

P+S YOUR PARTNER FOR LIFT- COMPONENTS

*Lift buffers - Guide shoes & inserts - Rollers & roller guides -
Cable spring buffers - Anti-vibration - Special applications*





P+S Polyurethan-Elastomere GmbH & Co. KG

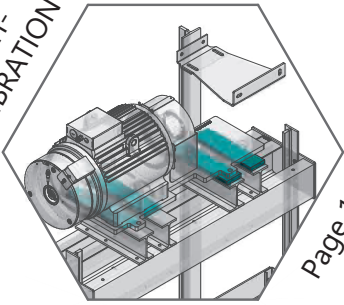
Since 1972, the **dynamic and resilient** construction elements made of polyurethane elastomers have been impressing customers throughout the lift industry.

Both **compact** and **foamed** elastomers are characterised by outstanding **technical properties**. Customers from all over the world place their trust in the environmentally friendly elastomers produced by **P+S**.

Creativity, design competence, a **strong knowledge** of the industry, modern polyurethane materials as well as a high degree of **adherence to leadtimes** and **service orientation**, are essential components of our corporate culture.

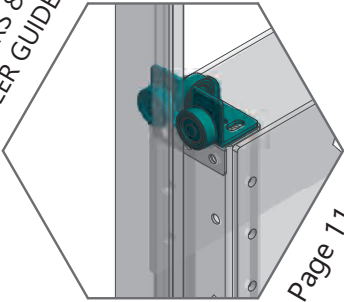


ANTI-VIBRATION



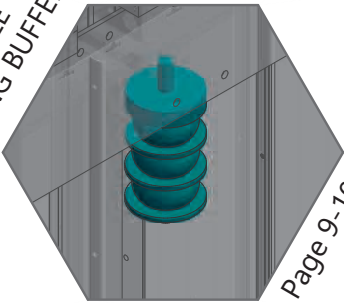
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ROLLERS & ROLLER GUIDES



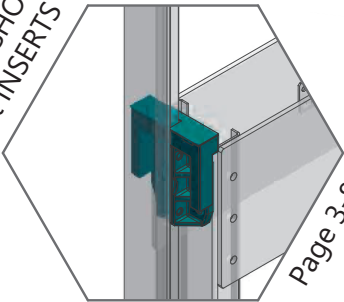
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CABLE
SPRING BUFFERS



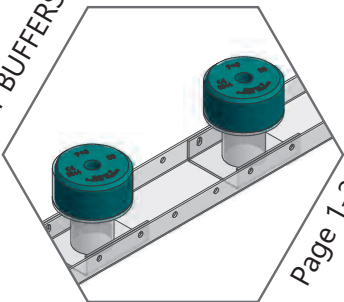
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GUIDE SHOES
& INSERTS

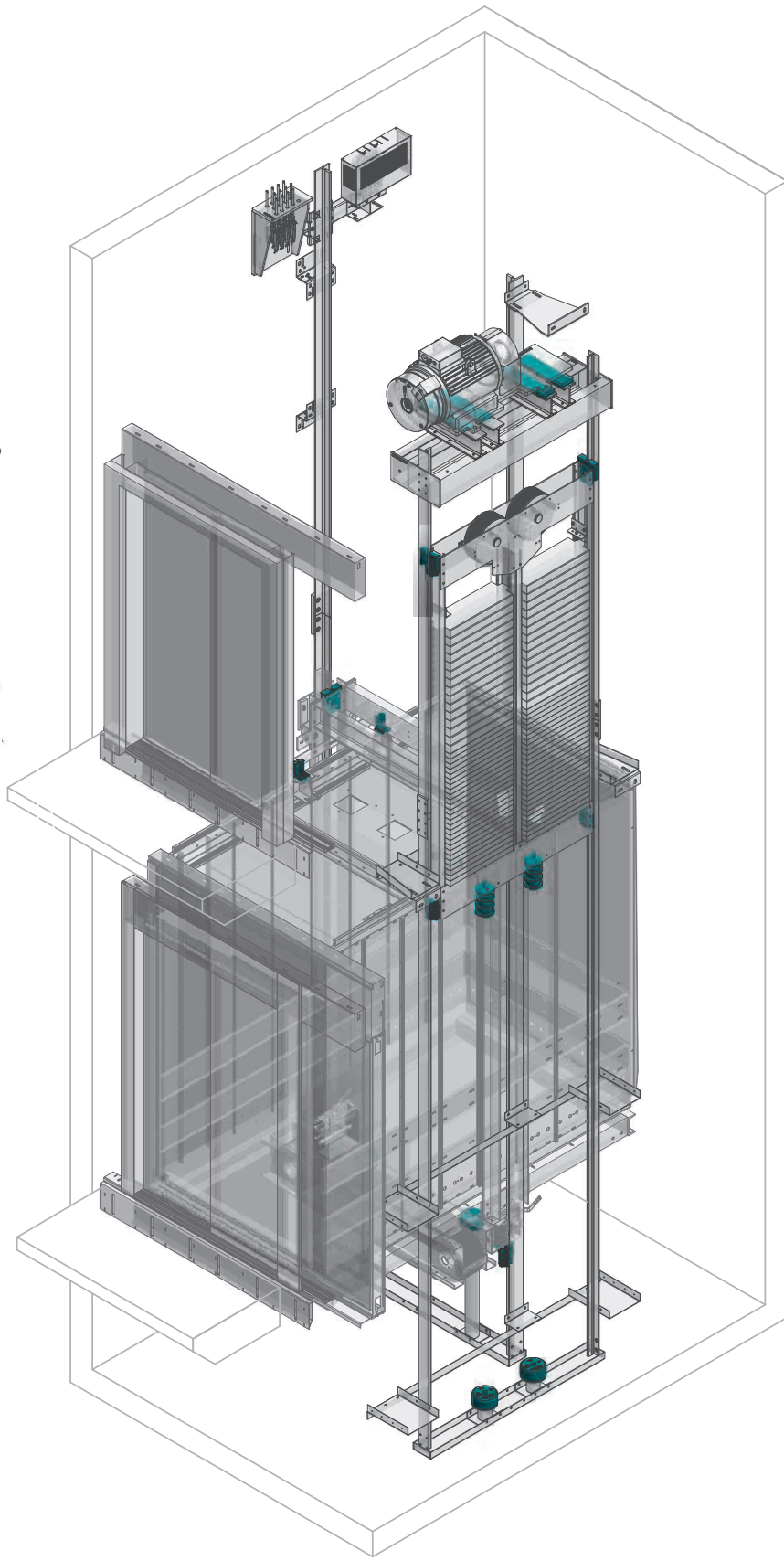


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LIFT BUFFERS



Page 1-2



Lift buffers D-Series



high load range | hydrolysis-resistant | maintenance-free

The D-series of our maintenance-free safety buffers made of **Diepocell® BM** has been perfectly adapted to comply with the **EU standard EN 81 -20/ -50**.

