

# GAS SPRINGS DS FOR DIE SEPARATION





## GAS SPRINGS DS FOR DIE SEPARATION

### Description

In line of reducing the set-up time while installing the tool in the press there are used autonomous acted gas springs for tool spacing. While using conventional gas springs they are activated with every press stroke about the whole stroke length. The new FIBRO gas spring, DS (Die Separation) have been developed especially for tool spacing. Because of the slow return stroke speed, the gas spring DS does not need the total stroke length. The FIBRO gas spring, DS minimises unwanted friction in the tool, press and in the gas spring itself. A further benefit is that they use up to 80% less energy than "conventional" standard gas springs.

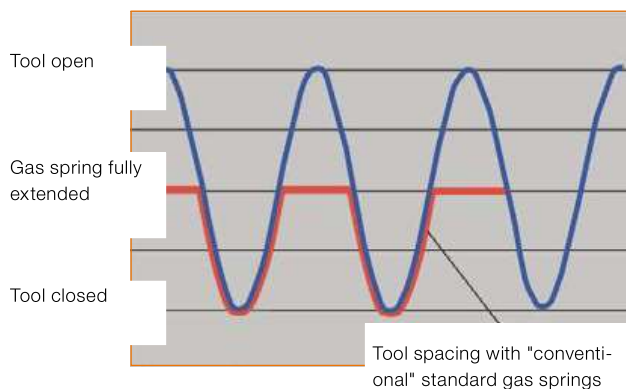
### Properties:

- Initial spring forces of 3000 daN to 7500 daN
- Stroke lengths of 50 mm to 300 mm
- Standardised dimensions in accordance with ISO, VDI, CNOMO
- Very slow return stroke speed 0.2 m/min
- Standard safety features (FIBRO Safer Choice)
  - Safety piston rod
  - Excess pressure protection
  - Overtravel protection
- High flexibility during fixing from the top mounting notch and lower fixing groove, together with the tapped bores in the spring base

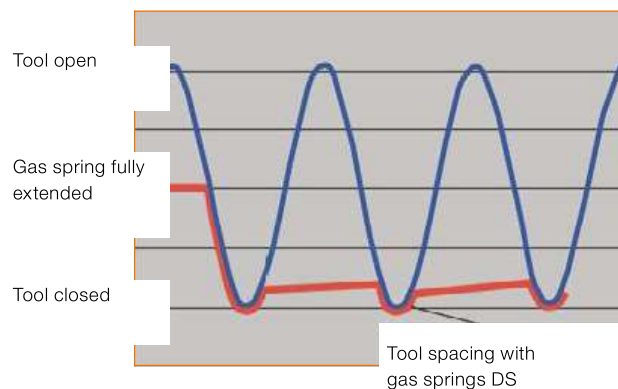
### Function:

When conventional standard gas springs are used to distance the upper and lower parts of the die, additional initial forces are exerted on each stroke carried out. This force can increase further at the end of the stroke (see diagram 1). When using the "new" DS gas springs in the same application, the force is reduced to less than 10% for each stroke (diagram 2). The return stroke speed of the gas springs DS is very slow. The duration of the complete return stroke is 1-2 minutes. However, this slow speed has no negative influence on the end position (gas springs fully extended). The piston rod is actuated oscillating up to 10% of the total stroke depending on the production rate.

