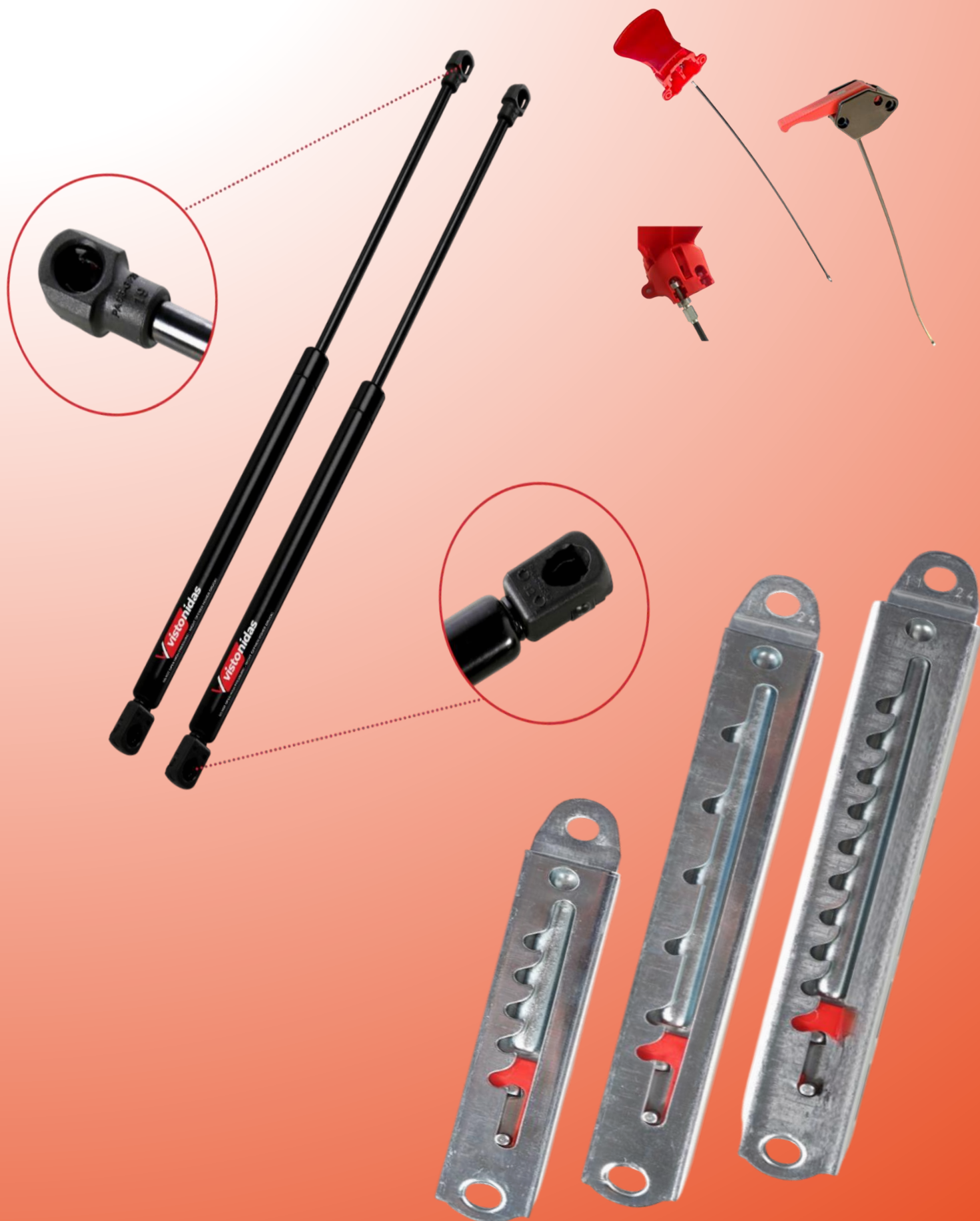
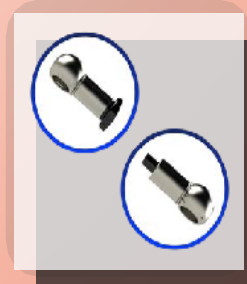
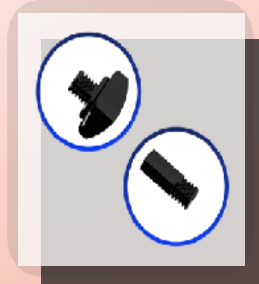
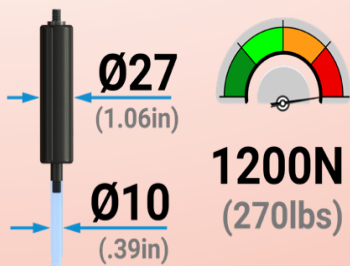
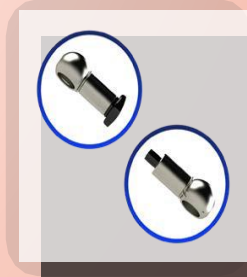
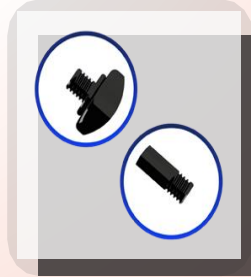
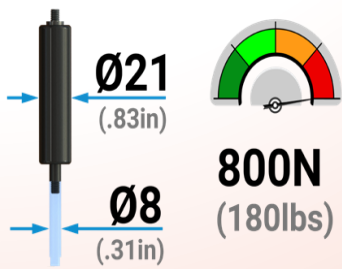






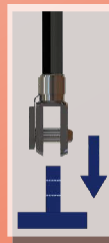
Ball Socket



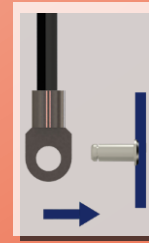
Ball Joint



Clevis



Eye





Tube Side End Fitting

M6, M8, M10 thread options according to item diameter.
Check End Fittings Collection for appropriate mounting options

Piston Assembly

Specially designed labyrinth piston with o-ring provides speed control and rod guide.

Pressure Tubes

Seamless ST14 Steel tube covered with electrostatic powder paint in order to provide corrosion resistance

Sealing and Guidance Package

The seal that prevents the pressurized gas from escaping and ensures the highest level of functional safety.

Piston Rod

Induction Hardened and 3 times stoned QBQ black piston rods provides protection against impacts and corrosion.

Rod Side End Fitting

M6, M8, M10 thread options according to item diameter. Check End Fittings Collection for appropriate mounting options.

How Does Gas Spring Work?

Retraction Phase (Pulling Action): When the external force pulling on the piston rod is released, the potential energy stored in the compressed gas causes the piston to move away from the rod end. This extension of the piston rod occurs as the gas inside the gas chamber during this extension phase.

Compression of Gas: As the piston rod extends, the gas inside the gas chamber gets compressed, storing potential energy in the gas strut.

Extension Phase (Reverse Action): When a force is applied to compress the gas strut (pulling on the piston rod), the gas inside the gas chamber is compressed further. This increased pressure causes the piston to move toward the rod end, causing the piston rod to retract.

The one-way valve prevents gas from flowing back to the rod chamber during this compression phase, allowing the gas strut to control the retraction speed and provide cushioning.

Endurance, Lifetime

Pullstrut Series Gas springs are designed in such a way that they can reach some 100,000 cycles via the whole stroke without problem. Which means without force loss, oil leakage. Besides, corrosion resistance is main expectation from gas springs. We provide our Pullstrut Series gas springs with above 120 hours salt duration.

Salt Spray Tests being occurred by officially registered laboratories according to TS EN ISO 9227 Corrosion tests in artificial atmospheres – Salt spray tests. 100 hours is acceptance criteria

This standard describes the spraying of a salt solution in the chamber at 35°C or 50°C. Acetic acid or copper chloride can be added to the NaCl solution to accelerate the reaction. The fine salt fog condenses on the test samples and initiates corrosion. A salt spray chamber according to DIN EN ISO 9227 is supplied with a minimum volume of 400 litres..

How to Measure Gas Spring

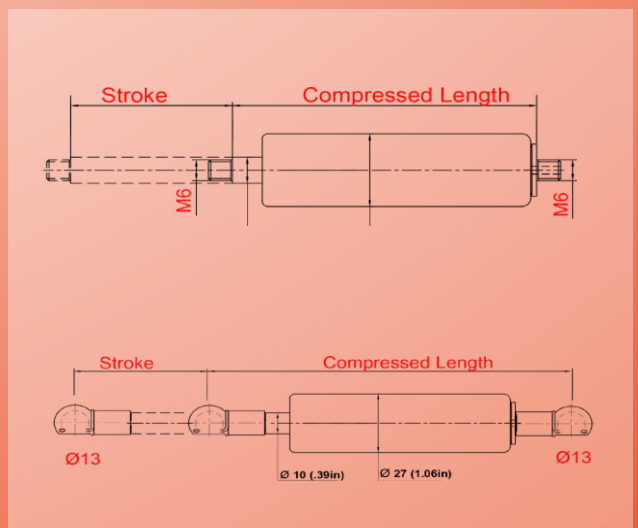
In case of custom design or ordering replacement gas springs there are some important parameters that need to be provided. These parameters are;

– **Compressed Length (CL)** ; it needs to be measure as gas spring fully compressed or closed. If there is not end fitting on gas spring please measure excluding threads. If there are end fitting on gas spring please measure from center to center.

– **Stroke Length (s)** ; it is actually difference between fully extended and fully compressed length.

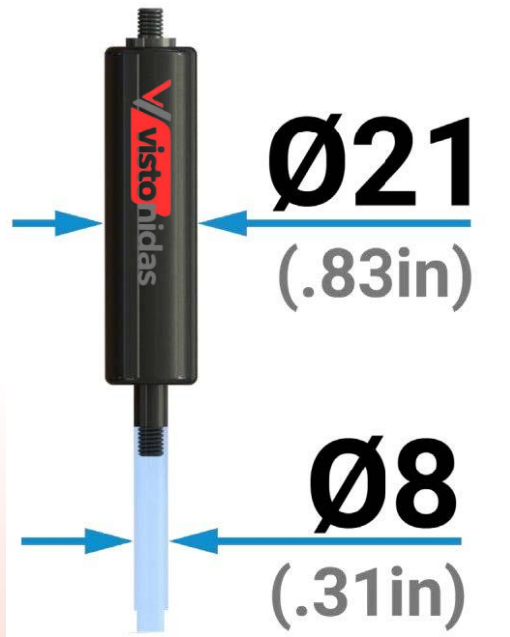
– **Pressure Rate (F1)** ; which can be considered as lifting power of gas spring. Each diameter range provides certain power capacity. F1 value can be stated as Newton (N) or Pound (lbs).

Dimension Parameters of Pullstrut gas springs are being measured by universal tools which calibrated periodically according to DIN 865/866 considering item drawing. Tolerance rate is ± 2 mm in accordance with TS 1980-2 EN 22768-2.