They impress with **strong damping**, as well as high working capacities with large load ranges.

P+S buffers have always been the preferred choice for lift and crane construction. The **D-Series** fits seamlessly into our **reliable product range** of buffer components.

Even the use in areas of increased humidity, even in tropical regions, **is no problem for our D-series buffers**.

The EC-type examination certificates of **P+S liftbuffers** made of **Diepocell® BM** was performed acc. to **guideline 2014/33/EU**. The components are already identified with a **QR-Code** as standard and meet all **traceability requirements**.

Notified Body: TÜV NORD CERT GMBH, Langemarckstraße 20; DE-45141 Essen

Applicable in elevators acc. to:

- EN 81 -1/ -2:1998+A3:2009
- EN 81 -20/ -50 : 2020

Certificates / user manual:

info@pus-polyurethan.de

Choosing the right lift buffer

Choose your loadrange



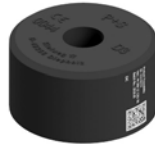
D0



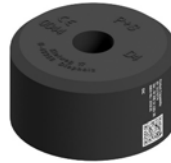
D1



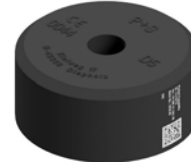
D2



D3



D4



D5



D6

Dimension in mm (diameter x height)

80x80

100x80

100x80

125x80

140x80

165x80

220x80

EC type-examination No.

44 208 12
1262 03

44 208 12
1262 05

44 208 12
1262 06

44 208 12
1262 07

44 208 12
1262 08

44 208 12
1262 09

44 208 12
1262 10

Nominal speed V=0,63 (m/s)

150

200

250

500

320

600

950

-
1200

-
1500

-
3200

-
5200

-
4000

-
7500

-
9400

Nominal speed V=1,00 (m/s)

m_{min} (kg) - m_{max} (kg)

180

220

330

600

450

650

1500

-
600

-
700

-
1250

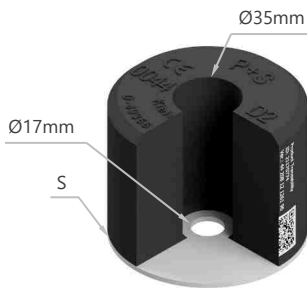
-
1850

-
1500

-
2700

-
5500

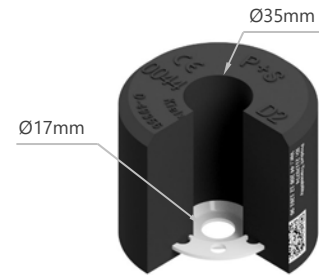
Choose your mounting-type



TYPE A



TYPE C



TYPE D

	S (mm)	Item-No.:	A (mm)	E (mm)	d (mm)	S (mm)	Item-No.:	Item-No.:
D0	4	211800074	105	80	12	4	211800174	211800774
D1	4	211801074	130	100	14	6	211801174	211801774
D2	4	211802074	130	100	14	6	211802174	211802774
D3	4	211803074	155	125	18	6	211803174	211803774
D4	6	211804074	180	140	18	6	211804174	211804774
D5	6	211805074	205	165	18	6	211805174	211805774
D6	6	211806074	260	220	18	6	211806174	211806774

Guide shoes & inserts



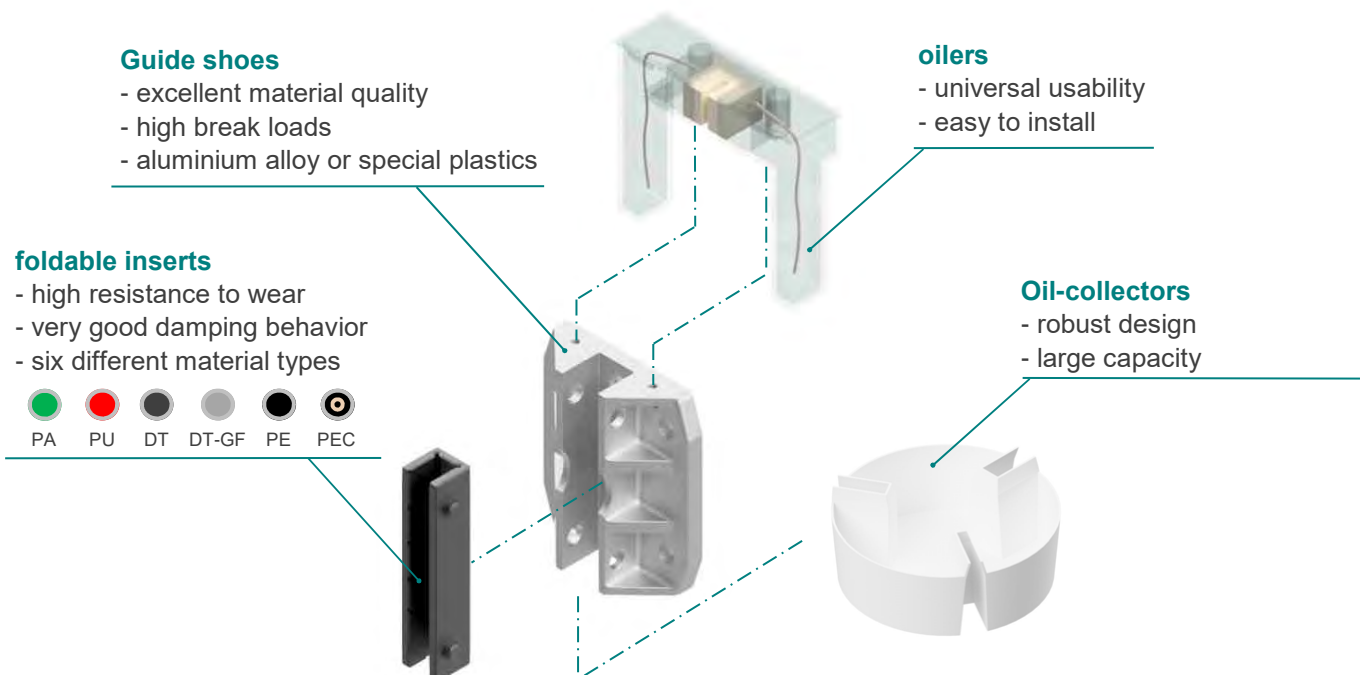
lightweight | damping-effect | universal

Our wide range of **lift construction components** includes a number of **movement and guide components**.

