Certification by SGS according to PED 2014/68/EU Modul H

FOGLIO ISTRUZIONI
INSTRUCTION SHEET
BETRIEBSANLEITUNG
FEUILLE DE INSTRUCTIONS
HOJA DE INSTRUCCIONES
FOLHA DE INSTRUÇÕES

Special Springs s.r.l.
Via Nardi 124/A
36060 Romano d'Ezzelino (VI) - ITALY
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Code: 9801C01300021

SPECIAL SPRINGS

Instruction sheet with clickable links

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We recommend toolmakers to deliver tools always with use and instructions sheets provided with Special Springs products.

THIS SECTION IS FILLED ONLY FOR CE MODELS

EU DECLARATION OF CONFORMITY

Special Springs S.r.l.
Via Nardi, 124/A - 36060 Romano d'Ezzelino (VI) - ITALY

Declares on its sole responsibility that the

nitrogen cylinder _____ production batch _____

to which this declaration refers complies with the terms of the assessment procedure, Module H of directive 2014/68/EU (PED.VE10615.Rev1) for pressure equipment implemented by the Legislative Degree of 15/02/2016 n. 26, and with harmonized standards:

EN 13445:2018, EN 14359:2017

other standards

EN 15614:2018

The Notified Body monitoring the Manifacturer's Quality Assurance System is:

SGS ITALIA spa, NOTIFY BODY N° 1381

Special Springs S.r.l.

Augusto Cappeller

Romano d'Ezzelino, ____ / _____ / _____

(signature of legal representative)

The model for this declaration complies with EN 17050:2010

The PED certificate is available on www.specialsprings.com

Fig. A

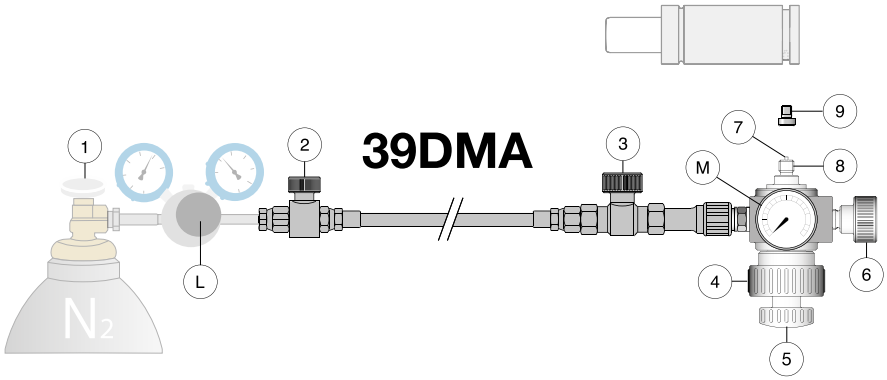
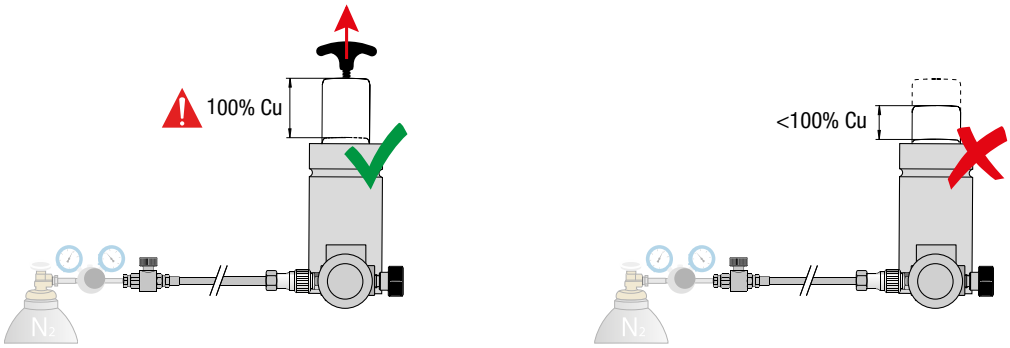


Fig. B

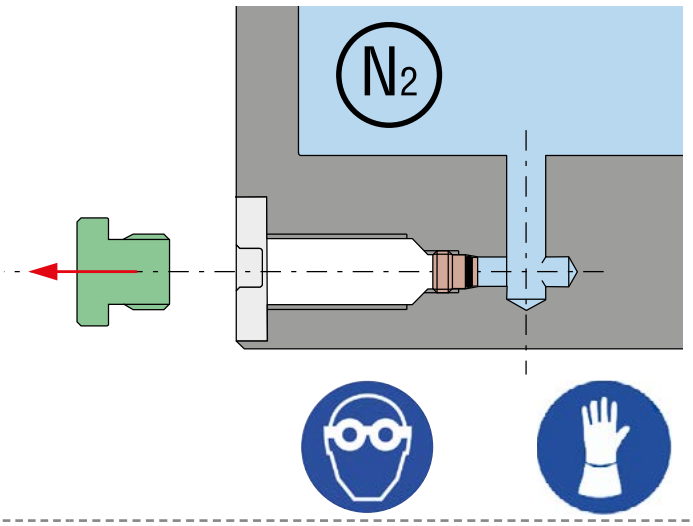


In case of use of charging/discharging devices not supplied by Special Springs, the manufacturer will not be liable for personal injury or property damage.

Do not exceed the maximum gas charging pressure at 20°C/68°F, as indicated on the body.

1) Block adequately the cylinder.
2) Before charging the gas cylinder, pull the rod completely (100% Cu) out (fig. B).
3) Unscrew the charging hole plug (9).
4) Unscrew the hand grip (5) untill the pin (7) is completely retracted.
5) Through the hand grip (4) screw the adapter (8) onto the charging hole.
6) Ensure that valves (2-3-6) are completely closed.
7) Open very slowly the valve on the gas bottle (1), then set the outgoing charging pressure by acting on lever (L).
8) Slowly open the valve (3) to pressurize the cylinder. Inside pressure appears on gauge (M).
9) Close the valve (3).
10) Open discharging valve (6).
11) Unscrew the adapter (8) from the charging hole through the hand grip (4).
12) Screw the charging hole plug (9) into the cylinder.
13) Close slowly the nitrogen bottle valve (1).

1



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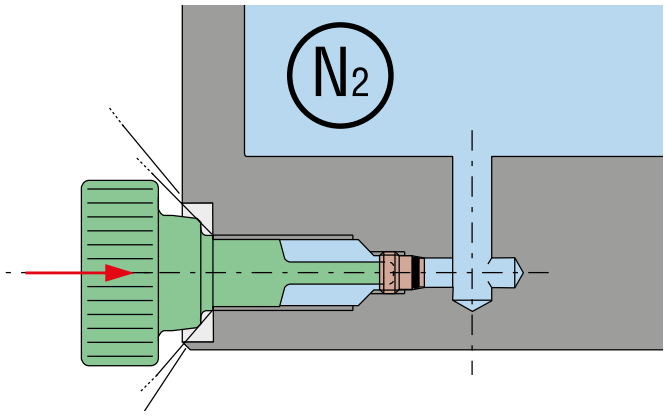

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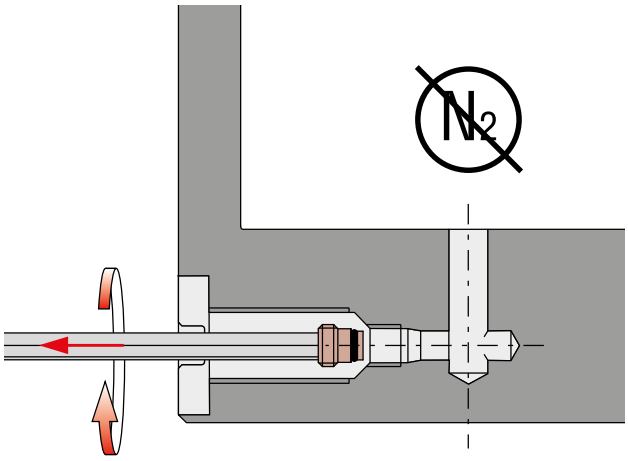
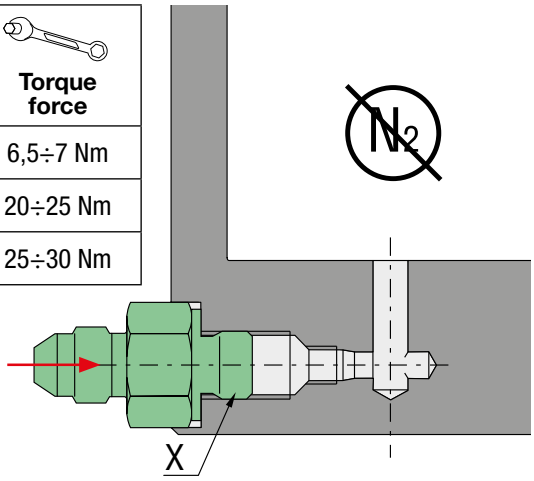


4

X	Torque force
M6	6,5÷7 Nm
G1/8”	20÷25 Nm
G1/4”	25÷30 Nm



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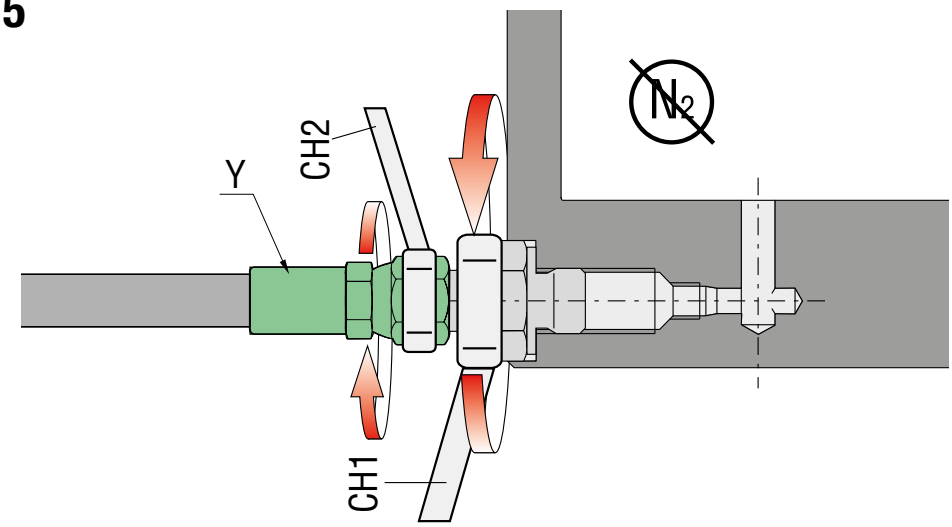

Y	Torque force
EO 24°	16÷18 Nm
JIC 37°	16÷18 Nm
Micro 32°	8÷9 Nm
ORFS	28÷32 Nm

No.	Category according to PED	CE Marketing	No. of notify body	Marking	Declaration of Conformity	Module according PED
1	SEP	✗	✗	PED 2014/68/EU Art. 4(3)	✗	Internal Production
2	I	✓	✓	CE 1381	See Declaration of conformity	Module H
3	II	✓	✓	CE 1381	See Declaration of conformity	Module H
4	III	✓	✓	CE 1381	See Declaration of conformity	Module H

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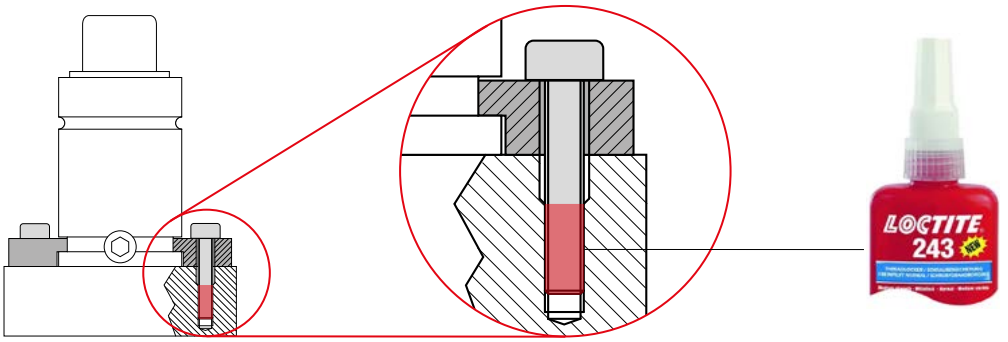
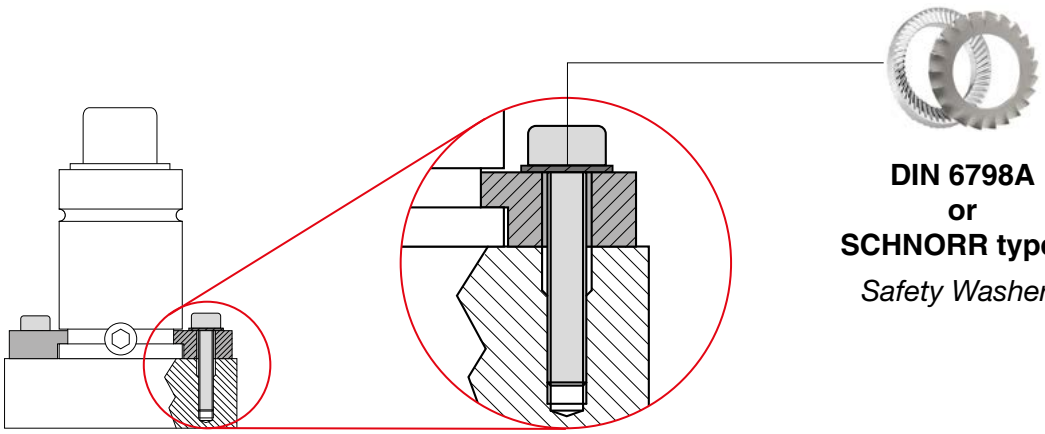
GENERAL INFORMATION Ref. 6.6 of VDI 3003 part1

You have always to fix the cylinders directly through the specific fixing components. A correct fixing of the gas springs prevents damages to products and serious dangers to operators.

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





DIN 6798A
or
SCHNORR type S
Safety Washers

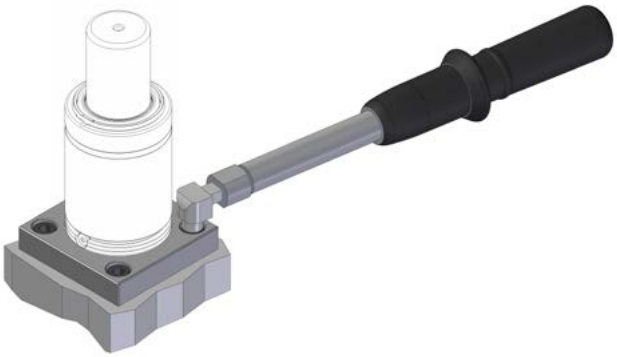
Follow the correct tightening torques as indicated. Always check the state of cylinders and of fixings after each operation on the tool.

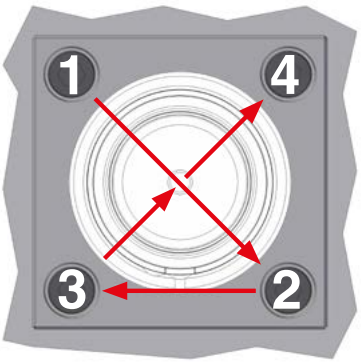
UNI EN ISO 21269:2007 class ≥ 8.8	**M5**	**M6**	**M8**	**M10**	**M12**	**M16**
Torque force	**6 Nm**	**10 Nm**	**24 Nm**	**50 Nm**	**84 Nm**	**205 Nm**

Continue...

The use of screws of higher class than 8.8, such as 9.8, 10.9 and 12.9, is always allowed. DO NOT EXCEED the values for the tightening torque indicated for class 8.8 in any other class of screws used.

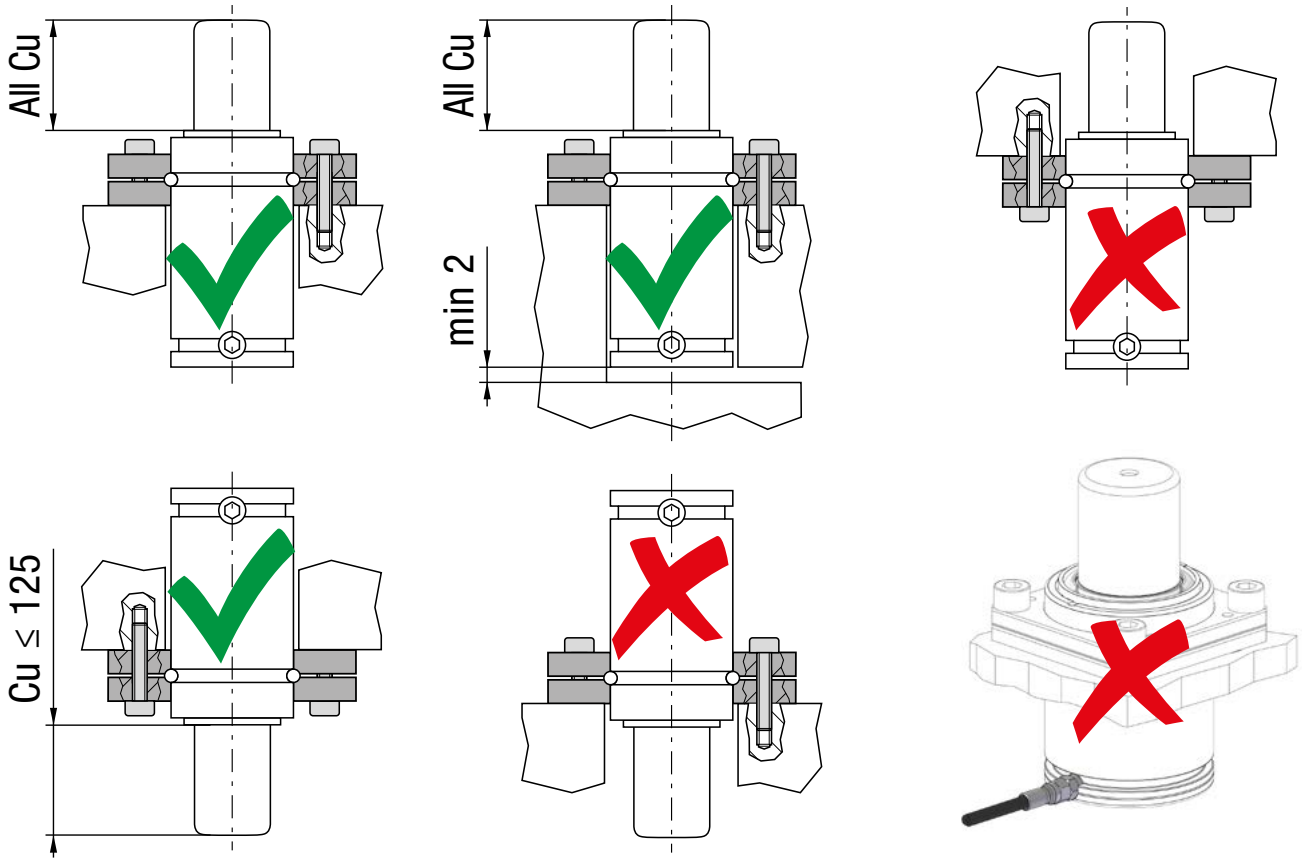
Tighten all fixing screws by following the order shown in the image (1, 2, 3, 4) and by applying the correct tightening torque. Carry out the operation by tightening the screws gradually.





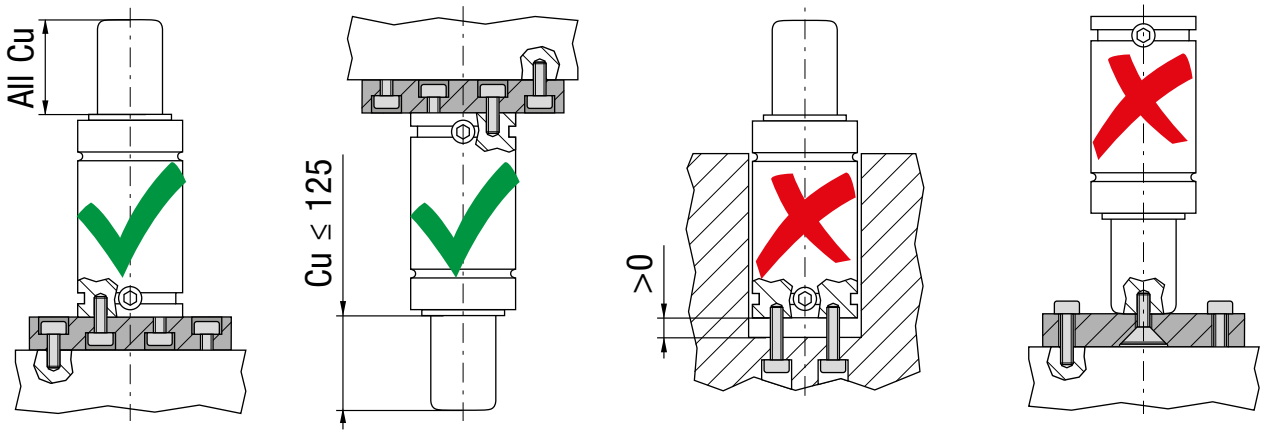
TOP MOUNT Ref. 6.1 of VDI 3003 part1

Top mounting with flange.



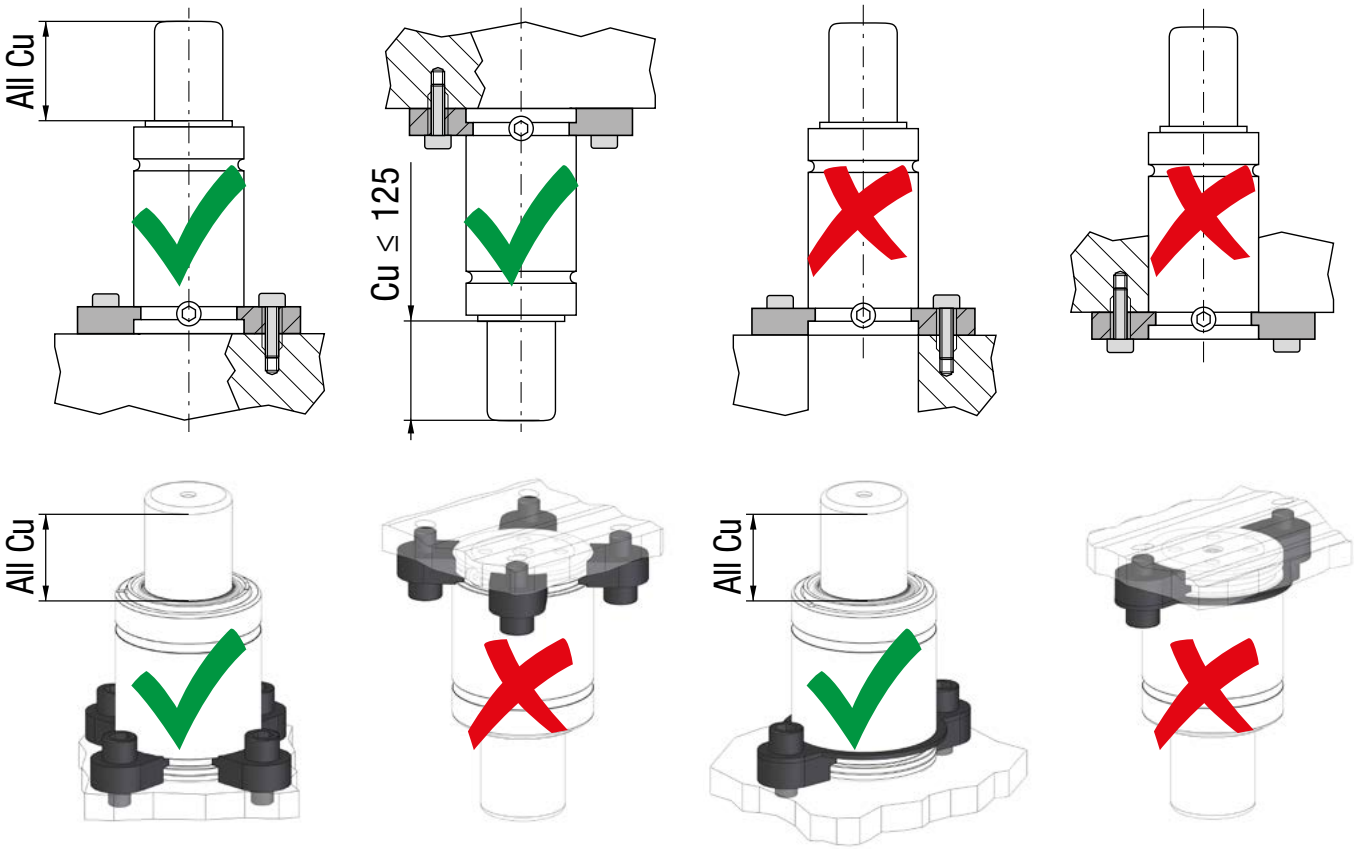
BOTTOM MOUNT Ref. 6.6 of VDI 3003 part1

Use screws with appropriate length to engage the full depth of the threaded hole of the cylinder.



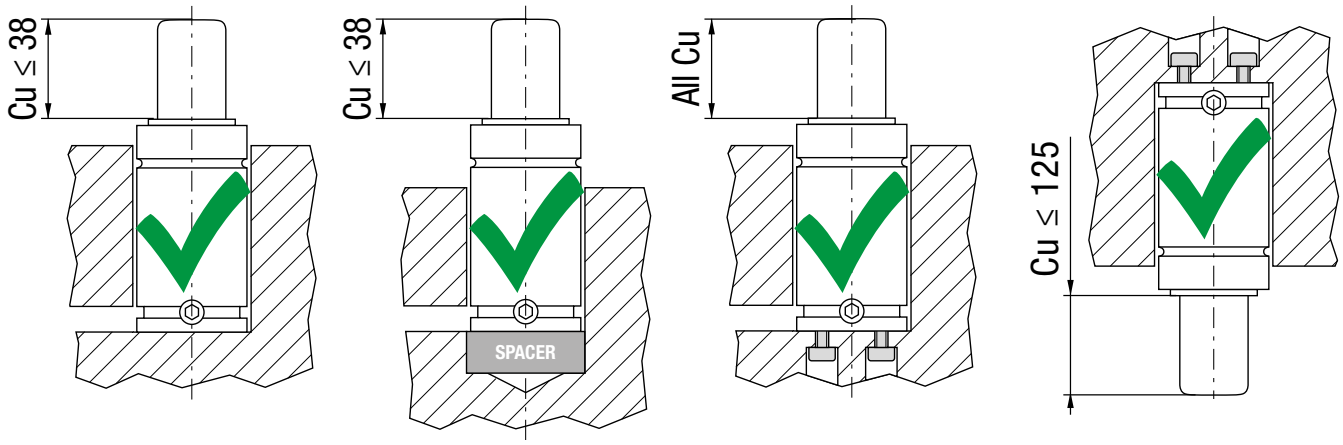
BRACKET MOUNT Ref. 6.2 - 6.3 of VDI 3003 part1

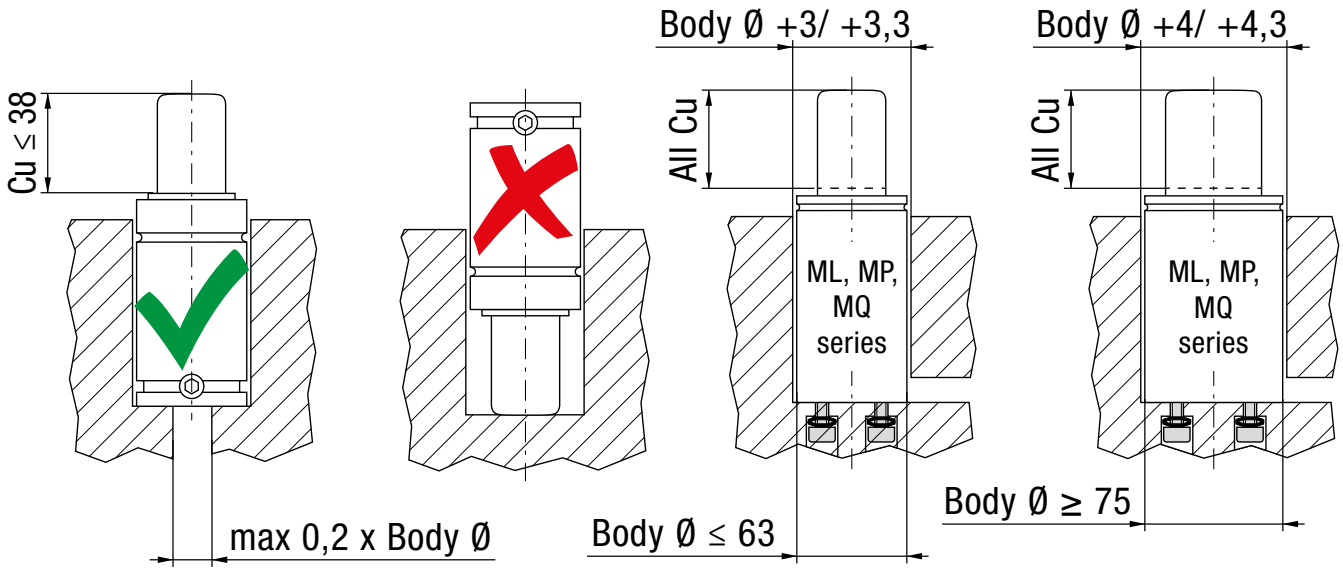
Bracket mounting.



DROP-IN Ref. 6.6 of VDI 3003 part1

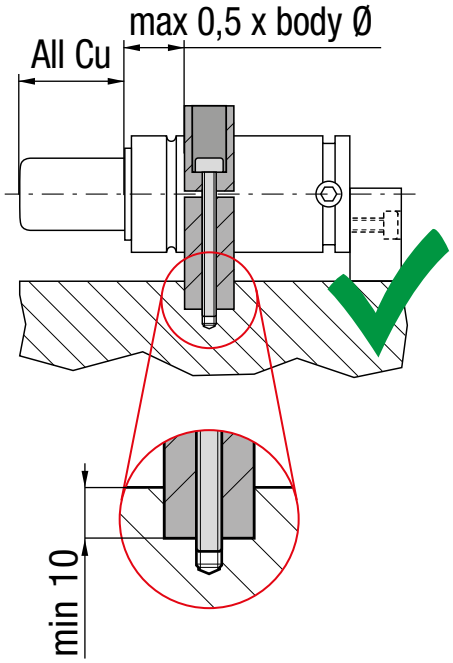
Ensure that the ground plane is NOT interrupted. Always check the state of cylinders and of its seats after each operation on the tool.

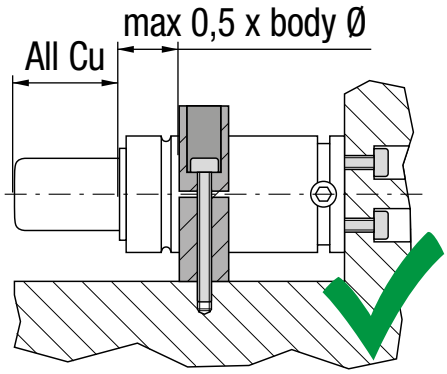


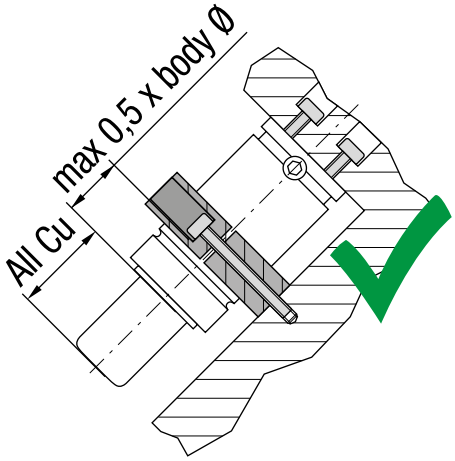


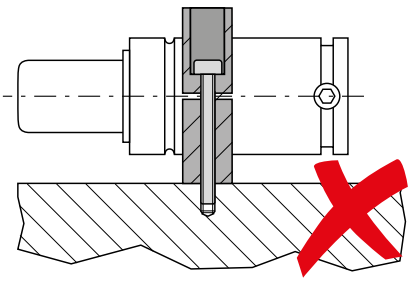
BODY MOUNT Ref. 6.4 of VDI 3003 part1

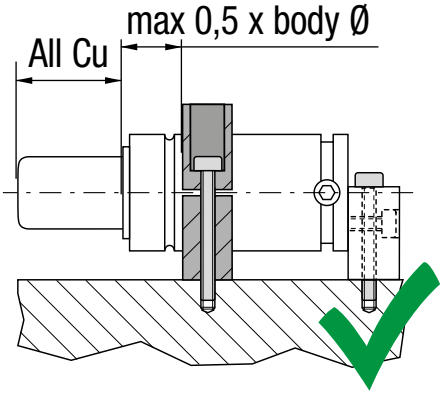
Gas springs with clamping flange mounting always require additional shouldering, as shown in the Figure.

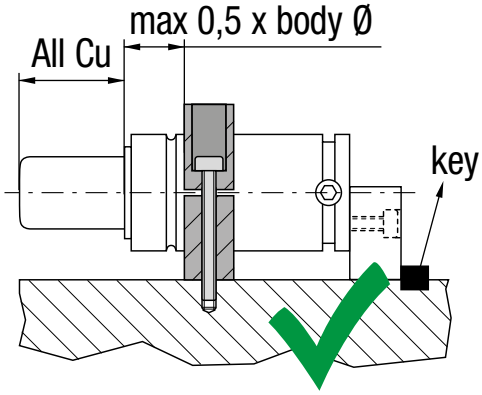






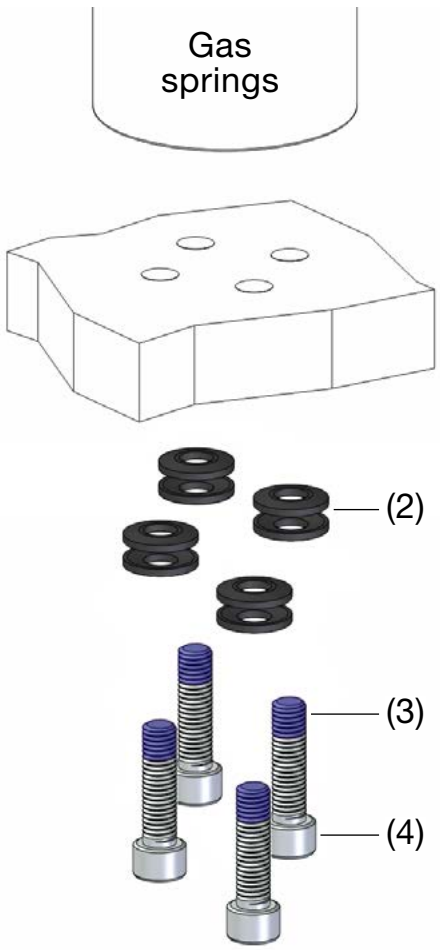
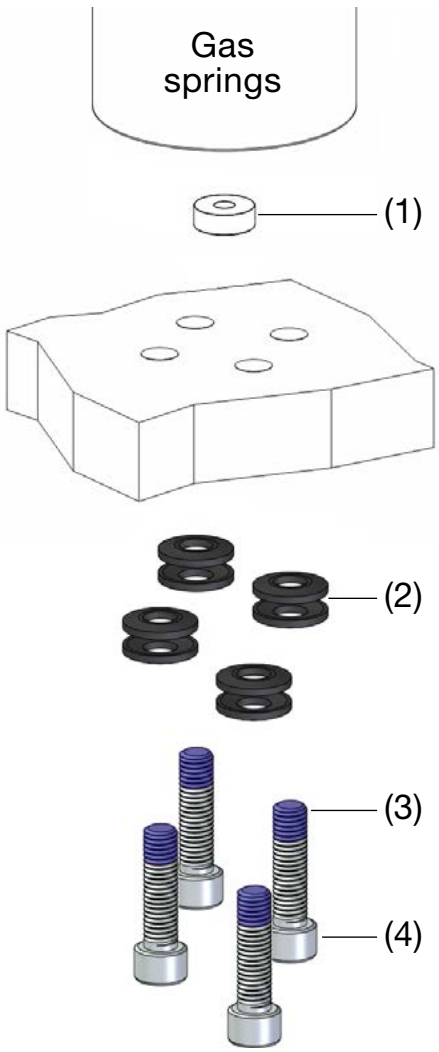
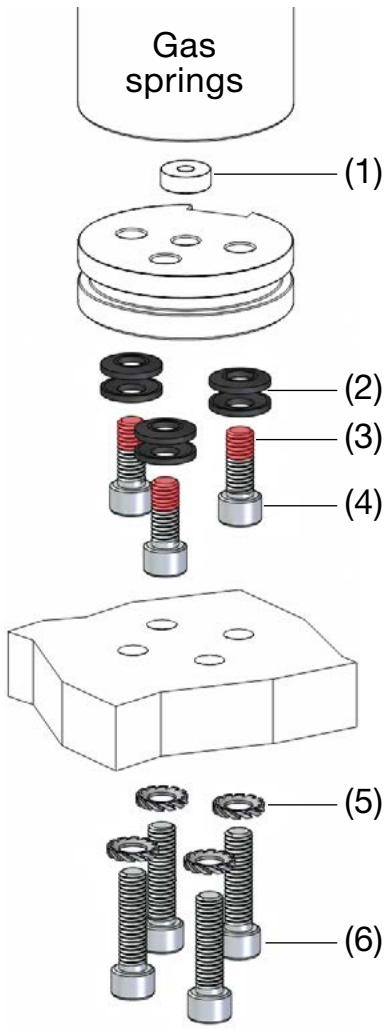






INSTALLATION GUIDELINE
ML - MP - MQ SERIES

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

SELF CONTAINED ML, MP, MQ Series	EASY MANIFOLD ML Series	LINKABLE ML Series
		

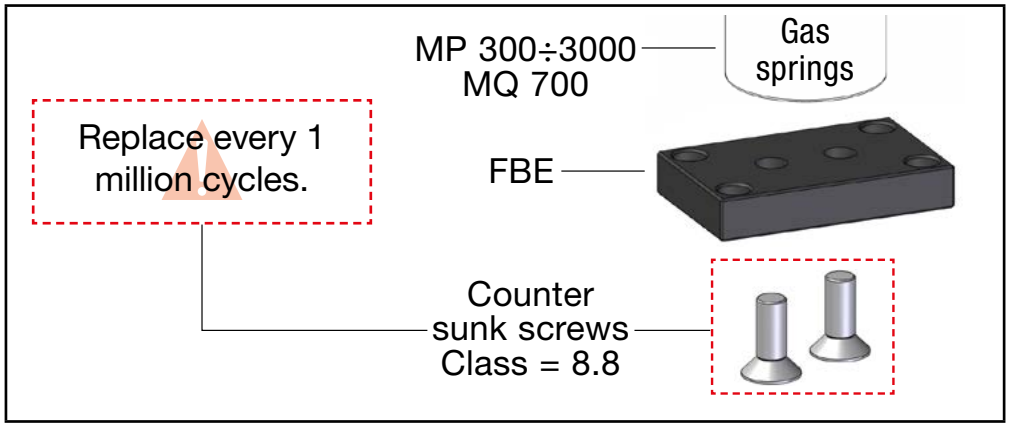
(1) Seal; (2) Conical spring washer; (3) Loctite 243; (4) Class = 8.8; (5) Safety Washers DIN 6798A or SCHNORR type S; (6) Class ≥ 8.8;

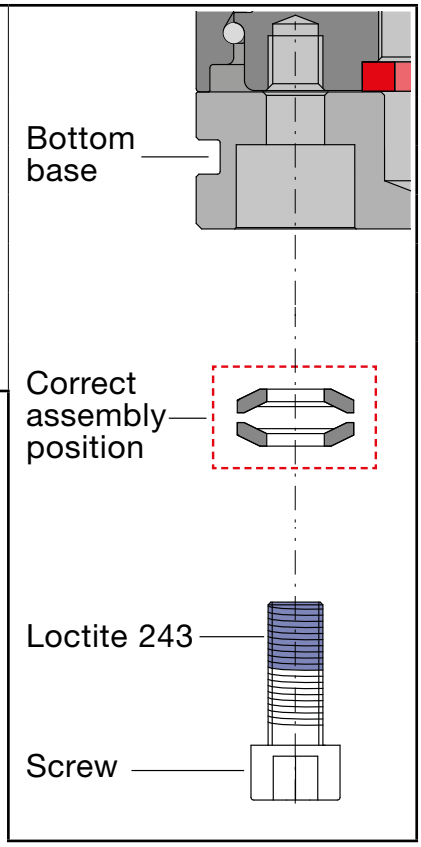
Continue...

Model	Conical spring washer code
ML 1000 D	49RC06A
ML 1800 D	49RC06A
ML 3000 D	49RCHS08A
ML 4700 D	49RC08A
ML 7500 D	49RC08A
ML 12000 D	49RC10A

Conical spring washer provided by Special Springs (included with Easy Manifold and Linkable cylinder)

Replace (1)(2)(3)(4) every 1 million cycles.

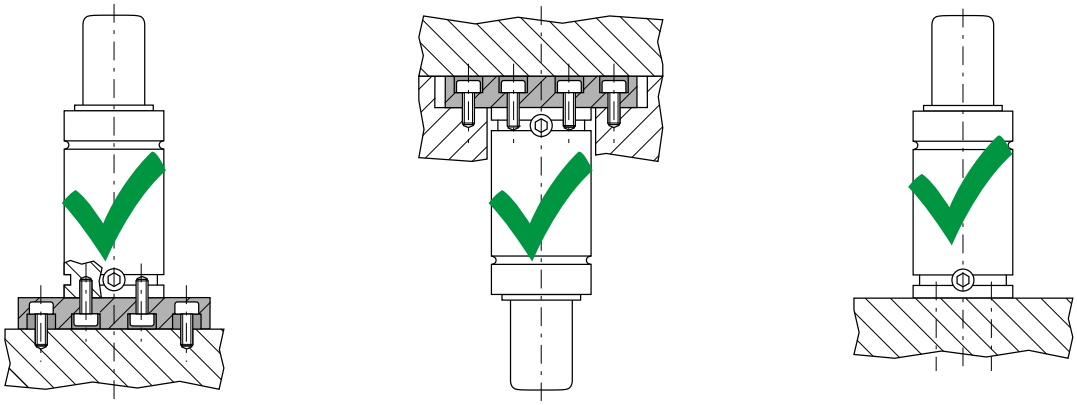




MOUNTING HOSED SYSTEMS

Ref. 6.5 of VDI 3003 part1

The gas springs in a linked system shall not rotate during the stamping operations. Rotation may cause deterioration of the hoses and result in damage or gas leakage. For this reason, it is not allowed to install gas springs in a linked system in drop-in mode without fixings or in top mount mode with flanges.
However, gas springs may nevertheless rotate under unfavourable operating conditions. In these special situations, the gas springs should be bolted via thread inserted in the spring base (directly or onto a base plate - see Figure).



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Safety for us is not simply a marketing matter, it's our philosophy in each choice. At the base of all Special Springs products, there are continuous researches and developments, the use of the latest technologies, quality and safety controls, all in full compliance with regulations and focused on guaranteeing you superior quality, durability, reliability. Discover the Special Springs product range.

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USAS	17
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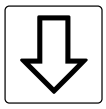
- **HOW SAFETY FEATURES WORK:**
  If the safety features are activated, pressure exhausts in a controlled manner.

- **WHAT TO DO AFTER:**
  If the safety features are activated, verify and exhaust the possible pressure leftovers, remove the causes of the damage and replace always the damaged cylinder.

OSAS Ref. 8.2 of VDI 3003

Over
Stroke
Active
Safety

VDI 3003

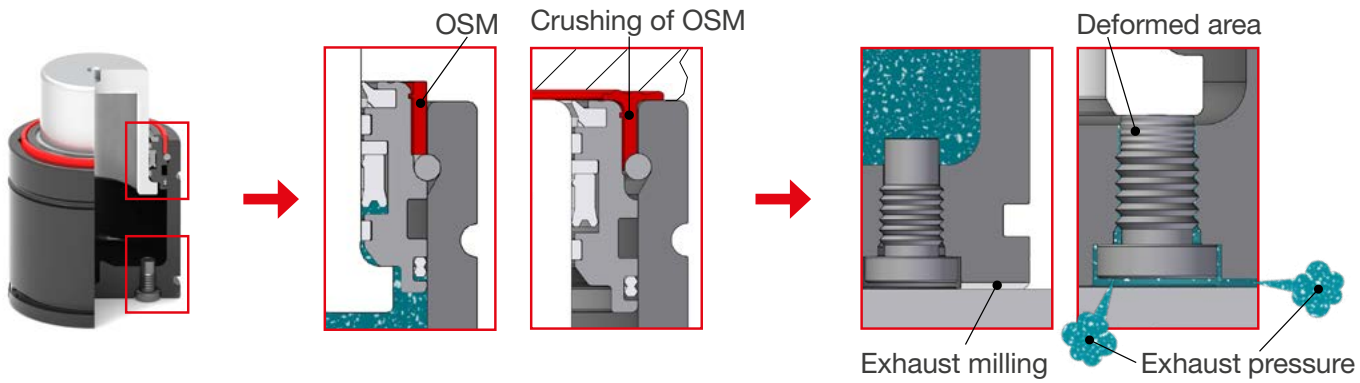


+

Over
Stroke
Marker

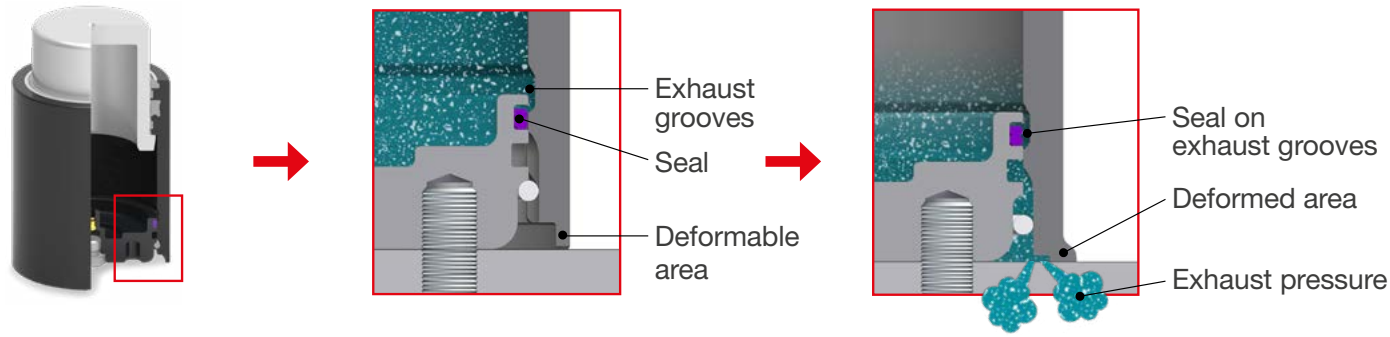
DESIGN: BUSH - BODY

Standard on: M300 - RV - RF - RS - RG - RT - S - SC - H - HF HT - LS



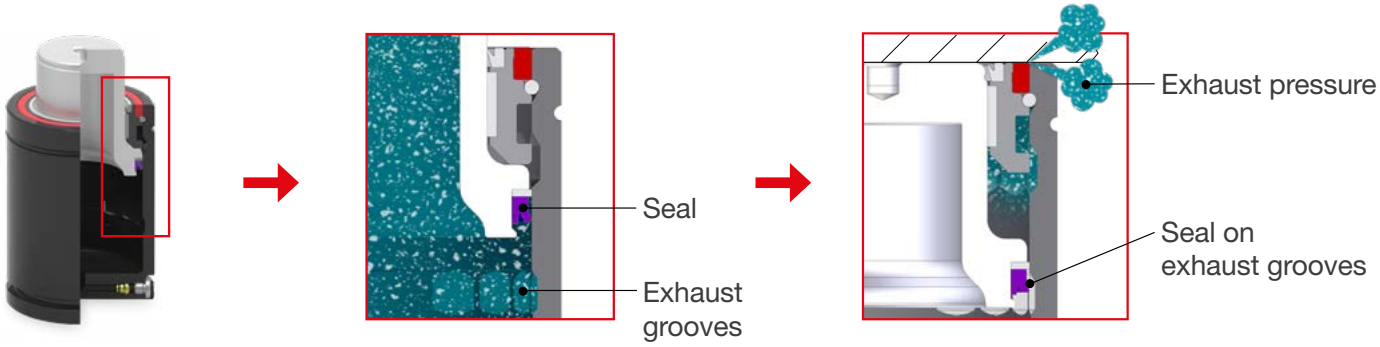
DESIGN: BOTTOM BASE DESIGN - BODY

Standard on: ML - MP - MQ



DESIGN: PISTON DESIGN - BODY

Standard on: KE



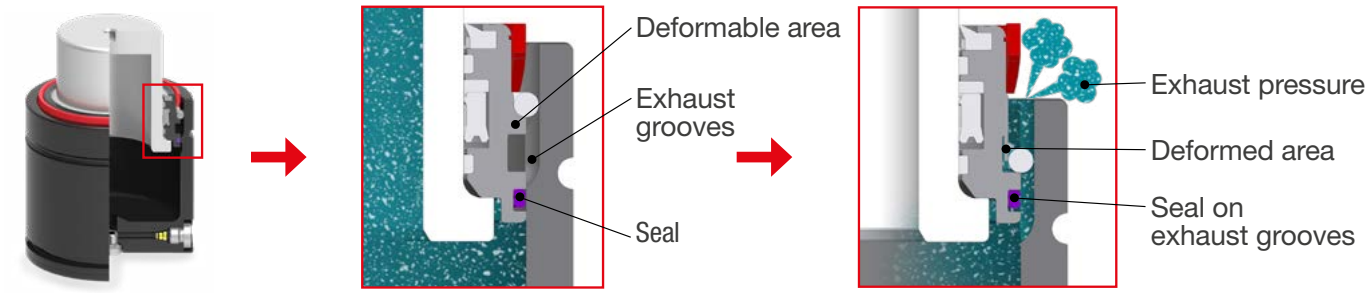
USAS Ref. 8.2 of VDI 3003

Uncontrolled
Speed
Active
Safety

VDI 3003

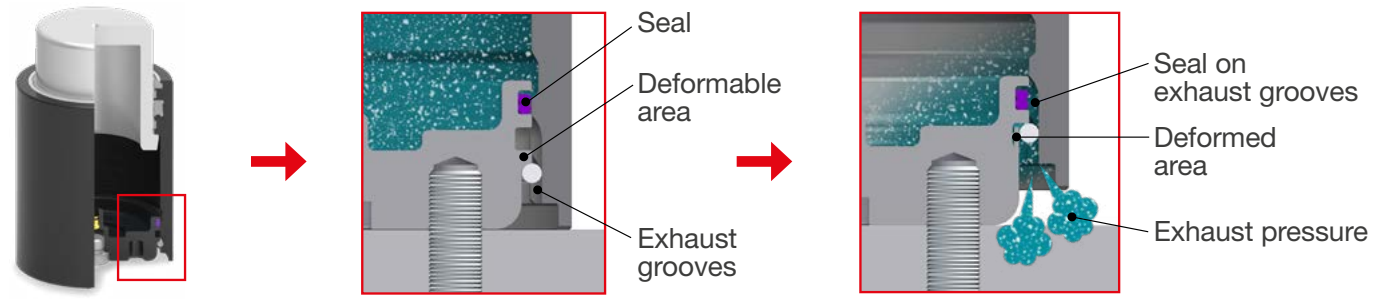
DESIGN: BUSH - BODY

Standard on: M300 - RV - RF - RS - RG - RT - S - SC - H - HF HT - LS



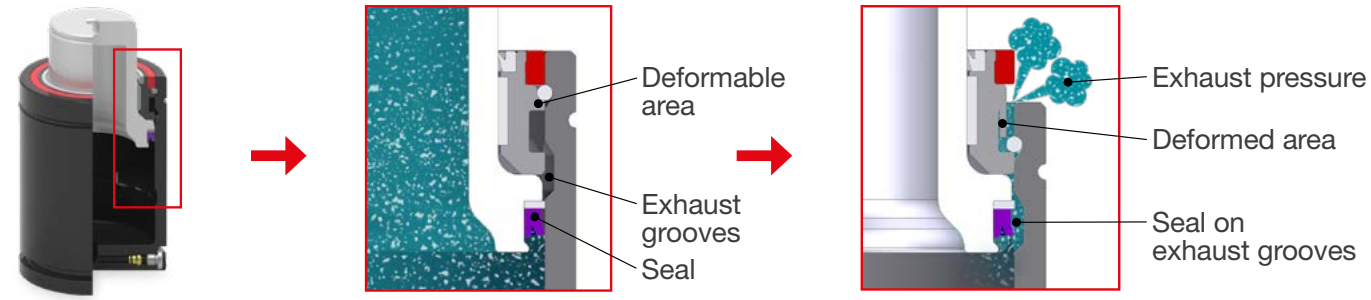
DESIGN: BOTTOM BASE DESIGN - BODY

Standard on: ML - MP - MQ



DESIGN: PISTON DESIGN - BODY

Standard on: KE

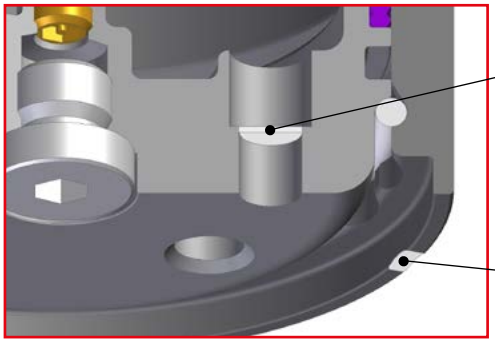


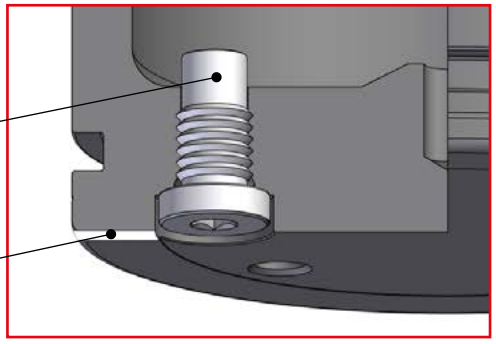
OPAS Ref. 8.3 of VDI 3003

Over
Pressure
Active
Safety

VDI 3003

Standard on: M - MS - RV - RS - RF - RG - RT - S
SC - H - HF - HT - LS - ML - MP - KE

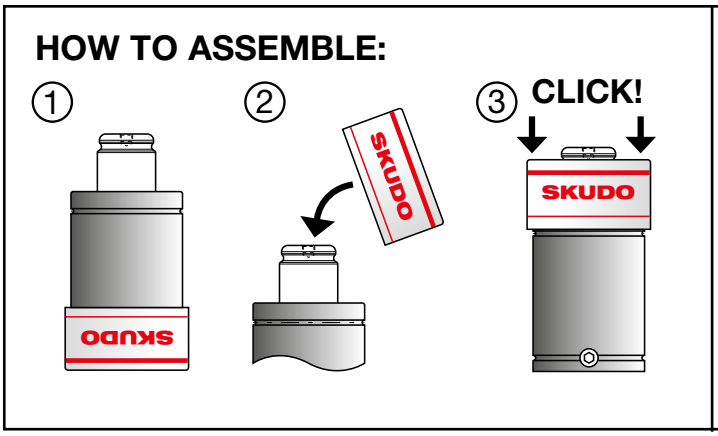


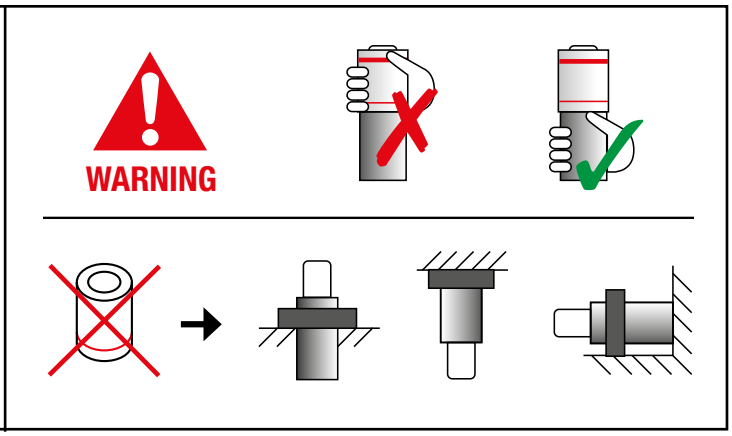


SKUDO

Active Protection from Contaminants

Standard on: KE - RS - MS





- All structural components of Special Springs' gas springs are designed and built in full compliance with the regulations in force (PED 2014/68/EU) and EN 13445:2018 for at least 2.000.000 complete cycles at the maximum pressure, temperature and for all types of fixings.
- Referring to the gas springs Series RV, RS, RF, RG, RT, SC, SCF, S, H, HF, LS (excluding models RV/RS170 and RV/RS320), Special Springs recommends replacing them at the latest after 10 years from the first commissioning.
- Referring to the gas springs Series ML, MP, MQ, KE Special Springs recommends replacing them either at the latest after 10 years or 4 million cycles from the first commissioning (whichever occurs first).
- This component has been engineered only for industrial use as an elastic element.
- The use of this component is only for skilled staff who must have read and understood this instruction sheet.
- Do not submit this component to performances over the given limit. Do not use this component in the presence of flames or heat sources.
- Do not store outdoors or at high humidity place.
- The cylinders misuse relieves Special Springs from any responsability.

