

PRECISION GAS SPRINGS PTY LTD

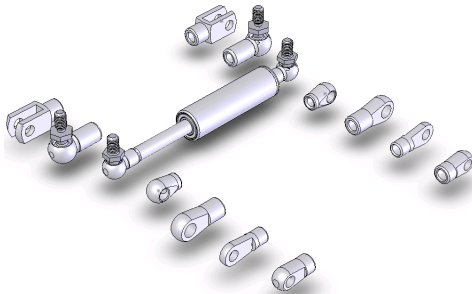
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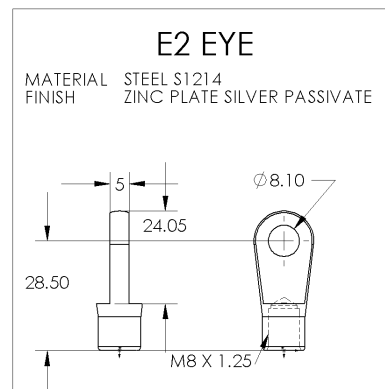
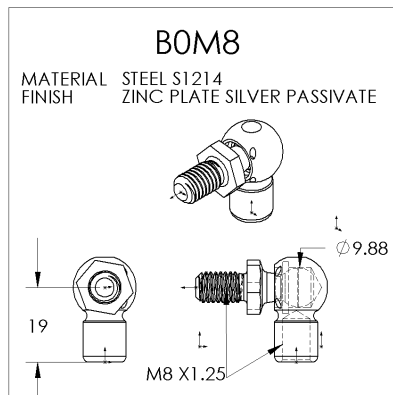
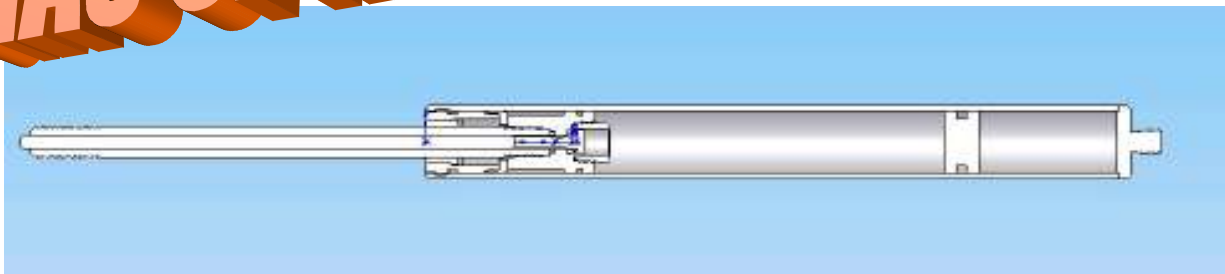
100% Australian owned and operated



2010

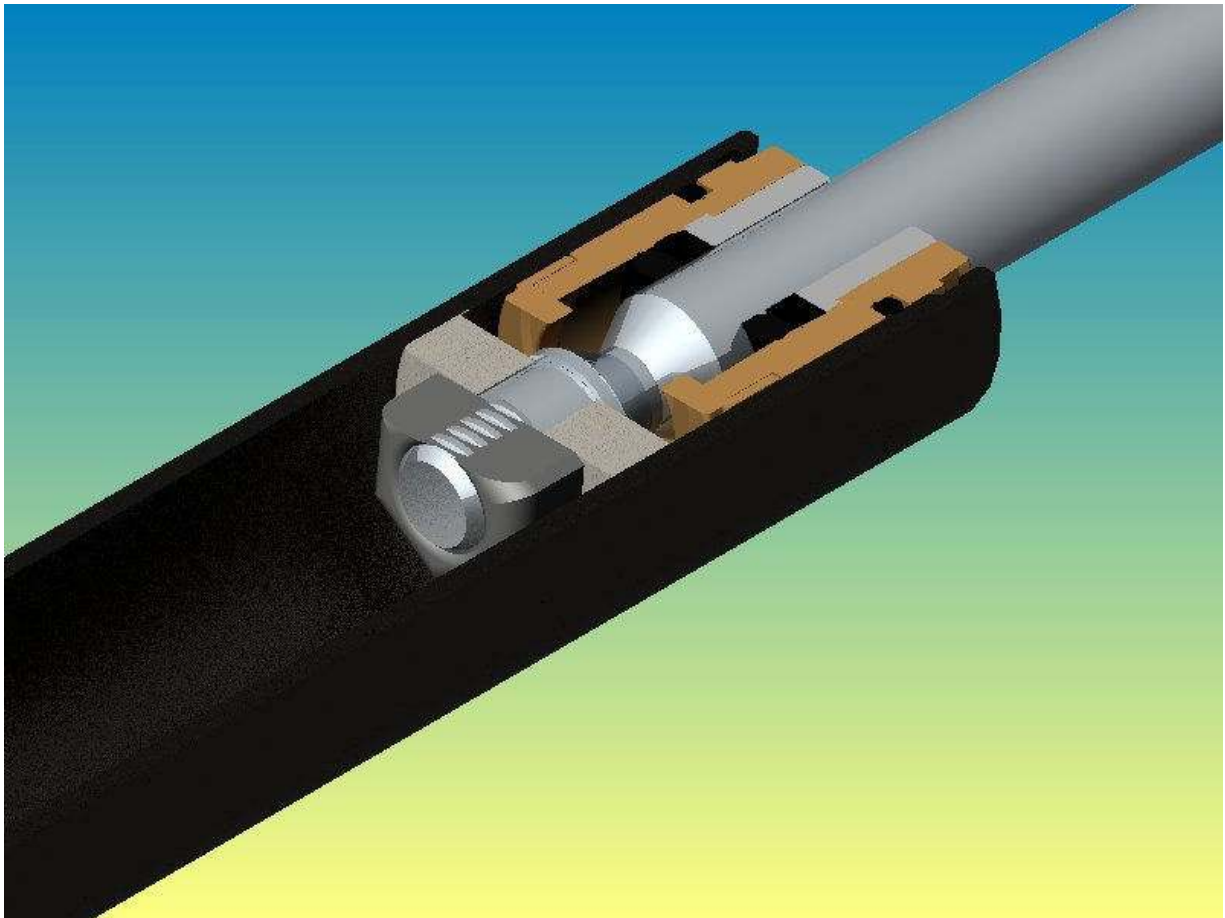


GAS SPRING CATALOGUE



WHAT IS A GAS SPRING?

A gas spring; also called a strut or stay, is a mechanical device which harnesses the kinetic or elastic energy of a gaseous element to provide a potential energy source. In layman's terms, the simplest form of gas spring is a cylinder, filled with an inert gas (nitrogen) to a pre-determined pressure. The rod being a movable entity becomes activated by the constant pressure on its cross-sectional area as if it were part of the cylinder wall, thus providing a positive force to the rod.



CUTAWAY OF 22 SERIES GAS SPRING

WHAT ARE GAS SPRINGS USED FOR?

Gas springs are used in a myriad of industrial applications where a single directional force is required. The most common use is in the family car to hold open the bonnet or boot and to provide control over the opening movement of these heavy and potentially dangerous mechanisms.