P+S Guide shoes made from **modern special plastics** or also **high-quality aluminium alloys** have a high load capacity and wear resistance due to the **well-designed, robust construction**. Guide shoes & inserts are available for all common guide rail widths.

Our guide shoe inserts offer **excellent damping** (PU), **good gliding properties** (PA), **excellent gliding and damping properties** (DT), with additional **self-lubrication** (DT-GF) or with high degrees of hardness and therefore **extreme abrasion resistance** (PE and PEC).

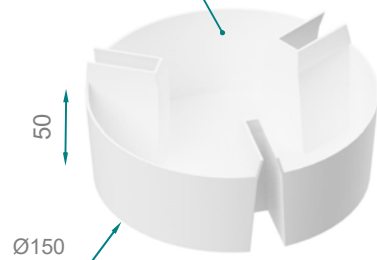
The range is rounded off by **compatible guide rail lubricators and oil collectors**, which are also notable for their design, robust construction, universal applicability and ease of installation.



Overview of oilers & oil-collectors

Oil-collector

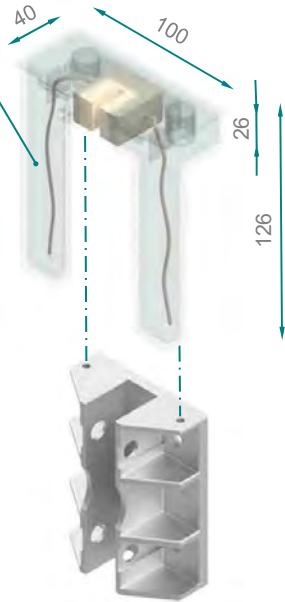
- Item-No.: 780306002
 - filling volume 500ml
 - universal application for guide rail widths 5–16 mm



* All dimensions in [mm]

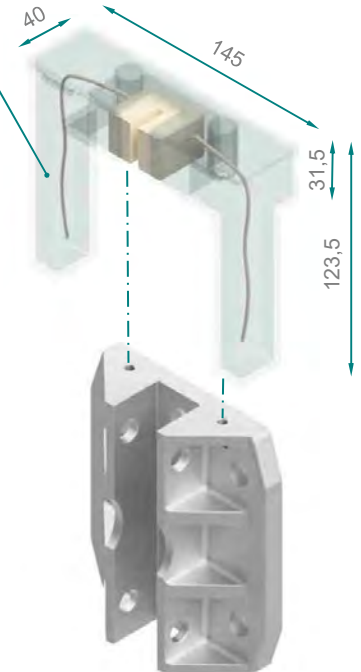
Oiler 100

- Item-No.: 780305001
 - M6 screws for connection
 - Max.-volume: 40ml
 - for guide rails widths up to 16mm



Oiler 140

- Item-No.: 780305000
 - M6 screw for connection
 - Max.-volume: 80ml
 - for guide rail widths up to 30mm



Overview of guide shoes

Aluminium

- high material quality
- high breaking-loads
- precise manufactured
- high tolerance accuracy

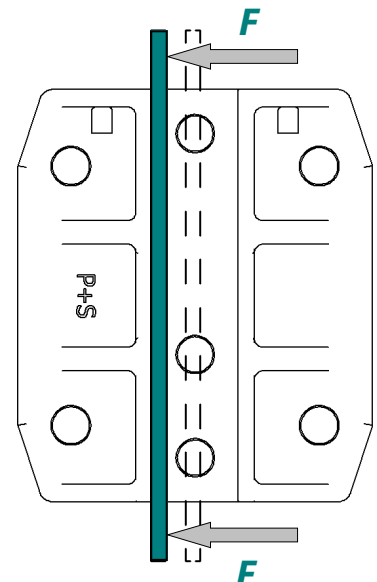


Plastic

- lightweight
- precision component
- 100% recyclable
- excellent material combination

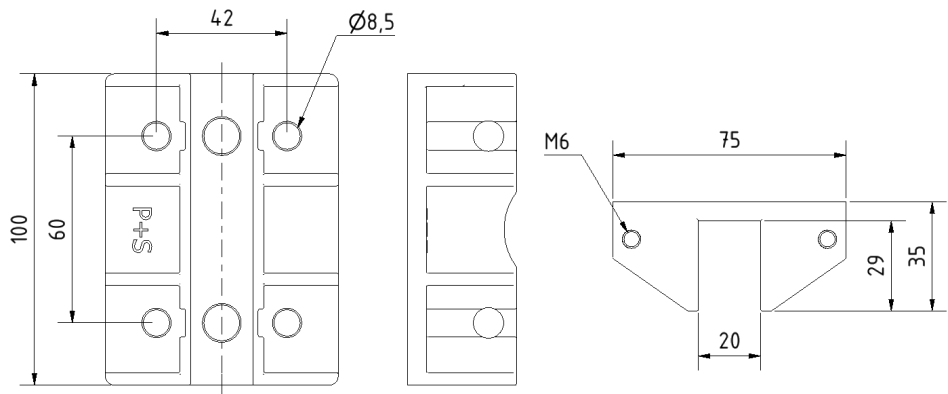
Breaking load

Type	Material	Market standard	P+S
HSMK100	Aluminium	17kN - 22kN	30kN
HSMK100	Plastic	7kN - 12kN	15kN
WSMK100	Aluminium	16kN - 21kN	20kN
HSM140	Aluminium	35kN - 43kN	80kN
HSM140	Plastic	16kN - 21kN	25kN
WSM140	Aluminium	22kN - 29kN	40kN
HSML180	Aluminium	45kN - 55kN	75kN
WSML180	Aluminium	50kN - 60kN	70kN



