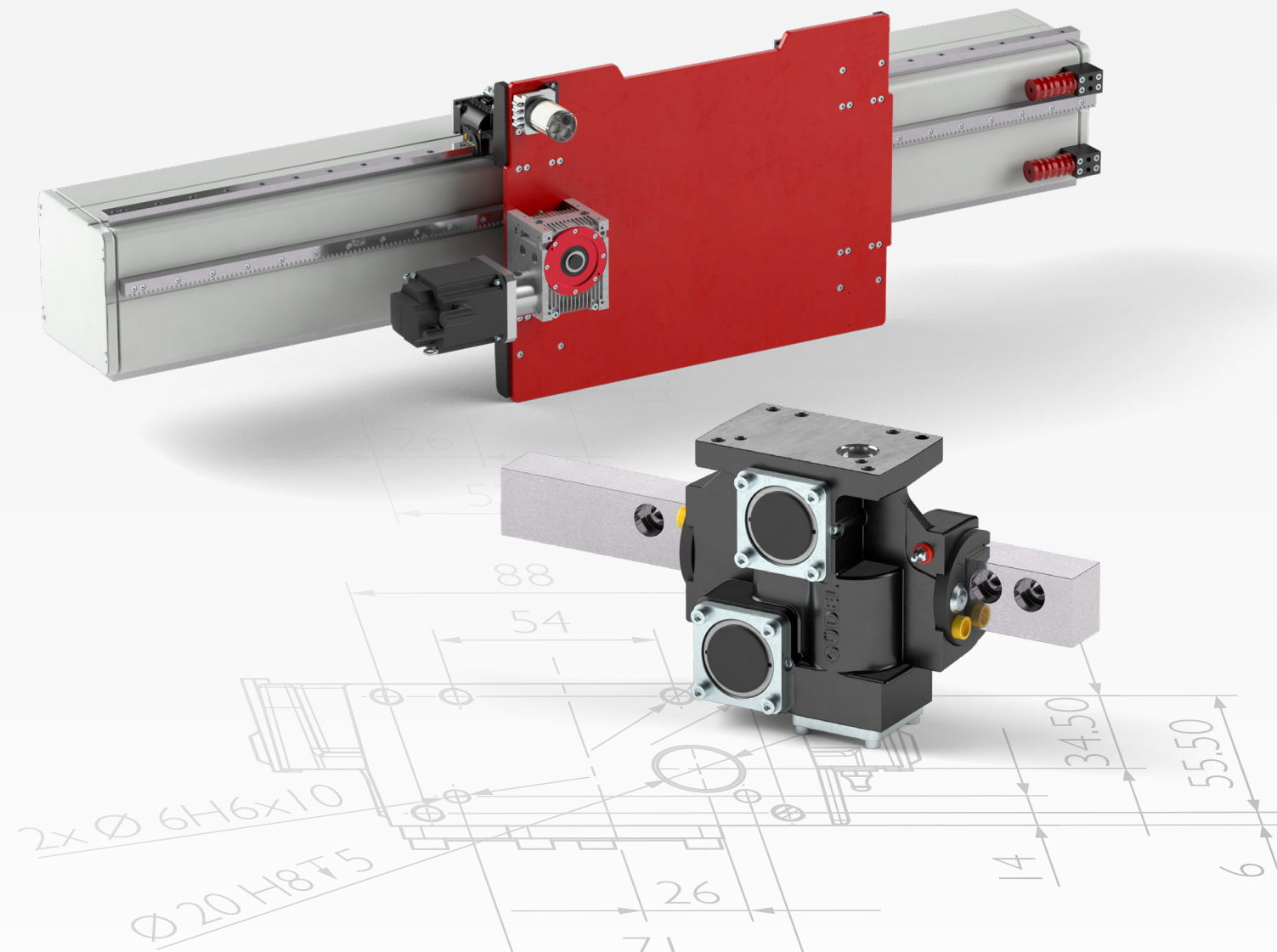




## Guideway systems for heavy duty applications



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Guideway systems for heavy duty applications

**GÜDEL**







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## Guideway systems for heavy duty applications

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## Technical information

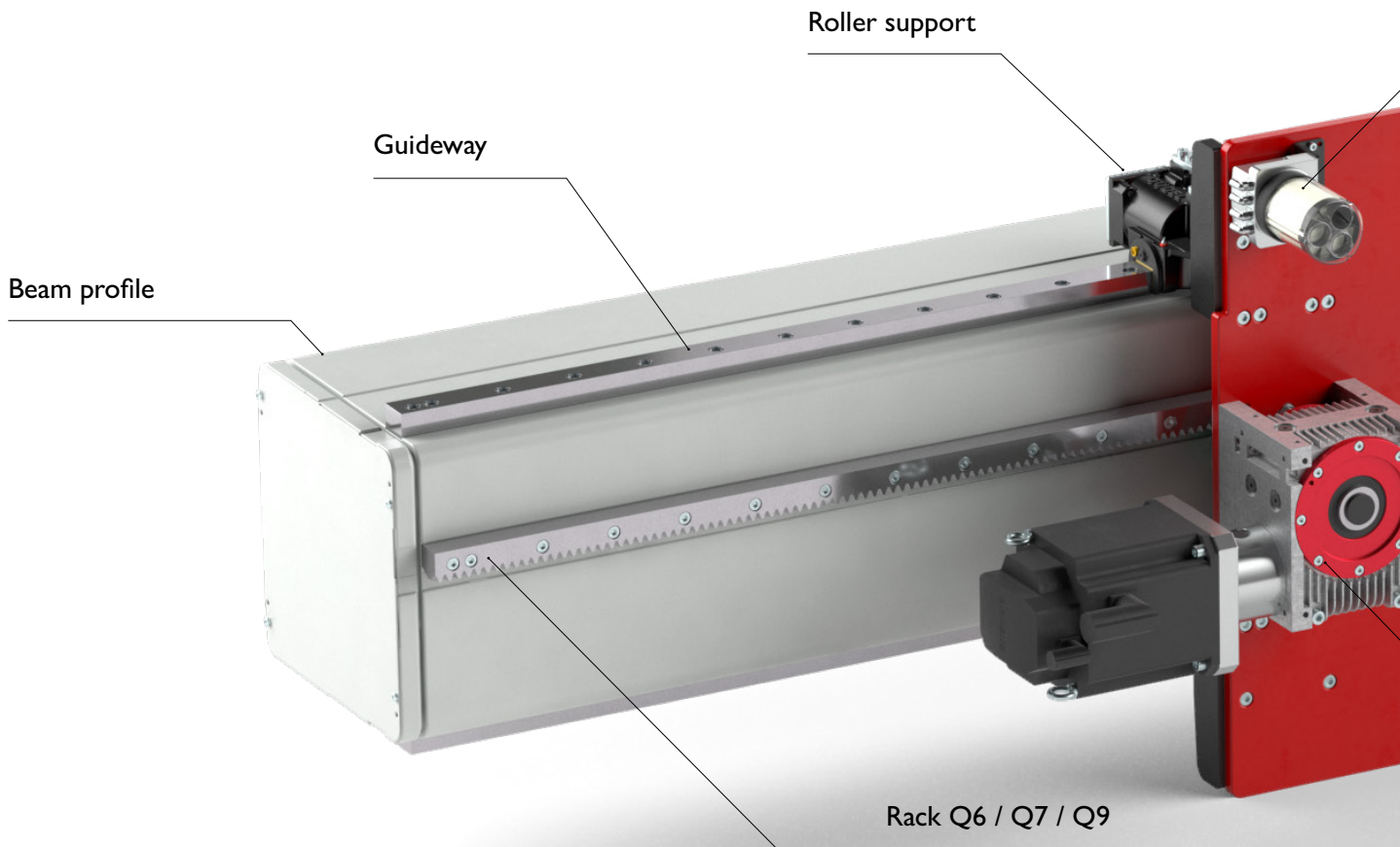
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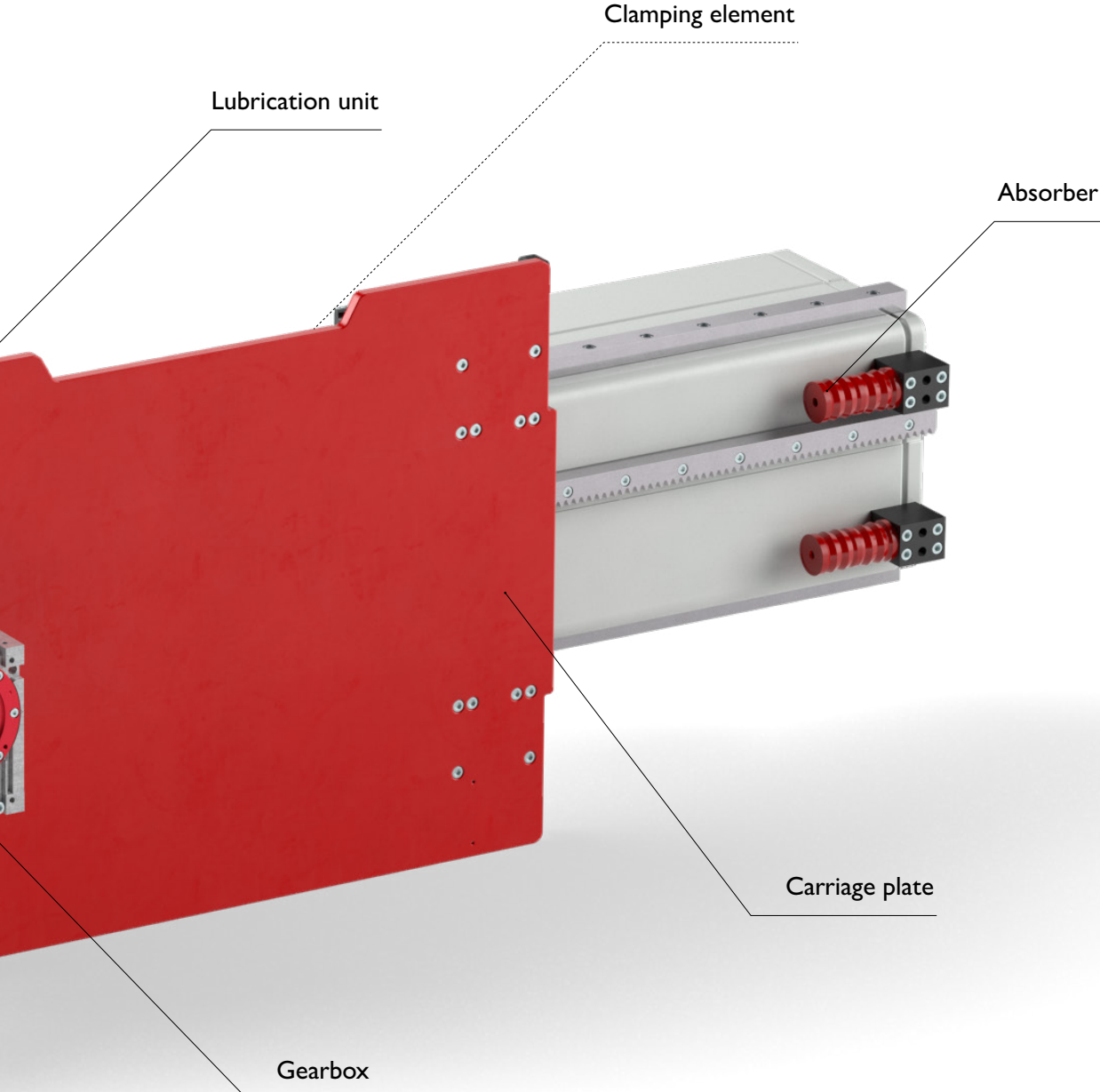
## Güdel worldwide

Contacts.....	60
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# Modular system – Tailored guideway systems and drive train solutions

Our guideway systems for heavy duty applications available in four sizes can be combined optimally with our standardized drive train solutions, consisting of rack, pinion, and gearbox. With pre-configured combinations, we provide you with the perfectly matching solution for your requirements.



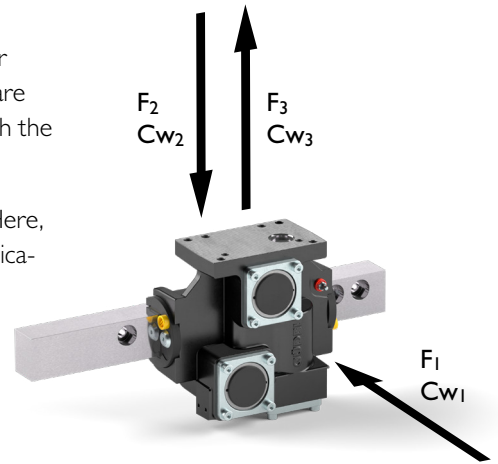




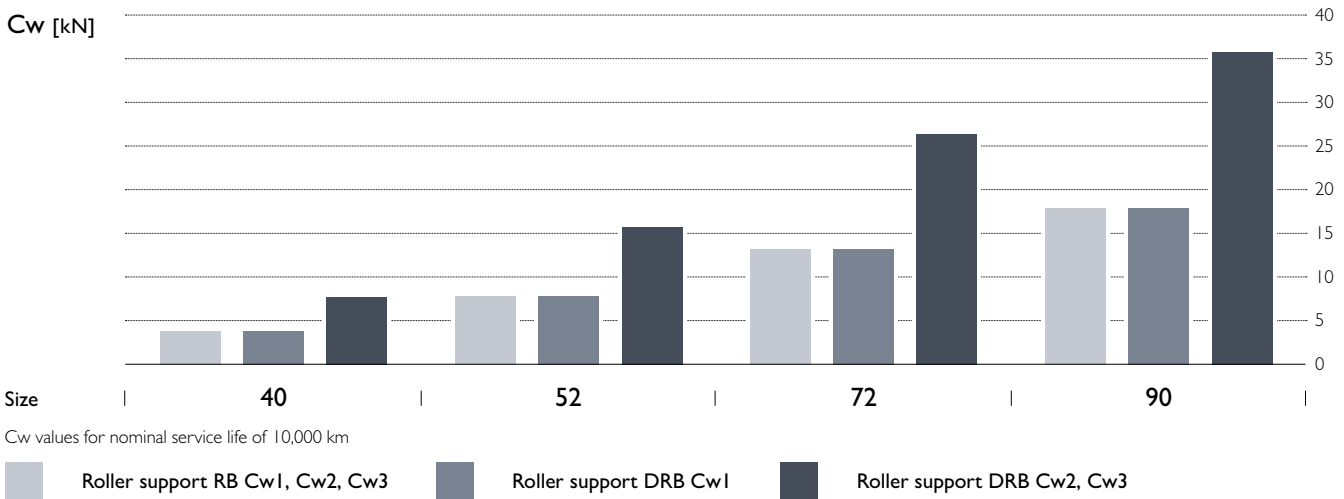
# Application-oriented load capacity and service life

Our tried-and-tested guideway system for heavy duty applications is divided into four sizes in order to provide the ideal solution for your application. The roller supports are also available in a double roller arrangement in order to achieve a higher payload with the same rails.

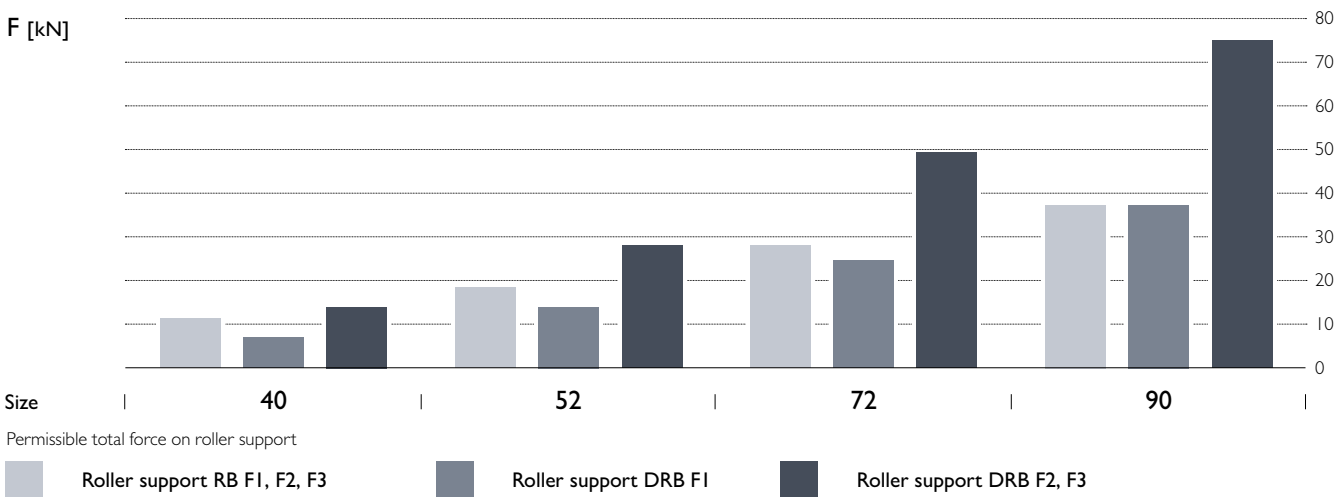
We offer the ideal drive train to match the load capacities of the guideway system. Here, the transfer feed forces and the precisions can be coordinated modularly to the application.