PULLSTRUT SERIES



Max. Pressure
800N
180 lbs

Rod- Tube Diameter

Maximum Pressure Capacity

End Fitting Options



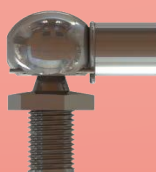
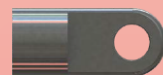
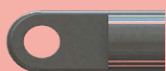


Pullstrut Series



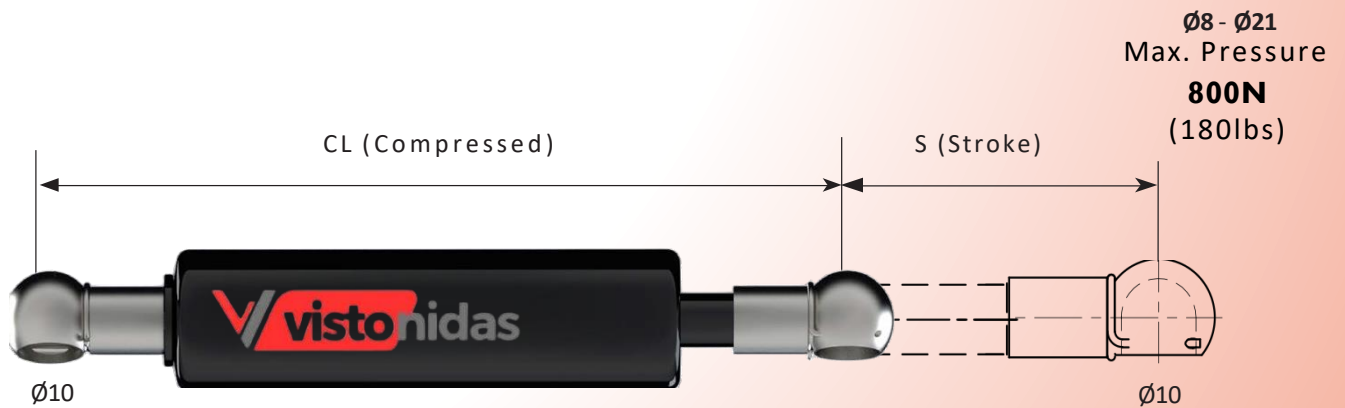
Ø8 - Ø21
Max. Pressure
800N
(180lbs)

Item Code	S (mm)	CL (mm)	S (inch)	CL (inch)	Item Code (inch)	S (mm)	CL (mm)	S (inch)	CL (inch)
310 100 000	20	100	0,79	3,93	310 100 011	150	232	5,9	9,13
310 100 001	30	112	1,18	4,4	310 100 012	150	390	5,9	15,35
310 100 002	50	132	1,96	5,19	310 100 013	155	353	6,1	13,89
310 100 003	54	150	2,12	5,9	310 100 014	160	260	6,29	10,23
310 100 004	60	160	2,36	6,29	310 100 015	181	404	7,12	15,9
310 100 005	79	201	3,11	7,91	310 100 016	200	282	7,87	11,1
310 100 006	80	180	3,14	7,08	310 100 017	200	290	7,87	11,41
310 100 007	100	182	3,93	7,16	310 100 018	200	300	7,87	11,81
310 100 008	100	190	3,93	7,48	310 100 019	206	455	8,11	17,91
310 100 009	100	200	3,93	7,87	310 100 020	250	340	9,84	13,38
310 100 010	104	251	4,09	9,88	310 100 021	250	349	9,84	13,74





Pullstrut Series



Item Code	S (mm)	CL (mm)	S (inch)	CL (inch)	Item Code	S (mm)	CL (mm)	S (inch)	CL (inch)
310 200 000	20	150	0,79	5,91	310 200 012	150	282	5,9	11,10
310 200 001	30	162	1,18	6,38	310 200 013	150	440	5,9	17,32
310 200 002	50	182	1,96	7,17	310 200 014	155	403	6,1	15,87
310 200 003	54	200	2,12	7,87	310 200 015	160	310	6,29	12,20
310 200 004	60	210	2,36	8,27	310 200 016	181	454	7,12	17,87
310 200 005	79	251	3,11	9,88	310 200 017	200	332	7,87	13,07
310 200 006	80	230	3,14	9,06	310 200 018	200	340	7,87	13,39
310 200 007	100	232	3,93	9,13	310 200 019	200	350	7,87	13,78
310 200 008	100	240	3,93	9,45	310 200 020	206	505	8,11	19,88
310 200 009	100	250	3,93	9,84	310 200 021	250	390	9,84	15,35
310 200 010	104	301	4,09	11,85	310 200 022	250	399	9,84	15,71
310 200 011	120	270	4,72	10,63	310 200 023	257	606	10,11	23,86



CL (Compressed)

S (Stroke)

M8

M8

The diagram illustrates the dimensions of a Vistonidas shock absorber. It shows a central black body with the 'Vistonidas' logo. On the left, a silver-colored spherical joint is labeled 'M8'. A dimension line above the body indicates 'CL (Compressed)' as the length of the main body. To the right, another spherical joint is labeled 'M8'. A second dimension line, labeled 'S (Stroke)', shows the travel distance from the center of this joint to the end of the shock absorber's travel, indicated by a dashed line and a cross-section of the internal piston rod.

[illegible]



Pullstrut Series

Ø8 - Ø21
Max. Pressure
800N
(180lbs)



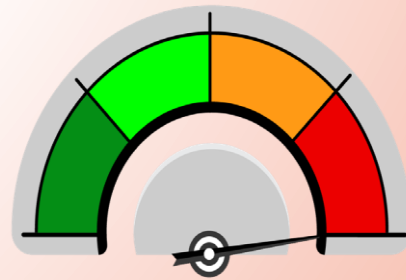
Item Code	S (mm)	CL (mm)	S (inch)	CL (inch)	Item Code	S (mm)	CL (mm)	S (inch)	CL (inch)
310 400 000	20	150	0,79	5,91	310 400 011	150	282	5,9	11,10
310 400 001	30	162	1,18	6,38	310 400 012	150	440	5,9	17,32
310 400 002	50	182	1,96	7,17	310 400 013	155	403	6,1	15,87
310 400 003	54	200	2,12	7,87	310 400 014	160	310	6,29	12,20
310 400 004	60	210	2,36	8,27	310 400 015	181	454	7,12	17,87
310 400 005	79	251	3,11	9,88	310 400 016	200	332	7,87	13,07
310 400 006	80	230	3,14	9,06	310 400 017	200	340	7,87	13,39
310 400 007	100	232	3,93	9,13	310 400 018	200	350	7,87	13,78
310 400 008	100	240	3,93	9,45	310 400 019	206	505	8,11	19,88
310 400 009	100	250	3,93	9,84	310 400 020	250	390	9,84	15,35
310 400 010	104	301	4,09	11,85	310 400 021	250	399	9,84	15,71



PULLSTRUT SERIES



Rod- Tube Diameter



1200N
(270lbs)

Maximum Pressure Capacity

End Fitting Options





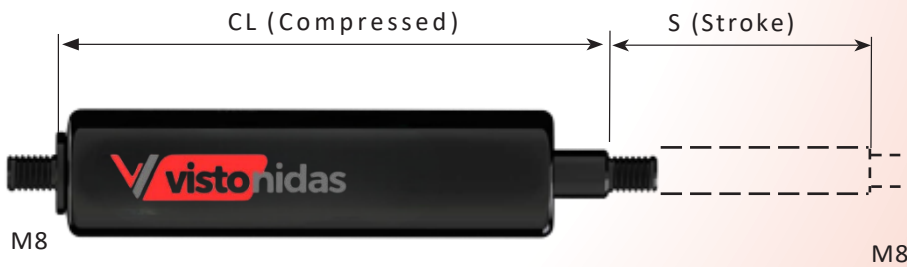
Pullstrut Series

Ø10 - Ø27

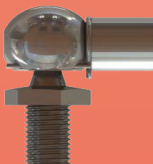
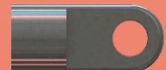
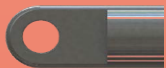
Max. Pressure

1200N

(270lbs)



Item Code	S (mm)	CL (mm)	S (inch)	CL (inch)	Item Code	S (mm)	CL (mm)	S (inch)	CL (inch)
310 500 000	30	130	1,18	5,12	310 500 011	250	349	9,84	13,74
310 500 001	50	150	1,96	5,91	310 500 012	254	315	10	12,4
310 500 002	76	143	2,99	5,63	310 500 013	300	394	11,81	15,51
310 500 003	89	181	3,5	7,13	310 500 014	300	400	11,81	15,75
310 500 004	100	200	3,94	7,87	310 500 015	350	450	13,78	17,72
310 500 005	140	207	5,51	8,14	310 500 016	400	500	15,75	19,69
310 500 006	150	249	5,91	9,8	310 500 017	450	550	17,72	21,65
310 500 007	152	245	5,98	9,65	310 500 018	500	600	19,68	23,62
310 500 008	200	290	7,87	11,42	310 500 019	550	650	21,65	25,29
310 500 009	200	300	7,87	11,81	310 500 020	600	700	23,62	27,55





Pullstrut Series

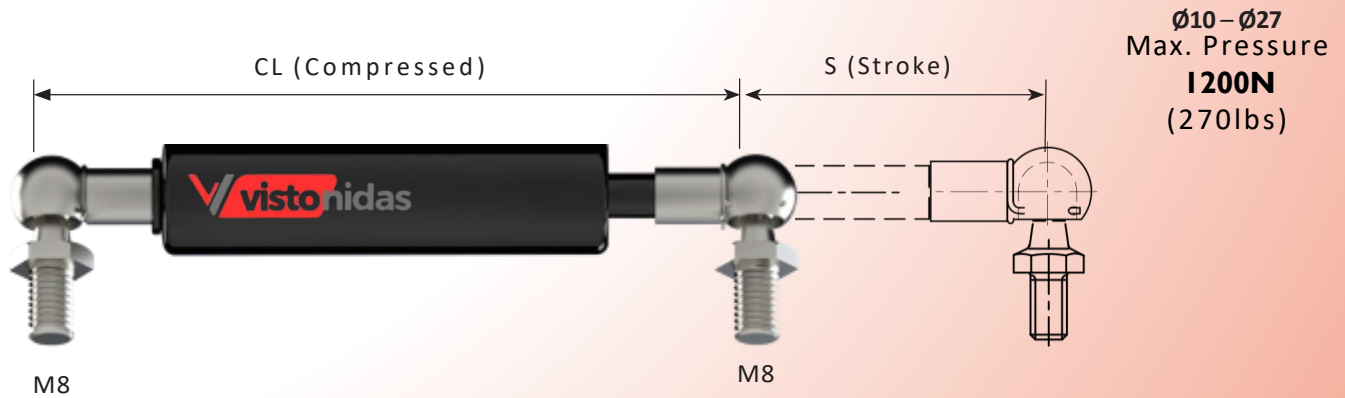


Ø10–Ø27
Max. Pressure
1200N
(270lbs)