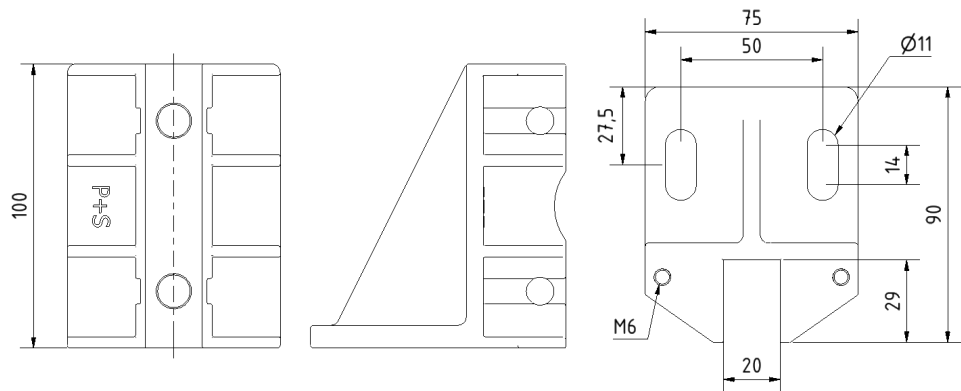
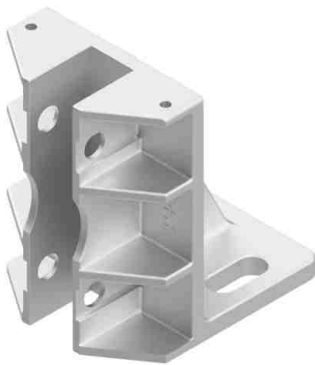
Guide shoe dimensions

HSMK100 | Aluminium Item-No.: 780300008 | Plastic Item-No.: 780300108



* All dimensions in [mm]

WSMK100 | Aluminium Item-No.: 780300001

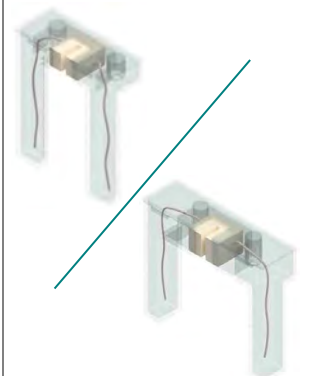


* All dimensions in [mm]

Suitable inserts for HSMK100 & WSMK100

For guide rail width [mm]	Material / Item-No.:					
	DT	DT-GF	PE	PEC	PA	PU
5	780311001	780311031	780309001	780310005	780307001	780308001
7	-	-	780309005	780310025	-	-
9	780311002	780311032	780309024	780310002	780307002	780308002
10	780311003	780311033	780309003	780310003	780307003	780308003
16	-	-	780309030	-	-	-

Suitable oiler

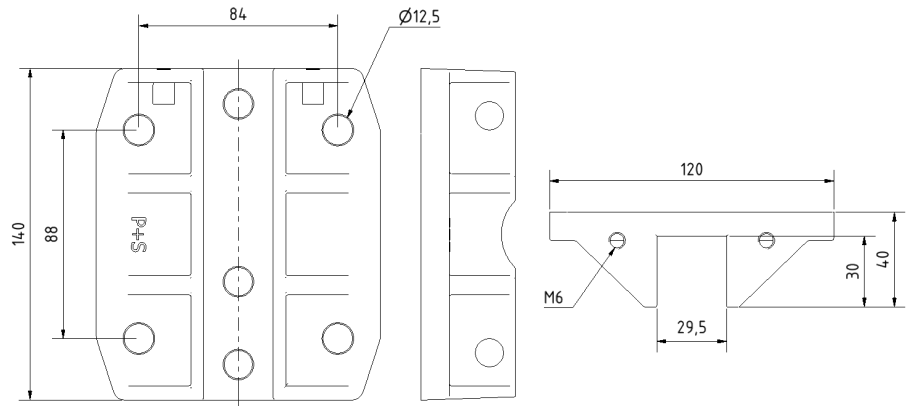


Oiler: 100 / 140
Item-No.: 780305001 / 780305000

Further dimensions are available upon request

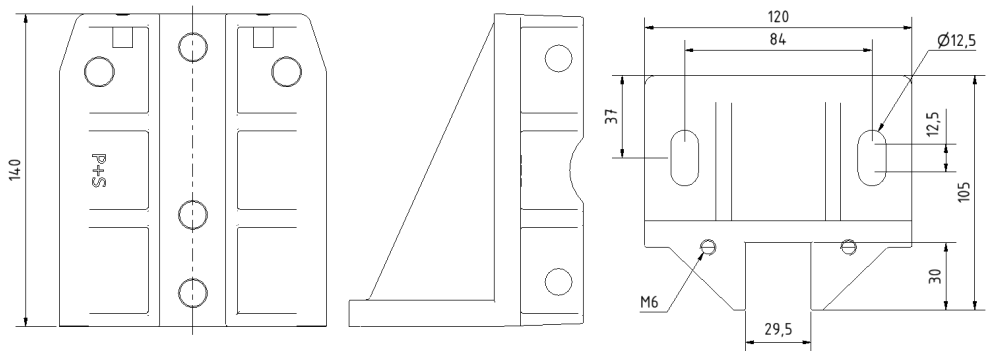
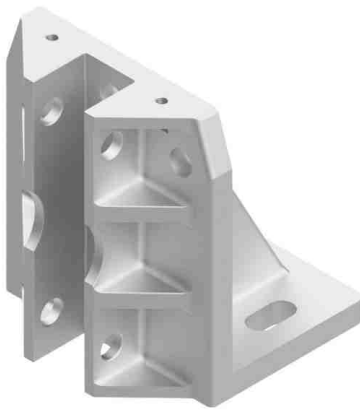
Guide shoe dimensions

HSM140 | Aluminium Item-No.: 780300002 | Plastic Item-No.: 780300102



* All dimensions in [mm]

WSM140 | Aluminium Item-No.: 780300003



* All dimensions in [mm]