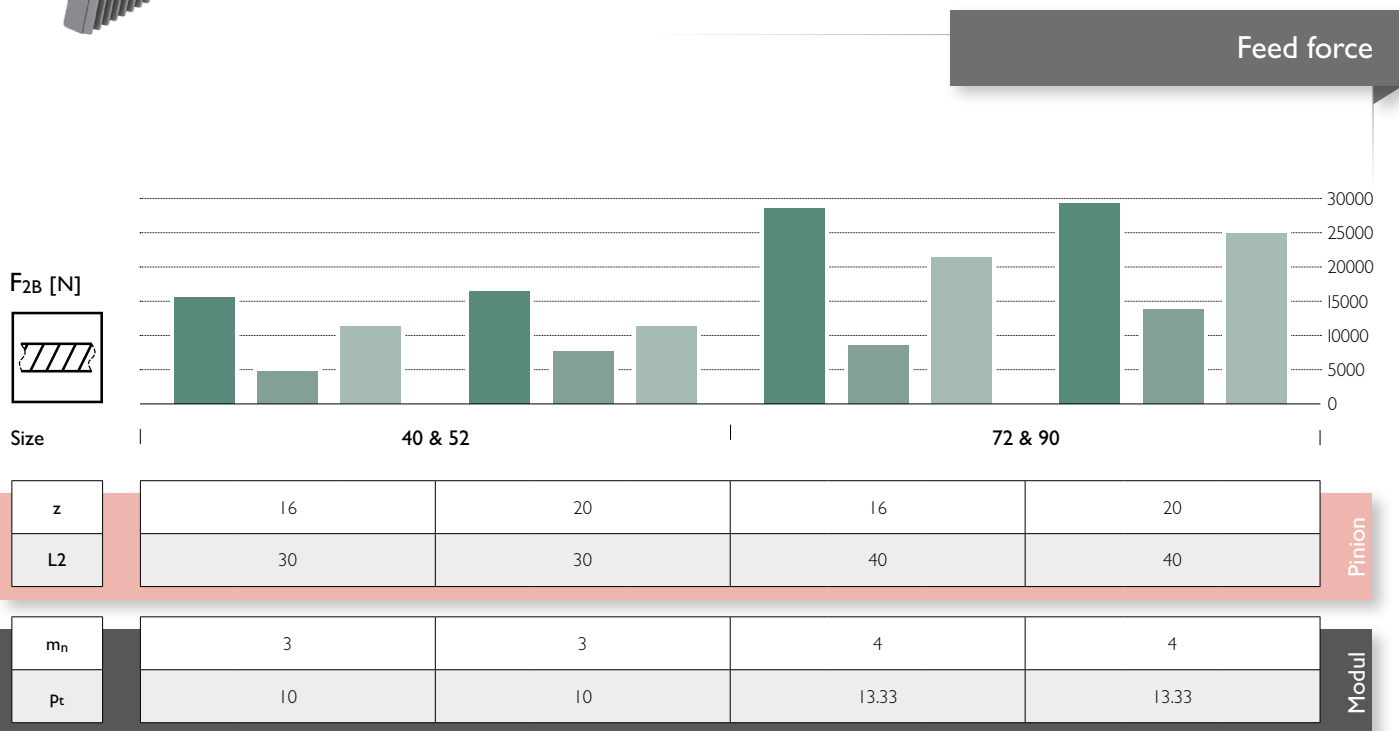
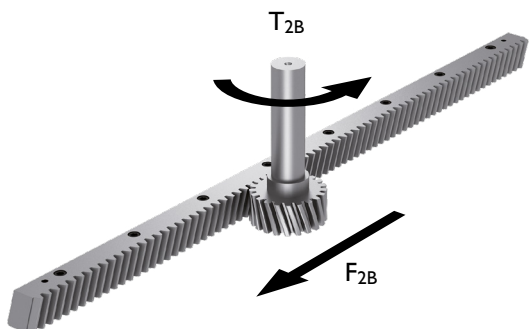


## Service life

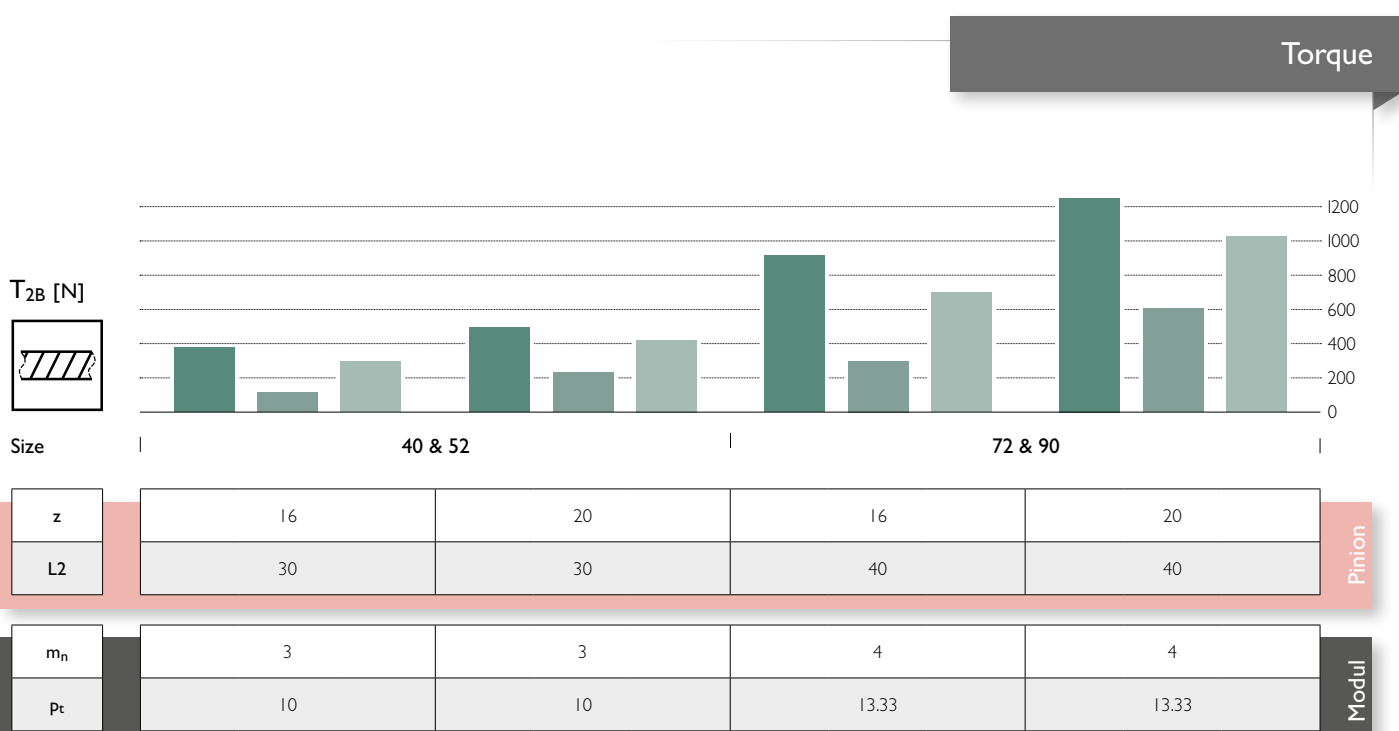


## Load capacity





z: Number of teeth, L<sub>2</sub>: Tooth width [mm], m<sub>n</sub>: Normal module, p<sub>t</sub>: Transverse pitch [mm]



z: Number of teeth, L<sub>2</sub>: Tooth width [mm], m<sub>n</sub>: Normal module, p<sub>t</sub>: Transverse pitch [mm]

# Your ideal drive train – The perfect addition to your guideway system

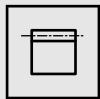
The ideal configuration of your drive train consists of:  
Güdel high performance angle gearboxes or high precision  
planetary gearboxes, racks and pinions.

The Güdel range of products complement each other perfectly and are ideally suited for a high performance drive train. They meet the highest demands of precision and economy. With our compact concepts, highly dynamic drive trains can be built that are universally applicable in terms of installation position.

Our ideal drive train is optimized for applications that require speed, precision, high feed force and dynamics even with long strokes. Fields of application include laser cutting systems, tool and wood processing machines as well as applications in robotics and conveyor technology.



Pinion



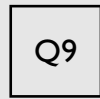
Rack



Quality



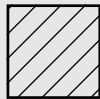
Q7



Q9



Helical



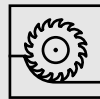
Steel



Hardened



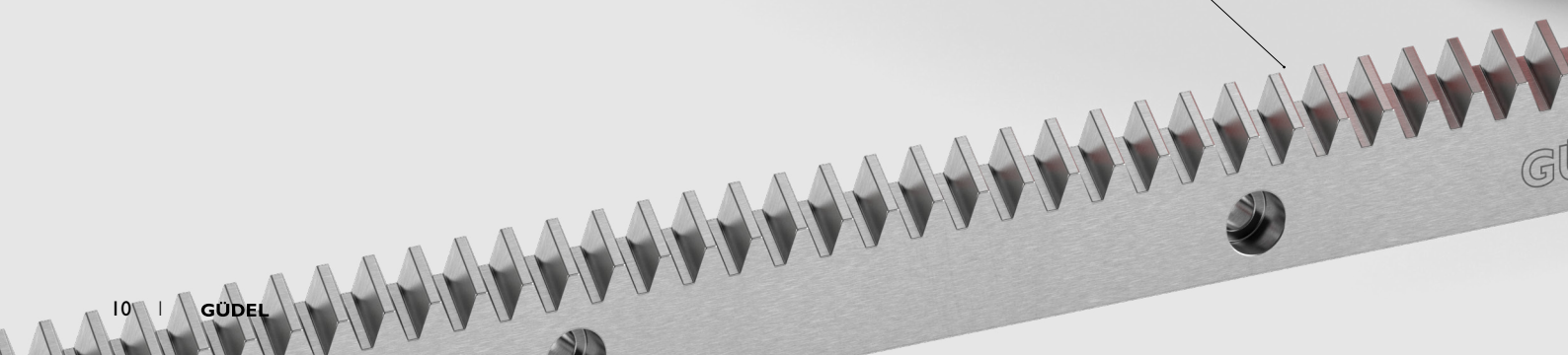
Ground



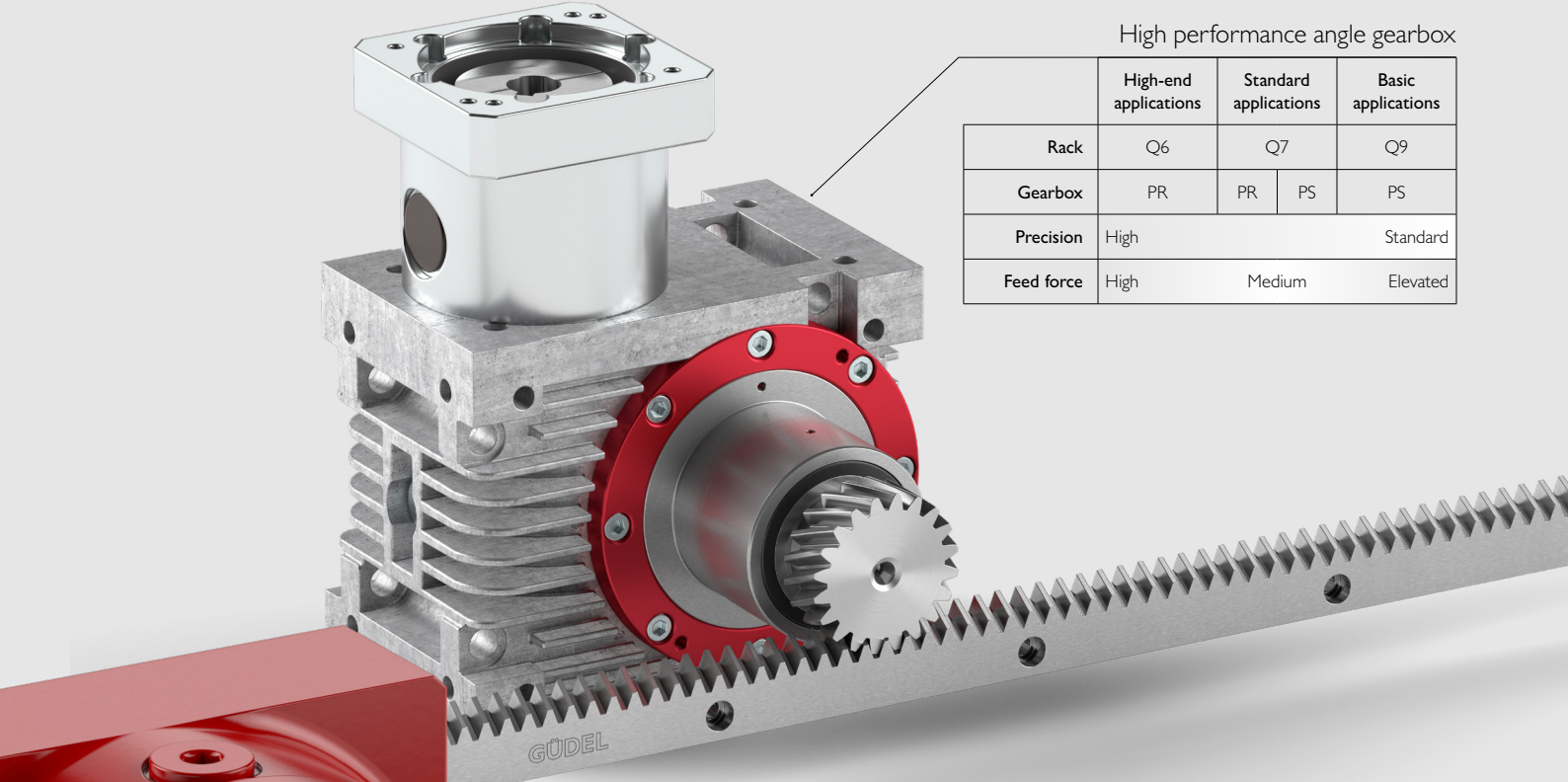
Milled



Rack Q6

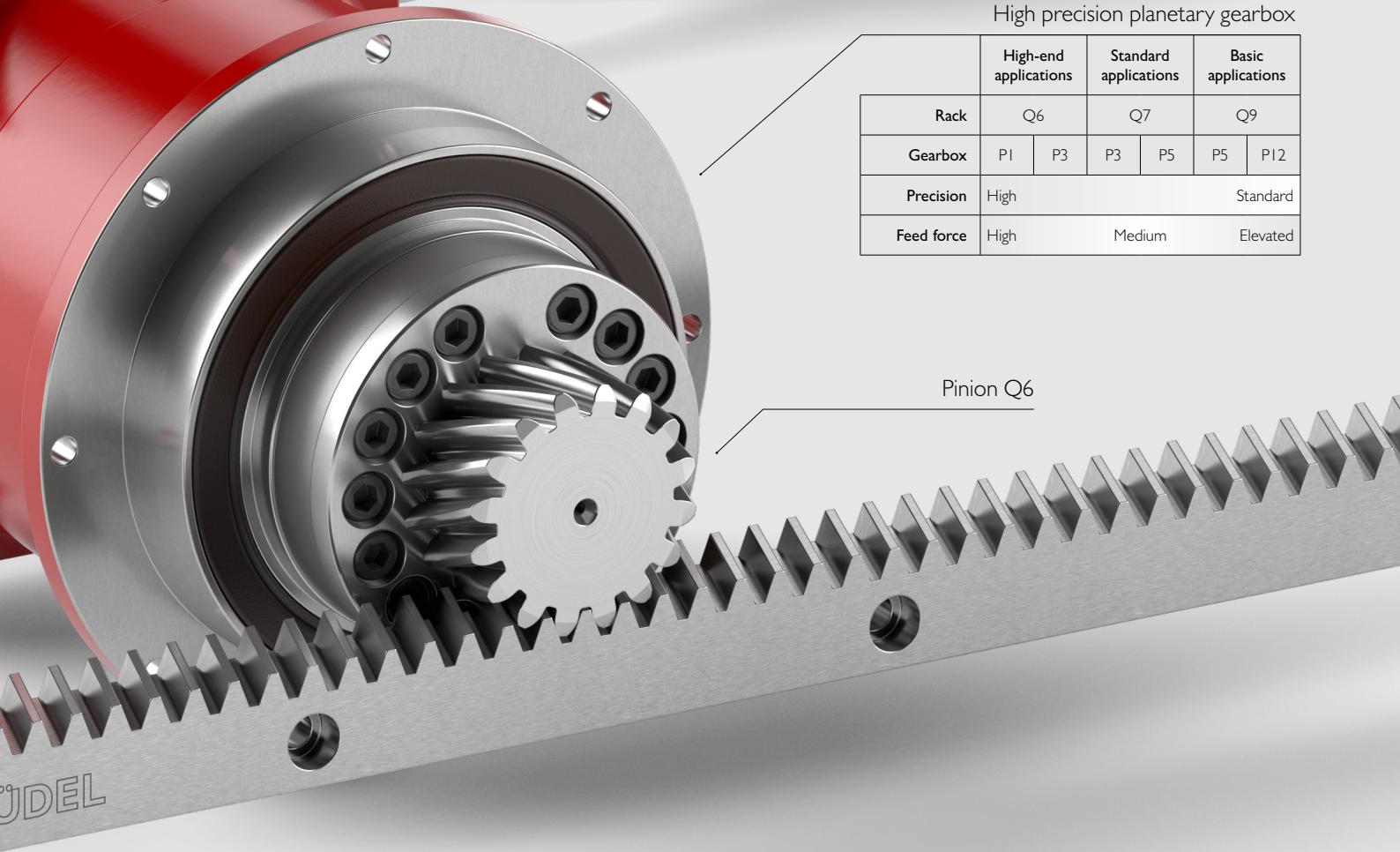






High performance angle gearbox

	High-end applications	Standard applications		Basic applications
<b>Rack</b>	Q6	Q7		Q9
<b>Gearbox</b>	PR	PR	PS	PS
<b>Precision</b>	High			Standard
<b>Feed force</b>	High	Medium		Elevated



High precision planetary gearbox

	High-end applications		Standard applications		Basic applications	
<b>Rack</b>	Q6		Q7		Q9	
<b>Gearbox</b>	PI	P3	P3	P5	P5	P12
<b>Precision</b>	High				Standard	
<b>Feed force</b>	High		Medium		Elevated	

Pinion Q6



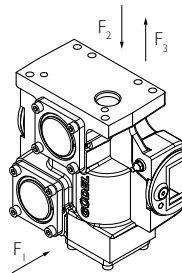
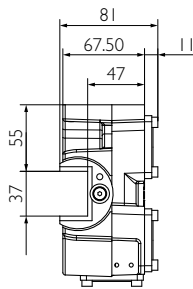
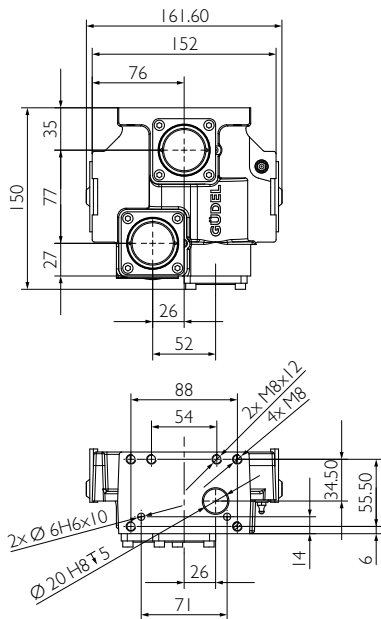