Item Code	S (mm)	CL (mm)	S (inch)	CL (inch)	Item Code	S (mm)	CL (mm)	S (inch)	CL (inch)
310 600 000	30	190	1,18	7,48	310 600 011	250	409	9,84	16,10
310 600 001	50	210	1,96	8,27	310 600 012	254	375	10	14,76
310 600 002	76	203	2,99	7,99	310 600 013	300	454	11,81	17,87
310 600 003	89	241	3,5	9,49	310 600 014	300	460	11,81	18,11
310 600 004	100	260	3,94	10,24	310 600 015	350	510	13,78	20,08
310 600 005	140	267	5,51	10,51	310 600 016	400	560	15,75	22,05
310 600 006	150	309	5,91	12,17	310 600 017	450	610	17,72	24,02
310 600 007	152	305	5,98	12,01	310 600 018	500	660	19,68	25,98
310 600 008	200	350	7,87	13,78	310 600 019	550	710	21,65	27,95
310 600 009	200	360	7,87	14,17	310 600 020	600	760	23,62	29,92
310 600 010	203	330	7,99	12,99	310 600 021	650	810	25,59	31,89



Pullstrut Series



Item Code	S (mm)	CL (mm)	S (inch)	CL (inch)	Item Code	S (mm)	CL (mm)	S (inch)	CL (inch)
310 700 000	30	190	1,18	7,48	310 700 011	250	409	9,84	16,10
310 700 001	50	210	1,96	8,27	310 700 012	254	375	10	14,76
310 700 002	76	203	2,99	7,99	310 700 013	300	454	11,81	17,87
310 700 003	89	241	3,5	9,49	310 700 014	300	460	11,81	18,11
310 700 004	100	260	3,94	10,24	310 700 015	350	510	13,78	20,08
310 700 005	140	267	5,51	10,51	310 700 016	400	560	15,75	22,05
310 700 006	150	309	5,91	12,17	310 700 017	450	610	17,72	24,02
310 700 007	152	305	5,98	12,01	310 700 018	500	660	19,68	25,98
310 700 008	200	350	7,87	13,78	310 700 019	550	710	21,65	27,95
310 700 009	200	360	7,87	14,17	310 700 020	600	760	23,62	29,92
310 700 010	203	330	7,99	12,99	310 700 021	650	810	25,59	31,89



Pullstrut Series



Ø10–Ø27
Max. Pressure
1200N
(270lbs)

Item Code	S (mm)	CL (mm)	S (inch)	CL (inch)	Item Code	S (mm)	CL (mm)	S (inch)	CL (inch)
310 800 000	30	190	1,18	7,48	310 800 011	250	409	9,84	16,10
310 800 001	50	210	1,96	8,27	310 800 012	254	375	10	14,76
310 800 002	76	203	2,99	7,99	310 800 013	300	454	11,81	17,87
310 800 003	89	241	3,5	9,49	310 800 014	300	460	11,81	18,11
310 800 004	100	260	3,94	10,24	310 800 015	350	510	13,78	20,08
310 800 005	140	267	5,51	10,51	310 800 016	400	560	15,75	22,05
310 800 006	150	309	5,91	12,17	310 800 017	450	610	17,72	24,02
310 800 007	152	305	5,98	12,01	310 800 018	500	660	19,68	25,98
310 800 008	200	350	7,87	13,78	310 800 019	550	710	21,65	27,95
310 800 009	200	360	7,87	14,17	310 800 020	600	760	23,62	29,92
310 800 010	203	330	7,99	12,99	310 800 021	650	810	25,59	31,89

Pull Type Custom
Production Description
Form
Gas Springs



*Insert Required Parameters:
(without end fittings - please ensure dimensions fit formula on left page)

Stroke (s)	Compressed Length (CL)	Pressure Rate (N)	Item Quantity

*Choose / Mention Tube Side End Fitting:
For more information and details, please
check our End Fittings Catalogue.

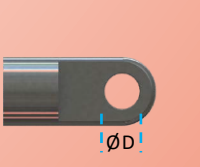
*Choose / Mention Rod Side End Fitting:
For more information and details, please
check our End Fittings Catalogue.



Eye

ØDiameter

Ø6,1
Ø8,1
Ø10,1



Eye

ØDiameter

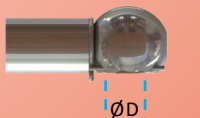
Ø6,1
Ø8,1
Ø10,1



Ball Socket

ØDiameter

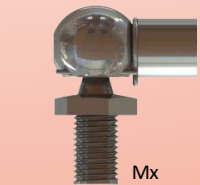
Ø8
Ø10
Ø13
Ø16



Ball Socket

ØDiameter

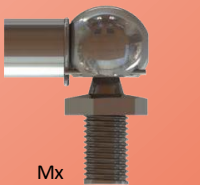
Ø8
Ø10
Ø13
Ø16



Ball Joint

Thread

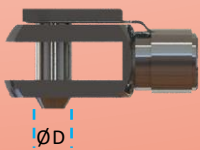
M6
M8
M10



Ball Joint

Thread

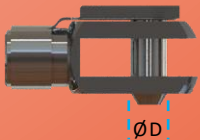
M6
M8
M10



Clevis

ØDiameter

Ø6
Ø8
Ø10



Clevis

ØDiameter

Ø6
Ø8
Ø10

*Choose Gas Spring Material :

Tube Material : AISI316L Stainless Steel Tube Surface: Polished Rod Material: AISI316L Stainless Steel Rod Surface: Chrome Plated	Tube Material : ST14 Steel Tube Surface: Black Painted Rod Material: Carbon Steel C35 Rod Surface: Q&Q Black

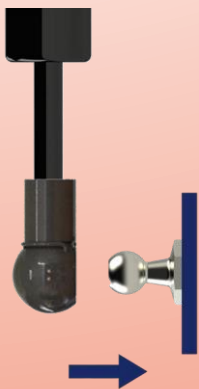
*Choose Accessory for Gas Spring (optional):
For more information and details,
please check our Accessories Catalogue.

DPC Dust Protection Cup	RPC Rod Protection Cover



End Fittings

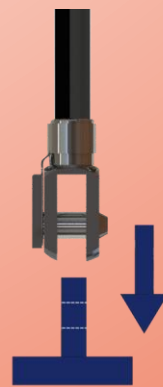
Ball Socket



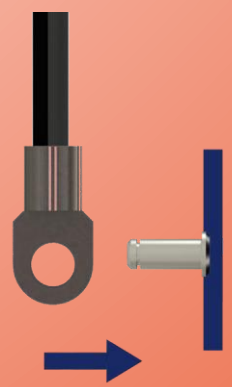
Ball Joint



Clevis

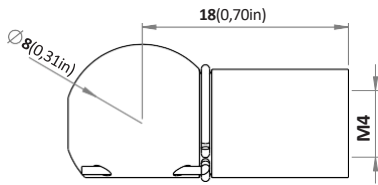


Eye



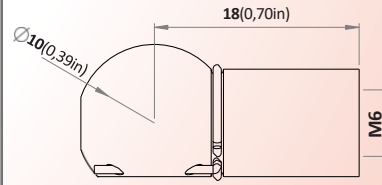
vistonidas

Ball Sockets



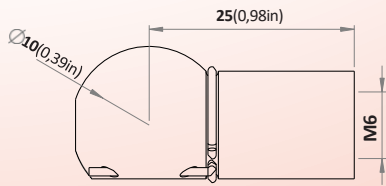
400 000 001 Ball Socket

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



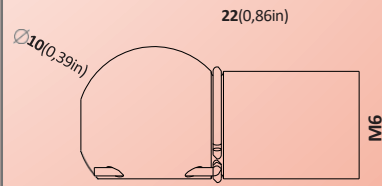
400 000 002 Ball Socket

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances; DIN
ISO 2768-medium



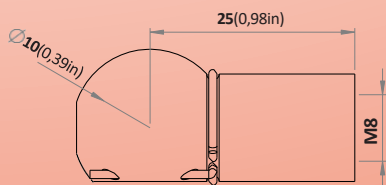
400 000 003 Ball Socket

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



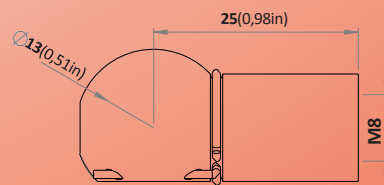
400 000 004 Ball Socket

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances; DIN
ISO 2768-medium



400 000 005 Ball Socket

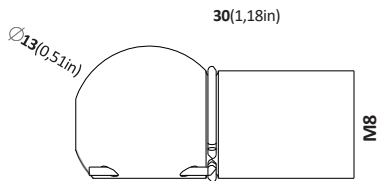
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



400 000 006 Ball Socket

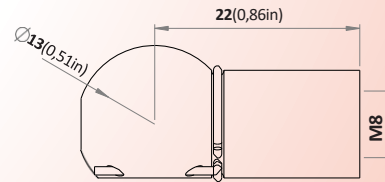
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

Ball Sockets



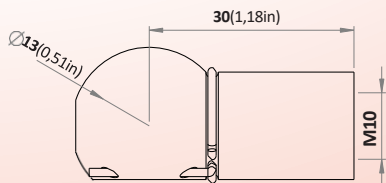
400 000 007 Ball Socket

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



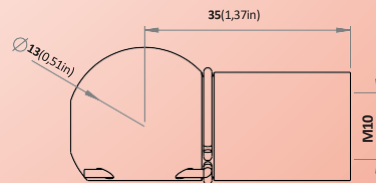
400 000 008 Ball Socket

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



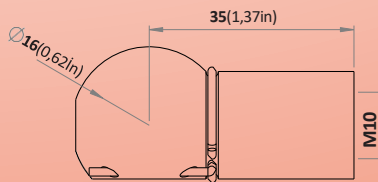
400 000 009 Ball Socket

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



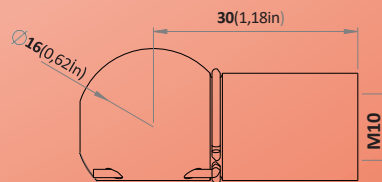
400 000 010 Ball Socket

Material Information;
Steel Sheet + 11SM-
nPb30 Surface Treat-
ment; White Zinc
Plated
General Tolerances;



400 000 011 Ball Socket

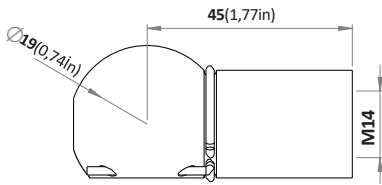
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



