henning
MADE IN GERMANY

ELEVATOR
COMPONENTS

LP

Elevator Buffers

Data sheet EN_V 4.0.0

Copyright

Warranty

This data sheet have been prepared by **Henning GmbH & Co. KG** to the best of our knowledge. All technical data have been carefully determined and checked and reflect state of the art technology. Subject to errors and technical changes.

Our technical advice, both written and verbal, is intended to support your own work. It is to be regarded as non-binding information, also with regard to any property rights of third parties, and does not release you from the requirement of carrying out your own practical tests of the products for their suitability for the intended processes and purposes.

Product descriptions do not contain any statements regarding liability for any damage. Should however, a claim for liability be considered, it is limited for all damages to the value of the goods delivered and used.

We are always grateful for information on errors or suggestions and criticism!

Address

Henning GmbH & Co. KG

Loher Str. 4
58332 Schwelm
Germany

TEL.: +49 2336 / 9 29 8 – 0
FAX: +49 2336 / 9 29 8 – 100

E-mail: info@henning-gmbh.de
URL : http://www.henning-gmbh.de

Service hotline: +49 2336 / 9 29 8 - 232

Subject to technical changes!

Elevator Buffer LP 50

For elevators **up to 5,1 m/s** rated speed according to EN 81-20, EN 81-50 5.5

The elevator buffer of type LP is an **energy dissipation type buffer** according to EN 81-20, EN 81-50 5.5 and therefore may be universally used for all applications in the construction of elevators. The design type approval permits the use in passenger and freight elevators both under the elevator car and under the counter weight.

The modern design provides many advantages for the construction of today's elevators.

- The buffer is supplied ready for operation filled with oil and gas filling. Transport and storage are admissible in every position as it is a hermetically closed system. The installation position is vertical.
- The oil level may be verified from the outside by a sight glass without opening the buffer (visual inspection). This reduces the maintenance expenditure of the buffer to a minimum.
- A mechanical safety limit switch according to DIN EN 50047 monitors the extended piston rod of the buffer.
- The hydraulic damping permits an optimum retardation of the system in a broad mass range as well as a very large energy conversion.
- The integrated pneumatic spring permits a short construction length of the buffer and low restoring forces after a buffer stroke.
- The oil chamber uses double sealing as leakage protection and thus increases the operating safety.
- An impact plate of rubber provides for damping both the impact noise and shock.

Functional description

In the case of a buffer stroke the piston rod **2** is forced into the cylinder tube **1** and the hydraulic fluid **3** in the tube is displaced and forced to the outside through small throttling ports **4** in the tube wall. The fluid accumulates within the jacket tube **5.**
At the same time the gas volume **6** above the hydraulic medium is further compressed. The sealing system **7** maintains a reliable seal between the hard chromium-plated piston rod and the atmosphere.
After the buffer stroke and return to hydraulic balance the compressed gas volume forces the displaced fluid back into the cylinder and extends the piston rod.
The level of the hydraulic fluid with extended piston rod can be read through the sight glass **9** without opening the buffer.

An elastic impact plate **16** damps the impact and reduces the impact noise.

The limit switch **13** monitors the extended ready position of the buffer. The limit switch is actuated by pressure on the piston rod by the linear slide **17** or the protection tube **10** respectively.

In the case of buffers equipped with a protection tube **10,** for maintenance work the screws **12** on the buffer head **11** are removed. Subsequently, the protection tube can be lowered, which simultaneously actuates the switch **13**. The oil filler screw **14** and the gas-filling valve **15** will then be accessible.
In the normal operating state the protection tube avoids damage and contamination of the piston rod.

