KALLER®

APPROVED PED 97/23/EC

Low Contact Force - LCF

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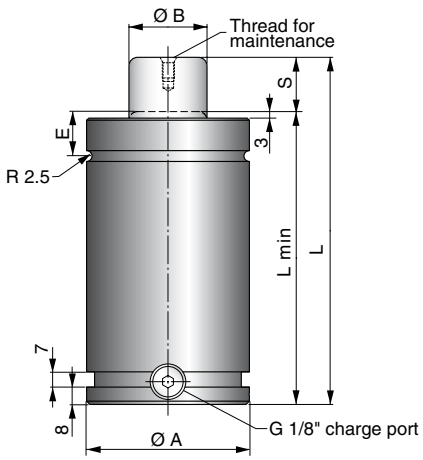
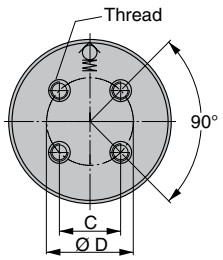
The LCF Series is the future generation of nitrogen gas springs. This innovative serie is engineered to address the major problems facing metal stampers today: excessive shock load, high noise levels, and extreme pad bounce. All factors that lead to high press maintenance costs and noise pollution.





- 100% interchangeable with standard height (ISO) gas springs
- Charged and rebuilt like standard gas spring
- Drop-in, flange mount, or base plate mounting
- Can be linked together in a Hose System
- Can be incorporated into press cushions

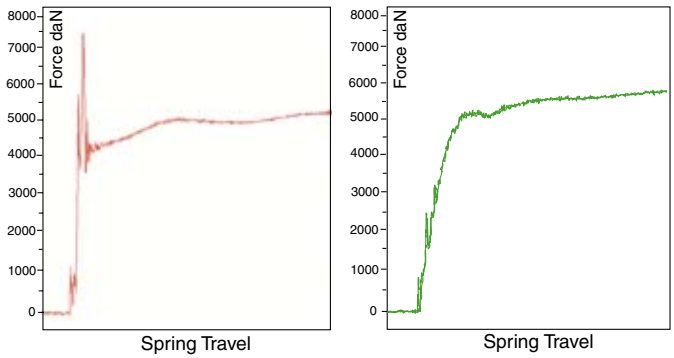
The LCF Series reduces shock load by as much as 50% compared to traditional gas springs. It supplies a gradual force build-up and smooth acceleration so there's less impact on gear and bearings and less wear on drive components. **The payoff is reduced press maintenance.**

The LCF Series lowers noise levels significantly, with a 20% or higher reduction in sound pressure level compared to standard gas springs. Its lesser impact force results in these lower noise levels and makes these springs a cost-effective alternative to building noise enclosures. **The payoff is a quieter, safer and healthier working environment.**

The LCF Series decreases pad bounce, allowing improved part transfer efficiency, increased production rates and reduced scrap. A gradual force increase and return results in smoother pad operation. **The payoff is higher production rates.**

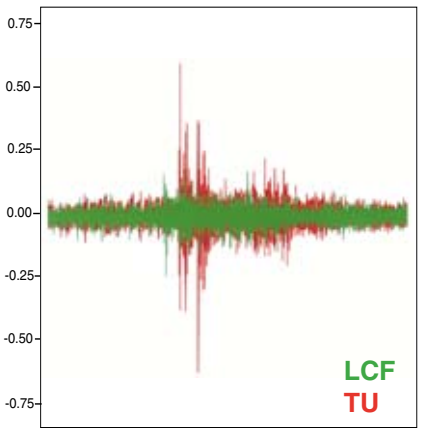
And because LCF gas springs mount directly to the die and are independent of the press, all benefits travel with the tool.

Measured Dynamic Piston Rod Force

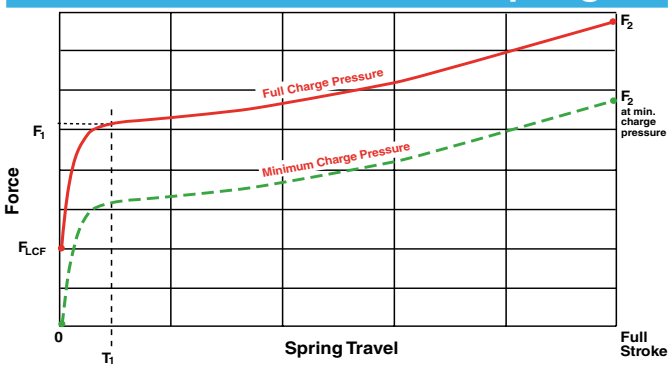


Noise Reduction

The LCF Series offers decreased noise levels because of its reduced impact force.



Force vs Stroke for LCF Springs



LCF Application Guidelines

1 F_1 is the initial force used to calculate the number of gas springs required for the application.

2 The LCF gas spring provides the same F_1 and force increase as an ISO standard gas spring.

3 For the selected charge pressure, the total F_{LCF} value should exceed the pad weight by a minimum of 15% to ensure that the pad will be supported at the correct height.