400 000 012 Ball Socket

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

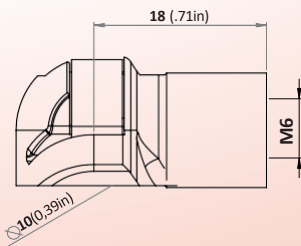
Ball Sockets



400 000 013

Ball Socket

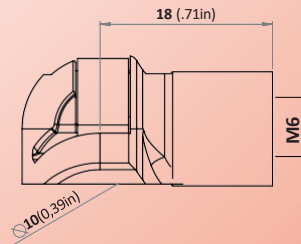
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



400 000 014

Ball Socket

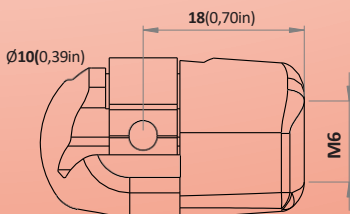
Material Information;
ZAMAC Alloy
Surface Treatment;
Grey Zinc
General Tolerances; DIN
ISO 2768-medium



400 000 015

Ball Socket

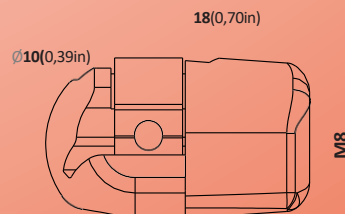
Material Information;
Composite
Surface Treatment;
Black
General Tolerances; DIN ISO
2768-medium



400 000 016

Ball Socket

Material Information;
Composite
Surface Treatment;
Black
General Tolerances; DIN
ISO 2768-medium

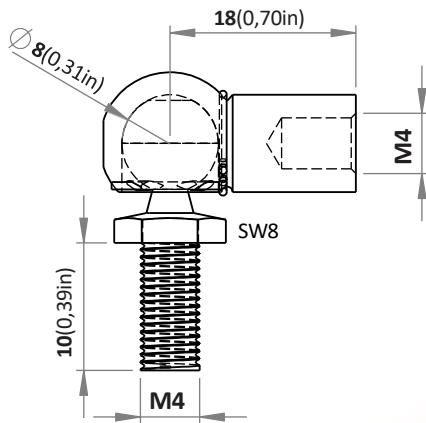


400 000 017

Ball Socket

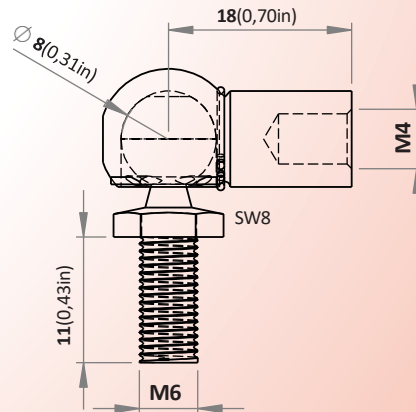
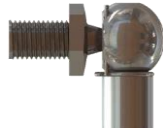
Material Information;
Composite
Surface Treatment;
Black
General Tolerances; DIN
ISO 2768-medium

Ball Joints



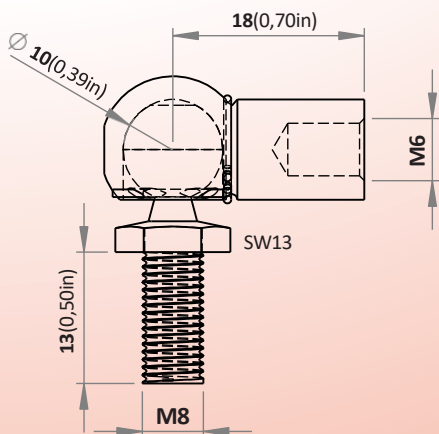
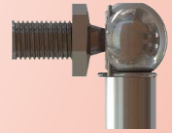
401 000 001 Ball Joint

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment; White
Zinc Plated General
Tolerances; DIN ISO 2768-
medium



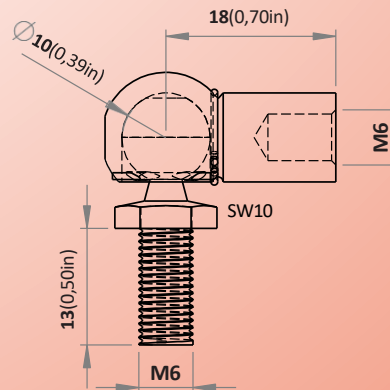
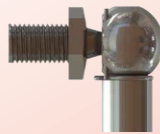
401 000 002 Ball Joint

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances; DIN
ISO 2768-medium



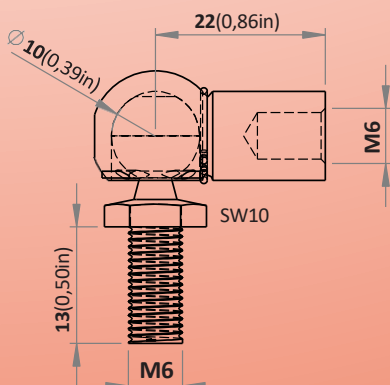
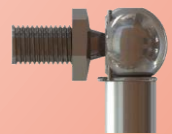
401 000 003 Ball Joint

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment; White
Zinc Plated General
Tolerances; DIN ISO 2768-
medium



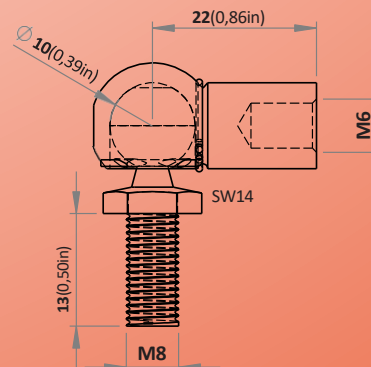
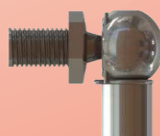
401 000 004 Ball Joint

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment; White
Zinc Plated General
Tolerances; DIN ISO 2768-
medium



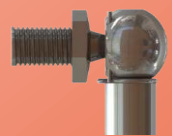
401 000 005 Ball Joint

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

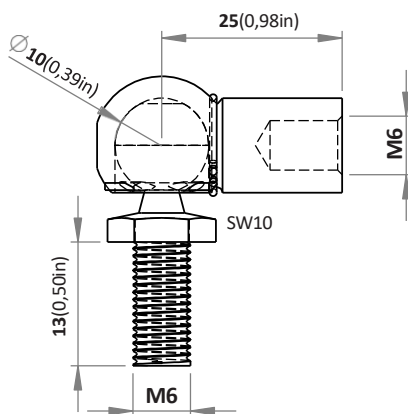


401 000 006 Ball Joint

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment; White
Zinc Plated General
Tolerances; DIN ISO 2768-
medium

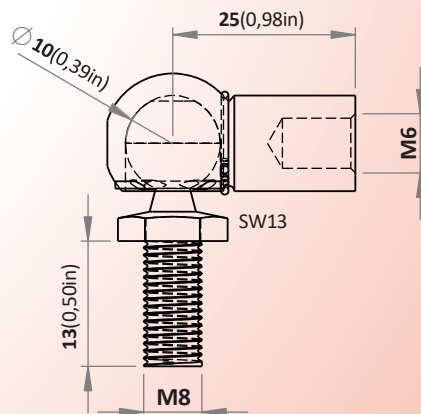


Ball Joints



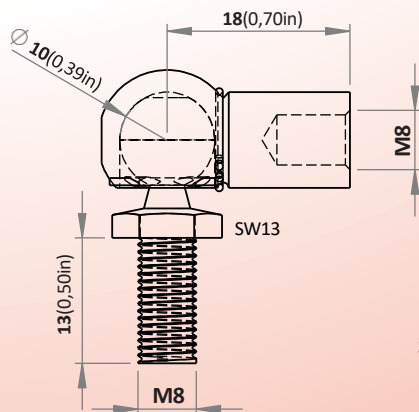
401 000 007 Ball Joint

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances; DIN
ISO 2768-medium



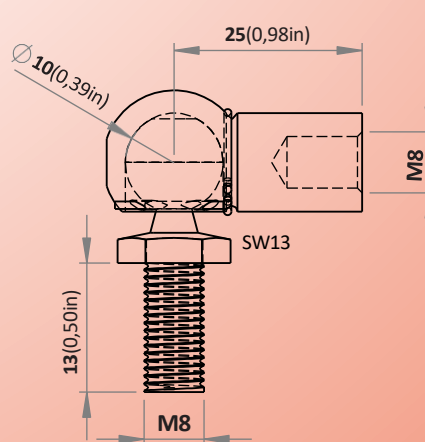
401 000 008 Ball Joint

Material Information;
Steel Sheet + 11SM-
nPb30 Surface Treat-
ment; White Zinc
Plated
General Tolerances;



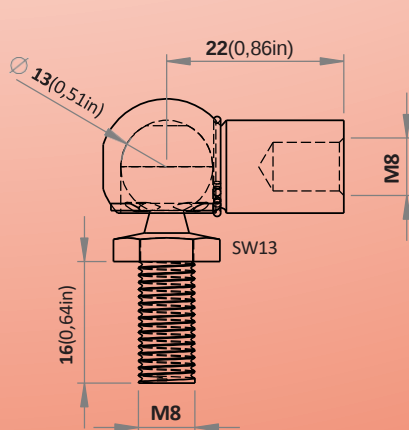
401 000 009 Ball Joint

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



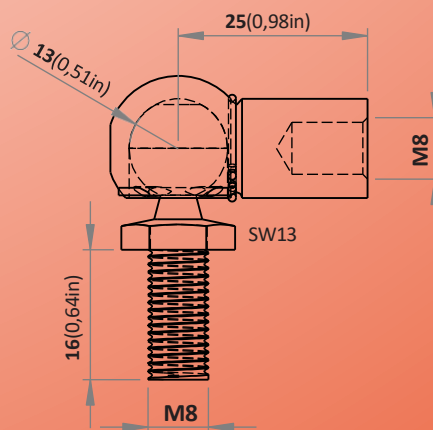
401 000 010 Ball Joint

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



401 000 011 Ball Joint

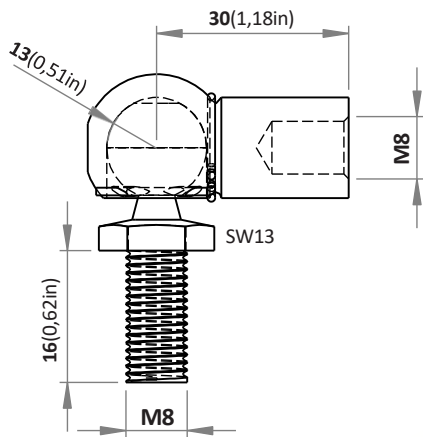
Material Information;
Steel Sheet + 11SM-
nPb30 Surface Treat-
ment; White Zinc
Plated
General Tolerances;