WHY USE A GAS SPRING?

Whilst any spring (gas or metal) provides a one directional force when compressed, a **gas spring** has the following advantages in the outcome it delivers:

CONTROLLED MOVEMENT

The rate of motion of the spring is controlled by using special engineering techniques to slow or dampen the shaft/rod movement, to a pre-determined rate.

MEASURED FORCE IN NEWTONS TO PRE-DETERMINED TOLERANCES

The standard manufacturing tolerance of +10/-0% @ 20C. More strict tolerances are available.

VARIABLE DISTANCES OF MOVEMENT OF THE SPRING

The stroke and body lengths are variable from 50mm to more than 1000mm.

LONG WORKING LIFE OF GAS SPRINGS

The average working life of a gas spring installed correctly is 4-5 years.

SPACE EFFICIENT

Gas springs require minimal space for housing within a mechanical environment.

CUSTOM MADE SPRINGS

We can produce a spring of any force, stroke, and/or length**, in small or large quantities with our patented system of gassing and sealing our springs. Furthermore, the force rating can be changed up or down* when required. Traditionally, users of gas springs in Australia have been required to purchase a gas spring that is ex stock regardless of its suitability for the task at hand. To have a special spring made for a low volume application was impractical because of the tooling costs involved; thus users were forced to use the nearest available option. At Precision Gas Springs Pty Ltd, the length, stroke, force and dampening of gas springs are **infinitely variable in any quantity.

* 00 series the force can only be increased not decreased

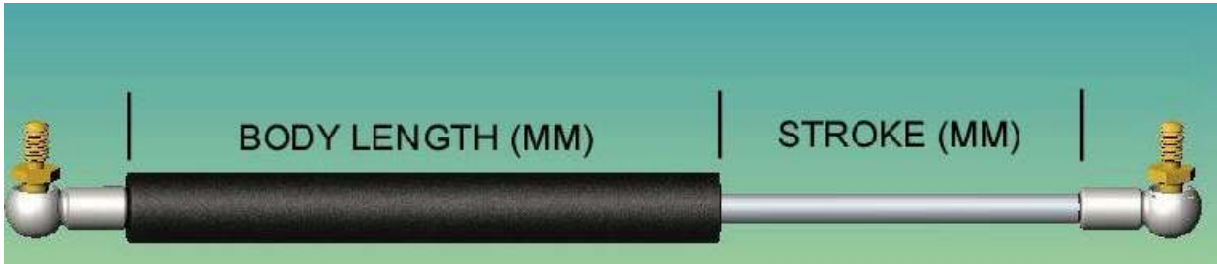
** certain aspects of a gas spring are limited by formulae

PROTOTYPES

As Prototypes are an essential part of development of a new design or invention, we understand the importance of prototypes and are geared to assist with the design, development and manufacture of prototypes, at A REASONABLE COST and within a prompt time frame.

TECHNICAL INFORMATION

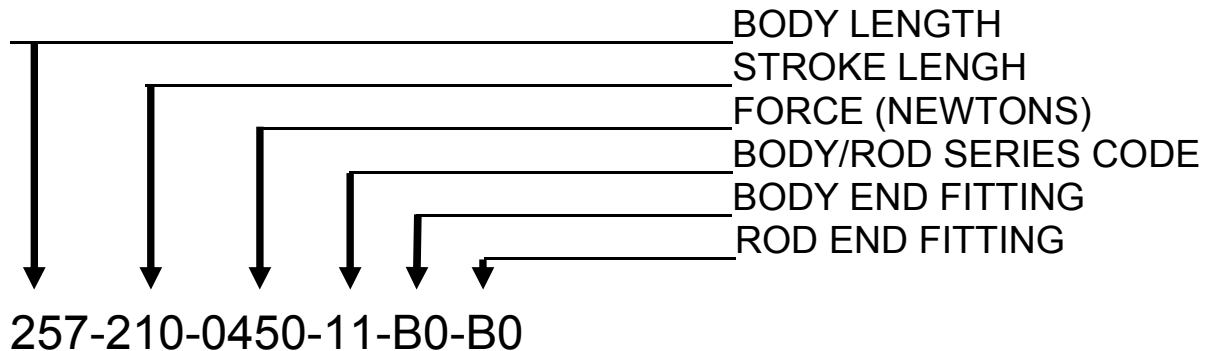
COUNTERBALANCE



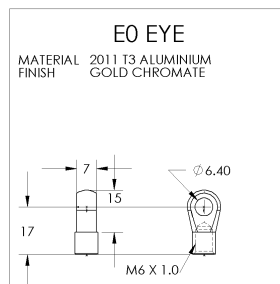
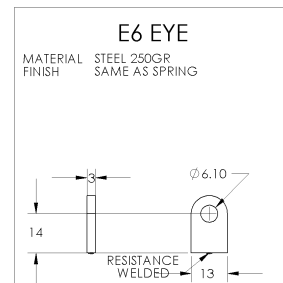
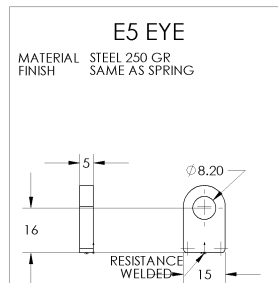
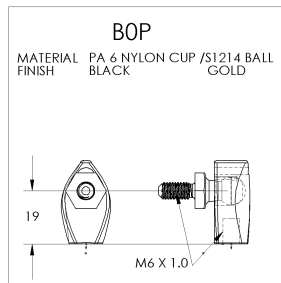
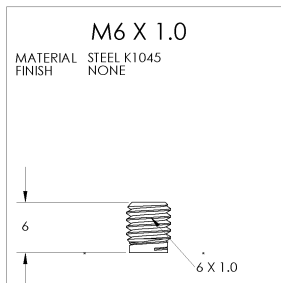
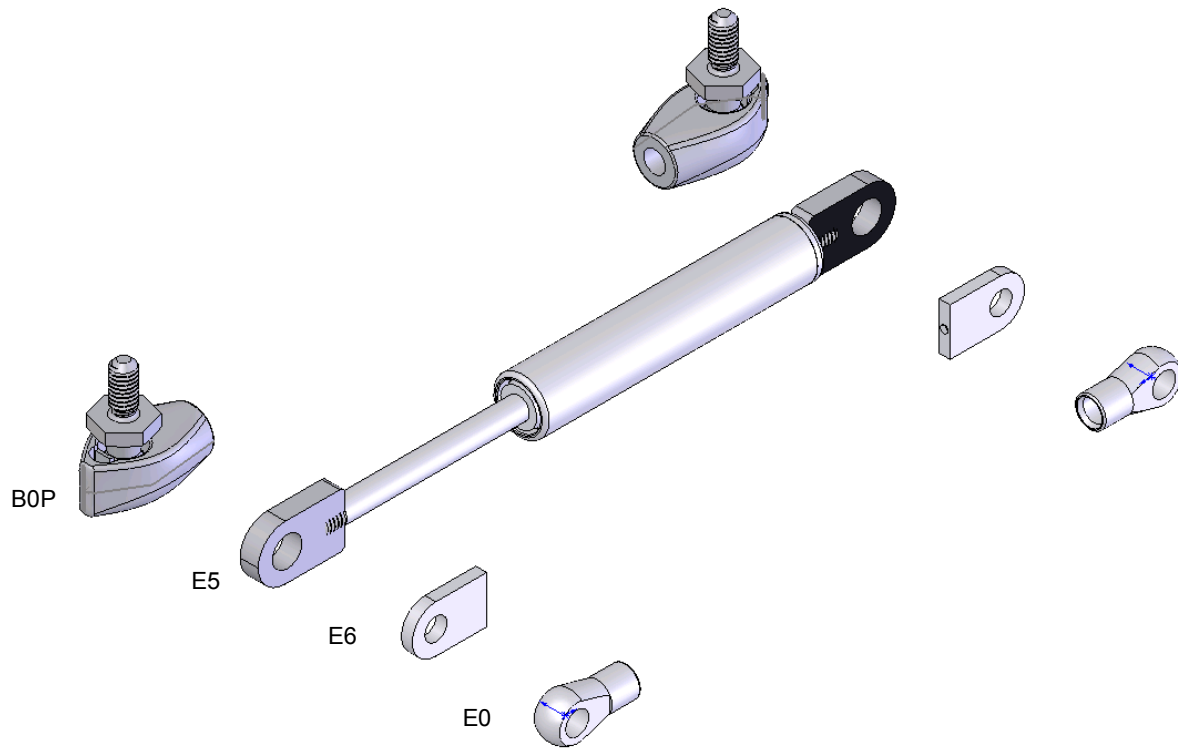
SERIES	00 STEEL	11 STEEL	22 STEEL	23 STEEL	34 STEEL	45 STEEL	SS STEEL
ROD/BODY DIAMETER	6/15	8/19	10/23	12/23	16/32	20/42	10/25
STROKE	40-150	40-400	40-800	40-1000	40-1000	40-1500	40-800
EXTENDED LENGTH	2 X STR+ 22MM	2 X STR+ 35MM	2 X STR+ 40MM	2 X STR+ 50MM	2 X STR+ 70MM	2 X STR+ 90MM	2 X STR+ 40MM
FORCE (N)	50-400	50-750	50-1200	50-2000	50-3500	50-5200	50-1200
FORCE INCREASE	30%	30%	30%	45%	40%	40%	25%
HI-TEMP SEALS	OPTION	OPTION	OPTION	OPTION	OPTION	OPTION	OPTION

