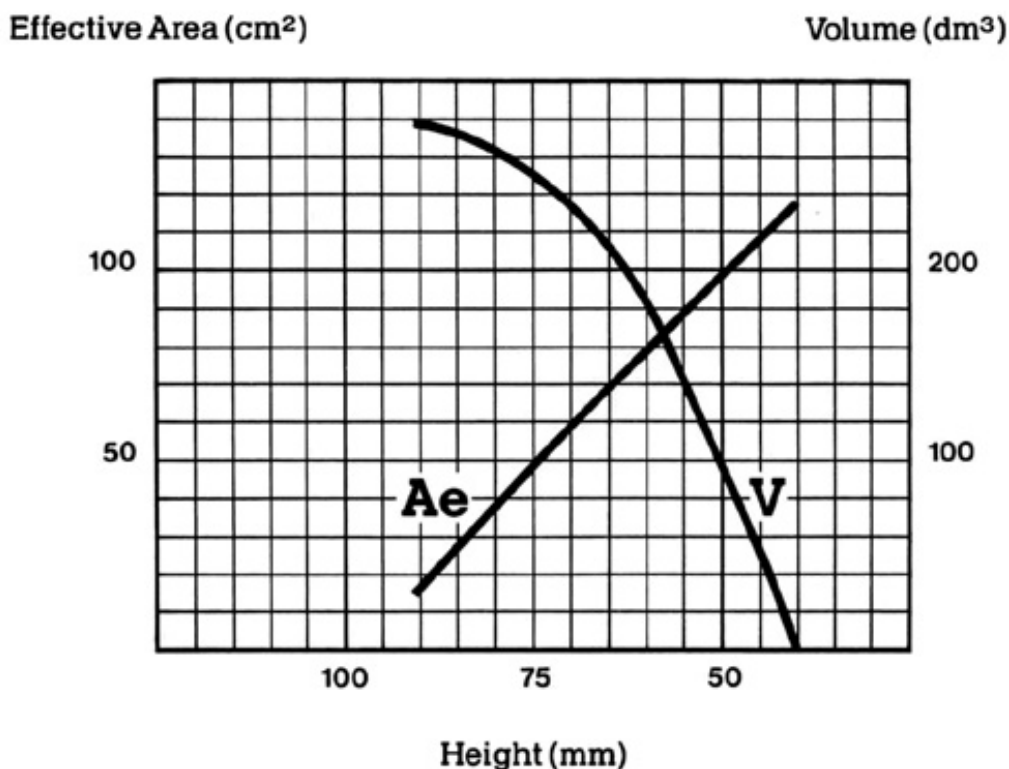
Note

This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	125mm
Space Required	140mm
Minimum Height	45mm
Maximum Height	90mm
Total Stroke	45mm
Static Height	65mm
Effective Area at Static Height	65cm ²
Bellows Weight	0.75kg

**Effective Area/Height
Volume/Height**



A_e Effective Area cm^2

V Volume dm^3

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

4 1/2 " x 2

PART NUMBER	TYPE	RUBBER	INLET
PNP 30728 03 00	Bellow	Standard	N/A
PNP 30559 01 07	Assembly	Standard	3/8" BSP
A 3 1470 0B 21	Bellow	Butyl	N/A
PNP 30559 B1 09	Assembly	Butyl	3/8" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	50bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

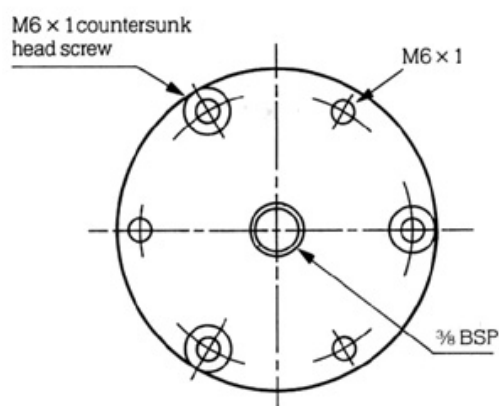
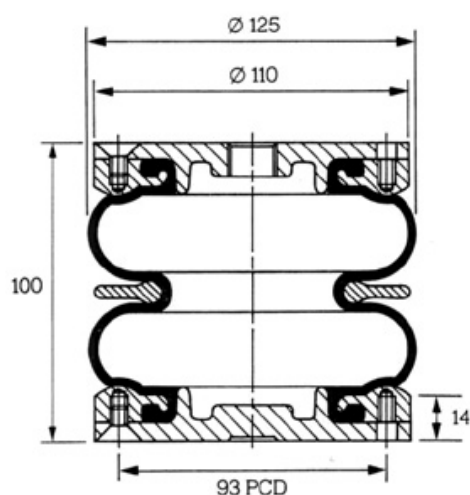
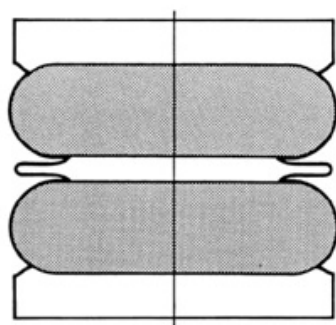
- Bellows : various rubbers
- Metal parts : aluminium alloy

Note

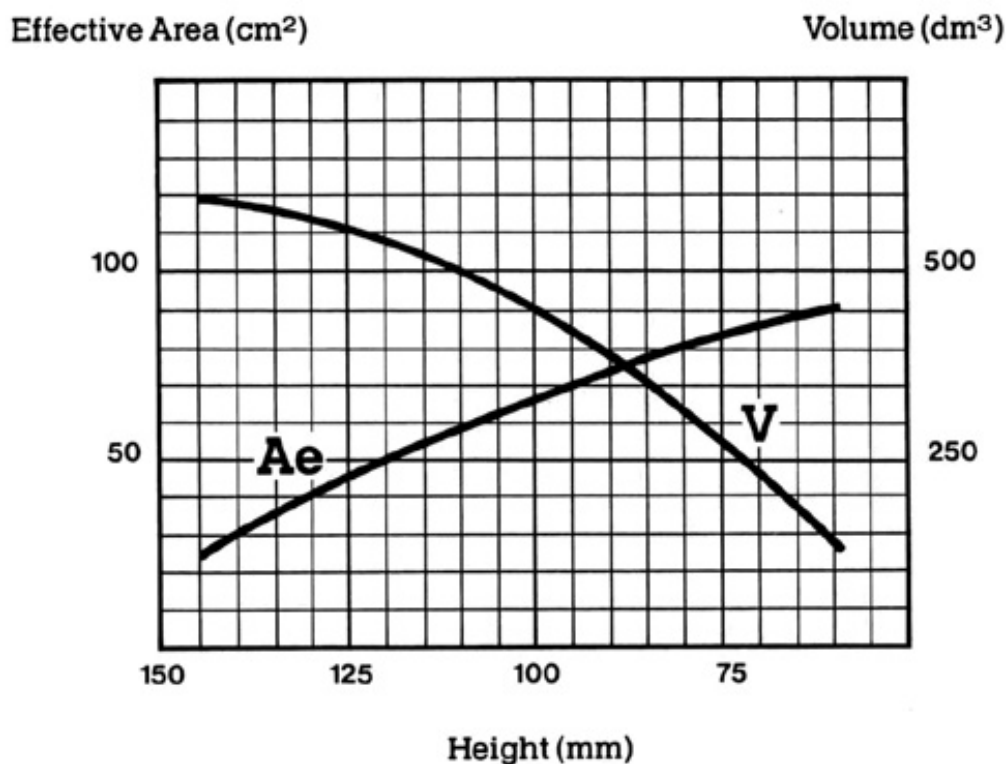
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	125mm
Space Required	140mm
Minimum Height	65mm
Maximum Height	145mm
Total Stroke	80mm
Static Height	100mm
Effective Area at Static Height	67cm ²
Bellows Weight	0.93kg



**Effective Area/Height
Volume/Height**



A_e Effective Area cm^2

V Volume dm^3

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

4 1/2 " x 3

PART NUMBER	TYPE	RUBBER	INLET
A 3 1338 00 33	Bellow	Standard	N/A
PNP 30559 01 08	Assembly	Standard	3/8" BSP
A 3 1471 0B 22	Bellow	Butyl	N/A
	Assembly	Butyl	3/8" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	50bar
Maximum Angle between Top & Bottom Plates	7°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

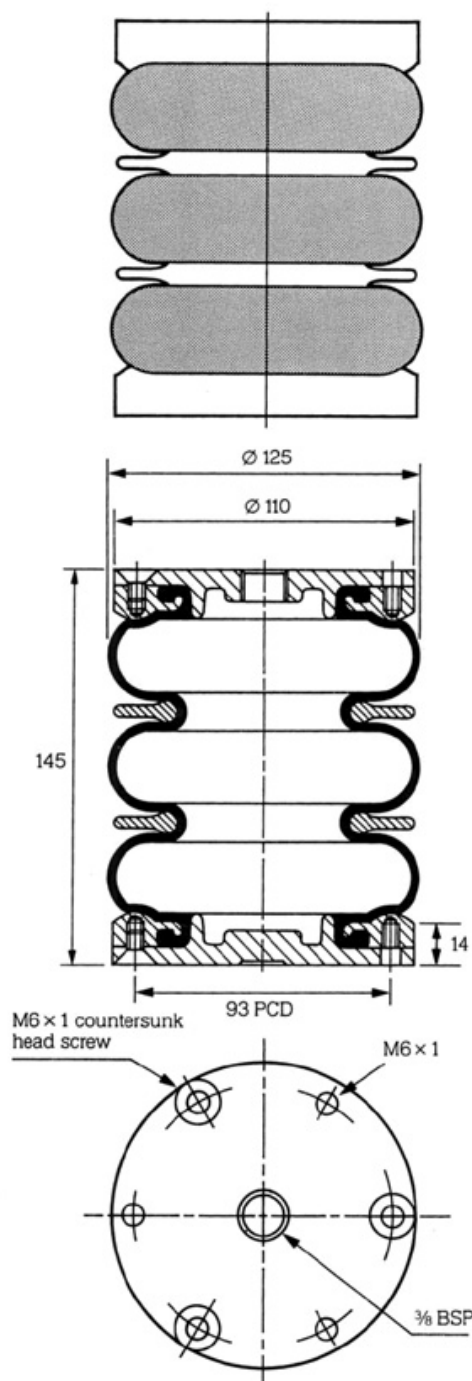
- Bellows : various rubbers
- Metal parts : aluminium alloy

Note

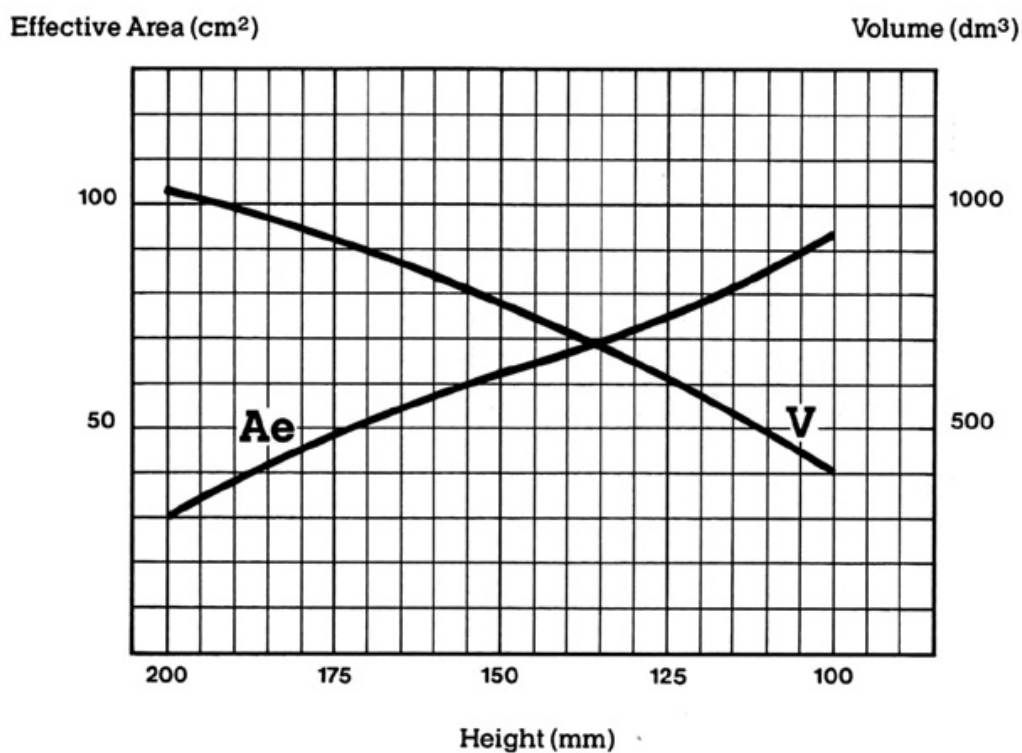
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	125mm
Space Required	140mm
Minimum Height	100mm
Maximum Height	200mm
Total Stroke	100mm
Static Height	145mm
Effective Area at Static Height	65cm ²
Bellows Weight	1.15kg



**Effective Area/Height
Volume/Height**



Ae Effective Area cm²

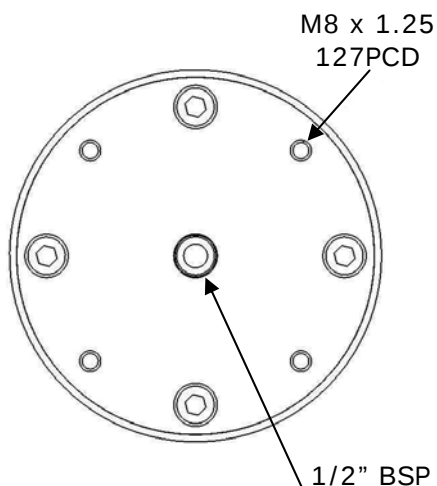
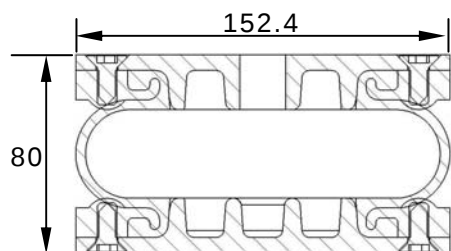
V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

6" x 1

PART NUMBER	TYPE	RUBBER	INLET
PNP 30405 02 00	Bellow	Standard	N/A
A 3 1330 01 01	Assembly	Standard	1/2" BSP
A 3 1472 0B 23	Bellow	Butyl	N/A
	Assembly	Butyl	1/2" BSP



Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	40bar
Maximum Angle between Top & Bottom Plates	5°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

Minimum Temperature -30°C (-40°C static)
Maximum Temperature 70°C (90°C static)

Materials

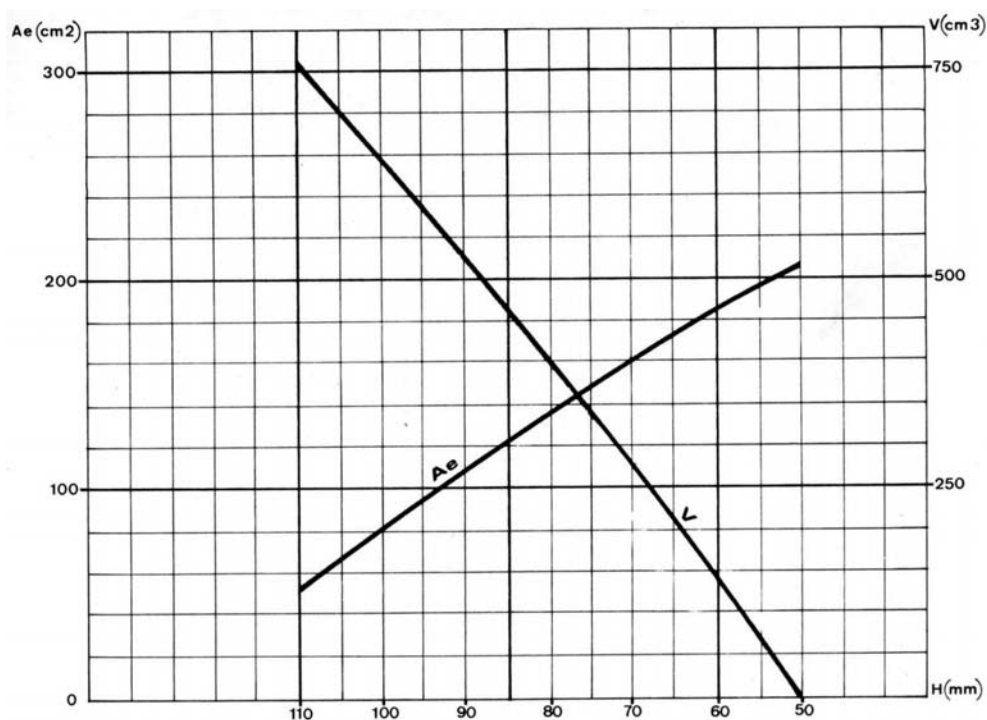
- Bellows : various rubbers
- Metal parts : aluminium alloy