OPERATING INSTRUCTIONS:

- Do not use a clamp to check cylinder force. (fig. 1)
- Always fix cylinders on the tool if possible.
- Always position the cylinder perpendicular to the surface. Avoid any radial load during rod compression. Always apply pressure to the entire end surface of the rod. As much as possible, equalize the load in the die. (fig. 2)
- Use the threaded hole on the rod only for handling. It is forbidden to fix cylinders from the threaded hole positioned on the top of the rod. (fig. 3)
- Do not carry out any mechanical work on body or rod. (fig. 4)
- It is forbidden any uncontrolled rod return. It may cause damages, mechanical failures to cylinder or fixings. (fig. 5)
- Protect the surface of gas springs from objects and/or aggressive fluids (soda and chlorides). If they are used to clean the die, remove any residue from the gas springs. (fig. 6)
- It is recommended to have a stroke reserve of 10% of the nominal stroke length or 5 mm. for strokes longer than 50 mm. (fig. 7)
- Do not use cylinder over 80°C/176°F. (fig. 8)
- Always charge cylinder only with nitrogen gas N2. (fig. 9)
- Do not use cylinders with a speed over 0,8 ÷ 1,8 m/sec. (fig. 10)

Continue...

- Do not charge cylinder over the maximum allowed charging pressure laser etched on the body. (fig. 11)
- During the discharging procedure, put the cylinder in upside-down position and direct the gas flow opposite to operator's position. (fig. 12)
- If a situation arises where there is a risk that the gas spring may have been damaged, the gas spring must be depressurized immediately while still in the installed position by opening the valve or drilling a hole in the cylinder body until the gas had been discharged. (fig. 13)

Fig. 1

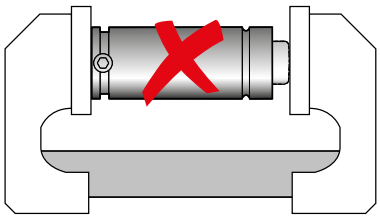


Fig. 2

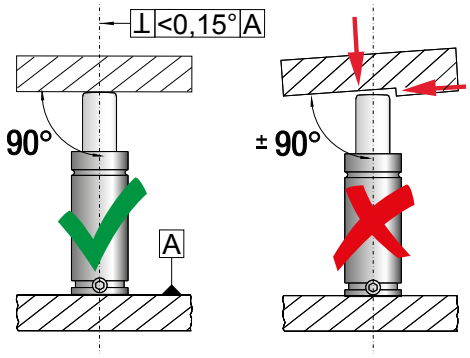


Fig. 3

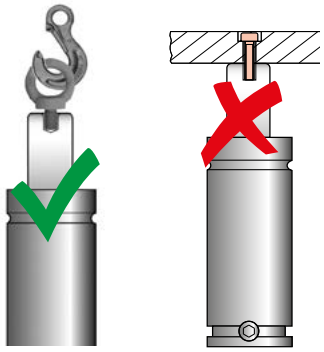


Fig. 4

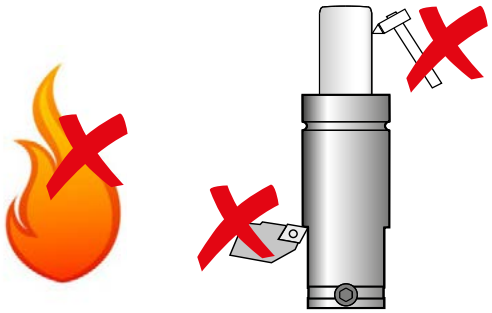


Fig. 5

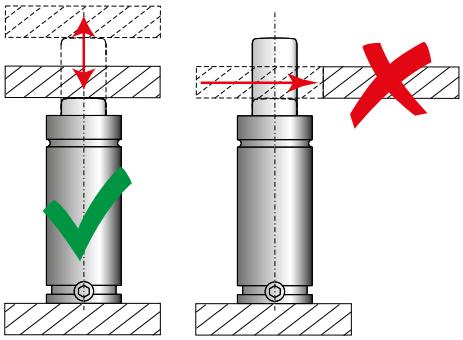
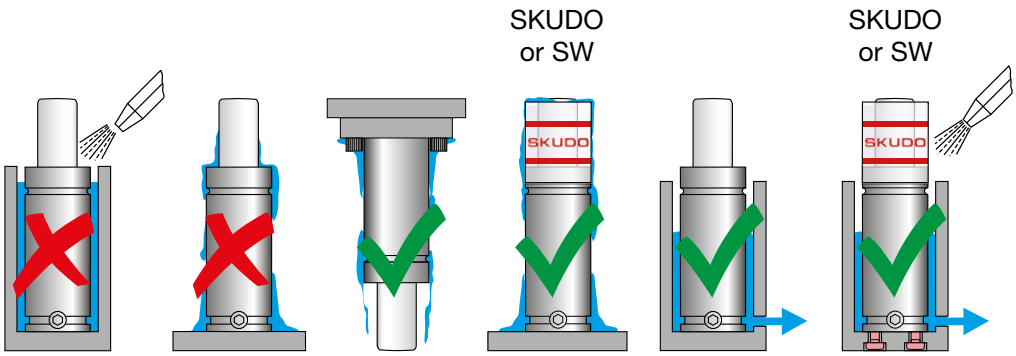


Fig. 6



Continue...

Fig. 7

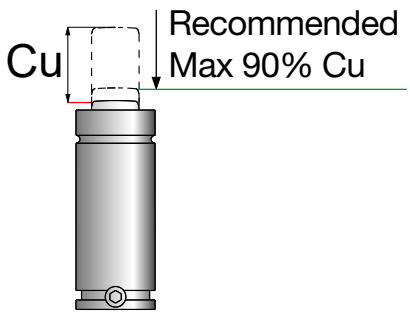


Fig. 8

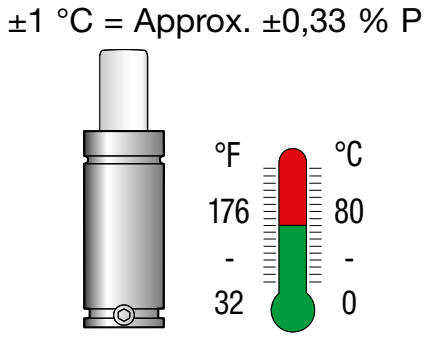


Fig. 9

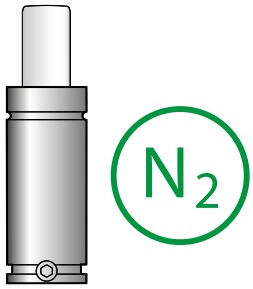
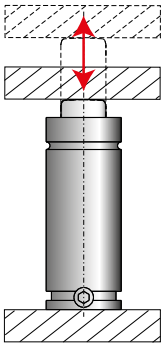


Fig. 10



MAX. SPEED
1,8 m/sec all series
0,8 m/sec KE series

Fig. 11

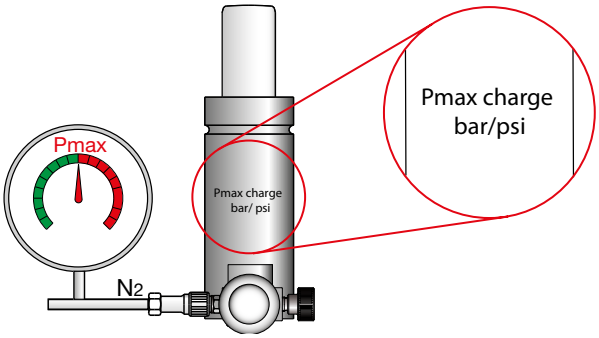


Fig. 12

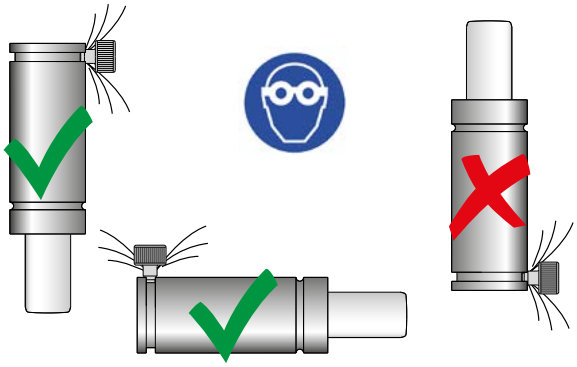
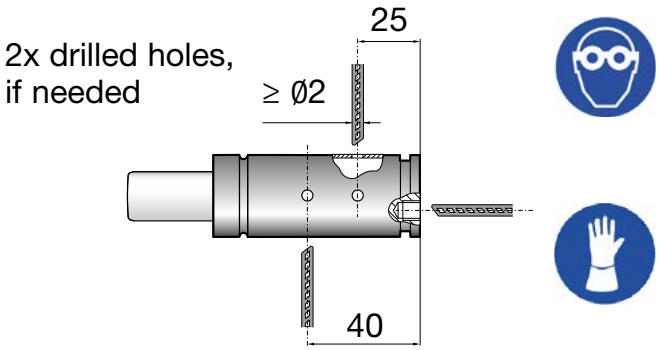


Fig. 13



- It is recommended to check the correct fixing of cylinders after any operation on the tool. In case of loose or broken screws, cylinder might have been subject to uncontrolled return.
- It is recommended to replace cylinder and remove the cause of uncontrolled return.
- The maintenance of gas springs must always be carried out by skilled personnel, using exclusively the Special Springs component and kits. Failure to do so will result into loss of warranty and liability disclaimer by the manufacturer.
- Before the disposal of any gas spring, discharge the pressure completely.

Whenever the working limits established by Special Springs (Chart 1) are exceeded, proceed with the maintenance. The service can be carried out by Special Springs or on site by ordering the suitable maintenance kit that is delivered with instructions sheet. The maintenance kit code (Man. Code) is marked on the cylinders (fig. 14).

Chart 1

Series	Cu	Expected Service Intervals	Nr. of replacements for the seal	From first commissioning
RV, RS, RF, RG, RT, SC, SCF, S, H, HF, LS (excluding RV170, RS170, RV320, RS320)	≤ 50mm	1.000.000 cycles	3	10 years
	> 50mm	200.000 linear meters of stroke		
ML, MP, MQ, KE	≤ 50mm	500.000 cycles	3	10 years or 4.000.000 cycles
	> 50mm	100.000 linear meters of stroke		

Clamp gas springs for maintenance and servicing.

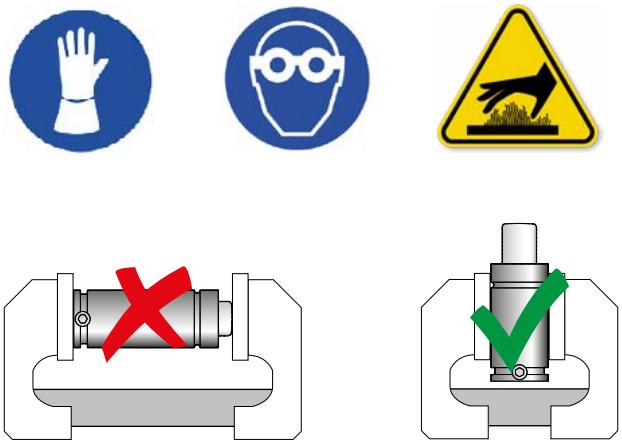
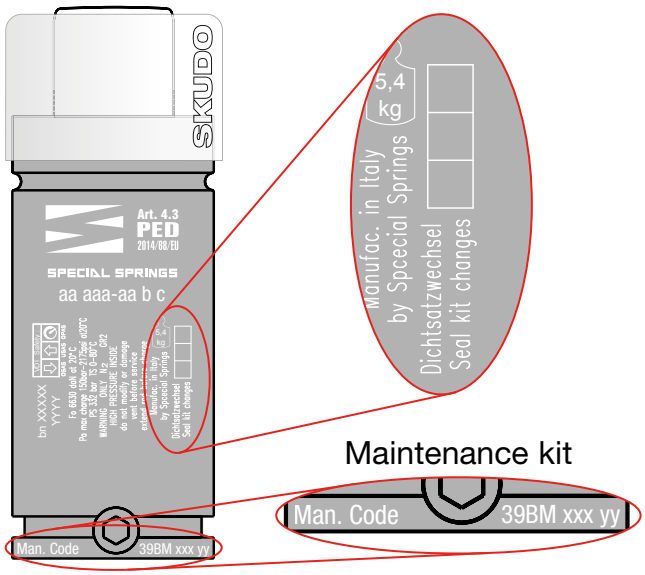


Fig. 14



Special Springs has carried out the tests according to § 8.3 EN 14359:2006.
When you install the gas cylinders in the die under the German law, you are subject as user to the following obligations, especially for the first operation and the regular tests, as prescribed by the BetrSichV:

Volumes *(Liters)*	**Testing before 1st Operation**		**Regular tests**		
	Based on	**Responsibility**	**Based on**	**Responsibility**	**Max. allowed testing deadline**
< 1 l	§ 14	bP	§ 14	bP	Determined by the employer
> 1 l	§ 15	ZÜS (1	§ 16	bP	5 years IP, 10 years FP
> 6,67 l	§ 15	ZÜS	§ 16	ZÜS	

(1 - simplified procedure according to Appendix 2, Section 4, No. 6.30.1 of the BetrSichV

List of Abbreviations:

BetrSichV	German Workplace Safety Regulation
bP	Person qualified for the testing
FP	Strength Test
IP	Internal Inspection
ZÜS	Notified Body

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CARICAMENTO - SISTEMI COLLEGATI	27
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TEST E CONTROLLO Prima del primo intervento	45

Si raccomanda ai costruttori di stampi di consegnare sempre con le attrezzature i fogli d'istruzione e uso allegati ai cilindri e agli accessori forniti da Special Springs.

SEZIONE COMPILATA SOLO PER MARCHIATURE CE

DICHIARAZIONE DI CONFORMITÁ UE

Special Springs S.r.l.
Via Nardi, 124/A - 36060 Romano d'Ezzelino (VI) - ITALY

Dichiara sotto la propria esclusiva responsabilitá che il

cilindro ad azoto _____ lotto di produzione _____

al quale questa dichiarazione si riferisce é conforme a quanto previsto dalla procedura di valutazione modulo H (PED.VE.10615.Rev1) della direttiva per le attrezzature a pressione 2014/68/EU recepita dal D.Lgs. n.26 del 15/02/2016, ed alle norme armonizzate:

EN 13445:2018, EN 14359:2017

altri standards

EN 15614:2018

L'organismo notificato che esegue il monitoraggio del Sistema Qualità é:

SGS ITALIA spa, NOTIFY BODY N° 1381

Special Springs S.r.l.

Augusto Cappeller

Romano d'Ezzelino, ____ / _____ / _____

(signature of legal representative)

Il modello della presente dichiarazione é conforme alla norma EN 17050:2010

Il certificato PED è disponibile sul sito www.specialsprings.com

Fig. A

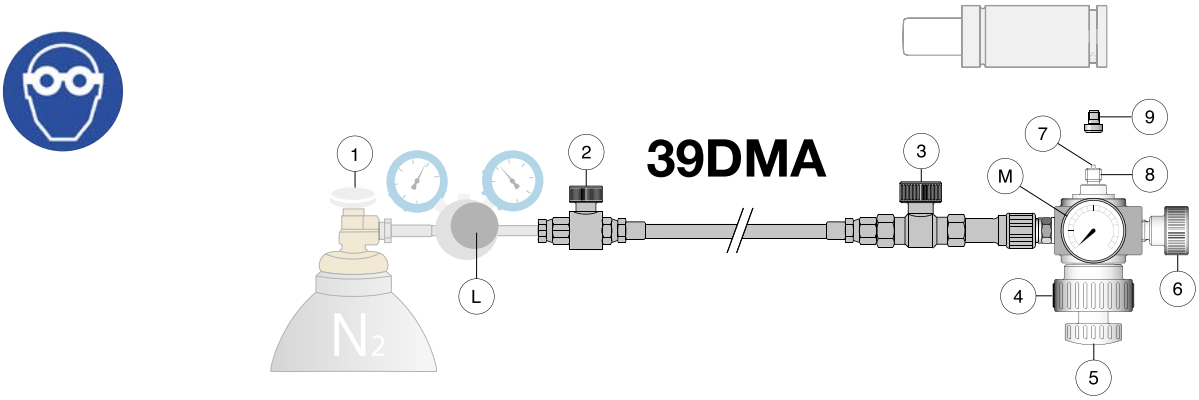
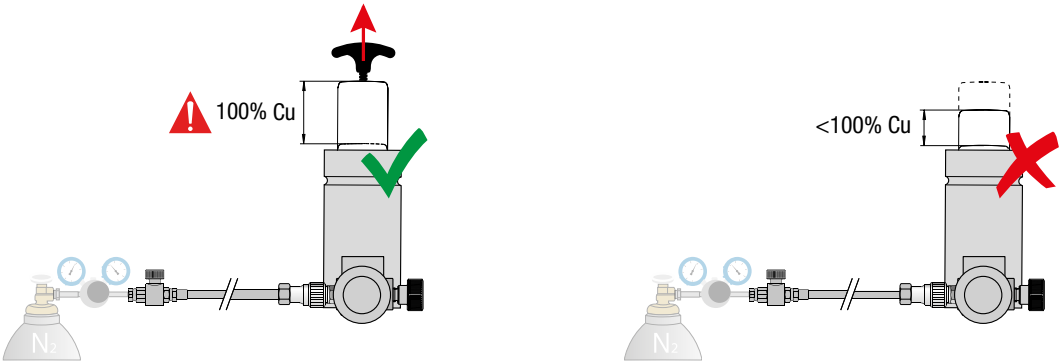


Fig. B

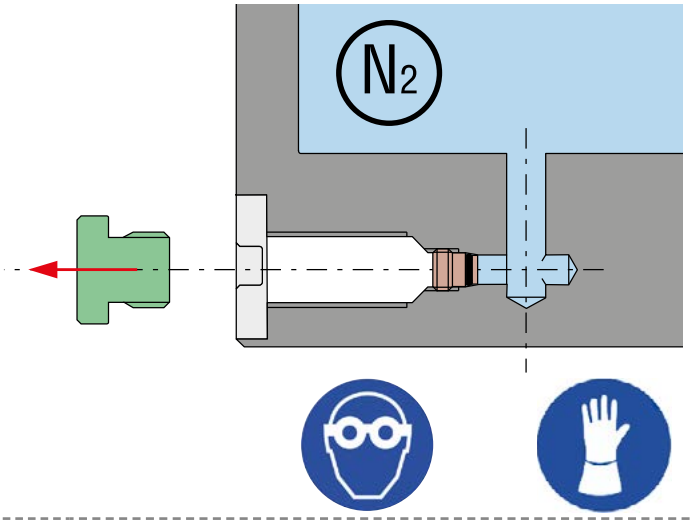


Nel caso di utilizzo di dispositivi di caricamento/scaricamento non forniti da Special Springs si declina ogni responsabilità per danni a cose e persone.

Non eccedere la pressione massima di caricamento a 20°C/68°F indicata sul cilindro.

1) Bloccare adeguatamente il cilindro.
2) Prima del caricamento, estrarre completamente (100% Cu) lo stelo (fig. B).
3) Svitare il tappo (9) che chiude il foro di caricamento.
4) Svitare la manopola (5) fino alla completa retrazione dello spillo (7).
5) Attraverso la manopola (4) avvitare l'adattatore (8) nel foro di caricamento.
6) Verificare che le valvole (2-3-6) siano chiuse.
7) Aprire molto lentamente il rubinetto della bombola (1), quindi tarare la pressione di caricamento agendo sulla manopola (L).
8) Aprire lentamente la valvola (3) fino alla completa pressurizzazione del cilindro; la pressione finale è leggibile sul manometro (M).
9) Chiudere la valvola (3).
10) Aprire la valvola di scarico (6).
11) Svitare l'adattatore (8) dal foro di caricamento attraverso la manopola (4).
12) Avvitare il tappo (9) nel foro di caricamento del cilindro.
13) Chiudere lentamente il rubinetto della bombola (1).

1



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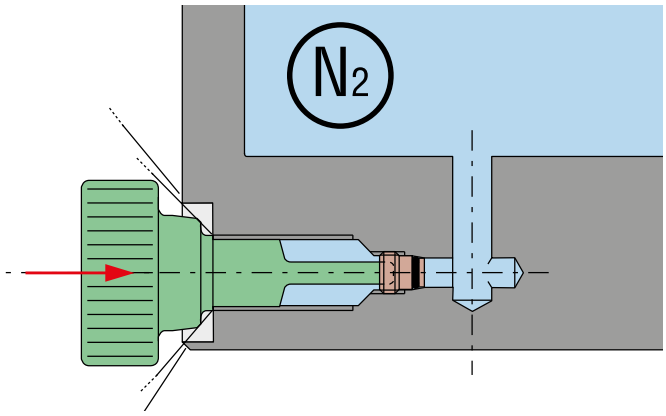

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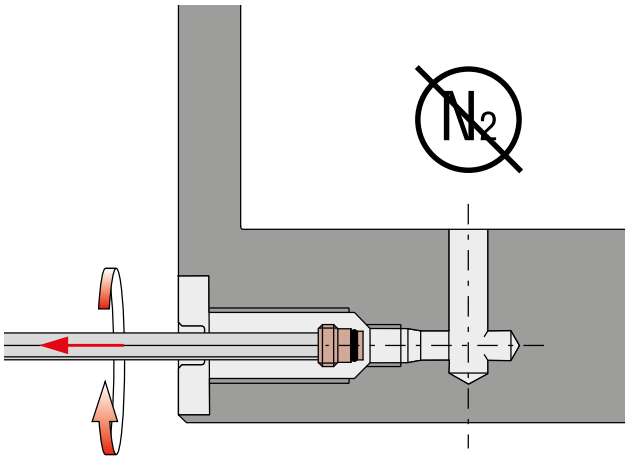
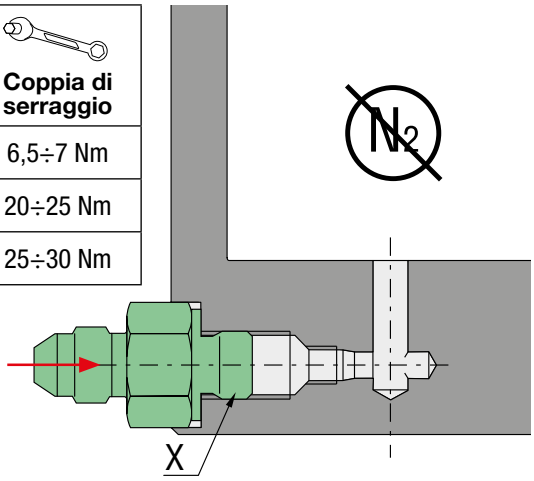


4

X	Coppia di serraggio
M6	6,5÷7 Nm
G1/8”	20÷25 Nm
G1/4”	25÷30 Nm



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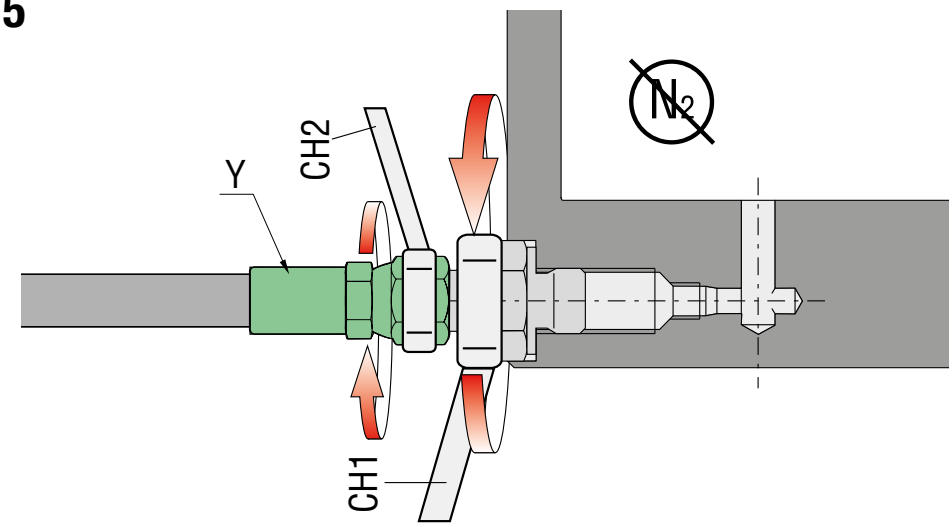

Y	Coppia di serraggio
EO 24°	16÷18 Nm
JIC 37°	16÷18 Nm
Micro 32°	8÷9 Nm
ORFS	28÷32 Nm

Per informazioni dettagliate: WWW.SPECIALSPRINGS.COM

N.	Categoria PED	Marcatura CE	N. of notify body	Marcatura	Dichiarazione di conformità	Modulo PED
1	SEP	✗	✗	PED 2014/68/EU Art. 4(3)	✗	Produzione interna
2	I	✓	✓	CE 1381	Vedi dichiarazione di confformità	Moduo H
3	II	✓	✓	CE 1381	Vedi dichiarazione di confformità	Modulo H
4	III	✓	✓	CE 1381	Vedi dichiarazione di confformità	Modulo H

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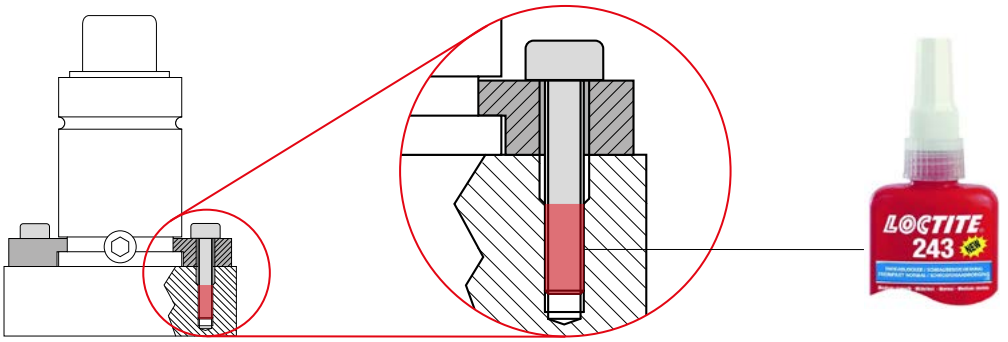
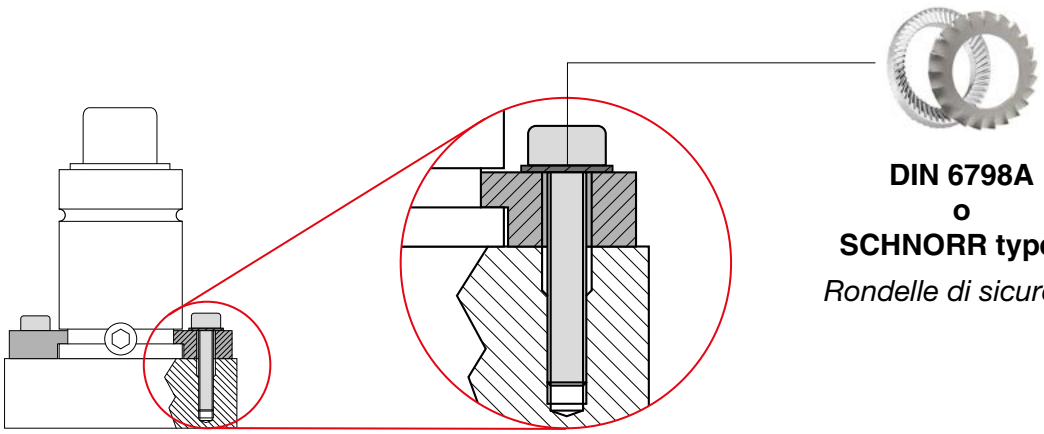
INORMAZIONI GENERALI VDI 3003 parte 1 rif. 6.6

Fissare sempre i cilindri direttamente attraverso gli specifici elementi di fissaggio. Un corretto fissaggio delle molle a gas previene danni ai prodotti e gravi pericoli agli operatori.

Utilizzare sempre apposito frenafiletti e/o rondelle di sicurezza su tutte le viti di fissaggio. (Non rappresentate nei disegni delle pagine seguenti).





DIN 6798A
o
SCHNORR type S
Rondelle di sicurezza

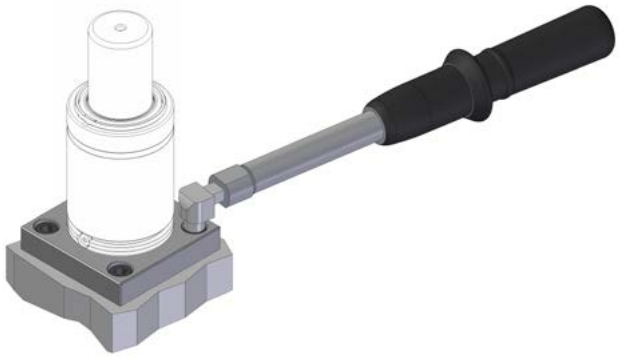
Rispettare sempre le corrette coppie di serraggio come indicato. Verificare sempre lo stato dei cilindri e dei fissaggi ad ogni intervento sullo stampo.

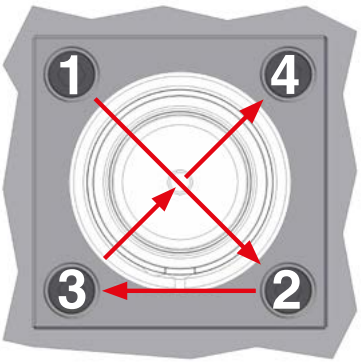
UNI EN ISO 21269:2007 class ≥ 8.8	**M5**	**M6**	**M8**	**M10**	**M12**	**M16**
Coppia di serraggio	**6 Nm**	**10 Nm**	**24 Nm**	**50 Nm**	**84 Nm**	**205 Nm**

Continua...

L' uso di viti di classe superiore alla 8.8, come 9.8, 10.9 e 12.9, é sempre possibile. Si raccomanda di NON SUPERARE i valori della coppia di serraggio indicati per la classe 8.8 per qualsiasi classe di viti utilizzata.

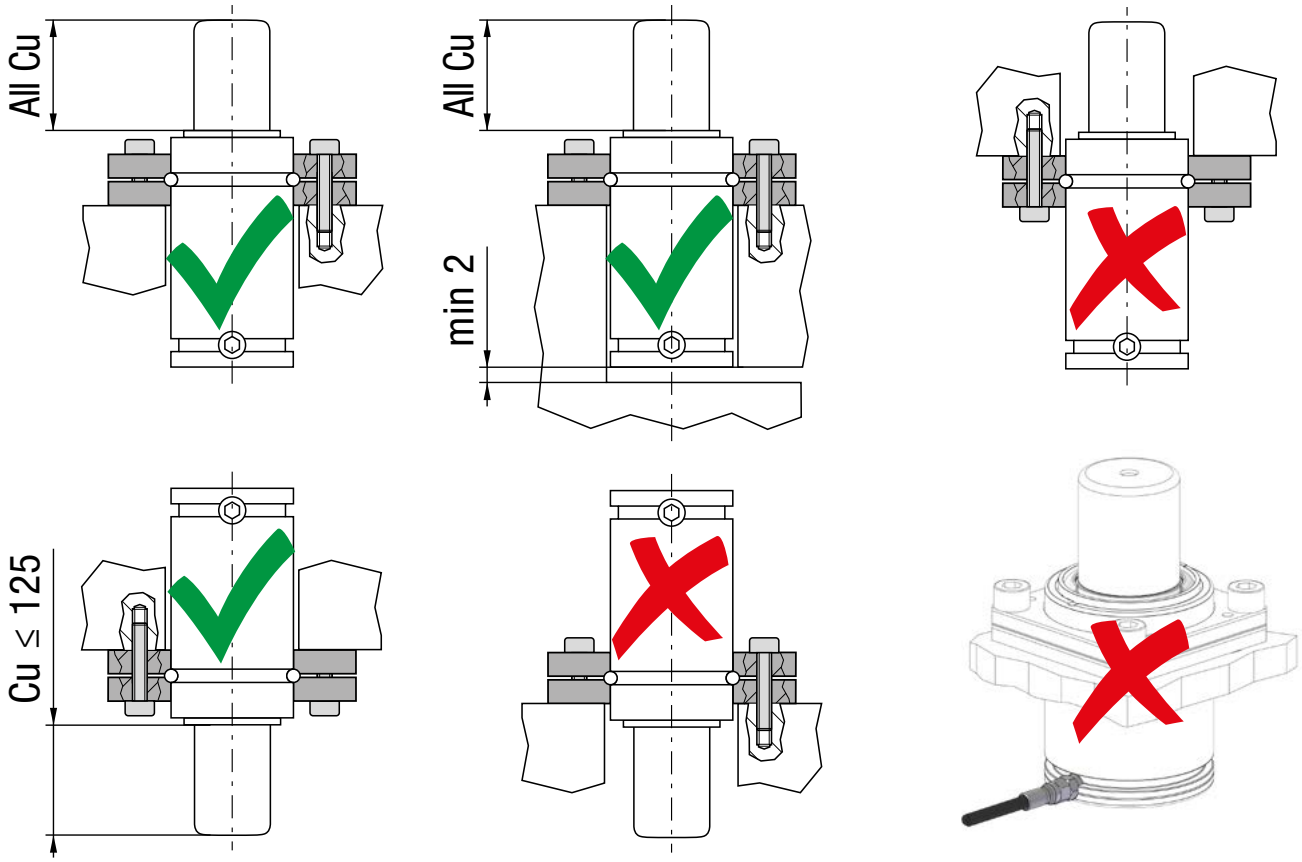
Serrare tutte le viti di fissaggio seguendo l'ordine a croce (1, 2, 3, 4) applicando la coppia di serraggio corretta. Eseguire l'operazione serrando gradualmente le viti.





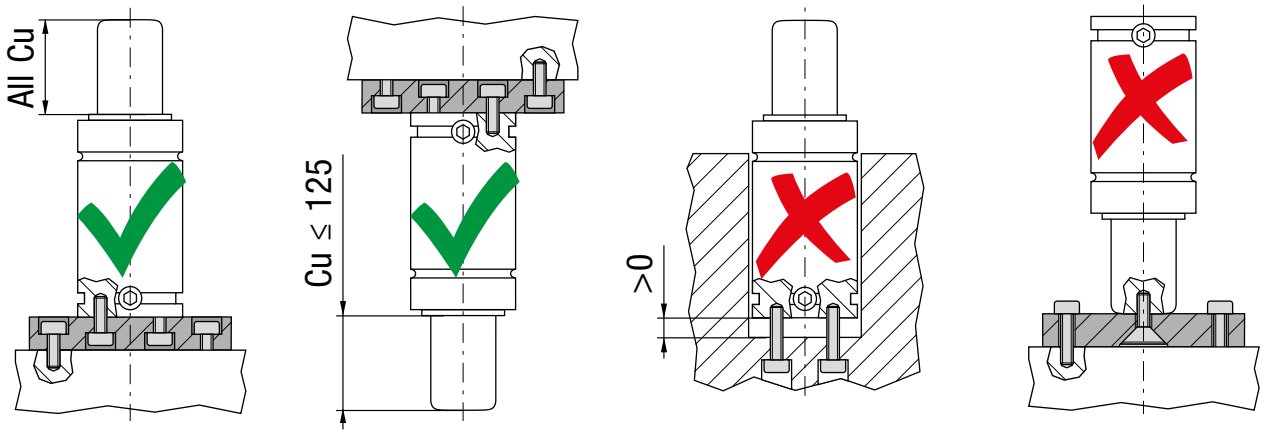
TOP MOUNT VDI 3003 parte 1 rif. 6.1

Montaggio con flangia collare.



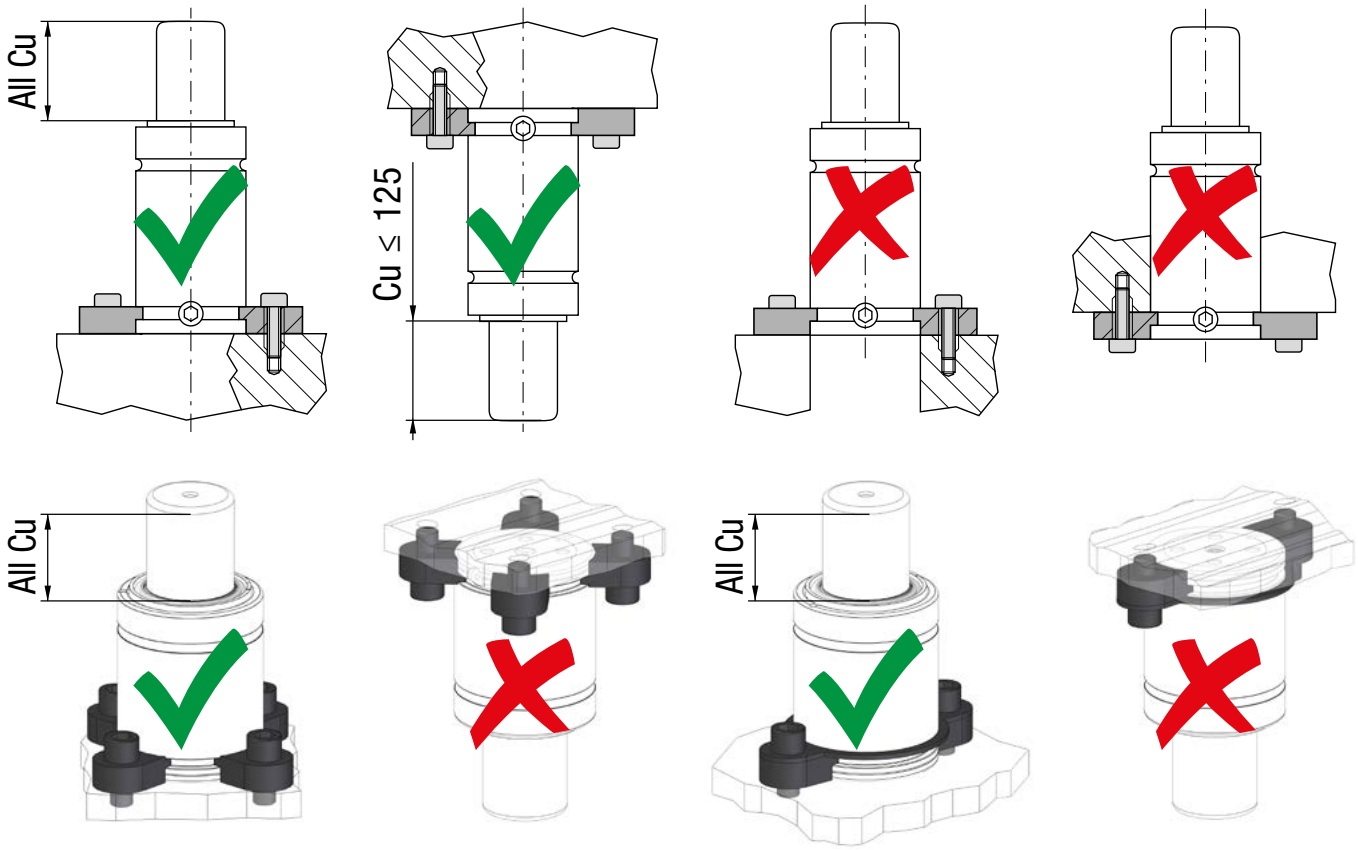
BOTTOM MOUNT VDI 3003 parte 1 rif. 6.6

Usare viti con lunghezza idonea per impegnare l'intera profondità del foro filettato sul cilindro.



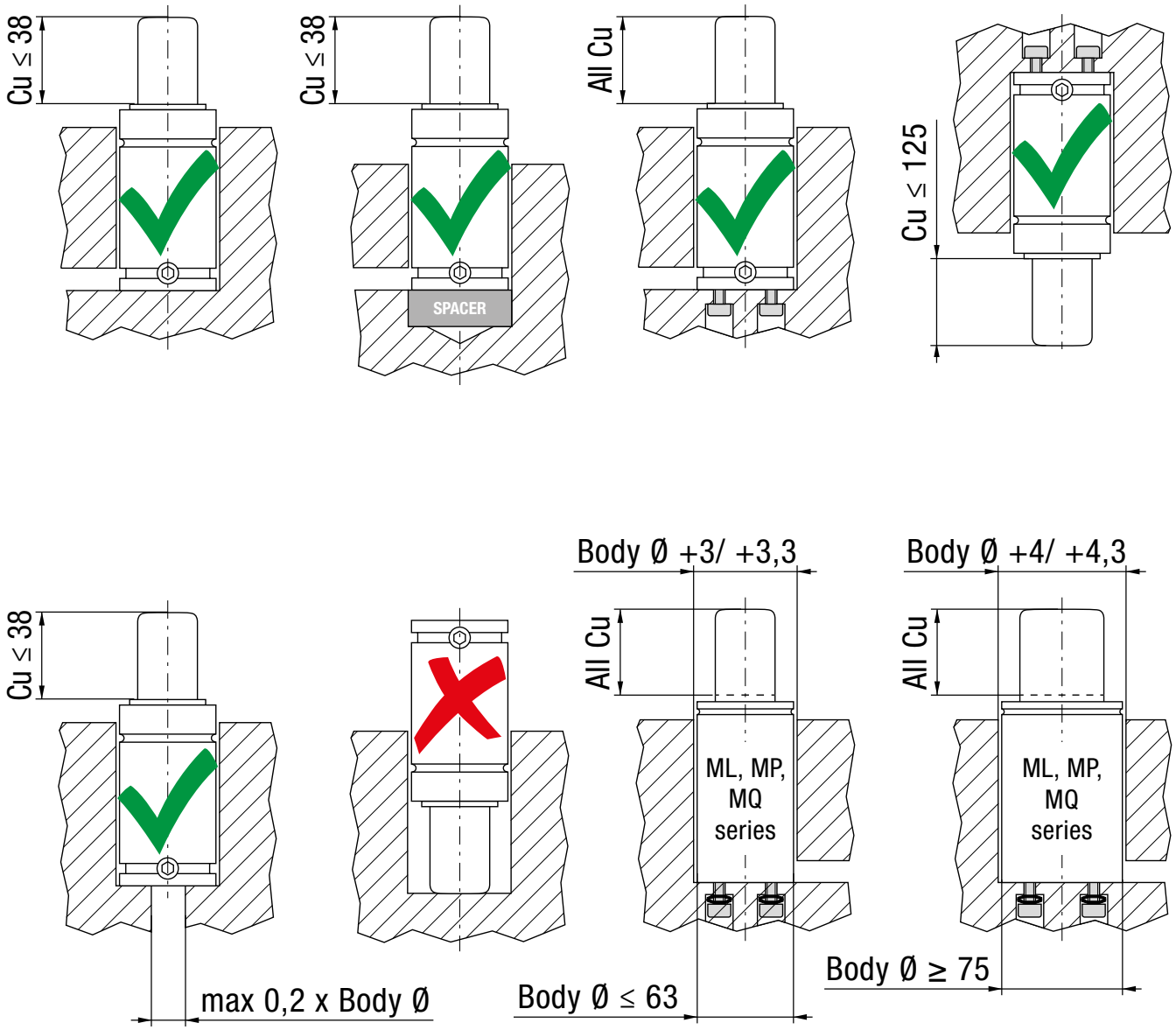
BRACKET MOUNT VDI 3003 parte 1 rif. 6.2 - 6.3

Montaggio con semiflangie di base.



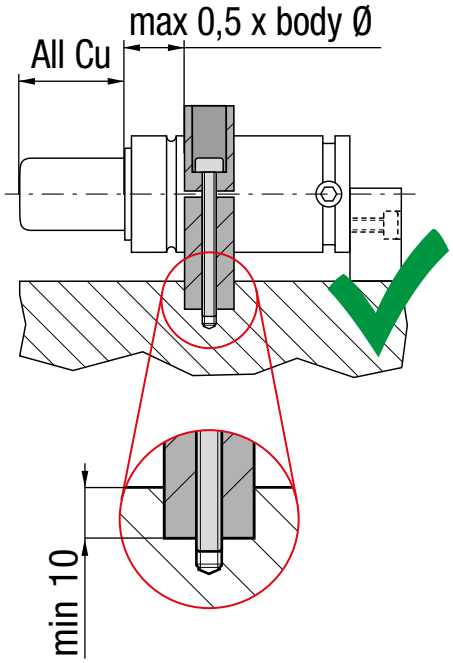
DROP-IN VDI 3003 parte 1 rif. 6.6

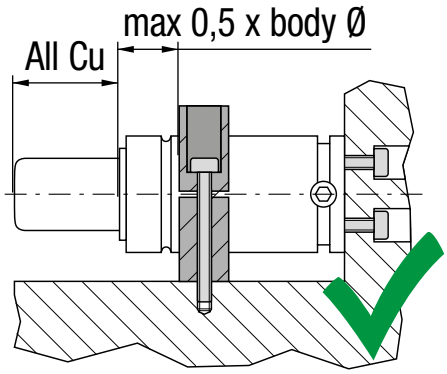
Assicurare che il piano di appoggio NON sia interrotto. Verificare sempre lo stato dei cilindri e delle loro sedi di alloggiamento ad ogni intervento sullo stampo.

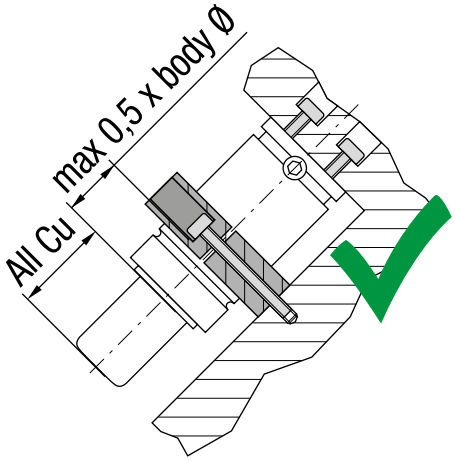


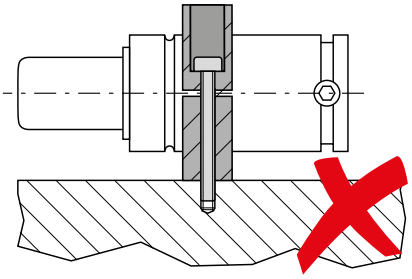
BODY MOUNT VDI 3003 parte 1 rif. 6.4

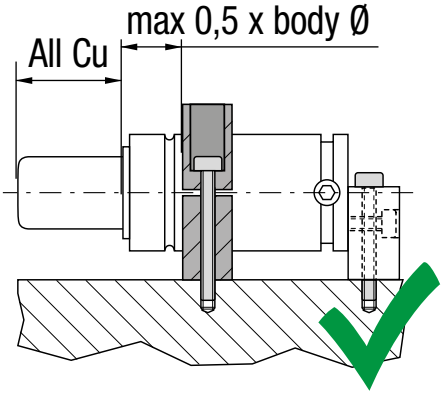
I cilindri a gas montati con flangia di serraggio richiedono sempre un supporto aggiuntivo, come da Figura.

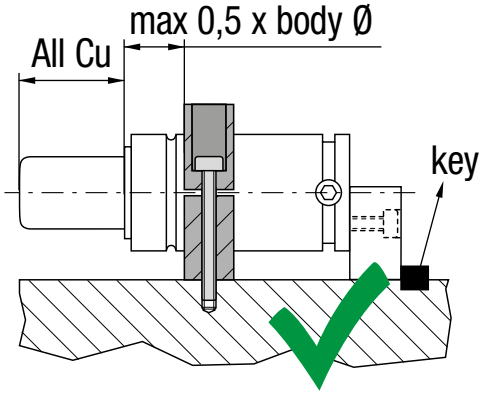






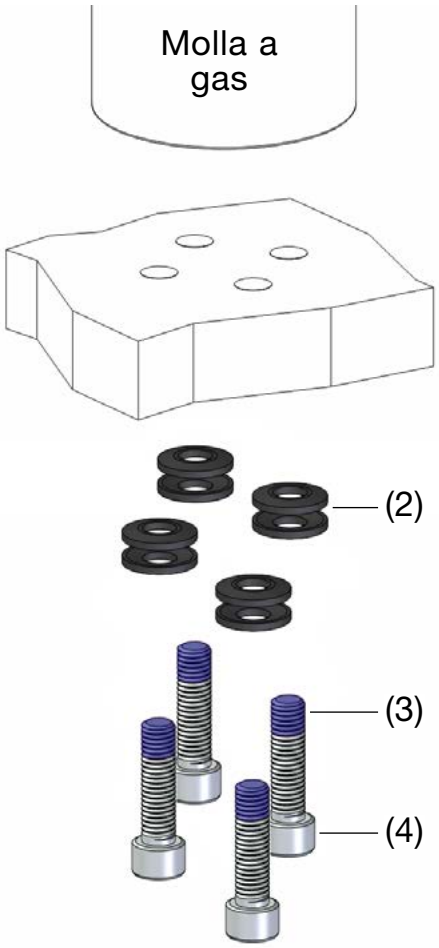
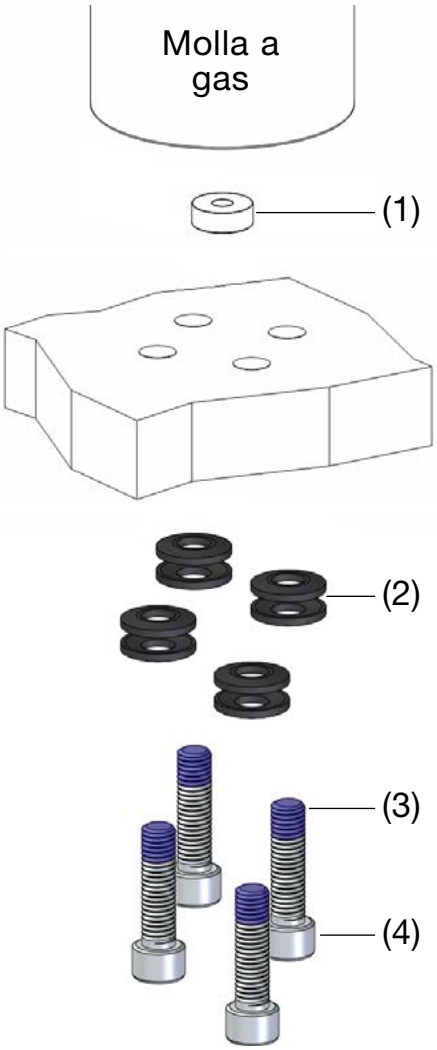
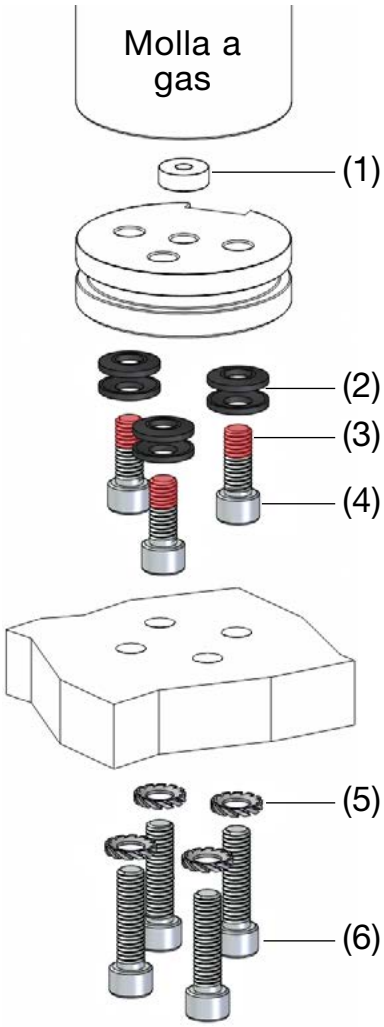






LINEE GUIDA INSTALLAZIONE: SERIE ML - MP - MQ

Installare le molle a gas rispettando le indicazioni fornite qui sotto. Informazioni dettagliate sono presenti nel kit dedicato.