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Low Contact Force - LCF Specifications

Order No.	Force in Newtons at 150 bar			Minimum Charge Pressure (bar)	T_1 Stroke Length For Force Rise	S Max. Stroke	L Min.	L ±0.25	Ø A	Ø B	C	Ø D	E	Thread
	F_{LCF}	F_1	F_2											
LCF 750-013	4 700	7 400	12 000	70	3.1 mm	12.7	107.7	120.4	50.2	25	20	--	17.5	M8 (2x) Depth 13 mm
LCF 750-025			12 000			25	120	145						
LCF 750-038			12 000			38.1	133.1	171.2						
LCF 750-050			12 000			50	145	195						
LCF 750-064			12 000			63.5	158.5	222						
LCF 750-080			12 000			80	175	255						
LCF 750-100			12 000			100	195	295						
LCF 750-125			12 100			125	220	345						
LCF 750-160			12 100			160	255	415						
LCF 750-200			12 100			200	295	495						
LCF 750-250			12 100			250	345	595						
LCF 750-300			12 100			300	395	695						
LCF 1500-025	7 000	15 000	23 000	105	4.6 mm	25	135	160	75.2	36	28.3	40	21	M8 (4x) Depth 13 mm
LCF 1500-038			23 000			38.1	148.1	186.2						
LCF 1500-050			23 000			50	160	210						
LCF 1500-064			23 000			63.5	173.5	237						
LCF 1500-080			23 000			80	190	270						
LCF 1500-100			23 000			100	210	310						
LCF 1500-125			23 000			125.0	235.0	360.0						
LCF 1500-160			23 000			160.0	270.0	430.0						
LCF 1500-200			23 000			200.0	310.0	510.0						
LCF 1500-250			23 000			250.0	360.0	610.0						
LCF 1500-300			23 000			300.0	410.0	710.0						
LCF 3000-025	16 000	30 000	42 000	68	3.8 mm	25.0	145.0	170.0	95	50	42	60	24	M8 (4x) Depth 13 mm
LCF 3000-038			43 000			38.1	158.1	196.2						
LCF 3000-050			44 000			50.0	170.0	220.0						
LCF 3000-064			45 000			63.5	183.5	247.0						
LCF 3000-080			46 000			80.0	200.0	280.0						
LCF 3000-100			47 000			100.0	220.0	320.0						
LCF 3000-125			47 000			125.0	245.0	370.0						
LCF 3000-160			47 000			160.0	280.0	440.0						
LCF 3000-200			48 000			200.0	320.0	520.0						
LCF 3000-250			48 000			250.0	370.0	620.0						
LCF 3000-300			48 000			300.0	420.0	720.0						
LCF 5000-025	25 000	50 000	71 000	75	7.7 mm	25.0	165.0	190.0	120	65	56	80	25.5	M10 (4x) Depth 13 mm
LCF 5000-038			75 000			38.1	178.1	216.2						
LCF 5000-050			77000			50.0	190.0	240.0						
LCF 5000-063			80 000			63.5	203.5	267.0						
LCF 5000-080			81 000			80.0	220.0	300.0						
LCF 5000-100			82 000			100.0	240.0	340.0						
LCF 5000-125			82 000			125.0	265.0	390.0						
LCF 5000-160			83 000			160.0	300.0	460.0						
LCF 5000-200			84 000			200.0	340.0	540.0						
LCF 5000-250			84 000			250.0	390.0	640.0						
LCF 5000-300			84 000			300.0	440.0	740.0						
LCF 7500-025	30 000	75 000	105 000	89	10.4 mm	25.0	180.0	205.0	150	80	70	100	27.5	M10 (4x) Depth 13 mm
LCF 7500-038			110 000			38.1	193.1	231.2						
LCF 7500-050			113 000			50.0	205.0	255.0						
LCF 7500-064			115 000			63.5	218.5	282.0						
LCF 7500-080			117 000			80.0	325.0	315.0						
LCF 7500-100			119 000			100.0	255.0	355.0						
LCF 7500-125			121 000			125.0	280.0	405.0						
LCF 7500-160			122 000			160.0	315.0	475.0						
LCF 7500-200			123 000			200.0	355.0	555.0						
LCF 7500-250			124 000			250.0	405.0	655.0						
LCF 7500-300			124 000			300.0	455.0	755.0						

We reserve the right to add, delete or modify components without notification.

All dimensions are stated in mm.
All dimensions are nominal unless tolerance is stated.

KALLER® GAS SPRINGS
USA • Korea • China • Mexico

KALLER®
The Safer Choice

Gas Springs
Kaller developed the first nitrogen gas spring for press tools and today offers a comprehensive selection of high quality gas springs for use in different tool & die applications.

Controllable Gas Springs-KF2
Kaller controllable springs are a family of gas springs, for use in press tools, that can be locked in their bottom position and where the return stroke of the spring can be controlled.

Flange Stripper Unit
Kaller Flange Stripper Unit is used in flanging dies for stripping/lifting a flanged part after forming. It provides 200 daN of stripping force, can be top or bottom mounted and is self guiding.

Flex Cam™
The Flex Cam is used for piercing, cutting, forming and flanging operations. The system allows for a flexible distribution of forces with optimal direction and velocity. By using a Flex Cam, fewer tools are required in production.

Roller Cam
Kaller Roller Cam is used for piercing, trimming, flanging and restriking. The Roller Cam can be mounted in both vertical and horizontal angles.

Counter Balance
Kaller Counter Balance gas springs can be used to lift, lower, assist, balance, and hold in a multitude of applications.

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