### Diagrams 1

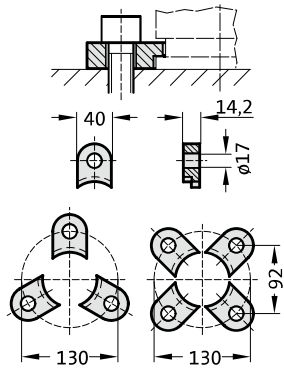


### Diagrams 2

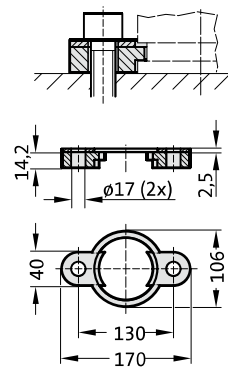


# GAS SPRING DS MOUNTING VARIATIONS

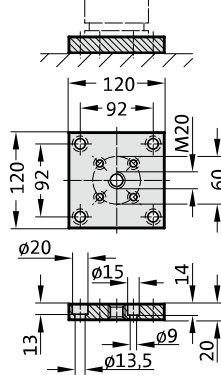
2480.007.03000



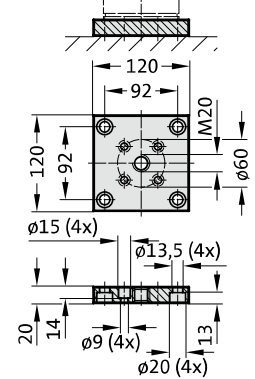
2480.008.03000<sup>3)</sup>



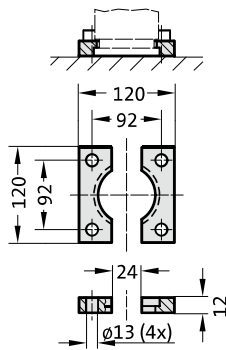
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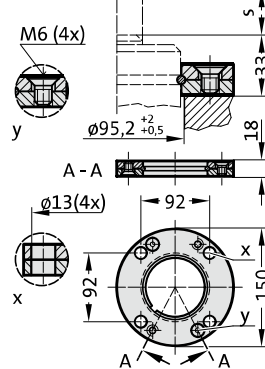
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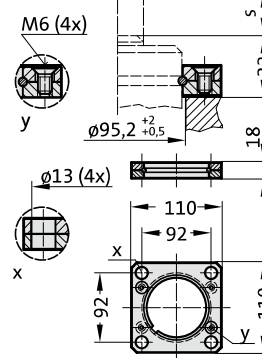
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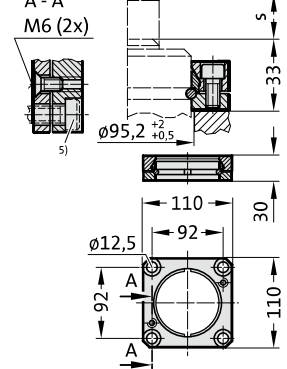
2480.055.03000



2480.057.03000



2480.064.03000<sup>4)</sup>



## Note:

- <sup>3)</sup> Not for use with composite connection.
- <sup>4)</sup> Square collar flange, non-rotating, fixing for composite connection.
- <sup>5)</sup> Machine screws with hexagonal socket (compact head recommended)

# GAS SPRING DS

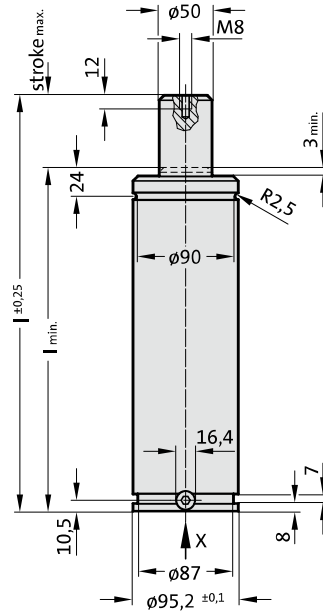
**Note:**

Initial spring force at 150 bar = 3000 daN

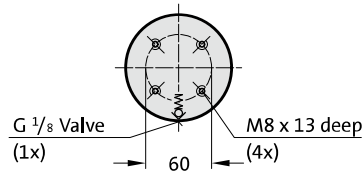
Order No. for spare parts kit: 2486.22.03000

- Pressure medium: Nitrogen - N<sub>2</sub>
- Max. filling pressure: 150 bar
- Min. filling pressure: 25 bar
- Working temperature: 0°C bis +80°C
- Temperature related force increase: ± 0.3%/°C
- Max. recommended extensions per minute: approx. 20 to 50 (at 20°C)
- Max. piston speed: 1,6 m/s
- Max. return stroke speed: 0.2 m/min

2486.22.03000.