Technical data sheets

**GÜDEL**



Roller support RB40



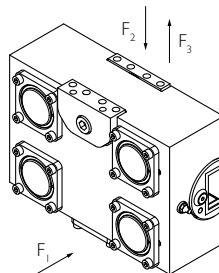
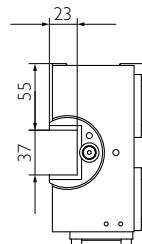
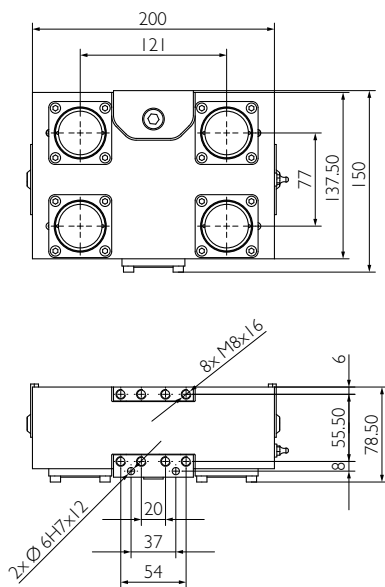
- F1**  
Load on side roller
- F2**  
Load on upper roller
- F3**  
Load on lower roller
- C<sub>w</sub>**  
For a nominal service life of 10<sup>7</sup> meter



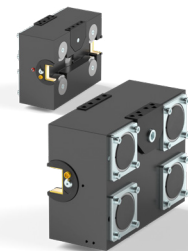
Type	Casing mat.	Load direction	C <sub>w</sub> [N]	n <sub>max</sub> [min-1]	F <sub>max. dyn</sub> [N]	F <sub>max. Not</sub> [N]	M [kg]	Part no.
RB40-S2937	GJS	F1 / F2 / F3	3840	5000	11400	17900	5	904200

C<sub>w</sub>: Dynamic load rating for 10<sup>7</sup> m, n<sub>max</sub>: Permissible speed, F<sub>max. dyn</sub>: Permissible force on roller support, dynamic, F<sub>max. Not</sub>: Permissible force on roller support in emergency stop, M: Weight

Double roller support DRB40



- F1**  
Load on side roller
- F2**  
Load on upper rollers
- F3**  
Load on lower rollers
- C<sub>w</sub>**  
For a nominal service life of 10<sup>7</sup> meter



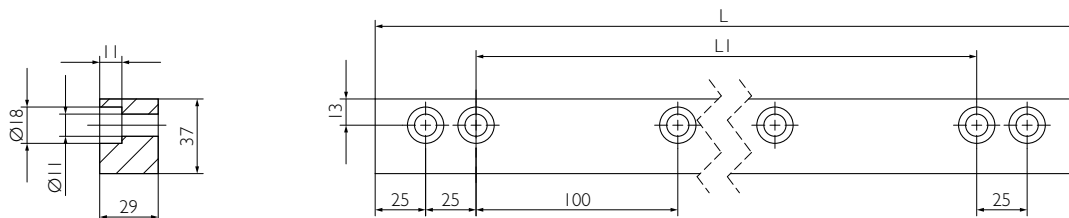
Type	Casing mat.	Load direction	C <sub>w</sub> [N]	n <sub>max</sub> [min-1]	F <sub>max. dyn</sub> [N]	F <sub>max. Not</sub> [N]	M [kg]	Part no.
DRB40-S2937	Aluminum	F1	3840	5000	7000	9600	6.1	904205
		F2 / F3	7680		14000	19200		

C<sub>w</sub>: Dynamic load rating for 10<sup>7</sup> m, n<sub>max</sub>: Permissible speed, F<sub>max. dyn</sub>: Permissible force on roller support, dynamic, F<sub>max. Not</sub>: Permissible force on roller support in emergency stop, M: Weight



BG 40

Guideway rail



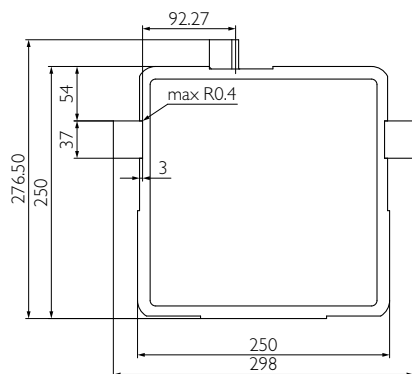
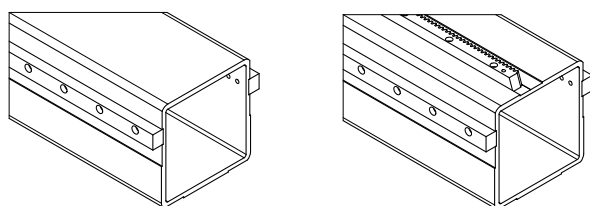
Installation & Accessories

Detailed information on the package, options & accessories on page 32f.

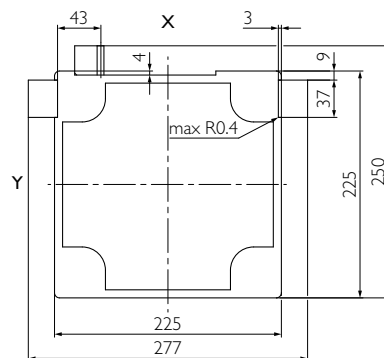
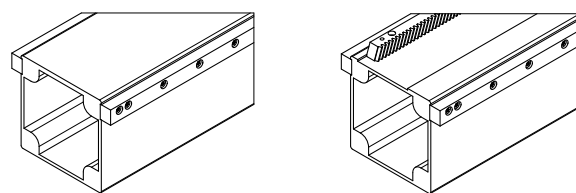
Type	Material		L [mm]	L <sub>1</sub> [mm]	M [kg]	Part no.
S2937	58CrMoV4	1.7792	2000	1900	16	903710

M: Weight

Beam profile in steel



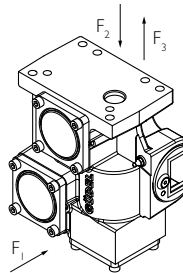
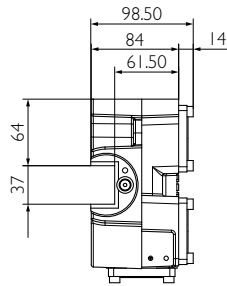
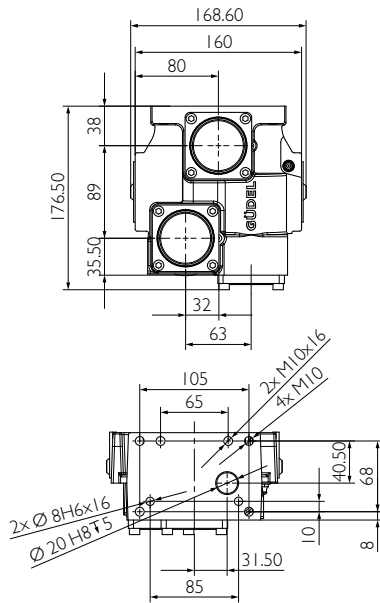
Beam profile in aluminum





BG 52

Roller support RB52



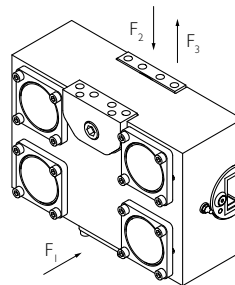
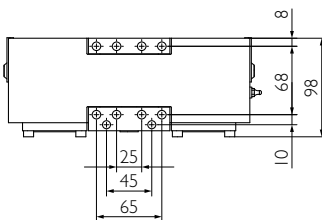
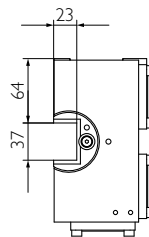
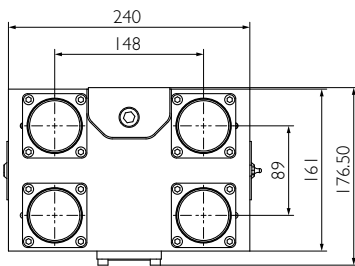
- F1**  
Load on side roller
- F2**  
Load on upper roller
- F3**  
Load on lower roller
- C<sub>w</sub>**  
For a nominal service life of 10<sup>7</sup> meter



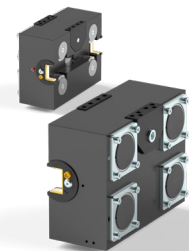
Type	Casing mat.	Load direction	C <sub>w</sub> [N]	n <sub>max</sub> [min-1]	F <sub>max. dyn</sub> [N]	F <sub>max. Not</sub> [N]	M [kg]	Part no.
RB52-S2937	GJS	F1 / F2 / F3	7850	3800	18400	31500	8.5	904210

C<sub>w</sub>: Dynamic load rating for 10<sup>7</sup> m, n<sub>max</sub>: Permissible speed, F<sub>max. dyn</sub>: Permissible force on roller support, dynamic, F<sub>max. Not</sub>: Permissible force on roller support in emergency stop, M: Weight

Double roller support DRB52



- F1**  
Load on side roller
- F2**  
Load on upper rollers
- F3**  
Load on lower rollers
- C<sub>w</sub>**  
For a nominal service life of 10<sup>7</sup> meter



Type	Casing mat.	Load direction	C <sub>w</sub> [N]	n <sub>max</sub> [min-1]	F <sub>max. dyn</sub> [N]	F <sub>max. Not</sub> [N]	M [kg]	Part no.
DRB52-S2937	Aluminum	F1	7850	3800	14000	20000	12	904215
		F2 / F3	15700		28000	40000		

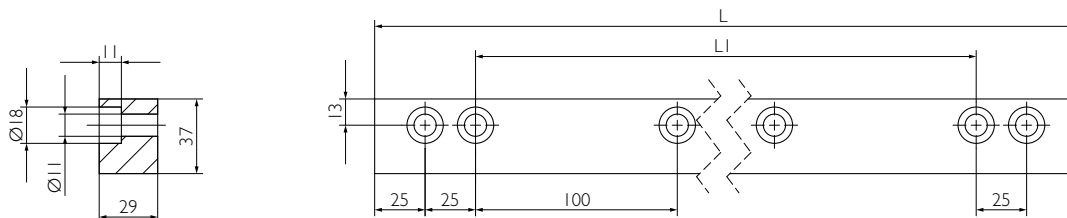
C<sub>w</sub>: Dynamic load rating for 10<sup>7</sup> m, n<sub>max</sub>: Permissible speed, F<sub>max. dyn</sub>: Permissible force on roller support, dynamic, F<sub>max. Not</sub>: Permissible force on roller support in emergency stop, M: Weight





BG 52

Guideway rail



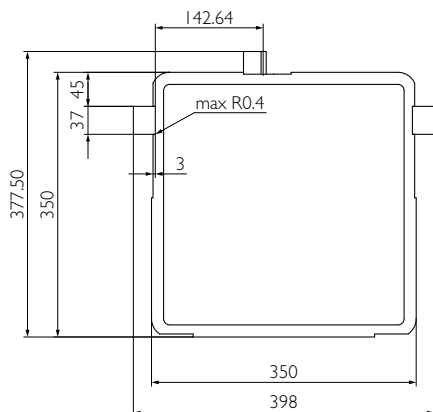
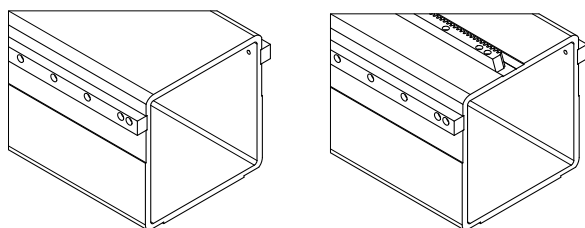
Installation & Accessories

Detailed information on the package, options & accessories on page 32f.

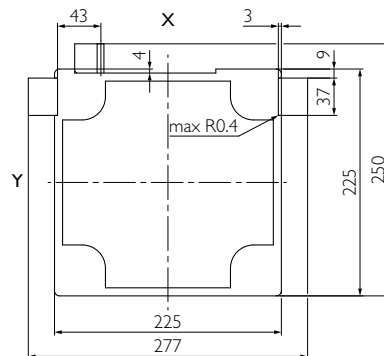
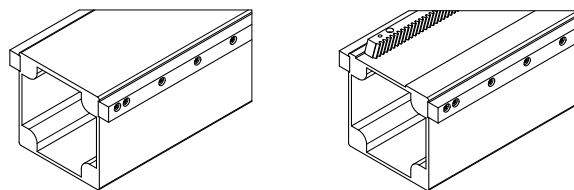
Type	Material		L [mm]	L <sub>1</sub> [mm]	M [kg]	Part no.
S2937	58CrMoV4	1.7792	2000	1900	16	903710

M: Weight

Beam profile in steel



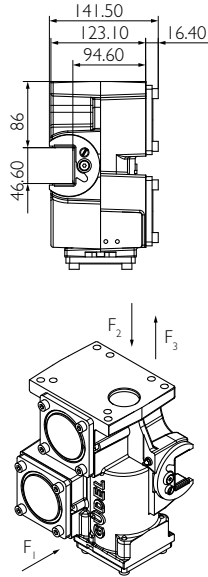
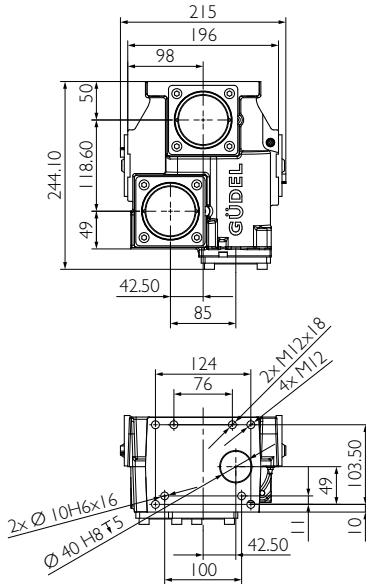
Beam profile in aluminum





BG 72

Roller support RB72



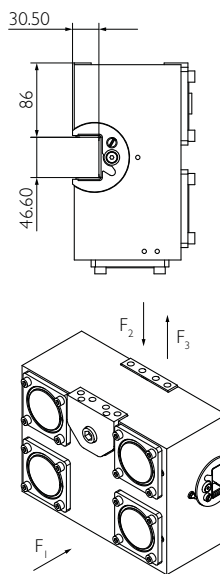
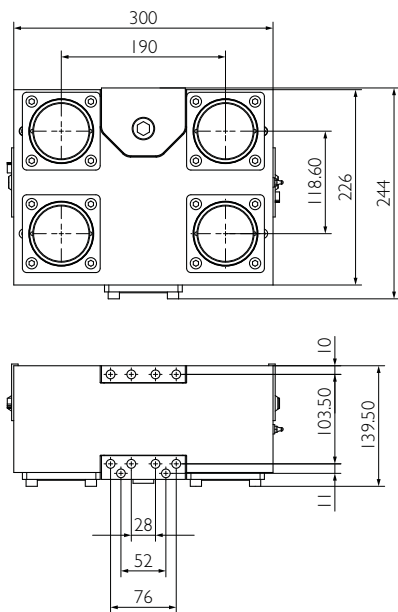
- F1**  
Load on side roller
- F2**  
Load on upper roller
- F3**  
Load on lower roller
- C<sub>w</sub>**  
For a nominal service life of 10<sup>7</sup> meters



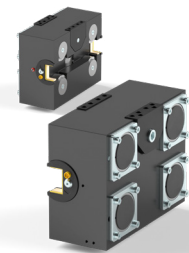
Type	Casing mat.	Load direction	C <sub>w</sub> [N]	n <sub>max</sub> [min-1]	F <sub>max. dyn</sub> [N]	F <sub>max. Not</sub> [N]	M [kg]	Part no.
RB72-S3547	GJS	F1 / F2 / F3	13150	2200	28015	56000	20	904230

C<sub>w</sub>: Dynamic load rating for 10<sup>7</sup> m, n<sub>max</sub>: Permissible speed, F<sub>max. dyn</sub>: Permissible force on roller support, dynamic, F<sub>max. Not</sub>: Permissible force on roller support in emergency stop, M: Weight

Double roller support DRB72



- F1**  
Load on side roller
- F2**  
Load on upper rollers
- F3**  
Load on lower rollers
- C<sub>w</sub>**  
For a nominal service life of 10<sup>7</sup> meter



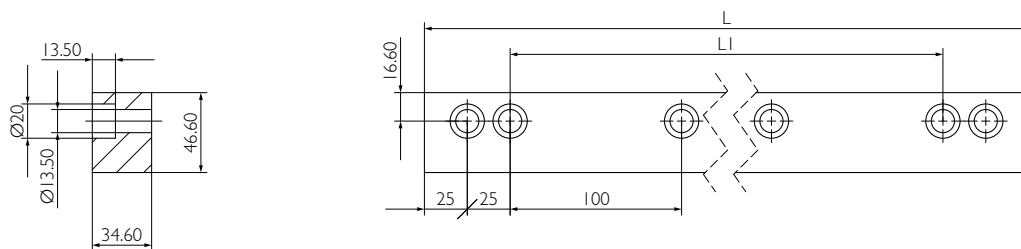
Type	Casing mat.	Load direction	C <sub>w</sub> [N]	n <sub>max</sub> [min-1]	F <sub>max. dyn</sub> [N]	F <sub>max. Not</sub> [N]	M [kg]	Part no.
DRB72-S3547	Aluminum	F1	13150	2200	24600	32600	29	904235
		F2 / F3	26300		49200	65200		

C<sub>w</sub>: Dynamic load rating for 10<sup>7</sup> m, n<sub>max</sub>: Permissible speed, F<sub>max. dyn</sub>: Permissible force on roller support, dynamic, F<sub>max. Not</sub>: Permissible force on roller support in emergency stop, M: Weight



BG 72

Guideway rail



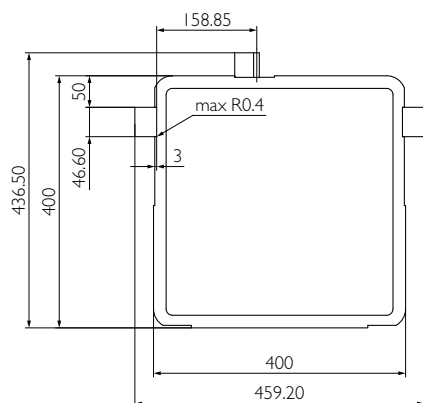
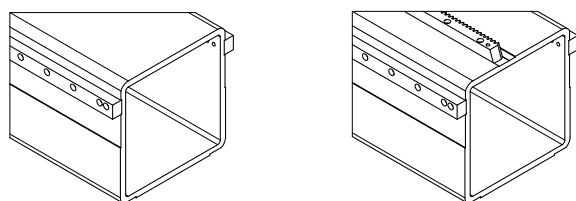
Installation & Accessories

Detailed information on the package, options & accessories on page 32f.

