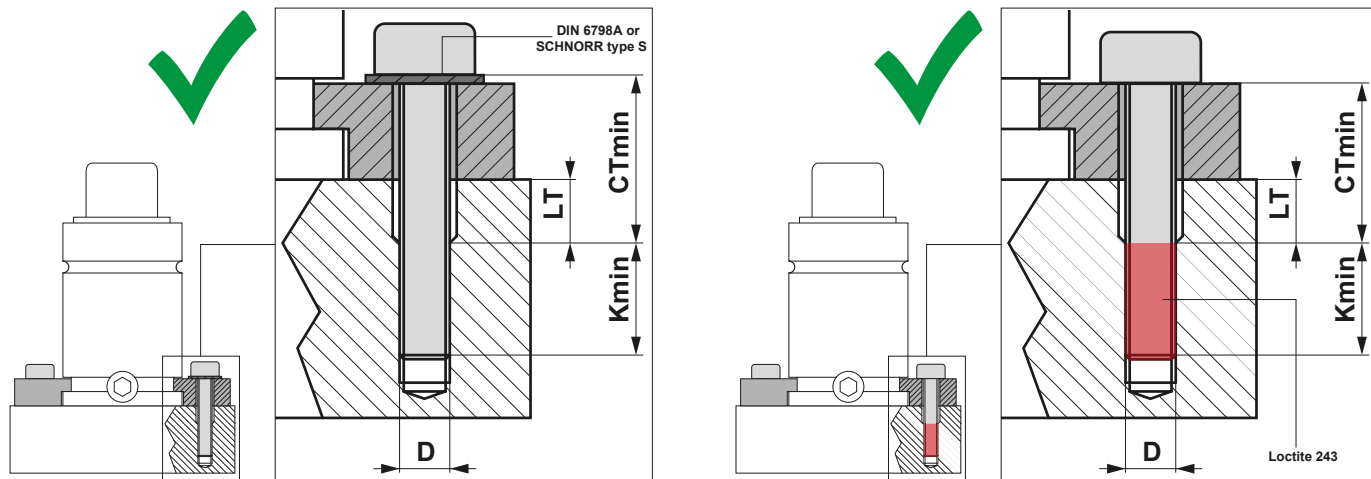


Ordering-Example:

Special Sizes Available On Request.



A correct fixing of the gas springs prevents damages to products and serious dangers to operators.



CTmin	Kmin	LT
Free length (min. 2 x D)	Minimum thread engagement (steel = min. 1.5 x D, cast iron = min. 2 x D)	Widening to ensure CTmin

Always use the suitable threadlocker and/or safety washers on all fixing screws.
(They are not represented in the drawings in the following pages of the catalog).



Safety Washers	
<p>Only for ML, MP, MQ series</p>  <p>Conical spring washer provided by Special Springs</p>	 <p>DIN 6798A or SCHNORR type S</p>

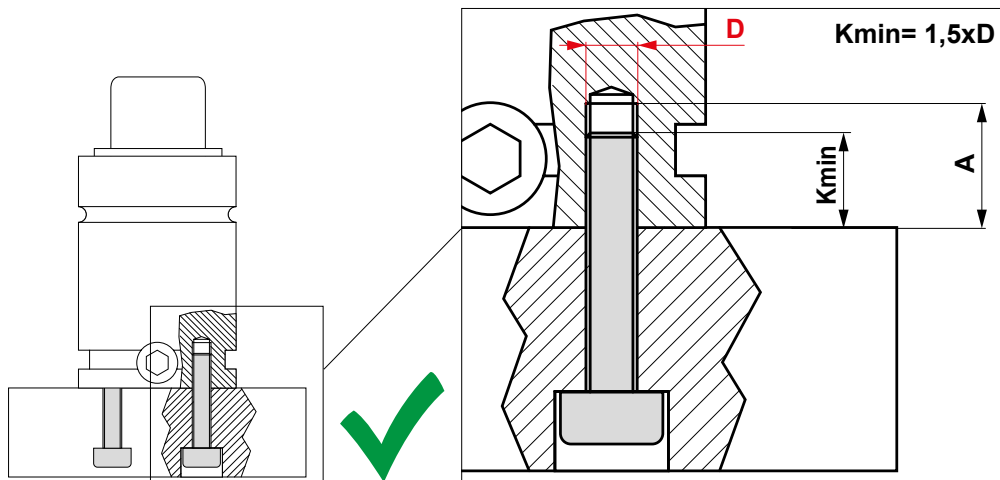
It is always possible to use screws belonging to Classes higher than 8.8, such as 9.8, 10.9 and 12.9. Do NOT EXCEED the values of the tightening torque valid for Class 8.8 for any of the screw's Classes you may use.

Ordering-Example:

Special Sizes Available On Request.

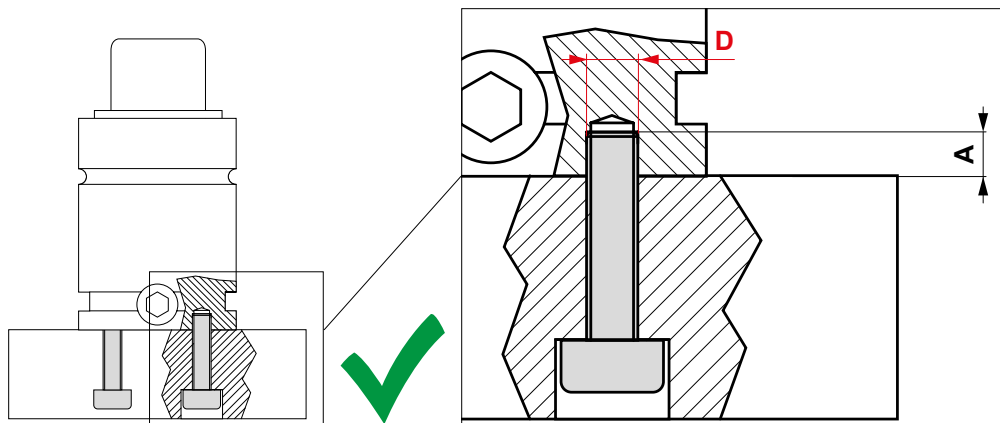
Gas spring with fixing holes for which value A is bigger than value D (e.g. SC3000 with fixing holes M8x13).

Installation Example: $A > D$



Always use the suitable threadlocker and/or safety washers on all fixing screws.
(They are not represented in the drawings in the following pages of the catalog).