View X - Gas spring

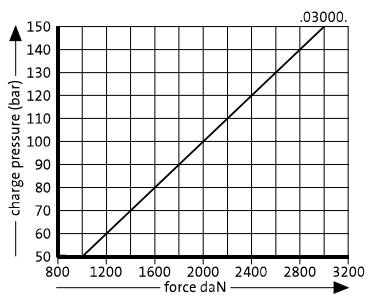


2486.22.03000.

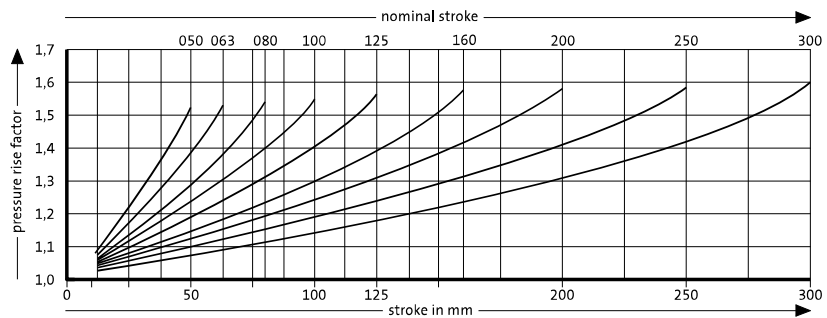
**Gas spring DS**

Order No	Stroke <sub>max.</sub> (s)	l <sub>min.</sub>	l
2486.22.03000.050	50	170	220
2486.22.03000.063	63.5	183.5	247
2486.22.03000.080	80	200	280
2486.22.03000.100	100	220	320
2486.22.03000.125	125	245	370
2486.22.03000.160	160	280	440
2486.22.03000.200	200	320	520
2486.22.03000.250	250	370	620
2486.22.03000.300	300	420	720

Initial spring force versus charge pressure





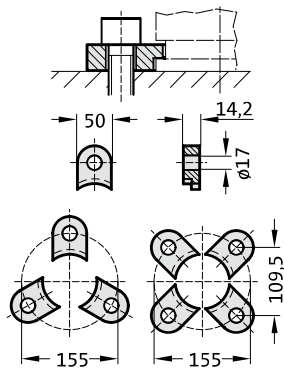
Spring force Diagram displacement versus stroke rise





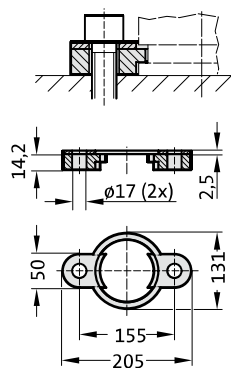
Pressure rise factor accounts for displacement but not external influences!



# GAS SPRING DS MOUNTING VARIATIONS

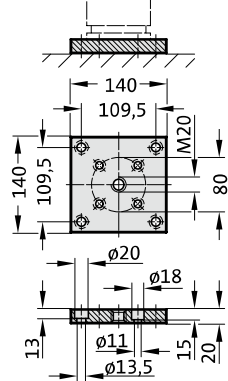
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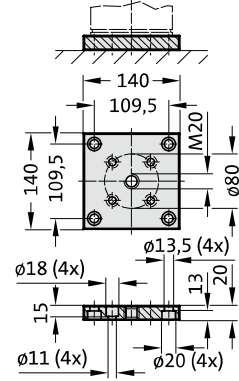
2480.008.05000<sup>3)</sup>  





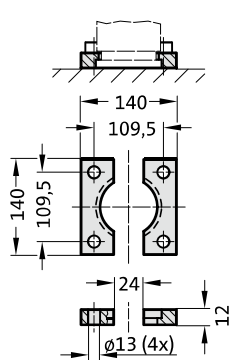
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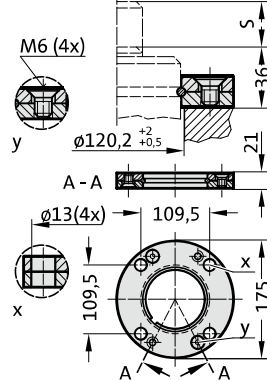
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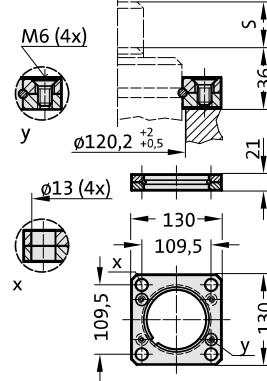
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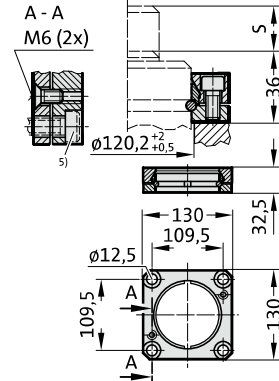
2480.055.05000  