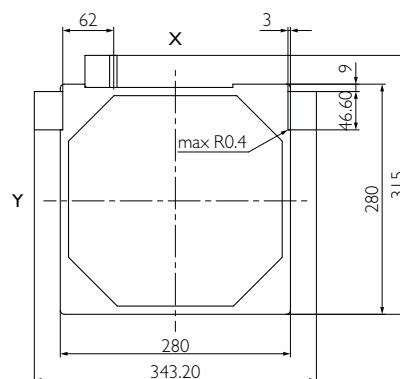
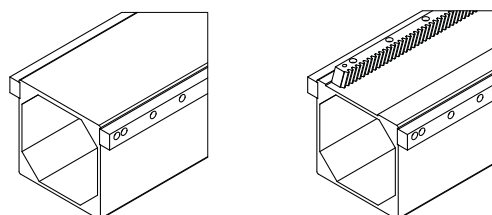
Type	Material		L [mm]	L <sub>i</sub> [mm]	M [kg]	Part no.
S3547	58CrMoV4	1.7792	2000	1900	23.9	903700

M: Weight

Beam profile in steel

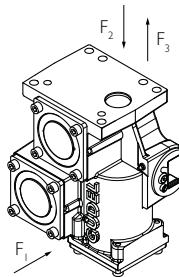
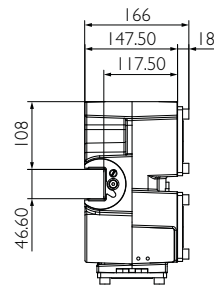
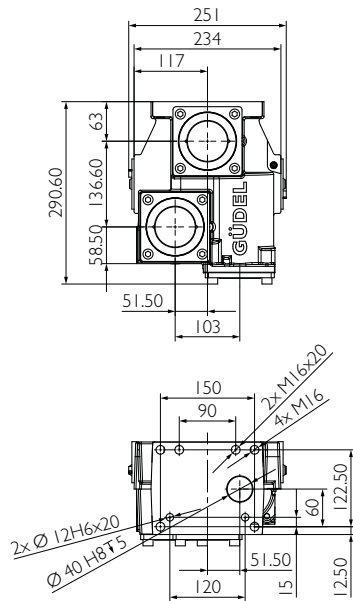


Beam profile in aluminum





Roller support RB90



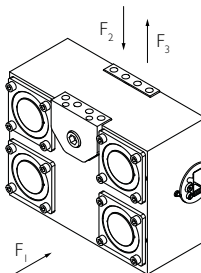
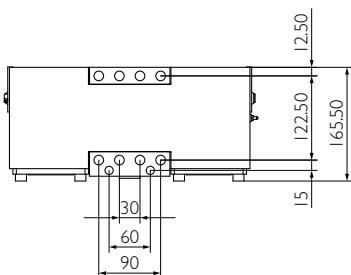
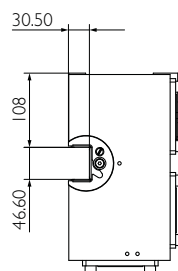
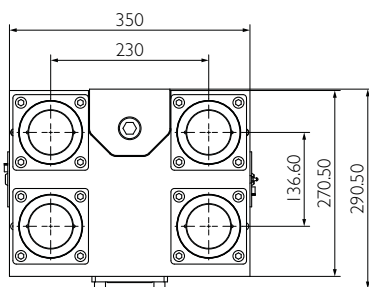
- F1**  
Load on side roller
- F2**  
Load on upper roller
- F3**  
Load on lower roller
- C<sub>w</sub>**  
For a nominal service life of 10<sup>7</sup> meters



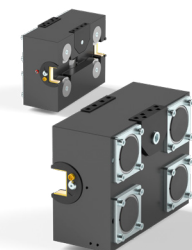
Type	Casing mat.	Load direction	C <sub>w</sub> [N]	n <sub>max</sub> [min-1]	F <sub>max. dyn</sub> [N]	F <sub>max. Not</sub> [N]	M [kg]	Part no.
RB90-S3547	GJS	F1 / F2 / F3	17840	1500	37400	65000	36	904240

C<sub>w</sub>: Dynamic load rating for 10<sup>7</sup> m, n<sub>max</sub>: Permissible speed, F<sub>max. dyn</sub>: Permissible force on roller support, dynamic, F<sub>max. Not</sub>: Permissible force on roller support in emergency stop, M: Weight

Double roller support DRB90



- F1**  
Load on side roller
- F2**  
Load on upper rollers
- F3**  
Load on lower rollers
- C<sub>w</sub>**  
For a nominal service life of 10<sup>7</sup> meter



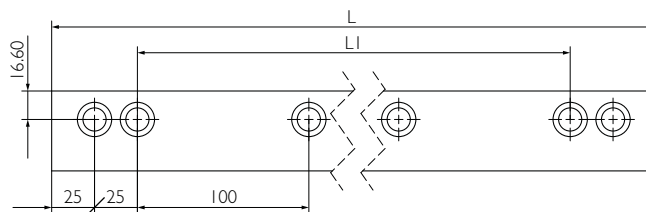
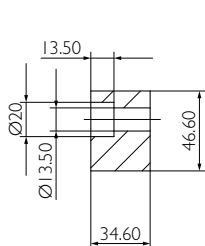
Type	Casing mat.	Load direction	C <sub>w</sub> [N]	n <sub>max</sub> [min-1]	F <sub>max. dyn</sub> [N]	F <sub>max. Not</sub> [N]	M [kg]	Part no.
DRB90-S3547	Aluminum	F1	17840	1500	37400	57400	53	904245
		F2 / F3	35680		74800	114800		

C<sub>w</sub>: Dynamic load rating for 10<sup>7</sup> m, n<sub>max</sub>: Permissible speed, F<sub>max. dyn</sub>: Permissible force on roller support, dynamic, F<sub>max. Not</sub>: Permissible force on roller support in emergency stop, M: Weight



BG 90

Guideway rail



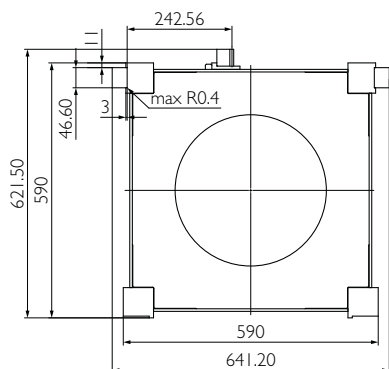
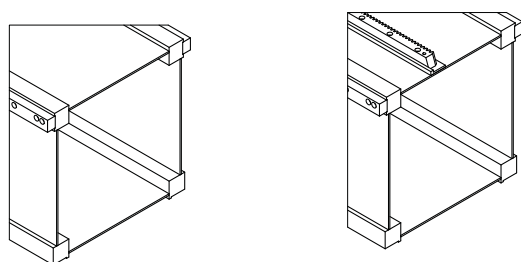
Installation & Accessories

Detailed information on the package, options & accessories on page 32f.

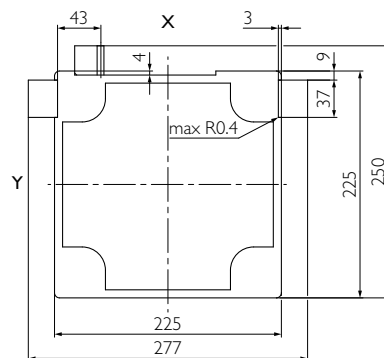
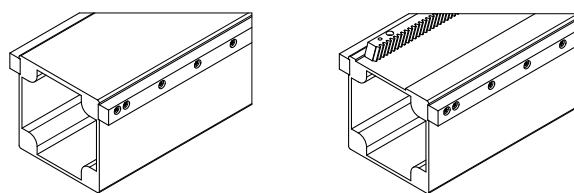
Type	Material		L [mm]	Li [mm]	M [kg]	Part no.
S3547	58CrMoV4	1.7792	2000	1900	23.9	903700

M: Weight

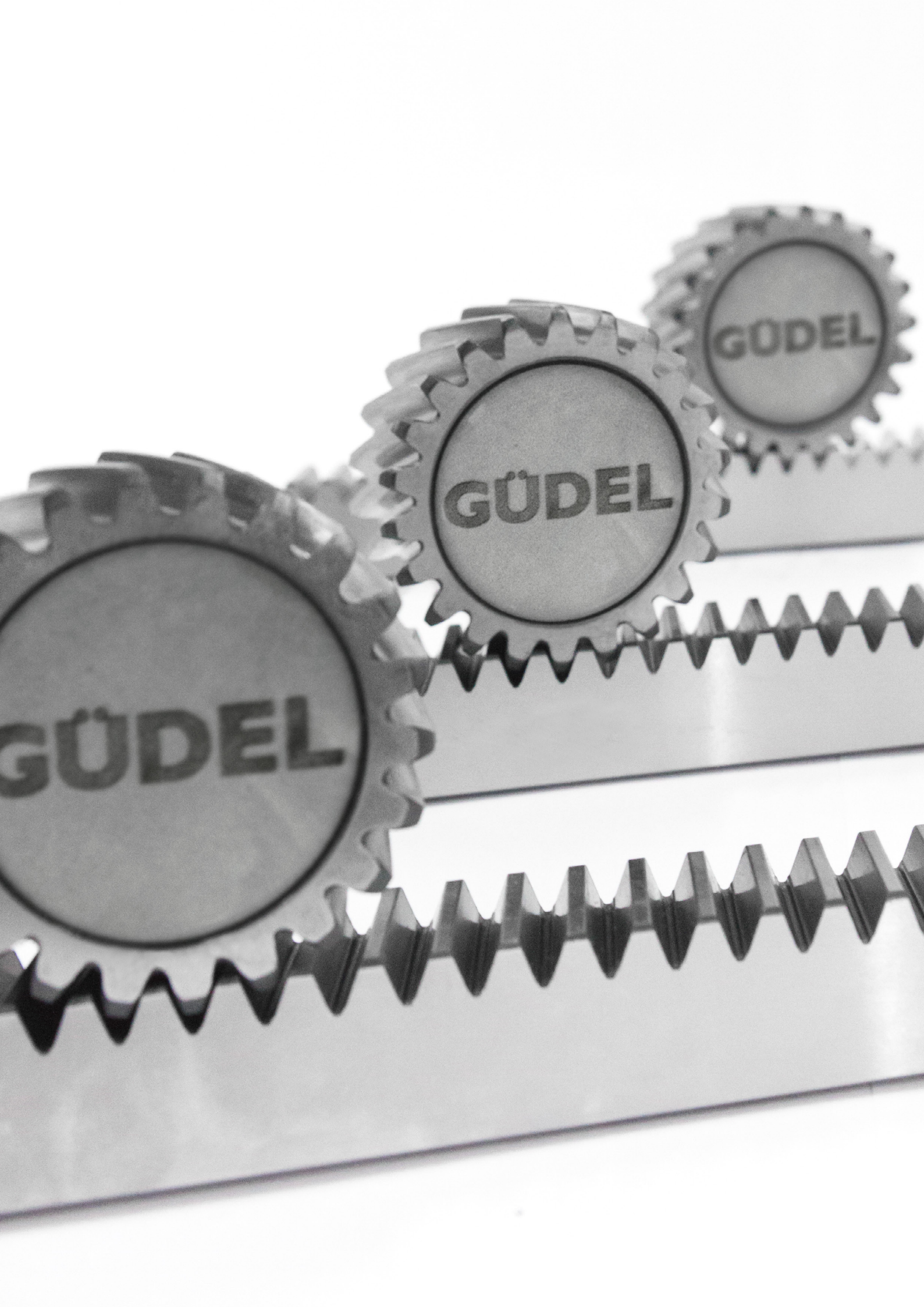
Beam profile in steel



Beam profile in aluminum





A black and white photograph of three interlocking gears. The gears are arranged in a diagonal line from the bottom left towards the top right. Each gear has the word "GÜDEL" printed in a bold, sans-serif font in the center of its face. The gears are interlocked, with the teeth of one gear meshing with the teeth of the adjacent gear. The lighting creates highlights on the teeth and shadows in the meshing areas, giving a three-dimensional appearance. The background is a plain, light color.

**GÜDEL**

**GÜDEL**

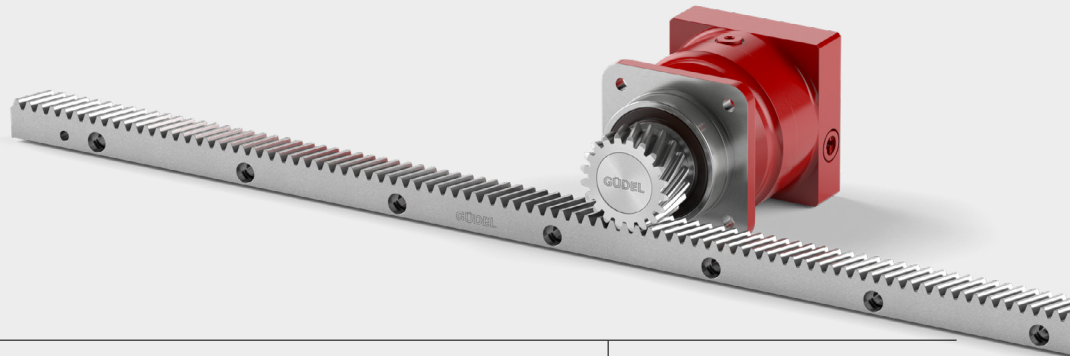
**GÜDEL**

Your ideal drive train

**GÜDEL**

Racks & pinions range

Find the suitable gearbox in our catalog for high precision planetary gearboxes.

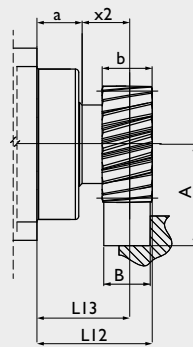
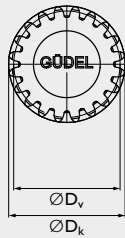


Pinion

Helical teeth, modular pitch



Hardened and ground



**Material**  
16MnCr5 DIN 1.7131

**Teeth**  
pressure angle  $\alpha = 20^\circ$   
helical teeth system left  
helix angle  $\beta = 19^\circ 31' 42''$   
hardened (58<sup>+4</sup><sub>-0</sub> HRC)  
ground, crowned

**Quality**  
6f24 DIN 3962/63/67

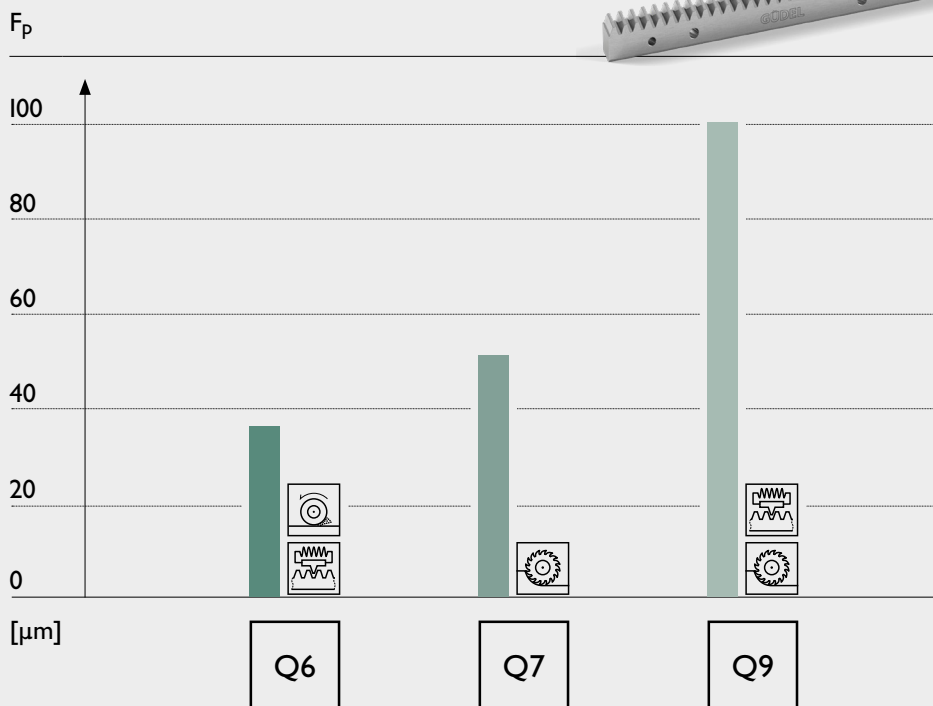
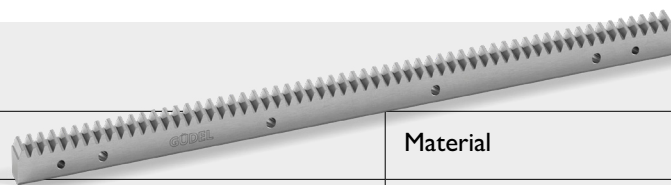


Geometrical data

	Gearbox	$m_n$	$P_t$	$z$	$A$	$b$	$D_k$	$D_0$	$D_v$	$L12$	$L13$	$x2$	$a$	$M$
BG 40	NRH 100	3	10.00	20	57.831	30	69.66	63.662	63.662	69.0	54.0	27.0	27	0.7
BG 52	NRH 140	3	10.00	22	61.014	30	76.03	70.028	70.028	69.5	54.5	27.5	27	0.8
BG 72	NR 180	4	13.33	20	77.441	40	92.88	84.883	84.883	83.5	63.5	31.5	32	1.5
BG 90	NR 180	4	13.33	20	77.441	40	92.88	84.883	84.883	83.5	63.5	31.5	32	1.5

$m_n$ : Normal module,  $P_t$ : Transverse pitch [mm],  $z$ : Number of teeth,  $D_0$ : Pitch circle diameter for calculation,  $D_v$ : Pitch circle diameter for construction,  $M$ : Weight [kg]

Rack



Material



Steel

Processing



Hardened



Milled



Ground



Helical

Example of the cumulative pitch deviation  $F_p$  for module 4 based on length 1000mm. Quality DIN 3962.