CILINDRI AUTONOMI SERIE ML, MP, MQ	EASY MANIFOLD SERIE ML	CILINDRI NON AUTONOMI SERIE ML
		

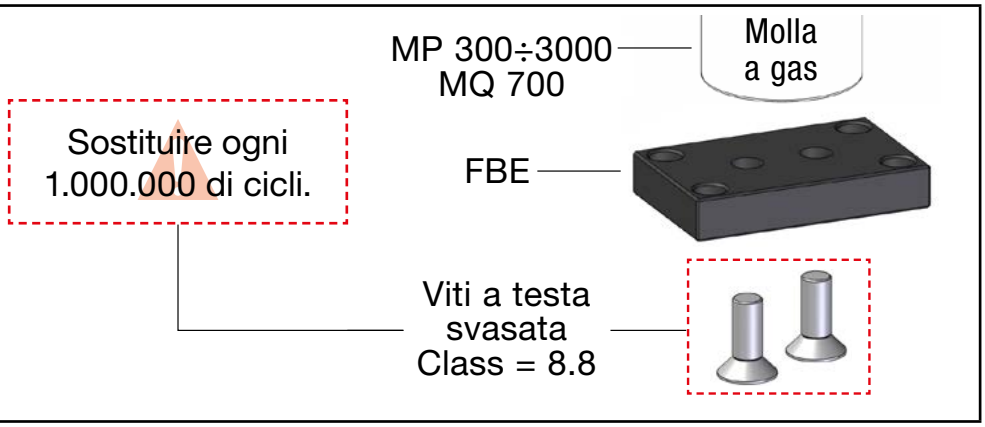
(1) Guarnizione; (2) Rondelle coniche; (3) Loctite 243; (4) Class = 8.8; (5) Rondelle di sicurezza DIN 6798A o SCHNORR tipo S; (6) Class ≥ 8.8;

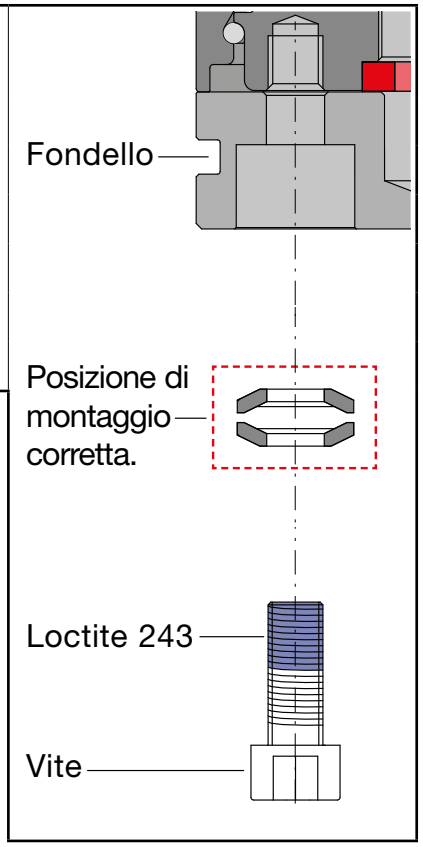
Continua...

Modello	Codice rondella conica
ML 1000 D	49RC06A
ML 1800 D	49RC06A
ML 3000 D	49RCHS08A
ML 4700 D	49RC08A
ML 7500 D	49RC08A
ML 12000 D	49RC10A

Rondelle coniche fornite da Special Springs (incluse nei cilindri non autonomi e Easy Manifold)

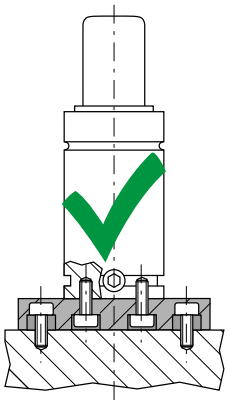
Sostituire (1)(2)(3)(4) ogni 1.000.000 di cicli.

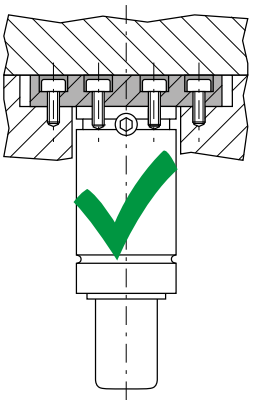


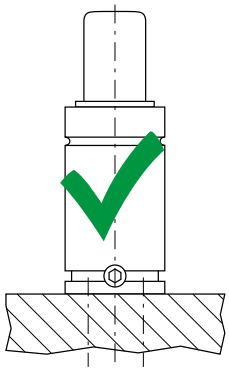


SISTEMI COLLEGATI VDI 3003 parte 1 rif. 6.5

I cilindri a gas di un sistema collegato non devono ruotare durante le operazioni di stampaggio. La rotazione potrebbe provocare il deterioramento dei tubi e causare danni o perdite di gas. Pertanto, non è ammessa l'installazione di cilindri a gas di sistemi collegati con montaggio drop-in senza fissaggi o con flangia collare.
I cilindri a gas in caso di condizioni d'uso particolarmente sfavorevoli potrebbero comunque ruotare. In queste situazioni particolari i cilindri a gas dovrebbero essere fissati per mezzo dei fori presenti sulla base del cilindro (direttamente o attraverso una base di fissaggio - vedi Figura).







INDICE

La sicurezza per noi non è solo una questione di marketing, è la nostra filosofia per ogni scelta. Alla base di tutti i prodotti Special Springs c'è un continuo lavoro di ricerca e sviluppo, l'utilizzo delle ultime tecnologie, controlli di qualità e sicurezza. Il tutto nel pieno rispetto delle normative e mirato a garantirvi qualità superiore, durata, affidabilità. Scopri la gamma di prodotti Special Springs.

OSAS 38

USAS 39

OPAS 40

SKUDO 40

- **COME FUNZIONANO I SISTEMI DI SISUREZZA:**
  Se si sono attivate le sicurezze, si scarica la pressione in modo controllato.

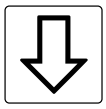
- **COSA FARE DOPO:**
  Se si sono attivate le sicurezze, verificare e scaricare eventuali residui di pressione, eliminare le cause del danno e sostituire sempre il cilindro danneggiato.

OSAS VDI 3003 rif. 8.2

Over
Stroke
Active
Safety

Sicurezza Attiva Oltre Corsa

VDI 3003



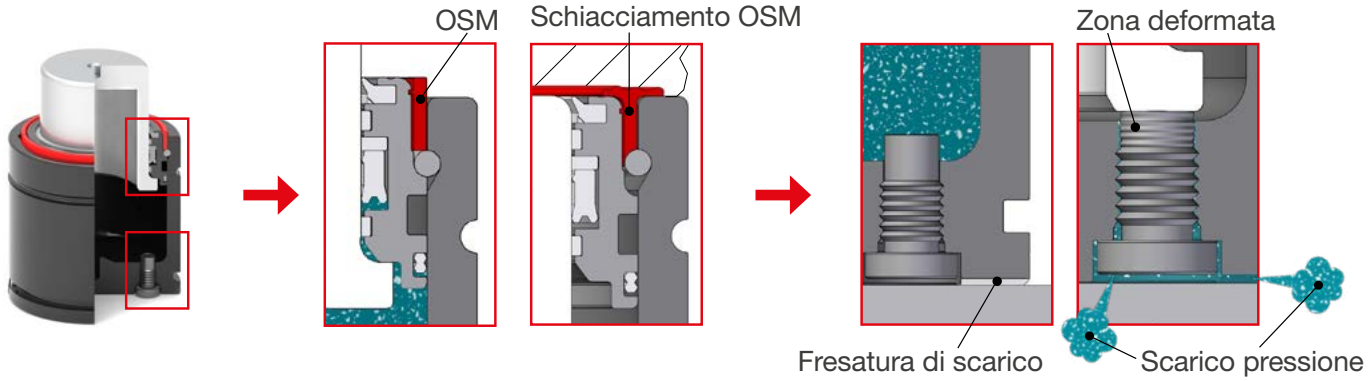
+

Over
Stroke
Marker

Marcatore Oltre Corsa

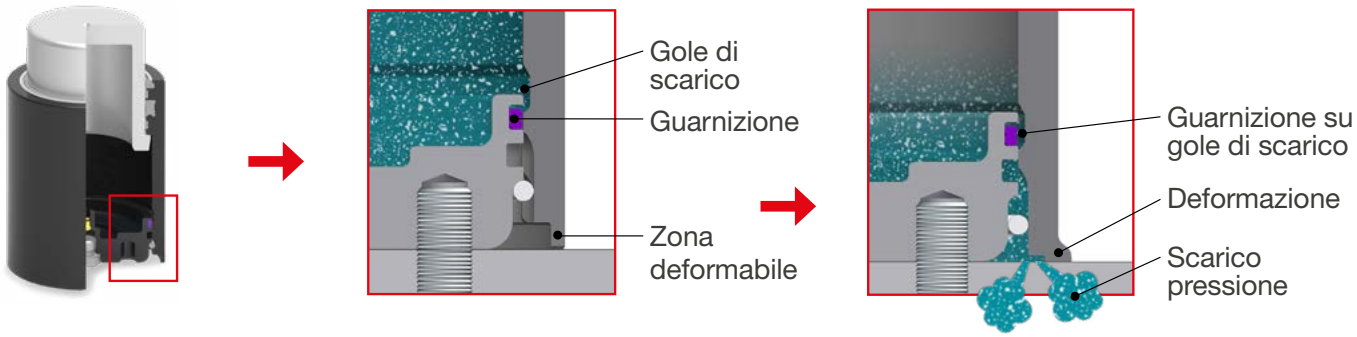
DESIGN: BOCCOLA - CORPO

Standard: M300 - RV - RF - RS - RG - RT - S - SC - H - HF HT - LS



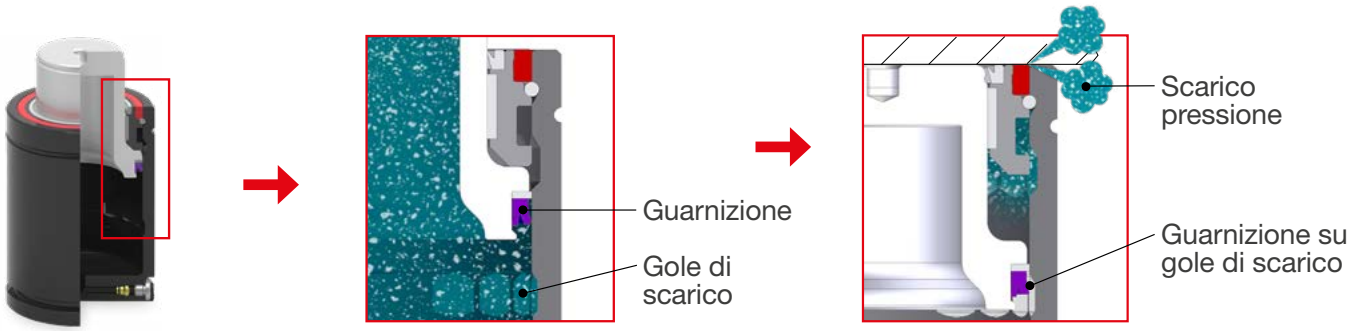
DESIGN: FONDELLO - CORPO

Standard: ML - MP - MQ



DESIGN: CORPO - PISTONE

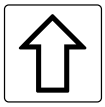
Standard: KE



USAS VDI 3003 rif. 8.2

Uncontrolled
Speed
Active
Safety

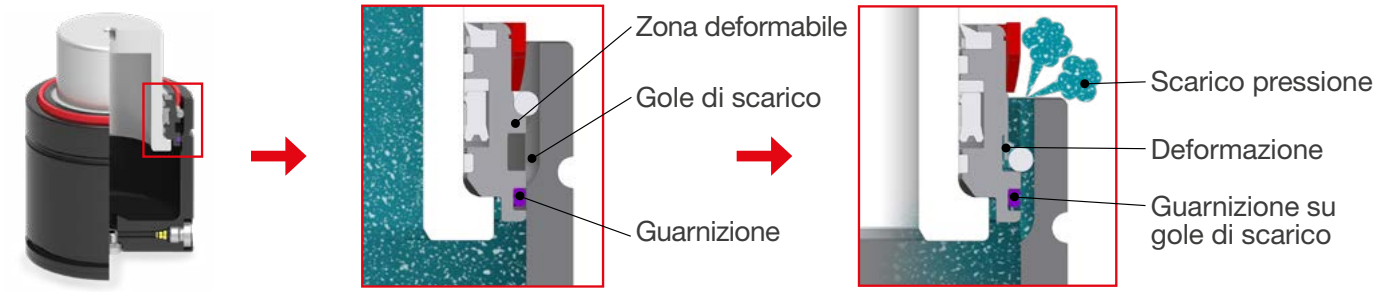
VDI 3003



Sicurezza Attiva Ritorno Incontrollato

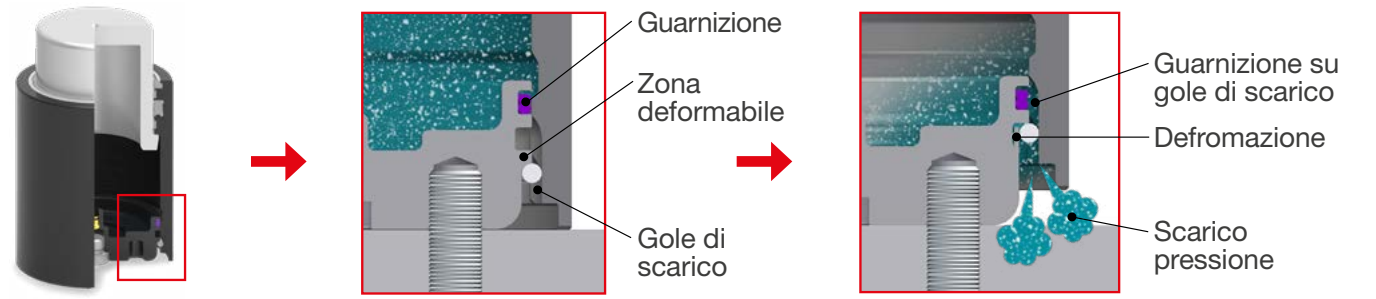
DESIGN: BOCCOLA - CORPO

Standard: M300 - RV - RF - RS - RG - RT - S - SC - H - HF HT - LS



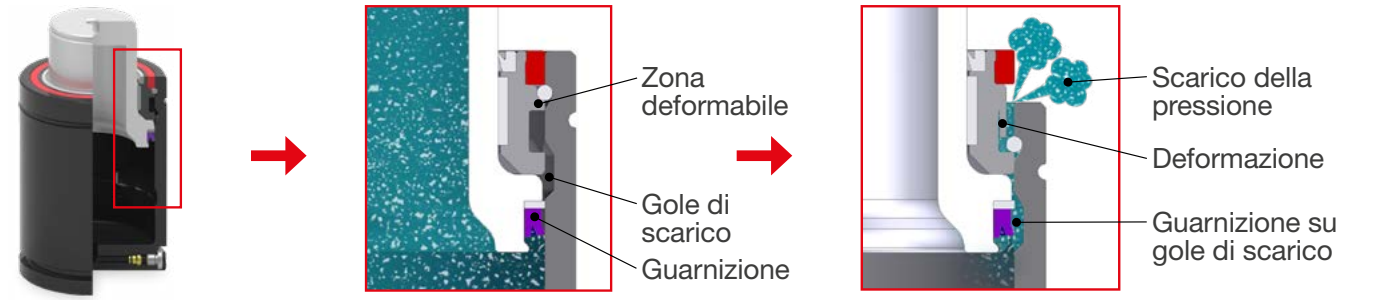
DESIGN: FONDELLO - CORPO

Standard: ML - MP - MQ



DESIGN: CORPO - PISTONE

Standard: KE



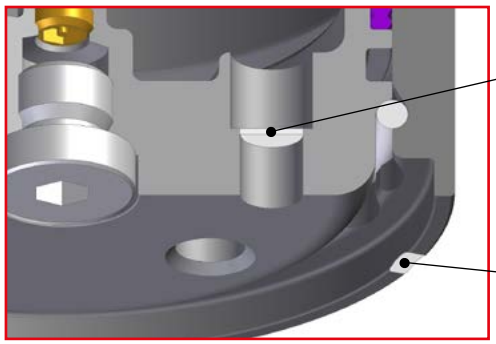
OPAS VDI 3003 rif. 8.3

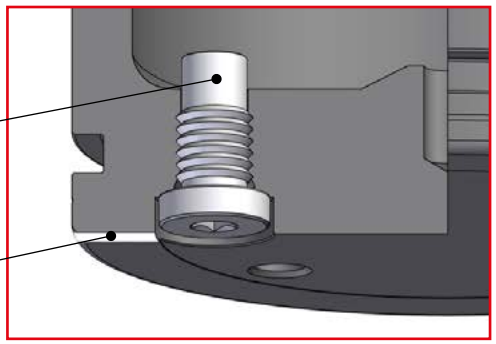
Over
Pressure
Active
Safety

VDI 3003

Standard: M - MS - RV - RS - RF - RG - RT - S
SC - H - HF - HT - LS - ML - MP - KE

Sicurezza Attiva Oltre Pressione

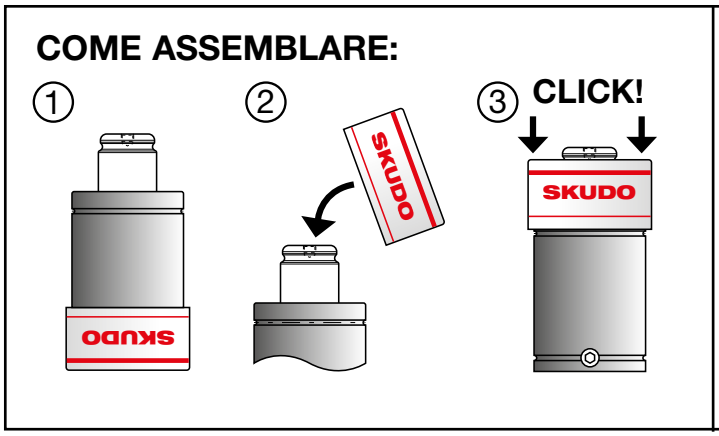


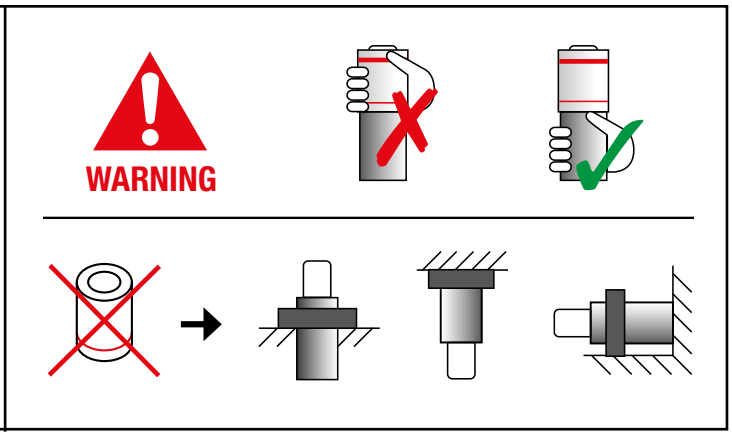


SKUDO

Protezione Attiva da Contaminanti

Standard on: KE - RS - MS





- Tutti i componenti strutturali delle molle a gas Special Springs sono progettati e costruiti nel pieno rispetto delle normative vigenti (PED 2014/68/EU) e EN 13445:2018, per minimo 2.000.000 di cicli completi alla massima pressione, temperatura e per ogni tipo di fissaggio.
- Per le molle a gas della serie RV, RS, RF, RG, RT, SC, SCF, S, H, HF, LS (esclusi RV/RS170, RV/RS320) si raccomanda in ogni caso la sostituzione dopo 10 anni dalla prima messa in servizio.
- Per le molle a gas della serie ML, MP, MQ, KE si raccomanda in ogni caso la sostituzione dopo 10 anni o 4 milioni di cicli dalla prima messa in servizio (la prima condizione che si verifica).
- Questo componente é stato progettato esclusivamente per uso industriale, da utilizzare come elemento elastico.
- Non sottoporre il componente a prestazioni superiori a quanto prescritto. L'uso di questo componente è riservato al solo personale addetto che deve aver letto ed assimilato il contenuto di questo foglio d'istruzioni.
- Non utilizzare il componente in presenza di fiamme o fonti di calore.
- Non conservare all'aperto o in condizioni di elevata umidità ambientale.
- L'uso improprio dei cilindri rispetto a quanto prescritto solleva Special Springs da qualsiasi responsabilitá.

ISTRUZIONI D'USO:

- Non utilizzare una morsa per verificare la forza di un cilindro. (fig. 1)
- Fissare sempre il cilindro sullo stampo quando possibile.
- É vietato posizionare il cilindro in modo non perpendicolare. Evitare di esercitare carichi radiali durante la compressione dello stelo. Applicare sempre la forza su tutta la superficie superiore dello stelo. Per quanto possibile, bilanciare il carico nello stampo. (fig. 2)
- Utilizzare il foro filettato sullo stelo solo per il trasporto. Vietato fissare il cilindro attraverso il foro filettato dello stelo (fig. 3).
- Non eseguire nessun tipo di lavorazione meccanica su corpo o stelo. (fig. 4)
- Vietato qualsiasi ritorno incontrollato dello stelo pistone. Il ritorno incontrollato può causare danni, cedimenti meccanici, al cilindro o ai suoi fissaggi. (fig. 5)
- Proteggere la superficie dei cilindri da corpi solidi e/o liquidi aggressivi (soda e cloruri). Se utilizzati per la pulizia dello stampo, si raccomanda di rimuovere dai cilindri ogni residuo. (fig. 6)
- Si raccomanda di prevedere una riserva corsa pari al 10% della corsa nominale o 5mm per corse superiori a 50mm. (fig. 7)
- Non utilizzare il cilindro a temperatura superiore di 80°C/176 °F. (fig. 8)
- Vietato caricare il cilindro con gas diversi da azoto N2. (fig. 9)

Continua...

- Non utilizzare il cilindro a velocità superiore di 0,8 ÷ 1,8 m/sec. (fig. 10)
- Vietato caricare il cilindro ad una pressione superiore a quella marchiata sul corpo. (fig. 11)
- Durante lo scaricamento, capovolgere il cilindro ed orientare il flusso del gas in direzione opposta all'operatore. (fig. 12)
- Se emerge una situazione di rischio per il loro danneggiamento, i cilindri a gas devono essere scaricati immediatamente mentre sono ancora installati aprendo la valvola o forando il corpo del cilindro fino a quando il gas è stato scaricato. (fig 13)

Fig. 1

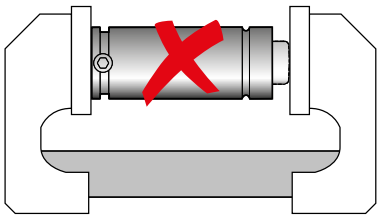


Fig. 2

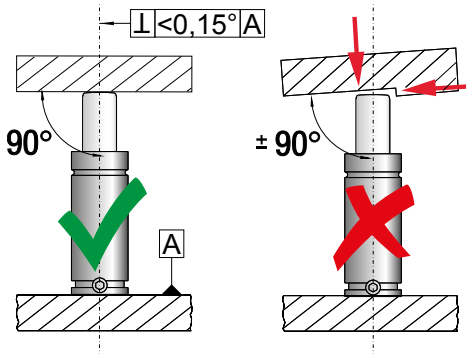


Fig. 3

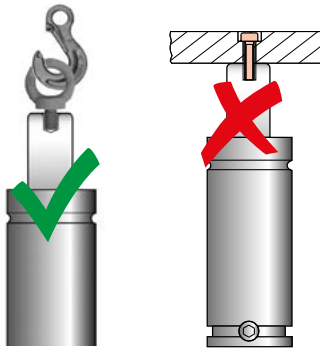


Fig. 4

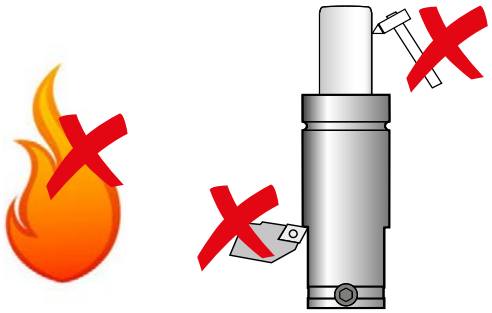


Fig. 5

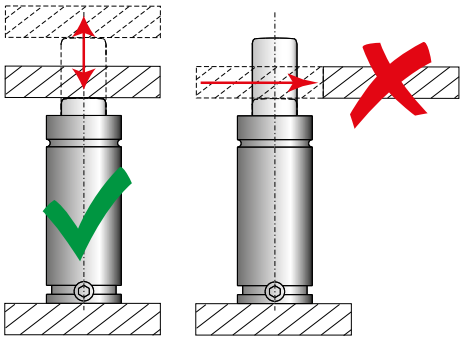
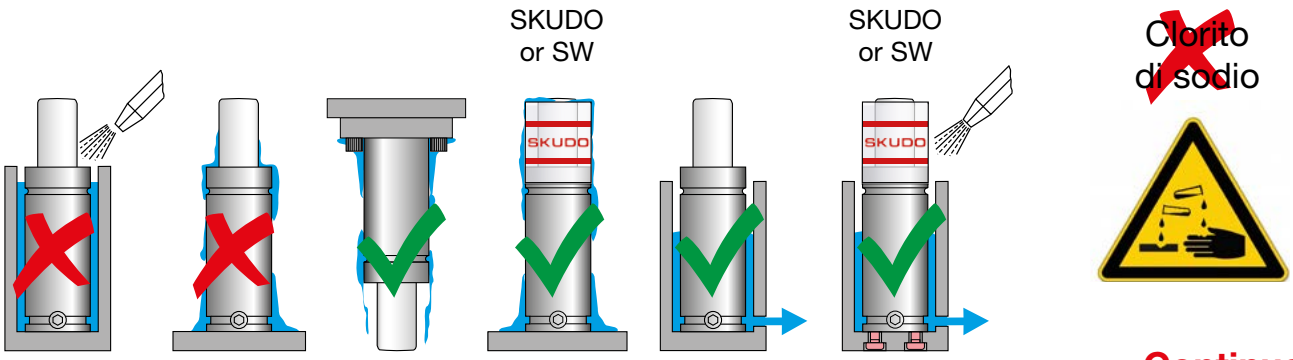


Fig. 6



Continua...

Fig. 7

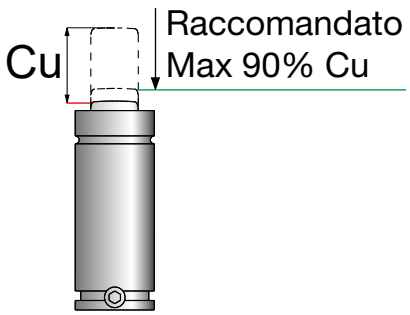


Fig. 8

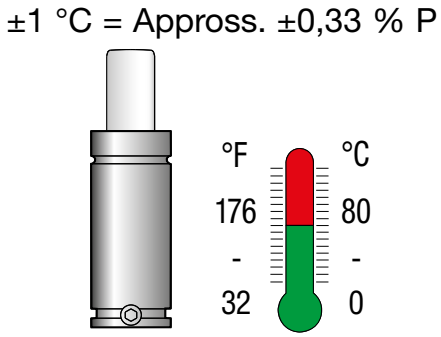


Fig. 9

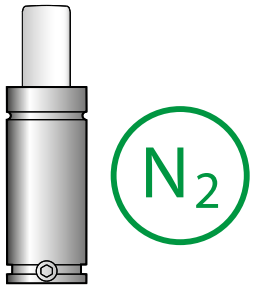
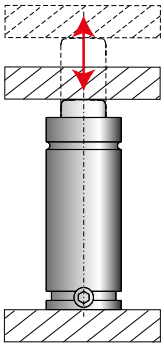


Fig. 10



VELOCITÀ MASSIMA
1,8 m/sec tutte le serie
0,8 m/sec serie KE

Fig. 11

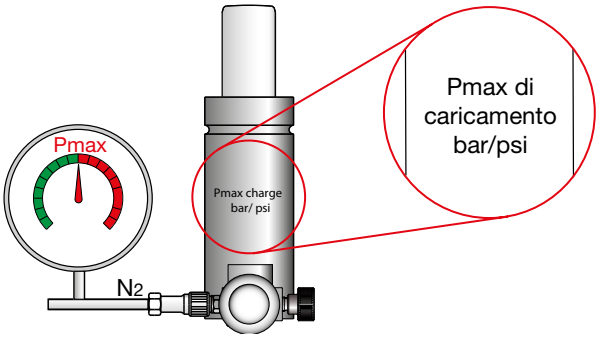


Fig. 12

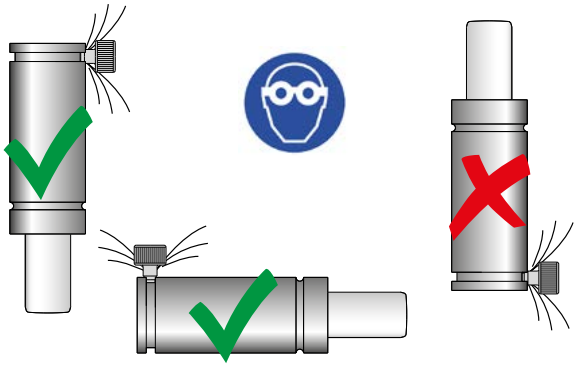
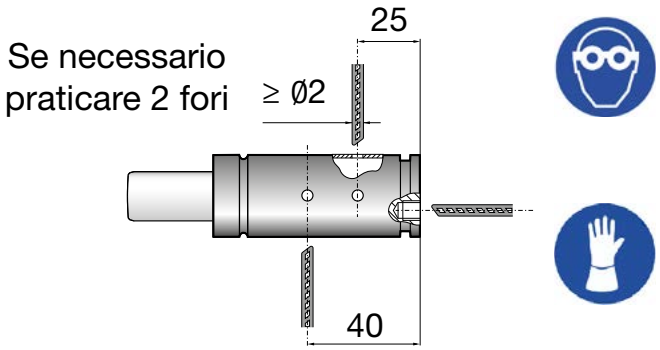


Fig. 13



- Si raccomanda di controllare sempre il corretto fissaggio dei cilindri ad ogni intervento sullo stampo. Qualora si riscontrassero viti allentate o rotte questo può essere il segnale che il cilindro è stato soggetto a ritorni incontrollati.
- Si raccomanda di sostituire il cilindro e di eliminare la causa dei ritorni incontrollati.
- La manutenzione dei cilindri deve essere sempre eseguita da personale competente con l'utilizzo esclusivo di kits e componenti Special Springs, pena la decadenza della garanzia e della responsabilità del produttore.
- Prima di smaltire qualsiasi cilindro a gas, scaricare completamente la pressione.

Se i limiti di utilizzo indicati da Special Springs (Tabella 1) sono superati, procedere con la manutenzione del cilindro. L'operazione può essere eseguita da Special Springs oppure in loco ordinando il kit adatto, completo di istruzioni d'uso. Il codice del kit di manutenzione (Man. Code) è marcato sul cilindro (fig. 14).

Tabella 1

Serie	Cu	Intervalli di manutenzione attesi	Nr. di sostituzioni della guarnizione	Dalla prima messa in servizio
RV, RS, RF, RG, RT, SC, SCF, S, H, HF, LS (esclusi RV170, RS170, RV320, RS320)	≤ 50mm	1.000.000 cicli	3	10 anni
	> 50mm	200.000 metri lineari di corsa		
ML, MP, MQ, KE	≤ 50mm	500.000 cicli	3	10 anni o 4.000.000 cicli
	> 50mm	100.000 metri lineari di corsa		

Per manutenzione e assistenza bloccare il cilindro

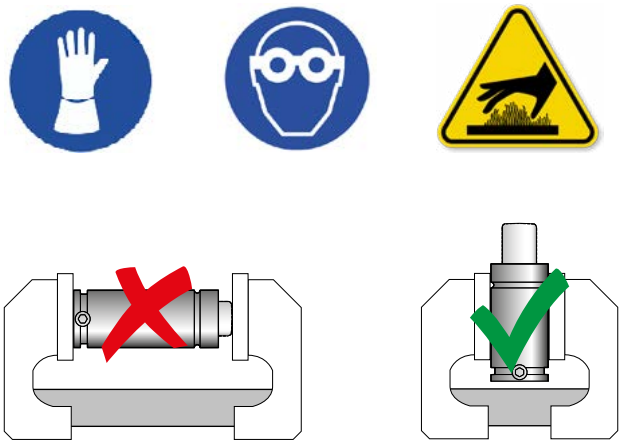
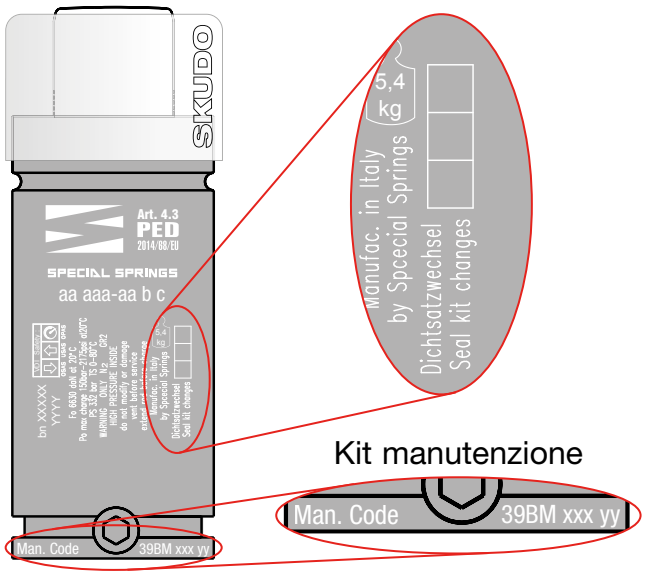


Fig. 14



Special Springs ha eseguito i test secondo quanto previsto da § 8.3 EN 14359:2006. Quando installate i cilindri a gas in uno stampo sottoposto alla legislazione tedesca, siete soggetti come utilizzatore ai seguenti obblighi, specialmente per la prima messa in servizio e i test periodici, come previsto dalla BetrSichV:

Volume *(Litri)*	**Prova prima del servizio**		**Test periodici**		
	Segue norma	**Responsabilità**	**Segue norma**	**Responsabilità**	**Scadenza max consentita per test**
< 1 l	§ 14	bP	§ 14	bP	Determinato dal datore di lavoro
> 1 l	§ 15	ZÜS (1	§ 16	bP	5 anni IP, 10 anni FP
> 6,67 l	§ 15	ZÜS	§ 16	ZÜS	

(1 - procedura semplificata secondo l'Appendice 2, Comma 4, No. 6.30.1 della BetrSichV

Lista delle Abbreviazioni:

BetrSichV	Direttiva tedesca sulla sicurezza nelle aziende
bP	Persona qualificata per il test
FP	Test di resistenza
IP	Ispezione interna
ZÜS	Ente di controllo abilitato

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Den Herstellern von Formen wird dringend empfohlen, mit den Ausrüstungen stets die Bedienungsanleitungen, die den von Special Springs gelieferten Zylindern und Zubehörteilen beigelegt sind, auszuhändigen.

DIESER ABSCHNITT WIRD NUR FÜR CE-MODELLE AUSGEFÜLLT

EU-KONFORMITÄTSERKLÄRUNG:

Special Springs S.r.l.
Via Nardi, 124/A - 36060 Romano d'Ezzelino (VI) - ITALY

Erklärt in alleiniger Verantwortung, dass die

Gasdruckfedern _____ Produktionsserie _____

Auf die sich diese Erklärung bezieht, den Bedingungen des Bewertungsverfahrens entspricht, Modul H der Richtlinie 2014/68/EU (PED.VE10615.Rev1) für Druckgeräte, umgesetzt durch die Gesetzverordnung vom 15.02.2016 n. 26 und mit harmonisierten Normen:

EN 13445:2018, EN 14359:2017

andere Normen

EN 15614:2018

Die notifizierte Stelle, die das Qualitätssicherungssystem des Herstellers überwacht, ist:

SGS ITALIA spa, NOTIFY BODY N° 1381

Special Springs S.r.l.

Augusto Cappeller

Romano d'Ezzelino, ____ / _____ / _____

(Unterschrift des bevollmächtigen Vertreters)

Das Muster dieser Erklärung ist EN 17050:2010 gemäβ

Das PED-Zertifikat ist auf der Internetseite www.specialsprings.com erhältlich

Abb. A

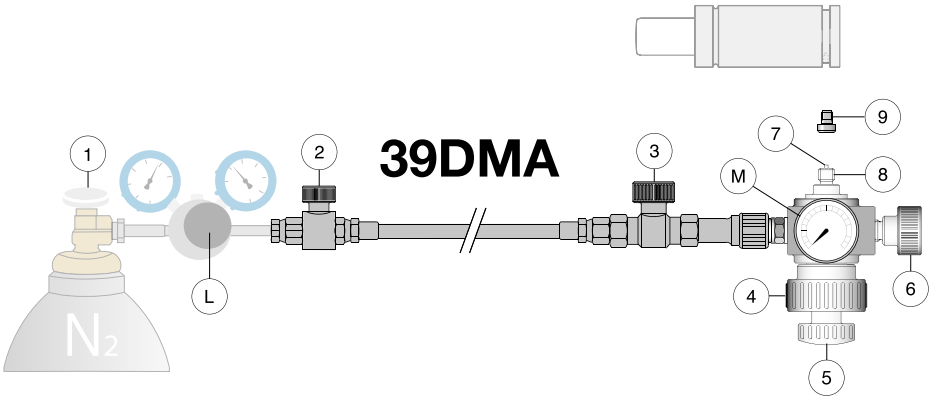
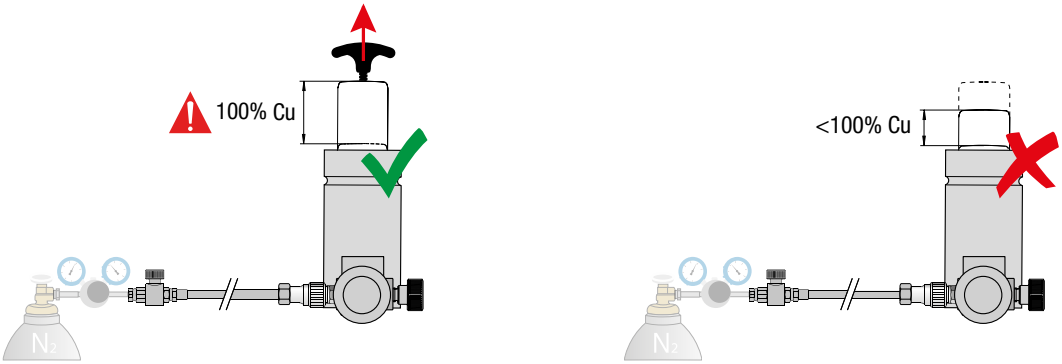


Abb. B

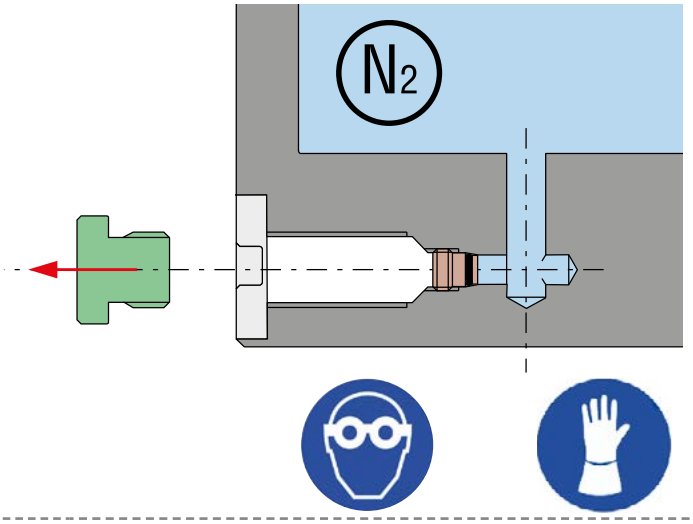


Zum Befüllen/Entladen dürfen nur Vorrichtungen von Special Springs verwendet werden, andernfalls lehnt Special Springs jede Haftung für Personen - und Sachschäden ab.

Den auf dem Zylinder angegebenen Befülldruck bei 20°C/68°F nicht überschreiten.

1) Den Zylinder gut fixieren.
2) Vor dem füllen, ziehen Sie die Kolbenstange komplett (100% Cu) heraus (Abb B).
3) Den Verschluss (9) der Befüllöffnung aufdrehen.
4) Den Drehknopf (5) aufdrehen, bis die Nadel (7) ganz eingezogen ist.
5) Über den Drehknopf (4) den Befülladapter (8) in die Befüllöffnung einschrauben.
6) Sicherstellen, dass die Ventile (2-3-6) geschlossen sind.
7) Den Hahn der Gasflasche (1) ganz langsam öffnen, dann mit dem Hebel (L) den Befülldruck einstellen.
8) Das Ventil (3) langsam öffnen, bis die vollständige Druckbeaufschlagung des Zylinders erreicht ist; der Enddruck kann am Manometer (M) abgelesen werden.
9) Das Ventil (3) schließen.
10) Das Ablassventil (6) öffnen.
11) Den Befülladapter (8) über den Drehknopf (4) aus der Befüllöffnung herausdrehen.
12) Den Verschluss (9) in die Befüllöffnung des Zylinders einschrauben.
13) Den Hahn der Gasflasche (1) langsam schließen.

1



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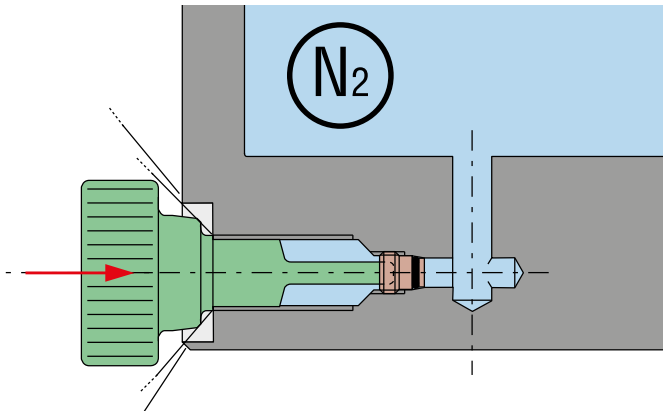

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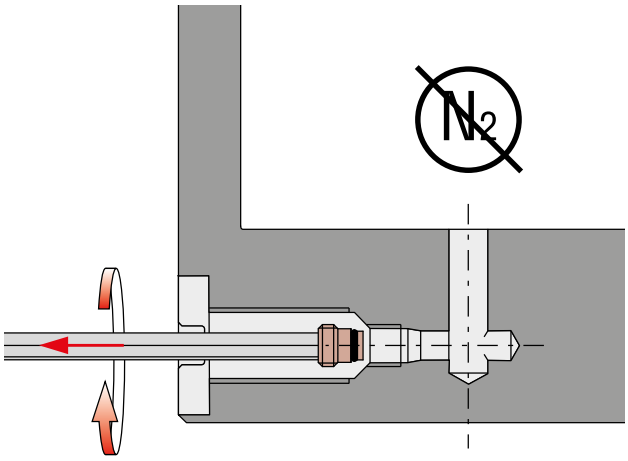
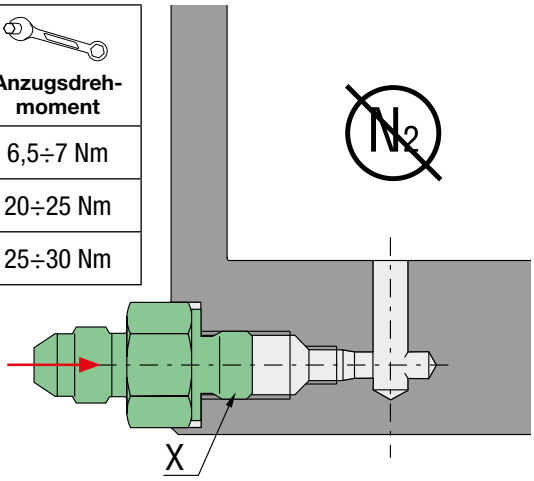
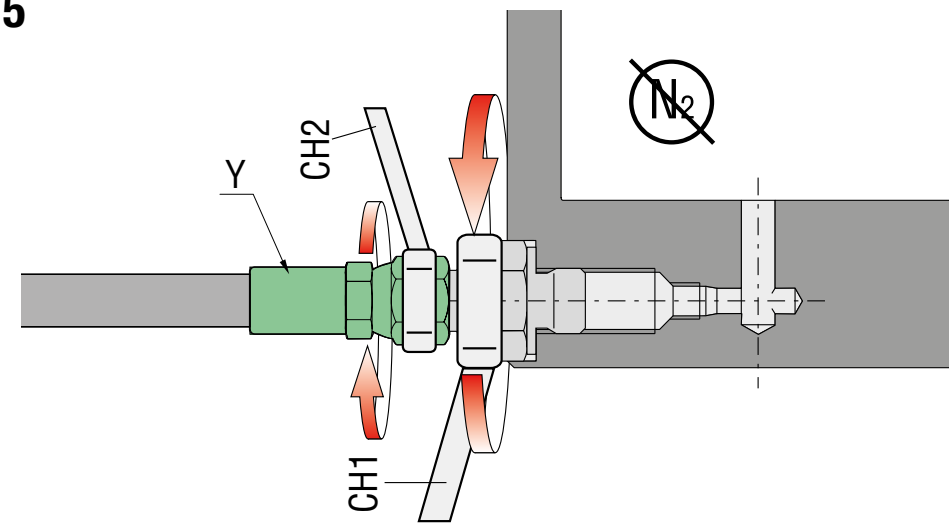


4

X	Anzugsdreh-moment
M6	6,5÷7 Nm
G1/8”	20÷25 Nm
G1/4”	25÷30 Nm



5



Y	Anzugsdrehmo-ment
EO 24°	16÷18 Nm
JIC 37°	16÷18 Nm
Micro 32°	8÷9 Nm
ORFS	28÷32 Nm

Für detaillierte Informationen: WWW.SPECIALSPRINGS.COM

Nr.	Kategorie nach PED	CE Kennzeichnung	Nr. der notifizierte Stelle	Kennzeichnung	Konformitätserklärung	Modul nach PED
1	SEP	✗	✗	PED 2014/68/EU Art. 4(3)	✗	Interne Produktion
2	I	✓	✓	CE 1381	Siehe Konformitätserklärung	Modul H
3	II	✓	✓	CE 1381	Siehe Konformitätserklärung	Modul H
4	III	✓	✓	CE 1381	Siehe Konformitätserklärung	Modul H

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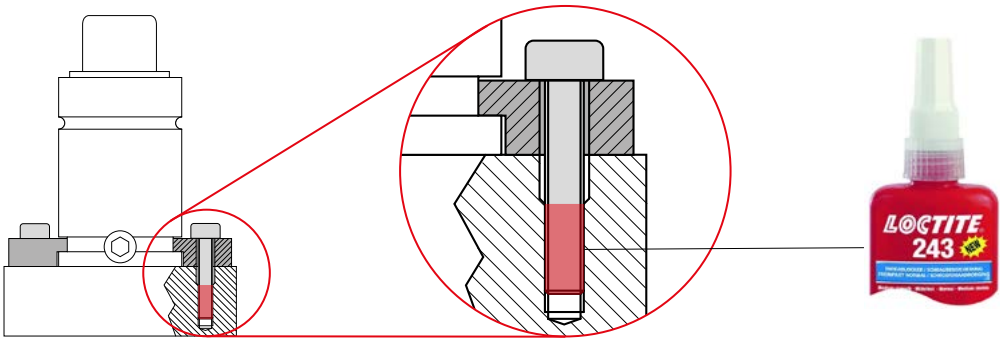
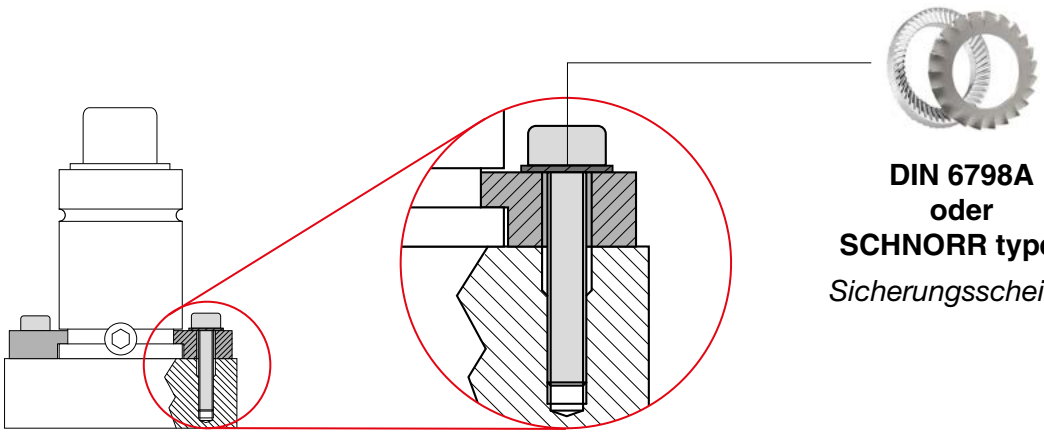
ALLGEMEINE INFORMATION

Art.-Nr. 6.6 der VDI 3003 Blatt 1

Die Gasdruckfedern immer direkt mit den hierfür vorgesehenen Befestigungselementen befestigen. Die richtige Befestigung der Gasdruckfeder verhindert Schäden an den Produkten und ernsthafte Gefahren für das Personal.

Verwenden Sie immer geeignete Schraubensicherungen und/oder Sicherungsscheiben an allen Befestigungsschrauben. (Nicht in den Zeichnungen auf den folgenden Seiten dargestellt).





DIN 6798A
oder
SCHNORR type S
Sicherungsscheiben

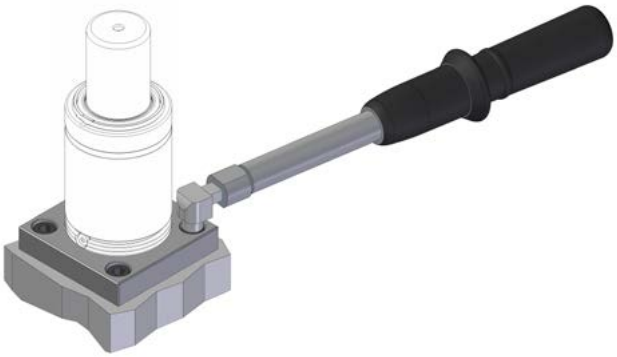
Immer die korrekten Anzugsmomente wie angegeben einhalten. Nach jedem Eingriff an der Form, stets der zustand den Gasdruckfedern und den befestigungen überprüfen.

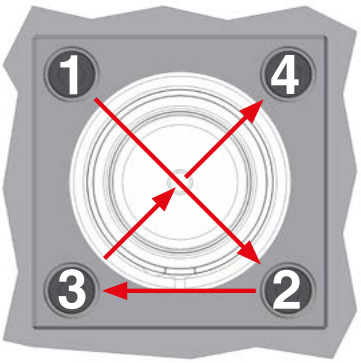
UNI EN ISO 21269:2007 class ≥ 8.8	**M5**	**M6**	**M8**	**M10**	**M12**	**M16**
Anzugsdrehmoment	**6 Nm**	**10 Nm**	**24 Nm**	**50 Nm**	**84 Nm**	**205 Nm**

Weitermachen...

Die Verwendung von Schrauben vom oberer Klasse vom 8.8, wie 9.8, 10.9 und 12.9, ist immer möglich. Wir empfehlen, dass Sie die Werte des Anzugsmomente der Festigkeitsklasse 8.8 für alle andere Klasse NICHT ÜBERSCHREITEN.