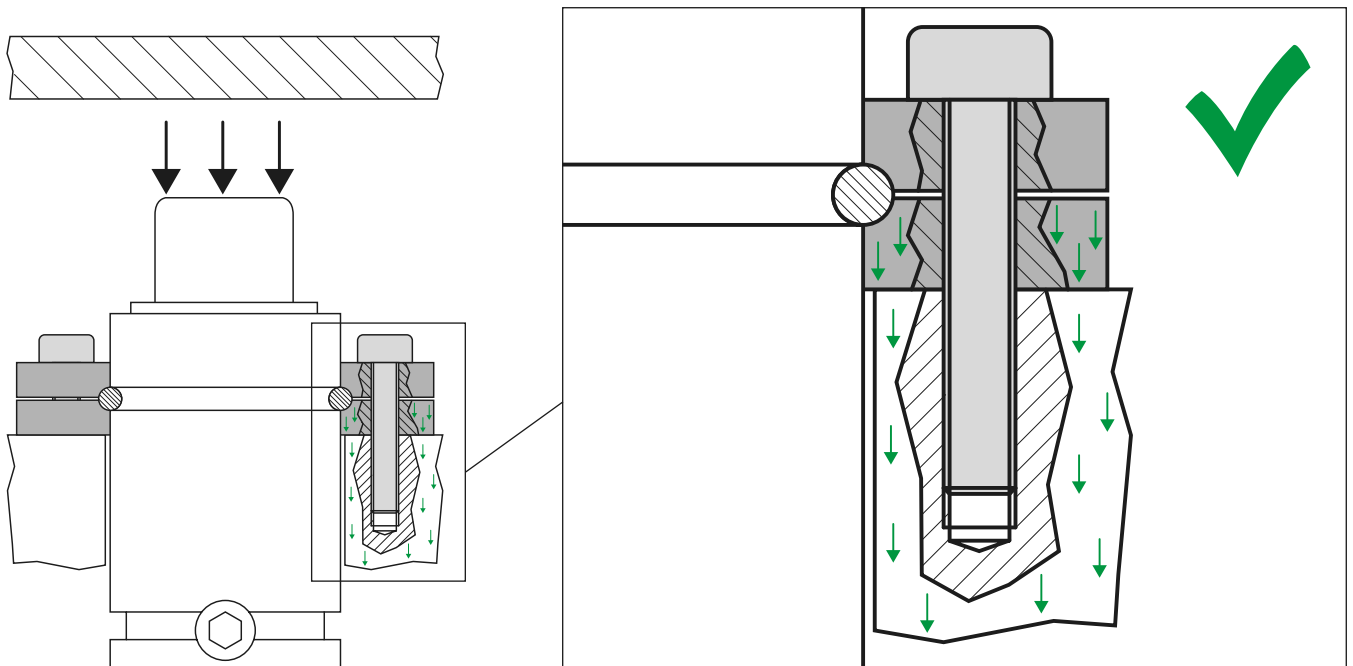
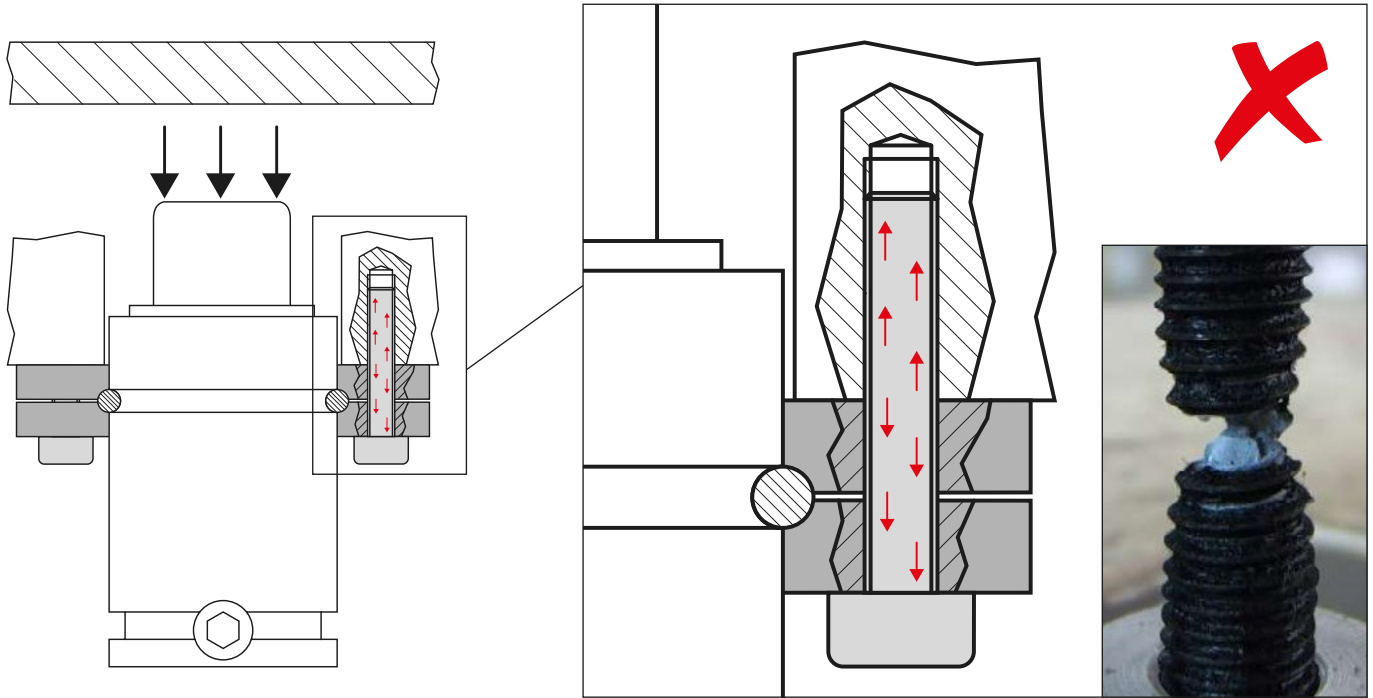
Installation Example: $A \leq D$



Ordering-Example:

Special Sizes Available On Request.



Fixing screws shall never be directly strained by the load acting on the gas spring.



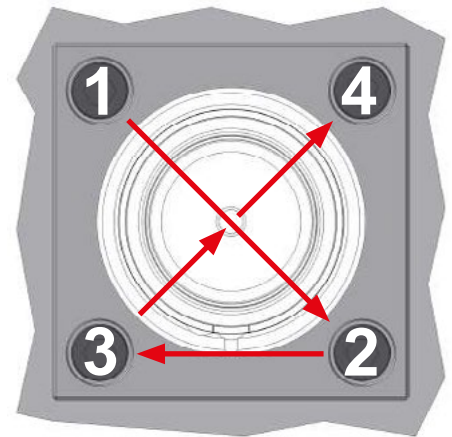
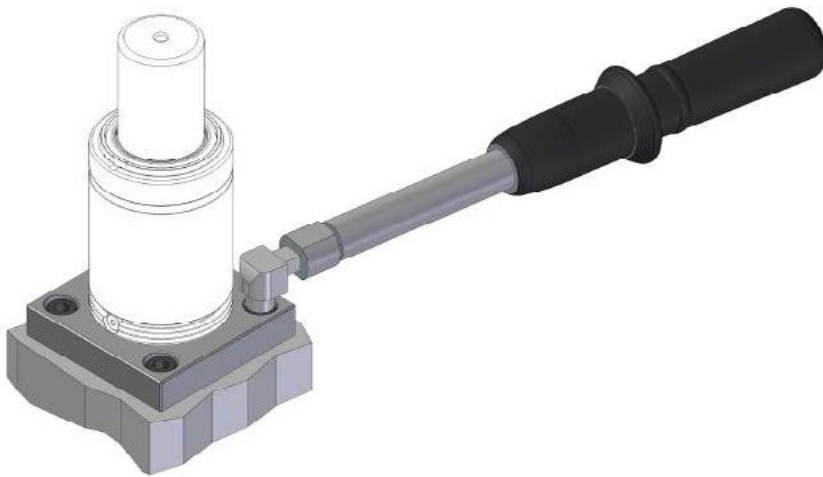
Ordering-Example:

Special Sizes Available On Request.