Geometrical data

Size	$m_n$	$P_t$	L	z	b	h
40 52	3	10.00	500.00	50	29	29
			1000.00	100		
			2000.00	200		
72 90	4	13.33	506.67	38	39	39
			1000.00	75		
			2000.00	150		

$m_n$ : Normal module,  $P_t$ : Transverse pitch [mm], z: Number of teeth  
 \* Double amount of fixing holes for maximum feed force

Q6
Part no.
246042
246043
246044
246055
246056
246057

Page 28

Q6+*
Part no.
246142
246143
246144
246152
246153
246154

Page 29

Q7
Part no.
155042
155043
155044
155052
155053
155054

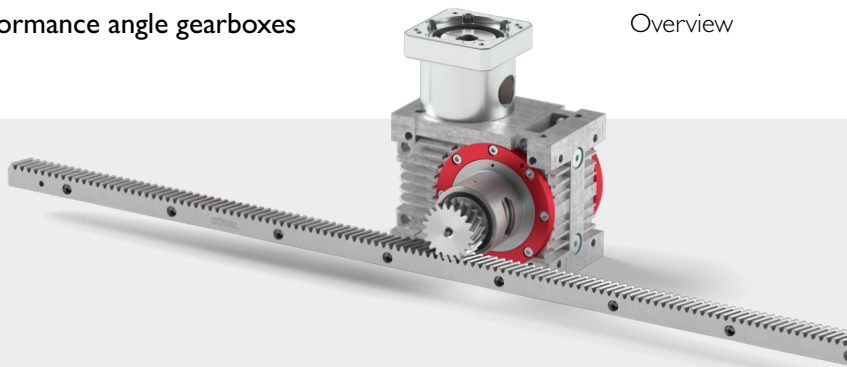
Page 30

Q9
Part no.
158042
158043
158044
158052
158053
158054

Page 31

Racks & pinions range

Find your matching gearbox in our catalog for high performance angle gearboxes.

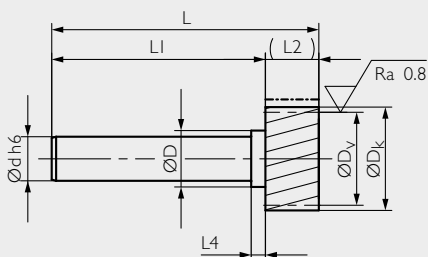
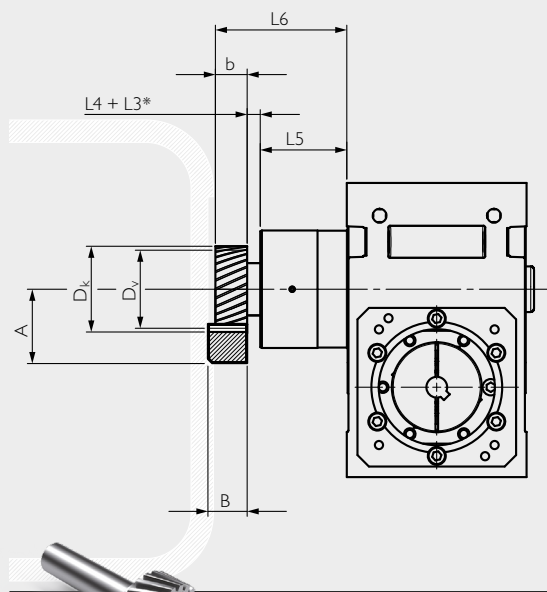


Output & pinion

Helical teeth, modular pitch



Hardened and ground



**Material**  
16MnCr5 DIN 1.7131  
shaft/bore soft

**Teeth**  
pressure angle  $\alpha = 20^\circ$   
helical teeth system left  
helix angle  $\beta = 19^\circ 31'42''$   
hardened ( $58^{+4}_0$  HRC)  
ground, crowned

**Quality**  
6f24 DIN 3962/63/67

Geometrical data

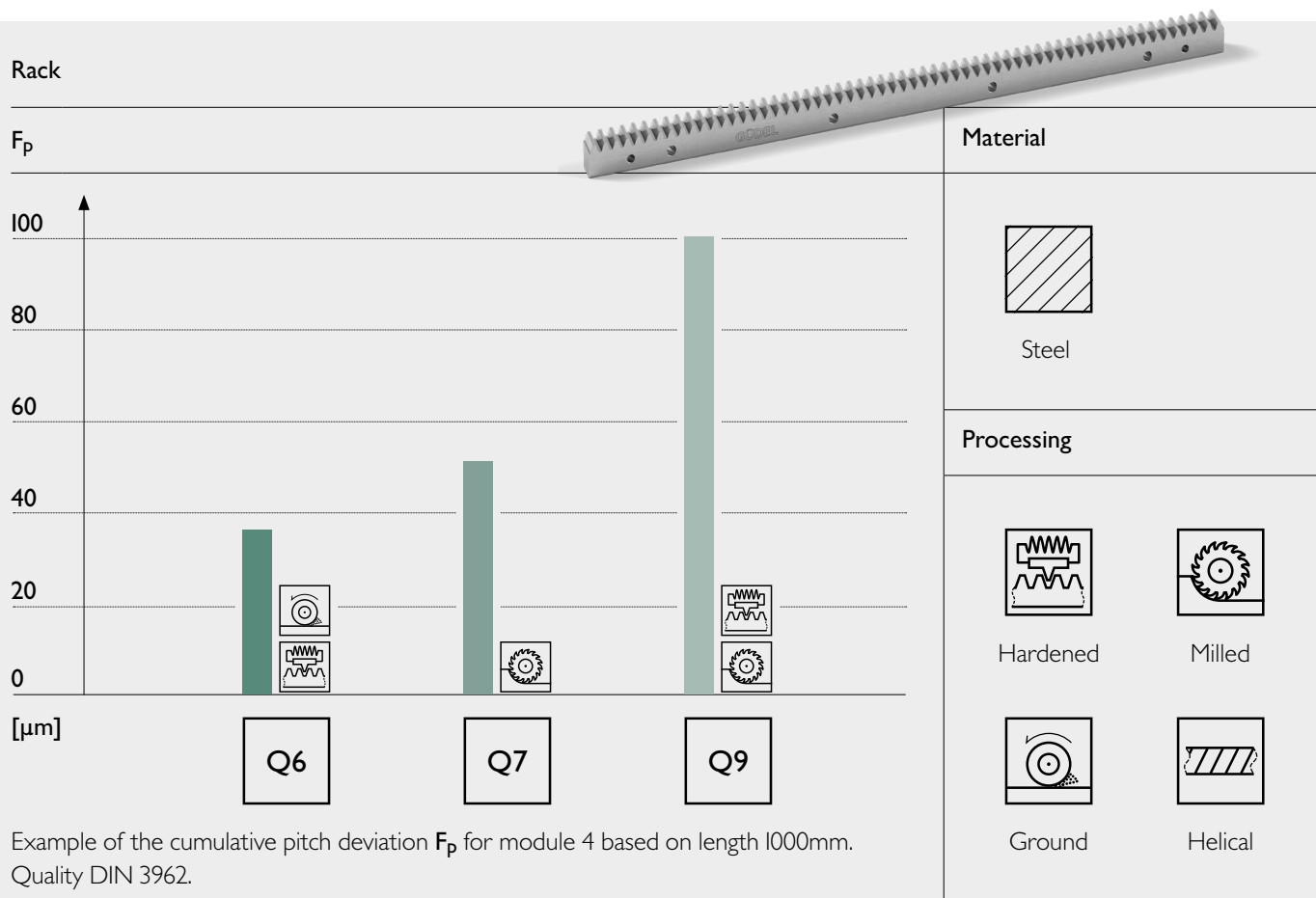
AY	HPG	$m_n$	$P_t$	A
40 52	060	3	10.00	52.365
				70.153
				77.440
				77.440
72	090	4	13.33	77.440
				77.440
90	120	4	13.33	77.440

Output		
L5	L6	L3
53.0	91.0	0
58.0	96.0	0
83.0	121.0	0
53.0	99.0	8
83.0	136.0	15
63.0	105.5	0
104.5	147.0	0
104.5	184.5	22
63.0	121.0	0
104.5	162.5	0
123	177.5	0
	211.5	34

Pinion													
z	d	$D_k$	$D_0$	$D_v$	D	L	DI	(L2) b	L4	Y	M	Part no.	
16	25	58.73	50.930	52.730	32	150	120	30	8.0	218	0.99	211416	
												180	150
						190	160		12.5	726	2.38		
												230	190
200	160	1954	3.43	211520									
				20	60	92.88	84.883	84.883	74	310	270	40	14.5

$m_n$ : Normal module,  $P_t$ : Transverse pitch [mm], z: Number of teeth,  $D_0$ : Pitch circle diameter for calculation,  $D_v$ : Pitch circle diameter for construction, J: Moment of inertia [ $10^{-6}$  kg m<sup>2</sup>], M: Weight [kg]





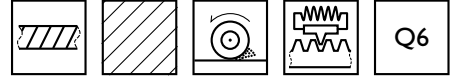
Geometrical data

Size	$m_n$	$P_t$	L	z	b	h
40 52	3	10.00	500.00	50	29	29
			1000.00	100		
			2000.00	200		
72 90	4	13.33	506.67	38	39	39
			1000.00	75		
			2000.00	150		

Q6	Q6+*	Q7	Q9
Part no.	Part no.	Part no.	Part no.
246042	246142	155042	158042
246043	246143	155043	158043
246044	246144	155044	158044
246055	246152	155052	158052
246056	246153	155053	158053
246057	246154	155054	158054

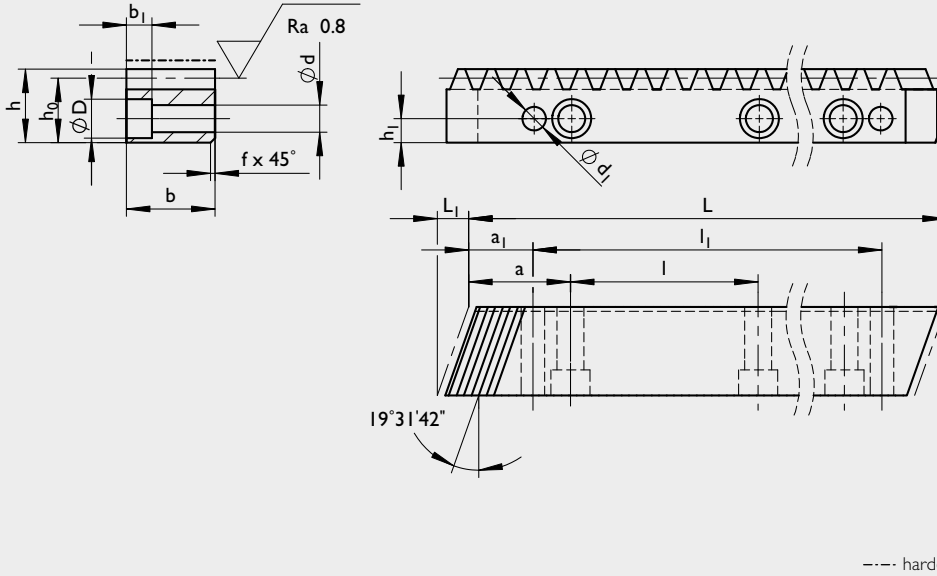
$m_n$ : Normal module,  $P_t$ : Transverse pitch [mm], z: Number of teeth  
 \* Double amount of fixing holes for maximum feed force



Helical teeth, modular pitch



Hardened and ground



**Material**  
C45E DIN 1.1191

**Profile**  
all faces ground

**Teeth**  
pressure angle  $\alpha = 20^\circ$   
helical teeth system right  
helix angle  $\beta = 19^\circ 31'42''$   
hardened ( $54^{+4}$  HRC)  
and ground

**Quality**  
6h23 DIN 3962/63/67

**$p_f$  [mm]**  
cut-to-length tolerance for  
continuous mounting -0.05/-0.50

**$F_{pL}$  [mm]**  
cumulative pitch deviation  
based on length L

--- hardened



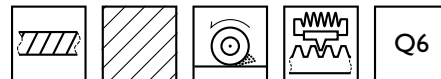
Geometrical data

Size	$m_n$	$p_t$	L	$L_1$	z	b	h	$h_0$	f+0.5	a	l	$h_1$	d	D	$b_1$	$a_1$	$l_1$	$d_1$	$F_{pL}$	M	Part no.
40 52	3	10.00	500.00	10.3	50	29	29	26.0	2	62.5	125	9	10	15	9	35.0	430.0	7.7	0.028	2.8	246042
			1000.00		100												930.0		0.037	5.6	246043
			2000.00		200												1930.0		0.054	11.2	246044
72 90	4	13.33	506.67	13.8	38	39	39	35.0	2	62.5	125	12	12	18	11	33.3	433.0	9.7	0.030	5.1	246055
			1000.00		75												933.4		0.036	10.1	246056
			2000.00		150												1933.4		0.050	20.2	246057

$m_n$ : Normal module,  $p_t$ : Transverse pitch [mm], z: Number of teeth,  $d_1$ : Predrilled, M: Weight [kg]



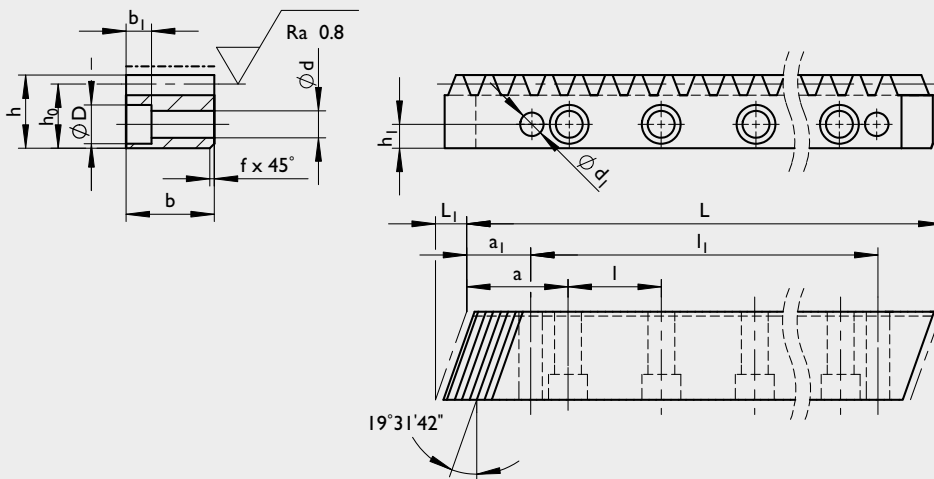
Rack – helical teeth



Helical teeth, modular pitch



Hardened and ground



**Material**  
C45E DIN 1.1191

**Profile**  
all faces ground

**Teeth**  
pressure angle  $\alpha = 20^\circ$   
helical teeth system right  
helix angle  $\beta = 19^\circ 31' 42''$   
hardened ( $58^{+4}$ HRC)  
and ground

**Quality**  
6h23 DIN 3962/63/67

**$p_f$  [mm]**  
cut-to-length tolerance for  
continuous mounting -0.05/-0.50

**$F_{pL}$  [mm]**  
cumulative pitch deviation  
based on length L

--- hardened



Geometrical data

Size	$m_n$	$p_t$	L	$L_I$	z	b	h	$h_0$	f+0.5	a	l	$h_I$	d	D	$b_I$	$a_I$	$l_I$	$d_I$	$F_{pL}$	M	Part no.
40 52	3	10.00	500.00	10.3	50	29	29	26.0	2	62.5	62.5	9	10	15	9	35.0	430.0	7.7	0.028	2.7	246142
			1000.00		100												930.0		0.037	5.4	246143
			2000.00		200												1930.0		0.054	10.8	246144
72 90	4	13.33	506.67	13.8	38	39	39	35.0	2	62.5	62.5	12	12	18	11	33.3	433.0	9.7	0.030	4.9	246152
			1000.00		75												933.4		0.036	9.7	246153
			2000.00		150												1933.4		0.050	19.5	246154

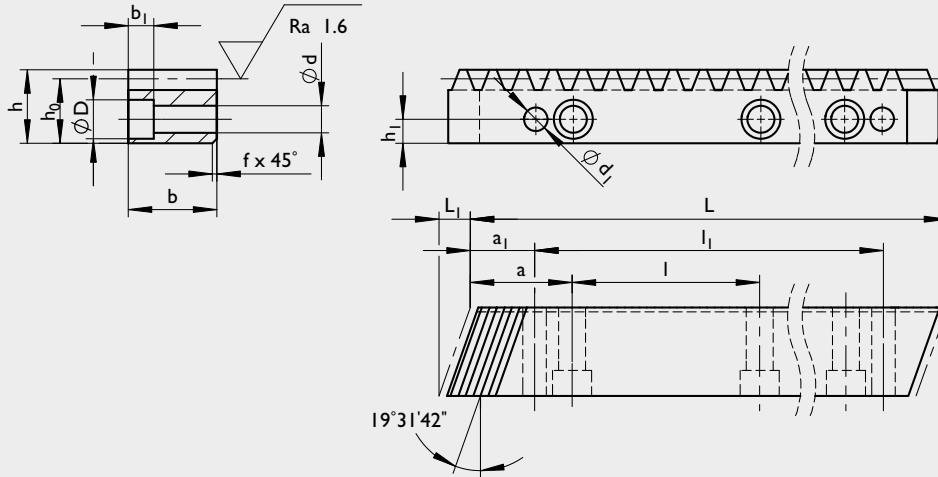
$m_n$ : Normal module,  $p_t$ : Transverse pitch [mm], z: Number of teeth,  $d_I$ : Predrilled, M: Weight [kg]



Helical teeth, modular pitch



Milled



**Material**  
42CrMo4 DIN 1.7225 I

**Profile**  
all faces milled

**Teeth**  
pressure angle  $\alpha = 20^\circ$   
helical teeth system right  
helix angle  $\beta = 19^\circ 31' 42''$   
milled

**Quality**  
7h25 DIN 3962/63/67

**pr [mm]**  
cut-to-length tolerance for  
continuous mounting -0.05/-0.50

**F<sub>pL</sub> [mm]**  
cumulative pitch deviation  
based on length L

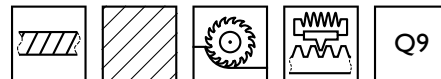


Geometrical data

Size	$m_n$	$P_t$	L	$L_1$	z	b	h	$h_0$	f+0.5	a	l	$h_1$	d	D	$b_1$	$a_1$	$l_1$	$d_1$	$F_{pL}$	M	Part no.
40 52	3	10.00	500.00	10.3	50	29	29	26.0	l	62.5	125	9	10	15	9	35.0	430.0	7.7	0.040	2.8	155042
			1000.00		100												930.0		0.051	5.6	155043
			2000.00		200												1930.0		0.073	11.2	155044
72 90	4	13.33	506.67	13.8	38	39	39	35.0	l	62.5	125	12	12	18	11	33.3	433.0	9.7	0.042	5.1	155052
			1000.00		75												933.4		0.051	10.1	155053
			2000.00		150												1933.4		0.070	20.2	155054