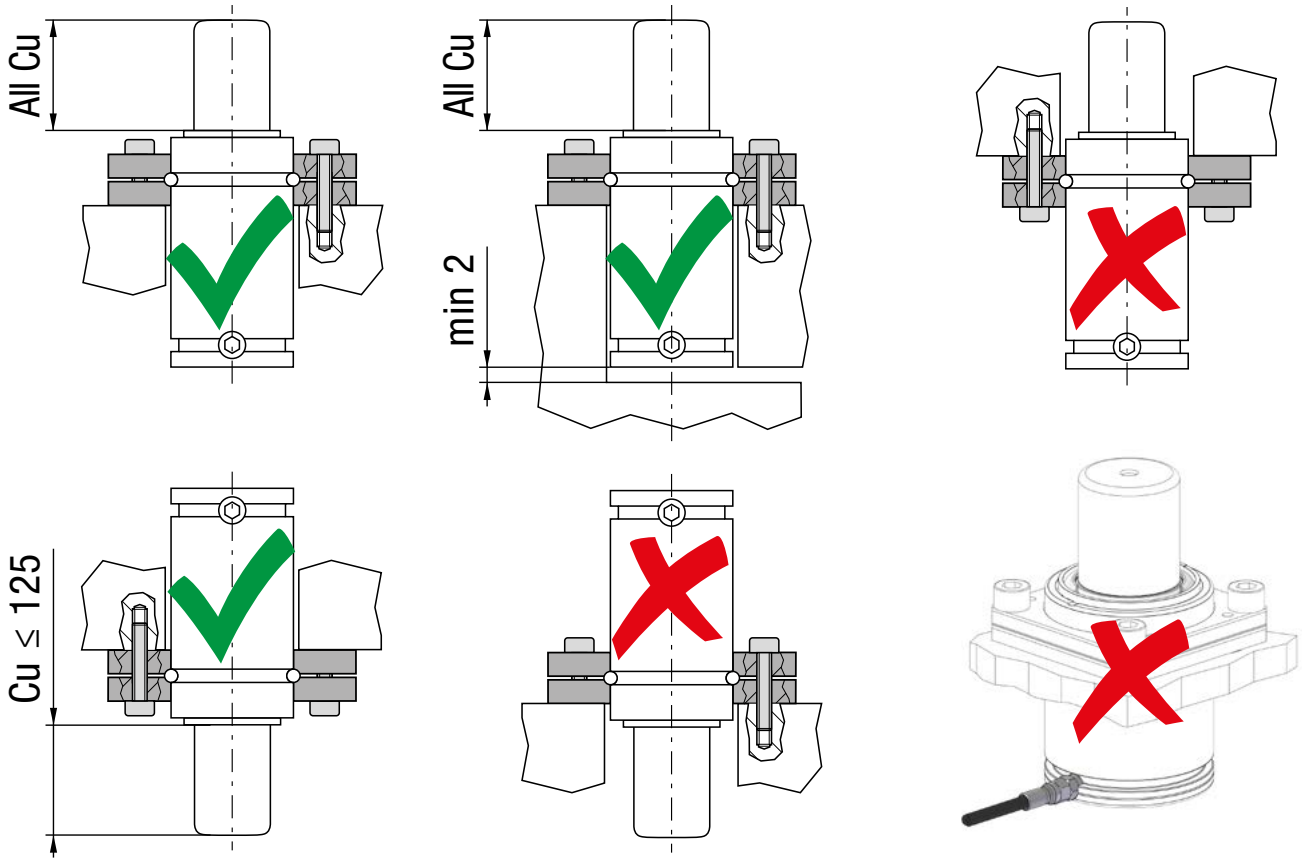
Alle Befestigungsschrauben über Kreuz in der Reihenfolge 1, 2, 3, 4 (siehe Bild) mit dem richtigen Anziehdrehmoment anziehen. Führen Sie den Vorgang durch, indem Sie die Schrauben schrittweise anziehen.





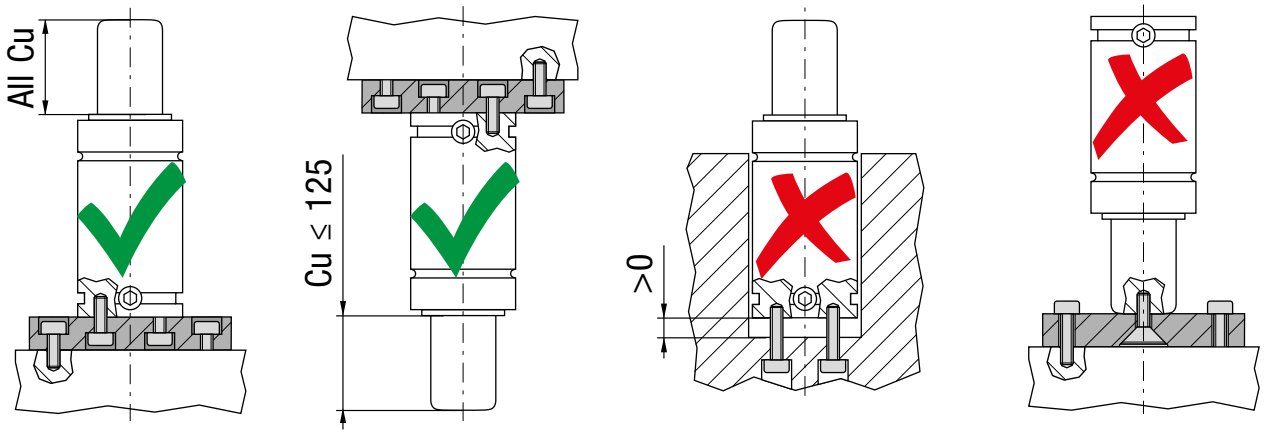
TOP-MOUNT Art.-Nr. 6.1 der VDI 3003 Blatt 1

Befestigung mit Bundflansch.



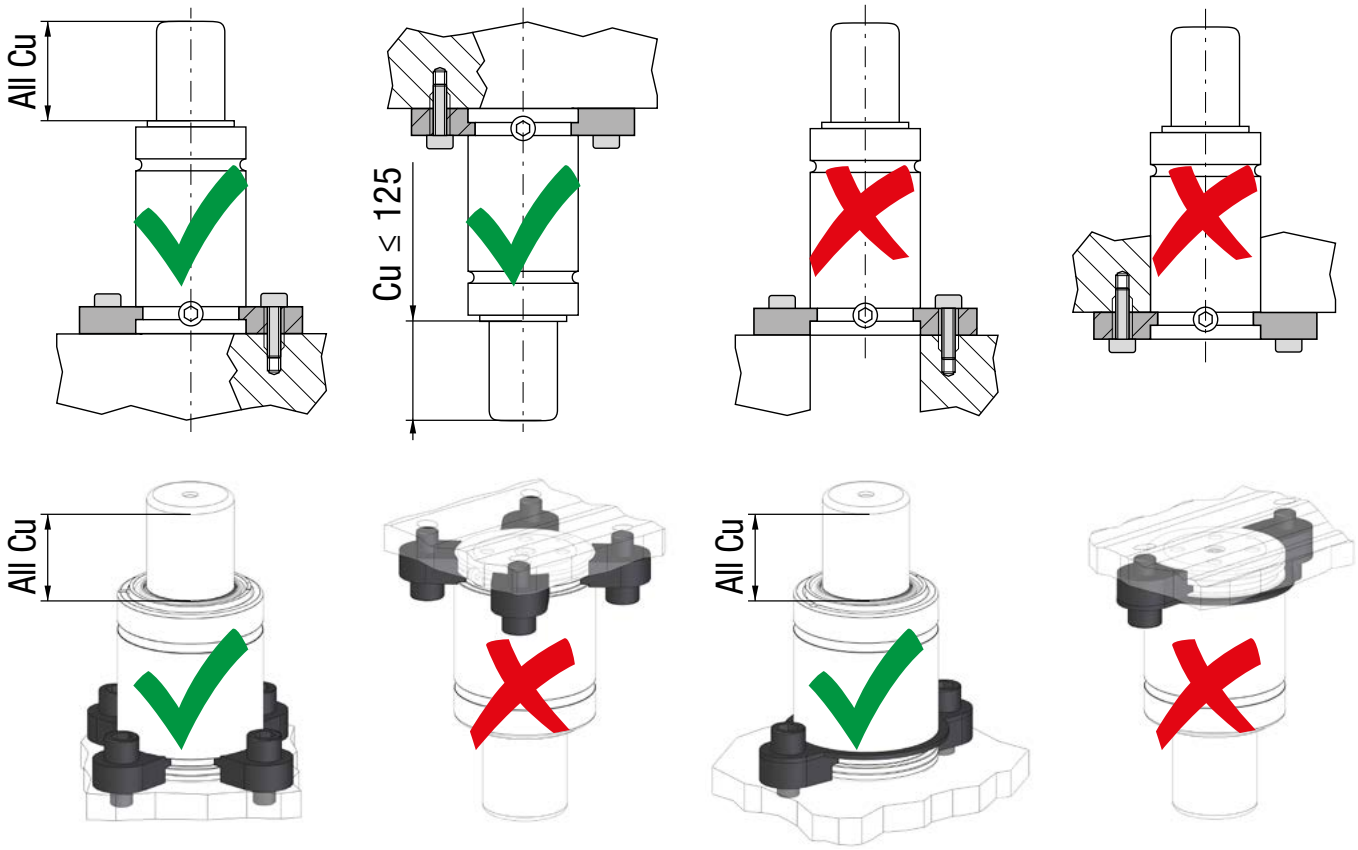
BOTTOM MOUNT Art.-Nr. 6.6 der VDI 3003 Blatt 1

Schrauben von geeigneter Länge verwenden, um die gesamte Tiefe des Gewindelochs auf dem Zylinder einzunehmen.



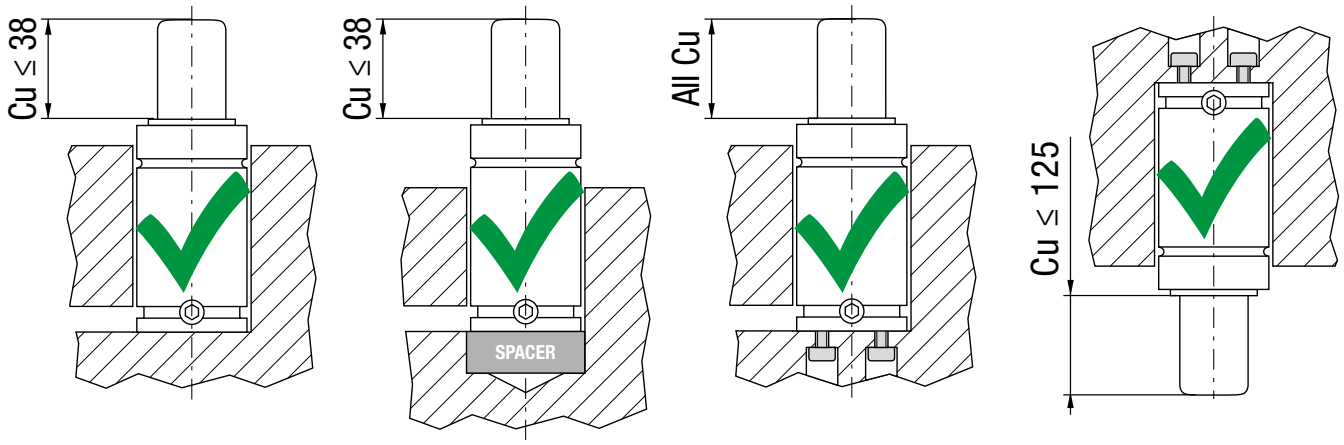
BRACKET MOUNT Art.-Nr. 6.2 - 6.3 der VDI 3003 Blatt 1

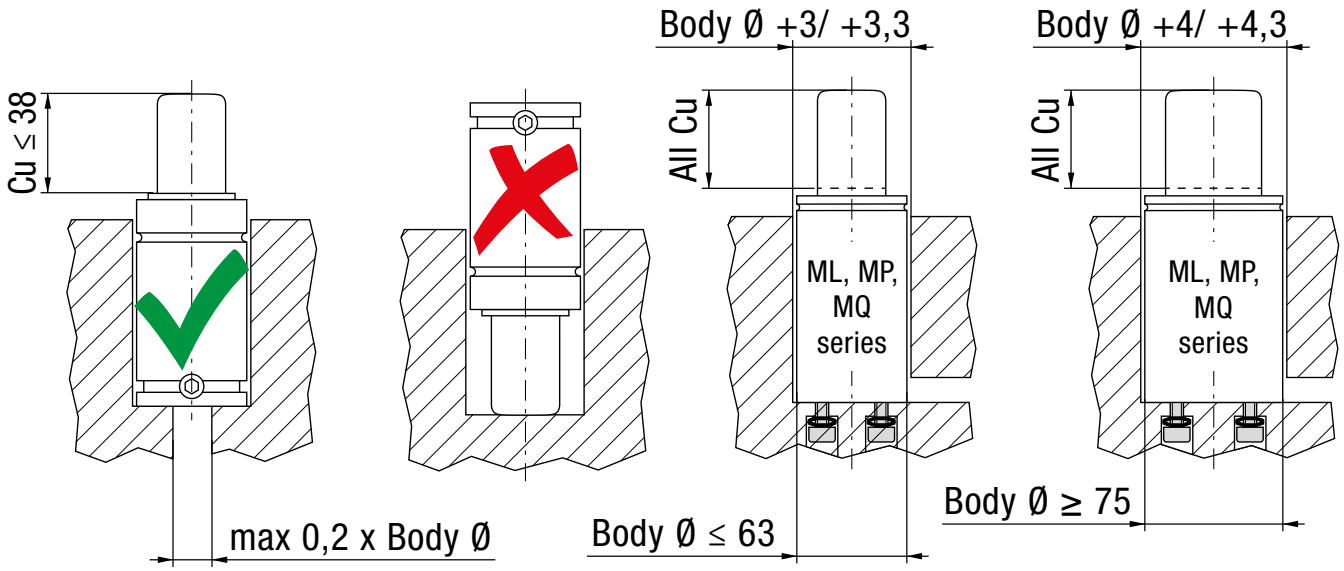
Befestigung mit Haltenstücken.



DROP-IN Art.-Nr. 6.6 der VDI 3003 Blatt 1

Sicherstellen, dass die Auflagefläche NICHT unterbrochen ist. Nach jedem Eingriff an der Form, stets der zustand den Gasdruckfedern und ihrer Sitzen überprüfen.

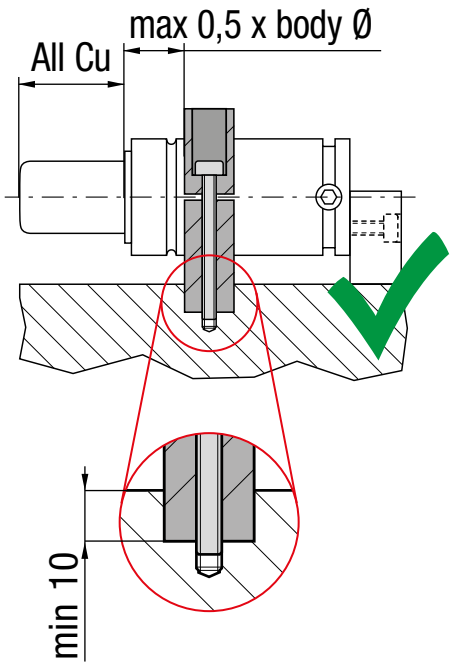


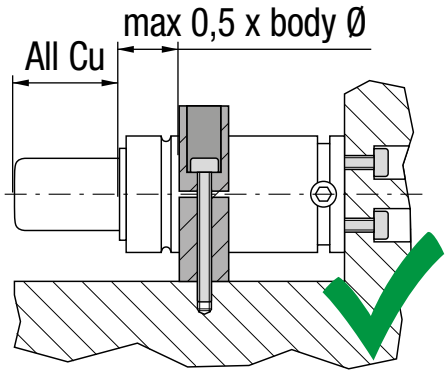


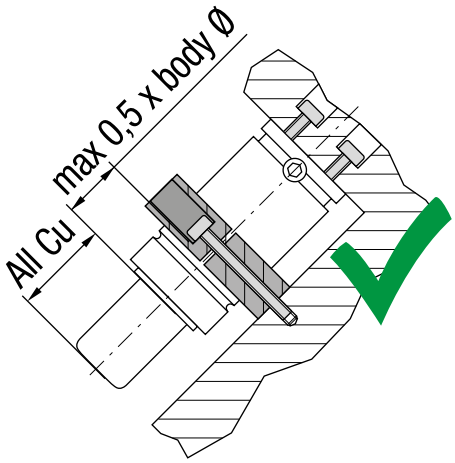
BODY MOUNT

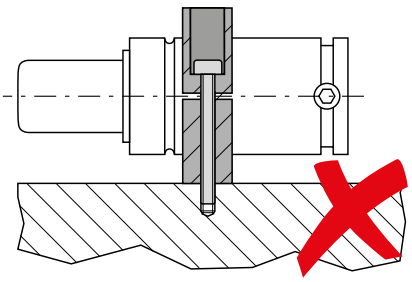
Art.-Nr. 6.4 der VDI 3003 Blatt 1

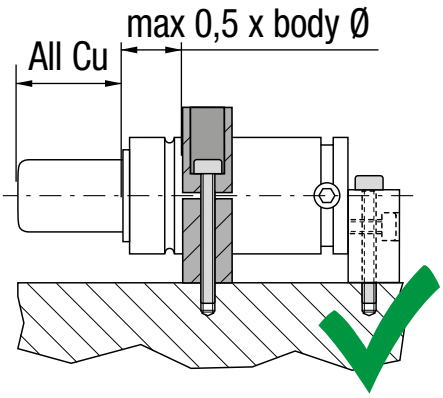
Gasdruckfedern mit Klemmflanschbefestigung sind immer zusätzlich abzuschultern (siehe Bild).

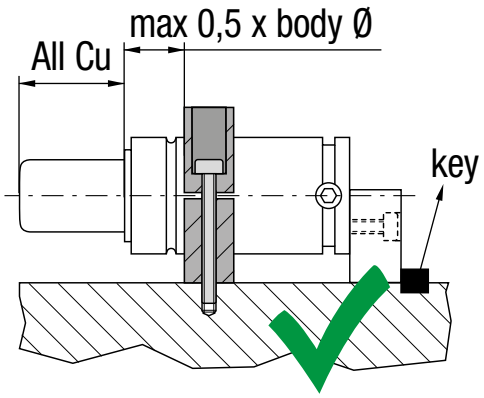






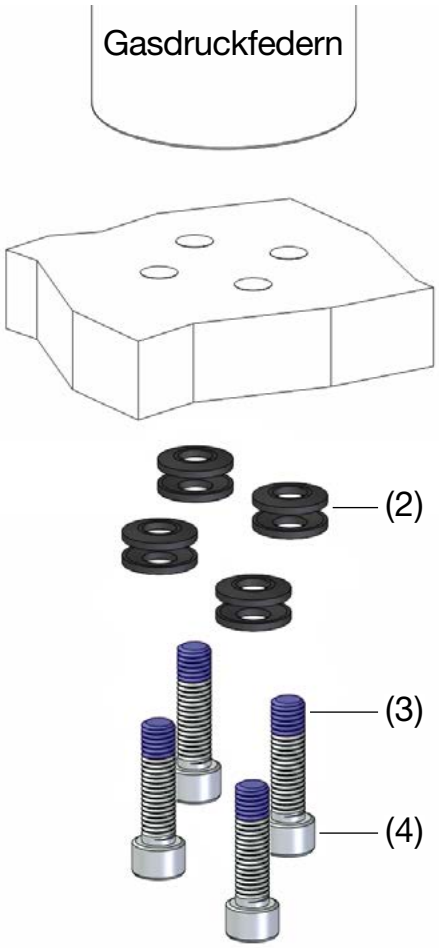
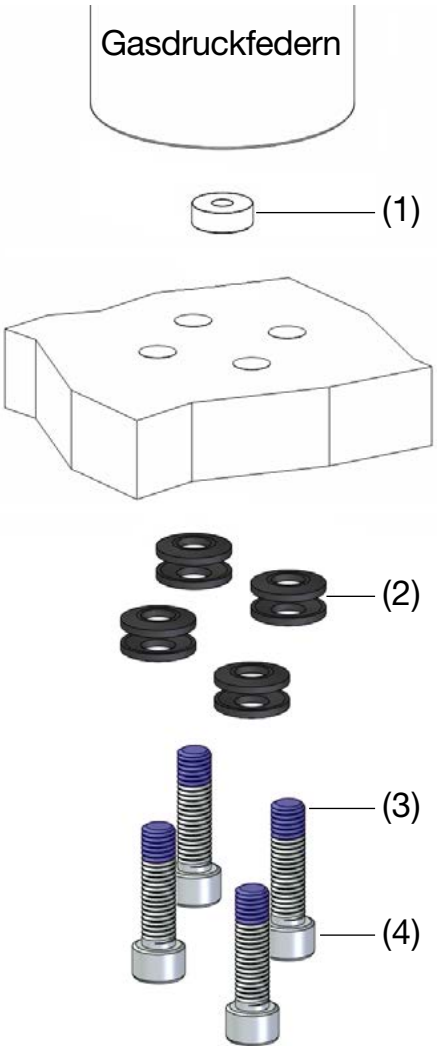
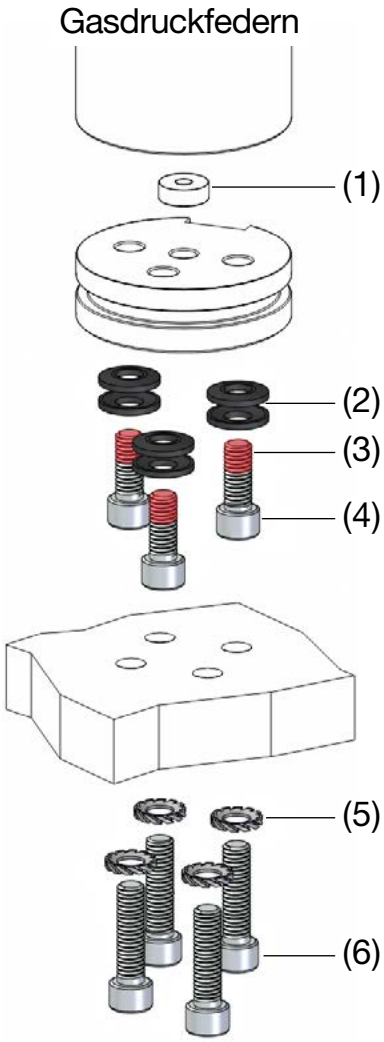






INSTALLATIONSRICHTLINIE: BAUREIHE ML - MP - MQ

Montieren Sie die Gasdruckfedern gemäß den unten folgenden Anweisungen. Detaillierte Anweisungen finden Sie im jeweiligen Bausatz.

AUTONOME ML-, MP-, MQ-SERIE	EASY MANIFOLD ML-SERIE	LINKABLE ML-SERIE
		

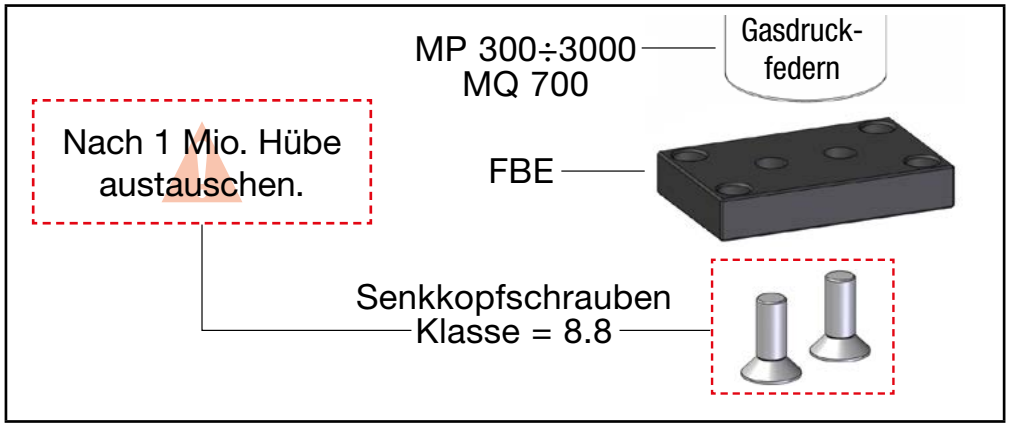
(1) Dichtung; (2) Spannscheiben; (3) Schraubensicherungen Loctite 243; (4) Class = 8.8; (5) SSicherungsscheiben DIN 6798A oder SCHNORR typ S; (6) Class ≥ 8.8;

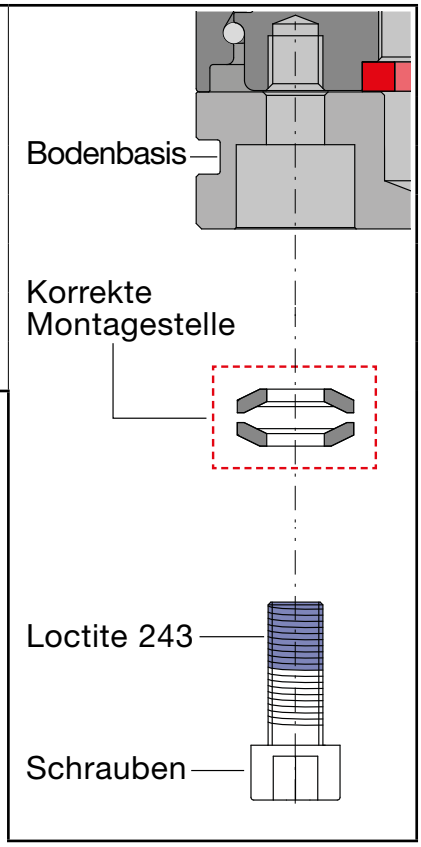
Weitermachen...

Modell	Spannscheiben
ML 1000 D	49RC06A
ML 1800 D	49RC06A
ML 3000 D	49RCHS08A
ML 4700 D	49RC08A
ML 7500 D	49RC08A
ML 12000 D	49RC10A

Die Spannscheiben sind von Special springs mit der Gasdruckfedern mitgeliefert

Nach 1 Mio. Hübe (1)(2)(3)(4) austauschen.

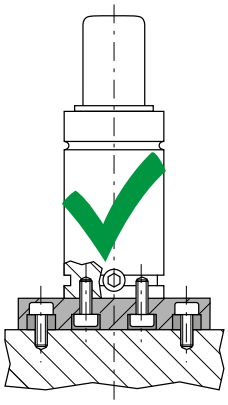


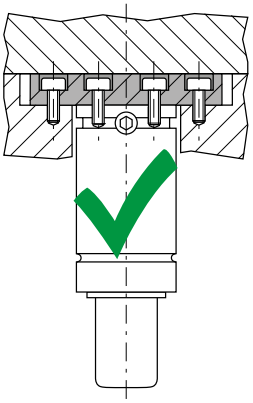


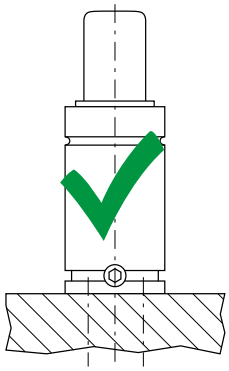
BEFESTIGUNG VERSCHLAUCHUNGSSYST EME

Art.-Nr. 6.6 der VDI 3003 Blatt 1

Bei Gasdruckfedernverbundsystemen mit Schlauchleitungen dürfen sich die Gasdruckfedern im Stanzbetrieb nicht verdrehen. Ein Verdrehen führt zu einer Verschlechterung der Schlauchleitungen und zu Beschädigung bzw. Gasleckage. Daher ist es nicht erlaubt, Gasdruckfedern in einem verbundenen System im Drop-In-Modus ohne Befestigung oder mit Bundflanschen einzubauen.
Bei ungünstigen Einsatzbedingungen kann es aber trotzdem zu einem Verdrehen der Gasdruckfedern kommen. Für diese Sonderfalle sollten die Gasdruckfedern über die im Federboden eingebrachten Gewinde direkt oder auf einer Bodenplatte verschraubt werden (siehe Bild).







INDEX

Sicherheit ist für uns nicht einfach nur ein Marketingthema, sondern unsere Philosophie. Als Grundlage aller Produkte von Special Springs stehen die kontinuierlichen Forschungen und Entwicklungen, der Einsatz der neuesten Technologien, Qualitäts- und Sicherheitskontrollen, alles in voller Übereinstimmung mit den Vorschriften, um hochwertige, widerstandsfähige und zuverlässige Produkte zu garantieren. Entdecken Sie die Produktpalette von Special Springs.

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SKUDO	62

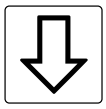
- **WIE DIE SICHERHEITSVORRICHTUNGEN AUSLÖSEN:**
  Wenn die Sicherheitsvorrichtungen aktiviert werden, entlädt sich der Druck in einer kontrollierten Weise.

- **WAS TUN NACH:**
  Wenn die Sicherheitsvorrichtungen aktiviert werden, prüfen und entladen Sie die eventuelle Restdruck, beseitigen Sie die Ursachen des Schadens und ersetzen Sie immer die beschädigte Gasdruckfeder.

OSAS Art.-Nr. 8.3 der VDI 3003

Over
Stroke
Active
Safety

VDI 3003



+

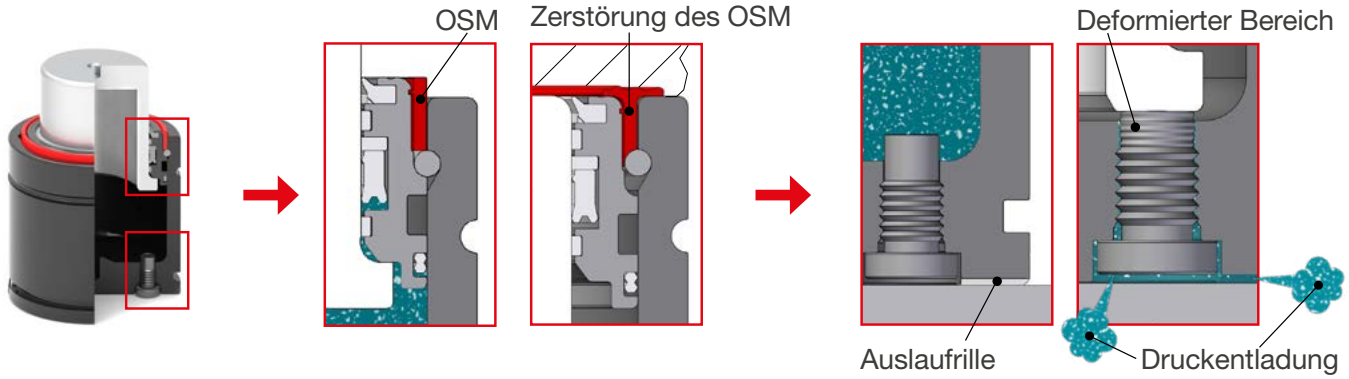
Over
Stroke
Marker

Aktive Überhubsicherung

Der Überhubmarker OSM

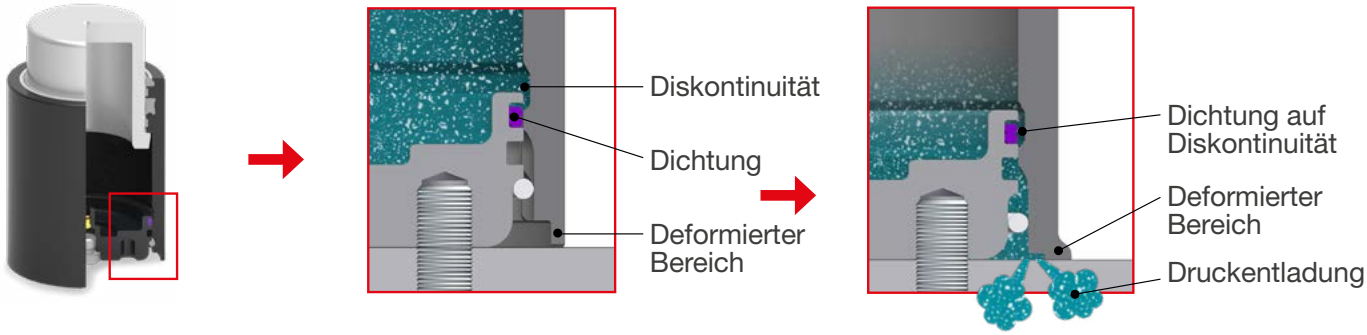
DESIGN: BUCHSE - KÖRPER

Standard bei: M300 - RV - RF - RS - RG - RT - S - SC - H - HF - HT - LS



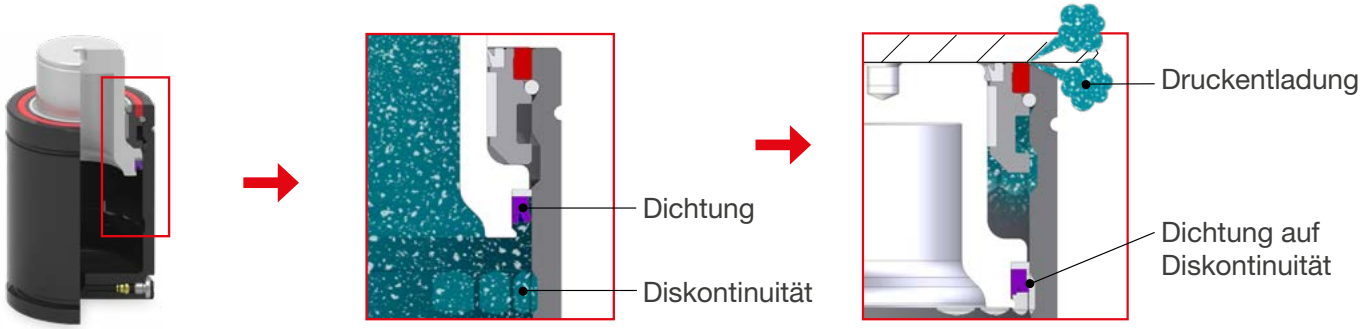
DESIGN: BODENBASIS-DESIGN - KÖRPER

Standard bei: ML - MP - MQ



DESIGN: KOLBENDESIGN – KÖRPER

Standard bei: KE



USAS Art.-Nr. 8.2 der VDI 3003

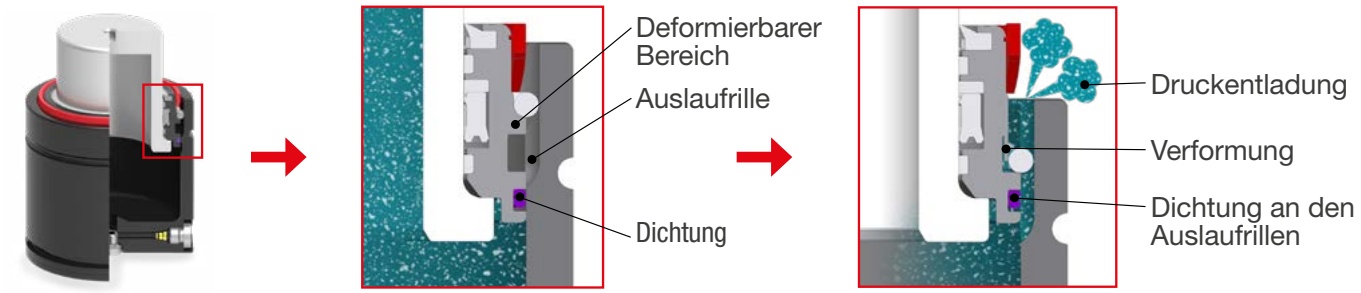
Uncontrolled
Speed
Active
Safety

VDI 3003

Aktiver Schutz bei unkontrolliertem Rückhub

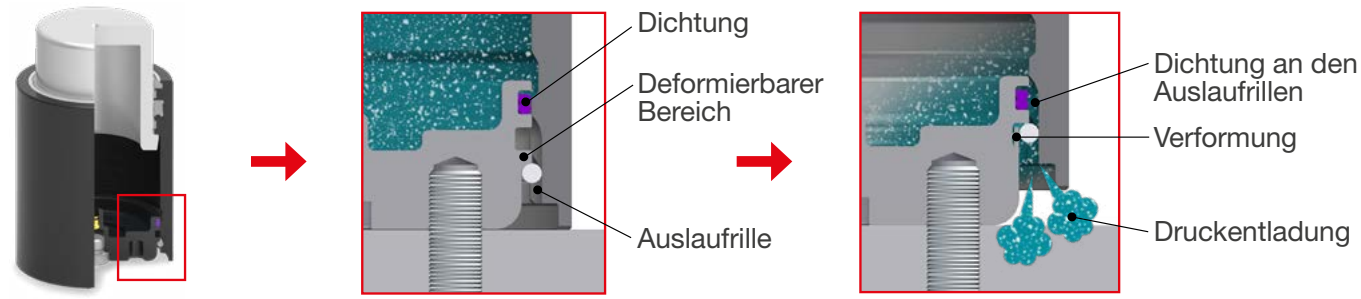
DESIGN: BUCHSE - KÖRPER

Standard bei: M300 - RV - RF - RS - RG - RT - S - SC - H - HF - HT - LS



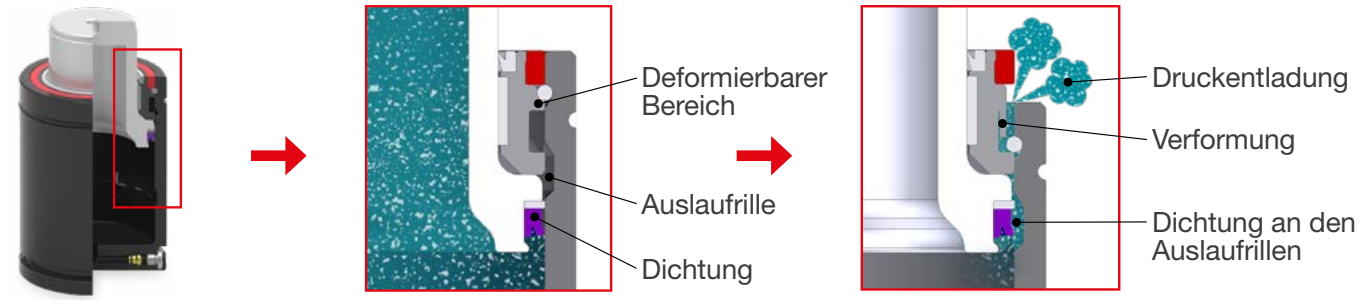
DESIGN: BODENBASIS-DESIGN - KÖRPER

Standard bei: ML - MP - MQ



DESIGN: KOLBENDESIGN – KÖRPER

Standard bei: KE



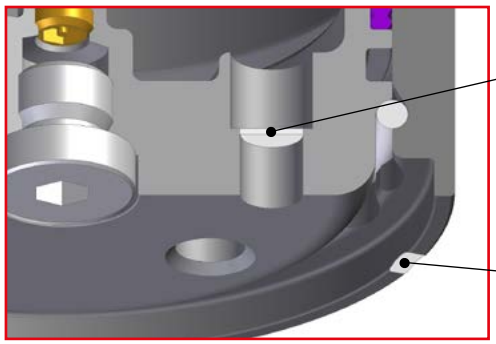
OPAS Art.-Nr. 8.3 der VDI 3003

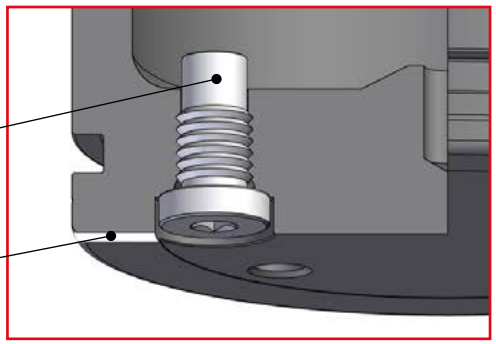
Over
Pressure
Active
Safety

VDI 3003

Standard bei: M - MS - RV - RS - RF - RG - RT - S
SC - H - HF - HT - LS - ML - MP - KE

Aktive Überdruck-Sicherheitsvorrichtung



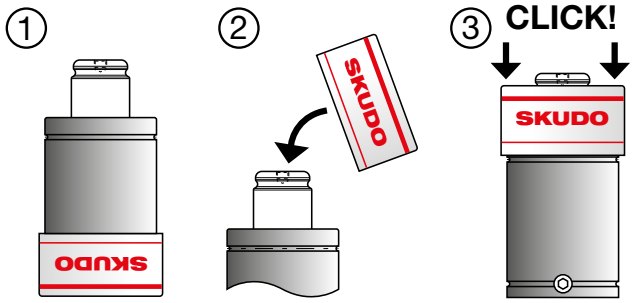


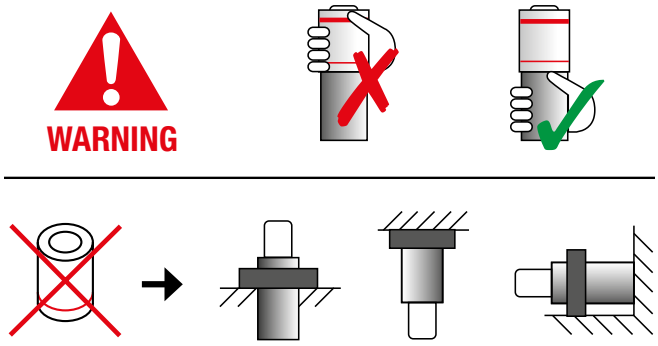
SKUDO

Aktiver Schutz vor Verunreinigungen

Standard bei: KE - RS - MS

WIE ZU MONTIEREN:





- Auslegung und Herstellung aller strukturellen Bauteile der Gasdruckfedern von Special Springs erfüllen die Anforderungen der geltenden Bestimmungen (Druckgeräterichtlinie 2014/68/EU) und EN 13445:2018 für mindestens 2.000.000 komplette Zyklen bei maximalen Druck- und Temperaturbelastungen und für jede Befestigungsart.
- In Bezug auf GDF Serien RV, RS, RF, RG, RT, SC, SCF, S, H, HF, LS (außer Modellen RV/RS170 und RV/RS320), Special Springs empfiehlt diese GDF spätestens nach 10 Jahre von der ersten Inbetriebnahme zu ersetzen.
- In Bezug auf GDF Serien ML, MP, MQ, KE Special Springs empfehlt diese GDF entweder spätestens nach 10 Jahre oder nach 4 Millionen Hübe von der ersten Inbetriebnahme zu ersetzen (je nachdem was zuerst eintritt).
- Dieses Bauteil ist ausschließlich für den industriellen Gebrauch zur Verwendung als elastisches Element ausgelegt.
- Der Gebrauch dieses Bauteils ist ausschließlich Fachpersonal vorbehalten, das den Inhalt dieser Anleitung gelesen und verstanden hat.
- Das Bauteil keinen höheren Belastungen aussetzen als vorgeschrieben. Das Bauteil nicht in der Nähe von Flammen oder Wärmequellen benutzen.
- Nicht im Freien oder an Orten mit hoher Luftfeuchtigkeit lagern.
- Bei zweckwidrigem Gebrauch der Gasdruckfedern wird Special Springs von jeglicher Haftung befreit.

BEDIENUNGSANLEITUNG:

- Zur Überprüfung der Kraft eines Zylinders keinen Schraubstock verwenden. (Abb. 1)
- Die Gasdruckfeder möglichst immer am Werkzeug befestigen.
- Es ist verboten, die Gasdruckfeder nicht im rechten Winkel zu positionieren. Während die Kolbenstange zusammengedrückt wird, Querkräfte vermeiden. Üben Sie immer Druck auf die gesamte Endfläche der Kolbenstange aus. Gleichen Sie die Last in dem Werkzeug so weit wie möglich aus. (Abb. 2)
- Die Gewindebohrung an der Kolbenstange darf nur für den Transport der Gasdruckfeder verwendet werden. Es ist verboten, die Gasdruckfeder mit der Gewindebohrung am Kolbenstangenkopf zu befestigen. (Abb. 3)
- Keinerlei mechanische Bearbeitung am Zylinder oder an der Kolbenstange vornehmen. (Abb. 4)
- Jeder unkontrollierte Rückhub der Kolbenstange ist verboten. Der unkontrollierte Rückhub kann Schäden oder mechanische Einwirkungen am Zylinder oder dessen Befestigungen verursachen. (Abb. 5)
- Die Oberfläche der Gasdruckfedern ist vor aggressiven Feststoffen und/oder Flüssigkeiten (Natriumcarbonate und Chloride) zu schützen. Falls solche Stoffe für die Reinigung der Werkzeuge verwendet werden, müssen alle Rückstände von den Gasdruckfedern entfernt werden. (Abb. 6)
- Es wird empfohlen, eine Hubreserve von 10% der nominellen Hublänge oder von 5 mm. für Hübe langer als 50 mm. vorzusehen. (Abb. 7)

Weitermachen...

- Die Gasdruckfeder nicht bei Temperaturen über 80°C/176°F verwenden. (Abb. 8)
- Die Gasdruckfeder darf mit keinem anderen Gas außer Stickstoff N2 gefüllt werden. (Abb. 9)
- Die Gasdruckfeder nicht bei Geschwindigkeiten über 0,8 ÷ 1,8 m/s verwenden. (Abb. 10)
- Den auf dem Zylinder angegebenen maximal zulässigen Fülldruck nicht überschreiten. (Abb. 11)
- Beim Entleeren den Zylinder umdrehen und den Gasfluss in die der Bedienungsperson entgegengesetzte Richtung leiten. (Abb.12)
- Bei einer Schadenssituation muss die Gasdruckfeder sofort im eingebauten Zustand drucklos gemacht werden. Dies kann durch folgenden Maßnahmen geschehen: öffnen des Ventils oder Anbohren des Zylinderrohrs, bis Gas ausströmt. (Abb 13)

Abb. 1

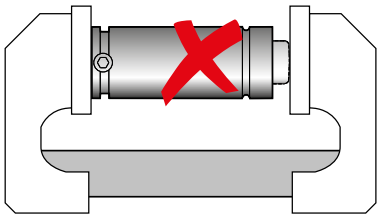


Abb. 2

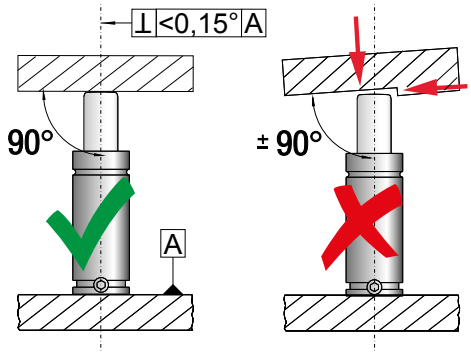


Abb. 3

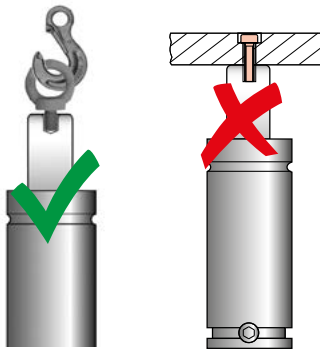


Abb. 4

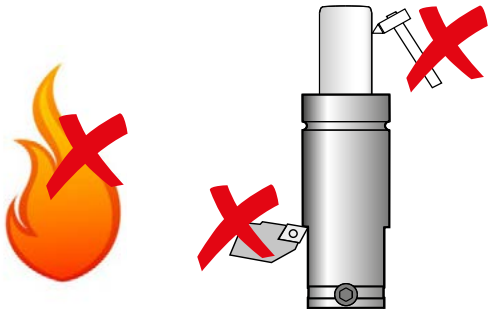


Abb. 5

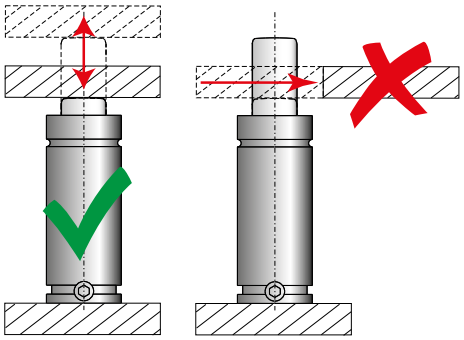
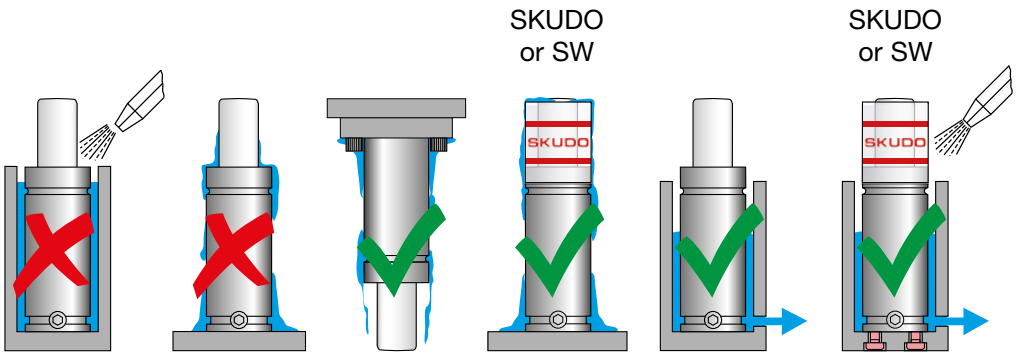


Abb. 6



Natriumcarbonate

Weitermachen...

Abb. 7

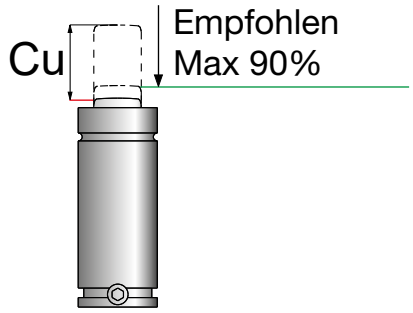


Abb. 8

±1 °C = etwa ±0,33 % P

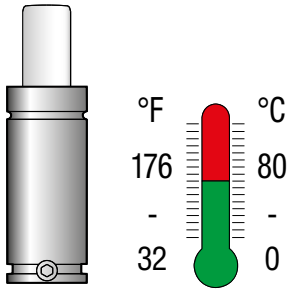


Abb. 9

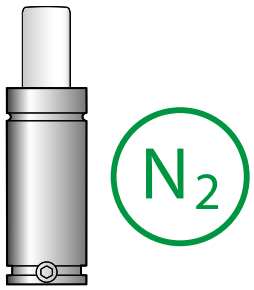
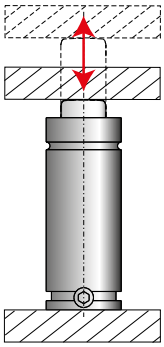


Abb. 10



Max.
Kolbengeschwindigkeit
1,8 m/sec all series
0,8 m/sec KE series

Abb. 11

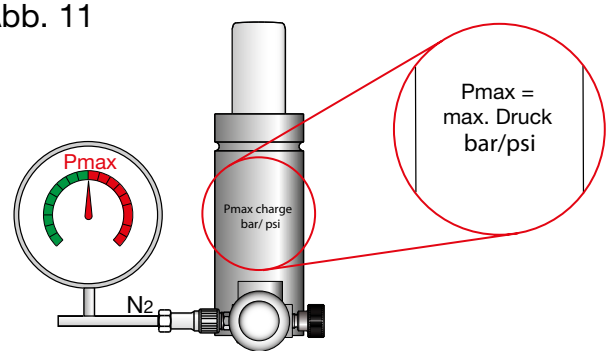


Abb. 12

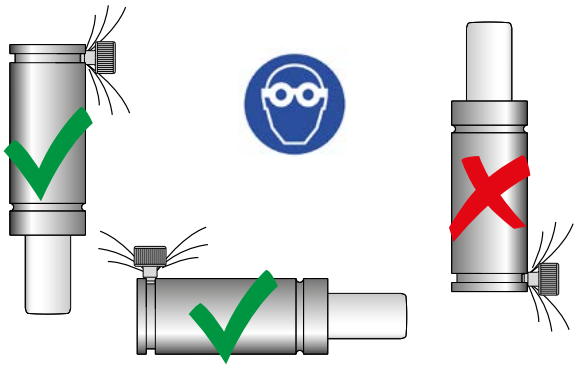
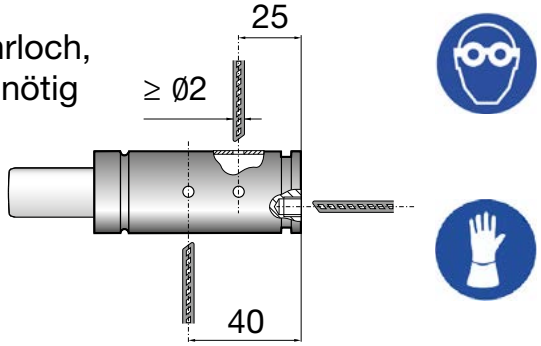


Abb. 13

2x Bohrloch,
wenn nötig



- Es wird empfohlen, bei jedem Eingriff am Werkzeug die korrekte Befestigung der Gasdruckfeder zu kontrollieren. Wenn lose oder abgebrochene Schrauben vorhanden sind, wurde die Gasdruckfeder möglicherweise unkontrolliertem Rückhub ausgesetzt.
- In diesem Fall die Gasdruckfeder auswechseln und die Ursache des unkontrollierten Rückhubs beseitigen.
- Die Wartung der Gasdruckfedern muss immer durch Fachpersonal und ausschließlich unter Verwendung der Kits und Bauteile von Special Springs durchgeführt werden. Andernfalls verfällten jeder Garantie und Haftungsanspruch des Herstellers.
- Vor dem Entsorgen der Gasdruckfedern den Druck vollständig ablassen.

Falls die Belastungsgrenzen, die von Special Springs (Diagramm 1) vorgeschrieben sind, überschritten wurden, sorgen Sie für die Wartung. Diese kann von Special Springs angeboten werden oder vor Ort nach Bestellung des geeigneten Bausatzes, der mit Betriebsanleitung geliefert wird. Der Wartungskit-Code (Man. Code) ist auf den Gasdruckfedern markiert (Abb. 14).

Diagramm 1

Baureihe	Cu	Erwartete Wartungsintervalle	Anzahl der Dichtungswechsel	Ab der ersten Inbetriebnahme
RV, RS, RF, RG, RT, SC, SCF, S, H, HF, LS (außer RV170, RS170, RV320, RS320)	≤ 50mm	1.000.000 Hübe	3	10 Jahre
	> 50mm	200.000 Laufmeter Hub		
ML, MP, MQ, KE	≤ 50mm	500.000 Hübe	3	10 jahre oder 4.000.000 Hübe
	> 50mm	100.000 Laufmeter Hub		

Gasfedern Klemme für Wartung und Instandhaltung.