Respect the specified tightening torques and verify always the condition of gas springs and fixings at each intervention on the die.

 ISO 4762 class 8.8	M5	M6	M8	M10	M12	M16
 Torque force	6 Nm	10 Nm	24 Nm	50 Nm	84 Nm	205 Nm

Tighten all fixing screws by following the order shown in the image (1, 2, 3, 4) and by applying the correct tightening torque. In doing so, the gas springs will be perfectly positioned.



Gas springs must always be installed perpendicular to the direction of force transmission.

The housing holes where the gas springs are installed must always have drain holes.

INSTALLATION GUIDELINE

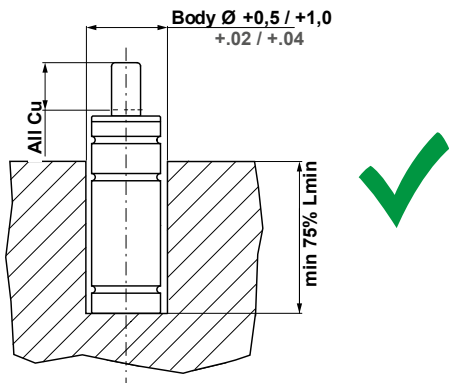


DROP-IN Installation examples

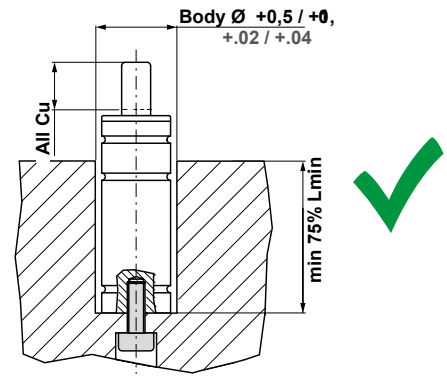
Ordering-Example:

Special Sizes Available On Request.

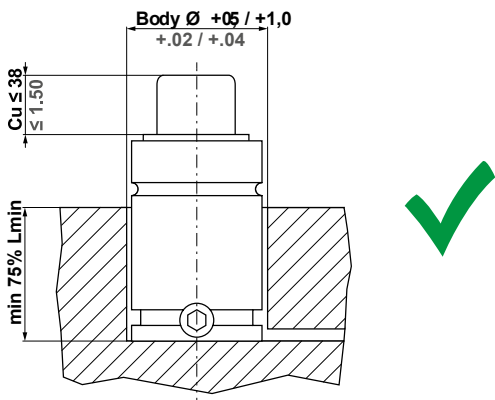
DROP - IN



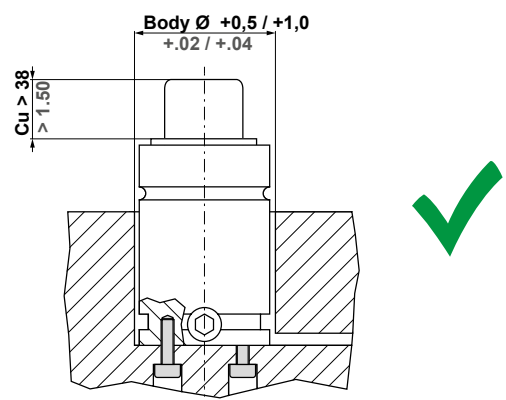
Installation in a flat-end hole.



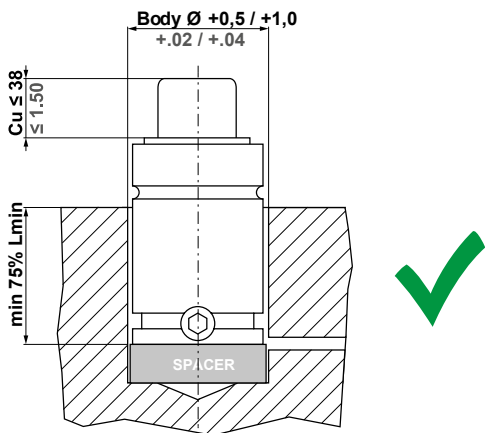
Installation in a flat-end hole with bottom fixing screws.



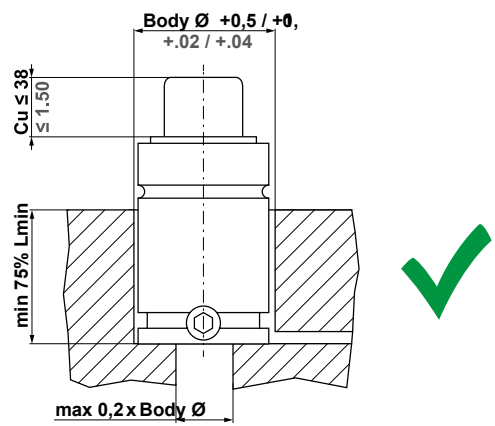
Installation in a flat-end hole.



Installation in a flat-end hole with bottom fixing screws.



Installation in a flat-end hole with spacer.



Max throughout bottom hole dimension for drop-in installation.

All dimensions in mm /inch

INSTALLATION GUIDELINE



DROP-IN Installation examples

Ordering-Example:

Special Sizes Available On Request.

DROP - IN (ML, MP, MQ)	
Installation in a flat-end hole with bottom fixing screws.	
Installation in a flat-end hole with fixing screws in upside down position.	
DROP - IN	
Installation in a flat-end hole with fixing screws in upside down position.	Installation NOT allowed due to excessive body wearing.

All dimensions in mm /inch

INSTALLATION GUIDELINE

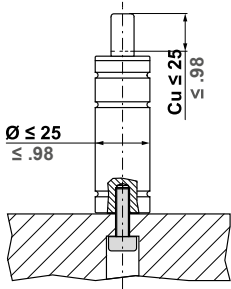
BOTTOM MOUNT Installation examples



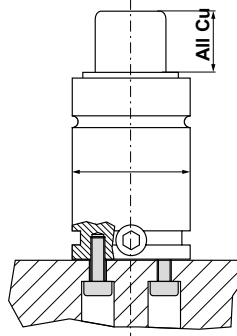
Ordering-Example:

Special Sizes Available On Request.