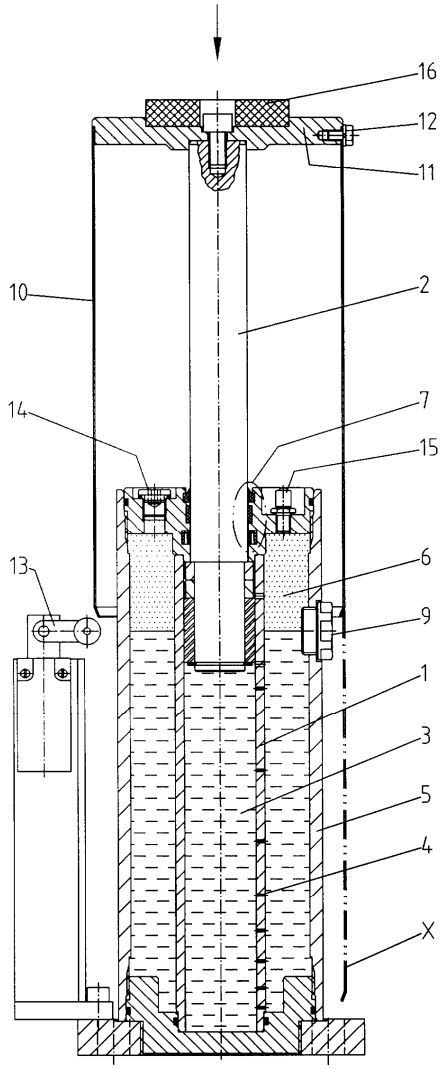


Fig. 1a: Buffer with Protection Tube

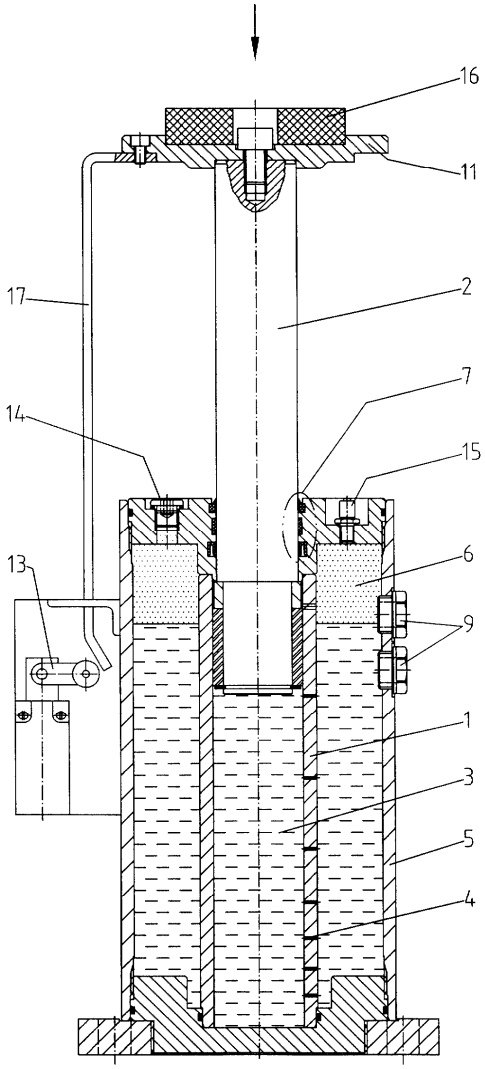


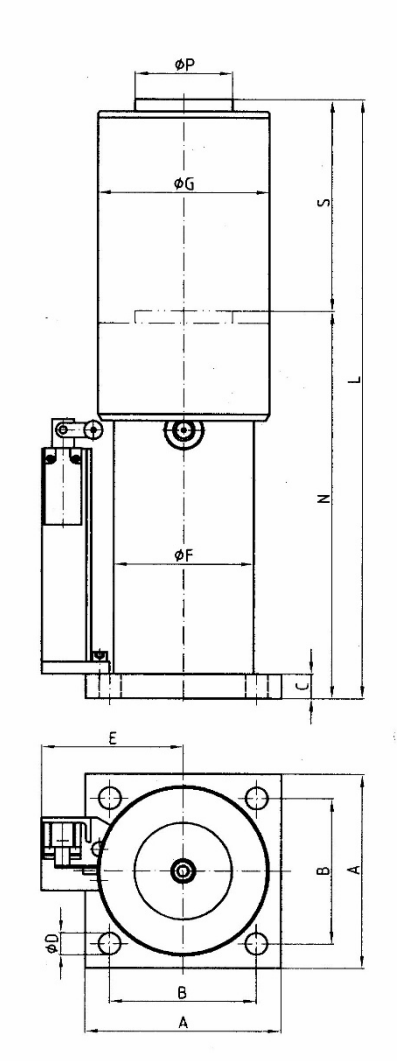
Fig. 1b: Buffer with Linear Slide

Application data

Size x Stroke s [mm]	Rated speed max. v [m/s]	Impact mass min. - max. m [kg]	Impact energy max. E [kNm]	Buffer force max. F [kN]	Weight with oil filling G [kg]
LP 40 x 80	1,0	450 - 3200	4,96	90	14
LP 40 x 120	1,3	450 - 3200	7,44	90	16
LP 40 x 175	1,6	450 - 3200	10,9	90	19
LP 40 x 275	2,0	450 - 3200	17,1	90	24
LP 40 x 430	2,5	450 - 3200	26,7	90	32
LP 50 x 425	2,5	500 - 4500	37,4	130	47
LP 50 x 695	3,2	500 - 4500	61,1	130	68
LP 50 x 950	3,7	500 - 4500	83,5	130	86
LP 50 x 1150	4,1	750 - 4500	92,7	130	110
LP 50 x 1760	5,1	750 - 4500	142,2	130	200

Dimensions type LP 40 with Protection Tube:

S	L	N	A	B	C	D	E	F	G	P
80	305	225	160	120	20	18	112	115	140	80
120	385	265								
175	495	320								
275	715	440								



All dimensions in mm.

All data subject to modifications!

Hydraulic oils and allowed ambient temperatures during operation:

a) Standard model:
Hydraulic oil DIN 51524-2 HLP respective ISO 6743/4 HM