$m_n$ : Normal module,  $P_t$ : Transverse pitch [mm], z: Number of teeth,  $d_1$ : Predrilled, M: Weight [kg]

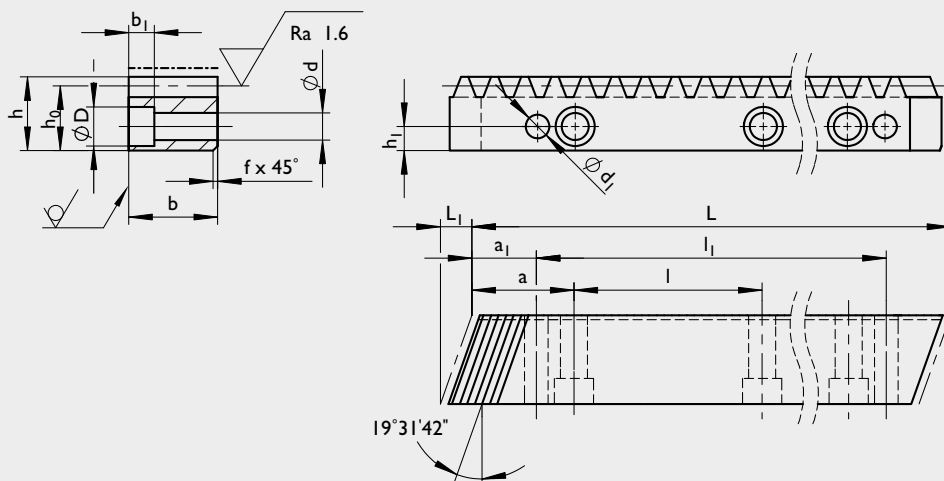
Rack – helical teeth



Helical teeth, modular pitch



Milled and hardened



--- hardened

**Material**  
C45E DIN 1.1191

**Profile**  
all faces milled

**Teeth**  
pressure angle  $\alpha = 20^\circ$   
helical teeth system right  
helix angle  $\beta = 19^\circ 31' 42''$   
hardened (58<sup>+4</sup>HRC)  
milled

**Quality**  
9h27 DIN 3962/63/67

**p<sub>f</sub> [mm]**  
cut-to-length tolerance for  
continuous mounting -0.05/-0.50

**F<sub>pL</sub> [mm]**  
cumulative pitch deviation  
based on length L



Geometrical data

Size	m <sub>n</sub>	p <sub>t</sub>	L	L <sub>1</sub>	z	b	h	h <sub>0</sub>	f+0.5	a	l	h <sub>1</sub>	d	D	b <sub>1</sub>	a <sub>1</sub>	l <sub>1</sub>	d <sub>1</sub>	F <sub>pL</sub>	M	Part no.
40 52	3	10.00	500.00	10.3	50	29	29	26.0	2	62.5	125	9	10	15	9	35.0	430.0	7.7	0.080	2.8	158042
			1000.00		100												930.0		0.103	5.6	158043
			2000.00		200												1930.0		0.147	11.2	158044
72 90	4	13.33	506.67	13.8	38	39	39	35.0	2	62.5	125	12	12	18	11	33.3	433.0	9.7	0.083	5.1	158052
			1000.00		75												933.4		0.101	10.1	158053
			2000.00		150												1933.4		0.136	20.2	158054

m<sub>n</sub>: Normal module, P<sub>t</sub>: Transverse pitch [mm], z: Number of teeth, d<sub>1</sub>: Predrilled, M: Weight [kg]





GÜDEL

GÜDEL  
Part No: 904230  
Type: RB 72 53547



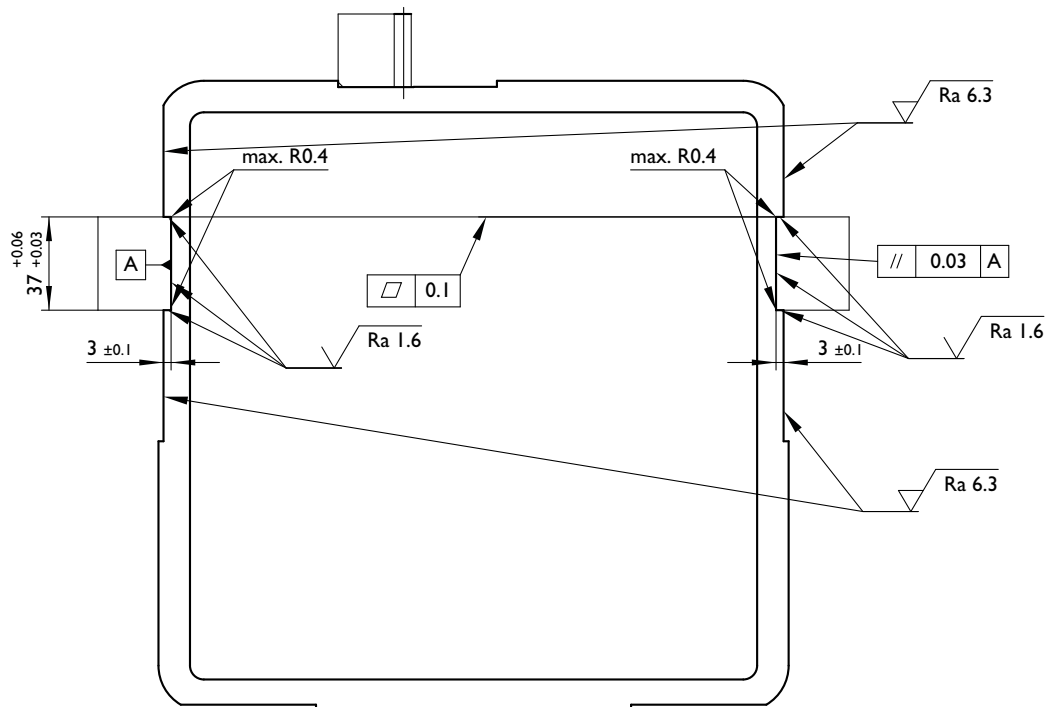


# The basis of your guideway system

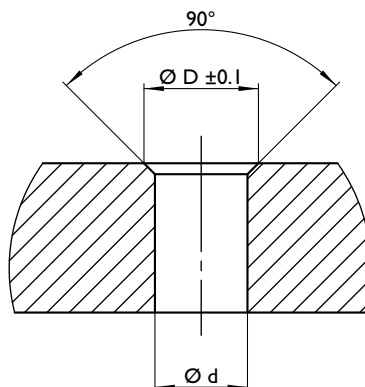
A correctly dimensioned basic structure is required to ensure correct mounting and support of the guide rails. The Güdel steel or aluminum beam profiles are ideally suited for this purpose. Alternatively you can use your own support structure.

Güdel specialists will be happy to support you in the configuration.

## Machining & tolerances



Fastening with thread-rolling screw



Geometrical data

Guideway rail	Screw	Part No.	Torque in S355	Torque in aluminium	Drill hole d	Countersink D
S2937	M10x45	0174938	63 [Nm]	71 [Nm]	Ø 9.3 H13	Ø 11.5
S3547	M12x40	0174939	108 [Nm]	123 [Nm]	Ø 11.2 H13	Ø 13.5

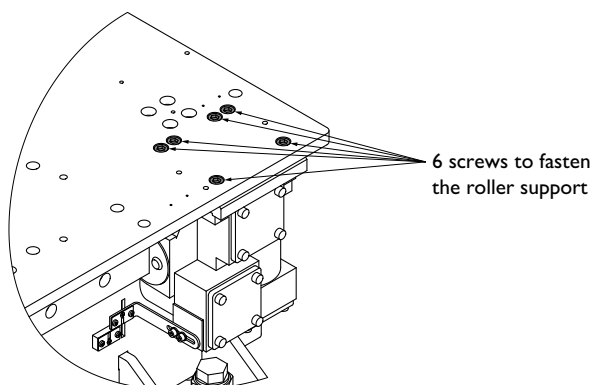
Use Güdel thread-rolling screws for efficient screwed connections to fasten the guide rails. The screw forms a metric thread when it is screwed in. This saves the need for time-consuming thread cutting in the beam profile.

Mounting with socket-head cap screw

Guideway rail	Screw in S355	Screw in aluminium	Quality
S2937	M10x30	M10x40	8.8
S3547	M12x40	M12x50	8.8

Guide rails are mounted with socket-head cap screws, ISO 4762, quality 8.8. The minimum thread length in steel is 1x nominal screw diameter. The minimum thread length in aluminum is 2x nominal screw diameter.

**Roller bracket installation - Attention:** Installation is only possible in combination with **limit stop edge A** or **sleeve B**

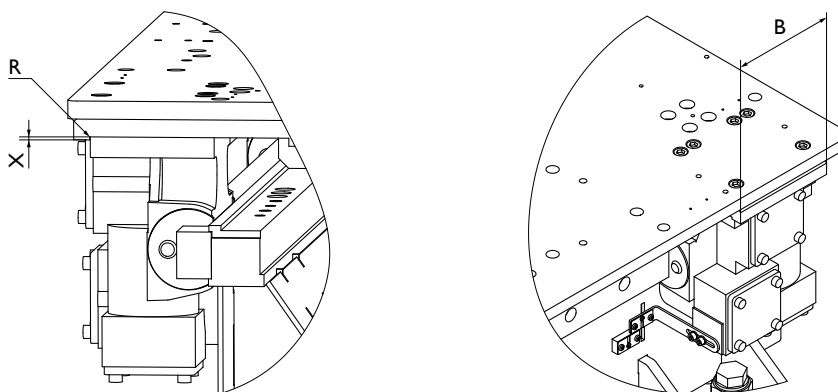


Geometrical data

Roller support part No.	Size	Pieces	Screws	Ma (Nm)
8625-001	RB40	6x	M8x25	24.6
8625-002	RB52	6x	M10x25	48
8625-003	RB72	6x	M12x40	84
8625-010	RB90	6x	M16x50	206

The roller bracket is fastened with 6 screws.

Stop edge A

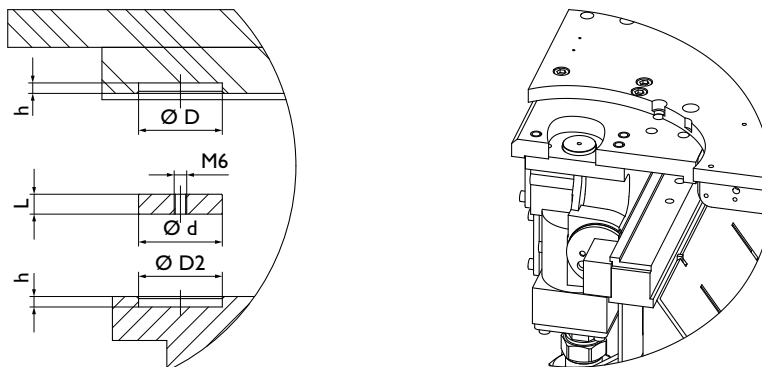


Geometrical data

Roller support part No.	Size	Measurement X	B min	R
8625-001	RB40	2mm	110mm	Sharp-edged
8625-002	RB52	8mm	130mm	Sharp-edged
8625-003	RB72	8mm	160mm	Sharp-edged
8625-010	RB90	8mm	220mm	Sharp-edged

The forces acting on the lateral roller must be absorbed by means of a limit stop edge A.

Sleeve B



Geometrical data

Roller support part No.	Size	Sleeve Part No.	Ø D	h	Ø d	L	Ø D <sup>2</sup>	Sleeve drill hole
8625-001	RB40	10401121	20H8	5	20h8	9.5	20H8	M6
8625-002	RB52	10401121	20H8	5	20h8	9.5	20H8	M6
8625-003	RB72	10401122	40H8	5	40h8	9.5	40H8	M6
8625-010	RB90	10401122	40H8	5	40h8	9.5	40H8	M6

Alternatively, the lateral forces can be absorbed by sleeve B.

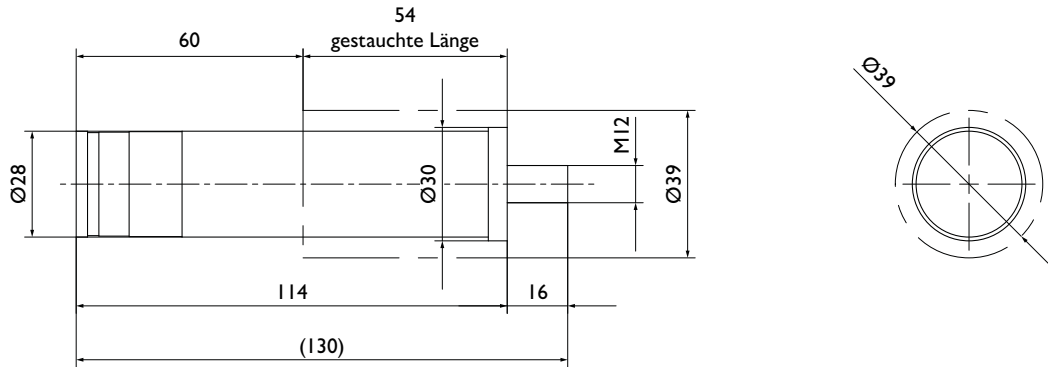




Accessories

**GÜDEL**

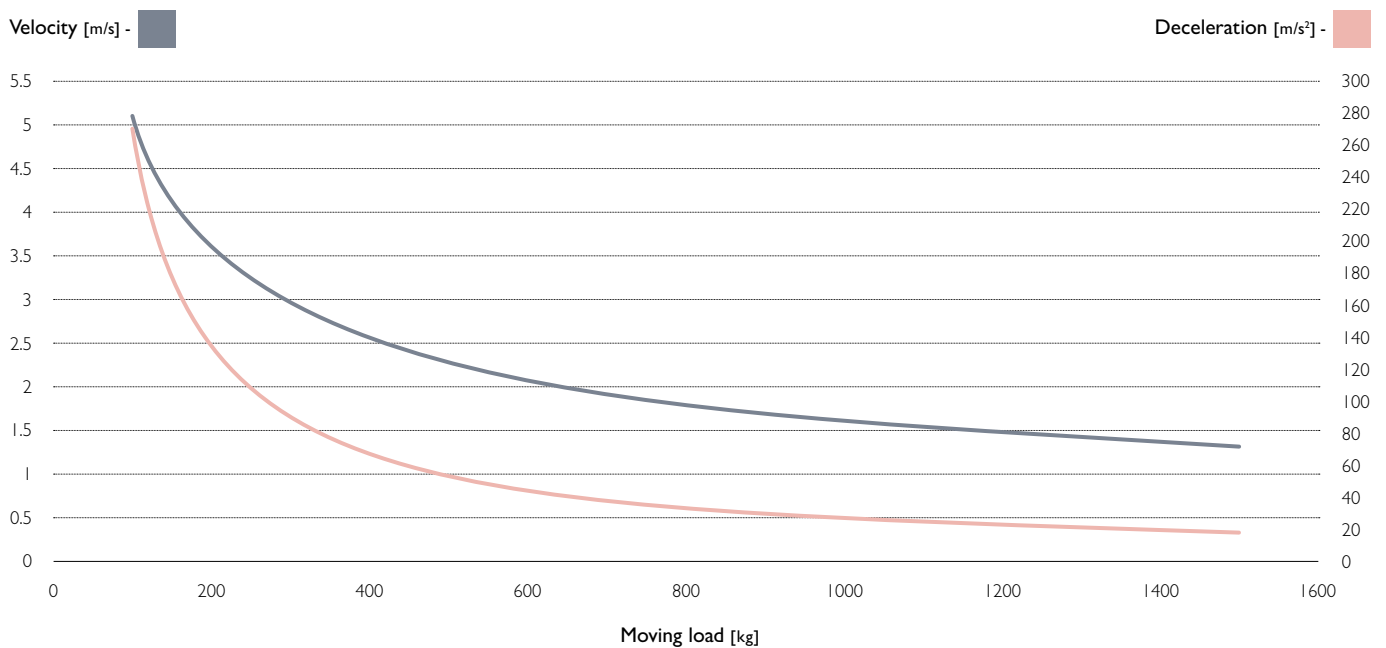
Absorber P30



Geometrical data

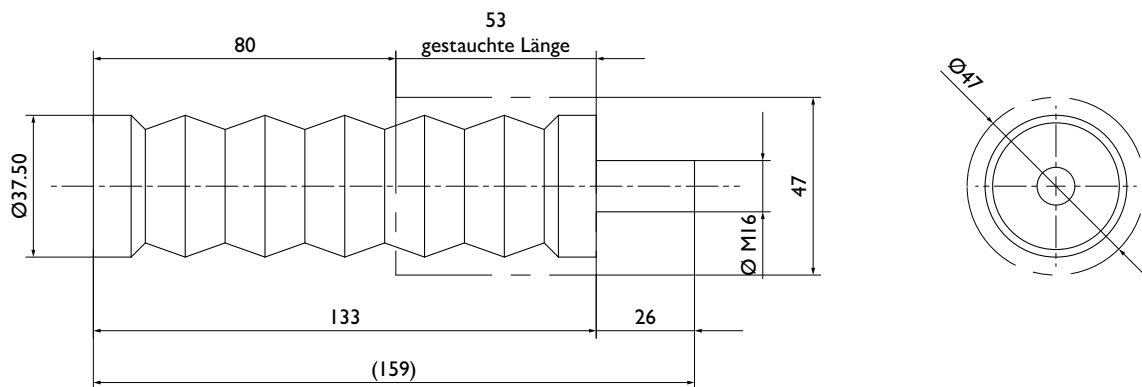
Type	Max. compression length	Deformation diameter	Max. permitted energy/work [Nm]	Max. reaction force [N]	M [kg]	Part No.
P30	60	39	1300	27000	0.1	10138132

Moving load P30



Area below the **velocity** curve is permissible.  
 The **deceleration** curve shows the deceleration occurring with a corresponding moving load.