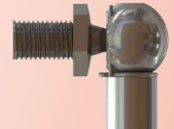
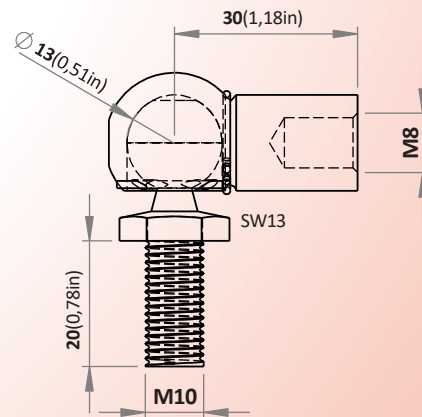
401 000 012 Ball Joint

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

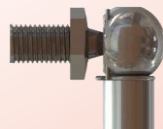
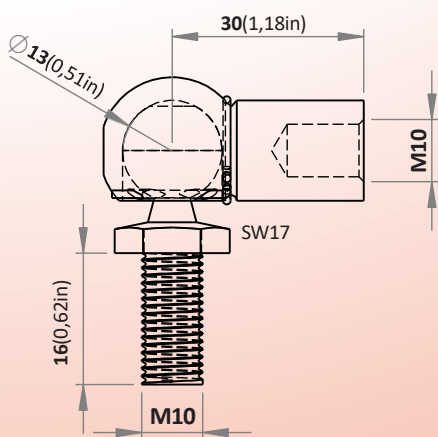
Ball Joints



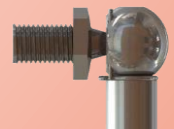
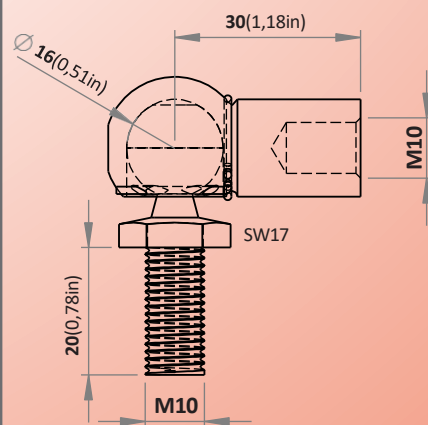
401 000 013
Ball Joint
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



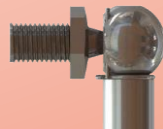
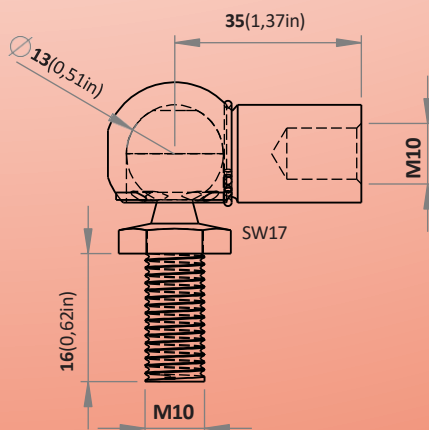
401 000 014
Ball Joint
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



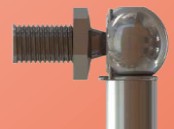
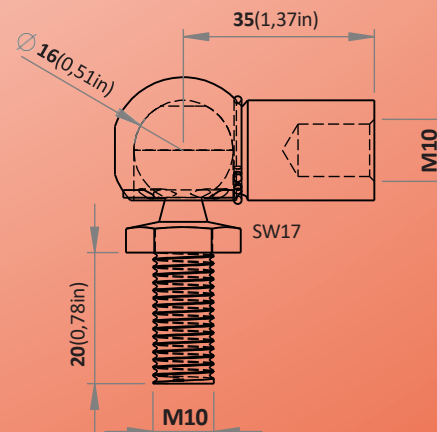
401 000 015
Ball Joint
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



401 000 016
Ball Joint
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

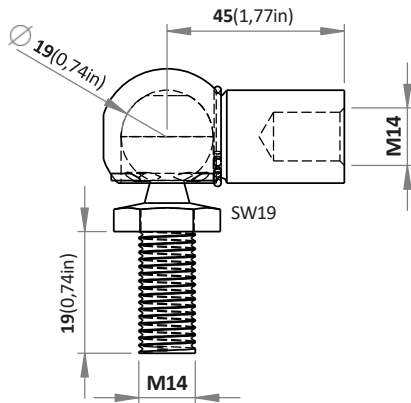


401 000 017
Ball Joint
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment; White
Zinc Plated General
Tolerances; DIN ISO 2768-
medium



401 000 018
Ball Joint
Material Information;
Steel Sheet + 11SM-
nPb30 Surface Treat-
ment; White Zinc
Plated
General Tolerances;

Ball Joints

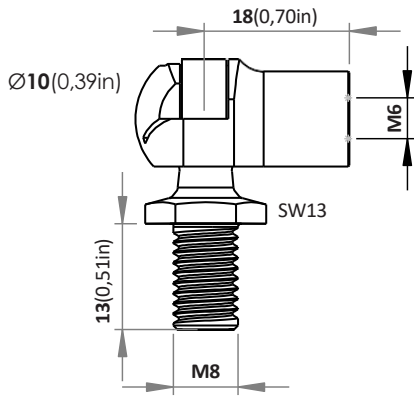


401 000 019

Ball Joint

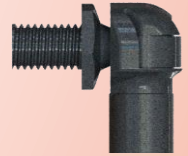
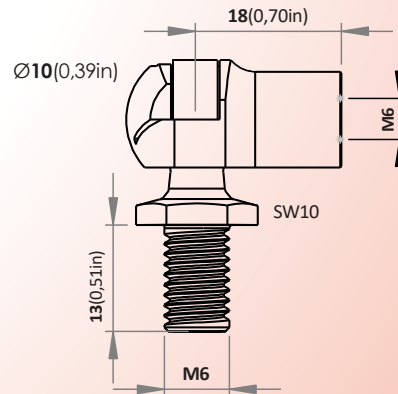
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

Ball Joints



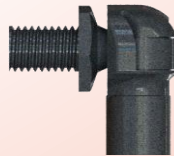
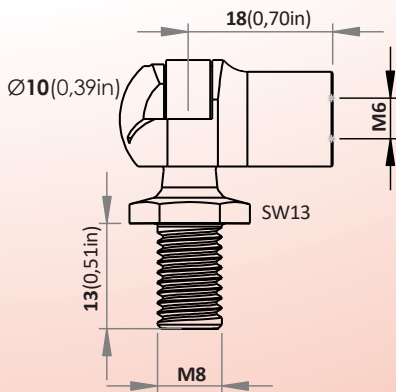
401 000 020 Ball Joint

Material Information;
Composite
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



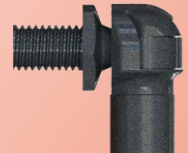
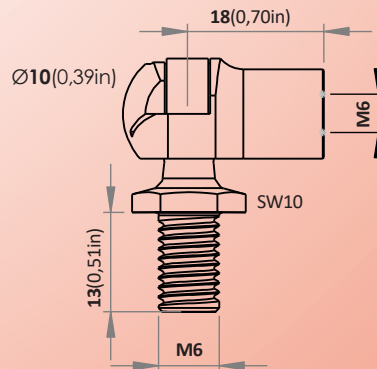
401 000 021 Ball Joint

Material Information;
Composite
Surface Treatment;
Black
General Tolerances; DIN
ISO 2768-medium



401 000 022 Ball Joint

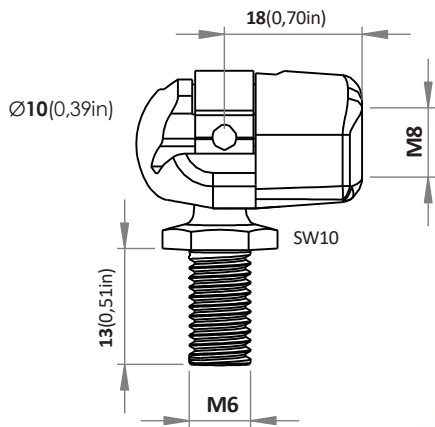
Material Information;
ZAMAC Alloy
Surface Treatment;
-
General Tolerances;
DIN ISO 2768-medium



401 000 023 Ball Joint

Material Information;
ZAMAC Alloy
Surface Treatment;
-
General Tolerances;
DIN ISO 2768-medium

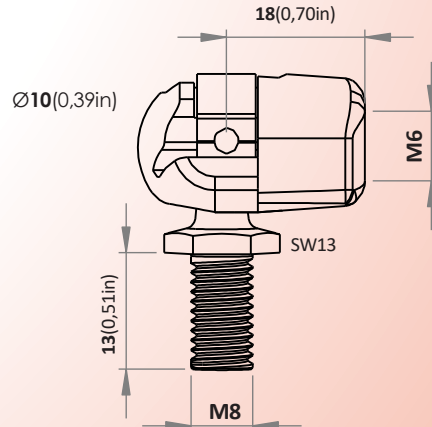
Ball Joints



401 000 024

Ball Joint

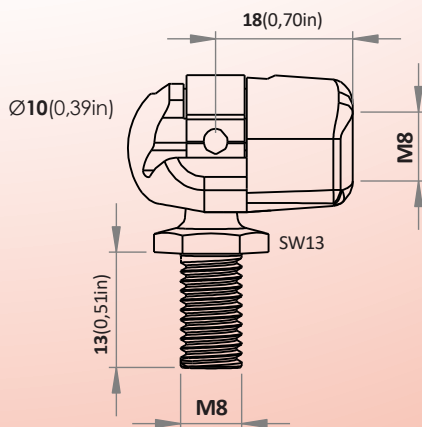
Material Information;
Composite
Surface Treatment;
Black
General Tolerances;
DIN ISO 2768-medium



401 000 025

Ball Joint

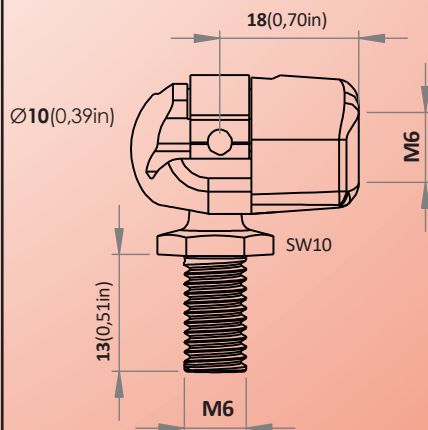
Material Information;
Composite
Surface Treatment;
Black
General Tolerances; DIN
ISO 2768-medium



401 000 026

Ball Joint

Material Information;
Composite
Surface Treatment;
Black
General Tolerances; DIN
ISO 2768-medium