viscosity ISO VG 46 for ambient temperatures from -10 °C up to +50 °C

b) Low temperature design (upon request):
Hydraulic oil MOBIL DTE 10 Excel 22
for ambient temperatures from -30 °C up to +40 °C

c) Special designs with biodegradable or flame-retardant hydraulic fluids (on request):

Various special fluids are tested for the hydraulic buffer LP and released for use.
Please note the special marking of the buffer and the additional inserts for order documentation in the individual case!

Dimensions Type LP 40 / 50 with linear slide:

	S	L	N	A	B	C	D	E	F	G	P
LP 40 x 80	80	305	225	160	120	20	18	116	115	130	80
LP 40 x 120	120	385	265								
LP 40 x 175	175	495	320								
LP 40 x 275	275	715	440								
LP 40 x 430	430	1065	635								
LP 50 x 425	425	1065	640	200	160	20	18	135	155	150	100
LP 50 x 695	695	1665	970								
LP 50 x 950	950	2235	1285								

All dimensions in mm.

All data subject to modifications!

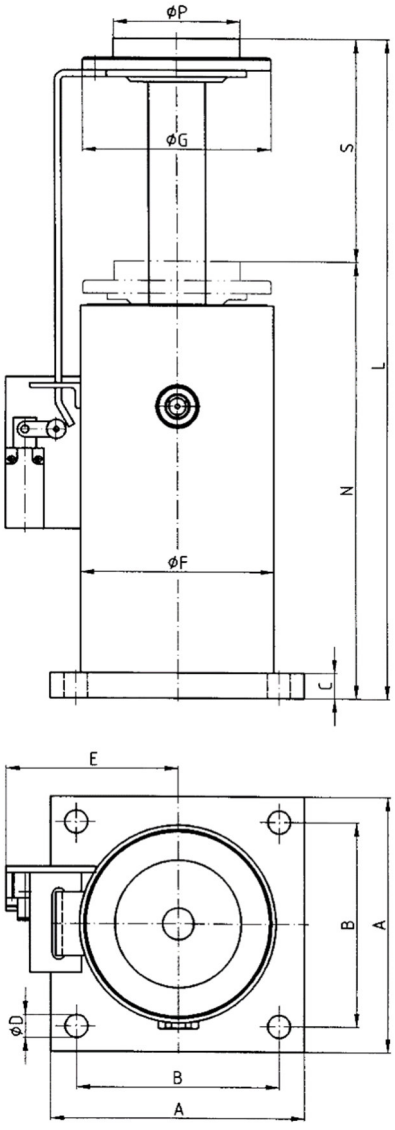
Hydraulic oils and allowed ambient temperatures during operation:

a) Standard model:
Hydraulic oil DIN 51524-2 HLP respective ISO 6743/4 HM
viscosity ISO VG 46 for ambient temperatures from -10 °C up to +50 °C