Note

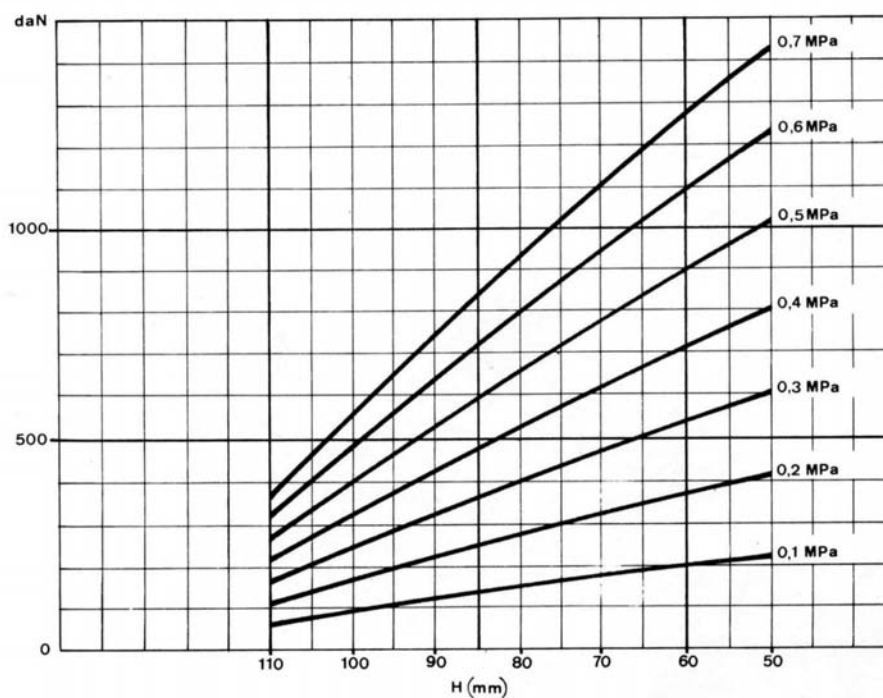
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	162mm
Space Required	180mm
Minimum Height	50mm
Maximum Height	110mm
Total Stroke	60mm
Static Height	80mm
Effective Area at Static Height	135cm ²
Bellows Weight	1.69kg

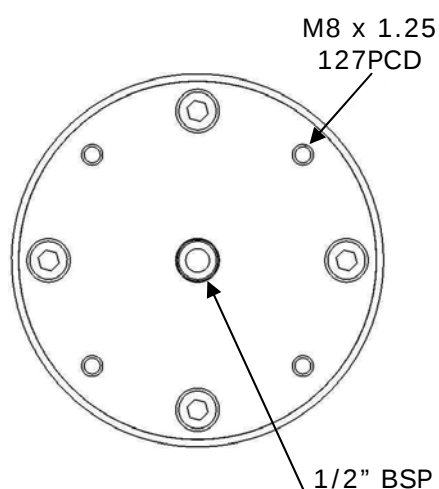
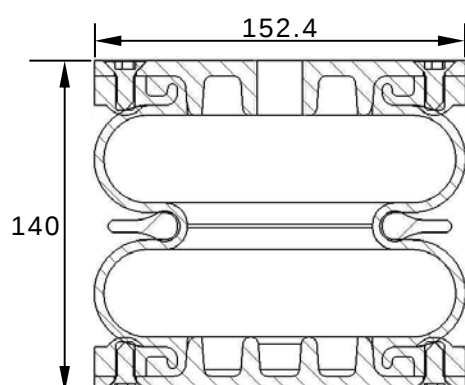


A_e : Effective Area
 H : Spring Height
 V : Volume



6" x 2

PART NUMBER	TYPE	RUBBER	INLET
VSM 10177	Bellow	Standard	N/A
A 3 1330 02 01	Assembly	Standard	1/2" BSP
A 3 1473 0B 24	Bellow	Butyl	N/A
A 3 1330 B2 01	Assembly	Butyl	1/2" BSP



Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	40bar
Maximum Angle between Top & Bottom Plates	10°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

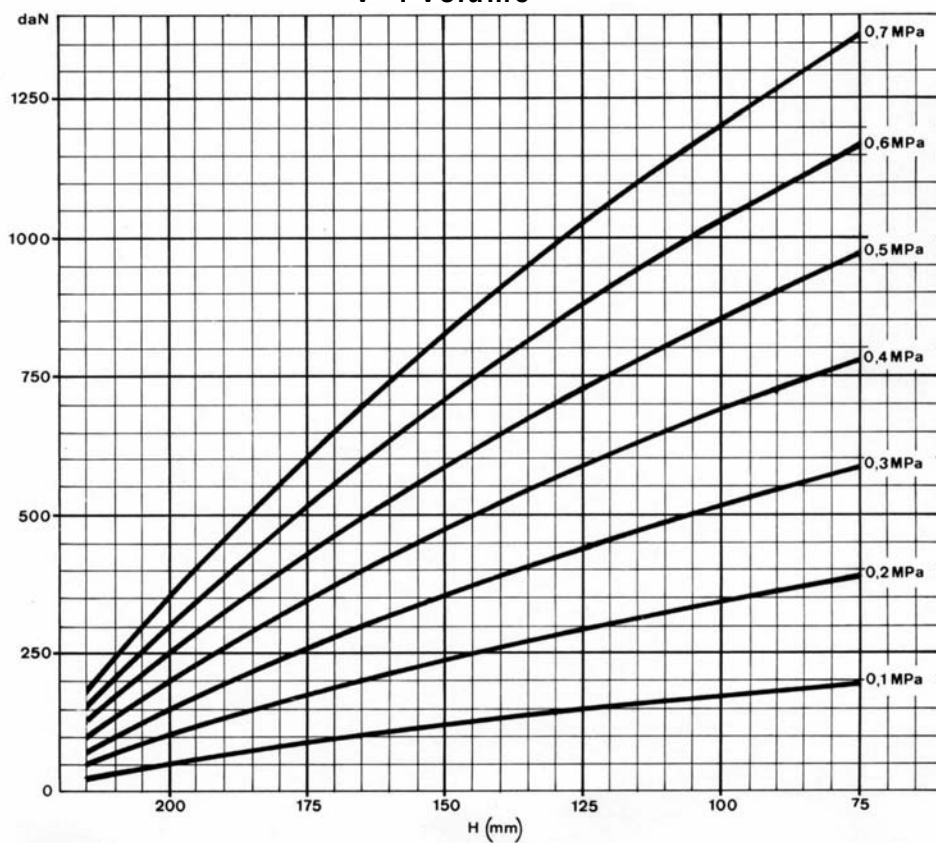
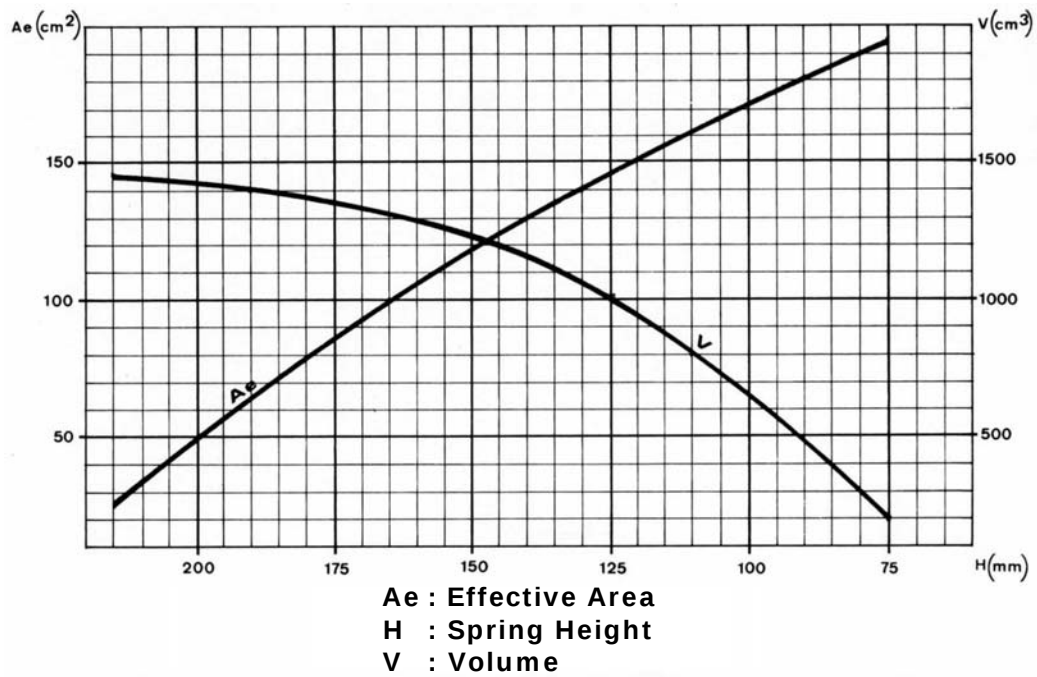
- Bellows : various rubbers
- Metal parts : aluminium alloy

Note

This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	168mm
Space Required	180mm
Minimum Height	75mm
Maximum Height	215mm
Total Stroke	140mm
Static Height	140mm
Effective Area at Static Height	130cm ²
Bellows Weight	2.08kg



6" x 3

PART NUMBER	TYPE	RUBBER	INLET
A 3 1339 00 34	Bellow	Standard	N/A
A 3 1330 03 01	Assembly	Standard	1/2" BSP
A 3 1474 0B 25	Bellow	Butyl	N/A
	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	40bar
Maximum Angle between Top & Bottom Plates	10°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

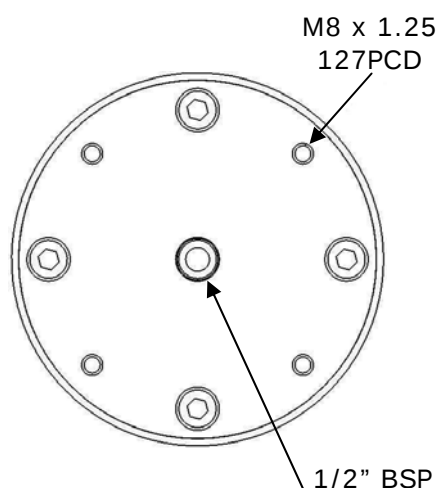
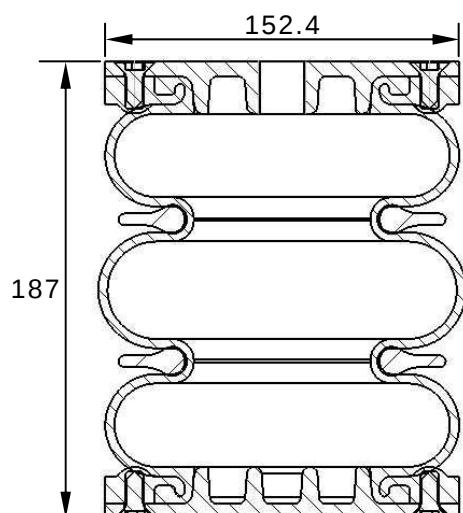
- Bellows : various rubbers
- Metal parts : aluminium alloy

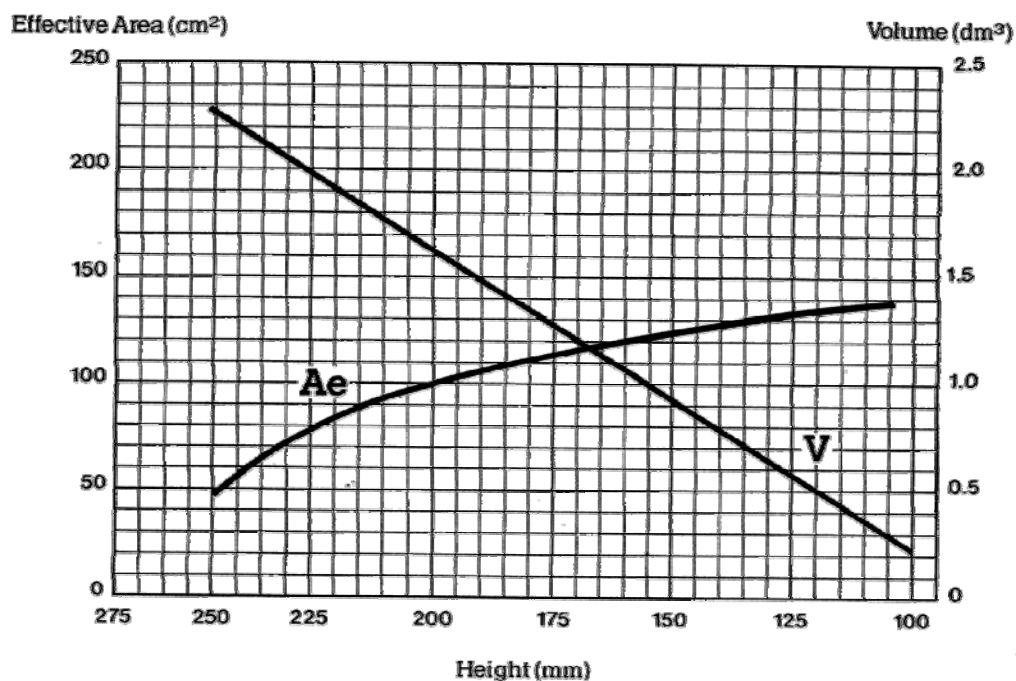
Note

This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	168mm
Space Required	180mm
Minimum Height	109mm
Maximum Height	262mm
Total Stroke	153mm
Static Height	187mm
Effective Area at Static Height	350cm ²
Bellows Weight	2.47kg





A_e : Effective Area (Measured at 4bar Pressure)
 V : Volume (Measured at 7bar Pressure)

Section 2

Bellows with Steel Clamping Plates

6" x 1

PART NUMBER	TYPE	RUBBER	INLET
PNP 30405 02 00	Bellow	Standard	N/A
PNP 30551 01 13	Assembly	Standard	1/2" BSP
A 3 1472 0B 23	Bellow	Butyl	N/A
	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	40bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

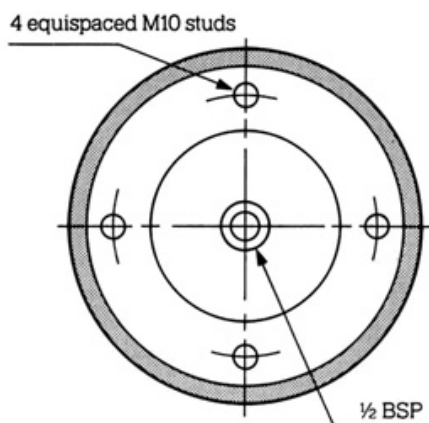
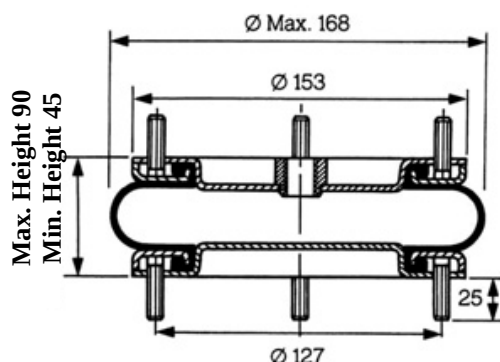
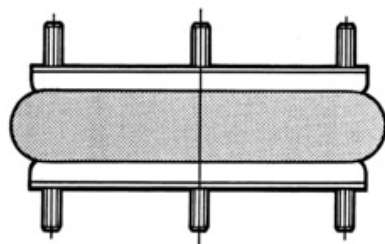
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

