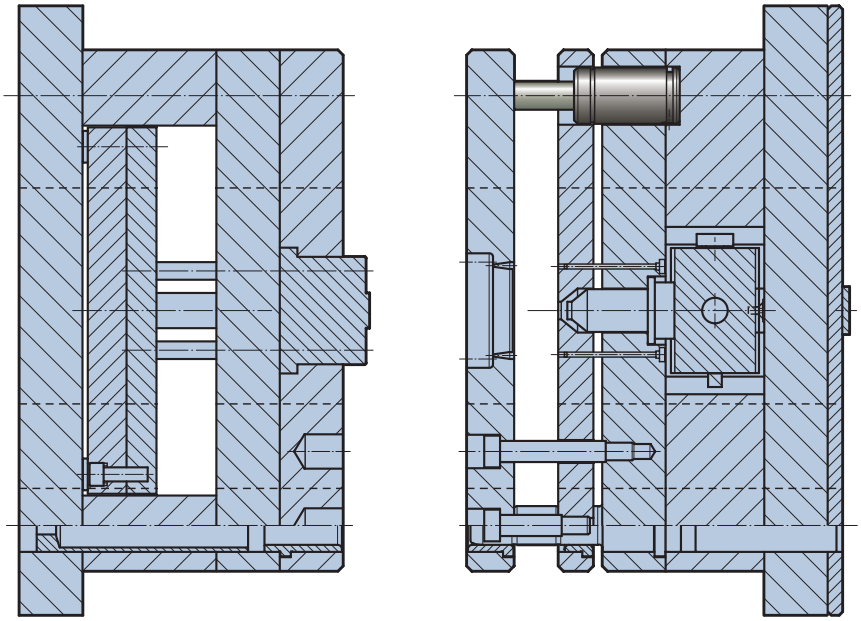
GASVEER VOOR SPUITMATRIJS

3487

Deze compacte gasveren met grote regelbare krachten zijn bestemd voor een continu werkingstemperatuur van 120°C.
Ze zijn conform aan de laatste Europese richtlijnen en beschikken over verschillende veiligheidsfuncties.
Ze kunnen onderhoudsvrij gebruikt worden tot 1 miljoen slagen en eisen geen smering.

De vervanging van traditionele matrijsopeningssystemen door gasveren laat een belangrijk winst toe door de afschaffing van de nodige laterale bewerkingen voor deze systemen.
In geval van blokkering van een mobiel element, kan een normale openingsdispositief beschadigingen in de spuitmatrijs ten gevolge hebben.
De gasveren neutraliseren dit fenomeen : indien de maximum kracht overschreden is, blijft hij in positie zonder componenten te beschadigen. Wanneer de blokkering opgeheven is kan de productie zonder vertraging opnieuw plaats vinden. (starten)



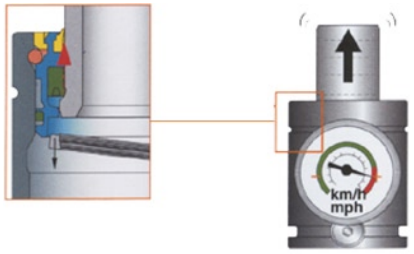
GASVEER VOOR SPUITMATRIJS

2487

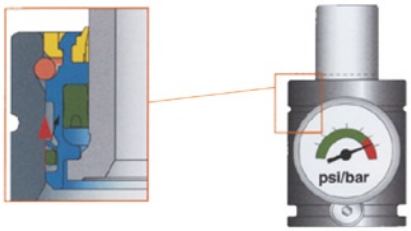
Deze gasveren worden vooral gebruikt bij matrijswerken op persen. Aanvankelijk waren de beschikbare modellen omvangrijk en zwaar. Zij interesseerden praktisch uitsluitend de automobielnijverheid.
Dankzij evidente technische voordelen als grote krachten en grote koersen, groeide gaande weg de interesse in andere takken van de industrie en zochten de fabrikanten naar de miniaturisering van de modellen. Vandaag kunnen gasveren in de meeste matrijzen geïntegreerd worden.
Er dient wel aandacht gevestigd te worden op het feit dat de huidige modellen het resultaat zijn van onnoemelijk veel ontwikkelingen ter voorkoming van soms ernstige ongevallen, die voorvielen met de eerste generaties. Indien deze gasveren niet beantwoorden aan zeer hoge veiligheidsvoorwaarden kunnen zij zeer gevaarlijk zijn en behoorlijk wat schade aanrichten.

De Gasveren van FIBRO garanderen een maximum aan veiligheid in de volgende 3 “rampscenario’s:

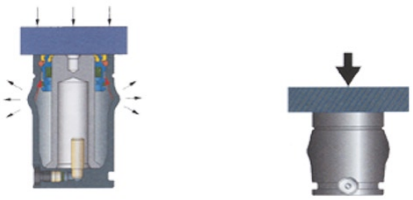
1)Beveiliging tegen een te hoge terugkeersnelheid:
Wanneer de zuigerstang te snel naar buiten komt, breekt een ingebouwde veiligheidsdichting zodat het gas zonder gevaar kan ontsnappen. Hierdoor wordt voorkomen dat de zuigerstang uit zijn behuizing losschiet.



2)Beveiliging tegen interne overdruk:
Wanneer de maximaal toegelaten, interne druk overstegen wordt, wordt een veiligheidsaanslag vernietigd om het gas zonder gevaar te laten ontsnappen en te vermijden dat het gasveerlichaam zou ontploffen.



3)Beveiliging tegen koersoverschrijding:
De gasveercilinder is op zo een manier ontworpen dat zijn lichaam op een vooraf bestemde manier zal vervormen bij overschrijding van de koers. Het gas kan dan ontsnappen om overdruk te vermijden.