PART NUMBER BREAKDOWN

Typical ex-stock spring part # 257-210-0450-11-B0 B0

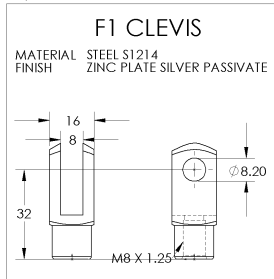
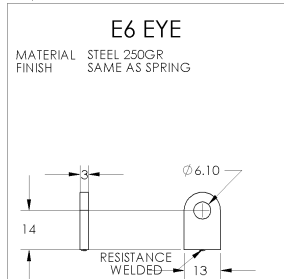
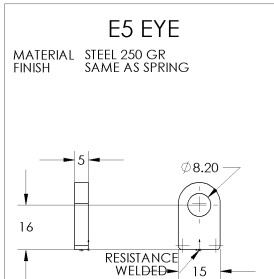
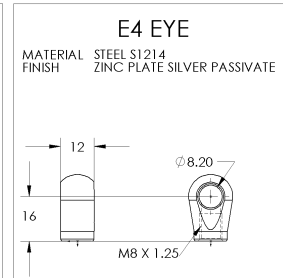
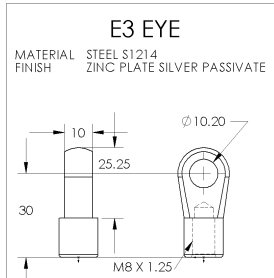
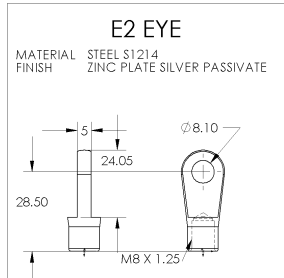
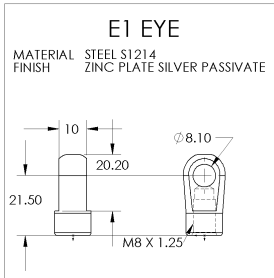
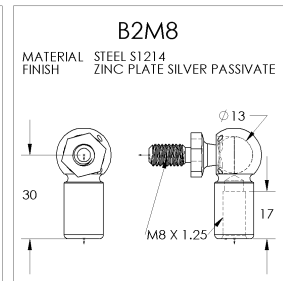
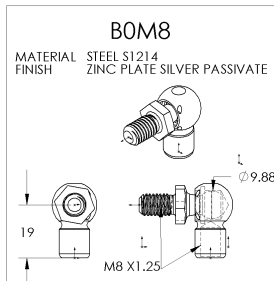
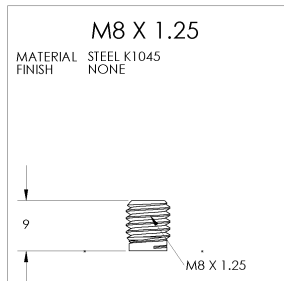
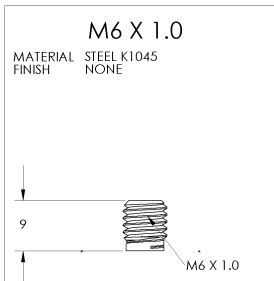
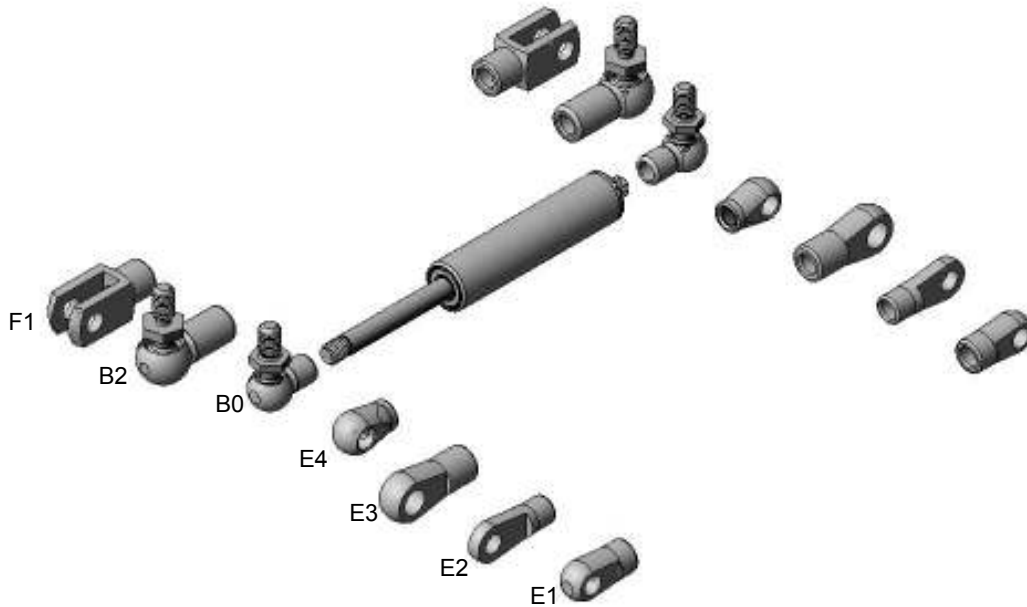