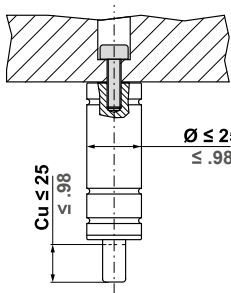
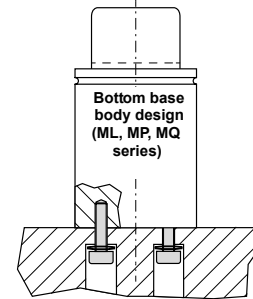
BODY THREADED HOLES



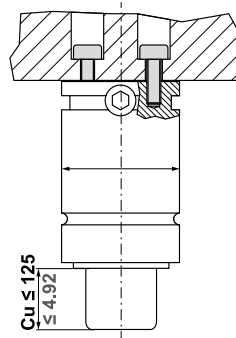
Installation with single fixing screw.



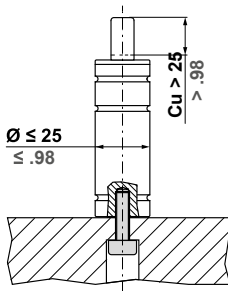
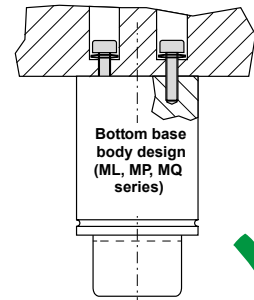
Installation with bottom fixing screws.



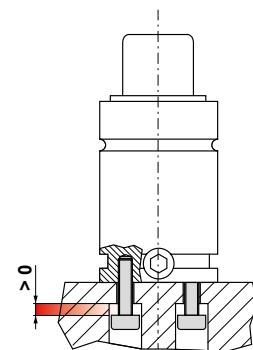
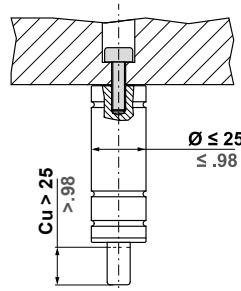
Installation with single fixing screw in upside down position.



Installation with bottom fixing screws in upside down position.



Installation NOT allowed due to excessive stress on gas spring bottom.



Installation NOT allowed due to incorrect screw length.

INSTALLATION GUIDELINE

BOTTOM MOUNT Installation examples



Ordering-Example:

Special Sizes Available On Request.

FB - FBA - FBB - FBC - FBD - FBF

Installation with base flange through fixing screws.

FBE

Installation with base flange through single fixing screw.

Installation with base flange through single fixing screw in upside down position.

Installation NOT allowed due to excessive stress on screw and internal components.

Installation NOT allowed due to excessive stress on gas spring bottom.

Installation with base flange through fixing screws.

Installation with base flange through fixing screws in upside down position.

INSTALLATION GUIDELINE



TOP MOUNT Installation examples

Ordering-Example:

Special Sizes Available On Request.

FCB - FCD - FC - FCC - FCQ - FCQC - FCQB

<p style="text-align: center;">Installation with collar mount flange.</p>	<p style="text-align: center;">Installation with collar mount flange in upside down position.</p>
<p style="text-align: center;">Installation NOT allowed due to tensile stress on screws.</p>	<p style="text-align: center;">Installation NOT allowed due to risk of gas spring rotation and hose damage.</p>

FC (for body gas spring Ø 12 ÷ 25)

<p style="text-align: center;">Installation with collar mount flange.</p>	<p style="text-align: center;">Installation NOT allowed due to excessive stress on internal component (wrong groove).</p>
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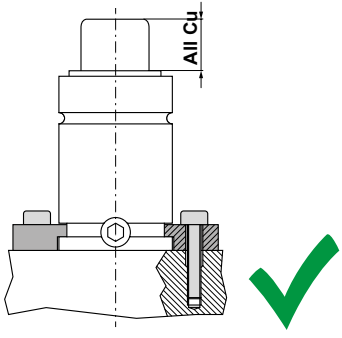
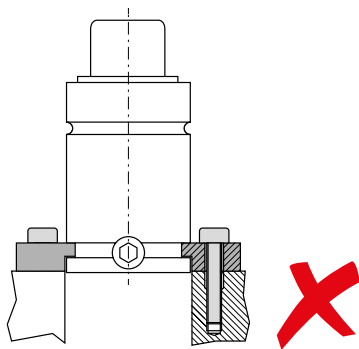
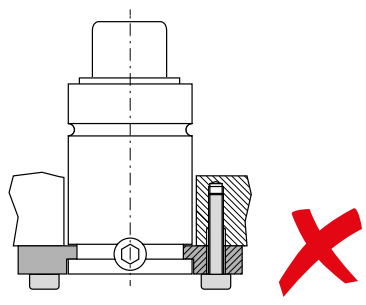
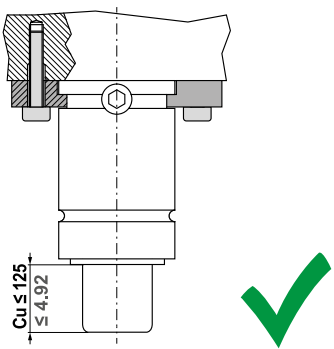
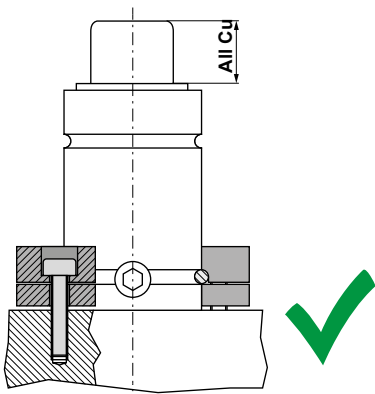
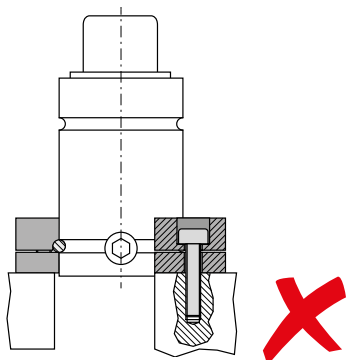
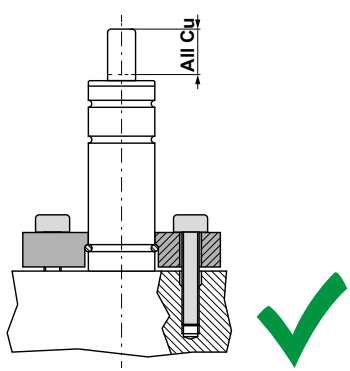
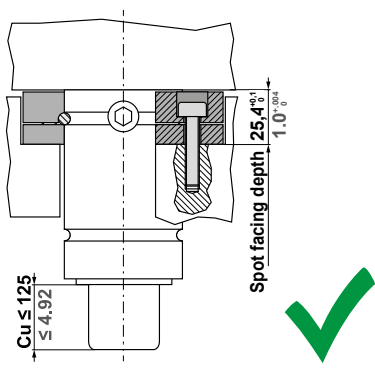
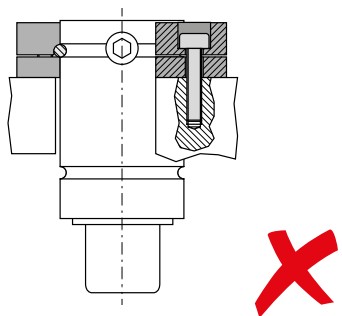
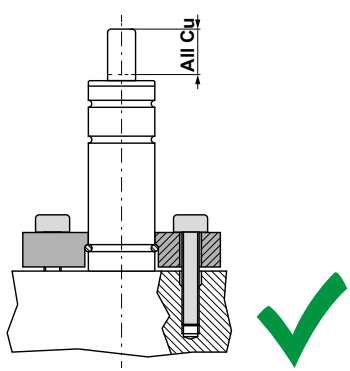
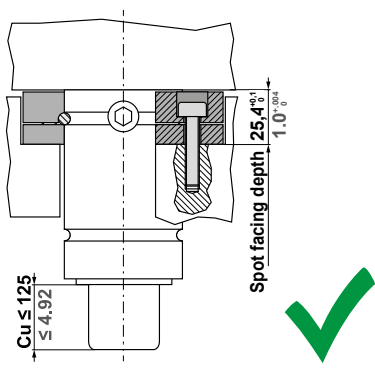
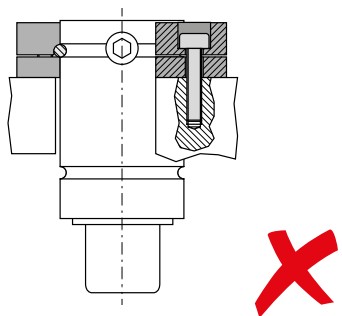
INSTALLATION GUIDELINE