Suitable inserts for HSM140 & WSM140

For guide rail width [mm]	Material / Item-No.:					
	DT	DT-GF	PE	PEC	PA	PU
5	-	-	780309000	-	-	-
6	-	-	780309027	780310027	-	-
8	780311008	780311038	780309008	780310006	780307018	780308018
9	780311005	780311035	780309007	780310007	780307005	780308005
10	780311006	780311036	780309006	780310008	780307012	780308012
12	-	-	780309016	780310016	-	-
14	-	-	780309010	780310010	-	-
15	-	-	780309004	780310004	-	-
16	780311009	780311039	780309012	780310012	780307009	780308009
19	-	-	780309026	-	-	-

Suitable oiler

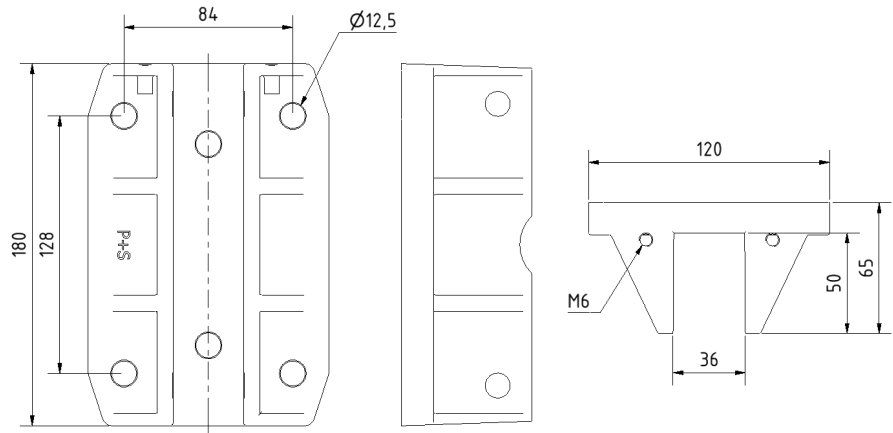
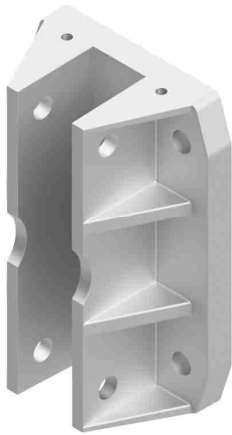


Oiler 140
Item-No.: 780305000

Further dimensions are available upon request

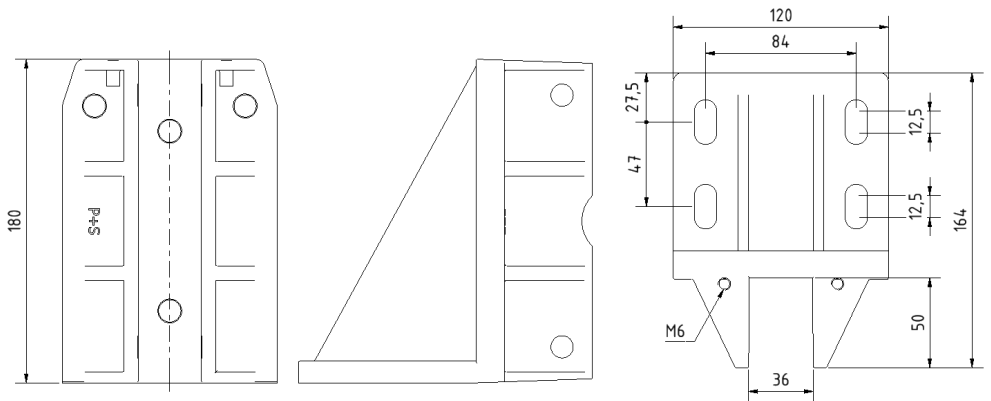
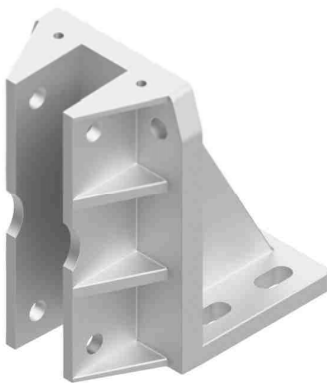
Guide shoe dimensions

HSML180 | Aluminium Item-No.: 780300004



* All dimensions in [mm]

WSML180 | Aluminium Item-No.: 780300005



* All dimensions in [mm]

Suitable inserts for HSML180 & WSML180

For guide rail width [mm]	Material / Item-No.:					
	DT	DT-GF	PE	PEC	PA	PU
9	-	-	780309017	780310017	-	-
10	-	-	780309015	780310015	-	-
12	-	-	780309018	780310018	-	-
14	-	-	780309028	780310028	-	-
16	-	-	780309014	780310014	-	-
19	-	-	780309023	780310023	-	-
28,6	-	-	780309029	-	-	-

Suitable oiler



Oiler 140
Item-No.: 780305000

Further dimensions are available upon request

Overview of Inserts



Material:
Diepotex
[DT]



Material:
Diepotex-GF
[DT-GF]



Material:
Polyurethane
[TPU]



Material:
Polyamide
[PA]



Material:
Polyethylene
[PE]



Material:
PE +
Cell-insert
[PEC]



Material comparison

Material	Color	Hardness (Shore D) [+/- 5]	V max. (m/s)	Noise emission	Wear resistance	Sliding- performance	Sliding- surface	Coefficient of friction	
								dry	lubricated
DT		75°	3	+	++	+++	with grooves	0,15 ± 0,05	< 0,07
DT-GF		70°	3	++	++	++	with grooves	0,25 ± 0,05	< 0,07
TPU		45°	1	+++	+	+	with grooves	–	0,75 ± 0,1
PA		65°	1,6	+	++	++	with grooves	–	0,60 ± 0,1
PE		60°	3	+	+++	+++	flat/ milled	0,15 ± 0,05	< 0,07
PEC		60°	3	+++	+++	+++	flat/ milled	0,15 ± 0,05	< 0,07