00 SERIES (6MM ROD/15MM BODY) CONNECTION OPTIONS



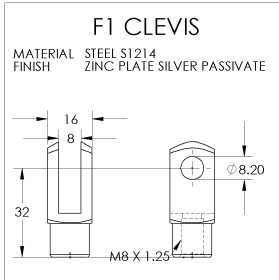
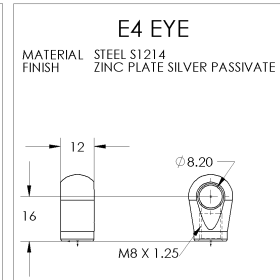
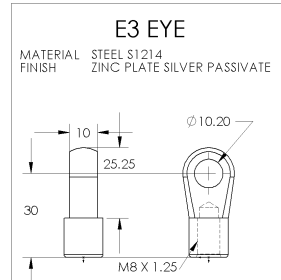
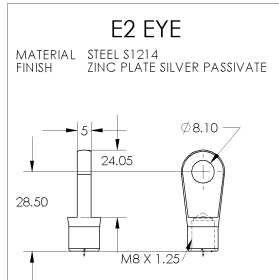
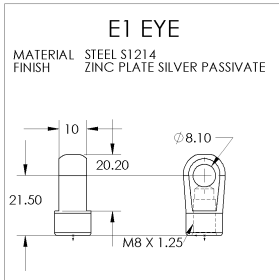
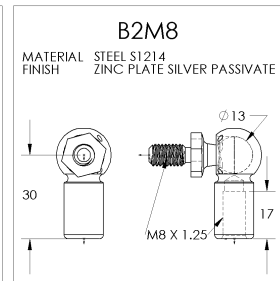
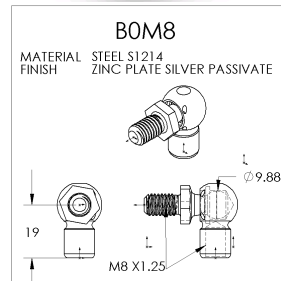
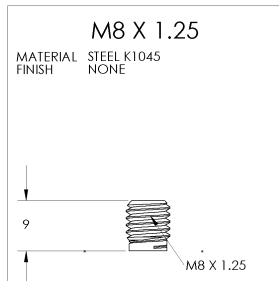
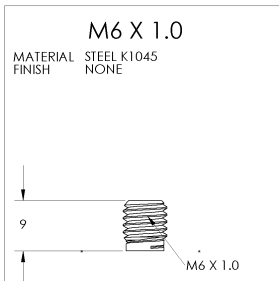
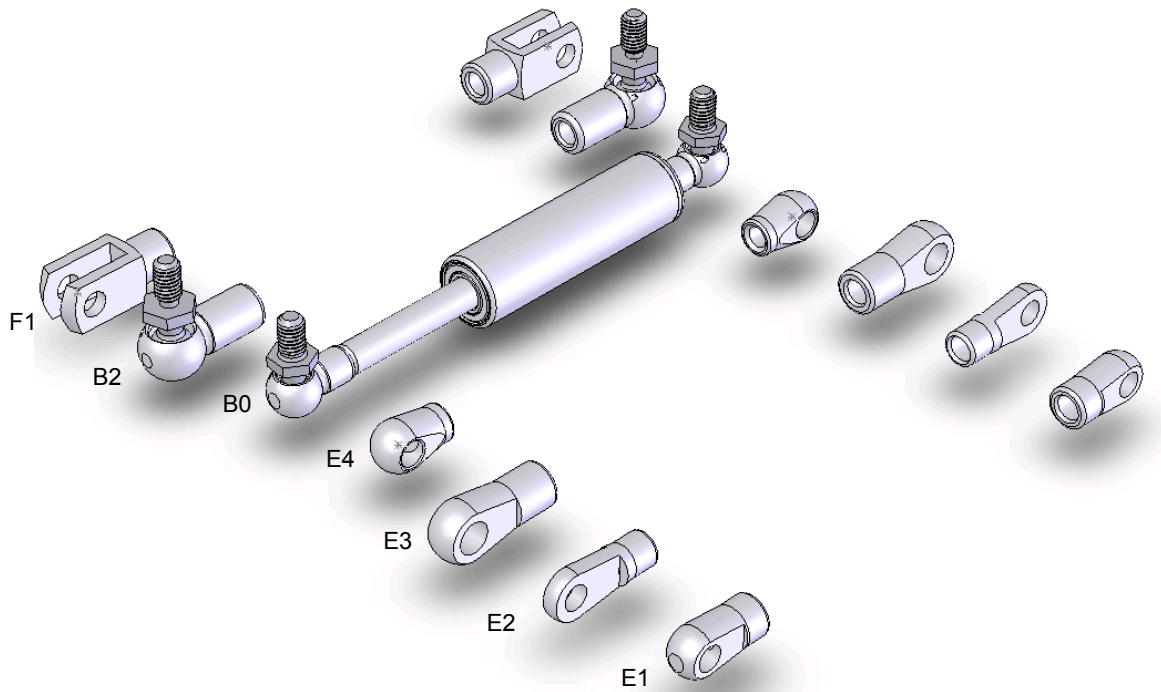
STANDARD COLOUR: BLACK SATIN
OTHER COLOURS AVAILABLE ON REQUEST (PRICE VARIATION)