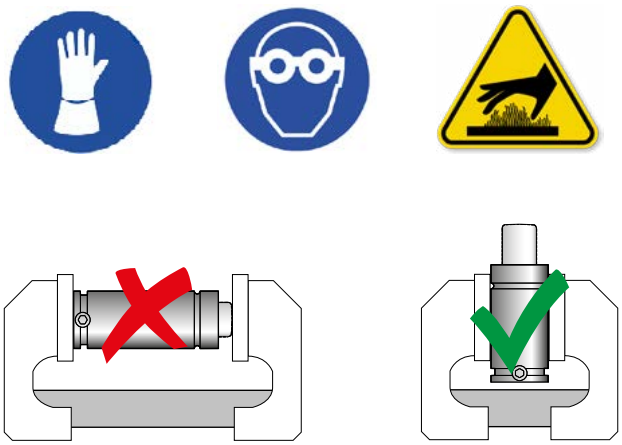
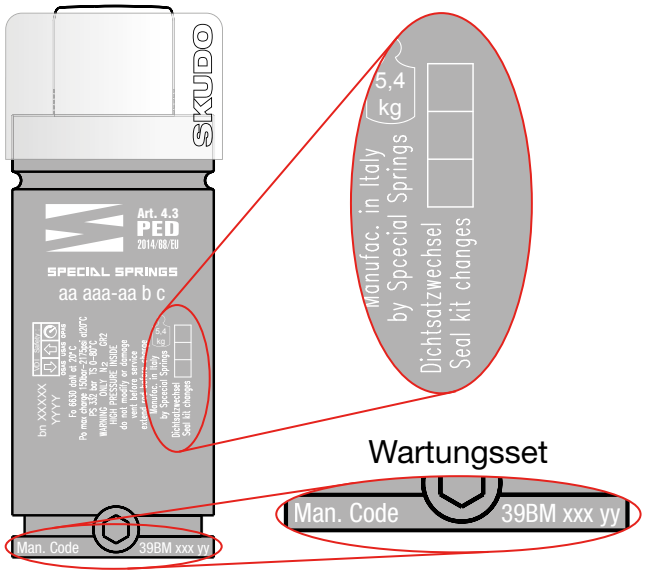


Fig. 14



Special Springs hat die Prüfungen gemäß § 8.3 EN 14359:2006 durchgeführt. Wenn Sie die Gasdruckfedern auf das Werkzeug installieren, unterliegen Sie als Anwender den Verpflichtungen der BetrSichV, insbesondere für die Erstinbetriebnahme und widerkehrenden Prüfungen.

Volumen *(Liter)*	**Prüfung vor IBN**		**Wiederkehrende Prüfung**		
	Grundlage	**Zuständigkeit**	**Grundlage**	**Zuständigkeit**	**Max. zulässige Prüffrist**
< 1 l	§ 14	bP	§ 14	bP	Durch Arbeitgeber festzulegen
> 1 l	§ 15	ZÜS (1	§ 16	bP	5 Jahre IP, 10 Jahre FP
> 6,67 l	§ 15	ZÜS	§ 16	ZÜS	

(1 - vereinfachtes Verfahren nach BetrSichV Anhang 2, Abschnitt 4, Nr.6.30.1

Abkürzungsverzeichnis:

BetrSichV	Betriebssicherheitsverordnung
bP	Zur Prüfung befähigte Person
FP	Festigkeitsprüfung
IP	Innere Prüfung
ZÜS	Zugelassene Überwachungsstelle

DÉCLARATION UE DE CONFORMITÉ	69
CHARGEMENT - RESSORTS A GAZ AUTONOMES	70
CHARGEMENT - SYSTEME DE CHARGEMENT CONNECTÉ	71
INFORMATIONS GÉNÉRALES PED	72
GUIDE D'INSTALLATION	73 - 80
DISPOSITIFS DE SÉCURITÉ ACTIFS	81 - 84
SECURITE - DUREE	85 - 87
MAINTENANCE	88
ESSAIS ET EXAMEN AVANT Essais et examen Avant la première mise en service	89

Nous recommandons aux constructeurs de moules de toujours remettre avec les outils les notices de mode d'emploi annexées aux cylindres et aux accessoires fournis par Special Springs.

CETTE SECTION EST REMPLIE UNIQUEMENT POUR LES MODÈLES CE

DÉCLARATION UE DE CONFORMITÉ

Special Springs S.r.l.
Via Nardi, 124/A - 36060 Romano d'Ezzelino (VI) - ITALY

Déclare sous sa seule responsabilité que le

ressort gaz _____ lot de production _____

À laquelle se réfère cette déclaration est conforme aux termes de la procédure d'évaluation, module H de la directive 2014/68/UE (PED.VE10615.Rev1) pour les équipements sous pression mis en œuvre par le décret législatif du 15/02/2016 n. 26, et avec des normes harmonisées:

EN 13445:2018, EN 14359:2017

autres normes

EN 15614:2018

L'organisme notifié surveillant le système d'assurance qualité du fabricant est:

SGS ITALIA spa, ORGANISME NOTIFIE N° 1381

Special Springs S.r.l.

Augusto Cappeller

Romano d'Ezzelino, ____ / _____ / _____

(signature du représentant légal)

Le modèle de cette déclaration est conforme à la norme EN 17050:2010

Le certificat PED est disponible sur www.specialsprings.com

Fig. A

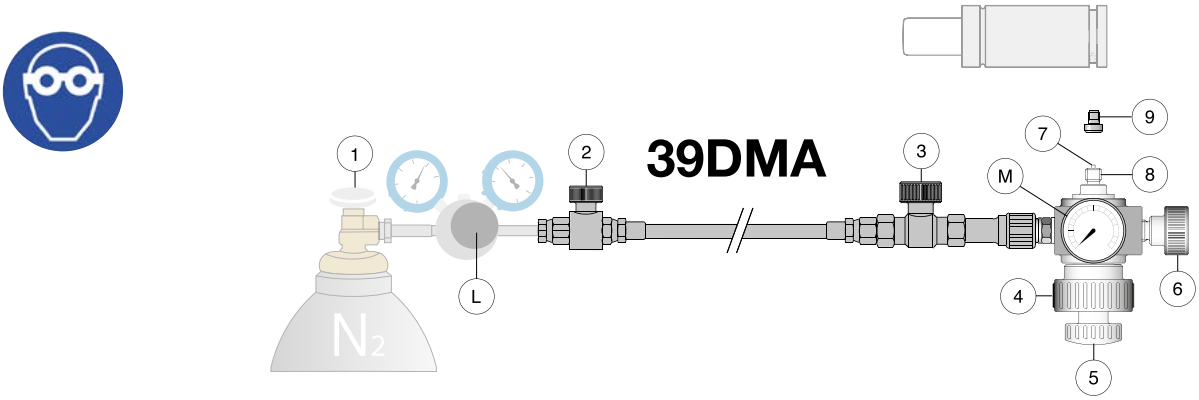
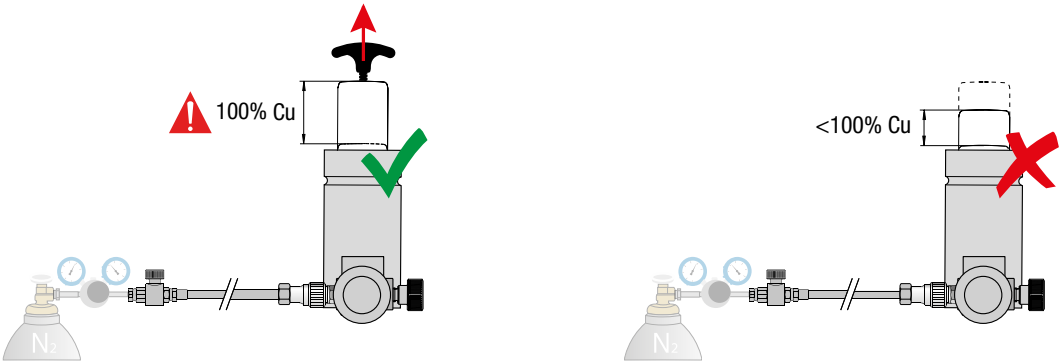


Fig. B

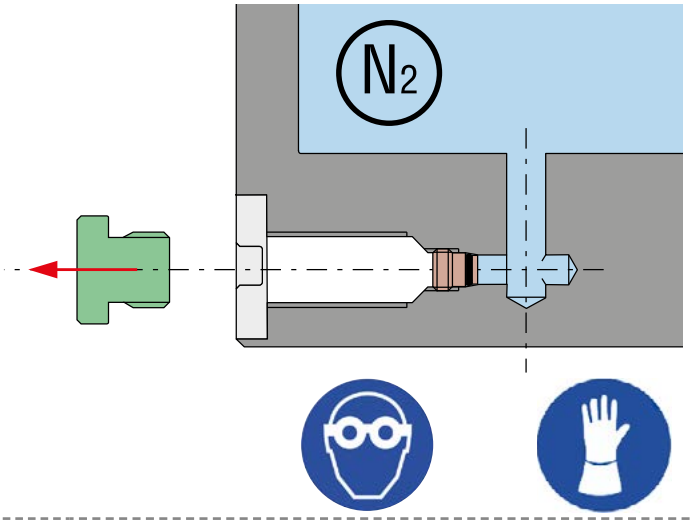


En cas d'emploi de dispositifs de chargement/déchargement pas fournis par Special Springs, le fabricant ne peut être tenu responsable des dommages ou des blessures.

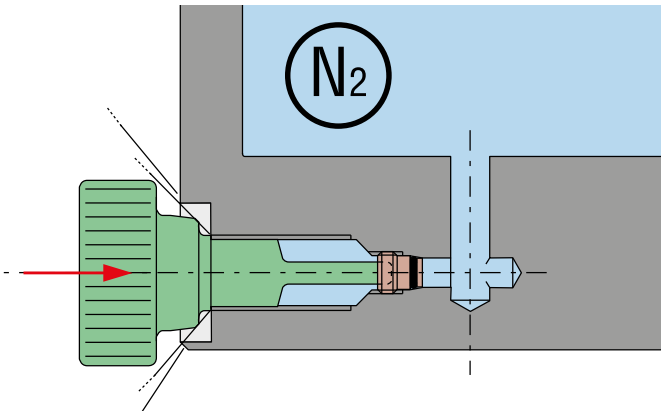
N'excédez pas la pression maximum de chargement du Gaz à 20°C/68°F, comme indiqué sur le cylindre.

1) Bloquer convenablement le cylindre.
2) Avant de charger le ressort à gaz, il faut sortir complètement (100% Cu) la tige (fig. B).
3) Dévisser le bouchon à trou de remplissage (9).
4) Dévisser la molette (5) jusqu'à ce que la broche (7) soit totalement rétractée.
5) En passant à travers la molette (4), visser l'adaptateur (8) sur le trou de remplissage.
6) Vérifier que les valves (2-3-6) sont totalement fermées.
7) Ouvrir très lentement la valve de la bouteille de gaz (1) et ensuite régler la pression de chargement en actionnant le levier (L).
8) Ouvrir lentement la valve (3) pour mettre la bouteille sous pression. La pression intérieure apparaît sur le manomètre (M).
9) Fermer la valve (3).
10) Ouvrir la valve de décharge (6).
11) Dévisser l'adaptateur (8) du trou de charge, en passant à travers la molette (4).
12) Visser le bouchon à trou de remplissage (9) dans la bouteille.
13) Fermer la bouteille d'azote (1).

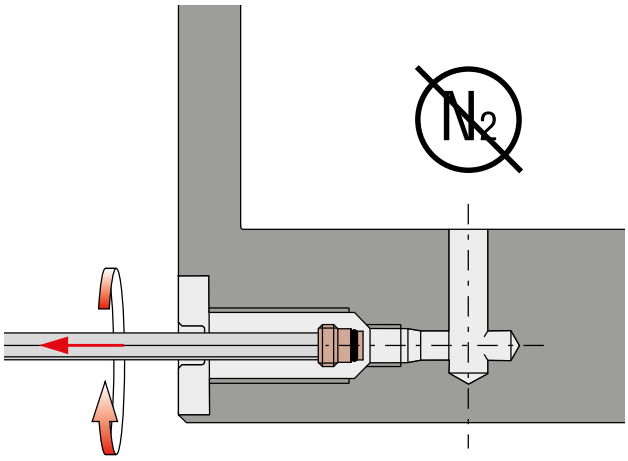
1



2

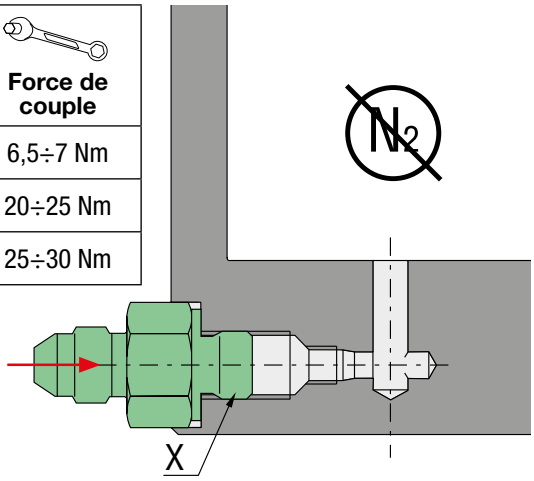


3



4

X	Force de couple
M6	6,5÷7 Nm
G1/8”	20÷25 Nm
G1/4”	25÷30 Nm



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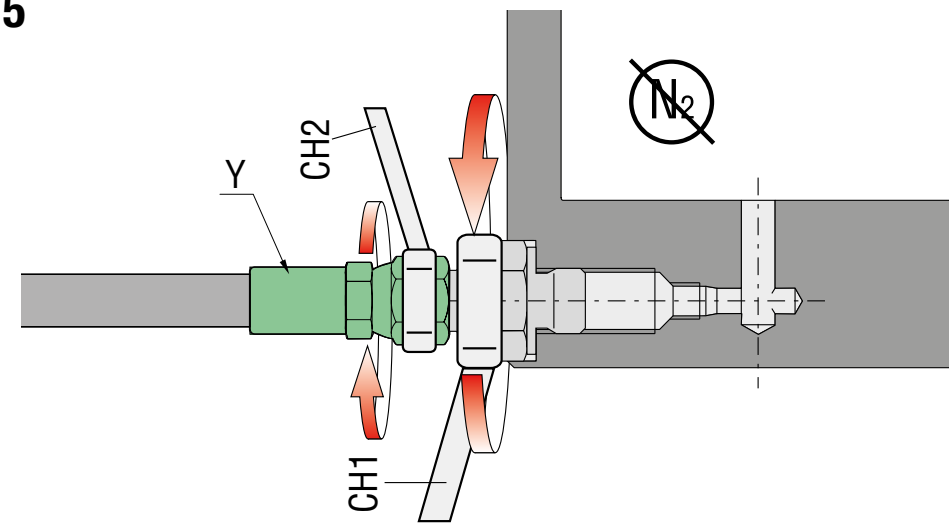

Y	Force de couple
EO 24°	16÷18 Nm
JIC 37°	16÷18 Nm
Micro 32°	8÷9 Nm
ORFS	28÷32 Nm

N°	Catégorie selon PED	Marquage CE	N° d'organisme notificateur	Marquage	Déclaration de conformité	Module selon PED
1	SEP	✗	✗	PED 2014/68/EU Art. 4(3)	✗	Production interne
2	I	✓	✓	CE 1381	Voir Déclaration de conformité	Module H
3	II	✓	✓	CE 1381	Voir Déclaration de conformité	Module H
4	III	✓	✓	CE 1381	Voir Déclaration de conformité	Module H

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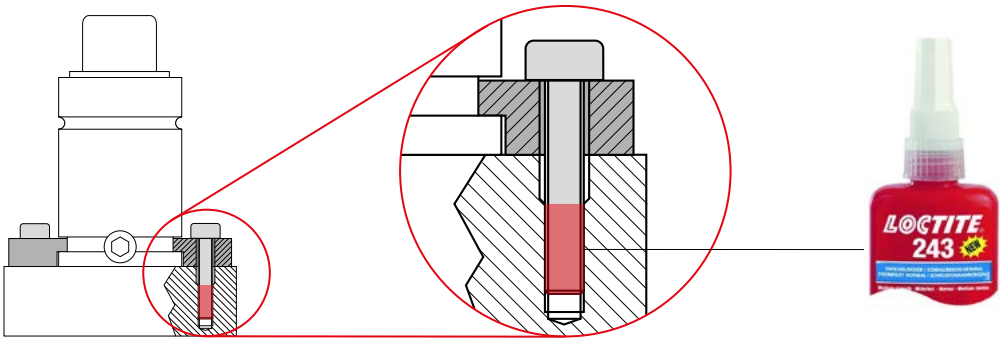
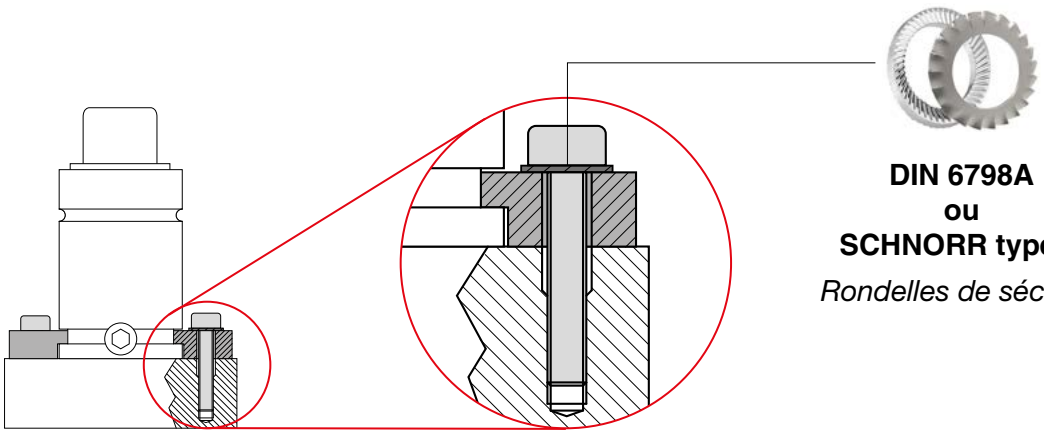
INFORMATIONS GÉNÉRALES

Réf. 6.6 de VDI 3003 partie 1

Fixer toujours les cylindres directement à travers les spécifiques éléments de fixation. La fixation correcte du ressort à gaz évite des dommages aux produits et des dangers graves pour les opérateurs.

Utilisez toujours le frein fi let approprié et/ou les rondelles de sécurité sur toutes les vis de fixation. (Ils ne sont pas représentés sur les dessins dans les pages suivantes).





DIN 6798A
ou
SCHNORR type S
Rondelles de sécurité

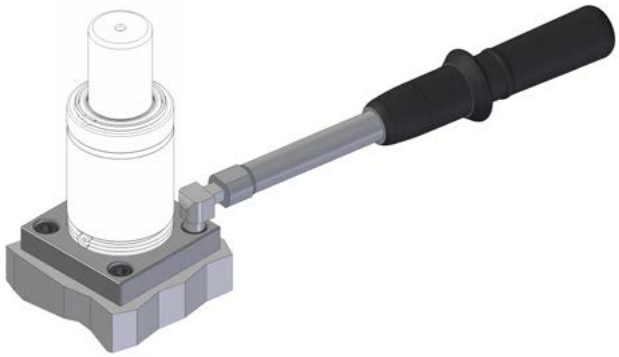
Respectez toujours les couples de serrage corrèctes. Vérifiez toujours l'état des cylindres et des fixations après toute intervention sur le moule.

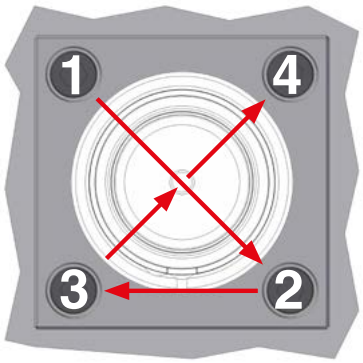
UNI EN ISO 21269:2007 class ≥ 8.8	**M5**	**M6**	**M8**	**M10**	**M12**	**M16**
Force de couple	**6 Nm**	**10 Nm**	**24 Nm**	**50 Nm**	**84 Nm**	**205 Nm**

Continuez...

L'usage de vis de classe supérieure au 8.8, tout comme 9.8, 10.9 et 12.9,est toujours possible. N'EXCEDEZ PAS la valeur de la couple se serrage indiqués pour la classe 8.8 pour n'importe quelle autre classe de vis utilisée.

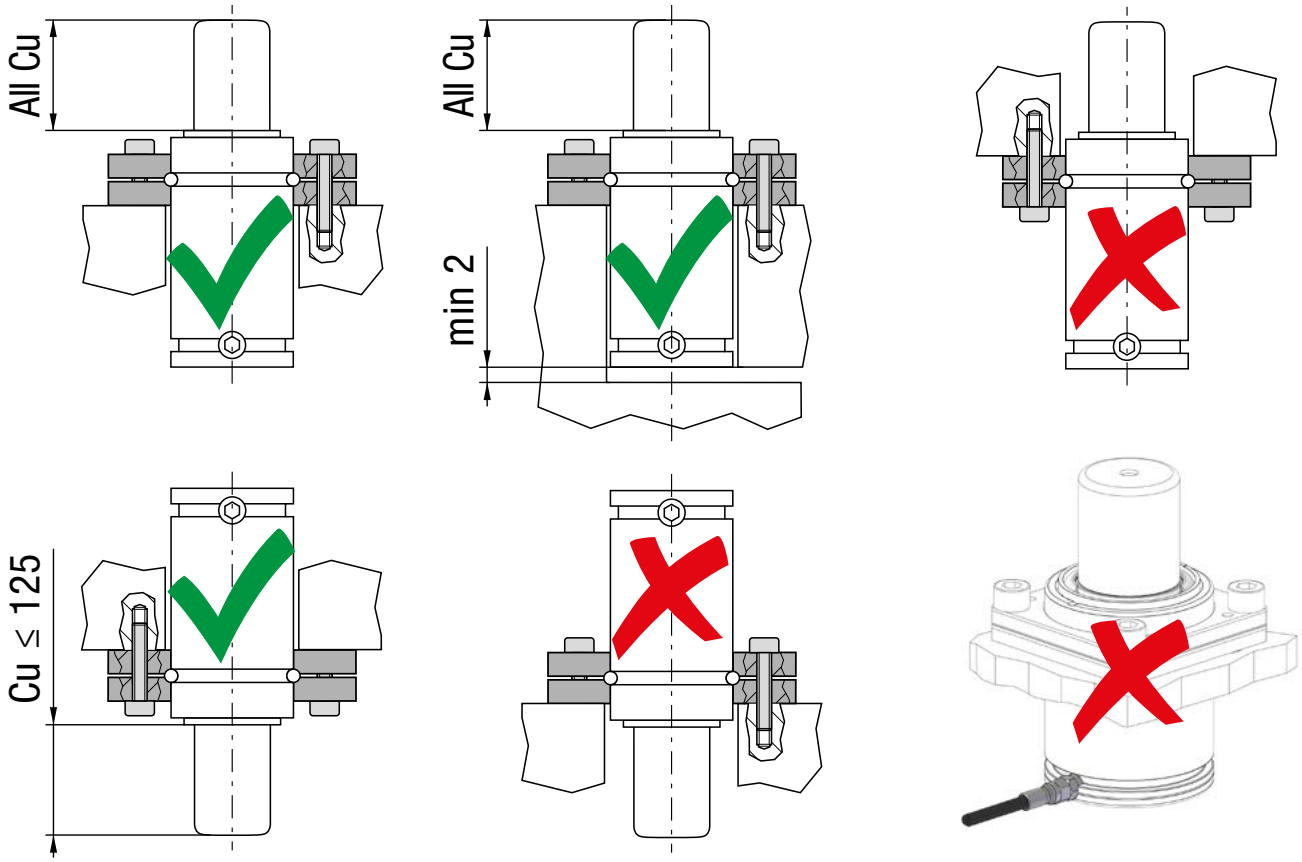
Serrez toutes les vis de fixation en respectant l'ordre indiqué sur l'image (1, 2, 3, 4) et en appliquant le couple de serrage approprié. Effectuez l'opération en serrant progressivement les vis.





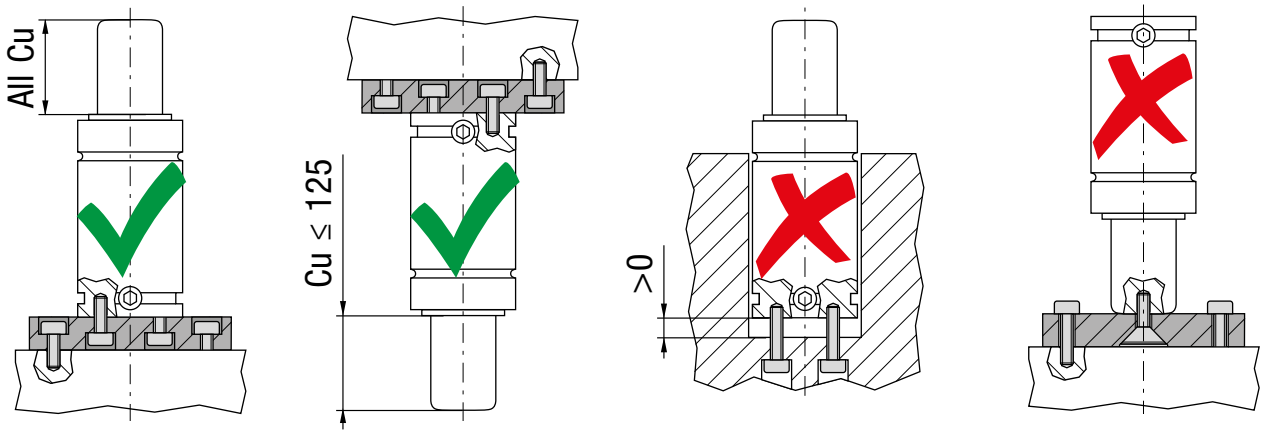
TOP MOUNT Réf. 6.1 de VDI 3003 partie 1

Montage superieure avec bride.



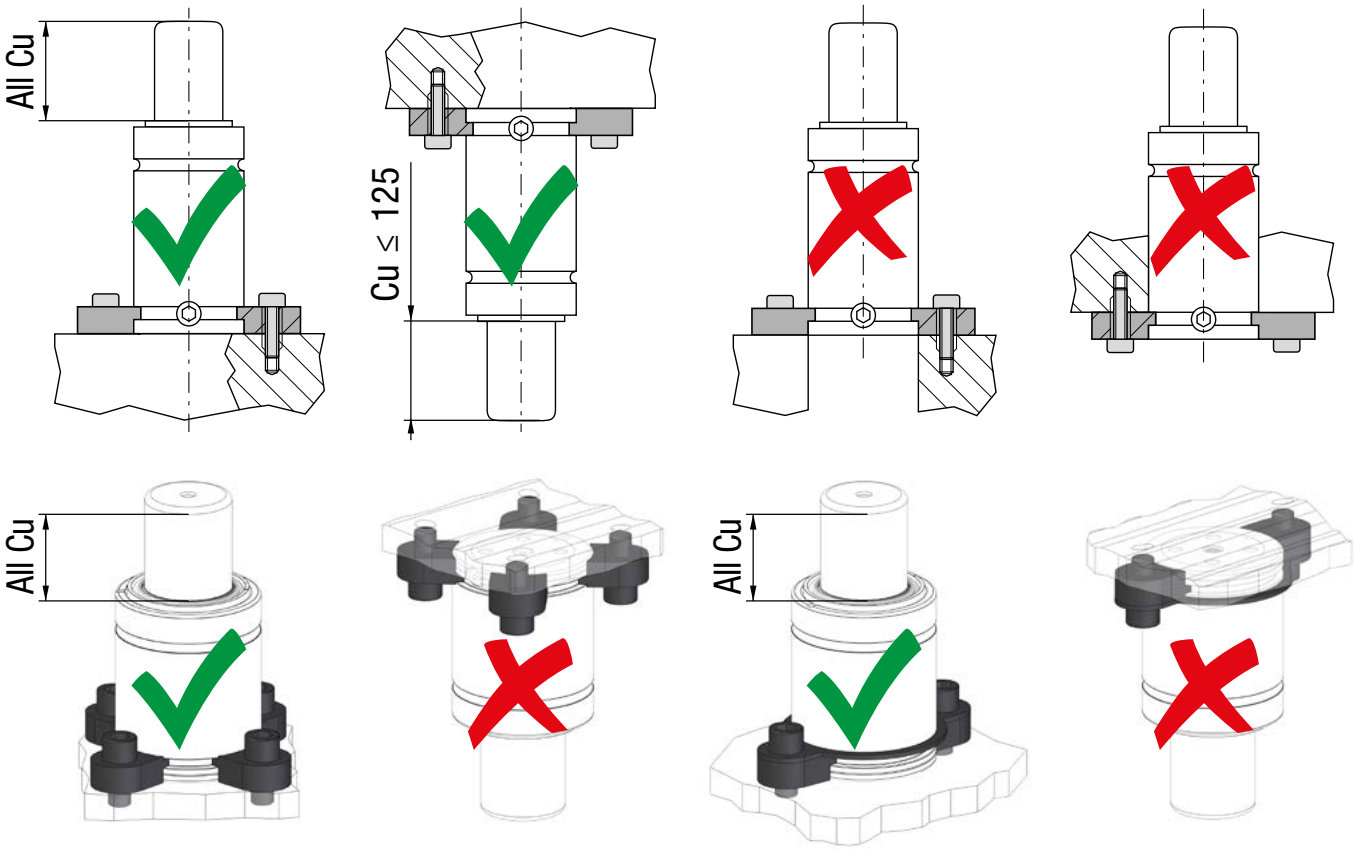
BOTTOM MOUNT Réf. 6.6 de VDI 3003 partie 1

Utilisez des vis ayant une longueur appropriée pour utiliser toute la profondeur du trou fileté sur le cylindre.



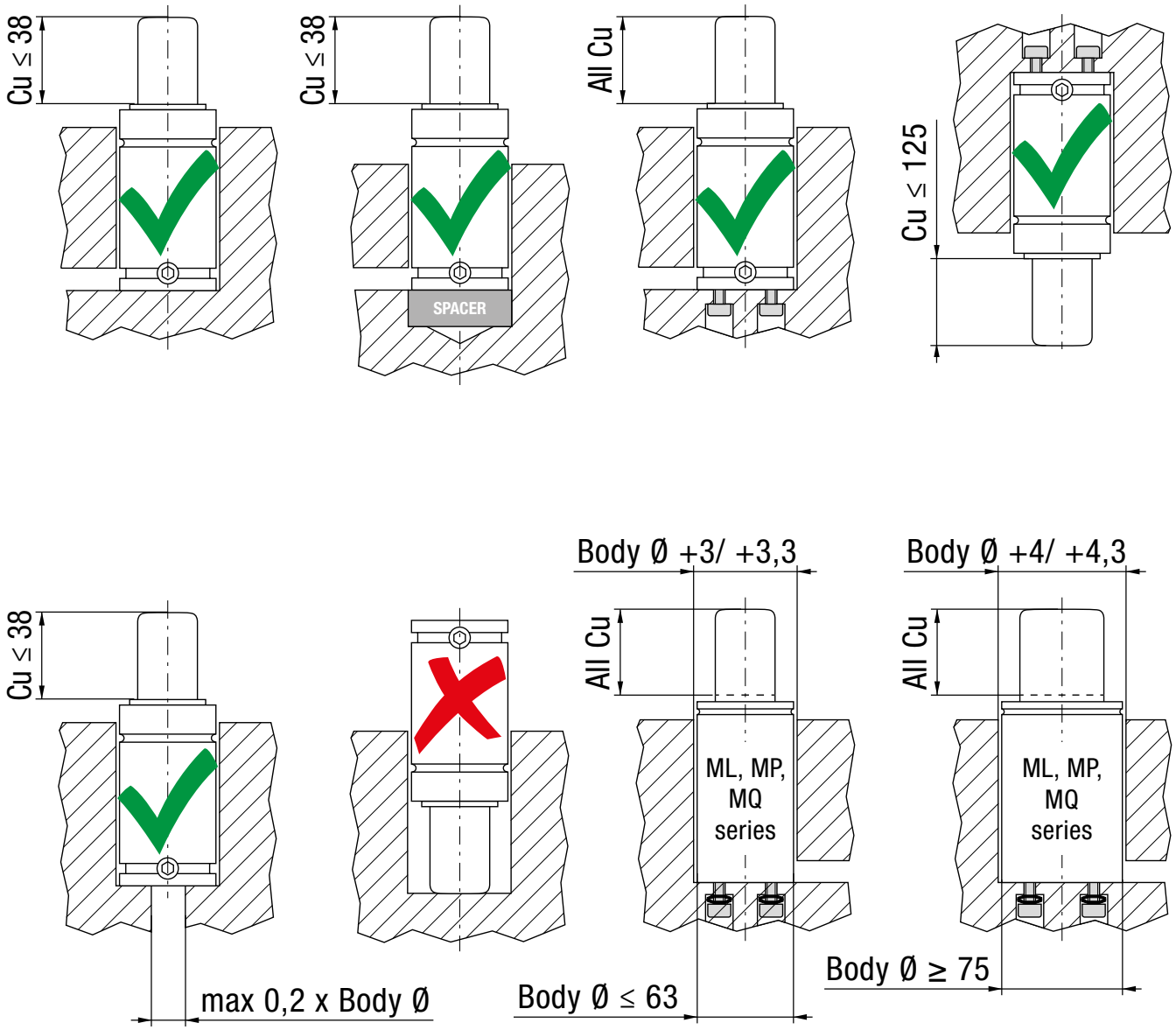
BRACKET MOUNT Réf. 6.2 - 6.3 de VDI 3003 part1

Montage avec supports de fixation à la base.



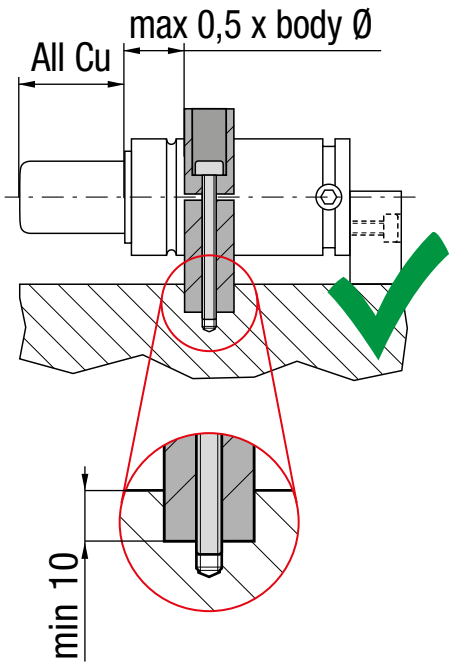
DROP-IN Réf. 6.6 de VDI 3003 partie 1

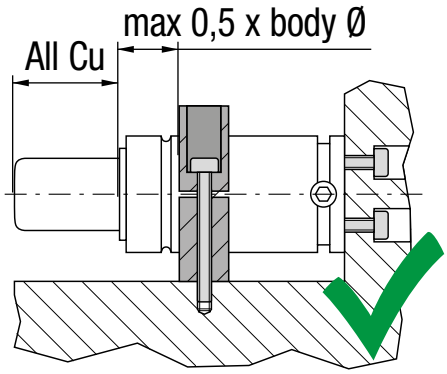
Assurez-vous que le plan d'appui NE SOIT pas interrompu. Vérifiez toujours l'état des cylindres et des sièges après toute intervention sur le moule.

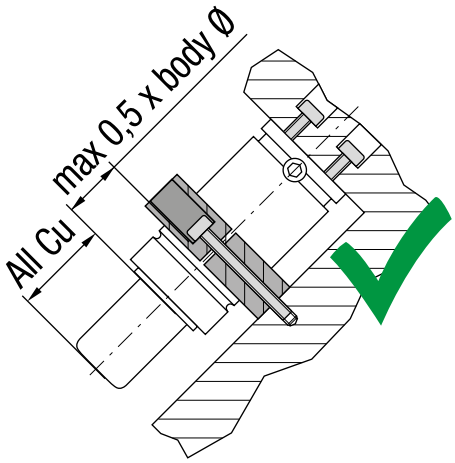


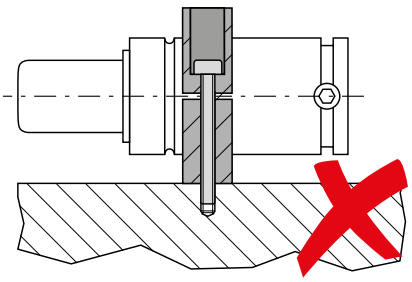
BODY MOUNT Réf. 6.4 de VDI 3003 partie 1

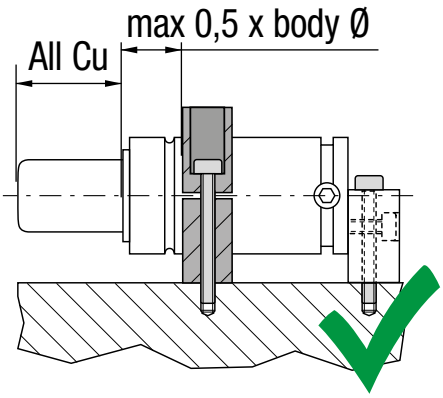
Les ressorts à gaz installés avec bride de serrage nécessitent toujours un support supplémentaire, comme illustré dans la Figure.

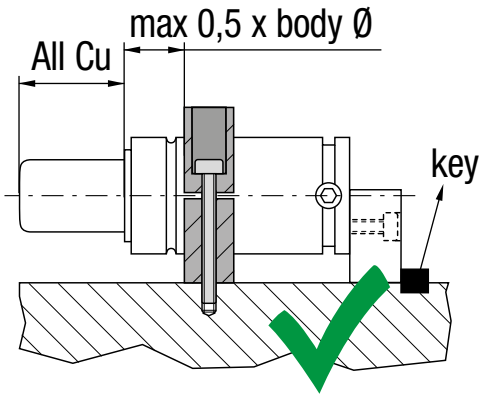






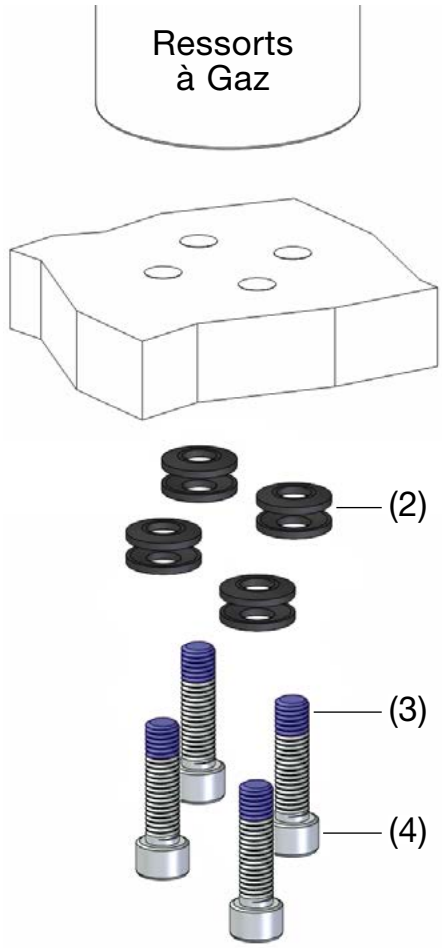
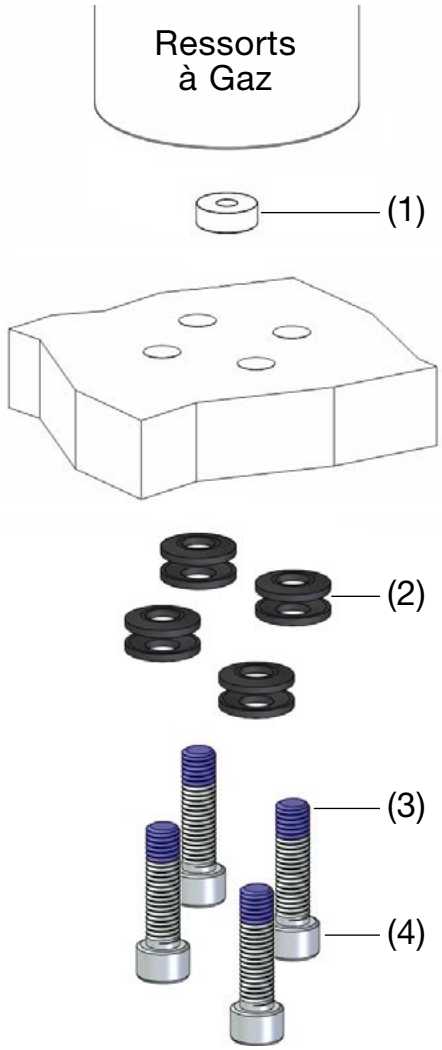
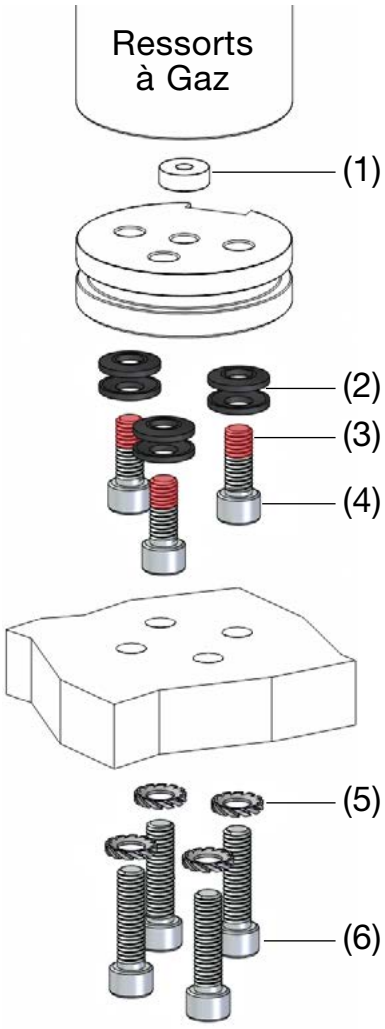






GUIDE D'INSTALLATION
SÉRIES ML - MP - MQ

Installez les ressorts à gaz en suivant les instructions données ci-dessous. Des informations détaillées sont incluses dans le kit spécifique.

Série SELF CONTAINED ML, MP, MQ	Série EASY MANIFOLD ML	Série LINKABLE ML
		

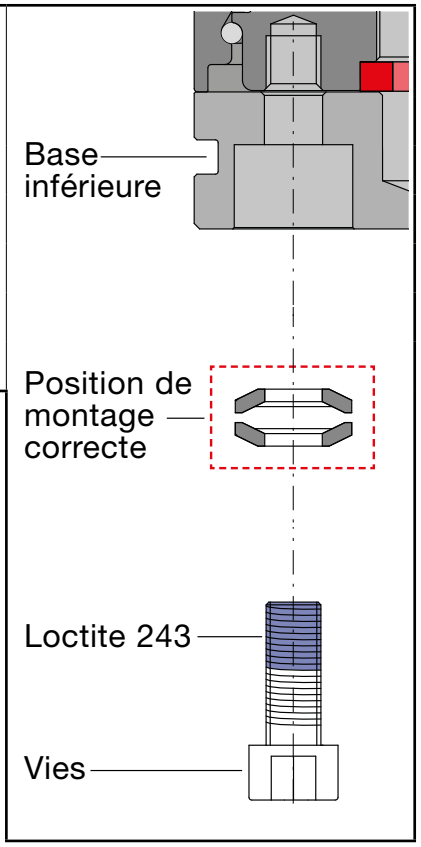
(1) Joint; (2) Rondelle élastique conique; (3) Loctite 243; (4) Classe = 8,8;
(5) Rondelles de sécurité DIN 6798A ou SCHNORR type S; (6) Classe ≥ 8,8;

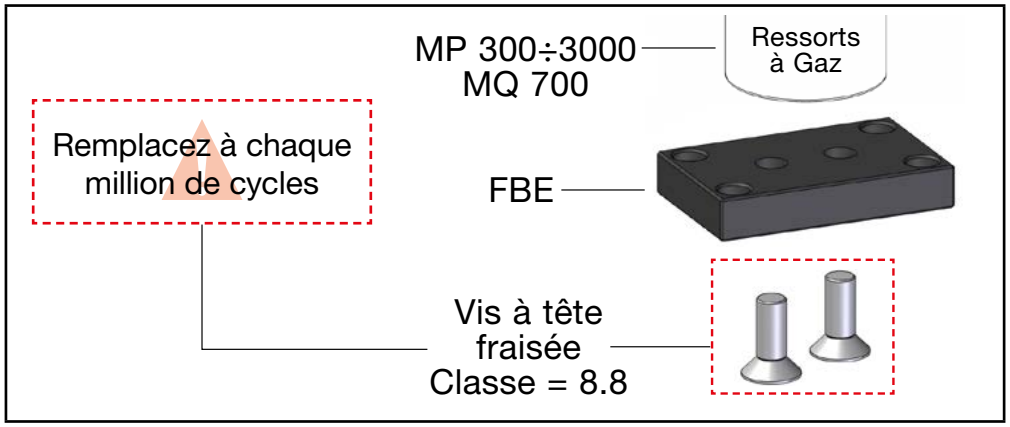
Continuez...

Modèle	Code rondelle élastique conique
ML 1000 D	49RC06A
ML 1800 D	49RC06A
ML 3000 D	49RCHS08A
ML 4700 D	49RC08A
ML 7500 D	49RC08A
ML 12000 D	49RC10A

Rondelle élastique conique fournie par Special Springs (incluse avec Easy Manifold et le vérin connectable)

Remplacez (1)(2)(3)(4) à chaque million de cycles

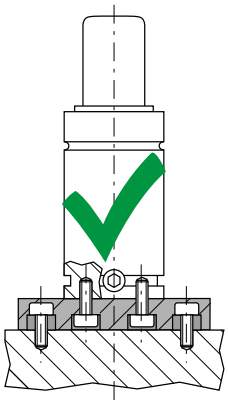


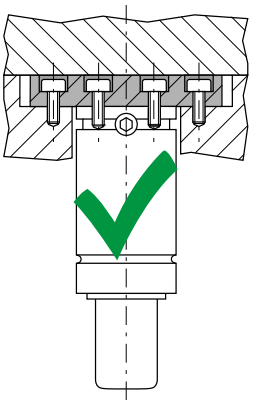


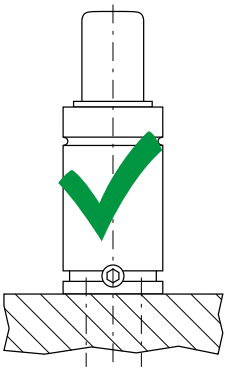
MONTAGE DES SYSTÈMES CONNECTÉS

Réf. 6.5 de VDI 3003 part1

Il n'est pas permis de laisser tourner les ressorts à gaz d'un système de tuyaux pendant les opérations d'estampage. La rotation peut causer la détérioration de tuyaux et entraîner des dommages et fuites de gaz. Pour cette raison il n'est pas permis d'installer les ressorts à gaz d'un système de tuyaux dans les trous sans serrer ou en montage supérieure avec bride.
Cependant, les ressorts à gaz peuvent néanmoins se tourner dans des conditions défavorables de fonctionnement. Dans ces situations spéciales, les ressorts à gaz doivent être verrouillés par l'intermédiaire d'un filetage inséré dans la base du ressort à gaz (directement ou sur une plaque de base - voir Figure).







INDEX

La sécurité pour nous n'est pas simplement une question de marketing, c'est notre philosophie dans chaque choix. À la base de chaque produits Special Springs, il y a des recherches et des développements continus, l'utilisation des dernières technologies, des contrôles de qualité et de sécurité, le tout dans le plein respect des réglementations et axé sur la garantie d'une qualité, d'une durabilité et d'une fiabilité supérieures. Découvrez la gamme de produits Special Springs.

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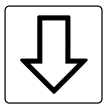
- **COMMENT FONCTIONNENT LES DISPOSITIFS DE SÉCURITÉ:**
  Quand les dispositifs de sécurité sont activés, la pression se décharge de façon contrôlée.
- **QUE FAIRE APRÈS:**
  Quand les dispositifs de sécurité sont activés, vérifier et décharger les eventuels résidus de préssion, éliminer les causes du endommagement et substituer toujours les ressort à gaz endommagés.

OSAS Réf. 8.2 de VDI 3003

Over
Stroke
Active
Safety

VDI 3003



+

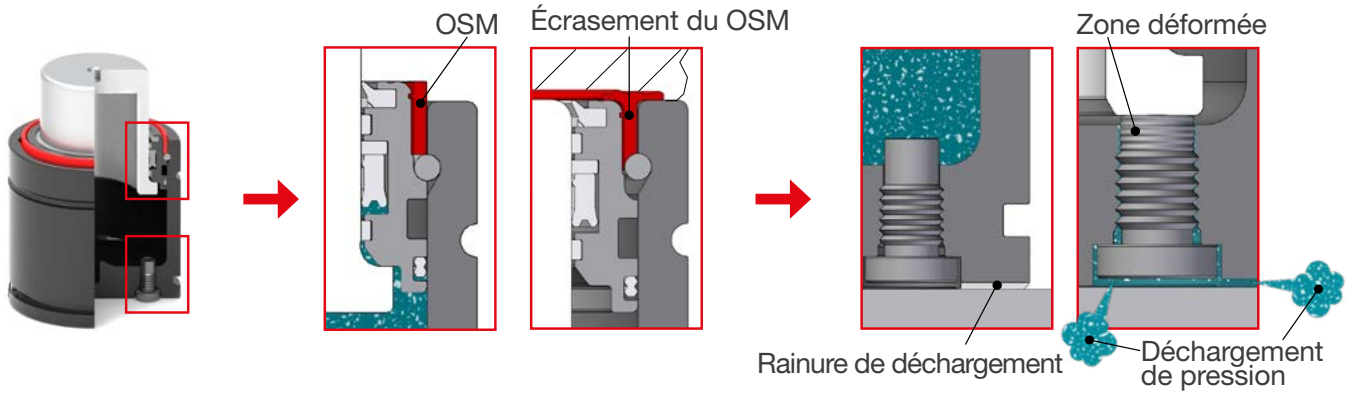
Over
Stroke
Marker

Sécurité Active pour Surcourse.