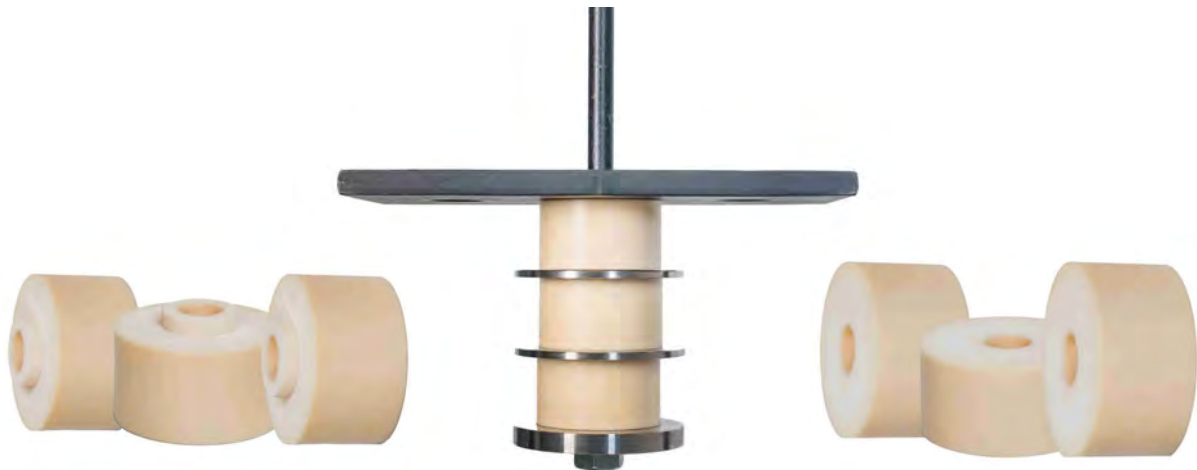
Permissible load

Material	Permissible surface pressure (N/mm ²)	Inserts for HSMK100 (values for 5mm rail)		Inserts for HSM140 (values for 16mm rail)		Inserts for HSML180 (values for 16mm rail)	
		Max. force - to center - [N]	Max. force - at side - [N]	Max. force - to center - [N]	Max. force - at side - [N]	Max. force - to center - [N]	Max. force - at side - [N]
DT	7,5	3250	14300	14750	19500	–	–
DT-GF	7,5	3250	14300	14750	19500	–	–
TPU	0,7	350	1750	1550	2450	–	–
PA	1,2	600	3000	2700	4200	–	–
PE	10	4400	19450	20050	26600	25900	57000
PEC	10	4400	19450	20050	26600	25900	57000

Please note: The values given are recommendations!

Testing using a long term pressure test.

Cable spring buffers



large deflection | good damping | adjustable

Cable spring buffers made from Vulkocell® are indispensable in lift construction. Due to their outstanding technical properties, they are used in many lift car and counterweight applications. The technical properties include **large spring range despite low overall height, low transverse expansion** due to high volume compressibility and good damping properties.

The spring range can be adjusted by using different numbers of buffer elements (1–3 buffers with intermediate layers). The spring elements are **very easy to assemble and are highly resistant** to mineral oils and greases.

Application notes:

When **mounting several buffer elements** on top of one another, metal intermediate plates should be used. These **promote uniform** compression of the spring elements. We recommend **plates with a diameter approx. 40% larger** than the nominal diameter of the spring element.

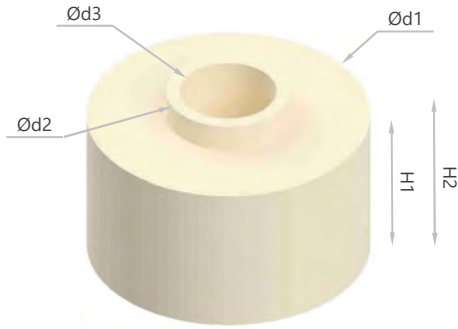
We offer **compatible metal plates** for the buffer elements upon request.

If several cable spring buffers **are installed next to one another**, ensure that there is **sufficient distance** between them to ensure **free compression**.

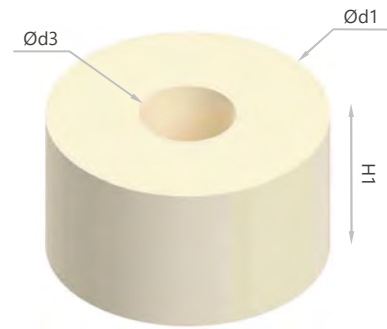
The spring elements can be installed with a **defined pre-tension**. These can be **taken from the below table**.

The **maximum dynamic deflection should not exceed approx. 65%** of the nominal height in **the long term**. Overloading the spring elements can lead to varying spring characteristics and have a negative effect on the service life of the components. **We therefore recommend a visual inspection of the components** as part of the general maintenance schedule of the lift system.

Overview of cable spring buffers



TYPE A



TYPE B

d1 (mm)	d2 (mm)	d3 (mm)	H1 (mm)	H2 (mm)	Item-No.:	d1 (mm)	d3 (mm)	H1 (mm)	Item-No.:
40	27	17	17	20	288037058	40	17	17	288037158
50	22	13	28	33	288029058	50	13	28	288030058
50	22	17	28	33	288031058	50	17	28	288032058
55	27	21	27	30	288038058	55	21	27	288038158
65	27	21	28	33	288033058	65	21	28	288034058
80	27	25	28	33	288035058	80	25	28	288036058