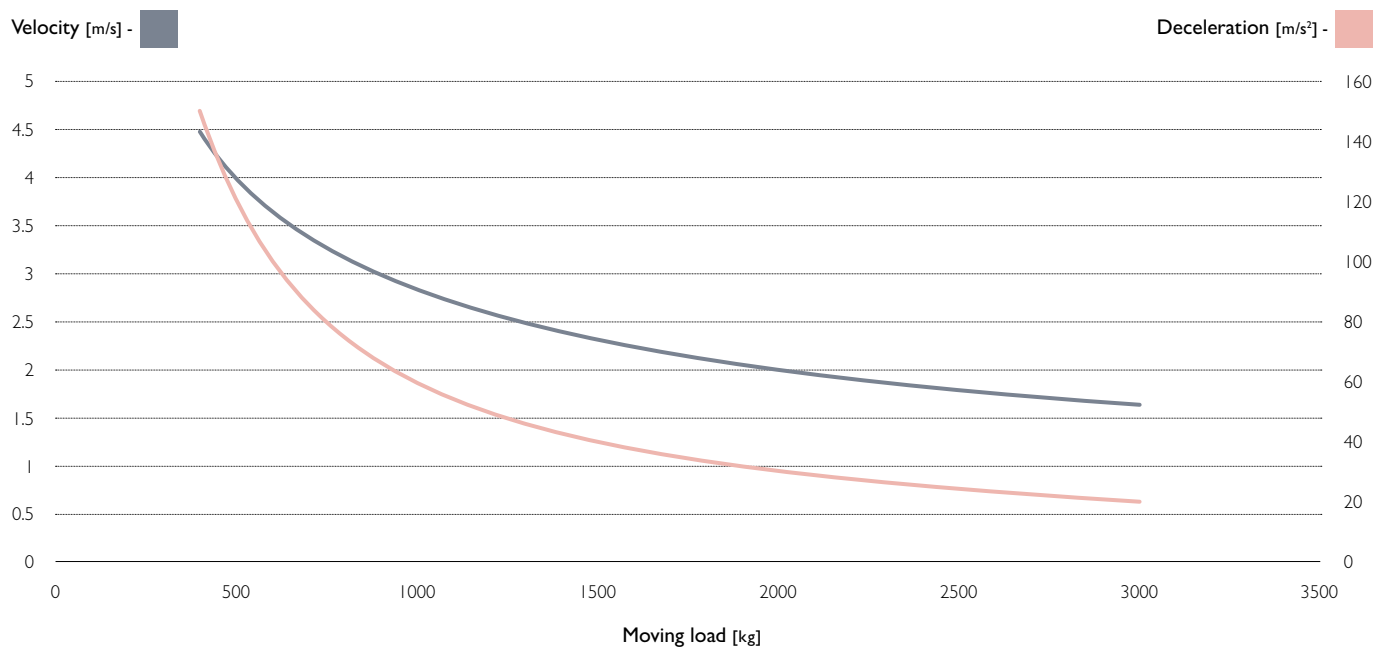
Absorber P474



Geometrical data

Type	Max. compression length	Deformation diameter	Max. permitted energy/work [Nm]	Max. reaction force [N]	M [kg]	Part No.
P474	80	47	4000	60000	0.3	10414217

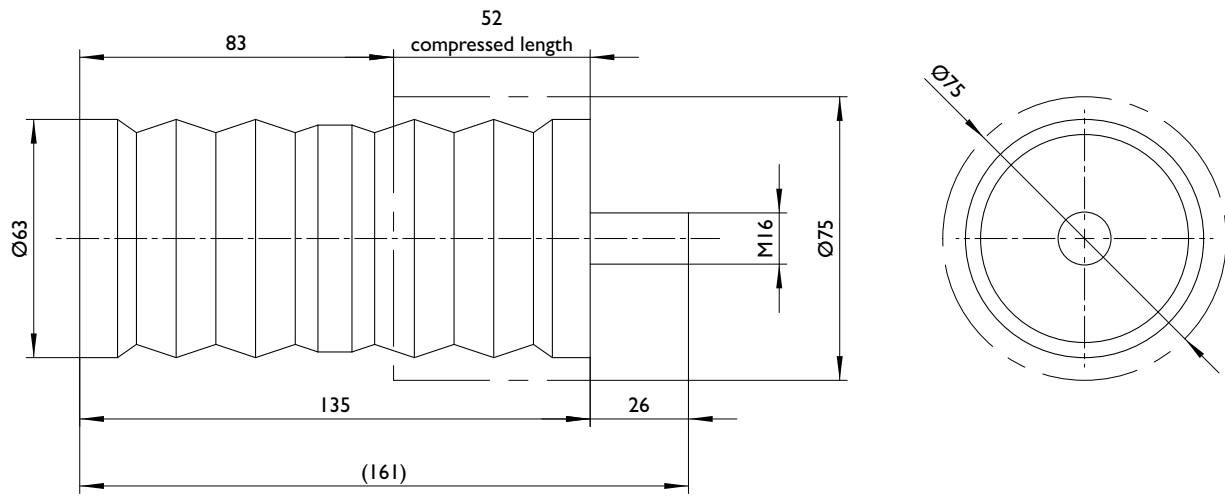
Moving load P474



Area below the **velocity** curve is permissible.  
 The **deceleration** curve shows the deceleration occurring with a corresponding moving load.



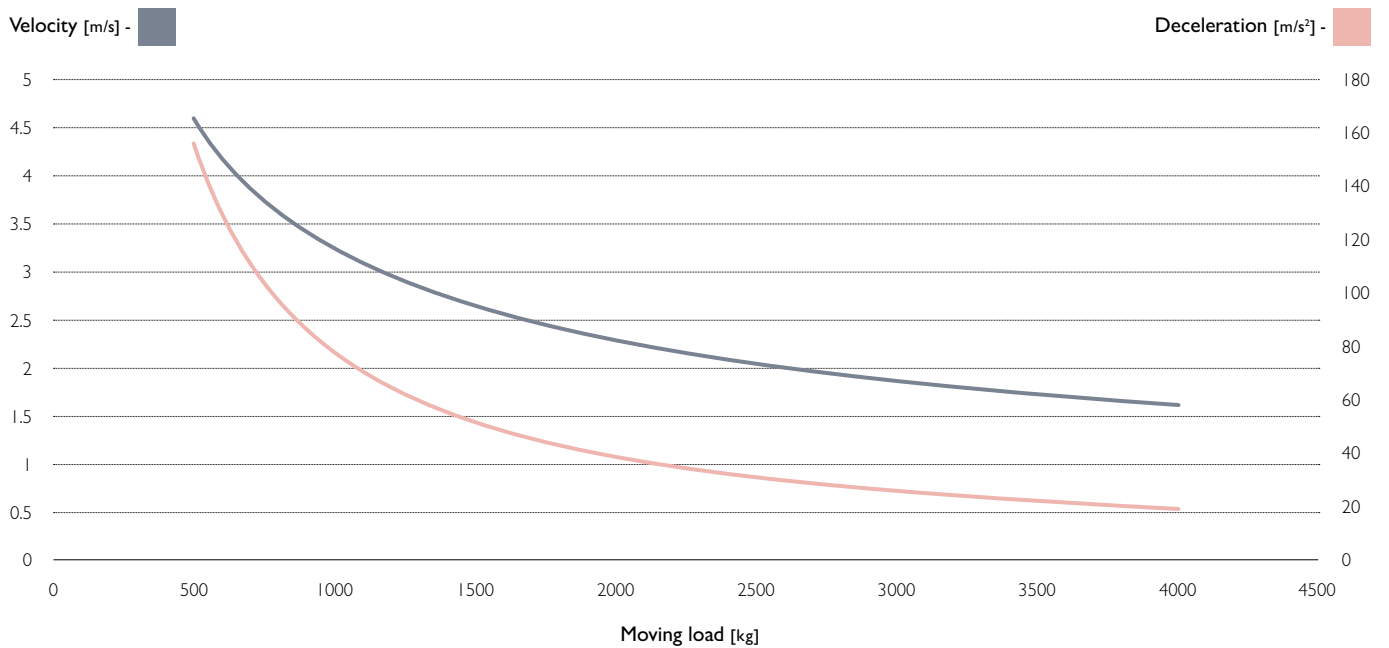
Absorber P686



Geometrical data

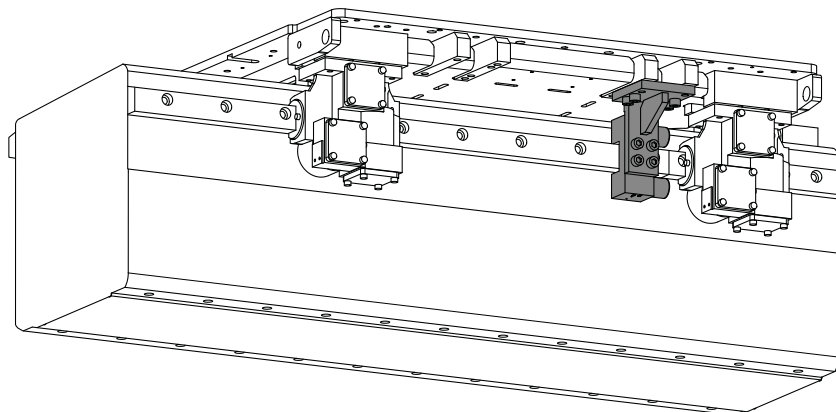
Type	Max. compression length	Deformation diameter	Max. permitted energy/work [Nm]	Max. reaction force [N]	M [kg]	Part No.
P686	83	75	5275	78000	0.7	I0135521

Moving load P474



Area below the **velocity** curve is permissible.  
 The **deceleration** curve shows the deceleration occurring with a corresponding moving load.

## Clamping element pneumatic



## Geometrical data

Guideway rail	Type	Theoretical holding force [N] ( $\mu\text{m } 0.1$ )	Verified holding force [N]	Part No.	Operating pressure [bar]
S2937	MKS4500F (NC)	4100	3300	10196870	6
	MK4500F (NO)	3100	2500	10196874	6
S3547	MKS5500G (NC)	2800	2250	10196875	6
	MK5500G (NO)	2800	2250	10196877	6

Use the Güdel clamping element for maximum positioning accuracy.  
 It has been designed for highest holding forces at small installation dimensions.  
 The clamping force applied by the spring does not act on the guideway rollers.  
 It is released pneumatically.  
 Several clamping elements can be used to increase the holding force.





100% 100%

**GÜDEL**

**GÜDEL H1**

75% 75%



50% Reg.-Nr. 136324 50%

Art.-Nr. 0206399

Charge:8F4583

filling date 07/2018

Inhalt / content 400 ml

25% 25%

Safety data sheet available on

[www.gudel.com](http://www.gudel.com)

Do not discharge into drains or rivers.

Sicherheitsdatenblatt auf [www.gudel.com](http://www.gudel.com)



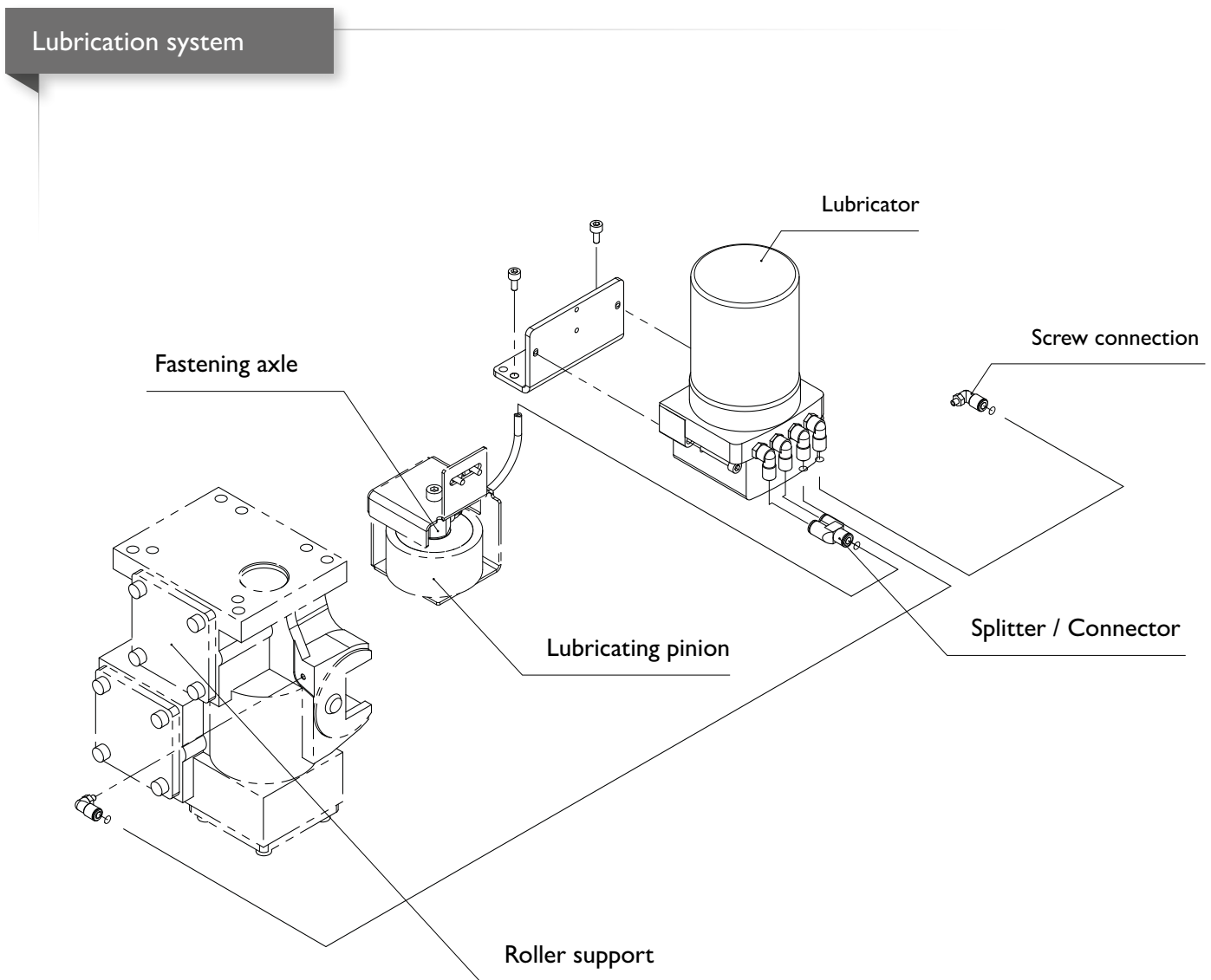
1.2

Lubrication

**GÜDEL**

# The optimal lubrication for smooth processes

Güdel racks and pinions are of high precision and quality. Our modular system enables us to meet a wide variety of needs. Due to Güdel's vertically integrated product range, we know how our components work together smoothly. We offer the appropriate lubrication pinions, fastening axles and lubricators to match your systems. An optimal lubrication film on the rack and pinion is achieved by a carefully measured quantity of grease, distributed by the lubrication system and lubrication elements. The lubrication pinion additionally cleans the teeth so that dirt particles and contaminants are removed with the lubrication process.



Detailed instructions can be found in our operating manual.

Lubricating pinion

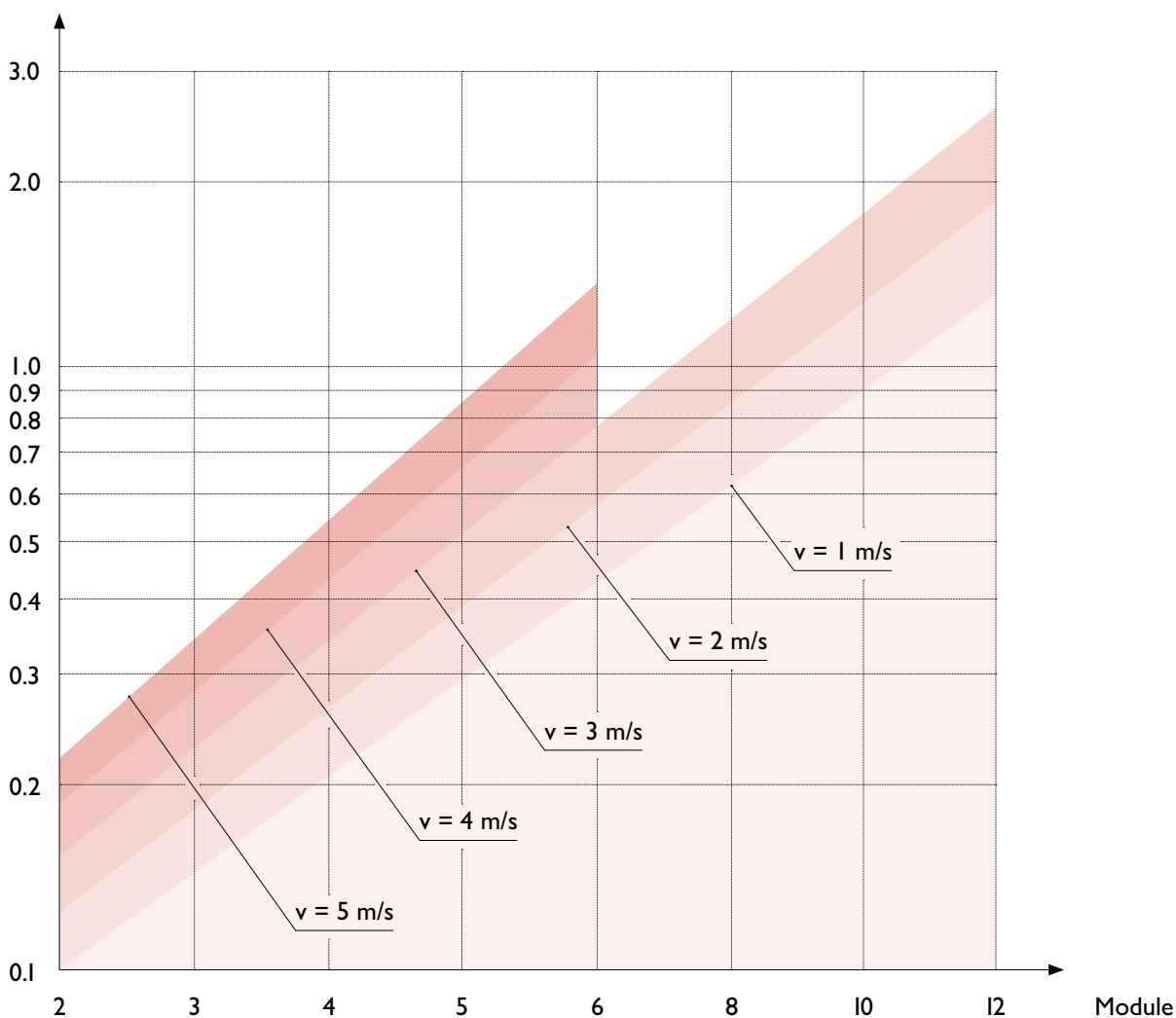
To ensure that the rack-and-pinion drives have a long service life, they must be lubricated regularly.

The polyurethane foam lubrication pinion takes on the task and is available in the versions SL and SR - lubrication of the rack or lubrication of the pinion. The properties of the polyurethane foam allow the lubricant to be stored and gradually released, thus achieving an optimum lubricating film.