Voor de aanschaf van gasveren moeten aankopers zich ervan verzekeren dat:

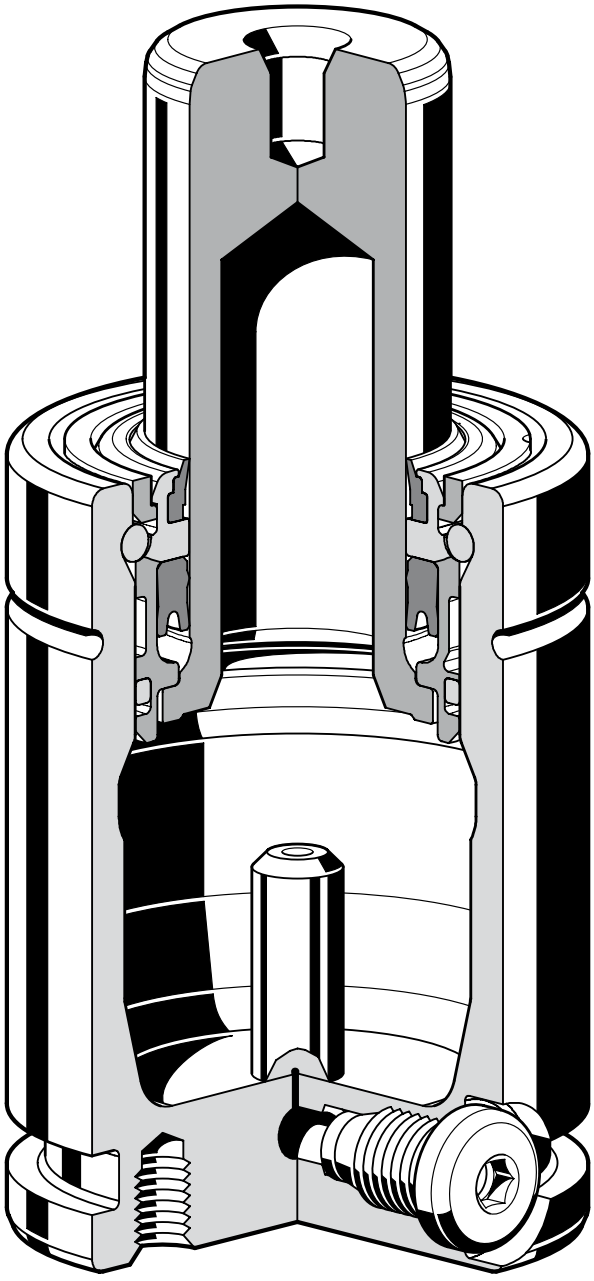
1) de gasveer wel degelijk voorzien is van een veiligheidsdichting ter beveiliging van een te hoge terugkeersnelheid.
2) De gasveer beantwoordt aan de vervaardiging en controle volgens de Europese richtlijn voor uitrustingen onder druk (DGRL) 97/23/EG voor minimaal 2 miljoen volledige slagen en dit voor:
   - de hoogste vulkracht
   - de hoogste toegelaten temperatuur
   - alle aangeboden bevestigingsmiddelen, de flenzen volgens ISO 11901-2 inbegrepen.

Opmerking: wanneer de maximale druk hoger ligt dan 0,5 bar moeten alle gasdrukveren geproduceerd, verkocht en geïnstalleerd in Europa aan de richtlijn DGRL 97/23/EG voldoen.

De gasveren van FIBRO beantwoorden aan al deze vereisten!!!

GASVEER VOOR SPUITMATRIJS

2487



GASVEER VOOR SPUITMATRIJS

2487

Maintenance

FIBRO FML gas springs are designed for long-term maintenance-free operation. We recommend lightly oiling the piston rod before using. Sealing and guide elements can be replaced easily in very little time.
They are available in a spare parts kit.
Each spare parts kit comes with detailed instructions for maintenance of gas springs.

Caution!

Gas springs may only be charged with commercial Grade 5.0 nitrogen gas.

Accessories

The range of accessories for gas springs includes fastening devices, charging and control units, screw connections and lines for setting up compound systems.

Advantages of the FIBRO Mould Line series:

- Very little calibration work required in the tool
- No lubrication required
- No maintenance required for up to 1,000,000 strokes[1]
- Variably adjustable forces
- For mould temperatures of up to 120°C
- Approved as per the European Pressure Equipment Directive 97/23/EC (14th GSGV regulation for pressure vessels)
- Standard safety features (FIBRO Safer Choice)[2]
  Safety piston rod
  Excess pressure protection
  Overstroke protection
- A pressure monitoring system makes it possible to recognise an impending failure at an early point (prevention)
- No tool breakage if the 2nd separation level is locked (the plate comes to a standstill; after the jam is removed, production can be resumed)
- Used worldwide in one million FIBRO gas springs
- Cost savings: approximately 60-70%
  (e.g. compared to a latch-locking unit)

[1] At 80°C to 120°C/ 500,000 strokes
[2] Depending on type of spring

Warning Signs

These are available on request. The signs should be affixed near the springs in as prominent a position as possible.

WARNING
This tool is equipped with __ Gas Springs with a max. pressure of 150 or 180 bar, depending on spring type.
Working pressure _____ bar.
Read maintenance instructions before working on gas springs.
FIBRO GmbH · Division Standard Parts
DE-74851 Hassmersheim · Postfach 1120
Phone +49 (0) 6266-73-0* · Fax -237

Size 35x50 mm

Language	Order No
german	2480.00.035.050.1
english	2480.00.035.050.2
french	2480.00.035.050.3
italien	2480.00.035.050.4
spanish	2480.00.035.050.5

WARNING
This tool is equipped with ___ Gas Springs with a max. pressure of 150 or 180 bar, depending on spring type.

No.	pcs.	spring type	fill.press./bar	force/daN
1	____	_____	_____	_____
2	____	_____	_____	_____
3	____	_____	_____	_____
4	____	_____	_____	_____
5	____	_____	_____	_____

Read maintenance instructions **before** working on gas springs.
FIBRO GmbH · Division Standard Parts
DE-74851 Hassmersheim · Postfach 1120
Phone +49 (0) 6266-73-0* · Fax +49 (0) 6266-73-237

Size 75x105 mm

language	Order No
german	2480.00.075.105.1
english	2480.00.075.105.2
french	2480.00.075.105.3
italian	2480.00.075.105.4
spanish	2480.00.075.105.5

Size110x150 mm

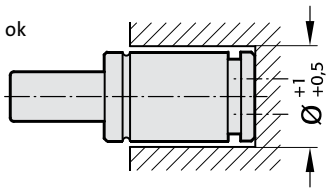
language	Order No
german	2480.00.110.150.1
english	2480.00.110.150.2
french	2480.00.110.150.3
italian	2480.00.110.150.4
spanish	2480.00.110.150.5

GASVEER VOOR SPUITMATRIJS

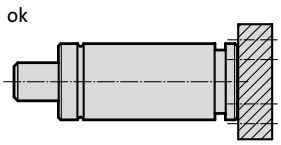
2487

Mounting examples

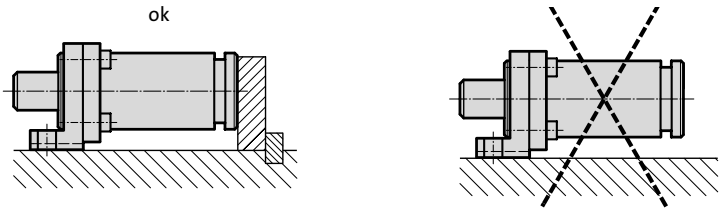
Mounting possibilities for gas springs are listed below.
For additional information on mounting, see the corresponding pages in the catalogue.