Le Marqueur Surcourse OSM

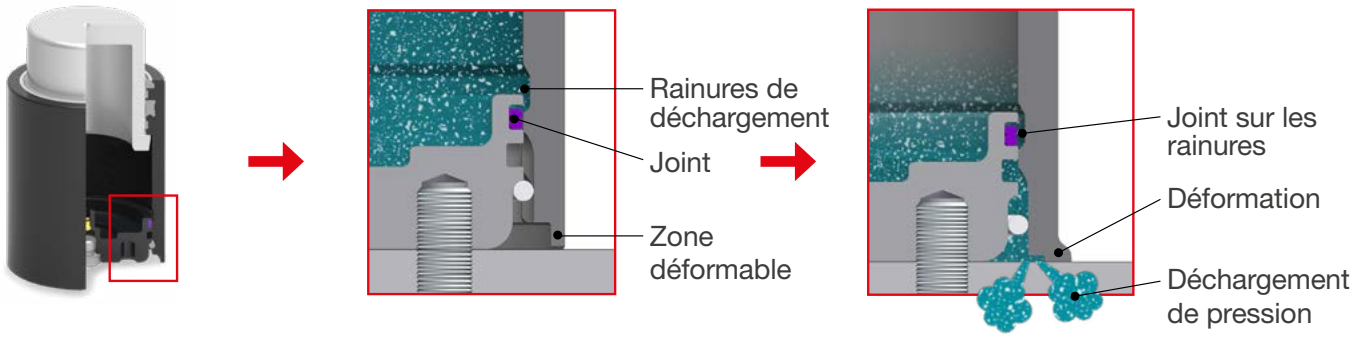
DESIGN : DOUILLE - CORPS

Standard on: M300-RV-RF-RS-RG-RT-S-SC-H-HF-HT-LS



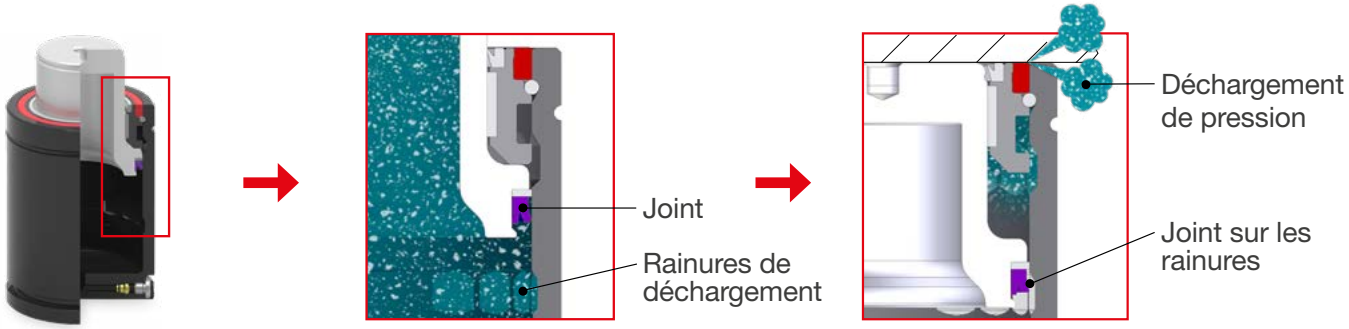
DESIGN : DESIGN BASE INFÉRIEURE - CORPS

De série sur: ML - MP - MQ



DESING: DESIGN PISTON – CORPS

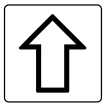
De série sur: KE



USAS Réf. 8.2 de VDI 3003

Uncontrolled
Speed
Active
Safety

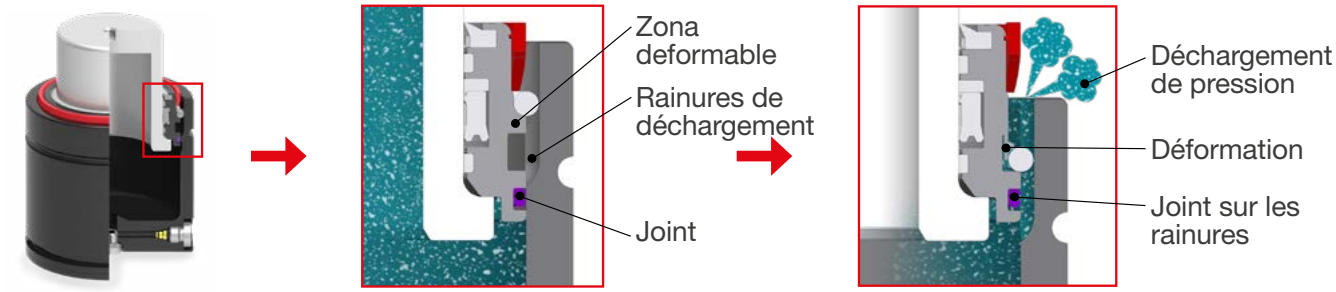
VDI 3003



Sécurité Active pour Retour Incontrôlé

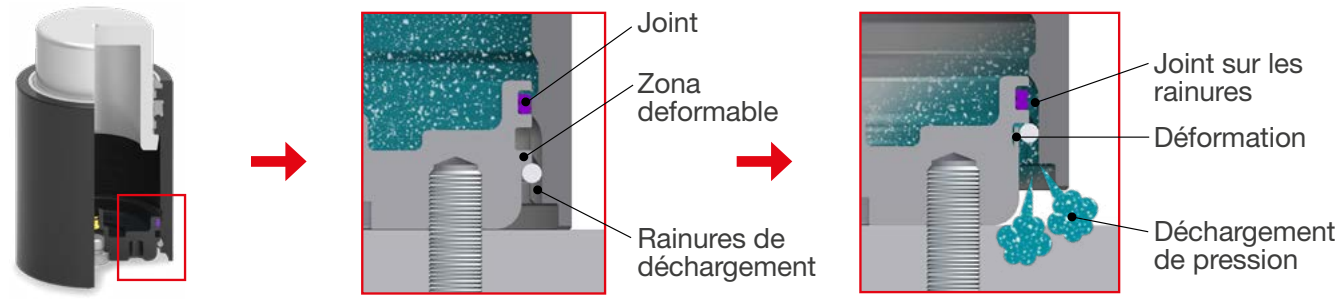
DESIGN : DOUILLE - CORPS

Standard on: M300-RV-RF-RS-RG-RT-S-SC-H-HF-HT-LS



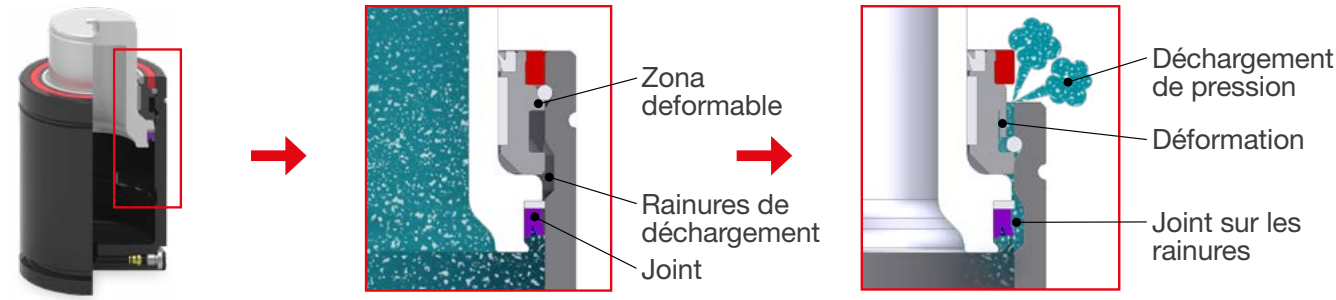
DESIGN : DESIGN BASE INFÉRIEURE - CORPS

De série sur: ML - MP - MQ



DESING: DESIGN PISTON – CORPS

De série sur: KE



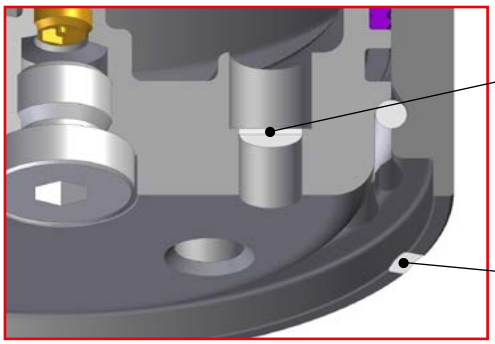
OPAS Réf. 8.3 de VDI 3003

Over
Pressure
Active
Safety

VDI 3003

De série sur: M - MS - RV - RS - RF - RG - RT - S
SC - H - HF - HT - LS - ML - MP - KE

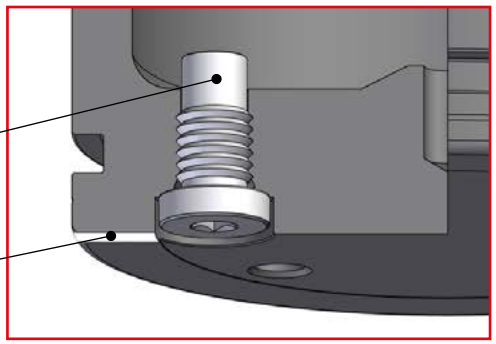
Sécurité Active Surpression



Zone fusible

Bouchon de sécurité

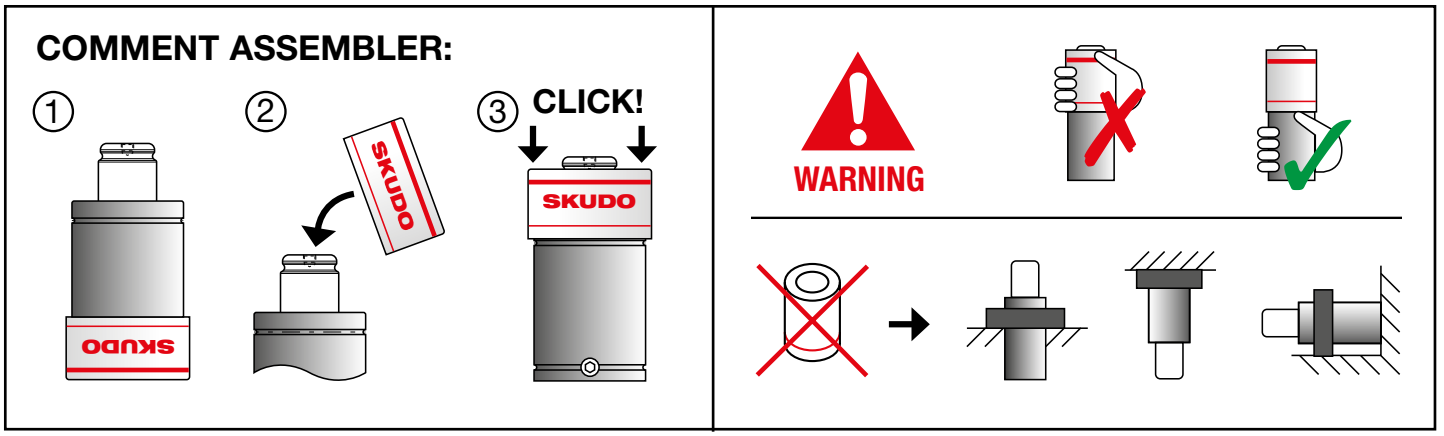
Fraisage de déchargement



SKUDO

Le Marqueur Surcourse OSM

De série sur: KE - RS - MS



- Tous les composants structuraux des ressorts gaz Special Springs sont conçus et construits en totale conformité avec les législations en vigueur (PED 2014/68/EU) et EN 13445:2018, pour un minimum de 2.000.000 de cycles complètes à la pression et température maximale pour chaque type de fixation.
- En ce qui concerne les ressorts à gaz des séries RV, RS, RF, RG, RT, SC, SCF, S, H, HF, LS (à l'exclusion des modèles RV/RS170 et RV/RS320), Special Springs recommande de les remplacer au plus tard après 10 ans à compter de la première mise en service.
- En ce qui concerne les ressorts à gaz des séries ML, MP, MQ, KE Special Springs recommande de les remplacer au plus tard après 10 ans ou 4 millions de cycles à compter de la première mise en service (selon la première éventualité à survenir).
- Cette pièce a été étudiée exclusivement pour une utilisation industrielle, à utiliser comme élément élastique.
- L'utilisation de cette pièce est réservée uniquement au personnel préposé qui doit avoir lu et assimilé le contenu de cette notice.
- Ne pas soumettre la pièce à des performances supérieures à celles qui sont prescrites. Ne pas utiliser la pièce en présence de flammes ou de sources de chaleur.
- Ne pas stocker à l'extérieur ou dans un endroit très humide.
- L'utilisation impropre des cylindres par rapport à ce qui est prescrit exonère Special Springs et de toute responsabilité.

MODE D'EMPLOI:

- Ne pas utiliser un étau pour vérifier la force d'un cylindre. (fig. 1)
- Fixez toujours le cylindre au moule quand cela est possible.
- Il est interdit de positionner le cylindre de manière non-perpendiculaire. Evitez d'exercer des charges radiales pendant la compression de la tige. Appliquez toujours la pression sur toute la surface de l'extrémité de la tige. Autant que possible, égalisez la charge dans le moule. (fig. 2)
- Utiliser le trou fileté sur la tige uniquement pour la manutention. Il est interdit de fixer le cylindre à travers le trou fileté sur la tête de la tige. (fig. 3)
- Ne réaliser aucun type de travail mécanique sur le corps ou sur la tige. (fig. 4)
- Tout retour incontrôlé de la tige piston est interdit. Le retour incontrôlé peut provoquer des dommages, des affaissements mécaniques, au cylindre ou à ses fixages. (fig. 5)
- Protéger la surface des ressorts à gaz contre les objets et/ou liquides agressif (soude et chlorures). S'ils sont utilisés pour nettoyer le moule, enlevez tout résidu des ressorts à gaz. (fig. 6)
- Il est recommandé de prévoir une réserve de course de 10% de la longueur nominale ou de 5 mm pour les courses supérieures à 50 mm. (fig. 7)
- Ne pas utiliser le cylindre à une température supérieure à 80°C/176°F. (fig. 8)
- Il est interdit de charger le cylindre avec des gaz autres que l'azote N2. (fig. 9)

Continuez...

- Ne pas utiliser le cylindre à une vitesse supérieure à 0,8 ÷ 1,8 m/sec. (fig. 10)
- Il est interdit de charger le cylindre à une pression supérieure à celle qui est marquée sur le corps. (fig. 11)
- Pendant le déchargement, renverser le cylindre et orienter le flux du gaz dans la direction opposée à celle de l'operateur. (fig. 12)
- Si une situation se présente où il y a une risque que les ressorts à gaz pourraient avoir été endommagés, les ressorts à gaz doivent être déchargés immédiatement alors que ils sont encore dans sa position d'installation en ouvrant la valve ou avec le perçage d'un trou dans le corps du ressort jusqu'à que le gaz a été déchargé. (fig. 13)

Fig. 1

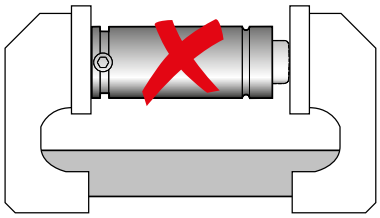


Fig. 2

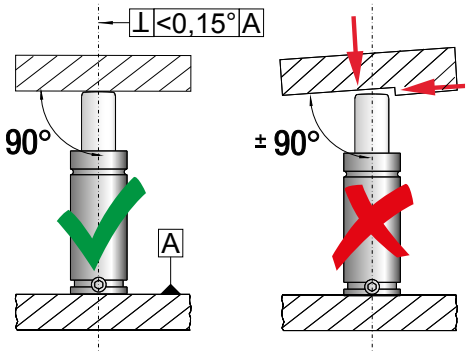


Fig. 3

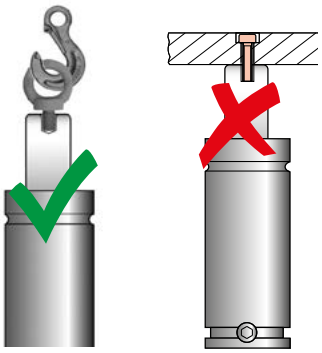


Fig. 4

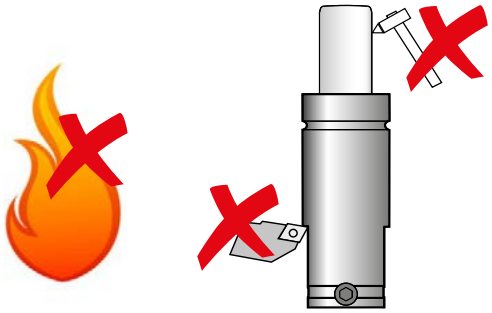


Fig. 5

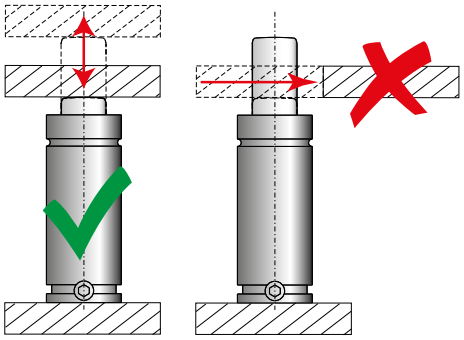
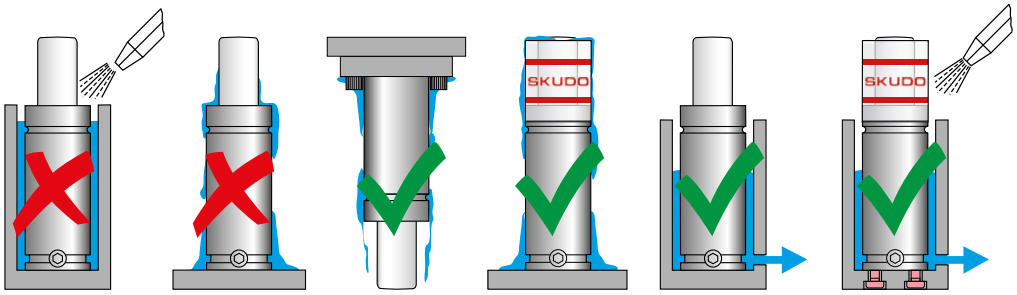


Fig. 6



CHLORITES
DE SOUDE

Continuez...

Fig. 7

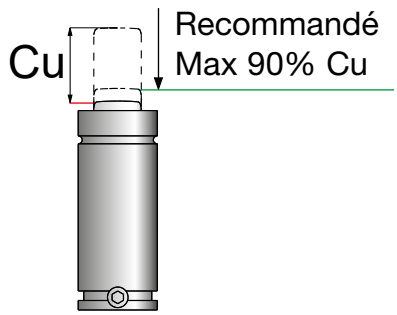


Fig. 8

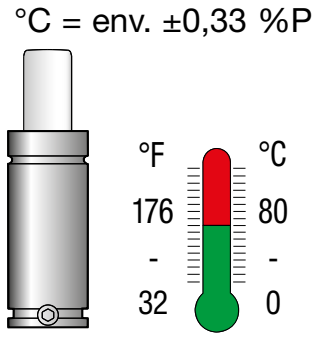


Fig. 9

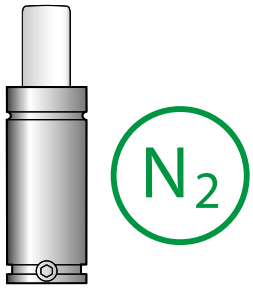
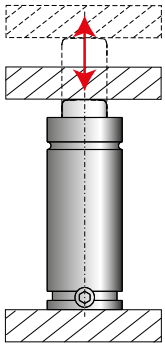


Fig. 10



VITESSE MAX.
1,8 m/sec toutes séries
0,8 m/s série KE

Fig. 11

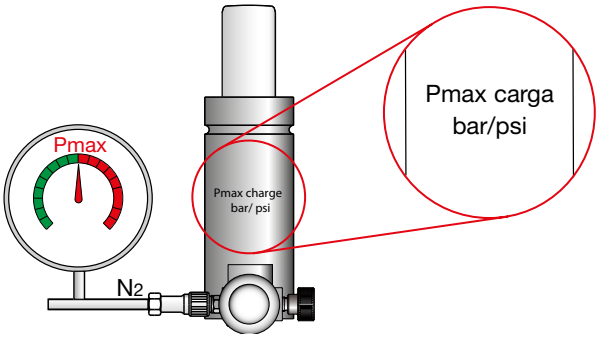


Fig. 12

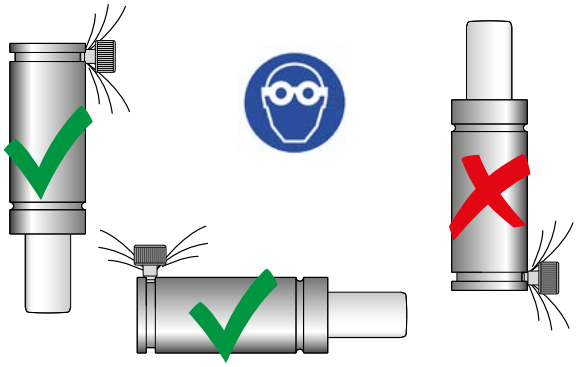
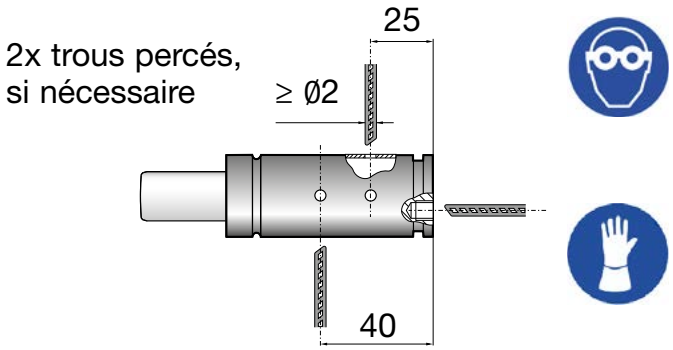


Fig. 13



- Nous recommandons de toujours contrôler le bon fixage des cylindres à chaque intervention sur le moule. Si il ya des vis desserrées ou cassées, le cylindre pourrait avoir été exposé à des retours incontrôlés.
- On reccomande de remplacer le cylindre et eliminer la cause du retour incontrôlé.
- L'entretien des ressorts à gaz doit être toujours effectué seulement par personnel qualifié et avec l'utilisation exclusive de set de composants Special Springs, sous peine de déchéance de la garantie et de la responsabilité.
- Avant de jeter n'importe quel ressort à gaz, il faut décharger complètement la pression.

En cas de dépassement des limites d'utilisation établies par le Special Springs (Graphique 1), procédez à l'entretien du ressort à l'azote. Cet service peut être effectué par Special Springs ou sur place après la commande du Kit approprié, livré avec un manuel d'utilisation. Le code du kit d'entretien (Man. Code) est marqué sur les cylindres (Image 14).

Graphique 1

Séries	Cu	Intervalles d'entretien prévus	Nr. de remplacements pour le joint	De la première mise en service
RV, RS, RF, RG, RT, SC, SCF, S, H, HF, LS (sauf RV170, RS170, RV320, RS320)	≤ 50mm	1.000.000 cycles	3	10 ans
	> 50mm	200.000 mètres linéaires de course		
ML, MP, MQ, KE	≤ 50mm	500.000 cycles	3	10 ans ou alors 4.000.000 cycles
	> 50mm	100.000 mètres linéaires de course		

Serrer les ressorts gaz pour toute maintenance et l'entretien:

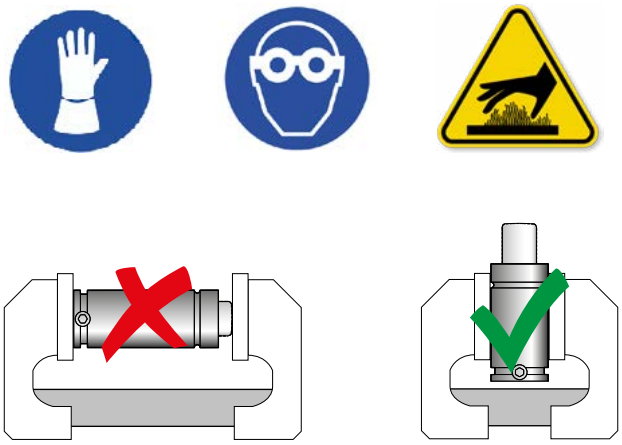
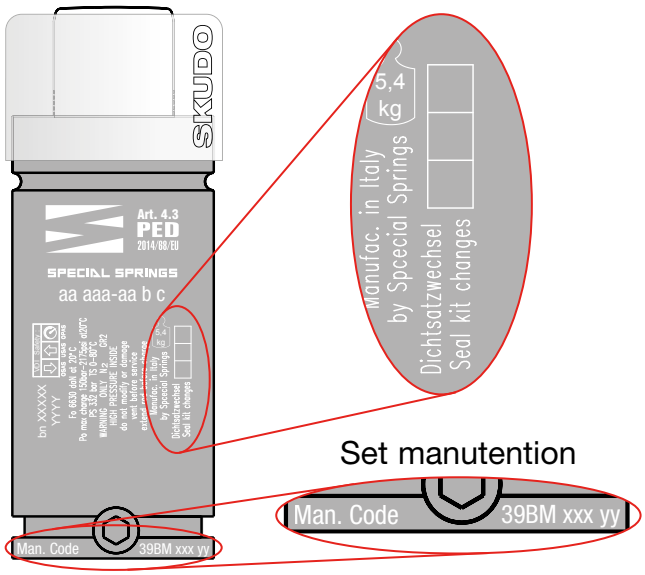


Fig. 14



Special Springs a effectué les tests conformément à § 8.3 EN 14359:2006.
Lorsque vous installez les ressorts à gaz dans un moule selon la loi alllemande, vous êtes soumis comme utilisateur aux obligations suivantes, en particulier pour la première opération de mise en service et les essais réguliers, comme prescrit par la BetrSichV:

Volumes *(Litres)*	**Essai avant la 1ère opération**		**Essais réguliers**		
	Basé sur	**Responsabilité**	**Basé sur**	**Responsabilité**	**Délai max. permis de test**
< 1 l	§ 14	bP	§ 14	bP	Déterminé par l'Employeur
> 1 l	§ 15	ZÜS (1	§ 16	bP	5 ans IP, 10 ans FP
> 6,67 l	§ 15	ZÜS	§ 16	ZÜS	

(1 - procédure simplifiée selon l'Appendice 2, Section 4, No. 6.30.1 de la BetrSichV.

Liste des Abréviations:

BetrSichV	Décret sur la sécurité du travail en Allemagne
bP	Personne qualifiée pour le test
FP	Essai de résistance
IP	Inspection interne
ZÜS	Organisme notifié

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CARGA - CILINDRO AUTÓNOMO	92
CARGA - SISTEMA CONECTADO	93
INFORMACIÓN GENERAL DEL PED	94
MANUAL DE INSTALACIÓN	95 - 102
CARACTERÍSTICAS DE LOS DISPOSITIVOS DE SEGURIDAD ACTIVA	103 - 106
SEGURIDAD - DURACIÓN	107 - 109
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PRUEBAS Y EXAMEN ANTES de la primera operación	111

Recomendamos que los fabricantes de moldes entreguen siempre, con los equipamientos, los libritos de instrucciones y uso anexos a los cilindros y a los accesorios proporcionados por Special Springs.

ESTA SECCIÓN SE RECOPILA SOLO PARA MODELOS CE

DECLARACIÓN UE DE CONFORMIDAD

Special Springs S.r.l.
Via Nardi, 124/A - 36060 Romano d'Ezzelino (VI) - ITALY

Declara bajo su exclusiva responsabilidad que el

cilindro de nitrógeno _____ lote de producción _____

A lo que se refiere esta declaración cumple con los términos del procedimiento de evaluación, Módulo H de la directiva 2014/68/UE (PED.VE10615.Rev1) para equipos a presión implementado por el Decreto Legislativo del 15/02/2016 n. 26, y con normas armonizadas:

EN 13445:2018, EN 14359:2017

otras normas

EN 15614:2018

El Organismo Notificado que supervisa el Sistema de Garantía de Calidad del Fabricante es:

SGS ITALIA spa, ORGANISMO DE NOTIFICACIÓN N° 1381

Special Springs S.r.l.

Augusto Cappeller

Romano d'Ezzelino, ____ / _____ / _____

(firma del representante legal)

El modelo de esta declaración cumple con la norma EN 17050:2010

El certificado PED está disponible en www.specialsprings.com

Fig. A

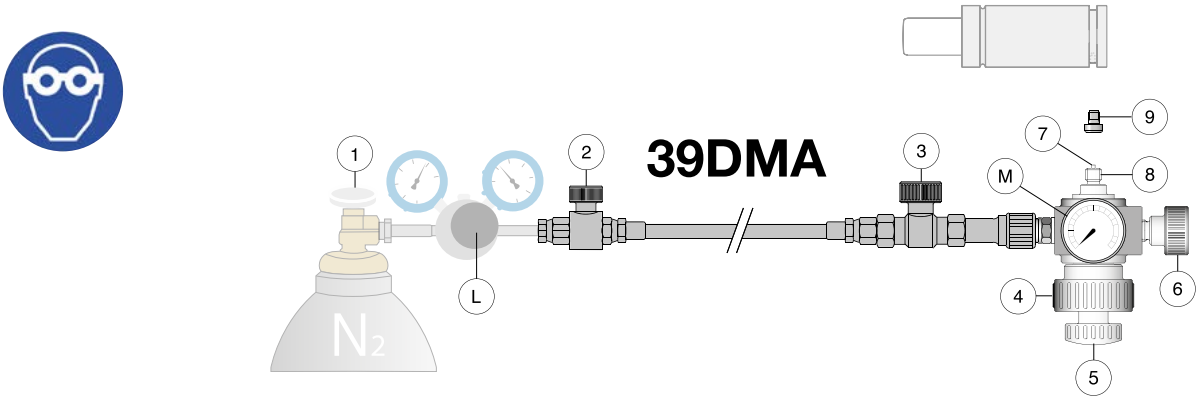
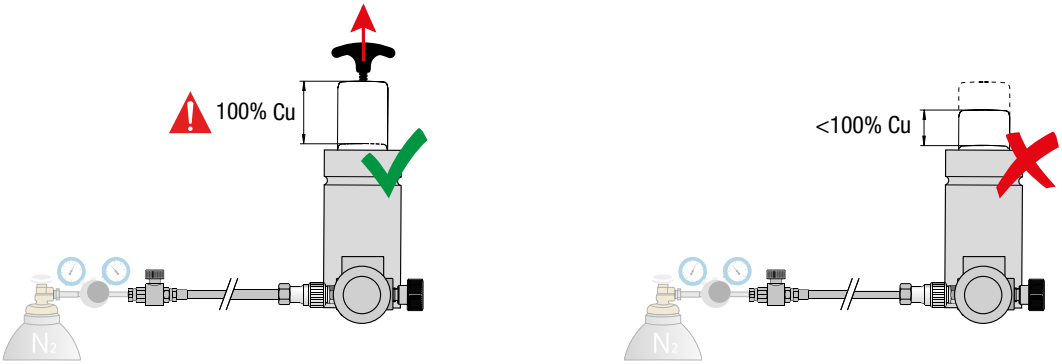


Fig. B

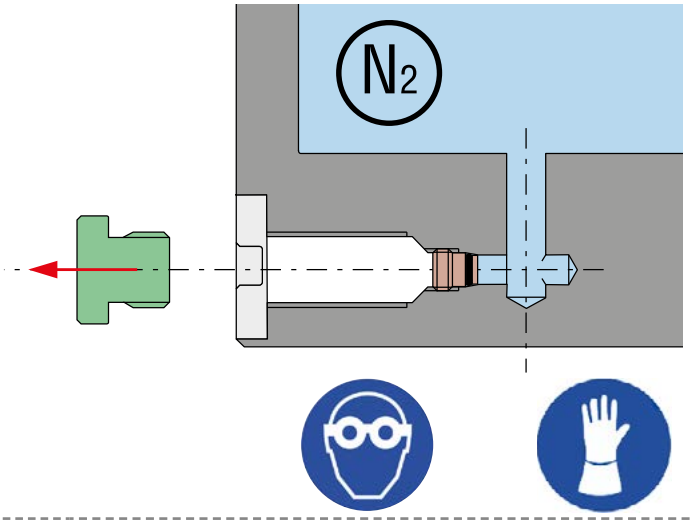


En caso de uso de dispositivos de carga/descarga no suministrados por Special Springs, el fabricante no se responsabiliza de ningún daño personal y material.

No exceda la presión de carga máxima del gas a 20°C/68°F, como se indica en el cilindro.

1) Bloquear el cilindro correctamente.
2) Antes de cargar el resorte de gas, extraiga completamente (100% Cu) el vástago (fig. B).
3) Quite el tapón (9) que cierra el orificio de carga.
4) Desenrosque el mando (5) hasta que la aguja (7) se retraiga por completo.
5) Mediante el mando (4) enrosque el adaptador (8) en el orificio de carga.
6) Compruebe que las válvulas (2), (3) y (6) estén cerradas.
7) Abra muy lentamente la llave de paso de la botella (1) y luego calibre la presión de carga mediante la palanca (L).
8) Abra lentamente la válvula (3) y deje pasar el gas hasta presurizar totalmente el cilindro; la presión final se lee en el manómetro (M).
9) Cierre la válvula (3).
10) Abra la válvula de descarga (6).
11) Quite el adaptador (8) del orificio de carga mediante el mando (4).
12) Coloque el tapón (9) en el orificio de carga del cilindro.
13) Cierre lentamente la llave de paso de la botella (1).

1



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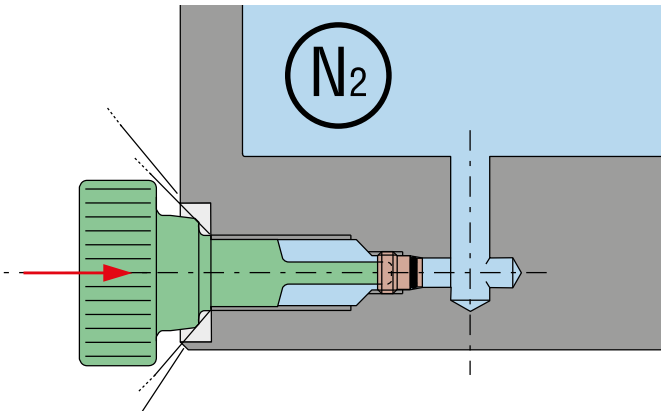

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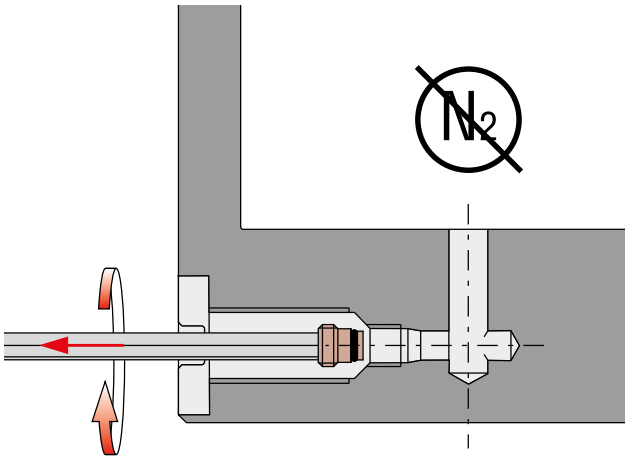
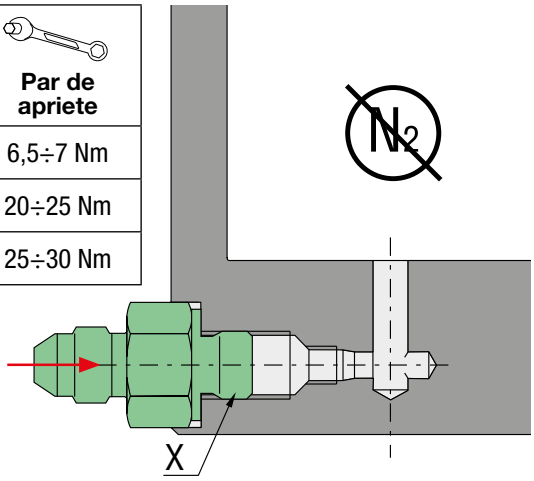


4

X	Par de apriete
M6	6,5÷7 Nm
G1/8”	20÷25 Nm
G1/4”	25÷30 Nm



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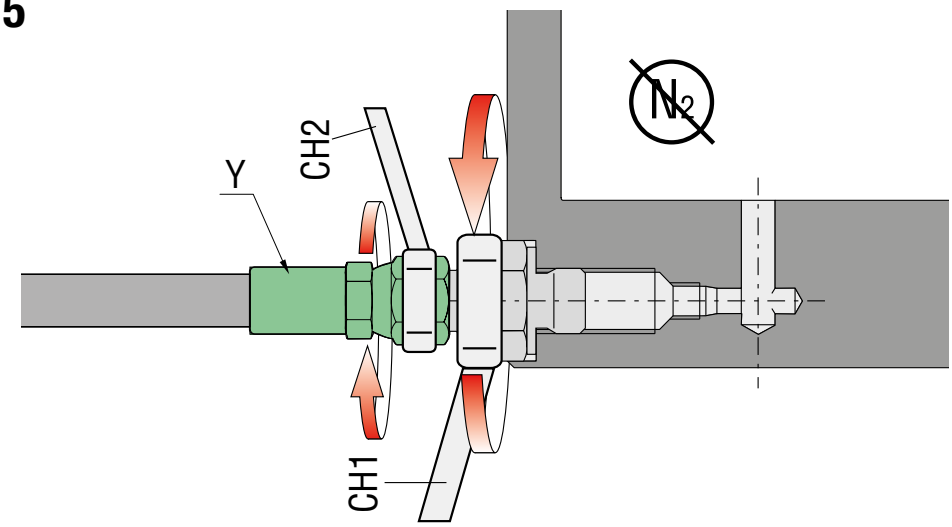

Y	Par de apriete
EO 24°	16÷18 Nm
JIC 37°	16÷18 Nm
Micro 32°	8÷9 Nm
ORFS	28÷32 Nm

Para obtener información detallada: WWW.SPECIALSPRINGS.COM

No.	Categoría según PED	Marcaje CE	Nº de organismo notificador	Marcaje	Declaración de conformidad	Módulo según PED
1	SEP	✗	✗	PED 2014/68/EU Art. 4(3)	✗	Producción Interna
2	I	✓	✓	CE 1381	Ver Declaración de conformidad	Módulo H
3	II	✓	✓	CE 1381	Ver Declaración de conformidad	Módulo H
4	III	✓	✓	CE 1381	Ver Declaración de conformidad	Módulo H

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BRACKET MOUNT	98
DROP-IN	99
BODY MOUNT	100
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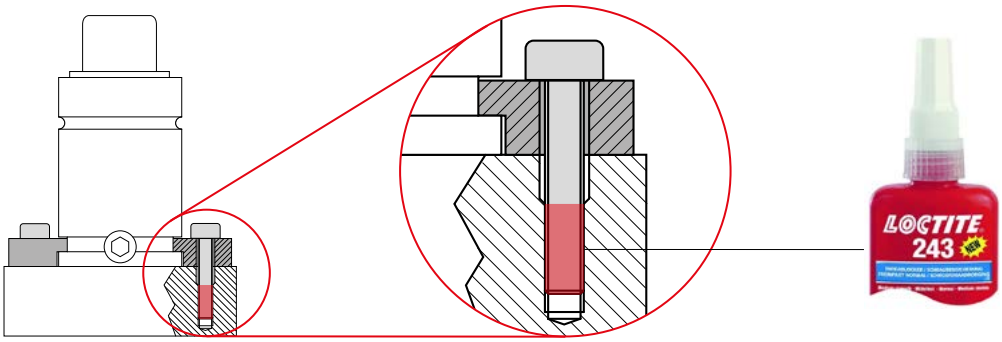
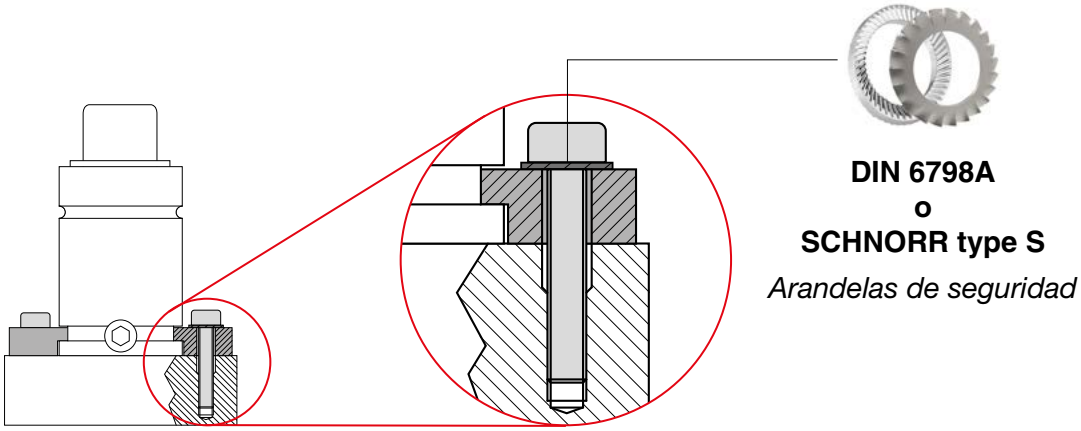
INFORMACIÓN GENERAL Ref. 6.6 de VDI 3003 parte 1

Fijar siempre los cilindros con los elementos de fijación adecuados. Una correcta fijación del cilindro de gas previene daños a los productos y graves peligros para los operadores.

Utilice siempre un fi jador de roscas adecuado y/o arandelas de seguridad en todos los tornillos de fi jación. (No son representados en los diseños de las paginas siguientes).





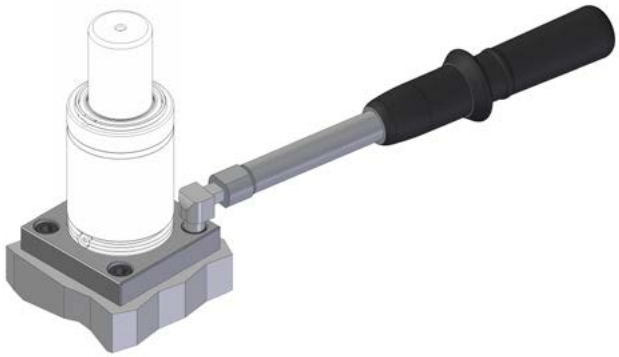
Respectar siempre los correctos pares de apriete, como indicado. Verificar siempre el estado de los cilindros y de las fijaciones después cada intervención sobre el molde.

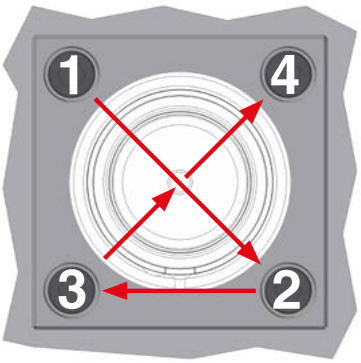
UNI EN ISO 21269:2007 class ≥ 8.8	**M5**	**M6**	**M8**	**M10**	**M12**	**M16**
Par de apriete	**6 Nm**	**10 Nm**	**24 Nm**	**50 Nm**	**84 Nm**	**205 Nm**

Continuar...

La utilización de los tornillos superiores a 8,8, como 9.8, 10.9 y 12.9, es siempre posible. Se recomienda NO SUPERAR los valores de las especificaciones de torsión para tornillos de clase 8.8 utilizados para cualquier otra clase.

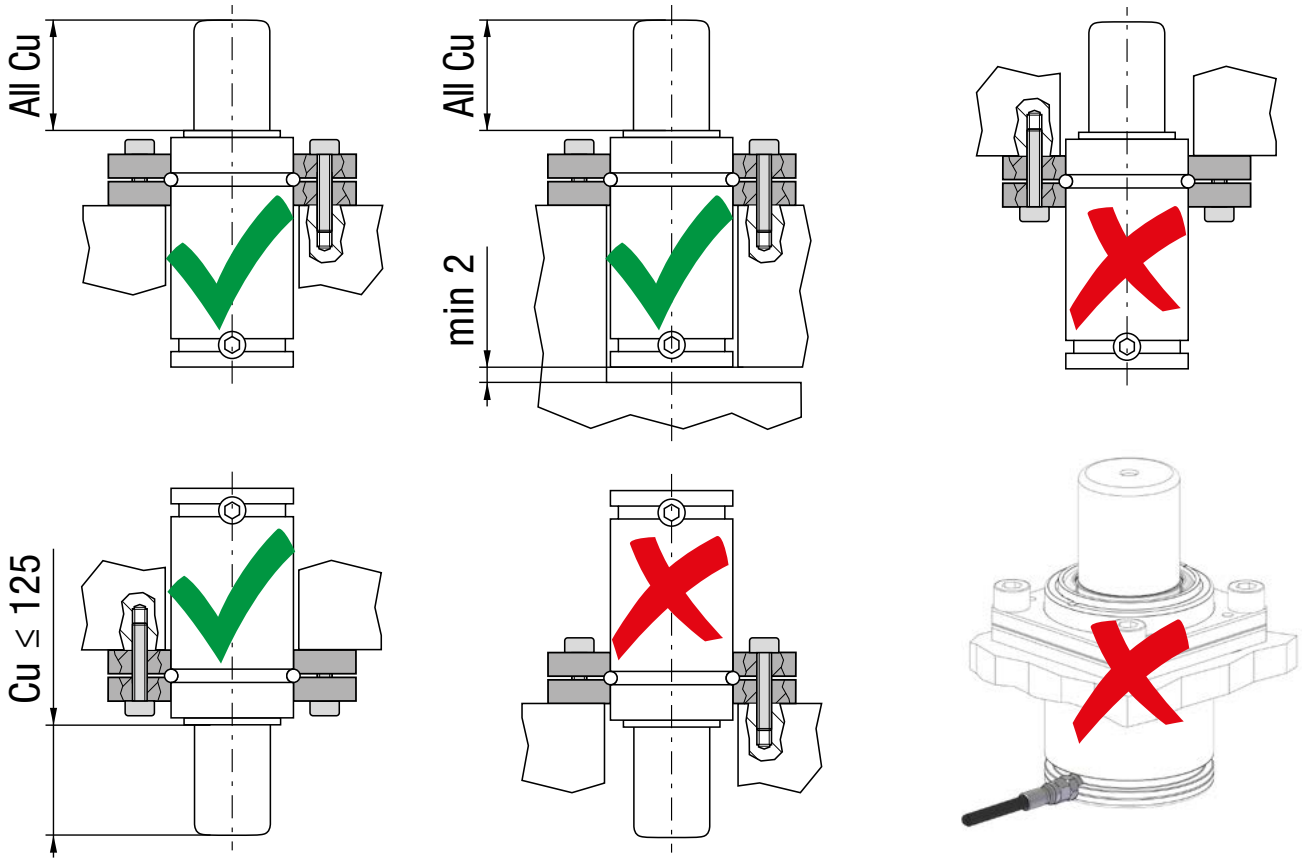
Apriete todos los tornillos de fijación siguiendo el orden que se muestra en la imagen (1, 2, 3, 4) y aplicando el par de apriete correcto. Realice la operación apretando los tornillos gradualmente.





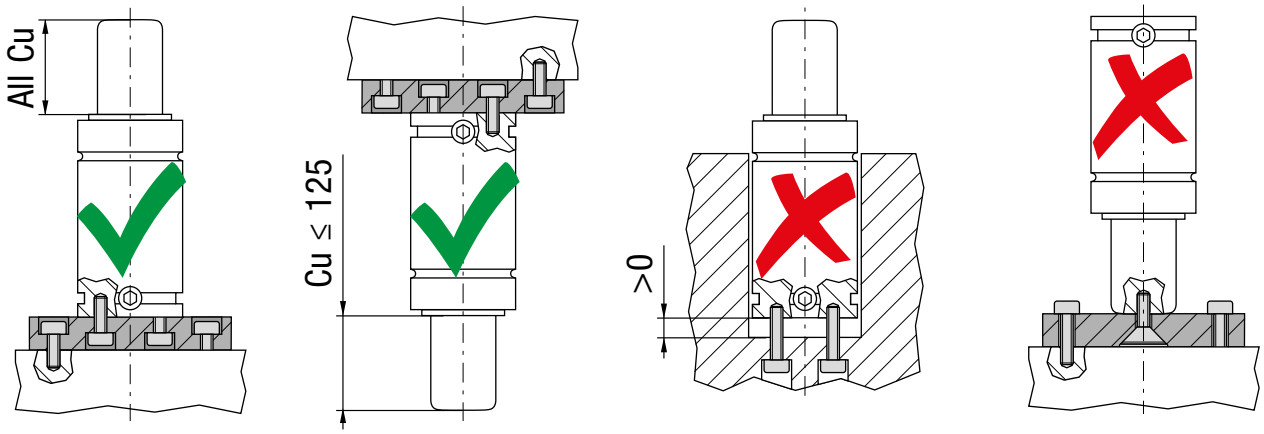
TOP MOUNT Ref. 6.1 de VDI 3003 parte 1

Montaje superior con brida.



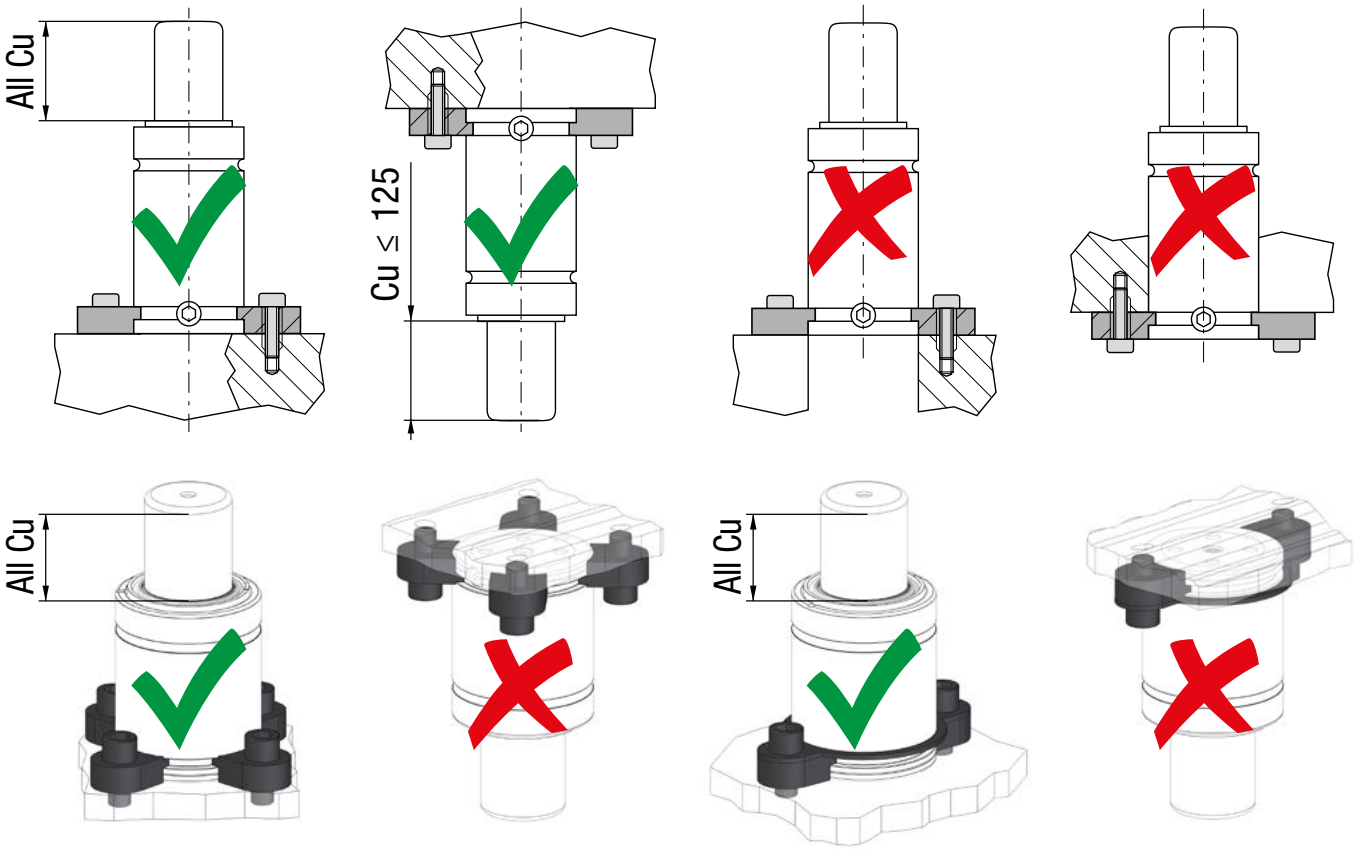
BOTTOM MOUNT Ref. 6.6 de VDI 3003 parte 1

Usar tornillos de longitud idónea para ocupar toda la profundidad del agujero fileteado en el cilindro.



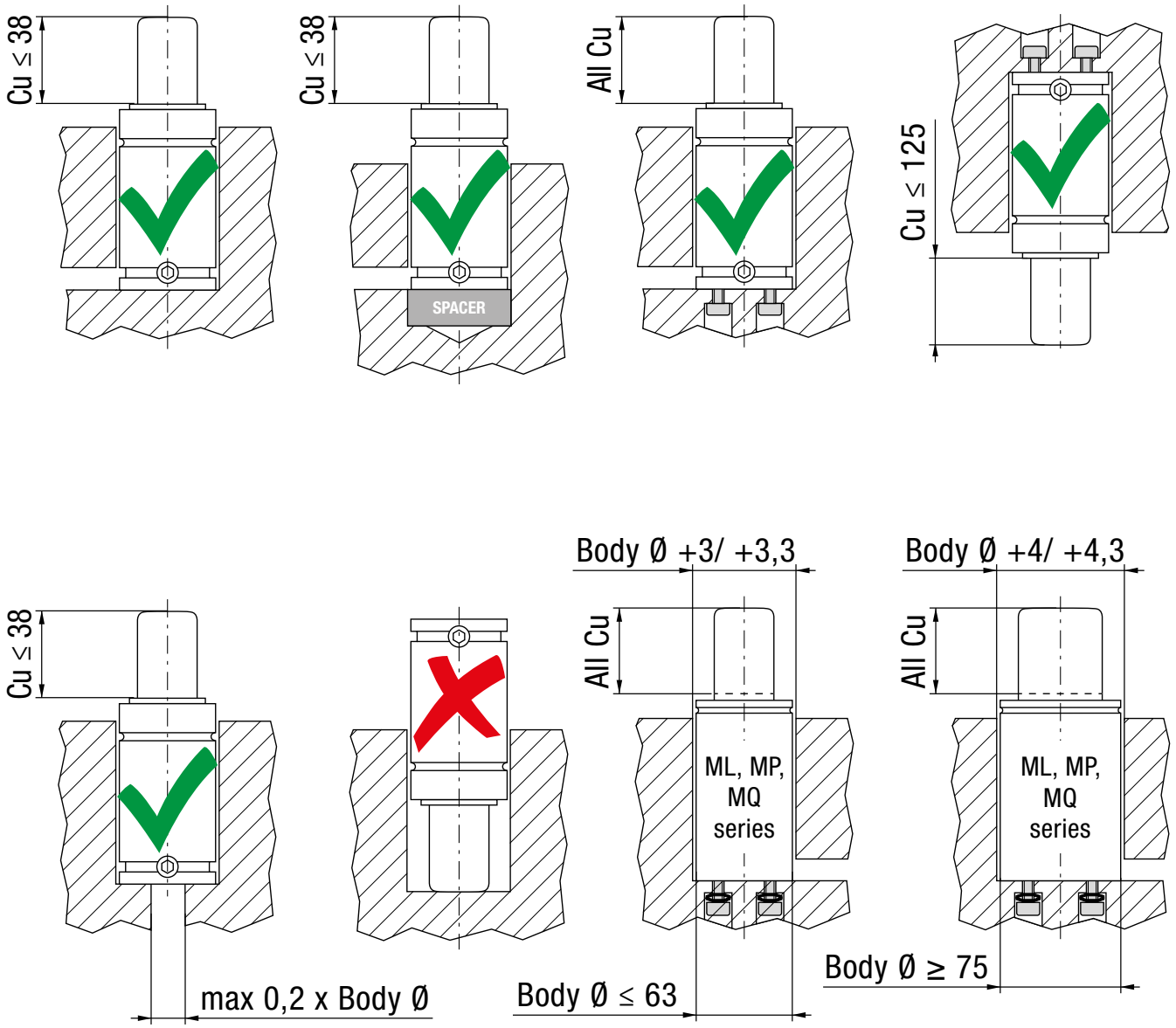
BRACKET MOUNT Ref. 6.2 - 6.3 de VDI 3003 parte 1

Montaje con soportes en la base.