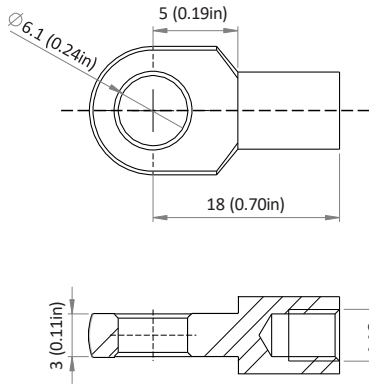


401 000 027

Ball Joint

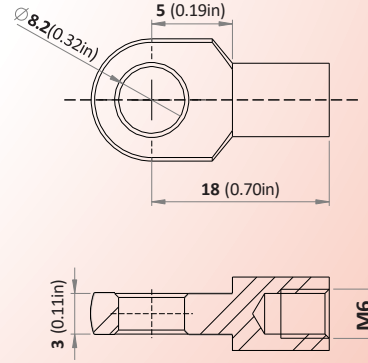
Material Information;
Composite
Surface Treatment;
Black
General Tolerances; DIN
ISO 2768-medium

Eye Fittings



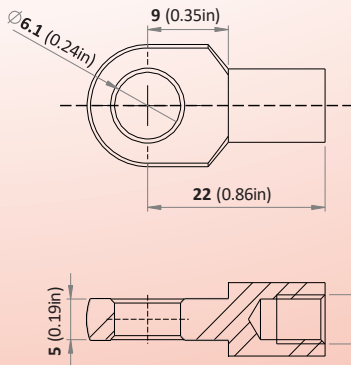
402 000 001 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



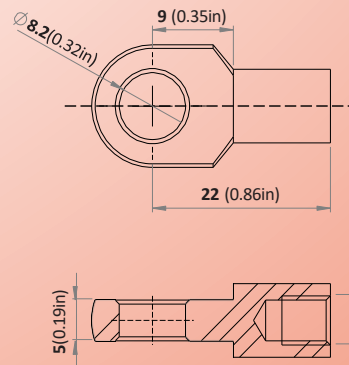
402 000 002 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



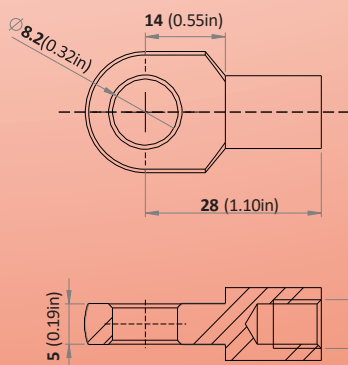
402 000 003 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



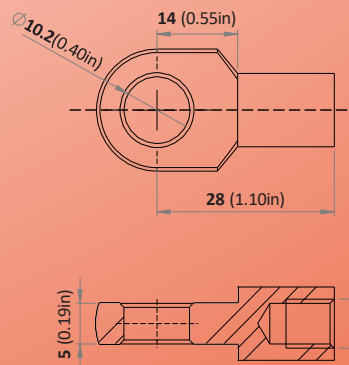
402 000 004 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



402 000 005 Eye Fitting

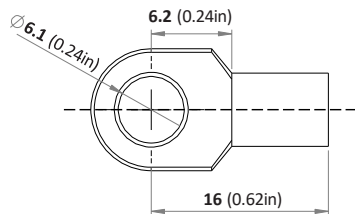
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



402 000 006 Eye Fitting

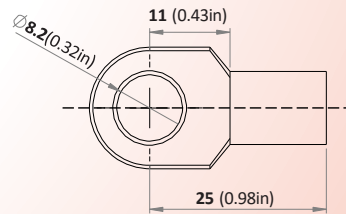
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

Eye Fittings



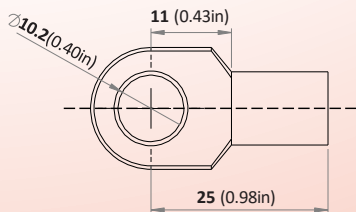
402 000 007 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



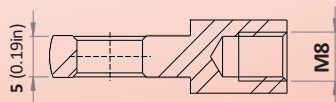
402 000 008 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

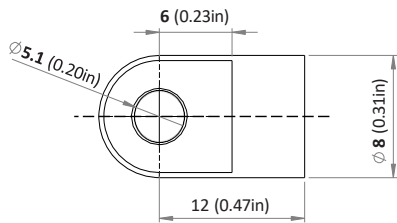


402 000 009 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

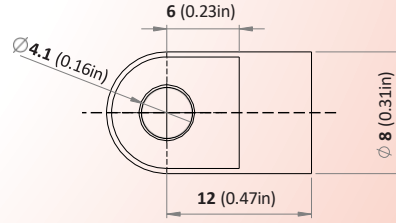


Eye Fittings



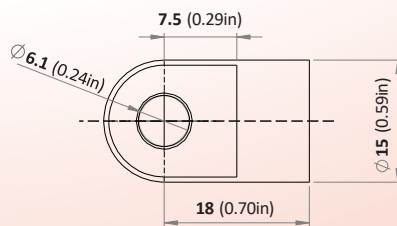
403 000 001 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



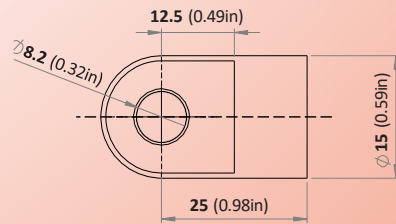
403 000 002 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



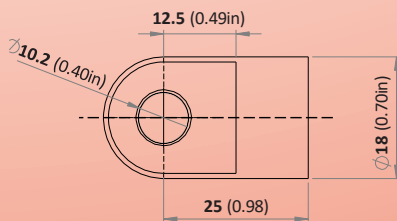
403 000 003 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



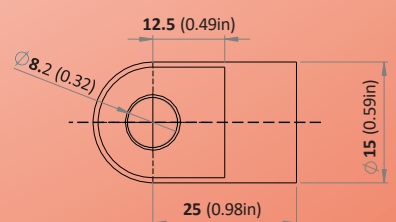
403 000 004 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



403 000 005 Eye Fitting

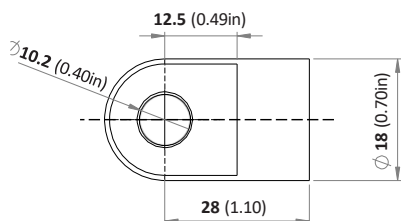
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



401 000 006 Eye Fitting

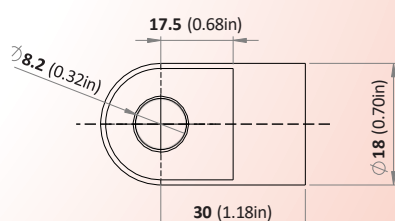
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

Eye Fittings



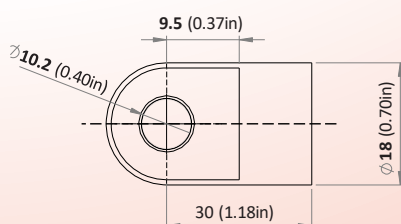
403 000 007 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



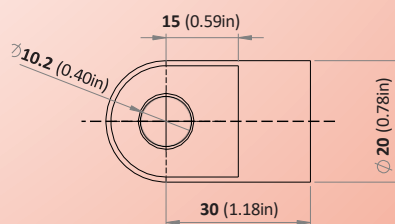
403 000 008 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



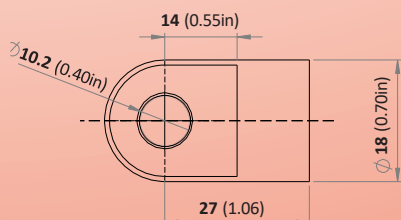
403 000 009 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



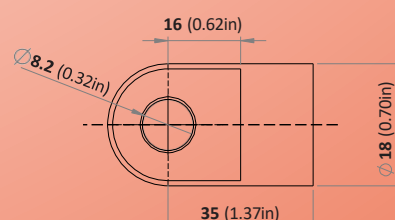
403 000 010 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



403 000 011 Eye Fitting

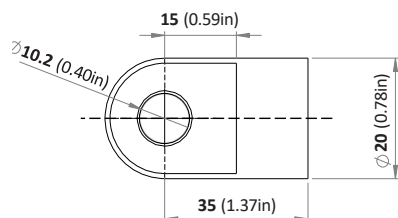
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



403 000 012 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

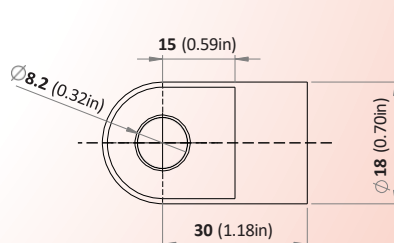
Eye Fittings



403 000 013

Eye Fitting

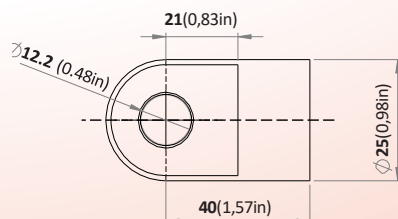
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



403 000 014

Eye Fitting

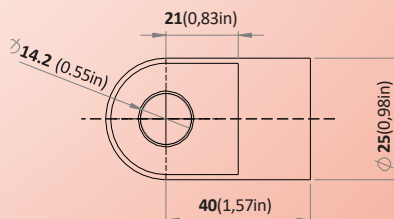
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



403 000 015

Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

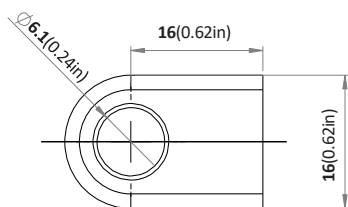


403 000 016

Eye Fitting

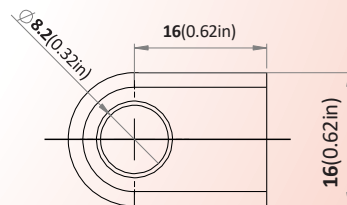
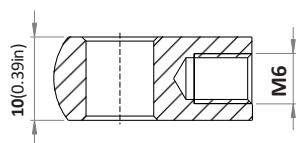
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

Eye Fittings



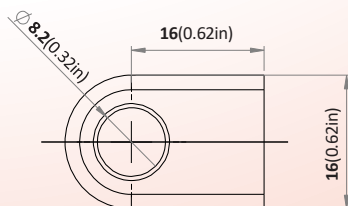
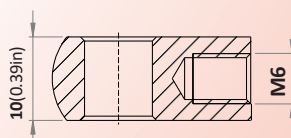
404 000 001 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



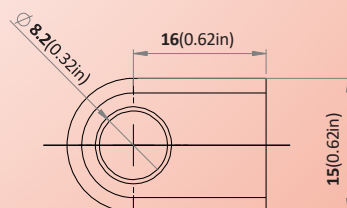
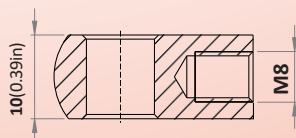
404 000 002 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