BRACKET MOUNT Installation examples



Ordering-Example:

Special Sizes Available On Request.

FS2 - FS2B - FS2A - FS2C					
 <p>Installation with bracket mount flange.</p>	 <p>Installation NOT allowed due to excessive stress on gas spring body and flange.</p>	 <p>Installation NOT allowed due to tensile stress on screws.</p>			
 <p>Installation with bracket mount flange in upside down position.</p>	<th colspan="2">FS1</th>		FS1		
 <p>Installation with bracket mount flange.</p>	 <p>Installation NOT allowed due to excessive FS3 stress on gas spring body and flange.</p>				
<th colspan="2">FS3</th> <td>  <p>Installation with bracket mount flange.</p> </td> <td>  <p>Installation with bracket mount flange in upside down position. Gas spring base must be in contact with upper plate.</p> </td> <td>  <p>Installation NOT allowed due to tensile stress on screws.</p> </td>	FS3		 <p>Installation with bracket mount flange.</p>	 <p>Installation with bracket mount flange in upside down position. Gas spring base must be in contact with upper plate.</p>	 <p>Installation NOT allowed due to tensile stress on screws.</p>

All dimensions in mm /inch

INSTALLATION GUIDELINE

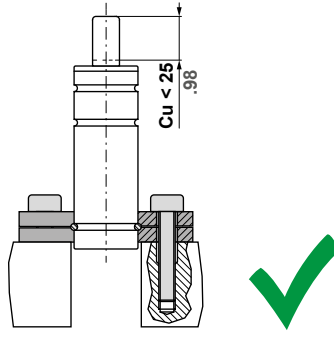
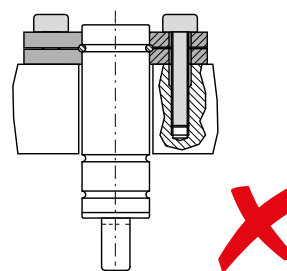
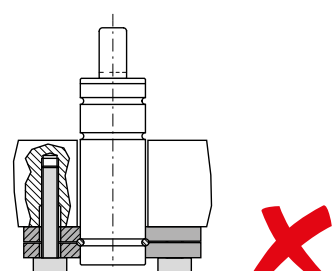
BRACKET MOUNT Installation examples



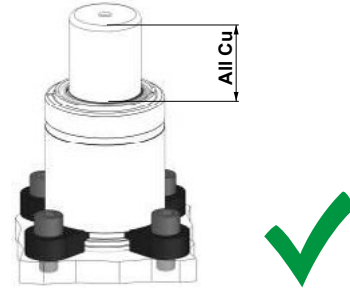
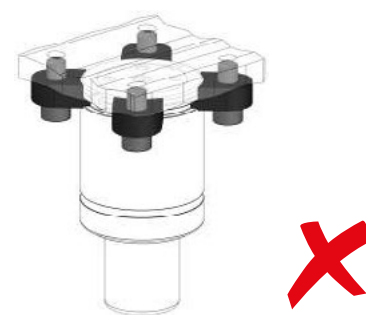
Ordering-Example:

Special Sizes Available On Request.

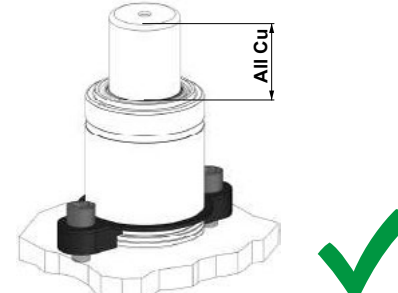
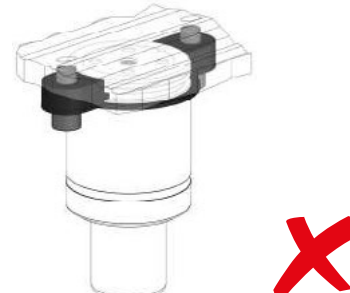
FC (for body gas spring $\varnothing 12 \div 25$)

 <p style="text-align: center;">Installation with collar flange on the lower body groove.</p>		
<p>Installation NOT allowed due to tensile stress on screws.</p>		

FT

 <p style="text-align: center;">Installation with tooth flange on the lower body groove.</p>	 <p style="text-align: center;">Installation NOT allowed due to risk of die damage in case of screw untightening.</p>
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FTP

 <p style="text-align: center;">Installation with tooth flange on the lower body groove.</p>	 <p style="text-align: center;">Installation NOT allowed due to risk of die damage in case of screw untightening.</p>
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All dimensions in mm /inch

INSTALLATION GUIDELINE



BODY MOUNT Installation examples

Ordering-Example:

Special Sizes Available On Request.