VERSION 1

Type A



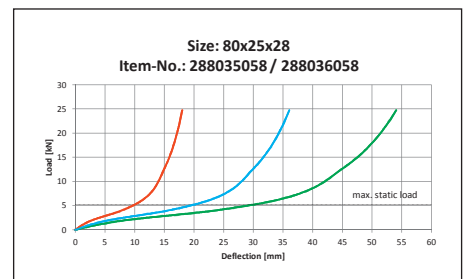
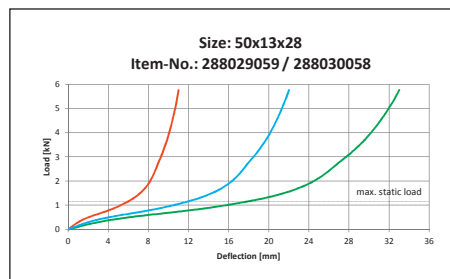
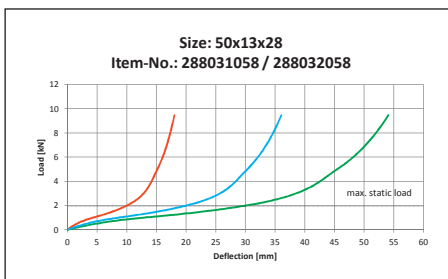
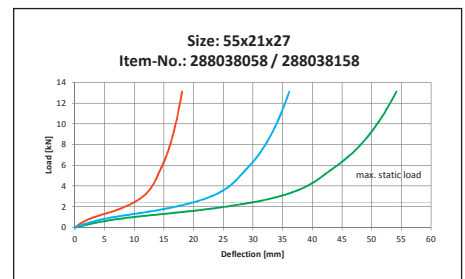
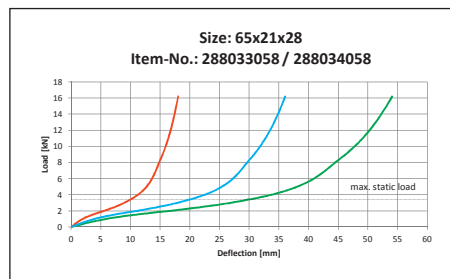
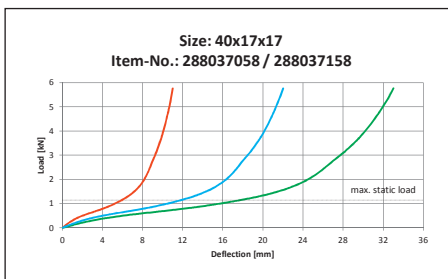
VERSION 2

Type A + Type B



VERSION 3

Type A + Type B + Type B



Rollers & Roller Guides

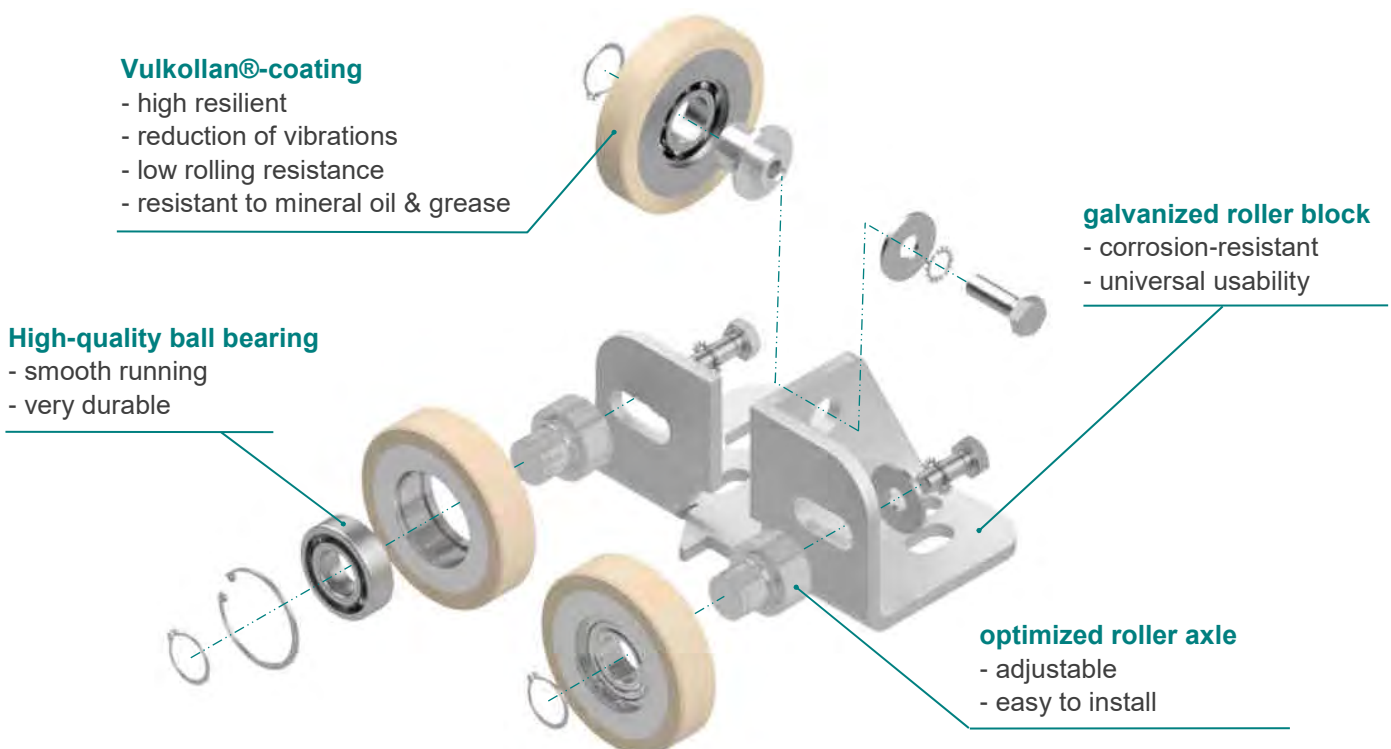


Application-specific | quiet | high-speed

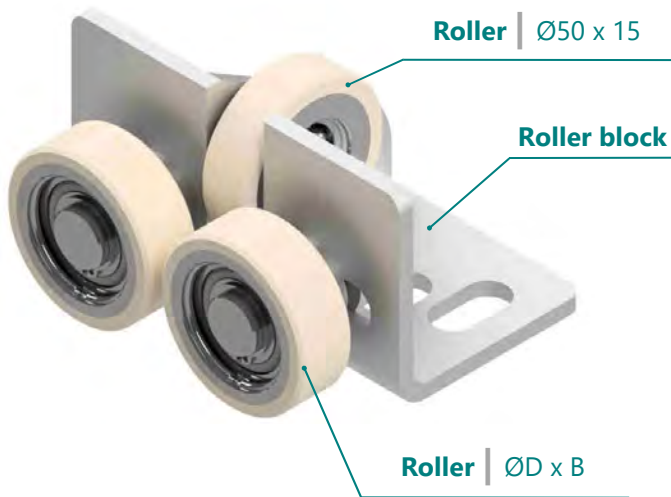
Vulkollan® is the perfect material for **lining guide rollers**. As a registered trademark of COVESTRO Deutschland AG, Vulkollan®, with its precisely specified raw materials, is a guarantee for **consistent elastomer quality at the very highest level**.