2480.057.05000  



2480.064.05000<sup>4)</sup>  



## Note:

- <sup>3)</sup> Not for use with composite connection.
- <sup>4)</sup> Square collar flange, non-rotating, fixing for composite connection.
- <sup>5)</sup> Machine screws with hexagonal socket (compact head recommended)

# GAS SPRING DS

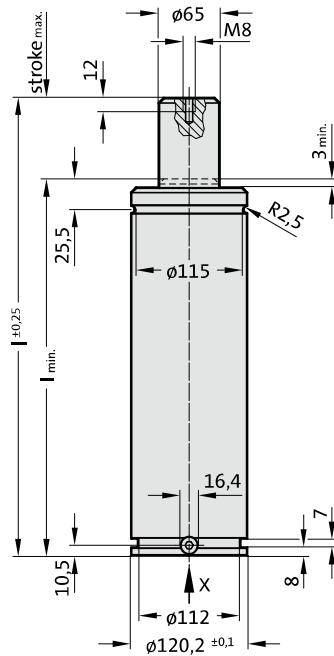
**Note:**

Initial spring force at 150 bar = 5000 daN

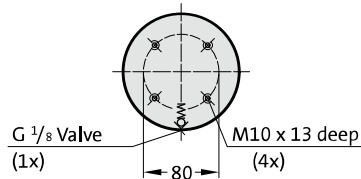
Order No. for spare parts kit: 2486.22.05000

- Pressure medium: Nitrogen - N<sub>2</sub>
- Max. filling pressure: 150 bar
- Min. filling pressure: 25 bar
- Working temperature: 0°C bis +80°C
- Temperature related force increase: ± 0.3%/°C
- Max. recommended extensions per minute: approx. 20 to 50 (at 20°C)
- Max. piston speed: 1,6 m/s
- Max. return stroke speed: 0.2 m/min

2486.22.05000.



View X - Gas spring

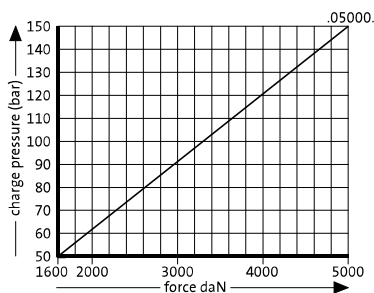


2486.22.05000.

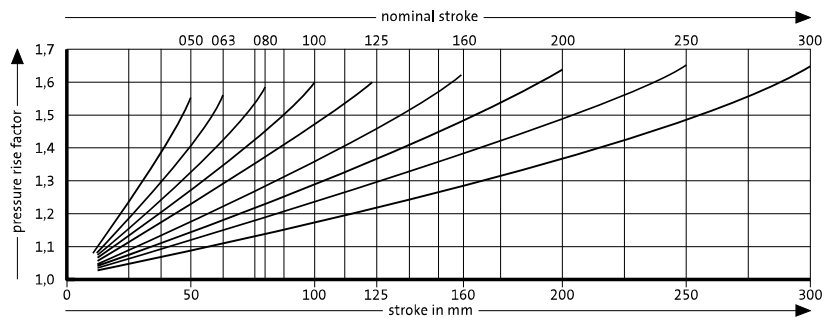
Gas spring DS

Order No	Stroke <sub>max.</sub> (s)	I <sub>min.</sub>	I
2486.22.05000.050	50	190	240
2486.22.05000.063	63.5	203.5	267
2486.22.05000.080	80	220	300
2486.22.05000.100	100	240	340
2486.22.05000.125	125	265	390
2486.22.05000.160	160	300	460
2486.22.05000.200	200	340	540
2486.22.05000.250	250	390	640
2486.22.05000.300	300	440	740