FSA - FSB - FSC - FSD - FSE

Installation with body mount flange and fixing screws. ✓

Installation NOT allowed due to lack of reaction force element. ✗

Installation with body mount flange and fixing screws. ✓

(FSA - FSB - FSC - FSD - FSE) + R

Installation with body mount flange and fixing screws in the rear support. ✓

Installation with body mount flange and fixing screws in the rear support. ✓

Installation with body mount flange and fixing screws in the key-fixed rear support. ✓

All dimensions in mm /inch

INSTALLATION GUIDELINE

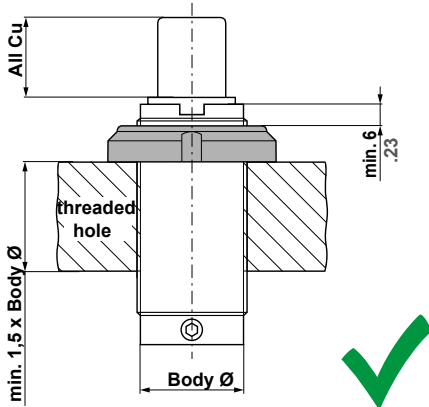
THREAD MOUNT Installation examples



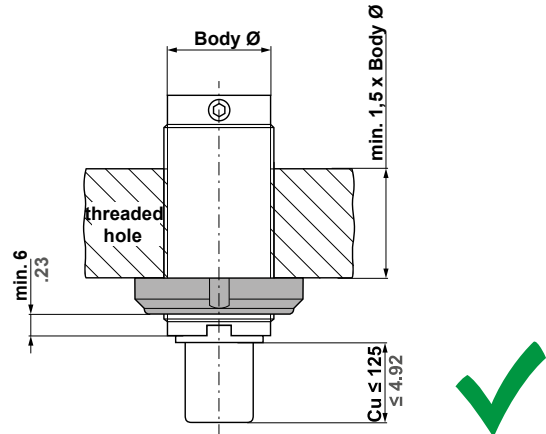
Ordering-Example:

Special Sizes Available On Request.

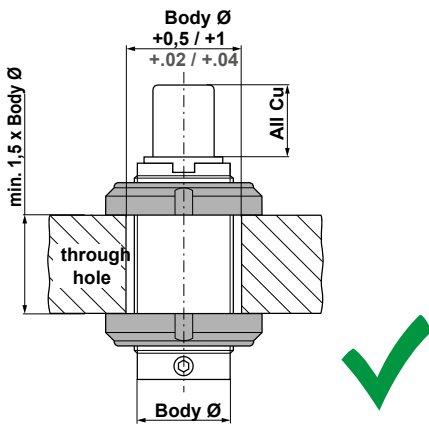
GM



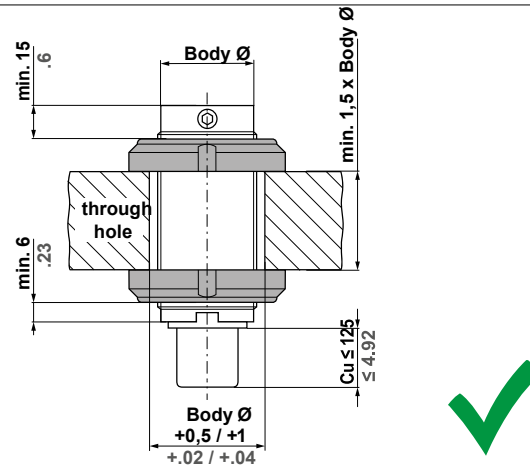
Installation into a threaded hole, locked by a threaded ring.



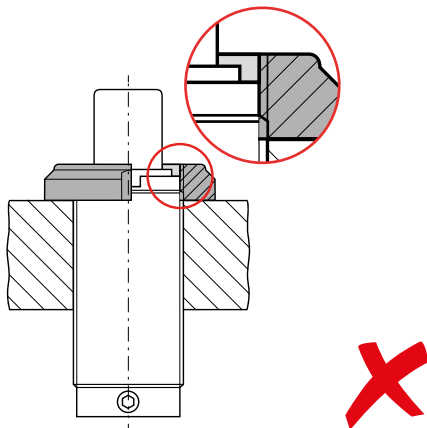
Installation into a threaded hole, locked by a threaded ring in upside down position.



Installation into a through hole, locked by two threaded rings.



Installation into a through hole, locked by two threaded rings in upside down position.



Installation NOT allowed due to insufficient length of engaged thread.

All dimensions in mm /inch

INSTALLATION GUIDELINE

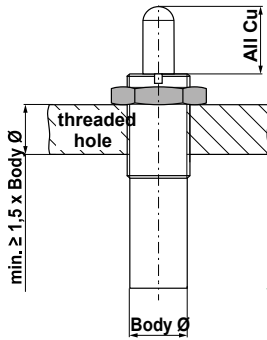
THREAD MOUNT Installation examples



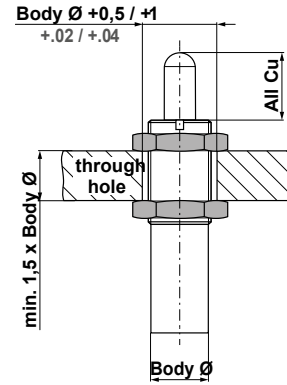
Ordering-Example:

Special Sizes Available On Request.

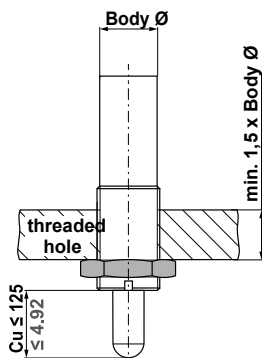
DM - DI



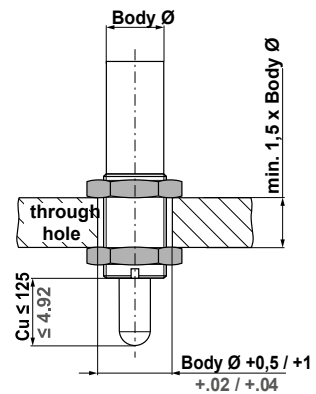
Installation into a threaded hole, locked by a nut.



Installation into a through hole, locked by two nuts.



Installation into a threaded hole, locked by a nut
in upside down position.



Installation into a through hole, locked by two nuts
in upside down position.

All dimensions in mm /inch

INSTALLATION GUIDELINE

THREAD MOUNT Installation examples



Ordering-Example:

Special Sizes Available On Request.