11 SERIES (8MM ROD/19.2MM BODY) CONNECTION OPTIONS



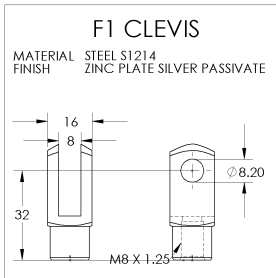
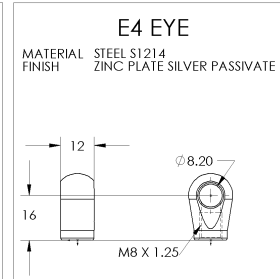
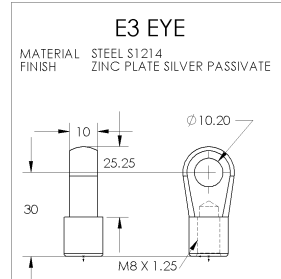
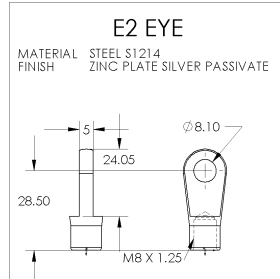
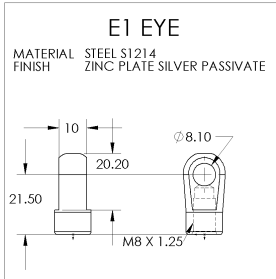
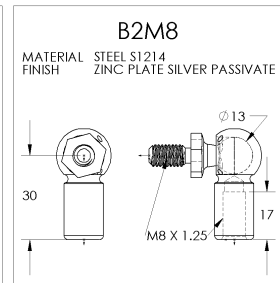
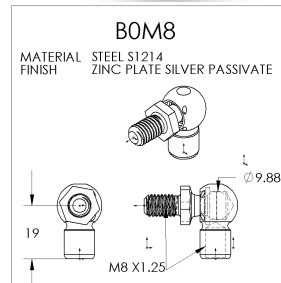
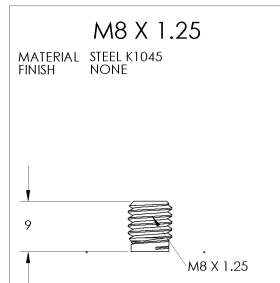
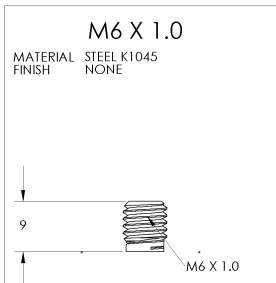
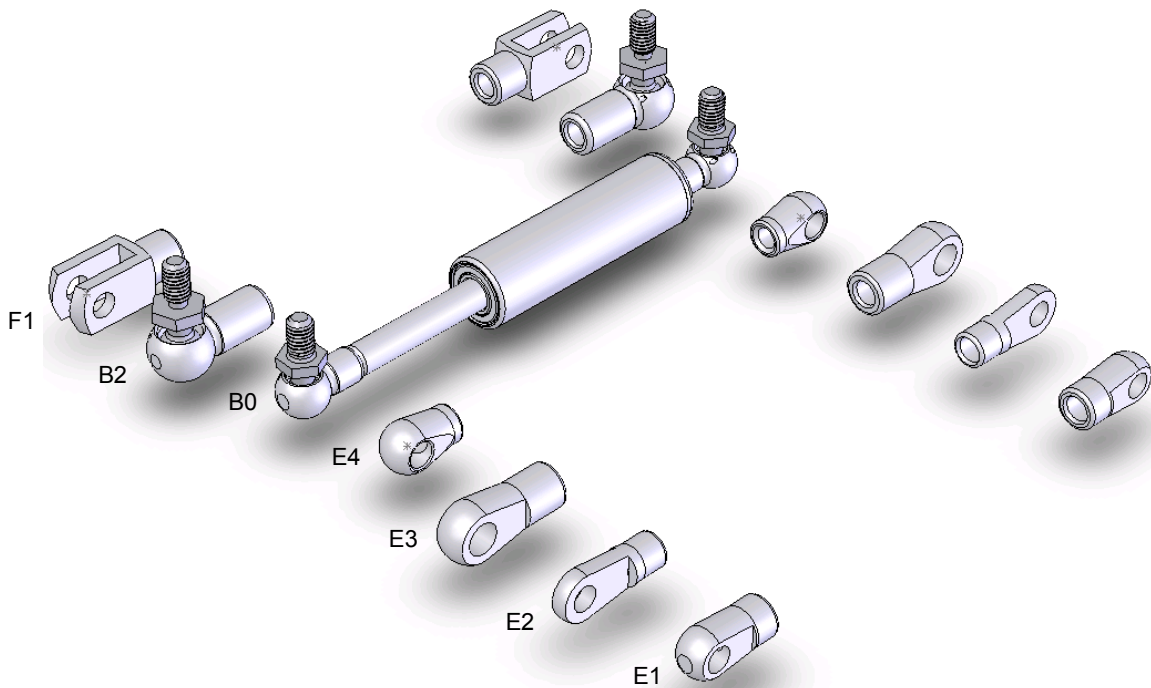
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OTHER COLOURS AVAILABLE ON REQUEST (PRICE VARIATION)

22 SERIES(10MM ROD/23.2MM BODY) CONNECTION OPTIONS



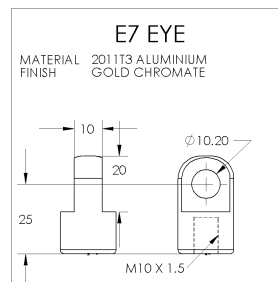
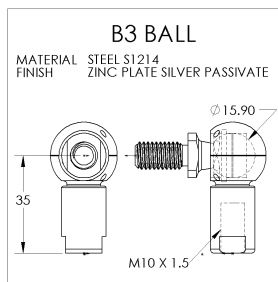
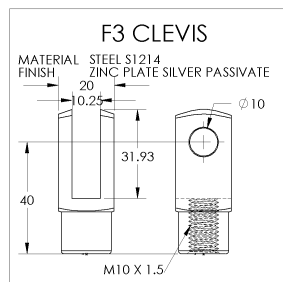
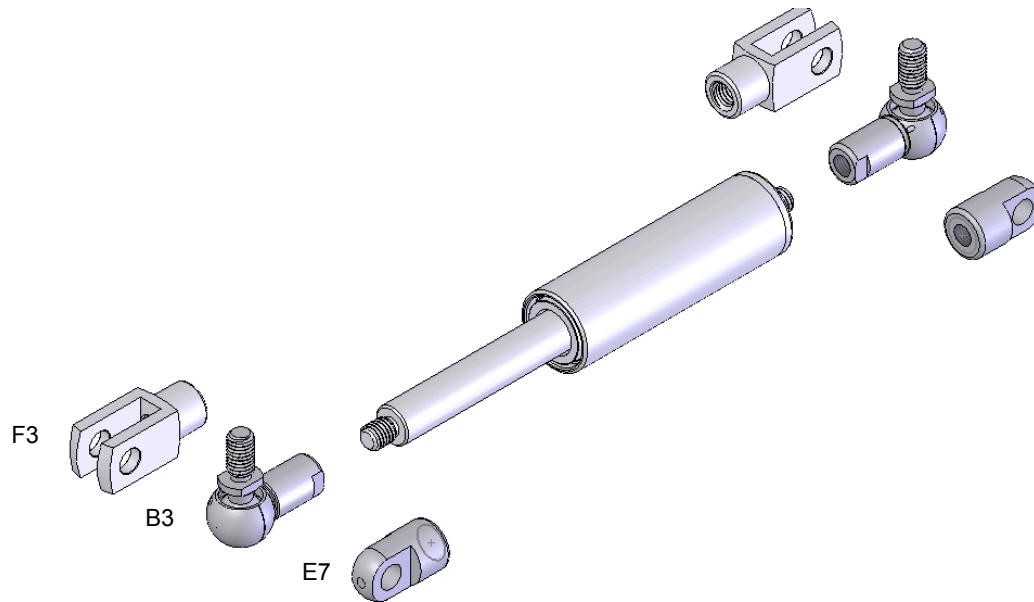
STANDARD COLOUR: BLACK SATIN
OTHER COLOURS AVAILABLE ON REQUEST (PRICE VARIATION)