Initial spring force versus charge pressure



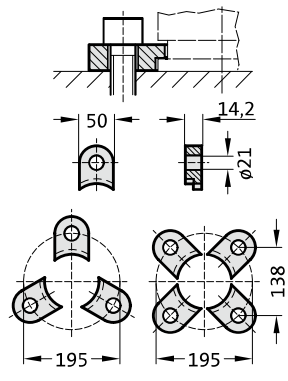
Spring force Diagram displacement versus stroke rise





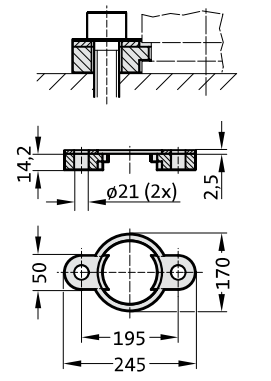
Pressure rise factor accounts for displacement but not external influences!



# GAS SPRING DS MOUNTING VARIATIONS

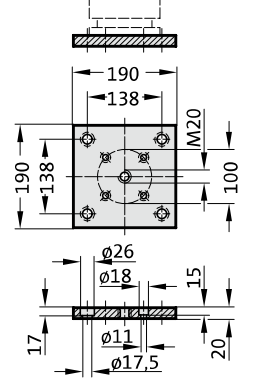
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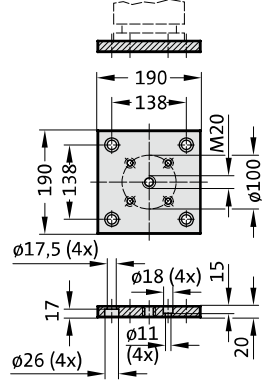
2480.008.07500<sup>3)</sup>  




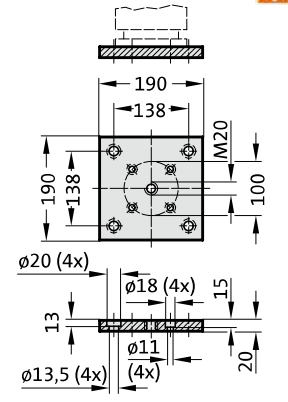
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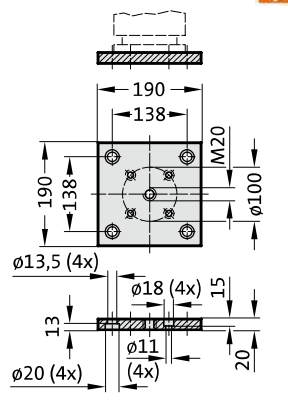
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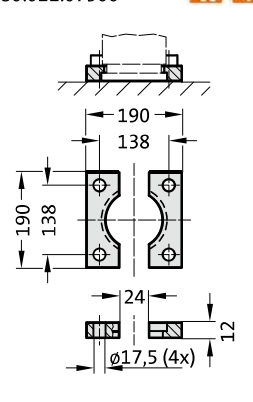
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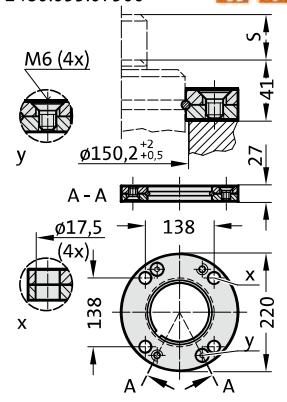
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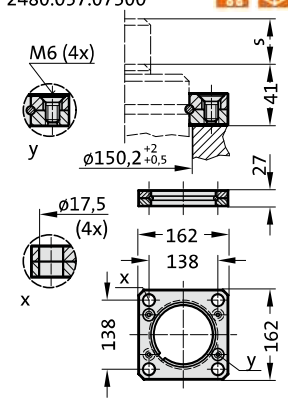
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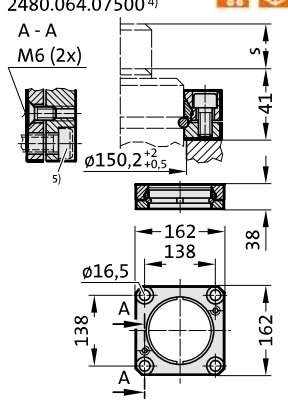
2480.055.07500  