DM - DI

<p>Installation into a through hole, fixed by a top mount threaded flange.</p>	<p>Installation into a through hole, fixed by a top mount threaded flange in upside down position.</p>	<p>Installation NOT allowed due to insufficient engaged thread strength.</p>
<p>Installation NOT allowed due to tensile stress on screws.</p>	<p>Installation NOT allowed due to off-axis positioning.</p>	<p>Installation NOT allowed due to gas spring untightening.</p>

INSTALLATION GUIDELINE

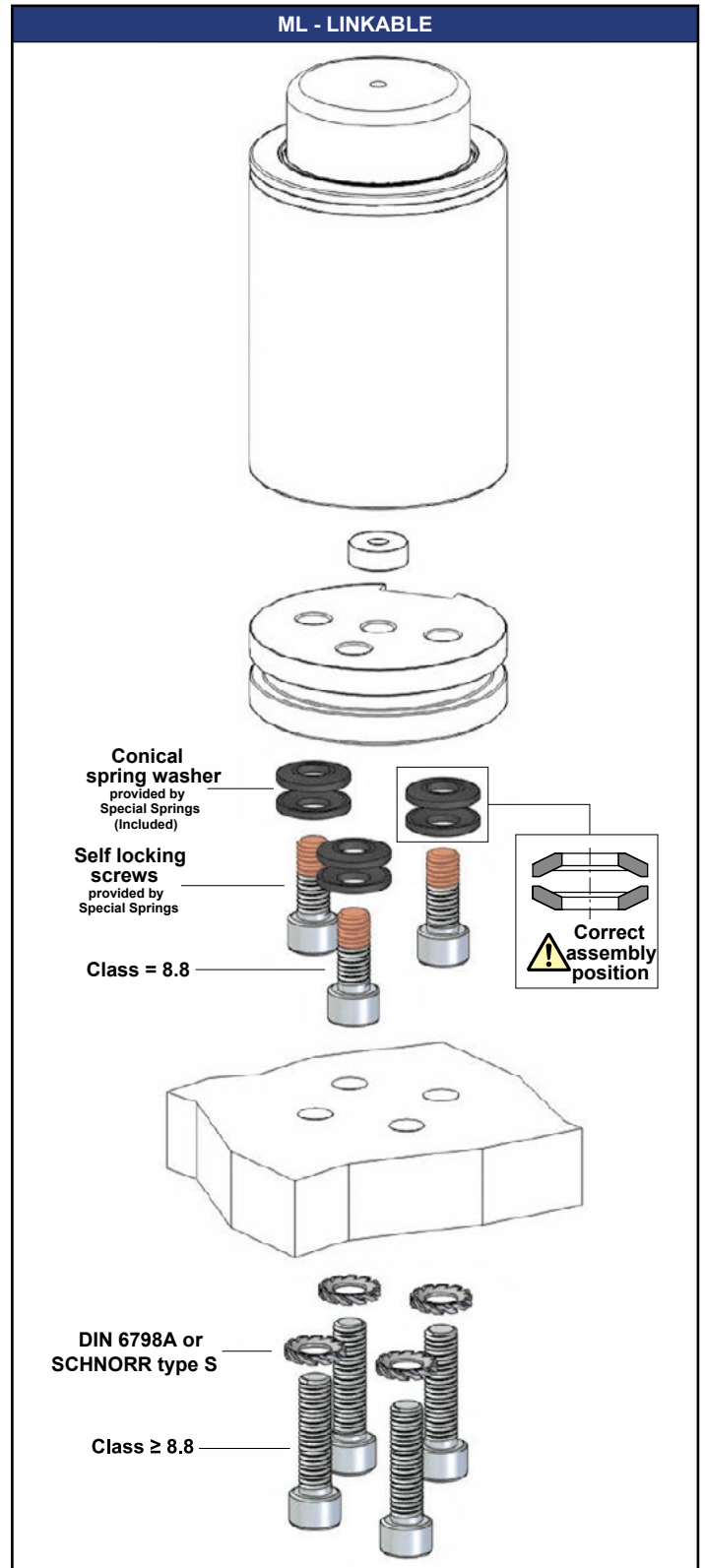
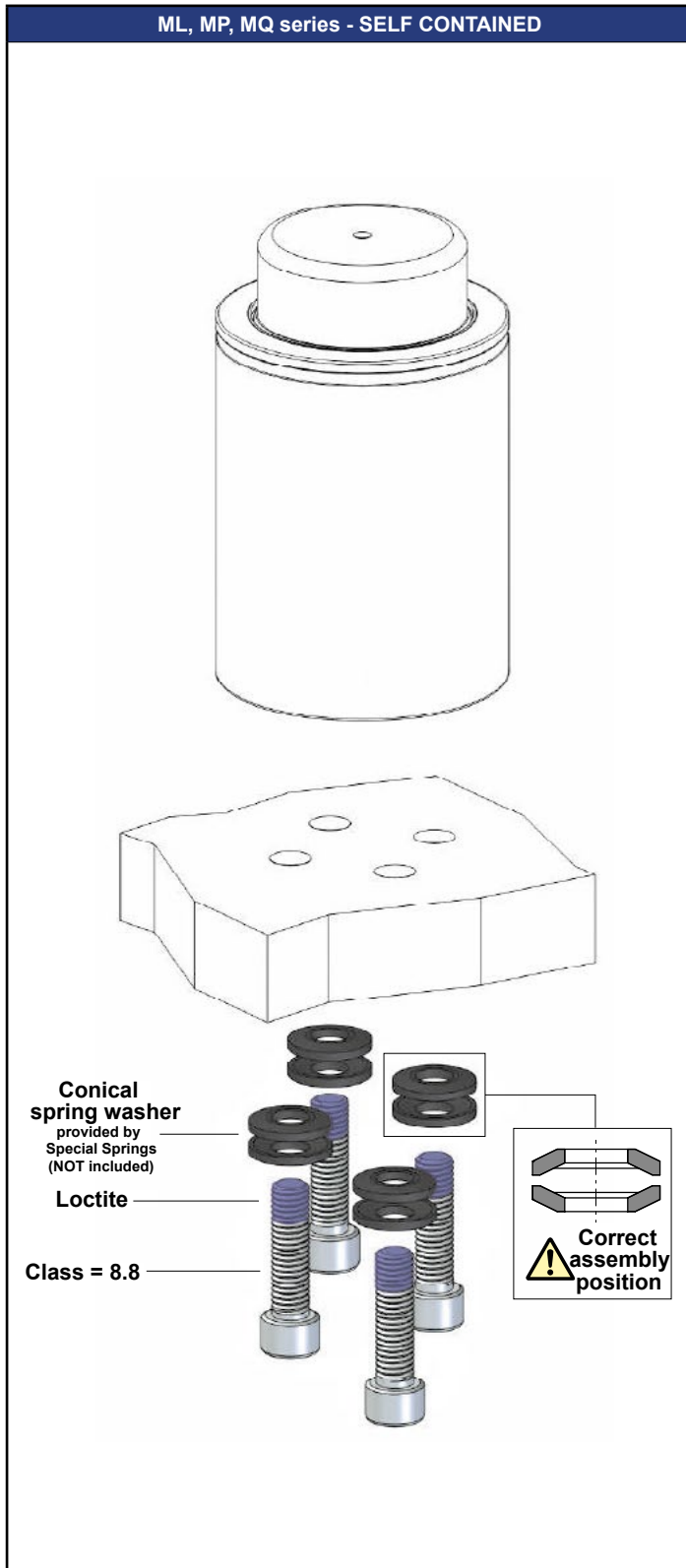


ML, MP, MQ series
Installation examples

Ordering-Example:

Special Sizes Available On Request.

Install the gas springs following the directions given here below. Detailed information is included in the specific kit.