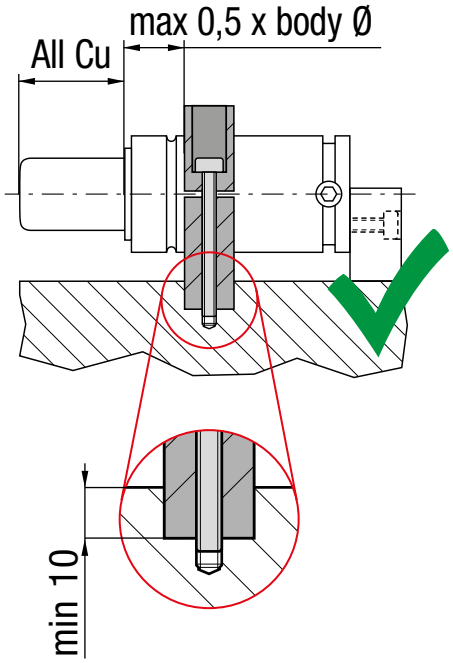
DROP-IN Ref. 6.6 de VDI 3003 parte 1

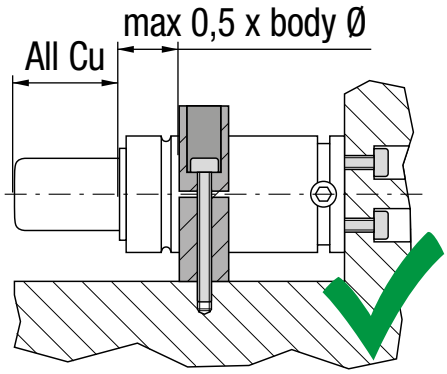
Comprobar que el plano de apoyo NO tenga interrupciones. Verificar siempre el estado de los cilindros y de sus alojamientos después cada intervención sobre el molde.

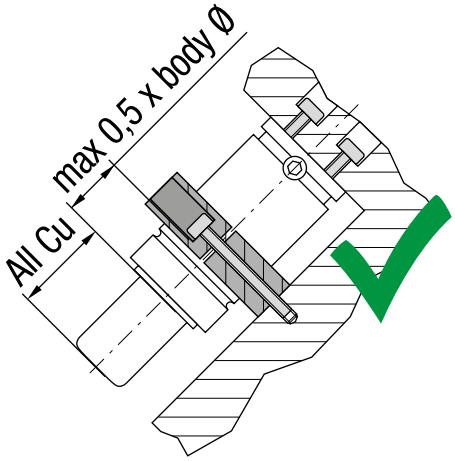


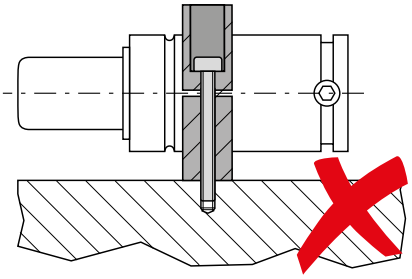
BODY MOUNT Ref. 6.4 de VDI 3003 parte 1

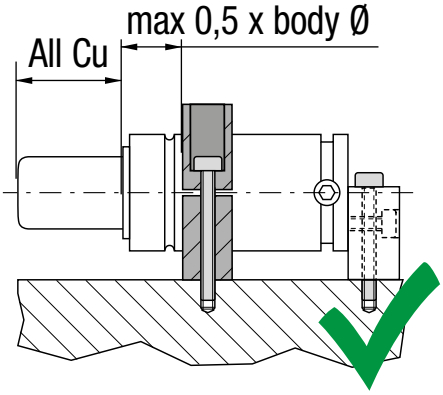
Los resortes de gas con montaje con brida de fijación requieren siempre un soporte adicional, como se muestra en la Figura.

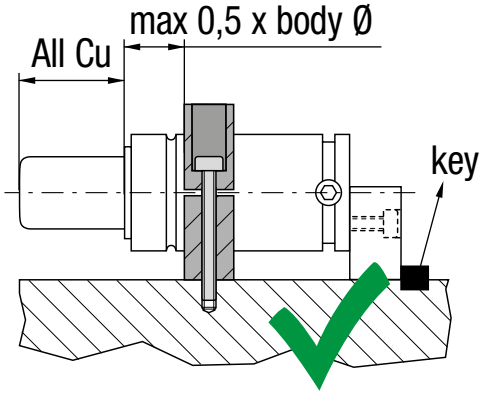






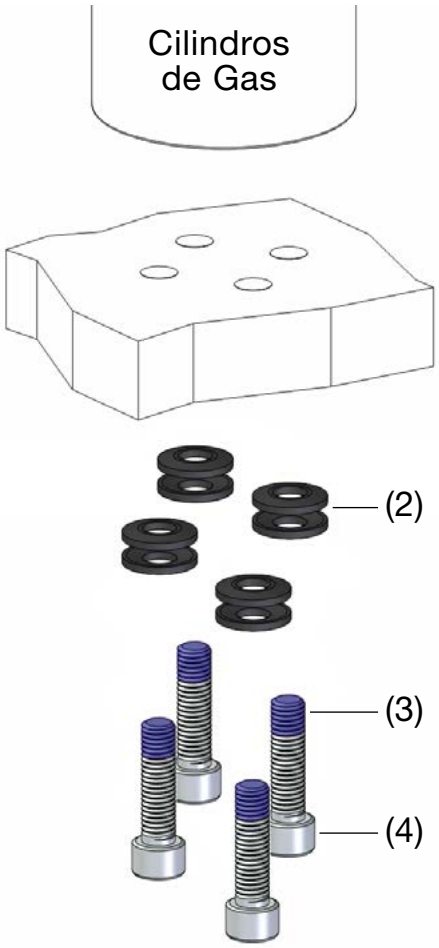
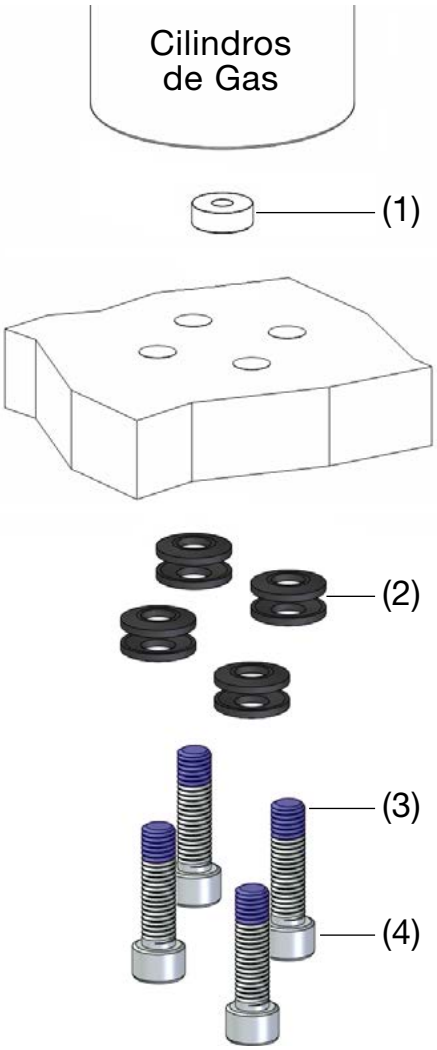
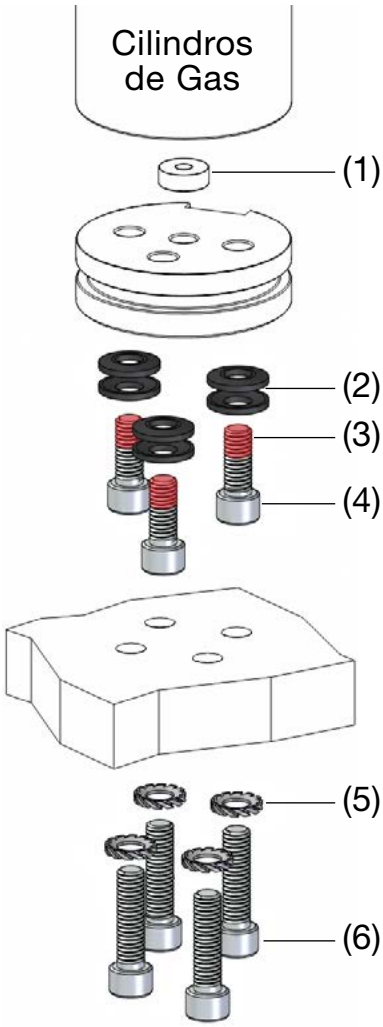






MANUAL DE INSTALACIÓN
SERIE ML - MP - MQ

Instalar los resortes de gas siguiendo las instrucciones dadas a continuación. La información detallada se incluye en el kit específico.

ML, MP, MQ Serie AUTONOMO	ML Serie EASY MANIFOLD	Serie ML CONECTABLE EN RED
		

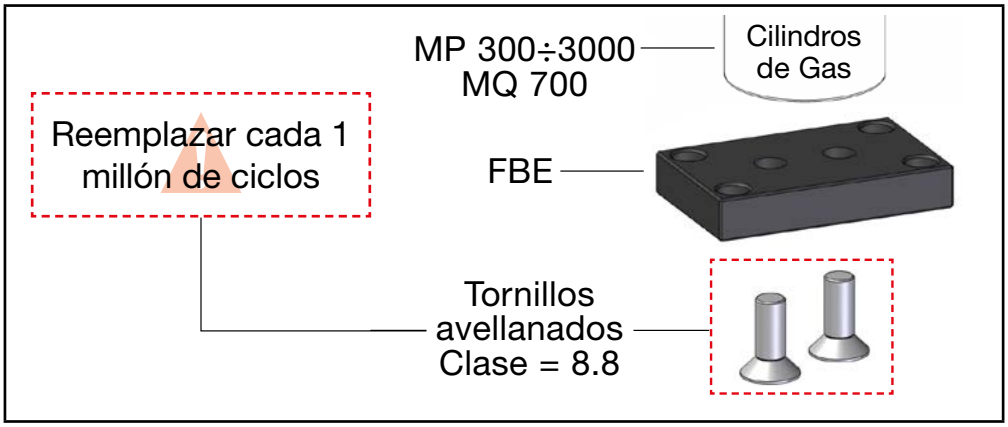
(1) Junta; (2) Arandela elástica cónica; (3) Loctite 243; (4) Class = 8.8; (5) Arandelas de seguridad DIN 6798A o SCHNORR tipo S; (6) Class ≥ 8.8;

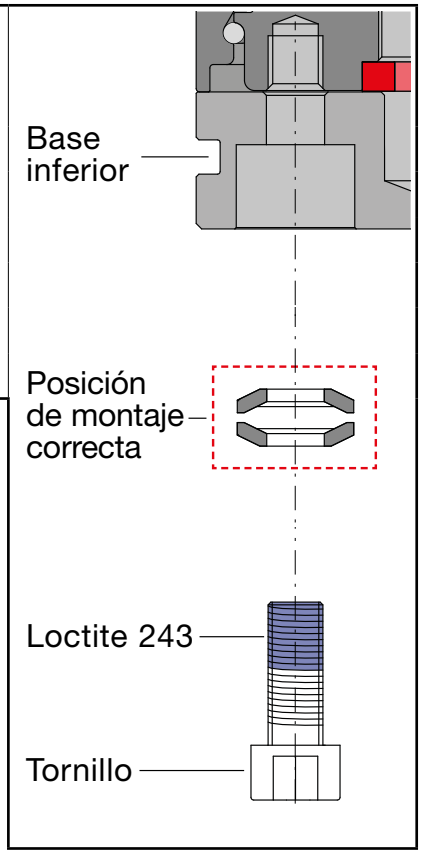
Continuar...

Modelo	Código de la arandela elástica cónica
ML 1000 D	49RC06A
ML 1800 D	49RC06A
ML 3000 D	49RCHS08A
ML 4700 D	49RC08A
ML 7500 D	49RC08A
ML 12000 D	49RC10A

Arandela de resorte cónica suministrada por Special Springs (incluida con Easy Manifold y cilindro conectable)

Reemplazar (1)(2)(3)(4) cada 1 millón de ciclos

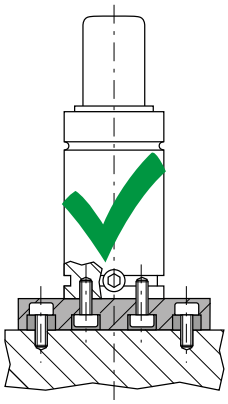


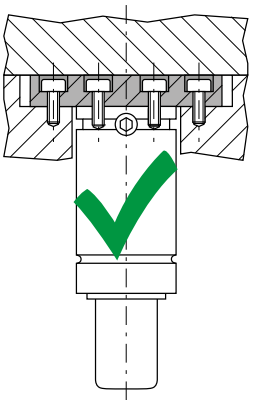


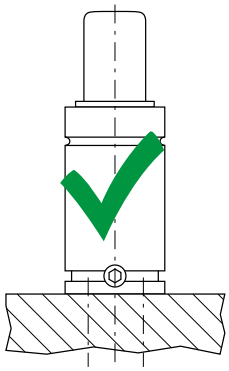
SISTEMAS DE MONTAJE CON MANGUERA

Ref. 6.5 de VDI 3003 parte 1

No está permitido dejar rotar los resortes de gas de un sistema de mangueras durante las operaciones de estampado. La rotación puede causar el deterioro de las mangueras y provocar daños o fugas de gas. Por eso no es aceptable instalar los resortes de gas de un sistema de mangueras flojamente en los agujeros o con montaje superior con brida.
Sin embargo, los resortes de gas pueden no obstante rotar bajo condiciones desfavorables de funcionamiento. En estas situaciones particulares los resortes de gas tienen que ser atornillados mediante rosca insertados en la base del resorte (directamente o sobre una placa de base - ver Figura).







ÍNDICE

La seguridad para nosotros no es simplemente una cuestión de marketing, es nuestra filosofía en cada decisiòn. En la base de todos los productos Special Springs, hay investigaciones y desarrollos continuos, el uso de las últimas tecnologías, controles de calidad y seguridad, todo en pleno cumplimiento de las normas y enfocado en garantizarle calidad superior, durabilidad y fiabilidad. Descubra la gama de productos Special Springs.

OSAS	104
USAS	105
OPAS	106
SKUDO	106

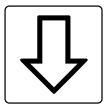
- **CÓMO FUNCIONAN LOS DISPOSITIVOS DE SEGURIDAD:**
  Si se activan los dispositivos de seguridad, la presión se descarga de manera controlada.

- **QUÉ HACER DESPUÉS:**
  Si se activan los dispositivos de seguridad, verificar y descargar toda la presión residual, eliminar las causas de los daños y reemplazar siempre el cilindro dañado.

OSAS Ref. 8.2 de VDI 3003

Over
Stroke
Active
Safety

VDI 3003



+

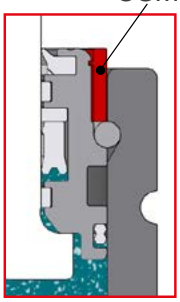
Over
Stroke
Marker

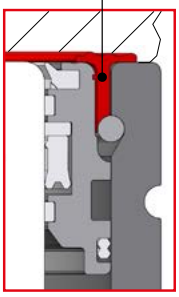
Seguridad Activa de Fin de Carrera

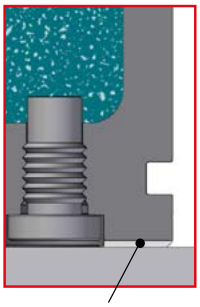
El Marcador de Sobrecarrera OSM

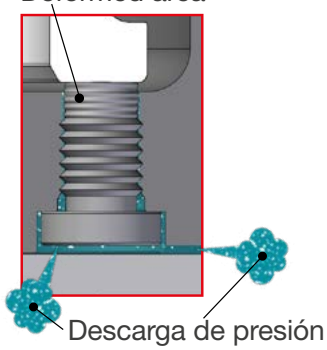
DISEÑO: CASQUILLO - CUERPO

Estándar en: M300-RV-RF-RS-RG-RT-S-SC-H-HF-HT-LS



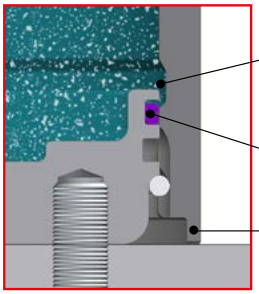


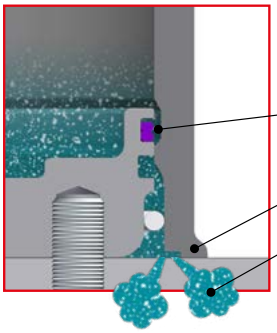




DISEÑO: DISEÑO BASE INFERIOR - CUERPO

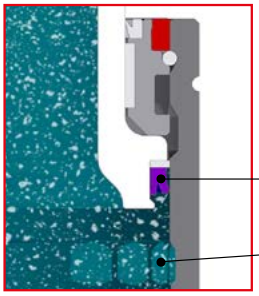
Estándar en: ML - MP - MQ

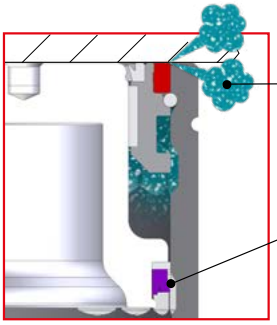




DISEÑO: DISEÑO PISTÓN – CUERPO

Estándar en: KE





USAS Ref. 8.2 de VDI 3003

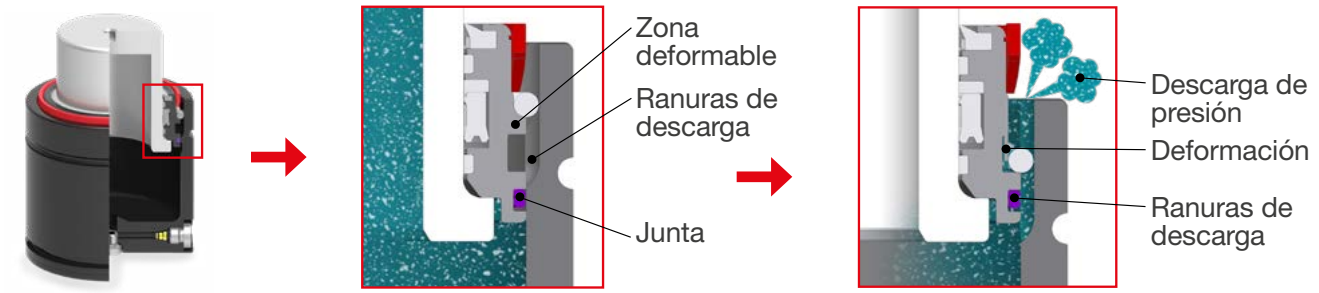
Uncontrolled
Speed
Active
Safety

VDI 3003

Seguridad Activa de Retorno Incontrolado

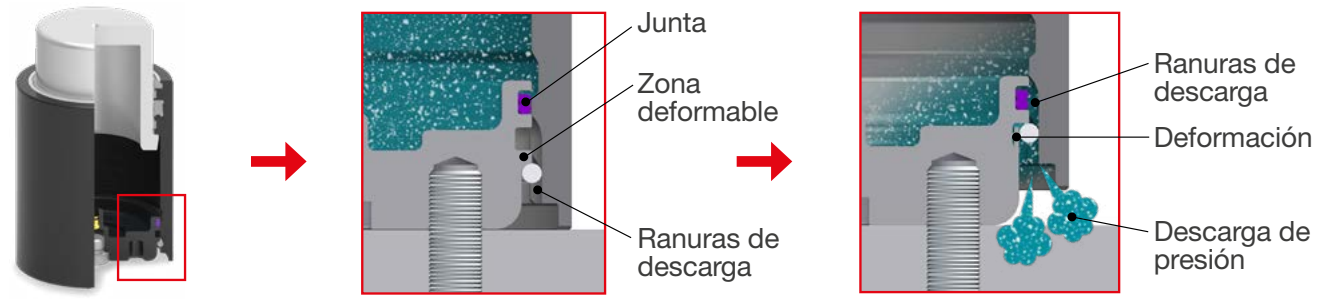
DISEÑO: CASQUILLO - CUERPO

Estándar en: M300-RV-RF-RS-RG-RT-S-SC-H-HF-HT-LS



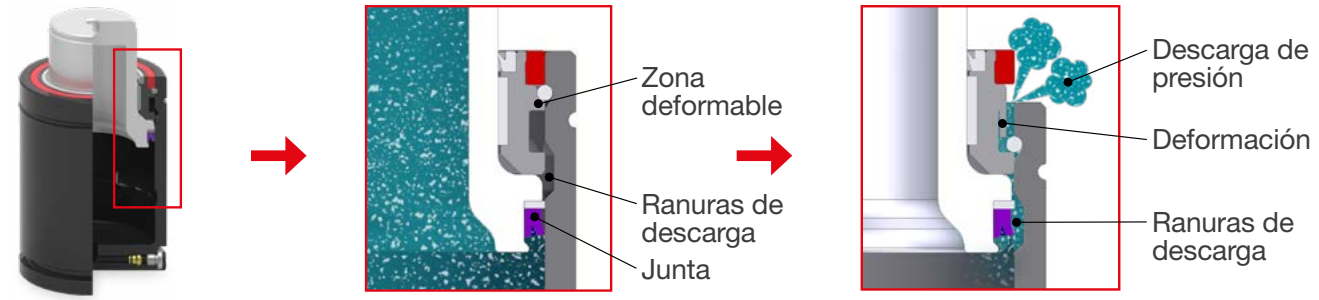
DISEÑO: DISEÑO BASE INFERIOR - CUERPO

Estándar en: ML - MP - MQ



DISEÑO: DISEÑO PISTÓN – CUERPO

Estándar en: KE



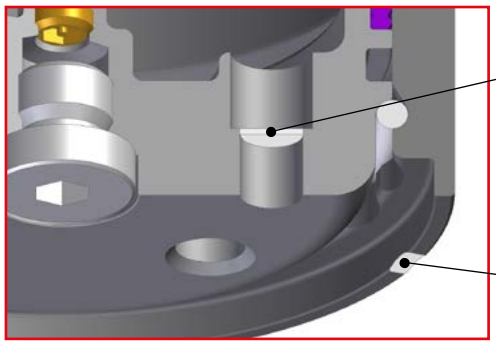
OPAS Ref. 8.3 de VDI 3003

Over
Pressure
Active
Safety

VDI 3003

Estándar en: M - MS - RV - RS - RF - RG - RT - S
SC - H - HF - HT - LS - ML - MP - KE

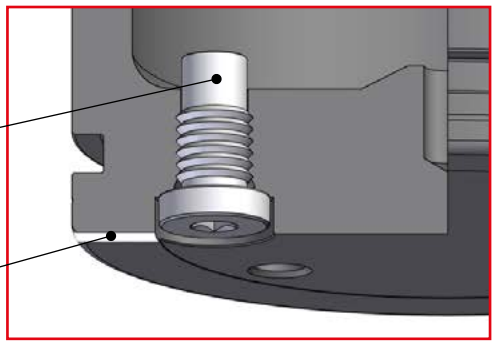
Seguridad Activa por Sobrepresión



Septo de rotura

Tapón de rotura

Fresado de descarga

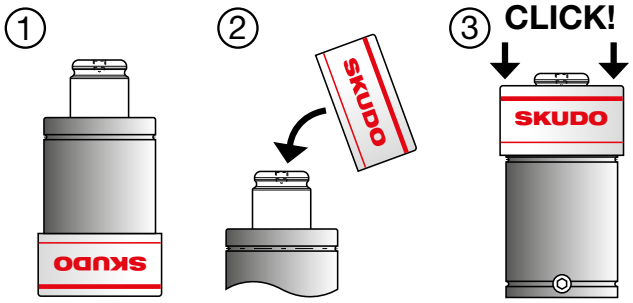


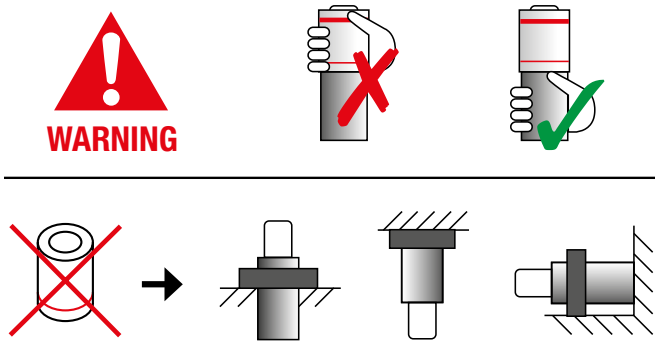
SKUDO

Protección Activa contra Contaminantes

Estándar en: on: KE - RS - MS

COMO ENSAMBLAR:





- Todos los componentes estructurales de los cilindros de nitrógen Special Springs son proyectados y fabricados en pleno respeto de las normativas vigentes (PED 2014/68/EU) y EN 13445:2018, para un mínimo de 2.000.000 ciclos completos a máxima presión y temperatura y con todos los tipos de fijaciónes.
- Refiriéndose a los resortes de gas de las Series RV, RS, RF, RG, RT, SC, SCF, S, H, HF, LS (excluyendo los modelos RV/RS170 y RV/RS 320), Special Springs recomienda reemplazarlos a más tardar después de 10 años desde la primera puesta en servicio.
- Refiriéndose a los resortes de gas de las Series ML, MP, MQ, KE Special Springs recomienda reemplazarlos a más tardar después de 10 años o 4 millones de ciclos desde la primera puesta en servicio (lo que ocurra primero).
- Este componente ha sido diseñado para uso industrial, a utilizar como elemento elástico.
- El uso de este componente está reservado únicamente al personal encargado, que tiene que haber leído y asimilado el contenido de este libreto de instrucciones.
- No someter el componente a prestaciones superiores a lo que está prescrito. No utilizar el componente en presencia de llamas o de fuentes de calor.
- No almacene al aire libre o en lugares con alta humedad.
- El uso impropio de los cilindros diferentemente de lo que está prescrito, exime la Special Springs de cualquier responsabilidad.

INSTRUCCIONES DE USO:

- No utilizar un tornillo de banco para verificar la fuerza de un cilindro. (fig. 1)
- Fijar siempre el cilindro sobre el molde, siempre que sea posible.
- Está prohibido posicionar el cilindro de manera no perpendicular. Evitar ejercer cargas radiales durante la compresión del vástago. Aplique siempre presión a toda la superficie del extremo del vástago. Tanto como sea posible, iguale la carga en el troquel. (fig. 2)
- Utilizar el orificio roscado en el vastago sólo para el trasporte. Está prohibido fijar el cilindro a través del agujero fileteado sobre la cabeza del vástago. (fig. 3)
- No realizar ningún tipo de elaboración mecánica sobre cuerpo o vástago. (fig. 4)
- Está prohibido cualquier retorno incontrolado del vástago pistón. El retorno incontrolado puede provocar daños, fallos mecánicos, al cilindro o a sus fijaciónes. (fig. 5)
- Proteger superficie de los resortes de gas contra objectos y/o fluidos agresivos (soda y cloruros). Si se usan para limpiar el troquel, eliminar residuo de los resortes de gas. (fig.6)
- Se recomienda prever una reserva del 10% de la carrera nominal o de 5 mm para carreras superiores a 50 mm. (fig. 7)
- No utilizar el cilindro con temperatura superior a 80°C/176°F. (fig. 8)
- Está prohibido cargar el cilindro con gases diferentes del nitrógeno N2. (fig. 9)

Continuar...

- No utilizar el cilindro a una velocidad superior a 0,8 ÷ 1,8 m/seg. (fig. 10)
- Está prohibido cargar el cilindro con una presión superior a la marcada en el cuerpo. (fig. 11)
- Durante la descarga, volcar el cilindro y orientar el flujo de gas en la dirección opuesta a la del operador. (fig. 12)
- Si se diera el caso de que hay un riesgo de que los resortes de gas puedan haber sido dañados, los resortes de gas deben ser descargados inmediatamente mientras ellos estan todavía en su posición de instalación abriendo la válvula o con la perforación del cuerpo del resorte hasta que el gas se haya descargado. (fig. 13)

Fig. 1

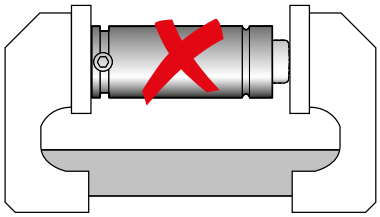


Fig. 2

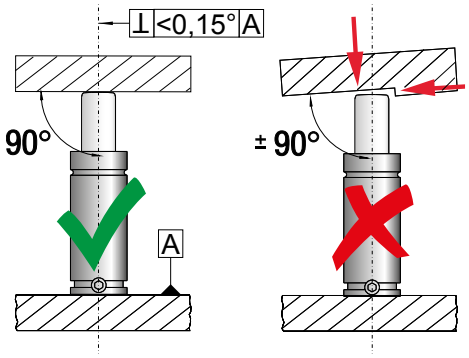


Fig. 3

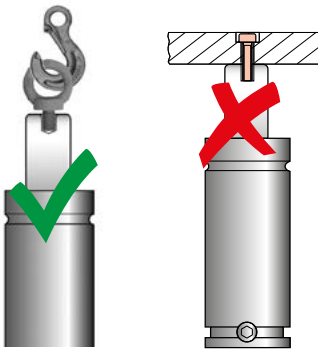


Fig. 4

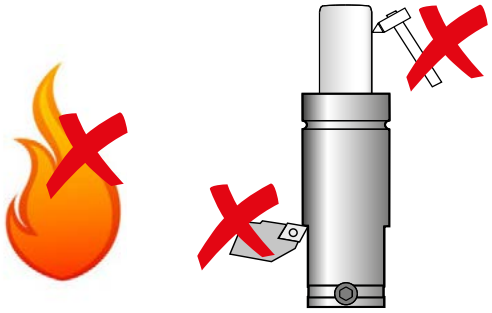


Fig. 5

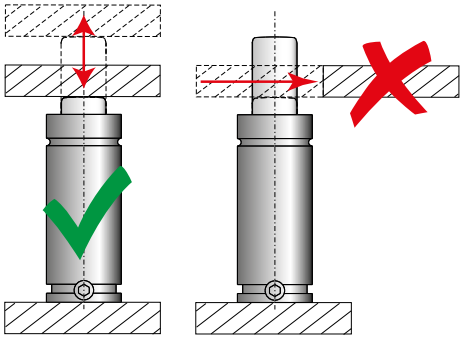
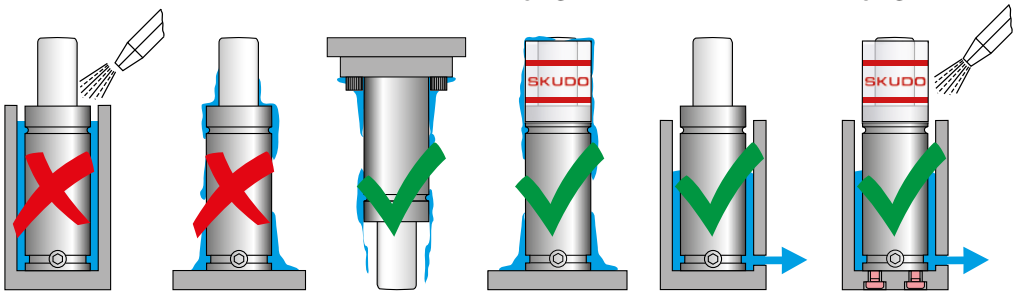


Fig. 6



CLORITOS DE SODIO

Continuar...

Fig. 7

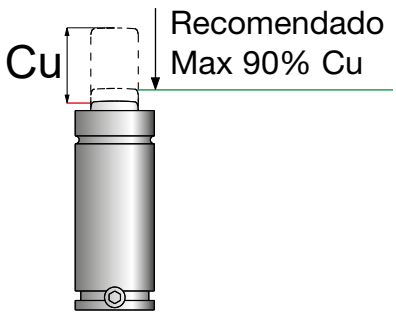


Fig. 8

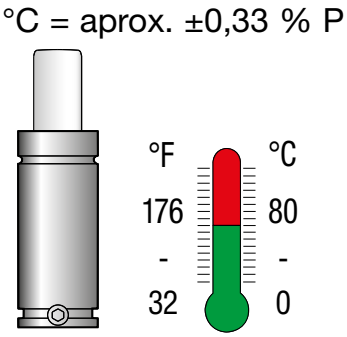


Fig. 9

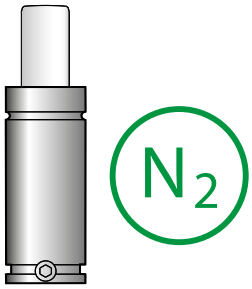
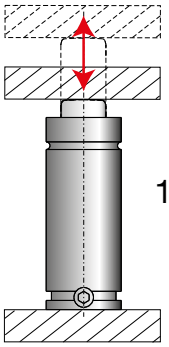


Fig. 10



VELOCIDAD MAX.
1,8 m/seg todas las series
0,8 m/seg serie KE

Fig. 11

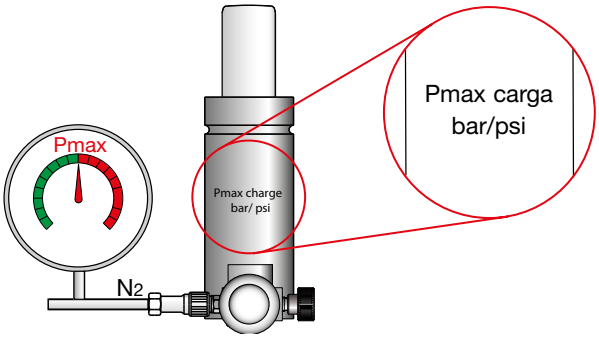


Fig. 12

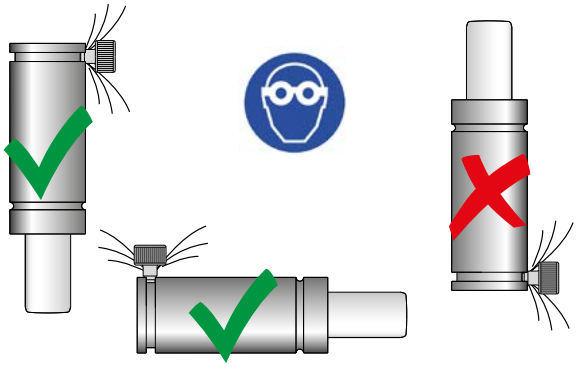
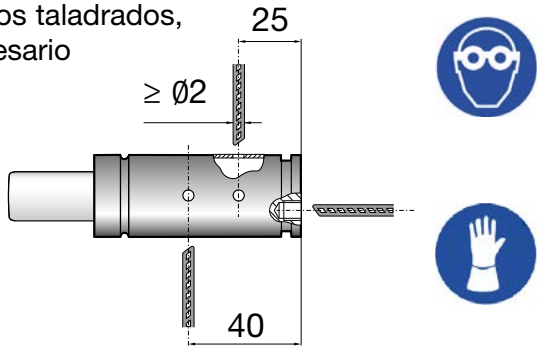


Fig. 13

2x agujeros taladrados,
si es necesario



- Recomendamos controlar siempre la correcta fijación de los cilindros en cada Intervención sobre el molde.
- En el caso de tornillos sueltos o rotos, el cilindro podría haber sido objeto de retorno incontrolado.
- Se recomienda reemplazar el cilindro y eliminar la causa del retorno incontrolado.
- El mantenimiento de los resortes de gas siempre debe ser realizado por personal cualificado con el uso exclusivo de los kits de componentes de Special Springs, so pena de caducidad de la garantía y responsabilidad del fabricante.
- Antes de eliminar cualquier resorte de gas, descargar completamente la presión.

Si se sobrepasan los límites de funcionamiento establecidos por la Special Springs (Cuadro 1), proceda con el mantenimiento del cilindro. Esta operación puede ser realizada por Special Springs o en el lugar utilizando el kit adecuado, entregado con un manual de instrucciones. El código del kit de mantenimiento (Man. Code) está marcado en los cilindros (figura 14).

Cuadro 1

Series	Cu	Intervalos de mantenimiento previstos	Nr. de reemplazos para la junta	De la primera puesta en funcionamiento
RV, RS, RF, RG, RT, SC, SCF, S, H, HF, LS (excepto RV170, RS170, RV320, RS320)	≤ 50mm	1.000.000 ciclos	3	10 años
	> 50mm	200.000 metros lineales de carrera		
ML, MP, MQ, KE	≤ 50mm	500.000 ciclos	3	10 años o 4.000.000 ciclos
	> 50mm	100.000 metros lineales de carrera		

Amarre el resorte de gas para todo mantenimiento y servicio.

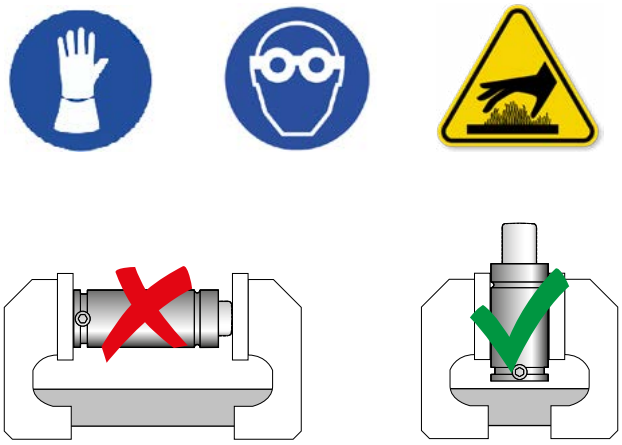
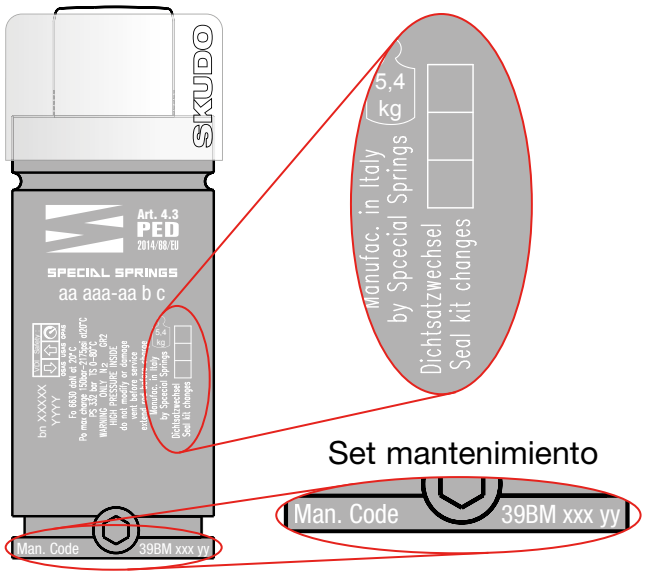


Fig. 14



Special Springs ha realizado las pruebas comforme a § 8.3 EN 14359:2006.
Cuando se instalan los resortes de gas en un molde según la legislación alemana, ustedes estan sujetos como Usuarios a las siguientes obligaciones, especialmente para la primera operación y las pruebas regulares, según lo prescrito por la BetrSichV:

Volumen *(Litros)*	**Prueba antes de la 1a operación**		**Pruebas regulares**		
	Basado en	**Responsabilidad**	**Basado en**	**Responsabilidad**	**Plazo máx. permitido de prueba**
< 1 l	§ 14	bP	§ 14	bP	Establecido por el empleador
> 1 l	§ 15	ZÜS (1	§ 16	bP	5 años IP, 10 años FP
> 6,67 l	§ 15	ZÜS	§ 16	ZÜS	

(1 - Procedimiento simplificado según el Apéndice 2, Articulo 4, No. 6.30.1 de la BetrSichV

Lista de Abreviaturas

BetrSichV	Reglamento de seguridad laboral en Alemania
bP	Persona calificada para la prueba
FP	Prueba de resistencia
IP	Inspección interna
ZÜS	Organismo notificado

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Recomendase aos fabricantes de matrizes entregar sempre com os equipamentos as folhas de instrução e uso anexados aos ilindros e aos acessórios fornecidos pela Special Springs.

ESTA SECÇÃO SE REFERE SOMENTE PARA OS MODELOS CE

DECLARAÇÃO UE DE CONFORMIDADE

Special Springs S.r.l.
Via Nardi, 124/A - 36060 Romano d'Ezzelino (VI) - ITALY

A Declaração abaixo é exclusiva responsabilidade de

cilindro de nitrógeno _____ lote de produção _____

A que se refere esta declaração cumpre com os termos do procedimento de avaliação, Módulo H da diretiva 2014/68/UE (PED.VE10615.Rev1) para equipamentos sob pressão implementado pelo Diploma Legislativo de 15/02/2016 n. 26, e esta de acordo com as normas padrões:

EN 13445:2018, EN 14359:2017

outras normas

EN 15614:2018

O orgão oficial que fiscaliza o sistema de garantia da qualidade é:

SGS ITALIA spa, ORGÃO NOTIFICADOR N° 1381

Special Springs S.r.l.

Augusto Cappeller

Romano d'Ezzelino, ____ / _____ / _____

(Assinatura do representante legal)

O modelo para esta declaração esta de acordo com a norma EN 17050:2010

The PED certificate is available O certificado PED esta disponivel em www.specialsprings.com

Fig. A

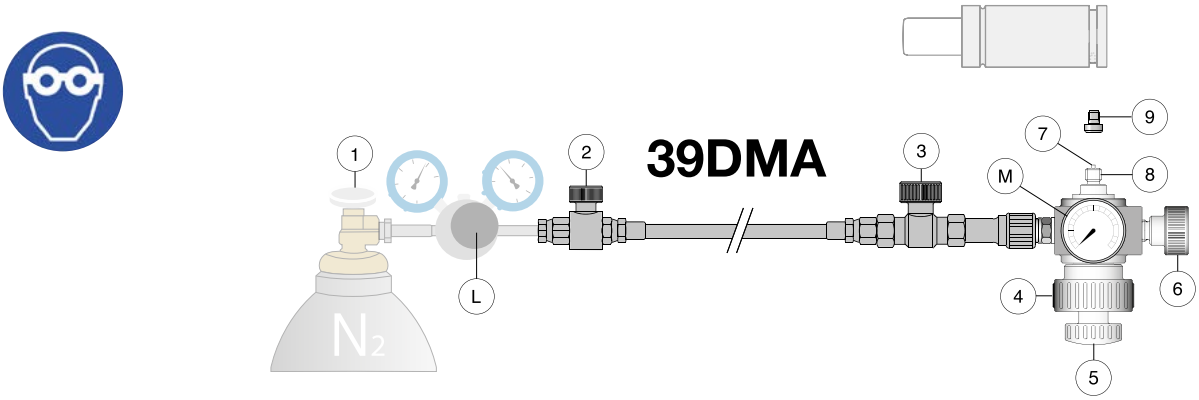
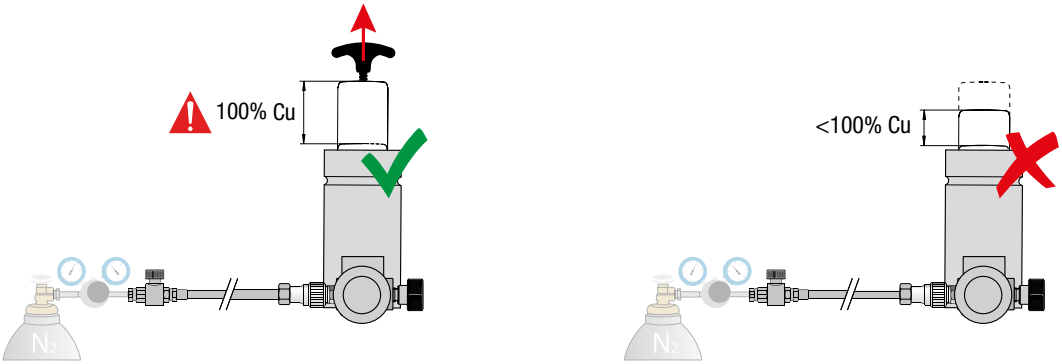


Fig. B

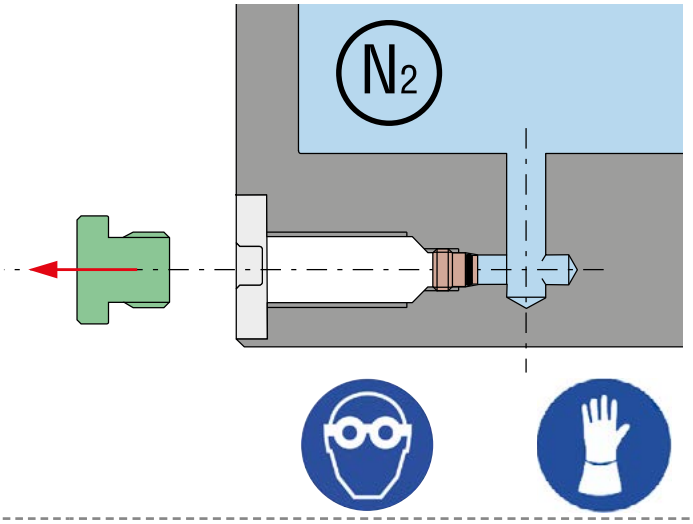


Em caso de utilização de dispositivos para carga/descarga que não sejam fornecidos por Special Springs, o fabricante não será responsável por qualquer dano a pessoas e coisas.

Não exceda a pressão máxima da carga do gás a 20°C/68°F, conforme indicado no cilindro.

1) Bloquear o cilindro propriamente.
2) Antes de cargar o cilindro a gás, puxe para fora completamente (100% Cu) a haste (fig. B).
3) Desaperte a tampa (9) que fecha a abertura de carregamento.
4) Desaperte a pega (5) até a rotação completa da agulha (7).
5) Mediante a pega (4) aperte o adaptador (8) na abertura de carregamento.
6) Controle que as válvulas (2-3-6) estejam fechadas.
7) Abra muito lentamente a torneira da garrafa (1) e depois afine a pressão de carregamento mediante a alavanca (L).
8) Abra lentamente a válvula (3) até a pressurização total do cilindro; a pressão final é legível no manómetro (M).
9) Feche a válvula (3).
10) Abra a válvula de descarga (6).
11) Desaperte o adaptador (8) da abertura de carregamento mediante a pega (4).
12) Aperte a tampa (9) na abertura de carregamento do cilindro.
13) Feche lentamente a torneira da garrafa (1).

1



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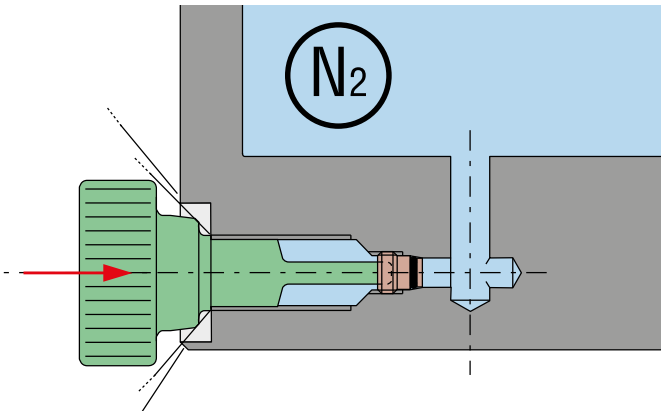
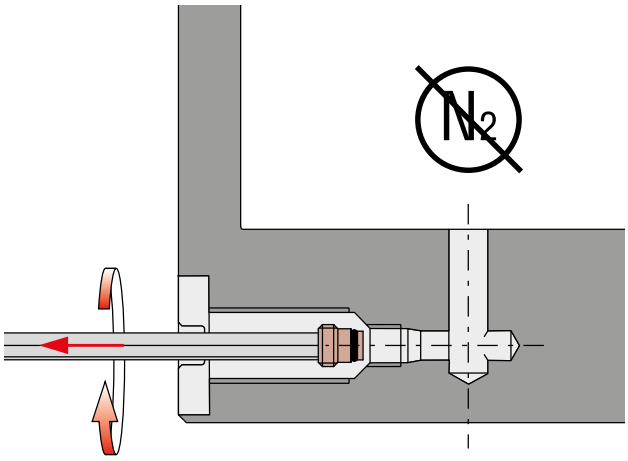
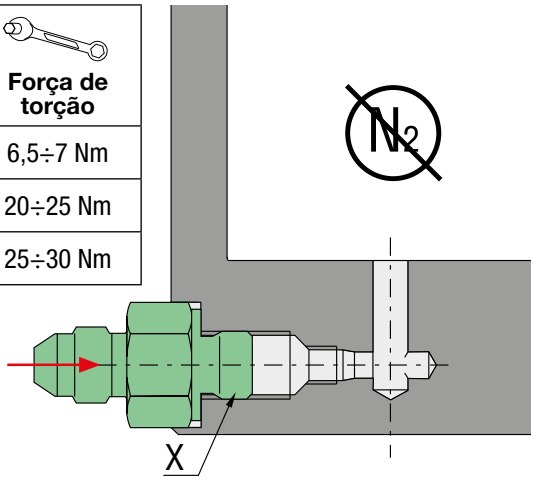


3



4

X	Força de torção
M6	6,5÷7 Nm
G1/8”	20÷25 Nm
G1/4”	25÷30 Nm



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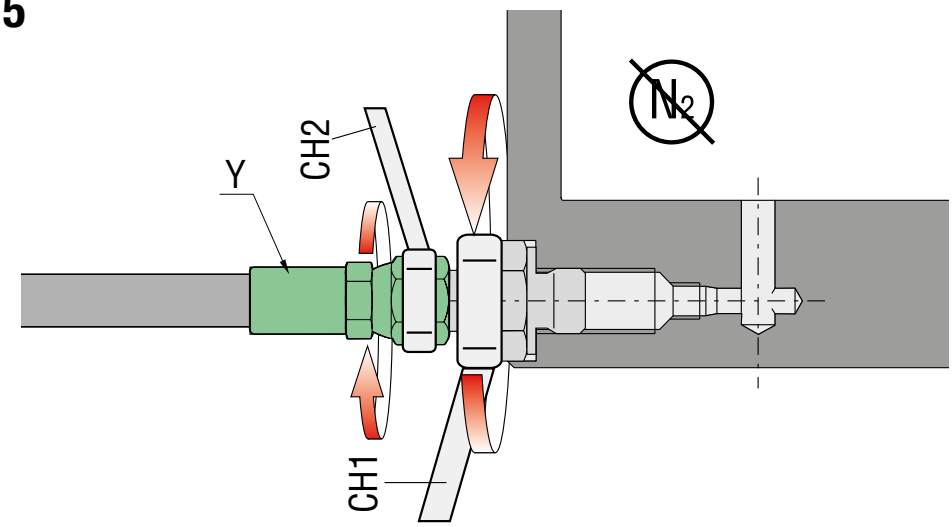

Y	Força de torção
EO 24°	16÷18 Nm
JIC 37°	16÷18 Nm
Micro 32°	8÷9 Nm
ORFS	28÷32 Nm

Para obter informações detalhadas: WWW.SPECIALSPRINGS.COM

No.	Categoría em acordo com a PED	Marcação CE	Nº do orgão notificador	Marcação	Declaracão de conformidade	Modelo em acordo com a PED
1	SEP	✗	✗	PED 2014/68/EU Art. 4(3)	✗	Produção Interna
2	I	✓	✓	CE 1381	Ver Declaração de conformidade	Modelo H
3	II	✓	✓	CE 1381	Ver Declaração de conformidade	Modelo H
4	III	✓	✓	CE 1381	Ver Declaração de conformidade	Modelo H

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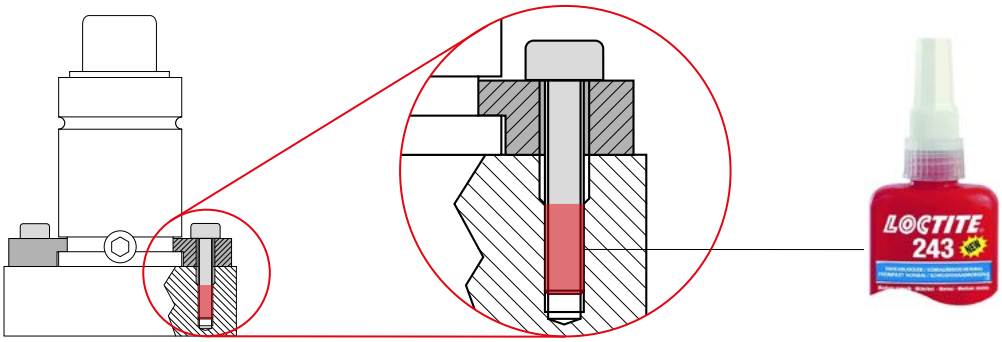
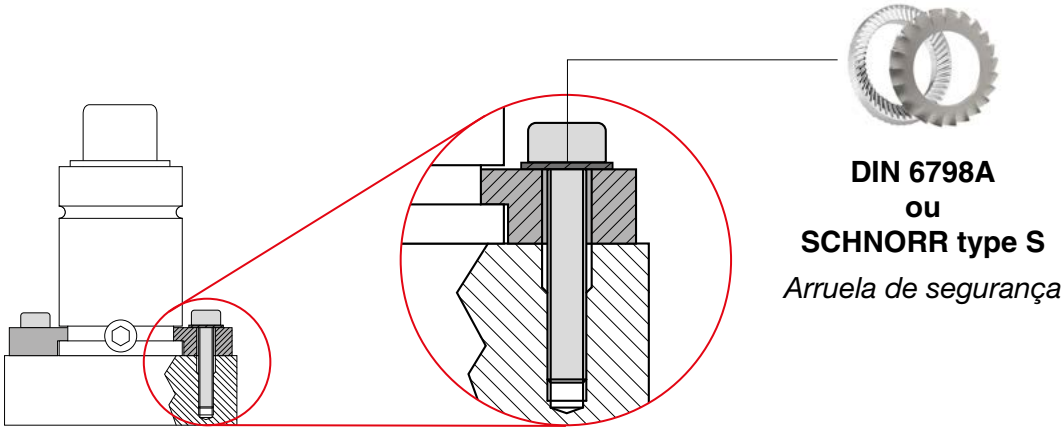
INFORMAÇÃO GERAL Ref. 6.6 da VDI 3003 parte 1

Fixar sempre os cilindros directamente através dos respectivos elementos de fixação. Uma correta fixação do cilindro pode previnir danos ao produto e tambem ao operador.

Sempre utilizar o trava roscas e/ou arruela de segurança em todos os parafusos de fixação (não estão representados nas proximas paginas).