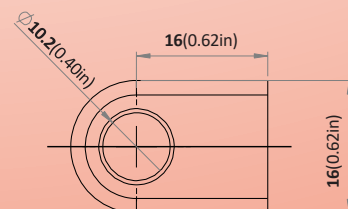
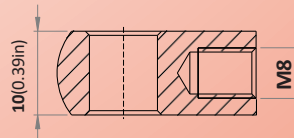
404 000 003 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



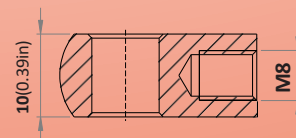
404 000 004 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

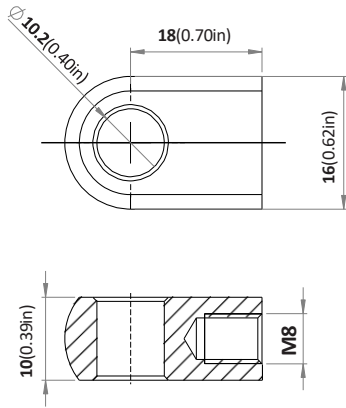


404 000 005 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

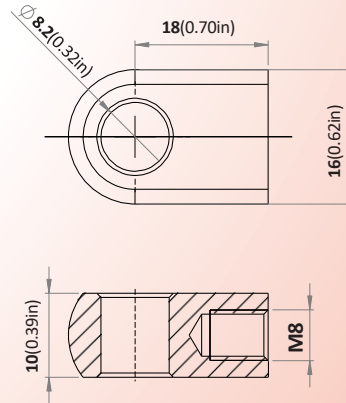


Eye Fittings



404 000 006 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

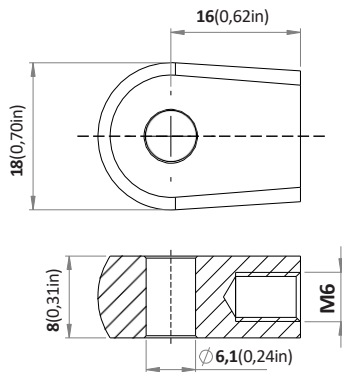


404 000 007 Eye Fitting

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



Eye Fittings

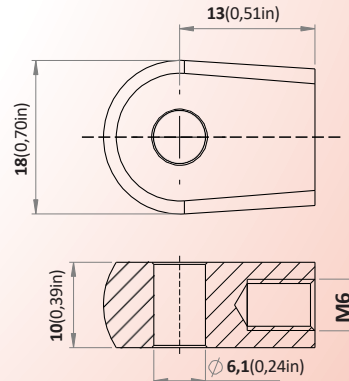


405 000 001

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;

General Tolerances;
DIN ISO 2768-medium

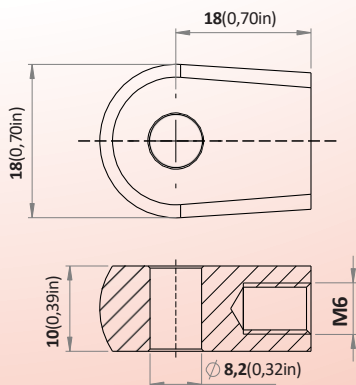


405 000 002

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;

General Tolerances;
DIN ISO 2768-medium

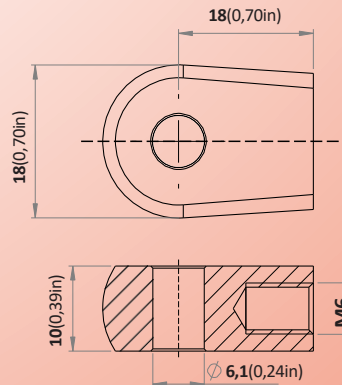


405 000 003

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;

General Tolerances;
DIN ISO 2768-medium

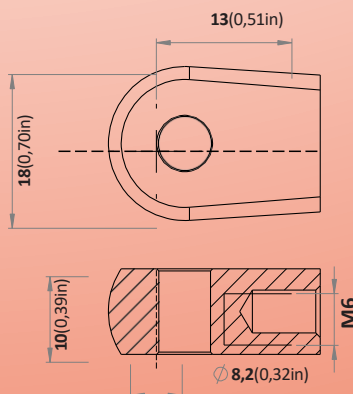


405 000 004

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;

General Tolerances;
DIN ISO 2768-medium

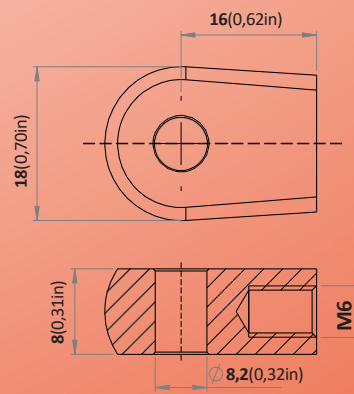


405 000 005

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;

General Tolerances;
DIN ISO 2768-medium



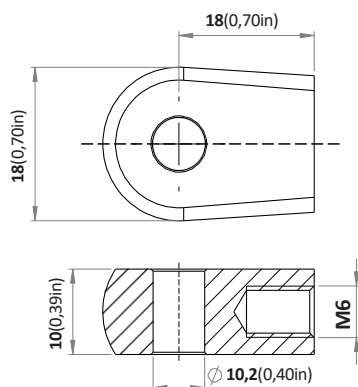
405 000 006

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;

General Tolerances;
DIN ISO 2768-medium

Eye Fittings

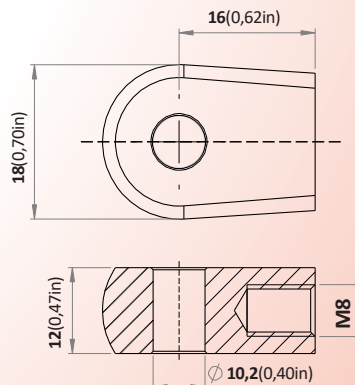


405 000 007

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;

General Tolerances;
DIN ISO 2768-medium

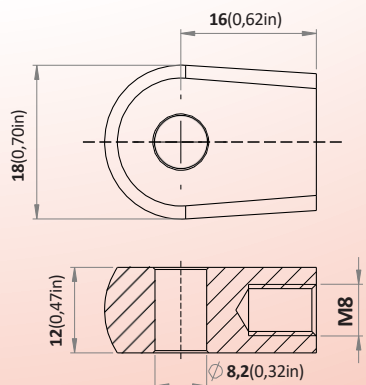


405 000 008

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;

General Tolerances;
DIN ISO 2768-medium

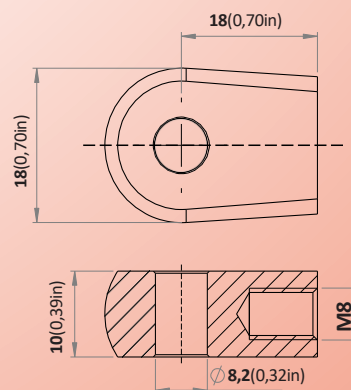


405 000 009

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;

General Tolerances;
DIN ISO 2768-medium

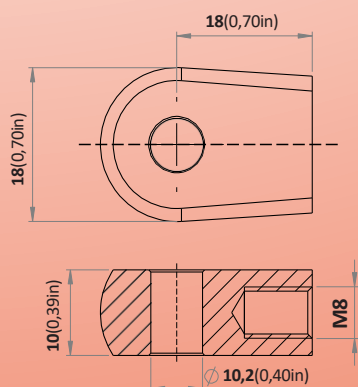


405 000 010

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;

General Tolerances;
DIN ISO 2768-medium



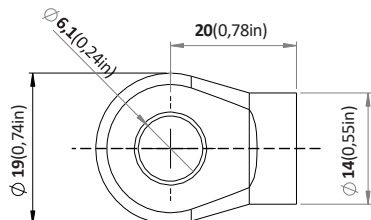
405 000 011

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;

General Tolerances;
DIN ISO 2768-medium

Eye Fittings

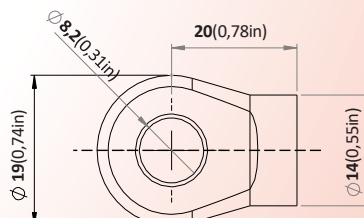


405 000 012

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;
-

General Tolerances;
DIN ISO 2768-medium

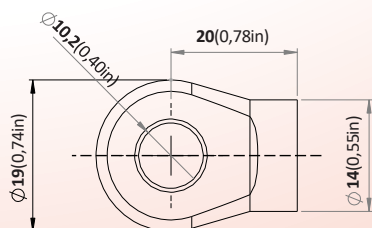


405 000 013

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;
-

General Tolerances;
DIN ISO 2768-medium



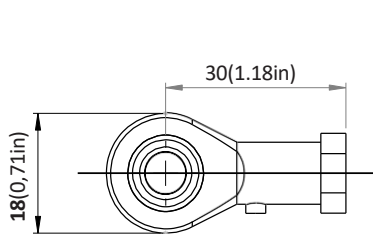
405 000 014

Eye Fitting

Material Information;
ZAMAC Alloy
Surface Treatment;
-

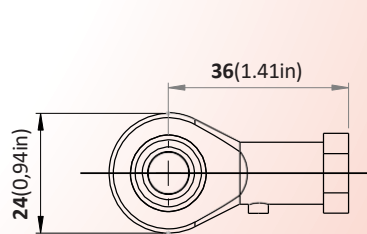
General Tolerances;
DIN ISO 2768-medium

Eye Fittings



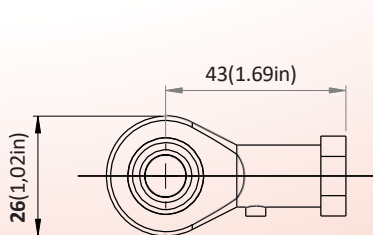
406 000 001 Eye Fitting

Material Information;
Steel Surface Treatment;
General Tolerances;
DIN ISO 2768-medium



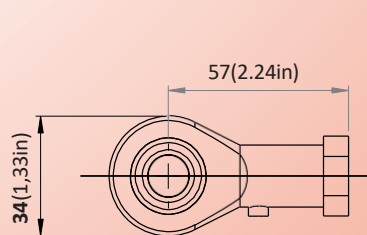
406 000 002 Eye Fitting

Material Information;Steel
Surface Treatment;
General Tolerances;
DIN ISO 2768-medium



406 000 003 Eye Fitting

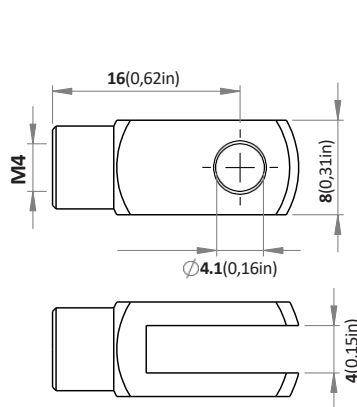
Material
Information;Steel
Surface Treatment;
General Tolerances;
DIN ISO 2768-medium