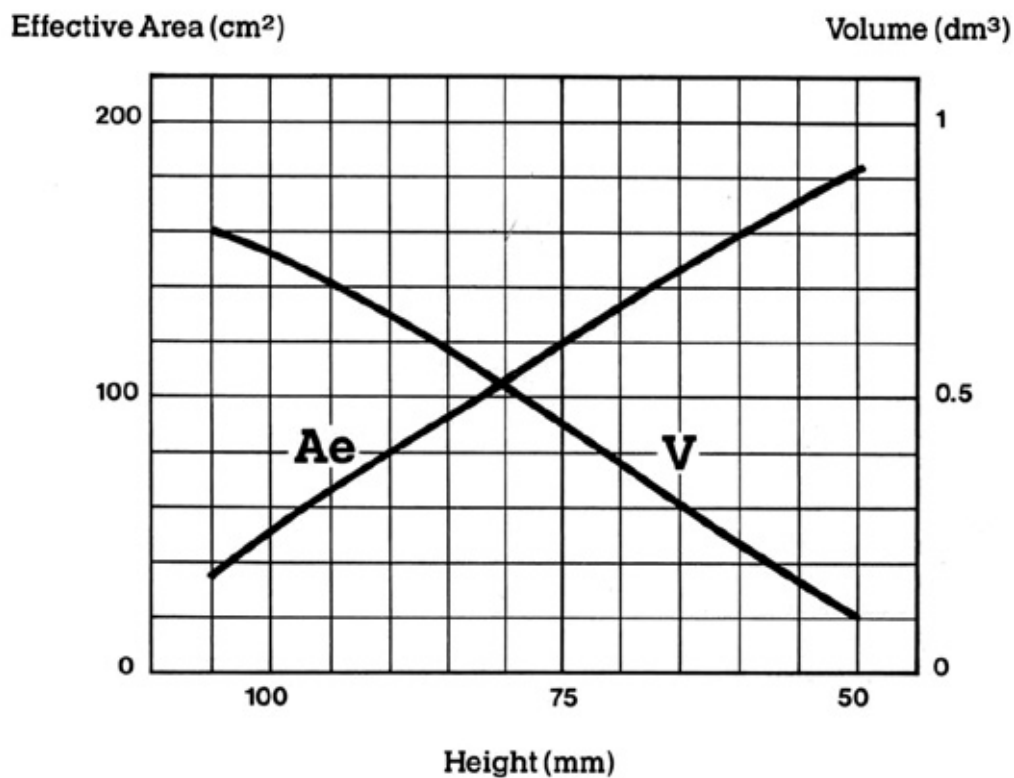
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	168mm
Space Required	180mm
Minimum Height	45mm
Maximum Height	90mm
Total Stroke	45mm
Static Height	80mm
Effective Area at Static Height	135cm ²
Bellows Weight	1.95kg



Effective Area/Height Volume/Height



Ae Effective Area cm²

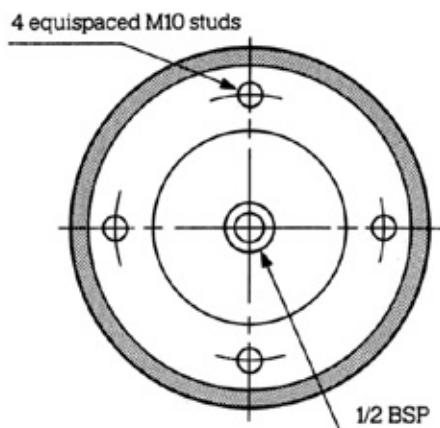
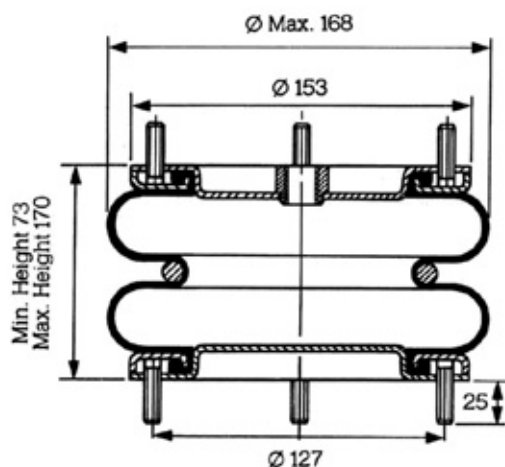
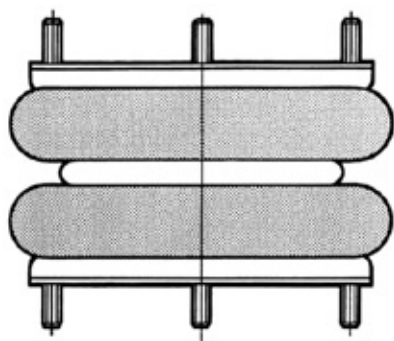
V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

6" x 2

PART NUMBER	TYPE	RUBBER	INLET
VSM 10177	Bellow	Standard	N/A
PNP 30551 01 11	Assembly	Standard	1/2" BSP
A 3 1473 0B 24	Bellow	Butyl	N/A
	Assembly	Butyl	1/2" BSP



Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	40bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

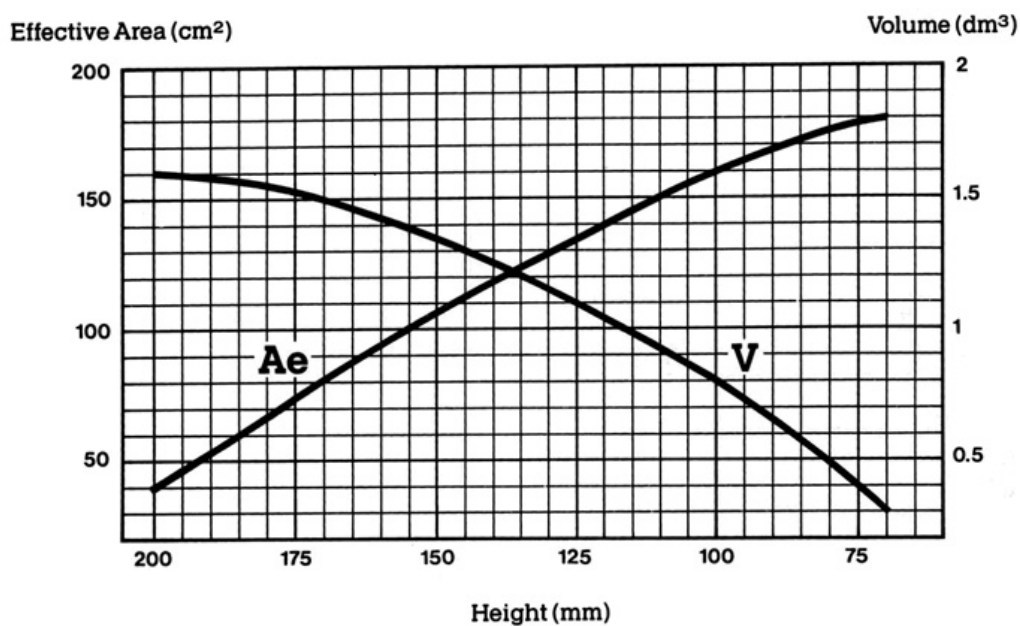
Note

This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	168mm
Space Required	180mm
Minimum Height	73mm
Maximum Height	170mm
Total Stroke	97mm
Static Height	120mm
Effective Area at Static Height	140cm ²
Bellows Weight	2.25kg

**Effective Area/Height
Volume/Height**



Ae Effective Area cm²

V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

6" x 3

PART NUMBER	TYPE	RUBBER	INLET
A 3 1339 00 34	Bellow	Standard	N/A
PNP 30551 01 18	Assembly	Standard	1/2" BSP
A 3 1474 0B 25	Bellow	Butyl	N/A
	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	40bar
Maximum Angle between Top & Bottom Plates	10°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

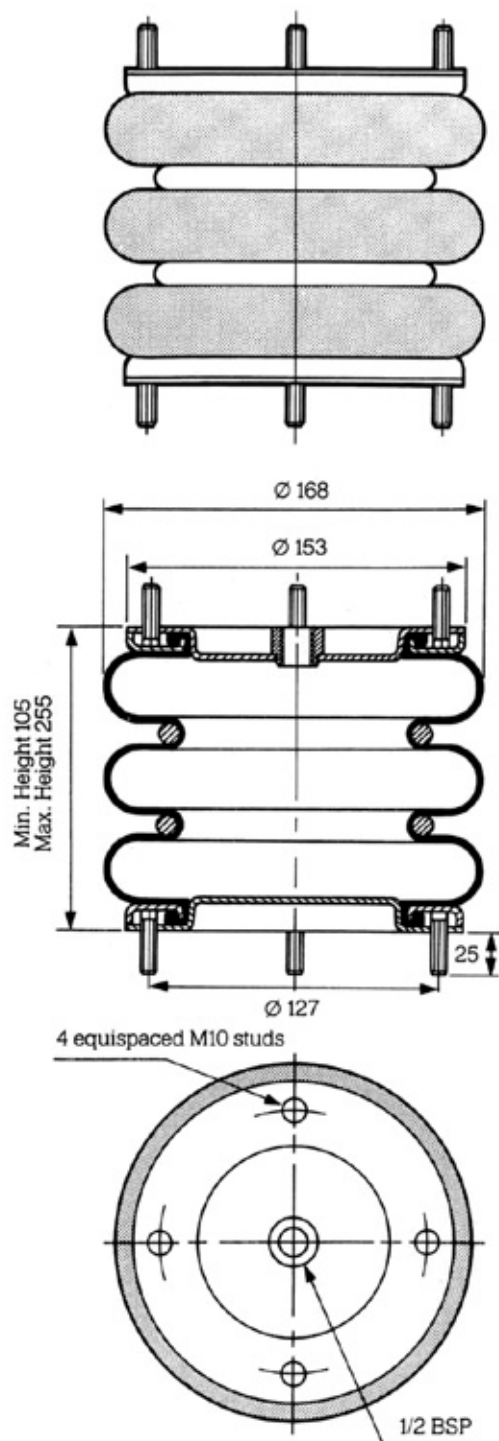
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

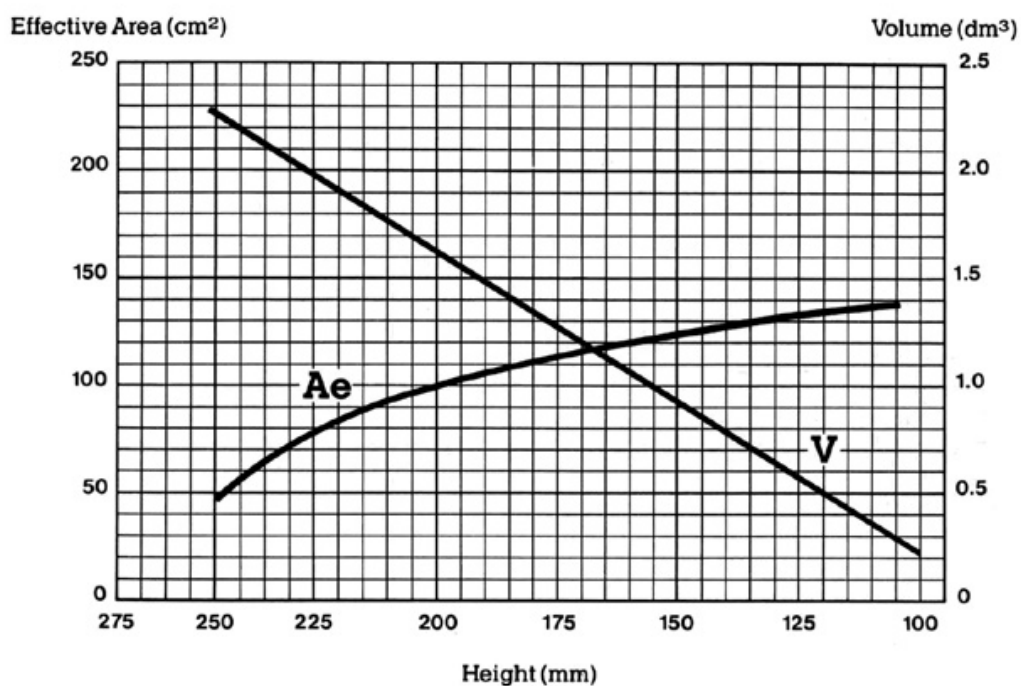
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	168mm
Space Required	180mm
Minimum Height	105mm
Maximum Height	255mm
Total Stroke	150mm
Static Height	180mm
Effective Area at Static Height	350cm ²
Bellows Weight	2.55kg



Effective Area/Height
Volume/Height



Ae Effective Area cm²

V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

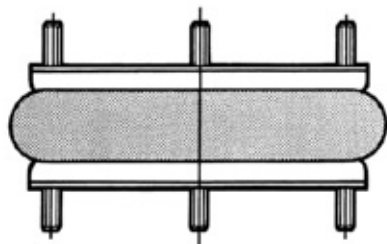
The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

8" x 1

PART NUMBER	TYPE	RUBBER	INLET
PNP 30406 02 00	Bellow	Standard	N/A
PNP 30550 01 10	Assembly	Standard	1/2" BSP
A 3 1475 0B 26	Bellow	Butyl	N/A
	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	35bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm



Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

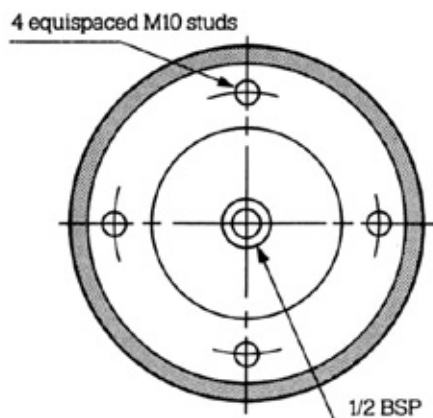
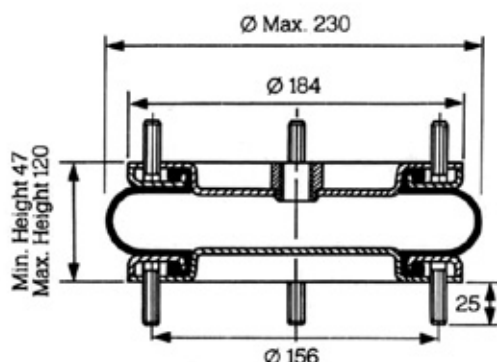
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

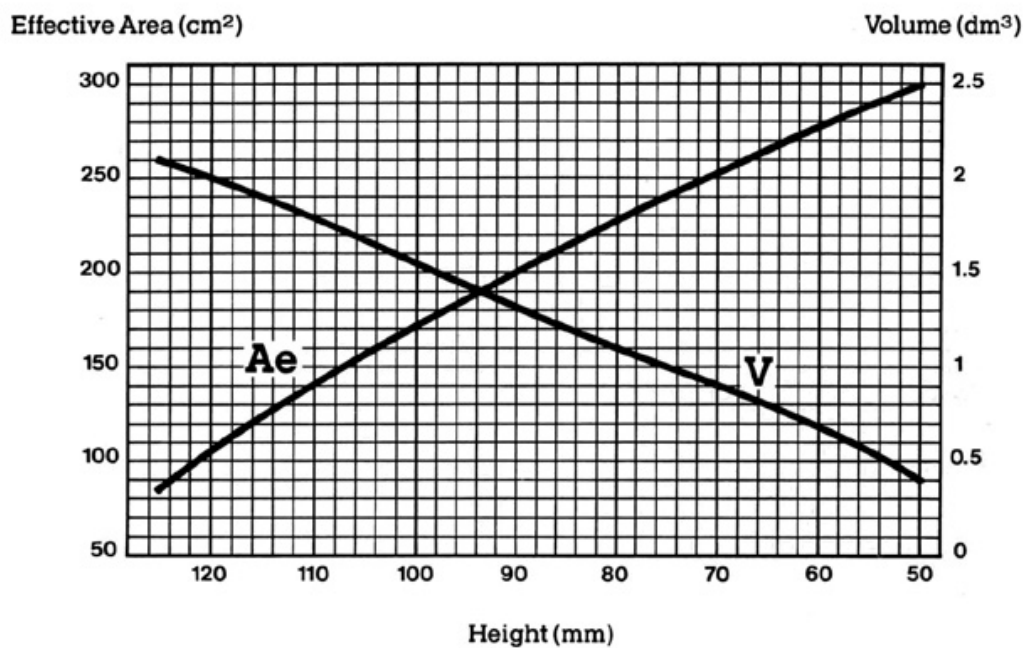
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	230mm
Space Required	240mm
Minimum Height	47mm
Maximum Height	120mm
Total Stroke	73mm
Static Height	90mm
Effective Area at Static Height	200cm ²
Bellows Weight	3.05kg