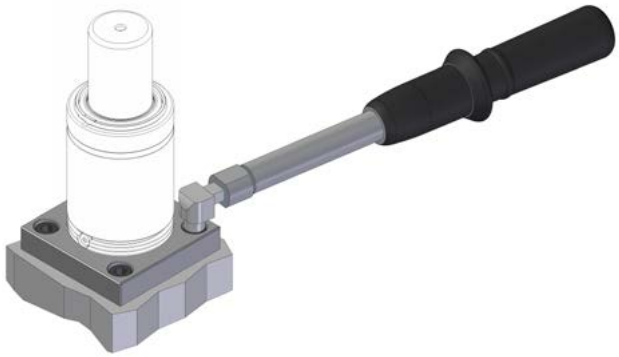
Respeite sempre as corretas duplas de fixação, como indicato. Verifique sempre o estedo dos cilindros e fixações após cada intervenção no molde.

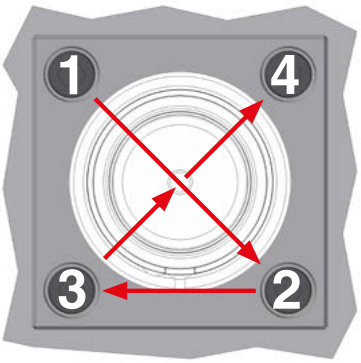
UNI EN ISO 21269:2007 class ≥ 8.8	**M5**	**M6**	**M8**	**M10**	**M12**	**M16**
Força de torção	**6 Nm**	**10 Nm**	**24 Nm**	**50 Nm**	**84 Nm**	**205 Nm**

Continua...

O uso de limitadores superiores a 8,8, tal como 9,8, 10,9 e 12,9, é sempre possível. Recomendamos que você NÃO ULTRAPASSE os valores das especificações de torque para a classe 8,8 por os limitadores utilizados para qualquer outra classe.

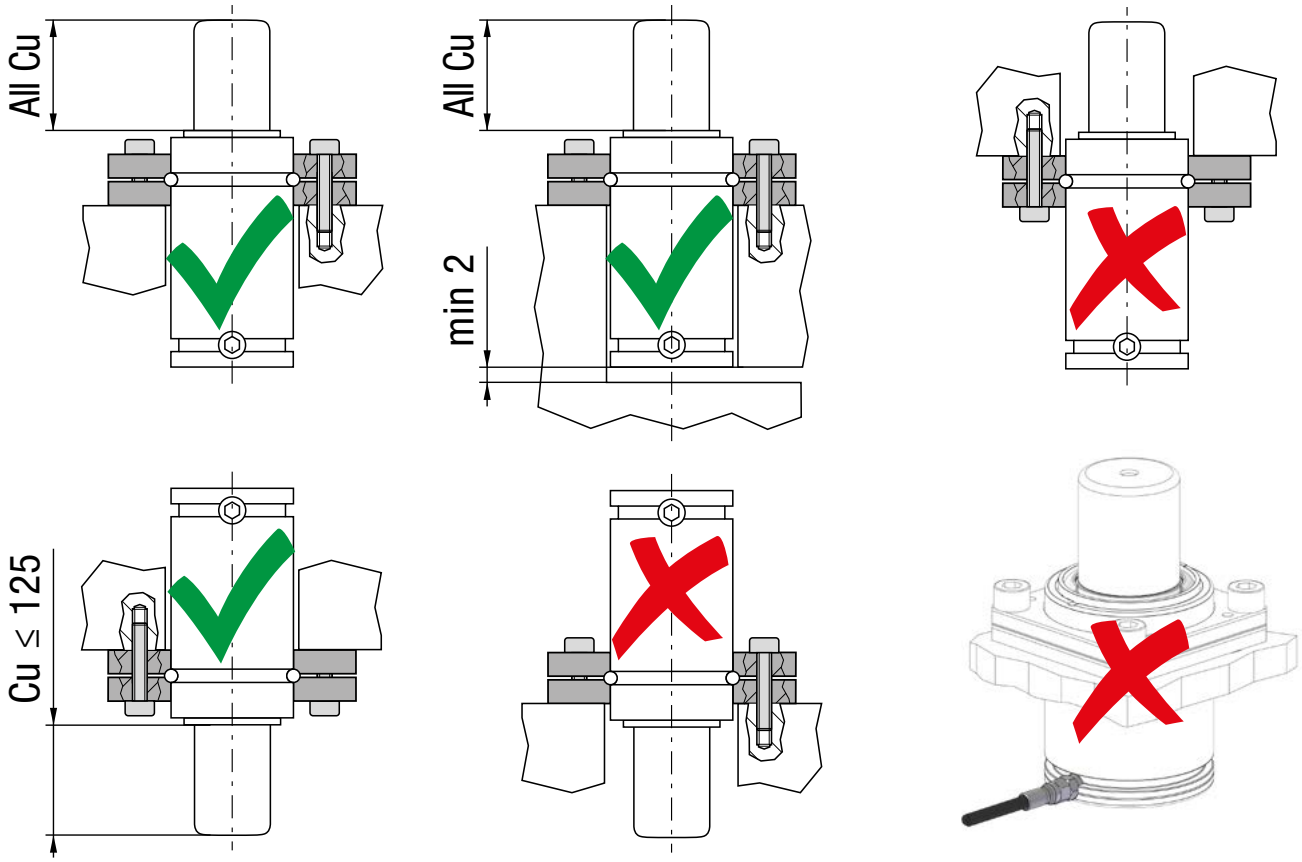
Os parafusos devem ser apertados seguindo a ordem do desenho (1,2,3,4) e aplicado o torque correto. Realize a operação apertando os parafusos gradualmente.





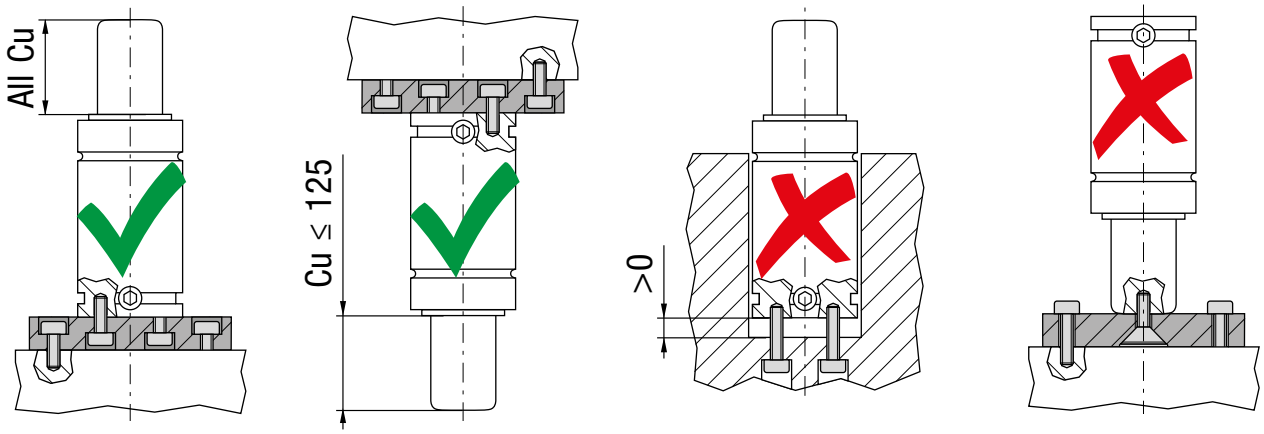
TOP MOUNT VDI 3003 parte 1 rif. 6.1

Montagem superior com flange.



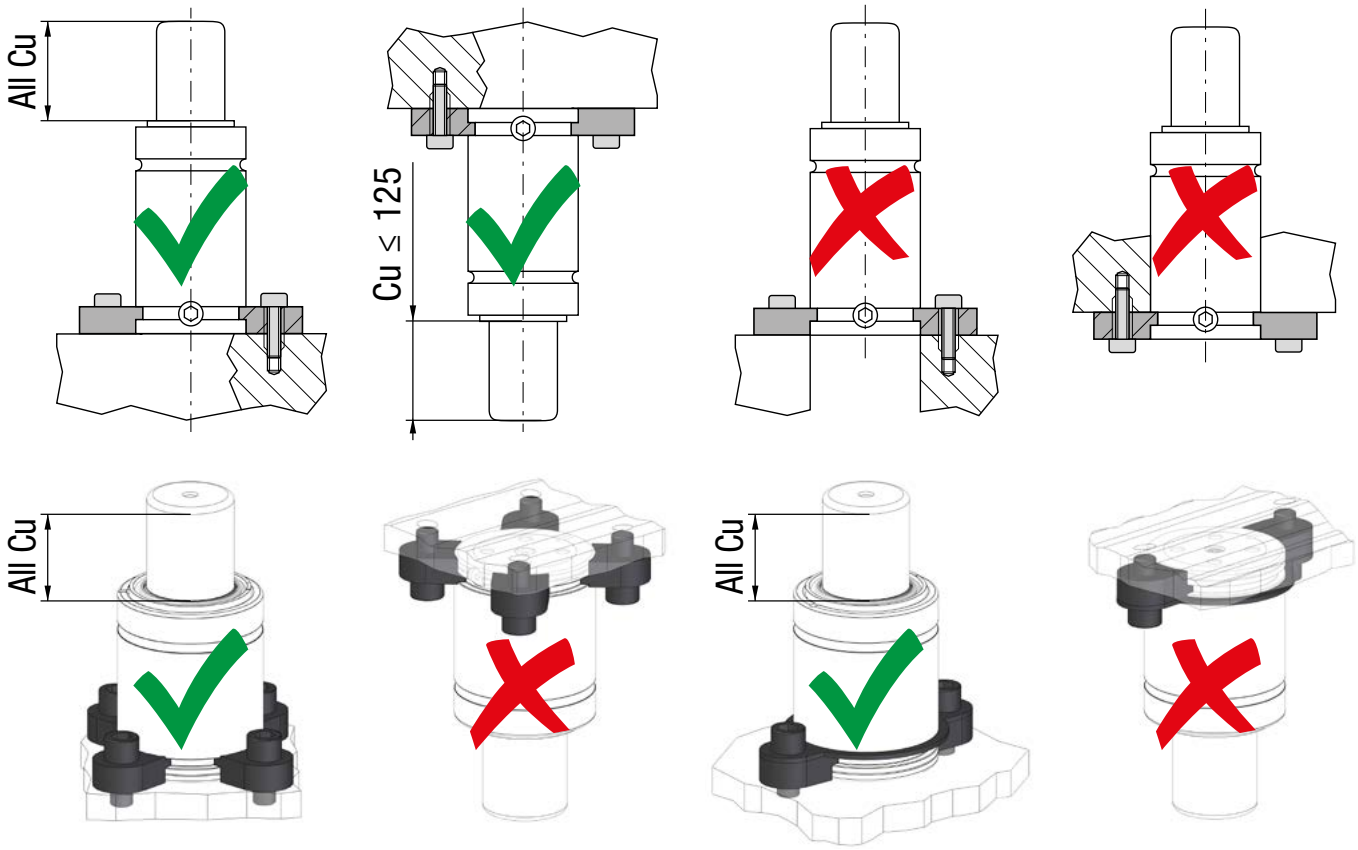
BOTTOM MOUNT Ref. 6.6 da VDI 3003 parte 1

Use parafusos de comprimento apropriado para utilizar toda a profundidade do furo rosqueado no cilindro.



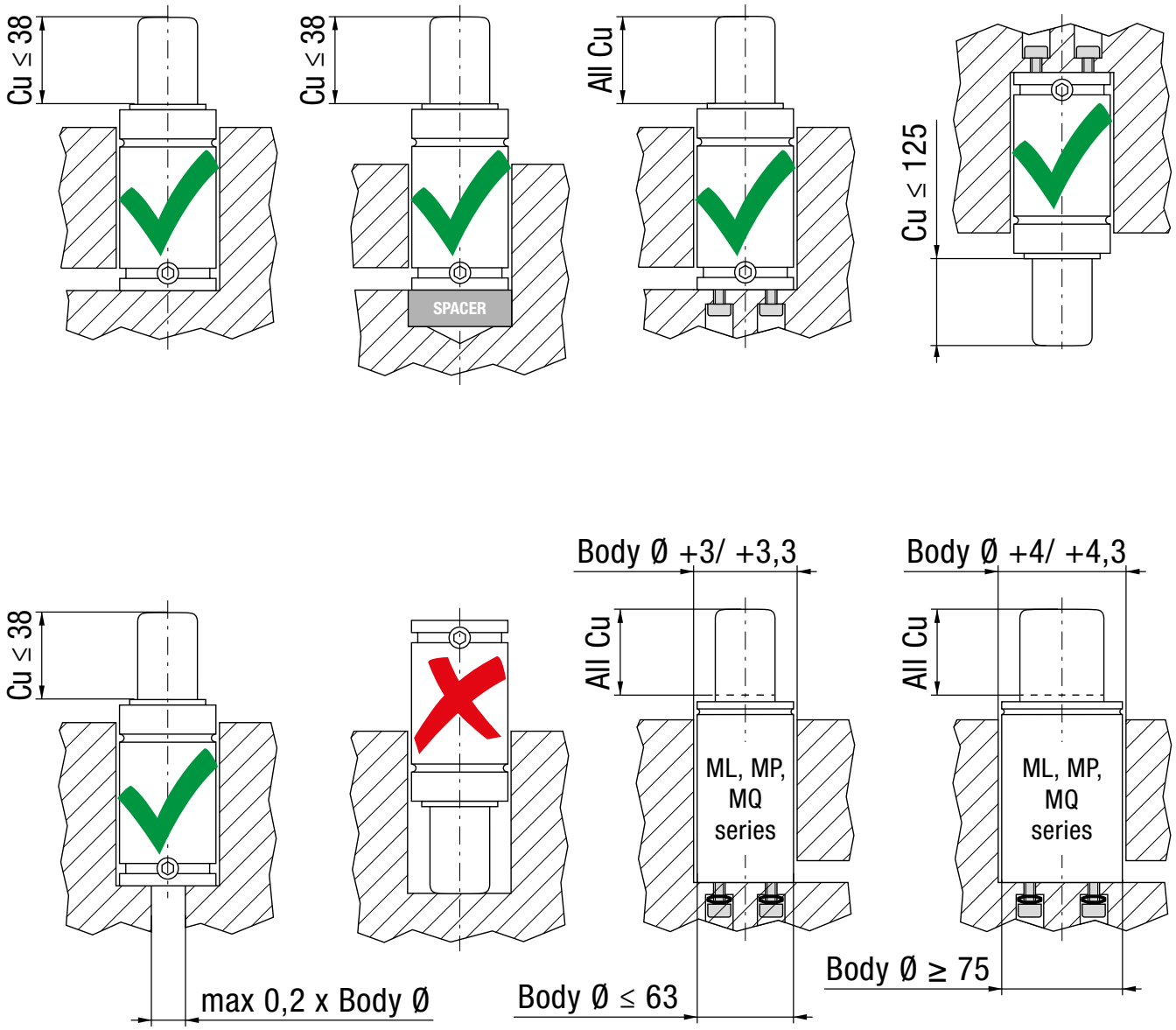
BRACKET MOUNT Ref. 6.2 - 6.3 da VDI 3003 parte 1

Montagem com suportes na base.



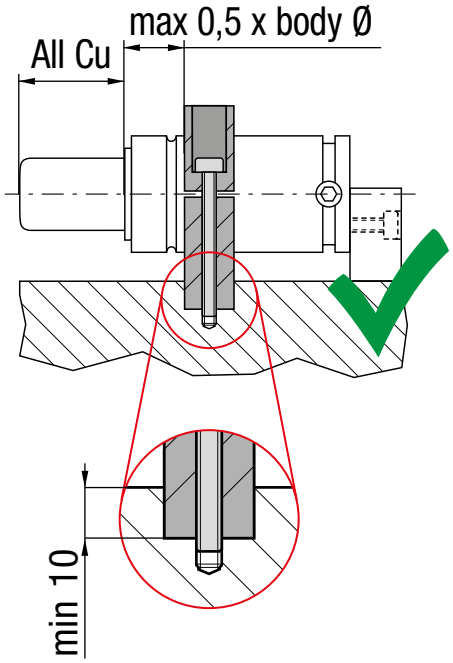
DROP-IN Ref. 6.6 da VDI 3003 parte 1

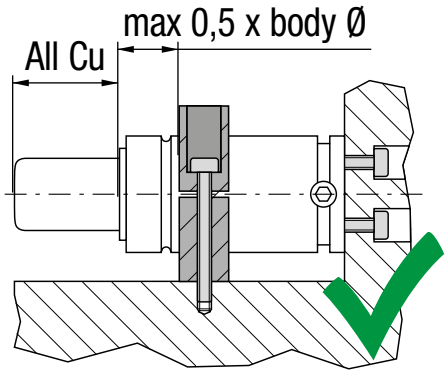
Assegure-se que a superfície de apoio NÃO esteja interrompida. Verifique sempre o estado dos cilindros e da suas sedes após cada intervenção no molde.

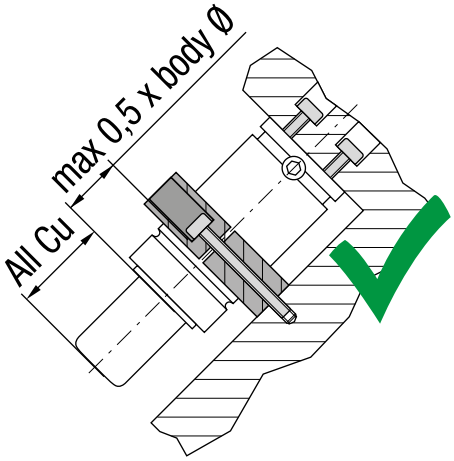


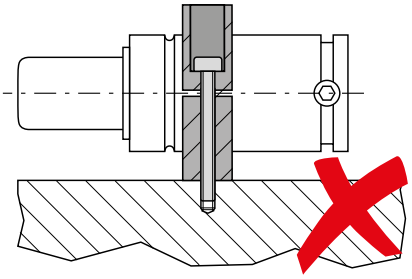
BODY MOUNT Ref. 6.4 da VDI 3003 parte 1

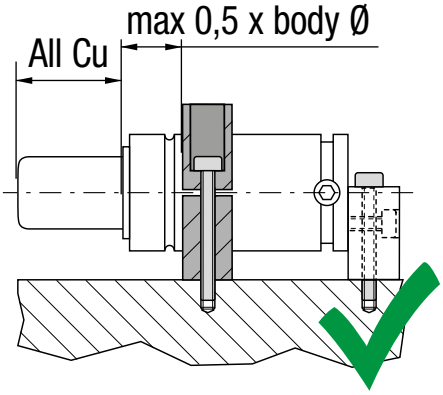
Os cilindros a gás com montagem com flange de fixação requerem sempre um suporte adicional, como monstrado na Figura.

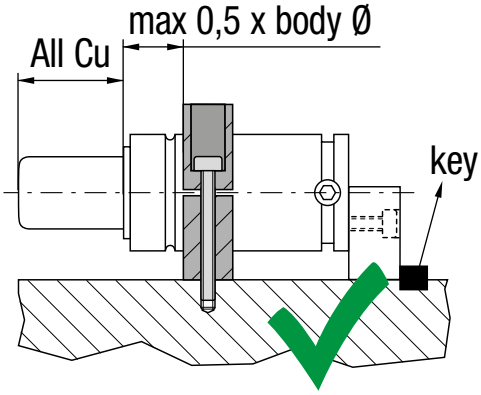






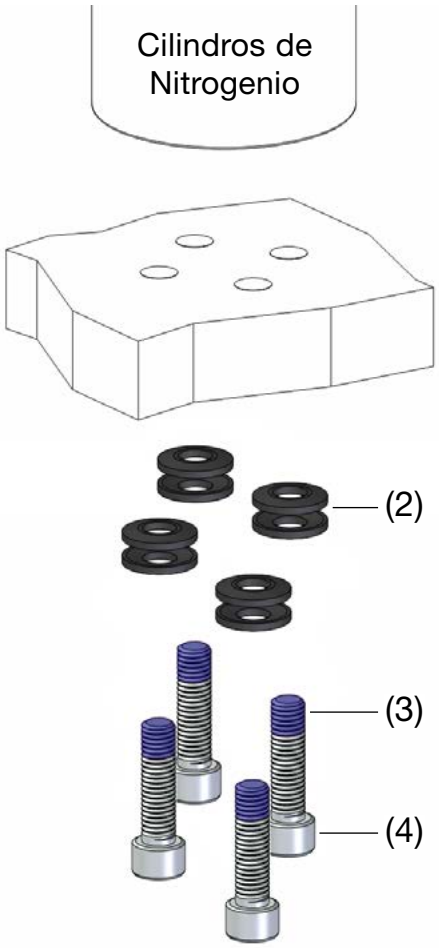
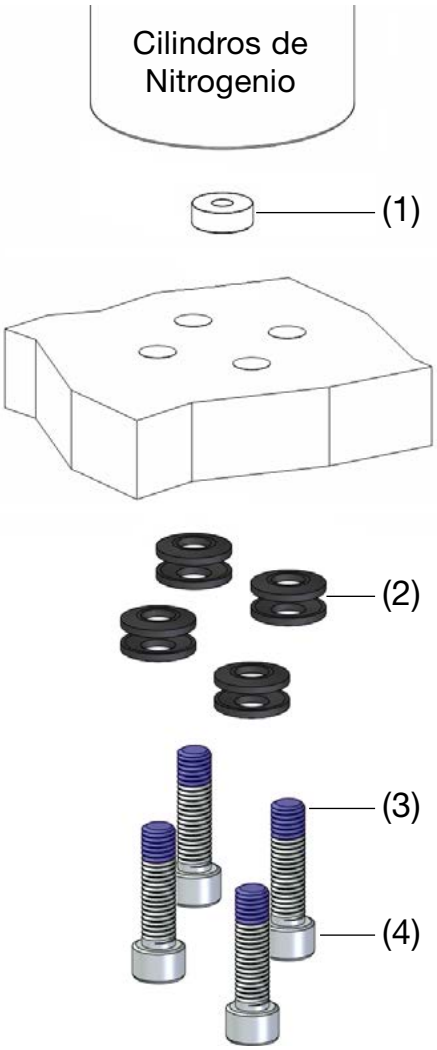
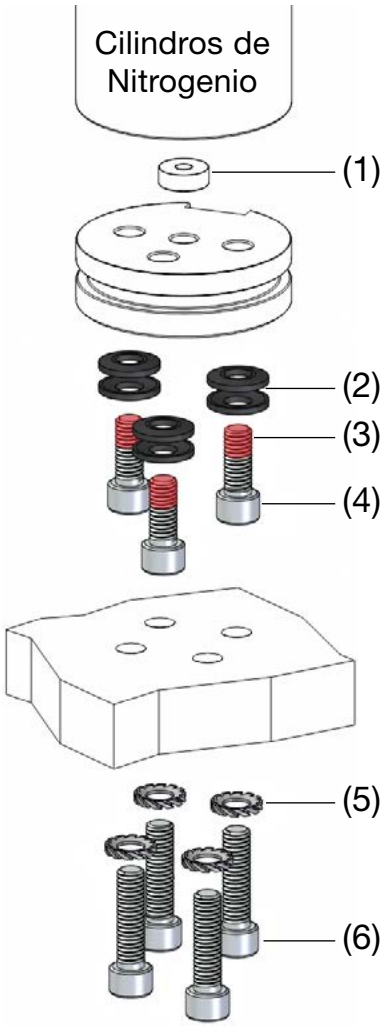






MANUAL DE INSTALAÇÃO: SERIE ML - MP - MQ

Fixar os cilindros respeitando as orientações abaixo. Todas as informações detalhadas estão presentes no manual de instruções de cada cilindro.

Serie ML, MP, MQ AUTONOMO	Serie ML EASY MANIFOLD	Serie ML INTERLIGADOS
		

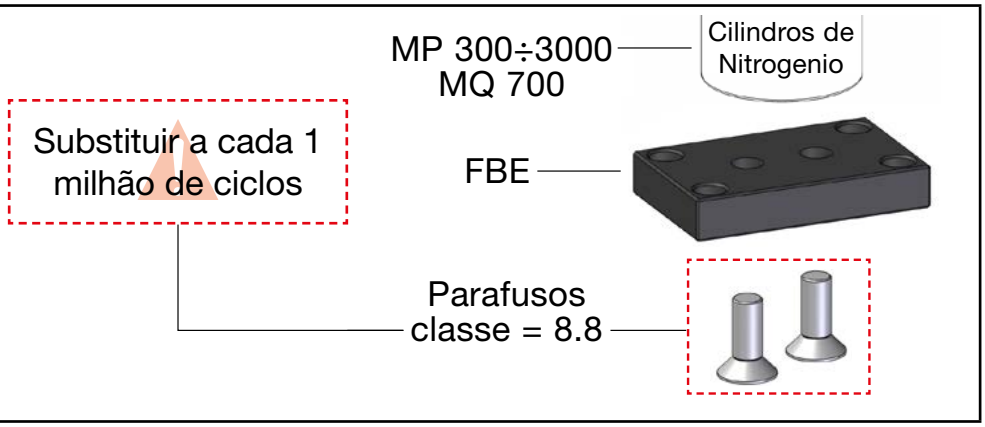
(1) Anel de vedação; (2) Arruela mola conica (no sono sicuro di questo, prego di inviarmi il originale); (3) Loctite 243; (4) Clase = 8,8; (5) Arruelas de segurança DIN 6798A ou SCHNORR tipo S; (6) Clase ≥ 8,8;

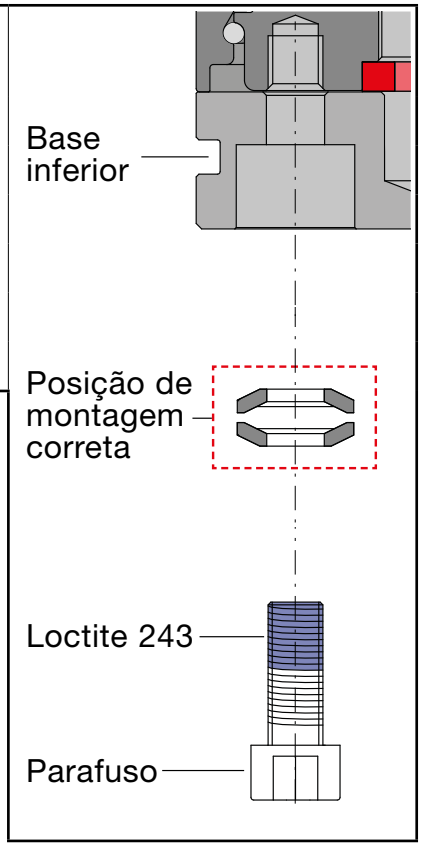
Continua...

Modelo	Código da arruela mola conica
ML 1000 D	49RC06A
ML 1800 D	49RC06A
ML 3000 D	49RCHS08A
ML 4700 D	49RC08A
ML 7500 D	49RC08A
ML 12000 D	49RC10A

A arruela mola conica fornecida pela Special Springs (inclusa com Easy Manifold e cilindro interligado)

Substituir (1)(2)(3)(4) a cada 1 milhão de ciclos



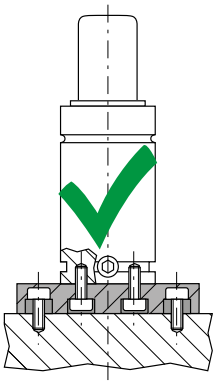


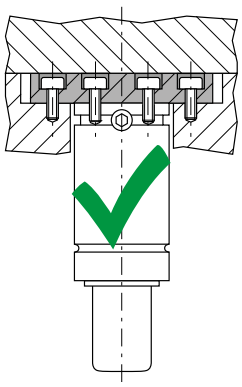
SISTEMAS DE MONTAGEM COM MANGUERA

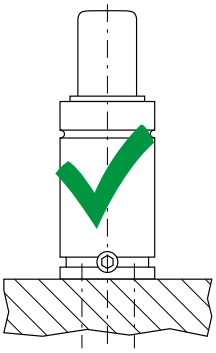
Ref. 6.5 de VDI 3003 parte 1

Não está permitido de deixar girar os cilindros de nitrogênio de um sistema interligado durante as operações de estampagem. A rotação pode causar deterioração das mangueiras e resultar em danos ou vazamento de gás. Por isso não é admissível a instalação dos cilindros de nitrogênio de um sistema interligado frouxamente em buracos ou com montagem superior com flange.

No entanto, os cilindros de nitrogênio podem não obstante girar em condições desfavoráveis de funcionamento. Nestas situações particulares, os cilindros de nitrogênio deveriam ser aparafusados através das roscas inseridos na base do cilindro (diretamente o numa chapa de base - ver Figura).







ÍNDICE

A segurança para nós não é somente questão de Marketing, é a nossa filofia em cada decisão. Em todos os produtos Special Springs existe uma grande pesquisa e desenvolvimento, o uso de tecnologias de ultima geração, contorles de qualidade e de segurança, todos em conformidade com as normas e focados em garantir a voce uma qualidade superior, durabilidade e confiabilidade. Descubra a gama de produtos da Special Springs.

OSAS 126

USAS 127

OPAS 128

SKUDO 128

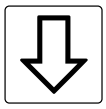
- **COMO FUNCIONAN OS DISPOSITIVOS DE SEGURANÇA:**
  Se os dispositivos de segurança são ativados, a pressão é liberada de forma controlada.

- **O QUE FAZER DEPOIS:**
  Se os dispositivos de segurança são ativados, verificar e descarregar qualquer pressão residual, eliminar as causas dos danos e substituir sempre o cilindro danificado.

OSAS Ref. 8.2 de VDI 3003

Over
Stroke
Active
Safety

VDI 3003



+

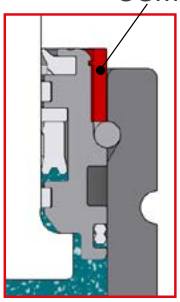
Over
Stroke
Marker

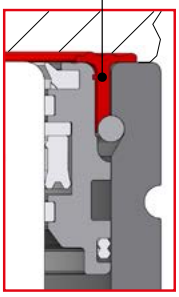
Seguridad Activa de Fin de Carrera

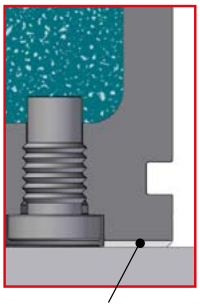
Anel de vedação dentro das ranhuras

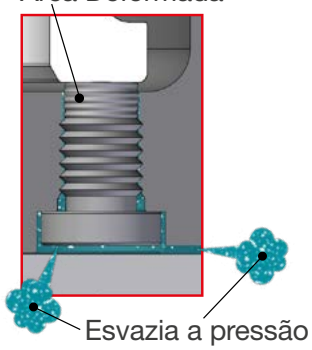
DESIGN – BUCHA - CORPO

Padrão com: M300 - RV - RF - RS - RG - RT - S - SC - H - HF HT - LS



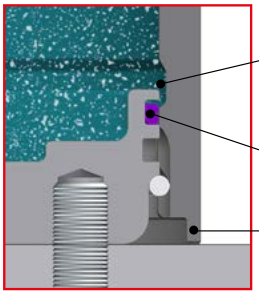


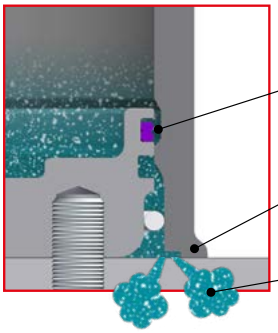




DESIGN: DESIGN PLACA INFERIOR - CORPO

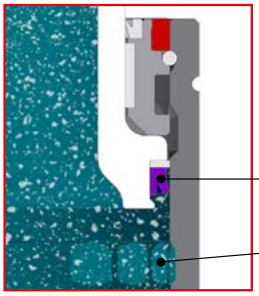
Padrão com: ML - MP - MQ

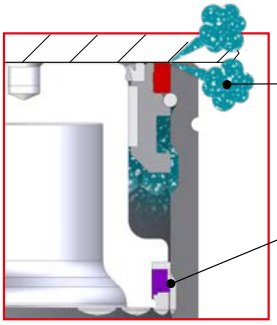




DESIGN: DESIGN HASTE - CORPO

Padrão com: KE

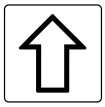




USAS Ref. 8.2 de VDI 3003

Uncontrolled
Speed
Active
Safety

VDI 3003



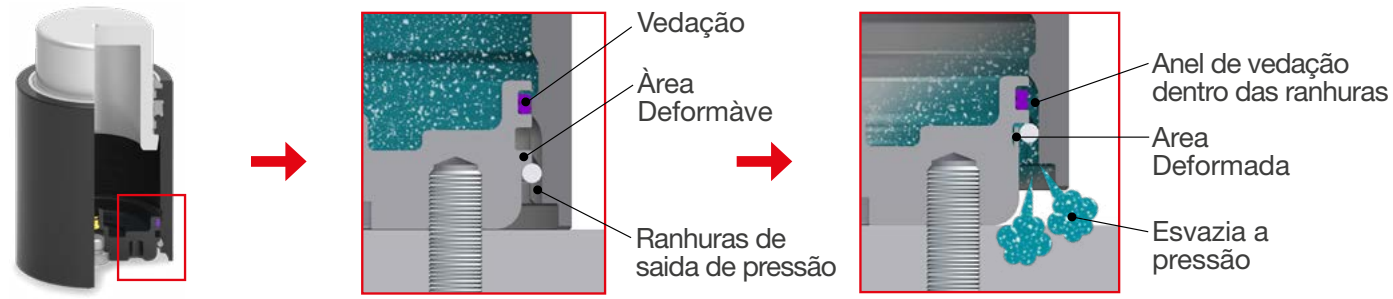
Segurança para Retorno Descontrolado

DESIGN – BUCHA - CORPO

Padrão com: M300 - RV - RF - RS - RG - RT - S - SC - H - HF HT - LS

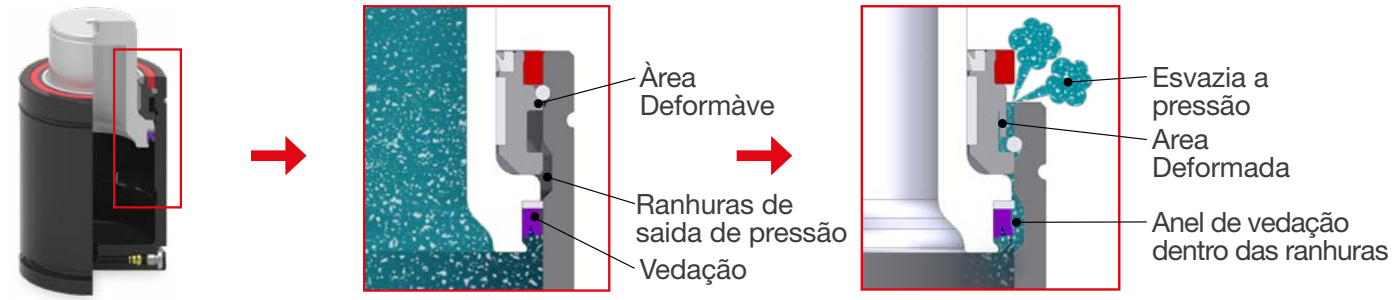
DESIGN: DESIGN PLACA INFERIOR - CORPO

Padrão com: ML - MP - MQ



DESIGN: DESIGN HASTE - CORPO

Padrão com: KE



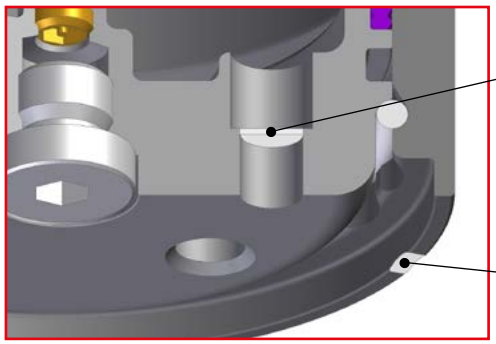
OPAS Ref. 8.3 de VDI 3003

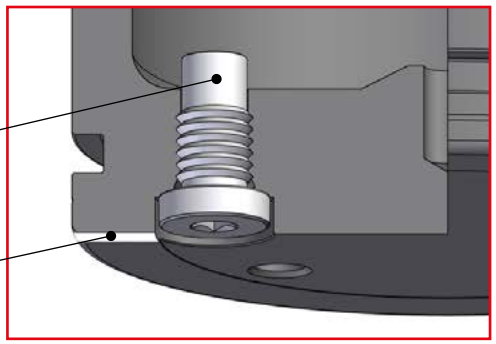
Over
Pressure
Active
Safety

VDI 3003

Padrão com: M - MS - RV - RS - RF - RG - RT - S
SC - H - HF - HT - LS - ML - MP - KE

Segurança Sobre Pressão

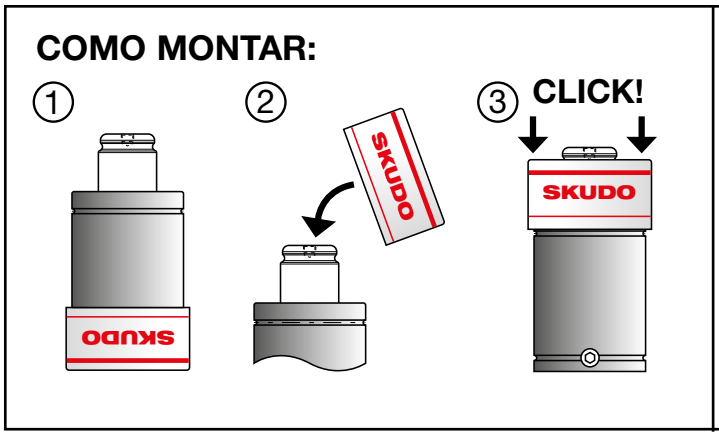


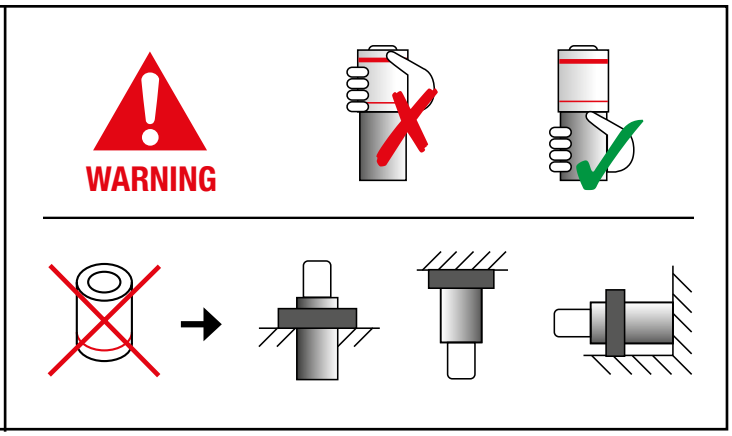


SKUDO

Capa Protetora Contra Resíduos

Padrão com: KE - RS - MS





- Todos os componentes estruturais dos cilindros Special Springs são projetados e construídos em total comformidade com as regras em força (PED 2014/68/EU) e EN 13445:2018, para no mínimo de 2.000.000 ciclos com máxima pressão, temperatura e para os tipos de dispositivos de fixação.
- Com referência às molas a gás das Séries RV, RS, RF, RG, RT, SC, SCF, S, H, HF, LS (excluindo os modelos RV/RS170 e RV / RS 320), a Special Springs recomenda substituí-las no máximo após 10 anos desde a primeira colocação em funcionamento.
- Referindo-se às molas a gás das Séries ML, MP, MQ, KE Special Springs recomenda substituí-las no máximo após 10 anos ou 4 milhões de ciclos a partir da primeira colocação em funcionamento (o que ocorrer primeiro).
- Este componente foi projetado exclusivamente para uso industrial e para ser utilizado como elemento elástico.
- Este componente deve ser utilizado somente pelo pessoal encarregado que deve ter lido e assimilado o conteúdo desta folha de instruções.
- Não submeter o componente a prestações superiores a quanto indicado. Não utilizar o componente em presença de chamas ou fontes de calor.
- Não armazene ao ar livre ou em locais de alta umidade.
- O uso inapropriado dos cilindros diferentemente do que indicado, isenta a Special Springs de qualquer responsabilidade.

INSTRUÇÕES DE USO:

- Não utilizar um torno para verificar a força de um cilindro. (fig. 1)
- Fixar sempre o cilindro no molde quando possível.
- É proibido posicionar o cilindro de forma não perpendicular. Evite exercitar cargas radiais durante a compres são da haste. Sempre aplique pressão em toda a superfície final da haste. Tanto quanto possível, equalize a carga no molde. (fig. 2)
- Utilizar o furo roscado na haste apenas para manusear. É proibido fixar o cilindro através do furo rosqueado na cabeça da haste. (fig. 3)
- Não efetuar nenhum tipo de operação mecânica no corpo ou na haste. (fig. 4)
- É proibido qualquer retorno incontrolado da haste pistão. O retorno incontrolado pode causar danos, cedimentos mecânicos, no cilindro ou nas suas fixações. (fig. 5)
- Proteger a superfície dos cilindros contra objetos e/ou fluidos agressivo (sódio e cloretos). Se eles forem utilizados para limpar a ferramenta, remover qualquer resíduo dos cilindros. (fig. 6)
- Recomenda-se considerar uma reserva de 10% do curso nominal o de 5 mm para cursos superiores a 50 mm (fig. 7).
- Não utilizar o cilindro com temperatura superior a 80°C/176°F. (fig. 8)
- É proibido carregar o cilindro com gases que não sejam azoto N2. (fig. 9)

Continua...

- Não utilizar o cilindro com velocidade superior a 0,8 ÷ 1,8 m/seg. (fig. 10)
- É proibido carregar o cilindro com pressão superior à marcada no corpo. (fig. 11)
- Durante a descarregamento, inverter o cilindro e orientar o fluxo de gás na direcção oposta para o operador. (fig. 12)
- Se ocorrer uma situação de risco de que os cilindros a gás possam ter sido danificados, os cilindros a gás devem ser descarregados imediatamente enquanto eles estão ainda na posição de instalação abrindo a válvula o com uma perfuração no corpo do cilindro até que o gás tenha sido descarregado. (fig. 13)

Fig. 1

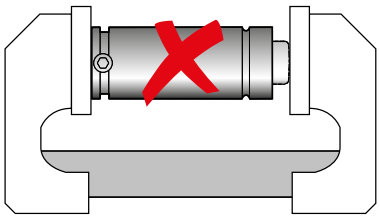


Fig. 2

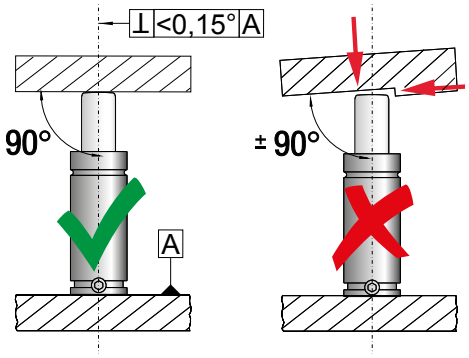


Fig. 3

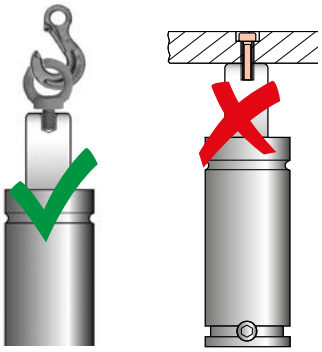


Fig. 4

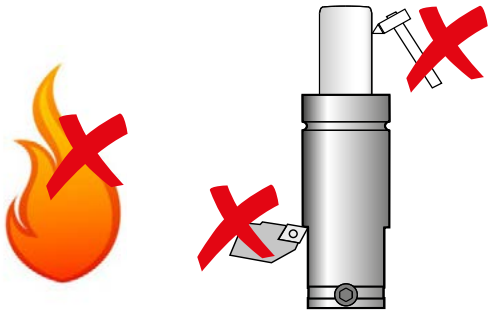


Fig. 5

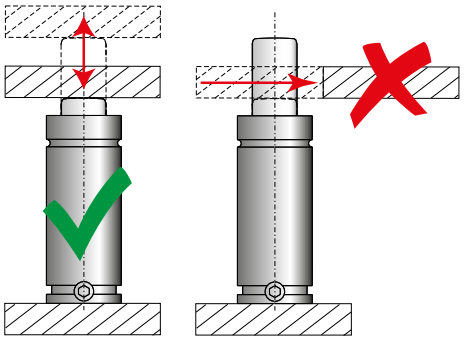
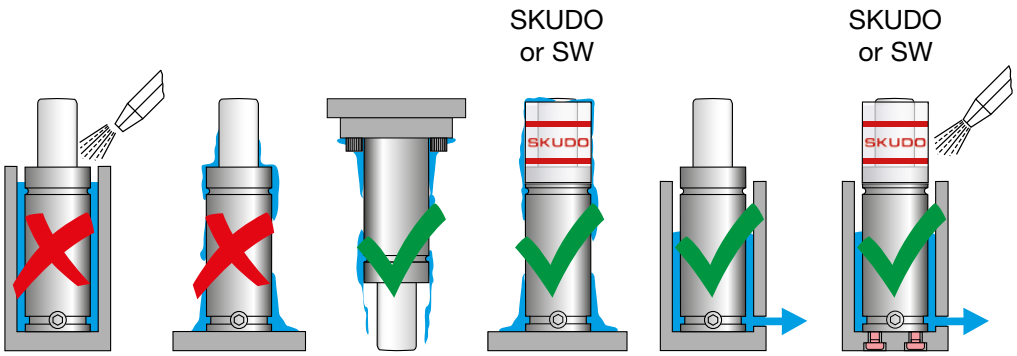


Fig. 6



CLORETO DE SODA

Continua...

Fig. 7

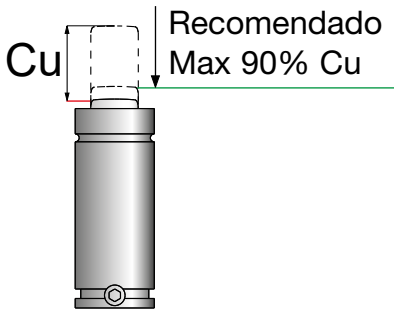


Fig. 8

±1 °C = aprox. ±0,33 % P

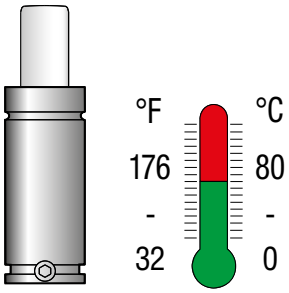


Fig. 9

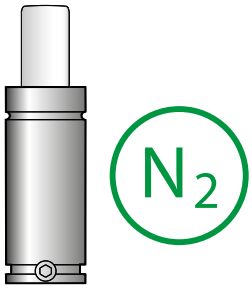
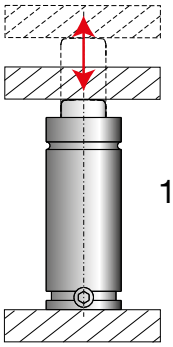


Fig. 10



VELOCIDADE MAXIMA
1,8 m/seg todas as series
0,8 m/seg serie KE

Fig. 11

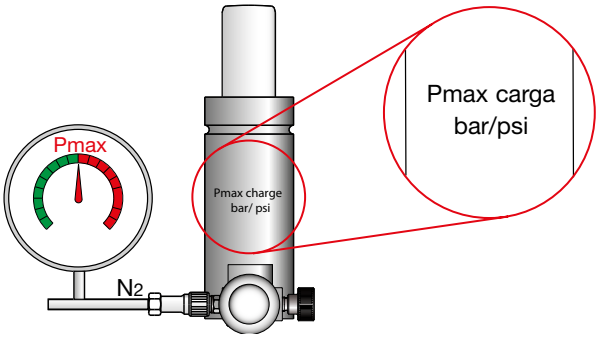


Fig. 12

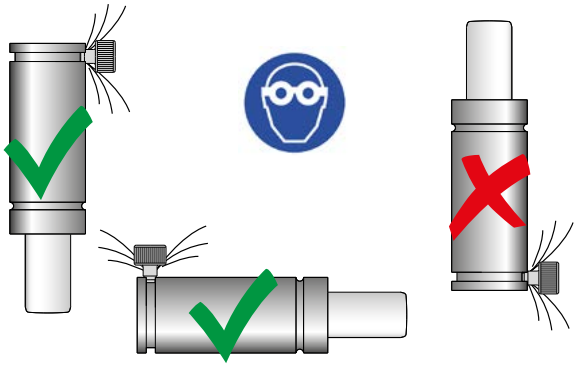
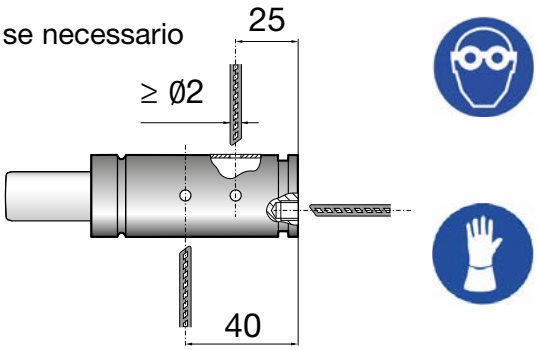


Fig. 13

Furos 2x, se necessario



- Recomenda-se controlar sempre a fixação correta dos cilindros a cada intervenção feita no molde. Em caso de parafusos soltos ou danificados, o cilindro pode ter sido sujeito a um recuo descontrolado.
- É recomendado substituir o cilindro e remover a causa do recuo descontrolado.
- A manutenção dos cilindros deve ser sempre realizados por pessoal qualificado com o uso exclusivo de kits de componentes Special Springs, sob pena de decadência da garantia e responsabilidade do fabricante.
- Antes de eliminar qualquer cilindro à gás, descarregar completamente a pressão.

No caso de exceder os limites de funcionamento estabelecidos pela Special Springs (Quadro 1), proceda à manutenção do cilindro. A operação pode ser efetuada por Special Springs ou no local ordenando o Kit adequado, fornecido com o Manual de Instruções. O código do kit de manutenção (Man. Code) está marcado nos cilindros (Fig. 14).

Quadro 1

Serie	Cu	Intervalos de manutenção previstos	Nr. de substituições para o selo	Da primeira colocação em funcionamento
RV, RS, RF, RG, RT, SC, SCF, S, H, HF, LS (exceto RV170, RS170, RV320, RS320)	≤ 50mm	1.000.000 pancadas	3	10 anos
	> 50mm	200.000 metros lineares de curso		
ML, MP, MQ, KE	≤ 50mm	500.000 pancadas	3	10 anos ou 4.000.000 pancadas
	> 50mm	100.000 metros lineares de curso		

Prender os cilindros para executar qualquer tipo de manutenção.

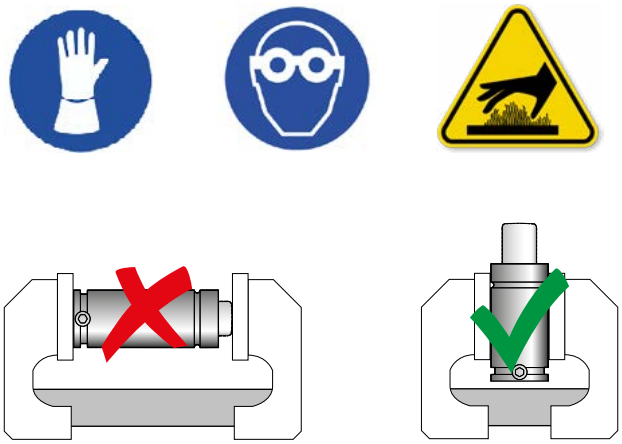
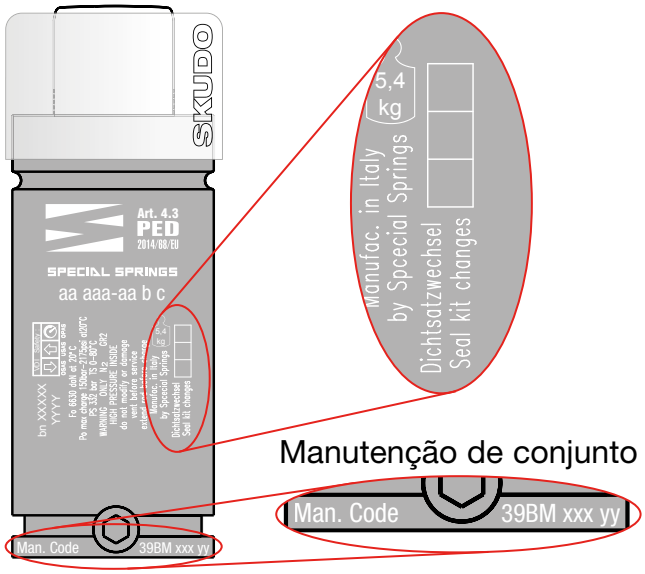


Fig. 14



Special Springs efectuou os testes de acordo com § 8.3 EN 14359:2006.
Ao instalar os cilindros a gás num molde no quadro da lei alemã, você está sujeito como usuário às seguintes obrigações, especialmente para a primeira operação e os testes regulares, conforme prescrito pela BetrSichV:

Volume *(Litros)*	**Teste antes da 1a operação**		**Testes regulares**		
	Baseado em	**Responsável**	**Baseado em**	**Responsável**	**Prazo máx. permitido de teste**
< 1 l	§ 14	bP	§ 14	bP	Determinado pelo empregador
> 1 l	§ 15	ZÜS (1	§ 16	bP	5 anos IP, 10 anos FP
> 6,67 l	§ 15	ZÜS	§ 16	ZÜS	

(1 - Procedimento simplificado de acordo com o Apêndice 2, Artigo 4, No. 6.30.1 da BetrSichV

Lista de Abreviaturas:

BetrSichV	Decreto de Segurança Operacional na Alemanha
bP	Pessoa qualificada pelo teste
FP	Prova de resistência
IP	Inspeção interna
ZÜS	Organismo notificado