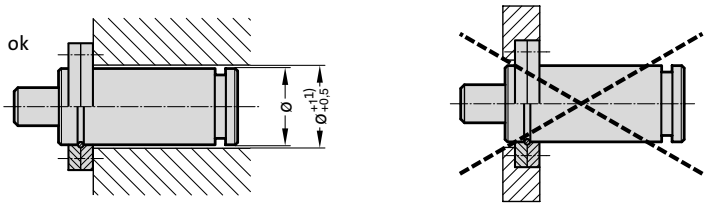
Screw mounted at the base



Screw mounted at the base with 2480.011.

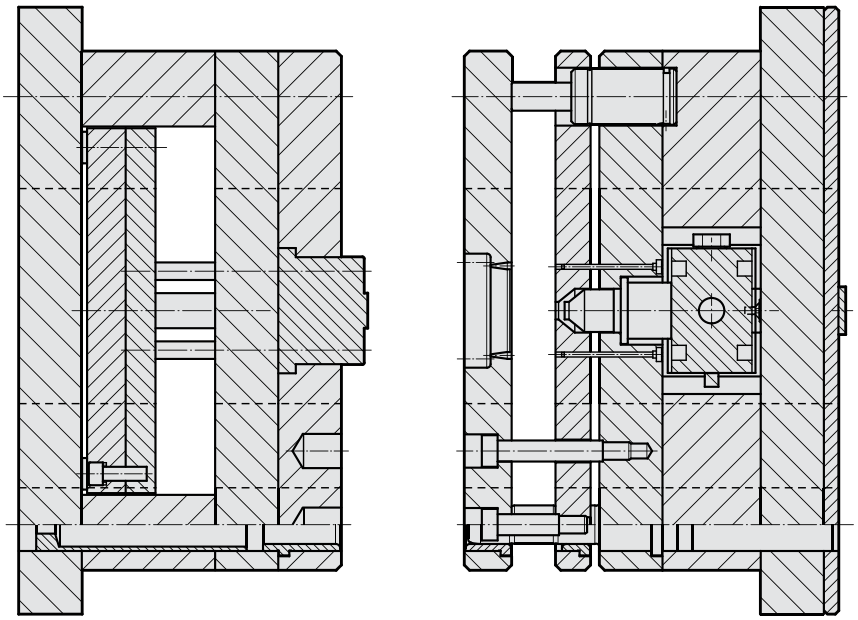


Fastened with 2480.044./045./047.



Fastened with 2480.055./057./064.
1) from ø38: $\phi^{+2}_{+0,5}$

Installation principle:

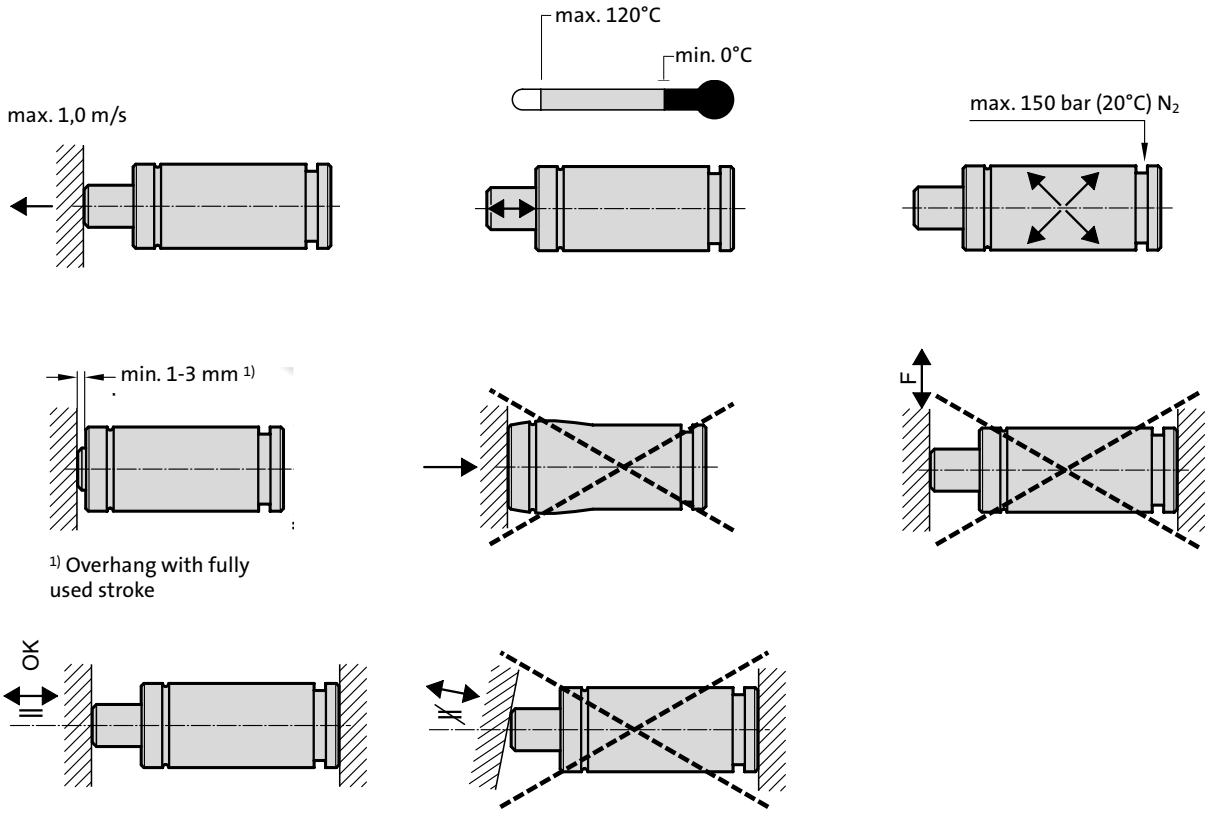


GASVEER VOOR SPUITMATRIJS

2487

To achieve the best possible service life and safety for the gas springs, the installation instructions must be followed.