**Effective Area/Height
Volume/Height**



Ae Effective Area cm²

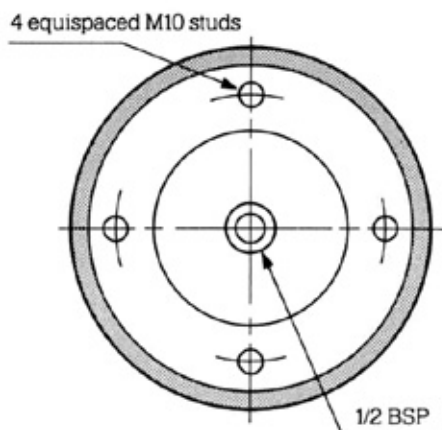
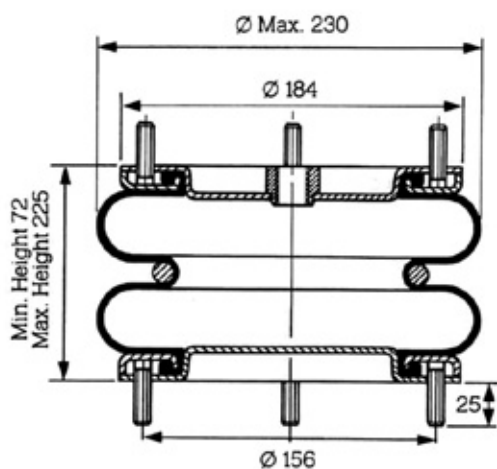
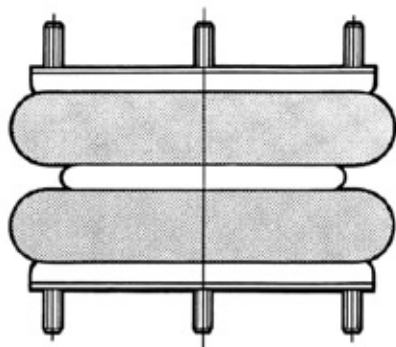
V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

8" x 2

PART NUMBER	TYPE	RUBBER	INLET
VSM 10180	Bellow	Standard	N/A
PNP 30550 01 12	Assembly	Standard	1/2" BSP
A 3 1476 0B 27	Bellow	Butyl	N/A
PNP 30550 01 11	Assembly	Butyl	1/2" BSP



Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	35bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

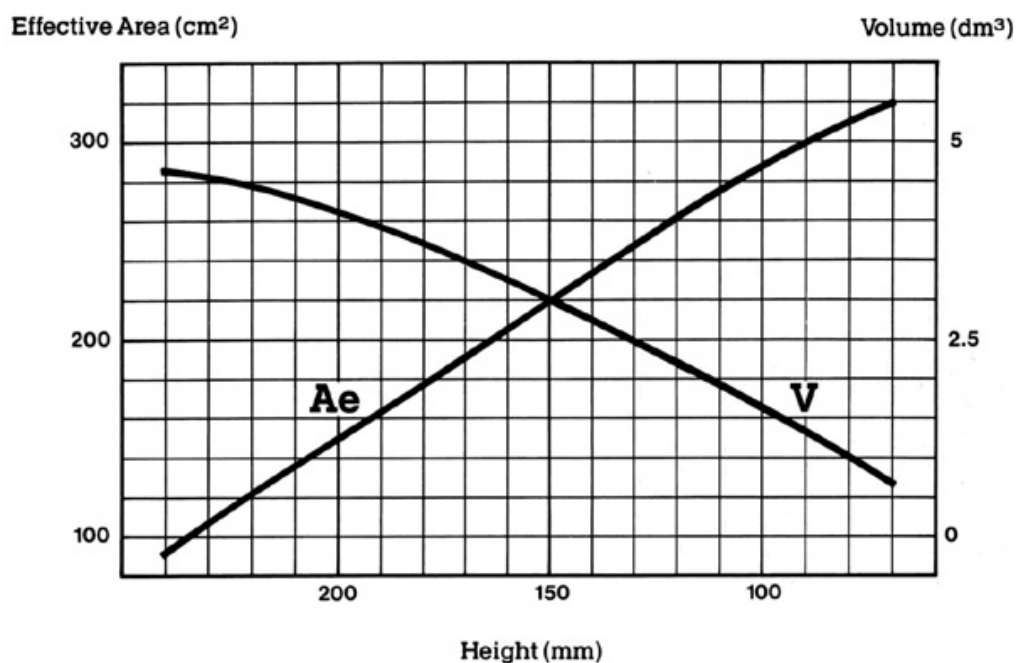
Note

This bellows assembly can be completely dismantled

Dimensions

Maximum Diameter	230mm
Space Required	240mm
Minimum Height	72mm
Maximum Height	225mm
Total Stroke	153mm
Static Height	150mm
Effective Area at Static Height	220cm ²
Bellows Weight	3.75kg

**Effective Area/Height
Volume/Height**



Ae Effective Area cm²

V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

8" x 3

PART NUMBER	TYPE	RUBBER	INLET
A 3 1440 00 20	Bellow	Standard	N/A
PNP 30550 01 34	Assembly	Standard	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	35bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	20mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

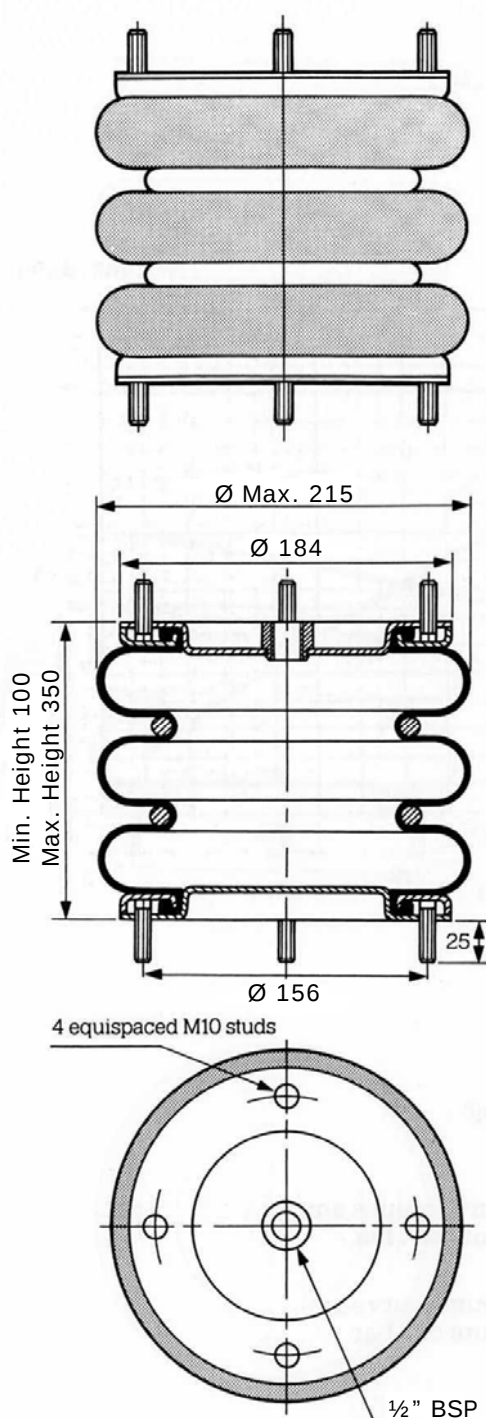
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

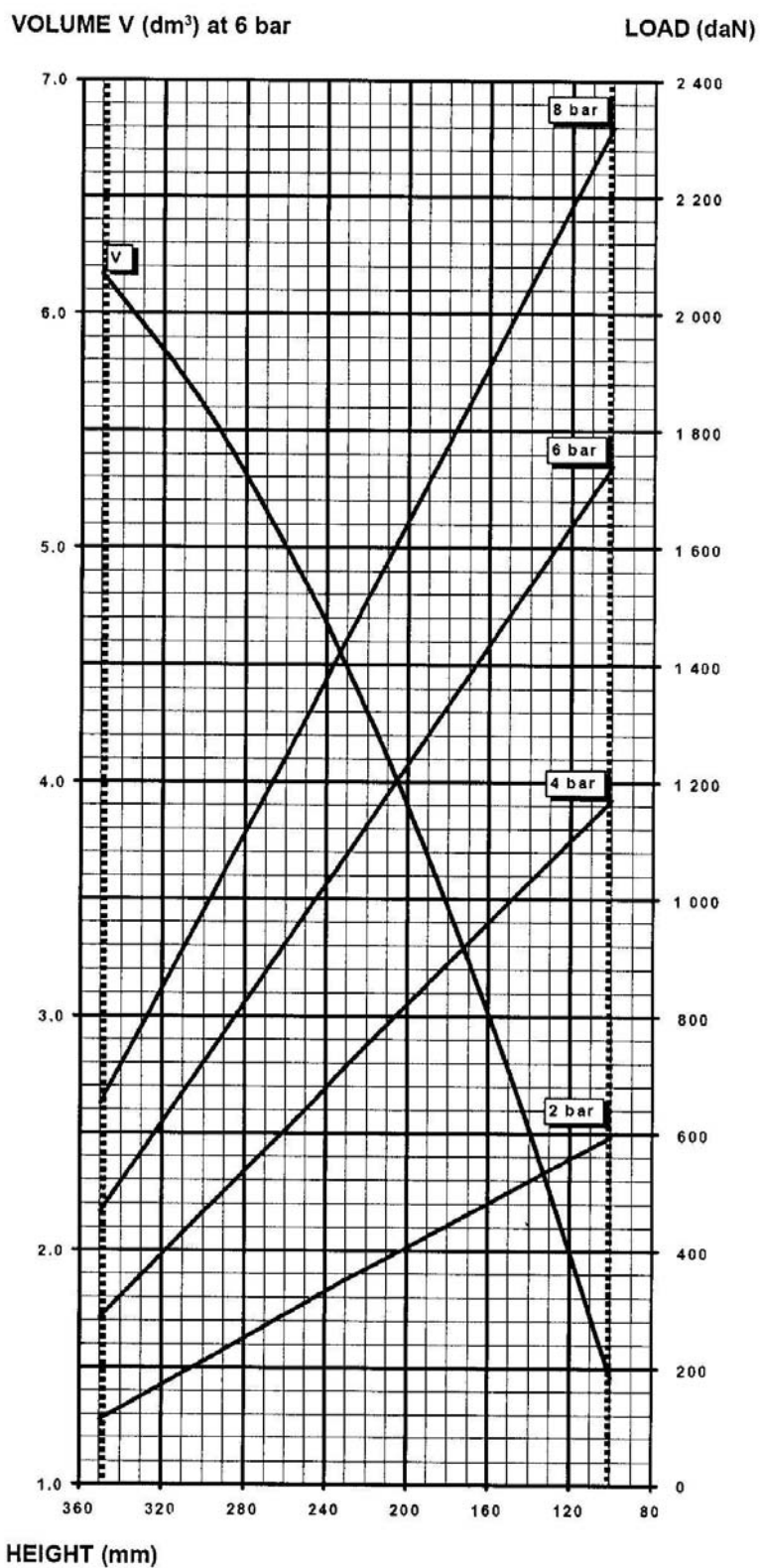
Note

This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	215mm
Space Required	240mm
Minimum Height	100mm
Maximum Height	350mm
Total Stroke	250mm
Static Height	230mm





9 1/4 " x 2

PART NUMBER	TYPE	RUBBER	INLET
VSM 10131	Bellow	Standard	N/A
PNP 30549 01 08	Assembly	Standard	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	32bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

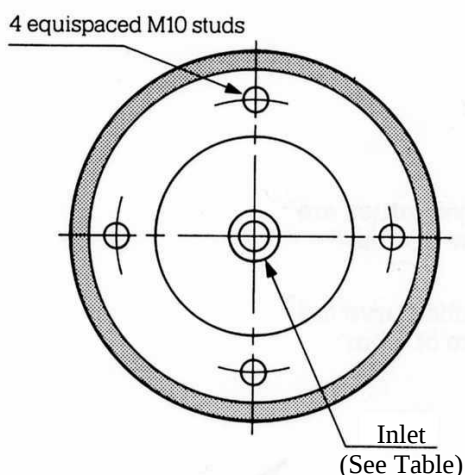
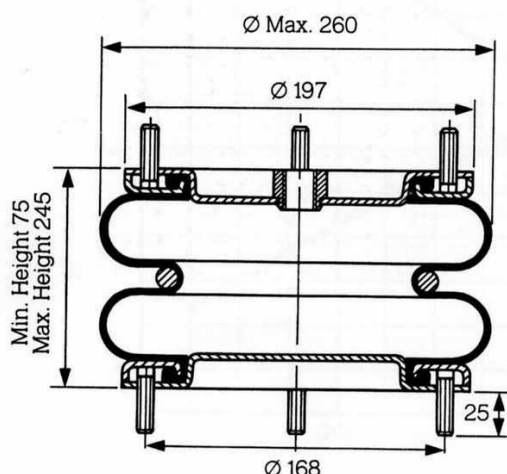
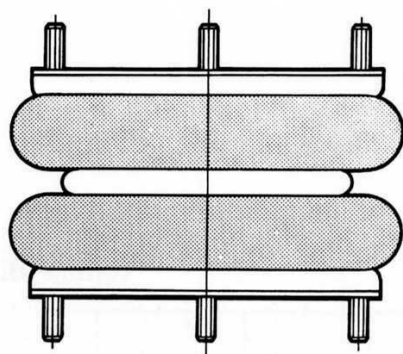
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

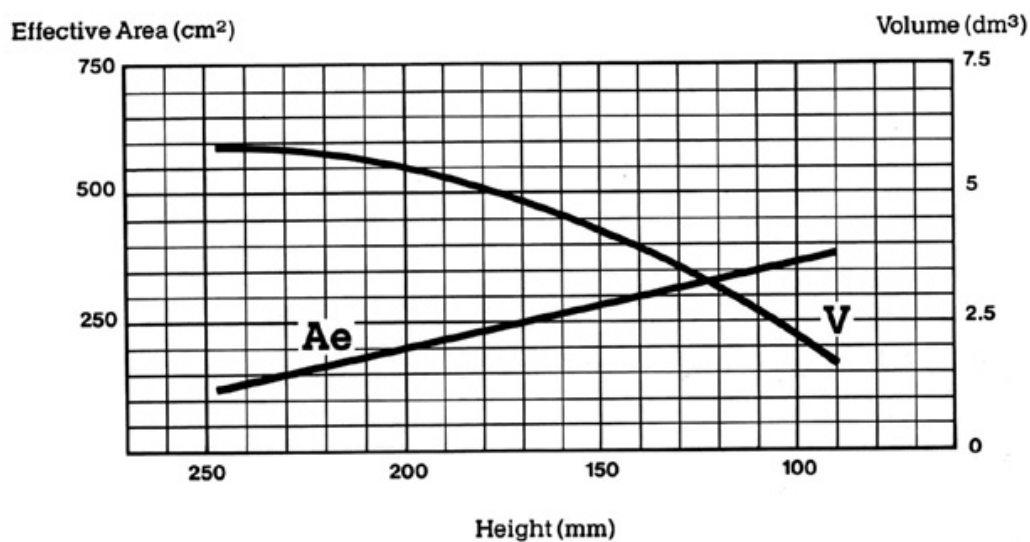
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	260mm
Space Required	275mm
Minimum Height	75mm
Maximum Height	245mm
Total Stroke	70mm
Static Height	160mm
Effective Area at Static Height	272cm ²
Bellows Weight	4.5kg