406 000 004 Eye Fitting

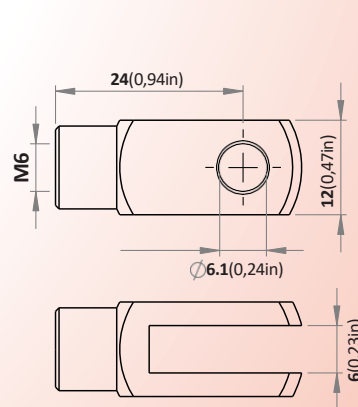
Material Information;
Steel
Surface Treatment;
General Tolerances;
DIN ISO 2768-medium

Clevis



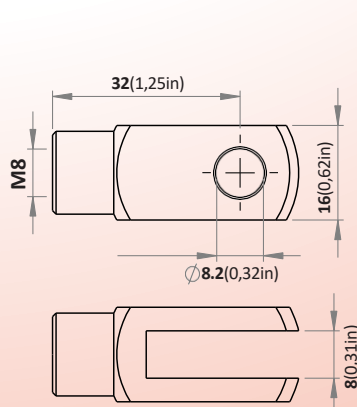
407 000 001
Clevis

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



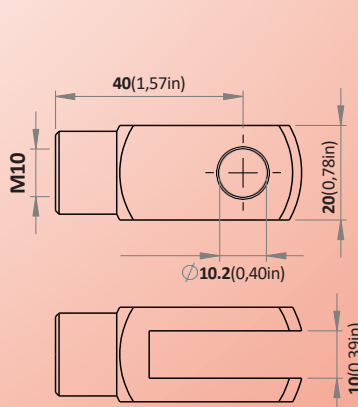
407 000 002
Clevis

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



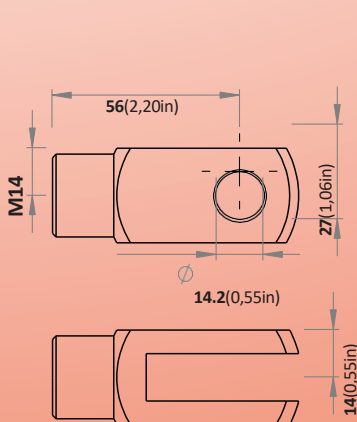
407 000 003
Clevis

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



407 000 004
Clevis

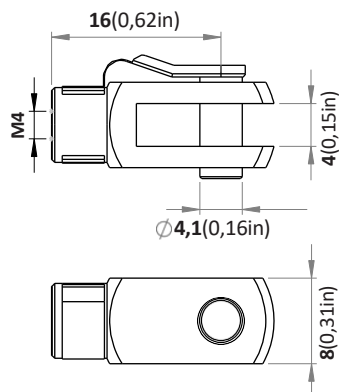
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



407 000 005
Clevis

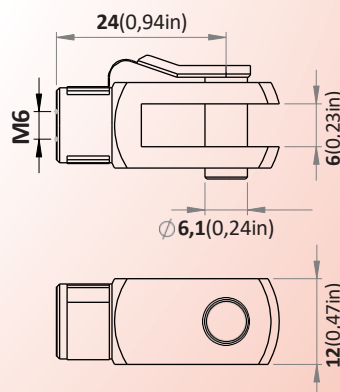
Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium

Clevis



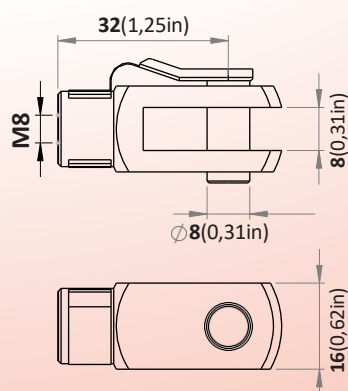
407 000 006
Clevis

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



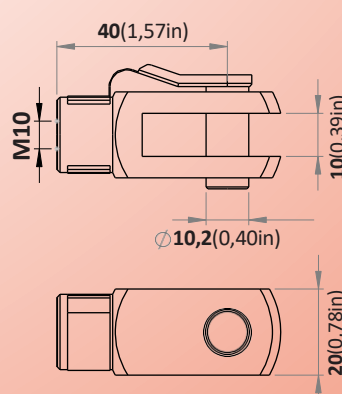
407 000 007
Clevis

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



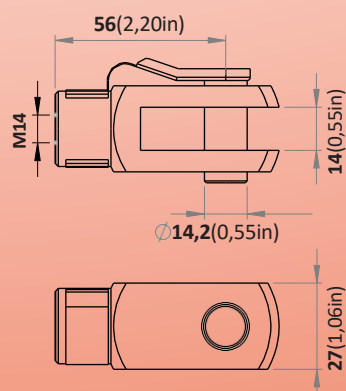
407 000 008
Clevis

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



407 000 009
Clevis

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



407 000 010
Clevis

Material Information;
Steel Sheet + 11SMnPb30
Surface Treatment;
White Zinc Plated
General Tolerances;
DIN ISO 2768-medium



Pullstrut Series Usage Fields

Traction type gas struts, also known as pull-type gas struts, have a specific design that allows them to provide controlled pulling or tension force when extended. Here are some usage fields and applications where traction gas struts are commonly employed:

Medical Equipment: Traction gas struts are applied in medical equipment like examination tables, dental chairs, and imaging systems, allowing precise positioning and angle adjustments for medical professionals and patients.

Aerospace and Aviation: These gas struts find use in aircraft interiors for tasks like opening and holding overhead compartments, providing efficient storage access during flights.

Industrial Equipment: These gas struts are integrated into industrial machinery to facilitate controlled pulling of access panels, safety guards, and equipment components during maintenance and operation.

Retail Displays: Traction gas struts are used in retail displays and signage to adjust the height and angle of promotional materials, enhancing visual merchandising.

Automation and Robotics: Traction gas struts are employed in automation and robotics for tasks such as lifting access covers, aiding in joint movements, and controlling motion in robotic arms.

Equipment Enclosures: These gas struts are integrated into enclosures for electrical equipment, generators, and machinery, providing easy and safe access for maintenance and inspections.

Sports and Fitness Equipment: Traction gas struts assist in controlled adjustments of components in fitness machines, gym equipment, and sports gear.

Traction type gas struts offer precise and reliable tension force in various applications, enhancing functionality, safety, and user convenience across a diverse range of industries.

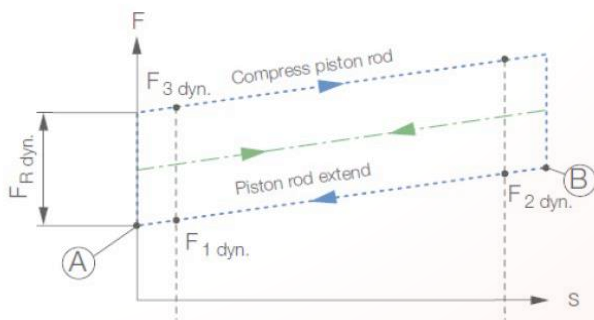
Usage Instructions

- Do mount standard gas springs rod down, use within a temperature range of -25°C up to $+60^{\circ}\text{C}$.
- Do not allow external objects to exert side load forces on the gas spring or on the end fittings .
- Do ensure that the end fittings are in line so that side load forces are not applied as a result of misalignment.
- Do try to use ball joints to help avoid side load forces. If eye (clevises) are used ensure a sloppy fit to allow lateral movement.
- Do try to use shorter springs close to the hinge rather than long stroke springs away from the hinge.
- Do provide physical stops to limit the spring's extremes. i.e. ensure that undue force is not applied to over compress .
- Ensure the gas spring's end fittings are compatible to gas spring and fully screwed home.
- Do not cycle more than 15 times per minute. Do not scratch, dent, chip, bend or paint the rod.
- If springs are to be stored prior to use, the spring should be stored rod down to lubricate the seal by its own.

Pressure Parameters and Tolerances

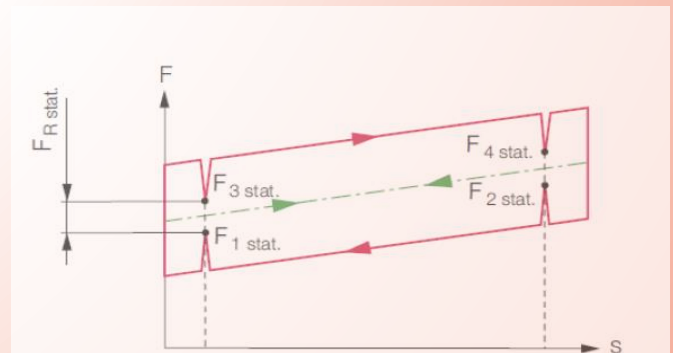
Pullstrut Series gas spring is a closed system consisting of 2 pressure tubes and piston rod with piston, as well as compressed Nitrogen (N₂) as an energy source and a lubrication oil. Pressure rate of gas spring generally defined as F1 with unit of N (Newton).

In order to get most certain results, test environment should be 20 C° (±3°). Positioning in test equipment as rod side down. There are 2 main measurement methods for measuring pressure rates of gas springs.



Dynamic Measurement

From the fully extended position, the gas spring is compressed at a constant test velocity until fully compressed. The subsequent, automatic extension is controlled at the same constant velocity. During compression/extension, the force reaction is recorded, resulting in the characteristic curve. F3 measured in after 5mm compressed of rod. F4 measured 5mm before fully compressed position. F2 measured 5mm extension after fully compressed. F1 measured 5mm before fully extended position.



Static Measurement

Similar to the dynamic measurement, the static measurement is performed with a constant speed. However, the motion is interrupted at the measuring points and the spring force is measured in a static condition. F3 measured in after 5mm compressed of rod. F4 measured 5mm before fully compressed position. F2 measured 5mm extension after fully compressed. F1 measured 5mm before fully extended position. Dynamic measurement is being applied to force measure, unless otherwise specified. F1 rate is being compared to reference drawing.

Pressure Tolerance Table

50N < F1 ≤ 250N	250N < F1 ≤ 750N	750N < F1 ≤ 1250N	1250N < F1 ≤ 2500N
± 20N	± 30N	± 50N	± 80N

Pressure Behaviours

In general, the gas spring is intended for a maximum operating temperature of 80°C. This accounts for the real properties of nitrogen (N₂) in respect to temperature and pressure changes.

Considering pressured gas inside gas spring tube, pressure rate varies according to environment temperature. In order to get most certain results, test environment should be 20 C° (±3°)

The force change of the gas spring as a function of pressure and temperature is also represented in diagram.