Mounting instructions



1) Overhang with fully used stroke

- Secure the gas spring in the tool/machine whenever possible using the threaded holes in the base of the spring or clamping elements.
  Do not exceed the maximum tightening torques for the threads in the base of the gas spring:
  (M6 = 10 Nm; M8 = 24 Nm; M10 = 45 Nm; M12 =80 Nm)
- The threaded hole in the piston rod must not be used for fastening gas spring. It must only used for servicing the gas spring.
- Do not use the gas spring in such a way that the piston rod is released abruptly from the position in which it is pressed down (internal damage to the gas spring).
- Install the gas spring parallel to the direction of the compression stroke.
- The contact surface for activating the piston rod must be perpendicular to the direction of the compression stroke and must be sufficiently hardened.
- The gas spring must not be subjected to any forces acting from the side.
- Protect the piston rod against mechanical damage and contact with liquids.
- We recommend leaving an unused stroke reserve of 10% of the nominal stroke length or 5 mm.
- The maximum charging pressure as a function of the working temperature must not be exceeded.
  If it is, the safety of the system cannot be guaranteed.
- Exceeding the maximum permissible working temperature will reduce the service life of the gas spring significantly.
- The surface of the piston rod/piston should be completely charged.

GASVEER VOOR SPUITMATRIJS

3749.030

Description:

Spring-loaded plungers are used as ejectors, vibration damping bolts, position holding devices and ejector pins in various areas of engineering involving tools, devices, moulds and machines.
Assembly is performed with a FIBRO insertion tool (2470.12.010.017.)

Note:

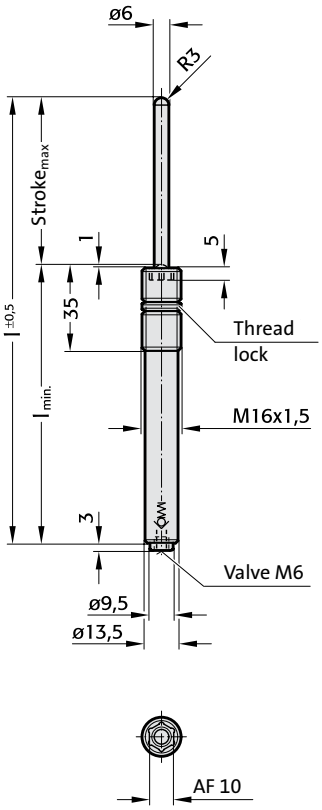
Do not repair worn springs; they have to be replaced completely

Pressure medium:	Nitrogen – N_2
max. filling pressure:	see table
min. filling pressure:	25 bar (20°C)
Working temperature:	0 °C to +120 °C
temperature-dependent force increase:	±0.3%/°C

Recommended max. strokes/min.	Working temperature range	Max. filling pressure at 20°C in bar
20	at 0°C- 80°C	150
15	at 80°C-100°C	125
10	at 100°C-120°C	115

Max. piston speed: 1.0 m/s

3479.030.



[2] Hexagon nut order supplementary: 2480.004.00040.1 (M16 x 1.5)

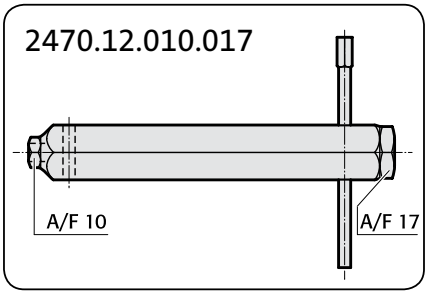
3479.030.

The initial spring force at 150 bar/20°C is 42 daN

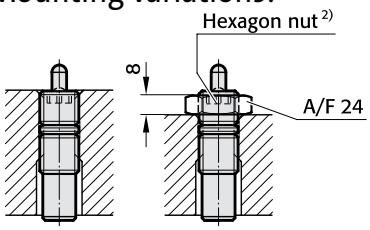
Order no.	Stroke max.	l min.	l
3479.030.00040.010	10	55	65
020	20	65	85
030	30	75	105
040	40	85	125
050	50	95	145
060	60	105	165
070	70	115	185
080	80	125	205

Longer stroke lengths on request

2470.12.010.017

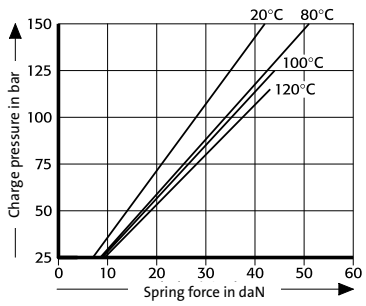


Mounting variations:



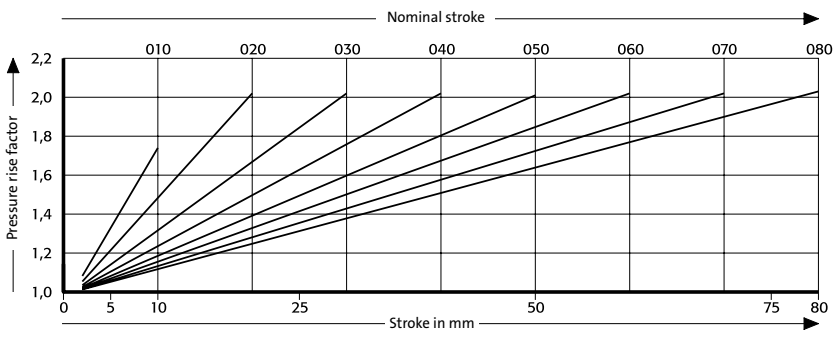
3479.030.

Initial spring force versus charge pressure and working temperature



3479.030.

Spring force Diagram displacement versus stroke rise



GASVEER VOOR SPUITMATRIJS

3749.032

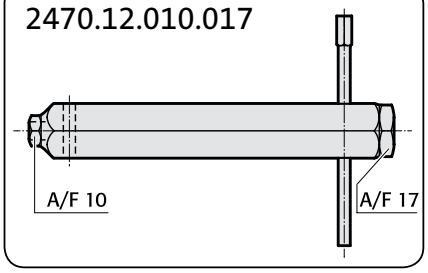
3479.032.