Effective Area/Height
Volume/Height



Ae Effective Area cm²

V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

10" x 1

PART NUMBER	TYPE	RUBBER	INLET
A 2 1407 00 22	Bellow	Standard	N/A
A 1 1127 00 07	Assembly	Standard	1/2" BSP
A 3 1478 0B 29	Bellow	Butyl	N/A
	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	28bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

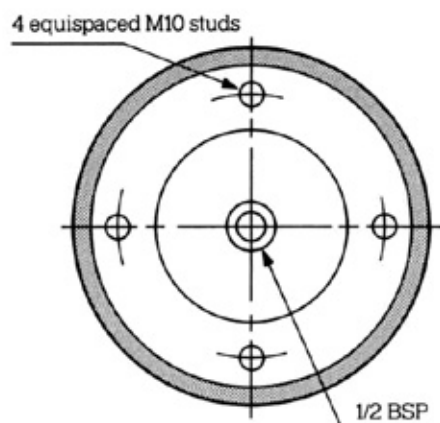
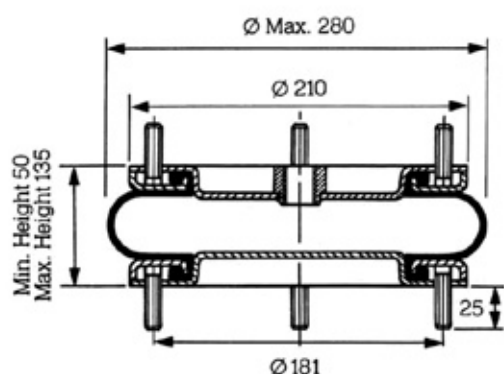
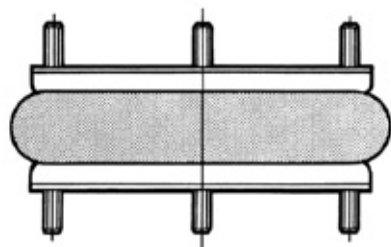
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

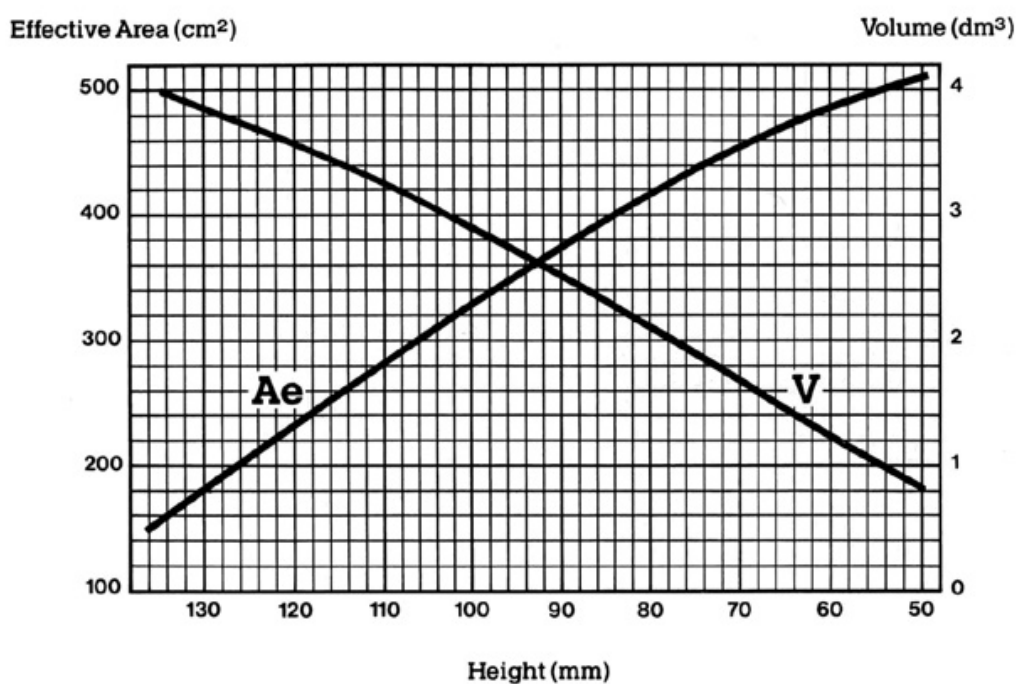
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	280mm
Space Required	295mm
Minimum Height	50mm
Maximum Height	135mm
Total Stroke	85mm
Static Height	95mm
Effective Area at Static Height	350cm ²
Bellows Weight	3.8kg



**Effective Area/Height
Volume/Height**



Ae Effective Area cm²

V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

10" x 2

PART NUMBER	TYPE	RUBBER	INLET
VSM 10176	Bellow	Standard	N/A
PNP 30545 01 12	Assembly	Standard	1/2" BSP
A 3 1479 0B 20	Bellow	Butyl	N/A
	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	28bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

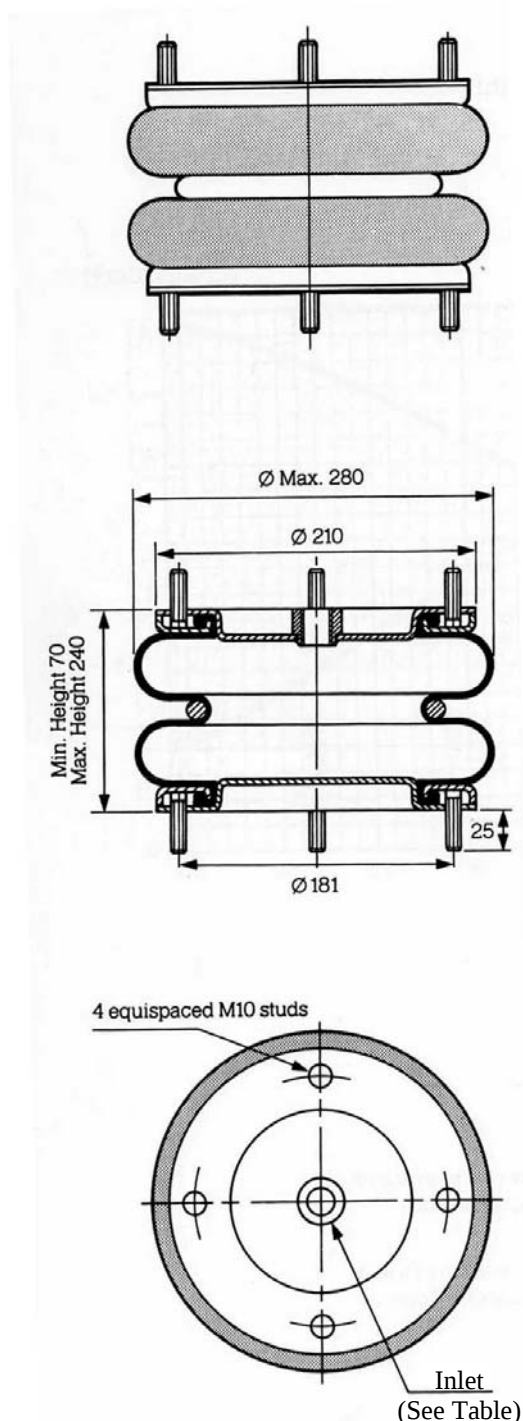
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

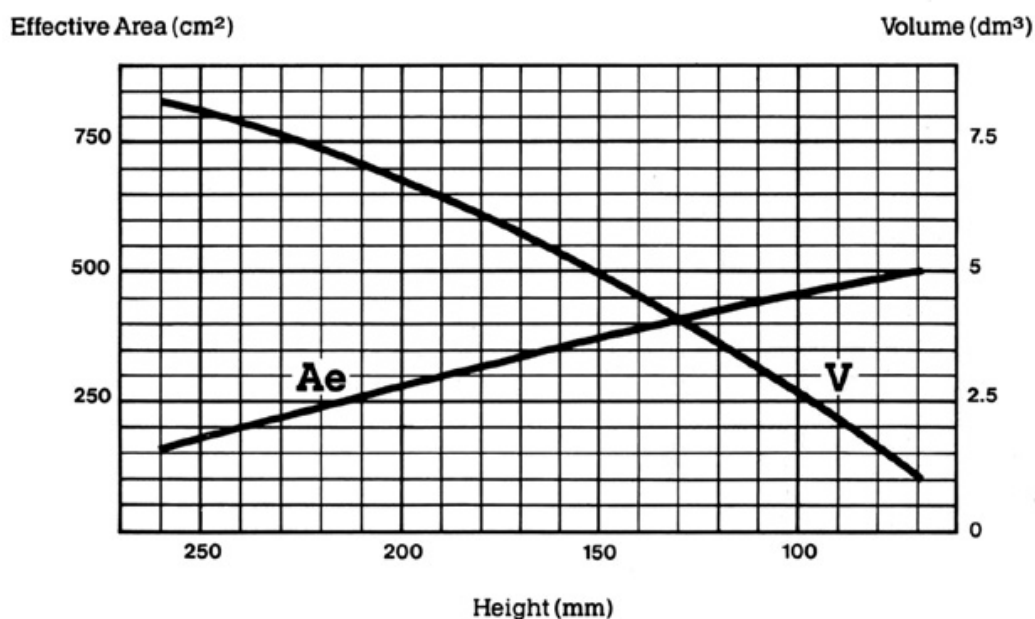
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	280mm
Space Required	295mm
Minimum Height	70mm
Maximum Height	240mm
Total Stroke	170mm
Static Height	160mm
Effective Area at Static Height	355cm ²
Bellows Weight	4.6kg



Effective Area/Height
Volume/Height



Ae Effective Area cm²

V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

10" x 3

PART NUMBER	TYPE	RUBBER	INLET
A 3 1465 00 26	Bellow, 2 ply	Standard	N/A
PNP 30545 01 10	Assembly, 2 ply Bellow	Standard	1/2" BSP
A 3 1480 0B 21	Bellow, 2 ply	Butyl	N/A
A 3 1492 0B 23	Bellow, 4 ply	Butyl	N/A
	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	28bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

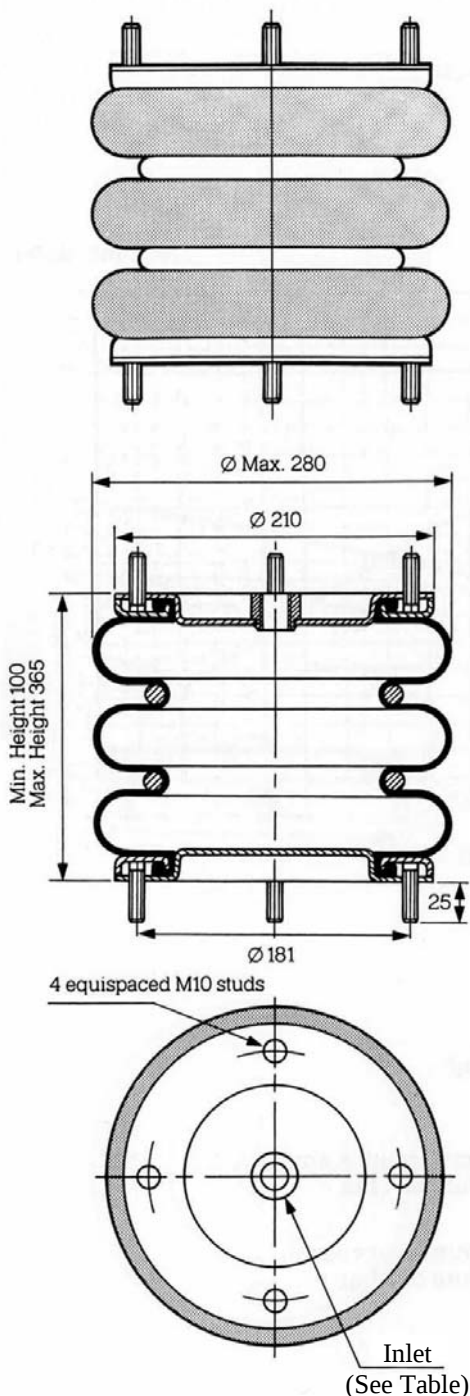
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

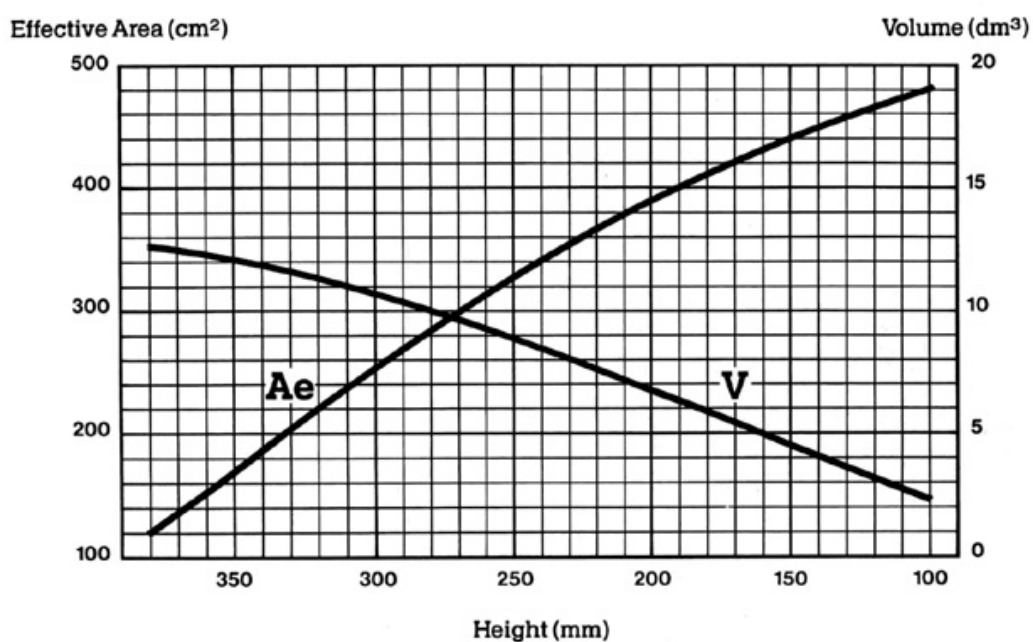
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	280mm
Space Required	295mm
Minimum Height	100mm
Maximum Height	365mm
Total Stroke	265mm
Static Height	235mm
Effective Area at Static Height	350cm ²
Bellows Weight	5.4kg



Effective Area/Height
Volume/Height



Ae Effective Area cm²

V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

12" x 1

PART NUMBER	TYPE	RUBBER	INLET
PNP 30407 02 00	Bellow	Standard	N/A
PNP 30552 01 20	Assembly	Standard	1/2" BSP
A 3 1481 0B 22	Bellow	Butyl	N/A
	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	27bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

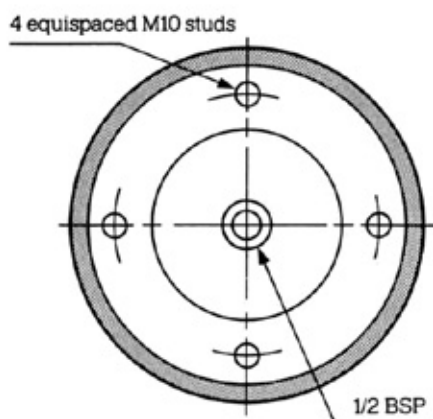
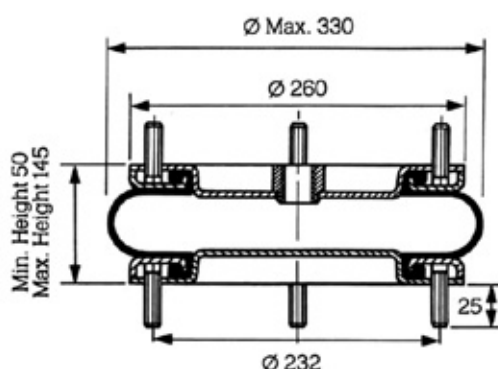
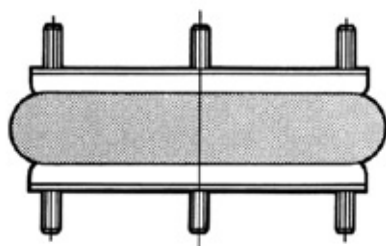
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