23 SERIES (12MM ROD / 23.2MM BODY) CONNECTION OPTIONS



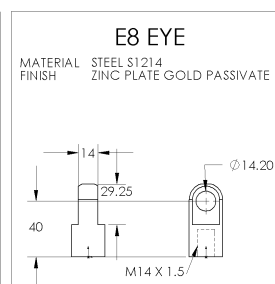
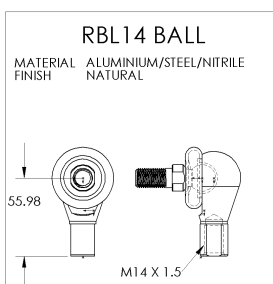
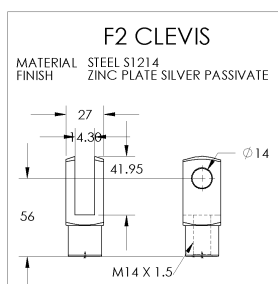
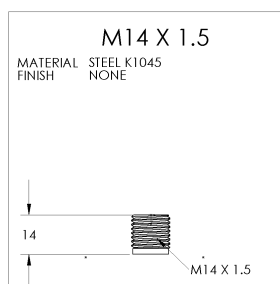
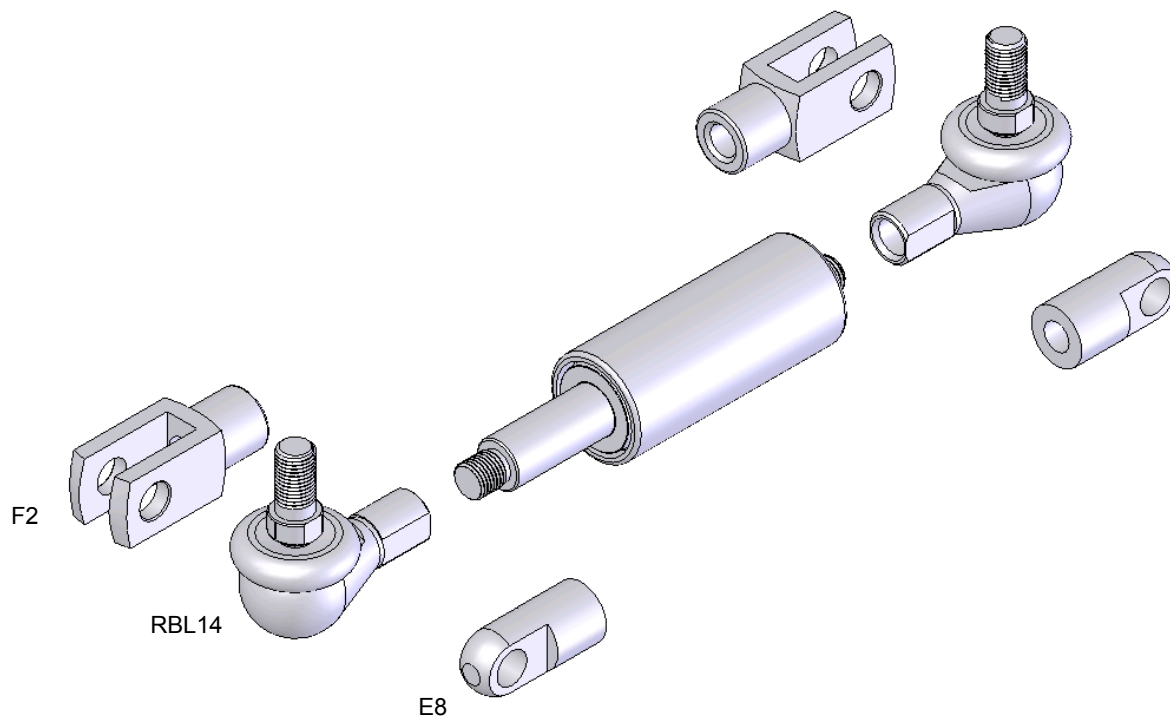
STANDARD COLOUR: BLACK SATIN
OTHER COLOURS AVAILABLE ON REQUEST (PRICE VARIATION)

34 SERIES (16MM ROD/32.3MM BODY) CONNECTION OPTIONS



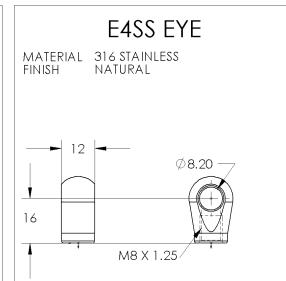
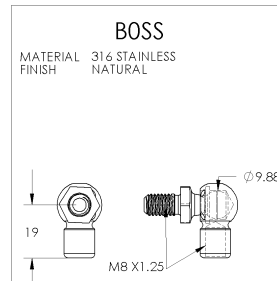
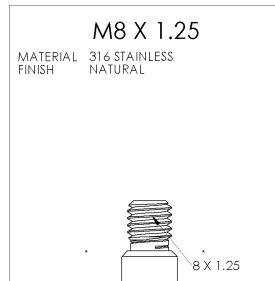
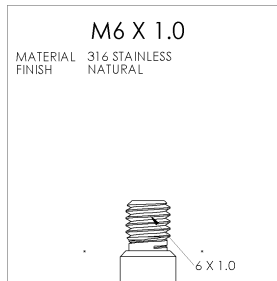
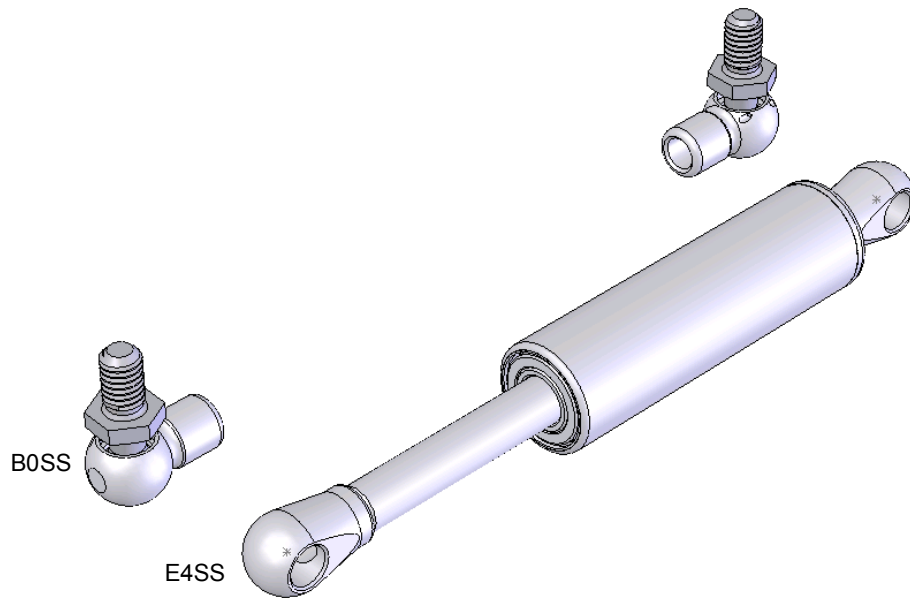
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OTHER COLOURS AVAILABLE ON REQUEST (PRICE VARIATION)

45 SERIES (20MM ROD/42MM BODY) CONNECTION OPTIONS



STANDARD COLOUR: BRIGHT SILVER
OTHER COLOURS AVAILABLE ON REQUEST (PRICE VARIATION)