Lubrication quantity

Refer to the following diagram for the lubricant requirement of pinion and rack. Half the quantity is required for lubrication of the roller and rail.

Lubrication quantity [cm<sup>3</sup>/24h]



## Lubricator

Dimensions (B x H x T)	[mm]	Max. 112 x 196 x 94
Weight	[g]	1120
Lubricant volume	[cm <sup>3</sup> ]	400
Lubricant type		Oil or grease up to NLGI 3
Method of operation		Piston pump
Operating pressure	[bar]	Max. 70
Metering volume / stroke	[cm <sup>3</sup> ]	0,15 (output / pulse signal)
Outlet		Rotating, right-angled hose connections 6 mm to 100 bar
Operating voltage	[VDC]	24
Current input	[mA]	I <sub>max</sub> during operation 350 (regular < 200)
Fuse	[mA]	350 (characteristic: medium slow-blow or slow-blow)
Protection class		IP 65
Operating temperature	[°C]	-20 bis +70
Control		Integrated, microelectronic
Pressure monitoring		Integrated, electronic (system pressure measurement)
Fill level monitoring		Integrated; reed contact
Control connection		Connector; M12x1, 4-pole
Activation of progressive distributor		Suitable

## Lubricator versions

Designation	404-DLS	402-Battery	402-24VDC
Outlets	4	2	2
Pump body	2	1	1
Lubricant	Güdel HI*	Güdel HI*	Güdel HI*
Part No.	0193906	10194590	0204578

## Replacement cartridge

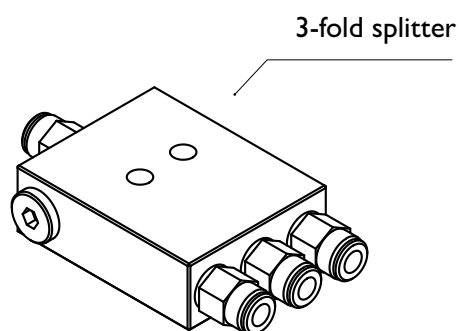
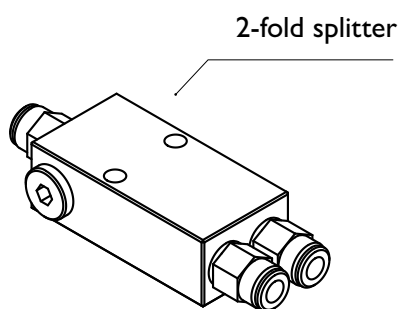
Designation	Cartridge Güdel HI
Lubricant volume	400 cm <sup>3</sup>
Lubricant type	Güdel HI*
Temperature range	10°C to 40°C
Part No.	0206399

\* Güdel HI: high-performance lubricant with viscosity 4000 [mm<sup>2</sup>/s] at +40°C.  
 Food grade with HI approval.  
 NSF registration number: 146621.  
 In cartridges of 400 [ml].

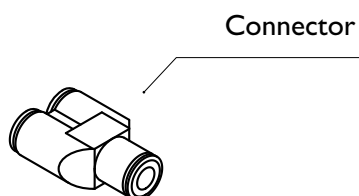
Hoses, hose connectors and splitters

Designation	Splitter 2-fold	Splitter 3-fold	Connector	Hose Ø6/3mm	Screw connection straight	Screw connection angled
Thread / connection	Pluggable	Pluggable	Pluggable	–	M6x1/pluggable	M6x1/pluggable
Model / no. of outlets	2	3	2 zu 1	PA 12	–	90°
Hose diameter	Ø6/3	Ø6/3	Ø6/3	Ø6/3	Ø6/3	Ø6/3
Part No.	0193908	0204580	0193909	0193912	0193910	0193911

The splitters divide the lubrication to equal quantities.

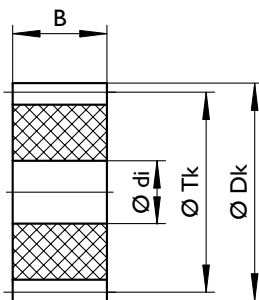


The connector combines two hoses into one lubrication point.





Lubricating pinion - Helical teeth, modular pitch



Geometrical data

Module	Number of teeth	Type	Use	B	D <sub>k</sub>	d <sub>i</sub>	T <sub>k</sub>	Part No.
3	17	SL	Rack	30	60.1	12	54.11	0193925
		SR	Pinion					-
4	17	SL	Rack	40	80.1	12	72.15	0193926
		SR	Pinion					0212416

SL: Lubricating pinion left, SR: Lubricating pinion right

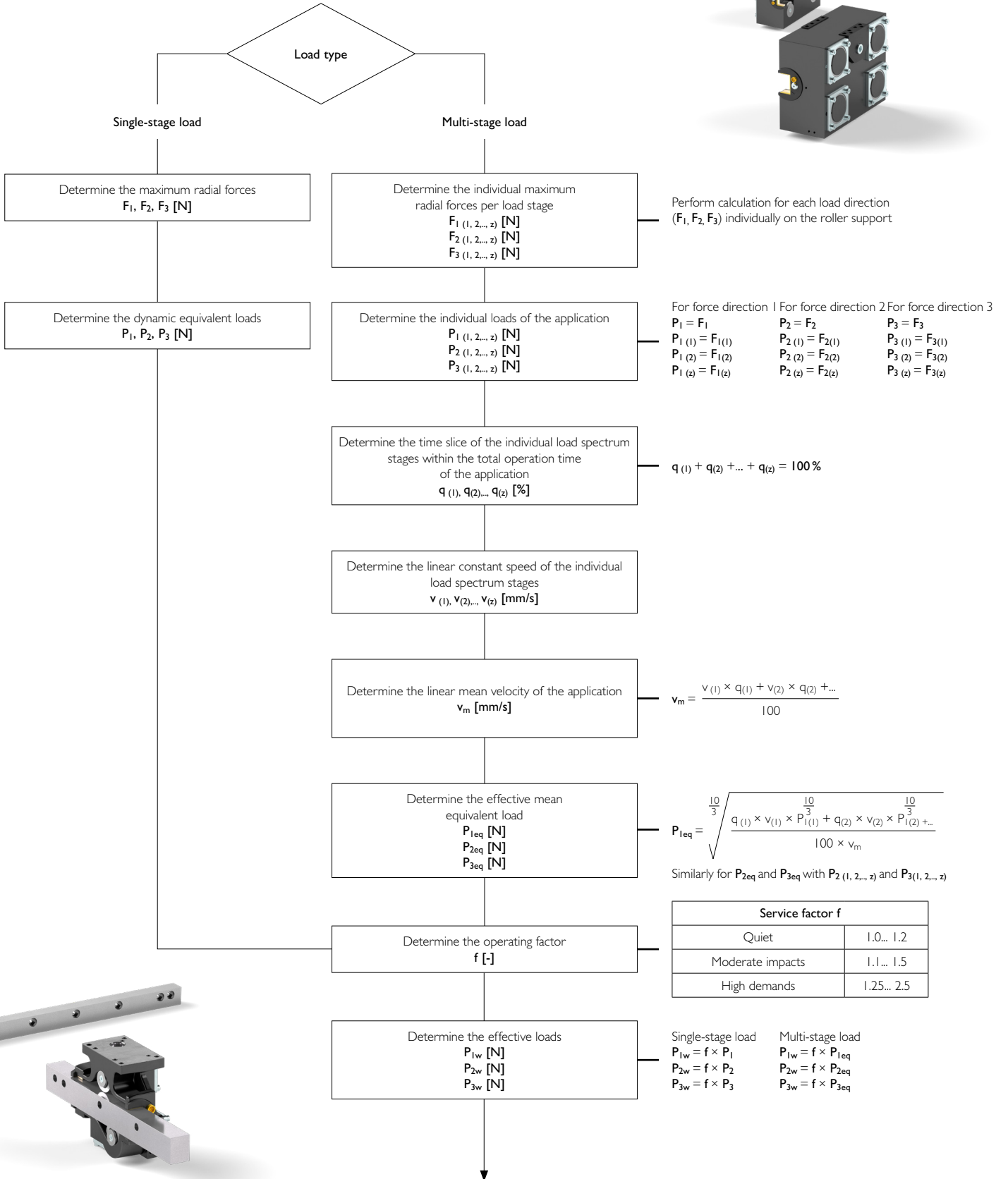


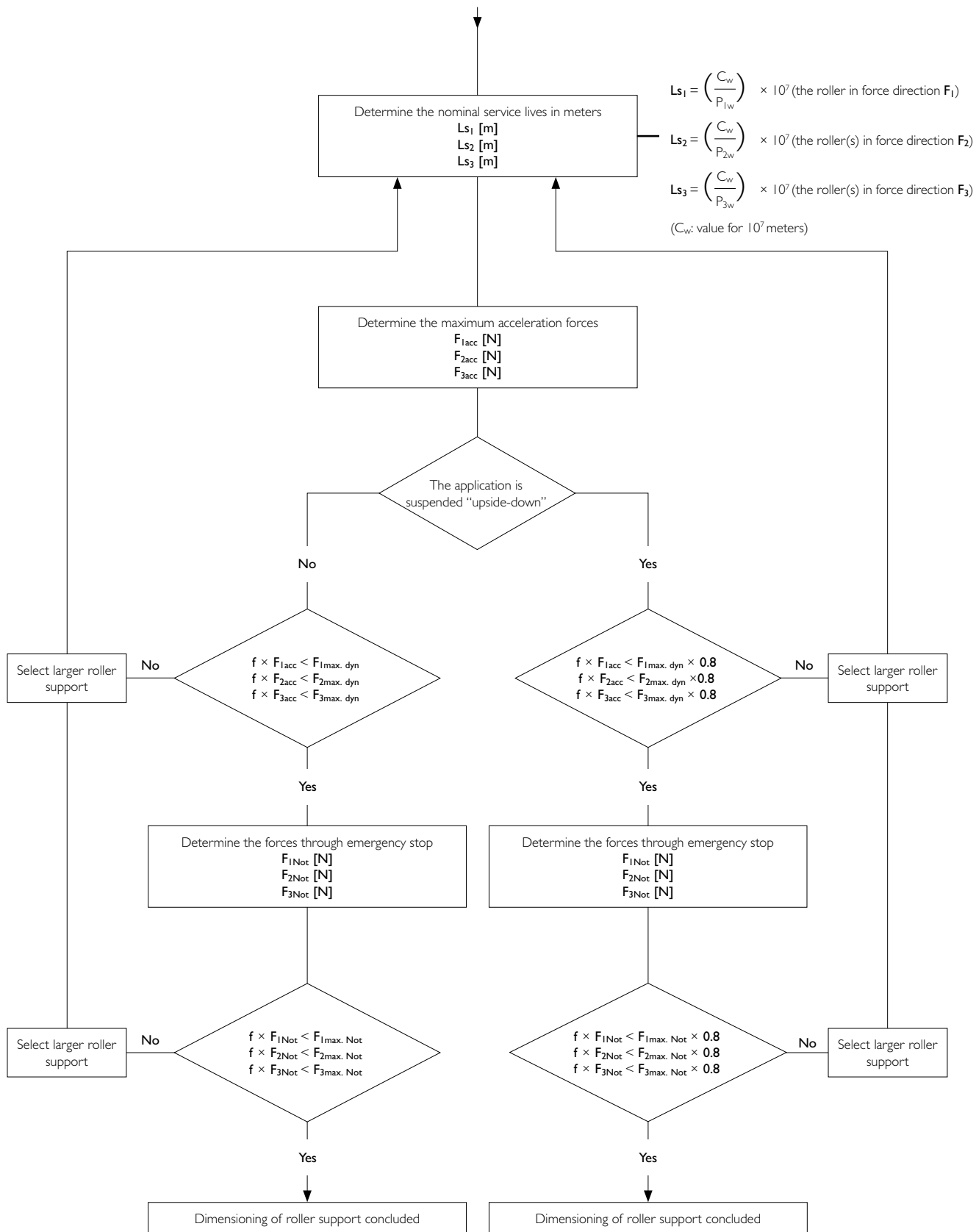


Technical information

**GÜDEL**

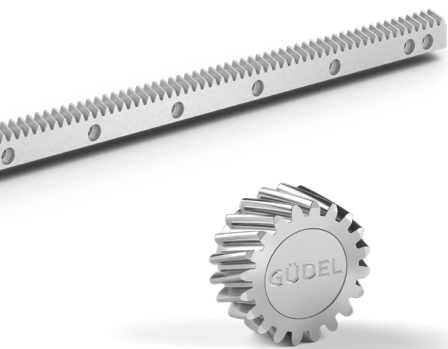
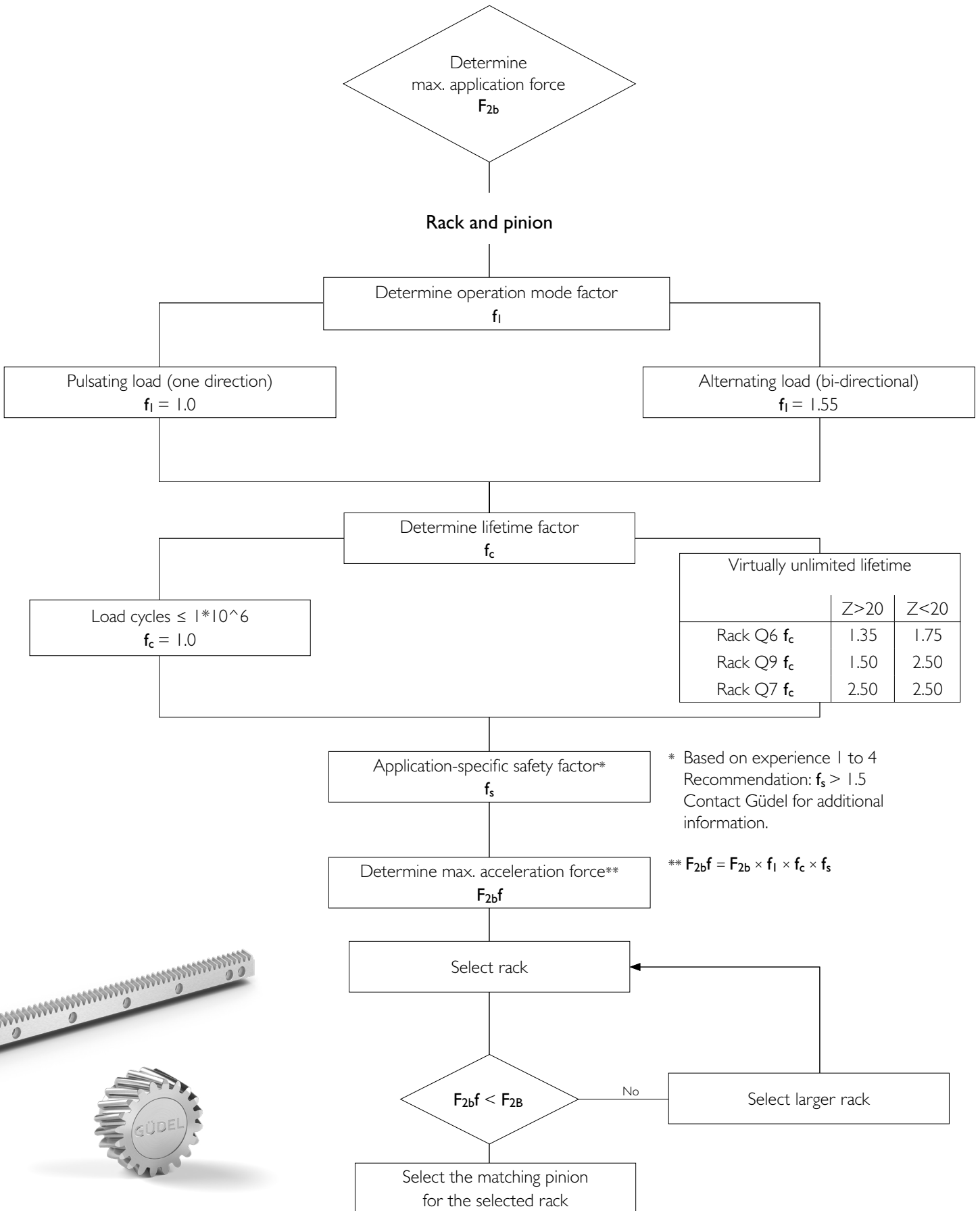
# Dimension your roller support







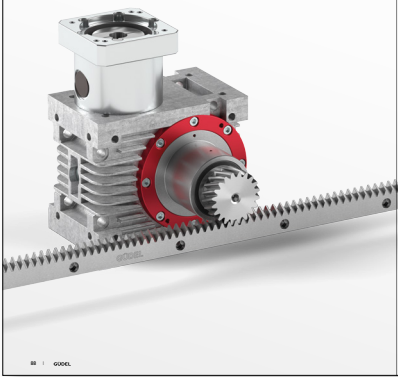
# Calculation of rack and pinion



Your ideal drive train combined with our high precision planetary and high performance angle gearboxes

Güdel offers high precision planetary and high performance angle gearboxes suitable to the calculated rack and pinion requirements of your application. The flowchart for calculating your ideal drive train can be found in the relevant gearbox catalogue.

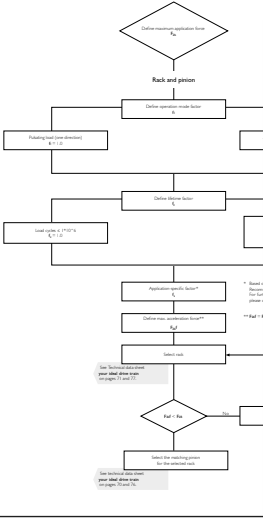
Flowcharts  
Find your ideal drive train



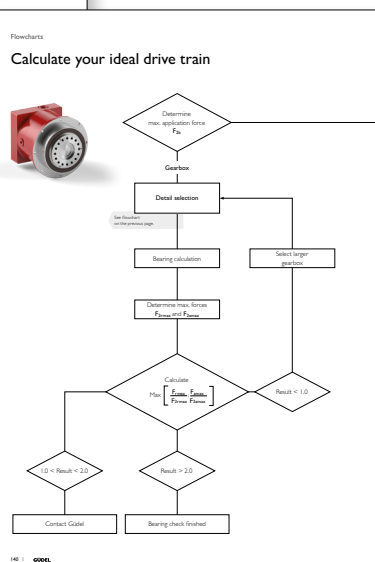
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GÜDEL

Flowcharts  
Find your ideal drive train



Flowcharts  
Calculate your ideal drive train





Güdel worldwide

**GÜDEL**



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