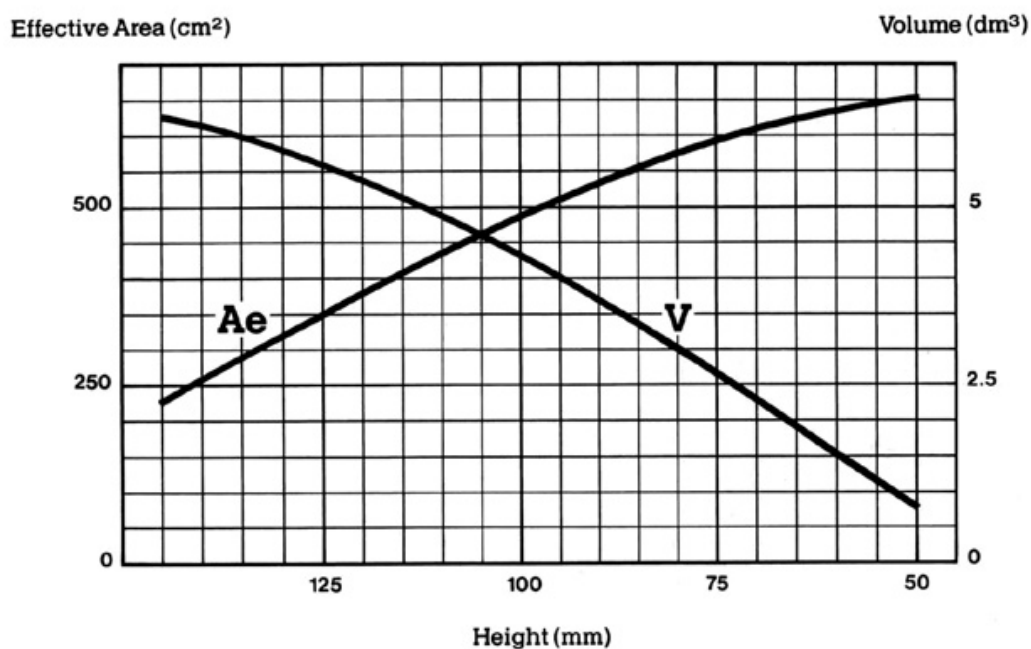
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	330mm
Space Required	345mm
Minimum Height	50mm
Maximum Height	145mm
Total Stroke	95mm
Static Height	95mm
Effective Area at Static Height	510cm ²
Bellows Weight	4.75kg



**Effective Area/Height
Volume/Height**



Ae Effective Area cm²

V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

12" x 2

PART NUMBER	TYPE	RUBBER	INLET
VSM 10178	Bellow	Standard	N/A
PNP 30552 01 18	Assembly	Standard	1/2" BSP
A 3 1482 0B 23	Bellow	Butyl	N/A
PNP 30552 01 107	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	27bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

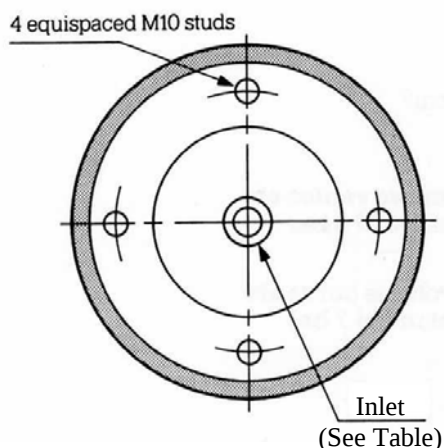
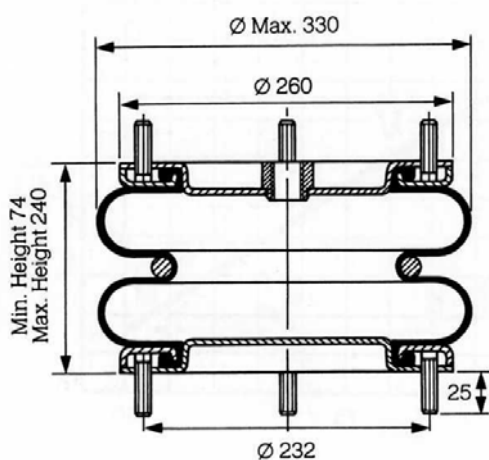
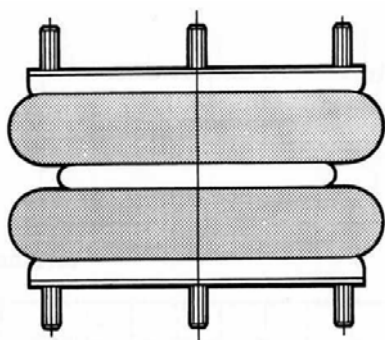
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

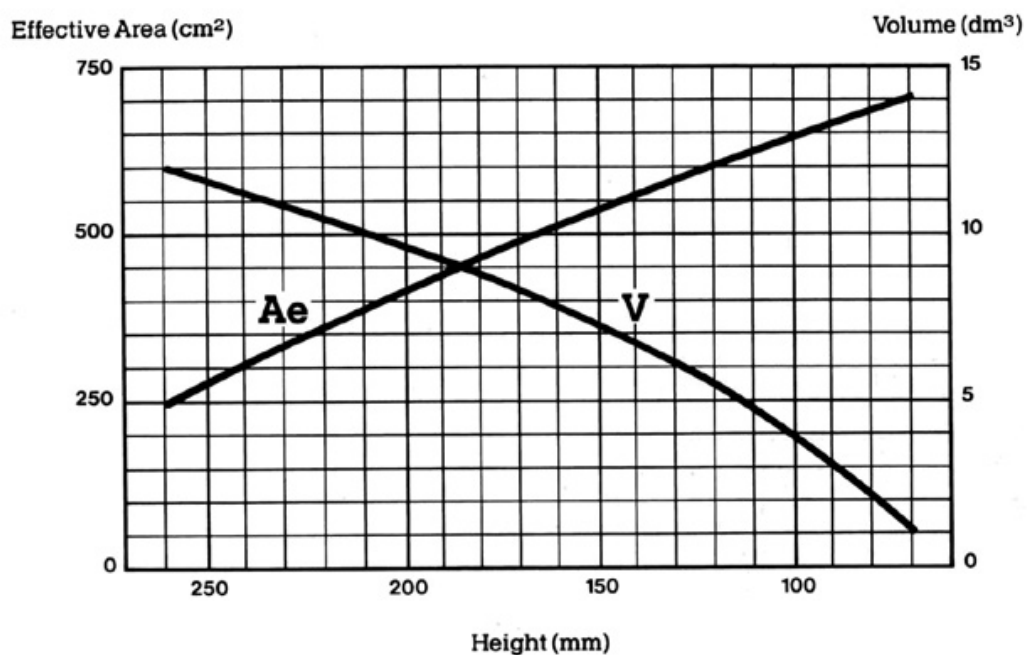
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	330mm
Space Required	345mm
Minimum Height	74mm
Maximum Height	240mm
Total Stroke	166mm
Static Height	160mm
Effective Area at Static Height	510cm ²
Bellows Weight	5.85kg



**Effective Area/Height
Volume/Height**



Ae Effective Area cm²

V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

12" x 2 Extended

PART NUMBER	TYPE	RUBBER	INLET
A 3 1733 00 25	Bellow	Standard	N/A

Conditions of Use

Maximum Working Pressure	8 bar
Burst Pressure	27bar

Precautions to Observe

Do not inflate assembly when it is unrestricted.

Do not inflate beyond pressures stated without prior consultation with Dunlop.

Respect maximum and minimum heights.

The bellows must be securely fixed.

Do not use without air pressure.

Operating Temperature

Minimum Temperature -30°C (-40°C static)

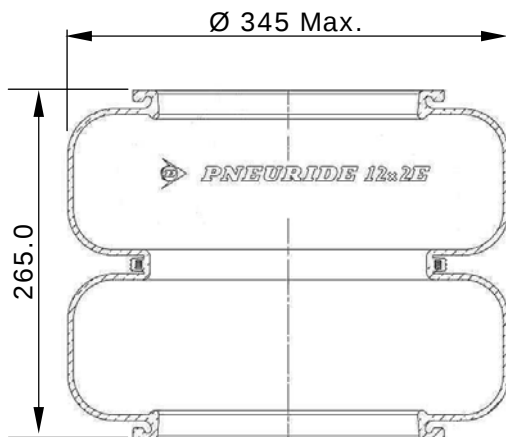
Maximum Temperature 70°C (90°C static)

Materials

- Bellows : various rubbers

Dimensions

Maximum Diameter	345mm
Space Required	370mm
Minimum Height	75mm
Maximum Height	400mm
Total Stroke	325mm
Static Height	270mm



12" x 3

PART NUMBER	TYPE	RUBBER	INLET
A 3 1466 00 27	Bellow, 2 ply	Standard	N/A
VSM 10132	Bellow, 4 ply	Standard	N/A
PNP 30552 01 78	Assembly, 4 play Bellow	Standard	1/2" BSP
A 3 1483 0B 24	Bellow, 2 ply	Butyl	N/A
A 3 1493 0B 24	Bellow, 4 ply	Butyl	N/A
	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	27bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

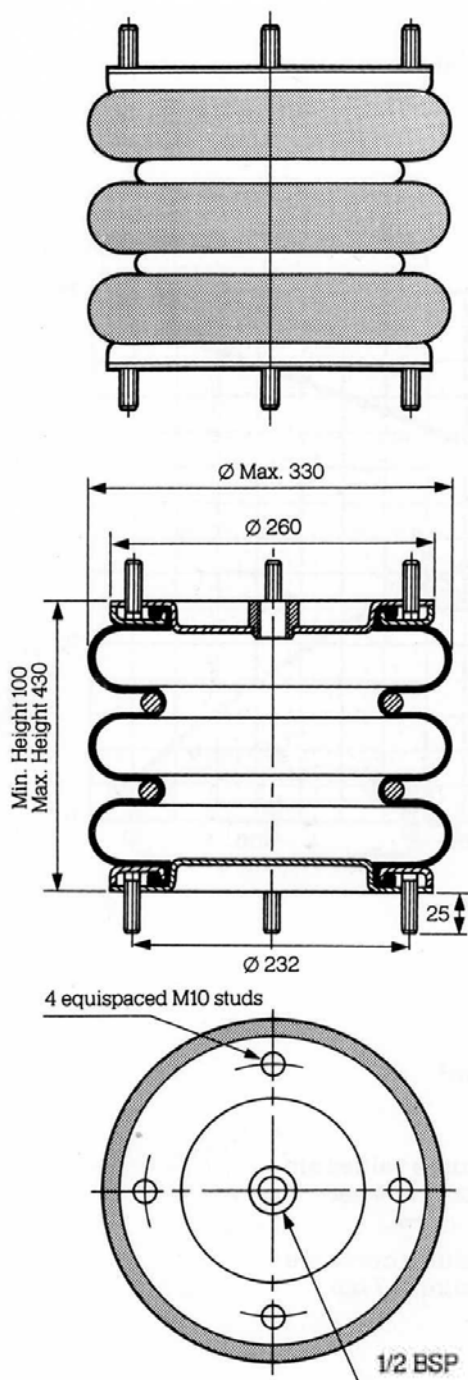
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

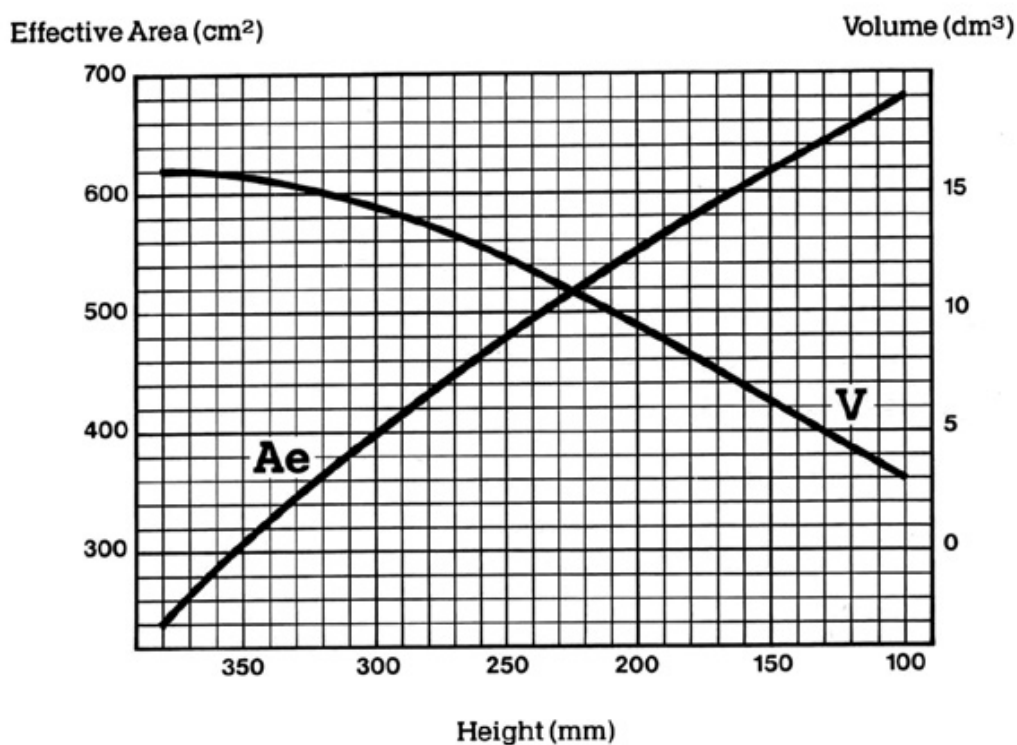
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	330mm
Space Required	345mm
Minimum Height	100mm
Maximum Height	430mm
Total Stroke	330mm
Static Height	222mm
Effective Area at Static Height	510cm ²
Bellows Weight	7.0kg



Effective Area/Height Volume/Height



Ae Effective Area cm²

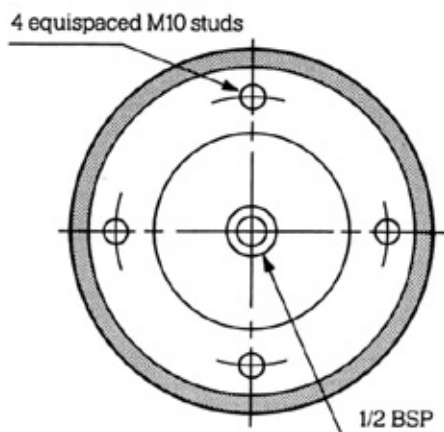
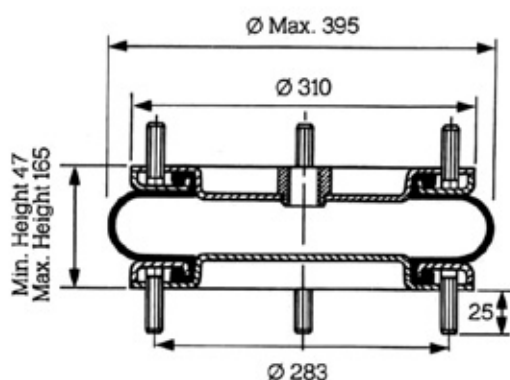
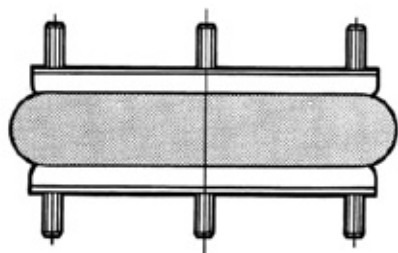
V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

14 1/2 " x 1

PART NUMBER	TYPE	RUBBER	INLET
PNP 30408 02 00	Bellow	Standard	N/A
PNP 30414 01 19	Assembly	Standard	1/2" BSP
A 3 1484 0B 25	Bellow	Butyl	N/A
	Assembly	Butyl	1/2" BSP



Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	26bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

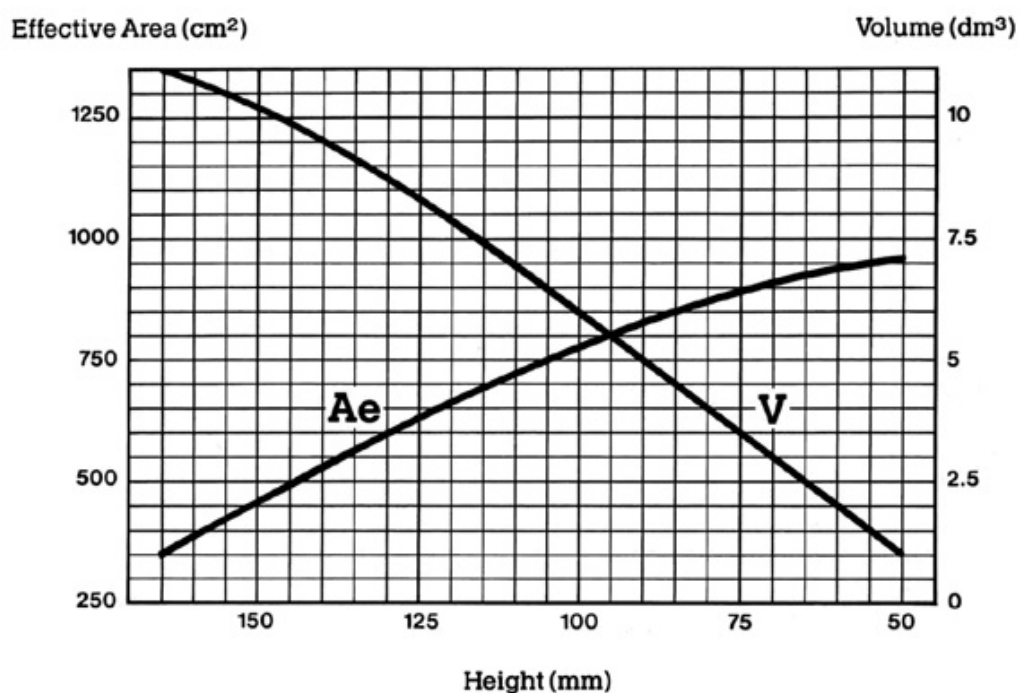
Note

This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	395mm
Space Required	410mm
Minimum Height	47mm
Maximum Height	165mm
Total Stroke	118mm
Static Height	105mm
Effective Area at Static Height	750cm ²
Bellows Weight	6.9kg

Effective Area/Height
Volume/Height



Ae Effective Area cm^2

V Volume dm^3

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

14 1/2 " x 2

PART NUMBER	TYPE	RUBBER	INLET
VSM 10248	Bellow	Standard	N/A
PNP 30414 01 17	Assembly	Standard	1/2" BSP
A 3 1485 0B 26	Bellow	Butyl	N/A
	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	26bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

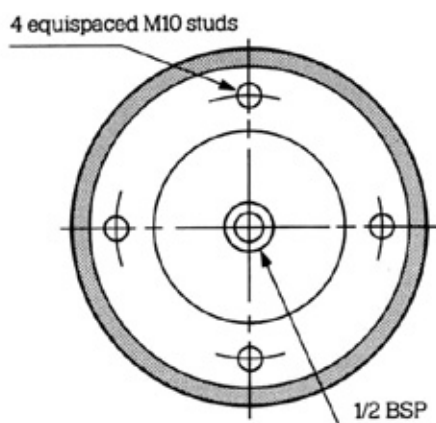
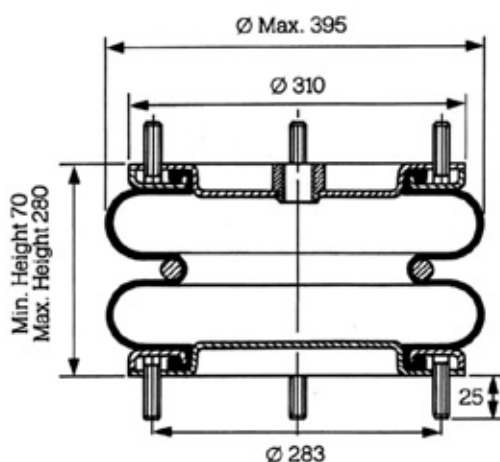
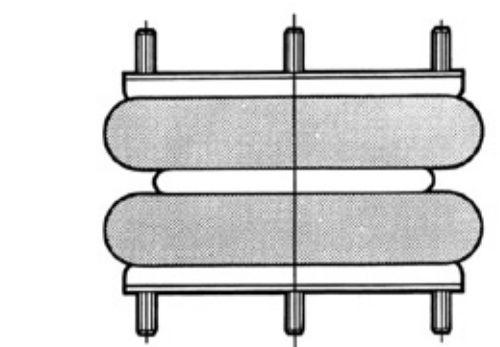
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

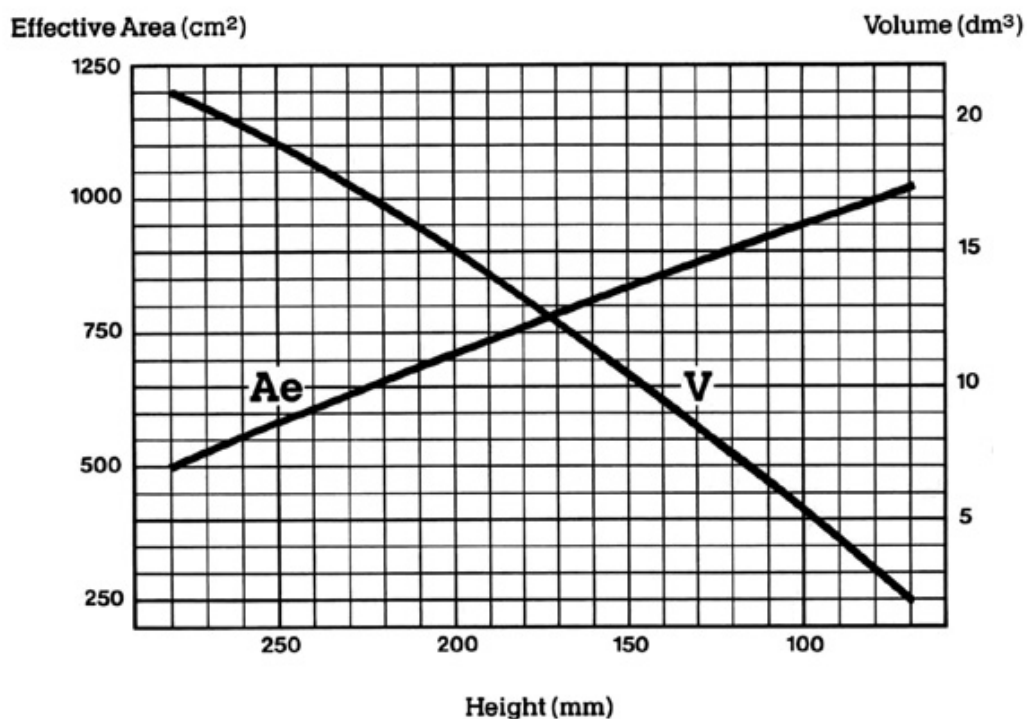
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	395mm
Space Required	410mm
Minimum Height	70mm
Maximum Height	280mm
Total Stroke	210mm
Static Height	180mm
Effective Area at Static Height	760cm ²
Bellows Weight	8.5kg



Effective Area/Height Volume/Height



Ae Effective Area cm²

V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

14 1/2 " x 3

PART NUMBER	TYPE	RUBBER	INLET
A 3 1441 00 21	Bellow, 2 ply	Standard	N/A
PNP 30625 01 23	Bellow, 4 ply	Standard	N/A
PNP 30414 01 42	Assembly, 4 ply Bellow	Standard	1/2" BSP
A 3 1486 0B 27	Bellow, 2 ply	Butyl	N/A
	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	26bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

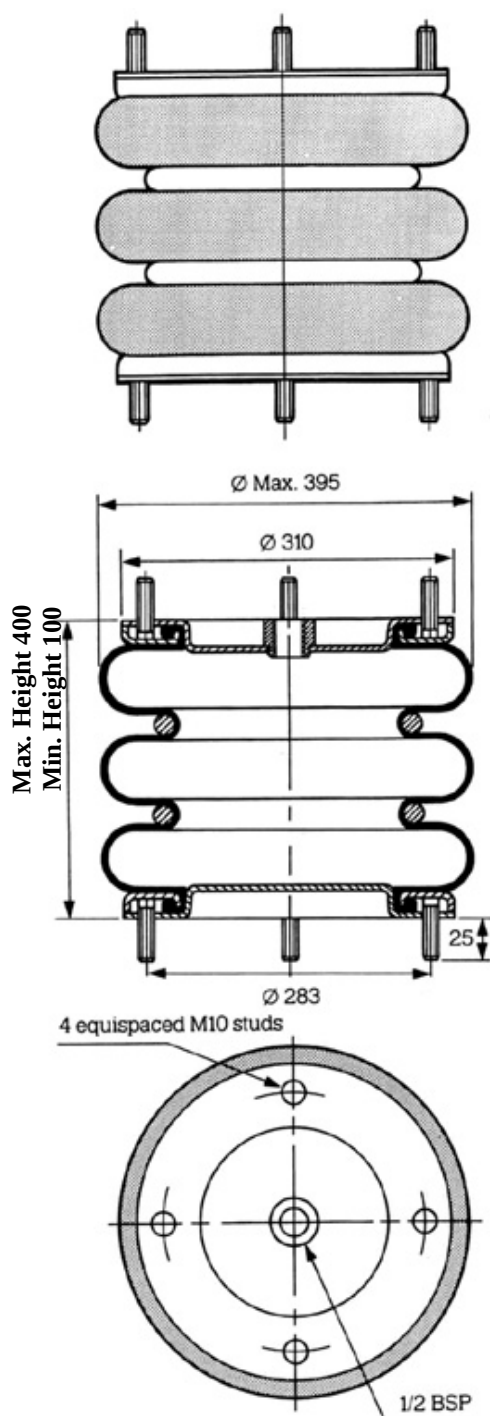
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

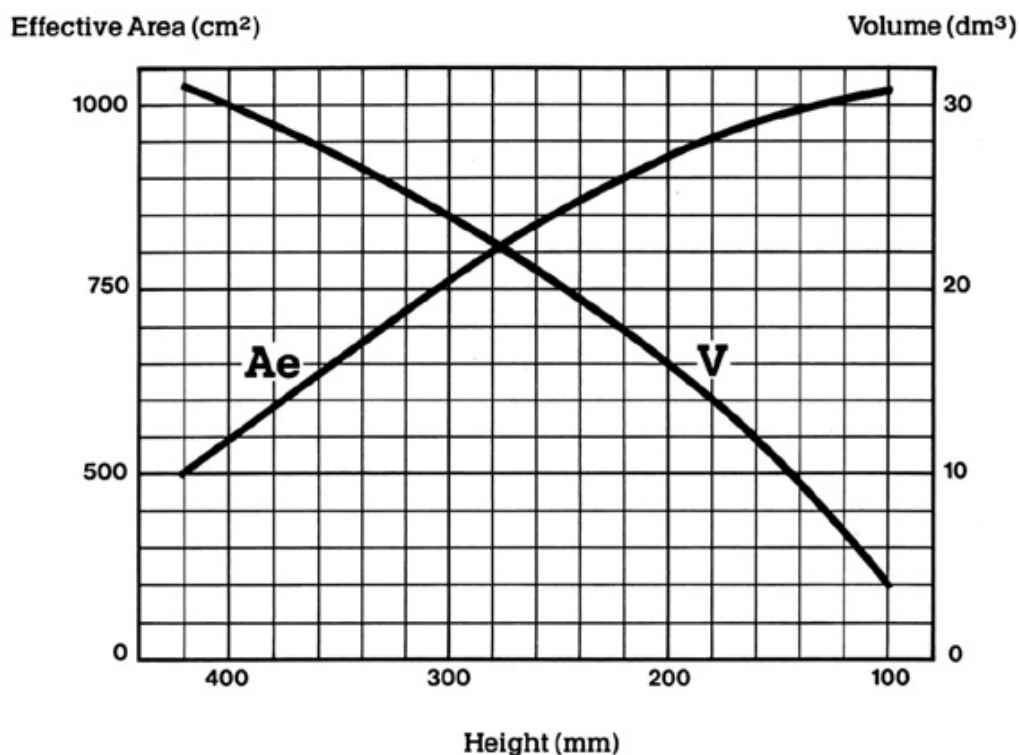
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	395mm
Space Required	410mm
Minimum Height	100mm
Maximum Height	476mm
Total Stroke	376mm
Static Height	280mm
Effective Area at Static Height	800cm ²
Bellows Weight	10kg



Effective Area/Height Volume/Height



Ae Effective Area cm²

V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

16" x 2

PART NUMBER	TYPE	RUBBER	INLET
ICM 3016	Bellow, 2 ply	Standard	N/A
A 3 1259 00 15	Bellow, 4 ply	Standard	N/A
PNP 30415 01 13	Assembly, 2 ply Bellow	Standard	1/2" BSP
A 3 1488 0B 29	Bellow, 2 ply	Butyl	N/A
	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	25bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

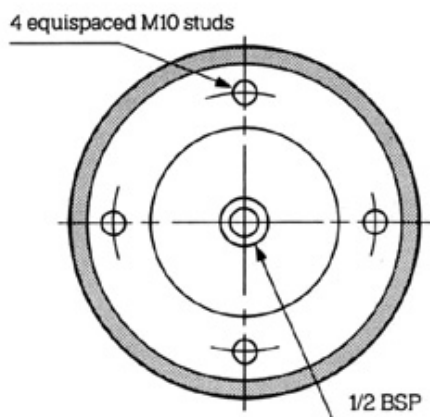
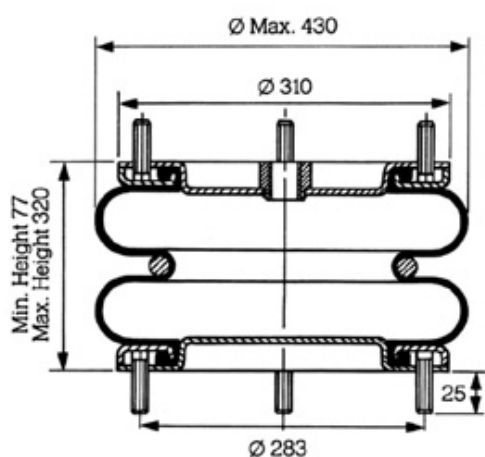
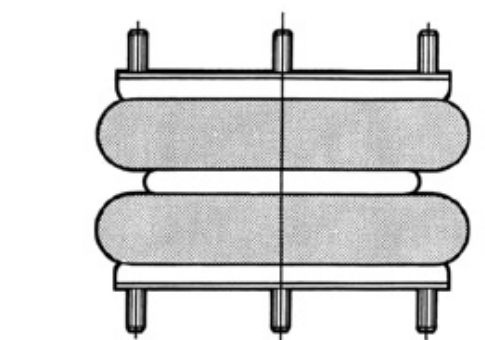
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