SS SERIES (10MM ROD/25.4MM BODY) CONNECTION OPTIONS

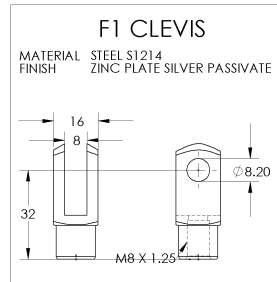
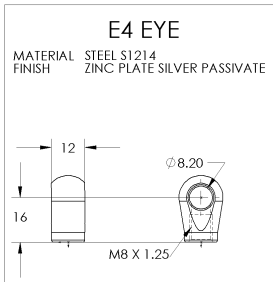
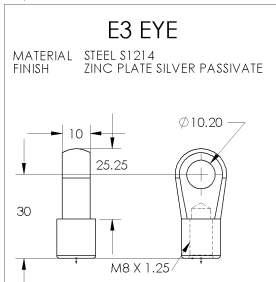
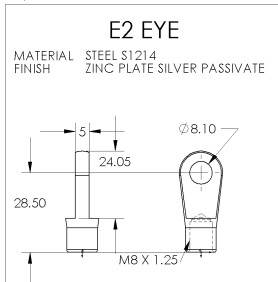
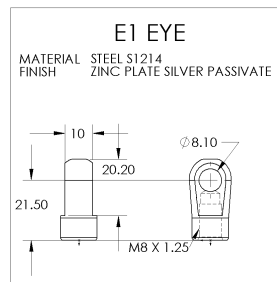
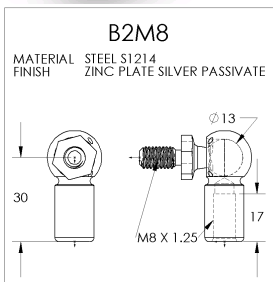
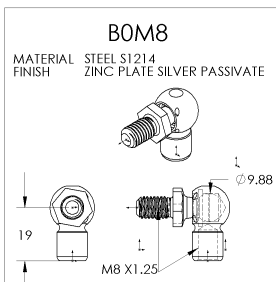
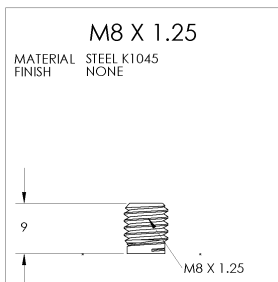
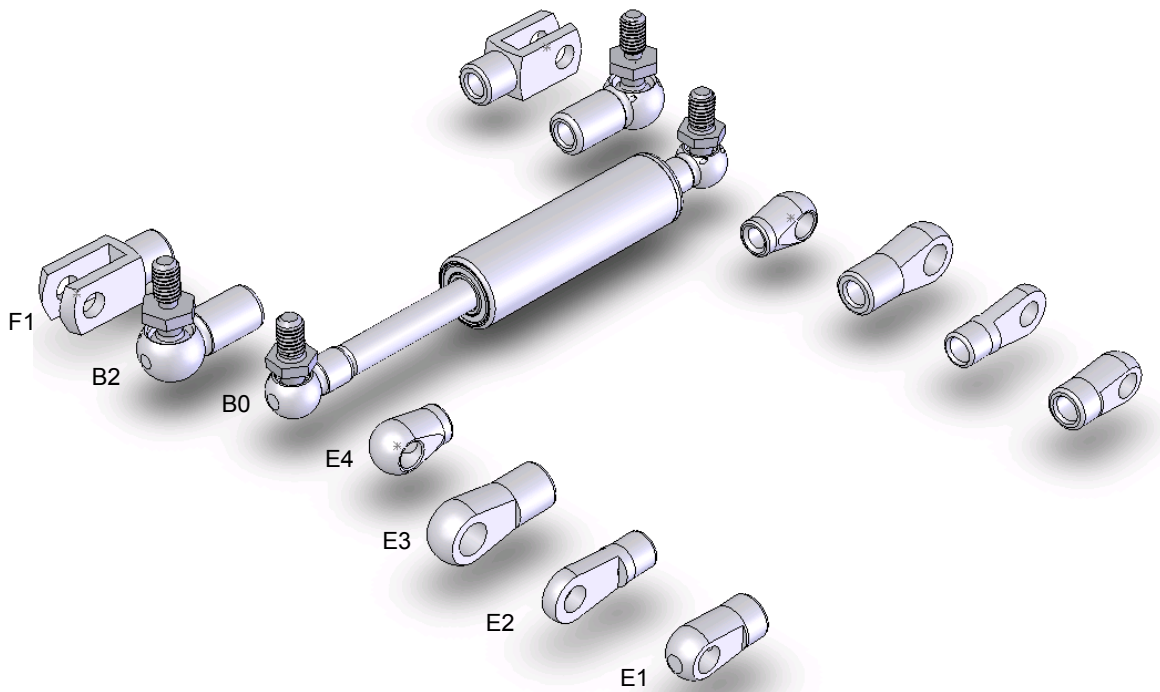


STANDARD COLOUR: BRUSHED NATURAL
OTHER COLOURS AVAILABLE ON REQUEST (PRICE VARIATION)

TRS SERIES (28MM BODY/10MM ROD) TRACTION SPRING

TRACTION SPRINGS (NON-DAMPENED)

Traction springs are designed to work in the opposite direction to a 'normal' counterbalance spring. Force increase is ~40%. Extended length is calculated as stroke * 2.0 + 51. Max Force -1200n.