The initial spring force at 150 bar/20°C is 170 daN

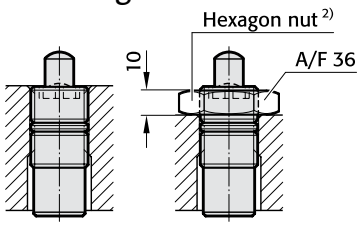
Order no.	Stroke max.	l min.	l
3479.032.00170.010	10	55	65
020	20	65	85
030	30	75	105
040	40	85	125
050	50	95	145
060	60	105	165
070	70	115	185
080	80	125	205

Longer stroke lengths on request

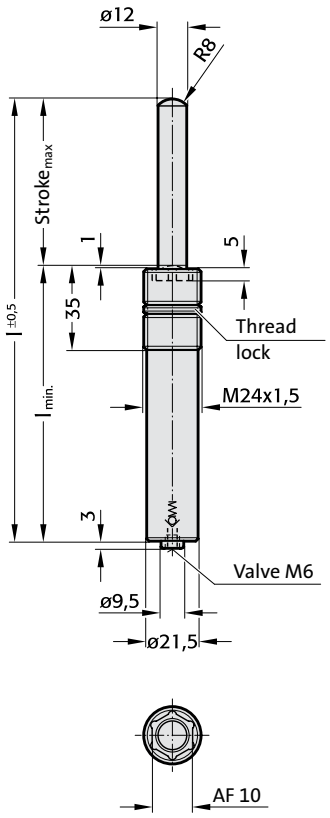
2470.12.010.017



Mounting variations:



3479.032.



2) Hexagon nut order supplementary: 2480.004.00170

Description:

Spring-loaded plungers are used as ejectors, vibration damping bolts, position holding devices and ejector pins in various areas of engineering involving tools, devices, moulds and machines.
Assembly is performed with a FIBRO insertion tool (2470.12.010.017.)

Note:

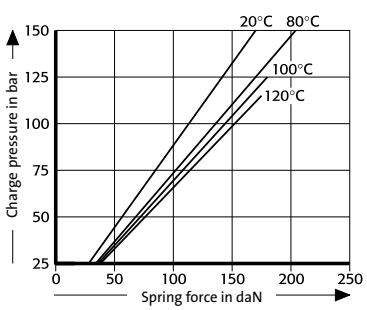
Do not repair worn springs; they have to be replaced completely

Pressure medium:	Nitrogen – N_2
max. filling pressure:	see table
min. filling pressure:	25 bar (20°C)
Working temperature:	0 °C to +120 °C
temperature-dependent force increase:	±0.3%/°C

Recommended max. strokes/min.	Working temperature range	Max. filling pressure at 20°C in bar
20	at 0°C- 80°C	150
15	at 80°C-100°C	125
10	at 100°C-120°C	115
Max. piston speed: 1.0 m/s		

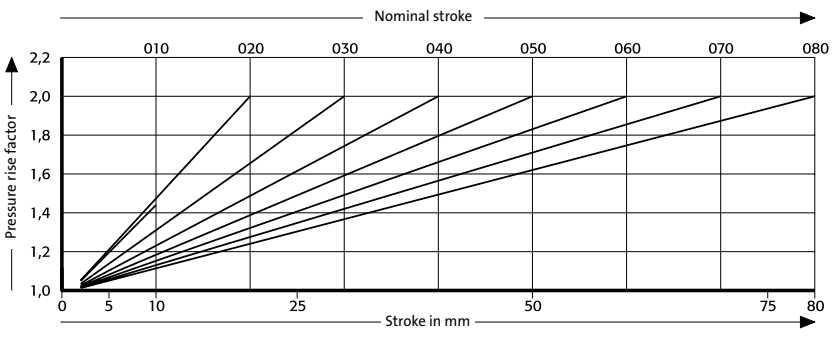
3479.032.

Initial spring force versus charge pressure and working temperature



3479.032.

Spring force Diagram displacement versus stroke rise



GASVEER VOOR SPUITMATRIJS

3749.12.00300

3487.12.00300.

The initial spring force at 150 bar/20°C is 300 daN

Order no.	Stroke max.	$l_{min.}$	l
3487.12.00300.010	10	40	50
013	13	43	56
016	16	46	62
019	19	49	68
025	25	55	80
032	32	62	94
038	38	68	106
050	50	80	130
063	63	93	156
075	75	105	180
080	80	110	190
100*	100	130	230
125*	125	155	280

*On request

Note:

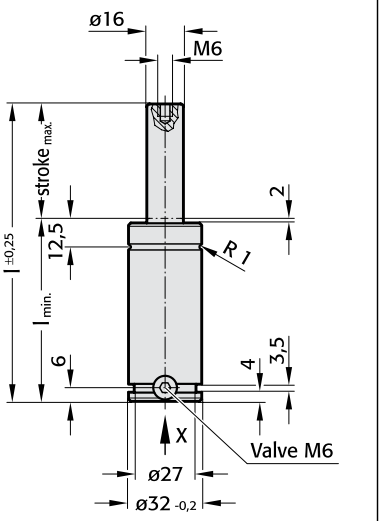
Order No. for spare parts kit:
3487.12.00300

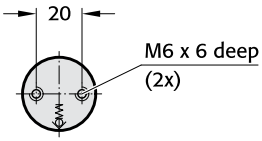
Pressure medium:	Nitrogen – N_2
max. filling pressure:	see table
min. filling pressure:	25 bar (20°C)
Working temperature:	0 °C to +120 °C
temperature-dependent force increase:	±0.3%/°C

Recommended max. Strokes/min.	working temperature range	Max. filling pressure at 20°C in bar
20	at 0°C- 80°C	150
15	at 80°C-100°C	125
10	at 100°C-120°C	115

Max. piston speed: 1.0 m/s

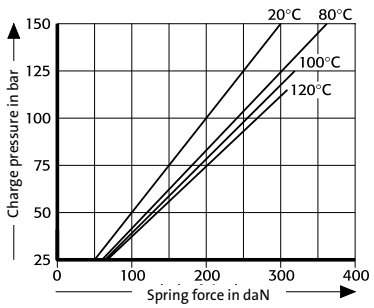
3487.12.00300.





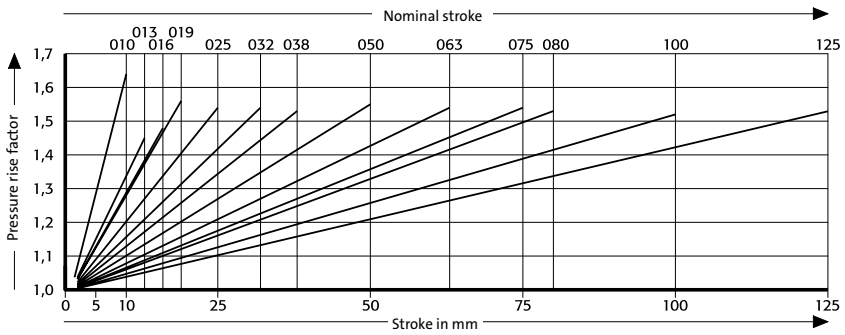
3487.12.00300.

Initial spring force versus charge pressure and working temperature



3487.12.00300.