2480.057.07500  



2480.064.07500<sup>4)</sup>  



**Note:**

- <sup>3)</sup> Not for use with composite connection.
- <sup>4)</sup> Square collar flange, non-rotating, fixing for composite connection.
- <sup>5)</sup> Machine screws with hexagonal socket (compact head recommended)



# GAS SPRING DS

**Note:**

Initial spring force at 150 bar = 7500 daN

Order No. for spare parts kit: 2486.22.07500

Pressure medium: Nitrogen - N<sub>2</sub>

Max. filling pressure: 150 bar

Min. filling pressure: 25 bar

Working temperature: 0°C bis +80°C

Temperature related force increase: ± 0.3%/°C

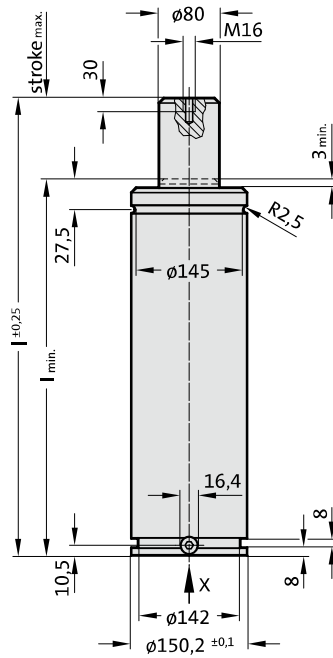
Max. recommended extensions per minute:

approx. 20 to 50 (at 20°C)

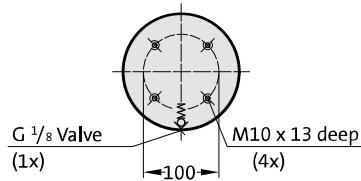
Max. piston speed: 1,6 m/s

Max. return stroke speed: 0.2 m/min

2486.22.07500.



View X - Gas spring

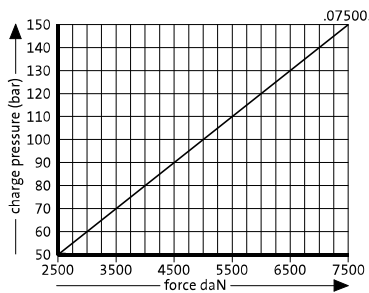


2486.22.07500.

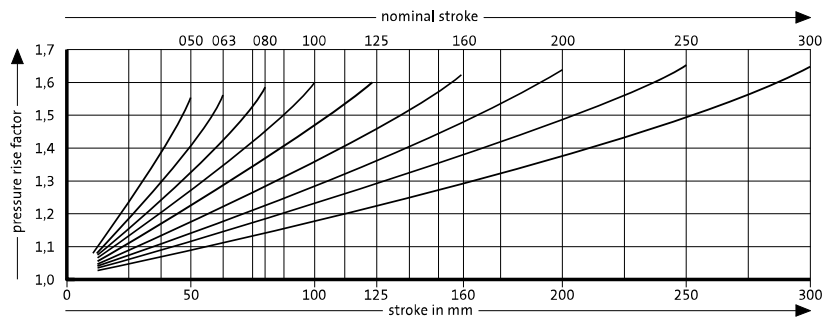
Gas spring DS

Order No	Stroke <sub>max.</sub> (s)	I <sub>min.</sub>	I
2486.22.07500.050	50	205	255
2486.22.07500.063	63.5	218.5	282
2486.22.07500.080	80	235	315
2486.22.07500.100	100	255	355
2486.22.07500.125	125	280	405
2486.22.07500.160	160	315	475
2486.22.07500.200	200	355	555
2486.22.07500.250	250	405	655
2486.22.07500.300	300	455	755

Initial spring force versus charge pressure



Spring force Diagram displacement versus stroke rise



Pressure rise factor accounts for displacement but not external influences!