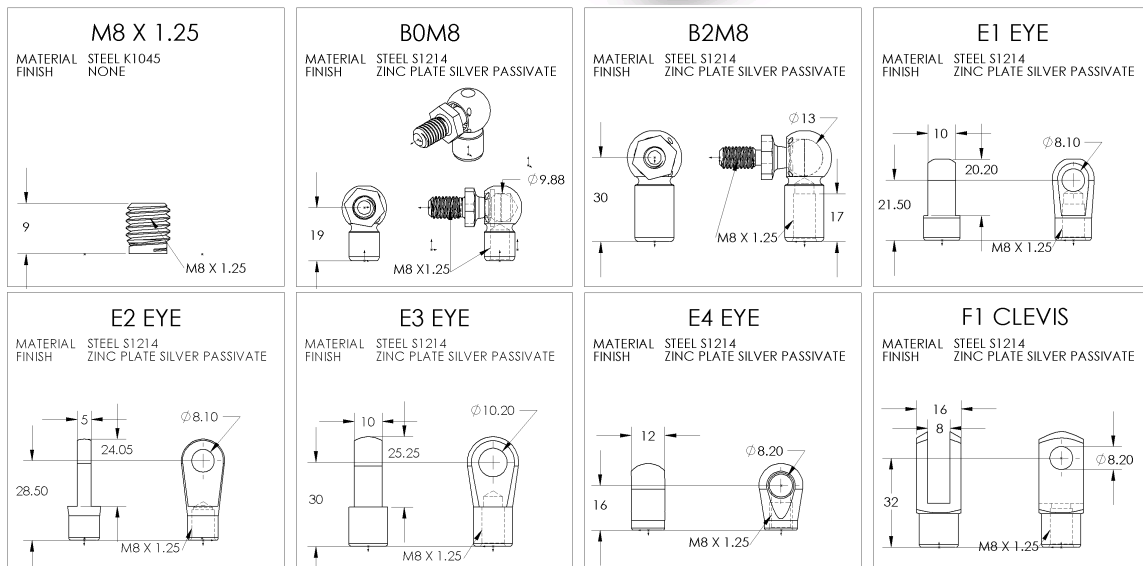
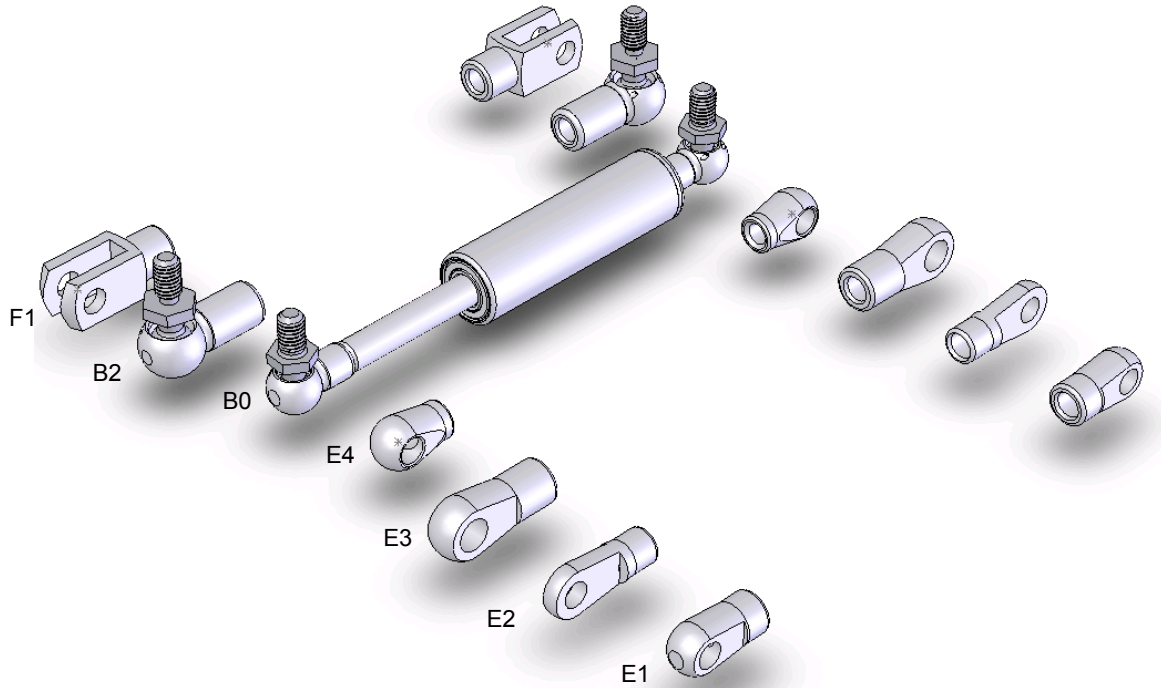


STANDARD COLOUR: BLACK SATIN
OTHER COLOURS AVAILABLE ON REQUEST (PRICE VARIATION)

TRD SERIES (28MM BODY/10MM ROD) TRACTION SPRING

TRACTION SPRINGS (DAMPENED)

Traction springs are designed to work in the opposite direction to a 'normal' counterbalance spring. Force increase is ~30%. Extended length is calculated as stroke * 3.0 + 51. Max Force -1200n.



STANDARD COLOUR: BLACK SATIN
OTHER COLOURS AVAILABLE ON REQUEST (PRICE VARIATION)

TECHNICAL INFORMATION

LOCKABLE

RLE

RIGID LOCK EXTENSION

Overcome force

Push AA Series 3.2x
Push BA Series 6.0x

SPR

SPRING LOCKING

AA Series Progressive
BA Series Progressive

LOCKING SPRINGS

Locking springs are designed to be locked in a fixed position by internal hydraulic/pneumatic flow control. The flow is controlled externally by a release pin (fig 1) located at the end of the piston rod. All locking springs have a 'break-away' locked force. (The point at which the pressure behind the floating piston is overcome by the force applied to the rod. See chart above for locking factors.) All lockable spring are equipped with a valve for altering force rating fig 2.



Fig 1



Fig 2

Release end fittings



Cable release



Handle Release



Hydraulic release

Body end fittings

<p>M8 X 1.25</p> <p>MATERIAL STEEL K1045 FINISH NONE</p>	<p>BOM8</p> <p>MATERIAL STEEL S1214 FINISH ZINC PLATE SILVER PASSIVATE</p>	<p>B2M8</p> <p>MATERIAL STEEL S1214 FINISH ZINC PLATE SILVER PASSIVATE</p>	<p>E1 EYE</p> <p>MATERIAL STEEL S1214 FINISH ZINC PLATE SILVER PASSIVATE</p>
<p>E2 EYE</p> <p>MATERIAL STEEL S1214 FINISH ZINC PLATE SILVER PASSIVATE</p>	<p>E3 EYE</p> <p>MATERIAL STEEL S1214 FINISH ZINC PLATE SILVER PASSIVATE</p>	<p>E4 EYE</p> <p>MATERIAL STEEL S1214 FINISH ZINC PLATE SILVER PASSIVATE</p>	<p>F1 CLEVIS</p> <p>MATERIAL STEEL S1214 FINISH ZINC PLATE SILVER PASSIVATE</p>

STANDARD COLOUR: BLACK SATIN
OTHER COLOURS AVAILABLE ON REQUEST (PRICE VARIATION)

Hahn's range of gas springs includes:

Locking Springs - Elastic / Spring Locking

Rigid Locking

Absolute Rigid Locking

Tension/Traction Gas Springs - Oil Dampers - Special Dampers.

APPLICATION OF GAS SPRINGS



ARE GAS SPRINGS SAFE?

Yes, gas springs are safe when used in accordance with instructions! Puncturing high pressure vessels of any kind is a hazardous practice and must not be done with any type or make of spring. Similarly, where gas springs are intended to be used outside normal atmospheric conditions, those conditions must be specified prior to ordering, so that any necessary changes or instructions can be arranged. Naturally, strict guidelines are used in the manufacture of our gas springs and pressure limits must be adhered to for certain sizes of spring component parts e.g. #11 series (8mm shaft) springs are not pressurized to greater than 750N force.

GAS SPRINGS AND THE ENVIRONMENT

Gas springs are filled with (N) nitrogen (industrial dry nitrogen) which comprises up to 78% of the earth's atmosphere and is a colourless, odourless and relatively un-reactive gas. This means that the environment will not be effected if the gas escapes, is harmless to humans and will not explode or burn.

Each spring contains a small quantity of oil (similar to automatic transmission fluid) 3-5ml which maintains the integrity of the seals within the unit, aids fluid movement of the unit and provides damping of the final part of the stroke.

Care must be taken in the disposal of unwanted or used gas springs which are either fully or partially gassed as they can cause damage if inadvertently punctured, incinerated or crushed e.g., if mixed in with normal rubbish. We offer a service to properly dispose of and recycle used or unwanted gas springs.

CONTACT:

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