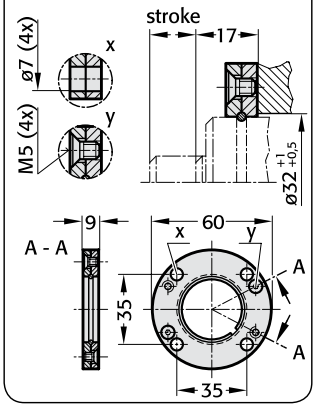
Spring force Diagram displacement versus stroke rise



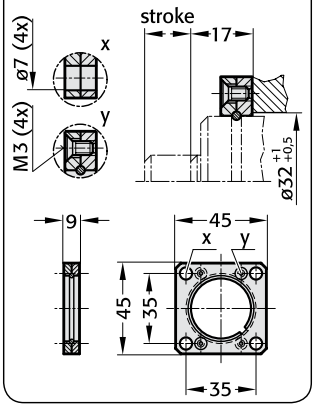
GASVEER VOOR SPUITMATRIJS

3749.12.0300

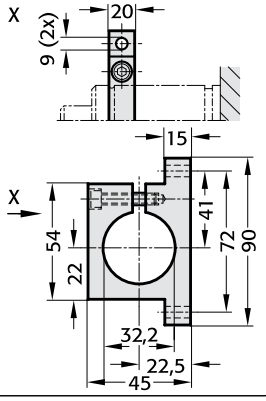
2480.055.00150



2480.057.00150



2480.044.00150 [2)]



Note:

[2)] Caution:
Spring force must be absorbed by stop surface!

Mounting examples:

GASVEER VOOR SPUITMATRIJS

3749.12.00500

3487.12.00500.

The initial spring force at 150 bar/20°C is 500 daN

Order no.	Stroke max.	$l_{min.}$	l
3487.12.00500.010	10	40	50
013	13	43	56
016	16	46	62
019	19	49	68
025	25	55	80
032	32	62	94
038	38	68	106
050	50	80	130
063	63	93	156
075	75	105	180
080	80	110	190
100*	100	130	230
125*	125	155	280

*On request

Note:

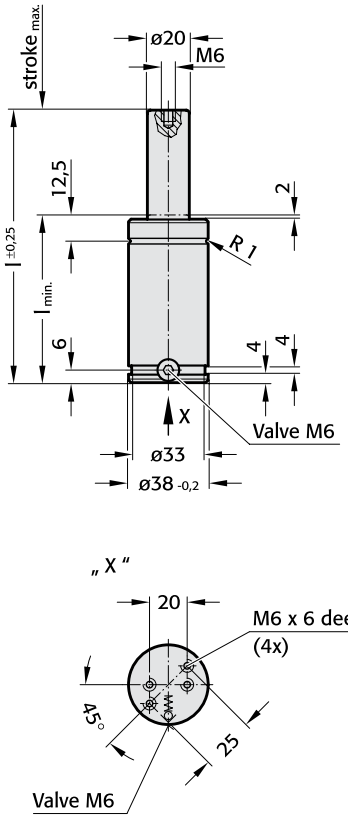
Order No. for spare parts kit:
3487.12.00500

Pressure medium:	Nitrogen – N_2
max. filling pressure:	see table
min. filling pressure:	25 bar (20°C)
Working temperature:	0 °C to +120 °C
temperature-dependent force increase:	±0.3%/°C

Recommended max. Strokes/min.	working temperature range	Max. filling pressure at 20°C in bar
20	at 0°C- 80°C	150
15	at 80°C-100°C	125
10	at 100°C-120°C	115

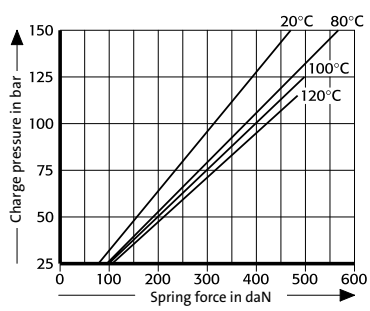
Max. piston speed: 1.0 m/s

3487.12.00500.



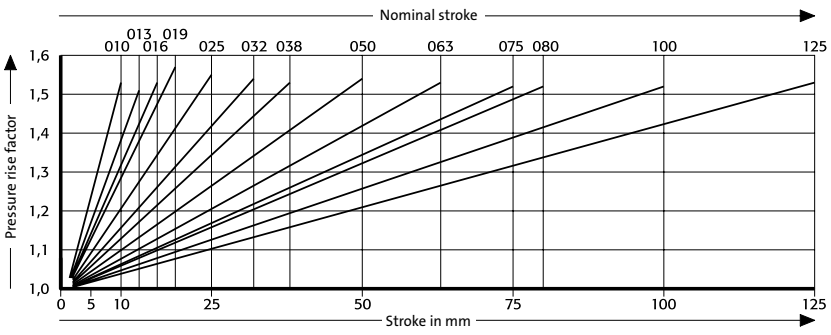
3487.12.00500.

Initial spring force versus charge pressure and working temperature



3487.12.00500.

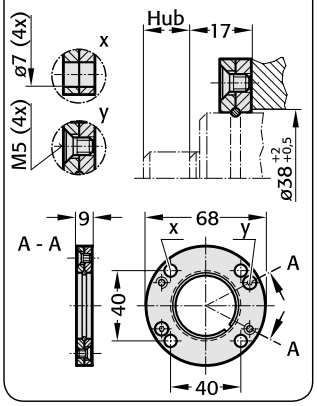
Spring force Diagram displacement versus stroke rise



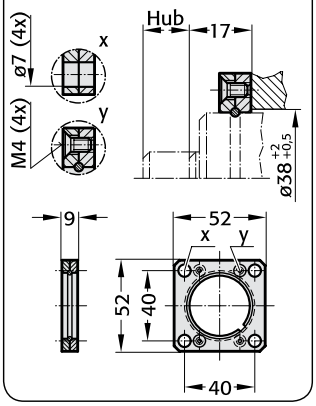
GASVEER VOOR SPUITMATRIJS

3749.12.00500

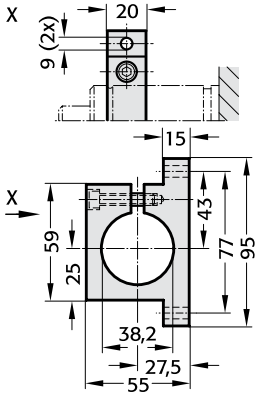
2480.055.00250



2480.057.00250



2480.044.00250 [2)]



Note:

[2)] Caution:
Spring force must be absorbed by stop surface!

GASVEER VOOR SPUITMATRIJS

3749.12.00750

3487.12.00750.