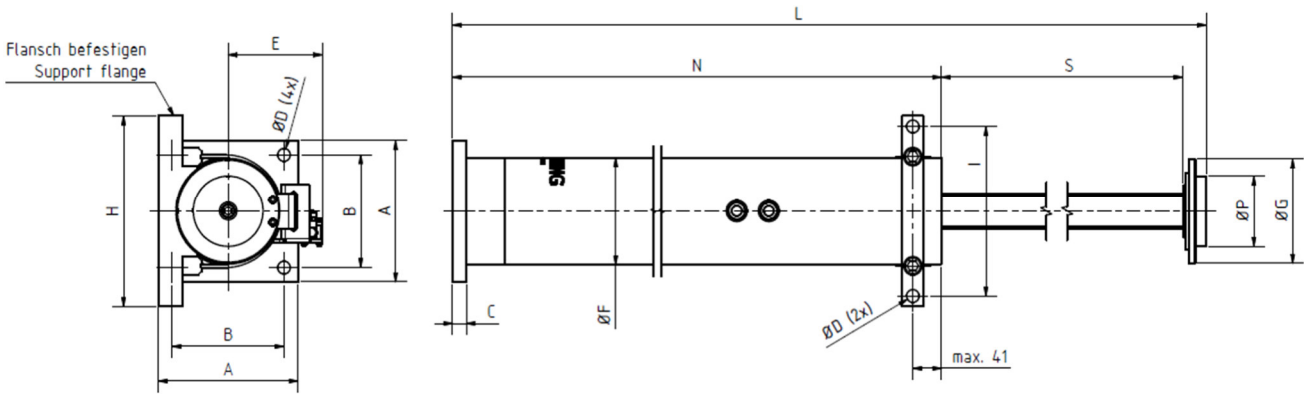
b) Low temperature design (upon request):
Hydraulic oil MOBIL DTE 10 Excel 22
for ambient temperatures from -30 °C up to +40 °C

c) Special designs with biodegradable or flame-retardant hydraulic fluids (on request):

Various special fluids are tested for the hydraulic buffer LP and released for use.
Please note the special marking of the buffer and the additional inserts for order documentation in the individual case!



Dimensions Type LP 50 with linear slide and support flange:



	S	L	N	A	B	C	D	E	F	G	H	I	P
LP 50 x 1150	1150	2695	1511	200	160	20	18	135	152	148	270	240	100
LP 50 x 1760	1760	4215	2421										

All dimensions in mm.

All data subject to modifications!

Only operate the buffer with the support flange attached!

Hydraulic oils and allowed ambient temperatures during operation:

a) Standard model:

Hydraulic oil DIN 51524-2 HLP respective ISO 6743/4 HM
viscosity ISO VG 46 for ambient temperatures from -10 °C up to +50 °C

b) Low temperature design (upon request):

Hydraulic oil MOBIL DTE 10 Excel 22
for ambient temperatures from -30 °C up to +40 °C

c) Special designs with biodegradable or flame-retardant hydraulic fluids (on request):

Various special fluids are tested for the hydraulic buffer LP and released for use.

Please note the special marking of the buffer and the additional inserts for order documentation in the individual case!

Henning GmbH & Co. KG

Loher Str. 4
58332 Schwelm
Germany

FON: +49 2336 / 9 29 8 – 0
FAX : +49 2336 / 9 29 8 – 100

eMail: info@henning-gmbh.de
URL : http://www.henning-gmbh.de

Service-Hotline: +49 2336 / 9 29 8 - 232