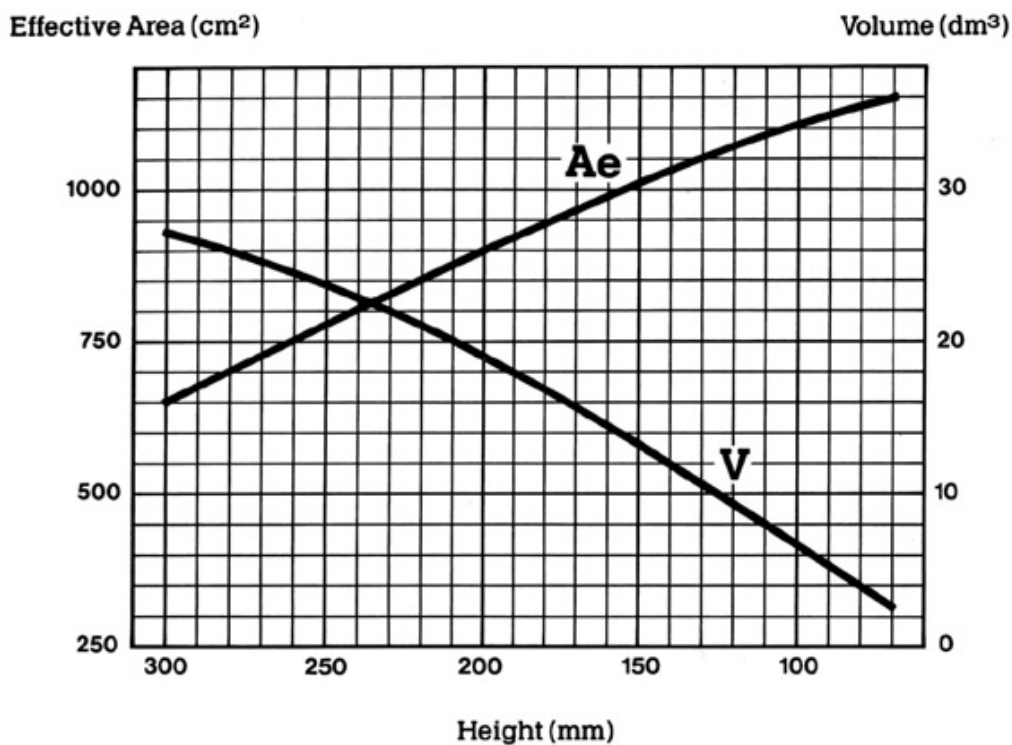
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	430mm
Space Required	445mm
Minimum Height	77mm
Maximum Height	320mm
Total Stroke	243mm
Static Height	180mm
Effective Area at Static Height	950cm ²
Bellows Weight	8.8kg



Effective Area/Height Volume/Height



Ae Effective Area cm²

V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

16" x 3

PART NUMBER	TYPE	RUBBER	INLET
PNP 31317 01 00	Bellow, 4 ply	Natural	N/A
PNP 31316 01 00	Assembly, 4 ply Bellow	Natural	1/2" BSP
A 3 1491 0B 22	Bellow, 2 ply	Butyl	N/A
	Assembly	Butyl	1/2" BSP

Conditions of Use

Maximum Working Pressure	8bar
Burst Pressure	25bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	10mm

Precautions to Observe

- Do not exceed stated stroke.
- Do not inflate assembly when it is unrestricted.
- Do not inflate beyond pressures stated without prior consultation with Dunlop.
- Respect maximum and minimum heights.
- The bellows must be securely fixed.
- Do not use without air pressure.

Operating Temperature

- Minimum Temperature -30°C (-40°C static)
- Maximum Temperature 70°C (90°C static)

Materials

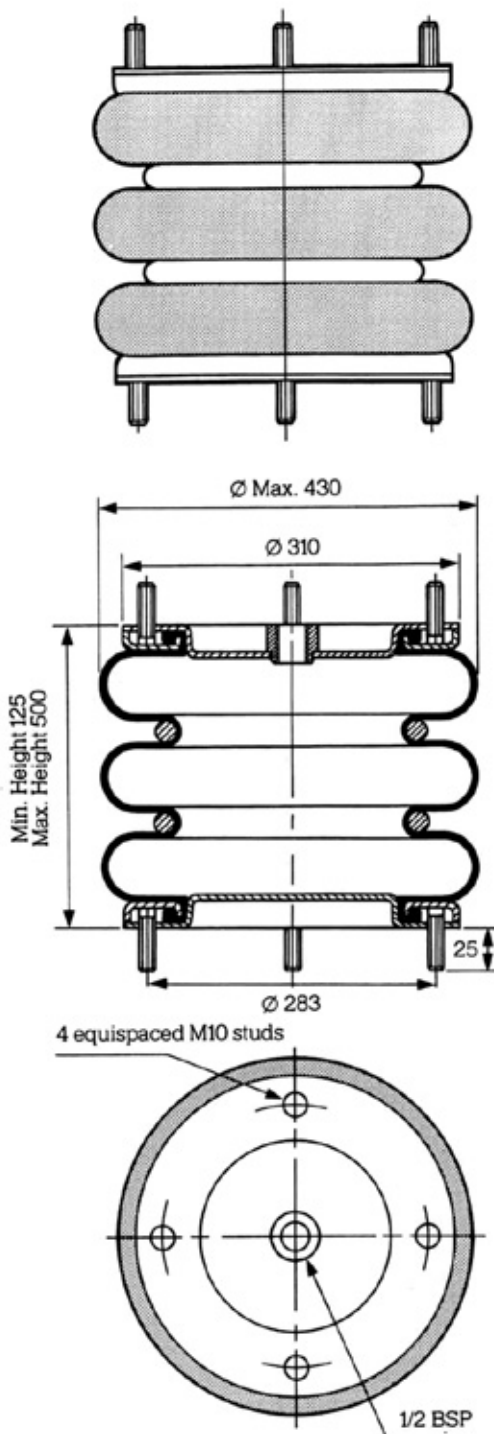
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

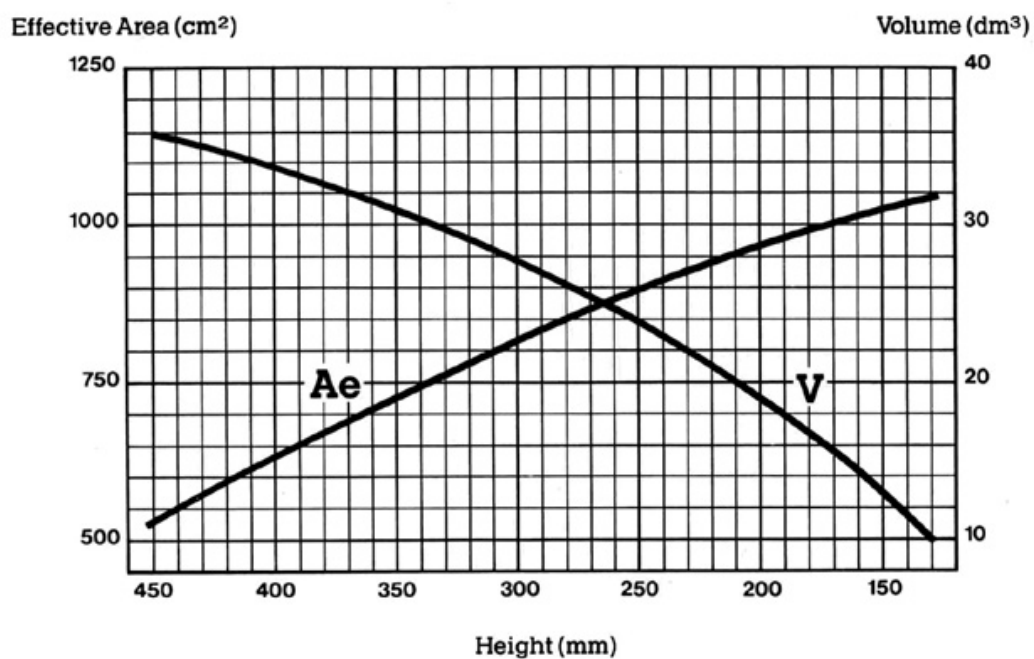
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	430mm
Space Required	445mm
Minimum Height	125mm
Maximum Height	500mm
Total Stroke	375mm
Static Height	280mm
Effective Area at Static Height	850cm ²
Bellows Weight	16kg



**Effective Area/Height
Volume/Height**



Ae Effective Area cm²

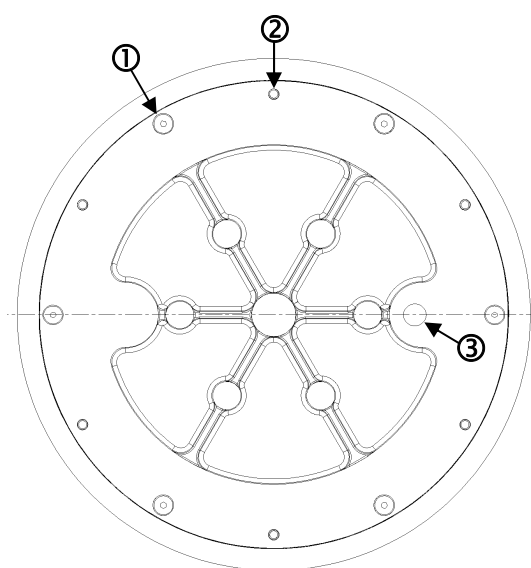
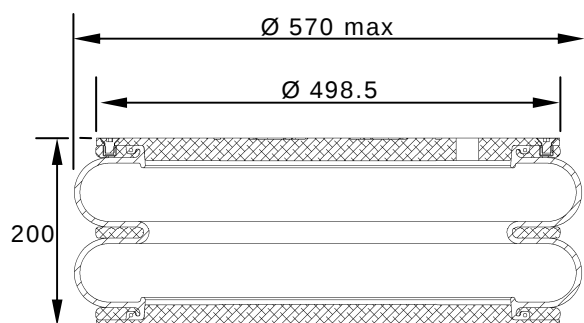
V Volume dm³

The effective area curve values are measured at a pressure of 4 bar (0.4 MPa).

The values of the volume curve are measured at a pressure of 7 bar (0.7 MPa).

21 1/2 " x 2

PART NUMBER	TYPE	RUBBER	INLET
A 3 1353 00 24	Bellow	Standard	N/A
A 1 1238 00 07	Assembly	Standard	3/4" BSP
A 3 1490 0B 21	Bellow	Butyl	N/A
	Assembly	Butyl	3/4" BSP



Clamping Plate Details

① Countersunk Holes
6-off equispaced M10 counter-sunk holes.

② Mounting Holes
6-off equispaced M10 mounting holes

③ Air Inlet
3/4" BSP

Conditions of Use

Maximum Working Pressure	10bar
Burst Pressure	20bar
Maximum Angle between Top & Bottom Plates	15°
Maximum Axial Offset	20mm

Precautions to Observe

Do not exceed stated stroke.
Do not inflate assembly when it is unrestricted.
Do not inflate beyond pressures stated without prior consultation with Dunlop.
Respect maximum and minimum heights.
The bellows must be securely fixed.
Do not use without air pressure.

Operating Temperature

Minimum Temperature -30°C (-40°C static)
Maximum Temperature 70°C (90°C static)

Materials

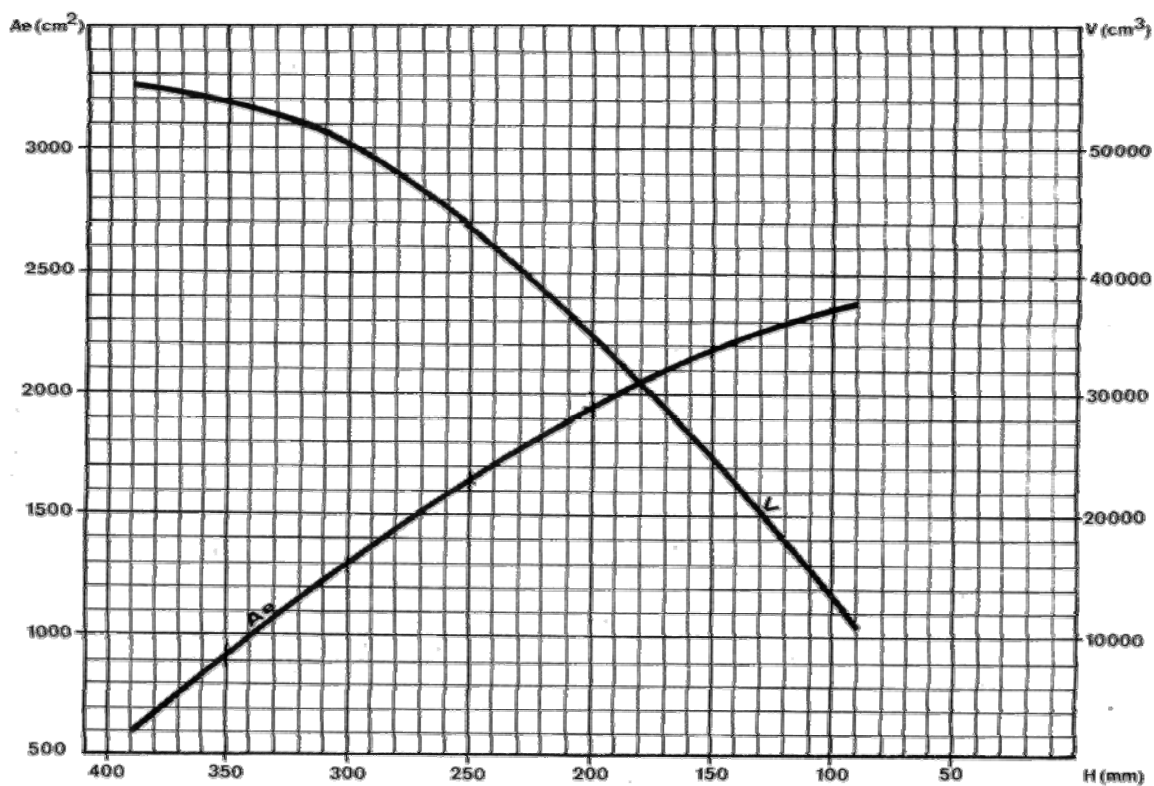
- Bellows : various rubbers
- Metal parts : mild steel, protected by zinc passivate and yellow chromate

Note

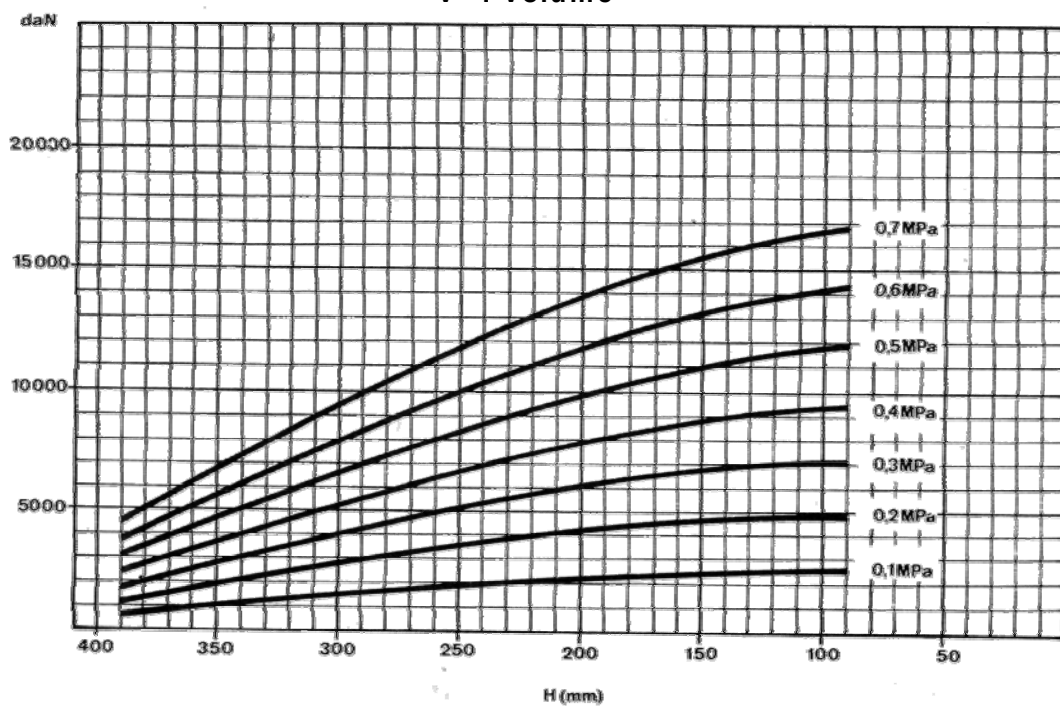
This bellow assembly can be completely dismantled

Dimensions

Maximum Diameter	570mm
Space Required	595mm
Minimum Height	90mm
Maximum Height	390mm
Total Stroke	300mm
Static Height	200mm
Effective Area at Static Height	1950cm ²
Bellows Weight	21kg



A_e : Effective Area
 H : Spring Height
 V : Volume





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