The initial spring force at 150 bar/20°C is 750 daN

Order no.	Stroke max.	$l_{min.}$	l
3487.12.00750.010	10	42	52
013	13	45	58
016	16	48	62
019	19	51	70
025	25	57	82
032	32	64	96
038	38	70	108
050	50	82	132
063	63	95	158
075	75	107	182
080	80	112	192
100*	100	132	232
125*	125	157	282

*On request

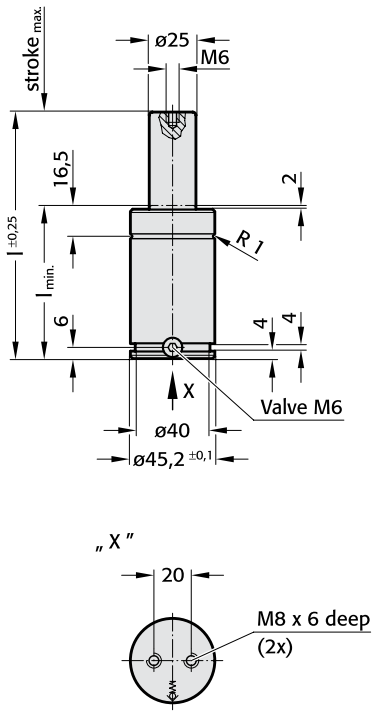
Note:

Order No. for spare parts kit:
3487.12.00750

Pressure medium:	Nitrogen – N_2
max. filling pressure:	see table
min. filling pressure:	25 bar (20°C)
Working temperature:	0 °C to +120 °C
temperature-dependent force increase:	±0.3%/°C

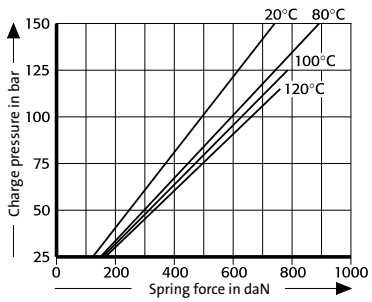
Recommended max. Strokes/min.	working temperature range	Max. filling pressure at 20°C in bar
20	at 0°C- 80°C	150
15	at 80°C-100°C	125
10	at 100°C-120°C	115
Max. piston speed: 1.0 m/s		

3487.12.00750.



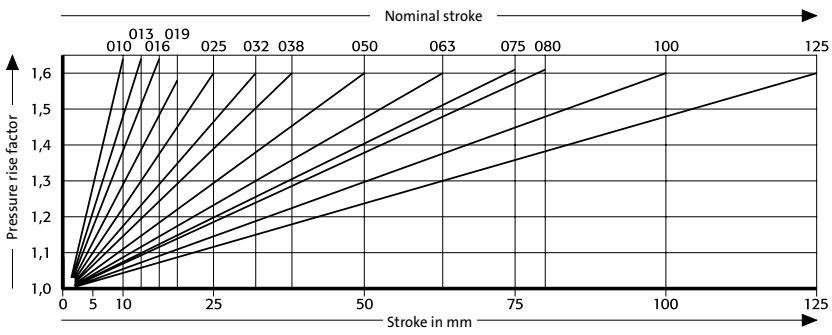
3487.12.00750.

Initial spring force versus charge pressure and working temperature



3487.12.00750.

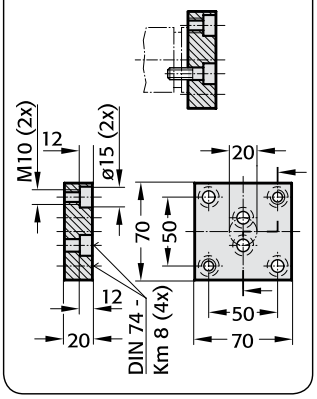
Spring force Diagram displacement versus stroke rise



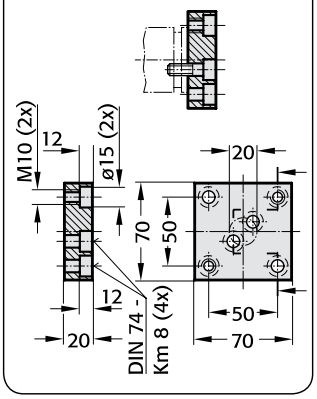
GASVEER VOOR SPUITMATRIJS

3749.12.00750

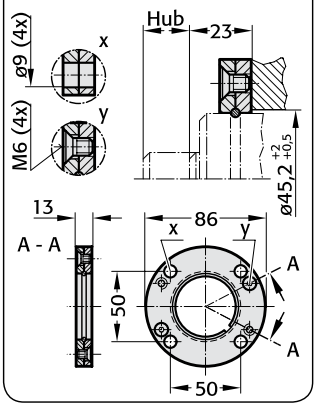
2480.011.00500



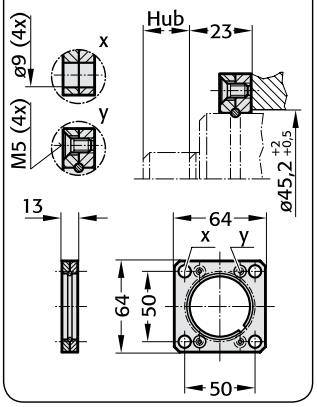
2480.011.00500.1



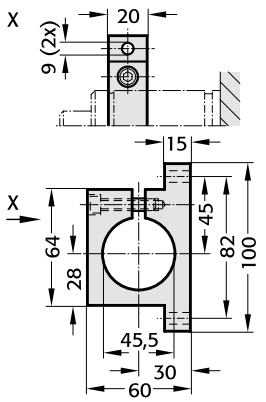
2480.055.00500



2480.057.00500



2480.044.00500 [2)]



Note:

[2)] Caution:
Spring force must be absorbed by stop surface!

GASVEER VOOR SPUITMATRIJS

3749.12.01000

3487.12.01000.