With eight different sizes, it can be **adjusted individually depending on the load**. All **P+S roller guides** are available at short notice. Spare parts, such as individual rollers, galvanised steel roller blocks, and axles, are also available on request.

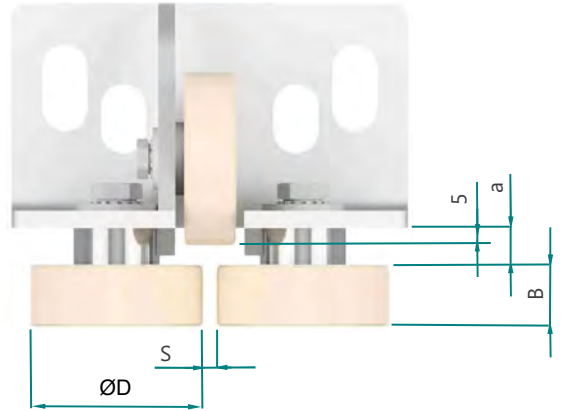
As a **strategic development partner**, P+S also offers the possibility of **an individual and application-related design** for special loads and environmental influences, as well as different dimensions for special systems.



Overview of roller guides

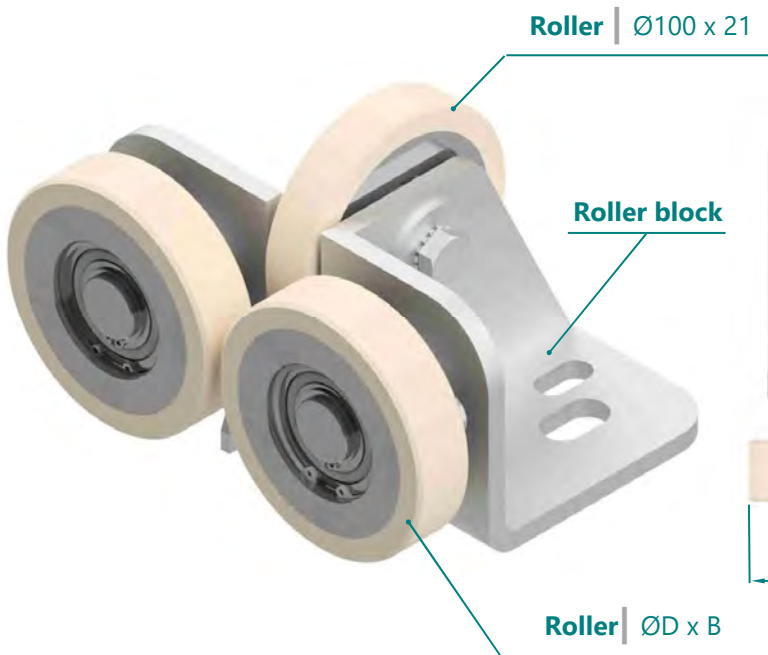


Roller guide: **RFL**

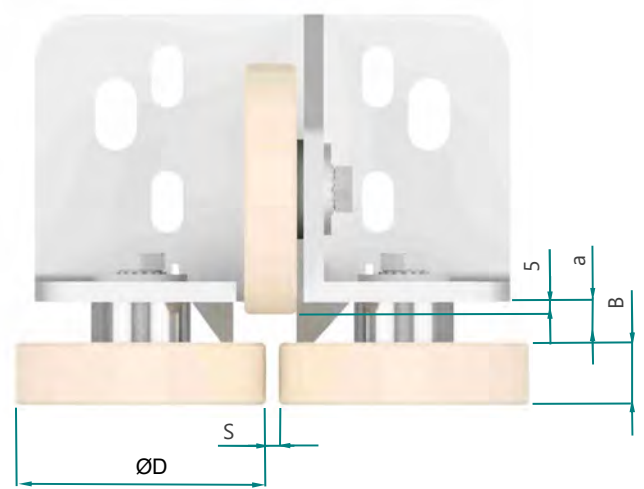


* All dimensions in [mm]

No.	S (mm)	ØD (mm)	B (mm)	a (mm)	Load range [N] at v [m/s]			Hardness Shore A	Item-No.
					0,63	1	2,5		
1	5 - 18	50	18	10,5	895	850	810	93°	780300050
2	5 - 18	60	18	10,5	1055	1000	950	93°	780300051



Roller guide: **RFS**



* All dimensions in [mm]

No.	S	ØD	B	a	Load range [N] at v [m/s]			Hardness Shore A	Item-No.
					0,63	1	2,5		
1	5 - 25	100	25	16	2420	2300	2000	93°	780300060
2	5 - 25	100	30	13,5	2850	2700	2350	93°	780300061
3	5 - 25	100	40	8,5	3800	3600	3200	93°	780300062
4	5 - 25	125	25	16	3075	2900	2500	93°	780300066
5	5 - 25	125	30	13,5	3600	3400	3100	93°	780300063
6	5 - 25	125	40	8,5	5690	5400	4710	93°	780300064

Anti-vibration



decoupling | noise-reducing | tunable

A wide range of different qualities from the **Vulkocell®** group of materials combine **high volume compressibility** at **low transverse strain** with high dynamic load-bearing capacity and very good spring properties, due to relatively low damping. **Long service lifetimes** can be achieved through a **design that is adapted to the load**.

The different qualities of the **Diepolast®** material stand out due to their **excellent decoupling properties** and low spring deflections at high amplitudes. A large selection of basic types and large load ranges of the individual types allow **precise adjustment** to the required area of application. **Diepolast®** is hydrolysis-resistant, which enables it to be used even in regions with high humidity.

Both groups of materials are used in a wide variety of applications in the lift industry. Dynamic springs in lift cabs or load-bearing structures, **active vibration decoupling** of motors, and suspension of lift cables by spring packages are just some of the areas where the outstanding technical properties of these materials can be used. Reducing unwanted vibrations, structure-borne sound and **noise emissions** are the primary goals and result in a high degree of **quietness and ride comfort**.

Design & Engineering

We will be happy to assist you in selecting the appropriate quality of material. Please ask for our project planning support at :

info@pus-polyurethan.de