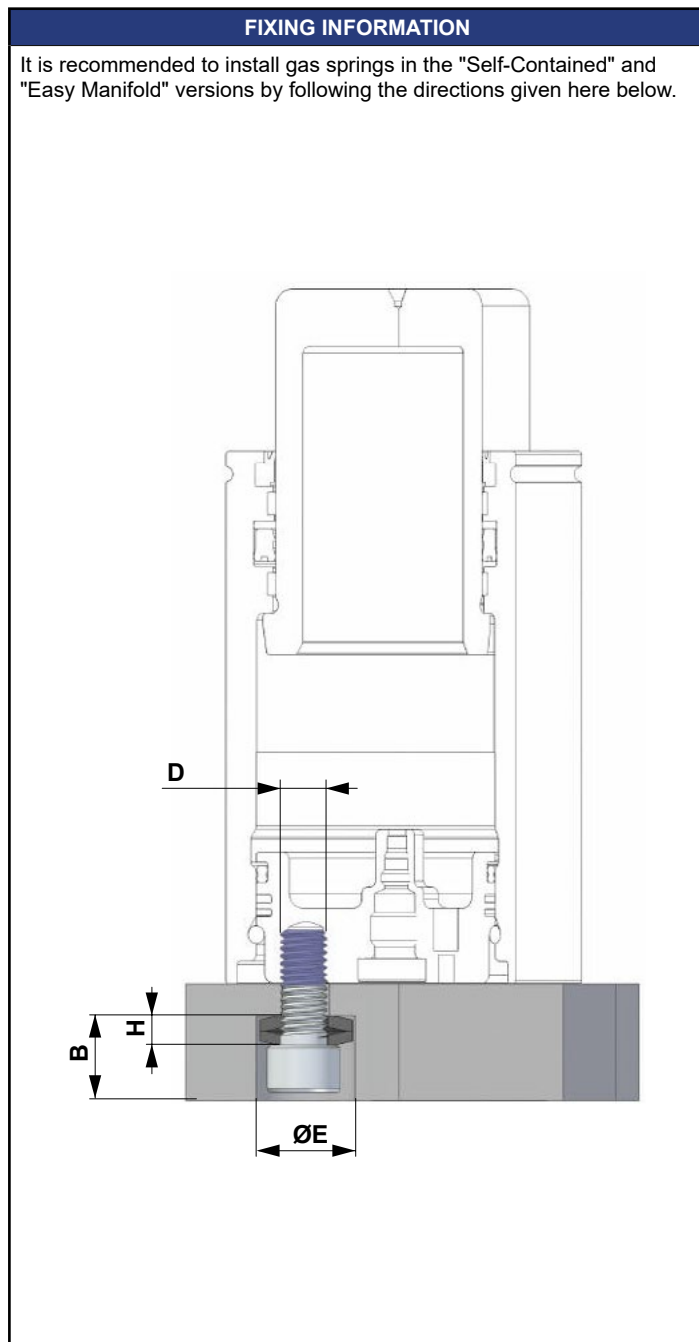
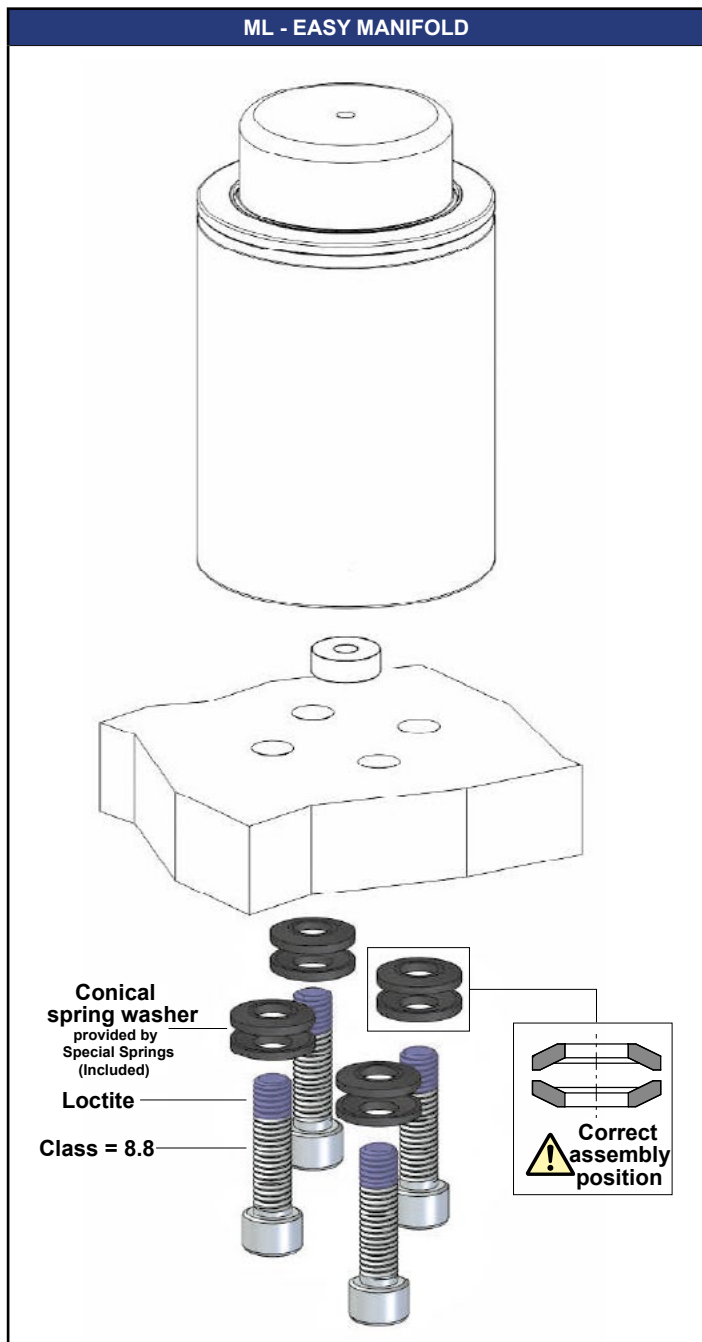
INSTALLATION GUIDELINE

ML, MP, MQ series
Installation examples



Ordering-Example:

Special Sizes Available On Request.



Model	Conical spring washer code	Ø E		B		H		D
		mm	inch	mm	inch	mm	inch	
ML 1000 D / ML 1800 D MP 500 A / MP 1000 A MQ 700 A	49RC06A	≥ 10,25	≥ .40	≥ 9,15	≥ .36	3,15	.12	M6
ML 3000 D	49RCHS08A	≥ 17,3	≥ .68	≥ 12	≥ .47	4	.16	M8
ML 4700 D / ML 7500 D MP 2000 A / MP 3000 A	49RC08A	≥ 18,3	≥ .72	≥ 12	≥ .47	4	.16	M8
ML 12000 D	49RC10A	≥ 23,3	≥ .92	≥ 15	≥ .59	5	.20	M10



ISO 4762
class 8.8