The initial spring force at 150 bar/20°C is 1000 daN

Order no.	Stroke max.	$l_{min.}$	l
3487.12.01000.013	13	51	64
016	16	54	70
019	19	57	76
025	25	63	88
032	32	70	102
038	38	76	114
050	50	88	138
063	63	101	164
075	75	113	188
080	80	118	198
100*	100	138	238
125*	125	163	288

*On request

Note:

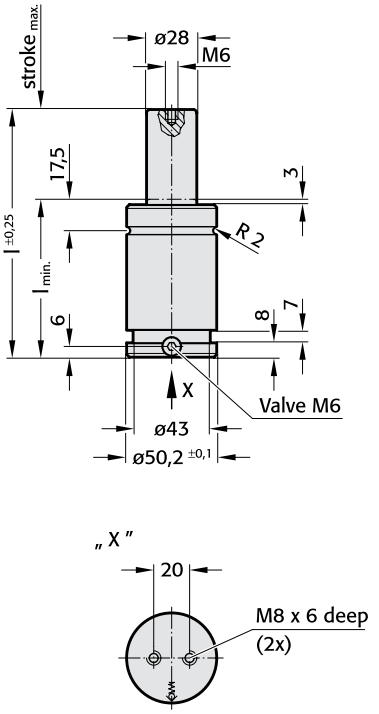
Order No. for spare parts kit:
3487.12.01000

Pressure medium:	Nitrogen – N_2
max. filling pressure:	see table
min. filling pressure:	25 bar (20°C)
Working temperature:	0 °C to +120 °C
temperature-dependent force increase:	±0.3%/°C

Recommended max. Strokes/min.	working temperature range	Max. filling pressure at 20°C in bar
20	at 0°C- 80°C	150
15	at 80°C-100°C	125
10	at 100°C-120°C	115

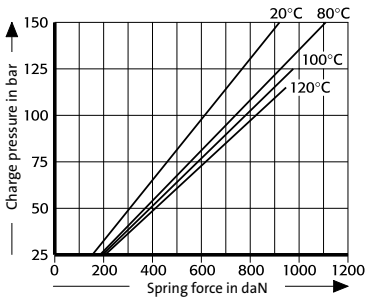
Max. piston speed: 1.0 m/s

3487.12.01000.



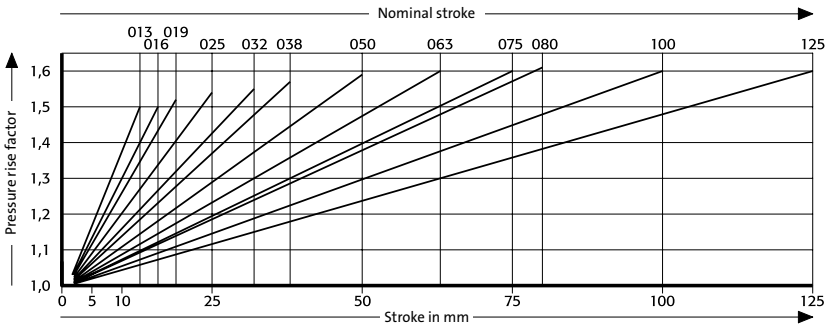
3487.12.01000.

Initial spring force versus charge pressure and working temperature



3487.12.01000.

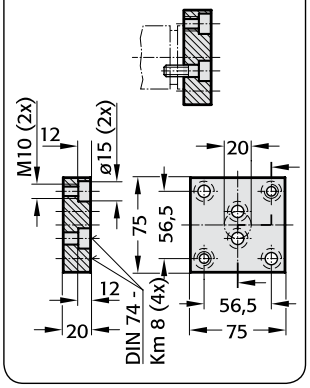
Spring force Diagram displacement versus stroke rise



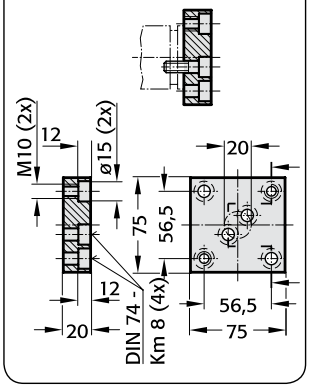
GASVEER VOOR SPUITMATRIJS

3749.12.01000

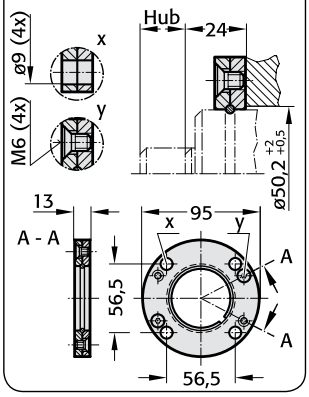
2480.011.00750



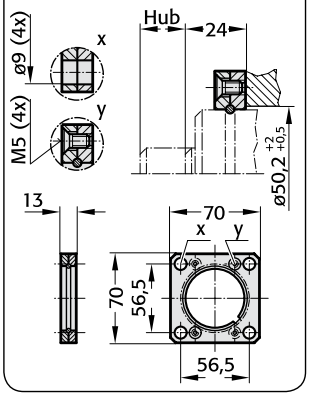
2480.011.00750.1



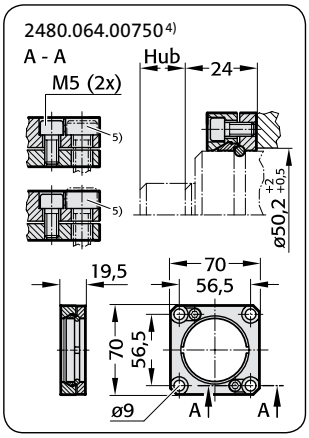
2480.055.00750



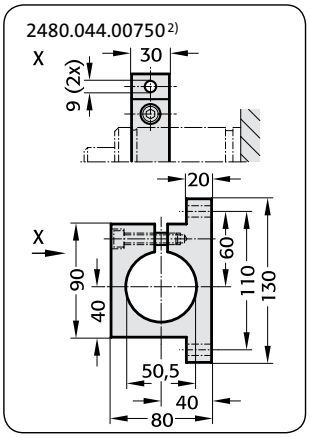
2480.057.00750



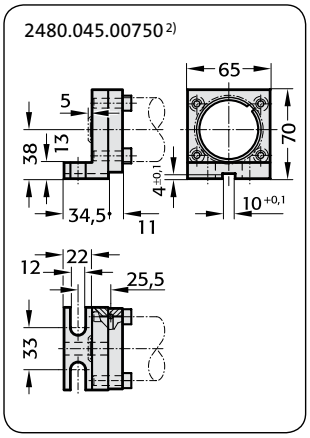
2480.064.00750 4)



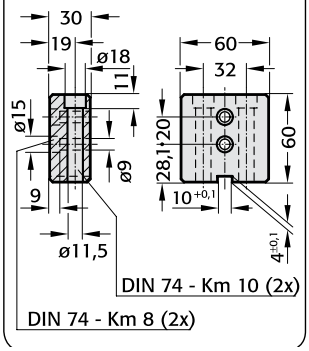
2480.044.00750 2)



2480.045.00750 2)



2480.047.00750 2)



Note:

2) Caution:
Spring force must be absorbed by stop surface!

4) Square collar flange, anti-twist, fixing forcollar connection.

5) Socket head screws withinternal hex (recommended: with low head).